DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 1

On-Street Turnover Data

APPENDIX 1

On-Street Turnover Data

Time Restriction		Inventory	Number of Parked Vehicles by Length of Stay									Total Vehicles	Total Duration (hours)	Average Turnover	Average Duration (hours)	Number of Time Violations	Violation Hours
			0-1 hours	1-2 hours	2-3 hours	3-4 hours	4-5 hours	5-6 hours	6-7 hours	7-8 hours	8+ hours						
2	TH-S (20-19)	12	11	0	1	0	0	0	3	0	0	15	35	1.25	2.33	4	16
1	TH-S (19-18)	8	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	TH-S (18-17)	12	7	0	0	1	0	0	0	0	0	8	11	0.67	1.38	1	2
1	TH-S (17-16)	9	4	0	0	0	0	0	0	0	0	4	4	0.44	1.00	0	0
2	TH-S (16-15)	4	6	0	0	0	0	0	0	0	0	6	6	1.50	1.00	0	0
2	TH-N (15-16)	5	7	0	2	0	0	0	0	0	0	9	13	1.80	1.44	2	2
24	TH-N (16-17)	10	10	0	0	1	0	0	0	0	0	11	14	1.10	1.27	0	0
2	TH-N (17-18)	11	5	0	0	0	0	0	0	0	0	5	5	0.45	1.00	0	0
24	TH-N (18-19)	8	6	0	0	1	0	0	0	0	0	7	10	0.88	1.43	0	0
24	TH-N (19-20)	5	6	1	0	2	0	0	0	0	0	9	16	1.80	1.78	0	0
1	PI-S WEST (22-21)	11	1	0	0	0	0	0	0	0	0	1	1	0.09	1.00	0	0
1	PI-S WEST (21-20)	11	3	0	0	0	0	0	0	0	0	3	3	0.27	1.00	0	0
2	PI-S WEST (20-19)	7	10	0	0	0	0	0	1	0	0	11	17	1.57	1.55	1	5
2	PI-S WEST (19-18)	7	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	PI-S WEST (18-17)	8	4	0	0	0	0	0	1	0	0	5	11	0.63	2.20	1	6
2	PI-S WEST (17-16)	10	17	0	0	0	0	0	0	0	0	17	17	1.70	1.00	0	0
2	PI-S WEST (16-15)	8	11	0	1	0	0	0	0	0	0	12	14	1.50	1.17	1	1
2	CAR-N WEST (15-16)	11	1	0	0	0	0	0	0	0	0	1	1	0.09	1.00	0	0
2	CAR-N WEST (16-17)	6	1	0	0	0	0	0	0	0	0	1	1	0.17	1.00	0	0
2	CAR-N WEST (17-18)	8	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	CAR-N WEST (18-19)	8	1	0	0	0	0	0	0	0	0	1	1	0.13	1.00	0	0
1	CAR-N WEST (19-20)	8	1	0	0	0	0	0	0	0	0	1	1	0.13	1.00	0	0
1	CAR-N WEST (20-21)	5	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	CAR-N WEST (21-22)	11	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	PI-S EAST (22-21)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	PI-S EAST (21-20)	4	1	0	0	0	0	0	0	0	0	1	1	0.25	1.00	0	0
2	PI-S EAST (20-19)	6	1	0	0	0	0	0	0	0	0	1	1	0.17	1.00	0	0
2	PI-S EAST (19-18)	10	1	0	0	0	0	0	0	0	0	1	1	0.10	1.00	0	0
1	PI-S EAST (18-17)	7	4	0	0	0	0	0	0	0	0	4	4	0.57	1.00	0	0
2	PI-S EAST (17-16)	10	1	0	0	0	0	0	0	0	0	1	1	0.10	1.00	0	0
2	PI-S EAST (16-15)	11	4	0	0	0	0	0	0	0	0	4	4	0.36	1.00	0	0
2	CAR-N EAST (15-16)	10	14	0	2	0	0	0	1	0	0	17	27	1.70	1.59	1	5
2	CAR-N EAST (16-17)	10	15	0	2	0	0	0	0	0	0	17	21	1.70	1.24	0	0
2	CAR-N EAST (17-18)	8	13	0	1	0	0	0	1	0	0	15	23	1.88	1.53	2	6
2	CAR-N EAST (18-19)	6	6	0	0	0	0	0	0	0	0	6	6	1.00	1.00	0	0
1	CAR-N EAST (19-20)	10	5	0	0	0	0	0	0	0	0	5	5	0.50	1.00	0	0
1	CAR-N EAST (20-21)	11	3	0	0	0	0	0	0	0	0	3	3	0.27	1.00	0	0
24	CAR-N EAST (21-22)	8	1	0	0	0	0	0	0	0	0	1	1	0.13	1.00	0	0
2	CAP-S (22-21)	8	5	0	0	0	0	0	0	0	0	5	5	0.63	1.00	0	0
24	CAP-S (21-20)	4	2	0	1	0	0	0	0	0	0	3	5	0.75	1.67	0	0
2	CAP-S (20-19)	8	3	0	0	0	0	0	0	0	0	3	3	0.38	1.00	0	0
2	CAP-S (19-18)	8	15	0	0	0	0	0	0	0	0	15	15	1.88	1.00	0	0
2	CAP-S (18-17)	10	21	0	0	0	0	0	0	0	0	21	21	2.10	1.00	0	0
2	CAP-S (17-16)	9	17	0	2	0	0	0	0	0	0	19	23	2.11	1.21	0	0
2	CAP-S (16-15)	7	11	1	0	0	0	0	0	0	0	12	13	1.71	1.08	0	0
2	CAP-N (15-16)	8	4	0	1	0	0	0	0	0	0	5	7	0.63	1.40	0	0
2	CAP-N (16-17)	9	19	0	3	0	0	0	0	0	0	22	28	2.44	1.27	1	1
2	CAP-N (17-18)	9	15	0	2	0	0	0	0	0	0	17	21	1.89	1.24	1	1
2	CAP-N (18-19)	10	9	0	2	0	0	0	0	0	0	11	15	1.10	1.36	1	1
2	CAP-N (19-20)	8	4	0	0	0	0	0	0	0	0	4	4	0.50	1.00	0	0
2	CAP-N (20-21)	11	7	0	0	0	0	0	0	0	0	7	7	0.64	1.00	0	0
0	CAP-N (21-22)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	CEN-S WEST (22-21)	10	2	0	0	0	0	0	1	0	0	3	9	0.30	3.00	1	5
2	CEN-S WEST (21-20)	10	9	0	0	0	0	0	5	0	0	14	44	1.40	3.14	5	25
2	CEN-S WEST (20-19)	10	6	0	0	0	0	0	0	0	0	6	6	0.60	1.00	0	0
2	CEN-S WEST (19-18)	7	6	0	0	0	0	0	0	0	0	6	6	0.86	1.00	0	0
2	CEN-S WEST (18-17)	8	11	0	1	0	0	0	0	0	0	12	14	1.50	1.17	1	1
2	CEN-S WEST (17-16)	9	17	1	2	0	0	0	1	0	0	21	32	2.33	1.52	3	7
0	CEN-S WEST (16-15)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	WAR-N WEST (15-16)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
2	WAR-N WEST (16-17)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
2	WAR-N WEST (17-18)	7	1	0	0	0	0	0	0	0	0	1	1	0.14	1.00	0	0
2	WAR-N WEST (18-19)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	WAR-N WEST (19-20)	10	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	WAR-N WEST (20-21)	11	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
24	WAR-N WEST (21-22)	11	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0

Appendix 1
City of Cheyenne Parking Strategic Plan
On-Street Turnover Data

Time Restriction		Inventory	Number of Parked Vehicles by Length of Stay									Total Vehicles	Total Duration (hours)	Average Turnover	Average Duration (hours)	Number of Time Violations	Violation Hours
			0-1 hours	1-2 hours	2-3 hours	3-4 hours	4-5 hours	5-6 hours	6-7 hours	7-8 hours	8+ hours						
1	CEN-S EAST (22-21)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	CEN-S EAST (21-20)	8	2	0	0	0	0	0	0	0	0	2	2	0.25	1.00	0	0
2	CEN-S EAST (20-19)	8	4	0	0	0	0	0	0	0	0	4	4	0.50	1.00	0	0
2	CEN-S EAST (19-18)	6	1	0	0	0	0	0	0	0	0	1	1	0.17	1.00	0	0
2	CEN-S EAST (18-17)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	CEN-S EAST (17-16)	10	6	0	0	0	0	0	0	0	0	6	6	0.60	1.00	0	0
0	CEN-S EAST (16-15)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	WAR-N EAST (15-16)	0	10	0	0	0	0	0	0	0	0	10	10	#DIV/0!	1.00	5	5
2	WAR-N EAST (16-17)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	WAR-N EAST (17-18)	10	19	0	3	1	0	0	0	0	0	23	32	2.30	1.39	1	2
2	WAR-N EAST (18-19)	6	4	0	0	0	0	0	0	0	0	4	4	0.67	1.00	0	0
24	WAR-N EAST (19-20)	9	2	0	0	0	0	0	0	0	0	2	2	0.22	1.00	0	0
1	WAR-N EAST (20-21)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
24	WAR-N EAST (21-22)	11	4	0	0	0	0	0	0	0	0	4	4	0.36	1.00	0	0
24	HOU-S (22-21)	10	11	0	2	0	0	0	1	0	0	14	24	1.40	1.71	0	0
24	HOU-S (21-20)	11	6	0	2	0	0	0	2	0	0	10	26	0.91	2.60	0	0
24	HOU-S (20-19)	11	4	0	1	0	0	0	0	0	0	5	7	0.45	1.40	0	0
24	HOU-S (19-18)	10	4	0	0	0	0	0	1	0	0	5	11	0.50	2.20	0	0
24	HOU-S (18-17)	5	8	0	2	0	0	0	1	0	0	11	21	2.20	1.91	0	0
24	HOU-S (17-16)	8	10	0	0	0	0	0	2	0	0	12	24	1.50	2.00	0	0
24	HOU-S (16-15)	6	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
24	HOU-N (15-16)	6	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
24	HOU-N (16-17)	10	2	0	1	0	0	0	2	0	0	5	19	0.50	3.80	0	0
24	HOU-N (17-18)	10	11	0	3	1	0	0	1	0	0	16	31	1.60	1.94	0	0
24	HOU-N (18-19)	11	3	0	0	0	0	0	0	0	0	3	3	0.27	1.00	0	0
24	HOU-N (19-20)	11	5	0	2	0	0	0	1	0	0	8	18	0.73	2.25	0	0
24	HOU-N (20-21)	10	0	0	2	0	0	0	2	0	0	4	20	0.40	5.00	0	0
24	HOU-N (21-22)	10	10	0	1	2	0	0	1	0	0	14	28	1.40	2.00	0	0
24	22-W (HOU-WAR)	11	11	0	2	1	0	0	1	0	0	15	28	1.36	1.87	0	0
2	22-W (WAR-CEN)	12	4	0	1	0	0	0	0	0	0	5	7	0.42	1.40	0	0
2	22-W (CEN-CAP)	11	10	0	1	1	0	0	1	0	0	13	24	1.18	1.85	3	8
2	22-W (CAP-CAR)	8	4	0	2	2	0	0	1	0	0	9	25	1.13	2.78	5	11
2	22-W (CAR-PIO)	11	2	0	0	0	0	0	3	0	0	5	23	0.45	4.60	3	15
1	22-W (PIO-THO)	10	8	0	0	0	0	0	0	0	0	8	8	0.80	1.00	0	0
24	22-E (THO-PIO)	10	6	0	0	0	0	0	0	0	0	6	6	0.60	1.00	0	0
2	22-E (PIO-CAR)	8	7	0	0	0	0	0	1	0	0	8	14	1.00	1.75	1	5
24	22-E (CAR-CAP)	14	12	0	0	3	0	0	0	0	0	15	24	1.07	1.60	0	0
2	22-E (CAP-CEN)	11	5	0	1	0	0	0	0	0	0	6	8	0.55	1.33	1	1
24	22-E (CEN-WAR)	8	4	0	0	0	0	0	0	0	0	4	4	0.50	1.00	0	0
24	22-E (WAR-HOU)	10	8	0	2	0	0	0	0	0	0	10	14	1.00	1.40	0	0
24	21-W (HOU-WAR)	12	11	0	3	0	0	0	0	0	0	14	20	1.17	1.43	0	0
24	21-W (WAR-CEN)	9	8	0	0	0	0	0	1	0	0	9	15	1.00	1.67	0	0
2	21-W (CEN-CAP)	8	17	0	0	0	0	0	0	0	0	17	17	2.13	1.00	0	0
24	21-W (CAP-CAR)	18	6	0	0	0	0	0	2	0	0	8	20	0.44	2.50	0	0
2	21-W (CAR-PIO)	11	7	0	2	0	0	0	0	0	0	9	13	0.82	1.44	0	0
0	21-W (PIO-THO)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	21-E (THO-PIO)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
2	21-E (PIO-CAR)	3	3	0	1	0	0	0	0	0	0	4	6	1.33	1.50	0	0
24	21-E (CAR-CAP)	6	2	0	0	0	0	0	0	0	0	2	2	0.33	1.00	0	0
2	21-E (CAP-CEN)	8	5	0	1	0	0	0	2	0	0	8	22	1.00	2.75	3	11
24	21-E (CEN-WAR)	6	5	0	0	0	0	0	0	0	0	5	5	0.83	1.00	0	0
1	21-E (WAR-HOU)	10	8	0	0	0	0	0	0	0	0	8	8	0.80	1.00	0	0
24	20-W-N (HOU-WAR)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
24	20-W-N (WAR-CEN)	6	5	0	0	0	0	0	0	0	0	5	5	0.83	1.00	0	0
2	20-W-N (CEN-CAP)	8	3	0	0	0	0	0	1	0	0	4	10	0.50	2.50	1	5
2	20-W-N (CAP-CAR)	4	1	0	0	0	0	0	0	0	0	1	1	0.25	1.00	0	0
2	20-W-N (CAR-PIO)	8	7	0	0	0	0	0	0	0	0	7	7	0.88	1.00	0	0
2	20-W-N (PIO-THO)	9	5	0	0	0	0	0	0	0	0	5	5	0.56	1.00	0	0
0	19-E-N (THO-PIO)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
1	19-E-N (PIO-CAR)	10	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	19-E-N (CAR-CAP)	10	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	19-E-N (CAP-CEN)	10	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	19-E-N (CEN-WAR)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
24	19-E-N (WAR-HOU)	9	3	0	0	0	0	0	0	0	0	3	3	0.33	1.00	0	0
24	20-W-S (HOU-WAR)	5	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	20-W-S (WAR-CEN)	7	2	0	0	0	0	0	0	0	0	2	2	0.29	1.00	0	0

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			0-1 hours	1-2 hours	2-3 hours	3-4 hours	4-5 hours	5-6 hours	6-7 hours	7-8 hours	8+ hours						
2	20-W-S (CEN-CAP)	10	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	20-W-S (CAP-CAR)	8	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
1	20-W-S (CAR-PIO)	7	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
24	20-W-S (PIO-THO)	9	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
24	19-E-S (THO-PIO)	8	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0	0
2	19-E-S (PIO-CAR)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
2	19-E-S (CAR-CAP)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
2	19-E-S (CAP-CEN)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
24	19-E-S (CEN-WAR)	10	1	0	0	0	0	0	1	0	0	2	8	0.20	4.00	0	0
24	19-E-S (WAR-HOU)	10	2	0	0	0	0	0	0	0	0	2	2	0.20	1.00	0	0
1	18-W (HOU-WAR)	16	22	0	0	0	0	0	0	0	0	22	22	1.38	1.00	0	0
2	18-W (WAR-CEN)	14	7	0	0	0	0	0	0	0	0	7	7	0.50	1.00	0	0
2	18-W (CEN-CAP)	13	16	1	0	1	0	0	1	0	0	19	29	1.46	1.53	2	7
2	18-W (CAP-CAR)	11	14	0	0	0	0	0	0	0	0	14	14	1.27	1.00	0	0
2	18-W (CAR-PIO)	15	9	0	1	0	0	0	0	1	0	11	20	0.73	1.82	2	7
2	18-W (PIO-THO)	7	7	0	0	0	0	0	0	0	0	7	7	1.00	1.00	0	0
2	18-E (THO-PIO)	9	6	0	0	0	0	0	0	0	0	6	6	0.67	1.00	0	0
2	18-E (PIO-CAR)	14	15	1	0	1	0	0	0	0	0	17	21	1.21	1.24	1	2
2	18-E (CAR-CAP)	15	17	2	0	0	0	0	0	0	0	19	21	1.27	1.11	0	0
2	18-E (CAP-CEN)	10	19	0	0	0	0	0	0	0	0	19	19	1.90	1.00	0	0
2	18-E (CEN-WAR)	10	14	0	0	0	0	0	0	0	0	14	14	1.40	1.00	0	0
24	18-E (WAR-HOU)	12	14	0	2	1	0	0	0	0	0	17	24	1.42	1.41	0	0
2	17-W (HOU-WAR)	10	11	0	0	0	0	0	0	0	0	11	11	1.10	1.00	0	0
1	17-W (WAR-CEN)	14	28	1	0	0	0	0	0	0	0	29	30	2.07	1.03	0	0
2	17-W (CEN-CAP)	14	6	1	0	0	0	0	0	0	0	7	8	0.50	1.14	0	0
2	17-W (CAP-CAR)	13	18	1	0	0	0	0	0	0	0	19	20	1.46	1.05	0	0
2	17-W (CAR-PIO)	12	15	0	0	0	0	0	0	0	0	15	15	1.25	1.00	0	0
1	17-W (PIO-THO)	10	4	1	0	0	0	0	0	0	0	5	6	0.50	1.20	0	0
1	17-E (THO-PIO)	7	6	0	0	0	0	0	0	0	0	6	6	0.86	1.00	0	0
0	17-E (PIO-CAR)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
2	17-E (CAR-CAP)	12	25	1	0	0	0	0	0	0	0	26	27	2.17	1.04	0	0
2	17-E (CAP-CEN)	13	23	1	0	0	0	0	1	0	0	25	32	1.92	1.28	1	5
1	17-E (CEN-WAR)	16	11	1	0	1	0	0	0	0	0	13	17	0.81	1.31	1	3
2	17-E (WAR-HOU)	8	7	0	0	0	0	0	0	0	0	7	7	0.88	1.00	0	0
0	16-W (HOU-WAR)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	16-W (WAR-CEN)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
2	16-W (CEN-CAP)	10	13	2	0	0	0	0	0	0	0	15	17	1.50	1.13	0	0
2	16-W (CAP-CAR)	7	4	0	2	0	0	0	0	0	0	6	10	0.86	1.67	1	1
0	16-W (CAR-PIO)	0	1	0	0	0	0	0	0	0	0	1	1	#DIV/0!	1.00	1	1
0	16-W (PIO-THO)	0	2	0	0	0	0	0	0	0	0	2	2	#DIV/0!	1.00	2	2
1	16-E (THO-PIO)	7	8	0	1	0	0	0	0	0	0	9	11	1.29	1.22	0	0
2	16-E (PIO-CAR)	10	8	0	0	0	0	0	0	0	0	8	8	0.80	1.00	0	0
2	16-E (CAR-CAP)	10	13	2	0	0	0	0	0	0	0	15	17	1.50	1.13	0	0
0	16-E (CAP-CEN)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	16-E (CEN-WAR)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	16-E (WAR-HOU)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	15-W (HOU-WAR)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	15-W (WAR-CEN)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	15-W (CEN-CAP)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
2	15-W (CAP-CAR)	7	12	0	0	0	0	0	0	0	0	12	12	1.71	1.00	0	0
2	15-W (CAR-PIO)	7	2	1	0	0	0	0	0	0	0	3	4	0.43	1.33	0	0
2	15-W (PIO-THO)	9	8	0	0	0	0	0	0	0	0	8	8	0.89	1.00	0	0
0	15-E (THO-PIO)	0	4	0	0	0	0	0	0	0	0	4	4	#DIV/0!	1.00	4	4
0	15-E (PIO-CAR)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
2	15-E (CAR-CAP)	4	7	0	0	0	0	0	0	0	0	7	7	1.75	1.00	0	0
0	15-E (CAP-CEN)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	15-E (CEN-WAR)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
0	15-E (WAR-HOU)	0	0	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.00	0	0
	TOTAL	1,545	1,081	19	64	20	0	0	44	1	0	1,229	1,707	0.80	1.39	64	179

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 2

Community Outreach Survey Results

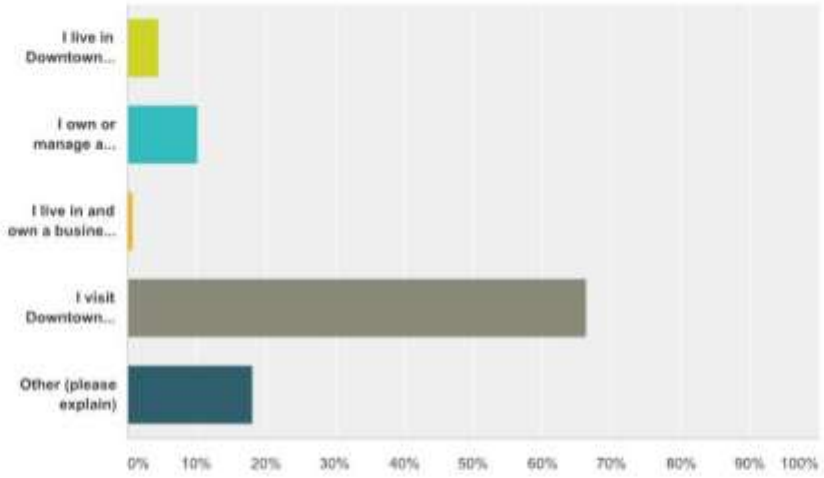
APPENDIX 2

Community Outreach Survey Results

Cheyenne Downtown Strategic Parking Plan

Q1 How would you describe yourself?

Answered: 620 Skipped: 0



Answer Choices	Responses	
I live in Downtown Cheyenne	4.52%	28
I own or manage a business in Downtown Cheyenne	10.16%	63
I live in and own a business in Downtown Cheyenne	0.81%	5
I visit Downtown Cheyenne (i.e. to attend an event, visit a retailer or eat at a restaurant)	66.45%	412
Other (please explain)	18.06%	112
Total		620

#	Other (please explain)	Date
1	Work	9/14/2016 11:33 AM
2	I live north of downtown	9/9/2016 10:14 PM
3	I work downtown	9/9/2016 10:03 PM
4	I travel through the city daily	9/9/2016 8:18 PM
5	I work downtown.	9/9/2016 4:24 PM
6	I work downtown	9/9/2016 4:23 PM
7	I work downtown	9/9/2016 4:08 PM
8	Work and visit in downtown Cheyenne	9/9/2016 3:59 PM
9	I rarely go downtown as wheelchair accessibility is a huge problem.	9/9/2016 3:45 PM
10	I work downtown, and travel downtown quite often	9/9/2016 3:37 PM
11	I live and work downtown	9/9/2016 3:34 PM
12	I work in downtown cheyenne	9/9/2016 3:31 PM
13	work downtown	9/9/2016 9:58 AM

Cheyenne Downtown Strategic Parking Plan

14	I live in Cheyenne, I do a lot of business downtown and my spouse works downtown	9/8/2016 10:31 PM
15	I live in Lakeview Historic District	9/8/2016 5:54 PM
16	I work in downtown daily	9/8/2016 12:29 PM
17	Work downtown	9/8/2016 11:52 AM
18	Work downtown	8/31/2016 4:13 PM
19	I dislike going downtown.	8/30/2016 10:08 AM
20	I work at an office downtown	8/30/2016 8:46 AM
21	Work downtown and visit	8/30/2016 8:36 AM
22	I work downtown	8/29/2016 10:12 PM
23	I own a condo downtown but currently live in another Cheyenne location. I visit Downtown several times a week.	8/29/2016 4:09 PM
24	I both live and work in downtown cheyenne and am here nearly 7 days a week.	8/29/2016 1:57 PM
25	I work downtown.	8/29/2016 1:48 PM
26	I work in downtown Cheyenne, have owned a business there and have lived there.	8/28/2016 9:45 PM
27	Work in downtown Cheyenne	8/28/2016 5:52 PM
28	Work downtown. How is that not an option?	8/27/2016 8:01 AM
29	Work downtown	8/26/2016 10:01 PM
30	Property owner	8/26/2016 1:33 PM
31	I rarely visit downtime cheyenne	8/26/2016 1:03 PM
32	Work downtown and attend retailers, restaurants, events	8/26/2016 12:59 PM
33	I work downtown	8/26/2016 12:52 PM
34	I work and visit downtown	8/26/2016 12:29 PM
35	I work downtown and occasionally visit stores and restaurants	8/26/2016 12:23 PM
36	I work downtown	8/26/2016 12:21 PM
37	I work in and visit downtown Cheyenne	8/26/2016 12:03 PM
38	Parking Division Director	8/26/2016 11:55 AM
39	rarely downtown except to go to Grease Monkey or Arbys	8/26/2016 10:53 AM
40	I live very close to downtown	8/26/2016 10:29 AM
41	Live near downtown, work dowtown	8/26/2016 10:24 AM
42	I live near Downtown Cheyenne	8/26/2016 10:17 AM
43	I work downtown	8/26/2016 10:14 AM
44	Work downtown	8/18/2016 11:38 AM
45	I live at Snyder and 24th, so not downtown proper, but very near.	8/18/2016 9:37 AM
46	I work in Downtown Cheyenne	8/15/2016 9:39 PM
47	I do visit Downtown, as well as have Lived and Worked in Downtown Cheyenne	8/15/2016 8:59 PM
48	I leave just east of Downtown and work Downtown.	8/15/2016 10:21 AM
49	Work and visit in downtown Cheyenne	8/15/2016 9:53 AM
50	I live close to downtown and visit downtown frequently	8/15/2016 6:47 AM
51	work downtown	8/15/2016 1:20 AM
52	My Mother owns a shop in downtown Cheyenne.	8/14/2016 11:40 PM
53	I commute through downtown Cheyenne, and then I also "visit".	8/14/2016 4:13 PM
54	I live very near Downtown	8/14/2016 7:52 AM

Cheyenne Downtown Strategic Parking Plan

55	I shop and eat downtown in my free time. I also am a service plumber who sometimes has to park downtown to work for businesses in the area.	8/14/2016 7:19 AM
56	I work downtown	8/14/2016 6:36 AM
57	Work downtown	8/13/2016 9:38 PM
58	I work downtown	8/13/2016 8:31 PM
59	I work in Downtown Cheyenne	8/13/2016 7:45 PM
60	I live very near downtown, and work downtown	8/13/2016 6:50 PM
61	I work in Downtown Cheyenne	8/13/2016 5:24 PM
62	I work downtown at the Emerson building	8/13/2016 4:23 PM
63	Work downtown	8/13/2016 3:47 PM
64	I work downtown	8/13/2016 3:25 PM
65	I work downtown	8/13/2016 2:47 PM
66	I work in downtown Cheyenne	8/13/2016 2:06 PM
67	I work downtown	8/13/2016 11:41 AM
68	I take care of businness in Dwtn Banking, PO, library	8/13/2016 11:27 AM
69	I work downtown	8/13/2016 11:17 AM
70	I work downtown	8/13/2016 10:37 AM
71	I work downtown	8/13/2016 9:36 AM
72	only when i have to	8/13/2016 8:25 AM
73	Work in downtown and visit downtown businesses	8/13/2016 7:37 AM
74	I live by Holiday park and walking to downtown is very difficult because of many uneven and broken sideways	8/13/2016 6:44 AM
75	I work in downtown.	8/13/2016 4:51 AM
76	I work at a downtown business	8/13/2016 12:43 AM
77	I work & visit retailers & restaurants	8/12/2016 11:55 PM
78	I work downtown	8/12/2016 11:51 PM
79	Work in downtown	8/12/2016 11:31 PM
80	My office is downtown.	8/12/2016 11:21 PM
81	Go to school downtown	8/12/2016 11:10 PM
82	I work in Downtown Cheyenne	8/12/2016 8:56 PM
83	I love downtown Cheyenne, however, the businesses I like to visit have poor parking for Handicapped. I loved the old flat parking lot that used to be where the multi-level lot is now. I parked in that structure when I had a business downtown and had to park up on 3rd level. My car was broken into and things were stolen. I no longer will park in that structure!	8/12/2016 8:54 PM
84	Work in downtown	8/12/2016 8:05 PM
85	I work downtown	8/12/2016 8:00 PM
86	I work and recreate in downtown	8/12/2016 4:45 PM
87	I visit downtown regularly and work downtown	8/12/2016 4:11 PM
88	I work downtown.	8/12/2016 3:59 PM
89	I work downtown.	8/12/2016 3:55 PM
90	I live *near* downtown.	8/12/2016 3:48 PM
91	work in Downtown Cheyenne	8/12/2016 3:31 PM
92	I work in downtown Cheyenne	8/12/2016 3:29 PM

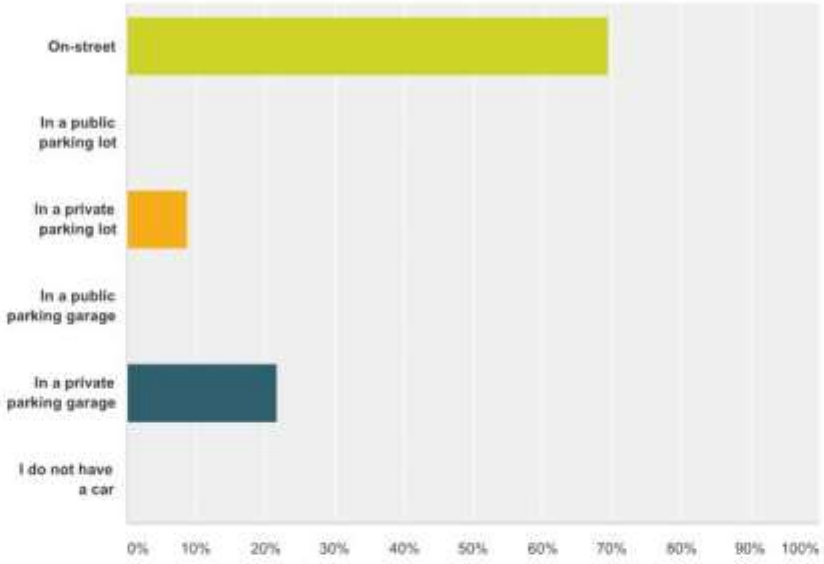
Cheyenne Downtown Strategic Parking Plan

93	I'm invested in our community as a county resident	8/12/2016 2:07 PM
94	I live in the county and work Downtown Cheyenne.	8/12/2016 1:31 PM
95	Work downtown	8/12/2016 1:27 PM
96	I work downtown	8/12/2016 1:12 PM
97	Live in Cheyenne, visit downtown regularly.	8/12/2016 12:19 PM
98	Live in Cheyenne, visit downtown regularly.	8/12/2016 12:17 PM
99	Live in Cheyenne, visit regularly.	8/12/2016 12:15 PM
100	Work	8/12/2016 12:01 PM
101	I previously was a business owner downtown. Currently attend downtown events.	8/12/2016 11:59 AM
102	I work downtown.	8/12/2016 11:50 AM
103	I worked downtown for 10 years.	8/12/2016 11:34 AM
104	I work downtown.	8/12/2016 10:55 AM
105	I work downtown	8/12/2016 10:47 AM
106	I live in the county, but do business in Cheyenne	8/12/2016 10:45 AM
107	I have property that I am developing for condos and parking	8/12/2016 10:21 AM
108	I work in the downtown area	8/12/2016 10:14 AM
109	I live in mid-town Cheyenne. Close to downtown but not actually in downtown.	8/12/2016 10:14 AM
110	work in the downtown area	8/12/2016 10:13 AM
111	I work in Downtown Cheyenne, and I visit.	8/12/2016 10:10 AM
112	I work downtown	8/12/2016 10:09 AM

Cheyenne Downtown Strategic Parking Plan

Q2 As a resident, where do you typically park overnight?

Answered: 23 Skipped: 597



Answer Choices	Responses	
On-street	69.57%	16
In a public parking lot	0.00%	0
In a private parking lot	8.70%	2
In a public parking garage	0.00%	0
In a private parking garage	21.74%	5
I do not have a car	0.00%	0
Total		23

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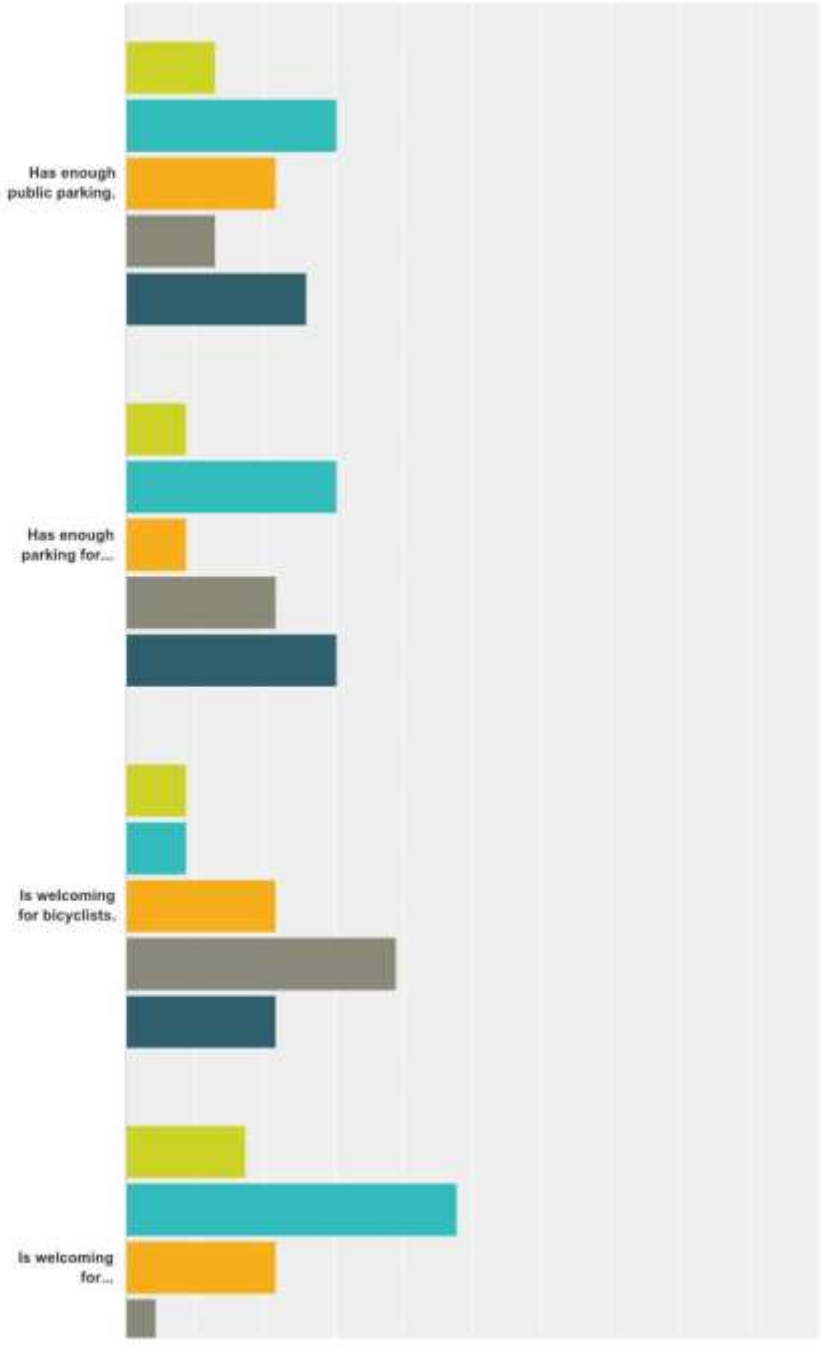
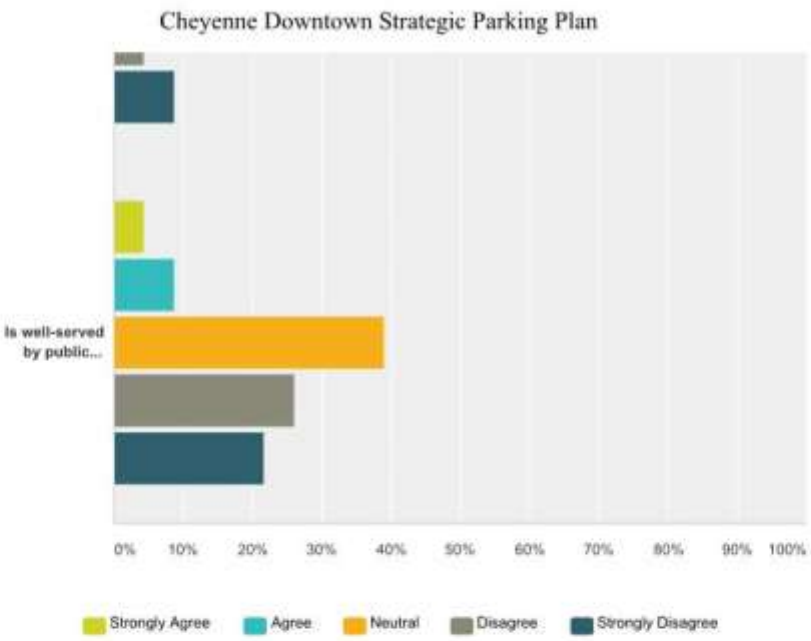
Cheyenne Downtown Strategic Parking Plan

Q3 How do you feel about the following statements? My downtown neighborhood:

Answered: 23 Skipped: 597



6 / 62

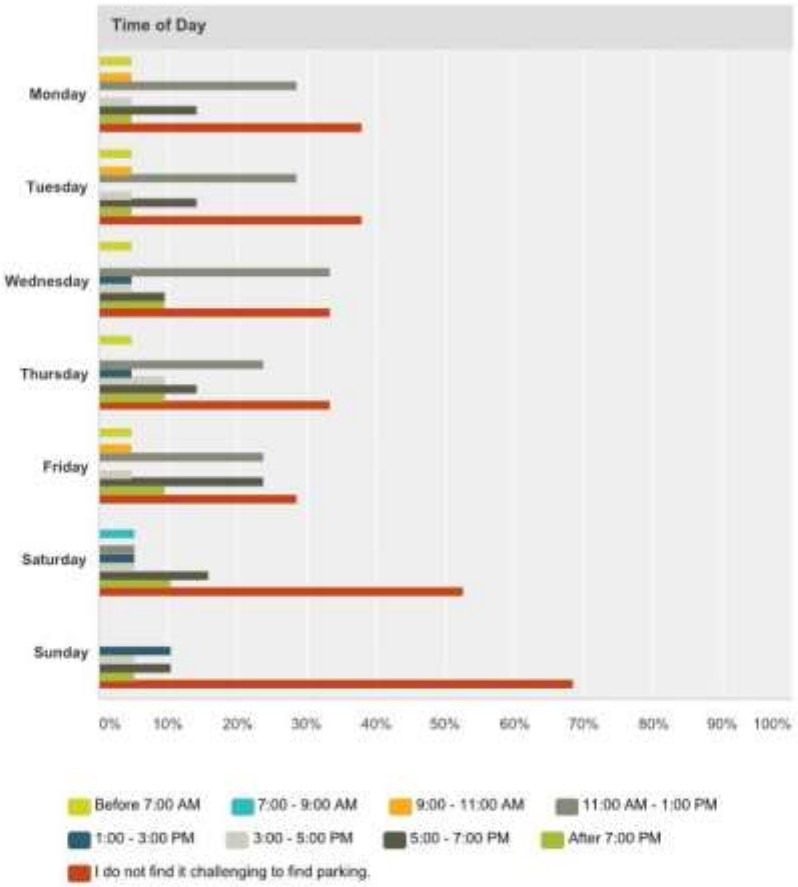


	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Respondents
Has enough public parking.	13.04% 3	30.43% 7	21.74% 5	13.04% 3	26.09% 6	23
Has enough parking for residents.	8.70% 2	30.43% 7	8.70% 2	21.74% 5	30.43% 7	23
Is welcoming for bicyclists.	8.70% 2	8.70% 2	21.74% 5	39.13% 9	21.74% 5	23
Is welcoming for pedestrians.	17.39% 4	47.83% 11	21.74% 5	4.35% 1	8.70% 2	23
Is well-served by public transit.	4.35% 1	8.70% 2	39.13% 9	26.09% 6	21.74% 5	23

Cheyenne Downtown Strategic Parking Plan

Q4 When is it most challenging to find available parking in your neighborhood?

Answered: 21 Skipped: 599



Time of Day	Before 7:00 AM	7:00 - 9:00 AM	9:00 - 11:00 AM	11:00 AM - 1:00 PM	1:00 - 3:00 PM	3:00 - 5:00 PM	5:00 - 7:00 PM	After 7:00 PM	I do not find it challenging to find parking.	Total
Monday	4.76% 1	0.00% 0	4.76% 1	28.57% 6	0.00% 0	4.76% 1	14.29% 3	4.76% 1	38.10% 8	21
Tuesday	4.76% 1	0.00% 0	4.76% 1	28.57% 6	0.00% 0	4.76% 1	14.29% 3	4.76% 1	38.10% 8	21
Wednesday	4.76% 1	0.00% 0	0.00% 0	33.33% 7	4.76% 1	4.76% 1	9.52% 2	9.52% 2	33.33% 7	21
Thursday	4.76% 1	0.00% 0	0.00% 0	23.81% 5	4.76% 1	9.52% 2	14.29% 3	9.52% 2	33.33% 7	21
Friday	4.76% 1	0.00% 0	4.76% 1	23.81% 5	0.00% 0	4.76% 1	23.81% 5	9.52% 2	28.57% 6	21

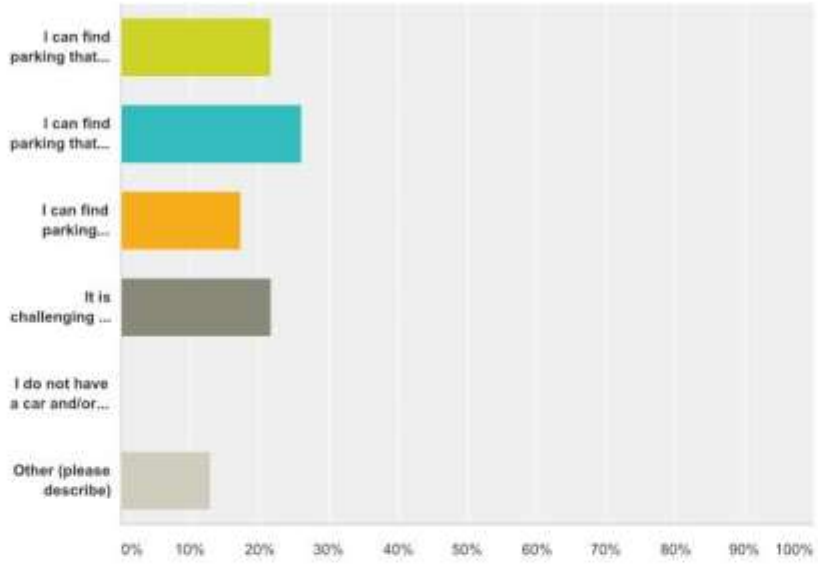
Cheyenne Downtown Strategic Parking Plan

Saturday	0.00% 0	5.26% 1	0.00% 0	5.26% 1	5.26% 1	5.26% 1	15.79% 3	10.53% 2	52.63% 10	19
Sunday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	10.53% 2	5.26% 1	10.53% 2	5.26% 1	68.42% 13	19

Cheyenne Downtown Strategic Parking Plan

Q5 Which of the following most accurately describes your typical parking experience as a downtown resident?

Answered: 23 Skipped: 597



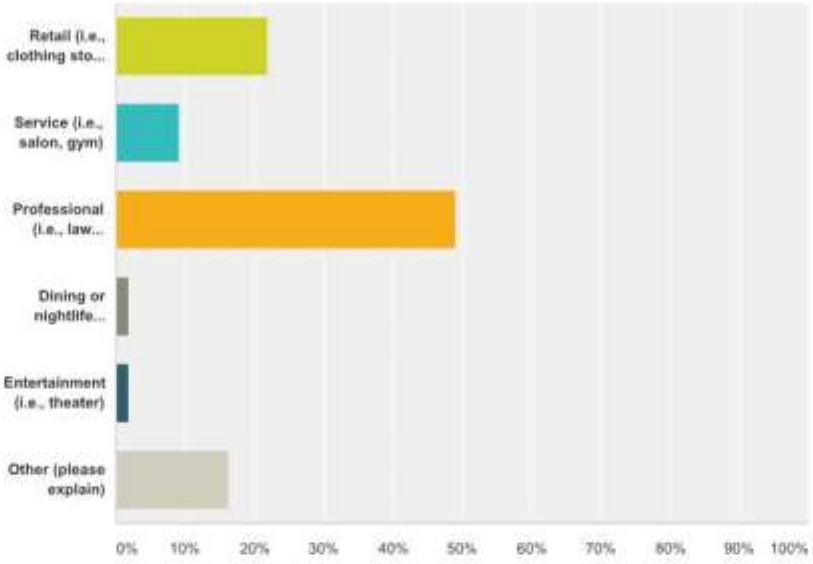
Answer Choices	Responses	
I can find parking that is close to my destination quickly and easily.	21.74%	5
I can find parking that is close to my destination in a reasonable amount of time.	26.09%	6
I can find parking quickly, however it is usually not close to my destination.	17.39%	4
It is challenging to find parking and when I do, it is usually not close to my destination.	21.74%	5
I do not have a car and/or do not park my car downtown.	0.00%	0
Other (please describe)	13.04%	3
Total		23

#	Other (please describe)	Date
1	I can't park within walking distance to my own residence and I can't get sleep after night shift due to the 2 hour parking laws	8/13/2016 8:07 AM
2	Amy wife is handicap and city gave us a parking spot.	8/12/2016 8:27 PM
3	The 2-hour parking makes it difficult to shop downtown without getting a ticket. This hurts downtown businesses and restaurants.	8/12/2016 4:23 PM

Cheyenne Downtown Strategic Parking Plan

Q6 What type of business do you own or manage?

Answered: 55 Skipped: 565



Answer Choices	Responses	
Retail (i.e., clothing store, gift shop)	21.82%	12
Service (i.e., salon, gym)	9.09%	5
Professional (i.e., law office, bank)	49.09%	27
Dining or nightlife (i.e., restaurant, pub or bar)	1.82%	1
Entertainment (i.e., theater)	1.82%	1
Other (please explain)	16.36%	9
Total		55

#	Other (please explain)	Date
1	Office Building	9/8/2016 11:45 AM
2	Real Estate	8/29/2016 11:12 PM
3	Buildings, retail/office	8/26/2016 10:18 AM
4	Bike & ski Retail/service	8/26/2016 10:18 AM
5	own commercail property	8/15/2016 2:10 PM
6	Transportation	8/15/2016 11:11 AM
7	Data Management	8/13/2016 6:19 PM
8	coffee shop & office buildings	8/12/2016 12:12 PM

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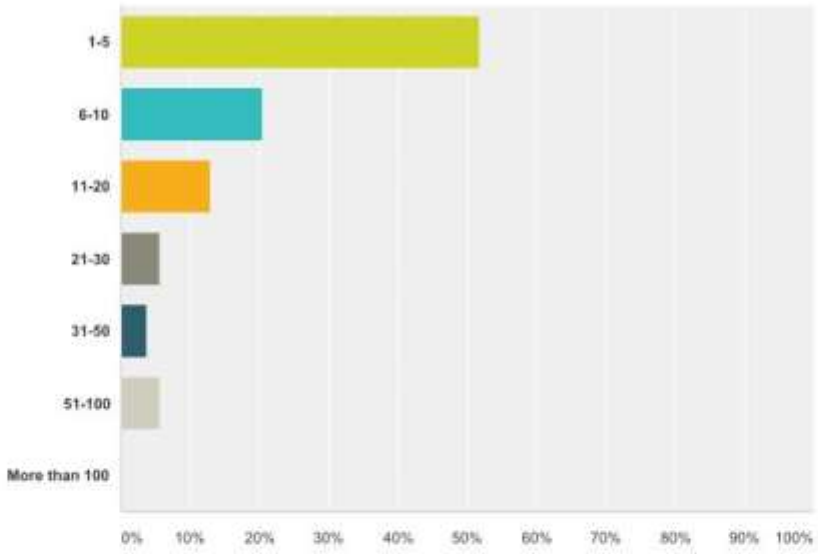
Cheyenne Downtown Strategic Parking Plan

9	Meal Entree Service	8/12/2016 10:51 AM

Cheyenne Downtown Strategic Parking Plan

Q7 How many employees do you have?

Answered: 54 Skipped: 566

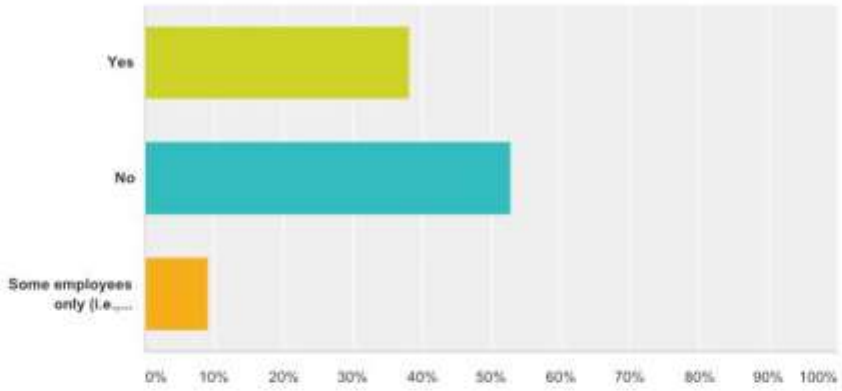


Answer Choices	Responses	
1-5	51.85%	28
6-10	20.37%	11
11-20	12.96%	7
21-30	5.56%	3
31-50	3.70%	2
51-100	5.56%	3
More than 100	0.00%	0
Total		54

Cheyenne Downtown Strategic Parking Plan

Q8 Do you provide parking for your employees?

Answered: 55 Skipped: 565

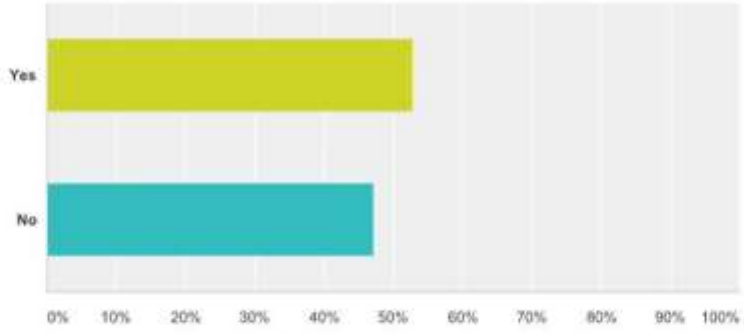


Answer Choices	Responses	
Yes	38.18%	21
No	52.73%	29
Some employees only (i.e., full time only, not part time)	9.09%	5
Total		55

Cheyenne Downtown Strategic Parking Plan

Q9 Do you tell your employees where to park?

Answered: 55 Skipped: 565

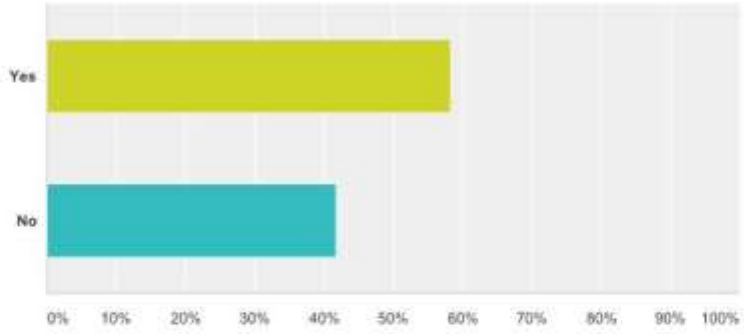


Answer Choices	Responses	
Yes	52.73%	29
No	47.27%	26
Total		55

Cheyenne Downtown Strategic Parking Plan

Q10 Do you think there is typically enough parking for your customers within a reasonable distance of your business?

Answered: 55 Skipped: 565

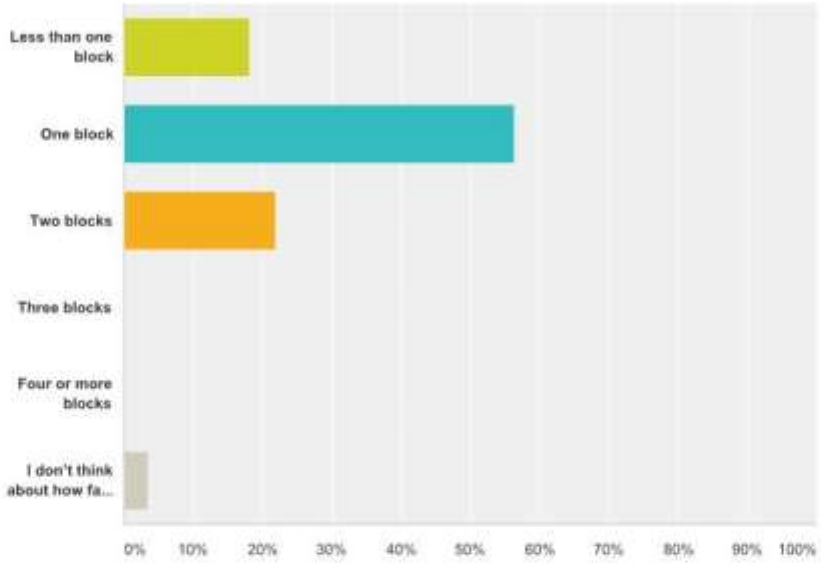


Answer Choices	Responses	
Yes	58.18%	32
No	41.82%	23
Total		55

Cheyenne Downtown Strategic Parking Plan

Q11 What do you considerable a reasonable distance for your customers to walk from their car to your business?

Answered: 55 Skipped: 585

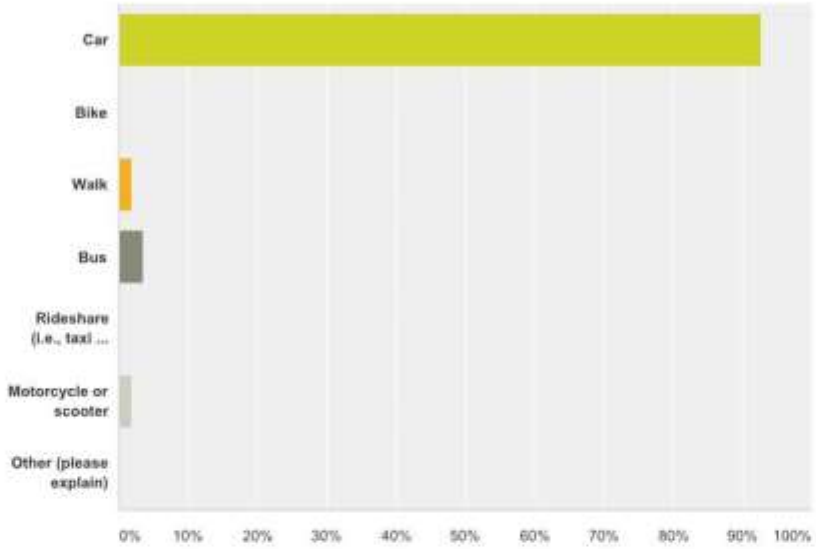


Answer Choices	Responses	
Less than one block	18.18%	10
One block	56.36%	31
Two blocks	21.82%	12
Three blocks	0.00%	0
Four or more blocks	0.00%	0
I don't think about how far my customers have to walk	3.64%	2
Total		55

Cheyenne Downtown Strategic Parking Plan

Q12 How do you think the majority of your customers arrive to the area where your business is located?

Answered: 55 Skipped: 565



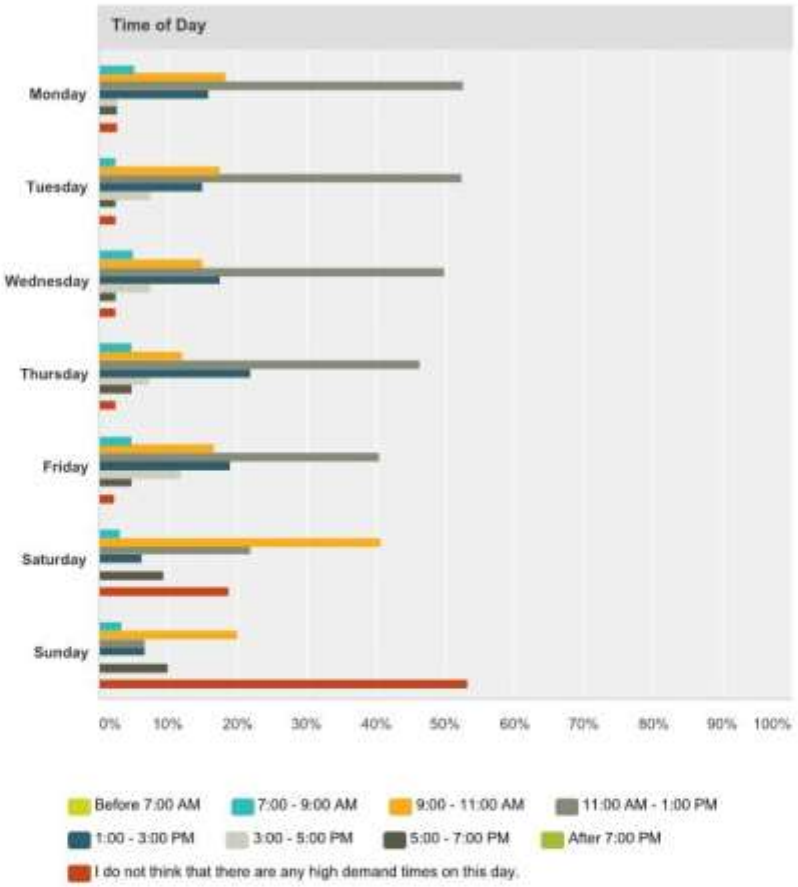
Answer Choices	Responses	
Car	92.73%	51
Bike	0.00%	0
Walk	1.82%	1
Bus	3.64%	2
Rideshare (i.e., taxi or Uber)	0.00%	0
Motorcycle or scooter	1.82%	1
Other (please explain)	0.00%	0
Total		55

#	Other (please explain)	Date
	There are no responses.	

Cheyenne Downtown Strategic Parking Plan

Q13 When do you think there is the highest demand for parking near your business?

Answered: 46 Skipped: 574



Time of Day	Before 7:00 AM	7:00 - 9:00 AM	9:00 - 11:00 AM	11:00 AM - 1:00 PM	1:00 - 3:00 PM	3:00 - 5:00 PM	5:00 - 7:00 PM	After 7:00 PM	I do not think that there are any high demand times on this day.	Total
Monday	0.00% 0	5.26% 2	18.42% 7	52.63% 20	15.79% 6	2.63% 1	2.63% 1	0.00% 0	2.63% 1	38
Tuesday	0.00% 0	2.50% 1	17.50% 7	52.50% 21	15.00% 6	7.50% 3	2.50% 1	0.00% 0	2.50% 1	40
Wednesday	0.00% 0	5.00% 2	15.00% 6	50.00% 20	17.50% 7	7.50% 3	2.50% 1	0.00% 0	2.50% 1	40
Thursday	0.00% 0	4.88% 2	12.20% 5	46.34% 19	21.95% 9	7.32% 3	4.88% 2	0.00% 0	2.44% 1	41

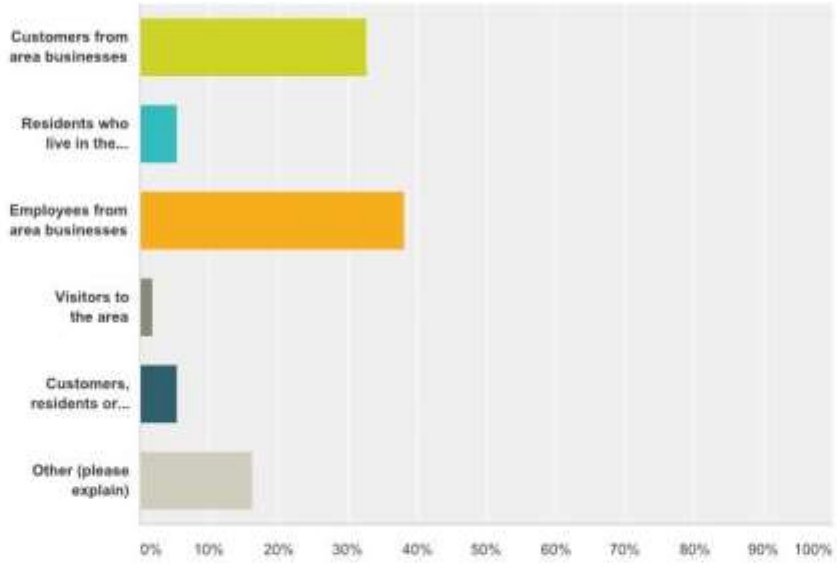
Cheyenne Downtown Strategic Parking Plan

Friday	0.00% 0	4.76% 2	16.67% 7	40.48% 17	19.05% 8	11.90% 5	4.76% 2	0.00% 0	2.38% 1	42
Saturday	0.00% 0	3.13% 1	40.63% 13	21.88% 7	6.25% 2	0.00% 0	9.38% 3	0.00% 0	18.75% 6	32
Sunday	0.00% 0	3.33% 1	20.00% 6	6.67% 2	6.67% 2	0.00% 0	10.00% 3	0.00% 0	53.33% 16	30

Cheyenne Downtown Strategic Parking Plan

Q14 Who do you think is parking in the on-street parking spaces closest to your business?

Answered: 55 Skipped: 585



Answer Choices	Responses	
Customers from area businesses	32.73%	18
Residents who live in the area	5.45%	3
Employees from area businesses	38.18%	21
Visitors to the area	1.82%	1
Customers, residents or visitors who are parking near my business and walking to another commercial district or neighborhood	5.45%	3
Other (please explain)	16.36%	9
Total		55

#	Other (please explain)	Date
1	All the above	9/4/2016 8:30 PM
2	lots of different people, residents, visitors, employees, customers	8/29/2016 3:08 PM
3	Customers and employees of area businesses	8/26/2016 11:24 AM
4	Don't know. Don't care	8/26/2016 10:18 AM
5	A mix of customers and employees	8/13/2016 10:20 PM
6	City parking reserved	8/13/2016 6:19 PM
7	Both customers and some employees of area businesses	8/12/2016 10:51 AM

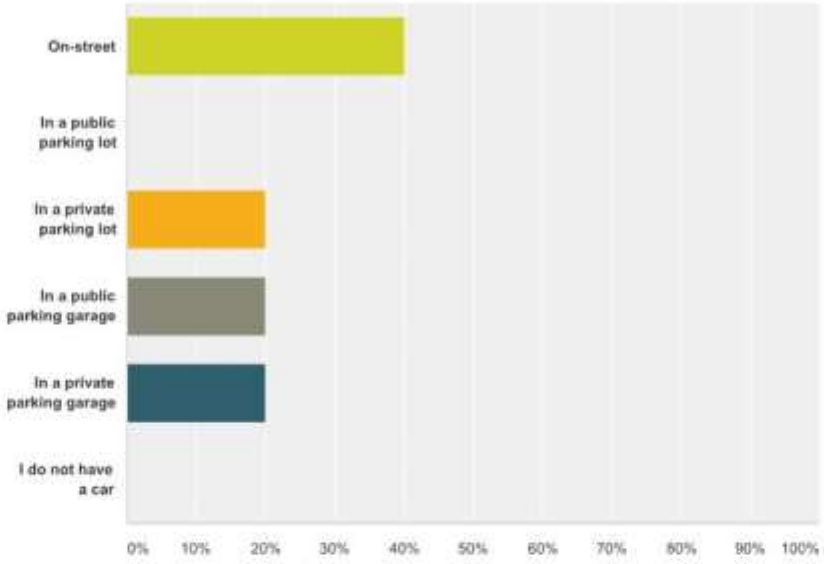
Cheyenne Downtown Strategic Parking Plan

8	People park and go to different places. Depot square the Albany etc	8/12/2016 10:44 AM
9	Customers, Employees and visitors - all 3	8/12/2016 10:06 AM

Cheyenne Downtown Strategic Parking Plan

Q15 As a resident, where do you typically park overnight?

Answered: 5 Skipped: 615

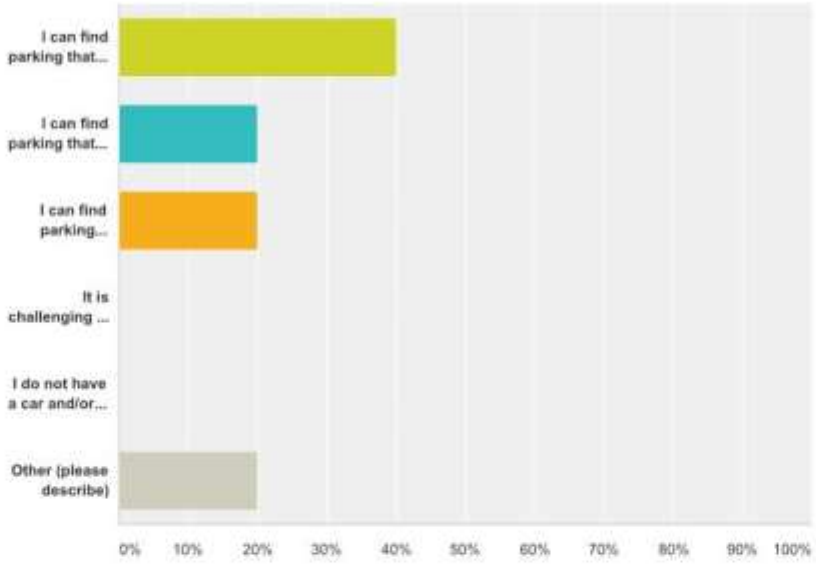


Answer Choices	Responses	
On-street	40.00%	2
In a public parking lot	0.00%	0
In a private parking lot	20.00%	1
In a public parking garage	20.00%	1
In a private parking garage	20.00%	1
I do not have a car	0.00%	0
Total		5

Cheyenne Downtown Strategic Parking Plan

Q16 Which of the following most accurately describes your typical parking experience as a downtown resident?

Answered: 5 Skipped: 615



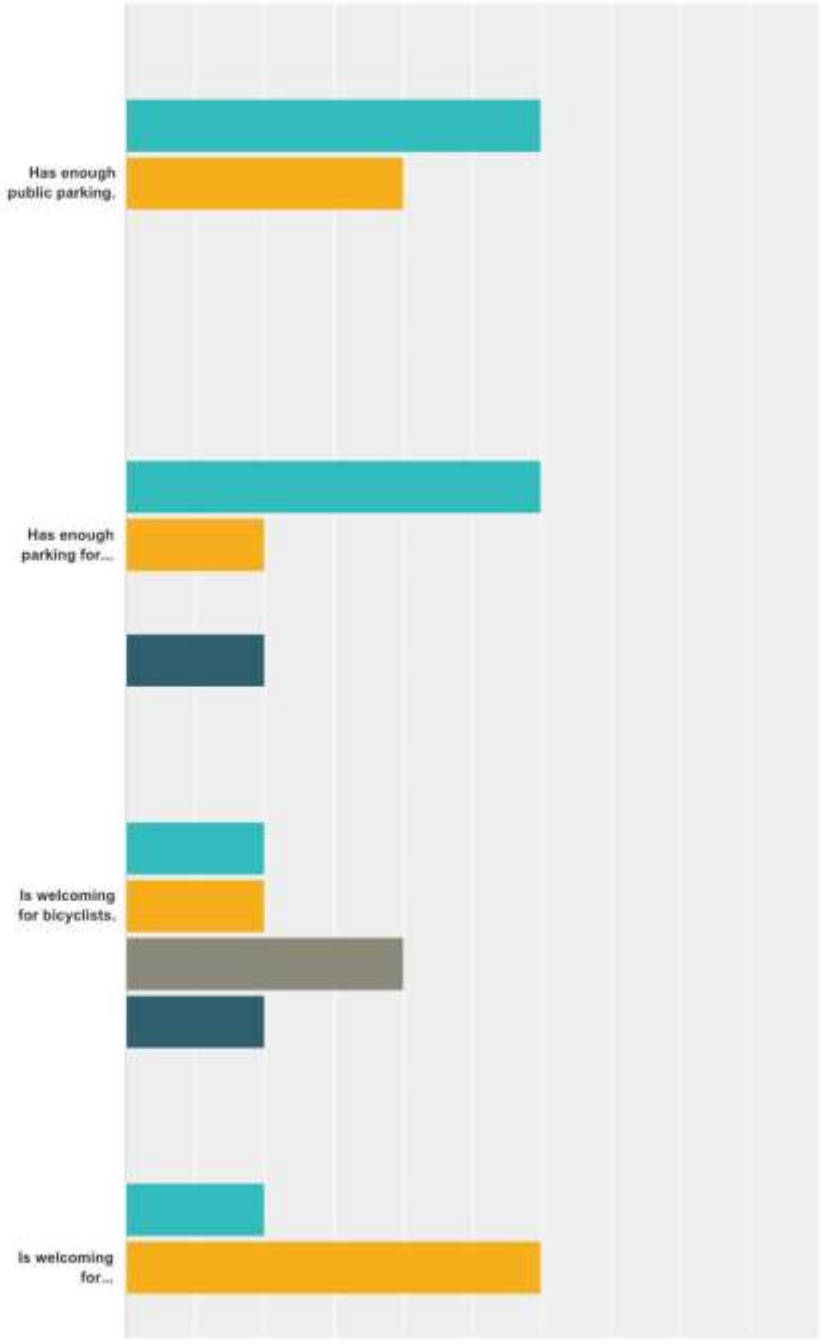
Answer Choices	Responses	
I can find parking that is close to my destination quickly and easily.	40.00%	2
I can find parking that is close to my destination in a reasonable amount of time.	20.00%	1
I can find parking quickly, however it is usually not close to my destination.	20.00%	1
It is challenging to find parking and when I do, it is usually not close to my destination.	0.00%	0
I do not have a car and/or do not park my car downtown.	0.00%	0
Other (please describe)	20.00%	1
Total		5

#	Other (please describe)	Date
1	Parking is fine, but the 2 hour limit SUCKS.	8/26/2016 12:33 PM

Cheyenne Downtown Strategic Parking Plan

Q17 How do you feel about the following statements? My neighborhood...

Answered: 5 Skipped: 615



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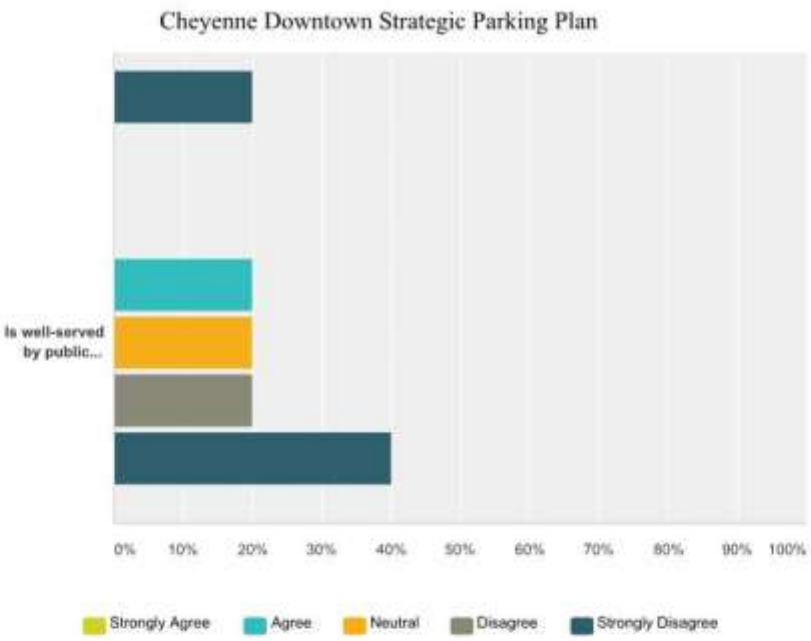
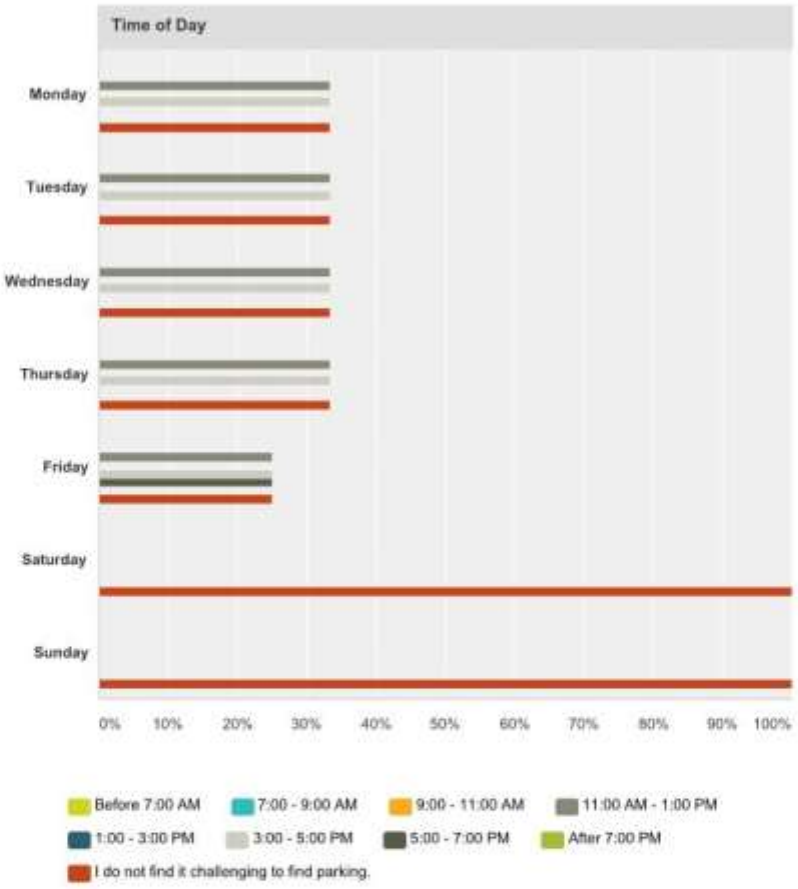


	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
Has enough public parking.	0.00% 0	60.00% 3	40.00% 2	0.00% 0	0.00% 0	5
Has enough parking for residents.	0.00% 0	60.00% 3	20.00% 1	0.00% 0	20.00% 1	5
Is welcoming for bicyclists.	0.00% 0	20.00% 1	20.00% 1	40.00% 2	20.00% 1	5
Is welcoming for pedestrians.	0.00% 0	20.00% 1	60.00% 3	0.00% 0	20.00% 1	5
Is well-served by public transit.	0.00% 0	20.00% 1	20.00% 1	20.00% 1	40.00% 2	5

Cheyenne Downtown Strategic Parking Plan

Q18 When is it most challenging to find parking in your neighborhood?

Answered: 4 Skipped: 616



Time of Day	Before 7:00 AM	7:00 - 9:00 AM	9:00 - 11:00 AM	11:00 AM - 1:00 PM	1:00 - 3:00 PM	3:00 - 5:00 PM	5:00 - 7:00 PM	After 7:00 PM	I do not find it challenging to find parking.	Total
Monday	0.00% 0	0.00% 0	0.00% 0	33.33% 1	0.00% 0	33.33% 1	0.00% 0	0.00% 0	33.33% 1	3
Tuesday	0.00% 0	0.00% 0	0.00% 0	33.33% 1	0.00% 0	33.33% 1	0.00% 0	0.00% 0	33.33% 1	3
Wednesday	0.00% 0	0.00% 0	0.00% 0	33.33% 1	0.00% 0	33.33% 1	0.00% 0	0.00% 0	33.33% 1	3
Thursday	0.00% 0	0.00% 0	0.00% 0	33.33% 1	0.00% 0	33.33% 1	0.00% 0	0.00% 0	33.33% 1	3
Friday	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	25.00% 1	25.00% 1	0.00% 0	25.00% 1	4

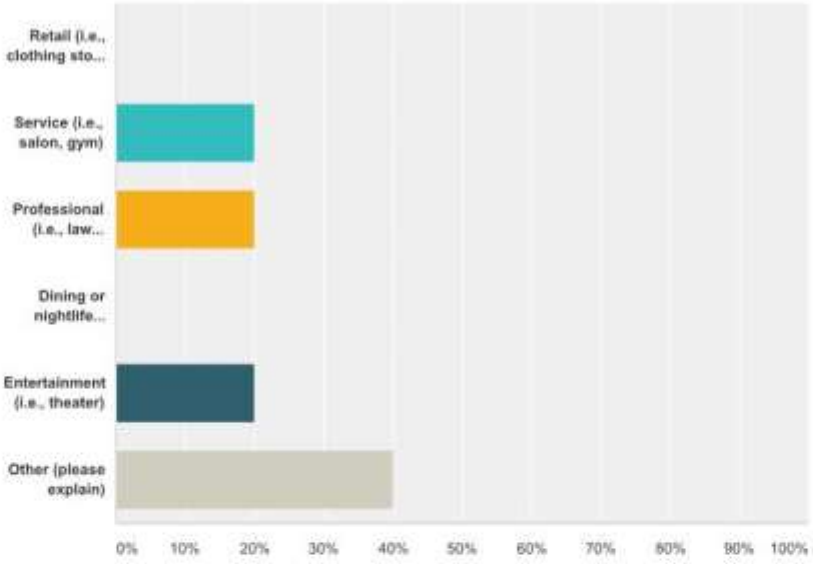
Cheyenne Downtown Strategic Parking Plan

Saturday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 3	3
Sunday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	100.00% 3	3

Cheyenne Downtown Strategic Parking Plan

Q19 What type of business do you own or manage?

Answered: 5 Skipped: 615



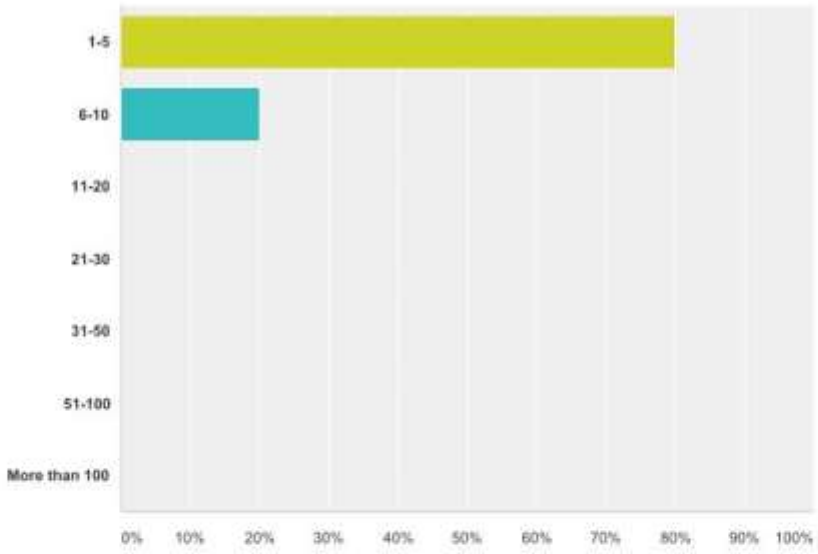
Answer Choices	Responses	
Retail (i.e., clothing store, gift shop)	0.00%	0
Service (i.e., salon, gym)	20.00%	1
Professional (i.e., law office, bank)	20.00%	1
Dining or nightlife (i.e., restaurant, pub or bar)	0.00%	0
Entertainment (i.e., theater)	20.00%	1
Other (please explain)	40.00%	2
Total		5

#	Other (please explain)	Date
1	Private School	8/26/2016 12:34 PM
2	B&B	8/12/2016 4:25 PM

Cheyenne Downtown Strategic Parking Plan

Q20 How many employees do you have?

Answered: 5 Skipped: 615

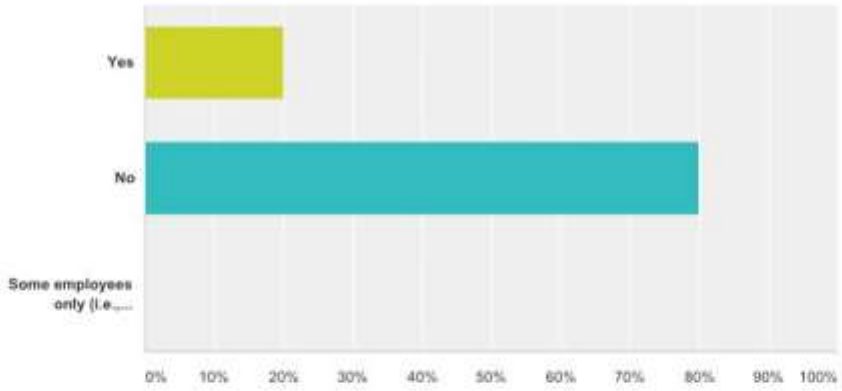


Answer Choices	Responses	
1-5	80.00%	4
6-10	20.00%	1
11-20	0.00%	0
21-30	0.00%	0
31-50	0.00%	0
51-100	0.00%	0
More than 100	0.00%	0
Total		5

Cheyenne Downtown Strategic Parking Plan

Q21 Do you provide parking for your employees?

Answered: 5 Skipped: 615

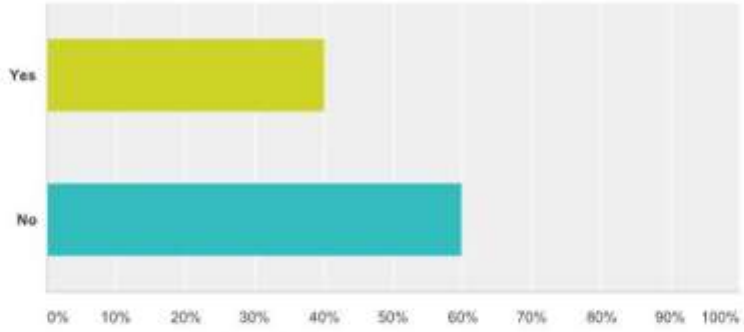


Answer Choices	Responses	
Yes	20.00%	1
No	80.00%	4
Some employees only (i.e., full time only, not part time)	0.00%	0
Total		5

Cheyenne Downtown Strategic Parking Plan

Q22 Do you tell your employees where to park?

Answered: 5 Skipped: 615

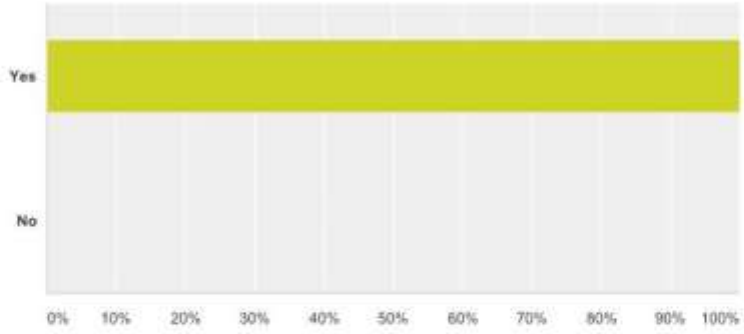


Answer Choices	Responses	
Yes	40.00%	2
No	60.00%	3
Total		5

Cheyenne Downtown Strategic Parking Plan

Q23 Do you think there is typically enough parking for your customers within a reasonable distance of your business?

Answered: 5 Skipped: 615

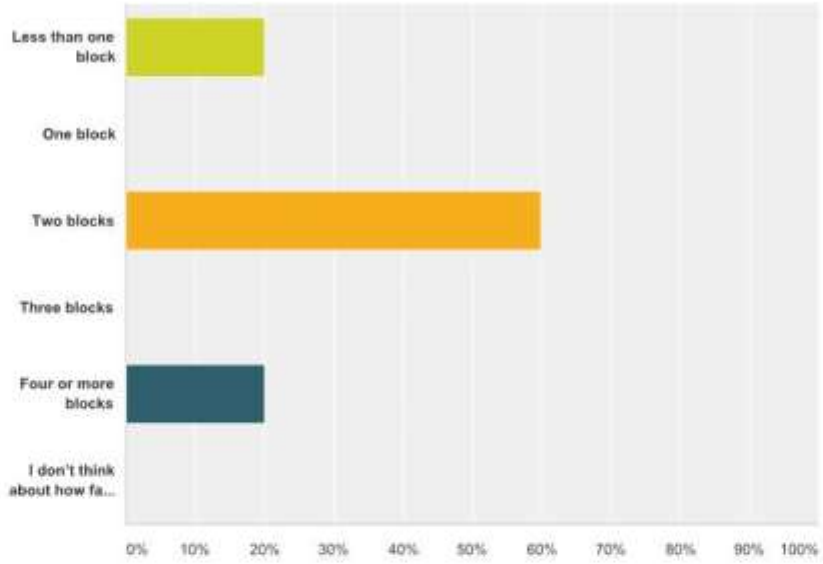


Answer Choices	Responses	
Yes	100.00%	5
No	0.00%	0
Total		5

Cheyenne Downtown Strategic Parking Plan

Q24 What do you considerable a reasonable distance for your customers to walk from their car to your business?

Answered: 5 Skipped: 615

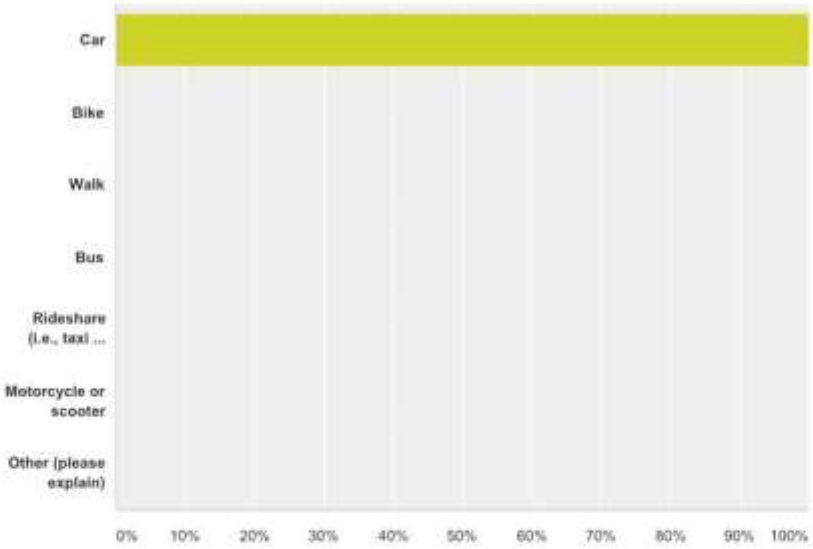


Answer Choices	Responses	
Less than one block	20.00%	1
One block	0.00%	0
Two blocks	60.00%	3
Three blocks	0.00%	0
Four or more blocks	20.00%	1
I don't think about how far my customers have to walk	0.00%	0
Total		5

Cheyenne Downtown Strategic Parking Plan

Q25 How do you think the majority of your customers arrive to the area where your business is located?

Answered: 5 Skipped: 615



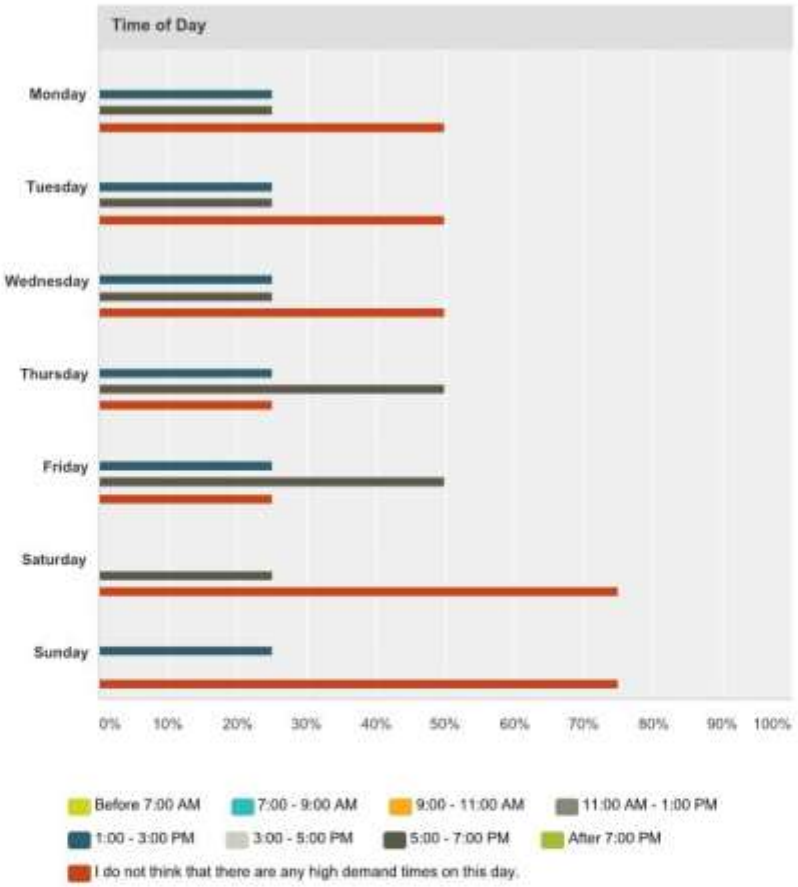
Answer Choices	Responses	
Car	100.00%	5
Bike	0.00%	0
Walk	0.00%	0
Bus	0.00%	0
Rideshare (i.e., taxi or Uber)	0.00%	0
Motorcycle or scooter	0.00%	0
Other (please explain)	0.00%	0
Total		5

#	Other (please explain)	Date
	There are no responses.	

Cheyenne Downtown Strategic Parking Plan

Q26 When do you think there is the highest demand for parking near your business?

Answered: 4 Skipped: 616



Time of Day	Before 7:00 AM	7:00 - 9:00 AM	9:00 - 11:00 AM	11:00 AM - 1:00 PM	1:00 - 3:00 PM	3:00 - 5:00 PM	5:00 - 7:00 PM	After 7:00 PM	I do not think that there are any high demand times on this day.	Total
Monday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	25.00% 1	0.00% 0	50.00% 2	4
Tuesday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	25.00% 1	0.00% 0	50.00% 2	4
Wednesday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	25.00% 1	0.00% 0	50.00% 2	4
Thursday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	50.00% 2	0.00% 0	25.00% 1	4

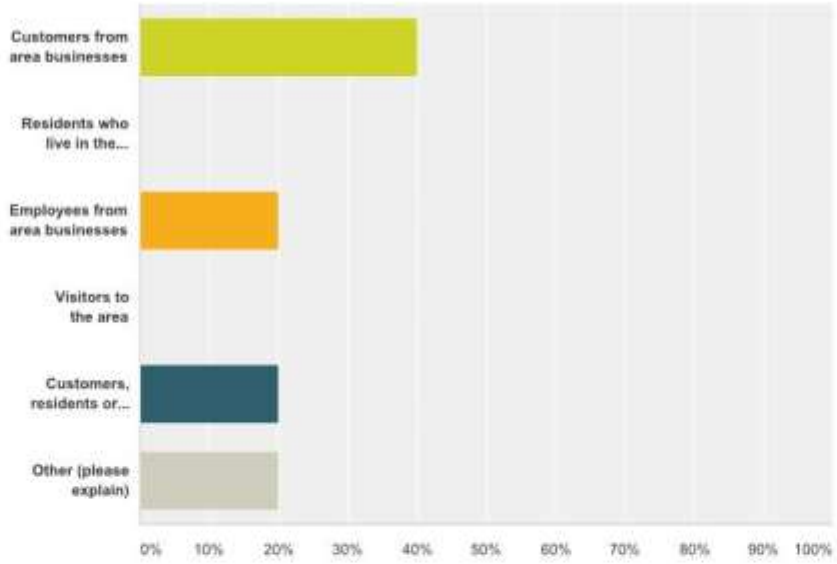
Cheyenne Downtown Strategic Parking Plan

Friday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	50.00% 2	0.00% 0	25.00% 1	4
Saturday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	75.00% 3	4
Sunday	0.00% 0	0.00% 0	0.00% 0	0.00% 0	25.00% 1	0.00% 0	0.00% 0	0.00% 0	75.00% 3	4

Cheyenne Downtown Strategic Parking Plan

Q27 Who do you think is parking in the on-street parking spaces closest to your business?

Answered: 5 Skipped: 615



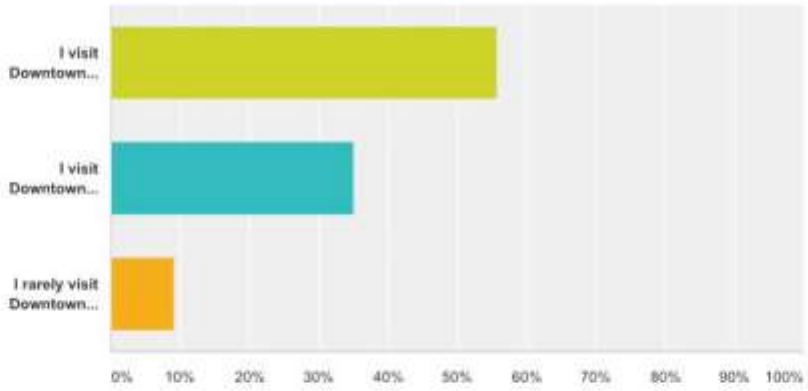
Answer Choices	Responses	
Customers from area businesses	40.00%	2
Residents who live in the area	0.00%	0
Employees from area businesses	20.00%	1
Visitors to the area	0.00%	0
Customers, residents or visitors who are parking near my business and walking to another commercial district or neighborhood	20.00%	1
Other (please explain)	20.00%	1
Total		5

#	Other (please explain)	Date
1	All of the above	8/12/2016 4:25 PM

Cheyenne Downtown Strategic Parking Plan

Q28 Which of the following best describes you?

Answered: 399 Skipped: 221

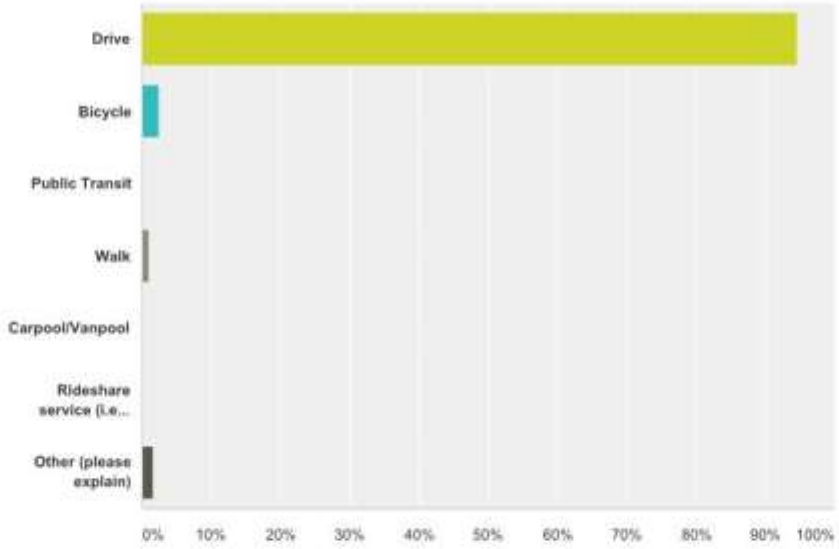


Answer Choices	Responses	
I visit Downtown Cheyenne regularly.	55.64%	222
I visit Downtown Cheyenne occasionally.	35.09%	140
I rarely visit Downtown Cheyenne.	9.27%	37
Total		399

Cheyenne Downtown Strategic Parking Plan

Q29 How do you typically travel to Downtown Cheyenne?

Answered: 399 Skipped: 221



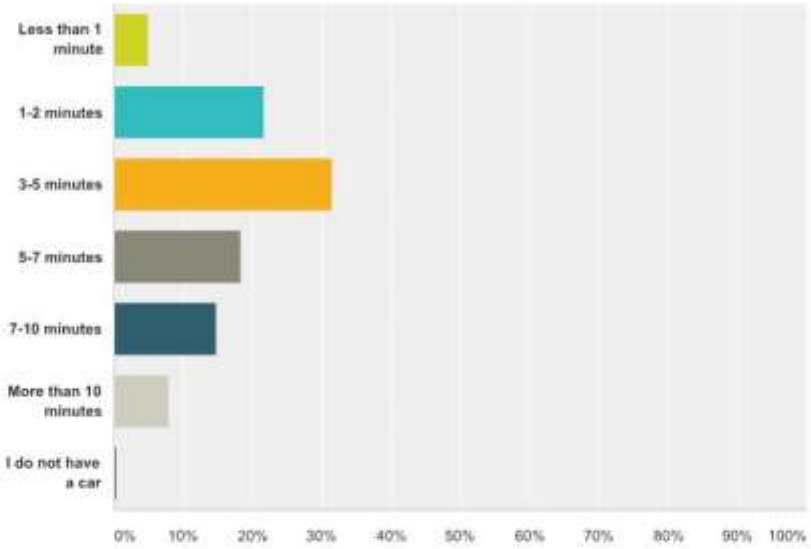
Answer Choices	Responses	
Drive	94.49%	377
Bicycle	2.51%	10
Public Transit	0.00%	0
Walk	1.00%	4
Carpool/Vanpool	0.25%	1
Rideshare service (i.e., taxi or Uber)	0.00%	0
Other (please explain)	1.75%	7
Total		399

#	Other (please explain)	Date
1	Motorcycle	9/9/2016 7:10 AM
2	B	8/26/2016 11:04 PM
3	Drive AND walk	8/14/2016 8:12 AM
4	Hardly do because no handicap parking	8/13/2016 3:05 AM
5	Hop	8/12/2016 3:28 PM
6	Drive or Bicycle	8/12/2016 12:04 PM
7	A mix: bike, walk, drive.	8/12/2016 10:06 AM

Cheyenne Downtown Strategic Parking Plan

Q30 When driving, how long does it usually take you to find a parking space in the downtown area?

Answered: 399 Skipped: 221

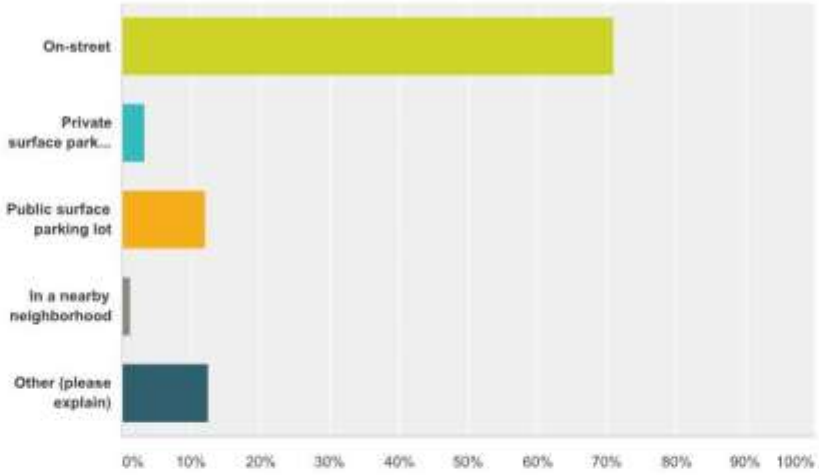


Answer Choices	Responses	
Less than 1 minute	5.01%	20
1-2 minutes	21.80%	87
3-5 minutes	31.58%	126
5-7 minutes	18.30%	73
7-10 minutes	14.79%	59
More than 10 minutes	8.02%	32
I do not have a car	0.50%	2
Total		399

Cheyenne Downtown Strategic Parking Plan

Q31 When driving to the downtown, where do you typically park?

Answered: 399 Skipped: 221



Answer Choices	Responses	
On-street	70.93%	283
Private surface parking lot	3.26%	13
Public surface parking lot	12.03%	48
In a nearby neighborhood	1.25%	5
Other (please explain)	12.53%	50
Total		399

#	Other (please explain)	Date
1	Sometimes a parking lot and sometimes on the street if you can find anything that you don't have to park one to two blocks away	9/9/2016 11:06 PM
2	Depending on the day and event, I utilize open spaces on the street ways, back lots by the depot, and the Parking Garage. I am not afraid to walk.	9/9/2016 3:47 PM
3	Parking garage or on-street	9/9/2016 3:38 PM
4	parking structure	9/9/2016 8:53 AM
5	On the street or parking garage	9/9/2016 7:11 AM
6	Spiker Garage if working, street parking if shopping	9/9/2016 5:40 AM
7	Sometimes street, sometimes parking structure	9/8/2016 12:49 PM
8	Parking garage	8/30/2016 12:11 PM
9	In the structure at Carey and Lincolnway	8/30/2016 8:39 AM
10	Whatever is open	8/27/2016 4:51 PM
11	Garage	8/26/2016 10:17 PM

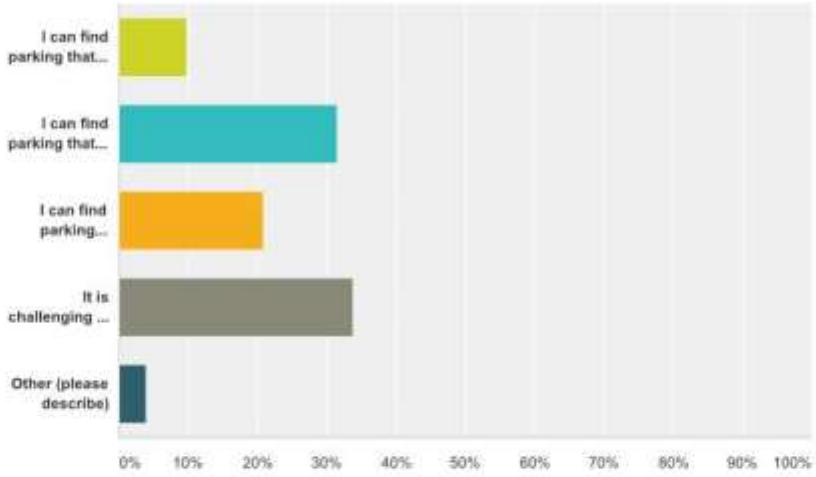
Cheyenne Downtown Strategic Parking Plan

12	I'm walk handicapped	8/26/2016 2:52 PM
13	or the parking garage; depends where I am going	8/26/2016 1:59 PM
14	Parking garage	8/26/2016 1:41 PM
15	Parking garage	8/26/2016 12:32 PM
16	What ever is open. First Street then parking garage then neighborhood	8/26/2016 11:09 AM
17	Parking garage	8/26/2016 10:22 AM
18	where ever i can find a space	8/15/2016 7:26 AM
19	Parking garage	8/14/2016 10:46 PM
20	on street, my van is to tall for parking in structure	8/14/2016 9:51 PM
21	We try to find a handicapped parking...but not enough available	8/14/2016 6:16 PM
22	Parking Garage	8/14/2016 12:55 PM
23	Public parking Garage	8/14/2016 12:06 PM
24	The parking garage	8/14/2016 7:56 AM
25	Parking garage	8/14/2016 7:18 AM
26	The parking garage	8/13/2016 8:45 PM
27	In front of the business I plan to visit, or at least within easy walking distance(a block or less).	8/13/2016 6:58 PM
28	Anywhere I can finally find a place to wedge my vehicle.	8/13/2016 11:24 AM
29	Illegally in a Private Surface Parking Lot	8/13/2016 11:23 AM
30	parking garage	8/13/2016 11:01 AM
31	No where half the time lack of handicap parking	8/13/2016 3:05 AM
32	Public parking garage	8/13/2016 1:31 AM
33	Anywhere I can fit because parking sucks	8/13/2016 12:46 AM
34	Parking garage	8/13/2016 12:01 AM
35	Parking garage	8/12/2016 11:24 PM
36	No car	8/12/2016 11:10 PM
37	Parking garage	8/12/2016 8:24 PM
38	Public garage	8/12/2016 4:11 PM
39	Depends on time of day. On weekends at dinnertime I usually park in a lot.	8/12/2016 3:33 PM
40	Underground	8/12/2016 3:28 PM
41	Depends if I'm shopping then I try to park on street, an event in the parking garage because it's dangerous pulling out in a small park from on street parking!!	8/12/2016 3:28 PM
42	Parking garage	8/12/2016 2:45 PM
43	Spiker garage	8/12/2016 2:12 PM
44	Parking garage	8/12/2016 1:48 PM
45	Spiker garage	8/12/2016 1:45 PM
46	Parking garage	8/12/2016 11:44 AM
47	This varies depending on where I'm going. Typically on street or in a garage	8/12/2016 11:12 AM
48	Parking garage by the crown. Every time	8/12/2016 10:42 AM
49	wherever I can find a space	8/12/2016 10:34 AM
50	Parking Garage at Lincolnway and Pioneer	8/11/2016 8:48 AM

Cheyenne Downtown Strategic Parking Plan

Q32 Which of the following most accurately describes your typical parking experience in Downtown Cheyenne?

Answered: 399 Skipped: 221



Answer Choices	Responses	
I can find parking that is close to my destination quickly and easily.	9.77%	39
I can find parking that is close to my destination in a reasonable amount of time.	31.58%	126
I can find parking quickly, however it is usually not close to my destination.	20.80%	83
It is challenging to find parking and when I do, it is usually not close to my destination.	33.83%	135
Other (please describe)	4.01%	16
Total		399

#	Other (please describe)	Date
1	The ease of finding adequate parking quickly or at all is determined by many variables. The destination, more so the specific location. The time of day or night and even the specific day of the week can effect the availability of parking spaces.	9/9/2016 8:34 PM
2	My biggest issue is dropping my mother off weekly at Cheeks to get her hair done.The students take all the parking places. they have figured out how to avoid the meter enforcer. She is 92 and has a difficult time walking. Maybe a 5 minute drop off would be helpful. And in the winter, since that business faces north, they dump all the snow onto the street (18th) and in the handcapped spot and it freezes. Its hazardous getting her in the door.	9/9/2016 8:08 PM
3	Depends on which part of downtown. 17th street is a problem between Warren and Carey. The further from there you get the easier it is, but that isn't where the shops/restaurants i want to visit are.	9/9/2016 4:04 PM
4	Covering parking is not safe and have vandals	9/9/2016 12:26 PM
5	It is a challenge because I cannot walk very far - handicap spaces are too few and not spread out far enough	9/9/2016 7:10 AM
6	It depends upon the time, during evening hours and when there are events downtown it can be challenging to find parking. During the day there is usually parking in the public parking structure but that is not necessarily close to my destination.	9/8/2016 8:23 AM

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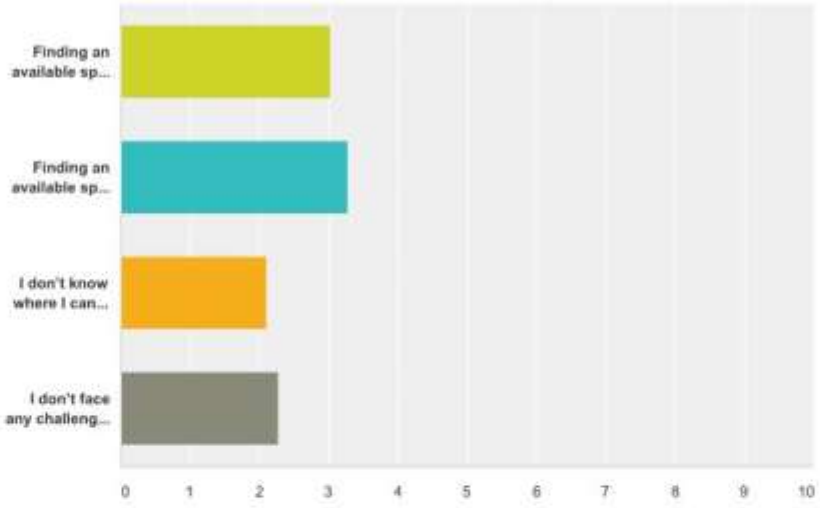
7	i like to park and walk and when i'm in downtown cheyenne for over two hours for an event, it isn't very conducive to force people to move their cars. i've had five parking tickets in a couple days for multi-day events downtown.	8/29/2016 9:40 AM
8	I can usually find parking relatively close to my destination, however, I specifically plan my trips to downtown around parking. That is to say, if I'm meeting someone for lunch downtown we agree to go at perhaps 11:15 rather than 12:15 bc otherwise we know we couldn't find parking.	8/14/2016 6:03 PM
9	Veey difficult to find ADA parking spaces; esoecially around the Paramount.	8/14/2016 5:36 PM
10	On 18th and Central area I don't have a problem, if I go further south or west, I do.	8/14/2016 3:28 PM
11	lack of handicapped parking, not enforced	8/13/2016 11:26 AM
12	If I look for legal parking? A long time, far away.	8/13/2016 11:23 AM
13	the garage is close to everything downtown	8/13/2016 11:01 AM
14	I don't drive	8/12/2016 11:10 PM
15	My hole gets filled with debris	8/12/2016 3:28 PM
16	I usually drive around the block 1 time and if i can't find parking anywhere within the block I leave	8/12/2016 12:04 PM

Cheyenne Downtown Strategic Parking Plan

Q33 Please rank what you consider to be the biggest challenge(s) you face when parking in Downtown Cheyenne. (1 = Most challenging;4 = Least challenging)

Answered: 547 Skipped: 73

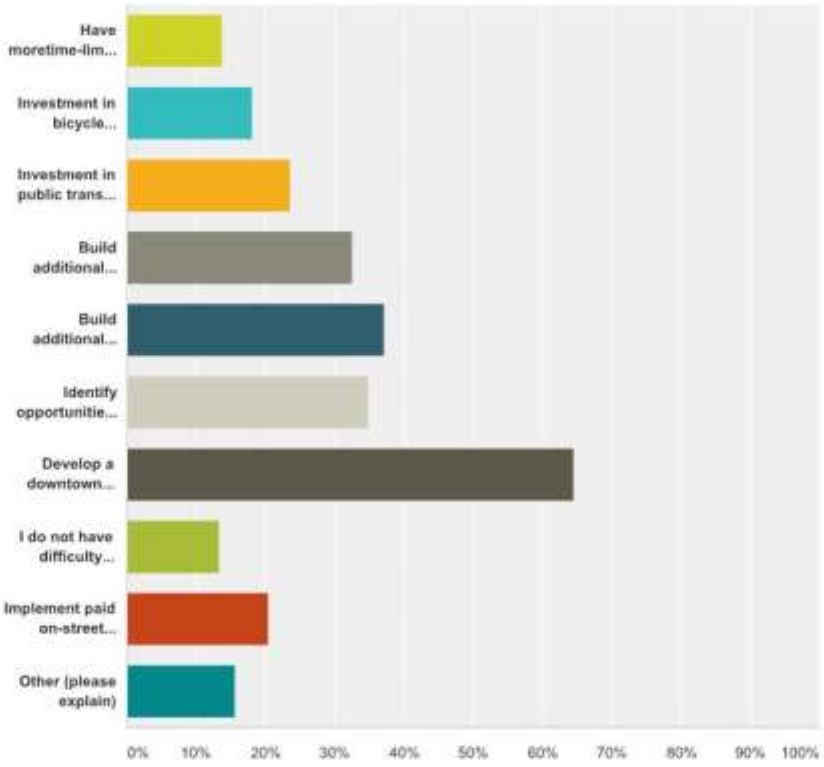


	1	2	3	4	N/A	Total	Score
Finding an available space quickly	27.86% 119	45.56% 195	18.46% 79	3.04% 13	5.14% 22	428	3.03
Finding an available space that is close to my destination	44.59% 206	36.36% 168	11.04% 51	3.46% 16	4.55% 21	462	3.28
I don't know where I can park (i.e., lack of signage, information about where I can park)	7.96% 39	9.39% 46	47.35% 232	17.35% 85	17.96% 88	490	2.10
I don't face any challenges when parking in Downtown Cheyenne	18.73% 97	5.60% 29	13.32% 69	25.68% 133	36.68% 190	518	2.27

Cheyenne Downtown Strategic Parking Plan

Q34 Cities use a variety of parking management strategies to balance the parking and access needs of residents, visitors and business owners. Please indicate which of following parking management options should be considered for downtown. (Please select all that apply.)

Answered: 553 Skipped: 67



Answer Choices	Responses
Have moretime-limited parking areas (i.e., a parking customer has to move their vehicle after a certain amount of time has passed)	13.74% 76
Investment in bicycle amenities (i.e., bike parking, bike lanes)	18.26% 101
Investment in public transit (i.e., to increase frequency of stops or introduce a downtown shuttle)	23.51% 130
Build additional surface parkinglots	32.55% 180

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Cheyenne Downtown Strategic Parking Plan

Build additional parking garages	**37.07%** 205
Identify opportunities for shared parking (i.e., use of existing private parking supply for public use)	**34.90%** 193
Develop a downtown employee parking program (to provide employees with a dedicated place to park so that they aren't parking in on-street spaces wherecustomers/visitors could be parking)	**64.56%** 357
I do not have difficulty parking in downtown and don't think that additional parking management is needed	**13.38%** 74
Implement paid on-street parking (i.e., parking meters)	**20.43%** 113
Other (please explain)	**15.73%** 87
Total Respondents: 553	

#	Other (please explain)	Date
1	Parking meters should be free after 5 and on weekends and holidays. Also there should be some sort of window sticker for people who work downtown so they do not have to move their cars every 2 hours	9/9/2016 3:58 PM
2	Security for cars in parking garages	9/9/2016 12:27 PM
3	Make Capitol ave diagonal parking	9/9/2016 9:54 AM
4	bike lanes are a joke. People use the sidewalks for their bike riding not the street. new laws need to made and enforced otherwise bike lanes are just a waste of money and time because not many people use them	9/9/2016 9:00 AM
5	Demo the numerous buildings that are never going to be renovated and turn those into parking lots	9/9/2016 8:26 AM
6	Motorcycle parking takes up much less room and thus encouraging motorcycle riders would make sense - right now, not many motorcycle riders head downtime (my opinion) - I visit for a couple of businesses and a couple of restaurants	9/9/2016 7:12 AM
7	Better safety for the Spiker Garage. I park there, but it's creepy and I don't like it. I don't generally park there when I come to shop; only when I work all day.	9/9/2016 5:43 AM
8	I have never in my 43 years of living in Cheyenne had a problem finding a parking spot. The only exception is when I worked downtown and had to move my car every two hours. That is the only reason I included the employee parking program, building additional parking garages, and introduce a downtown shuttle. I am assuming that would be accompanied with a free park and ride lot.	9/8/2016 10:49 PM
9	I don't like the idea of tearing down more historic buildings, but strategic parking garages that fit in the landscape would be helpful at times.	9/8/2016 10:43 PM
10	Visit Boston, NYC or DC sometime and you find that walking a couple blocks is not a big deal.	9/8/2016 12:32 PM
11	Provide safety mechanisms in parking garages. Promote the safety feature.	9/8/2016 8:30 AM
12	It seems that the two parking garages in the downtown area are filled during the day with reserved spaces for state workers and paid parking for employees downtown. This takes away from available spaces for those who wish to shop or eat at downtown restaurants.	9/6/2016 8:28 AM
13	I always find parking near to where I want to go. I believe in a need for more parking structures for a lot of reasons, public perception being one.	9/6/2016 1:20 PM
14	Underground parking would benefit rather than tearing down buildings and destroying the historic look of downtown.	8/30/2016 8:23 PM
15	If you want to encourage people to shop, work, and be downtown, it seems like the garage should not have a 2hr time limit on it. If we need to invest more in making sure there is free, easily walkable parking, great. I really think this is a perception problem more than an actual problem, however.	8/30/2016 12:13 PM
16	When an opportunity arises to level an empty building, then build a parking structure for employees. But a ground lot in the Hole will be PRIVATE and not benefit anyone.	8/30/2016 8:41 AM
17	biggest issue is parking for people who work in downtown area. city, state, county, private. work on providing static parking areas for employees in the downtown area and you will free up the existing parking for everyone else.	8/29/2016 11:31 PM

Cheyenne Downtown Strategic Parking Plan

18	create a resident exemption category / window sticker. around housing, limit parking from others.	8/29/2016 3:15 PM
19	lesser expensive parking at the garage to encourage people to park there if they'll be out for more than a couple hours, more expensive parking on the street to encourage turnover.	8/29/2016 3:09 PM
20	Make parking in the parking structures more inviting. Little unnerving at times with all the people that hang out in front of the parking garage on 17th. Way too many confrontations there during busy times.	8/29/2016 1:50 PM
21	have paid unlimited time - over night parking may take additional consideration - parking garages, maybe free on the weekends and holidays. you want to have the short term parking around businesses to force turnover and no employees parking in front. the cheaper parking should be in the garages and farther out to encourage people to park there.	8/29/2016 9:44 AM
22	Build more garages, free parking up to eight hours! Usually by the time I have to move my car, I'm over the bs that is downtown.	8/28/2016 6:06 PM
23	Clean up the parking garage we have as well. I don't feel safe parking there if I'm alone.	8/27/2016 4:58 PM
24	Security in 17th St. parking garage	8/26/2016 5:33 PM
25	one thing we should NOT do is only allow 2 hour parking! That guarantees that people do not want to come downtown for meetings or day time events because they get ticketed after two hours. Geesch...	8/26/2016 4:59 PM
26	While the parking downtown, such as in the main garage often has spaces available, the garage is not safe. I have seen people sleeping in the stairwells, and have been yelled at by people who are obviously homeless. Having the bus stop and the transitional center at the same location as the garage does not make parking in the garage inviting.	8/26/2016 1:17 PM
27	Let's not reinvent the wheel here. Paid metered parking on the streets (2 hour limit is annoying as F), and the parking garage needs to have an automated arm that dispenses tickets. The ticket could allow the first 2 hours free and then customers charged on the way out for the remaining time. Just like any other developing city.	8/26/2016 12:37 PM
28	Sometimes I see private business parking lots. It would be nice to know if I can park in them after hours or weekends	8/26/2016 12:25 PM
29	Use of private lots for public parking would be beneficial. I see so many underutilized private lots when streets are packed! Not sure how you would facilitate that.	8/26/2016 12:07 PM
30	Easier-to-understand parking in parking garage -- why not a booth with an attendant for parking beyond 2 hours (paid fee).	8/26/2016 11:39 AM
31	Better signage indicating where parking garages are located.	8/26/2016 11:31 AM
32	Encourage landlords of downtown buildings to offer at least 1 space with their lease (most buildings have alley access to parking)	8/26/2016 11:26 AM
33	Change all parallel parking to diagonal parking to maximize the number of available spaces	8/26/2016 10:47 AM
34	I worked downtown and so many of my fellow employees parked on the street all the time. They got tickets but still did it, maybe make those repeat offenders tickets larger.	8/26/2016 10:33 AM
35	More spots for handicap vans with ramp that need 10 feet of clearance for the wheelchair to get out and signs that say handicap vans only plus more additional hanicap spots as well	8/26/2016 10:18 AM
36	Have longer than two hour parking in some areas.	8/18/2016 11:42 AM
37	We do not need more parking lots or parking garages downtown. The garage we have is hardly used. I even found parking there during Cheyenne Frontier Days. More garages/parking lots are just a drain on property that could be turned into a property tax-paying, quality of life-lifting, job-providing business. More bike racks would be nice, but I can usually find a railing or pole for mine. There are a couple lanes on one way streets marked as a bikeway (is that the term?) Drivers seem mostly nice about it, so I'm not worried about traveling downtown on bike (unlike in Casper. Yikes!) Perhaps more bike routes spoking out from downtown to other parts of the city would be good? If you REALLY feel like there is a parking problem, and I don't think there is, I guess you could restripe so parking is diagonal, but that probably comes with its own problems.	8/18/2016 9:43 AM
38	I have never had a major problem finding parking downtown, but I always support investment in public transit and biking opportunities.	8/18/2016 8:34 AM
39	Don't make people pay for meters. Residential street parking is close to everything and people will just use that to not pay.	8/15/2016 4:57 PM
40	Require new construction downtown include underground parking in designs.	8/15/2016 4:10 PM
41	state employees can have minimal parking depending on the building they park. having to move their cars every two hours is a disservice to all involved.	8/15/2016 1:22 AM

Cheyenne Downtown Strategic Parking Plan

42	to many time limited parking areas, especially near courthouse	8/14/2016 9:53 PM
43	Mote handicap parking.	8/14/2016 6:18 PM
44	No parking meters!!!	8/14/2016 6:05 PM
45	Encourage more walking , biking and accomodating disabilities. A 3/4 ton duelly should park elsewhere.	8/14/2016 12:12 PM
46	Working downtown is a pain because of the 2 hour limit. The parking garage is too far from my building. Either a permit for working individuals and for the cheeks students for an anual flat fee or abolish the 2 hour parking. Moving your vehicle every 2 hours isn't a realistic thing to do every 2 hours.	8/14/2016 9:41 AM
47	Give passes to employees of businesses that work downtown so they don't get tickets for the timed parking. It's not fair to them and it drives away business.	8/14/2016 4:12 AM
48	Parking restrictions should be removed from downtown streets; no time limits on street or parking garage.	8/14/2016 2:04 AM
49	Post dedicated security teams AND cameras to current parking garages, most people (and I have heard this from over 10 people) do not feel safe parking in the current parking garages. Homeless and vagrants loiter in the current parking garages which makes some people(i.e. Significant others) extremely uneasy	8/13/2016 9:22 PM
50	Avoid paid meters!	8/13/2016 12:16 PM
51	add additional parking for longer time frames (more than 2 hours)	8/13/2016 11:36 AM
52	handicapped parking	8/13/2016 11:28 AM
53	I don't struggle with parking usually but events in downtown shut down the alley access to my parking and i don't get notified and have to find parking elsewhere that doesn't affect our business parking.	8/13/2016 10:52 AM
54	More handicapped parking.	8/13/2016 9:47 AM
55	Reduce traffic on lincolnway and provide parking like fort Collins down town area. And get rid of the bums.	8/13/2016 9:41 AM
56	Extend the time allowed to park at a spot. Either by adding meters of just switching the signs out to include me time per spot. Add additional handicap spaces on street level. If you build a public lot ADD SECURITY.	8/13/2016 8:45 AM
57	Remove the time limit and paid parking pass on parking in the garage to get more people to park there.	8/13/2016 8:22 AM
58	Get rid of parking time limit on the streetit shows favoritism towards businesses and is very discriminating towards residents	8/13/2016 8:10 AM
59	Get rid of the out dated rules and regs for parking on the same side of the street in the same day.	8/13/2016 6:22 AM
60	Cameras for garage or institute permit or paid parking. Vandals, loitering,and transients seem to be the biggest concerns to parking there.	8/13/2016 1:34 AM
61	Increase the parking time limits. 2 hours is really unreasonable!	8/13/2016 12:44 AM
62	George cox parking lot needs to have the lines painted they are so worn off people take 2 spots. The other parking structure is maintained, why not the other? Street, there needs to be some sort of marker for spots people there again take up 2 spots.	8/13/2016 12:09 AM
63	Less timed parking. More parking places downtown for people who work in the office spaces downtown. Or a close by parking garage with a sky walk to main office building areas.	8/12/2016 11:23 PM
64	Give the students a break may be with a customer and sometimes can't get out and move our vehicles in time	8/12/2016 11:12 PM
65	More handicap parking on 17th Street as handicap Parkersburg take my wife's spot	8/12/2016 8:30 PM
66	Make parking garages available to downtown employees rather than have them pay for the spaces. City would make more revenue with more businesses	8/12/2016 5:44 PM
67	Have parking structures open to more of the public	8/12/2016 4:42 PM
68	Get rid of 2-hour parking limit for customers	8/12/2016 4:25 PM
69	Parking voucher/ stamp cards for business owners and clients to park for free.	8/12/2016 4:15 PM
70	It seems that the parking study is a solution in search of a problem. Cheyenne does not have a parking problem.	8/12/2016 4:14 PM
71	Better management of traffic and parking during large events at the depot such as pancake days and Friday's on the Plaza.	8/12/2016 3:51 PM
72	Downtown Employees need a place to park. They take a break every two hours to move their cars. Make businesses enforce their employees to park in the parking garage. Give them a monetary break in the garage.	8/12/2016 3:40 PM

Cheyenne Downtown Strategic Parking Plan

73	Plenty of parking is available, but better signage in parking areas is needed (eg. is the parking garage free? time limited?), possibly directional signs to areas which frequently have available parking spots would also be helpful (eg. the downtown parking garage).	8/12/2016 3:35 PM
74	Comment	8/12/2016 3:29 PM
75	More handicapped spaces are needed	8/12/2016 2:51 PM
76	What about taking away all limits and letting people manage themselves?	8/12/2016 1:51 PM
77	Make bikes pay more for using the streets and all the street updates we have done for them in order to build and provide more parking in other areas.	8/12/2016 1:18 PM
78	When I bike downtown with my kids we usually end up walking our bikes because it doesn't feel safe riding on the street without actual bike lanes on most streets and we don't like to ride on sidewalks where people are walking. It would be nice to have more painted bike lanes and places to park bikes.	8/12/2016 12:13 PM
79	Enforce parking restrictions during significant snowstorms so that plows can clear the snow so as to allow continued access to downtown shopping	8/12/2016 11:18 AM
80	Enforce parking rules - ticket when necessary	8/12/2016 10:55 AM
81	Paid parking garage	8/12/2016 10:53 AM
82	A permit for box trucks doing a load in that sometimes take longer than two hours	8/12/2016 10:47 AM
83	Underground parking garages. Quit with the eye sores above ground. Build underneath the already-in place businesses	8/12/2016 10:44 AM
84	Parking downtown is not as challenging as some perceive. I think it's only challenging relative to parking in a shopping center.	8/12/2016 10:40 AM
85	employee taking customer parking is and has always been a major problem...additional parking lots need to become available...parking is the most critical part of a successful downtown experience.	8/12/2016 10:17 AM
86	Let people walk. Too many fat people in Cheyenne anyway.	8/12/2016 10:16 AM
87	If there is to be more limited parking (through meters/time limits), those limits need to be enforced to be effective. Also, it would be great if the DDA garage passes allowed pass holders access to dedicated garage spots during Frontier Day events. Most parking pass holders are employees at local businesses and need to get to work on time, not get stuck in the crowds trying to navigate to a random open parking space. DDA could allocate and reserve spaces based on number of passes issued.	8/12/2016 10:11 AM

Cheyenne Downtown Strategic Parking Plan

Q35 Do you have any other questions, comments or concerns about parking in downtown?

Answered: 198 Skipped: 424

#	Responses	Date
1	I most certainly do not agree with paid parking, as in parking meters. We are not Denver and it takes away from the small town community we are striving to keep especially downtown. Also the meter maid that marks cars parked too long needs to be aware of the flow of traffic and pull to the side when checking and marking cars. It gets ridiculous when they hold up traffic and it can get dangerous during busy times.	9/10/2016 5:04 PM
2	Na	9/10/2016 12:35 PM
3	Are you working with the Mayors Council forPeople with Disabilities. They can give you some insite.	9/10/2016 3:25 AM
4	N/A	9/9/2016 9:44 PM
5	I don't see a problem with parking downtown	9/9/2016 8:21 PM
6	Only employees taking the spaces and snow build up in the parking places.	9/9/2016 8:10 PM
7	Please do not add paid meters. I don't particularly like going somewhere downtown because of parking. If I had to pay to park, I'm pretty sure I would not frequent downtown ever.	9/9/2016 6:00 PM
8	Parking downtown is slightly more difficult than parking at target. Slightly.	9/9/2016 5:11 PM
9	Yes all the pot holes getting bigger and bigger all over Cheyenne and breaking sidewalks everywhere also. It's dangerous for our kids to be walking specially in the winter!	9/9/2016 5:09 PM
10	Build a park and ride	9/9/2016 4:53 PM
11	Not enough parking on street or lots for actual residents there	9/9/2016 4:41 PM
12	It's fine until CFD comes to town.	9/9/2016 4:39 PM
13	Parking garages need better security. (The whole of downtown needs better security.)	9/9/2016 4:20 PM
14	Parking garage feels unsafe - even if it isn't. Stairwells in parking garage often smell. Parking garage usually has parking available, but is several blocks from restaurants and shops I want to visit and requires me, or my wife, to walk past sketchy looking buildings (Pioneer hotel).	9/9/2016 4:09 PM
15	When parking for work, employees have no where to park that is out of the way of customers parking access. Also when said employees receive multiple tickets for time limited parking it is even more frustrating. Frustrating for customers at our restaurant as well when they choose to enjoy a meal and walk out to a ticket. Time limited parking is great for some businesses and store fronts that need spaces open and revolving but I feel the time limited spots are poorly placed downtown and unnecessary. It is typical for employees and customers alike to have to park 2-3 blocks away and walk, but that's at any business downtown.	9/9/2016 3:55 PM
16	This is really a simple issue and does not have to be made into such a complicated process. There IS plenty of parking in the downtown parking garage. Point blank. It's the people that need to change their frame of thinking and learn how to be patient and walk from one destination to another.	9/9/2016 3:54 PM
17	I would go downtown more if there was better parking.	9/9/2016 3:42 PM
18	Too many times limited parking, not enough available parking	9/9/2016 3:36 PM
19	I think the is not sufficient parking for the size of traffic in this town, but there are lot of homeless people scoping out cars to steal. I would love to see security in the parking garages.	9/9/2016 12:29 PM
20	If all else fails, the downtown parking garage is a good alternative.	9/9/2016 10:48 AM
21	Include parking garage fee,in the tuition for the beauty school! So they don't take all the parking on 18th street!	9/9/2016 9:58 AM
22	why is there no long term free parking for the senior citizens near the senior citizen building. the north lot is available now but when they close the west lot seniors will be forced to spend $45 a month to use the structure ,money of which only a few can afford.	9/9/2016 9:07 AM

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23	There's a lot of trash that hangs out downtown at night and I don't feel safe about leaving my vehicle there over night, which is way I think a lot of people end up driving home drunk from the bars.	9/9/2016 8:28 AM
24	I think there really isn't an issue. The hardest time to find spots is mon thru Friday because you are jousting for spots with downtown employees	9/9/2016 7:14 AM
25	Once again, increase safety patrols in the Spiker Garage. I frequently move my car to the street late in the day. I work later than most office workers and HATE having to walk into that garage at 6:00 pm. I often move to the street between 4:00 and 5:00 to avoid the garage after business hours.	9/9/2016 5:45 AM
26	This may or may not be included (as it is the West Edge), but I heard they were going to get rid of a parking lot on the west side of the Civic Center. A lot of people park there for shows. We park there because the lot to the south is private parking for 24 hours. Also, when there are school related programs (all-state music, Christmas programs, and much more) The school busses fill that lot. One night last winter, all of the lots around the building were packed full of busses, there was something going on at the library where I was, and at St. Mary's. So, parking was interesting. Keep in mind the busses can't just go to the district garage, because they are from all over the state at times. The library parking lot also gets full often and can't really be used by the Civic Center for this reason. If busses and trucks have to park on the street instead of that lot, there will be a lot more of a parking problem downtown. Busses are not always the issue. Often shows like Pippin, Cats, Annie, etc have big trucks with trailers to consider too. If this lot goes away, there are going to be a lot more issues downtown.	9/8/2016 10:56 PM
27	I am worried about parking at the Civic Center when this West Edge BS takes the municipal building's west lot and makes it a wishing pond. As in "I wish we needed a pond just west of the Municipal Building" pond.	9/8/2016 10:51 PM
28	Before considering angle parking, take notice that we have a substantial amount of long pickup trucks, suburbans, etc. 17th is terrible when they are parked there.	9/8/2016 10:11 PM
29	The parking concern is not about parking at all. There is too much scarcity in Downtown. People complain about parking because it seems like an easier solution than bringing businesses and entertainment to the downtown core. If we look to other capital cities in the region they all have some type of paid parking system that forces people to move their cars or creates some type of revenue for the facility or city. People will pay to park if there is something worth parking for. And people will be willing to walk if there is something worth walking for.	9/8/2016 6:01 PM
30	I think it would be nice if there was a parking structure in the UP parking lot, where the UP employees got the best spots, but where the public could park to access the depot plaza.	9/8/2016 12:54 PM
31	no	9/8/2016 11:54 AM
32	Occupying the vacant and "abandoned" buildings will create a greater need for more parking. The Plains Hotel can use lots of parking.	9/6/2016 1:22 PM
33	I park in A two Hr parking for 10Min leave for 4-6 hrs then Come back to the same block and get a Ticket for parking there to long. This is B.S	9/4/2016 8:36 PM
34	I believe transit is the best way to alleviate the parking problems.	8/31/2016 12:29 PM
35	Must people especially elderly or handicap cannot walk far from parking garages.	8/30/2016 8:24 PM
36	I worked on a study in Laramie and a few other communities that showed that the average person will walk more through the Wal-Mart parking lot than they will downtown. We need to shift the mindset. However, if people really want these lots, make them 24-hour, free lots so that people are encouraged to hang around. Leave the parking on the street as time-limited so that there are opportunities for people to pop in and out of businesses. Opportunities to share parking with bank/church/private lots when they're closed, etc?	8/30/2016 12:15 PM
37	Parking in downtown Cheyenne is relatively abundant. There is probably too much surface, off-street parking to the point that it detracts from the effectiveness of downtown as a symbiotic destination. It is difficult to determine which off-street parking is available to the public. The biggest parking problem that I perceive downtown is that people are unwilling to walk a block or two. However, downtown success depends on pedestrian traffic walking from one place to the next.	8/30/2016 8:52 AM
38	I work in the Emerson Building and I am completely familiar with fighting for a space and moving my vehicle every two hours. Had anyone had the foresight to buy the police station (old) before the church did that would have been an ideal location for many employees of the State to utilize. Instead the Church will now have something else to rent out.	8/30/2016 8:44 AM
39	I don't really feel that parking is a very large problem. The City has done a good job with the parking structure and building a lot at 17th and Warren.	8/29/2016 10:14 PM
40	The problem is people are lazy in Cheyenne and don't want to walk.	8/29/2016 4:15 PM
41	See above, the people that hang out in front of the bus stop at the 17th street parking garage make a lot of people nervous. I have been asked on more than one occasion to walk with someone for safety to/from this parking garage.	8/29/2016 1:51 PM

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42	I do not think we have a parking problem in downtown Cheyenne. You can ALWAYS find a space within a block or two of your destination.	8/29/2016 1:21 PM
43	Don't like the diagonal parking. It is to hard to see when backing up.	8/29/2016 11:43 AM
44	I typically don't mind walking a block or 2, and I've never had to park any further then that.	8/29/2016 11:09 AM
45	I really don't have any problems when visiting downtown. As stated before, we usually bike, but when we drive, we park easily within blocks of our destination. The surface lot on Warren is our most frequently used lot, as it allows us to get to restaurants and the movie theater. The most frustrating place to try to park and visit has got to be the depot, but that has everything to do with not parking in the garage.	8/29/2016 10:27 AM
46	It would be nice if the no parking areas had yellow painted curbs	8/28/2016 12:39 PM
47	I feel that the may parking lots in downtown detracts from how Cheyenne should look. I feel Cheyenne is becoming one big parking lot and is less invinting to visit.	8/27/2016 10:39 PM
48	N/a	8/27/2016 4:53 PM
49	It would also be nice to have spots that are handicap/stroller accessible with in the block, rather just at the corners. That way families with small kids don't have to walk in the street with strollers to get to the crosswalk to get on the side walk.	8/27/2016 3:20 PM
50	I dont have concerns about parking downtown. I cant see how this is even an issue.	8/27/2016 8:04 AM
51	Generally I think people would be willing to pay to stay in a parking space longer. But when they get burned with a ticket after 2 hours they refuse to come downtown for lunch meetings, or meetings or events at Plains or other venues.	8/26/2016 5:01 PM
52	no	8/26/2016 1:24 PM
53	Safety	8/26/2016 1:15 PM
54	I feel most times of the year parking isn't a big issue. I also think the people of Cheyenne need to be ok with walking a little further to reach their destination if they have to park further away, most cities are like that.	8/26/2016 1:05 PM
55	It's hard to do during the week during daytime. I no longer use a hair salon down there because one of the issues was the 2 hour limit. Ladies hair can take longer than that.	8/26/2016 1:05 PM
56	The parking fine schedule needs to either be followed or revised.	8/26/2016 1:00 PM
57	I'm far more concerned about all the empty buildings and wasted space than parking.	8/26/2016 12:59 PM
58	Biggest problem - 2 hour limits everywhere. Fixes: Digital metered parking on streets, and parking garage needs to have automatic ticket dispersal and payments like any other downtown garage in the modern world.	8/26/2016 12:39 PM
59	Seems like we could add diagonal parking in some areas or at least one one side of the street	8/26/2016 12:27 PM
60	Businesses cannot survive in downtown CHeyenne without access to relatively close ,open parking.	8/26/2016 12:11 PM
61	There needs to be available permits for service related vehicle to park and leave at their convenience. My techs come and go all day long and cannot park in front of my building more than once a day even if it is for 5 minutes at a time. This is not an efficient system.	8/26/2016 10:49 AM
62	Not enough accessible parking spaces maybe you could build a handicap lot in the center of downtown thats not too far for anyone to get to any of the places downtown or make the current parking ones all have 1 level just for handicap and the areas that are not a vgarage need a full line of handicap spots just make sure all of them have several spots marked for handicap van use only	8/26/2016 10:23 AM
63	No	8/26/2016 10:20 AM
64	N	8/26/2016 10:15 AM
65	I am glad to hear the talk of improvement to downtown Cheyenne.	8/25/2016 9:18 AM
66	Do not like timed parking or metered parking. Parking garages ok for 2-3 stories but need security and excellent lighting. Would like to see more public surface parking lots.	8/22/2016 3:17 PM
67	explain parking rules better	8/18/2016 11:42 AM
68	Sidewalks and curbs are in bad shape making walking less appealing (compared to board walk sounds and covered walking). Big trucks are obnoxious... lighting is poor on some streets (17th street especially bad)	8/17/2016 4:05 PM

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69	I feel there is a great misconception about parking availability downtown. People claim they don't want to talk too far but they are willing to park and walk in to the mall or Walmart with no problems. Parking a couple blocks away downtown is no different.	8/15/2016 9:44 PM
70	Needs to be biker friendly.	8/15/2016 4:57 PM
71	I've lived downtown nearly 18 years. The PERCEPTION is stronger than the reality. Small town residents "expect" a parking place to be waiting for them when they go somewhere. Those of us who moved from elsewhere know a short walk isn't an issue. The problem is in the minds of LOCALS, it's not based in reality. Call it a growing pain issue for the city. GOOD LUCK.	8/15/2016 4:13 PM
72	I think downtown business and nightlife could be supported by more strategic parking options. While Cheyenne is not a large city, we could benefit from more surface parking lots that are not timed or are paid. As a downtown worker, timed parking is difficult to manage when you are busy during the day so dedicated worker parking would free up on-street parking for business patrons.	8/15/2016 10:30 AM
73	Frankly, parking does not have anything to do with the success of a downtown area. Think of ANY city with a good downtown that you like to visit... and the parking sucks. Who cares. It's about zoning and foot traffic. Force new businesses to locate downtown. Don't give them a building or business permit for anywhere else, until downtown is full to the max.	8/15/2016 9:57 AM
74	To many transients in parking garage. I don't feel safe parking there. Police need to keep them away from vehicles and persons that park there.	8/15/2016 9:42 AM
75	no	8/15/2016 9:35 AM
76	No	8/15/2016 4:45 AM
77	consideration for the employees who work in areas with only on street parking having to move cars becomes difficult. construction and poor weather makes if worse when on street parking lose spots due to plowed snow!!	8/15/2016 1:23 AM
78	N/A	8/14/2016 10:49 PM
79	My biggest parking frustration is the fact that the downtown garage is largely unavailable to local customers during the week. So, we fight for limited on street parking in order to avoid tickets.	8/14/2016 10:11 PM
80	More Handicapped parking.	8/14/2016 7:49 PM
81	My husband has Parkinson's and handicapped parking is limited. We have tried to attend Friday night concerts and other activities but had to leave because no available parking	8/14/2016 6:21 PM
82	Need to do something about the transient problem. It can be frightening when they beg and follow you.	8/14/2016 5:58 PM
83	no	8/14/2016 4:27 PM
84	It is important that the available parking structures for the public be a bit more secure (and give the impression that they are safe, as well). Since people on jury duty are told they can park in one of the controlled lots, it might be useful to have a section specifically for them.	8/14/2016 4:17 PM
85	Safety in parking structures.	8/14/2016 2:51 PM
86	Cheyenne people are fat and lazy. Walk more!	8/14/2016 12:13 PM
87	No	8/14/2016 10:57 AM
88	They don't explain the stupid rules about moving your car to avoid a ticket. It should be fine if you move your car anywhere within the time frame.	8/14/2016 10:08 AM
89	a lot of this is common sense but since the city council seems to have now we'll have to do it the hard way. quit picking our pockets 2 hours is not long enough, business owners and employees should get a pass from the city so they don't have to worry about moving their vehicles or getting a ticket come on. Without them there be no downtown. I cannot believe if the city government has let this go on for so long we definitely need some big changes like a whole new city council chief of police and mayor.	8/14/2016 8:54 AM
90	No	8/14/2016 7:37 AM
91	Downtown isn't that big and the parking garage is never close to being half full and I can usually find street parking fairly close to where I want to be within 2 blocks, but more bicycle parking would be nice	8/14/2016 7:24 AM
92	Should require vehicles with large "low" style side mirrors to fold them in when parked as the downtown streets are narrow enough.	8/14/2016 7:24 AM

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93	I park in the city lot on warren & 17th. I have to time my lunch hour so that I return after the lunch rush or I can't park in the lot. And pleas make one city parking pass that we can use in all facilities. Right now you must choose either a garage or the lot.	8/14/2016 6:40 AM
94	Make it easier to allow employees of downtown businesses to park close to work for more than 2 hours.	8/14/2016 4:12 AM
95	I feel that there is a lot of confusion about permit v. Non permit parking. The parking garages and public parking spaces advocate that they are permit only, but in practice are public. I think that if the "in practice" elements were applied, more people would feel they could safely park.	8/14/2016 1:08 AM
96	Very inconsistent with ticketing for pending violations. Do not add meters--they are annoying.	8/13/2016 10:22 PM
97	The parking garage at Carey and lincolnway is not very safe especially for a female by themselves	8/13/2016 9:41 PM
98	Metered parking would allow for the people who need to park for long terms (such as downtown employees) to have a reliable "all day" parking spot, while still having the average person have an incentive to move within a reasonable time. As mentioned before, current parking garages need dedicated security teams to protect from car damage, theft, and potential bodily injury. As an example most women, and even many men I've met and know, refuse to park in what they refer to as the "Murder Garage" for fear of the lack of security in a Paid Parking structure.	8/13/2016 9:28 PM
99	I'm the opposite of most people. I really don't see much to complain about parking downtown. Although I don't frequent downtown often, I can usually find a parking space within the block I'm visiting. I am more of a person who feels really disgruntled when I need to walk a city block to walk to a big box store in either sweltering sun or strong winds or freezing cold and snow - and will avoid that experience as often as possible. Downtown, I can choose to walk on the shady side when it's hot and the sunny side when it's cold. I think a lot of young people never learned this skill because most everything when it comes to shopping was either at "the mall" or "big box". I would frequent downtown more if there was more of a reason for me to be there. I'm really not avoiding going downtown because of any parking problem. I gladly go downtown whenever I have a reason! Yes, I guess I'm one of a very few.	8/13/2016 8:11 PM
100	I don't go downtown because of parking	8/13/2016 7:50 PM
101	Cox Garage is hard to find parking in because of all the spots that are allocated for Laramie County Government.	8/13/2016 7:26 PM
102	Snow plowing usually means snow piled in parking places necessitating climbing over a pile to the sidewalk??	8/13/2016 7:01 PM
103	I think most people don't want to walk. I am downtown daily, and if you are willing to walk a half to one block, you can generally find parking. Most people walk farther going to Walmart, parking in their lot, shopping and walking back to their car. The perception is that they are closer because they are in walmarts parking lot.	8/13/2016 6:55 PM
104	The limited, timed parking makes it difficult for anyone who works downtown, or plans to go to events.	8/13/2016 6:35 PM
105	No one comes downtown as parking is too difficult. Fix the problem please.	8/13/2016 6:20 PM
106	There's too many skateboarders on the sidewalks!	8/13/2016 5:27 PM
107	The time limited parking spots next to my place of work cause a problem because everyone parks there and sometime it's a pain because you can't just leave work to move your car	8/13/2016 4:27 PM
108	Many people here drive trucks out of necessity due to weather, or because they live on farms or ranches. Parking is always very tight if you are driving a truck of any sort.	8/13/2016 4:01 PM
109	Need less time restricted parking. I typically spend more than 2 hours downtown and don't want to move my car. Often if I try to move it is end up further from where I want to be.	8/13/2016 2:29 PM
110	Seal off general vehicle traffic between 16th & 17th Streets between Warren Ave. & Thomes Ave. so as to promote foot traffic, outdoor eating, retail vendors indoors & outdoors, and create features conducive to exploration and contemplation; increase safety while increasing family-friendly environment.	8/13/2016 1:30 PM
111	Severe lack of handicap accessible or shared handicapped/ regular spots on each block and appropriate curbing where wheelchairs or crutches can get to businesses	8/13/2016 12:57 PM
112	Price for parking passes downtown is far too high. Getting three tickets should not be cheaper than a month's parking fee.	8/13/2016 11:43 AM
113	No place to park when you need more than 2 hours	8/13/2016 11:36 AM
114	DDA, Mayor have heads up their asses	8/13/2016 11:32 AM
115	Winter time is especially hazardous - usually snow is plowed from streets & piled onto parking spots	8/13/2016 11:17 AM
116	Visibility with on-street diagonal parking. Get a big pickup parked next to your car and getting out is very difficult.	8/13/2016 11:03 AM
117	No	8/13/2016 11:03 AM

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118	Businesses need to be let known if their private parking will be unavailable in advance. I also believe the parking garage should be free to all, and it shouldn't be so hard for businesses to get parking passes for their employees without being on a waiting list for a pass that they have to pay exuberant amounts of money for.	8/13/2016 10:53 AM
119	The insaine fact that you can get a ticket for parking on the same block at 4pm if you parked there for 5 minutes at 10 am.	8/13/2016 10:49 AM
120	The garage is a challenge because of the people who are constantly asking for money or following. So certain times of the day make walking to and from uncomfortable.	8/13/2016 10:43 AM
121	Security for the parking garages would be nice as well.no	8/13/2016 10:07 AM
122	Get rid of the bums! I hate parking down there with my kids and you have to walk by several bums to get where you are going.	8/13/2016 9:42 AM
123	Y'all need to repaint pretty much everything. The yellow is so card in some areas I can't see it till I get out of my vehicle. A quick touch up of paint would help everyone stay legal and keep moving until they find an appropriate parking space.	8/13/2016 8:47 AM
124	Metered parking is a terrible idea	8/13/2016 8:32 AM
125	The parking downtown is terrible, you get a ticket for being somewhere spending your money to help downtown. So how is that supposed to help downtown businesses. Anyone who works downtown is either constantly trying to shuffle their car around to avoid getting ticketed, getting the tickets costing them more money just to work there, or paying $45 a month to park in unsecured structures and areas that are more dangerous than parking on the street.	8/13/2016 8:25 AM
126	Due to 2 hour parking I am too tired to be up to fulfill certain night shift obligations at my work so it is pushing me further into poverty making it very difficult for me to pay my bills to live meanwhile businesses around me or arguing about not being able to make an extra three or $400 a night	8/13/2016 8:11 AM
127	Downtown employers should be required to provide parking off street for their employees	8/13/2016 8:00 AM
128	The signs should change in front of 2424 Pioneer. The building is not regularly used by the public, so the one hour limit is unnecessary. But many client meetings are held there that need more than one hour. Consider 2 hour or no limit.	8/13/2016 7:41 AM
129	The parking garage should have a place where you can pay for the hour or by the day. It is unrealistic for people to go to the city building to buy a day parking pass.	8/13/2016 7:36 AM
130	More 4 hour parking (instead of 1/2 hr) and NOT another parking garage. The one we have is very unsafe and we especially don't need one where the hole is downtown where their needs to be a children's museum. Also everything downtown is a 5 minute walk at the most so change the signs so people can park longer and encourage walking. Maybe put more art and lights and maybe a map or more signs to where things are. The last thing we need is another parking garage.	8/13/2016 7:28 AM
131	Public safety is an issue downtown. The bus stop, Pioneer Hotel and Transition Center bring a lot of sketchy people downtown. My employees often complain about feeling safe walking to and from the parking garage for this reason. This should be addressed when considering parking downtown, as we often do not feel safe in the parking garage. As a result, we end up parking on the street closer to our business and get multiple parking tickets.	8/13/2016 7:26 AM
132	I'm hoping that, unlike other investments of time and money by the downtown development group, that SOMETHING will be done with the findings of this survey. Nothing to truly IMPROVE downtown Cheyenne will be cheap or simple. The more TIME your organization wastes waiting for the "easy" way out to magically appear, the WORSE our downtown gets and the bigger the problem gets and the solutions become more limited and more expensive. It's time to invest in this community and actually DO something!!!	8/13/2016 7:10 AM
133	I do not agree with the design of the children's museum	8/13/2016 1:47 AM
134	I have no problem walking 2-3 blocks if there were more parking garages downtown. We usually forego any businesses or events down town due to parking issues. I only go there when I have to go to a government building ie: County clerks office at the courthouse	8/13/2016 12:49 AM
135	Increase parking time limits. It is unreasonable for people that work downtown have to move their vehicles every two hours!	8/13/2016 12:48 AM
136	City has parking attendants (meter maids) very rarely are they monitoring parking and catching violators. If the weather is bad you can park anyway and anywhere you want because they won't be out ticketing. They recently got new vehicles so exactly what are their jobs?	8/13/2016 12:09 AM
137	No	8/13/2016 12:05 AM
138	Shouldn't be timed parking especially for those that work or attend school in downtown. Too hard to move car every 2 hours..make parking free	8/12/2016 11:34 PM

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139	We definitely need more parking or parking passes for employees who work downtown. There is a lot of offices and businesses but hardly any parking.	8/12/2016 11:25 PM
140	Because of the violent incidences I've heard of in the downtown parking garage, I think there should be security cameras and possibly a security on patrol during certain hours, especially with the crown bar and so many others nearby.	8/12/2016 11:12 PM
141	.	8/12/2016 8:02 PM
142	The problem is keeping businesses profitable downtown. The ones we do have are spread out so parking isn't close to all or even most of them. As downtown grows we will need more parking. Let's get in front of it.	8/12/2016 4:51 PM
143	None	8/12/2016 4:50 PM
144	How about prohibiting 18 wheelers on 16th St all together, use only smaller vehicles for deliveries, allows for safer parking and pedestrian traffic.	8/12/2016 4:49 PM
145	People do not know which is the proper lane to be in before going up the vi-doc on central. Could be marked a lot better way prior to arriving in at lincolnway and central. Cater to the out of towners better and make it where they want to come back. Also would make driving a lot more safer!	8/12/2016 4:37 PM
146	Housing & Apartments downtown need near by parking.	8/12/2016 4:34 PM
147	Petition Union Pacific to allow a parking structure to be built on their parking lot between Central Ave and Warren Ave south of Lincolnway. Make the first (ground) level for Union Pacific only, and all other parking levels for the public.	8/12/2016 4:30 PM
148	backing out of diagonal parking is dangerous in the 17 and 18th street areas.	8/12/2016 4:26 PM
149	CFD should be forced to build a parking structure.	8/12/2016 4:16 PM
150	I love the ida of parking meters, especially at higher-demand locations like near the depot, hynds building, and restaurants. On benefit would be the deterrence of all-day parkers wasting the space (like business employees). But on the other hand.... don't we want people to stay downtown and walk around and visit other shops? If they're rushing to beat the meter, they are even less likely to do that than they are right now.	8/12/2016 3:54 PM
151	People who complain about parking in Cheyenne have probably never tried to park in a bigger city. We have it easy, folks.	8/12/2016 3:52 PM
152	A ton of space in downtown is dedicated to parking. There is no need for additional parking downtown in my opinion and I'd actually like to see parking be reduced in downtown. Parking may be better regulated by charging a nominal fee for parking on the street.	8/12/2016 3:42 PM
153	We should encourage long term parking in garages and harder-to-reach parking lots. Shared parking should be allowed - especially in the Bank surface parking lots. Nothing is more frustrating than seeing a 'RESEVED FOR <BANK> ONLY' on an empty lot on Saturday.	8/12/2016 3:38 PM
154	Ban duel axle trucks from diagonal parking	8/12/2016 3:36 PM
155	Angled parking is horrid if you have a small car and a truck or SUV parks next to you. You cannot see if traffic is coming as you back out, I literally pray and slowly go for it.	8/12/2016 3:32 PM
156	I think the "parking issue" all depends on perspective. Parking in Cheyenne is quite easy compared to much larger cities so I don't feel it's a problem. For people who are used to going to walmart or texas roadhouse for dinner and just walking up to the place, then sure, it might seem like an issue. Education might help and signage b/c I could see the one-way streets screwing with you if you don't know where you're going. Or just get rid of one-way streets. They are designed to draw people out of downtown anyways.	8/12/2016 3:30 PM
157	A free shuttle up & down Capitol would be good. Also all free parking in the parking barn would be good because it would encourage downtown staff to park there rather than on the street.	8/12/2016 3:22 PM
158	Visitors should be allowed to use business parkin lots during downtown public events	8/12/2016 3:08 PM
159	During the farmer's market there is even less handicapped parking available. A shuttle might be helpful.	8/12/2016 2:55 PM
160	I park regularly in the Spiker Garage and find it somewhat creepy. More patrols in and around the garage would be appreciated.	8/12/2016 2:15 PM
161	Make the parking garages safer. Solve the problem of transients walking downtown.	8/12/2016 1:31 PM
162	I really don't want anymore round abouts. And I hate paid parking.	8/12/2016 1:19 PM
163	Counteract bad rumors about parking garage, eg crime, the homeless etc. I NEVER have had a problem in or near the parking garage except for a drunk falling out the Crown Bar onto me	8/12/2016 12:42 PM

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164	Change the perception of the Spiker garage that it is unsafe, and it will be more utilized. Move the transit pickup dropoff away from garage entry/exit. Let verified downtown residents park for free in the Spiker garage or city lot all day every day.	8/12/2016 12:29 PM
165	I don't use the parking garage because I don't feel safe due to the homeless and other strange groups that hang around there.	8/12/2016 12:27 PM
166	Thank you for attempting to do something about this problem.	8/12/2016 12:21 PM
167	My concerns are more with walking in the downtown area after finding a parking place, particularly in winter. Last winter it was difficult to cross the street even in the cross walks. The snow build up at the corners and in front of the cross walks made it difficult to cross the busiest streets. Businesses are piling sidewalk snow around the poles that have the cross walk buttons so you could not reach the buttons. Although the street lights change for traffic the crosswalk sign does not flash as long as it would if the button pedestrian button is pressed. In winter it takes a longer time to negotiate the snow and slush to get walk across the street safely. Often time the light has changed before a pedestrian can start crossing the street. A good example of this is the cross walk located at the intersection of W. Lincolnway and Carey Ave. There's often times great parking on Carey Ave., between 15th st. and 16th st. but it's almost impossible to navigate the snow & slush in the cross walk to get across Lincolnway (16th st) in the amount of time the crosswalk light is flashing unless the person can push the cross walk button.	8/12/2016 12:18 PM
168	Parking on Lincolnway across from the Depot needs to be addressed. Mirrors get clipped so easily otherwise the drivers in the right lane have to take up both lanes to get by. It needs to be restricted to compact cars only no parking along that block. I dread driving in the right lane, especially if there is anyone in the lane beside me since it's impossible to not cross over into the left lane if vehicles are parked along the road	8/12/2016 12:18 PM
169	The biggest problem that we see is with people who work downtown taking up street parking in front of businesses. We see our own tenants from the office building going out every two hours to move their cars. We believe that if downtown employees had free parking in the garage, that it would free up so much street parking that there would be plenty for customers!!!	8/12/2016 12:16 PM
170	Utilize parking garage and make it more appealing by keeping homeless/drunks from hanging out in it	8/12/2016 12:07 PM
171	There should be security in the current parking garage that makes rounds in there hourly. Paid parking garage in the Bakery Hole would be fantastic.	8/12/2016 12:02 PM
172	No	8/12/2016 11:47 AM
173	How can we get people to start walking ?	8/12/2016 11:46 AM
174	Keep the diagonal parking--it's much easier in and out	8/12/2016 11:43 AM
175	put in parking meters	8/12/2016 11:40 AM
176	Parking is never an issue on Sundays because nothing ever happens downtown on Sundays. Downtown is most congested from 11A - 2P M-F, and Friday/Saturday evenings (especially during the warm months). Additional garages or lots are not needed. I would recommend a shuttle program for downtown employees, but I would first need to know from what direction most employees come from to determine where a shuttle lot might be best located.	8/12/2016 11:22 AM
177	Forget about the childrens museum, use the hole for something better	8/12/2016 11:18 AM
178	Clean up the parking garage...meaning patrol it more often due to the vagrants that loiter around it and the criminals that live across the street from it. You'd probably would get more use out of the parking garage then.	8/12/2016 11:05 AM
179	I try to ride my bike whenever possible, so make bicycling more friendly. Obviously, that becomes less an option in the winter, so we need good snow removal at the curb to park and on the sidewalks for pedestrians.	8/12/2016 11:01 AM
180	Management of the existing downtown parking structure could be improved.	8/12/2016 11:01 AM
181	It would be nice to buy a one-day permit that enables you to park a delivery truck without getting a ticket.	8/12/2016 10:50 AM
182	na	8/12/2016 10:48 AM
183	It's horrible so we need to act instead of just doing study after study. Put a plan in place and move it forward	8/12/2016 10:47 AM
184	Just the bus stops	8/12/2016 10:44 AM
185	One and two hour limits make no sense if you want people to spend time downtown. Parking meters make sense. I pay for how long I want to be downtown.	8/12/2016 10:35 AM
186	Parking in downtown Cheyenne is not that difficult. I also think paid meters would do WONDERS. Who is taking up the spots while simultaneously complaining about a lack of parking??? DOWNTOWN BUSINESS OWNERS. They need to park elsewhere and leave the spots for customers. Meters would solve a majority of the issues.	8/12/2016 10:30 AM

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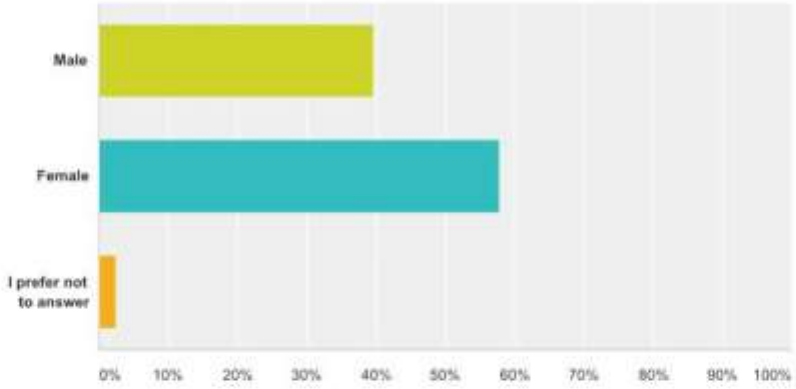
187	I would build another parking garage. Better use of space. Then I would close down 17th Street to traffic except for bikes and public transportation like 16th street in Denver.	8/12/2016 10:29 AM
188	I think the parking garage is great but I do not feel that safe parking there with the transit people, bus stop patrons, and transition home people in that area.	8/12/2016 10:27 AM
189	need to plan for nighttime parking for the events at depot, Atlas, and other venues	8/12/2016 10:23 AM
190	Have lived in Cheyenne all my life and for the past 30+ years downtown parking has been an issue. Glad to see that it is now critical enough to hopefully start to make some changes to improve this major problem. Really need to establish a 5-10 year plan and get a strong commitment form the property owners as it will take time to improve this project.	8/12/2016 10:22 AM
191	Parking downtown doesn't seem to be an issue for me. Walk a few blocks people, it's good for you!	8/12/2016 10:15 AM
192	Some of the largest problems are lack of spaces near where you want to go. There is the Jack Spiker parking garage, which I use, but sometimes it's a long ways from where I want to go because it's on one edge of downtown. If it were more centralized, it would be less of an issue. It is nice that it's close to the business district, though. That said, sometimes some people can't walk that far. My mother has rheumatoid arthritis. It's not an option for her to walk several blocks to get where she needs to go. But then business owners and employees park along the streets so often, that you can't find a place to park. I think designated employee parking, with the exception of handicapped employees, is a good idea. That also would save the employees from having to move their cars every two hours, which I think deters people from opening businesses downtown. Who wants to work somewhere that you have to go move your car every two hours to keep from getting ticketed?	8/12/2016 10:15 AM
193	No	8/12/2016 10:11 AM
194	The City should build out additional bike infrastructure.	8/12/2016 10:11 AM
195	As bicycle amenities increase to make it more safe to ride downtown, that would be my preferred means to travel there. You are working in the right direction with regards to these amenities.	8/12/2016 10:08 AM
196	This survey should have defined "close", because I don't mind walking 2-3 blocks to an event or restaurant. That to some people is not close.	8/11/2016 8:51 AM

Cheyenne Downtown Strategic Parking Plan

Q36 Which of the following best represents your identity?

Answered: 553 Skipped: 67

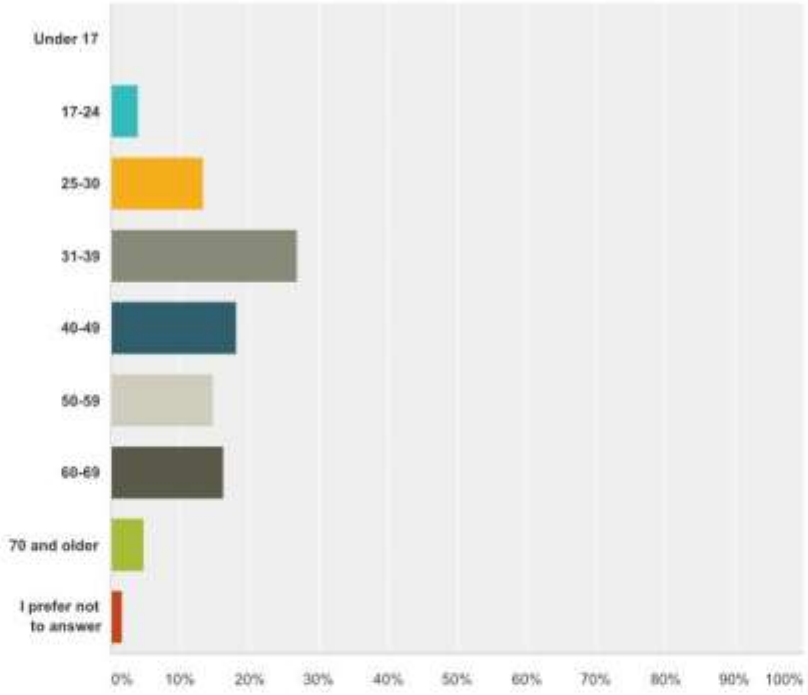


Answer Choices	Responses	
Male	39.60%	219
Female	57.87%	320
I prefer not to answer	2.53%	14
Total		553

Cheyenne Downtown Strategic Parking Plan

Q37 Which of the following best represents your age?

Answered: 550 Skipped: 70



Answer Choices	Responses	
Under 17	0.00%	0
17-24	4.00%	22
25-30	13.27%	73
31-39	26.91%	148
40-49	18.18%	100
50-59	14.91%	82
60-69	16.36%	90
70 and older	4.73%	26
I prefer not to answer	1.64%	9
Total		550

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Appendix 3

Sample Crisis Communication Plan

APPENDIX 3

Sample Crisis Communication Plan

When an emergency occurs, the need to communicate is immediate. If business operations are disrupted, customers will want to know how they will be impacted. Regulators may need to be notified and local government officials will want to know what is going on in their community. Employees and their families will be concerned and want information. Neighbors living near an incident may need information—especially if they, their residence or their business could be impact. All of these "audiences" will want information before the business has a chance to begin communicating.

An important component of an organization's planning effort is the creation of a crisis communications plan. A business or organization must be able to respond promptly, accurately and confidently during an emergency in the hours and days that follow. Many different audiences must be reached with information specific to their interests and needs. The image of the business can be positively or negatively impacted by public perceptions of the handling of the incident.

This document provides direction for developing a crisis communications plan. Understanding potential **Audiences** is key, as each audience wants to know: "How does it affect me"? Guidance for scripting **Messages** that are specific to the interests of the audience is another element of the plan. The **Contact & Information Center** section explains how to use existing resources to gather and disseminate information during and following an incident.

Audiences

Understanding the audiences that a business or organizational needs to reach during an emergency is one of the first steps in the development of a crisis communications plan. There are many potential audiences that will want information during and following an incident and each has its own needs for information. The challenge is to identify potential audiences, determine their need for information and then identify who within the business is best able to communicate with that audience.

The following is a list of audiences that a parking program should consider as they create a crisis communication plan:

- Patrons
- Those directly impacted by the incident, and if applicable, their families
- Parking program employees, and if applicable, their families
- News media
- Community stakeholders—especially those living near or directly impacted by an incident
- Program management, Managers and other financial stakeholders
- Government elected officials, regulators and other authorities
- Suppliers, if applicable

Contact Information

Contact information for each audience should be compiled and immediately accessible during an incident. Existing information such as customer, supplier and employee contact information may be exportable from existing databases. Include as much information for each contact as possible (e.g., organization name, contact name, business telephone number, cell number, fax number and email address). Lists should be updated regularly, secured to protect confidential information and available to authorized users for use by members of the crisis communications team. Electronic lists can also be hosted on a secure server for remote access with a web browser. Hard copies of lists should also be available at the alternate location.

Customers

Customers are the life of a business, so contact with customers is a top priority. A crisis communication (business continuity) plan should include action to redirect incoming telephone calls to a second location (if available) or to a voice message indicating that the organization is experiencing a temporary problem. This plan should also include procedures to ensure that customers are properly informed about issues that may impact them directly and indirectly.

Front line parking staff who are normally assigned to work with customers should be assigned to communicate with customers during a crisis as well. If there are a lot of customers, then the list should be prioritized to reach the most important customers first.

Remember, in the case of a crisis: communicate early, communicate often and communicate as honestly as possible.

Suppliers

The crisis communication plan should include documented procedures for notification of suppliers, for example technology providers, other city departments who directly supply support or services to a parking program, contracted staff, etc. The procedures should identify when and how they should be notified.

Management

Protocols for when to notify management should be clearly understood and documented. Consider events that occur on a holiday weekend or in the middle of the night. It should be clear to staff what situations require immediate notification of management regardless of the time of day. Similar protocols and procedures should be established for notification of Managers, investors and other important stakeholders. Management does not want to learn about a problem from the news media.

Government Officials & Regulators

Communications with government officials depends upon the nature and severity of the incident and protocol for notifying upper level City management should be discussed as part of the crisis communication planning process. Businesses/organizations that fail to notify a regulator within the prescribed time risk incurring a fine. OSHA regulations require notification to OSHA when there are three or more hospitalizations from an accident or if there is a fatality. Environmental regulations require notification if there is chemical spill or release that exceeds threshold quantities. Other regulators may need to be notified if there is an incident involving product tampering, contamination or quality. Notification requirements should be documented in the crisis communications plan. A major incident in the community will capture the attention of elected officials. A senior manager should be assigned to communicate with elected officials and public safety officials.

Employees

Human Resources, or another designated management level staff person, are responsible for the day-to-day communications with employees regarding employment issues and benefits administration. HR management/designated management should assume a similar role on the crisis communications team. This designated person/people should coordinate communications with management, supervisors, employees and families. They should also coordinate communications with those involved with the care of employees and the provision of benefits to employees and their families. Close coordination between management, designated organizational spokesperson, public agencies and HR is needed when managing the sensitive nature of communications related to an incident involving death or serious injury.

The Community

Parking programs and their services are very customer-oriented so in addition to internal/organizational audience, the community at large can become an important audience. As such, community outreach should be part of the crisis communications plan. The plan should include coordination with public safety officials to develop protocols and procedures for advising the public of any hazards and the most appropriate protective action that should be taken if warned.

Positioning

To decide on how you position your communication to the community at large, it is important to step out of your role in the business/organization and put yourself in the situation of whom ever was involved in the crisis or try to view the crisis from the eye of the public. Ignoring the situation will only make things worse.

Examples of categories to consider for positioning are:

- Human error
- Clerical error
- Unauthorized procedures
- Inadequate supervision
- Inadequate quality control
- Misuse of confidential information
- Errors of judgment
- Inadequate standard operating procedures

As you are considering your "position" it is important to consider the wide range of consequences (e.g., legal, financial, public relations, effects on administration, effects on operations). Keep in mind that people tend to remember what they hear first and last.

News Media

If the incident is serious, then the news media will be on scene or calling to obtain details. There may be numerous requests for information from local, regional or national media. The challenge of managing large numbers of requests for information, interviews and public statements can be overwhelming. Prioritization of requests for information and development of press releases and talking points can assist with the need to communicate quickly and effectively.
Develop a company policy that only authorized spokespersons are permitted to speak to the news media. Communicate the policy to all employees explaining that it is best to speak with one informed voice.
Determine in advance who will speak to the news media and prepare that spokesperson with talking points, so they can speak clearly and effectively in terms that can be easily understood.

Designated Spokesperson

One individual should be designated as the primary spokesperson to represent the Company, make official statements and answer media questions throughout the crisis. A backup to the designated spokesperson should also be identified to fill the position in the event that the primary spokesperson is unavailable.
In addition to the primary spokesperson and the backup spokesperson, individuals who will serve as technical experts or advisors should be designated. These resources might include a financial expert, an engineer, a leader in the community or anyone your organization deems necessary during a specific kind of crisis. This will take some brainstorming by the crisis communication team since what is needed may not always be apparent. There should be an authority or technical expert in their field and be available to supplement the knowledge of the spokesperson.
Criteria for the spokesperson, backup spokesperson and crisis communication expert is:

- Comfortable in front of a TV camera and with reporters. Preferably, skilled in handling media, skilled in directing responses to another topic, skilled in identifying key points, able to speak without using jargon, respectful of the role of the reporter, knowledgeable about the organization and the crisis at hand
- Able to establish credibility with the media, able to project confidence to the audience, suitable in regard to diction, appearance and charisma, sincere, straightforward and believable, accessible to the media and to internal communications personnel who will facilitate media interviews, able to remain calm in stressful situations.

In addition to the designated spokesperson and backup, it can be anticipated that other parties involved in the crisis; police, fire department, health officials, etc., will also have a spokesperson. It is important to obtain the

identity of that individual as early as possible so all statements and contacts with the media can be coordinated between the two individuals and their organizations/interests whenever possible.

Practicing Tough Questions

A crisis situation is always difficult when dealing with the media. Therefore, tough questions and rehearsals are necessary to help the spokesperson prepare.

It is important, at the onset of the crisis, that the spokesperson, backup and advisors spend some time rehearsing prepared statements and answers to possible "tough" questions that may be asked by reporters. If possible, similar rehearsals should be conducted prior to each media interview, briefing or news conference. It is also important to anticipate and practice new questions as the story evolves. It is better to over prepare than to be surprised by the depth of questioning by the media.

The designated spokesperson should prepare questions and answers for the practice sessions. These questions and answers should be for internal use only and not for distribution outside the organization. Don't volunteer information unless it is a point the organization wants to make and the question hasn't been asked. Don't talk off the record.

Prepared Statements

If you don't communicate immediately, you lose your greatest opportunity to control events. Your first news release should include at a minimum the who, what, when and where of the situation.

You must give the facts that have been gathered from reliable sources and confirmed. Don't over reach and don't speculate. If you do nothing more than show concern for the public and for your employees in your first press interaction, you are already on the right track. The corollary of expressing concern and generating good will at the consumer level is securing the loyalty of your customers and employees by taking the initiative to share information with them. If your employees and customers don't feel like insiders, they are going to act like outsiders.

You must have a prepared statement on hand that can be used to make an initial general response to the media when knowledge about the crisis first becomes known on a widespread basis or by reporters. As the crisis progresses and new information and facts become available, it is also advisable to develop prepared statements to be made by the spokesperson at the onset of any media interview, briefing or news conference. These prepared statements also can be read over the telephone to reporters who call to request information but are not represented at news conferences or briefings. The statement can also be sent by e-mail or posted on the organization's Web site or appropriate social media account.

Messaging

During and following an incident, each audience will seek information that is specific to them. "How does the incident affect my order, job, safety, community…?" These questions need to be answered when communicating with each audience.

After identifying the audiences and the spokesperson assigned to communicate with each audience, the next step is to script messages. Writing messages during an incident can be challenging due to the pressure caused by "too much to do" and "too little time." Therefore, it is best to script message templates in advance if possible. Pre-scripted messages should be prepared using information developed during the risk assessment. The risk assessment process should identify scenarios that would require communications with stakeholders. There may be many different scenarios but the need for communications will relate more to the impacts or potential impacts of an incident:

- accidents that injure employees or others
- property damage to company facilities
- liability associated injury to or damage sustained by others
- production or service interruptions
- product quality issues

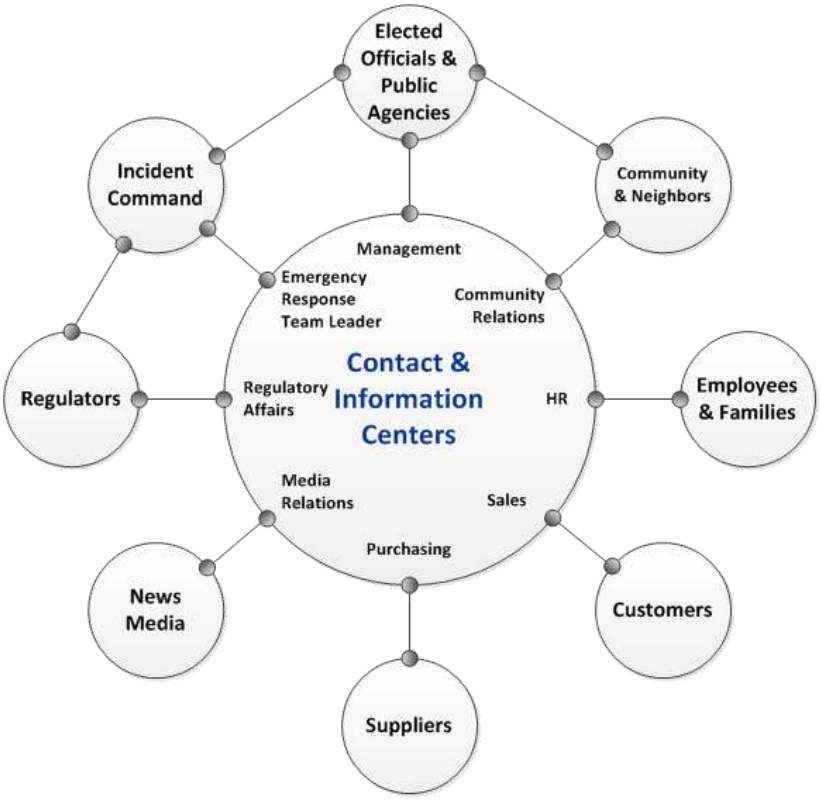
Messages can be pre-scripted as templates with blanks to be filled in when needed. Pre-scripted messages can be developed, approved by the management team and stored on a remotely accessible server for quick editing and release when needed.

Another important element of the crisis communications plan is the need to coordinate the release of information. When there is an emergency or a major impact on the business, there may be limited information about the incident or its potential impacts. The “story” may change many times as new information becomes available.

One of the aims of the crisis communication plan is to ensure consistency of message. If you tell one audience one story and another audience a different story, it will raise questions of competency and credibility. Protocols need to be established to ensure that the core of each message is consistent while addressing the specific questions from each audience.

Another important goal of the crisis communications plan is to move from reacting to the incident, to managing a strategy, to overcome the incident. Management needs to develop the strategy and the crisis communications team needs to implement that strategy by allaying the concerns of each audience and positioning the organization to emerge from the incident with its reputation intact.

Communications before, during and following an emergency are bi-directional. Stakeholders or audiences will ask questions and request information. The business will answer questions and provide information. This flow of information should be managed through a communications hub.



Contact and Information Centers form the “hub” of the crisis communications plan. The centers receive requests for information from each audience and disseminate information to each audience. Employees from multiple departments may be assigned to communicate with a specific audience.

The “contact center” fields inquiries from customers, suppliers, the news media and others. The contact center should be properly equipped and staffed by personnel to answer requests for information. The staff working within the contact center should be provided with scripts and a “frequently asked questions” (FAQ) document to answer questions consistently and accurately.

The “information center” consists of existing staff and technologies (e.g., Web site, call center, bulletin boards, etc.) that field requests for information from customers, employees and others during normal business hours. The information center and its technologies can be used to push information out to audiences and post information for online reading.

The crisis communications team, consisting of members of the management team, should operate in an office environment to support the contact and information centers. The goal of the crisis communications team is to gather information about the incident. This should include monitoring the types of questions posed to call center operators or staff in the office; emails received by customer service; social media chatter or stories broadcast by the news media. Using this input, the crisis communications team can inform management about the issues that are being raised by stakeholders. In turn, management should provide input into the messages generated by the crisis communications team. The team can then create appropriate messages and disseminate information approved for release.

Resources for Crisis Communications

Resources should be available within the primary business site and provisions should be made to set up similar capabilities within an alternate site in case the primary site cannot be occupied.

- Telephones with dedicated or addressable lines for incoming calls and separate lines for outgoing calls
- Access to any electronic notification system used to inform employees
- Electronic mail (with access to "info@" inbox and ability to send messages)
- Access to company Web site to post updates
- Access to social media accounts
- Access to local area network, secure remote server, message template library and printers
- Hard copies of emergency response, business continuity and crisis communications plan
- Site and building diagrams, information related to business processes and loss prevention programs (e.g., safety and health, property loss prevention, physical and information/cyber security, fleet safety, environmental management and product quality)
- Copiers
- Forms for documenting events as they unfold

The sources for this outline were *Crisis Communication Plan* (www.ready.gov) and *Crisis Communication Plan: A PR Blueprint* (www.newsplace.org/crisis). Additional resources for Crisis Communication Strategies:

10 Steps of Crisis Communication, Jonathan Bernstein (2013)
Crisis Communications: A Primer for Teams, Al Czarnecki (2007)
You'd Better Have a Hose if You Want to Put Out the Fire: The Complete Guide to Crisis and Risk Communications, Rene A. Henry (2001)

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 4

Recommended Reading List for Parking Professionals

2016 RECOMMENDED READING LIST FOR PARKING PROFESSIONALS

Each year Kimley-Horn updates its recommended reading list for parking professionals. This year'supdate includes several new additions in the areas of sustainability and urban planning.

Be sure to check out the new additions to the RECOMMENDED WEB-PAGES!

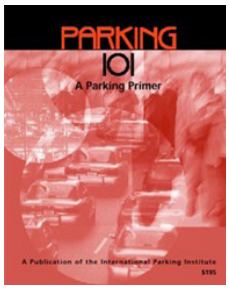
Kimley»Horn

Expect More. Experience Better.

2016 Reading List

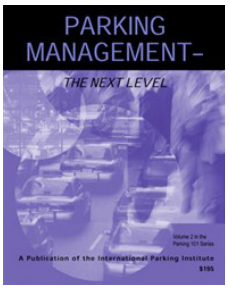
The following is a basic bibliography of good parking planning, general management and marketing texts that can enhance your management capabilities and your specific knowledge of important parking and transportation topics:

PARKING PLANNING



01

Parking 101, A Parking Primer – International Parking Institute, 2002



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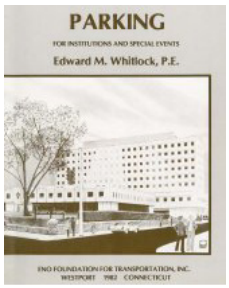

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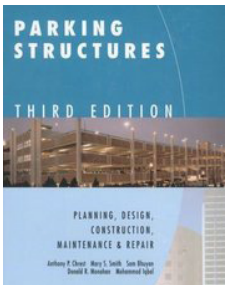

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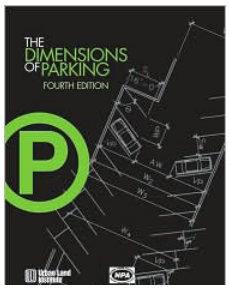

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The Dimensions of Parking – Various Authors, Copyright – The Urban Land Institute and National Parking Association, Fourth Edition, 2000

06

Parking Generation – Institute of Transportation Engineers, ITE Publ. No. IR-034A, 2nd Edition, 1987

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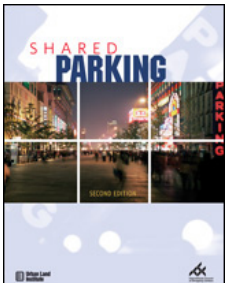
The Parking Handbook for Small Communities – National Trust for Historic Preservation / Institute of Transportation Engineers, 1994



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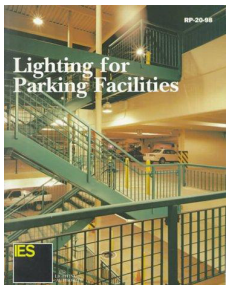

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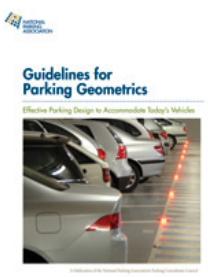

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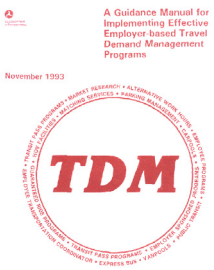

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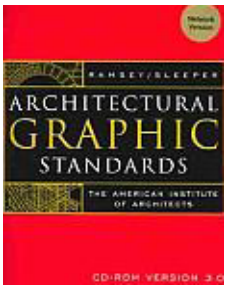

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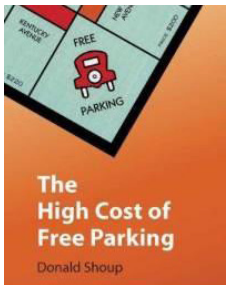

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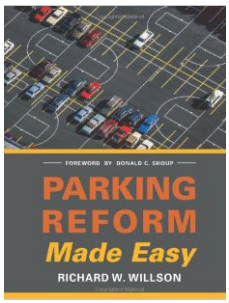

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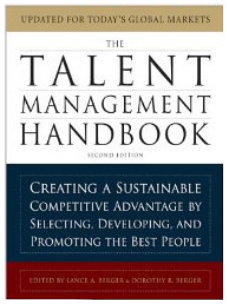
GENERAL MANAGEMENT



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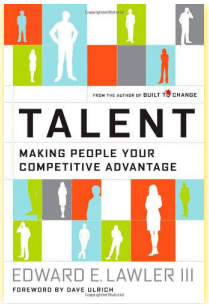

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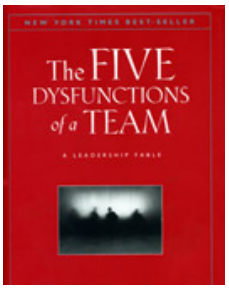

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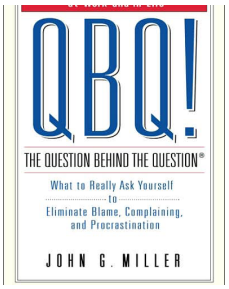

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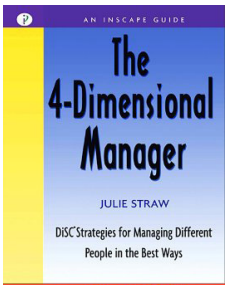

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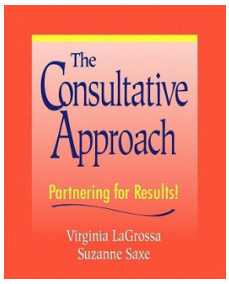
The 4-Dimensional Manager: DiSC Strategies for Managing Different People in the Best Ways – Julie Straw, Berrett-Koehler Publishers, Inc., 2002



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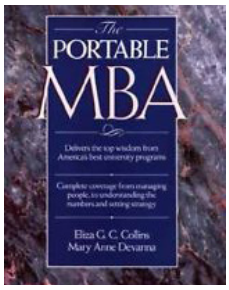

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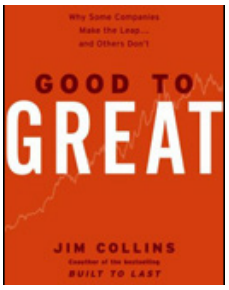

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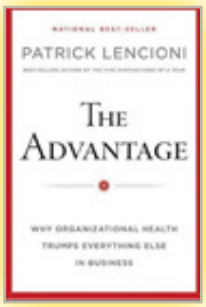

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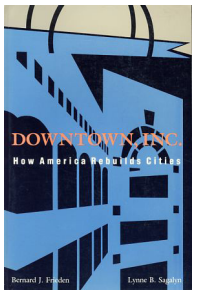

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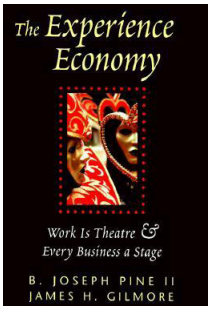

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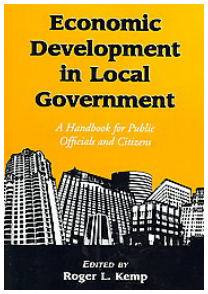

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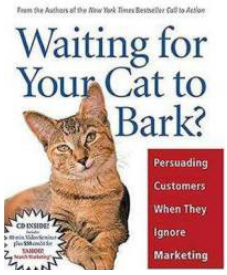

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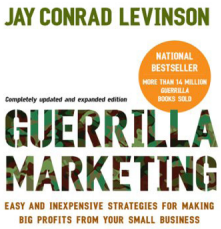

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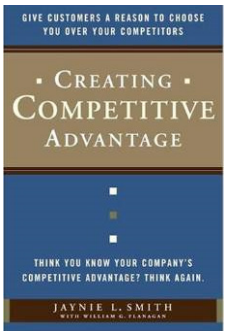

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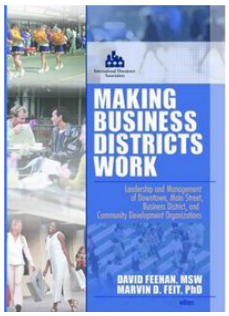

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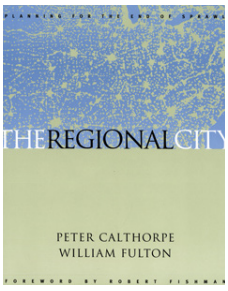

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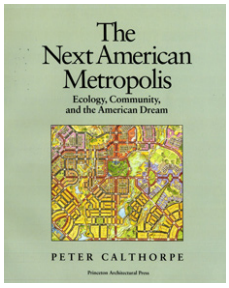

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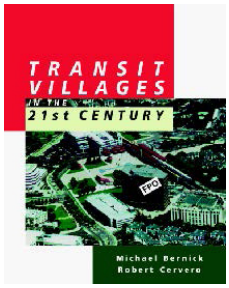

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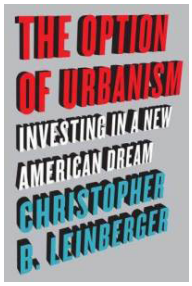

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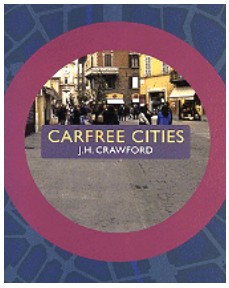

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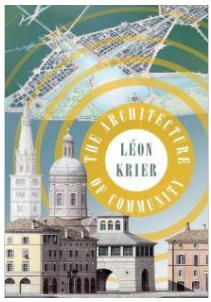

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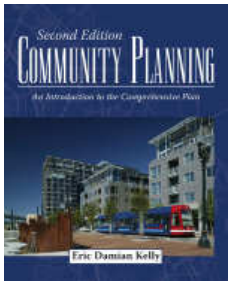

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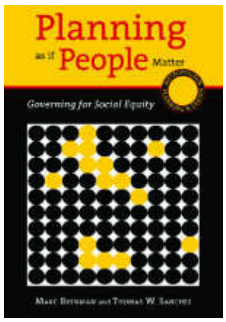

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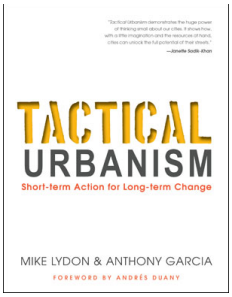

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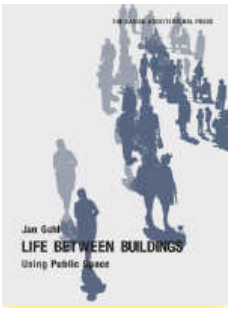

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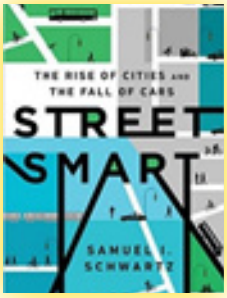

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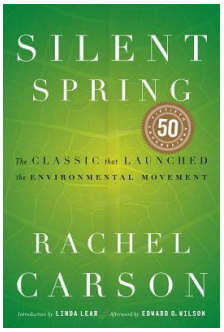

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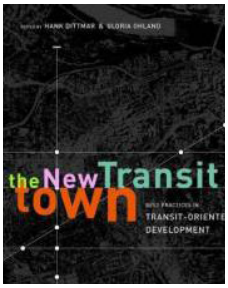

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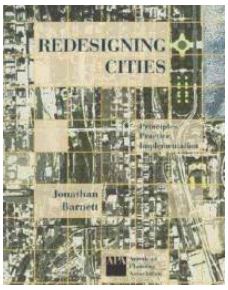

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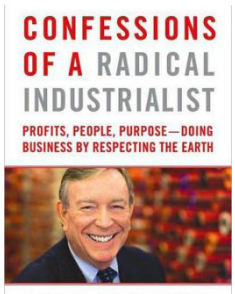

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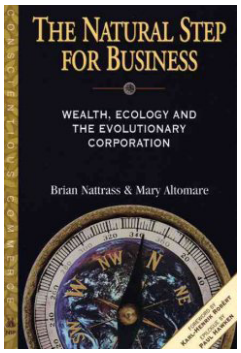

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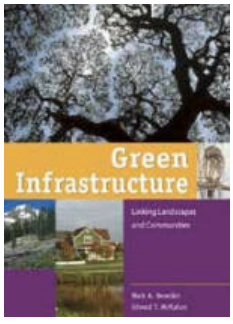

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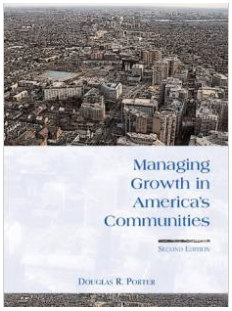

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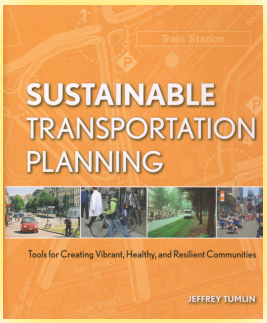

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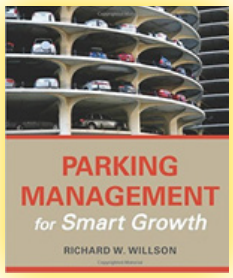

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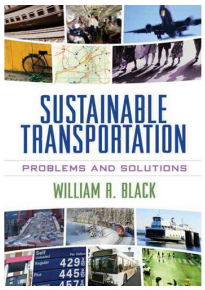

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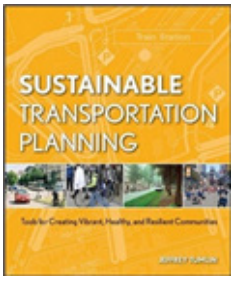

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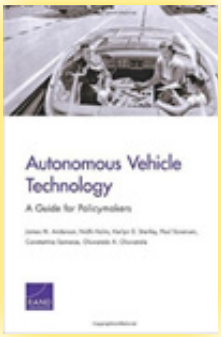

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DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 5

Accredited Parking Organization Program Manual

ACCREDITED PARKING ORGANIZATION

ACCREDITED PARKING ORGANIZATION℠ PROGRAM

MANUAL FOR APPLICANTS

Second Edition, May 2016

IPI INTERNATIONAL PARKING INSTITUTE℠

Advancing the parking profession℠

ACCREDITED PARKING ORGANIZATION PROGRAM

MANUAL FOR APPLICANTS

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INTRODUCTION

Welcome to the Accredited Parking Organization (APO) Program, IPI's newest credential, which establishes a benchmark of the quality by which a parking management organization conducts its business and maintains its facilities and services. An APO designation assures the public that a parking program meets national and internationally endorsed standards for professionalism, accountability, creativity, responsibility, and performance.

The parking industry's sectors include institutions, colleges, and universities; health services and medical centers; airports and intermodal transport hubs; municipalities; and office buildings, shopping centers, and other private facilities. All large and small, full- and partial-service organizations will share a single accreditation format that recognizes areas of advanced and exemplary services and innovations, as well as entrepreneurial spirit.

One of the goals of accreditation is to inspire organizations to improve their programs, facilities, services, and results continuously. By undertaking this process, your organization demonstrates its commitment to ongoing evaluation and improvement of program outcomes through the implementation of industry best practices.

Why Your Organization Should Become an APO

Until now, there has been no centralized accreditation or quality measurement system for parking organizations; rather, parking organizations have created and maintained their own standards and promoted them as good and effective—rather than "industry best"— practices. While this has been successful in gaining some recognition for individual programs, it has not encouraged the emergence of a unified brand or concept of a parking product that has positive effects in the minds and imaginations of customers and stakeholders.

The process of becoming an APO engages managers and staff in research and strong progress toward learning and adopting industry best practices and focuses organizations on the continuous improvement of internal efficiency and profitability.

It also promotes continuous development and improvement of industry products and services in a manner that is generally recognized by industry peers, internal and external administrators, and the general public. This will result in improved facilities and services as well as improved utilization and revenues.

Becoming an APO

1. Understanding APO Standards and Best Practices

Accreditation is the final act for a program that compares and measures existing practices against objective standards, resulting in a measured validation that certifies competency, authority, and/or credibility.

Standards are formal documents that establish uniform criteria, methods, processes, and practices related to a given activity or industry. Primary standards define the key characteristics of an individual item or practice and are supported by a hierarchy of secondary, tertiary, and check standards. A custom, convention, or corporate practice that becomes generally accepted and dominant is often referred to as a de facto standard.

Jeremy Brooks

Standards may be developed privately or unilaterally by a corporation, trade or occupational group, regulatory body, military, or other authoritative source. They may be developed by edict or a formal consensus of technical experts and usually are retained in the custody of a national or international standards body created expressly for that purpose.

International standards are directly imposed by an authoritative international governing body and sometimes are modified to suit local conditions; equivalent, national standards may differ somewhat in appearance, use of language, and definitions. They may reflect conflicts in governmental regulations or industry-specific requirements caused by geographical, technological, or

infrastructural factors, or the stringency of a given authority. International standards represent one method of overcoming barriers in international commerce caused by differences among nations or economic regions.

Best practices are methods or techniques that yield consistently superior results in public policy and business management activities. Used in nearly every industry and professional discipline, they serve as benchmarks of standardized ways of doing things that continue to evolve as improvements are discovered. Best practices often are used as an alternative to mandatory legislated standards and can be based on self-assessment, peer assessment, or formal benchmarking. Prior to becoming a "best" practice, a particular activity might be described as a smart, good, or promising practice. These best practices are the backbone of formal accreditation programs.

2. Why Standards Are Important

Standards form the fundamental building blocks for product and service development by establishing consistent practices and protocols that can be universally understood and adopted. This helps fuel compatibility and interoperability between products and services; in manufacturing, they simplify product development and speed time-to-market; in service industries, they simplify delivery techniques and form consumer expectations. Standards make it easier to understand and compare competing services. They propel the development and implementation of the products, services, technologies, and economics that influence and transform the way we live, work, and communicate.

At a consumer level, standards provide a safety net for many areas of our individual experience. They remove consumer anxiety by informing us about the reliability and fitness of the goods and services we buy and use, offer us greater choice, and instill confidence in the businesses we patronize. At a service-supplier level, standards provide clear guidelines toward targets that reflect best practices and offer protection from lesser rivals who might otherwise damage an industry's reputation. They provide an excellent selling point and a benchmark that can be used for communicating the specification and characteristics of a product, service, or system. They help explain improvements and innovations, and offer a competitive advantage by making it easier, cheaper, and more efficient to produce and sell industry products and services, both locally and internationally.

A good example of the power of standardization is the Global System for Mobile Communications (GSM) mobile communication technology network and its successors (3G, 4G, etc.). Although GSM originated in Europe, the technology has been adopted worldwide, helping travelers to communicate about and use familiar services globally.

While modern society views standardization as a given in technological fields, consumers and service providers are less accustomed to applying standards to everyday services. The parking industry has matured rapidly and possesses an entrepreneurial spirit. While these characteristics lend great vitality and value to the industry, the absence of generally accepted standards creates a gap between what customers expect and what the industry can deliver. By establishing standards for facilities and service delivery, we create a level playing field for the industry that assures customers and stakeholders of the highest quality.

3. What the APO Standard Represents

The APO standard for parking facilities and services represents the industry's best efforts to collect, assemble, and develop a reputation for achieving higher levels of quality and professionalism. It verifies that the accredited organization has achieved an established level of organization, delivery, and performance best practices within the top 30 percent of the global parking industry. Accreditation with Distinction indicates that the organization has achieved standing in the top 5 percent of the global industry.

The APO program is intended to be both a visionary, guiding standard and a day-to-day performance standard that is achievable by all industry organizations. Based on the scope and scale of individual organizations operating in different environment and service sectors, the program reinforces the industry training and professional certification initiatives developed by IPI and available to the industry worldwide.

The APO designation is awarded at the Accredited or Accredited with Distinction level. For the APO program launch in 2015, organizations were eligible to submit for the Accredited level. Those organizations were then eligible to submit for the Accredited with Distinction level after January 1, 2016. As of January 1, 2016, organizations may apply for either APO or APO with Distinction. Those organizations that wish to pursue APO, and then APO with distinction at a later date, will be permitted to do so through a new application. This manual is constructed to include both levels to educate and inform organizations that wish to pursue the accreditation.

Applicant organizations will be asked to gather and transmit information as objective evidence of attainment of the accreditation standard they are seeking, and to work with a third-party site reviewer to organize and present evidence that demonstrates accomplishment of each required item. A series of nominal fees will apply to process the application and sustain the program. The reviewer will visit the applicant site and work through the evidence to determine suitability, and whether the evidence item is material (applicable or not applicable) to the application. Based on the reviewer's recommendation, IPI, through its APO governance process, may award the APO designation at the appropriate level.

The APO program is designed to evolve and become more demanding over time, in accordance with industry practices. It will continue to "raise the bar", facilitating and encouraging continuous improvement in the industry.

4. The APO Board

The APO standard is trademarked (international) and is the intellectual property of IPI. The IPI Board of Directors has established the APO Board to provide oversight and strategic direction for the APO program. The APO Board ensures and supports the development and maintenance of industry standards representing the highest level of professionalism and competency. The Board is responsible for maintaining a benchmark of excellence for the industry and provides a means for parking and transportation organizations to demonstrate their proficiency and competency and be recognized by their peers, employees, employers, regulatory agencies, customers, and the public.

The accreditation standard will be amended and updated every three years, or as may be required by the ongoing evolution of the industry. Amendments or change to the standard will be made at the sole discretion of IPI and its governing bodies.

5. Eligible Organizations, Definitions, and Summary of Criteria

Eligible Organizations

Parking Organization – A parking organization is an entity that operates, manages, owns or leases parking facilities (defined as: parking lot(s), garage(s), ramps, carparks, etc. and on-street parking spaces).

> *Example: ABC airport has parking that is close to the airport and also runs multiple airports within the state. Application Fee ($250); Accreditation Fee ($2,500).*

Multi-Site Parking Organization – A parking organization may operate, manage, own or lease parking sites that are not in close physical proximity. Despite geographic distance, sites are managed with common policies and procedures by the same parking organization. In this case, they may be included in the same APO application.

> *Example: ACME University operates, manages, owns or leases parking facilities that are not in close proximity, for instance in separate cities. Application Fee ($250); Accreditation Fee ($3,500, including first three facilities) plus $500 per additional facility.*

Criteria for APO

- Meets 100% of the *required* criteria in Section 1 of the APO Matrix.
- Meets 80% of the remaining criteria in Section 1 of the APO Matrix.
- Has at least one facility meet 80% of criteria in Section 2 of the APO Matrix (Onsite Review as part of Site Visit). May submit up to three facilities as part of documentation; additional facilities may be added per the fee schedule.
- Payment of Accreditation fees, including $250 application fee, and $2,500 for three year accreditation period. Additional facilities (in addition to the first three) are $500 per facility. *These are IPI member rates, additional fees apply for non-members.*
- Complete facility review documented by IPI-approved APO Site Reviewer. *Fees negotiated separately between applicant and site reviewer.*
- Once all of the above criteria have been met and the APO Board has formally granted APO status, applicant will be notified of the successful APO pursuit, and may use the APO logo.

ACCREDITED PARKING 2016-19 ORGANIZATION

Criteria for APO with Distinction

- Meets all of the criteria for APO as detailed above.
- In addition, meets 80% of the APO *with Distinction* criteria in Section 1 of the APO Matrix.
- Once APO and APO with Distinction criteria have been met and the APO Board has formally granted APO with Distinction status, applicant will be notified of the successful APO pursuit, and may use the APO with Distinction logo.

Length of Accreditation

The initial accreditation term is valid for three years. The re-accreditation term is valid for one, three-year term, and APOs will be provided with a streamlined application process for recertification. Upon completion of the streamlined re-accreditation application, payment of $1,500 fee, and formal approval, the applicant's APO status will be extended for the three-year period.

After six years, a new application (based on the subsequent editions of the APO Manual for Applicants and APO Matrix) needs to be submitted with current applicable fees.


@first_sight

Additional Facilities

Should an APO organization wish to add facilities during either their initial three-year certification term, or recertification three-year term, they may do so by having those facilities undergo a facility review, meet the accreditation criteria, and pay $500 per facility. Regardless of when additional sites are submitted, the initial (or recertification) accreditation term stands for the APO and any related facilities.

> *Example: XZY municipality earned the APO in 2016. Their initial accreditation term is through Dec. 31, 2019. In 2017 they want to add two additional facilities. Adding the additional two facilities in 2017 does not extend their initial accreditation term to 2020; it remains Dec. 31, 2019.*

APO Premier Facility

As an additional benefit, facilities meeting the accreditation criteria under Section II of the APO Matrix and formally recognized by the APO Board may display the APO Premier Facility logo on their website and at each facility having undergone the facility review and meeting the accreditation criteria.

> *Note: Even though a parking organization may successfully achieve APO status, parking facilities that are not inspected nor evaluated against the APO Section 2 requirements as part of the APO application, or fail to meet the APO criteria, may not be marked as a Premier Facility. Marking or branding a facility as a Premier Facility, or as an APO site, without meeting these requirements may result in the parking organization losing its APO status.*

6. Getting Ready for Accreditation

An organization is ready for accreditation when it has adopted applicable recognized best practices and gathered evidence to demonstrate and benchmark these practices. Several industry publications and resources are available to assist potential applicants in preparing for the accreditation matrix, including but not limited to:

- *Parking 101: Parking Primer, Volume 1*, International Parking Institute
- *Parking 101: Parking Management: The Next Level, Volume 2*, International Parking Institute
- *Parking 101: Parking Management: Planning, Design and Operations, Volume 3*, International Parking Institute

- *What's What in Parking Technology, Second Edition*, International Parking Institute
- *Sustainable Parking Design & Management: A Practitioner's Handbook*, International Parking Institute
- *The Parking Professional* magazine
- CAPP Resource Guide
- www.parking.org

7. The Matrix

IPI freely distributes copies of the current APO matrix to guide applicants. To help applicants prepare for the process, the APO matrix is provided to applicants and online at parking.org/apo. Applicants are encouraged to share the matrix with other organizations interested in becoming accredited. It is divided into sections which can be delegated to a management team tasked with assembling the evidence, and then reassembled for inspection and reporting. During evidence preparation, the evidence-collection team corresponds with their selected reviewer to determine what evidence is required and which may not be applicable to their particular program. The reviewer will collect formal and informal evidence and make a complete copy for the applicant following the site review and before submitting evidence and recommendations to the APO governing authority.

8. The Role of the Reviewer

Each applicant will be required to seek a qualified, authorized, site reviewer to confirm their facts and specifics of their application and provide a report to the APO Board supporting their request for accreditation.

Review services, available from IPI-approved providers, include, site reviews- and accreditation recommendations. Most review service providers retain a number of trained and certified reviewers to assist organizations in pursuit of accreditation. In preparation for their review, organizations are encouraged to contact a reviewer to initiate a services agreement with one of these groups. IPI will provide current contact information regarding skilled and trained individuals at parking.org/APO.

In consultation with a reviewer, each organization will be guided in assembling the required evidence necessary to achieve the desired level of accreditation. Evidence may be gathered and transmitted to the reviewer in a variety of ways; however, electronic copies of all evidence documents must be sent to APO via an electronic file retention or transfer process before any accreditation recommendation can be made.

When all evidence is gathered remotely, the reviewer will visit the sites and programs to verify the evidence's accuracy and completeness independently, and will identify the correct level of achievement. All completed evidence collections, site-visit attestations, reports, and electronic images must be submitted by electronic means to the APO Board for affirmation and granting the APO. These electronic records will be securely maintained for documentation purposes, but will remain confidential and will not be disclosed to any person or organization other than the applicant, APO Board, or IPI staff. The reviewer's organization will charge a fee paid directly to the reviewing organization, to be negotiated under separate contract between the applicant and reviewing organization.

Every country, state, or region, parking facilities require a qualified, trained, and objective third-party visual assessment of their facilities and services to verify achievement of the accreditation standard. The desire to keep costs as low as possible and integrate the accreditation standard into efficient local practices necessitates that site review services be available locally. IPI has developed specialized training for local and national firms to deliver review services within a reasonable distance of most urban centers, allowing applicants to source their reviewer close to home.

All reviewers are trained and granted qualification by IPI based on their performance in APO training seminars and examinations that focus on accreditation best practices. Companies offering review services can be contracted for services leading up to and including the final APO site-visit review. Consultant or other IPI member organizations may offer review services as part of their own regular service packages, at rates they determine, provided that all reviewers are trained and approved by the APO Board and all reviewer quality practices are observed. Conflicts of interest that are not permitted include current employment and family relationships with the leadership team of the applicant organization. If an applicant organization wishes to pursue the APO designation, an objective third-party reviewer must be selected.

Reviewers hold their certification at the discretion of the APO Board, and those who provide questionable or substandard services in any aspect of their duties may have their approval revoked at any point. APO designations based on questionable review practices may be re-opened and re-examined subsequent to any withdrawal of reviewer certification.

9. Demonstrating Accomplishment of Best Practices

Organizations will be asked to gather, transmit, and retain objective and documentary evidence to support all of their claimed accomplishments. It is understood that different organizations may use different documentation methodologies, and that some of the evidence may be non-specific or visual in nature. If evidence is non- specific and/or submitted as an equivalent substitute for the documents, the equivalent must be demonstrated to the satisfaction of the reviewer and, ultimately, the IPI APO Board. All supporting evidence must be retained and transmitted to IPI by an approved site reviewer for custodianship prior being accepted. A detailed description of the evidence required by the APO Board follows.

Once IPI has reviewed all materials, IPI may grant accreditation. An organization is considered accredited when it receives the affirmation letter and certificate from IPI, accompanied by award displays, permissions, and instructions for communications with the public. The accreditation is conferred by IPI and may be upgraded or revoked at IPI's sole discretion at any time for any cause, including a shortfall in new achievements or performance.

10. Scope and Scale of the Organization

The APO Matrix assumes a complete and full-service organization that performs in all areas of parking management. If an applicant does not participate in some areas of parking management (i.e., operating parking garages), the applicant should identify that item or section as "not applicable" and mention this to the reviewer for consideration. Affirmation that the item is not applicable by the reviewer and the APO Board will exclude it from the score and nullify any negative effect.

Applicants are encouraged to use the checklist to implement change in their organizations. When applicants approach completing the matrix, they should contact their reviewer to examine any areas of real or suspected non- applicability or non-compliance. It is recommended that applicants do not schedule a reviewer visit until all required items are addressed and all evidence is gathered and verified to be correct and complete via the preliminary telephone meeting process.

11. Criteria and Documentation

This document identifies more than 150 industry best practices and program features that are present in modern institutional, municipal, medical, university, airport, private, and other parking programs around the world.

IPI recognizes that the parking industry is broad and entrepreneurial in scope and scale, and diverse in the way it approaches daily management challenges; what is a natural administrative solution for one program is often impossible for others. Accreditation seeks to define a common theme by emphasizing what is accomplished, rather than prescribing how it should be done.

To satisfy each item, the applicant is required to present clear, objective, and documented evidence that speaks directly to their claim. As an example, if the accreditation matrix requires a mission statement containing references to financial clarity and customer service, the applicant may submit a notarized or authorized current statement satisfying these requirements. This may be presented to the reviewer and APO Board in the form of an operating charter, internal planning document, internal communication document or email, published website, or other definitive public communication.

Other acceptable formats for communication of standards include:

- Internal documents, letters, emails, manuals, internal descriptions, or statements of objectives and standards of service delivery.
- Diagrams, illustrations, organization charts, flow charts, photographs, or other graphically definitive presentations.
- External third-party audits or opinions, "out of department" reports, letters or emails, web pages, or other objective electronic or hard-copy documents that describe a task or a function and demonstrate that the principle and function requested in the matrix is regularly occurring in the parking organizational unit.

Where varying evidence formats are presented, the reviewer will advise regarding the acceptability of the evidence provided.

12. Accreditation

There are 25 elements in the Standard that are required. All organizations seeking the APO designation must achieve 100 percent of these items.

Organizations must accomplish 80 percent of the 131 individual criteria to earn the APO designation. Accreditation at this level signifies that the organization has developed a solid and well-rounded parking program that exhibits all of the key practices in use in the global industry, and falls within the top 30 percent of all operating organizations.

It is important to note that the parking facilities and services industry evolves rapidly, with new program elements being constantly developed. Concepts move on to become advanced practices and, ultimately, "best practices" that empower and enable administration and operations in a variety of environments.

Working with experts in each environment and service sector, IPI has assembled these key elements into an aggregate suite of key attributes or best practices that are followed by progressive and leading service providers worldwide. These practices are considered essential to achieve recognition as a progressive provider, and the standard reflects a requirement of 80 percent compliance to achieve accredited status. This level of achievement identifies a facilities and services program as representing a strong mix of regulatory and business acumen, technological sophistication, service and contribution to the host community, and service to customers and stakeholders, as appropriate to the environment and service sector.

13. Required Criteria

The following elements are marked "Required" on the matrix and must be achieved for an organization to earn accreditation.

1.1 Provides a copy of official documentation that defines a contract, charter, ordinance or enabling legislation.

1.2 Provides documentation showing governance hierarchy (Board of Directors/ Executive Director roles, responsibilities, terms, and relationships) is current; and policy-making authority, process, record-keeping, and decision-making are transparent.

2.1 Provides current documentation stating short- and long-term goals and identifying measurable objectives and timelines for achievement.

2.3 Planning includes an annual or multi-year budget and financial projection, with periodic tracking and analysis, and coordinated with related community or institutional planning entities.

3.1 Mission and Vision or other guiding statements address financial principles, such as transparency, accountability, and responsibility.

3.2 Produces and maintains an annual budget and projects a future (three or more years) financial planning document.

4.1 Commitment to service is identified and detailed in mission and/or vision statements.

4.4 Provides and maintains a proactive customer-service training program for all staff.

5.1 Provides all staff with an employee handbook, or equivalent document(s) identifying roles, tasks, responsibilities, operational policies, and procedures.

5.3 Maintains current job descriptions for each position, and files training documentation for regular staff.

6.1 Maintains effective access and revenue control plan for all facilities and services.

7.1 Demonstrates that regular onsite inspections are an integral part of facility maintenance.

7.7 Performs condition assessments by a qualified structural engineer, who conducts a walk-through inspection (annually).

8.1 Documents current compliance goals designed to encourage voluntary compliance.

8.2 Regulations and processes related to enforcement and appeals are transparent and available to the public.

9.1 Outlines safety and security philosophy in organization objectives and values.

9.3 Maintains SOPs or manuals and conducts testing, drills, and emergency communication procedures (i.e., 911, police, fire, administration, supervision.)

10.1 Demonstrates a strategic commitment to environmental sustainability.

10.2 Demonstrates implementation of sustainable practices showcasing a direct reduction in energy or resource use.

11.1 Demonstrates a commitment to reducing or distributing travel demand.

12.1 Develops and maintains a communications and marketing plan that supports the program's larger strategic goals.

12.3 Annual budget includes dedicated funding for communication and marketing activities.

13.1 Has a defined policy for protecting sensitive data and retaining or destroying secure data.

13.10 All equipment and services purchased are certified as PCI-DSS- or PA-DSS-compliant.

14.1 The applicant maintains active contracts with external service providers.

14. Accreditation with Distinction

Many organizations employ leading and progressive advanced practices and vision and innovation that go beyond the broad acceptance level required for accreditation. IPI seeks to recognize, support, and celebrate these fast-forward concepts with a higher tier of accreditation. To qualify for Accreditation with Distinction, organizations must achieve 80 or more points out of an additional 86 exceptional or advanced practices. Organizations that meet this threshold demonstrate accomplishment in the top five percent of the industry.

As of January 2016, new applicants may choose to submit at the Accredited or Accredited with Distinction level. IPI encourages organizations pursuing accreditation under this program to consider both levels when preparing for review documentation and site visits by the selected site reviewer.

Visionary and innovative programming is being developed on a small scale constantly, so advanced-standard concepts will be updated every three to five years as the industry progresses. Future best practices will be recognized as advanced achievements and may become best practices as they reach broad acceptance. To retain either level of recognition, APO's must advance and maintain standards current in the year of assessment or renewal.

15. When an Organization's Scoring Falls Short

The APO program's goal is for every applicant to attain the standard at the appropriate level. While some organizations may accomplish the APO standard quickly, others may take longer to gain the required experience and evidence. Organizations that have not yet attained the required level of experience and evidence are encouraged to persevere. With effort and commitment, every parking organization can obtain accredited status.

Organizations that do not achieve the necessary performance standards on first assessment will be debriefed by their reviewer on results and shortcomings, and given a list of accomplishments required to achieve accreditation. Based on the scope or scale of the organization being assessed and its location or service sector, some elements of the APO matrix may not be appropriate. In this instance, the reviewer will formally identify these items as not applicable and provide the necessary justification to the APO Board for this request.

16. Appeals

Organizations that do not achieve accreditation and wish to present an objection to IPI may address their concerns to the APO Board. Frivolous or opportunistic appeals will not be considered. Appealing organizations should be prepared to present evidence detailing why their site reviewer's recommendation or IPI's final decision should be re-evaluated. The Board will review the submission and render a final decision or recommendation within 60 days of receipt of the appeal.

Chris Chapman Photography

17. Promoting Your Accreditation

After notification of accreditation, IPI provides a comprehensive package of benefits and support for the organization, to include certificate, plaque, permission to use the APO logo, and branding guidelines. In addition, IPI will provide ongoing support and visibility through its website and multiple platforms. Accredited organizations hold the designation for a three-year period, and for subsequent years following successful renewal. Benefits include, but are not limited to:

- Provision of a branding and identity package, which includes use of the APO logo (dated for the specific years of the accreditation) to display on marketing and business collateral, websites, letterhead, business cards, facility signs, plaques, uniforms, and other visible public areas (samples and electronic formats provided).
- Press release by IPI showcasing the organization's achievement in national media and template for use by the APO to local media.
- Recognition at the annual IPI Conference & Expo, awarding a certificate and plaque showcasing the organization's Accredited status.
- Identification at the appropriate level of accreditation in IPI documents.
- Highlighted status on the IPI website parking.org.
- Public relations support through IPI programs such as Parking Matters® and Awards of Excellence.

18. Renewal

Once granted, the APO designation is good for three years, after which it will lapse and trigger a renewal process. The APO Board may choose to provide an expedited review process based on the prior submission, depending on improvements to the APO Program over that three-year period. Applicants will be informed of these changes at least six months prior to the expiry date of their accreditation to allow sufficient time for review and resubmission requirements.

After the first three-year cycle and successful renewal for the second three-year period, a full examination of documents, site review, and recommendation will be necessary to re-award the APO designation.

19. Fees

Participation fees to support the APO program are listed below, and may be adjusted annually. Reviewer fees will be contracted separately between the applicant and reviewing agency. The application fee will be paid to IPI when the request to pursue accreditation is submitted via the form posted on the website. The APO fee will be paid to IPI when the full application and all documentation is submitted by the applicant and reviewer to the APO Board. The APO fee includes the initial submittal of complete documentation including the reviewer's report, and allows for one resubmission to the APO Board if additional documentation or clarification is necessary.

If a second resubmittal becomes necessary, an additional fee may apply.

Questions or comments regarding the APO process should be directed to the designated staff point of contact listed at parking.org.

Fees	IPI Member Rate	Non-Member Rate
Application	$250	$750
APO (3-year period)	$2,500 *Accreditation fee includes up to 3 facilities.	$4,500
Additional Facility	$500 *Fee applies to the fourth and any additional facilities.	$500
Review Process	Determined by applicant and reviewer*	
Renewal Fee	$1,500	$3,000

The fees above are paid directly to IPI to support the APO program. The required reviewer fee will be contracted and paid directly to the selected reviewer from the applicant. IPI recommends that the applicant budget approximately $5,000 for reviewer fees, report, travel, and expenses, but acknowledges that each organization is unique and mayrequire a customized approach.

CODE OF ETHICS

Introduction

The APO Board has adopted a Code of Ethics and Professional Responsibility (Code of Ethics) that establishes the expected level of professional conduct and practice for an organization that holds APO Accreditation or Accreditation with Distinction. The APO Board retains the right to amend the Code of Ethics as required.

To promote and maintain the integrity of its APO program for the benefit of designation holders and stakeholders, the APO Board has the ability to enforce the provisions of the Code of Ethics. The APO Board shall be required to enforce sanctions against APOs who violate the regulations as written in the Code of Ethics. The APO Board will follow its disciplinary rules and procedures when enforcing the Code of Ethics. Any reference below to an APO also includes an APO's officers and directors.

APO Code of Ethics

The APO Board is the sole body authorized to award the APO designation. The APO designation bestows a recognized level of excellence in the field of professional parking organization, management, and operations. Part of that competence relates to an understanding that APOs and their leadership and staff will abide by the Code of Ethics, thereby protecting the public they serve. The purpose of this Code is to direct APOs to lead their organizations with competency, honesty, professionalism, integrity, and fairness, and to provide a benchmark code of conduct that stakeholders may expect.

To this end, the APO Board hereby establishes this Code of Ethics stating that all APOs are bound to:

I. Conduct their businesses according to high standards of integrity and fairness and to render that service to customers so that any "prudent person" would agree that the APOs conduct their businesses in a manner that is beyond reproach.

II. Provide competent, "customer-centric" service that serves all stakeholders and specifically protects the public.

III. Abide by all applicable governing rules, regulations, and standards.

The Code consists of two parts: The Principles and The Rules. The Principles embody the ethical and professional standards expected of APOs. These principles address the substance and not merely the form of service to customers. The Principles are the guidelines of professional conduct—the same conduct any customer would expect of any professional organization on which they rely. The Rules serve as a description of best-practice or APO standards and outline how The Principles must be implemented in specific circumstances.

The Principles

Principle 1. Organizational Competence: The APO shall provide services to stakeholders in a manner that demonstrates organizational competency. Organizational competency must be maintained through participation in recertification activities that demonstrate the APO has maintained the standards and criteria established in the APO Manual for Applicants and ancillary documents required in the role of the APO. Organizational competence also includes maintaining the organization's standing as an APO through continuous improvement and recertification.

Principle 2. Confidentiality: An APO, including its staff, shall not disclose any confidential customer information without the specific written consent of the customer unless the disclosure is made in response to a legal proceeding, to defend against charges of wrongdoing by the APO, or in connection with a civil dispute between the APO and a claimant. Confidentiality is a fundamental aspect of trust on which the professional customer relationship is based.

Principle 3. Professionalism: Conduct by the APO, including staff, in all matters shall reflect professionalism and good character, as expected by the APO designation. An APO represents the accreditation and may not behave in any manner that would discredit the designation or the program.

Principle 4. Fairness and Integrity: An APO shall perform its business and professional services in a manner that is fair and reasonable to customers, prospective customers, colleagues, employers, and regulators, and shall disclose any conflicts of interest associated with service as an APO. The APO must demonstrate integrity by serving customers, staff and the public with steadfast adherence to the APO Code of Ethics Rules and Principles, and the policies and procedures of the APO Board.

The Rules

Rules that Relate to Principle I: Competence

Rule 101: APOs shall keep informed of developments in the profession and provide continuing education to improve professional competence among all staff.

Rules that Relate to Principle II: Confidentiality

Rule 201: An APO, including its staff, shall not reveal or use, without the customer's consent, any personally identifiable information relating to the customer except and to the extent that disclosure or use is reasonably necessary to: (a) comply with legal requirements or legal process; (b) defend the APO against charges of wrongdoing; or (c) defend the APO in connection with a civil dispute between the APO and the customer.

Rule 202: An APO, including its staff shall maintain the same standards of confidentiality to employers and employees as to customers.

Rules that Relate to Principle III: Professionalism

Rule 301: An APO shall use the designation in compliance with the current rules and regulations of the APO Board, as established and amended.

Rule 302: An APO shall engage in fair and honorable competitive practices.

Rule 303: An APO who has knowledge that another APO has committed a violation of this Code must promptly notify the APO Board. A violation would be any act that raises substantial questions as to another APO's integrity, competence, or business practices. For the purposes of this Rule, knowledge means no substantial doubt.

Rule 304: An APO who has knowledge that raises a substantial question of legally actionable, unprofessional, fraudulent, or illegal conduct by an APO must promptly inform the appropriate regulatory body if appropriate, as well as the APO Board. For purposes of this Rule, knowledge means no substantial doubt.

Rule 305: An APO who has reason to suspect illegal conduct within the APO organization shall make timely disclosure of the available evidence to the designee's immediate supervisor and/or partners or co-owners, and take appropriate measures to remedy the problem. The APO shall, where appropriate, alert the proper regulatory authorities and the APO Board.

Rule 306: In all professional activities, an APO shall perform services in accordance with: (a) applicable laws, rules, and regulations of governmental and other applicable authorities; and (b) applicable rules, regulations, and other established policies of the APO Board.

Rule 307: An APO shall always act in the best interest of the customer and/or stakeholders, serving the overarching requirement to protect the public.

Rules that Relate to Principle IV: Fairness and Integrity

Rule 401: An APO shall not, during the course of rendering professional services, engage in conduct that involves dishonesty, fraud, deceit, or misrepresentation, or knowingly make a false or misleading statement to a customer, employer, employee, professional colleague, governmental or other regulatory body or official, or any other person or entity.

Rule 402: An APO is prohibited from the unauthorized or misleading use of the APO designation. If the APO renewal date has passed and the APO has not fulfilled requirements to maintain accreditation, the APO designation may not be used until the APO meets all requirements and pays all outstanding fees and fines. Additionally, APOs are prohibited from using the APO designation to represent their organization as specialists in a particular business service, or from using the designation in any way to mislead stakeholders about their expertise or breadth of experience.

Rule 403: An APO and its leadership shall not discriminate against others based on, but not limited to, gender, race, age, religion, disability, nationality, or sexual orientation.

Violation of the Code of Ethics

APOs that violate the Code of Ethics shall be subject to disciplinary action.

Content Area I: Accreditation Criteria

1. Governance and Organization

A parking organization's role, authority, responsibility, management expectations, and obligations are always defined in some documentation: a charter, ordinance, regulation, or other official document that is promulgated through the governance levels of the organization. An accredited program must be well-defined and empowered with a vision and mission statement or equivalent, and the organizational structure must be appropriate to meet the program's stated role and operational requirements. Its operations must be clearly aligned with the organization's governance document and defined by an effective and efficient organization structure.

Objective

To complete this section successfully, the applicant must demonstrate this alignment and provide accountable, transparent, responsive, justifiable, inclusive, and participatory parking, transportation, and mobility services to the community or constituencies it serves.

Accreditation Criteria

1.1 Provides a copy of official documentation that defines a contract, charter, ordinance or enabling legislation.*

1.2 Provides documentation showing governance hierarchy (Board of Directors/ Executive Director roles, responsibilities, terms, and relationships) is current; and policy-making authority, process, record-keeping, and decision-making are transparent.

1.3 Regulations regarding limits or restrictions on the organization's authority to change/amend rates, fines, use of funds, agency jurisdiction, operating rules, etc., are current and well-defined.

1.4 Current operational policies and procedures are documented with amendments and/or revisions.

1.5 Mission and Vision statements (or equivalent definitions of purpose) are current and available to the public, and to stakeholders and parent companies or organizations.

1.6 A current organizational chart is available and reflects the program's mission.

1.7 Comprehensive organizational structure is in place that clearly defines relationships between functions, process and staff assignments. Appropriate and accurate position descriptions are in place and current within three years of the accreditation inspection date.

1.8 Appropriate and accurate position descriptions are in place and current within three years of the accreditation inspection date.

Arielle Brown

Accredited with Distinction Criteria

Additional points will be awarded to organizations that further contribute to the accountable, transparent, responsive, and justifiable significance of governance and organization.

1.9 There is an active stakeholder committee, with a documented Terms of Reference, that participates in governance.

1.10 There is a senior leader or Executive Director with professional training in planning and delivery of parking services.

1.11 The senior leader or Executive Director represents the parking organization in public and the media.

1.12 Retains annual reports or departmental profiles that explain the role and mission of the parking organization.

1.13 Retains past performance documentation.

*Criteria in bold are required elements of the APO program

2. Planning and Monitoring

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Modern industry organizations and activities are developed to coincide with or be part of larger public transportation and mobility programs. Even private-sector activities, though not directly subject to government involvement, are guided in their course in accordance with public policy standards, as permitted through zoning and licensing requirements. All organizations possess goals and objectives that focus on desired outcomes and all organizations monitor and measure results to demonstrate progress toward those outcomes. IPI APOs routinely utilize a methodical and objective process of planning and monitoring based on regular and consistent observations, measurements, and analysis.

Objective

To complete this section successfully, the applicant must demonstrate that planning for the parking system, including any related transportation and communication elements, is consciously placed within the broader context of community or institutional planning goal. Regular monitoring of relevant performance indicators is an active part of the system management process.

Accreditation Criteria

2.1 Provides current documentation stating short- and long-term goals and identifying measurable objectives and timelines for achievement.

2.2 Provides documentation outlining planning process and procedures that translate daily activities into long-term or strategic planning – minimum two years beyond current fiscal year.

2.3 Planning includes an annual or multi-year budget and financial projection, with periodic tracking and analysis, and coordinated with related community or institutional planning entities.

2.4 Maintains a detailed and up-to-date inventory of all parking resources (permits, facilities, parking stalls).

2.5 Conducts parking supply, demand, and utilization studies at regular intervals.

2.6 Uses performance measurements in decision-making and regular benchmarking activities.

Accredited with Distinction Criteria

Additional points will be awarded to organizations that regularly apply the principles of planning and monitoring to daily operations and utilize these principles to maintain a culture of quality service and continuous improvement.

2.7 Demonstrates a solid understanding of the operational use of study results, metrics, and benchmarks.

2.8 Demonstrates a practice of using metrics to explain and illustrate features of the parking program to the public.

2.9 Participates in broader industry benchmarking and measurement studies and initiatives outside of his/her own organization or corporation.

2.10 Planning outlines the schedule and process for key day-to-day operational and administrative activities, including responsible staff, timing/communication, frequency and documentation to indicate activities are a well-established part of the organization's management process.

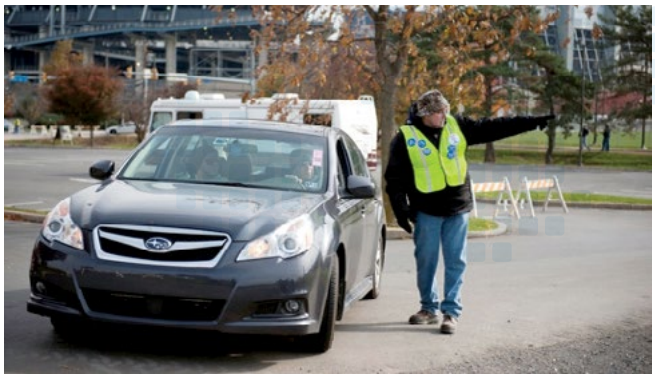
3. Financial Budgeting and Financial Management

While the financial expectation of any parking organization is defined in its role and mission, APOs operate in an atmosphere of transparency, accountability, and responsibility, in support of their role. The applicant must be committed to providing accurate and responsible financial transparency in accordance with Generally Accepted Accounting Principles (GAAP) or equivalent as may be determined by the organization's senior leadership.

Objective

To complete this section successfully, the applicant must demonstrate sound financial management practices in all aspects of planning, budgeting, cash and account management, and audit and reconciliation processes to accurately report the organization's financial position.

Accreditation Criteria



Annemarie Mountz

3.1 Mission and Vision or other guiding statements address financial principles, such as transparency, accountability, and responsibility.

3.2 Produces and maintains an annual budget and projects a future (three or more years) financial planning document.

3.3 Produces a monthly report identifying revenues and expenses, as well as variance budget to actual.

3.4 Maintains and regularly reviews organization's capital plan noting project status and associated budget financial status.

3.5 Maintains a calendar of planned and completed audits (revenue control, employee safety, environment, labor control and management, cost management, etc.).

3.6 Audits include all aspects of finance and operations, including cash and financial record keeping and management, as well as utilization and inventory control.

3.7 Maintains audit protocol and procedure documents.

3.8 Circulates documentation identifying audit findings or shortcomings to senior management, and management reviews recommendations.

3.9 Senior leadership (audit committee, etc.) responds to audit findings and recommendations and decides upon a plan of action and completion timeline, and documents response and plan of action.

3.10 Maintains current SOP for Accounts Payable/Accounts Receivable.

Accredited with Distinction Criteria

Additional points will be awarded to organizations that further contribute to an atmosphere of transparency, accountability, and responsibility of financial budgeting and management processes.

3.11 Reviews budget and performance documentation with authorized stakeholder groups.

3.12 Demonstrates consistent and acceptable financial performance year after year.

3.13 Financial performance meets or exceeds the targets established by the governing authority of the parent corporation.

3.14 Financial management is subject to routine internal audit and process improvement measures.

3.15 Produces a budget year-end financial report and operational summary.

3.16 Achieved a strong bond or credit rating based on a third-party reviewing agency.

3.17 Developed or achieved a level of public/private cooperation, such as a P3 partnership or other community partnership.

4. Customer Service

There are several components of good customer-service practices within an organization. Understanding customer needs is a top priority.

APOs include provision and maintenance of suitable customer-service infrastructure in all facilities and services, continuous customer-service improvement, a dedication to developing and/or supporting customer-service programs, and a demonstrated concern for customers' opinions and experiences. This includes follow-up and sourcing feedback regarding facilities and services and excellence in response to public and media inquiries.

Objective

To successfully complete this section, the applicant must demonstrate a high, progressive, and sustained level of communication, care, and service to end-use customers.

Accreditation Criteria

4.1 Commitment to service is identified and detailed in mission and/or vision statements.

4.2 Refers to philosophy of customer service in routine correspondence.

4.3 Refers to philosophy of customer service in long-and short-term planning documents.

4.4 Provides and maintains a proactive customer-service training program for all staff.

4.5 Conducts customer-service training for new staff.

4.6 Offers annual customer-service refresher training for all staff.

4.7 Responds to customer-service feedback.

4.8 Staff are available remotely or in person to assist customers.

4.9 Employs regular customer surveys (one-year interval minimum).

4.10 Demonstrates a variety of customer-service programs.

Accredited with Distinction Criteria

Additional points will be awarded to organizations that demonstrate a commitment to flexibility and offer customers a choice of services.

4.11 Provides a variety of parking payment options.

4.12 Provides a variety of parking permits options.

4.13 Provides a variety of choice options for response to compliance tickets or citations.

4.14 Provides a choice of mode of interaction: telephone, email, text, or in-person.

4.15 Utilizes social media to enhance customer service.

4.16 Gives credit to the team.

4.17 Offers customer-appreciation days, activities, or events. Conducts contests, special days, and special offers to promote its role and product, or relationship to its customers.

4.18 Engages stakeholders to assist in data collection or other tasks.

4.19 Engages stakeholders in the customer service survey and acts upon the results of the survey.

4.20 Uses rapid entrance and exit techniques for special event parking.

5. Personnel Education & Development

APOs pay strong attention to the initial and ongoing training of employees. The competence and effectiveness of employees is a driving factor behind an organization's parking program, and personal education and development is key to establishing a strong reputation for dealing fairly with the public.

Objective

To complete this section successfully, the applicant must demonstrate that the organization is invested in developing qualified, confident, and well-rounded individuals who are well-trained in professional parking knowledge to meet operational requirements, as well as human interaction and problem-solving to meet service objectives.

Accredited Criteria

5.1 Provides all staff with an employee handbook, or equivalent document(s) identifying roles, tasks, responsibilities, operational policies, and procedures.

5.2 Administers a training program that features a defined structure, outline, schedule, and materials.

5.3 Maintains current job descriptions for each position, and files training documentation for regular staff.

5.4 Provides an orientation to facilities, organization, operations and lines of authority, introductions, review of personnel policies for new staff.

5.5 Provides formal instruction on functional responsibilities and procedures.

5.6 Utilizes trainee assessment/testing to test comprehension of concepts and essential information.

5.7 Directly supervises employees while in training before they begin performing duties independently.

5.8 Uses follow-up training to address identified weaknesses and documents eventual competency.

5.9 Maintains process for annual evaluations and professional development of staff.

5.10 Utilizes evaluation criteria that are relevant to the functions and responsibilities of the employee, with an opportunity for written and verbal feedback.

5.11 Provides employees the opportunity for documented input into evaluation.

Accredited with Distinction Criteria

Additional points will be awarded to organizations that demonstrate advanced interest and achievement in the training and professional development of their employees.

5.12 In the case that an employee reports to multiple supervisors, provides opportunity for input from each supervisor.

5.13 Provides a range of other training programs for the benefit of employee or organization.

5.14 Senior manager is a Certified Administrator of Public Parking (CAPP).

5.15 Middle management team participates in CAPP or other professional development.

5.16 Supervisory and long-service staff participate in IPI professional development programs (or comparable equivalent) appropriate to their employment level, duties, and responsibilities.

6. Access and Revenue Control

APOs are always involved in managing access to parking facilities under varying conditions, and are involved in managing permits and credentials as well as cash, credit card, electronic purse, or other forms of value-accounted transactions. As these transactions are of relatively small value and usually occur in high volumes, the quality management of credentials and value—particularly cash value—is of central importance to the way organizations function and how they are perceived to function by our peers, stakeholders, customers, owners, and the public.

Conservation Design Forum

Objective

To complete this section successfully, the applicant must demonstrate a high level of sophistication in the care of physical assets used to manage and control access to parking stall inventory and to revenue accruing from the sale of parking stall inventory, as well as its related tokens, permits, fees, fines, and other products.

Accreditation Criteria

6.1 Maintains effective access and revenue control plan for all facilities and services.

6.2 Provides appropriate control methodologies (PARCs, timed parking, meters, etc.).

6.3 Provides a current SOP that includes access and revenue control requirements.

6.4 Provides a systematic and documented process for obtaining and evaluating collection data.

6.5 Equipment used to control facilities provides sufficient documentation for revenue generated.

6.6 Incorporates reporting features into accounting reconciliation and reporting processes that include both transactions and revenue.

6.7 Maintains a standard counting and reconciliation practice.

6.8 Conducts periodic unannounced or opportunity counts or audits.

6.9 Demonstrates that employees responsible for revenue management are trained in relevant policies, procedures, and audit processes.

6.10 Provides a write-off policy/procedure.

6.11 Maintains copies of bank transaction reports on at least a weekly basis that includes all forms of payment.

6.12 Requires supervisory sign-off on void transactions and reconciliation documentation.

6.13 Provides a process to resolve financial discrepancies.

6.14 Provides a current letter, contract, or agreement in-place between the applicant and any special event clients.

6.15 Provides an automated process for reserving and/or vending parking space for events.

6.16 Has the ability to issue a receipt to the customer during special-event parking operation.

6.17 Captures utilization reporting and routinely debriefs management and staff on the outcome of each event.

6.18 Vault or counting room is monitored and access control is maintained.

6.19 Properly limits and controls access to bulk permit or card stock.

6.20 Documents custody of unissued permits and access cards.

6.21 Inventories and counts meter canisters.

6.22 Procedures and/or report slips show cashier stations are subtotaled and cash counted periodically during each shift.

Accreditation with Distinction Criteria

Additional points will be awarded to organizations that show an advanced level of cash security, scrutiny, audit procedures and resources, and sound cash-management processes in all areas of its operation.

6.23 Monitors gate equipment and cashier positions controlling revenue areas with cameras.

6.24 Audit process includes periodic review of statistical patterns related to equipment activity, cashiering functions, and field revenue collections.

6.25 Provides a copy of most recent third-party audit (external or internal).

7. Asset Maintenance

APOs manage major public facilities in such a way as to provide responsible, efficient, and valuable customer services to their customers, in support of their stakeholder and owner objectives.

Objective

To complete this section successfully, the applicant must demonstrate an active asset maintenance program that ensures regular and consistent monitoring, cleaning, and repair of parking facilities and supporting assets.

Accreditation Criteria

7.1 Demonstrates that regular onsite inspections are an integral part of facility maintenance.

7.2 Tests emergency systems regularly.

7.3 Maintains a maintenance program that includes inventory of maintenance items.

7.4 Maintains copies of current maintenance agreements with third parties.

7.5 Maintains a capital renewal plan.

7.6 Budgets for maintenance reserves or funds set aside for parking facilities and services replacement and upgrade.

7.7 Performs condition assessments by a qualified structural engineer, who conducts a walk-through inspection (annually).

7.8 Performs condition assessments by a qualified structural engineer who conducts a full condition assessment including all disciplines (once every three years at a minimum).

7.9 Provides a reconciliation report and schedule of repair completion for items identified in the condition appraisal.

Accreditation with Distinction Criteria

Additional points will be awarded to organizations demonstrating an advanced level of care and attention to detail invested in asset inspection, maintenance, and updates. The applicant must confirm that an advanced maintenance program is functioning in accordance with a developed and formal work order and tracking process.

7.9 Maintains a maintenance program in accordance with Parking Consultants Council or equivalent guidelines, including a formal work order and tracking process.

7.10 Posts maintenance, ownership, and contact information and hours of operation.

7.11 Regulations and restrictions are posted and explained at customer-service locations.

7.12 Replaces lighting ballasts and illuminators on a regular basis.

7.13 Encourages customers to report security breaches or risks, and follows up with recorded action.

7.14 Conducts routine physical security audits.

7.15 Offers car wash, concierge, laundry, vehicle repair, or other value-added services.

8. Regulations, Enforcement, Adjudication and Collections

APOs often operate, or influence the operation of, enforcement programs intended to discourage non- compliance with public laws or ordinances, or private- property management standards. The purpose of an enforcement program is to hold vehicle owners personally and sometimes financially accountable for their actions, to raise awareness through education, and to promote and encourage corrective behavior to avoid a repeat situation. While the traditional enforcement role sends a negative message, organizations are increasingly developing practices and techniques that emphasize the positive side of encouraging compliance, rather than discouraging misuse.

Objective

To complete this section successfully, the applicant must demonstrate that their organization provides professional and flexible services in accordance with modern technologies, service-delivery options, and best modern compliance practices.

Accreditation Criteria

8.1 Documents current compliance goals designed to encourage voluntary compliance.

8.2 Regulations and processes related to enforcement and appeals are transparent and available to the public.

8.3 Uses data to allocate resources and improve effectiveness (voluntary compliance).

8.4 Conducts periodic review of patrol zones and activities.

8.5 Reviews officer performance and productivity monthly.

8.6 Utilizes positive customer-service techniques to encourage compliance.

8.7 Conducts daily shift briefings or other daily communication/updates.

8.8 Details role of enforcement and compliance in training materials.

8.9 Uses technology to monitor patrol routes and officer activities.

8.10 Uses digital images to document and improve the accuracy of the enforcement process.

8.11 Officers are identifiable and uniformed.

8.12 Utilizes hand-held computer, License Plate Recognition, or equivalent systems that tie regulation, customer performance, and administrative service delivery together in a comprehensive way.

8.13 Offers a transparent and publicly available appeals program.

8.14 Offers appellants access to a multi-level review process.

InventorChris.

8.15 Considers the views of adjudicators when regulations are designed.

8.16 Demonstrates that citations written in error represent fewer than 2% of all citations.

8.17 Uses a fine-collection process exists.

8.18 The fine collection process collects 80 percent or more of fines.

8.19 Maintains a boot/tow policy.

8.20 Trains officer/third-party providers in the boot/tow process in customer service and conflict resolution.

8.21 Provides 24 hour service at impound facility and vehicle storage areas.

Accreditation with Distinction Criteria

Additional points will be awarded to organizations that demonstrate an advanced approach to gaining compliance through enforcement, adjudication, and collection systems, as well as positive compliance-gaining techniques.

8.22 Demonstrates an advanced degree of care for the customer during the enforcement, adjudication, and collection process.

8.23 Enforcement staff works with customer-service to ensure that service issues are dealt with in the office environment rather than in the public eye.

8.24 Uses principles of parking supply/demand measurement, capture, and patrol frequency to optimize the enforcement process.

8.25 Works proactively with the court system to ensure that regulations are being documented and processed in an acceptable manner, and that new practices and procedures will be supported by the adjudication process.

8.26 Utilizes customer-performance data to determine appropriate corrective action.

8.27 Provides appellants access to an objective third-party (court of law, adjudication committee, etc.).

8.28 Adopted parking ambassador program or approach.

9. Safety, Security, and Risk Management

APOs work dynamically and proactively to establish a superior personal safety and property security presence for their customers and stakeholders, and manage their owners' risk responsibly.

Objective

Accreditation Criteria

9.1 Outlines safety and security philosophy in organization objectives and values.

9.2 Documents effective workplace safety and risk management practices.

9.3 Maintains SOPs or manuals and conducts testing, drills, and emergency communication procedures (i.e., 911, police, fire, administration, supervision.)

9.4 Conducts periodic inspection of facility infrastructure and maintains documentation of inspections.

9.5 Incorporates passive and active security measures in facility design and operation.

9.6 Responds to public safety inquiries.

9.7 Security staff are identifiable and uniformed.

9.8 Trains security staff to respond to public safety and security issues.

Accreditation with Distinction Criteria

Additional points will be awarded to organizations that ca demonstrate an exemplary level of safety and security awareness and response.

9.9 Participates in community safety and security organizations.

9.10 Utilizes customer surveys in assessing security and safety measures.

9.11 Develops safety-oriented partnerships with stakeholder and other interested groups.

9.12 Provides onsite security staff or equivalent personnel.

10. Sustainability

APOs demonstrate a high level of attention to progressive environmental practices and standards, and show leadership in all aspects of their roles as environmental stewards.

Objective

To complete this section successfully, the applicant must demonstrate that the program, sets specific goals for energy and resource consumption, and shows progress toward reaching its sustainability goals.

Accreditation Criteria

10.1 Demonstrates a strategic commitment to environmental sustainability.

10.2 Demonstrates implementation of sustainable practices showcasing a direct reduction in energy or resource use.

10.3 Provides incentives to promote use of low-emitting and fuel-efficient or alternative fuel vehicles.

10.4 Demonstrates use of alternative-fuel fleet vehicles.

10.5 Provides payment system in parking facilities to reduce idling upon exiting.

10.6 Recycles or repurposes materials and equipment (recycling paper, reusing signs).

10.7 Uses energy-efficient lighting systems and/or controls in parking facilities.

10.8 Uses energy-efficient, environmentally favorable Heating Ventilation and Air Conditioning (HVAC) systems and/or controls in facilities requiring ventilation, or facilities designed without mechanical ventilation.

10.9 Uses halon-free fire-suppression systems.

10.10 Demonstrates planning for continued sustainability gains.

Center for Watershed Protection, Inc.

Accreditation with Distinction Criteria

10.11 Achieved GPC (now Parksmart), LEED, Green Globes or equivalent certification for at least one parking facility.

10.12 Posts policies regarding sustainability in prominent public space.

10.13 Manager(s) directly responsible for day-to-day parking operations has earned and maintained a qualified environmental sustainability credential.

10.14 Implemented external wayfinding system to reduce time spent searching for a parking space.

10.15 Implemented internal wayfinding system within parking facility or facilities to reduce time drivers spend locating a space.

10.16 Installed and maintains electric vehicle charging stations.

10.17 Provide tire inflation stations or mobile tire inflation services.

10.18 Implemented water-reduction technologies/strategies.

10.19 Roofing system designed to reduce heat-island effect and/or provide stormwater mitigation.

10.20 Generates renewable energy on site, and/or purchases of renewable energy credits.

10.21 Provides proactive parking facility maintenance plan.

10.22 Uses permeable materials in at least in one surface parking facility.

11. Access Management

APOs champion transportation solutions that connect people to where they need to go, while reducing congestion, wear-and-tear on surrounding infrastructure, and environmental damage.

Objective

To complete the section successfully, the applicant must demonstrate a commitment to travel demand management strategies, employing techniques designed to support multi-modal transportation solutions that promote walking, cycling, and transit use, and control motor vehicle access.

Accreditation Criteria

11.1 **Demonstrates a commitment to reducing or distributing travel demand.**

11.2 Charges for parking to impact transportation choice.

11.3 Provides for or supports the use of bicycles.

11.4 Provides for or supports the use of carpooling or vanpooling.

11.5 Uses parking guidance, traffic management or parking reservation systems.

11.6 Provides for or supports car share programs or services.

11.7 Provides for or supports bicycle share programs or services.

11.8 Parking facilities are located at least.25 miles from mass transit services.

Accreditation with Distinction Criteria

An additional score will be awarded to organizations who demonstrate the development of enhanced mobility programs and/or policies to support users of alternative transportation modes.

11.9 Participates in a TMA/TMO or similar organization aimed at reducing congestion and travel demand.

11.10 Provides for or supports guaranteed ride home programs and services.

11.11 Provides for or supports ride matching services.

11.12 Provides for or supports transit, universal bus pass, or shuttle services.

11.13 Provides short-term, occasional parking options for flexible commuting.

11.14 Parking facilities are part of, or proximate to, Transit Oriented Developments.

12. Marketing and Communications

APOs recognize the need to educate and form their customers' impressions and responses to the parking environment, as well as its current standards and best practices. This is accomplished through marketing and communications programs targeted at individuals, customers, or stakeholder groups, as well as ownership authorities and the general public.

Objective

To complete this section successfully, the applicant must establish commitment to strategic excellence in communications, marketing, and community relations.

Accreditation Criteria

12.1 **Develops and maintains a communications and marketing plan that supports the program's larger strategic goals.**

12.2 Strategic-planning documents specifically focus on communications and marketing which are reviewed annually and current.

12.3 **Annual budget includes dedicated funding for communication and marketing activities.**

12.4 Provides opportunities for customer feedback (at least quarterly) and responds to feedback.

12.5 Media relations protocols include a specific list of approved media spokespeople and chain-of-command for approving and reviewing information that is released to the media.

12.6 Employs a current media list that includes key media organizations and contact information for key staff.

12.7 Uses a press/news release template.

12.8 Crisis/emergency situation protocols, including a specific list of key contacts, clearly defined chain-of-command and areas of responsibility are in-place.

12.9 Maintains expedited method of communication specifically for crisis/emergency situations.

12.10 Maintains policies and/or procedures for addressing annual, seasonal, campaign-based, and event-specific communications functions in a timely manner (i.e., special events, construction, service disruption, and routine maintenance).

12.11 Branding includes a logo or distinct visual marker that is consistent across media.

12.12 Website includes 1) map of facilities, pricing, payment options, 2) contact email, phone number, hours of operation; 3) instructions for after-hour emergencies; 4) how to pay and/or appeal a citation; 5) information on monthly parking, if applicable; 6) ADA information.

Accreditation with Distinction Criteria

Additional points will be awarded to organizations that demonstrate an exemplary and exceptional commitment to marketing, promotions, and community outreach.

12.14 Shares best practices in marketing and communications with parking industry colleagues.

12.15 Conducts information sessions for the public and can demonstrate how feedback is incorporated into operational efforts.

12.16 Posts up-to-date information on programs and practices in public places and online.

12.17 Participates in public events, public-education sessions, lunch-and-learn sessions, or other awareness- and confidence-building activities.

12.18 Utilizes new communication technologies (YouTube, social media, blogs, etc.) to reinforce its message to the public.

12.19 Uses resources to support community quality-of-life programs.

13. Data Management and Security

The industry is experiencing increased gathering and retention of personal data; in the parking industry, some of this data is critical to management functions and some is not. POs recognize the need to retain key data points for the purpose of compiling histories, assessing behaviors, managing programs, facilitating purchases, and educating customers; the need to protect this information while in custody; and the requirement to discard this information when it is no longer relevant or necessary.

Objective

To complete this section successfully, the applicant must clearly demonstrate a commitment to data security in compliance with Payment Card Industry (PCI) standards and parking industry best practices.

Accreditation Criteria

13.1 **Has a policy for protecting sensitive data and retaining or destroying secure data.**

13.2 Provides a policy that outlines the type of Personally Identifiable Information (PII) used/collected, individual responsibilities, how sensitive data is processed when expired, and references appropriate laws.

13.3 Provides a policy that defines how access to systems is managed and controlled.

13.4 Contractually requires all vendors to follow the applicant's data and IT security policies.

13.5 Maintains inventory of all IT assets and data assets and where they are located.

13.6 For organizations accepting payment cards: Submits to Payment Card Industry (PCI) certification or self-certifications, and ensures timely security scans; any issues are documented and resolved in a timely manner.

13.7 Employing Tokenization for web based transactions.

13.8 Reviews existing systems to ensure that necessary patches and updates (operating systems, applications, etc.) are performed and implemented in a timely manner.

13.9 Uses firewalls, gateway antivirus, intrusion-detection devices, and other forms of dynamic monitoring to screen for vulnerabilities.

13.10 **All equipment and services purchased are certified as PCI-DSS- or PA-DSS-compliant.**

13.11 Vulnerability scans should be performed and reviewed monthly (at a minimum).

13.12 Encrypts all sensitive personal information and credit card data.

Accreditation with Distinction Criteria

13.13 Conducts a quarterly review of users and their permissions.

13.14 Vulnerability scan should be performed and reviewed weekly (at a minimum).

13.15 Servers are in locked cabinets or secure locations and firewalls are actively managed with consistent monitoring for intrusion (PCI requirement).

13.16 Purges non-essential data in accordance with the data-retention policy.

13.17 Ensures that all employees complete annual data security, PII, or PCI recurring training.

13.18 Retains an inventory of all devices connected to network that touch or store personal or credit card data.

13.19 Has limited, or eliminated, the use of removable data/media storage and any writeable media related to personal or credit card data.

13.20 Has a response plan for a data security breach.

13.21 Employing Point to Point Encryption solutions.

14. Third Party Contractors and Service Level Agreements

Most private parking facilities and services utilize multiple service providers to deliver elements of their services. APOs establish high-quality standards in the selection and retention of their contractors. In some cases, individual contractors may seek IPI accreditation for the services or elements of services they provide.

If a service provider has been independently accredited by IPI based on achievement of basic or advanced best practices, and those practices have been officially and completely adopted and implemented by the facility or service owner (individually or in a group of practices), IPI will award points equivalent to the contractor's achievement. If a facility or service owner has recently changed contractors, the owner must advise IPI of the change and provide a statement and copy of contractual clauses that assure accredited activities will remain in place. If these activities do not remain in place or standards have perceptibly declined, APO status will be revoked.

Objective

APOs engage in a constant process to ensure that contracts and agreements are properly structured and reviewed appropriately, and that both service provider and facility owner are meeting their responsibilities in support of service delivery.

Accreditation Criteria

14.1 The applicant maintains active contracts with external service providers.

14.2 Uses Memorandums of Understanding (MOUs) or Service Level Agreements (SLAs) with internal service providers.

14.3 Contracts/agreements include a defined start and end date, and clear and precise renewal terms.

14.4 Contracts/agreements include a statement of work that clearly defines the work to be performed by contractor/service provider.

14.5 Contracts/agreements incorporate specific performance objectives and a written process of measuring and assessing progress toward goals and objectives.

14.6 Holds periodic performance reviews with third parties and identifies performance deficiencies against performance objectives annually (at a minimum).

14.7 Documents the specific modules of accreditation that third parties deliver on behalf of the applicant.

14.8 Maintains process/policy for amending contracts/agreements, including clear documentation of changes.

Accreditation with Distinction Criteria

An additional point will be awarded to organizations that demonstrate a strong commitment to contracted quality service standards.

14.9 Requires performance guarantees in contracts, MOUs, and/or SLAs.

Content Area II: Site-Visit Assessment

APOs portray an exemplary image to the customer, in keeping with global best practices. This is one of the most important elements of accreditation. As part of the assessment process, a reviewer will visit each applicant site as noted on the application and independently spot- check all field operations and facilities to ensure the following items are in place and functioning, in support of APO standards:

1.1 Approach, internal, and guidance signage is clear, concise, appropriate, and appears to be "fresh" and well-maintained.

1.2 Signage clearly shows posted hours of operation and rates.

1.3 There are no unnecessary, out of date, overly redundant or unprofessional looking signs.

1.4 Compliance and information signs are visible to drivers.

1.5 Reserved or special needs signs are correctly placed for the reserved group or individual serviced.

1.6 Compliance and information signs use international symbols and are in common use.

1.7 Wayfinding, identification and regulatory signage and associated systems are current, clear, concise, and refreshed.

1.8 Signs are designed with highly-contrasting elements (dark background with light graphics or vice versa).

1.9 Deck level guidance information is available.

1.10 Pay by cell signs or labels are present and generously distributed.

1.11 Area is free of dangerous conditions, i.e., materials, activities, construction, refuse.

1.12 Emergency and communications services are clearly marked and functional, all lights and systems functioning.

1.13 All areas accessible to the public are open and visible, and devices are placed so to minimize dark or non-visible areas.

1.14 Sight lines are clear to exits.

1.15 Lights make use of bright, white light.

1.16 Lighting is complete and intact, all lights are active, and there are no dark areas.

1.17 Lighting, fixtures and machine surface fixtures or interfaces are shatter proof and/or protected.

1.18 Entry/Exit plazas, drive aisles, parking bays and drive aisles are evenly illuminated.

1.19 Lighting spill over is mitigated.

1.20 Parking surfaces and pedestrian areas are clean and free of road grit, water, refuse, and non-vehicle items or storage.

1.21 Asphalt and concrete surfaces are free of chips, potholes, cracks or slab heaves and trip edges.

1.22 All curbs and stall demarcations are freshly painted and visible to the parker.

1.23 Parking and pedestrian areas are free from snow/ice/water and other obstructions.

1.24 Sign posts are straight and appropriately placed.

1.25 Landscaped edges, boulevards, grass and gardens are trimmed and weeded.

1.26 Layout and perimeter edge treatments allow easy pedestrian access and egress.

1.27 Overhead railings, pipes, conduits, and other level surfaces are free from dust, dirt, soot, bird droppings, or other substances.

1.28 Concrete spalls or delaminations have been repaired and patched.

1.29 No salt or water stains.

1.30 Membranes intact and complete.

1.31 Expansion joints secure.

1.32 Decks are not leaking.

1.33 Heating or climate control processes, if fitted, are functioning and in place.

1.34 Outside pedestrian doors are glazed (has glass panes or panels for visibility).

1.35 Field test of payment system functions properly.

1.36 Where cash change is available, correct change is returned.

1.37 Machine issues receipts that include the name of the parking vendor, date time limits and fees associated with the purchase.

1.38 Information on what to do if the machine is out of service is clearly communicated.

1.39 All field transactions have credit card or other remote payment capability.

1.40 All field booth facilities are neatly maintained and painted.

1.41 Where a PARCS is used, all machines are operational, tidy and in good order.

1.42 Where a PARCS or metering is used, there are additional machines for redundancy (in case one goes off line).

1.43 Speed control devices, if fitted, are functional and effective.

ACCREDITED PARKING ORGANIZATION

APO Application

Congratulations on taking the first step to pursue the Accredited Parking Organization (APO) designation. Earning the APO designation assures the public that a parking program meets nationally and internationally endorsed standards for professionalism, accountability, creativity, responsibility, and performance. By undertaking this process, your organization demonstrates its commitment to ongoing evaluation and improvement of program outcomes through the implementation of industry best practices.

Date of Application[1]: _____

Organization/Company Name: _____

IPI Member ☐ **yes** ☐ **no** _____ **IPI Member Number:** _____

Type:

- ☐ Academic (college/university, school)
- ☐ Airport
- ☐ Commercial Operations (private operators, shuttle services)
- ☐ Corporate (building owners, developers, entertainment, resort, retail)
- ☐ Hospital/Medical or Healthcare Facility
- ☐ Public (city, economic development, municipality, public works, police, law enforcement)
- ☐ Transit/Transportation (bus highway, rail)
- ☐ Other (please specify): _____

This application is for (select one of two choices below).

☐ Parking Organization — A parking organization is an entity that operates, manages, owns or leases parking facilities (defined as: parking lot(s), garage(s), ramps, carparks, etc. and on-street parking spaces).

Example: ABC airport has parking that is close to the airport and also runs multiple airports within the state. IPI Member pricing: Application Fee ($250); Accreditation Fee ($2,500).

OR

☐ Multi-Site Parking Organization — A parking organization may operate, manage, own or lease parking sites that are not in close physical proximity. Despite geographic distance, sites are managed with common policies and procedures by the same parking organization. In this case, they may be included in the same APO application.

Example: ACME University operates, manages, owns or leases parking facilities that are not in close proximity, for instance in separate cities. Member pricing: Application Fee ($250); Accreditation Fee ($2,500, including first three facilities) plus $500 per additional facility.

Please provide a short narrative providing detail on the scope of your organization (i.e. number of facilities, type of facilities, etc.):

_____

_____

_____

[1] IPI will confirm receipt of application. On the date that the applicant organization receives confirmation, the one year submission period begins. Applicant must submit full documentation package to IPI within that one year period, or the application process will start anew with a new application and accompanying fee.

Website: _____

Primary Contact Name: _____ **Title:** _____

Mailing Address: _____

Telephone: _____ **Email:** _____

Secondary Contact Name: _____ **Title:** _____
(if applicable)

Mailing Address: _____

Telephone: _____ **Email:** _____

Fees:

Application fees are due at the time of application ($250 IPI member/$750 non-member[1]).

Accreditation fees for the three year accreditation ($2,500 IPI member/$4,500 non-member) are due at the time of submission of complete documentation package.

Please note that payment and completed application must be received before candidate may begin the accreditation process.

Check one:

- ☐ I have included a check with this application. Check # _____
- ☐ I have paid for the application fee online at parking.org.

Initial the following:

_____ I have reviewed and understand the requirements and criteria outlined in the APO Manual for Applicants and the APO Matrix. I have conducted an internal self-assessment of my organization, and have determined that I am eligible for Accredited and/or Accredited with Distinction status, and that my organization will be able to provide documentation to support the criteria.

_____ I agree to abide by the Code of Ethics contained in the APO Manual for Applicants.

_____ I understand the application fee is non-refundable.

_____ I understand that the applicant organization will be responsible for the cost to procure Site Review by an IPI-approved Site Reviewer[2], and that this is a required and critical step in the accreditation process [3].

_____ I understand that I will be required to submit a Site Reviewer Potential Conflict of Interest Form when Site Reviewer is selected, which will disclose existing relationships required (vendor/client, former employee/employer, other relationships, etc.)[4].

Signature: _____ **Date:** _____

Printed Name: _____

[1] Member rates apply to the organization pursuing accreditation, not to the selected Site Reviewer.

[2] IPI recommends that applicants budget $5,000 for reviewer fees, report, travel, and expenses for a two-day on-site meeting and review, but acknowledges that each organization is unique and may require a customized approach.

[3] Accreditation is based on a third-party review and final approval by the APO Board, and IPI is not responsible for the outcome of the accreditation process.

[4] Conflicts of interest that disqualify a site reviewer from performing services include: 1) existing employee of applicant organization or 2) family relationship to employees of applicant organization.

Downtown Organizations Managing Municipal Parking Systems

Opportunities & Landmines

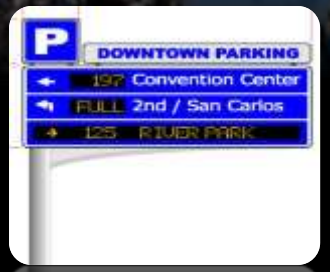
Cheyenne Parking Strategic Plan - Appendix 7
International Downtown Association – Spring Conference
PROFESSIONAL DEVELOPMENT SESSIONS

Kimley»Horn



DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS







DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

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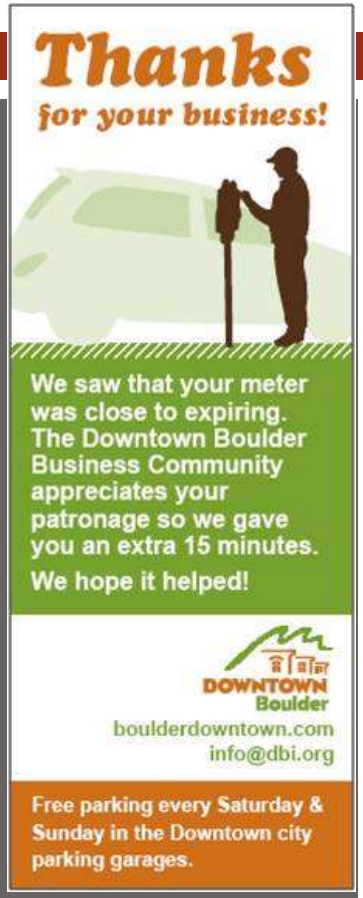
DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Great opportunity to enhance **community participation and collaborative problem solving** around parking issues
- Connect parking management and facility development to **economic development**
- Promote or implement **more visitor friendly policies and practices**
- **Enhance parking facility interior environments (a downtown enhancement)**
- Control or **strongly influence parking rates/fines**



DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Develop a parking brand and **integrate with larger downtown branding and marketing** campaigns
- **Reinvestment of parking revenues** back into the district in which they were generated
- Turn parking from "an excuse not to come downtown" into a **"downtown amenity"**
- **Better manage first and last impressions**

ParkiTempe

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- An opportunity to **promote good urban design**
  - Enhance architectural integration
  - Require mixed-uses & active street level uses
  - Promote passive security design
  - Promote universal access standards
  - "De-clutter" on-street environments
  - Provide pedestrian amenities
  - Promote "walkability"
  - Engaging street-level retail and public areas can lengthen acceptable walking distances to/from parking resources

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Utilize parking development as a platform for **achieving other strategic community goals**:
  - Urban parks, public gathering or green space
  - Engagement of local artists

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Parking as a platform to promote/support downtown **residential development**
- Encourage smart parking facility designs that effectively **share parking resources**

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Encourage parking facility designs that effectively **integrate with historic districts**
- Promote historic preservation goals

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

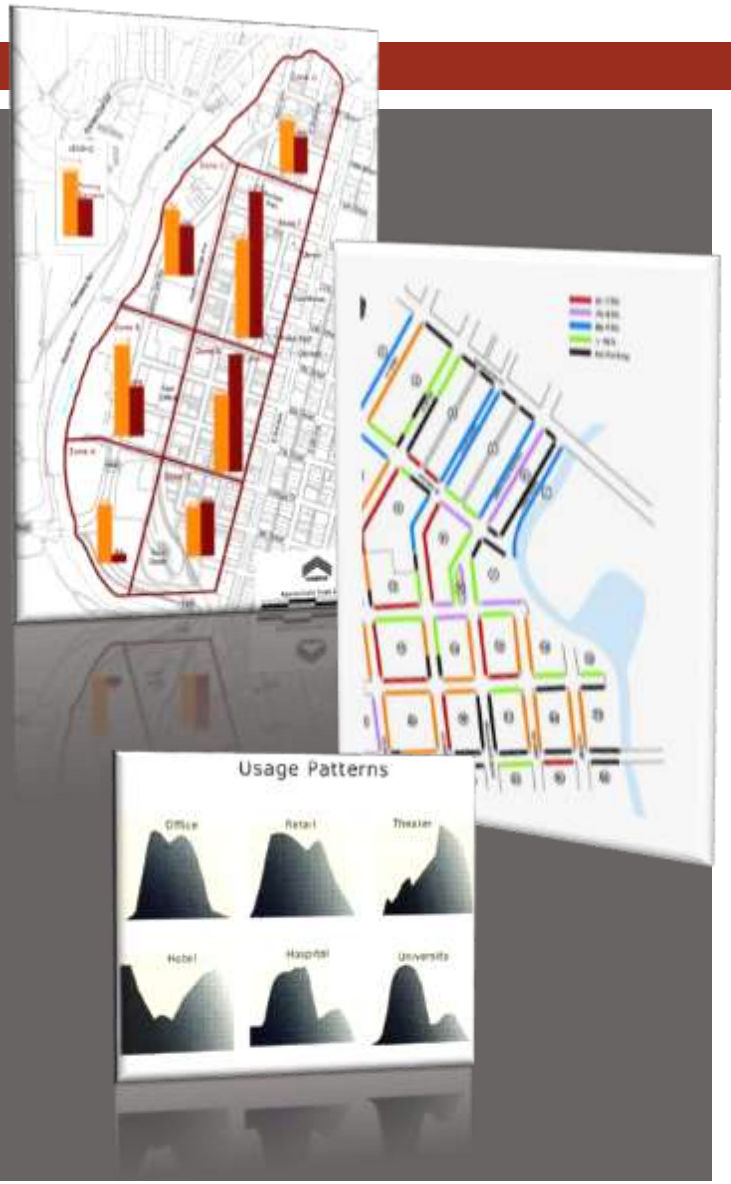
Opportunities

- Promote a more comprehensive and **balanced approach to overall downtown access**
  - "Integrated Access Management Strategies"
  - Support Transportation Demand Management Programs
  - Integrate parking planning with Center City Transportation Plan goals
  - Develop special event coordination strategies – including both parking & transportations elements
  - Bike racks as another community art project

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- **Develop a strong parking and transportation planning function**
  - Promote "flexible parking & zoning requirements"
  - Develop special TOD parking requirements
  - Ensure coordination between on-street and off-street policies
  - Understand and track parking inventory and utilization trends
  - Promote shared parking
  - Provide a full range of TDM incentive and disincentives
  - Involve others in parking studies



DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- **Develop strong public education, advocacy and community engagement processes**
  - Keep stakeholders informed
  - Solicit feedback regularly
  - Celebrate your accomplishments!
  - Get involved in related planning efforts
    - Strategic Plans
    - Traffic Studies
    - Economic & Market Studies
    - Transportation Plans

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- **Recognize the importance of enforcement, but manage it to mitigate its inherent negativity**
  - Reassess parking fine structures
  - Employ new technologies
  - Adopt the "parking ambassador model"
  - Obtain and use management data to continually assess time limits and other policies
  - **Key goals:** turnover, general compliance, consistency, fairness (revenue not primary)

Overtime violation within 12-month period	Current Amount	Proposed Amount	After 6 days fine increases to:
1st overtime	$10	Warning	N/A
2nd overtime	$20	$10	$20
3rd overtime	$40	$25	$50
4th overtime	N/A	$50	$75
5th overtime	N/A	$75	$100
6th or more…	N/A	$100	$150

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- **Develop a helpful "On-Street Personality"**
  - Cross-training in various functions pushes down the organizational mantra – **"Everything we do makes downtown more visitor friendly"**
  - Develop special programs to meet identified needs like: "Safe Walk" or "Discounted Restaurant Employee Parking"
  - Provide good maps – both hard copy and on the web/mobile devices
  - Consider employing informational kiosks

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Promote a more progressive **"Green Parking"** agenda to integrate with **community sustainability initiatives**
  - Bike lockers in parking facilities
  - Reduced price parking for alt fuel vehicles
  - Preferential parking for carpools and vanpools
  - Car share programs
  - Bike concierge programs
  - Pervious concrete
  - "Rain Garden" parking lot detention
  - Solar panels on parking canopies
  - Green roofs on parking structures

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Create synergy through **integrated downtown and parking marketing programs**
  - "Layered" websites (Restaurants, retail, event venues, & parking / transportation)
  - E-Newsletters
  - Banner Programs
  - Parking Advertising
  - Quality Parking Maps

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

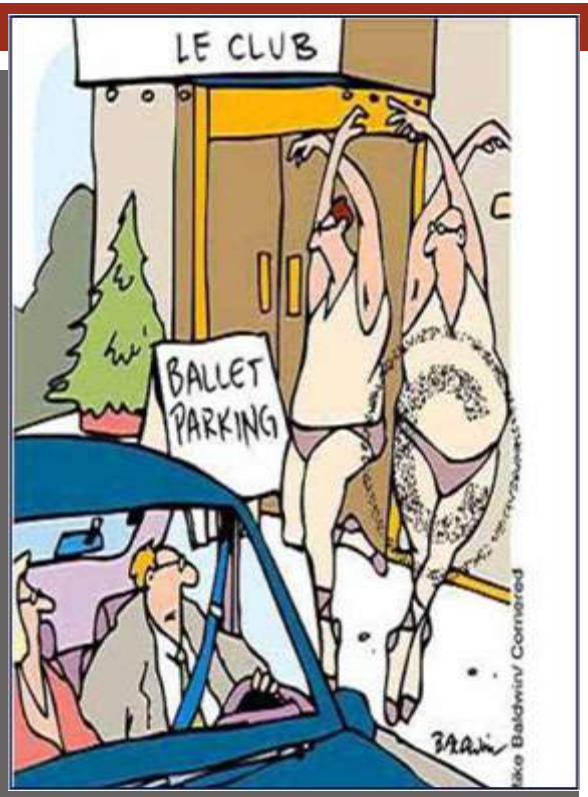
- **Leveraging Technology** with a goal of "**Enhancing the Downtown Experience**"
  - New Web-Based Parking Management Platforms
  - Multi-space Meters
  - Pay-By-Cell Phone
  - Parking Reservation Systems
  - Parking Availability Signage
  - Enhanced Parking Websites
  - Web and Text Message Parking Alerts


PAY HERE

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Opportunities

- Create business opportunities that add value to downtown patrons and employees such as "VIP" services for monthly customers.
  - **Examples of VIP services that <u>employees</u> value:**
    - Vehicle Washing/Detailing
    - Oil Changes
    - State Inspection Renewal
    - Dry Cleaning, etc.
  - **Examples of VIP services <u>customers</u> value:**
    - Valet Parking
    - Parking Reservation Services



Ballet Parking?
Looks a little pricey.



DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Potential Landmines

Kimley»Horn

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Complexity = Challenge (& Opportunity)

- What should be apparent from the previous slides is that parking is multi-dimensional and complex.
- Therein lies its great range of opportunities and a large threat for those that approach it too lightly.
- A due diligence assessment is recommended before accepting responsibility.

Tips For Success

- Failure to educate your Board in advance of the complexity can take a DT organization "off-mission".
- The potential benefits can be great, but be aware of the challenges.
- Make sure you have the support and the organizational resolve.

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Parking is a "Deep Dive"

- Most downtown organizations are involved in many areas, are engaged with multiple community organizations & succeed by influencing/stimulating a broad range of development activities.
- Because of this, downtown organizations tend to have "great breadth" but tend not go into great depth into any one area.

Tips For Success

- If you plan to take on parking, ditch the snorkel and invest in some good scuba gear
- Beware of the "Leap before you Look" factor
- The revenue control dimension alone is a sobering venture
- It may be possible to engage in parking in a meaningful way without the "deep dive", but that is a different approach.

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Parking is Personal!
(And emotional)

- **Parking impacts people in very personal ways…**
  - In the pocketbook
  - Personal safety
  - Impacts daily routines
  - Can be unpredictable
  - Can lead to "penalties"
- Because of these factors people take parking issues very seriously (and personally)

Tips For Success

- Be prepared for great scrutiny of any policy or rate change
- Public process and planning are elevated to avoid "public relations mis-steps"
- Often there is no "right answer".

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

"Everyone Is A Parking Expert" (I've been doing it all my life!)

- **Everyone has an opinion on what the solution should be**
  - Generally, these solve the problem "from their perspective"
  - When managing public parking we have a responsibility to solve problems in ways that best serve the community at large, not just our own interests

Tips For Success

- Develop a set of "Guiding Principles" as part of a **Parking Strategic Plan**
  - Organize Action Items under GP categories
- Leave policy level decisions, technology purchases decisions with the true experts

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Parking is Political!!!

- **This may be the biggest understatement ever made!**
- Some politicians win on campaigns of "free parking" (sometimes decimating strong parking programs in the process)

Tips For Success

- Parking should be "Friendly, Not Free" (Parking is never free)
- To the greatest degree possible insulating parking from politics is good policy

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

What worked yesterday may not work tomorrow.

- **The landscape is constantly shifting**
  - Supply comes and goes
  - Demand shifts
  - Access patterns change
  - Revenue streams fluxuate
  - Expenses increase
  - Political support can be fickle
  - Special events can reek havoc!

Tips For Success

- **Hey, sounds a lot like managing a Downtown!**
- **Success** =
  - Flexible and responsive management
  - Keeping up with technology
  - Focus on customer service
  - Staying ahead of the demand curve

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Everyone is Special
(and some more than others).

- **So many customer groups, so little parking…**
  - Shoppers
  - Office workers
  - Tourists
  - Churches
  - Court House
  - Entertainment
  - Restaurants

Tips For Success

- Each group has unique needs
- Differing peak demand periods – a challenge and an opportunity
- Need for policy flexibility (one size does not fit all)
- Look for "mass customization" opportunities

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Repeat after me:

"BID Renewal & Parking…"

Does this make anyone else a little queasy?

- **Parking management could be the home run you were hoping for…**
  - Enhanced support for DT merchants
  - Improved business recruitment and retention
  - A more visitor friendly DT environment. **Or…**
- **The end of the organization as you know it.**

Tips For Success

- Are some DT organization funding models better suited for taking on parking than others?
- Are there ways to protect the host organization?

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

Question Your Motivations

- **A little honest self-inspection could go a long way…**
- **Reasons to tackle parking**
  - To better support your organizations membership
  - To improve program vision and leadership
  - To align parking & transportation policy with larger community strategic goals
  - ~~**We want the money!**~~

Tips For Success

- Parking management & policy development needs to be done in the context of larger community strategic goals.
  - This is something BIDs do very well
- Needs to be approached collaboratively – avoid "turf wars".

DOWNTOWN ORGANIZATIONS MANAGING MUNICIPAL PARKING SYSTEMS

Landmines

"Doing it Right" takes money, expertise and discipline

- **Good Stewardship of the Infrastructure**
  - Maintenance Reserve Programs
  - Future facility capital investments
- **Hire a Parking Professional**
  - Finance/Accounting
  - Revenue Control
  - Technology Implementation
  - Maintenance Program Development
  - Customer Service Programs
  - Special Events Coordination
  - Enforcement/Adjudication

Tips For Success

- Don't skimp on required investments.
  - Including staffing
- Hire for talent and attitude – train for skills.
- Acknowledge parking as a professional endeavor

Thank You!

Discussion

Municipal Parking Management Organizational Options

A White Paper on

Effective Parking Management Organizational Models

Appendix 8

Kimley»Horn

Appendix 8 - Municipal Parking Management Options

Effective Parking Management Organizational Models

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EXECUTIVE SUMMARY

Improving the parking system in the City of Cheyenne (City) is a critical element for enhancing the overall downtown experience. Well-managed, customer-oriented parking facilities encourage visitors to shop, work, and explore local cultural and entertainment options by improving access to downtown attractions, reducing traffic congestion, and clearly informing users about regulations and fee structures associated with available parking. The creation of such a system will support commerce; promote the City's transportation, sustainability, and traffic mitigation goals; and advance the broader objectives of economic development and downtown vitality.

This report examines a number of effective parking management operational methodologies and organizational frameworks that could serve as models for the implementation of a City-managed parking district in downtown Cheyenne.

Parking program reorganization initiatives are often the result of larger community-wide strategic or transportation plans or downtown master planning projects. Parking issues can also be identified when business districts implement retail enhancement strategies. Regardless of the catalyst, parking initiatives often share a set of core goals and priorities that emphasize the need to address the needs of multiple constituencies, support the development of a vibrant community, and provide safe, user-friendly parking facilities that balance the public need with private interests. All of this must be accomplished in consideration of funding mechanisms and strategies that continue to benefit the community in the long-term.

Parking System Organizational Frameworks

Parking management best practices from a program organizational perspective, center on the concept of a "vertical integration" of parking functions. This is in contrast to the typical "horizontally fragmented" organizational structures that tend to evolve naturally in many municipal parking organizations across the U.S.

Horizontally fragmented systems are defined by the compartmentalization of parking functions and responsibilities, such as on-street parking, enforcement, and parking structures, among multiple, disparate departments or entities. The police, facilities management, and accounting departments all may play a role, yet no singular entity has responsibility for, perspective on, or understanding of all of the interrelated functional areas that comprise a parking system. In this scenario, there is no overall accountability for parking. Or put another way, parking is everyone's part-time job, but no one's full-time responsibility.

In a vertically integrated system, parking is managed as a cohesive system. At a minimum, one entity manages on-street parking, off-street parking, and parking enforcement. More advanced models include parking/transportation planning, transportation demand management programs, and, in some communities, transit system management. Vertically integrated systems can be

self-managed or management can be outsourced/contracted via management or concession agreements.

The following white paper details the most commonly utilized and successful vertically integrated organizational models. Each of these models has its own strengths and weakness depending on factors including the parking system's size, degree of development, programs offered, political landscape, and community goals, among others. Despite the details, they all address the major problem associated with horizontally fragmented systems. Each model should be carefully evaluated to determine which can be utilized to design a parking program that most effectively achieves the City's unique goals, objectives, and priorities. The following section provides a high-level overview of the most successful organizational models for communities across the country.

Consolidated ("Vertically Integrated") City/District Department Model

The consolidated or "vertically integrated" city/district department model is characterized by a department head with complete responsibility for the management of all parking-related program elements. Primary elements include off-street parking facilities, on-street parking resources, overall program financial performance, parking system planning, and enforcement. Other responsibilities may include transportation demand management, marketing, the implementation of new technologies, and planning, among others.

Parking Authority Model

In the parking authority model, a detailed management agreement and defined mission and vision guide all aspects of parking operations. In most cases, a small staff led by a president or executive director engage a private parking operator to manage day-to-day operations. This models places all of the major stakeholders at the same table via a parking authority board or commission, which often results in all parties gaining a deeper understanding of the complexities of parking and the often-competing interest of various constituent groups. The parking authority often has bonding capacity.

"Contract" or Business District Model

In an increasing number of communities around the country, downtown business improvement districts or downtown development authorities have taken over operational responsibility for parking. Parking is governed by a well-defined operating agreement that sets specific expectations and guidelines for the management of parking assets. These contracts or operating agreements are typically reauthorized every three to five years based on whether the defined contract goals were achieved. If reauthorized, it is not uncommon for new goals and program objectives to be set for the next contract period.

Parking District Model

The parking district model is defined by an overarching goal of creating a comprehensive parking management function under the aegis of one management entity. In most cases, the parking district's geographic boundaries and responsibility for district improvements (parking, transportation demand management, clean and safe programs, events/programming, etc.) are

managed to by the district to better promote downtown vitality and activation. Parking thus becomes a tool for economic development, place making and other larger district goals. While specific implementation policies can vary significantly, parking revenue is collected and managed by the district for reinvestment in the district in this model. Revenue sources include special assessments, off and on-street parking, special events, advertising, in-lieu-fees, enforcement revenues etc.

Professional Services Model

In the professional services model, a small, professional parking services group works in conjunction with an outsourced parking management firm. The parking services group defines the overarching vision and mission, while the management firm is responsible for day-to-day parking operations. Because daily operations are outsourced, a lean group of professional management staff can focus on the strategic goals of the parking program without becoming involved with a myriad of operational issues.

Parking Management Collaborative Model

This approach was developed for communities that have not developed a significant off-street public parking system and therefore do not have the ability to influence the off-street parking market in traditional ways. The collaborative model is aimed at developing a comprehensive approach between private, off-street parking assets and on-street parking to make the downtown more accessible to visitors. The primary objective is to develop a “parking management program overlay” to establish a well-coordinated user-friendly parking system marketed as a cohesive public parking program. While the approach requires only a small, highly effective staff, an executive-caliber program director is essential for the strategy to succeed. The support of major parking property owners is also vital.

“EcoDistrict” Model

The EcoDistrict model integrates sustainability as a defining element of the parking and transportation organizational framework. The EcoDistrict model recognizes that parking management can advance community-scale sustainability performance goals through strategies including energy and water management, use of alternative modes of transportation (e.g., bicycles and pedestrians), and development of trip reduction and car-sharing programs. Parking revenue can also be invested in a variety of sustainability initiatives, such as the use of permeable pavement and other low-impact development techniques in municipal parking lots. Like many of the organizational models, the EcoDistrict has many variations. It shares a sense of purpose, need for stakeholder engagement, and broad economic development focus all viewed through a lens of “sustainability” that make its approach appealing to many environmentally progressive communities.

CHAPTER 1: INTRODUCTION

Appendix 8 - Municipal Parking Management Options

Effective Parking Management Organizational Models

The purpose of a City of Cheyenne (City) parking program is to support commerce. Ensuring the availability of convenient, well-managed parking encourages visitors to shop, work, and take advantage of local cultural and entertainment options.

The City is seeking to enhance the overall downtown experience and recognizes that an improved parking system is a critical element in achieving that objective.

This white paper was developed to provide an initial overview of several effective parking management operational methodologies, as well as parking management organizational options that could be models for a City-managed parking district in the downtown area. For each organizational model explored in this paper, examples of communities where they have been successfully implemented are provided with an overview of the larger contributions they have made to their communities.

CHAPTER 2: PARKING PROGRAM REORGANIZATION INITIATIVES

Many communities are considering creating parking management districts or are evaluating the potential benefits of reorganizing their existing parking management programs.

Often the impetus for parking program reorganization initiatives grows out of larger community strategic plans or a downtown master planning project. In other cases, opportunities for parking operational improvements are identified during the development of a comprehensive community transportation plan. Parking issues also tend to come to the fore when business improvement districts conduct membership surveys or retail enhancement strategies.

To help frame the context within which parking district development or reorganization should be considered, the following are examples of parking related recommendations developed as part of recent downtown transportation planning or strategic planning initiatives:

Downtown transportation plan parking policy recommendations

- City policy should reflect the difference between short-term and long-term parking
- Provide better information and way-finding in advance of entering downtown to enhance the parking experience
- Establish a parking management group to better coordinate the entire parking system
- Promote structured parking as part of new downtown development
- Promote centralized and shared parking
- Add new meters to unmetered areas as parking demand exceeds a 50% utilization threshold
- Establish and staff a parking management group
- Develop parking management incentives and strategies to offer to owners and operators
- Develop and require consistent parking operations requirements
- Develop an electronic, real-time parking guidance and availability system
- Price on-street parking above off-street parking
- Implement a more convenient meter type that provides multiple payment options
- Implement a strong marketing program and distribute maps
- Enhance the universal validation system or consider a “first hour free” program in off-street public parking facilities
- Survey public perception of parking on a regular basis
- Continue to expand the number of short-term parking facilities
- Re-evaluate parking requirements in the downtown code

- Modify parking meter rates in concert with off-street parking and the economy
- Evaluate market response to long term market needs
- Evaluate short-term parking adequacy
- Recognize changes in modal split and traffic congestion – evaluate parking strategies to reflect changes
- Support the implementation of a Downtown Parking and Transportation Plan
- Educate the public about parking in the downtown
- Coordinate public and private interests
- Address long-term transportation needs
- Maximize the use of existing parking resources

Downtown strategic parking plans goals and priorities typically include:

- Support a vibrant community
- Encourage patrons to park once and access all of downtown via other transportation modes
- Provide consistency in way-finding and practices for public parking
- Promote a system that is user-friendly (utilizing technology for this purpose)
- Address the different needs of various users
- Provide for coordination between publicly and privately owned parking facilities
- Develop safety and security measures for facilities offered to the public
- Balance the provision of public parking with private parking interest
- Advance the city's current land use plan
- Encourage private parking owners to provide public parking

CHAPTER 3: PARKING MANAGEMENT PROGRAM ORGANIZATIONAL OPTIONS

Over the past several years, we have conducted extensive research on how parking systems evolve organizationally. This area of interest emerged in conjunction with our research and documentation of parking management best practices from around the country.

MUNICIPAL PARKING SYSTEM EVOLUTION

Many parking systems, especially in municipal environments, have evolved over time into organizational structures that we have termed "horizontally fragmented." This means that various parking system components are spread among multiple departments or entities. It is important to realize that when these systems were first created, parking management as a profession had not fully developed.

The following examples illustrate how many municipal parking programs evolved and reflects the "functional fragmentation" that this approach can engender.

> There was a need to establish a parking function. The initial need was to manage on-street parking assets. Because Public Works already managed the streets, this function was located under the Public Works Department.
>
> When the need for an enforcement function achieved critical mass, this was logically assigned to the Police Department as enforcement was their specialty.
>
> Over time, off-street lots and parking structures were added. The management of these resources was placed under the Facilities Management Division because they managed the City's real estate assets and facilities.
>
> Soon there was enough revenue being generated that an audit/accounting function was established to ensure accountability over the revenues and expenses. This function was placed under the Finance Division.

Fast forward to today. Your community is making impressive advances in downtown development and revitalization. A new downtown master plan sets the vision for further downtown development. The plan identifies specific transportation and parking action items needed to support the new downtown vision. Parking emerges as a significant element. Stakeholder comments include, "*All these issues are important, but nothing works without parking*." "*Parking is impacting everything we are trying to achieve as a community!*" "*If parking is this important, are we sure that the parking system is organized to be as efficient and*

effective as possible?" "*How is our parking system organized anyway?*" This discussion is happening across the country and parking system organizational assessments are becoming much more common.

In a horizontally fragmented parking program, where each department only manages one aspect of the parking system (such as on-street parking, enforcement, or parking structures), no one has responsibility or the perspective and understanding of all the functional areas to manage all these interrelated components as a system. In one study where different departments each managed a small component of the parking supply along with responsibilities for several other areas, the observation was made that "*parking was everyone's part-time job, but no one's full-time job*". Under this scenario, there is no overall accountability for parking as a system.

It is interesting to note the variety of ways in which the horizontal fragmentation of parking systems has evolved in different cities. Some have evolved along the lines of assigning different functions to various departments as noted in the illustration above. Some have peculiar combinations of functional and geographic divisions. Another category related to parking system organization and management has to do with whether the municipality has chosen to invest in the development of a significant off-street parking program (i.e., construction/management of parking structures/lots). Finally, the community's approach to self-management of resources versus outsourcing certain functions also plays a role.

CHAPTER 4: PARKING MANAGEMENT ORGANIZATIONAL BEST PRACTICES

While the current best practice data is fairly agnostic as to the exact organizational framework, **the fundamental characteristic of all the most successful strategies is the principle of "vertical integration" of parking functions.** The minimum degree of integration is management by one entity of the on-street parking, off-street parking, and parking enforcement functions. More advanced models include parking/transportation planning, transportation demand management programs, and, in some smaller communities, even transit system management.

Another dimension that we will discuss related to the organization and management of a vertically integrated parking program is the issue of self-management versus outsourcing/contract management. Within the contract management context we will review two primary approaches: management agreements and concession agreements.

We would be remiss if we did not at least mention another recent trend in this area: parking system privatization or "monetization." While there is not a lot of history in this area relative to parking systems, recent examples in Chicago, Pittsburgh, Atlanta, and Indianapolis are worth noting. Parking system monetization refers to the offering a long-term lease of specific parking assets (essentially a long-term concession agreement) in exchange for a large upfront payment.

There are many major US cities that have not made a significant investment in the development of a public off-street parking system. While this is neither good nor bad, it does impact the organizational options to be considered in terms of how they can most effectively organize a parking program designed to achieve the community's specific program goals and objectives.

In addressing this particular condition we have developed a new program approach that we call "the parking management collaborative". The goals of this approach are to essentially create a "management overlay" onto a collection of public and private parking assets so that the parking system looks and feels like a public parking system despite the actual distributed ownership behind the scenes.

This option, along with the more traditional parking system organizational options (parking authorities, parking districts, a vertically integrated municipal department, business district or development authority contract management options, etc.) are discussed later in this report following a discussion of defining program goals and guiding principles.

CHAPTER 5: PARKING SYSTEM ORGANIZATION AND MANAGEMENT

As the parking profession has evolved, several very effective parking system organizational models have emerged. Each of these models has its own strengths and weakness depending on several factors including the parking system's size, degree of development, programs offered, political landscape, community goals, and other factors. The four most successful and commonly utilized organizational models are:

- Consolidated ("vertically integrated") city/district departments
- Parking authorities or commissions
- "Contract" or business district models
- Parking districts

While there are several variations and hybrids of these models, these are the four primary alternatives commonly seen across the country. Each of these models will be detailed in more depth in the following sections. Yet despite the details, they all have one common factor that contributes to their success: They all address the major problem associated with the "horizontally fragmented" systems previously described.

When evaluating which organizational option will work best in a specific community, it is important to ask community stakeholders to create a prioritized set of evaluation criteria. A typical list of criteria that we employ includes determining which organizational option:

- Best supports economic development
- Best reflects the image and personality of the community
- Is most efficient/cost effective
- Is most customer-friendly
- Is most politically feasible
- Is most focused on the vision
- Is easiest to achieve
- Is most responsive to businesses and stakeholders
- Is most financially viable
- Provides the most effective coordination

The following section provides a brief description of parking system organizational models that have shown demonstrated success in recent years. Each description is illustrated by an example of a specific program based on that model.

CONSOLIDATED ("VERTICALLY INTEGRATED") CITY/DISTRICT DEPARTMENT MODEL

A consolidated, or "vertically integrated", city/district department model is essentially a typical department led by a department head and consisting of a varying assortment of support staff. The defining characteristic of this model is that the department director has complete responsibility for the management of all parking related program elements. The primary elements of these being:

- Off-street parking facilities
- On-street parking resources
- Overall program financial performance
- Parking system planning
- Parking enforcement

There are numerous other related areas that can be included:

- Transportation demand management (trip reduction programs, preferential parking for car/van pools, transit programs, etc.)
- Parking system branding, marketing, and community outreach
- Implementation of new technologies
- Parking system planning (e.g., zoning, financial planning)
- Residential permit parking programs
- Interface with downtown development and economic development

The City of Fort Collins, Colorado has a consolidated parking management program that incorporates off-street parking (parking structures and surface lots), on-street parking (time limited on-street spaces), and parking enforcement. All parking functions are self-managed using city staff positions. The city's parking manager also has developed a program to promote effective coordination and collaboration with the owners of private parking to better support evening restaurant parking demands and for special events.

FORT COLLINS, COLORADO

Another feature arising from this integrated approach is that the city recently embarked on a parking technology assessment. A key feature of this assessment was to identify technology options that could link on-street/enforcement systems (Auto-Vu License Plate Recognition (LPR) enforcement technology/T-2 systems software) with the next generation of off-street parking equipment and potentially new on-street multi-space meters. This type of creative and integrated thinking is more common in systems with a vertically integrated organizational structure.

CITY OF FORT COLLINS

We have identified an emerging trend in municipalities that are reorganizing their approach to parking, but maintain parking as a city department function. Many of these cities are adopting the vertically integration principals and organizationally consolidating all parking function in the economic development division as opposed to the more traditional transportation or public works divisions.

PARKING AUTHORITY MODEL

Parking authorities typically operate with a small staff and engage a private parking operator to manage day-to-day operations (although some have their own in-house staff). One advantage of the parking authority model, especially in a municipal setting, is that it puts all the major parties at the same table via a parking authority board or commission. This helps key stakeholders gain a deeper appreciation for the complexities of parking and the often competing or conflicting agendas between various constituent groups.

The defining characteristics of a parking authority model include:

- Defined mission and vision
- Governed by a detailed management agreement
- Often has bonding capability
- Most often has responsibility for all aspects of parking operations (off-street, on-street, and enforcement)
- Typically headed by a president or executive director
  - Tend to attract the highest caliber parking management personnel
  - President or executive director reports to a board (typically 7 to 15 members)
  - Board is comprised of influential and invested downtown stakeholders.
  - Board composition typically includes:
    - High level city staff
    - Mayor or City Manager (or appointee)
    - Director of Finance

- Director of Public Works
- Property owners/developers
- Downtown association members
- Chamber of Commerce representative
- Large downtown employers

Although the authority may not control all of the parking in a downtown area, that does not mean they cannot affect the entire downtown. The Downtown Toledo Parking Authority (DTPA) of Toledo, Ohio so dramatically transformed the operations in its three facilities that all the other private parking operations were forced to follow suit. Now virtually all downtown parking facilities have attendants in new uniforms, customer service training for front-line staff, parking structure interiors are painted white, are new customer friendly parking technologies and programs are being installed/instituted--all following the DTPA's lead. We call this the "high tide raises all boats" phenomenon.

TOLEDO, OHIO PARKING AUTHORITY

"CONTRACT" OR BUSINESS DISTRICT MODEL

In a surprising number of communities across the United States, downtown business improvement districts, downtown development authorities or urban renewal districts are taking operational responsibility for parking. Similar to the parking authority model, the contract or business district model is governed by a well-defined operating agreement that sets specific expectations and limits on the use of parking assets. These contracts or operating agreements must typically be reauthorized every three to five years based on whether the defined contract goals were met. If reauthorized, it is not uncommon for new goals and program objectives to be set for the next contract period.

BOISE, IDAHO CAPITAL TERRACE

In Boise, Idaho, the off-street parking program is professionally managed by the Capital City Development Corporation, the city's urban renewal agency. Through the aggressive use of tax increment financing combined with a strategy of leading other desired development with parking infrastructure investment, downtown Boise has become a national model of downtown community development and resurgence.

Another example of this model can be found in Tempe, Arizona. The City of Tempe does not own any significant parking facilities and only a few small surface parking lots. In Tempe, the need for a coordinated parking system solution to provide a more user-friendly experience for visitors drove the downtown organization, the Downtown Tempe Community, Inc. (DTC), to create what amounts to a "parking management overlay program". Working with the owners of the off-street parking assets, the DTC created a parking system management plan. Through creative signage, a common parking validation program, and extensive marketing, the parking system is branded to such an extent that it appears that Tempe has a well-managed and comprehensive parking program, although they do not own any of the individual assets. In essence, DTC acts as a private parking management firm. They manage all parking staff and programs and return all profits to the facility owners (keeping a modest management fee). The DTC also manages the city's on-street parking resources and reinvests on-street parking revenues back into the downtown district.

TEMPE, ARIZONA – MILL AVENUE

PARKING DISTRICT MODEL

The parking district model is slightly different than the previously defined models, but still shares the one common element of all of these successful models: the goal of a creating a "comprehensive parking management function" under the control of one managing entity ("vertical integration").

The characteristics of a parking district include:

- Typically have a defined area with set boundaries
- May have a special property assessment that applies to all properties within the district
  - While this revenue generally goes toward defined district improvements, it can be restricted to parking or transportation related projects.
- May have a "Parking In-Lieu of Property Tax" (PILOT) program where, in lieu of having a parking requirement for new development, developers instead pay a fee-in-lieu of parking development. This fee is generally calculated on a per stall basis and goes to the parking district for strategic investment in district parking needs (e.g., new parking additions, technology upgrades, transportation alternatives).
- Generally run by an executive director or president (although some are run by city department heads)

- All revenues are collected and managed by the district for reinvestment in the district
  - In some cases, additional funds are returned to the city's general fund if revenues exceed operational or capital program needs
  - In other cases, the city assesses the district a fee based on a percentage of net revenues in-lieu of not assessing property taxes on the parking facilities. This money goes to the city's general fund.
- Revenue sources typically include:
  - Special assessment (if applicable)
  - Off-street parking, which could include:
    - Miscellaneous sources such as advertising in parking structures, vending machines, or retail space rental (mixed-use parking facilities)
    - Special event parking
  - On-street parking
  - Parking enforcement

Parking Districts have made some significant contributions to the communities they serve. For example, the Downtown and University Hill Management District/Parking Services in Boulder, Colorado can boast the following list of accomplishments (all paid for with parking district revenues):

- **Funding of the Eco-Pass Program** ($700,000 for 2006). This program provides all downtown employees with a free bus pass and contributes to a 62% modal-split among downtown employees while reducing parking demand.

BOULDER, COLORADO –NEW ON-STREET

- **Repayment of a $3.4 million Mall Improvement Bond** ($500,000 per year). This is a good example of the parking program contributing to community economic development.
- **Payment of parking structure debt service obligations.** Parking district revenues can fund the development costs of downtown public parking structures as well as all parking operating and maintenance costs.
- **Establishment of design guidelines.** One of the more impressive parts of this program has been the leadership in defining appropriate design guidelines for parking structures. The guidelines state that only mixed-use structures are permitted, they must incorporate street level retail, and structures must be architecturally consistent with the downtown fabric. Some have been multi-modal in nature by integrating transit functions with parking.

BOULDER, COLORADO – PEARL STREET MALL

PROFESSIONAL SERVICES MODEL

A more recently developed organizational model is the “professional services” model. In this model, a smaller, more professional parking services group is developed in conjunction with the outsourcing of day-to-day operations. While there are many potential variations under this category, the most successful variation involves a core team that is primarily administrative in nature.

The management group is responsible for program elements, such as creating the vision and mission of the program, community outreach, program development (e.g., assessing the adoption of new technologies), parking system planning, interfacing with economic development programs and transportation system functions (including alternative transportation programs), contract administration, parking facility long-term maintenance program development, system financial administration/audit functions, and special projects management.

Day-to-day parking operations are outsourced to a qualified parking management firm. Responsibilities typically include off-street parking facility operations (cashiering services, pay-on-foot operations, etc.), daily facilities maintenance, security, etc. Some communities have extended these contract services to include the operation of on-street parking and parking enforcement programs including citation collections and management. Meter maintenance and collections, citation issuance, collections, and adjudication for on-street and enforcement operations can also be outsourced.

Another feature often used in conjunction with the professional services model is the development of on-call services agreements for various types of consulting and professional

services such as engineering facility condition appraisals, technology assessments, strategic planning, and revenue control system assessments and audits.

The primary advantages of this model are that parking is managed by a lean group of professional management staff focused on key areas such as:

- Program administration and finance
- Audit/revenue control
- Contract administration
- Special projects
- Marketing/branding/communications
- Economic development/customer satisfaction/business community interface

Because day-to-day operations are outsourced, the professional management group can better focus on the strategic goals of the parking program without getting involved in day-to-day management that comprises a myriad operational issues.

Communities beginning to implement this approach include the City of Beverly Hills, California and the City of Lincoln, Nebraska.

PARKING MANAGEMENT COLLABORATIVE APPROACH

This approach was developed specifically to address the set of conditions that exist in communities that have chosen not to develop a significant off-street public parking system and therefore do not have a significant ability to influence the off-street parking market in traditional ways.

The Parking Management Collaborative approach comprise of the following basic tenets:

- Demonstrated need to improve the ease of use and access to parking in the downtown, especially for occasional visitors
- Recognition that a comprehensive approach that will coordinate and integrate both on-street parking and off-street parking assets is needed to make the downtown more visitor-friendly
- On-street parking assets will be better managed as a short-term parking resource with the primary management goal being to promote a high degree of turnover for the benefit the merchants and businesses that depend on an effectively managed supply of convenient short-term parking resources. A goal of maintaining an average on-street occupancy level of approximately 85% shall be key program goal/benchmark.
- Because the majority of off-street parking in the downtown is privately owned and operated, a collaborative approach to developing a downtown parking management strategy is needed. The primary objective of this approach is to develop what is essentially a “parking management program overlay” that will create a well-coordinated and marketed user-friendly parking system that appears as a public parking program to the casual user. The key functional elements of this parking management overlay include:

- Program branding and marketing
- Comprehensive, updated downtown parking and wayfinding program
- Central parking and transportation information clearinghouse function
- Special event coordination function
- Significant parking and transportation planning function
- Coordination with community and economic development activities
- Management of city-owned parking assets
- Coordination with the downtown alliance in support of downtown business needs
- Parking Management Collaborative will strive to promote superior, customer-oriented parking programs and parking facility standards.
- Parking planning and coordination will be important functions related to understanding and responding to both the current and future parking needs of uptown users.
- The diverse needs of various user groups will be considered, including visitors, employees, employers, property owners, and parking management firms, through active planning, coordination, and communications.
- The Parking Management Collaborative shall be considered an integral component of the community's economic development strategies and programs.

The following nine elements form the initial strategies to be implemented by the Parking Management Collaborative in Charlotte, NC:

- Develop a parking system brand and marketing program
- Create a web-based parking and transportation information clearinghouse and serve as the central point for the coordination of information related to parking and access options for the community
- Promote the principles of balanced access for all travel modes, including vehicular, pedestrian, bicycle, and transit, to meet community-wide goals
- Focus on creating an excellent customer service orientation for all parking user groups including visitors, employees, employers, property owners, etc.
- Develop an effective interface between public and private parking providers
- Work with parking management collaborative members to create high standards for safe, attractive, and well-maintained facilities
- Take an aggressive and proactive approach to community education related to parking and transportation issues and new program development with responsiveness to the needs of the diverse customer/citizen base.
- Actively coordinate with economic vitality initiatives, retail support strategies, and other community and economic development programs.

- Develop a strong parking and transportation planning function and promote good urban design, shared parking, walkability, and transit-oriented development approaches to create a superior, people-oriented urban center

This approach needs only a small, but highly effective staff to be successful. The recruitment of an executive caliber program director with strong vision and excellent communication skills is essential for this strategy to succeed. The other key ingredient is to get buy-in from the major parking property owners. This is typically accomplished by recruiting them to be on the program's board of directors. In some cases, where all the right individuals are already on the board of an existing downtown organization (especially if creating "yet another board" would be seen as an issue), this function could become an initiative of that organization.

One of the key values of have the major parking property owners engaged at this level is that this will lead to them to direct the parking management firms they manage/hire to "get onboard" with the program. Engaging the parking management firms on another level can also be very valuable because of their detailed knowledge of conditions on the street and broader parking management principles.

Charlotte, North Carolina is the first major city to employ this model in a business improvement district known as Charlotte City Center Partners.

"ECODISTRICT" MODEL

This is the newest model that is beginning to be adapted to have a parking/transportation program focus. EcoDistrict initiatives generally are a comprehensive strategy to accelerate sustainable neighborhood development. The value proposition includes defining performance areas and outlining an implementation strategy as it relates to integrating sustainability goals as a defining element in the parking and transportation program organizational framework.

At its heart, an EcoDistrict is a neighborhood or district with a broad commitment to accelerate neighborhood-scale sustainability. EcoDistricts commit to achieving ambitious sustainability performance goals, guiding district investments and community action, and tracking the results over time.

A parking and transportation EcoDistrict recognizes technologies and strategies for enhancing district sustainability, such as energy and water management systems within parking developments, support for green streets, and the promotion of resource conservation, among other programmatic elements.

In this case, because parking can be a significant revenue source, we envision funds first being dedicated to supporting parking program operations, maintenance reserves, and technology upgrades. Once the parking program is established and generating excess revenues, these resources would be invested in a variety of sustainability initiatives. Examples might include programs such as:

- Community bike programs to support an overall "parking once strategy"
- Car sharing programs to support downtown residential development

- Pervious pavement installation and bio-swales as demonstration projects in city surface parking lots

It should be noted that the widespread deployment of these strategies has been slow to develop due to lack of comprehensive assessment tools, scalable project capital, and public policy support. EcoDistrict initiatives focus on removing these implementation barriers and creating an enabling strategy to accelerate neighborhood-scale sustainability.

The EcoDistricts initiative is distinct from most green development strategies that focus on brownfield or greenfield development primarily led by master developers or public agencies. Instead, the EcoDistricts initiative targets districts—existing at the intersection of buildings, infrastructure, and people. This initiative would be “working upstream” of rating systems like LEED for Neighborhood Development (ND) to develop tools and strategies for engagement and project implementation.

Generally, the EcoDistricts approach brings together community stakeholders, property developers, utilities, and the municipality to solidify a shared sense of purpose and partnership through the following actions:

- Create an engagement and governance strategy to build community support, set priorities, and take action
- Develop an assessment and management toolkit to guide project development and track ongoing performance
- Implement sustainability projects through technical and economic feasibility analyses, assembly of project financing, and establishment of public-private partnerships
- Identify commercialization opportunities for companies to test promising products and practices
- Establish municipal policy and regulatory structures to support EcoDistrict development

While the general goals above still apply, there will be some variation in the actions outlined above for a parking and transportation-specific application. Yet the broad-based nature of parking and transportation, need for on-going stakeholder engagement, and larger economic development focus make this application very appealing. Transportation accounts for approximately 30% of the nation’s overall carbon footprint. Organizing your parking program to have an explicit EcoDistrict orientation would send a strong signal of the community’s commitment to environmental progress.

APPENDIX A

Sample Parking Management Agreement

Appendix 8 - Municipal Parking Management Options

Effective Parking Management Organizational Models

Please note: This document is provided as an example of the typical scope and detail of a recommended parking management agreement transferring operational authority from a municipality to tax-exempt not-for-profit entity.

MANAGEMENT AGREEMENT

This **Management Agreement** ("Agreement") is made as of the __ day of _____, 20__, by and between the City of _____ a municipal corporation, duly organized and existing under and by virtue of the Constitution and the laws of the State of Wyoming and a duly adopted Charter (the "City"), and the [PARKING ORGANIZATION], an City non-profit corporation.

W I T N E S S E T H:

WHEREAS, The City owns, operates and maintains a public parking system for the City of _____ consisting of street metered parking, surface lots and parking garages (as more specifically described in Article 2 hereof as the "Parking System");

WHEREAS, the City has issued tax-exempt bonds to finance its "Off-Street Parking Facilities" in the _____ central business district (as defined in Article 2 hereof);

WHEREAS, [ORGANIZATION] was formed to provide support to the City with the management of downtown services, so as to lessen a burden of government;

WHEREAS, the City desires to consolidate the management of the Parking System by retaining the management services of [ORGANIZATION], for the benefit of the public welfare and to serve a legitimate public purpose of the city;

WHEREAS, [ORGANIZATION], has received a ruling from the Internal Revenue Service to the effect that [ORGANIZATION], is an organization described in Section 501(c)(3) of the Internal Revenue Code of 1986 as amended ("Code") so as to not impair the tax-exempt status on the bonds for the Off-Street Parking Facilities; and

WHEREAS, the City and [ORGANIZATION], believe that the public interest and the interest of future downtown development are best served by entering into this Agreement, as authorized by Ordinance No. _____.

NOW THEREFORE, in consideration of the promises and the mutual covenants herein contained, the parties hereto agree as follows:

Article I

APPOINTMENT OF [ORGANIZATION],

1.01 Appointment. The City hereby appoints [ORGANIZATION], to supervise, direct and manage the operation of the Parking System for the term provided in Article 3 hereof. [ORGANIZATION] accepts said appointment and agrees to supervise, direct and manage the operation of the Parking System during the term of this Agreement in accordance with the terms and conditions hereinafter set forth. The performance of all activities by [ORGANIZATION], under this Agreement shall be for the benefit of the City.

1.02 Authority to Operate. The Parking System shall be managed under the exclusive supervision and direction of [ORGANIZATION], who shall be responsible for its proper and efficient operation in accordance with the terms of this Agreement.

1.03 Authority to Subcontract.

(A) [ORGANIZATION] may retain one or more experienced commercial parking operators for the day-to-day operations of the Parking System and retain such services for the operations of the Parking System upon such terms and conditions as may be reasonably determined by [ORGANIZATION] to be appropriate in accordance with this Agreement.

(B) Any contract, agreement or other arrangement entered into after the date of this Agreement (collectively the "Arrangement") permitting an entity other than [ORGANIZATION] to use, operate or manage a portion of the Parking System the cost of acquisition, construction or improvement of which, or the equipment of which, was financed by bonds of the City the interest on which was intended to be excluded from gross income for federal income tax purposes (the "Bond-financed Facilities") must either be with an organization which has a ruling of the Internal Revenue Service that it is an organization described in Section 501(c)(3) of the Code and as to which income received pursuant to the Arrangement will not be "unrelated business income" for purposes of the Code, or if an entity that is not such an organization ("Private Person") must satisfy the following:

(1) If the Private Person's use of the Bond-financed Facilities occurs pursuant to an Arrangement for management services in the operation of all or a portion of the Bond-financed Facilities:

(a) At least 50 percent of the compensation provided to the Private Person under the Arrangement is based on a periodic, fixed fee that contains no incentive adjustment (e.g., based on the efficiency or output of managed property);

(b) None of the compensation is based to any extent on a share of net profits;

(c) The compensation is reasonable in relation to the services performed;

(d) The term of the Arrangement does not exceed five years (including any renewal option provided for in the Arrangement);

(e) If the term of the Arrangement exceeds three years, [ORGANIZATION] may cancel the Arrangement without penalty or cause at the end of each three-year period of the term of the Arrangement;

(f) Any automatic increase in the periodic fixed fee may not exceed the percentage increase determined by an external standard (e.g., Consumer Price Index) set forth in the Arrangement for Computing increases;

(g) Any succeeding Arrangement between the Private Person for management services that involve the Bond-financed Facilities is subject to the restrictions of this paragraph;

(h) If the governing body of the [ORGANIZATION] and the Private Person numbers five or more members, no more than one member of either one of such governing bodies is an employee or member of such other governing body and no more than one member of the governing body of [ORGANIZATION] may be the Private Person or a related person as described in Section 144(a)(3) of the Code;

(i) If the governing body of the [ORGANIZATION] or the Private Person numbers less than five, no member of either one of such governing bodies that numbers less than five is an employee or member of such other governing body and no member of the governing body of [ORGANIZATION] may be such Private Person or a related person as described in Section 144(a)(3) of the Code;

(j) The chief executive officers of [ORGANIZATION] and the Private Person, and the chairpersons of the governing bodies of [ORGANIZATION] and the Private Person are not members or employees of both [ORGANIZATION] and the Private Person or their governing bodies; and

(k) Members of the governing body of [ORGANIZATION] do not own a controlling interest in the Private Person and members of the governing body of the Private Person do not hold a controlling interest in [ORGANIZATION] .

(2) If the Arrangement permits a Private Person to use Bond-financed Facilities then all of the following conditions of this paragraph must be met:

(a) If the Arrangement provides for compensation based entirely on a periodic fixed fee that contains no incentive adjustments, the requirements of (c) through (k) of the immediately preceding paragraph (1) must be satisfied.

(b) If the Arrangement provides for compensation based in whole or in part on a percentage of gross income or other measure, the requirements of (c), (d) and (g) through (k) of the immediately preceding paragraph (1) and the following conditions must be satisfied.

(i) The term of the Arrangement does not exceed two years; and

(ii) [ORGANIZATION] is able to cancel the Arrangement at any time without penalty or cause at the end of the first year.

(3) An Arrangement under which services are to be provided by a Private Person ("Service Provider") involving the use of all or any portion of, or any function of, the Bond-financed Facilities (for example, management services for an entire facility or a specific portion of a facility, janitorial services, etc. ("Service Contract")) must meet all of the following conditions:

(a) The compensation for services provided pursuant to the Service Contract is reasonable;

(b) None of the compensation for services provided pursuant to the Service Contract is based on net profits from operation of the Bond-financed Facilities or any portion thereof;

(c) The compensation provided in the Service Contract satisfies one of the following subparagraphs:

(i) At least 50% of the compensation for each annual period is based on a periodic fixed fee. "A period fixed fee" means a stated dollar amount for services rendered for a specified period of time that does not increase except for automatic increases pursuant to a specified, objective external standard that is not linked to the output or efficiency of the Bond-financed Facilities (e.g., Consumer Price Index).

(ii) All of the compensation for services is based on a capitation fee or a combination of a capitation fee and a periodic fixed fee. A "capitation fee" means a fixed periodic amount for each person for whom the Service Provider assumes the responsibility to provide all needed services for a

specified period so long as the quantity and type of service actually provided to covered persons varies substantially.

(iii) All of the compensation for services is based on a per-unit fee or a combination of a per-unit fee and periodic fixed fee. A "per-unit fee" means a fee based on a unit of service provided (e.g., a stated dollar amount for each cleaning of a facility or car parked).

(iv) All of the compensation for services is based on a percentage of fees charged by the Service Provider.

(d) The terms of the Service Contract satisfy whichever of the following subparagraphs is applicable:

(i) In the case of a Service Contract providing for compensation described in sub-subparagraph (c)(i) or (ii), the term of the contract, including all renewal options, does not exceed five years and the Service Contract is cancelable by [ORGANIZATION] upon reasonable notice and without penalty or cause at the end of the third year of the contract term;

(ii) In the case of a Service Contract providing for compensation described in sub-subparagraph (c)(iii), the term of the contract, including all renewal options, does not exceed three years and the Service Contract is cancelable by [ORGANIZATION] upon reasonable notice and without penalty or cause at the end of the second year of the contract term;

(iii) In the case of a Service Contract providing for compensation described in sub-subparagraph (c)(iv), the term of the contract, including all renewal options, does not exceed two years and the Service Contract is cancelable by [ORGANIZATION] upon reasonable notice and without penalty or cause at the end of the first year of the contract term.

For purposes of this sub-subparagraph (d), termination of a Service Contract is considered to contain termination penalties if the termination limits [ORGANIZATION'S] right to compete with the Service Provider, requires [ORGANIZATION] to purchase equipment, goods, or services from the Service Provider, or requires [ORGANIZATION] to pay liquidated damages for cancellation of the Service Contract; a requirement that [ORGANIZATION] reimburse the Service Provider for ordinary and necessary expenses, or restrictions on the hiring by [ORGANIZATION] of key personnel of the Service Provider are not treated as contract termination penalties.

(e) The Service Provider has no role or relationship with [ORGANIZATION] that, in effect, substantially limits [ORGANIZATION'S] ability to exercise its rights under the Service Contract, including cancellation rights;

(f) The Service Provider and its directors, officers, shareholders and employees possess in the aggregate no more than 20 percent of the voting power of the governing body of [ORGANIZATION];

(g) [ORGANIZATION] and members of its governing body, officers and employees possess in the aggregate no more than 20 percent of the voting power of the governing body of the Service Provider;

(h) No individual who is a member of the governing body of [ORGANIZATION] and the governing body of the Service Provider is the chief executive officer of either [ORGANIZATION] or the Service Provider or the chairperson of either the governing body of [ORGANIZATION] or the governing body of the Service Provider;

(i) [ORGANIZATION] and the Service Provider are not member of the same controlled group (within the meaning of Treasury Regulations §1.150-1(f) or related persons, as defined in Section 144(a)(3) of the Code.

1.04 Authority to Make Expenditures. [ORGANIZATION] shall pay the costs and expenses for the management and operation of the Parking System during the term of this Agreement from the revenues of the Parking System and from the monies received from the City in accordance with the terms of this Agreement. In no event shall [ORGANIZATION] be liable for: (a) any cost or expense of the Parking System incurred by the City or any other person or entity, except as otherwise specifically provided in Article 13 hereof; or (b) any cost or expense of the Parking System which was otherwise incurred or accrued prior to the Commencement Date (as hereinafter defined).

1.05 Relationship of Parties. Nothing contained in this Agreement shall be deemed or construed by the parties hereto, nor by any third party, as creating the relationship between the parties of principal and agent, partnership, or joint venture. [ORGANIZATION] shall at all times be deemed an independent contractor without the right or authority to impose tort or contractual liability upon City. Nothing contained in this Agreement shall be deemed or construed by the parties hereto, nor by any third party, as limiting or prohibiting the ability of [ORGANIZATION] to manage and operate the parking facilities of any other governmental entity, including, without limitation, the County of _____ and the State of _____.

Article 2

DESCRIPTION OF PARKING SYSTEM

2.01 Parking System. The “Parking System” shall refer to and consist of the following facilities:

(A) The “Off-Street Parking Facilities,” which shall include the interest of the City in the following:

i) _____ Parking Facility, located at _____ (intersection of _____ and _____), as more particularly described in Exhibit A; capacity approximately _____ cars in the structure.

ii) _____ Parking Facility, located at _____ (intersection of _____ and _____), as more particularly described in Exhibit A; capacity approximately _____ cars in the structure.

iii) _____ Parking Facility, located at _____ (intersection of _____ and _____), as more particularly described in Exhibit A; capacity approximately _____ cars in the structure.

iv) such personal property owned by the City and used by or on behalf of the City in the operation of, and located at, the facilities listed in items i) through iii) above, including, without limitation, that property described in Exhibit D; and

v) such other facilities, structures, garages, lots and spaces now owned or hereafter acquired or constructed by the City, which may be made subject to the terms of this Agreement to the extent hereafter mutually agreed in writing by the parties hereto and

approved by the San Antonio City Council; together with the entrance and exit ramps, plaza areas, walkways, stairways, elevators, and office and management areas.

(B) The "On-Street Metered Parking," shall refer to and consist of all metered parking spaces located on the streets of downtown _____, as more particularly described in Exhibit E, all parking meters located therein and such personal property owned by the City and used by or on behalf of the City in the operation of said meters and the collection of revenues therefrom.

2.02 Excluded Space. City has certain commercial space in the Off-Street Parking Facilities which is not used for, or in connection with, vehicular parking, which space is more particularly described in Exhibit F ("Excluded Space"). The Excluded Space shall not be considered to be a part of the Off-Street Parking Facilities or the Parking System for purposes of this Agreement.

Article 3

TERM OF AGREEMENT

3.01 Term. Subject to earlier termination of this Agreement as provided in Article 12 hereof, the initial term of this Agreement shall be for a period commencing on 12:01 a.m. on _____, or such earlier date as may be mutually agreed by the parties hereto (the "Commencement Date") and ending at 11:59 p.m. on _____. Thereafter, this Agreement shall automatically renew for successive three (3) year periods, providing, however, that either party may terminate this Agreement if written notice is provided to the other party no later than six (6) months before the expiration of the initial term or any successive renewal term.

4.01 Management and Operation. [ORGANIZATION] shall supervise, direct and manage the operation of the Off-Street Parking Facilities, which shall be used solely for the provision of public off-street vehicular parking and related activities. [ORGANIZATION] shall see to the management and operation of the Off-Street Parking Facilities in an efficient and effective manner consistent with the operation of other parking facilities in _____. Subject to the terms of this Agreement and the Existing Agreements (as defined in Article 13 hereof), [ORGANIZATION] shall have exclusive authority to determine and modify vehicular parking rates, hours of operations, hours of free parking, if any, and the policies and procedures affecting customer service, staffing and personnel, advertising and promotion, maintenance, general appearance and cleanliness, procurement of inventories and all other activities necessary for the management and operation of the Off-Street Parking Facilities. The management and operation of the Off-Street Parking Facilities shall also specifically include the collection, receipt, holding and disbursement of funds and the maintenance of bank accounts (including, without limitation, reserve accounts). All revenues generated by the operation of the Off-Street Facilities shall be held in the name of [ORGANIZATION] subject to the terms of this Agreement. From and after the date of the execution of this Agreement, [ORGANIZATION] shall also have the right to use office space in the Off-Street Parking Facilities for the management of the Parking System without charge.

4.02 Condition of Facilities. Except as set forth in the report identified in Exhibit G attached hereto, the City represents and warrants to [ORGANIZATION] that on the Commencement Date the structural, mechanical, electrical, heating, ventilation, air conditioning, plumbing and vertical transportation elements of the Off-Street Parking Facilities will be in good repair and condition and that the Off-Street Parking Facilities will otherwise be in conformity with all applicable local, state and federal laws, ordinances, rules and regulations. On April 1 of each year during the term of this Agreement, and during the first two years of the first renewal term, the City shall provide [ORGANIZATION] with the sums set forth on Exhibit H, which sums [ORGANIZATION] shall use exclusively to perform so much of the maintenance, repair and alterations of the Off-Street Parking Facilities described in the report identified in Exhibit G as may be performed with such sums.

4.03 Routine Repairs and Maintenance. [ORGANIZATION] shall maintain the Off-Street Parking Facilities in good repair and condition and in conformity with all applicable local, state and federal laws, ordinances, rules and regulations, and shall make or cause to be made such routine maintenance, repairs and

minor alterations as it, from time to time, deems necessary for such purposes. The cost of routine maintenance, repairs and minor alterations to the Off-Street Parking Facilities shall be included in the Annual Budget (as defined in Section 6.03 hereof) and paid for from the revenues of the Parking System.

4.04 Non-Routine Repairs and Maintenance. Subject to the availability of necessary funds from the Repair Reserve, [ORGANIZATION] shall make or cause to be made such non-routine maintenance, repairs and alterations (as defined below) as may be necessary for the proper operation of the Off-Street Parking Facilities. The cost of non-routine maintenance, repairs and alterations to the Off-Street Parking Facilities shall be paid from the Repair Reserve. If the cost of such non-routine maintenance, repair or alteration exceeds the amount of the then outstanding balance of the Repair Reserve, [ORGANIZATION] shall so advise the City and request the City's approval of such work and the City's payment of the cost of such work to the extent such cost exceeds the then outstanding balance of the Repair Reserve. If the City does not approve such work and pay into the Repair Reserve the amount so requested within sixty (60) days after the written request therefore from [ORGANIZATION], then [ORGANIZATION] shall not be obligated to perform such work and [ORGANIZATION] may terminate this Agreement upon sixty (60) days written notice to the City. For purpose of this Agreement, non-routine maintenance, repairs and alterations shall include the sealing, repainting and resurfacing of the Off-Street Parking Facilities, and major repairs, alterations, improvements, renewals and replacements to the structural, mechanical, electrical, heating, ventilation, air conditioning, plumbing and vertical transportation elements of the Off-Street Parking Facilities.

4.05 Repair Reserve. [ORGANIZATION] shall establish a reserve escrow account in a bank acceptable to City to cover the costs of non-routine maintenance, repairs and alterations (the "Repair Reserve"). Prior to the Commencement Date, the City shall pay to [ORGANIZATION] the sum of $_____, which [ORGANIZATION] shall deposit in the Repair Reserve. Thereafter [ORGANIZATION] shall deposit such additional funds in the Repair Reserve pursuant to Sections 6.05 and 6.06 of this Agreement, up to an amount to be determined annually in accordance with good engineering practice by a licensed Wyoming professional engineer experienced with the operation, maintenance and design of parking facilities and retained by [ORGANIZATION] for that purpose. Such determination shall be based upon an annual report undertaken by such professional, which report shall be in a form similar to the Due Diligence Report, dated _____, prepared by _____ and attached hereto as Exhibit G. All expenditures from the Repair Reserve must be spent for non-routine maintenance, repairs and alterations and shall be appropriately documented.

4.06 Ownership of Replacements. All changes, repairs, alterations, improvements, renewals or replacements made pursuant to this Article 4 shall inure to the benefit of City unless otherwise denoted by written agreement between [ORGANIZATION] and the City. This Section 4.06 shall not limit or restrict the right or ability of [ORGANIZATION] to lease property from any third party for the management or operation of the Off-Street Parking Facilities, wherein such party retains title to such property.

4.07 Liens. [ORGANIZATION] will not, directly or indirectly, create or permit to be created or to remain, and will promptly remove and discharge or cause to be removed and discharged, any liens from being filed against the Off-Street Parking Facilities, or any funds of the [ORGANIZATION] or the City, which arise from any maintenance, changes, repairs, alterations, improvements, renewals or replacements in or to the Off-Street Parking Facilities or any party thereof, or any attested accounts, other than those liens approved by City in writing or created by or resulting from any act or status of City. The existence of any mechanic's, laborers,' materialman's, supplier's or vendor's lien, or any right in respect thereof, shall not constitute a violation of this Section 4.07 if payment is not then due upon the contract or for the goods or services in respect of which any such lien has arisen or if [ORGANIZATION] is contesting the same in good faith. [ORGANIZATION] shall not create any mortgage or other lien or encumbrance upon the Off-Street Parking Facilities or any part thereof. This Section 4.07 shall not limit or restrict the right or ability of [ORGANIZATION] to lease property from any third parties for the management or operation of the Off-Street Parking Facilities, wherein such party retains title to such property. The City or [ORGANIZATION] may, at its expense and after prior written notice to the

other, by appropriate proceedings diligently prosecuted, contest in good faith the validity or amount of any such lien, and during the period of contest, need not pay the items so contested, provided however, if at any time the City or [ORGANIZATION] shall deliver to the other an opinion of independent counsel to the effect that by nonpayment of any such times, any part of the Off-Street Parking Facilities will be materially affected or will be subject to imminent loss or forfeiture, [ORGANIZATION] shall promptly cause such lien to be discharged as aforesaid.

4.08 Access to Off-Street Parking Facilities. City shall have the right to enter upon the Off-Street Parking Facilities at all reasonable times for the purpose of inspecting or having others inspect same to determine the condition of the Off-Street Parking Facilities or the extent of [ORGANIZATION'S] compliance with its obligations hereunder. Any concern, comment or question City may have during or after such visit shall first be directed to [ORGANIZATION] and thereafter, following reasonable advance notice to [ORGANIZATION], the City may communicate with (but not direct) any operator which [ORGANIZATION] may retain under Section 1.03 of this Agreement. Notwithstanding the provisions of this Section 4.08, the City's access shall not interfere with the management or operation of the Off-Street Parking Facilities, and the City shall not have the right to use or permit any other persons to use the Off-Street Parking Facilities during the term of this Agreement except as provided in this Agreement. Notwithstanding the foregoing, however, the City shall have the right to use, without additional charge, up to fifty (50) parking spaces in the _____ Parking Facility for the parking of city vehicles, at such locations as may be designated by [ORGANIZATION] from time to time, provided that the City shall release any or all of such spaces upon the written reasonable request of [ORGANIZATION] received by the City not less than 30 days prior to the requested date if the _____ Parking Facility is fully occupied on a regular basis.

4.09 Mutual Cooperation. [ORGANIZATION] and the City shall reasonably and mutually cooperate and coordinate with the other in the performance of their respective maintenance, repair and replacement activities with respect to Off-Street Parking Facilities (insofar as [ORGANIZATION] is concerned) and with respect to the Off-Street Parking Facilities and other municipal improvements (insofar as the City is concerned), so as to minimize any disruptions to the operations of the other.

4.10 Additional Off-Street Parking Facilities. City and [ORGANIZATION] agree to cooperate and consult with each other in the development and operation of any other public parking facilities, structures or garages which the City may wish to construct, own or operate in _____ ("New Facilities"). City acknowledges that any New Facilities may affect the operation of the Parking System and the ability of [ORGANIZATION] to perform in accordance with the terms of this Agreement.

Article 5

ON-STREET METERED PARKING

5.01 Ownership and Policing Powers Vested in City. Nothing in this Agreement shall be construed to limit the City's power to control its streets pursuant to law. City shall retain ownership and policing powers over On-Street Metered Parking. City shall have ultimate authority concerning vacating streets and altering the course of traffic, including the right of traffic control, and shall have the ultimate authority as to issues such as visibility and general safety relating to City streets.

5.02 Parking Violations. The City agrees to retain [ORGANIZATION] to perform certain services for the On-Street Metered Parking, including but not limited to, issuing, processing and collecting of parking tickets for On-Street Metered Parking, provided that [ORGANIZATION] personnel issuing such parking tickets are duly authorized to do so under Wyoming law, and the collection of parking meter revenues. [ORGANIZATION] shall perform said services in collaboration with City, the Department of Police, the Cheyenne Prosecutor's Office and existing traffic violations personnel. All revenues generated by the operation of On-Street Metered Parking

and collected by the [ORGANIZATION] from On-Street parking meters and courtesy boxes shall be held in City's name in an escrow account in a bank acceptable to City and systematically transferred to an account held in [ORGANIZATION'S] name on a daily basis for use by [ORGANIZATION] in accordance with Wyoming law and this Agreement.

5.03 Meters and Signage. All traffic and parking zones within the City streets are established by and subject to the control of the Commissioner of Transportation ("Commissioner") in accordance with the _____ Municipal Code. After thirty (30) days following the reasonable request of [ORGANIZATION] to the Commissioner, the Commissioner may, at his reasonable discretion, change the time limits on meters, and/or change the parking rates for the On-Street Metered Parking. Subject to the approval of the Commissioner, [ORGANIZATION] may replace and remove parking meters related to the On-Street Metered Parking. The Commissioner and/or the Department of Police may temporarily cap parking meters for construction and other short-term public purposes. The Commissioner also regulates the installation and removal of all traffic signs within the City streets. [ORGANIZATION] shall request the Commissioner in writing fourteen (14) days in advance concerning the installation and removal of all traffic signs concerning the On-Street Metered Parking.

5.04 Repairs and Maintenance. [ORGANIZATION] shall maintain On-Street Metered Parking in good repair and condition and in conformity with all applicable local, state and federal laws, ordinances, rules and regulations, and shall make or cause to be made all necessary repairs, improvements and replacements to On-Street Metered Parking control equipment and meters. City shall continue to be responsible for providing street maintenance services on City streets. [ORGANIZATION] and the City shall reasonably and mutually cooperate and coordinate with the other in the performance of their respective maintenance, repair and replacement activities with respect to On-Street Metered Parking (insofar as [ORGANIZATION] is concerned) and the streets (insofar as the City is concerned), so as to minimize any disruptions to the operations of the other.

Article 6

BOOKKEEPING AND FINANCIAL ADMINISTRATION

6.01 Books and Records. [ORGANIZATION] shall keep full and adequate books of account and other records relating to or reflecting the results of operation of the Parking System, to be kept in substantial accordance with generally accepted accounting principles applied on a consistent basis, and so as to permit the City to comply with its Charter. Separate books and records shall be maintained for On-Street Metered Parking and the Off-Street Parking Facilities as well as for each individual parking facility constituting a part of the Off-Street Parking Facilities. All such books and records shall at all times be considered the property of City, however [ORGANIZATION] shall control, administer, maintain and otherwise be solely responsible for such books and records during the term of this Agreement. Upon termination of this Agreement, [ORGANIZATION] shall turn over all such books and records to City within one hundred twenty (120) days from the date of such termination, and all such books and records shall thereafter be reasonably available to [ORGANIZATION] for inspection, audit, examination and copying for a period of ten (10) years.

6.02 Accounts and Expenditures. Upon the execution hereof, City shall annually pay to [ORGANIZATION] the sum of $_____, which sum shall be used [ORGANIZATION] solely for the cost of the management and operation of the Downtown Organization and the Parking System and reimbursement of certain organizational and administrative expenses of [ORGANIZATION]. [ORGANIZATION] may also use revenues generated from the operation of the Parking System for its administrative expenses as provided in the Annual Budget (as defined in Section 6.03 hereof), but shall not charge any additional management fee for its own services in addition to its expenses. Revenues generated from the operation of the Parking System shall be deposited by [ORGANIZATION] in a bank approved by City. Whenever feasible, interest-bearing accounts shall be utilized. Withdrawals and payments made by [ORGANIZATION] from said accounts shall be made only by representatives as authorized by Washington DC BID, and only for the purposes permitted by this

Agreement. City acknowledges and agrees that [ORGANIZATION] may use the revenues generated from any part of the Parking System to pay the operating expenses for any part of the Parking System, without regard to the source of such revenue within the Parking System, it being the intent of the parties to operate the entire system as a whole unit on the City's behalf and without regard to the source of the revenue or the operation expense. The same shall also be true for all reserves to be established or generated under this Agreement. Upon termination of this Agreement, [ORGANIZATION] shall turn over all remaining accounts and reserves to the City after deduction for outstanding operating expenses for the Parking System and [ORGANIZATION] through the date of termination. [ORGANIZATION] shall provide an accounting of such expenses to the City.

6.03 Annual Budget. The [ORGANIZATION] shall submit to the Mayor of the City an annual operating plan and budget ("Annual Budget") in a format as set forth in exhibit __ attached hereto, or in a format as may be otherwise approved by City as follows. The First Annual Budget for the first full Fiscal Year hereunder (to be adjusted for the actual Commencement Date) is attached as exhibit ___, and has been found to be reasonably acceptable to both parties. The subsequent Annual Budgets for each remaining Fiscal Year, or portions thereof, included in the term of this Agreement, shall be due on June 15 of each preceding year. Such Annual Budget shall set forth in reasonable detail in conformance with those accounting requirements as set forth in Section 6.01, a detailed estimate of the income and operating and capital expense of the Parking System for the next succeeding Fiscal Year. Commencing on the date of submission, the Mayor shall have a thirty (30) day period to provide his or her comments with respect to the Annual Budget. If at the expiration of the thirty (30) day period, the Mayor fails to provide his or her comments with respect to a submitted Annual Budget, said Annual Budget shall become final. In the event the Mayor does provide his or her comments in a timely manner, [ORGANIZATION] shall work in good faith and with due diligence to achieve an Annual Budget reasonably acceptable to both parties. Consistent with the foregoing provisions, sixty (60) days prior to the commencement of the ensuing Fiscal Year, [ORGANIZATION] shall resubmit a final revised Annual Budget to the Mayor.

6.04 Periodic Reports. The [ORGANIZATION] shall provide the City with an annual financial report showing such items of income and expense as are required to be set forth in the Annual Budget, with a comparison of line items with those in the applicable Annual Budget. The [ORGANIZATION] shall also provide the City with a monthly financial report showing such items of income and expense as are required to be set forth in the Annual Budget on both a cumulative basis for that calendar month and any prior calendar months during such Fiscal Year and on a non-cumulative, independent basis for such month alone. The [ORGANIZATION] shall also maintain daily reports setting forth such financial information in regards to the Parking System operations as results from [ORGANIZATION'S] standard financial accounting and reporting procedures. The [ORGANIZATION] shall be responsible for the preparation of any interim financial reports that City may reasonably request. The [ORGANIZATION] shall provide the City with the periodic reports sets forth in this Section 6.04 as promptly as reasonably possible. Such reports shall be based upon the records of [ORGANIZATION] maintained in accordance with Section 6.01 of this Agreement.

6.05 Parking Fund. The City shall pay to [ORGANIZATION] such balance as may be remaining in the City's parking fund at _date__, which [ORGANIZATION] shall deposit in the Repair Reserve. All expenditures of such funds by [ORGANIZATION] shall be made in accordance with Section 4.05 hereof.

6.06 Surplus. Parking System revenues in excess of Parking System operating expenses ("Net Revenues") at the end of each Fiscal Year shall be first applied to the Repair Reserve up to the amount certified in Section 4.05 of this Agreement. Net Revenues remaining after application to the Repair Reserve shall be promptly remitted to City and first used by the City for the payment of the existing debt services for obligations issued by the City for the Off-Street Parking Facilities to the extent that the Debt Service Reserve established by Article 7 of this Agreement is insufficient for such purposes.

6.07 Inspection of Books and Records. City shall have the right to inspect and audit the books and records maintained by [ORGANIZATION] pursuant to this Article 6 at all reasonable times.

6.08 Certified Audit. [ORGANIZATION] shall provide the City with an annual review of the annual financial statements of [ORGANIZATION] prepared by an independent public accountant. For the second year of the initial term and each alternate year thereafter, [ORGANIZATION] shall provide the City with an independent audit of the most recent annual financial statements of [ORGANIZATION].

Article 7

TAX-EXEMPT MUNICIPAL BONDS

7.01 Debt Service Reserve. [ORGANIZATION] shall establish a reserve escrow account to assist the City with the amortization of the existing debt service for Off-Street Parking Facilities (the "Debt Service Reserve"). During the term of this Agreement, [ORGANIZATION] shall make monthly payments, as provided by Exhibit K, from the revenues of the Parking System to the Debt Service Reserve. Such payments shall be recorded as part of, and included in, the Annual Budget. Funds deposited in the Debt Service Reserve shall be delivered to City semiannually on May 15 and November 15 to be used for payment of debt service on obligations issued by the City for the Off-Street Parking Facilities. As to the holders of the outstanding obligations of the City, the City shall be responsible for the payment of the debt service on obligations issued by the City for the Off-Street Parking Facilities.

7.02 Tax-Exempt Status of Bonds. The City and [ORGANIZATION] hereby covenant and represent that neither shall take any action or fail to take action that may be required of it for interest on the outstanding notes and bonds of the City to be and remain excluded from the gross income of the holders thereof for federal income tax purposes.

Article 8

INSURANCE

8.01 Liability Insurance. [ORGANIZATION] shall procure and maintain, during the term of the Agreement, commercial general liability insurance with limits of not less than $1,000,000 combined single limit per occurrence, $2,000,000 annual aggregate. The City, its officials, officers and employees shall be named as additional insured using ISO form GC 20 24 "Additional Insured-Owners or Other Interests From Whom Land Has Been Leased" or such other form as may be acceptable to the City. [ORGANIZATION'S] insurance coverage shall be primary insurance as respects the City. Any insurance or self-insurance maintained by the City shall be excess of [ORGANIZATION'S] insurance and non-contributing. Any self-insurance retention or deductible insurance plans shall be the sole responsibility (without contribution or set-off from City) of [ORGANIZATION]. The commercial general liability policy shall contain the following definition of "insured contract":

> "That part of any other contract or agreement pertaining to your business (including an indemnification of a municipality in connection with work performed for a municipality) under which you assume the tort liability of another party to pay for 'bodily injury' or 'property damage' to a third person or organization. Tort liability means a liability that would be imposed by law in the absence of any contract or agreement."

The Certificate of Insurance must include this specific language on the certificate of insurance or otherwise to confirm this definition of any insured contract. [ORGANIZATION] shall furnish the City with a Certificate(s) of Insurance (form ACCORD 25-S) and a copy of the additional insured endorsement acceptable to the City during the term of this Agreement and any extension thereof. A copy of the policy(s) shall be provided the City upon request. [ORGANIZATION] expressly understands that the insurance requirements as outlined above are minimum requirements to be met under this Agreement and does not in any manner represent that the limits, coverage or policy forms are sufficient or adequate to protect the interest or liabilities of the City.

8.02 Property Insurance. City shall keep the Off-Street Parking Facilities, including all property contained therein, insured against loss or damage from fire, explosion and similar casualties or other cause normally covered in standard broad form property insurance policies, in an amount not less than ninety percent (90%) of the replacement cost thereof. Insurance shall be carried in the name of City and any losses there under shall be payable to the parties hereto as their respective interest so entitles them to receive.

8.03 Workers' Compensation. [ORGANIZATION] agrees at all times during the term of this Agreement to maintain adequate Workers Compensation Insurance consistent with the laws of Wyoming and unemployment insurance in such amounts and with such deductibles as are required by law.

8.04 Waiver and Subrogation. City and [ORGANIZATION] do hereby release and waive the right of recovery and suit against each other and shall, to the extent possible, procure endorsements to such effect on any insurance policies required under this Article 8, for loss or damage to property arising out of the perils insured against under this Article 8 covered by valid and collectible insurance carried at the time of the loss or damage to the extent such loss or damage is indemnified by such insurance, regardless if such loss or damage is caused by the fault or neglect of either party.

Article 9

INDEMNIFICATION

9.01 Indemnification. [ORGANIZATION] agrees to defend and hold harmless and indemnify the City, its officials, officers and employees from and against any and all loss, damage, claims or expense whatsoever by reason of injury (including death) to or loss by any person or property arising in any manner or under any circumstances whatsoever from [ORGANIZATION'S] (including but not limited to its agents, contractors, vendors and employees - however known) supervision, direction, management and operation of the Parking System, whether said injury or damage is suffered by [ORGANIZATION], its agents, contractors, vendors or employees or any other persons whomsoever who seek to hold the City, its officials, agents and employees liable. It is understood and agreed that this indemnification obligation is enforceable to the full extent permitted by Wyoming law. In any and all claims against the City by any employee of [ORGANIZATION], anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, hereby expressly waives the immunity proved to [ORGANIZATION] by Wyoming law so that this indemnification obligation may be enforced by the City against [ORGANIZATION] in those instances. The indemnification obligation shall not be limited in any way by the insurance requirements but shall be in addition to those requirements.

Article 10

PROCEEDS FROM CASUALTY

10.01 Proceeds from Casualty. Any proceeds received by the City or [ORGANIZATION] from any insurance policies required to be maintained pursuant to this Agreement or otherwise because of casualty or damage to the Parking System shall be promptly used to restore the Parking System to a condition mutually satisfactory to City and [ORGANIZATION]. If in the good faith judgment of City the funds received from any insurance policies or otherwise shall be insufficient to restore the Parking System to a satisfactory condition, and if additional funds of [ORGANIZATION] or City are not made available, or if additional bonds are not authorized to make proper restoration, then the City or [ORGANIZATION] shall have the right and option to terminate this Agreement upon sixty (60) days notice.

Article 11

TAXES

11.01 Real Estate and Property Taxes. The Off-Street Parking Facilities are currently exempt from real property taxes on the improvements, but not from real estate taxes on the land nor from special assessments. City and [ORGANIZATION] agree that they shall not take any action to impair said tax exempt status of the Off-Street Parking Facilities (unless it is mutually agreed that taxable bonds be considered to provide more flexibility regarding parking facility usage). City shall pay all real estate taxes on the land and all special assessments for all periods which are due and payable through __date___. [ORGANIZATION] shall pay the real estate taxes on the land and the special assessments for the Off-Street Parking Facilities on a due and payable basis during the term of the Agreement, commencing with the taxes and assessments due and payable after __date__, from the revenues of the Parking System as part of the operating expenses of the Parking System. The City or [ORGANIZATION] may, at its expense and after prior written notice to the other, by appropriate proceedings diligently prosecuted, contest in good faith the validity or amount of any such taxes, assessments or other similar charges, and during the period of contest, need not pay the items so contested, provided however, if at any time the City or [ORGANIZATION] shall deliver to the other an opinion of independent counsel to the effect that by nonpayment of any such times, any part of the Off-Street Parking Facilities will be materially affected or will be subject to imminent loss or forfeiture, [ORGANIZATION] shall promptly pay such taxes, assessments or similar charges.

Article 12

DEFAULT AND REMEDY

12.01 Default by [ORGANIZATION]. Any of the occurrences or acts set forth in this Section 12.01 shall constitute an event of default of [ORGANIZATION] under this Agreement:

(A) The failure of [ORGANIZATION] to perform, keep or fulfill any material provision of this Agreement for thirty (30) days after City shall have delivered to [ORGANIZATION] written notice of such failure. Provided, however, if a default referred to in this Section 12.01(A) cannot be cured within thirty (30) days, then upon receipt by City of a certificate from [ORGANIZATION] stating (i) the reason that such default cannot be cured within thirty (30) days, and (ii) that [ORGANIZATION] is proceeding with diligence to cure such default, the time within which such default may be cured shall be extended for such period as may be necessary to complete the curing of the same with diligence; or

(B) If a receiver, trustee, custodian or liquidator of [ORGANIZATION] shall be appointed in any proceeding brought by [ORGANIZATION]; or if any such receiver, trustee custodian or liquidator shall be appointed in any proceeding brought against *[ORGANIZATION]* or its assets and shall not be discharged within ninety (90) days after such appointment; or if [ORGANIZATION] shall consent to or acquiesce in such appointment; or

(C) If [ORGANIZATION] shall make an assignment for the benefit of creditors or shall admit in writing its inability to pay its debts generally as they become due.

12.02 Default by City. Any of the occurrences of acts set forth in this Section 12.02 shall constitute an event of default by City under this Agreement:

(A) The failure of City to perform, keep or fulfill any material provision of this Agreement for thirty (30) days after [ORGANIZATION] shall have delivered to City written notice of such failure. Provided, however, if a default referred to in this Section 12.02(A) cannot be cured within thirty (30) days, then upon receipt by [ORGANIZATION] of a certificate from City stating (i) the reason that such default cannot be cured within thirty (30) days, and (ii) that City is proceeding with diligence to cure such default, the time within which such

default may be cured shall be extended for such period as may be necessary to complete the curing of the same with diligence;

(B) The issuance by any court of competent jurisdiction of a permanent injunction in any way preventing the use of the Parking System for the purposes set forth in this Agreement.

12.03 Remedies. (A) In the event of default by [ORGANIZATION] under Section 12.01, City may terminate this Agreement and take possession of the Parking System and/or pursue any other remedy provided by law.

(B) In the event of default by City under Section 12.02, [ORGANIZATION] may terminate this Agreement and/or pursue any other remedy provided by law.

Article 13

EXISTING AGREEMENTS

13.01 Existing Agreements. Attached hereto (if applicable) are various City agreements with third parties ("Existing Agreements") regarding the use and enjoyment of the Parking System on and after the Commencement date. Effective on the Commencement Date, the City shall assign all right, title and interest in and to the Existing Agreements to [ORGANIZATION], and [ORGANIZATION] shall assume and perform the prospective obligations of the City there under; provided, however, that in no event shall [ORGANIZATION] be responsible for any obligations of the City with respect to the Existing Agreements which relate to the period prior to the Commencement Date. The City represents and warrants to [ORGANIZATION] on the date hereof and on the Commencement Date (a) that the Existing Agreements are true, correct and complete copies of the same; (b) that the Existing Agreements constitute the entire agreement with said parties, are in full force and effect, and have not been amended or in any way modified except as expressly set forth therein; (c) that there exists no default or event of default under the Existing Agreements or other condition, that with the giving or notice or passage of time or both would constitute a default or event of default under the Existing Agreements; and (d) that except for the Existing Agreements there are no other agreements with any persons or entities regarding the management, operation, use or enjoyment of the Parking System. After the date hereof and until the termination of this Agreement, City agrees not to enter into any agreements, with any persons or entities for the ownership, management, operation, use or enjoyment of the Parking System, which remain in effect on or after the Commencement Date. Without limiting the generality of the foregoing, City shall not after the date hereof and until the expiration of this Agreement bargain, sell, convey, assign, mortgage, pledge, gift or in any manner transfer any of its right, title, or interest in the Parking System, or permit or authorize any other person or entity to use the Parking System on or after the Commencement Date except as provided in this Agreement.

Article 14

MISCELLANEOUS PROVISIONS

14.01 Notices. Any notice by either party to the other shall be in writing and shall be hand-delivered or mailed by registered or certified mail in a postage prepaid envelope addressed:

To City: City of Cheyenne, WY

Address

Attention:

To: [ORGANIZATION]:

Attention: Executive Director

or at such other address as The City and [ORGANIZATION] , respectively, may designate in writing from time to time. Notice shall be deemed to have been duly given upon receipt.

14.02 Entire Agreement. This Agreement constitutes the sole agreement of the parties hereto and supersedes any prior understandings or written or oral agreements between the parties respecting the subject matter hereof.

14.03 Severability. If any provision of this Agreement or the application thereof to any person or circumstances shall be invalid or unenforceable, the remainder of this Agreement or the application of which is invalid or unenforceable shall not be affected thereby.

14.04 Binding Effect. This Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective heirs, executors, administrators, legal representatives, successors and assigns when permitted by this Agreement.

14.05 No Waiver. Except as otherwise specifically provided in this Agreement, the failure of either party to insist upon a strict performance of any of the terms or provisions of this Agreement or to exercise any option, right or remedy herein contained, shall not be construed as a waiver or as a relinquishment for the future of such term, provision, option, right or remedy, but the same shall continue and remain in full force and effect.

14.06 Governing Law. This Agreement shall be construed under and governed by the laws of the State of Wyoming.

14.07 Headings. The article and section headings contained in this Agreement are for convenience only and do not define, limit or construe the contents of such articles and sections.

14.08 Amendment. No amendment or modification of the terms hereof shall be binding unless the same shall be in writing and duly executed by the parties hereto.

14.09 Counterparts. This Agreement may be executed in several counterparts, each of which shall be an original, but all of which shall constitute but one and the same instrument.

14.10 Force Majeure. In the event [ORGANIZATION] or the City shall be delayed or otherwise prevented from the performance of any act required hereunder by reason of strikes, walkouts, other labor disputes, acts of God, inability to procure materials or labor, failure of power, restrictive governmental laws or actions, riots, insurrections, war, or other reason of like nature or any other reason not the fault of and beyond the reasonable control of [ORGANIZATION] or the City as the case may be, then performance of such act shall be excused for the period of the delay so resulting.

14.11 Nondiscrimination. [ORGANIZATION] shall comply with all federal and state laws with regard to nondiscrimination in employment.

14.12 Assignment. This Agreement may not be assigned by either party without written consent of the other.

14.13 Fiscal Year. The “Fiscal Year” of [ORGANIZATION] shall begin on the first day of January in each year.

14.14 No Personal Liability. No covenant, stipulation, obligation or agreement of the City or [ORGANIZATION] contained in this Agreement shall be deemed to be a covenant, stipulation, obligation or agreement of any present or future member, officer, trustee, agent or employee of Wyoming or

[ORGANIZATION] in other than his or her official capacity; and neither the members of ____ City Council or any trustee or officer of the City or [ORGANIZATION] shall be subject to any personal liability or accountability by reason of the covenants, stipulations, obligations or agreements contained in this Agreement.

Signed by the Parties:

_____

_____

APPENDIX B

Draft Resolution to Create a Parking Management District

DRAFT RESOLUTION TO CREATE A PARKING MANAGEMENT DISTRICT

DRAFT OF MUNICIPAL CODE CHAPTER AUTHORIZING THE CREATION OF A PARKING IMPROVEMENT DISTRICT

Note: It is intended that this document be used as a starting point for the development of a resolution to authorize the creation of a Parking Improvement District. Consultation with appropriate legal council will be required to investigate state statutes regarding the creation of parking management agencies and if desired, the creation of special tax assessment districts.

City of _____, _____

Chapter No. ___ PARKING DISTRICT

Section ___.010 Purpose.

Section ___.020 Resolution of intention.

Section ___.030 Public hearing.

Section ___.040 Description of the area.

Section ___.050 Businesses subject to amendment.

Section ___.060 System of assessments or charges imposed.

Section ___.070 Parking and business improvement area established.

Section ___.080 Uses of revenues.

Section ___.090 Delegation of administration.

Section ___.100 Findings of benefit.

Section ___.120 Operative date.

Section ____.010 Purpose.

The purpose of this chapter is to authorize _____ to create a quasi-independent parking improvement assessment district to improve the management of parking resources and to support the economic development and the strategic vision of the City. The parking district will have the power to impose assessments or charges or both on businesses within the downtown area, which is in addition to any assessments, fees, charges or taxes imposed by the State of Wyoming and to use such proceeds for the benefit of businesses within such area by doing any and all of the following:

A. Parking supply additions
B. Parking system improvements
C. Parking technology upgrades
D. Parking rate assessment and modifications
E. Beautification
F. Promotion of public events
G. Furnishing of art to public places in the area, and
H. General promotion of business activities.

Section ____.020 Resolution of intention.

The parking district herein created was initiated pursuant to the provisions of the _____ Code Section _____ which requires adoption of a Resolution of Intention by the legislative body of any City creating such an entity. The City Council of the City of _____ at a regular City Council meeting on _____ adopted Resolution No. _____ which declared its intention to consider establishment of a parking district.

Section ____.030 Public hearing.

Pursuant to the requirement of _____ Code Section _____, the City Council of the City of _____ held a public hearing at a regularly scheduled City Council meeting on _____ for the purpose of receiving testimony and protests and other comment from those businesses within the proposed area, and to receive any other information concerning the formation of the parking District.

Section ____.040 Description of the area.

The Parking District created herein is focused initially on the [insert area] business area of the City of Cheyenne, but may extend to cover parking management issues in other areas in the future as additional needs develop. The downtown parking improvement district created herein is in the downtown business area of _____, an area more fully described in the legal description marked Exhibit A and the plat of the area titled "Parking Improvement District"

marked Exhibit B attached to Resolution No. _____ and permanently placed on file in the office of the City Clerk, and incorporated herein by this reference. The boundaries of the downtown parking improvement district of the City of _____ may be amended from time to time, by resolution pursuant to Section _____ of the _____ Streets and Highways Code or by ordinance pursuant to Section ____ of the _____ Streets and Highways Code.

Section ____.050 Businesses subject to amendment.

All businesses in the parking improvement district created and established under this chapter shall be subject to any amendments to this chapter enacted or adopted by the City Council of the City of _____.

Section ____.060 System of assessments or charges imposed. (Optional)

The Parking District will have the ability to implement a charge system to be imposed on each business entity within the parking improvement district as hereby created. Businesses shall pay an amount equal to ___ percent of the business tax charge as set forth in this code or as it may hereafter be amended. Such funds are in addition to and shall be kept in a separate account from business tax revenues and shall be used for the purposes that are established herein. (Ord. _____, 20__)

Section ____.070 Parking District established.

Pursuant to the provisions of _____ Code Section _____ and following, the City Council hereby establishes a downtown parking district as described in this chapter. (Ord. _____, 20__)

Section 3.46.080 Uses of revenues.

The revenues derived from the parking facilities and parking district assessments and charges shall be used for the following purposes:

I. Creation and operation of the Parking District

II. Parking Operations and Management

III. Parking System Capital Improvement

IV. Parking System Marketing and Support of Seasonal Promotions

V. Beautification and Parking Projects

VI. General promotion of business activities

VII. Other uses not inconsistent with the purposes enumerated in Section _____. (Ord. _____, 20__)

Section 3.46.090 Delegation of administration.

The _____ Parking District is authorized to administer funds raised hereunder and to operate programs and activities which are consistent with the purposes, goals and uses outlined in this

chapter, and to formally report back to the City Council at least annually beginning no later than January, ____. (Ord. _____, 20__)

Section 3.46.100 Findings of benefit.

The City Council, after holding a public hearing and providing an opportunity for protests to be heard and after taking testimony and comment from interested persons representing businesses within the area and the Downtown _____ Association, does hereby find that to promote improved public service, enhanced downtown economic development and the achievement of the City's strategic goals, the creation of the parking District be an valuable asset and that the businesses conducting their activities within the area will benefit by the expenditure of funds raised by the charges as contemplated by said Section _____ and following of the Streets and Highways Code. (Ord. _____, 20__)

Section 3.46.120 Operative date.

The operative date of this chapter is _____, 20__. (Ord. _____, 20__)

Wyoming

DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

Kimley»Horn
Expect More. Experience Better.

December 2016

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DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

Introduction/Overview

This “Tool Box” of parking management and design best practices has been compiled over a number of years and continues to evolve as the parking industry evolves.

Our goals in the development and organization of this document were to provide a comprehensive categorization of parking planning, management and design areas to make finding specific best practices easier. As is often the case when trying to categorize a wide range of items there are instances where one item might legitimately be placed in multiple categories.

As this collection has grown, we have expanded our thinking on exactly what to include. For example, in the category of “Sustainable Parking Design & Management Strategies” we chose to include some concepts that speak more to potential future applications. While technically not “best practices”, they do illustrate new ideas and approaches that can inspire creative thinking.

We know of no parking/transportation program anywhere that has adopted all of these concepts and management strategies. It is our hope that this tool will provide the City with a wealth of ideas to stimulate program development as you tackle parking issues as a key transformative strategy within the context of your downtown revitalization and parking program enhancement plans.

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Ch.
1

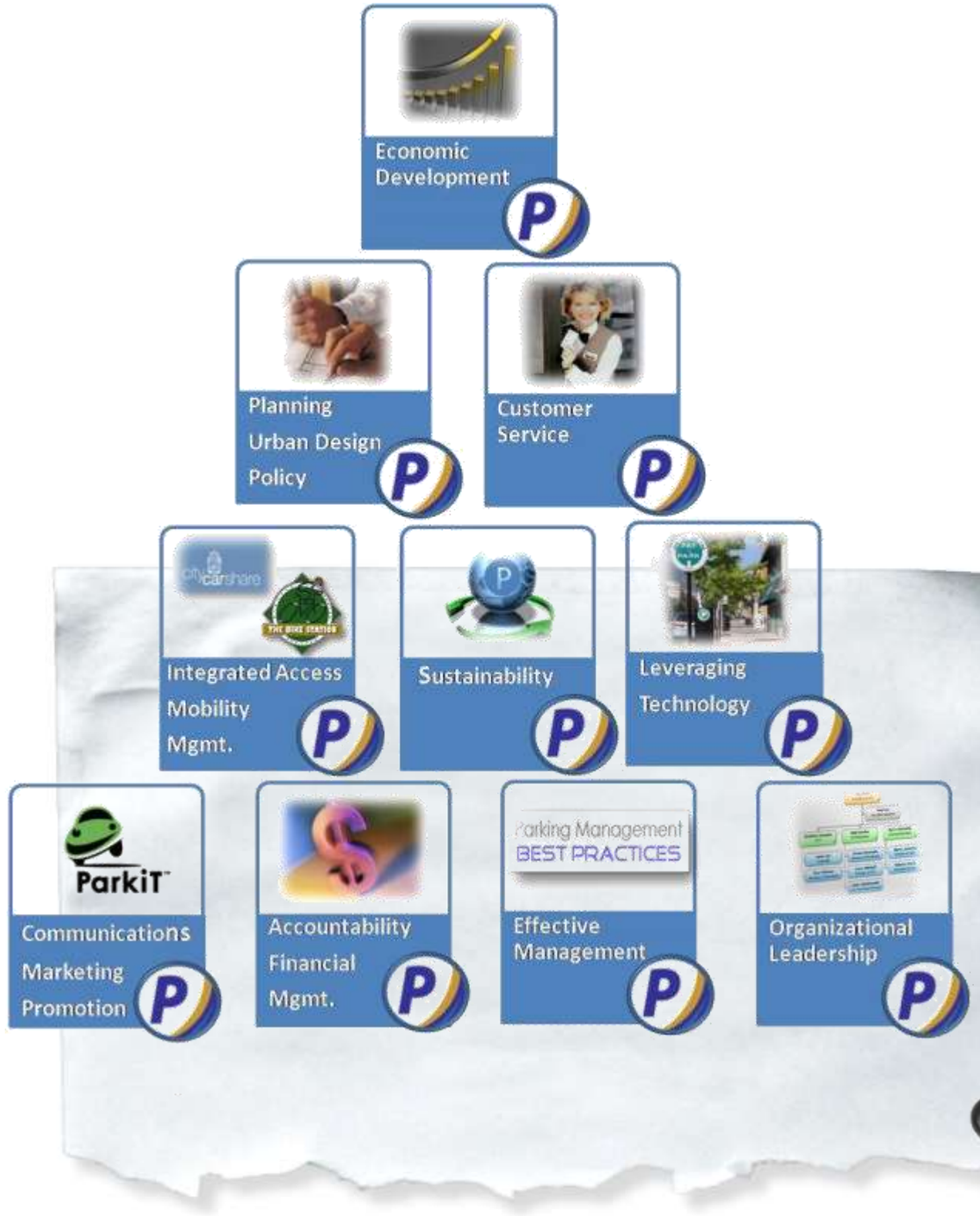
A Comprehensive Approach to Program Development

Guiding Principles

Creating a comprehensive set of “guiding principles” is the first step in creating a strategic parking plan for your organization.

ex.

- Guiding Principles form the strategic framework of a program
- Within a parking strategic plan, specific action items are organized by the larger “guiding principle categories”.
- In this way, by working the action plan, you will remain true to the vision, mission and core values of the strategic plan which was developed with significant stakeholder involvement.



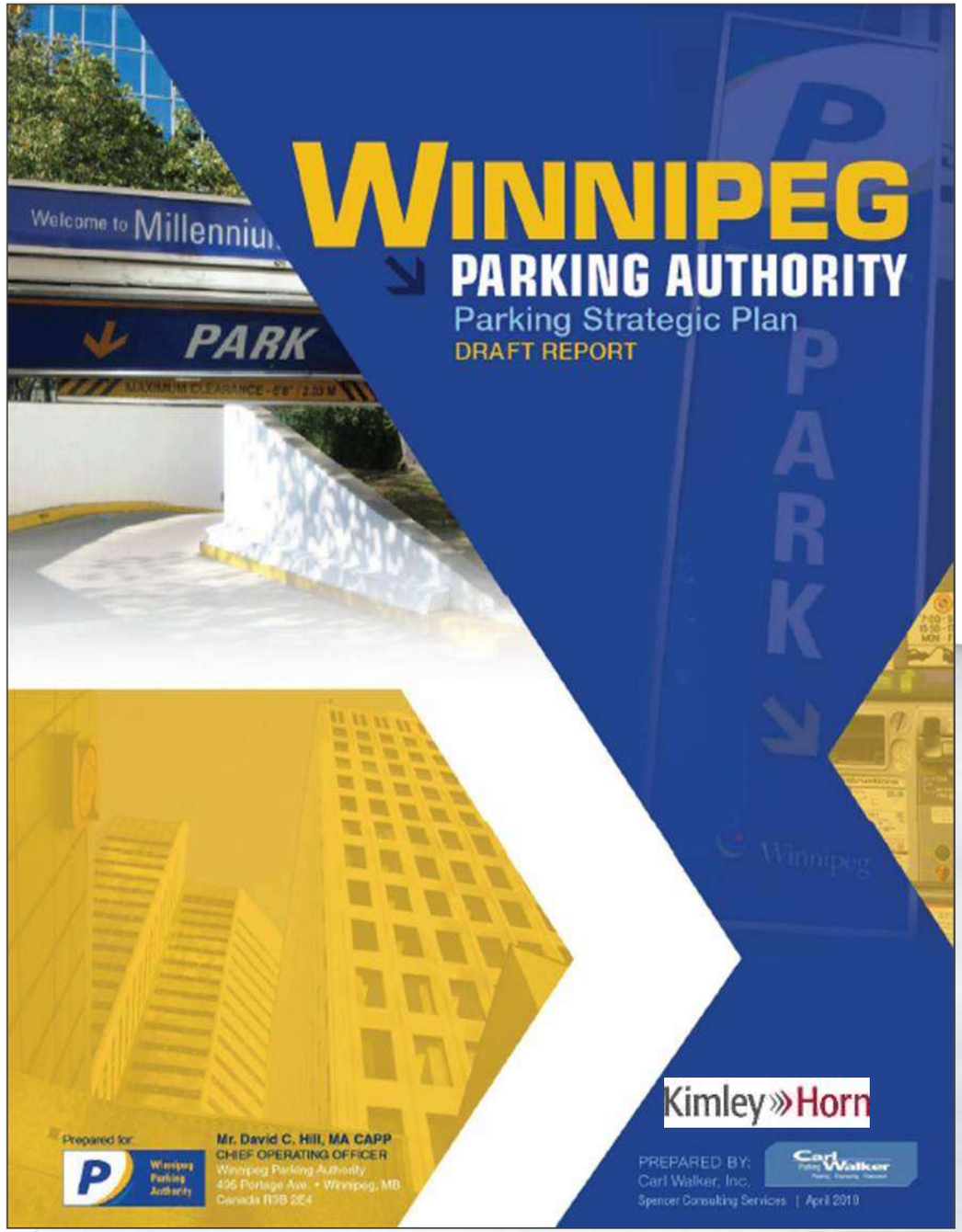
Parking Strategic Plans

A characteristic of “Best in Class” parking programs is that they have developed a *Parking Strategic Plan* to define the program’s vision, mission and work plan.

One key to success is the degree to which programs actually “work the plan”.

ex.

- The strategic plan helps set program priorities
- Builds consensus on program direction
- Defines funding priorities
- Informs staffing development
- Connects the program of work with related community interests
- Provides a roadmap for future program development



20 Characteristics of Effective Parking Programs

The parking chapter of the book *"Making Business Districts Work"* reviews what the author considers to be the "20 Characteristics of Best-in-Class Parking Programs". Taken as a whole these characteristics form the foundation for a comprehensive parking management program.

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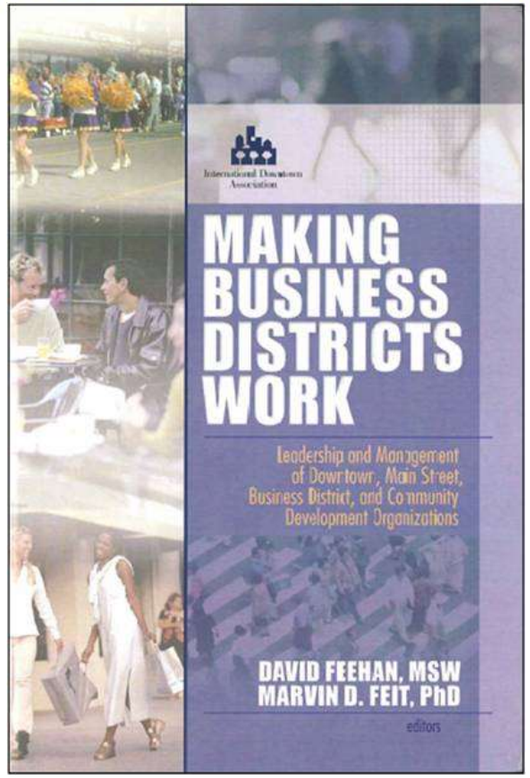

- Clear Vision and Mission
- Parking Philosophy & Guiding Principles
- Strong Planning
- Community Involvement
- Organization
- Staff Development
- Safety, Security and Risk Mgmt.
- Communications
- Consolidated Parking Programs
- Financial Planning
- Effective Parking Management
- Operational Efficiency
- Facilities Maintenance & Asset Protection
- Use of Technology
- Parking System Marketing
- Customer Service Programs
- Special Events Parking
- Effective Enforcement
- Parking & Trans. Demand Mgmt.
- Awareness of Competitive Environment

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STRATEGIC PARKING PLAN
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Ch.
2

Program Organization

Vertical Integration

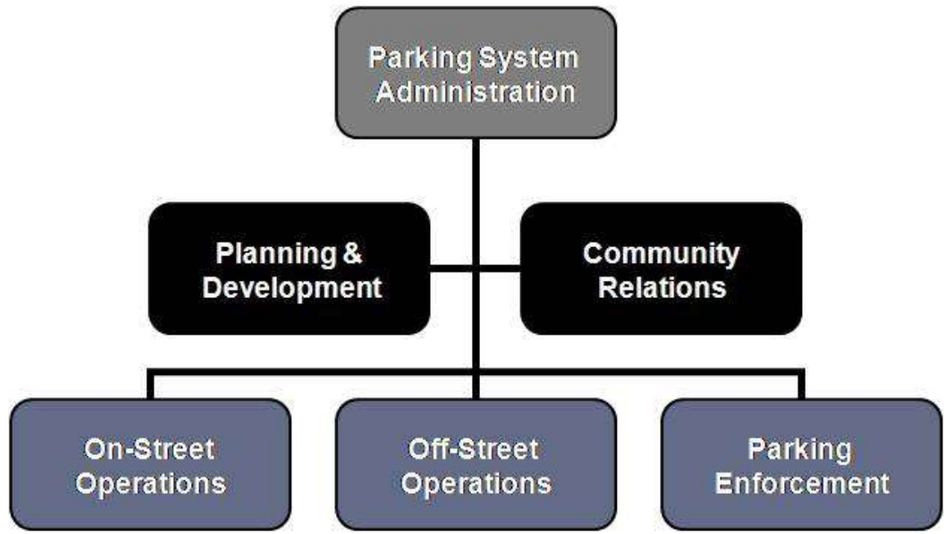
The single most important element of a parking program's organizational structure is the principle of "vertical integration".

- The most successful parking program organizational models include:
  - Parking Authorities
  - Vertically Integrated City Departments
  - Business Improvement Districts
  - Parking Management Districts
  - The Professional Services Model
- At a minimum the following three areas are essential for a vertically integrated parking program:
  - Off-Street Management
  - On-Street Management
  - Parking Enforcement

ex.

- Beyond the three primary functional areas (on-street, off-street and enforcement), the other recommended primary areas include: administration, planning/development and community relations.

  Other key areas might include: contract administration, finance/audit and special projects, depending on the program.



Non-Traditional Organizational Models

The City of Boulder has a unique combination of integrated municipal services within the Downtown and University Hill Management Division & Parking Services (DUHMD/PS).

» Beyond the basic parking program integration of off-street management, on-street management and parking enforcement, this program has a broader organizational mandate including urban space management, transportation and economic vitality.

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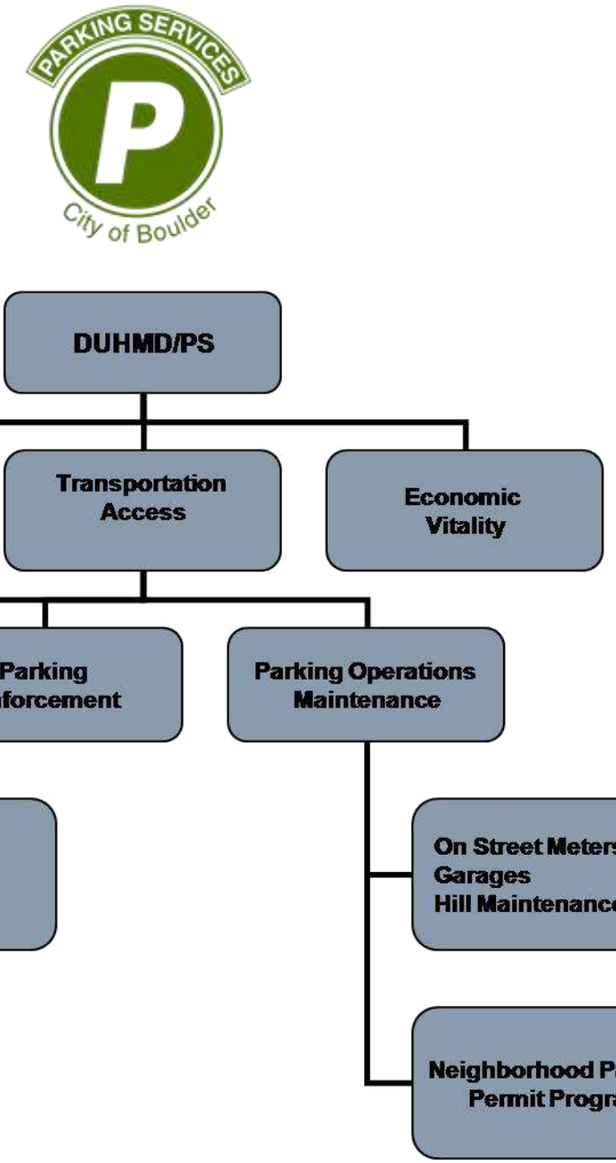

"Dual Mission Philosophy"

Some of the most effective and progressive parking programs in operation today are those being managed by Business Improvement Districts, Downtown Development Authorities, Urban Renewal Agencies, etc.

» One of characteristics that helps make these organizations so successful is what we refer to as the "Dual Mission Philosophy".

» The primary goal of the agency is to create a revitalized downtown. Because of this, parking is managed as a tool to support this primary goal.

» The result is that different decisions are made relative to parking than those made in traditional city parking departments.

ex.

Examples of high quality parking programs that fit into this category include:

» The City of Boulder, Boulder, CO

» The Capital City Development Corporation – Boise, ID

» The Ann Arbor Downtown Development Authority – Ann Arbor, MI

» The Anchorage Community Development Authority – Anchorage, AK

» Downtown Tempe Community, Inc. – Tempe, AZ

» The Cedar Rapids Downtown District – Cedar Rapids, IA

» Charlotte CENTER CITY Partners, - Charlotte, NC

» Missoula Parking Commission – Missoula, MT

Organizational Development Pyramid

The organizational development pyramid succinctly defines the major organizational issues that any program should consider.

- **The primary questions to be answered include:**
  - Where are we going?
  - Why are we here?
  - What do we believe in?
  - What do we need to accomplish?
  - Who does what?
  - How do we get things done?
  - How do we work together as a team?

ex.

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Ch.
3

Parking Planning

Alignment with Community Transportation and Strategic Plans

"Best in Class" programs typically have developed parking specific strategic or community access strategic plans that are aligned with larger community transportation planning initiatives.

ex.

» Strategic plan action items include:

- Exploration of alternative management methodologies to enhance customer service
- Evaluation of new parking technologies
- Forming of partnerships with community organizations
- Generating facilities development plans
- Evaluating the impact of related transportation resources
- Undertaking survey research to identify customers perceptions regarding parking availability and pricing

Guiding Principles

Development of a set of parking system "Guiding Principles" is a good tool for setting and communicating program goals and objectives to both staff and community stakeholders.

» "Guiding Principles" are not intended to replace policies and procedures, rather, they define the goals and objectives that ultimately define the character of the parking department.

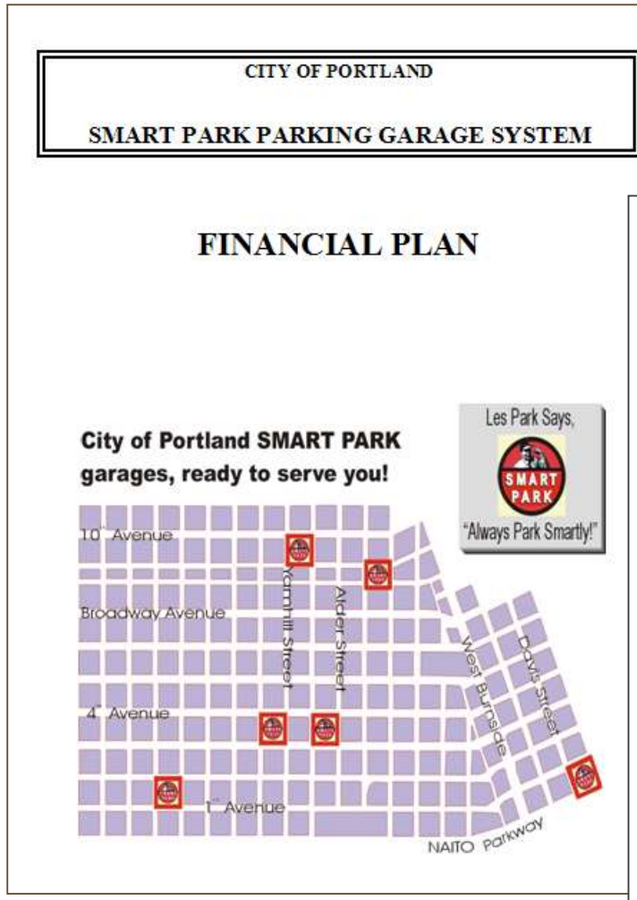
ex.

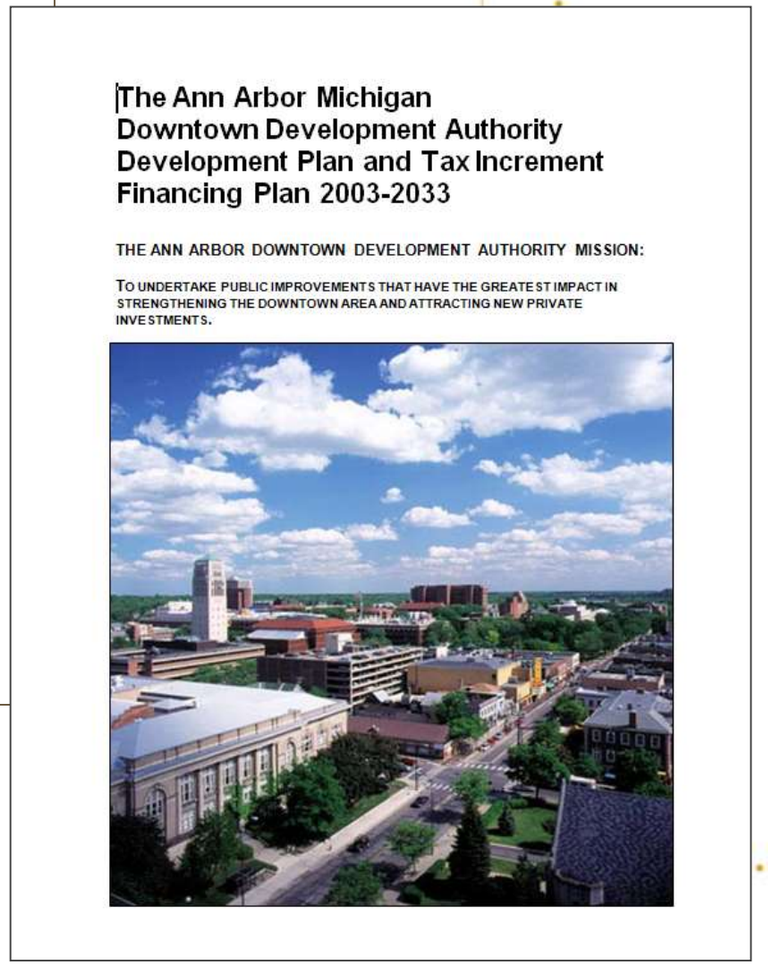
» Guiding Principles typically cover:

- Mission Statement / Statement of Purpose
- Operations/Funding Strategies
- Community Relationships
- Responsibility for Parking Operations
- Rate Setting Guidelines
- Options for Allocating/Procuring Parking
- Inclusion of Parking in Strategic and Master Planning Processes
- Procedures for Managing Losses of Parking Supply (both temporary and long-term)
- Definition and Communication of Parking Rules and Regulations
- Enforcing and Adjudicating Parking Rules and Regulations
- Defining Parking Facility Maintenance Responsibilities
- Special Event Parking
- Budgeting and Planning Cycles

Financial Plans

"Best in Class" programs typically have developed parking specific financial plans.





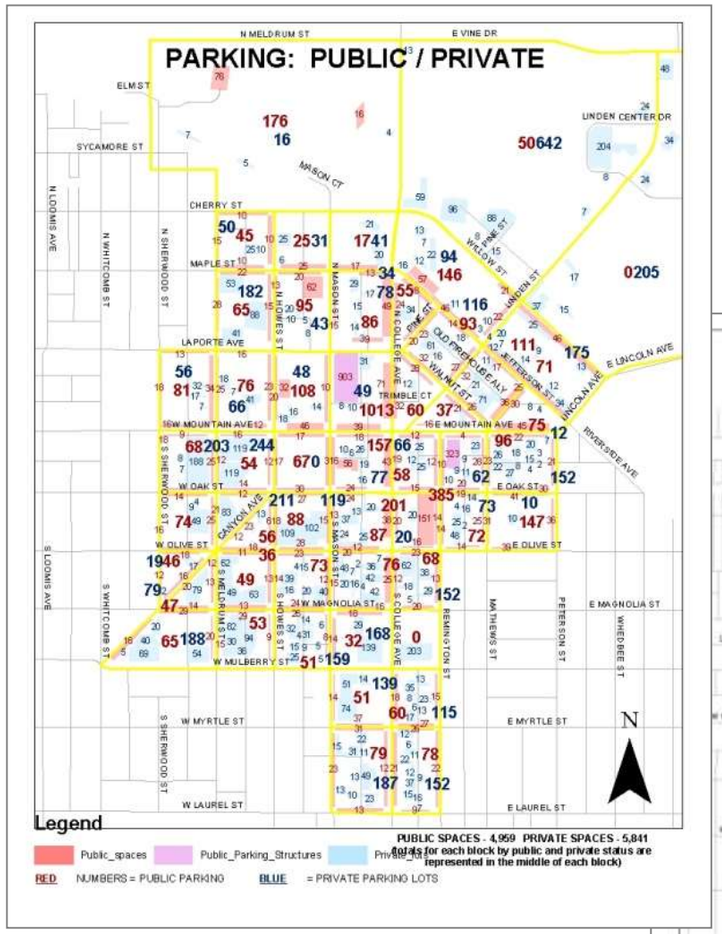
ex.

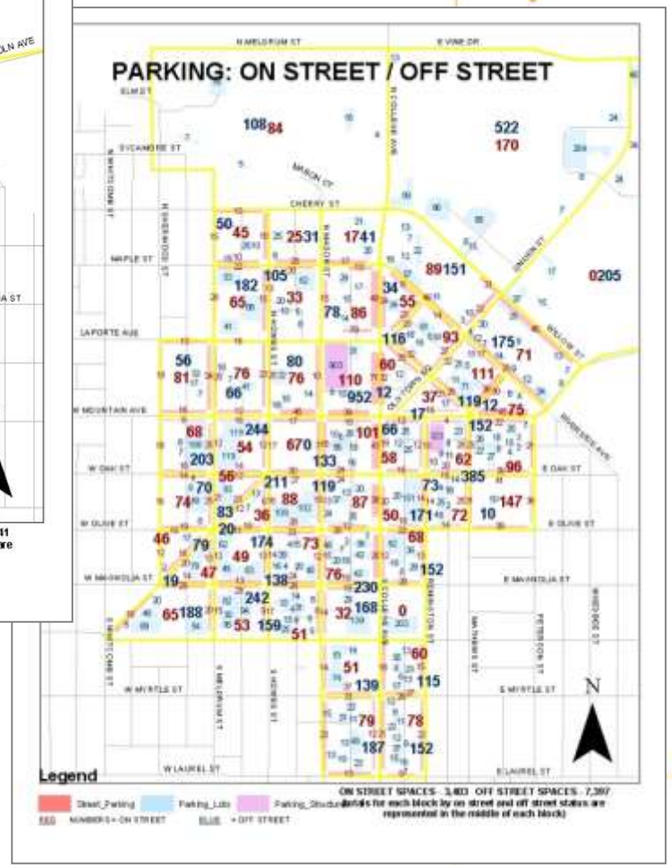
» Sample Financial Plan Table of Contents

- Introduction
- Background
- Planning and Policy Framework
- Operational Objectives
- Fund Balance and Reserve Policy
- Policies Regarding Uses of Parking Revenues
- Debt Policy
- Rates Policies
- Annual Updates

Parking Inventories

A basic element of effective parking program management is maintaining an up-to-date parking inventory.





ex.

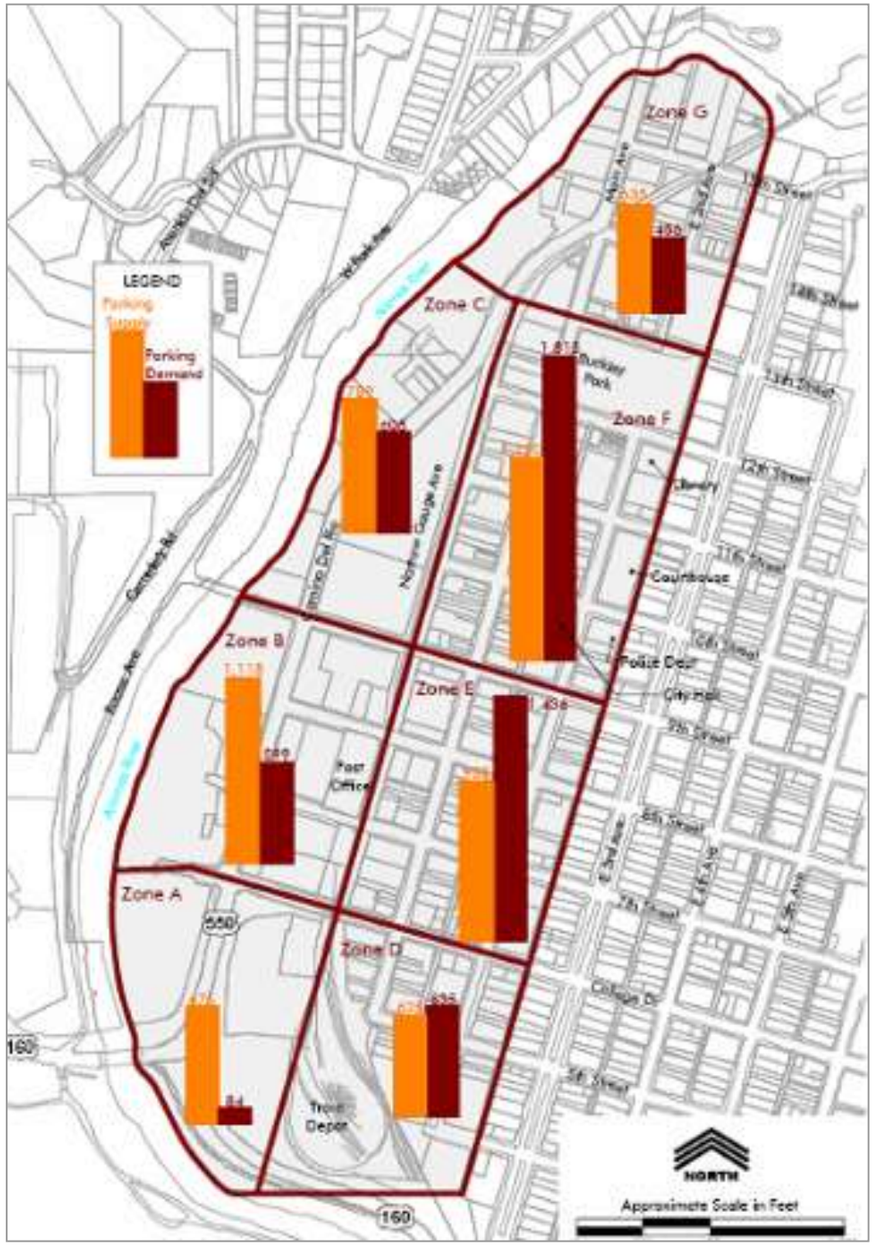
- Parking inventories should be kept up to date on an on-going basis.
- Supply additions and losses should be tracked along with the dates spaces come into or out of service.
- It is extremely useful to also track land-uses and square footages.
- Parking supply should be subdivided by type of spaces.
  - On-Street vs. Off-Street
  - Public vs. Private
  - Surface lot vs. Structured

Supply/Demand Analysis

Periodic assessments of parking supply/demand are critical to effective parking system planning.

- Documenting current parking adequacy, typically on a zoned basis, is the first task in this process.
- This is followed by analyzing potential changes in parking supply conditions and future development projects.
- Projections of future parking demand and adequacy are typically developed based on proposed land-use changes or by analyzing specific development initiatives.

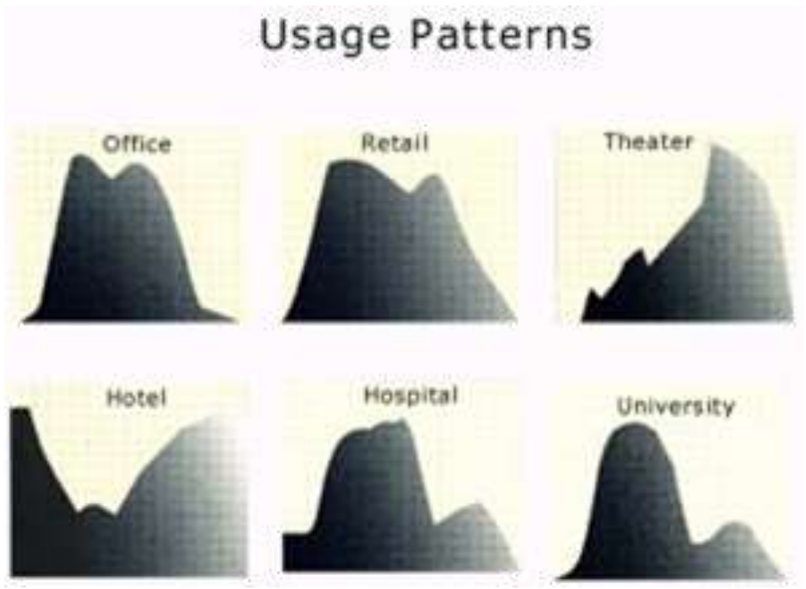
ex.



Shared Parking Model

Shared parking can have a significant impact on mixed-use development parking requirements. Combining certain land uses results in a demand for parking spaces that is less than the demand generated by separate, freestanding developments of similar size and character.

Having a community adopted shared parking model as part of the local parking requirements is a recommended best practice.



ex.

- Shared parking is defined as parking space that can be used to serve two or more individual land uses, without conflict or encroachment
- The opportunity to implement shared parking is the result of two conditions:
  - Variations in the peak accumulation of parked vehicles as a result of different activity patterns of adjacent or nearby land uses (by hour, by day, by season).
  - Relationships among land use activities that result in people's attraction to two or more land uses on a single auto trip to a given area or development.

On-Street Occupancy

Documenting on-street parking occupancy is another effective tool to help you better understand and manage your parking resources.

- Routinely tracking on-street parking occupancy and documenting the results graphically provides valuable management data.
- Often there is adequate parking supply despite a wide-spread perception that the parking supply is inadequate.
- Documenting the true occupancy rates are the first step to effectively resolving parking problems (real or perceived).

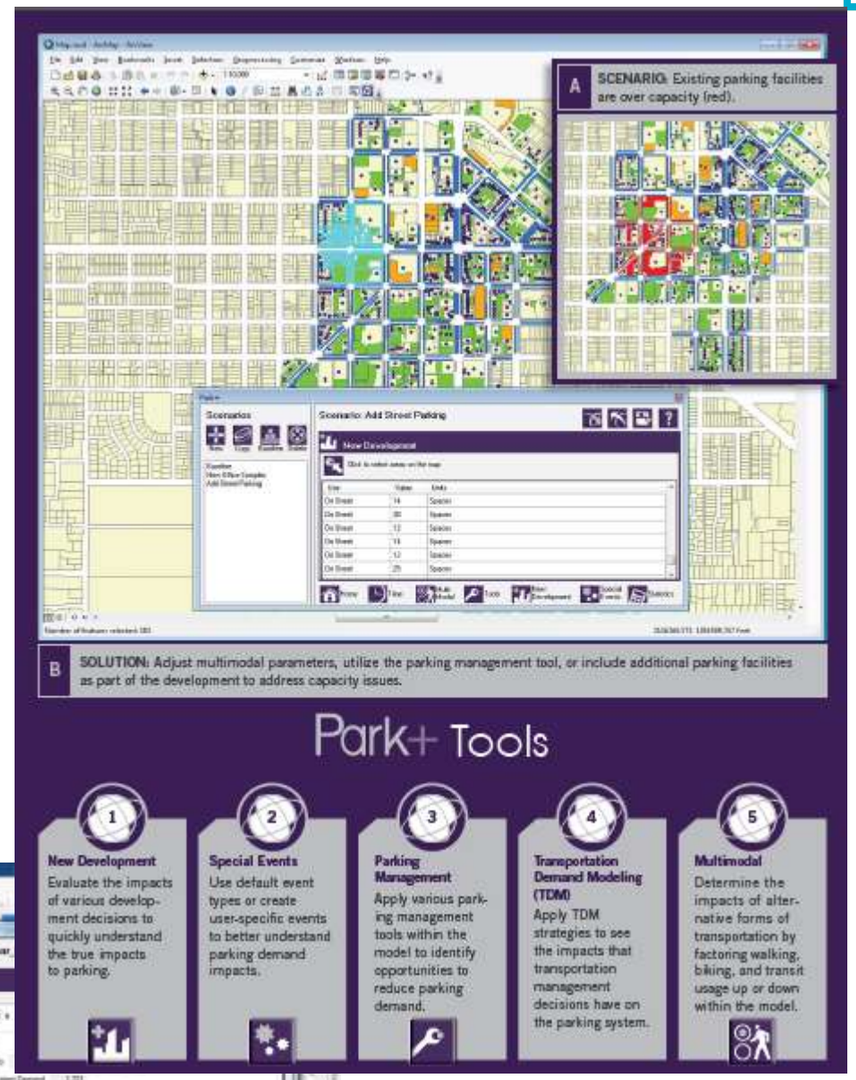
ex.

Parking Demand Model

Kimley-Horn has developed a model to help our clients keep parking inventory, utilization, land-use and parking adequacy data up to date.

» This dynamic toll is linked to Arc/GIS systems to provide an even more effective tool for local governments and institutions.

ex.



Zoning and Parking Requirements

Zoning is the means by which cities and other local governmental agencies ensure that development projects meet the community's standards. It has been termed "a preventative" approach for achieving planned and orderly development."

Summary Table of Uses and Space Requirements

Use	Parking Spaces Required
Single Family Dwelling Unit	2/ Dwelling Unit
Multi-Family Dwelling Unit	
Rental	1.65/ Dwelling Unit
Owned	1.85/ Dwelling Unit
Accessory Dwelling Unit	1/ Dwelling Unit
Sleeping Rooms	1/ Unit or Room plus 2 for owners/managers
Commercial Lodgings	1.25/ Sleeping Room or unit plus 10/1,000 sq ft GLA restaurant/lounge plus 30/per 1000 sq ft GLA meeting rooms/banquet plus or, where more than 50 sq ft of meeting banquet per guest room, 20/1,000 sq ft GLA
Elderly Housing	0.5/ Dwelling Unit
Group, Convalescent and Nursing Home	0.33/ Resident
Day Care Center	1 space per employee plus 1.2 spaces per person licensed capacity enrollment, plus drop-off spaces equal to one for each eight enrollees permitted
Hospital/Medical Center	0.4/ Employee plus 1 space/ 3 beds plus 1 space/ 5 average daily outpatient treatments plus 1 space for each 4 members of medical staff. (Medical centers and teaching hospitals add 1 space for each student, full-time faculty/staff)
Retail Service	
General Retail	3.3/1,000 sq ft of GFA
Convenience Retail	4.3/1,000 sq ft of GFA
Service Retail	4/1,000 sq ft of GFA
Hard Goods Retail	2.5/1,000 sq ft GFA interior sales space plus 1.5/1,000 sq ft of interior storage and exterior display/ storage areas
Shopping Center	4/ 1,000 sq ft GLA for centers with up to 400,000 sq ft GLA; scaled for centers with 400,000 to 600,000 sq ft; 4.5/1,000 sq ft of GLA if over 600,000
Personal Care Services	2/ Treatment station but not less than 4/1,000 sq ft of GFA
Coin Operated Laundries	1 space/ 2 washer and dryer machines
Other Retail/Service Uses	As determined by the Zoning Administrator
Temporary Retail	3.3/1,000 sq ft of GFA
Motor Vehicle Sales and Services	2.5/1,000 sq ft of GFA interior sales space plus 1.5/1,000 sq ft of external display (does not include stock areas closed to the public) plus 3/ service bay
Motor Vehicle Laundries	1 space per each 2 peak shift employees plus queue space for vehicle count equal to one and one-half times the maximum hourly capacity of the facility
Food and Beverage	
Fine Dining and Eating and Drinking	20/1,000 sq ft GLA
Family Restaurant	15/1,000 sq ft GLA
Fast Food	15/1,000 sq ft GLA
Office and Business Services	
General Business Offices	3.8/1,000 sq ft of GFA for GFA up to 25,000 sq ft; scaled for GFA 25,000 to 100,000 sq ft; 3.4 for GFA of 100,000 sq ft; scaled for GFA between 100,000 and 500,000 sq ft; 2.8/1,000 sq ft GFA for GFA over 500,000 sq ft
Consumer Service Offices	4.5/1,000 sq ft of GFA for GFA up to 25,000 sq ft; 4.0/1,000 sq ft GLA for GFA over 25,000 sq ft
Data Processing/ Telemarketing/Operations Offices	7/1,000 sq ft of GFA for GFA up to 25,000 sq ft; 6/1,000 sq ft GFA for GFA over 25,000 sq ft
Medical Offices (not part of hospital campus)	4.5/1,000 sq ft GLA
Medical Offices (on hospital	4/1,000 sq ft GLA

ex.

- With respect to parking, zoning standards typically lay out formulas for determining how many parking spaces must be provided for specific types of land uses.
- Design standards are often included. The layout of parking, particularly the size of parking spaces and aisles, is frequently covered.
- There will always be variations in demand within a community, so that a single rigid formula may not adequately cover all situations for each land use category.
- Reviewing zoning requirements on a regular basis is recommended.
- New concepts such as "Form-Based Codes" are rapidly gaining in acceptance.

Flexible Parking Standards

More accurate and flexible standards means that the parking requirements at a particular location are adjusted to account for various factors. This approach reduces to potential for overbuilding parking supply thus contributing to a more sustainable overall parking and transportation program.

ex.

Examples of Adjustment Factors:

- Geographic Location
- Residential Density
- Employment Density
- Land-use Mix
- Transit Accessibility
- Car-Sharing
- Walkability

Sustainable Parking and Transportation Programs

Triple Bottom Line Approach The Triple Bottom Line is a way of measuring an organization's impact on people and the environment as well as its finances.

PEOPLE

1. Improved Parking Technology Creating an Enhanced Customer Experience (Multiple Payment Options, etc.)
2. Improved Wayfinding , Signage and Program Branding (Less VMT due to searching for parking, Less parker frustration)
3. Improved Commute Options - "The Connected Traveler" (Greater mode choices, Enhanced quality of life forall citizens)
4. Excellent Communications and Collaborative Public Processes (Greater diversity of opinion , A better informed/educated public, Enhanced societal sustainability)
5. Improved Community "Quality of Life" (Cleaner Environment, Reduced Congestion, Promotion of Healthy Lifestyles, Reduced Environment Impacts)

PLANET

1. Improved Access with Reduced SOV mode share
2. Increased 3Rs (reduce, reuse, recycle)
3. Increased up-cycling (the process of converting waste materials or useless products into new materials or products of better quality or a higher environmental value)
4. Reduced idle time/queuing time
5. Increased use of alternative energy source

PROFIT

1. Balanced Perspective Regarding Operating Costs and Reduced Life-Cycle Cost
2. Improved and Diversified Tax Base
3. Reduced Vacancy Rates and Therefore Property Values
4. Increased Business Activity and Growth

Form Based Codes

A form-based code is one that is based primarily on “form” - urban form, including the relationship of buildings to each other, to streets and to open space. This contrasted to codes that are based primarily on land use.

- A Form-Based Code is a development code that provides the developer / applicant greater flexibility in permitted land uses in exchange for more stringent regulations controlling urban form.
- These types of codes support mixed-use, pedestrian-friendly and mixed housing development more effectively than conventional codes.
- Form-Based Codes are becoming increasingly attractive to municipalities that want greater control over how buildings look and feel.

ex.

A BRIEF COMPARISON OF CONVENTIONAL CODES AND FORM-BASED CODES

URBAN FORM GENERATING CHARACTERISTICS

CONVENTIONAL CODES	FORM-BASED CODES
• Include extensive lists of permitted, prohibited and conditional uses by zone. Many land uses in conventional codes lists are outdated and do not reflect the nature of contemporary employment models or dwelling types • Often disallow a mix of uses • Prohibit adaptability of buildings to other uses over time • On zoning maps, land use designations typically begin and end at the center of the street or Right of Way	• Consider the building “walls” that frame the Right of Way (often referred to as the “public realm”) as one of the primary determinants of form • Regulating plan zone designations typically transition at the back of the lot • The same or similar development standards typically apply to both sides of the street • Land uses allow a much broader range of uses within a zone or subarea; also allow a greater mix of uses • Many uses are allowed if they meet performance standards

Parking Requirements for Transit Oriented Developments

The rise in popularity and success of “Transit Oriented Developments” or TODs is creating a need to reassess and redefine zoning and parking requirements for these districts.

» Specific development plans for TODs and “Transit Station Areas” has led to the development of specific station area typologies to support transit friendly development.

Planning for Transit-Friendly Development at the 43rd Street El Station

ex.

Client:
Jones Lang LaSalle and Chicago Transit Authority

Location:
Chicago, IL

Services:
Transportation and urban planning, and public involvement

Chicago Transit Authority Station Area Typology Study

Kimley-Horn led the urban planning element of the initiative by the Chicago Transit Authority (CTA) to create a typology or hierarchy for station areas around each of the 144 CTA stations. The objective is to establish a set of guidelines by which planning and design of transit friendly design (TFD) projects can occur in these station areas and to identify incentives to future development projects through zoning, funding, and public private partnerships.

Kimley-Horn gathered data related to station area characteristics and led workshop meetings of the advisory committee to reach a consensus as to the definition and application of each of seven typologies.

Seven Typologies
- (DC) Downtown core
- (MC) Major activity center
- (LC) Local activity center
- (DN) Dense urban neighborhood
- (UN) Urban neighborhood
- (SD) Service Employment District
- (MD) Manufacturing Employment District

Various one-on-one meetings with elected officials and more formal stakeholders' meetings and open house formats also were conducted. Conceptual design guidelines and recommendations have been developed and a final report was prepared in “magazine” workbook format. The final document entitled *Transit Friendly Development Guide, Station Typology* will be used by the city, CTA, elected officials, and developers to encourage appropriate development around stations.

Kimley-Horn and Associates, Inc.

Program Criteria Documents

Program Criteria Documents are a tool to help ensure that institutional goals, objectives and standards are incorporated during the early phases of project planning and development.

ex.

» Program Criteria Document benefits:

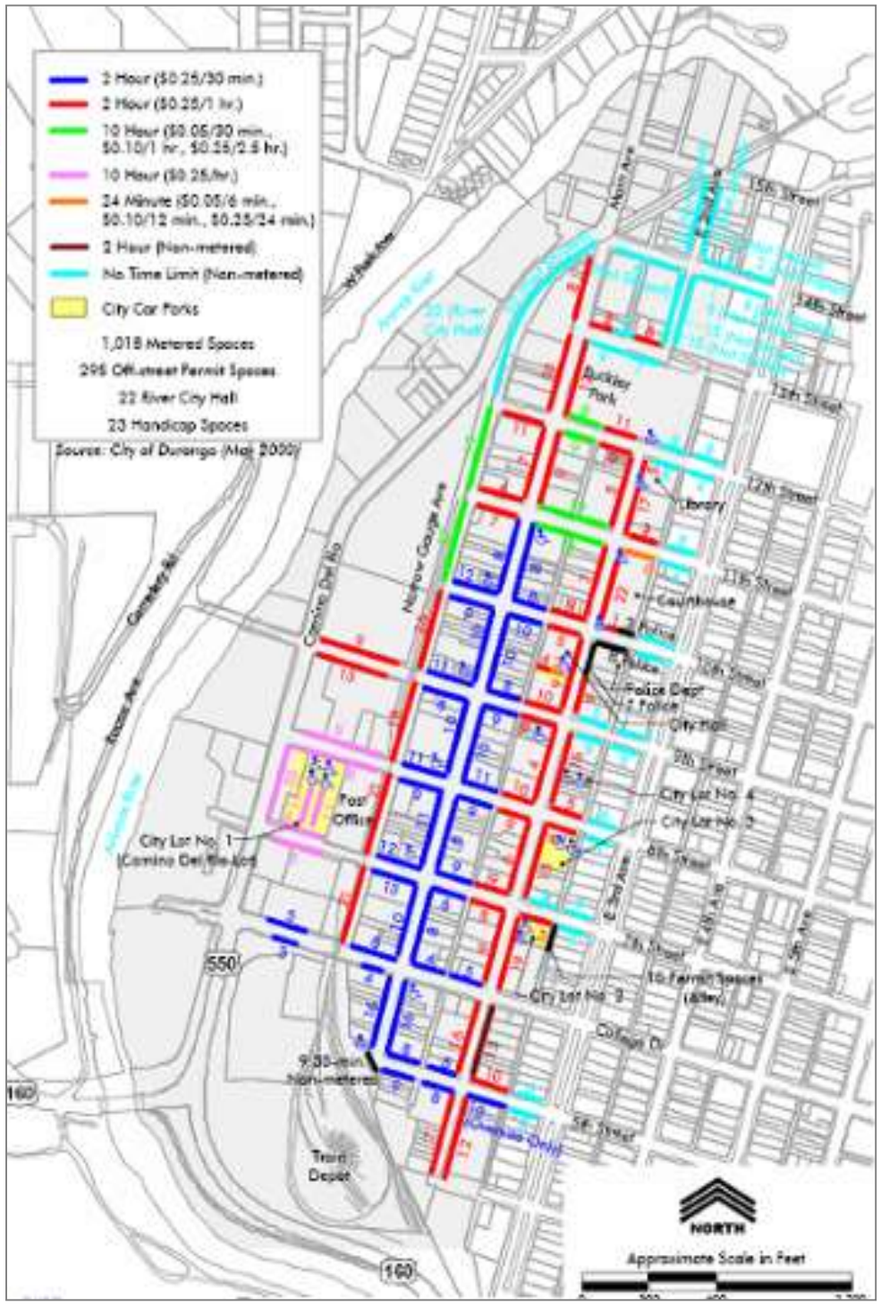
- Development of a more comprehensive understanding of the project impacts and scope.
- Build or strengthen project momentum and acceptance.
- Promote parking-specific areas of concern that are often overlooked without direct and early involvement by parking professionals, such as:
  - designing for operational flexibility
  - planning for alternative payment technologies
  - designing to maximize passive security, user comfort, etc.

Time-Limit Maps

On-street parking time-limits should be mapped and changes tracked over time.

- Mapping on-street time-limits is an important tool for staff education, and communicating with the public.
- It is a fundamental tool for documenting resource usage, facilitates the analysis of trends and is an effective planning tool.
- Tracking changes over time creates a record of management strategies that have been used in the past.

ex.

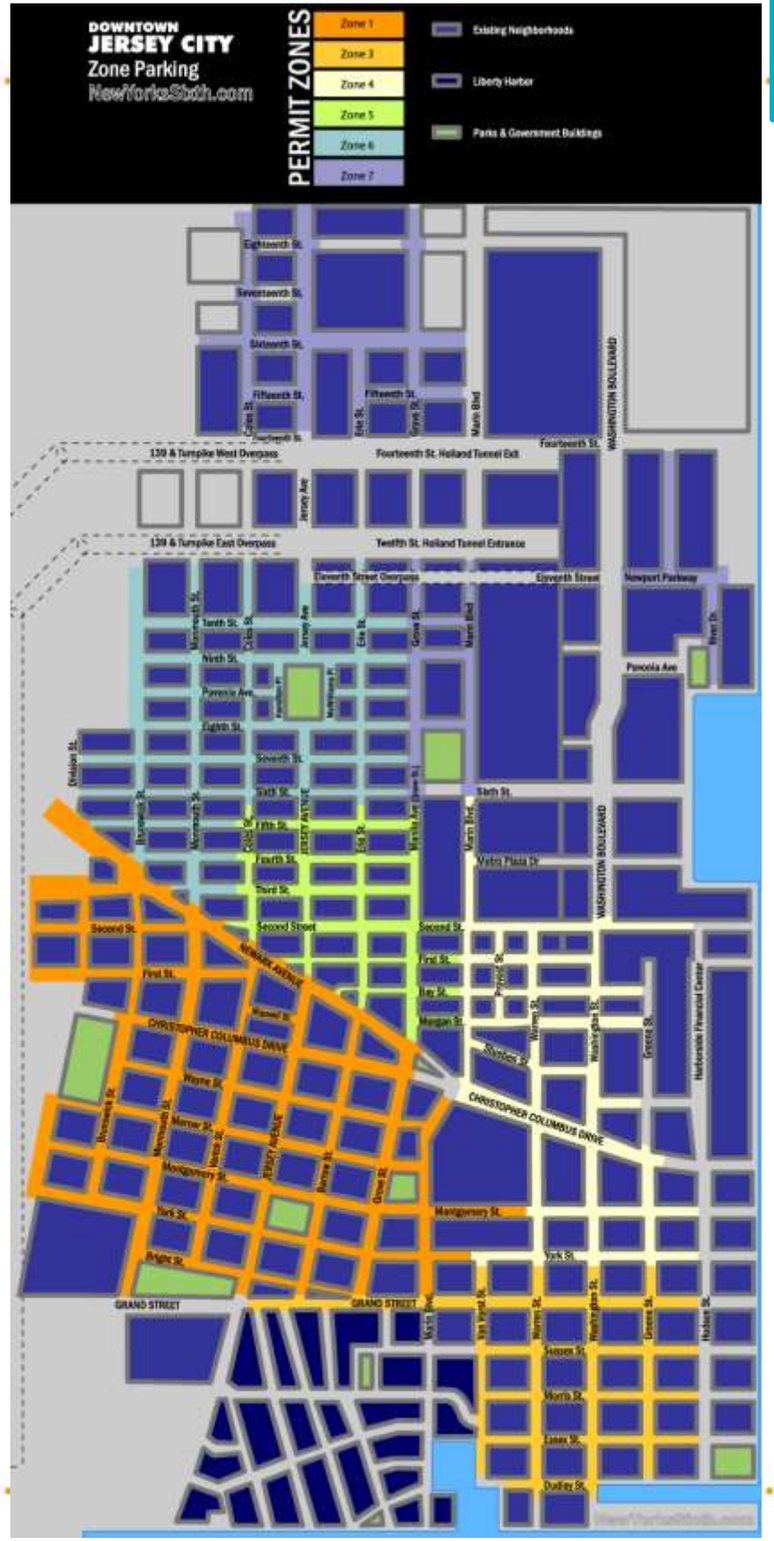


Mapping Parking Permit Zones

Mapping parking permit zones provides an important tool to effectively communicate the permit zone rules and regulations as well as locations.

- This practical tool helps you better educate City Council members other planning officials and citizens at large.
- It also provides a means of documenting changes to permit zones over time.
- It is also an important tool for training new parking enforcement officers.

ex.



Parking Rate Assessment Strategies

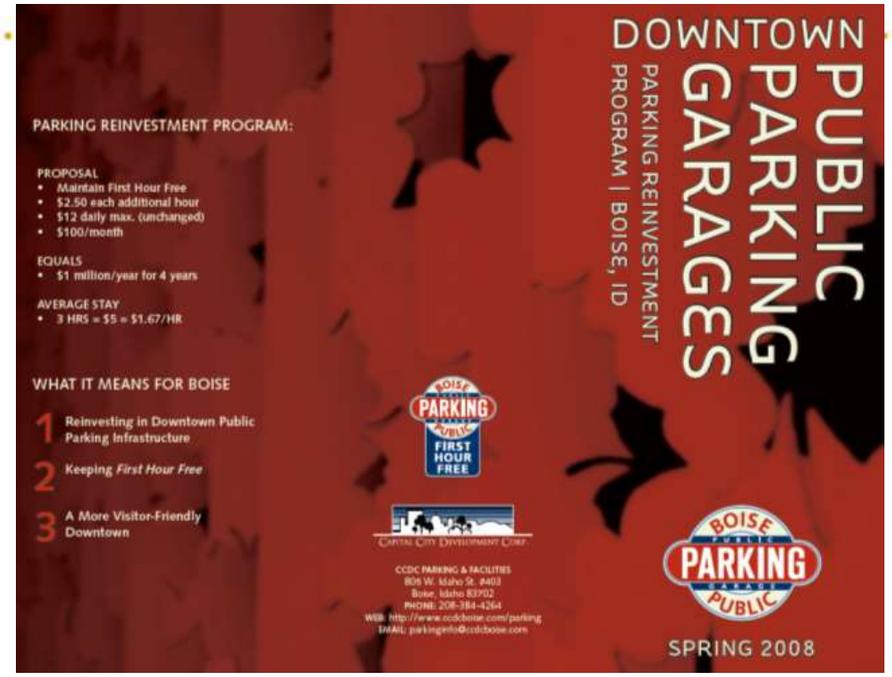
Assessing parking rates is something every parking program must do from time to time. A successful parking rate assessment strategy has two key elements:

- Defining the type and impact of rate increase options &
- Defining a program for how new revenues will be invested.

» Our recommended process includes the development of a parking rate modeling tool that can be used to project parking revenues by any incremental increase in transient, monthly and special event rates.

» The process also includes the development of “parking investment plan” which is essentially the program’s work plan for the defined planning horizon.

ex.



Retail Supportive Parking Strategies

Revitalizing retail in a downtown setting is one of the most difficult elements of downtown revitalization to get right. Convenient, plentiful and easily accessible parking is especially critical to the success of retail in a downtown area.

» What is often overlooked or underestimated in retail revitalization projects is a comprehensive “retail parking strategy”.

» In many cases this will involve significant investment in new parking infrastructure or at least a restructuring or reallocation of existing parking resources.

» Once the parking supply issues have been addressed, a wide range of parking management strategies should also be considered.

ex.

We recommend a three pronged approach to developing a retail parking strategy:

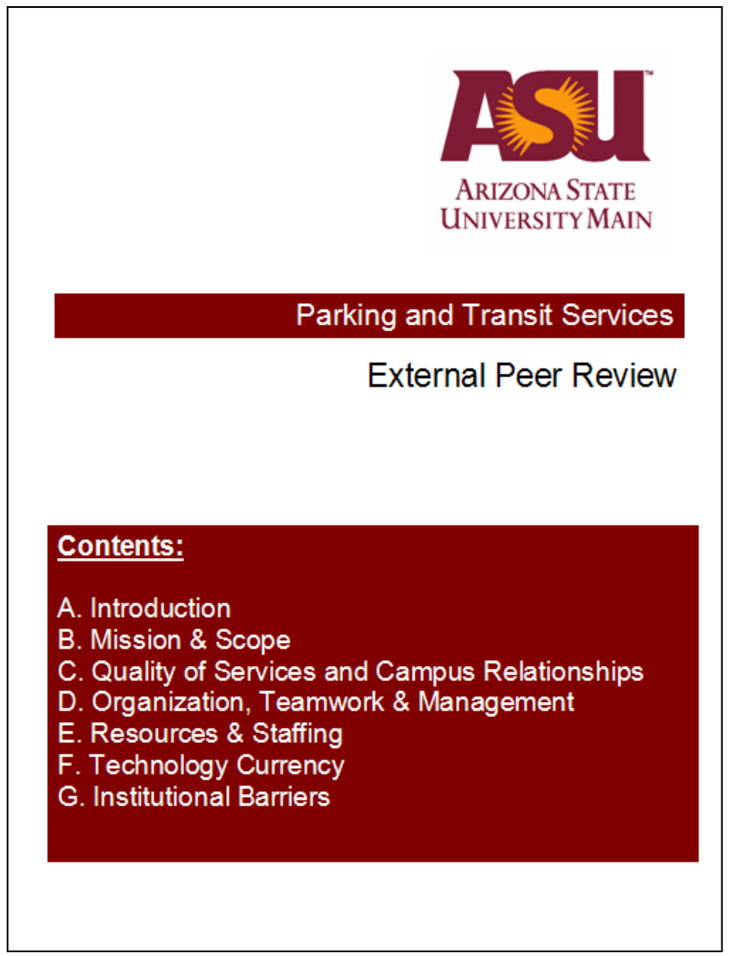
» **On-street Parking** – As the most conveniently located parking assets (and therefore the most valuable), effective management of on-street parking to promote turnover is critical.

» **Off-street Parking** – In a downtown environment the primary issues related to retail parking are to provide large, easy-to-find reservoirs of parking within close proximity to the retail cores or corridors.

» **Overall Parking Management** - From a management and operations perspective, there are many effective strategies that downtown parking programs can employ to better support retail and the larger community’s strategic goals.

Operational Peer Reviews

This is a low cost initiative that can be set up through local, regional or national parking associations.


ARIZONA STATE UNIVERSITY MAIN

Parking and Transit Services

External Peer Review

Contents:

A. Introduction
B. Mission & Scope
C. Quality of Services and Campus Relationships
D. Organization, Teamwork & Management
E. Resources & Staffing
F. Technology Currency
G. Institutional Barriers

ex.

- The scope of peer reviews vary, but are generally focused on operational elements and might include maintenance practices, staffing and staff training, the use of technology, customer services practices, etc.
- Peer reviews are often reciprocated.
- The ASU External Peer Review brought in four other university parking system administrators from across the country and generated a very professional and objective system assessment.

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Integrated Access Management Strategies

What is “Integrated Access Management”?

“Integrated Access Management” is a term that refers to a more holistic approach to community or institutional planning relative to parking and transportation.

- Within the parking arena, this concept strives to promote a broader view of program scope and participation.
- It fights the tendency to place parking in a “silo”, divorced from the larger transportation equation.
- The primary intent of this approach is to get communities to focus on “access” incorporating the full range of parking, transportation and demand management strategies to improve not only access, but to also enhance and promote walkable urban environments.

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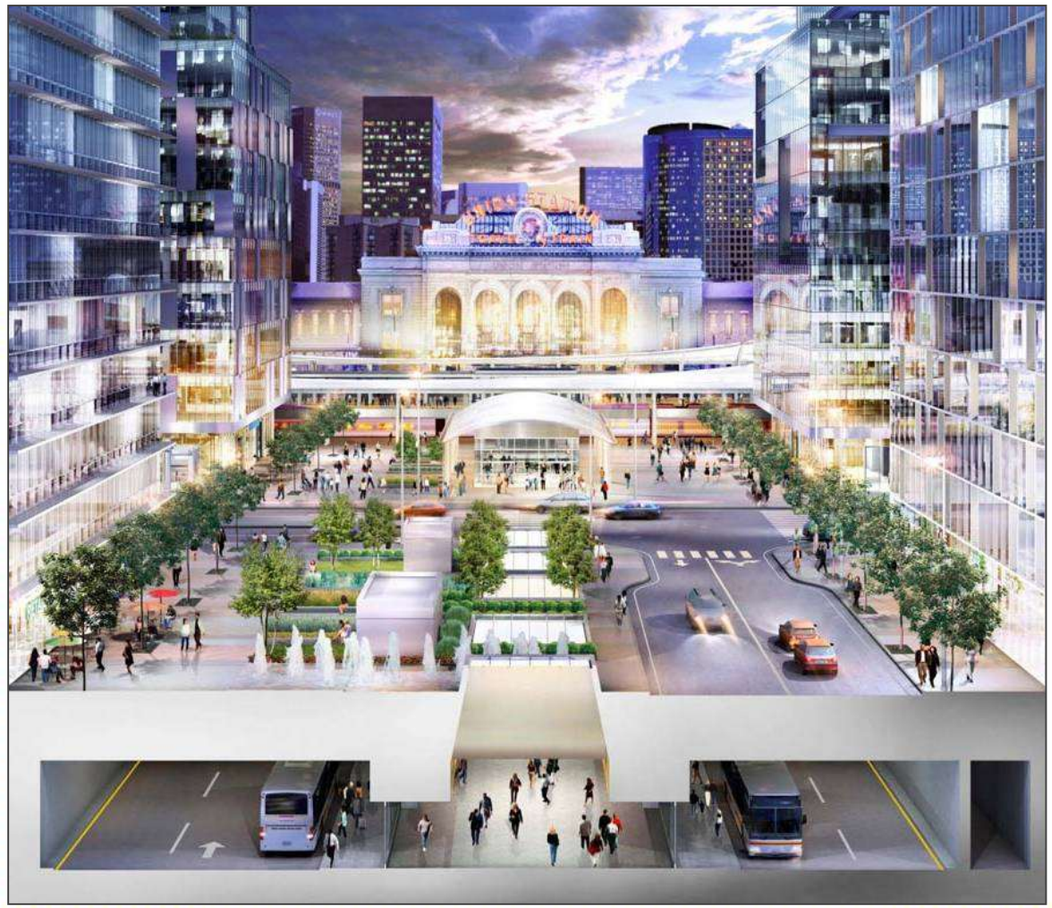
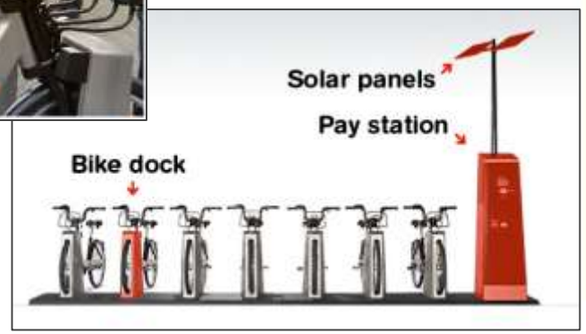


Community Bike Rental Programs

Located at key locations in the central business district, the bikes provide a new way of discovering and moving around the city.

- The bike stations are modular and the bikes are ergonomic and light-weight in a distinct design.
- Bikes are parked at docking points which use a proprietary locking system to ensure that each bike is securely stored.



ex.

» http://www.smartbikedc.com/

Operations

Docking Points

Bike Stations

The Bikes

Bike Parking & Lockers

One more way for parking programs to support Transportation Demand Management (TDM) is through the provision of bike lockers in and around parking facilities. This is also a means of securing LEED credits in support of parking program sustainability goals.

- Bicycles chained haphazardly to railings, posts or lamp columns can be dangerous and inconvenient to pedestrians, particularly visually impaired people.
- Proper bicycle parking can reduce this risk, as well as removing unsightly clutter.

ex.

Vintage Bike Racks

Portable Bike Racks

Wall Mounted Racks

CycleSafe® SECURE BICYCLE PARKING

Unmatched Durability for your Facility
Now with shorter lead times!

Construction Process and Material Selection are key to product Quality and Durability
- Price is not Cost

Click to learn more:

KNOW THE DIFFERENCE

Key features include:

- SMC Molded, non-metallic construction
- Stainless steel hardware
- Reinforced ribbing throughout
- Patented high-security locks
- Impervious to weather, age and vandalism
- Fire retardant and graffiti resistant
- Manufactured using environmentally friendly processes
- Space efficiency for small footprint
- Contributes to LEED Credits!

Contact us to secure your order and have your parking facilities ready for the riding season!

Bike Racks on Busses – Practice Makes Perfect

For those advanced parking systems that are part of the larger transportation solution, providing access to transportation options through the parking office is not uncommon.

» However, the University of Washington provides a “practice station” for those wishing to learn how to put their bike in the “on-bus bike racks”.

ex.

» This little extra effort is one of the many things that sets the UW program apart.

Be an Engaged Partner in Other Community Transportation Initiatives

As part of the commitment to a broader approach to community access strategies, the parking program should become an interested and engaged partner in other community transportation initiatives.

» Getting involved in the Dallas Bike Plan is a good example of this type of recommended strategy.

ex.


Newsletter November/December 2010

2011 DALLAS BIKE PLAN

2011 DALLAS BIKE PLAN Newsletter November/December 2010

INTEREST IN BIKE PLAN STILL STRONG AT SECOND PUBLIC MEETING

On Thursday, September 20, over 200 people participated in the second 2011 Dallas Bike Plan Public Meeting at City Hall. Council members Angela Hunt (District 14) and Sheffield Kadane (District 9) provided the welcome and words of support for the Plan. Peter Lagerway provided an overview of the draft Bikeway System network recommendations, including over 550 miles of on-street facilities. After the presentation, participants were invited to review and comment on these recommendations laid out on maps showing the proposed network segments as well as the facility type for each. Other public feedback gained through separate stations dealt with project prioritization criteria and marketing and promotion ideas for the Plan's Implementation Strategy. Information on the Plan's vision, goals and objectives as well as educational materials were also available.

Review and comment on the draft bikeway recommendations at public feedback stations included a map of Dallas divided into four quadrants, a map of downtown Dallas, and maps of the Trinity Corridor. Other stations provided information on plan goals and objectives, education for bicyclists and motorists, project prioritization criteria and marketing and promotion.

deemed to be practical and possible
- Difficult intersections within the anticipated bicycle network were analyzed
- Connectivity gaps were addressed, and
- Projects to be identified in the Plan's Implementation Strategy.

SURVEY PROVIDES OPPORTUNITY FOR CITY-WIDE INPUT

A web-based, bilingual survey was made available on the project website (dallasbikeplan.org) from May 18 to July 11, which elicited over 1,400 responses. The survey results will help the project team describe existing conditions, opportunities and constraints, and develop project and policy recommendations in the Plan. The most frequently cited needs were for:
- Education for all travelers through on-road signage and other techniques to instruct users how to share the road
- More bike lanes on major streets and shared lane markings on wide outside or curb lanes
- Stronger bike connections to transit
- Additional parking
- More off-street facilities and on-street connections between them

Nearly all respondents were ages 21 to 65; 42% of these between 46 to 65 years old. 30% of respondents were women.

FIELD WORK

Three two-person teams conducted a feasibility analysis of over 550 miles of Dallas streets over a two-week period during the Summer of

2011 DALLAS BIKE PLAN Newsletter November/December 2010

2010. Taking into account observed and recorded traffic volumes and existing roadway (curb-to-curb) widths, the field work teams identified 517 miles of roadway that could include context-appropriate bicycle facilities. Facility recommendations were identified for all areas and a variety of roadways within the City in order to serve transportation and recreational needs. As a result, the recommended network establishes citywide connected routes on a variety of street types, including arterials, collectors and local streets.

According to this analysis, there are many scenarios where the opportunity exists to install bicycle lanes or cycle tracks by re-allocating roadway space via a technique called a "road diet" (see graphic example right).

DRAFT BIKEWAY SYSTEM FACILITY RECOMMENDATIONS

Bikeway Type	Miles	Percentage
Other lanes	107	21%
Shared lane markings	160	31%
Climbing lanes (bike lane on uphill side only)	3	0.6%
Paved shoulder	24	4%
Cycle track/buffered bike lane	80	15%
Multi-purpose path/wide sidewalks	39	10%
Further study needed	60	11%
TOTAL MILES	522	

STAY INFORMED ON THE BIKE PLAN WEBSITE

The 2011 Dallas Bike Plan website (www.dallasbikeplan.org) serves as a one-stop source providing input on the Plan, getting info on Bike Plan and Dallas area bicycling activities, as well as downloading or viewing draft Bike Plan products. The website also provides news and information on the project schedule, and educational materials. Other links include information on the Safe Routes to School Program and the Complete Streets Initiative.

NEXT PUBLIC MEETING - THURSDAY, JANUARY 20, 2011
Dallas City Hall Flag Room (6E North)

Review the revised network recommendation maps based on comments from the September Public Meeting and a full draft of the 2011 Dallas Bike Plan. Visit our web site at www.dallasbikeplan.org for more details on the agenda as the time gets near.

2011 DALLAS BIKE PLAN

2011 Dallas Bike Plan
6180 Commerce Street
Suite 101
Dallas, Texas 75224

Bike Parking As Public Art!

Bike racks have become a favorite medium for creating practical and engaging community public art.

ex.

Integrate Intermodal Options

Installing bike lockers is just one example of incorporating multi-modal options into parking structures and contributing to a more balanced parking and transportation program.

- Other more aggressive strategies include integrating bus or shuttle transfer stations into parking garages.
- Creation of express park and ride lots, etc.

ex.

Transit Visualization System

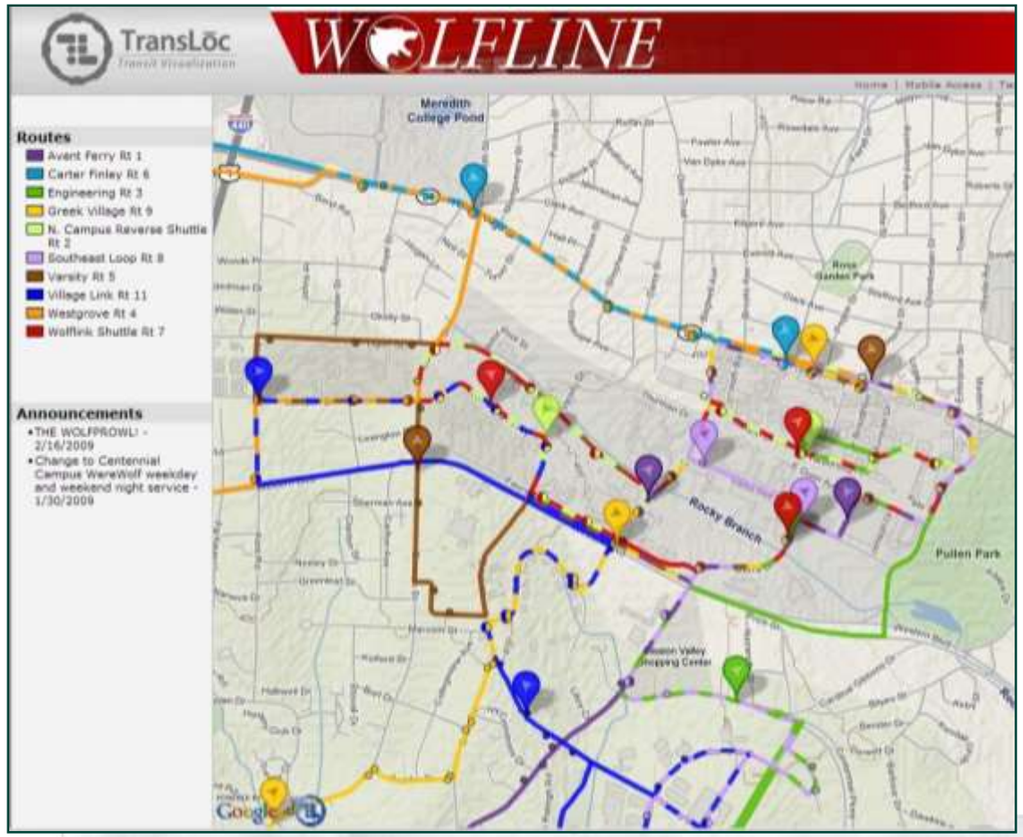
TransLōc
Transit Visualization Systems

See What We've Done

- Auburn University *Tiger Transit*
- Emory University *Emory Shuttles*
- Harvard University *Harvard Shuttle*
- MASCO - Boston, MA *LMA Shuttle*
- Microsoft Silicon Valley *Shuttle Connect*
- NC State University *The Wolfline*
- Princeton University *TigerTransit* (new)
- University of Alabama *CrimsonRide*
- University of Florida *Regional Transit System*
- University of Maryland, BC *UMBC Transit*
- Yale University *Yale Transit*

The TransLoc Transit Visualization System shows buses moving in real-time live on the internet, making it easier for riders to use transit.

ex.



- North Carolina State University in Raleigh, NC was the first transit system in NC to broadcast its bus locations live over the internet.
- Since then, many other transit systems have added the TransLoc Transit Visualization System.
- You can view the live, interactive system at: http://live.transloc.com

Kimley»Horn

DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

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Effective Communications & Community Engagement

Strategic Communications

A Strategic Communications Plan has the power to transform an organization:

- Both in terms of your credibility and status in your community
- And in terms of the way you work together as a team to achieve your mission and vision

The Communications Plan Pyramid

- ✧ Assess your communications infrastructure
- ✧ Establish your goals
- ✧ Who is your target?
- ✧ Who is your audience?
- ✧ How to frame your issues?
- ✧ What is your message?

ex.

Parking Information Clearinghouse

An important role your organization can play is to become THE parking information clearinghouse for your community.

- If you become the “go to source” for all parking info, you will not be providing a needed service, but you will enhance your program’s value and reputation in the community.
- (You may actually learn as much as you inform!)
- Developing a web-based program is one effective way of serving multiple goals in this type of endeavor.

ex.

Keep In Touch... Parking E-Newsletters

Even if you don't have your own parking "E-Newsletter (and why not?), see if you can tag a message onto other appropriate E-venues.

DOWNTOWN Boulder

DOWNTOWN UPDATE

Hit the Bricks!

Downtown Boulder Business Improvement District — August 5, 2005

What's Cooking on the East End

Join us at our monthly Downtown Community Exchange and check out Coburn Development's newest projects.

When: Thursday, August 11, 2005; 5:30-7pm
Cost: FREE
Where Coburn Development--1811 Pearl Street (upstairs)
What Else: Great door prizes, updates on Downtown Boulder
RSVP: to Downtown Boulder info@dbi.org --303-449-3774 by August 9th--to ensure plenty of refreshments

Don't Miss These Events in Downtown Boulder!

August 5th-7th--Sidewalk Sales in Downtown Boulder. Take advantage of fabulous savings.

August 10th--Farmer's Market--4-8pm on 13th Street between Arapahoe and Canyon

August 13th & 14th--Asian Festival

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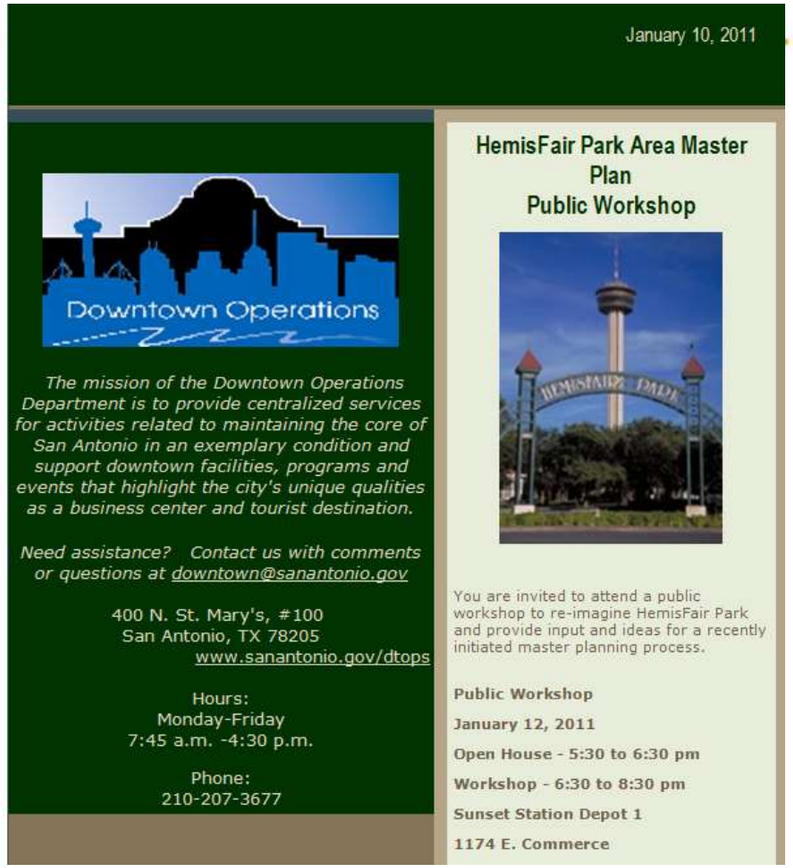


January 10, 2011

Downtown Operations

The mission of the Downtown Operations Department is to provide centralized services for activities related to maintaining the core of San Antonio in an exemplary condition and support downtown facilities, programs and events that highlight the city's unique qualities as a business center and tourist destination.

Need assistance? Contact us with comments or questions at downtown@sanantonio.gov

400 N. St. Mary's, #100
San Antonio, TX 78205
www.sanantonio.gov/dtops

Hours:
Monday-Friday
7:45 a.m. -4:30 p.m.

Phone:
210-207-3677

HemisFair Park Area Master Plan Public Workshop

You are invited to attend a public workshop to re-imagine HemisFair Park and provide input and ideas for a recently initiated master planning process.

Public Workshop

January 12, 2011

Open House - 5:30 to 6:30 pm

Workshop - 6:30 to 8:30 pm

Sunset Station Depot 1

1174 E. Commerce

- » Promote parking validations.
- » Links to parking info/websites.
- » Promote merchants that participate in validation programs.
- » Promote parking availability.
- » Promote alternative transportation options.

Parking Meets Social Media

Get the word out! Stay in Touch!

- Develop your own communities of users
- Advertise directly
- Celebrate accomplishments
- Highlight staff
- Offer Facebook only coupons
- Get program feedback
- Solicit testimonials
- Provide event notifications
- Broadcast construction updates

Follow us on: twitter

Find us on Facebook

ex.

Parking Meets Mobile Apps

Connecting with a world on the move!

- Availability
- Rates
- Services
- Proximity to key destinations

ex.

Mobile Parking Apps

Mobile Parking Apps will help you find the cheapest parking rates anywhere in Chicago, San Francisco, San Diego, Seattle, LA, and New York. More cities are coming soon... Avoid overpaying for parking by comparing rates from neighborhood garages. Ability to search by an address.

Features:

* Search over 300+ Parking Garages to find the best rates (by hour, daily, weekend, monthly)

* Map showing all Meters, Zones, Rates, and Paybox locations

* List showing all the Early Bird Specials in the city

* Search for local parking spots for rent and sale

*Save yourself a parking ticket with the built in parking timer.

*Remember where you parked with turn by turn directions back to your car. Ability to leave voice memo

* Real-Time updates, Reservations, public transportation schedule

Developing Smart Parking & Development Educational Tools

Being a leader in the development of planning and development toolkits can improve the image and reputation of your organization (as well as advancing your planning goals)!

ex.

Enter the Blogosphere!

- Do you really want to know what people think? (Are you sure???)
- Have a couple hundred opinions you'd like to share?
- Want to get YOUR version of things expressed?

Then Blogging may be just your thing!

» To start your own blog visit:

http://parkingpress.com/

» Other parking blogs:

Parking Blogs

Grush Hour

MoBlog

Parking By Design

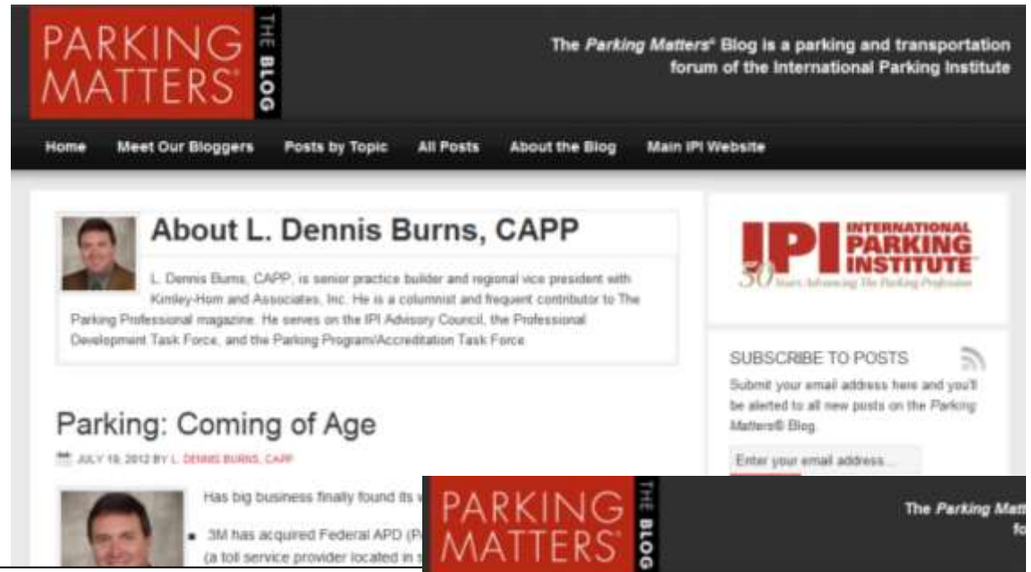
ParkingCarma

ParkWhiz Blog

PT's Parking Blog

Airport Parking Connection

ex.



Customer Alerts - Parking E-Notifications

The evolution of technology, especially in the area of mobile devices is transforming our customer service options.

Now we can send out customer notifications in real-time through a variety of channels.

ex.

- Reduces parking patron frustration
- Improves the image of the downtown or institution
- Can be very useful in snow closings, or to alert a campus community of on-going construction activities.

"Fast Facts" – Program Summary

What is your program really all about? How do inform your stakeholders of your mission, key program goals, funding sources, key staff, staff roles, organizational structure, policy positions, budget highlights, accomplishments, etc.

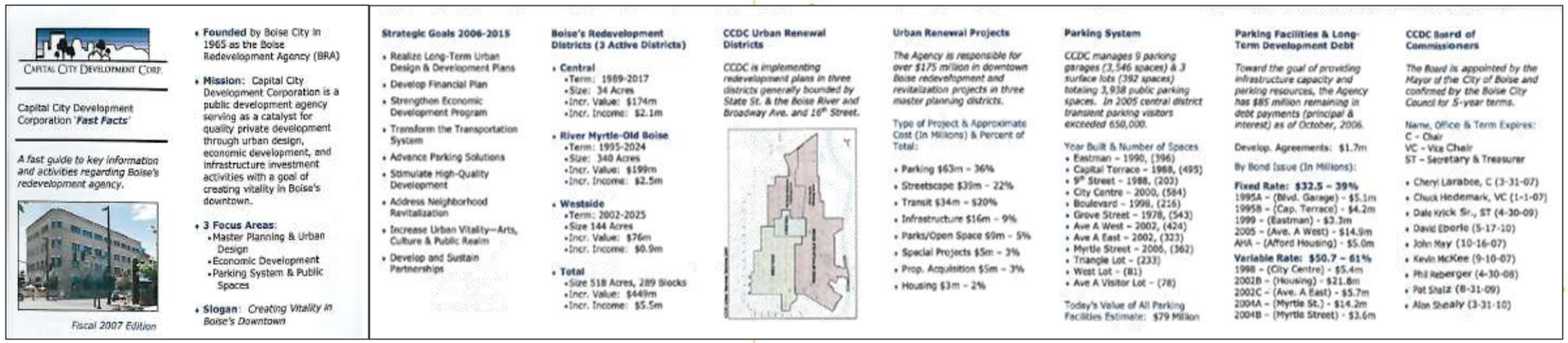
The "Fast Facts" mini brochure covers all these topics and more in a succinct and meaningful way.

ex.

» Using a creative 3.5" x 17" double-sided layout, this info packed mini-brochure is filled with valuable information and manages to capture the scope, mission and accomplishments of the organization in a positive way.

Specific section headers include:

- Cover – Fiscal 2007 Edition
- Founded/Mission/# Focus Areas/Slogan
- Strategic Goals
- Redevelopment Districts – Central/River Myrtle/Westside/Total
- Urban Renewal Districts
- Whose Job Is It?
- Budget
- Top 10 Cost Issues FY07
- Top 10 Policy Positions
- FY 07 Budget highlights
- Selected Boise Rankings



Capital City Development Corp.

Capital City Development Corporation '*Fast Facts*'

A fast guide to key information and activities regarding Boise's redevelopment agency.

Fiscal 2007 Edition

- **Founded** by Boise City in 1965 as the Boise Redevelopment Agency (BRA)
- **Mission:** Capital City Development Corporation is a public development agency serving as a catalyst for quality private development through urban design, economic development, and infrastructure investment activities with a goal of creating vitality in Boise's downtown.
- **3 Focus Areas:**
  - Master Planning & Urban Design
  - Economic Development
  - Parking System & Public Spaces
- **Slogan:** *Creating Vitality in Boise's Downtown*

Strategic Goals 2006-2015

- Realize Long-Term Urban Design & Development Plans
- Develop Financial Plan
- Strengthen Economic Development Program
- Transform the Transportation System
- Advance Parking Solutions
- Stimulate High-Quality Development
- Address Neighborhood Revitalization
- Increase Urban Vitality—Arts, Culture & Public Realm
- Develop and Sustain Partnerships

Boise's Redevelopment Districts (3 Active Districts)

- **Central**
  - Term: 1989-2017
  - Size: 34 Acres
  - Incr. Value: $174m
  - Incr. Income: $2.1m
- **River Myrtle-Old Boise**
  - Term: 1995-2024
  - Size: 340 Acres
  - Incr. Value: $199m
  - Incr. Income: $2.5m
- **Westside**
  - Term: 2002-2025
  - Size 144 Acres
  - Incr. Value: $76m
  - Incr. Income: $0.9m
- **Total**
  - Size 518 Acres, 289 Blocks
  - Incr. Value: $449m
  - Incr. Income: $5.5m

CCDC Urban Renewal Districts

CCDC is implementing redevelopment plans in three districts generally bounded by State St. & the Boise River and Broadway Ave. and 16th Street.

Urban Renewal Projects

The Agency is responsible for over $175 million in downtown Boise redevelopment and revitalization projects in three master planning districts.

Type of Project & Approximate Cost (In Millions) & Percent of Total:

- Parking $63m – 36%
- Streetscape $39m – 22%
- Transit $34m – 20%
- Infrastructure $16m – 9%
- Parks/Open Space $9m – 5%
- Special Projects $5m – 3%
- Prop. Acquisition $5m – 3%
- Housing $3m – 2%

Parking System

CCDC manages 9 parking garages (3,546 spaces) & 3 surface lots (392 spaces) totaling 3,938 public parking spaces. In 2005 central district transient parking visitors exceeded 650,000.

Year Built & Number of Spaces

- Eastman – 1990, (396)
- Capital Terrace – 1988, (495)
- 9th Street – 1988, (203)
- City Centre – 2000, (584)
- Boulevard – 1998, (216)
- Grove Street – 1978, (543)
- Ave A West – 2002, (424)
- Ave A East – 2002, (323)
- Myrtle Street – 2006, (362)
- Triangle Lot – (233)
- West Lot – (81)
- Ave A Visitor Lot – (78)

Today's Value of All Parking Facilities Estimate: $79 Million

Parking Facilities & Long-Term Development Debt

Toward the goal of providing infrastructure capacity and parking resources, the Agency has $85 million remaining in debt payments (principal & interest) as of October, 2006.

Develop. Agreements: $1.7m

By Bond Issue (In Millions):

Fixed Rate: $32.5 – 39%
1995A – (Blvd. Garage) – $5.1m
1995B – (Cap. Terrace) – $4.2m
1999 – (Eastman) – $3.3m
2005 – (Ave. A West) – $14.9m
AHA – (Afford Housing) – $5.0m

Variable Rate: $50.7 – 61%
1998 – (City Centre) – $5.4m
2002B – (Housing) – $21.8m
2002C – (Ave. A East) – $5.7m
2004A – (Myrtle St.) – $14.2m
2004B – (Myrtle Street) – $3.6m

CCDC Board of Commissioners

The Board is appointed by the Mayor of the City of Boise and confirmed by the Boise City Council for 5-year terms.

Name, Office & Term Expires:
C – Chair
VC – Vice Chair
ST – Secretary & Treasurer

- Cheryl Larabee, C (3-31-07)
- Chuck Hedemark, VC (1-1-07)
- Dale Krick Sr., ST (4-30-09)
- David Eberle (5-17-10)
- John May (10-16-07)
- Kevin McKee (9-10-07)
- Phil Reberger (4-30-08)
- Pat Shalz (8-31-09)
- Alan Shealy (3-31-10)

Know the Numbers – "Combating Misperception"

More often than not, parking problems are more perceived than real. The Boulder & Lincoln parking programs addressed this issue through a "Know the Numbers" campaign.

- » 34% more downtown spaces with the opening of 10th & Walnut garage.
- » 3,778 City parking spaces in Downtown Boulder.
- » 93 merchants that reimburse customer's parking.
- » 2,209 Free covered downtown parking spaces on Saturday & Sunday.

ex.

Multi-Language Signage

Increasingly, dual or multi-language signage is becoming more important.

Electronic signage can be useful in providing flexibility.

Pictograms or universal symbologies are becoming the norm.

ex.

Parking News & FAQs
In Related Communications Resources

Tapping into other community communication resources is a great way to educate the community on new parking programs and to promote parking program contributions

DOWNTOWN Boulder **Update**

▸BoulderDowntown.com
▸Forward to a friend
▸Buy a Gift Certificate!
▸Downtown RSS

IN THIS ISSUE: ▼NEWS YOU CAN USE ▼ NEW MEMBERS & OPENINGS ▼ SPOTLIGHT ON ...

NEWS YOU CAN USE

To skip to a specific news item, use the links below! To read them all, just scroll on down.

- Last Day for Spring Green Orders
- Steps for Literacy
- Bolder Boulder Volunteers Needed
- KidLinks Entry Form Now Available
- Hop 2 Chautauqua Kickoff Party
- Bauman College Cooking Demos
- Parking Pay Station Q & A
- Website Tips and Tricks
- **Spotlight On**:Tulip Fairy & Elf Parade

Last Day for Spring Green Orders
It's time again for Downtown Boulder's Spring Green, which means free flowers (Petunias) for businesses in the Downtown Boulder BID. The deadline for putting in your orders is **May 9th,** so **Click Here** to register online, call our office at 303-449-3774 or fax back the Spring Green order form to 303-449-1582. Flowers will be delivered between May 20th and May 23rd.

Picture of the Week

WHAT'S HAPPENING
May 8th - May 25th

This Weekend's Weather

Fri 70/38

ex.

Parking Paystation Q & A

Q: What do I do with my old meter key?

A: Parking Services is working diligently to implement a prepay card to replace the meter keys. The City intends to trade balances on the keys to these new cards.

If you have a specific question you would like answered send an email to parking@dbi.org.

Parking Paystation Q & A
Now that the solar powered pay stations are up and running there are a few questions that people have. This section addresses these questions.

Q: Can I take my time with me?

A: Yes! Once you have your printed receipt displayed on your dashboard, you may move your vehicle to another metered spot until your original time is up.

If you have a specific question you would like answered send an email to parking@dbi.org.

Parking Paystation Q & A
Now that the solar powered pay stations are up and running there are a few questions that people have. This section addresses these questions.

Q: What are the enforced hours?

A: Pay stations are enforced -Monday through Saturday 9am to 7pm. Pay stations are FREE on Sunday and on city holidays. Please go to www.boulderparking.com to verify the holidays the city observes.

If you have a specific question you would like answered send an email to parking@dbi.org.

Stakeholder Forums and Workshops

Park Smart

A Forum to Raise the Bar on Good Parking Policy

Parking has been a hot topic in the news over the last year. Reading the headlines and blogs you'd think there were just two points of view: those who think free parking Downtown is an inalienable right, and those who want to force everyone out of their cars onto transit or bicycles. We think it's time to elevate the discussion about parking in Seattle and assess what we can learn from other cities to better manage the parking we have so that it supports a healthy, vibrant urban core. We've assembled a terrific panel that includes policy makers, national experts, transportation officials and a UW researcher to lead an informed discussion about the best approaches to mana

Bring a m Rasmussen, chair of Seattle's Transpo

Featured Panelists:

L. Dennis Burns, CAPP, Kimley-Horn and Associates, Inc.
Dennis Burns is a senior practice builder and regional vice president for Kimley-Horn and Associates, Inc. Burns is a certified administrator of pubilc parking and has nearly 30 years of parking operations, management and consulting experience. His focus in recent years includes parking and transportation strategic planning, 'smart parking' system development and urban space management concepts. In 2010, Mr. Burns was the recipient of International Parking Institute's "Parking Professional of the Year," and was a featured speaker at the first-ever Green Gov Symposium in Washington, DC.

Rick Williams, BPM Development Company
Rick Williams is a transportation demand management expert from Portland, OR with more than 20 years of experience. From 1989-1994, he managed Portland's 3,500-stall Smart Park system and its 208-block downtown business improvement district. In 1995, Mr. Williams helped establish the Lloyd Transportation Management Association, and currently works both as its executive director and as an independent transportation management consultant for clients throughout North America.

Joining the panel will be **Seattle City Councilmember Tim Burgess**, sponsor of variable price parking legislation, and **Daniel J. Evans School of Public Affairs Senior Lecturer Daniel Carlson**, who specializes in community and economic development, and transportation and land use in metropolitan areas. **Seattle Department of Transportation Parking Operations and Traffic Permits Manager Mike Estey** will also discuss the City's new on-street parking policy.

Presented By:

Downtown Seattle Association · BOMA Seattle King County · City of Seattle · Commute Seattle · Great City · Seattle Hotel Association · Transportation Choices Coalition

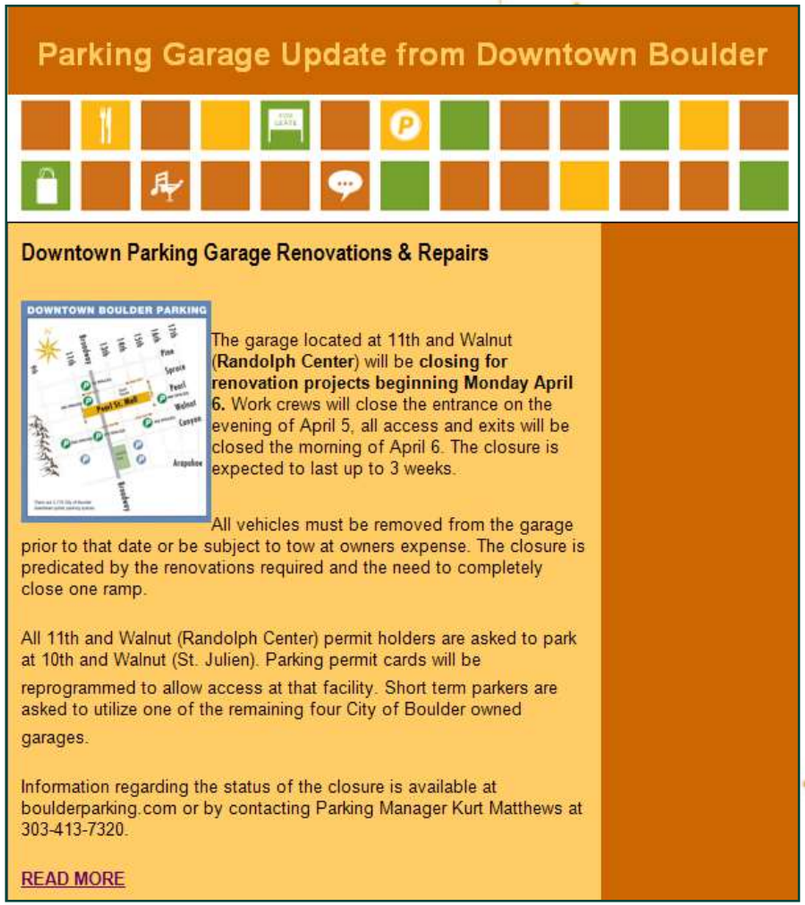
Combine community education and stakeholder input into a community workshop!

This is also a great opportunity for collaborating with other community partners.

Keeping Your Customers Informed During Renovations / Repairs

Keeping customers informed, especially during significant garage repair and renovation projects, is important.

Developing a flexible format for information sharing on a regular basis is a preferred approach.



ex.

» Key Elements for a Garage Repair Update include:

- Names & locations of affected facilities
- Dates & times of impacts
- Duration & nature of impacts
- Alternative locations during construction/repair work
  - Provide different instructions for employees / contract parkers & visitors/short-term parkers if appropriate
- Where to go to get additional information

Where Did We Park?

Massport Welcomes You to Logan International Airport Parking

Whether your trip is for business or pleasure, Massport's parking facilities and services are designed to make parking convenient, safe, affordable and helpful. Exciting changes at Logan are continuing to make your travels better than ever before.

Upon entering the airport, please check the parking availability sign on the inbound roadway. For updated parking information, call Massport's Parking Facilities Information Line at 617-561-1672, tune to Airport Radio 1650 AM within 5 miles of Logan, or visit our web site at www. massport.com.

Where to Park

(arriving/departing the main airport)

Terminal A (Short-Term only)
- Meters only.
- Two hour maximum lot in front of terminal.
- For long-term parking, please use the Terminal A area of Central Parking (Terminal A walkway bridge on level 4), or Economy/Satellite Parking lots.

Terminal B (Long- and Short-Term)
- Enter the Terminal B Garage from the left lane, lower level, or take the ramp down to parking from the upper level.
- If full, please use the Terminal B area of Central Parking (the Terminal B walkway bridge, level 1 on the right connects to the terminal) or Economy/Satellite Parking lots. For stroller and luggage cart access, please use the first level walkway bridge by the Tower. Take the elevator to Level 2 and follow the signs to Terminal B.

Terminals C & D (Long- and Short-Term)
- Enter Central Parking from the inbound roadway. Park in the Terminal C/D area.
- Use the walkway bridge (level 1) on the left which connects to the terminal.

Terminal E (Long- and Short-Term)
- Enter Central Parking from the inbound roadway.
- Park in the Terminal E area. The walkway bridge on level 4 connects to Terminal E.

Economy / Satellite (Long-Term)
- Follow the outbound roadway. Turn right after the Ted Williams Tunnel on ramp and then take an immediate left. Follow this road curving to the right until it ends. Turn left at the stop sign for Satellite Lot. Free shuttle bus service is available to and from the terminals every fifteen minutes, 24 hour service.

Logan Airport Parking Facilities Guide

Central Parking Locator Map

Accessible Parking

Accessible parking is always available at the following locations:

Terminal A
- Van parking available on the lower level at the curb for drop-off and pick-up only.
- Metered lot (2 hour maximum).

Terminal B
- Van parking available on first level (clearance: 7'6").
- Disabled parking available on third level for automobiles (clearance: 6'6").

Central Parking
- First level near Tower Walkway Bridge (clearance: 6'10").
- First level near Terminal C & D Walkway Bridge (clearance: 6'10").
- Fourth level by A & E Walkway Bridges (clearance: 6'2").
- Van parking available on first level in overheight vehicle lot (clearance: 12').

Satellite Parking
- Beside bus shelter directly after entering lot.

Parking orientation tools are very helpful in large parking garages especially if the customer is unfamiliar with the facility.

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Parking Branding & Marketing “Comes of Age”

Branding and Marketing

Developing a parking system “Brand” is one trademark of “Best in Class” parking programs.

Ultimately, a positive patron experience should be your brand.

ex.

- The brand is more than just a logo.
- The brand should promote the image you want people to have of the system.
- It should be something you can say, such as “Easy Park” or “Park Smart”
- It should reinforce the positive aspects of the system – “Free and Easy Parking”, “Visit Downtown and Parking Is On Us”, etc.
- Use consistent signage and other branding tools to “tie the system together”.

Branded Programs

Branding all aspects of your program into unified whole makes your program look and feel more professional.

ex.

» The EasyPark program from Vancouver is a great example of this approach.

EasyPark Programs:

EasyGreen
EasyPark's environmental initiatives.

EasyFlicks
'Shooting a movie in Vancouver?

EasyRider
EasyPark programs for 2-wheelers.

EasyAccess
EasyPark's easy accessibility.

EasySearch
Click here for parking lots and rates

EasyPay
Click here for secure online payment.

Violation Dispute
Click here to dispute a violation.

Parking Offices as a Retail Storefront?

As the parking industry matures, our interface with our customers is evolving.

Most parking offices had a distinctly "back office" feel to them in the past.

But some programs are beginning to change everything!

» The examples to the right are:

A. The Winnipeg Parking Authority

B. The Calgary Parking Authority

ex.

A.

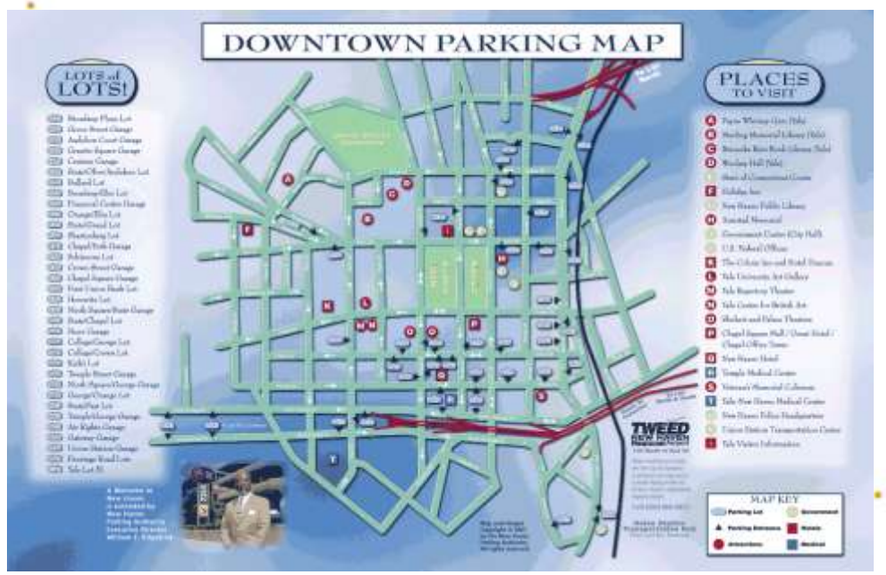

B.

Map It!

Having an effective and easy to read parking map is basic asset for effectively communicating with customers.

ex.

- There are many examples of quality parking maps available.
- These maps from Downtown San Jose and New Haven Conn. have detailed information about parking facilities, downtown destinations, transit alternatives etc.
- The maps can also distinguish between public and private parking facilities and provide a useful orientation to the one-way streets.



The 30' Rule for Garage Entry Points

First impressions mean a lot and you never get a second chance to make one! So, what you see within the first 30' of a facility entrance sets the tone.

Make sure the first 30' creates a positive experience!

ex.

"Where would you rather park?"

or

- Typical issues at facility entrances include:
  - Too much or poor quality signage
  - Signage and equipment in poor condition
  - Inadequate lighting
  - Dirty walls and curbs
  - Trash and debris

Parking Receipt & Merchant Coupon!

Multi-space meters in “Pay & Display Mode” can print a 2-part receipt ticket. One part is displayed in the vehicle and the second part can be used as a merchant coupon or to receive a parking validation.

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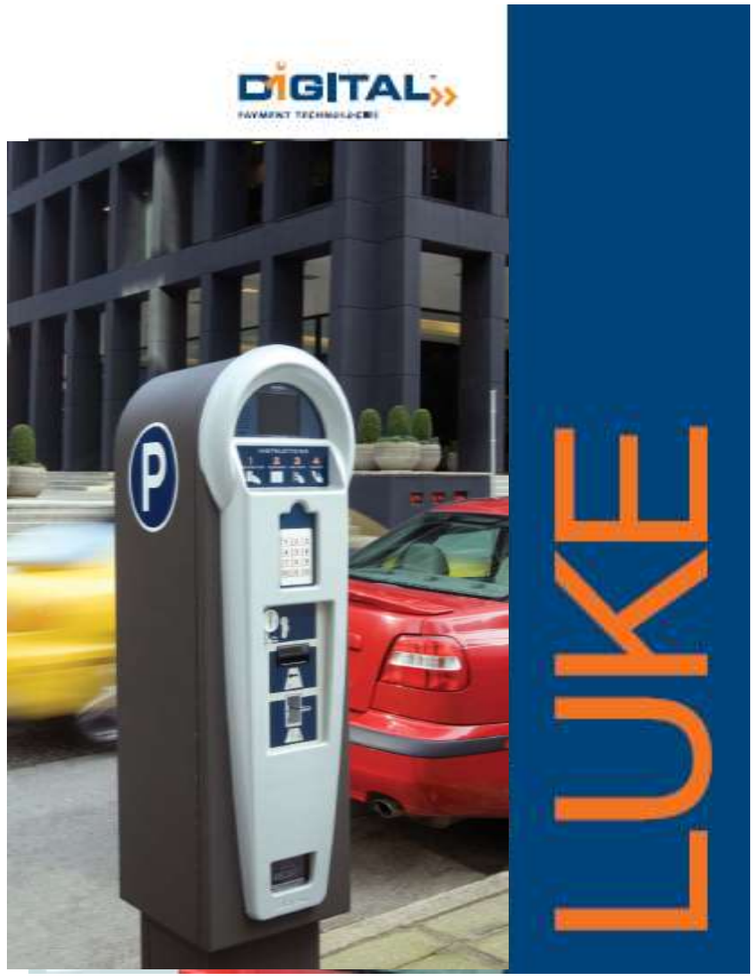


- This innovation is a good one for municipalities and merchants concerned about implementing paid parking.

Integrated Access and Downtown Marketing

Downtown Long Beach Associates (always at the cutting edge!) have integrated Parking, Transportation and Downtown Management in their new “Ride-Park-Play” web page.

ex.

» The Innovative site features an interactive parking and route planning map as well as special links to:

- Downtown Long Beach Transportation
- Downtown Dining
- Downtown Shopping
- Downtown Attractions
- Downtown Calendar of Events

Distinctive & Consistent Parking Signage

Fort Wayne, IN

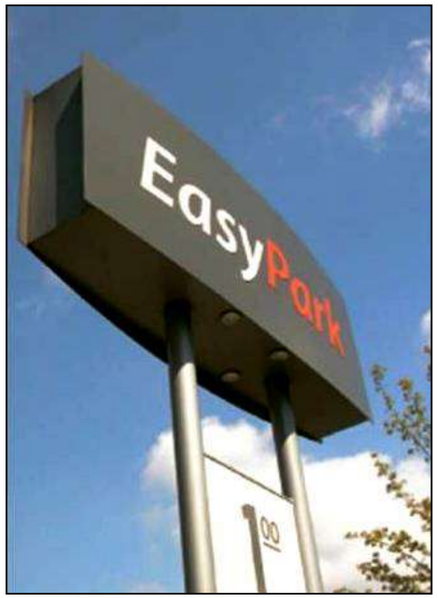
» Once you have created a high standard of service in your facilities, you want your patrons to associate that level of excellence with YOUR SYSTEM – consistent and distinctive signage helps tie it all together.

ex.

Portland, OR

Boulder, CO

Boise, ID



Vancouver, BC

Collaborative Promotions

Marketing dollars can go further when parking programs collaborate and co-market with other downtown organizations.

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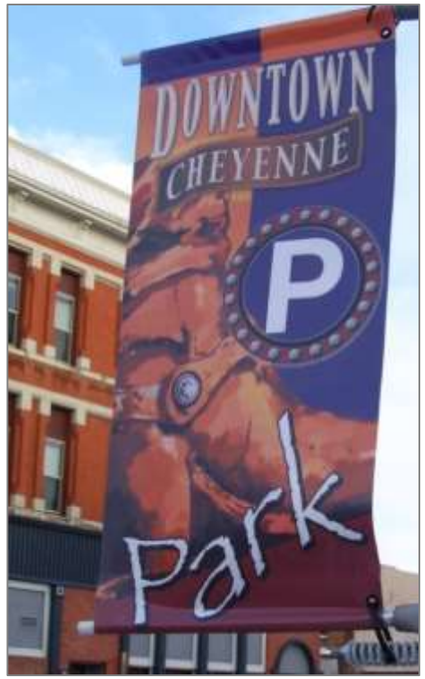
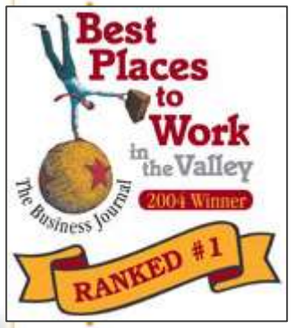


- Examples include: adding parking system info to downtown maps & brochures, banners, wayfinding kiosks, print ads, etc.

Program Marketing

Parking marketing programs that promote not only services, but their staff can be very effective. Happy and satisfied employees provide better service. Companies that provide high quality work environments provide better employees and thus better service.

ex.



- This message is not lost of Fortune 500 companies, nor on the parking industry customer service leaders.
- American Valet, based in Phoenix, AZ, has built their reputation on a strong commitment to both employee satisfaction/recognition and exemplary customer service.

Promote Local Attractions on Meter Heads

If you still have traditional single space meters, why not make the most of them?

Advertise local attractions on the meter heads.

» Downtown Denver advertises for the Denver Zoo, the Museum of Nature and Science, the Denver Art Museum and the Denver Botanical Garden.

» Free on-street parking on Sundays is also promoted.

ex.

Attention Grabbers

OK, now really, who wouldn't want to park in the "Rockstar Parking Lot"?

- "Cityplace" is located in downtown Winnipeg near the new MTA Center which hosts a variety of events including hockey, concerts, etc.
- "Rockstar Parking" is a creative, attention getting marketing strategy for their closest surface parking lot.

ex.

Bollard Sleeves

Question: What is at the entrance to almost every parking area?

Answer: Bollards!

Why not turn these ubiquitous elements into an opportunity for advertising or facility promotion?

ex.

» Eliminating unsightly rusted bollards used to require regular maintenance and even then was often unsuccessful.

» Bollard sleeves are an inexpensive and easy solution to the problem of rusted bollards. Low-density polyethylene thermoplastic sleeves slide over existing guard posts for quick and easy installation.

» A new product (pictured above) includes solar powered lights.

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Celebrating Accomplishments

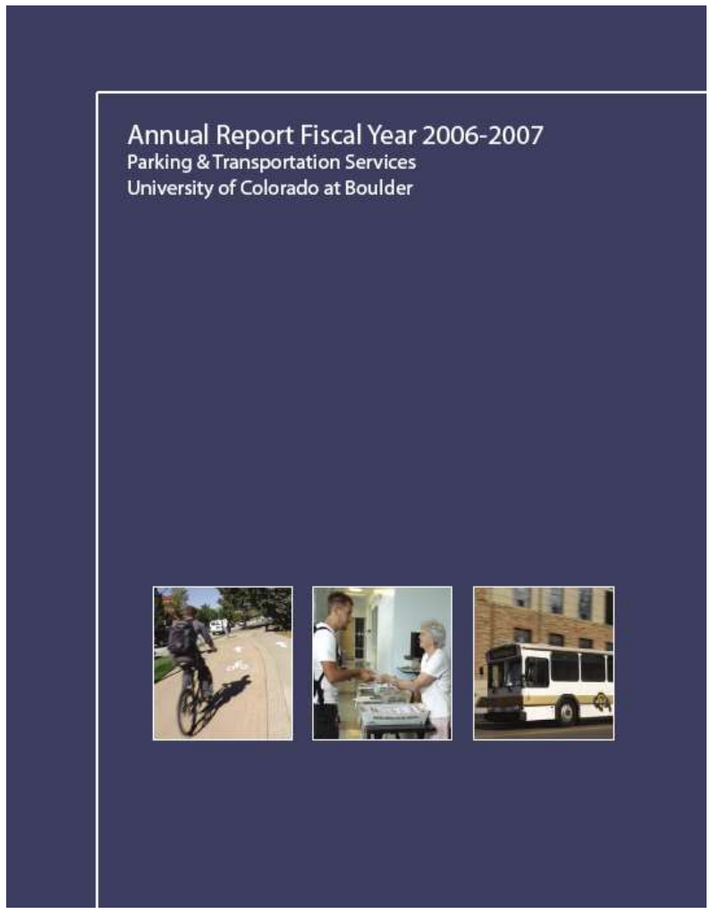
Annual Parking Reports

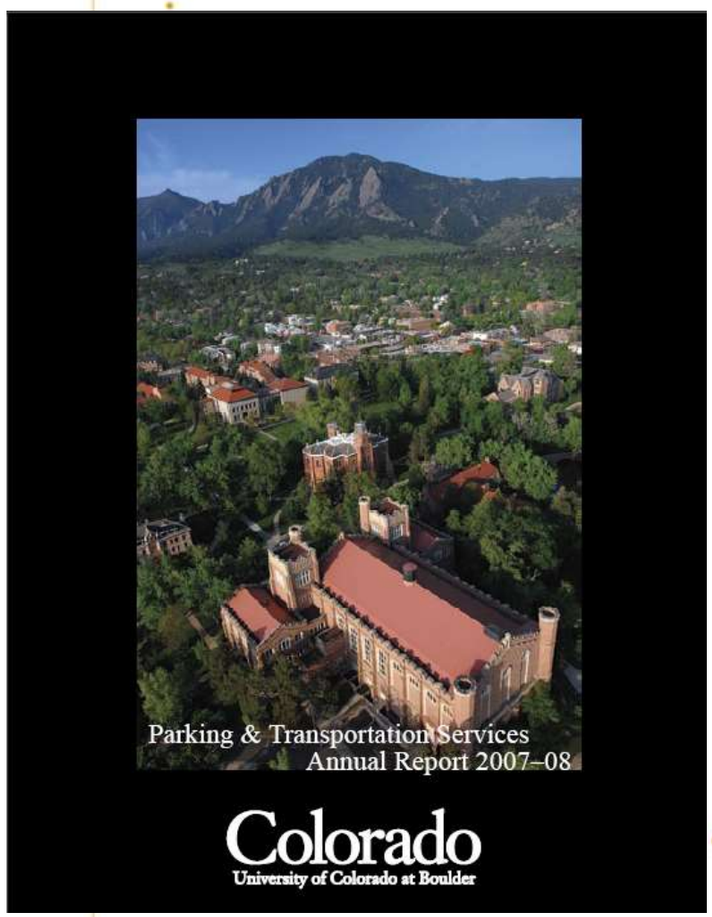
Developing an Annual Parking Report is an effective tool for communicating with both internal and external customer groups.

ex.

» Annual Parking Report Benefits:

- Identifies key departmental issues and challenges
- Promotes departmental achievements
- Documents the "state of parking"
- Builds confidence in the department
- Creates a historical record





Celebrating Program Accomplishments

The University of Washington created the piece below as part of a “strategic communications initiative”. They were facing great financial pressure and had an urgent need to raise parking rates to be able to pay for dramatic fare increases from the local transit agency.

The summary of program successes and accomplishments helped garner needed administrative support for an unpopular, but essential rate increase.

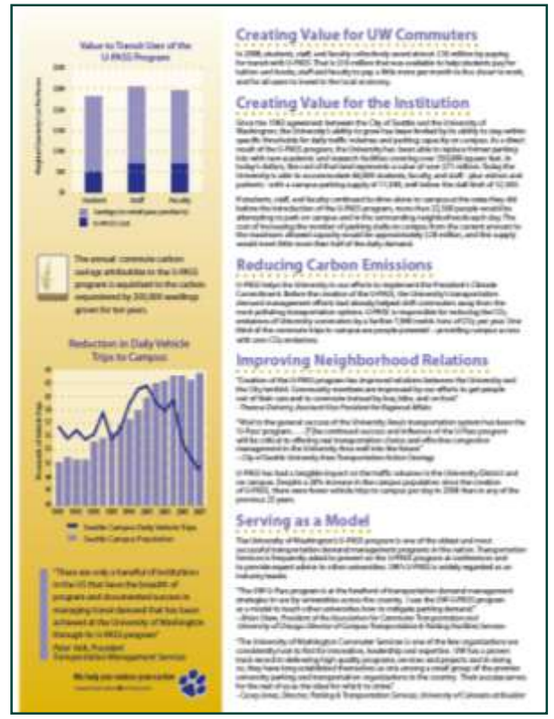
“U-PASS: 17 Years of Success - Almost 80% of the campus population -approximately 52,000 people - commutes to campus using a greener transportation mode than driving alone. One third chooses biking or walking - emissions-free commute options.”

COMMUTER SERVICES
a Transportation Services Program

UNIVERSITY OF WASHINGTON TRANSPORTATION SERVICES

ex.

- **U-PASS: 17 Years of Success**
  - Creating Value for UW Commuters
  - Creating Value for the Institution
  - Reducing Carbon Emissions
  - Improving Neighborhood Relations
  - Serving as a Model
- A component of a larger “Strategic Communications Plan”



New Facility Openings

Make Your New Facility Grand Opening An Event!

Few parking program activities are PR opportunities of this magnitude. Make the most of it!

- HOLLYWOOD -Parking at the Seminole Hard Rock Hotel & Casino in Hollywood is about to become a bit easier after the “smashing” grand opening of its brand new Winner’s Way Parking Garage.
- In celebration of Wednesday’s grand opening, the Seminole Hard Rock set the record for the “World’s Largest Guitar Smash,”.
- The 9-story “Winner’s Way” garage provides an additional 2,400 covered parking spaces. It has 14 elevators, six escalators, a 351-foot-tall pedestrian bridge, a 164-foot-tall Casino bridge, and a car count system, all in a brightly lit environment.

ex.

“Parking Is A Winner At Seminole Hard Rock Hotel & Casino!”

Awards and Recognition

Been recognized for your program excellence?

Well, don't keep it a secret!

- » **Issue Press Releases**
- » **Put out Banners**
- » **Develop a Presentation**
- » **Hold a Press Conference**
- » **Write an Article**

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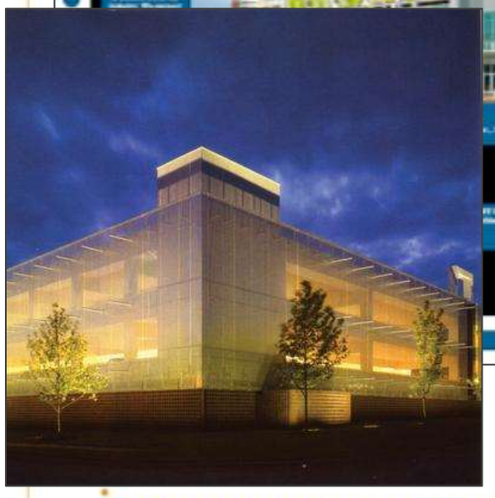


IPI INTERNATIONAL PARKING INSTITUTE ADVANCING THE PARKING PROFESSION

The International Parking Institute Announces Winners of 2010 Awards of Excellence Competition

Award of Excellence: University of Colorado, Boulder - Sustainability, Parking & Transportation, Boulder, Colo
University of Colorado at Boulder, Parking and Transportation Services

Project Team:

- University of Colorado, Boulder, Parking & Transportation Services, Boulder, Colo
- University of Colorado, Boulder, Environmental Center , Boulder, Colo

The University of Colorado, Boulder, is frequently recognized as one of the nation's greenest, in large part due to its Parking and Transportation Services. Despite a growing number of commuters, the campus continues to reduce its carbon impact through better use of scarce parking resources. Its Ecopass program provides free public transportation for employees, freeing over 1,000 parking spaces. The addition of more than 1,300 bike parking spaces in the past two years means that bike parking and vehicle parking spaces have reached parity. Two existing garages were renovated to reduce energy consumption; a third garage under construction will include electric vehicle charging stations.

Worst Parking Awards?

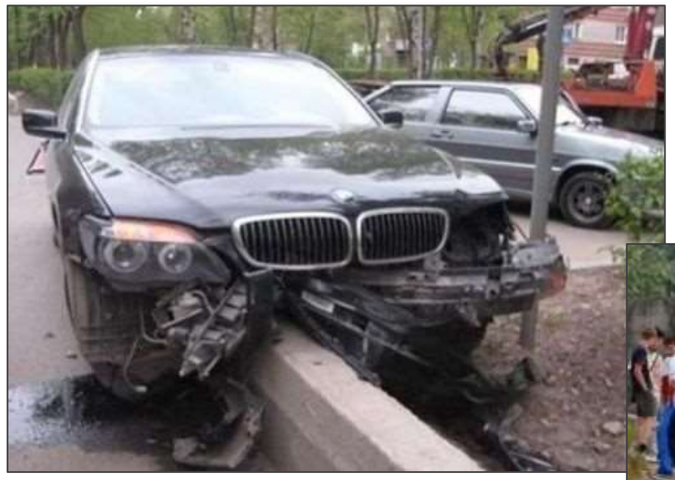
Looking for a little attention?

People love to talk and complain about parking.

Tap into our natural fascination with parking by creating your own local awards program!
(Something tells me there is no shortage of potential entries!)

Maybe the:

"Worst Parking Award" or
"Most Creative Parking Award".



ex.

» You might even celebrate diversity with a "Multi-Cultural Parking Award" – (Here's my entry!")

Conference Presentations

Giving back…

Share your successes and innovative ideas with your peers and in the process enhance your reputation and the prestige of your program and institution.

» **The 6 Benefits of Conference Presenting**

1. Recognition as an expert
2. Time away from the office
3. Acknowledgement of your accomplishments
4. Collaboration with your peers
5. Hone your communications skills and……

ex.

Media Relations/ Media Kit

One benefit of doing an Annual Parking Report is that it can be a great start on developing your parking program “media kit”.

Parking Media Kits might include:

- System/Facility fact sheets
- Statistical Info
- Comparative Info
- Photos
- Video Footage
  - Facilities, staff doing their jobs, etc.
- Bios of Key Staff

Develop the Media Kit “before a crisis”

- On your time table

ex.

Media Relations Tips:

- Make friends with local Media
- Keep your message simple
- Provide resources – visuals, photos, plans, stats
- If hosting a press event – keep presentation short
- No more than 5 minutes
- Then open it up for questions
- Have a written “press release”
- Have a copy available for reporters

Anniversaries

Don’t Forget Your Anniversary!

Program anniversaries are a natural opportunity to reflect back on your progress and celebrate your accomplishments!

» **3 Ideas for your celebration:**

1. Offer “free parking for a year” to one lucky person
2. Have a water balloon accuracy dropping contest from the roof of the garage
3. Bake a cake in the shape of parking deck!

ex.

Happy 75th Anniversary Parking Meter !

Ch. 8

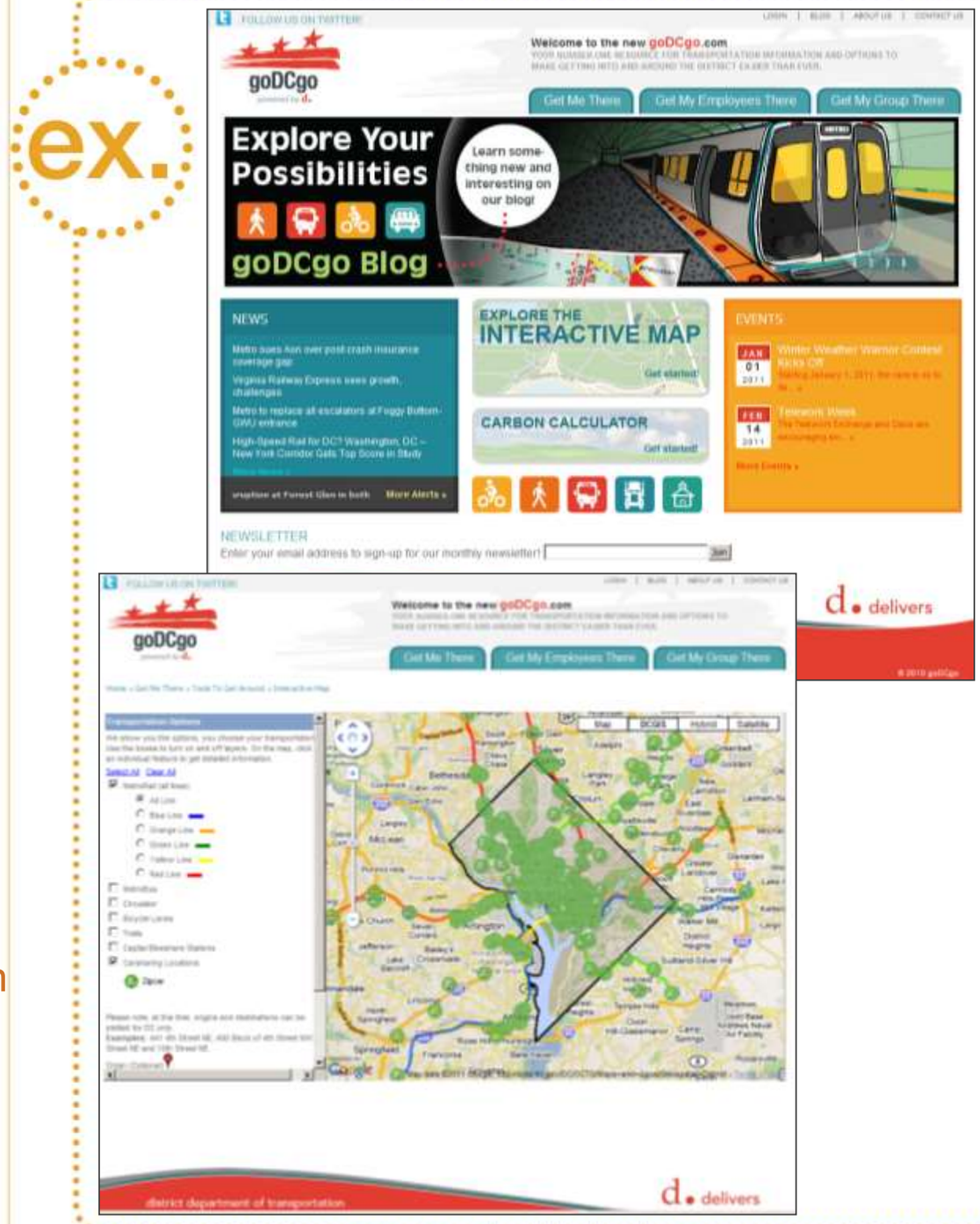
The Virtual Environment

The Virtual Environment

Let's face it, the internet has changed everything! (and mostly for the good!)

This has forced us to come to terms with the fact that we have a new "virtual environment" that needs to be carefully designed, managed and maintained.

- Our "Web Presence" says a lot about our organization
- It is often the first point of contact with our programs
- It can be an incredibly valuable tool for information dissemination, but it must be kept current
- Parking is typically not "front and center" on institutional home pages. How easy is it to find your program information?
- One of favorite sites from a transportation perspective the "go DC go.com" site



Flash Based Mapping Programs

Flash based mapping programs provide the ability to map out walking routes from parking locations on campus to specific destinations and could also be translated to walking times.

ex.

» Visit www.wisc.edu to see an example of this technology application.

- Click on the “Campus Map”
  - Ruler feature.

Recommended Website Elements

Website development has come a long way!

We now have a wide variety of tools and other webpage elements to choice from.

Some parking specialty items include:

- Carbon reduction calculators
- Parking facility construction cost estimator
- Ask the consultants

Some other favorites to consider include:

» News & Events

» Maps

» Events Calendars

» Construction Updates

» Did You Know?

» Weekly Polls

» Program FAQs

» Links to other sites/resources

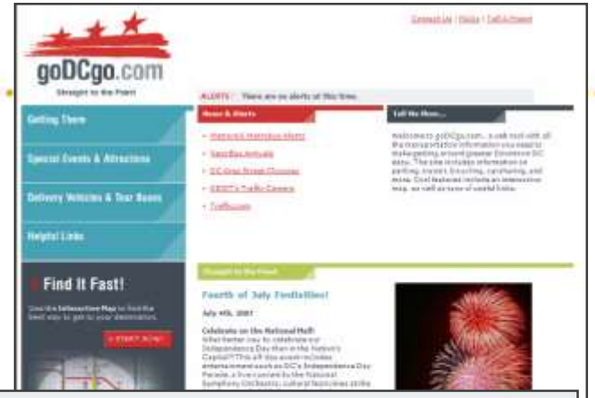
» Job postings

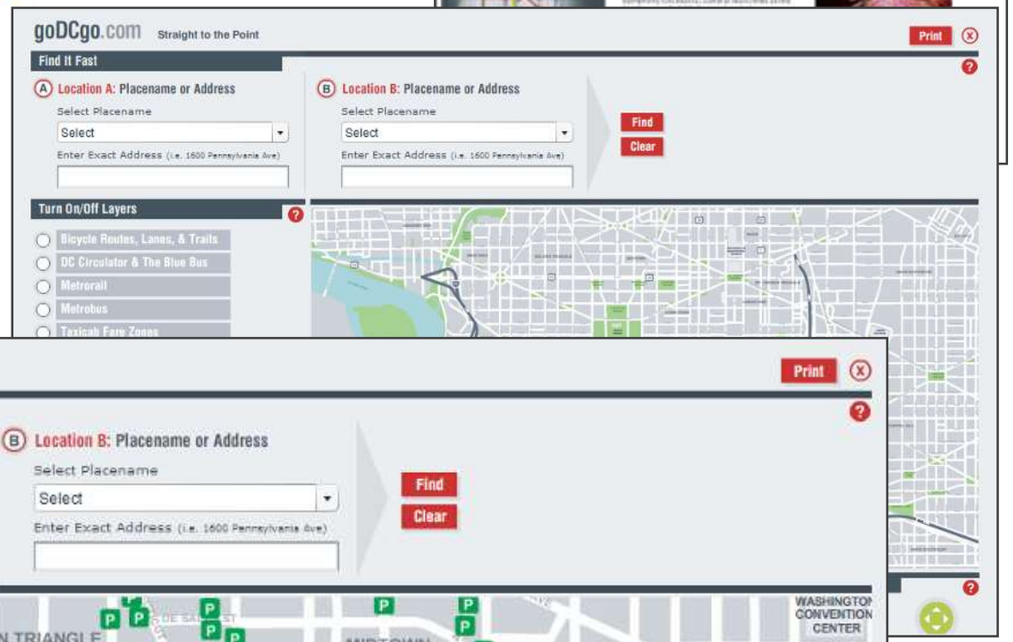
Best Parking Website Features – Interactive Maps

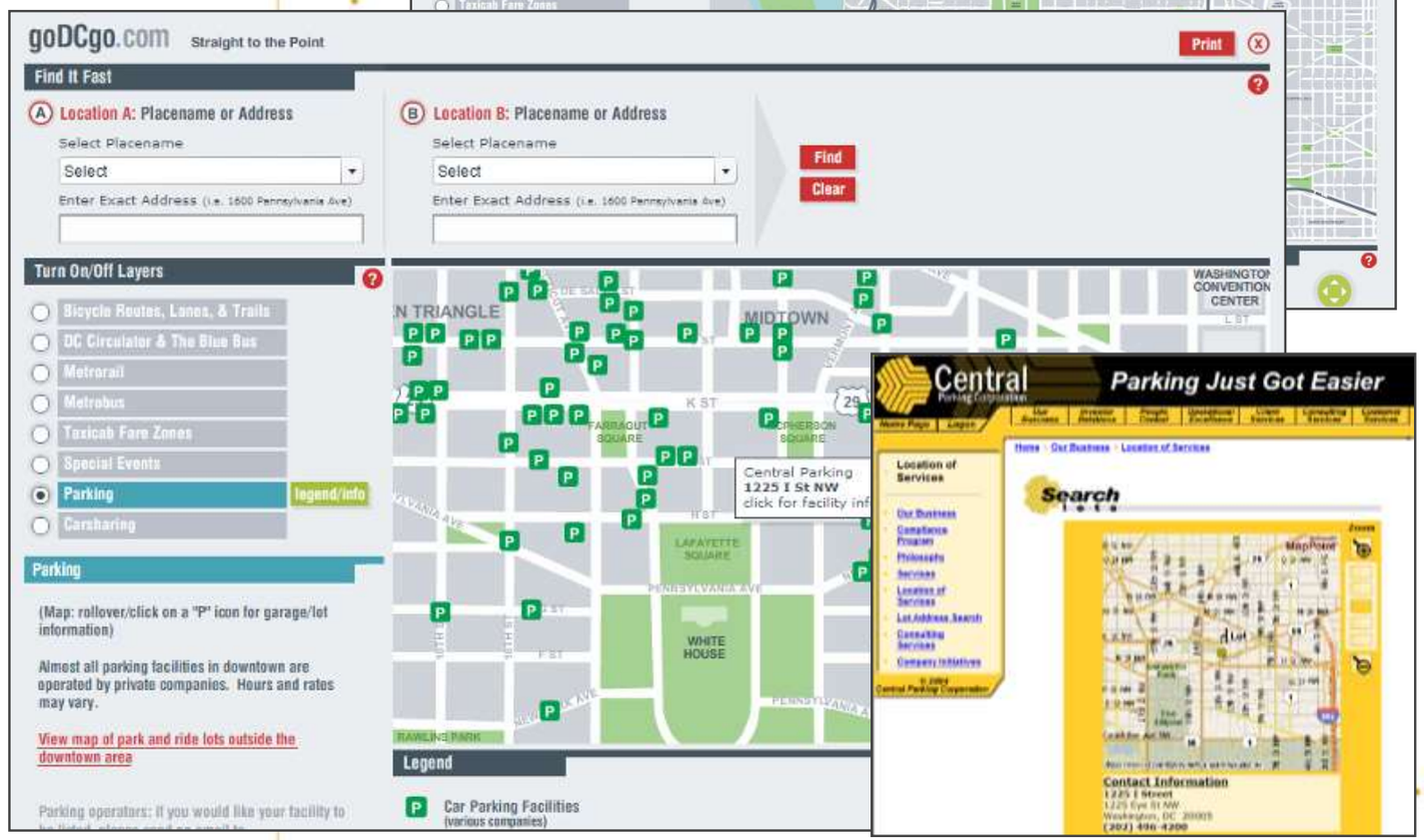
On the “Go DC Go.com” interactive web-site map, by turning on the parking “layer” you can not only identify the location of various parking facilities, but also drill down to very detailed information about facility management, services offered, hours of operation, rates, etc.

» At the most detailed level, the data is just a link and detailed info is managed by the site owner, such as **Central Parking** in this example.

ex.







Best Parking Website Features – Parking Locators

Interactive web-site maps that allow you to turn on “layers” to relate various features is a very valuable parking and downtown web-site feature.

Examples of specialty transportation related layers include:

- Parking
- Bike Share Stations
- Transit Stops
- Circulator Stops and Routes
- Car Share Locations

Some other “layers could include:

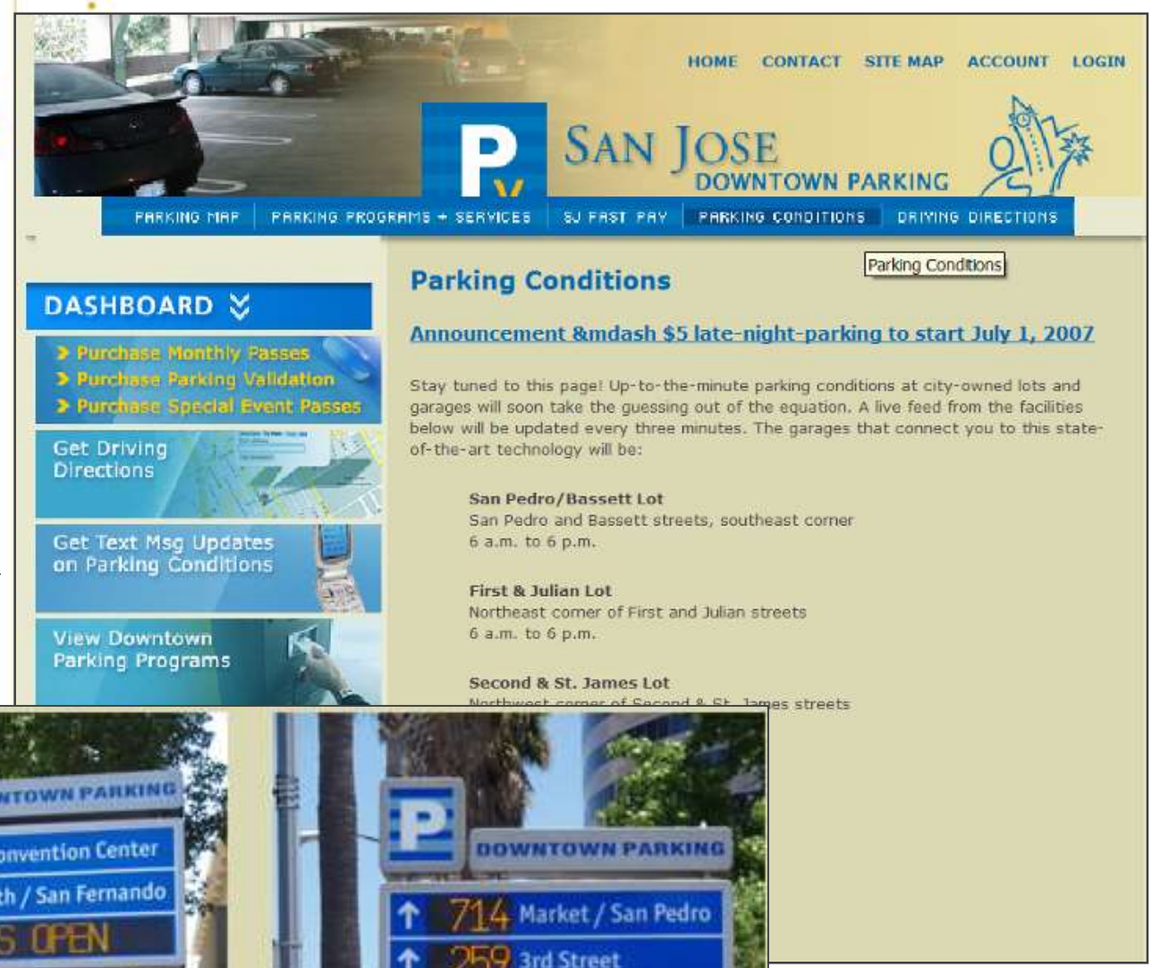
» Attractions
» Major Buildings
» ATMs
» Restaurants
» Retail
» Government Facilities
» Art Galleries
» Coffee Shops

Best Parking Website Features – Parking Conditions Updates

The San Jose parking website offers a page that keeps customers informed of “current conditions” related to city operated parking facilities”.

» You can even sign up to get “parking condition updates” sent directly to your cell phone via text message.

» San Jose is also on the leading edge with parking guidance signage systems with real-time information.



Best Parking Website Features – FAQs

Many websites recognize that there are a variety of "commonly asked questions".

An FAQ (Frequently Asked Questions) section can be a helpful addition to many customers and reduce the number of phone calls your office staff has to answer.

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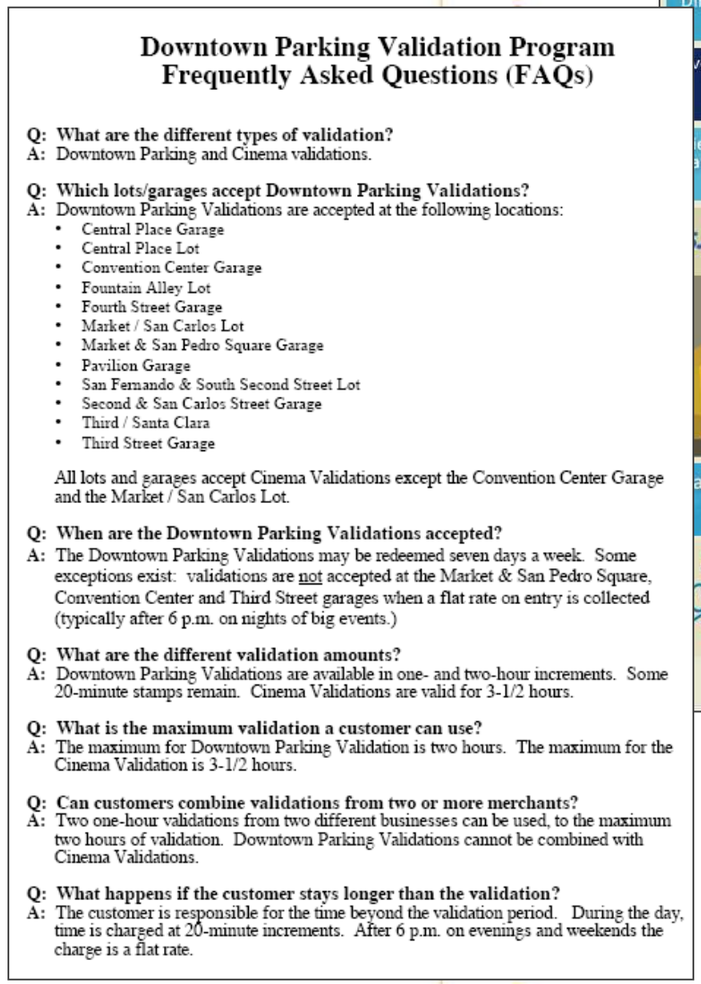

Downtown Parking Validation Program
Frequently Asked Questions (FAQs)

Q: What are the different types of validation?
A: Downtown Parking and Cinema validations.

Q: Which lots/garages accept Downtown Parking Validations?
A: Downtown Parking Validations are accepted at the following locations:

- Central Place Garage
- Central Place Lot
- Convention Center Garage
- Fountain Alley Lot
- Fourth Street Garage
- Market / San Carlos Lot
- Market & San Pedro Square Garage
- Pavilion Garage
- San Fernando & South Second Street Lot
- Second & San Carlos Street Garage
- Third / Santa Clara
- Third Street Garage

All lots and garages accept Cinema Validations except the Convention Center Garage and the Market / San Carlos Lot.

Q: When are the Downtown Parking Validations accepted?
A: The Downtown Parking Validations may be redeemed seven days a week. Some exceptions exist: validations are not accepted at the Market & San Pedro Square, Convention Center and Third Street garages when a flat rate on entry is collected (typically after 6 p.m. on nights of big events.)

Q: What are the different validation amounts?
A: Downtown Parking Validations are available in one- and two-hour increments. Some 20-minute stamps remain. Cinema Validations are valid for 3-1/2 hours.

Q: What is the maximum validation a customer can use?
A: The maximum for Downtown Parking Validation is two hours. The maximum for the Cinema Validation is 3-1/2 hours.

Q: Can customers combine validations from two or more merchants?
A: Two one-hour validations from two different businesses can be used, to the maximum two hours of validation. Downtown Parking Validations cannot be combined with Cinema Validations.

Q: What happens if the customer stays longer than the validation?
A: The customer is responsible for the time beyond the validation period. During the day, time is charged at 20-minute increments. After 6 p.m. on evenings and weekends the charge is a flat rate.

Web-based Parking Locators

Searchable Parking Locator Map features on websites allow customers to zoom in on their areas of interest and get detailed parking location, contact info, maps, cost and sometimes parking availability information.

ex.

» Visit www.greenP.com to see an example of this website feature.

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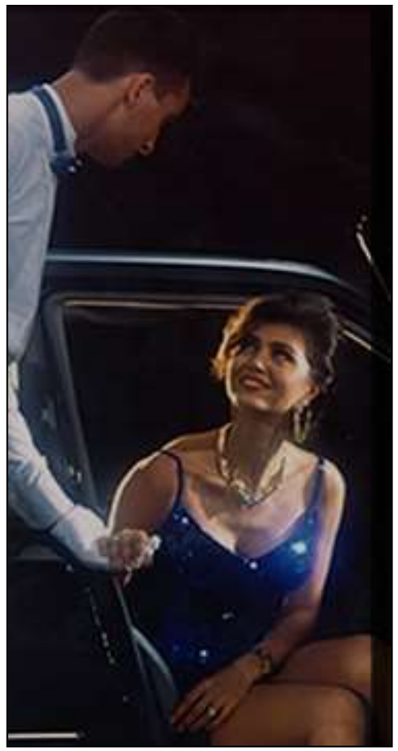
Improving Customer Service

Quality Customer Service Programs

"Best in Class" parking programs have well defined customer service programs that typically include vehicle lock out assistance, dead battery assistance and vehicle location assistance at a minimum.



ex.

» Other key customer service areas include:

- Focus on employee training and hiring practices.
- Develop friendly, attentive, outgoing knowledgeable attendants.
- Increase personal contact between parking system manager, stake holders & customers.
- Institute performance measurements and utilize for company and employee incentives.
- Develop customer friendly payment options.

Quality Customer Service Programs Begin with Training

Excellent customer service is never an accident. It is a result of a defined prioritization by management, a dedication to making guests feel special and an investment in training.

ex.

IPI INTERNATIONAL PARKING INSTITUTE ADVANCING THE PARKING PROFESSION

MEETINGS & EVENTS | MEMBERSHIP SERVICES | PUBLICATIONS | PROFESSIONAL DEVELOPMENT

HOME PAGE > PROFESSIONAL DEVELOPMENT > ON-SITE TRAINING PROGRAMS

On-Site Training Programs

Employees are an organization's most valuable asset. An investment in staff training and education brings a high rate of return in job performance and satisfaction.

For more information, contact Lauri Chudoba at chudoba@parking.org or 540.371.7535.

Customer Service Training

Conflict Resolution Training

Customer Service Amenities –

A Requirement for Canadian Parking Association Certification

ex.

Customer amenities provided by the Winnipeg Parking Authority.

Canadian Parking Association

Association canadienne du stationnement

CPA ACS

Specialized Reserve Spaces for Retail Customers

Understanding the special needs of your customers and providing for their special needs can boost sales of specialty programs.

ex.

» Examples include:

- Short-term spaces for quick turn-over customers such as “Coffee Customers”
- Quick and convenient “run–in / run-out” spaces for pre-prepared meal customers.
- Close-in, convenient spaces (generally next to accessible spaces) reserved for “Expectant Mothers”.

Lincoln's "Shopper Zones"

Reserving the most convenient off-street parking spaces for retail customers, Lincoln's new "Shopper Zones", takes this best practice to a new level!

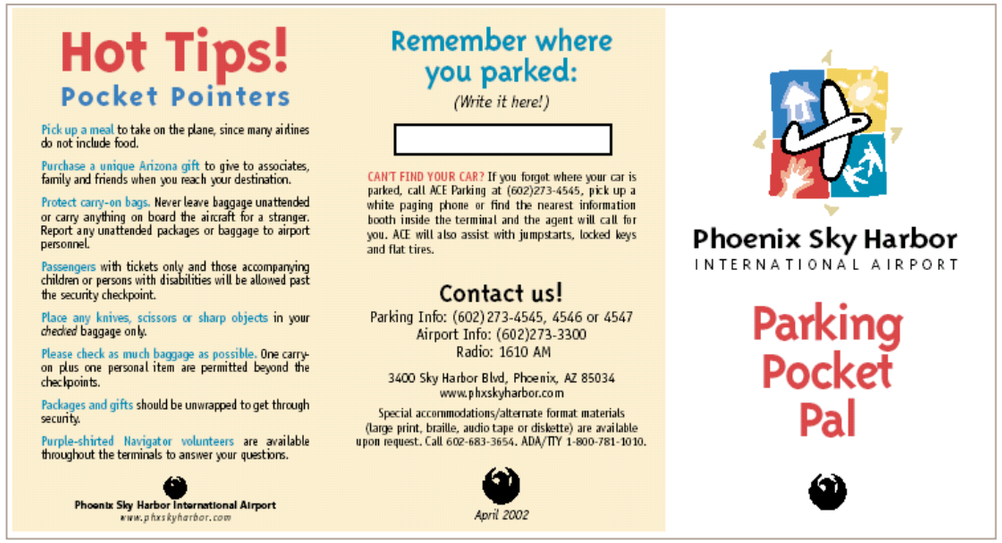
ex.

Parking Orientation Tools

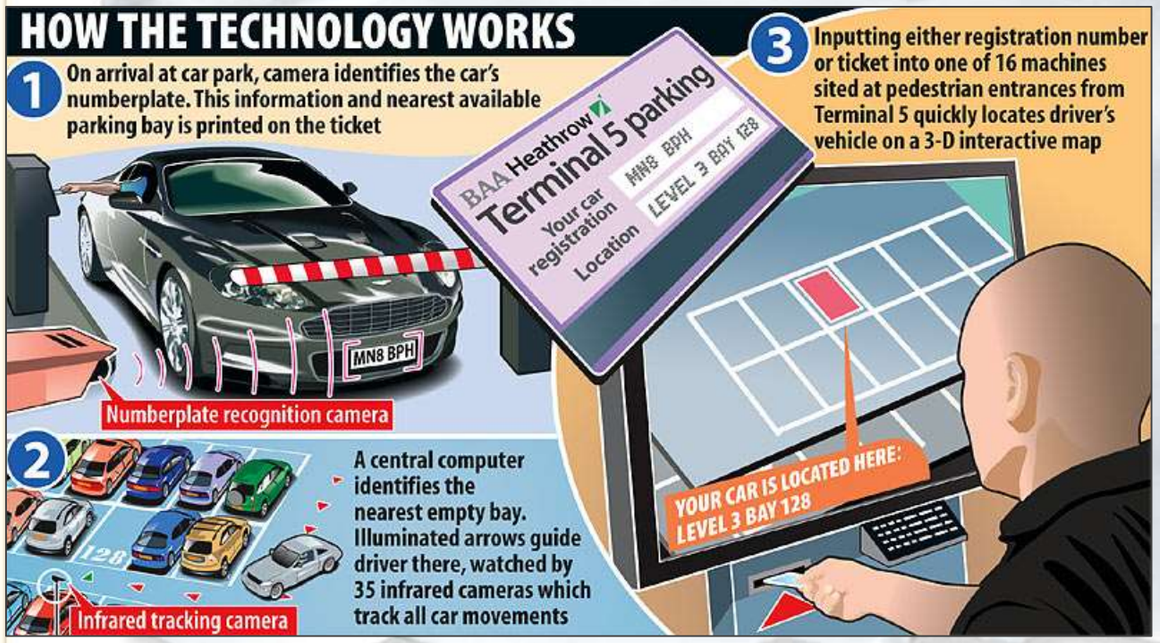
Many facilities place “You parked on Level ___” cards at the elevator lobbies for patrons to take with them.

ex.

» London’s Heathrow Airport uses LPR technology to make finding your car even easier!



» Other systems have developed “Parking Pocket Pal” mini-brochures to provide orientation and parking services information to customers.



Enhanced Payment Options

One area that we can use to improve customer service in the parking world is to make “paying for parking” as easy and painless as possible. Because, let’s face it, nobody LIKES to pay for parking. But if is difficult to pay, that just makes it worse!

ex.

If accepting credit or debit card payments, be sure your systems are PCI certified!

Improved payment options include:

- Cash/Coin
- Credit/Debit Card Acceptance
- Community Cards (Debit)
- Cash-Key
- Pay-By-Cell Phone
- Pay-Pal (On-Line)
- Toll Tags
- “Sky Meter”

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Customer & Community Education

"Coffee with the Parking Guy"

The Winnipeg Downtown BIZ sponsored "Coffee with the Parking Guy"!

As a service to it's membership the BIZ would host monthly meetings connecting retailers, restaurateurs and other downtown business owners at a local coffee shop to the Winnipeg Parking Authority's chief administrator (& IPI's Parking Professional of the Year in 2010!).

ex.

- This simple, but effective outreach strategy worked well in Winnipeg because of their smart and savvy parking administrator.
- Discussion were lively and sometimes a little intense. People can get passionate over parking.
- But in the end, it was a valuable learning experience and the educational benefits went in both directions.

Mr. David Hill, CAPP
IPI's 2010 "Parking Professional of the Year"

How To Park in Any City, USA

Having a succinct and accessible document that informs your customers “How to Park” is just good basic management.

PARKING TICKETS

COURTESY TICKETS

Under our courtesy ticket system, first-time parking offenders who receive tickets for on-street metered parking violations may have their tickets waived. The goal of the courtesy ticket program is to ensure that the downtown is friendly to our visitors and business customers.

PARKING FINES

- Expired meter $15
- Parking over marked lines $15
- Parking in a handicap zone $200
- Parking within 15 feet of fire hydrant $100
- Parking within fire lane $100
- Other violations $50

Late Fees: $10 for 21 days after issuance and an additional $10 for each subsequent 14-day period, up to $20.

PAYING YOUR TICKET

Enclose the citation with a personal check, money order or cashier's check (do not send cash). Make checks payable to Town of Chapel Hill. Mail to Town of Chapel Hill Parking Services, 150 E. Rosemary St., Chapel Hill, NC 27514. Payments are accepted from 8:30 a.m. to 5 p.m. Monday to Friday at the Parking Services office, or by phone at (919) 932-2912. Payments may also be deposited in the Town's drop-box locations at Chapel Hill Town Hall, 405 Martin Luther King Jr. Blvd., or the Police Department, 838 Martin Luther King Jr. Blvd.

IF YOU LOSE YOUR TICKET

Paying your ticket is still your responsibility. Visit Parking Services in person or phone (919) 932-2912. ame of

21 days of
ll Parking
/parking.

TOWED OR IMMOBILIZED?

IMMOBILIZED VEHICLES

Vehicles illegally parked within the Town that have four or more outstanding parking citations are subject to having an immobilization device (commonly referred to as a "boot") attached to their vehicle.

REMOVING THE IMMOBILIZATION DEVICE

In order to have the device removed, please come to the parking office at 150 E. Rosemary St. between 8:30 a.m. and 4:30 p.m. Monday through Friday to settle the account and pay the $55 booting fee. Vehicles not claimed prior to 4:30 p.m. are subject to towing.

TOWED VEHICLES

It is rare for the Town of Chapel Hill to tow vehicles, but towing will be enforced when:

- Vehicles are parked in hazardous locations
- Vehicles are parked for more than 24 hours in a Town owned lot
- Vehicles have been booted and have not been released before 4:30 p.m.
- Vehicles have been booted on two or more occasions and owners have failed to settle their account.

RETRIEVING YOUR VEHICLE

Towed vehicles may be reclaimed from the vehicle impoundment area upon payment of the towing fee. In order to have your vehicle released, please go to the Chapel Hill Police Department, 828 Martin Luther King Jr. Blvd. Payment of the towing fee does not remove responsibility for the ticket that caused the tow or any outstanding, unpaid or overdue parking tickets.

PUBLISHED IN AUGUST 2010 BY:
Town of Chapel Hill
Communications & Public Affairs
(919) 968-2743 or
publicaffairs@townofchapelhill.org

Printed on recycled paper
Please recycle with white paper.

PARKING DOWNTOWN

The Parking Services office is located in the Wallace Parking Deck.
Open 8:30 a.m. - 5 p.m. Monday to Friday, except holidays.

150 E. Rosemary St.
Chapel Hill, NC 27514

Information: (919) 968-2758
Residential Permits & Citations:
(919) 932-2912
Fax: (919) 932-2926
E-mail: parking@townofchapelhill.org
Web: www.townofchapelhill.org/parking

DOWNTOWN CHAPEL HILL PARKING

PUBLIC PARKING LOTS

There are 675 off-street parking spaces in Town-managed lots.

- Rosemary/Columbia Parking Lot (Formerly Lot 2) (A)
  100 E. Rosemary St.
- West Rosemary Parking Lot (Formerly Lot 4) (B)
  104 W. Rosemary St.
- 127 W. Rosemary Lot (C)
  127 W. Rosemary (leased parking only)
- Wallace Deck at Rosemary (D)
  150 E. Rosemary St.
- Rosemary/Church Street Parking Lot (Formerly Lot 5) (E)
  108 Church St. & 141 W. Rosemary St.
  (will close in Fall 2010 for construction of 140 West)
- West Franklin Parking Lot (Formerly Lot 3) (F)
  415 W. Franklin St.
- West Franklin/Basnight Parking Lot (G)
  113/114 N. Basnight Lane (new)

LEASED PARKING

The Town leases parking spaces for $85/month. For more information, call (919) 968-2758.

FREE PARKING

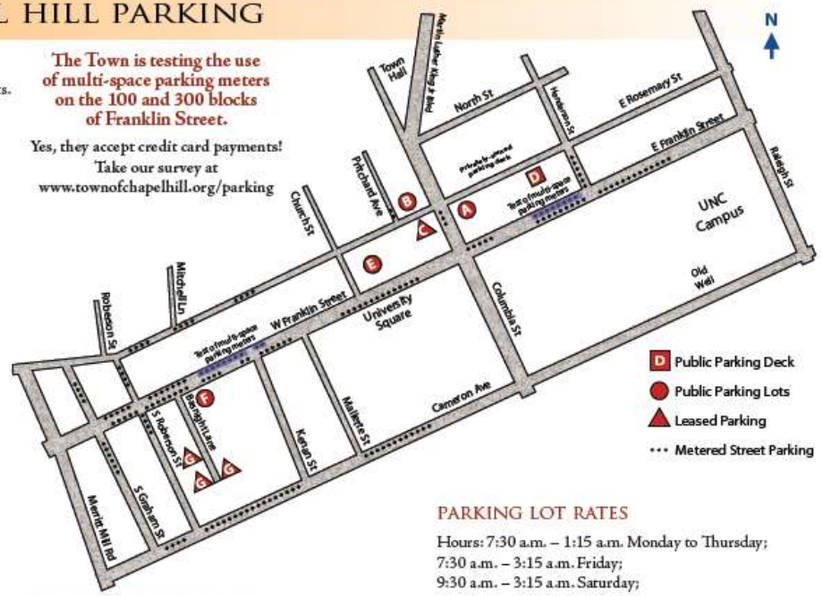
After 8 p.m. Saturday, parking is free at the West Franklin Lot (415 W. Franklin St.) and Rosemary/Church Street Lot (141 W. Rosemary St.)

Also, you are not required to pay for parking meters after 6 p.m. Monday through Saturday. All parking lots and meters are free all day Sunday.

Meters are not enforced on the following Town holidays: Martin Luther King Holiday, Good Friday, Memorial Day, Fourth of July, Labor Day, Thanksgiving, Christmas and New Year's Day. Parking in all metered municipal lots is also free on these holidays; the Rosemary/Columbia Lot and the Wallace Deck are open for paid parking on Martin Luther King Jr. Day and Good Friday.

The Town is testing the use of multi-space parking meters on the 100 and 300 blocks of Franklin Street.

Yes, they accept credit card payments!
Take our survey at
www.townofchapelhill.org/parking



ON-STREET PARKING

There are more than 250 on-street metered parking spaces within Chapel Hill. Most spaces are in the central business district and charge 25 cents for 15 minutes with a 2-hour limit. Meters accept quarters and dimes only.

- Meters are enforced 8 a.m. to 6 p.m. Monday through Saturday. Metered parking is FREE after 6 p.m. daily and all day Sunday.
- Meters in the Cameron Avenue zone have a 4-hour time limit.
- Fines for Expired Meter, Beyond Time Limits, or Outside Marked Lines in metered zones are $15.

PARKING LOT RATES

Hours: 7:30 a.m. – 1:15 a.m. Monday to Thursday;
7:30 a.m. – 3:15 a.m. Friday;
9:30 a.m. – 3:15 a.m. Saturday;

Wallace Deck – 150 E. Rosemary St.
Rates: $.50/half hour for 0-4 hours;
$1/hour for 4-17 hours

Rosemary/Columbia Parking Lot – 100 E. Rosemary St.
Rates: $.65/half hour for 0-4 hours;
$1.30/hour for 4-6 hours;
$1.80/hour for 6 hours or more

Weekend evening fee: $5 after 8 p.m. Friday – Saturday (Includes Thursdays during UNC academic term).

Limited discounts to senior citizens and people with disabilities are available.

Time Limit: 24 hours

Typical contents might include information on:

- Office Location/Contact Info
- Parking locations
- Rates
- On-Street Parking
- Enforcement/Adjudication
- Towed/Immobilized Vehicles

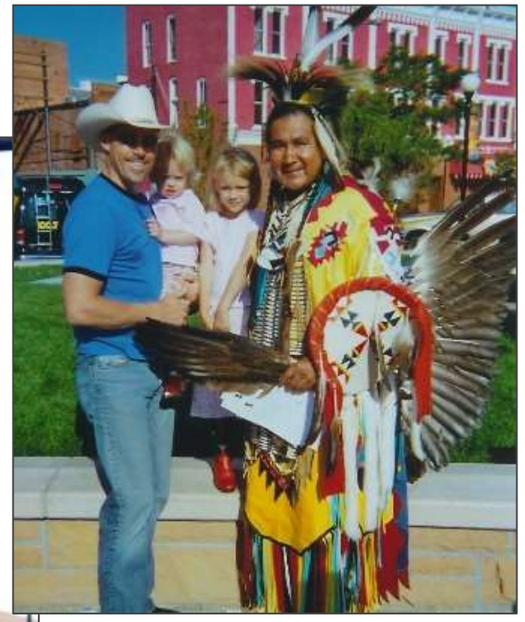
Howdy Pardner!

The “real problem” from a parking management perspective re: on-street parking is repeat offenders trying to take up what should be a short-term space for their longer term needs.

If this is true, why not make the penalty for occasional or first-time violators less harsh to mitigate the inherent negativity of parking enforcement.

ex.

- Why not take it one step further and let the first parking citation be an educational opportunity?
- That’s what they did in Cheyenne, WY with their innovative “Howdy Pardner!”program.
- This is one strategy to better align parking policy with the goals of creating a vital downtown.



» Using creative marketing Cheyenne crafted a parking citation envelope to be an educational piece that led off with the phrase “Howdy Pardner”.

» Message #1: Welcome and Thanks for Shopping Downtown!

» Message # 2: Need more than 2 hrs.? Here are some longer term parking options and other tips on how to parking legally in Downtown Cheyenne.

Secrets to Parking Success!

The collaborative effort between the Downtown Winnipeg Business Improvement Zone (BIZ) and the Winnipeg Parking Authority is aimed at helping you get around downtown easily by car, bike, bus and on foot.

» Getting around downtown and parking is easy with 32,000 parking spots, the free Downtown Spirit shuttle bus, 2 kilometres of indoor walkways, dozens of bus stops, and many bike racks.

ex.

BLUE LOONIE FOR You!

WINNIPEG $ DOWNTOWN

THANK YOU FOR VISITING DOWNTOWN!

USE THIS EASY STREETS™ BLUE LOONIE FOR:

- $1 off parking at street meters and most downtown parking lots
- Full bus fare
- $1 off participating taxis, Handi-Transit and the Splash Dash Water Bus

Ask for your Blue Loonie at participating businesses (see back) when you spend $20 or more (before tax and tip).

FOR MORE TIPS ABOUT BLUE LOONIES AND DOWNTOWN PARKING, REVIEW THIS GUIDE OR VISIT WWW.DOWNTOWNWINNIPEGBIZ.COM

Enjoy your time downtown!

A fresh APPROACH TO DOWNTOWN PARKING

EASY STREETS

SECRETS TO PARKING SUCCESS

PLAN BEFORE YOU GO

Check out a few options for parking before you leave.
- Have a first and second choice parking location.

Keep spare change close at hand to use in meters.
- If you don't have change, the new parking meters and many parkades take credit cards.

LOCATING YOUR PARKING SPOT

Beat the rush.
- Attending an event at the MTS Centre or elsewhere in downtown? Come early for a bite to eat or to shop, and secure that parking spot well in advance.

Staying a while? Take your time, but choose a parking lot.
- Think you might be longer than one or two hours? Going to a medical appointment that might keep you waiting? Choose a parkade or parking lot.

Don't get caught in the red! Time's up, time to move.
- All on-street meters are limited to one or two hours on weekdays between 9:00am and 5:30pm. That means you have to move your car after the allotted time has expired (you can't plug the meter again!)

ONCE YOU'RE THERE

You've successfully parked downtown. Now what?

Park for the day and get around another way.
- Take advantage of the free Downtown Spirit shuttle bus to get around the city centre and back to your car when your day's done.

Stay high and dry.
- Avoid sleet and snow by parking indoors and using downtown's walkway system. You can get from Portage & Main to The Bay without ever stepping outside!

ALTERNATIVES TO PARKING DOWNTOWN

Park and ride.
- Park at one of Winnipeg Transit's 12 Park and Ride locations and hop on a direct bus downtown. For a map, visit www.winnipegtransit.com/main/parkandride.jsp
- Shop at an Easy Streets retailer and ask for a blue loonie, which will cover your bus fare back to your car.

Leave your car at home!
- Hitch a ride with a friend and carpool to downtown.
- Travel on foot or by bike or bus.

PARKING MY TH:
I ALWAYS have to pay a Fortune for parking downtown.
BUSTED:
There are many ways to save on downtown parking... and even park for free!

PARKING ON A BUDGET

Paying for parking is a reality in most cities' downtowns. But there are a few tricks to save on parking.

Come downtown after 5:30pm on weekdays and park for free on the street, or at a reduced rate at most lots.

Free weekends at street meters.
- Saturdays: park free for two hours at all street meters—even if it's a one-hour meter (9:00am-5:30pm). But after two hours, you'll need to move your car.
- Sundays & Holidays: free all day long.
- Watch for meters at The Forks and the Promenade behind Portage Place. Since they're not run by the City, they have different hours.

Call your destination before you leave and ask if they have visitor parking or validated parking. Locations offering validated parking include Portage Place, IMAX Theatre, Eaton Cinema, The Bay and others (validated parking policies vary).

Ask for your blue loonie after spending $20 or more at Easy Streets businesses.

Park a few blocks outside downtown and walk or bus in.

Check loading zones for time and/or day limited designation. You can actually park (for free) in some loading zones on evenings and weekends.

The Inside Scoop
PARKING PATROLS SPEAK UP

"There's lots of parking downtown, but it takes a bit of research to know where to find the bargains. It's best to park in a surface lot or parkade if you're going to be a while; on-street parking space is dedicated to short-stay parking only. Please drive safely and park courteously, and call us if we can help. Our patrol staff are happy to point out the regulated areas, and explain where you can leave your vehicle safely, for as long as you wish."

David Hill, DEPUTY DIRECTOR, STREETS, WINNIPEG PARKING AUTHORITY

WHAT PARKING PATROLS REALLY WISH YOU KNEW

"No Stopping" signs mean no stopping. No ifs, ands or buts!

Loading zones are meant for loading.
- You can park in a loading zone for 15 minutes to dash into a business or to pick someone up. No need to use your hazards.
- If there is constant loading/unloading activity, a vehicle can be at a loading zone for longer than 15 minutes.

Back lanes need to be kept clear for safety reasons, but can be used for short-term loading.

Let the rush flow!
- Rush hour restrictions help traffic flow in and out of downtown, 7:00am to 9:00am and 3:30pm to 5:30pm. Watch for no stopping zones and no-parking meters during rush hour times.

PARKING MYTH:
Parking Patrols stake out my car, waiting for my meter to expire before slapping a ticket on it.
BUSTED:
In fact, Parking Patrols would much rather you park smart and don't get a ticket at all.

REMEMBER:
Park smart, and be courteous!

LOT TALK

When parking in lots and parkades, keep these tips in mind:

Read the signs!
- Rules vary between lots, so to park smart, read the posted signs.
- Many downtown lots are operated by private companies like Impark and Urban Aropark, and not by the City.

Reserved... but not for you!
- Reserved signs in parking lots are paid for by monthly parkers or someone paying a premium for that spot.

Check the times, because some spots are only reserved 6:00am to 6:00pm.

Look out for day and evening rate changes.
- Many parking lots have flat rates in the evening and one hour or maximum rates during the day.

Keep it simple and pay by phone at some lots.

NEW AUTOMATED PARKING PAYSTATIONS

The Winnipeg Parking Authority's new solar-powered parking meters create more parking spaces and will save you from parking tickets!

How do I use the new parking meters?

COINS
1. Insert coins for desired amount of time.
2. Press green button to print ticket.
3. Place ticket on your dash, face-up.

CREDIT CARD:
1. Insert and remove credit card.
2. Enter desired time OR enter the maximum time.
3. Press green button to print ticket.
4. Place ticket on your dash, face-up.

How do the meters save me from parking tickets?
- The new meters won't take payment during no parking times.

DOWNTOWN PARKING CHEAT SHEET:
WHAT'LL IT COST YOU?

CITY OF WINNIPEG STREET PARKING METERS
Saturdays: 2 hours free
Sundays: Free parking
Monday-Friday, 5:30pm-9am: Free parking
Monday-Friday, 9am-5:30pm: $1/hour

DOWNTOWN PARKADES & PARKING LOTS
Hourly: $1-$2.50
Maximum costs vary.
Day: $4-$10
Evening: $1-$6

DOWNTOWN PARKING PLUSES
- Easy on-street parking
- Many indoor and heated parkades
- Indoor walkway system to use once you've parked
- Lots of choice
- Free on-street parking on weekends, holidays and evenings

Save More WITH EASY STREETS

1. Ask for your blue loonie.
Spend $20 or more (before tax and tip) at participating downtown businesses, and ask for your Easy Streets™ Blue Loonie!

2. Use your blue loonie for:
- Full fare on Winnipeg Transit buses
- One hour of parking at City of Winnipeg parking meters
- $1 off parking at over 80 downtown lots
- $1 off fare with participating taxis and Handi-Hailper Transit
- $1 off Fare on the Splash Dash Water Bus

FOR MORE PARKING INFORMATION:
Winnipeg Parking Authority: 986-6281, www.theparkingstore.winnipeg.ca
FNP Parking: 942-8300, www.theforks.com
Imperial Parking: 943-3578, www.impark.com
Urban Aropark: 956-7275, www.urbanaropark.com
ParkingPlus: 943-8641
Winnipeg Transit: 986-5700, www.winnipegtransit.com
Downtown BIZ: 958-4640, www.downtownwinnipegbiz.com

Trends in Parking & Transportation

Taking a page from our Downtown Management professional's play book, tracking trends and program performance is a good way to keep our customers educated and aware.

ex.

» Trends to track might include:
  - » Community demographics
  - » Changes in land-use
  - » Parking supply & utilization
  - » Parking rates
  - » Community Investment/New Development
  - » Economic data
  - » Program financial performance
  - » Parking services, accomplishments and community reinvestment

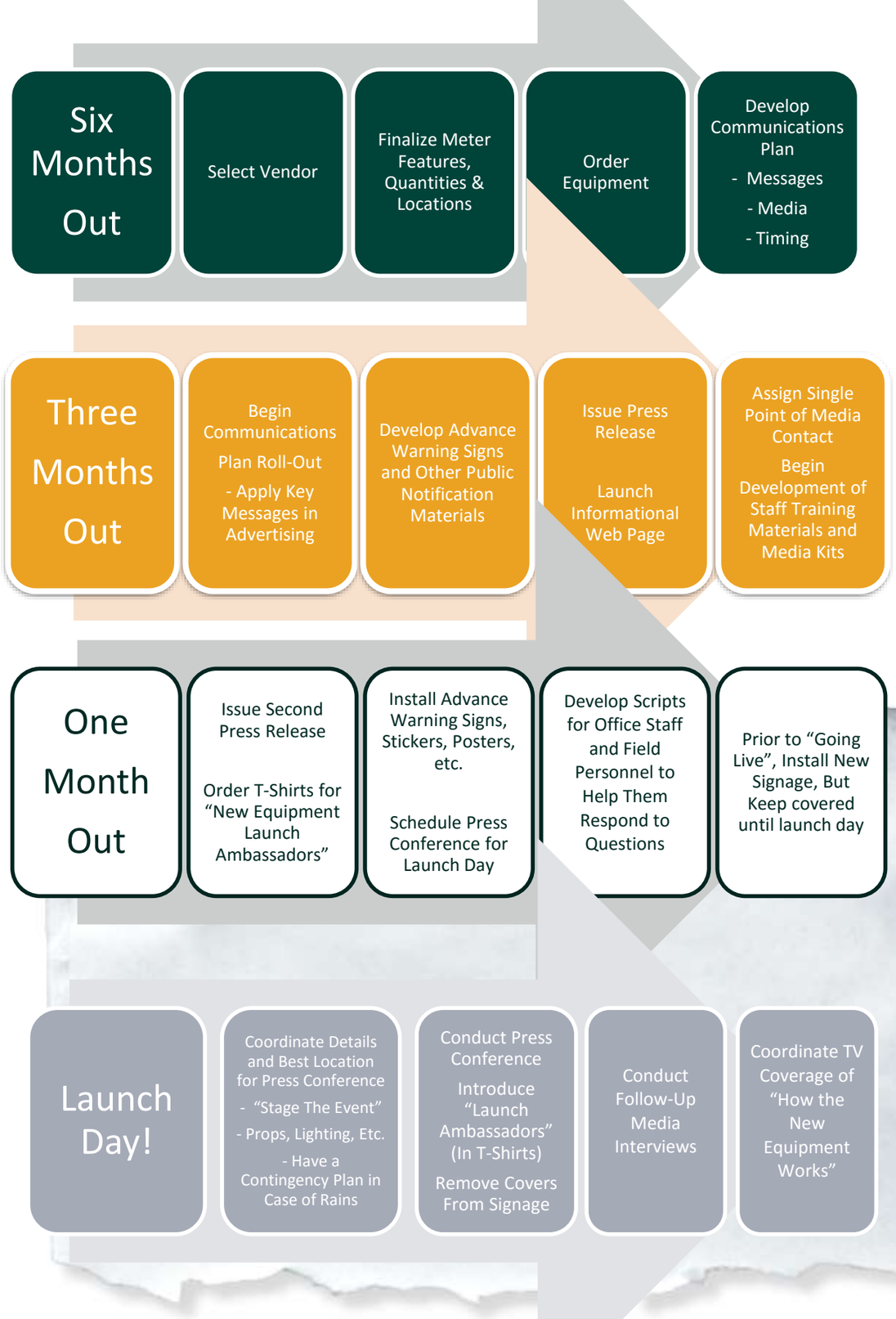
New Technology Introduction –

On-Street Meter Upgrades

Once the decision has been made to upgrade the on-street meter system (or any other parking technology that the public will have direct interface with) it is important to develop a detailed implementation timeline including a public relations strategy.

ex.

- A typical implementation timeline would start early and would be structured with major milestone dates and specific action items.
- A sample implementation timeline is provided to the right:



Kimley»Horn

DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

Ch.
11

On-Street Parking Management Strategies

On-Street Parking - Policy Basics

There are a few basic principles related to on-street parking that most parking consultants, urban planners and downtown management professionals agree on. These include:

- On-street parking is a valuable, limited resource due to its convenience and proximity to businesses, therefore the primary management objective to promote space turnover for the benefit of the local merchants and the public.
- If you are going to have paid parking, charge for the on-street spaces first to promote turnover.
- If you have both on-street and off-street paid parking, the on-street rates should be higher than the off-street.
- Set on-street parking rates to a achieve a 15% vacancy per block face.
- Adopt the philosophy that parking should be " Friendly, not free"

ex.

» The application of parking management "rules and regulations" mandates a need for an enforcement function.

» The primary goals of an enforcement program should be:

- Have a well-defined set of policies and procedures
- Promote general (not absolute) compliance
- Be consistent, but "unpredictable" in enforcement routes and times.
- Leverage new technology to improve efficiency, effectiveness and productivity.

Primary Program Components

The following are a listing of major components of an effective on-street parking program:

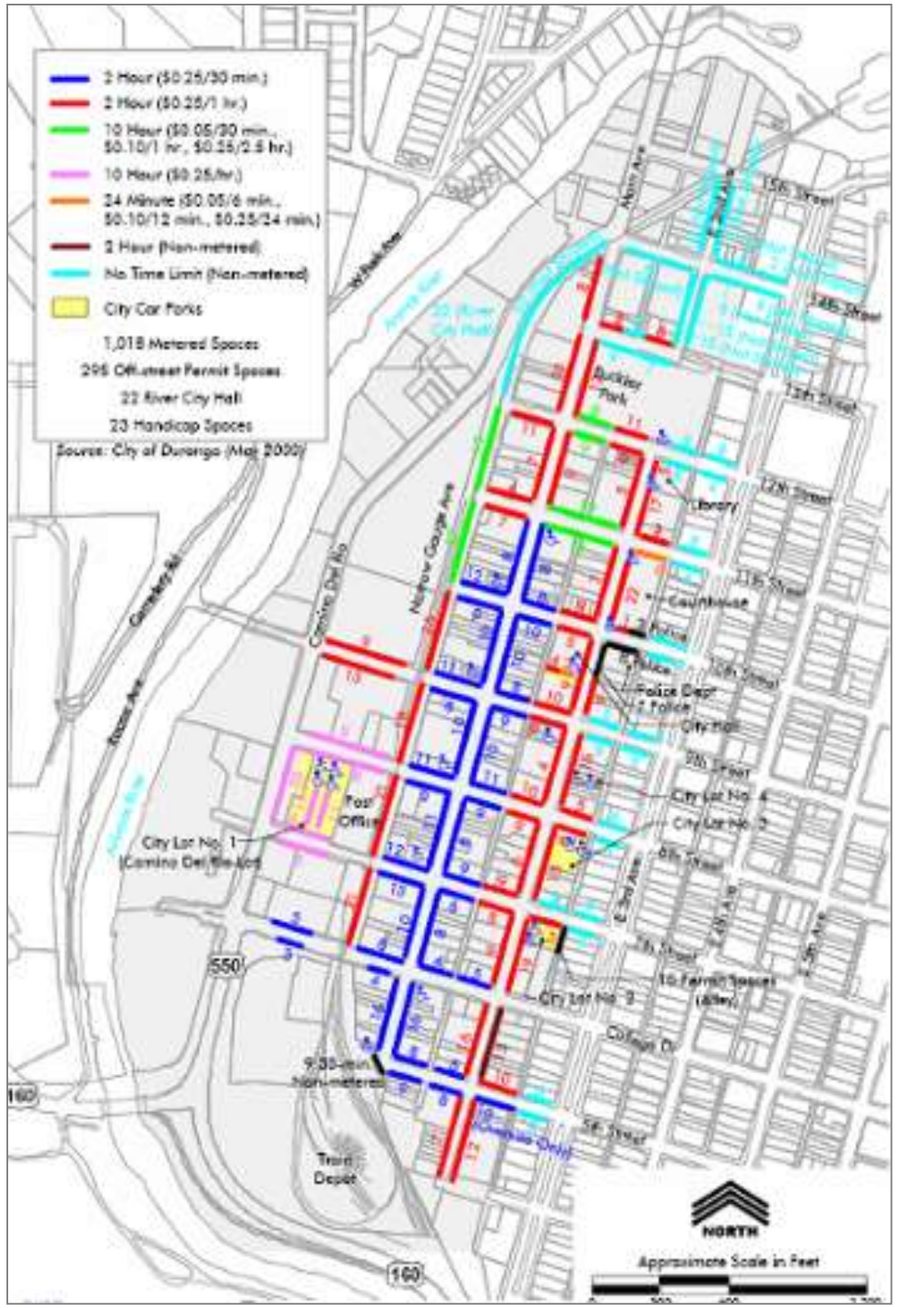
- » Legislative framework
- » Regulations/Fines
- » On-Street ADA Issues
- » Enforcement staffing and deployment
- » Citation Processing
- » Adjudication
- » Collections
- » Scofflaw strategies
- » Residential Permits

Mapping On-Street Parking Time Limits

On-Street parking time-limits should be mapped and changes tracked over time.

- Mapping on-street time-limits is an important tool for staff education, and communicating with the public.
- It is a fundamental tool for documenting resource usage, facilitates the analysis of trends and is an effective planning tool.
- Tracking changes over time creates a record of management strategies that have been used in the past.

ex.



Monitor and Document On-Street Parking Utilization

Documenting on-street parking occupancy is another effective tool to understanding and managing your parking resources.

- Routinely tracking on-street parking occupancy and documenting the results graphically provides valuable management data.
- Often there is adequate parking supply despite a wide-spread perception that the parking supply is inadequate.
- Documenting the true occupancy rates are the first step to effectively resolving parking problems (real or perceived) and can be an effective community educational tool.

ex.

On-Street Parking Utilization Data Analysis

When designing parking utilization data surveys consider the following:

- What are you really trying to find out?
- Do you need to survey all the spaces or can you use limited area sampling?
  - If sampling, what percent is adequate for statistically valid results?
- How survey many passes are needed?
- How frequently?
- What data do we need to collect?

ex.

City of _____

ON-STREET PARKING TURNOVER
Day and Date
Zone 6

Location	Space #	9am	9:30am	10am	10:30am	11am	11:30am	12pm	12:30pm	1p
5th & Santa Monica-Arizona	1									
5th & Santa Monica-Arizona	2									
5th & Santa Monica-Arizona	3									
5th & Santa Monica-Arizona	4									
5th & Santa Monica-Arizona	5									
5th & Santa Monica-Arizona	6									
5th & Santa Monica-Arizona	7									
5th & Santa Monica-Arizona	8									
5th & Santa Monica-Arizona	9									
5th & Santa Monica-Arizona	10									

City of _____

ON-STREET PARKING OCCUPANCY - SAMPLING
Day and Date

Block #	Spaces	8:00 AM	9:00 AM	10:00 AM	11:00 AM	NOON	1:00 PM	2:00 PM	3:00 PM	4:00 PM
1	6									
2	23									
3	12									
4	9									
5	27									
6	24									
7	65									
8	34									
9	2									
10	31									
11	25									
12	34									
13	56									
14	34									
15	38									
16	44									
17	41									
18	26									
19	23									
20	25									

On-Street Parking Utilization Data Analysis

On-Street Parking Surveys: What data can a parking space yield? (First Pass)

- Regulation in effect
- Occupied? (Y/N)
- Vehicle category
- Legal status
- If illegal, ticketed? (Y/N)
- Residency of occupant (requires full plate - optional)

ex.

On-Street Parking Utilization Data Analysis

What data can a parking space yield? (2nd, 3rd, 4th Pass)

- » Occupied? (Y/N)
- » Occupied by same vehicle?
- » Legal status (including overtime)
- » If illegal, ticketed? (Y/N)
- » Duration of occupancy

ex.

The High Cost of Employee Parking in Short-term Spaces

The following is one approach to quantifying the financial impact of employees taking up on-street spaces.

ex.

Fort Collins, CO Case Study

- There are approximately 8,400 employees in downtown Fort Collins.
- If only 5% of those workers use customer parking spaces, 420 spaces would be unavailable to shoppers.
- If each space turned over four times per day, they would accommodate 1,680 shopper trips.
- If each car carried 1.5 customers, there would be 2,520 customers.
- If a quarter those customers went elsewhere to shop and each customer spent $10.00, the total loss per day would be $6,300.

» Annualized at six shopping days each week, the total loss would amount to nearly $2 million in Downtown revenue.

» Obviously this impacts the merchants, but it also impacts the municipality in terms of lost sales tax revenues.

Determining Appropriate Regulations

The following are factors to consider in developing on-street parking regulations and policies:

- Area density
- Area parking mix
- Transportation environment
- Adjacent land uses
- Types of businesses
- Is there a need for:
  - Meters (and what time restrictions and cost)
  - Loading zones
  - Valet zones
  - Permit parking in nearby residential areas

ex.

On-Street Parking Utilization Data Analysis

When analyzing parking utilization data the following are the key metrics to evaluate:

- Occupancy Rate
- Turnover Rate
- Average Duration
- Violation rate
- Capture rate (% ticketed)
- Average time to ticket/unticketed
- Disabled Placard usage
- Impact of non-residents

ex.

Standard Turnover Rate Analysis Output

Parking Space Type	Average Turnover	Average Duration	Number of Time Violations
30-Minute	6.39	43 Mins.	35
1-Hour	5.71	1 hr. 8 Mins.	63
2-Hour	4.17	1 hr. 10 Mins.	59
Disabled	2.00	1 hr. 7 Mins.	NA
Unlimited	3.23	1 hr. 52 Mins.	NA

On-Street Parking Utilization Data Analysis

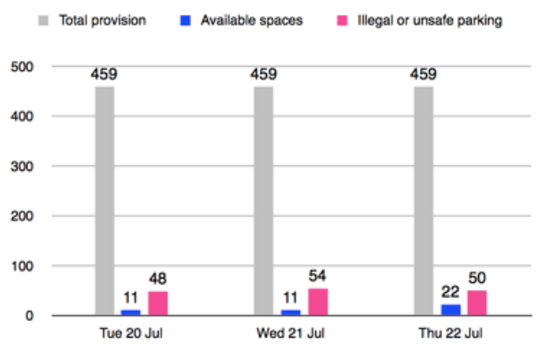
Central Business District - Acceptable Survey Metric Result Ranges

- Unpaid Legal Meter Occupancy Up to 15%
- Meter Violations Capture Rate – 33% overall and up to 40% in core areas
- Duration, or average length of Stay – 67% to 140% of the regulated duration

ex.

Community Parking Survey

Residents in the area have conducted a community parking survey to challenge what is being claimed by the developer. Our own calculations indicate that the transport requirements of the proposed development cannot be met by existing availability in the area.



The parking situation at 10pm on weeknights in July

Existing demand for on-street parking at peak periods, especially in the late evenings and overnight, already leads many drivers to park in unsafe or unsuitable positions such as blocking pavements or on junctions or yellow lines. This factor, which was not taken into account in the survey provided by the developer, illustrates the lack of suitable parking space.

On-Street Parking Utilization Data Analysis

Central Business District - Acceptable Survey Metric Result Ranges

- Total Meter Occupancy –
  - Ideal = 85% average per block face
  - Upper limit: not above 93% to 95%
- Illegal Meter Occupancy – 5- 7%
- Paid Meter Occupancy – 60-85%

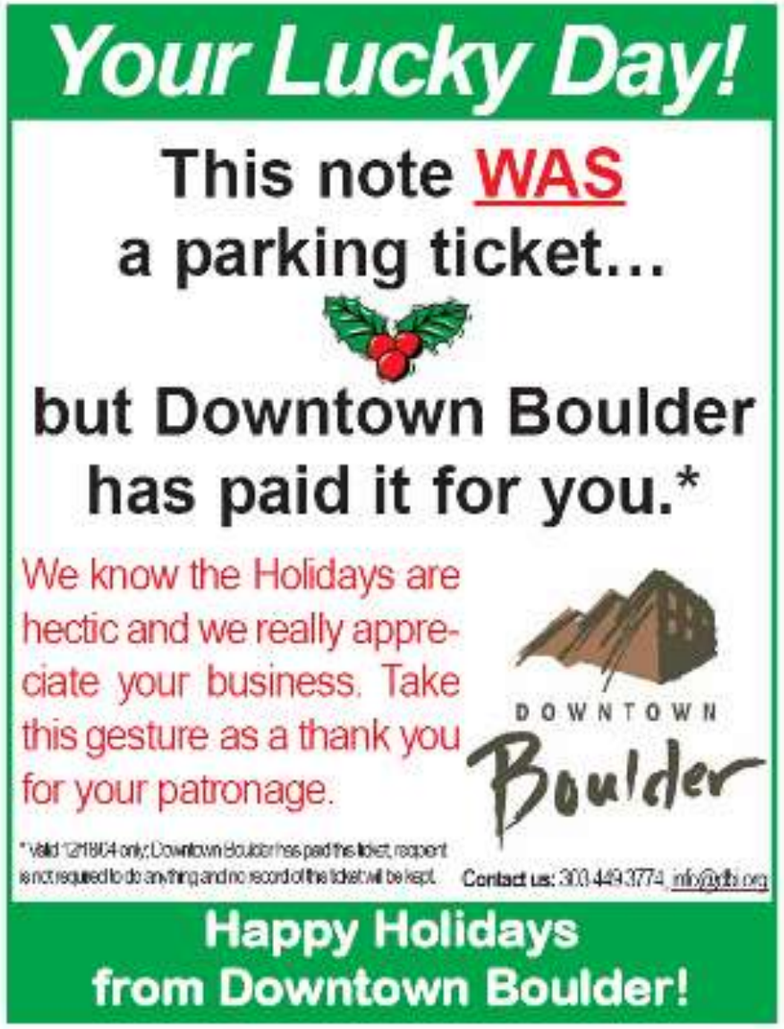
ex.

On-Street Parking Holiday Shopping Program

Holiday parking ticket amnesties and other forgiveness programs are tools to balance the need for parking enforcement with business encouragement through customer appreciation.

- The Downtown Association paid over $6,000 in customer's parking tickets over the Christmas holidays in Boulder last year.
- In other communities, the parking system simply suspends parking enforcement or replaces citations with holiday notices.

ex.



Wireless Hand-held Citation Issuance

The next generation of hand-held devices has allowed parking field personnel to have access real-time information.

ex.

» Examples include: Real-time scofflaw data for enforcement officers – If a vehicle owner has five outstanding citations and the sixth citation should generate vehicle “booting” - the officer in the field needs to know that this is the sixth citation.

» Roving maintenance staff can now be notified in the field via text message of “low tickets”, “ticket jams”, etc. before traffic backs up.

Wireless Hand-held Citation Issuance

The next generation of hand-held devices has allowed parking field personnel to have access real-time information.

- Examples include: Real-time scofflaw data for enforcement officers –

ex.

On-Street Parking Enforcement Program Components

- Legislative framework
- Regulations/Fines
- On-Street ADA Issues
- Enforcement staffing and deployment
- Citation Processing
- Adjudication
- Collections
- Scofflaw strategies

On-Street Parking – Demand-Based Pricing

Best-in-Class parking programs strive to understand the dynamics of parking utilization within a district, neighborhood or even on a block face level.

They invest the time and energy to generate reliable data on which to base policy decisions. This "data-driven" approach benefits everyone from politicians/policy makers to parking management staff and ultimately to customers and residents.

- The goals are to effectively manage a valuable and limited resource to achieve pre-defined goals.
- With more data available than ever before, parking professionals are in a better position to apply basic economic principles (supply/demand) to achieve targeted results.
- This "demand-based pricing" is being used to create better parking availability and reduce congestion during peak demand periods.

ex.

» New wireless technologies hold great promise in making these approaches to even effective and responsive.

» Linking on-street rates to off-street rates and options is the next critical step.

Real Time On-Street Management Information

San Francisco is implementing a federally funded pilot program of new on-street parking management technologies and approaches.

Benefits include:

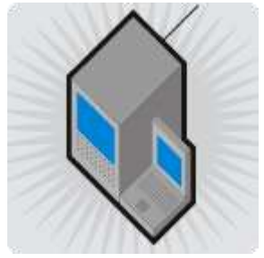
- Find parking faster
- Pay more easily
- Avoid tickets
- Less circling and fewer double-parked cars give us cleaner air and safer streets for bicyclists and pedestrians
- With less traffic, public transit and emergency vehicles move more easily

Program Components

ex.

The Sensors

The Meters



Data Feed

Demand Responsive Pricing

SFpark- Overview:

- Using sensors, new meters, and real-time parking data to take the guesswork out of parking in the City.
- Makes parking easier to find and more convenient.
- Benefits will accrue to drivers, Muni riders, bicyclists, pedestrians, visitors, merchants and more.

Pay-By-Cell Phone

No coins to feed the meter? Your time is expiring, but your 3 blocks away? No problem – Pay with your cell phone!

ex.

» How Pay-By Cell Phone Works:

- Once an account is set up, a motorist finds a spot, parks the car, calls a toll-free number and keys in the spot's number.
- If a person is running late, he can remotely buy more parking time with another phone call (assuming it does not exceed the time limit).
- The bill is typically sent to a credit card.
- Customers receive a text message on their phones, warning them five minutes before their time is about to expire.

In-Car Meters

In-Car Meters can be programming for up to twenty time zones with different rates for each zone. They can be used with other systems or as a new “stand alone” system. Controlled parking areas can be increased by adding in-car meters only in fringe areas with no capital investment.

A new version adds time wirelessly via cell phone purchases.

ex.

» User Benefits –

- Convenience
- No need to carry coins or tokens
- System is fair - charging only for the actual time parked
- Motorists receives receipt whenever parking time is purchased
- Replaceable Battery

Meter Time Limit Stickers

If you still have traditional parking meters, the simple addition of meter time limit stickers can greatly improve the user friendliness of your on-street system, especially for the occasional user.

- Some systems use colored meter polls to indicate time limits, however, this assumes the customers are familiar with the color-coding system.
- The meter time limit stickers are more easily understood by first time visitors.

ex.

125

Public Relations – “Meter Angels”

Sometimes called the “Meter Angels” program, the Business Improvement District in Boulder will add 15 minutes of time to customer’s meters and leave the note below on the vehicle’s windshield.

ex.

- On one hand local businesses directly benefit from the parking space turn-over that an effective enforcement program helps provide.
- On the other hand no one likes to receive a parking ticket.
- This program aims at taking the edge off by providing a cushion for those who may be running just a little late.
- Even it the patron still receives a ticket, the effort by the BID is still appreciated.

Creating a Friendly "On-Street Personality"

If we think beyond the job of monitoring on-street parking and issuing citations to vehicles that are in violation of the rules, what else comes to mind?

» Many communities, in an attempt to create an enhanced sense of place and to make downtown a more desirable destination, are transforming "parking enforcement officers" into "Downtown Ambassadors".

» This expanded (and more positive role) can be very successful when a focus on creating a friendlier "On-Street Personality" is prioritized.

» This goes beyond the attitude of the ambassadors; it includes streetscape design, retail enhancements, pedestrian amenities, etc.

ex.

Progressive On-Street Parking Pricing

Progressive Pricing in Combination with the Elimination (or Extension) of Time Limits

- This strategy merges two cutting-edge on-street parking management strategies to provide more flexibility for a variety of trip purposes with different time limits while maintaining turnover.
- This strategy uses standard rates from one hour to two hours, and rates that increase for any period over two hours.
- The elimination of time limits could be used to increase utilization in under-performing areas by essentially changing the type of parking use permitted in an area.
- A modified approach could be to not fully eliminate time limits, but expand the time limits to allow longer stays (for example, from two hours to four hours).

ex.

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12

Effective Parking Enforcement Strategies

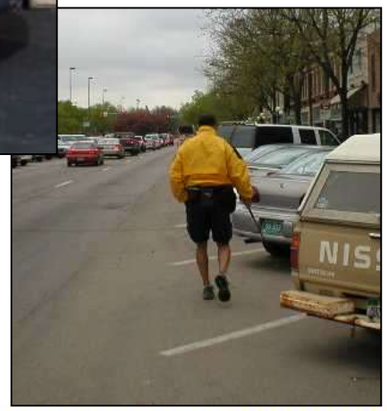
Enforcement Technology

The use of advanced parking enforcement technology can have a dramatic impact on the effectiveness and efficiency of your parking enforcement program.

ex.

» The use of License Plate Recognition (LPR) systems to automate the enforcement of time-limited areas through the use of efficient “electronic chalking” improves the accuracy and efficiency of enforcement efforts.

» These systems utilize GPS locators and generate real-time scofflaw lists.



On-Line, Real-time Citation Management Systems

The use of advanced parking enforcement citation management systems provide on-line, real-time information to parking enforcement officers on the street.

ex.

- This is critical to effective program implementation.
- It tells the officers which vehicles have previous citations and the status of their accounts.
- If the vehicle is “boot or tow eligible” due to its “scofflaw status”, the officer will know it in real time and be able to take the appropriate action based on departmental policy.

Fine Structures

Parking fine structures should be developed to address the specific problems you are trying solve.

- In the example to the right, the fine structure was modified to be more forgiving to infrequent violators (typically visitors) and more punitive on repeat offenders (typically employees parking in short-term spaces.
- In addition, incentives are built into the fine structure to promote prompt payment and thereby improve the “citation collection ratio”, a key program effectiveness benchmark.

ex.

Overtime violation within 12-month period	Current Amount	Proposed Amount	After 8 days fine increases to:
1st overtime	$10	Warning	N/A
2nd overtime	$20	$10	$20
3rd overtime	$40	$25	$50
4th overtime	N/A	$50	$75
5th overtime	N/A	$75	$100
6th or more…	N/A	$100	$150

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On-Line Citation Payment Options

Allowing the payment of non-contested parking citations on-line improves customer service, increases your citation collection ratio (and therefore revenue) and improves collections processing efficiency.

ex.

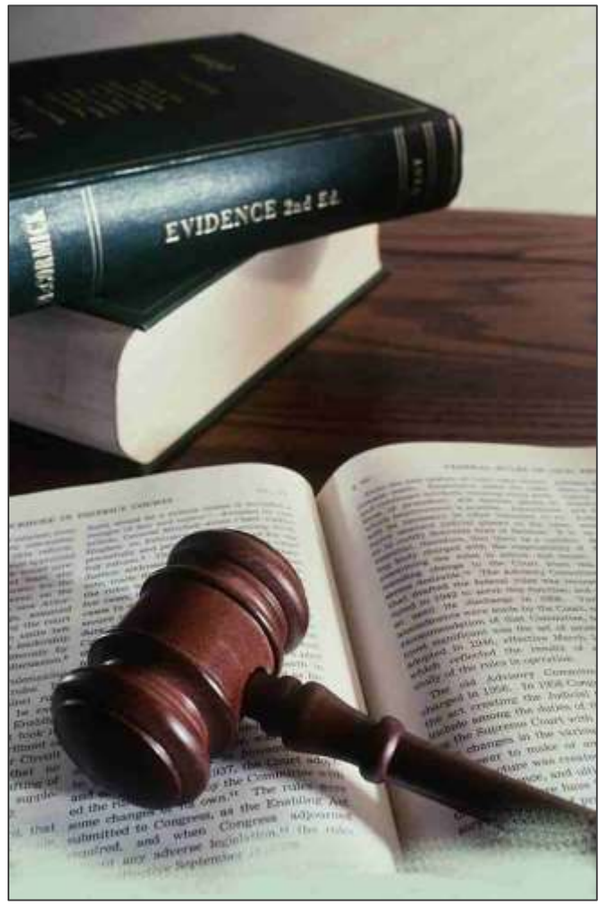
- Helps meet goals of providing timely, customer oriented services.
- Accepts multiple payment options including credit cards.
- Simple, straightforward processing.

Separation of Duties in Parking Citation Adjudication

Just as the concept of “separation of duties” is a key auditing principle when evaluating program financial accounting, the same concept applies to parking citation adjudication (appeals processes).

ex.

» The agency/department that issues parking citations should not be the same entity that reviews and processes contested citations.



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Effective Facility Maintenance Practices

Hinged Light Poles

Many times parking systems know they have a few lights out, but it is expensive to bring in a bucket truck to change just one light, so they live with the liability until we have more than one light to replace better justifying the expense.

ex.

- Hinged light poles make it possible for two men to change out light bulbs without the expense of a bucket truck.
- This approach reduces liability, improves safety and reduces cost.

Striping Removal

Occasionally, due to operational changes, old parking stripes need to be removed. After trying several removal strategies the use of a 3M product called “Peel Away” proved most effective.

ex.

- Removal of the existing paint was initially attempted using high pressure water treatment alone.
- Chemical removal of the existing striping with MEK (Methyl Ethyl Ketone) proved ineffective and raised environmental/disposal concerns.
- Another option attempted was to try and paint over the stripes attempting to match the color of the concrete.

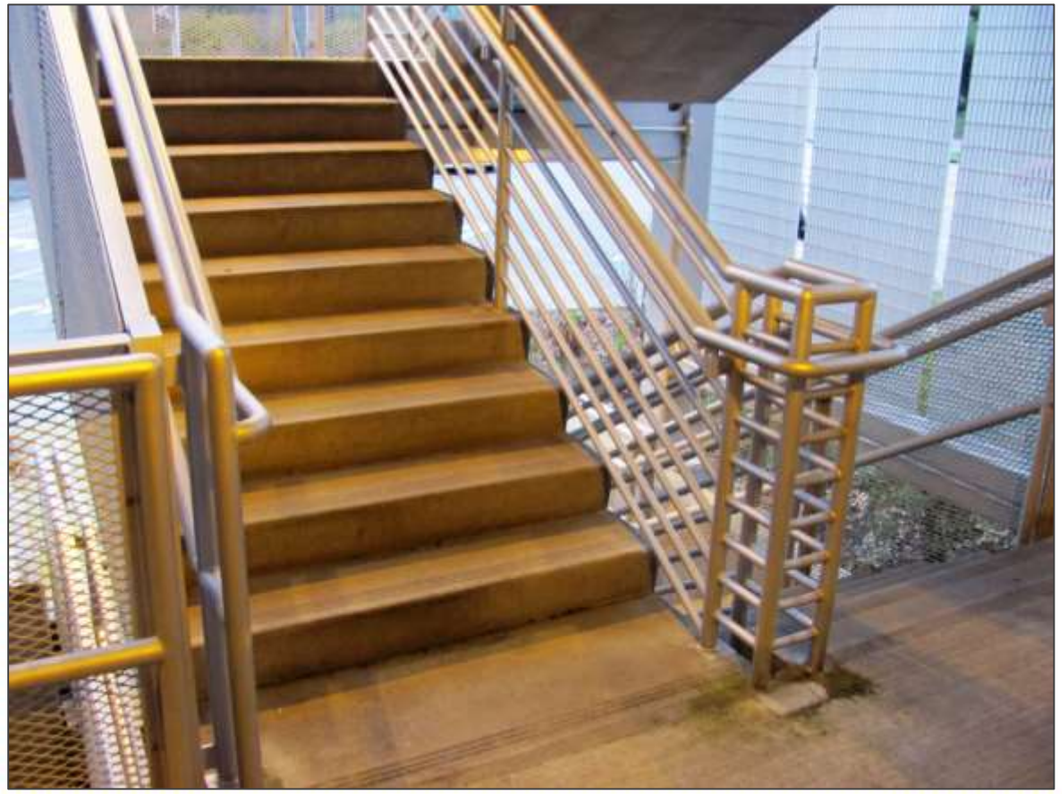
Invest in Maintenance Free Infrastructure

Traditional metal stair railings an other metal parking garage elements eventually rust and need to be painted.

An initial investment in stainless steel or galvanized metal elements can pay big dividends in the long run on maintenance savings and a better looking facility.

ex.

» Elimination of this type of maintenance headache is estimated to save a minimum of 80 maintenance man-hours per year per garage.



Bird Management

Avipel is a nuisance bird repellent.

The cost of Avipel is less expensive than other mechanical options. It also is easier to apply and more economical to the end user.

Endorsed by PITA and the American Human Society

AVIPEL™

ex.

» The material is applied to surfaces where birds land. The birds will then walk, stand, or roost on the material. As the bird preens it is inevitable that the bird will ingest the anthraquinone (referred to as AQ). This will cause a short-lived gut reaction that lasts for a short time. The bird will then realize that the AQ is noticeable through the UV light spectrum and associate the ill feeling with the UV sight and refrain from going to that area.

Environmental Responsibility

Mobile Parking Garage Cleaning Systems are designed for specific types of pressure washing or water jetting activities, designed to provide an affordable, safe method for quick, simple on-site treatment of the wastewater generated to remove contaminants, such as oil, grease, hydraulic fluids, trace metals, PCBs or paints.

ex.

» The basic components of these mobile systems include a pressure washer or water jetting equipment
  - Heater (optional)
  - Vacuum/Recovery System
  - Waste Water Processor

Budget:
$0.05 – $0.12 per square ft.

Fluorescent Lamp Recycling

Spent Fluorescent Lamps Must be Properly Handled and Stored to Limit Mercury Exposure.

ex.

- Energy efficient fluorescent lamps can contribute to a cleaner environment, but they must be managed properly. For most us, fluorescent lamps present the single greatest risk of mercury exposure in the work place. Protect the health and safety of your employees and customers
  - Reduce the soft costs of managing mercury waste
  - Reduce your company's risk and liability
  - Improve your regulatory compliance

Ch.
14

Facility and Equipment Protection Systems

Automated Pay Station Shelters

With the recent rapid growth of automated pay stations, shelter providers have begun developing special products to protect your investment and minimize repair expenses.

ex.

- These shelters are designed to increase equipment longevity by protecting them from rain and snow.
- Features include:
  - Translucent fiberglass roof
  - Tempered safety glass
  - Aluminum kick panels
  - Elevated wall panels to facilitate ventilation and drainage
  - Options to accommodate graphics and signage.

Collision Avoidance Alarms

Collision avoidance alarm systems help prevent costly repairs and injuries caused by collisions between oversized vehicles in parking garages and other facilities.

ex.

- When installed in front of (and slightly below) roll up doors and overhead objects, any contact with the Watchman triggers a 120db siren and flashing red lights, warning forklift drivers and warehouse management before a collision occurs.
- In addition to overhead doors, the Watchman can be used to protect conveyor systems, canopies, walls, pipes, sprinklers, ducts and other overhead fixtures.
- The patented* Watchman can be purchased for a fraction of the average repair bill for a damaged overhead door, making it practical to equip your entire facility with this unique safety device.
- www.alvarado.com

Column & Vehicle Protection Systems

Products such as “Park Sentry” provide flexible and cost effective options to protect customer vehicles and concrete columns in parking structures.

ex.

- Protect square or rectangular concrete columns in parking garages without adding bulk to the column.
- Park Sentry creates a safe zone around the column, protecting both the column and vehicles from collision damage.
- It is scratch, abrasion and collision-resistant, and can be installed quickly without tools for immediate protection.
- www.sentrypro.com

Flex Posts

Flex post signs spring back to their original position after being hit. No sign, pavement or vehicle damage. No replacement required.

- Signs get hit.
- They bend. They break. They require replacement.
- They cost more than their purchase price.
- Their appearance impacts your professional image.

ex.

www.flexpost.net

Height Clearance

Parking structures have limited height restrictions. "Headache Bars" are the traditional solution. New electronic sensor systems detect over-height vehicles and activate flashing electronic signs to more effectively alert drivers.

» Electronic height detectors utilize an "electric eye" at a predefined height. If the sensor is tripped by an oversized vehicle a flashing over-height warning sign is activated.

ex.

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15

Valet Parking Best Practices

Centralized Downtown Valet Parking Programs

Park your car at any location, pick it up at any number of other locations. This best practice encourages downtown patrons to walk, shop and explore.

Successful programs have several elements in common:

- » A consolidated, single-operator parking management agreement.
- » The operator is selected via a competitive process.
- » A detailed management agreement specifies City approved terms and service criteria.
- » Supported by a well-defined Valet Parking Ordinance.
- » Has well-defined valet station and signage standards.
- » Leverages state-of-the-art valet management technology

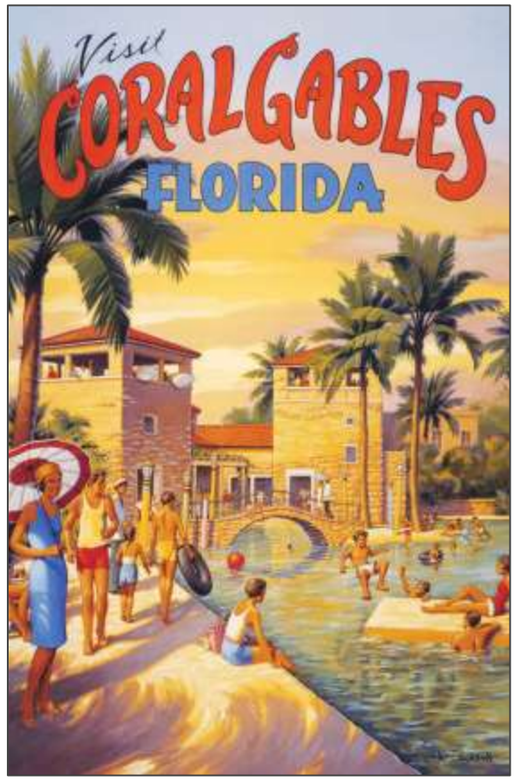
ex.

Centralized Downtown Valet Parking Programs

CASE STUDY:

Coral Gables, FL

Miracle Mile Shopping District



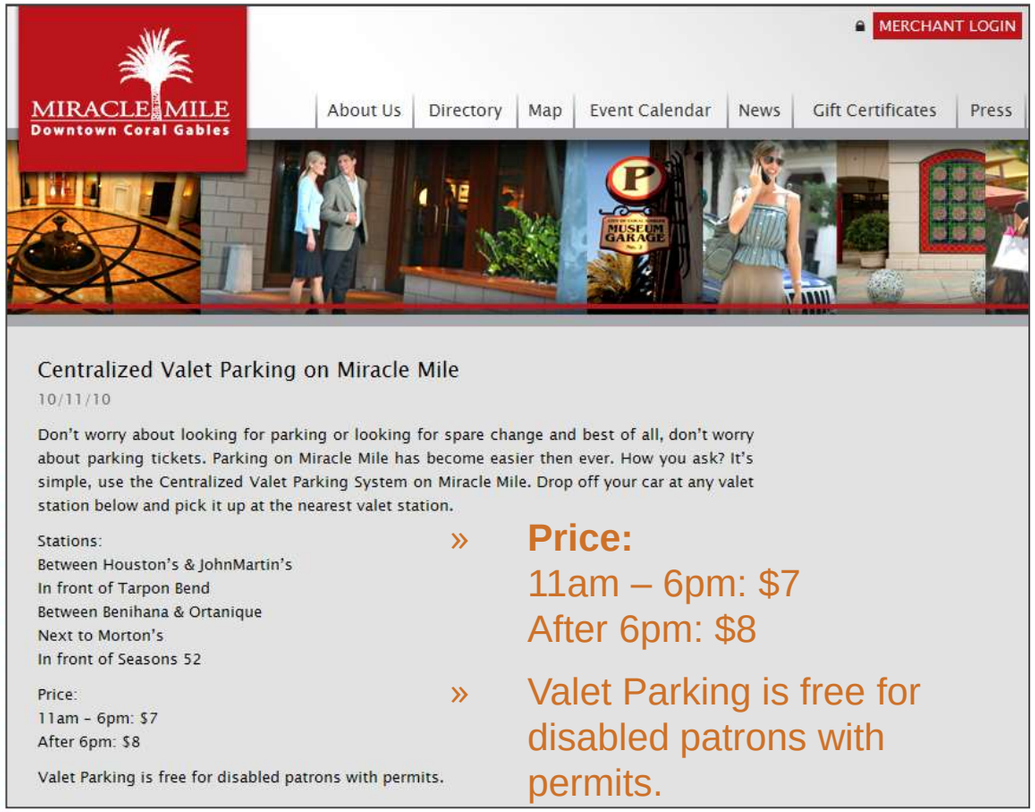
Webpage Introduction:

» Don't worry about looking for parking or looking for spare change and best of all, don't worry about parking tickets.

» Parking on Miracle Mile has become easier then ever. How you ask? It's simple, use the Centralized Valet Parking System on Miracle Mile. Drop off your car at any valet station below and pick it up at the nearest valet station.

ex.

» Valet Stations:
  - » Between Houston's & JohnMartin's
  - » In front of Tarpon Bend
  - » Between Benihana & Ortanique
  - » Next to Morton's
  - » In front of Seasons 52



» **Price:**
11am – 6pm: $7
After 6pm: $8

» Valet Parking is free for disabled patrons with permits.

Valet Express Program

Call ahead service for Valet operations to reduce waiting times for vehicle retrieval.

» Preprinted cards handed out upon arrival with local phone number to call 10-minutes prior to departure.

ex.

Advanced Valet Parking Management Practices

Self-serve Request Kiosks

The most popular casino valet systems are equipped with **high definition digital camera lane technology**, VIP Request kiosks, valet management software and even a mobile PC interface to keep management informed – real time!

- Self-serve Request Kiosks allow departing customer to initiate their vehicle retrieval simply by scanning their bar coded valet parking ticket at the built-in reader.
- Customers may wait inside a climate controlled space in view of the staging area until their vehicle is retrieved

ex.

- A dial-up request module allows visitors to request vehicles by cell phone or text message.

Advanced Valet Parking Management Practices

HDIP Digital Camera Interface

One of the more popular system modules is the HDIP Digital Camera Interface. It provides the comfort of knowing whether or not an alleged damage liability was incurred while the vehicle was in your care.

- No more guess work, irate customers and time consuming case building. Here, a picture is worth a thousand words.

ex.

Advanced Valet Parking Management Practices

HDIP Digital Camera Interface

Wireless Mobile Technology has become another popular tool and can be very effective in the right application.

» Hardware options range from a compact blue-tooth wireless scanner designed primarily to ‘time-stamp’ newly issued tickets in the lane, to full featured mobile PPT’s with built-in license plate recognition.

ex.

Advanced Valet Parking Management Practices

Valet Parking Management iPhone App

The new **iValetParc.net** could be a game-changer. It is a powerful, visually appealing and user-friendly valet parking management application.

STS
service tracking systems.net

ex.

» In addition to its wireless mobility, it also features an intelligent data management solution called ICDataFlow™ and revolutionary new VisualValet™ concept (patent pending).

Kimley»Horn

DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

Ch.
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Parking Facility Safety & Security

Passive Security Design Features

Investing in “passive security” features pays dividends in the long run.

ex.

- Passive security is defined as any device or technique not requiring a human response, such as lighting, fencing, glass-backed elevators and stairwells, etc.
- Passive security is more cost effective, and if done well, contributes to a patron’s feeling of safety and comfort within a facility.

Parking Safety Escorts

Parking escorts for employees and downtown patrons is a much valued service in many communities.

- These programs are often done in collaboration with a Business Improvement District, a large downtown employer or with a consortium of downtown restaurants.
- In some cases, off-duty police are engaged to provide this service.

ex.

Secure Parking Deck Stairwells!

Eliminate potential “hiding places”.

Secure areas below stairwells for safety and to create additional secure storage area.

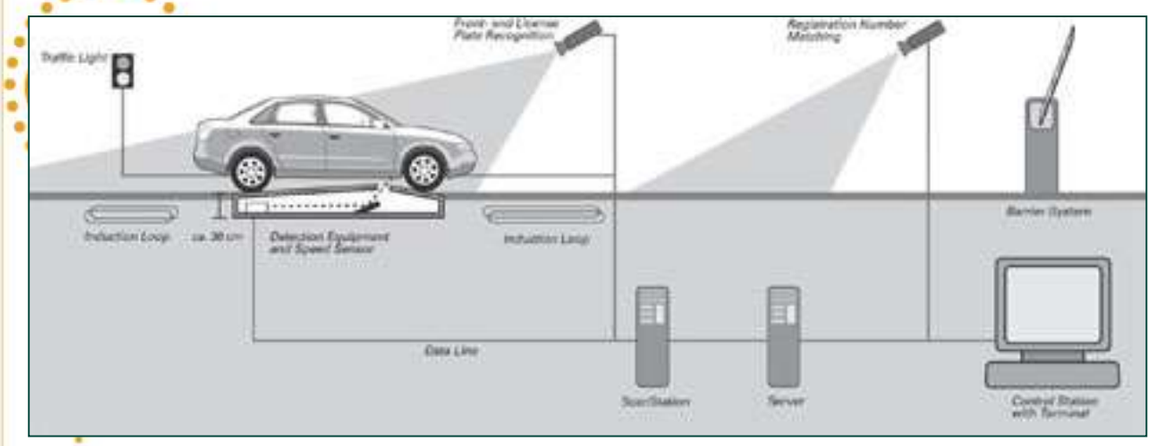
- Wire Mesh Protection Door with automatic closure and lock will limit access to roofs, basements and behind stairwells.
- It eliminates possible hiding areas and improves parking facility security.
- It also creates additional on-site secured storage areas.

ex.

Under Vehicle Monitoring Systems

In today's ever changing world, Security is on the minds of Industry Professionals.

In response to the security challenges in the parking environment, under vehicle monitoring systems are a new option to consider.



» BENEFITS

- Highly mobile for temporary applications with speeds up to 35 mph
- High resolution imagery with tremendous "zoom" capabilities
- Automated license plate capture with underside vehicle "matching"
- Extensive statistical analysis on collected vehicle data.

Ch.
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Risk Reduction and Liability Limitation

Parking Lot Safety Products

1 in 5 accidents occur in parking lots!

» One way to defend against this is to provide devices help to enforce safer driving behavior, ensuring pedestrians and drivers are protected from the dangers often found in these areas.

» By using recycled materials, we can contribute to our program sustainability goals and enhance the longevity of these products.

ex.

» PARK –IT CAR STOPS

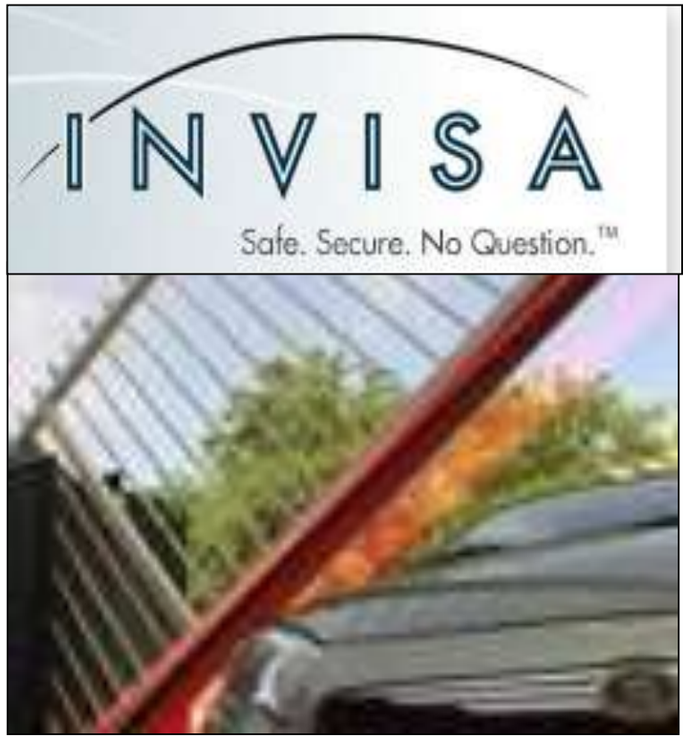
- Year Installed: 1998
- Year Photo Was Taken: August 2008
- Installation Location: Owensboro, KY
  - This is a photo of the Park-It Car Stops installed at a beauty salon in Owensboro, KY in 1998. Used to help guide vehicles when pulling into a parking stall, this installation was done on asphalt using rebar spikes and is 11 years old!

Smart Gates

"Smart Gate Technology" incorporates non-contact safety sensors for parking barrier gates.

- This technology places protection in front of moving doors or gates by providing a non-contact safety field that moves with and precedes a gate arm or door to sense potential contact before it happens and prevent it.
- This technology can reduce damage claims due to alleged gate malfunctions.

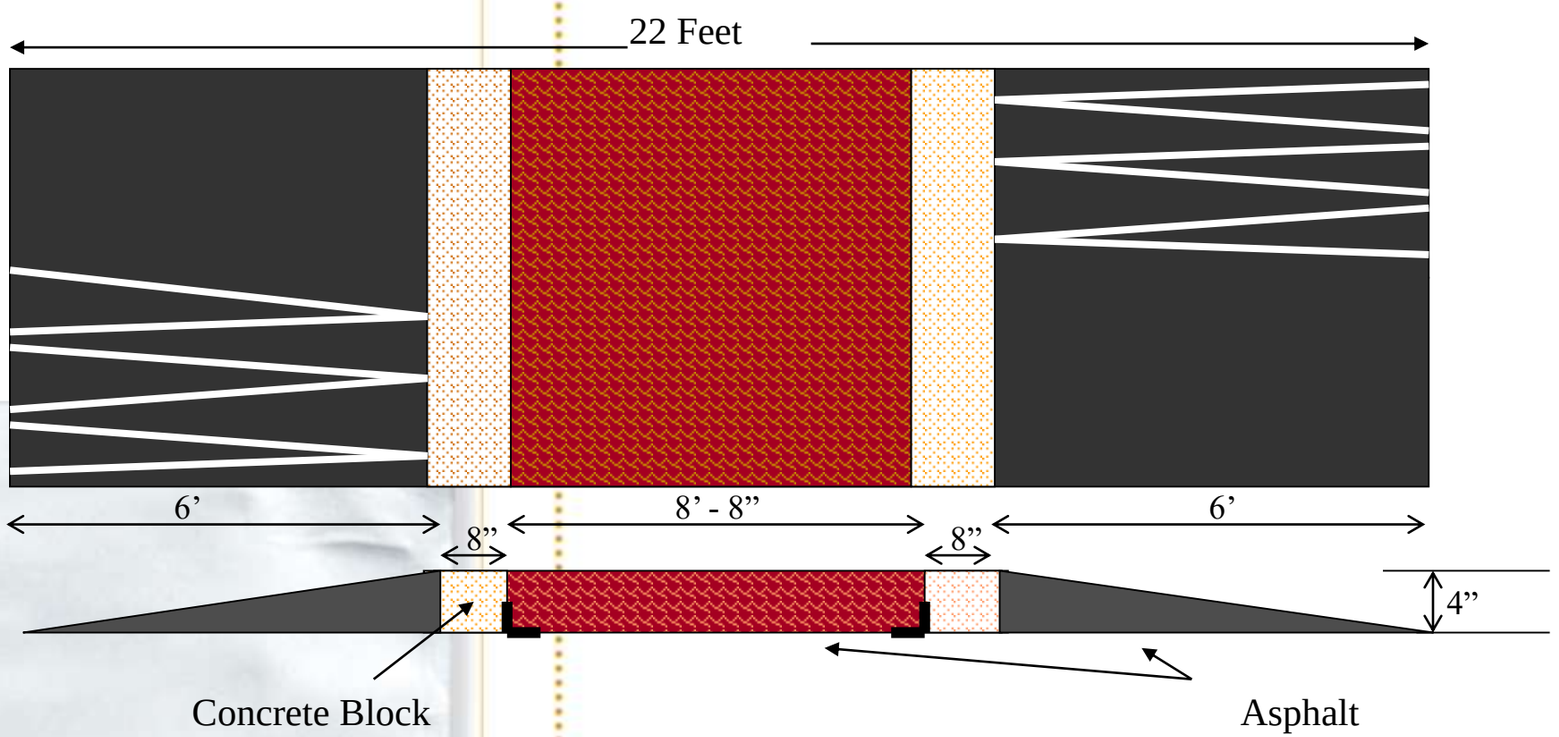
ex.



Traffic Calming (Raised Crosswalk/Speedhump)

Raised crosswalks or “speedhumps” can enhance pedestrian safety in pedestrian/vehicular conflict areas.

ex.



- This traffic calming strategy is primarily used in residential areas.
- One key to a successful “speedhump” is a large enough “table” for a full-size vehicle to fit on to reduce excessive vehicle bouncing.

Pedestrian Safety Options

Flashing Signs with audible signals activated by exit lane loop detectors alert pedestrians on the sidewalks approaching parking garage portals of on-coming vehicular traffic.

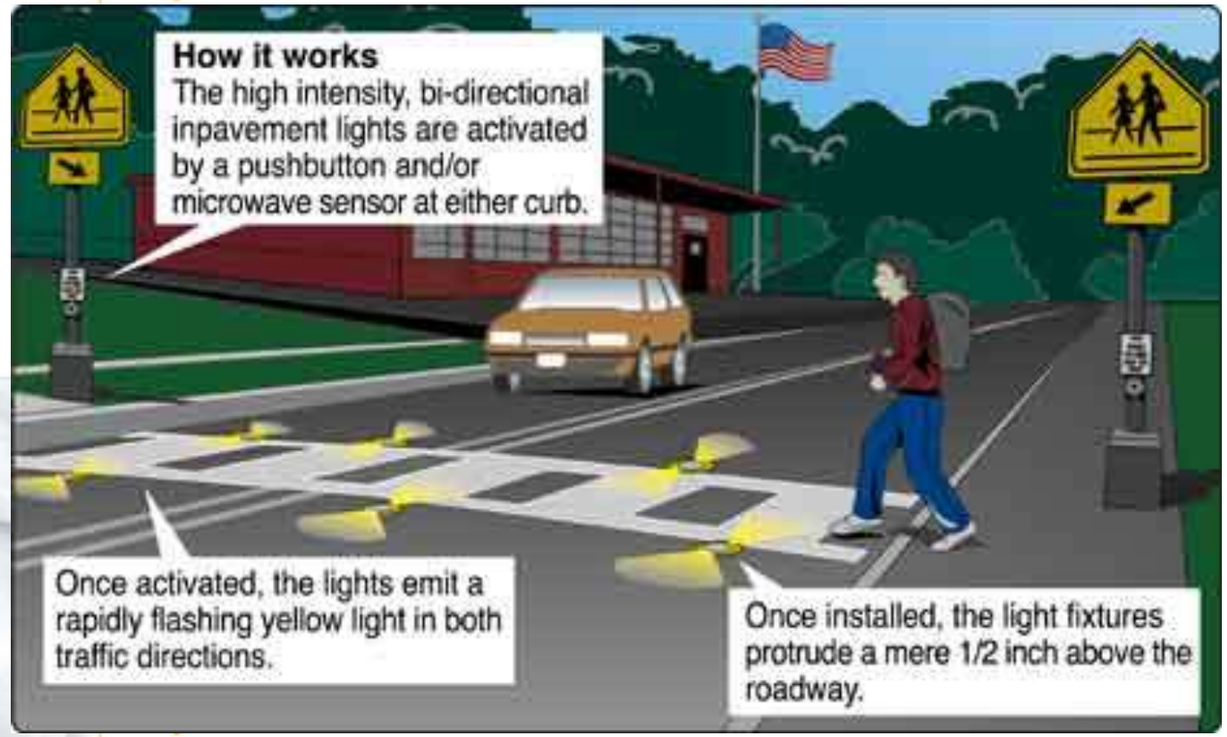
» Other pedestrian safety elements include signage and convex mirrors.

ex.

Pedestrian Safety

Lighted crosswalks activated by push button or microwave sensor enhances pedestrian safety.

ex.

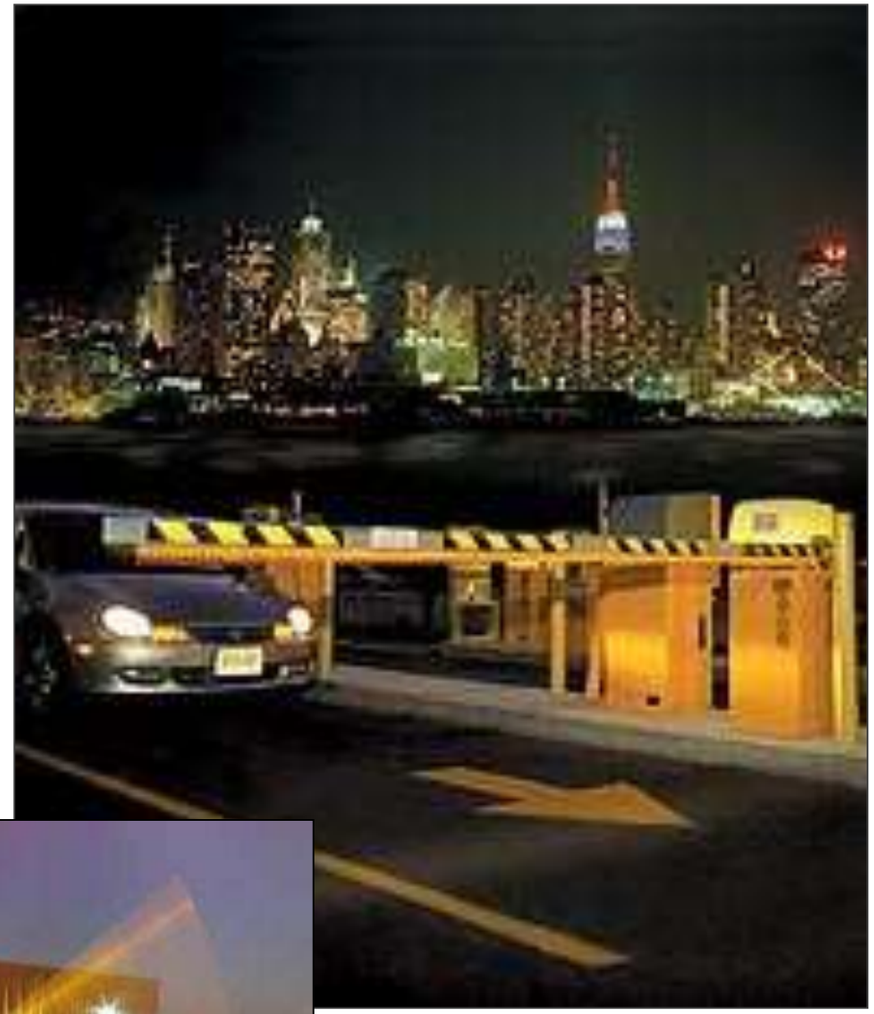


Illuminated Gate Arms

Designed to provide exceptional visibility, particularly between dusk and dawn.

- Illuminated gate arms are a new feature, which offers safety advantages especially in areas with high pedestrian activity.

ex.



Hi Def Digital Camera Modules

The idea of documenting the physical condition of a vehicle in order to ascertain the origin of damage liability has become a valet industry best practice.

» However, the use of new High Definition IP Digital Camera Modules has taken this standard to the next level.

» In this case, a picture really is worth a thousand words!

ex.

FEATURES & BENEFITS

50% - 80% Claims Reduction

Pre-Existing Damage Assessment

Positive Valet Driver Identification

Missing Key Prevention

Instant Picture Recall

Search By Date/Time/Make/Plate/Name

Complete Case Report Generator

Indefinite Vehicle Data Storage

License Plate Recognition

Vehicle History File

Visual History File

Visual Screen Tools (Move, Capture, Zoom)

High Zoom Capabilities Without Pixelation

Mpeg Vehicle Scan Option

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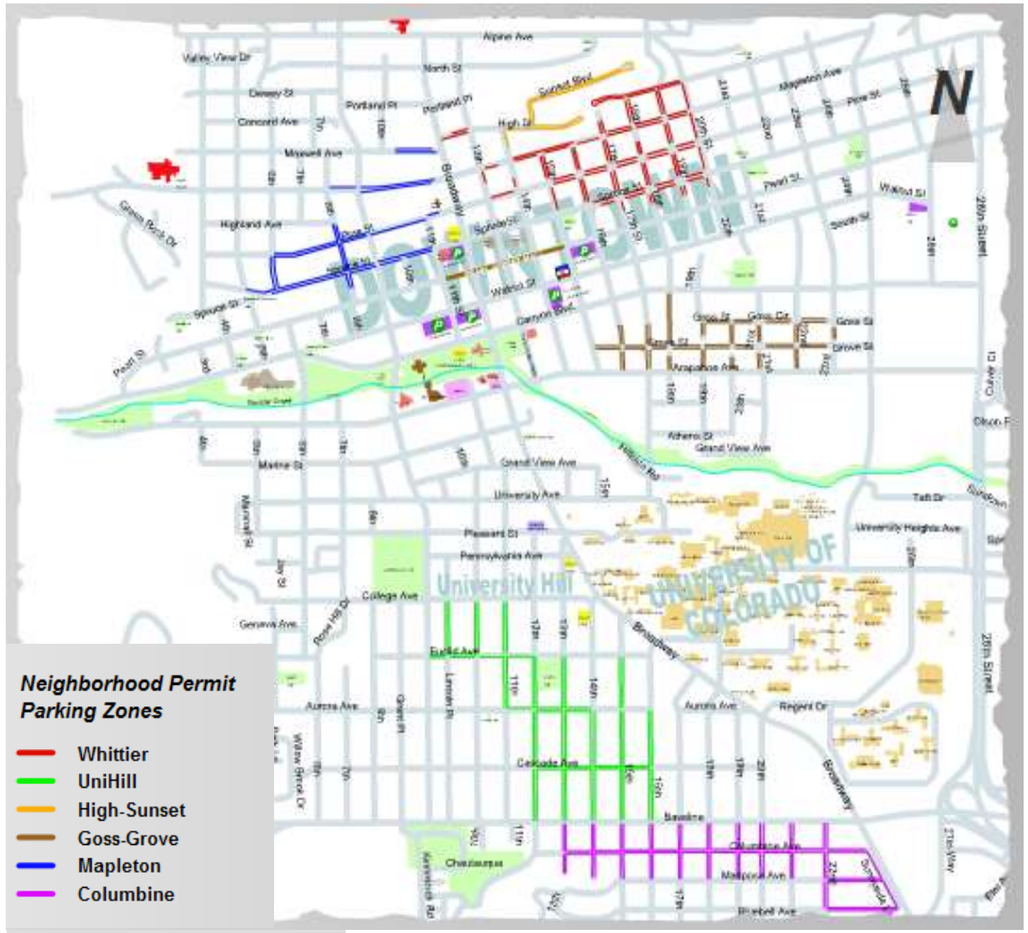
Residential Parking Permit Programs

Neighborhood Parking Permit Programs

A Neighborhood Permit Parking zone is a residential area where on street parking is restricted. NPP programs are developed as a tool to balance the needs of all who park on our streets, including residents, visitors and commuters.

- To be considered for an NPP zone, neighborhood residents assess their parking needs by working with the City to determine the feasibility of a potential parking permit zone.
- After at least 25 neighbors have applied by petition, the City initiates a multi-step process for development and approval of a new zone.

ex.



Boulder, CO

Ch.
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Staff Development and Training

Library of Parking Reference Materials

Create a library of parking reference materials for staff training and development.

Recommended Parking Planning and Management Resource Library

The following is a basic bibliography of good parking planning, general management and marketing texts that can increase your staff's knowledge:

Parking Planning

i. Parking 101, A Parking Primer – International Parking Institute Fredericksburg, VA, 2002

ii. Parking 102, Parking Management ~ The Next Level – International Parking Institute Fredericksburg, VA, 2004

iii. Parking 103, Parking Management - Planning, Design & Operations – International Parking Institute Fredericksburg, VA, 2004

iv. Parking - Robert A. Weant and Herbert S. Levinson, Copyright - Eno Foundation for Transportation, Washington, DC, 19

v. Parking Structures, Planning Design, Chrest, Mary S. Smith, Sam Bhuyan, 2001

vi. The Dimensions of Parking - Various National Parking Association, Fourth

vii. Parking Generation – Institute of Tra Washington, DC, 1987

viii. The Parking Handbook for Small Co Institute of Transportation Engineers,

ix. Shared Parking Second Edition – Stu Institute, Mary S. Smith, Washington,

x. Lighting for Parking Facilities – Illumi Publ. No. RP-20-98, 2nd Edition, New

xi. Recommended Guidelines for Parki Parking Association, Publication No.

xii. Implementing Effective Travel Dem of Transportation Engineers, ITE Publ

Kimley-Horn and Associates, Inc.

xiii. Architectural Graphic Standards – American Institute of Architects, ISBN: 0471383856, Wiley, John & Sons, Incorporated, Illustrated, 2000

xiv. The High Cost of Free Parking – Donald Shoup, American Planning Association, Planners Press, Chicago, ISBN: 1-884829-98-8, 2005

General Management

xv. The Portable MBA – Ellis G.C. Collins, Mary Anne Devanna, John Wiley & Sons, New York, NY, 1990, ISBN: 0-471-61997-3

xvi. Good to Great – Jim Collins, Harper Business, New York, NY, ISBN: 0-06-662099-6, 2001

xvii. The Five Dysfunctions of a Team – Patrick Lencioni, Jossey-Bass, San Francisco, ISBN: 0-7879-6075-6, 2002

xviii. GBQ – "The Question Behind the Question" and Flipping the Switch – John G. Miller, The Penguin Group, New York, NY, ISBN: 0-399-15295-4

xix. The 4-Dimensional Manager – Julie Straw, Berrett-Koehler Publishers, Inc., San Francisco, ISBN: 1-57675-135-X

Downtown Management

xx. Making Business Districts Work – David Feehan, MBW, Marvin D. Feit, PhD, The Haworth Press, Inc., Birmingham, NY, ISBN 0-7890-2390-3

Economic Development

xxi. Economic Development in Local Government – Roger L. Kemp, McFarland and Company Publishers, Jefferson, NC, 1995, ISBN: 0-7864-0095-1

Marketing

xxii. Guerrilla Marketing – Jay Conrad Levinson, Houghton Mifflin, Company, Boston, 1993, ISBN: 0-395-64496-8

xxiii. Waiting for Your Cat to Bark – "Persuading Customers When They Ignore Marketing" – Bryan & Jeffrey Eisenberg, Nelson Business, Nashville, TN, ISBN: 0-7852-1897-1

Kimley-Horn and Associates, Inc.

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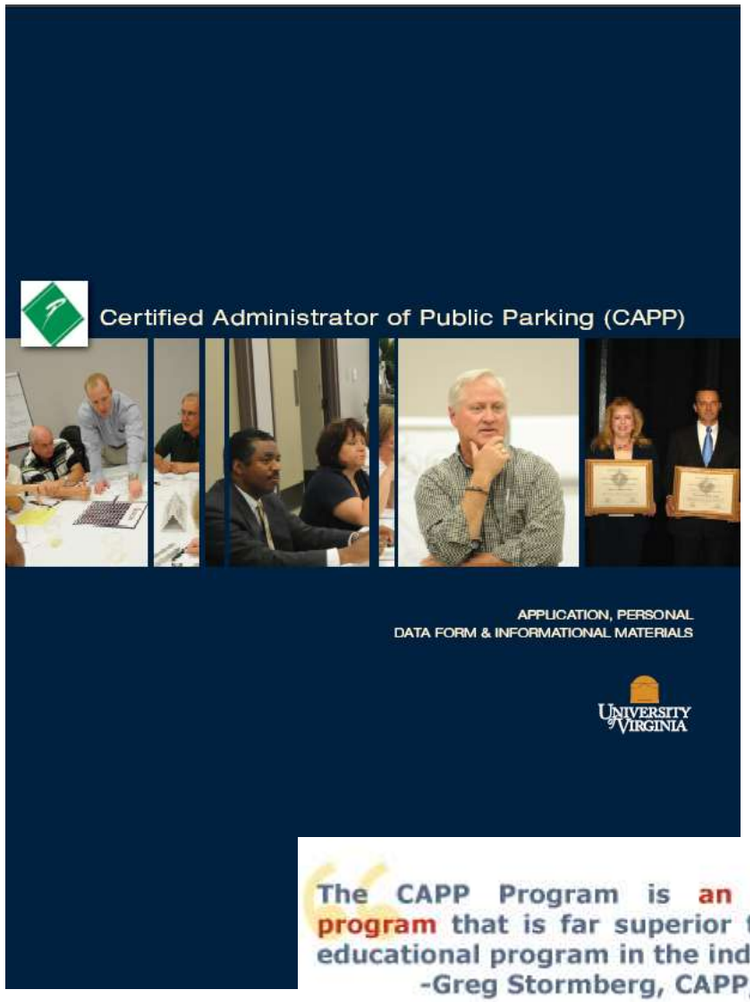
ex.

- Slowly the parking industry is beginning to build up a good selection of text books in a variety of areas.
- Both the IPI and the NPA have some excellent publications on parking design, maintenance and management.
- Other groups such as the Urban Land Institute, the American Planning Association, the Eno Foundation, the International Downtown Association and the Transportation Research Board also have a variety of parking and transportation offerings.

Certified Administrator of Public Parking

The Certified Administrator of Public Parking program offered by the International Parking Institute is the most respected certification program in the parking industry.



"The CAPP Program is an outstanding program that is far superior to any other educational program in the industry."
-Greg Stormberg, CAPP, CPP

ex.

» **Why CAPP Certification?**
Parking and transportation services have become a major element affecting the lives and activities of millions of citizens in the United States, Canada and around the world. As an industry, parking now accounts for billions of dollars and more than a million jobs each year, and as a profession, it is now a serious career choice. As such, it demands continuous information and specialized training.

The International Parking Institute, and the University of Virginia, have combined their resources to create a rigorous program of professional training and examination culminating in the awarding of the designation, Certified Administration of Public Parking (CAPP).

Ch.
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Parking Access & Revenue Control Systems

Hands Free Access

Automatic Vehicle Identification (AVI) systems provide a more customer friendly system while improving security (no stopping, no rolling down windows and enhances driver safety by keeping their hand on the wheel and eyes on the road.) It also increases vehicle through-put during peak demand periods.

ex.

- Radio signal from reader activates tag
- Transponder reflects data
- Reader processes data and
  a. Opens gate if valid
  b. Sends data to host CPU
- Host processes data, and records transaction

Metered Transient Parking

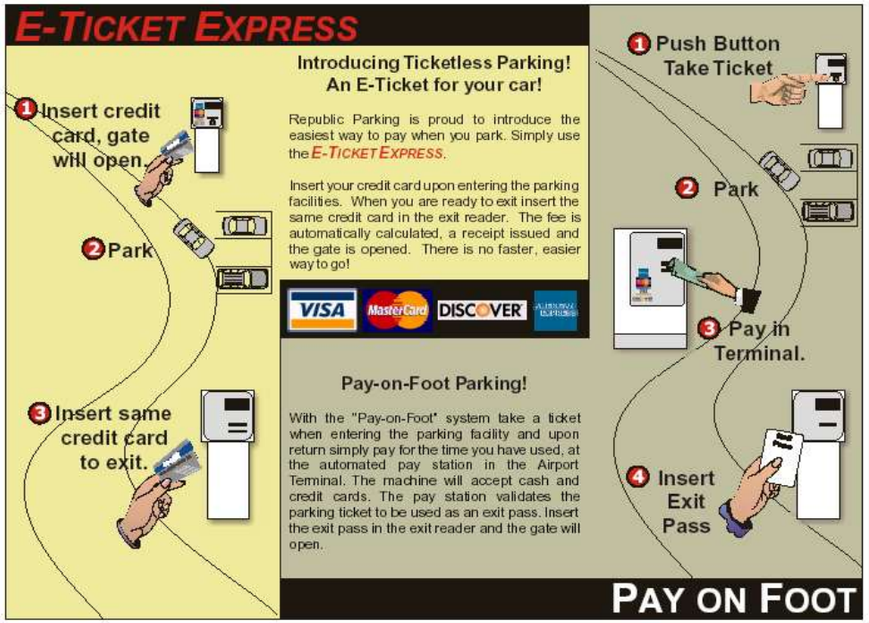
For situations where there are only a limited number of transient spaces within a facility, controlling/charging for those spaces with meters can be a cost effective alternative to traditional exit cashiering.

ex.

- In the facility to the right there were just over a hundred transient spaces available, the rest were reserved for monthly parkers. The revenue stream from the transient spaces would not have justified two shifts of exit cashiers, plus supervision, fee computers, booths and other capital items.
- Note that there are still staffing costs with this option as the meters need to be enforced.

Ticketless Parking

Ticketless parking provides several advantages to customers and parking systems – This strategy is also known as Credit Card In/Out. It can work in conjunction with other systems, such as pay-on-foot.



- This operational model offers customers the benefits of quick in and out and easy payment.
- The operational benefits are that it is attendantless, and therefore lowers operating costs and it is cashless, thereby reducing the potential for theft.
- The reduction in operating costs more than makes up for the minimal credit card fees.

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Parking Accounting and Auditing

Patron Fee Displays

While not new, patron fee displays remain an important customer service and revenue control feature in a cashiered facility.

It is important in locating the fee display that the cashiers cannot conceal the display, a factor that is often overlooked.

ex.

» BENEFITS

- An important revenue control feature
- Large, easy to read displays
- Custom messaging possible

Successful Revenue Control

is Partly a Matter of Organization and Detail Orientation

Effective auditing relies on detailed reviews of individual transactions.

- A systems based approach to auditing leads to program success and a culture of accountability.
- Increasingly, these processes are becoming more computerized, relying on programming audits and video license plate audits, etc.

Securing Access Control Equipment

Your parking equipment can be secured with electronic access controls without the need for on-site power. These controls can be installed in virtually any parking equipment, anywhere enhancing system security and providing improved audit capabilities.

ex.

- BENEFITS;
  - Know and control who accesses or tries to access your equipment
    - Know how much cash was removed, by who and when
    - Easy online management, including reports
    - Minimize shrinkage
    - Eliminate the problem of lost or stolen keys
    - Minimize vandalism of locks
    - Compelling ROI- typically 30%+

Ch.
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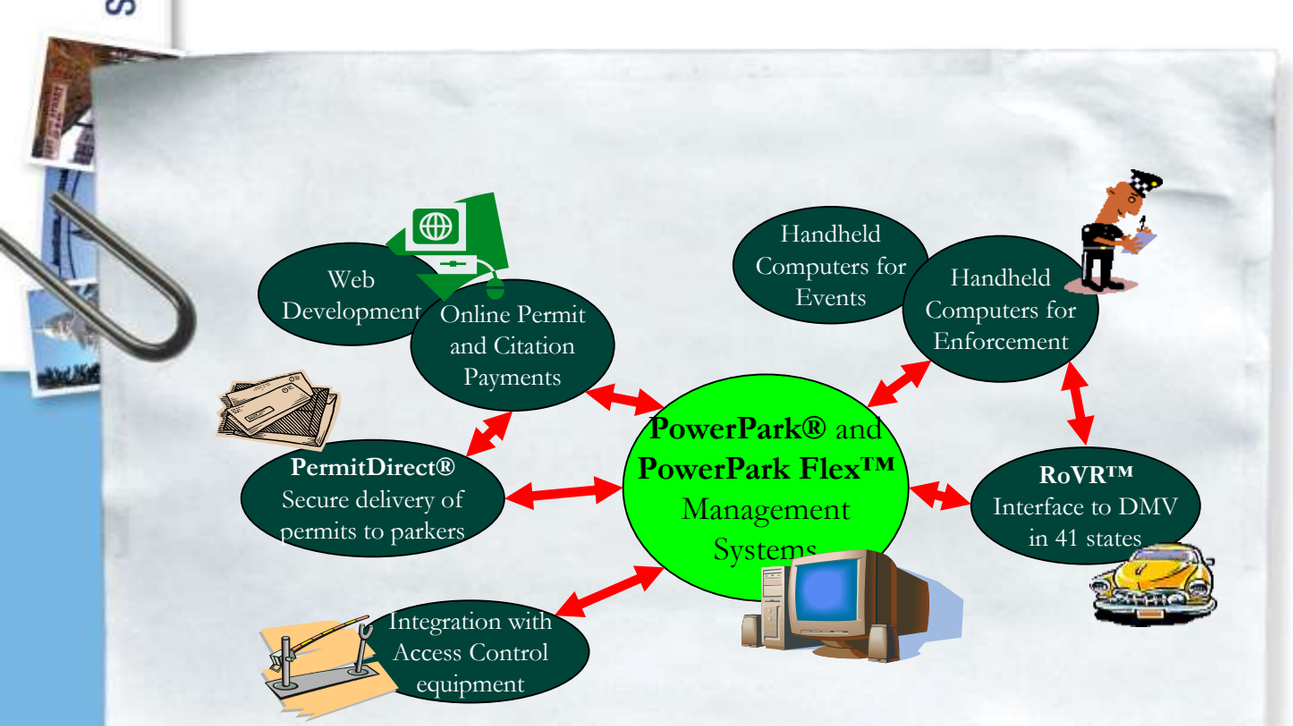
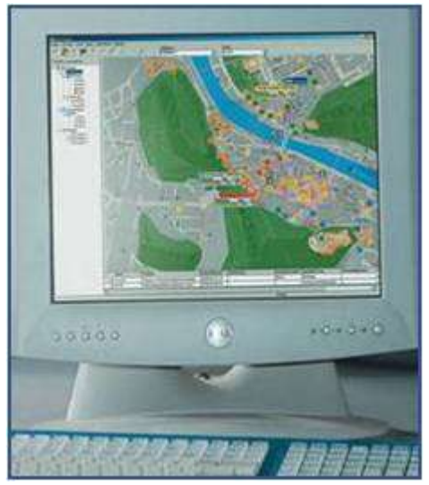
Leveraging New Technologies

Web-Based Management Platforms

Consistent management regardless of the type of parker (transient, monthly, residential, etc.) All aspects of parking management can now be integrated into a web-based management system.



ex.



- Management information at a glance: vehicles, citations, names, addresses, etc. on a single, clean, easy-to-read page.
- Open architecture allows sales/payment from anywhere.

Video Based Car Counting Systems

At SeaTac international Airport, just after the Daily Parking entrances, drivers see an electronic sign that tells them how many spaces are available on each floor.

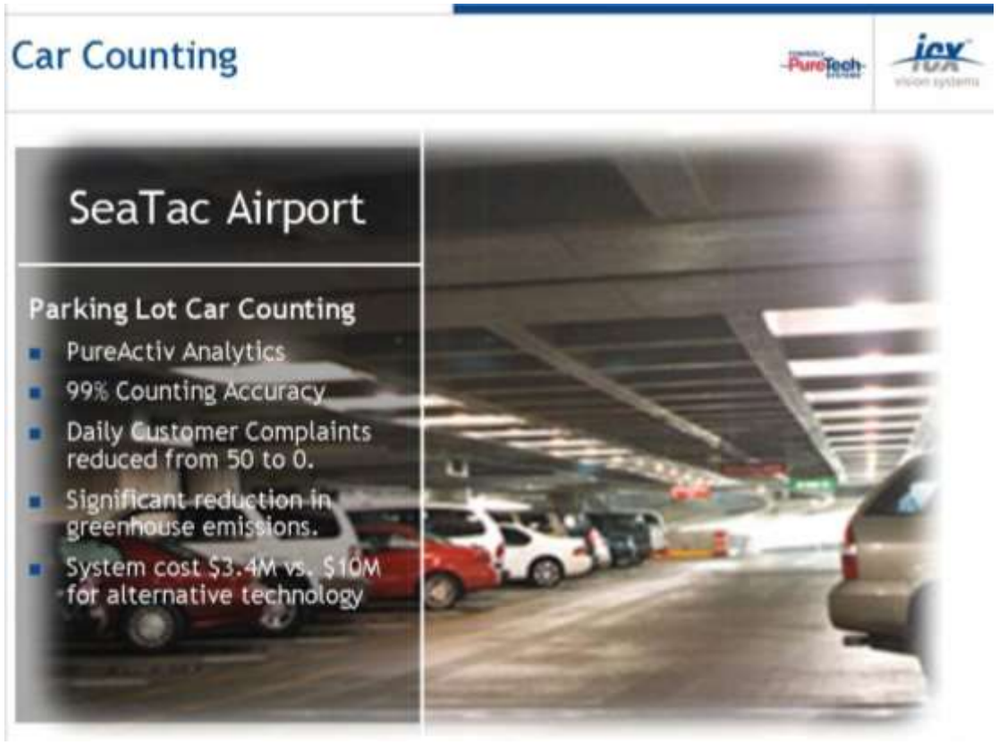
Once you get to a floor, a sign will tell you how many spaces are open to the left or right.

Within each floor, more signs will tell you how many spaces are available in each four-row section.

ex.

» BENEFITS

- Reduced customer complaints
- Highly improved count accuracy
- Significant reduction in greenhouse gas emissions
- Extensive statistical analysis on collected vehicle data



Video Based Car Counting Systems

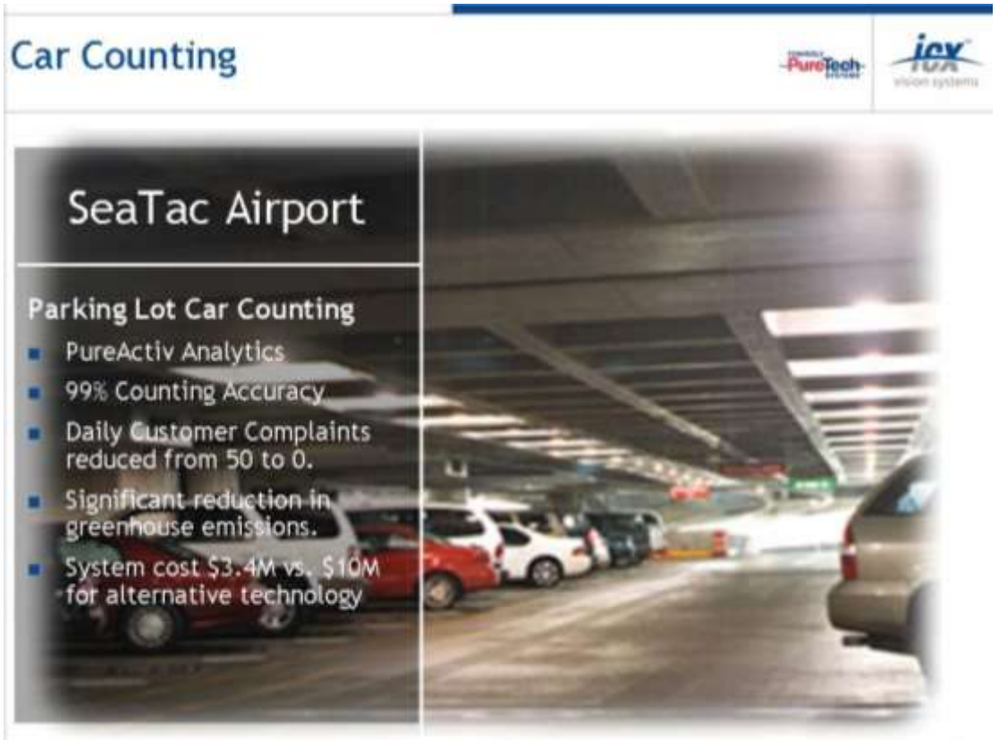
Utilizing video analytics as a vehicle count mechanism provides more data than simple loop detectors or other sensors. This new application has great potential going forward.

- » Just after the Daily Parking entrances, drivers see an electronic sign that tells them how many spaces are available on each floor.
- » Once you get to a floor, a sign will tell you how many spaces are open to the left or right.
- » Finally, once you get an a floor, more signs will tell you how many spaces are available within each four-row section.

ex.

» BENEFITS

- Reduced customer complaints
- Highly improved count accuracy
- Significant reduction in greenhouse gas emissions
- Extensive statistical analysis on collected vehicle data



Parking Management Control Centers

As parking management programs get larger and more complex, communications, security and active systems monitoring becomes more important.

ex.

Many of the more sophisticated programs have created central dispatch and systems monitoring “control centers”.

Ch.
23

Signage and Wayfinding

Don’t Forget Your Manners?

Someone once said, “everything we really need to know, we learned in Kindergarten”

» Remember to welcome your guests and to always say “thank you”!

ex.

When It Comes to Signage, Less is Often More!

Contrast the two approaches below:

ex.

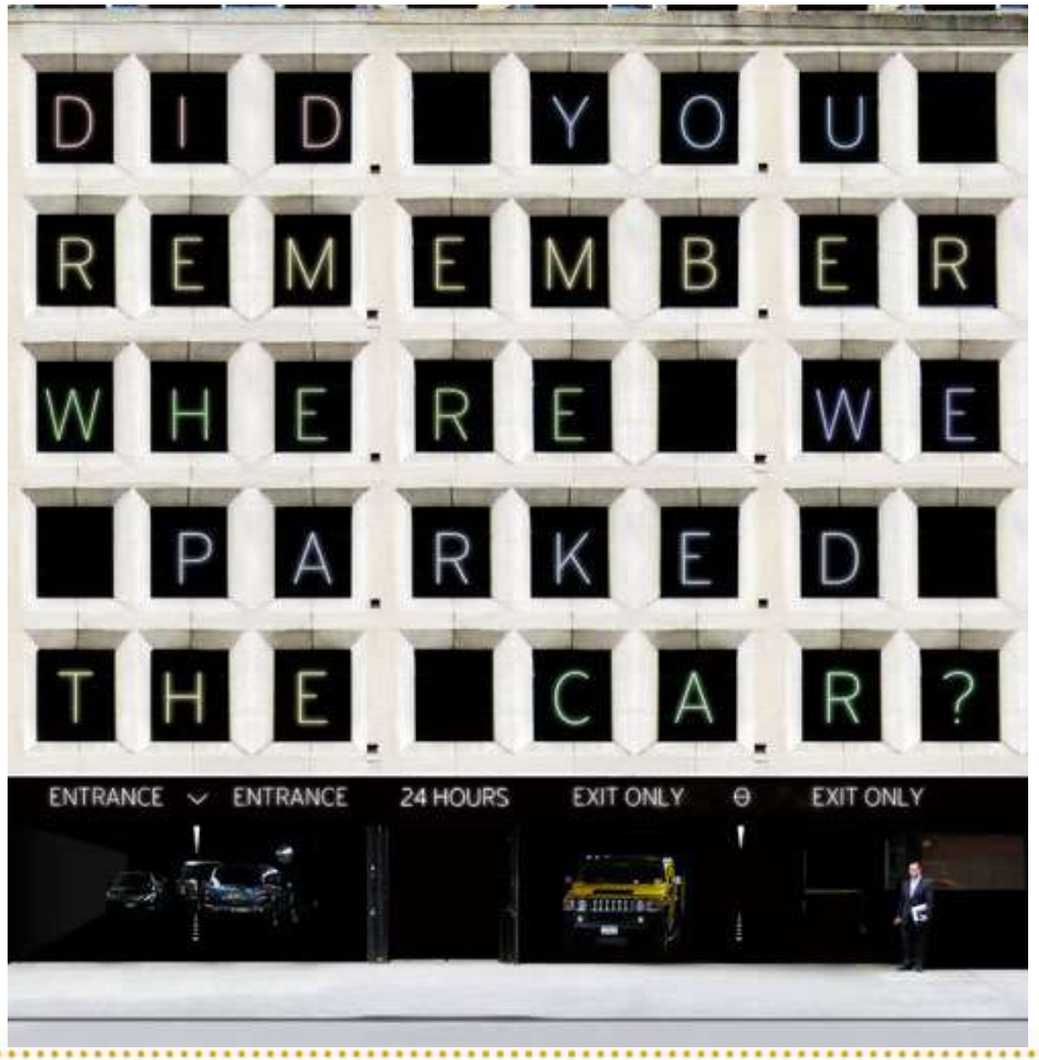
PICTOFORM

Where Did I Park?

Finding your car in a large parking facility is a common problem.

Signage and wayfinding are important, but for those that don't read signs, here's an App for you!

ex.

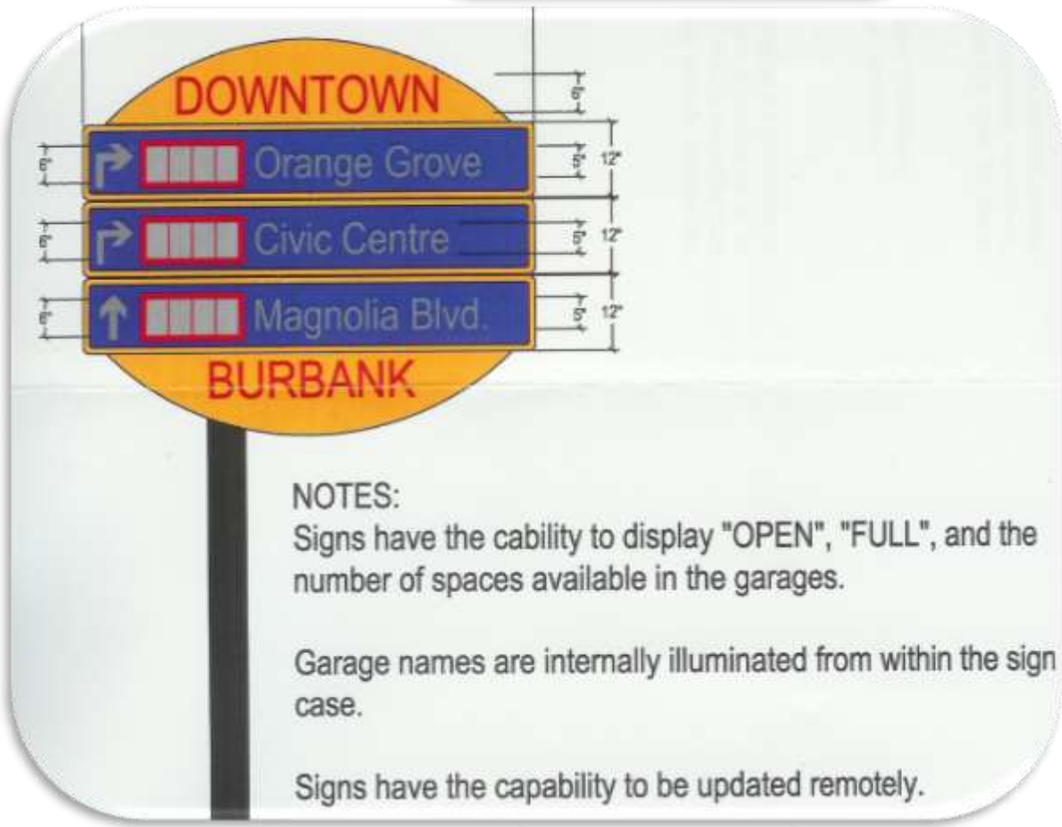


Parking Guidance Systems

The downtown wayfinding and signage program in Burbank, CA are designed to read by motorists. Font sizes are calculated to be read based on driving speeds.

- The variable message signs are internally illuminated for high visibility at nights.
- Burbank chose to only display “open” and “full” messages instead of specific space availability numbers.
- They also have the capability of being updated from remote locations.

ex.



Parking Guidance Systems

The downtown wayfinding and signage program in San Jose uses a combination of static elements with variable message components to display space availability.

- The signs also provide full panel variable message components to accommodate new destinations or special functions that may only occur on an occasional basis.

ex.

Integrating with Downtown Wayfinding

The downtown wayfinding and signage program in Tucson, AZ is organized by downtown districts.

Each district has it own unique icon, colors and graphics.

- Downtown merchants and related agencies were given a “graphics CD” so that they could integrate the wayfinding graphics into their marketing and advertising.
- This approach helps keep the graphic colors, fonts, icons, etc. consistent.

ex.

Integrating with Downtown Wayfinding

The downtown wayfinding and signage program in Fort Wayne, IN is organized by downtown districts and then by major activity centers/destinations.

ex.

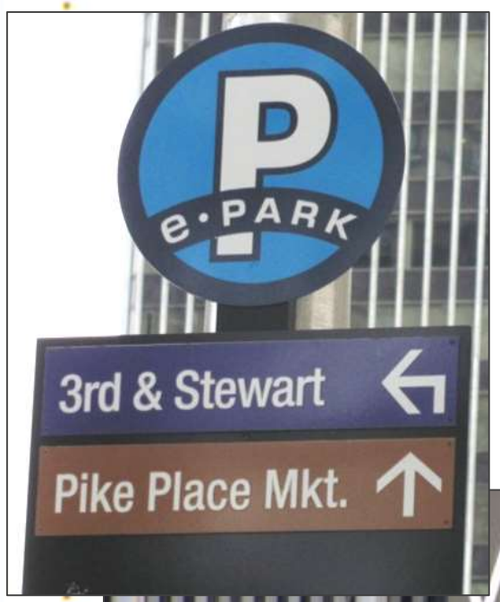
- Parking is addressed by a Green P with directional arrows that can be applied to specific destinations of district identifiers.
- This approach keeps the primary intent of the signage focused on primary destinations and allows for flexibility as parking options are added or change over time.

Parking Spaces Available Signage

Seattle's new "E-Park" program provides wayfinding and space availability information for a combined system of public and private short-term parking options in the downtown area.

The signage is a combination of static and variable message signs.

ex.



Super Graphics

Using “Super Graphics” to indicate garage level, elevator and stair locations, etc. is a fairly common, but very effective best practice.

» Using these graphics to orient parkers to surrounding streets is another recommended practice.

ex.

Color Banding and Consistency

Combining crisp, clean graphics, bright colors and ***"color bands"*** to indicate garage level, elevator and stair locations, is another effective best practice.

- » Color banding can tie sometimes confusing three dimensional environments together graphically.
- » They can more exactly differentiate where on level stops and another begins.
- » They can also "lead" patrons directly to destinations such as elevators.

ex.

Garage Signage Principle # 1: I am parked on_____.

Fundamental parking signage principle # 1 is simple: When you step out of your vehicle in any space, You should be able to look around and be able to identify where you are parked (i.e., Level 4, Row A).

- This applies to parking lots as well as garages.
- The more creative and memorable the signage clues provided, the better.

ex.

2 Dimensional Art – 3-D Effects

Parking garages have many large blank walls.

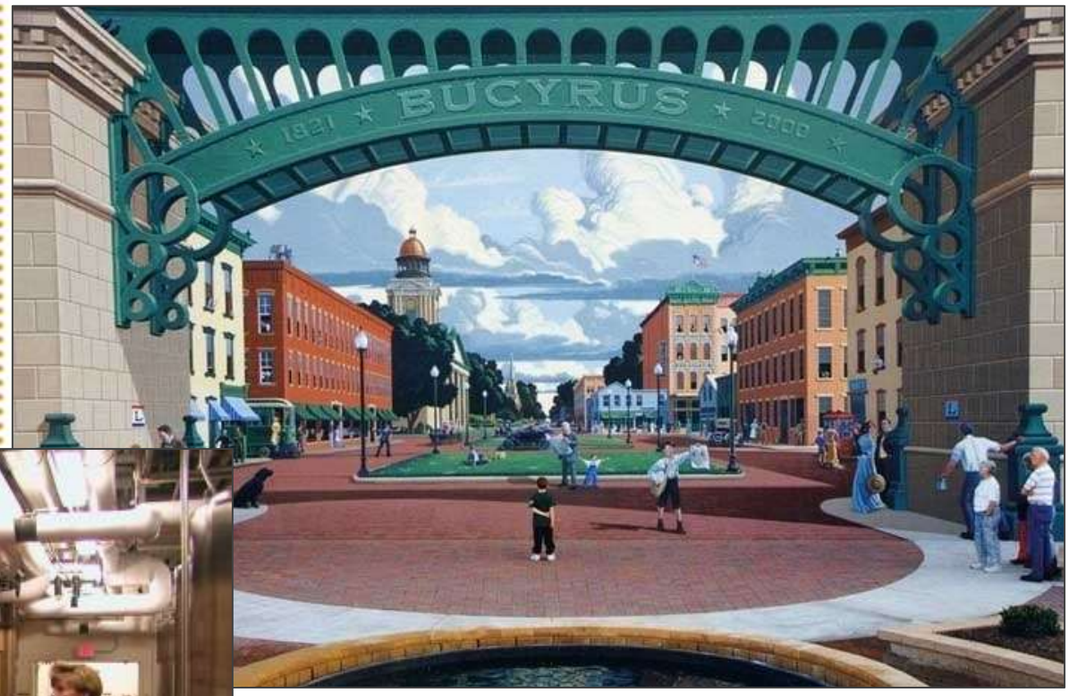
Consider this your “Canvas” for creating new and dramatic focal points using 2-Dimensional painted images with 3-D impacts.

Before:

After:

ex.

Before:



After:

Effective Use of Symbols and Pictograms

From the basic “Parking P Symbol” to international symbols to the creation of new pictograms to keep up with evolving technologies, graphics symbols have become an important part of how we communicate.

ex.

Reflective Text

The use of reflective lettering materials on internal parking directional signage improves readability, especially in below grade facilities.

ex.

Parking Signage

Can’t get anyone to take your “No Parking” signage seriously?

Try a modest exaggeration.

ex.

» This sign caught my attention? (And no, I didn’t park there.)

Well Designed Parking Signage and Graphics

Good design matters! What more is there to say?

Quality design and graphics speak for themselves and reflect positively on the program that made such a wise investment.

PICTOFORM

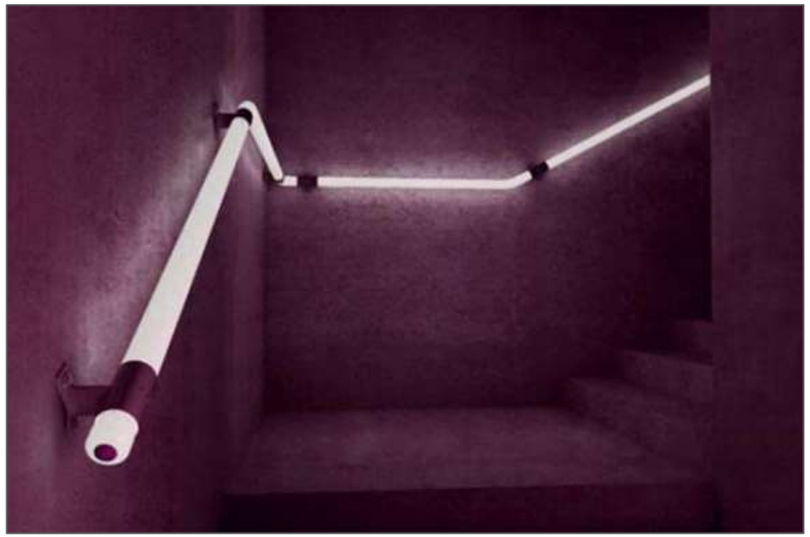
ex.

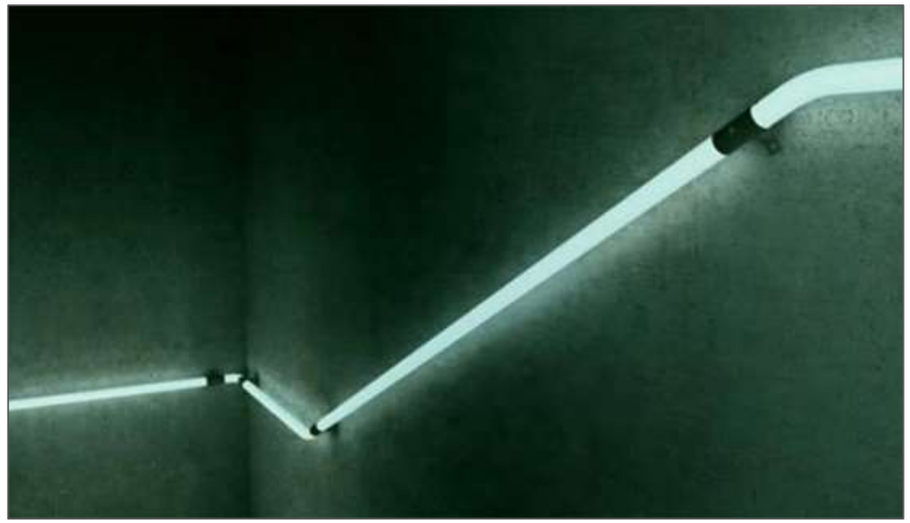
Ch.
24

Enhancing the “Parking Experience”

Unique Touches!

Reminiscent of Luke Stairwalker, I mean Skywalker, here's a futuristic staircase handrail for the Jedi Master in all of us.





- The super cool LED-lit handrail by Croatia-based Zoran Sunjic is **perfect** for modern homes, restaurants and hot night clubs – even parking garages!
- Multifunctional, the rail lights the way, makes the passage safe, and adds a touch of fantasy.
- You can even color code to match your floors (OK, maybe not.)

Special Touches!

Understanding the needs of your customers and implementing services to meet their special needs is always a winning strategy.

ex.

- Reserving convenient spaces for specialty groups can help promote customer loyalty and appreciation.
- Its all about knowing your clientele!

Green It Up!

Add a planter or two. It's amazing the difference adding plants can make in the look and feel of a parking structure, especially around elevator lobbies and entry/exit plazas.

Green the whole roof if you really want to make an impact!

ex.

- At the Queensway Garage in Long Beach, planters are located at both entrance and exit plazas improving the look and feel of the parking environment. (Top left)
- Attention to little details at a City Parking Garage in Ottawa. (Top)
- If you do add significant landscaping above parking, be sure to hire a parking consultant to engineer it properly!

Add Color

The use of color is a tried and true mechanism for brightening up drab concrete structures and aiding in wayfinding.

ex.

» In this example, the colors are associated with different vertical elements and where they lead.

Customer Amenities

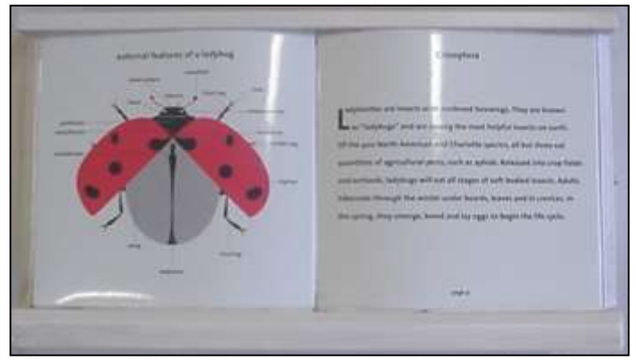
Customer amenities in a parking structure can include a variety of offerings including drink machines, water fountains, snack machines, etc.

- It can also include special services such as dry cleaning drop-off, auto washing and detailing services, state vehicle inspection services, loaner “audio books”, etc.

Brighten it Up! Creative Level Theming and Wayfinding

Wayfinding aids such as “level theming” have helped make the parking environment more pleasant and interesting while providing the benefit of helping patrons remember where they parked their car.

ex.



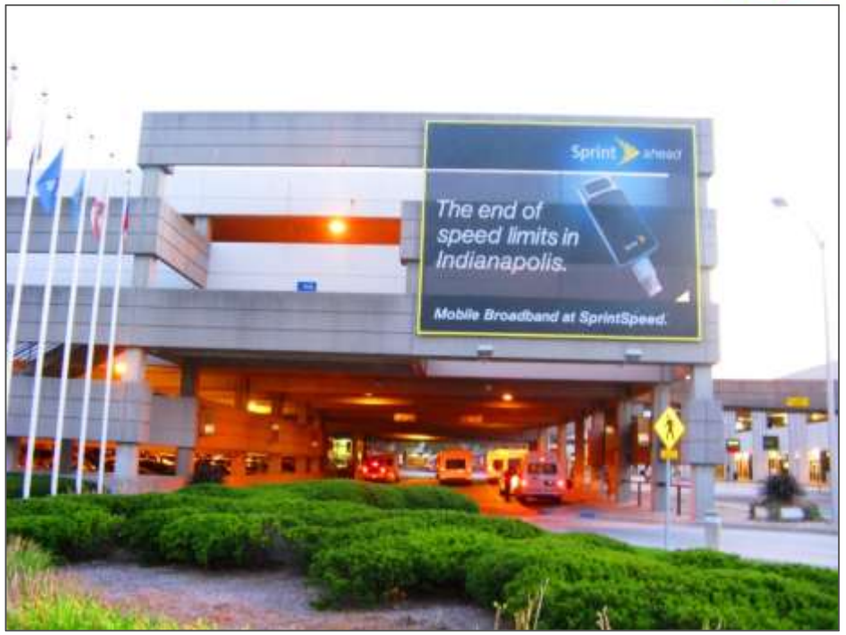
Music In Your Parking Lots?

Some upscale shopping centers are keeping shoppers dancing all the way into the stores by providing music in the parking lots.

- Mall owners site a desire to “set a certain mood for their shoppers” and to put them in a positive state of mind.

Banners Can Add Color, Communications and Ad Revenues!

Some developers, hospitals and airports are taking advantage of high visibility space and cashing in on advertising potential.



» How many views per year do you think these locations generate?

Engaging Local Artists

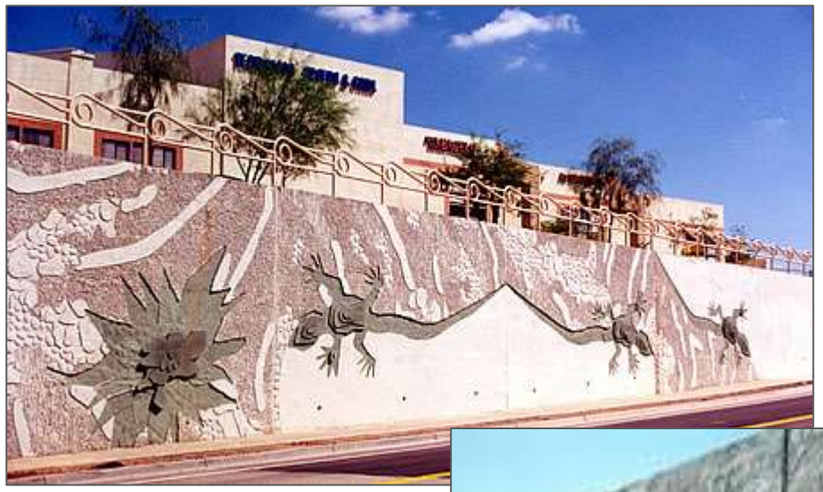
Charlotte, NC (and Bank of America in particular) has been a leader in investing in creative level theming and wayfinding as well as well as engaging local artists.

ex.

7th Street Station Garage, Charlotte, NC

Roadway and Interchange Art

If we can do this for roadways, why not parking garages! Concrete can be a great creative medium.



ex.

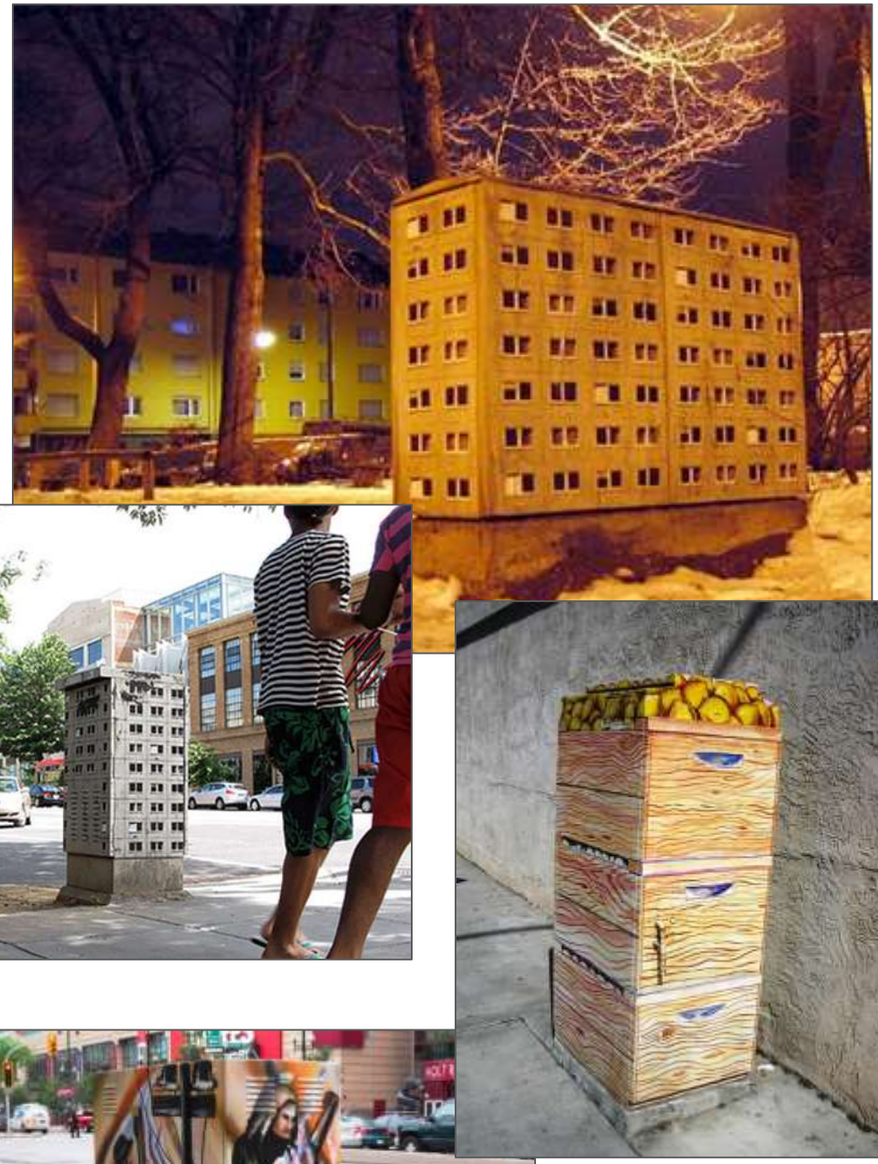
Art as Urban Utilities Camouflage

The writing's on the wall…or, in this case, the utility box.

Graffiti art replaces gang graffiti and provides "street-art" for passersby.

- Urban art in the form of buildings is stenciled onto telecommunication power boxes and concrete surfaces throughout the streets of German cities. (Top 2)
- Stacked Lemon crates . (Middle)
- Musician's adorn a utility box in downtown Winnipeg. (Bottom)

ex.



Got a Blank Wall? – Add a Mural!

Parking programs can place a greater emphasis on public art. Blank walls can be an opportunity to showcase local artists, add a splash of color and interest and enliven dull parking environments.

ex.

- My favorite wall mural of all time is the girl I met on my first trip to Manhattan. I still think of her when I think of New York City (Left).
- There are too many great examples to show, but here are a few.

"Jazzed up" Pedestrian Pathways

Sometimes we have long corridors or tunnels connecting parking to it's primary demand generators. Problem?

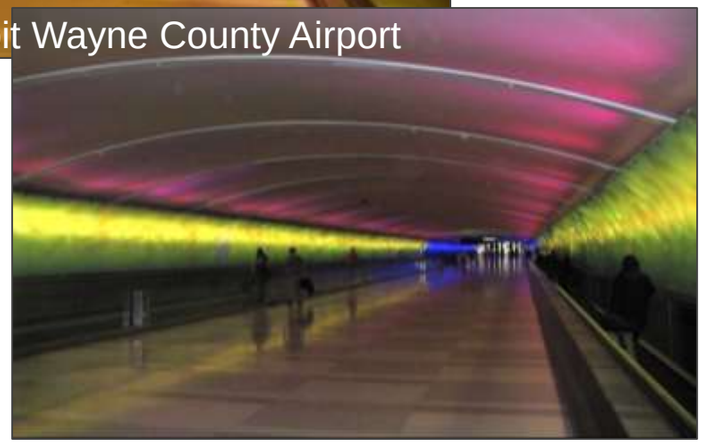
No, an Opportunity!

ex.

O'Hare Airport

The New Indianapolis Airport

Detroit Wayne County Airport



- Tunnels and connectors need not be dull or dark.
- These airport examples use dramatic and changing lighting, people movers, art, music or interesting "soundscapes" to create an interesting and positive experience.

Creative Level Theming as a Wayfinding Strategy

In addition to visual clues, some parking structures are also using music to remind patrons where they parked. A different style of music is used on each floor.

ex.

- O'Hare airport in Chicago (Standard Parking) was one of the first to use this wayfinding enhancement strategy.
- The music is reinforced on each floor by dramatic graphics - distinctive to the specific song being played on that floor - displayed in the elevator vestibules and throughout that level's parking bays.

Shade, Protect and Even Generate Power and Increased Revenue

Adding shade structures to surface lots parking or deck rooftop spaces to enhance customer service and increase utilization and parking revenues.

- The initial investment varies based on type of product, but generally runs in the $700 - $1,500 per space range with an average ROI in ranging from 1.5 – 2.8 years.
- Parking shade structures can also have integrated photovoltaic panels to generate solar power.

ex.

Dramatic Lighting – Now that makes a statement!

Lighting can set your facility apart from the background and create dramatic affects.

ex.

» Indirect lighting in parking facilities and be very effective and attractive. (Right – Parking Garage at the Museum of Art in Milwaukee, WI.)

Happy Holidays!

Nobody wants this experience at Christmas! (Especially Santa)

ex.

» Now this is a little more like it!

» And if you're really in the spirit!

Ch.
25

Revenue Enhancement Strategies

Advertise On Your Tickets

Advertising on parking tickets, valet tickets and parking “booms” can effectively eliminate tickets expenses from your operating expense budget, as well as creating an opportunity to market downtown venues and attractions.

ex.

www.advertickets.com

Advertise In Your Facilities

Advertising in elevator lobbies, sky-bridges and other areas with high levels of pedestrian traffic can generate additional parking program revenues. This can also be an effective way to promote parking programs and services.

ex.

Alternative Revenue Sources

There are several sources of alternative revenue available in parking systems, that most systems don't take full advantage of. These options often provide additional value to clients.

ex.

- Examples include advertising, drink and vending machines, ATM machines, etc.
- Another example is the provision of bike lockers, bike tire pumps, etc.

Parking Brokerage Services

Parkingspots.com connects those needing a parking spot with those renting parking spots. The service allows you to find parking close to downtown, the airport, your office, your home or wherever else you need it. Easy, affordable monthly rentals where you want, when you want!

ex.

- Primarily focused on the US and Canadian markets Parkingspots.com is a virtual parking marketplace.
- Locate your ideal parking spot by city, by postal or zip or using Google maps.

Ad Walls

The use of “Ad Walls” is a good example of finding creative alternative revenue sources. It also adds color and interest to typically dull garage environments.

- This strategy can make use of a variety of surfaces including columns, beams and even gate arms.

ex.

Kimley»Horn

DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

Ch.
26

Expense Reduction Strategies

Automated Parking Systems

Labor Expenses

- Parking facility staffing can be the single largest expense item (ranging from 50% to 70%)
- This expense typically includes payroll, taxes, benefits, training, recruitment, etc.

  - Winnipeg reduced labor by ~25% using pay-in-lane off peak
  - Texas Medical Center reduced labor by more 35% using pay-on-foot

ex.

Opportunities to reduce labor expenses

- » Use automated parking technologies
- » Review lane activity to ensure efficient coverage
- » Improve employee retention
- » Review market pay rates
- » Consider outsourcing
- » Encourage cross-training
- » Regularly review insurance/benefits costs
- » Improve passive security
  - ▸ Reduce staff needs and reduce liability

New High Efficiency Lighting Products

Recently, there have been significant improvements in the cost, performance, and application of LEDs for a variety of lighting applications.

The energy saving potential of LED lighting, as compared with conventional lighting, ranges from 50 to 90 percent.

ex.

» Additionally, LED lighting technology offers benefits of extended operating lifetime (up to 100,000 operating hours), small sizes to expand fixture design options, and improved optical quality and control.

Energy Conservation

Having separate electrical circuits for parking facility lights on the exterior side of parking bays as well as the roof level can save thousands of dollars per year in energy costs.

ex.

- The photo to the right shows an example of this best practice. The circled lamp is off during the daytime hours while the interior row of lights in the same bay remain on.
- In this application the exterior row of lights are tied to photo cells in the event light levels are reduced to a certain point such as during a thunder storm.

Limited Transient Customer Volume? Consider Meters.

For situations where there are only a limited number of transient spaces within a facility, controlling or charging for those spaces with meters can be a cost effective alternative to traditional exit cashiering.

- In a facility with less than 100 transient spaces (the rest were reserved for monthly parkers) the revenue stream from the transient spaces would not justify two shifts of exit cashiers, plus supervision, fee computers, booths and other capital items.
- In this case, installing meters was a more cost effective option.
- Note that there are still staffing costs with this option as the meters need to be enforced and the revenue collected.

ex.

Track Warranty Expiration Dates

Review equipment and facility related warranties

- Ensure necessary work is completed before warranties expire.
- Carolinas Medical Center saved $15,000 by scheduling a tour of parking deck expansion joints (with the expansion joint company representative) 6 months prior to warranty expiration.

ex.

- Damaged joints were documented with time/date stamped digital photos in a letter to the company.

Equipment Maintenance Contracts

Consider using equipment maintenance contracts only for more sophisticated equipment (Fee computers, ticket issuing machines, count systems, etc.)

ex.

- For less complex equipment (gates, etc.) train staff in-house and create a separate budget area for “equipment maintenance non-contract” for problems your staff can’t resolve.
- One hospital parking operation saved ~ $5,000 - $8,000 annually using this approach.

The Value of Preventative Maintenance

Don't forget about the value of and long-term savings associated with preventative maintenance...

- Structural
- Mechanical systems
- Electrical systems
- Parking equipment

ex.

- Conduct periodic wash downs to remove chlorides and dirt/debris

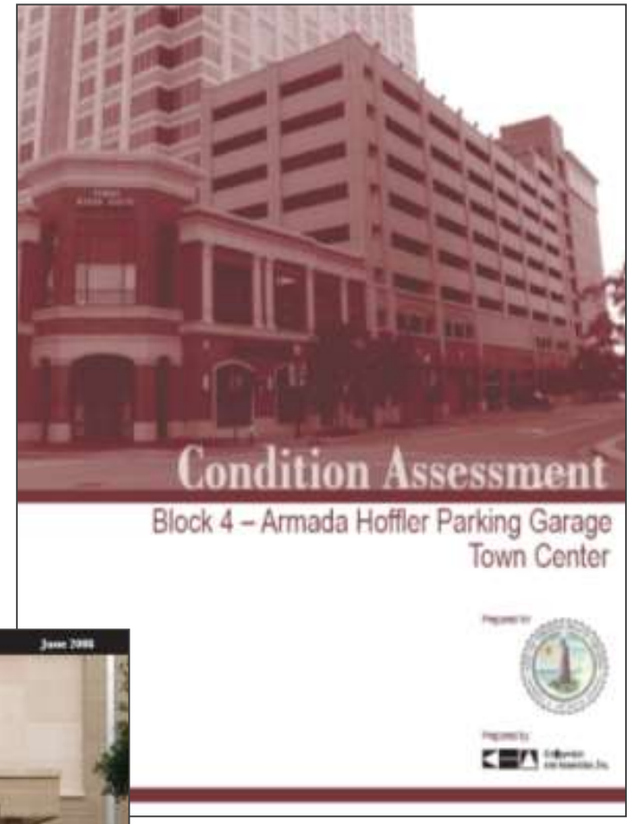
Regular Facility Structural Condition Appraisals

- a Good Long-term Investment

Invest in regular parking facility condition appraisals.

» These relatively inexpensive facility reviews can identify structural problems in advance of major problems that might impact operations (and therefore facility revenue or damage to customer vehicles).

ex.



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Special Programs and Promotions

Parking Coupons "Re-imagined"

Chinook Book – the popular green resource guide and coupon book – now has a high-tech sister: *Chinook Book* for iPhone, the world's first mobile coupon book.

For the first time ever, Chinook Book owners can now use their iPhone®, iPod touch® or iPad™ to save thousands of dollars at hundreds of local green businesses in the Seattle metro area.

» These e-coupons can even be used for parking and car share services at the University of Washington.

ex.

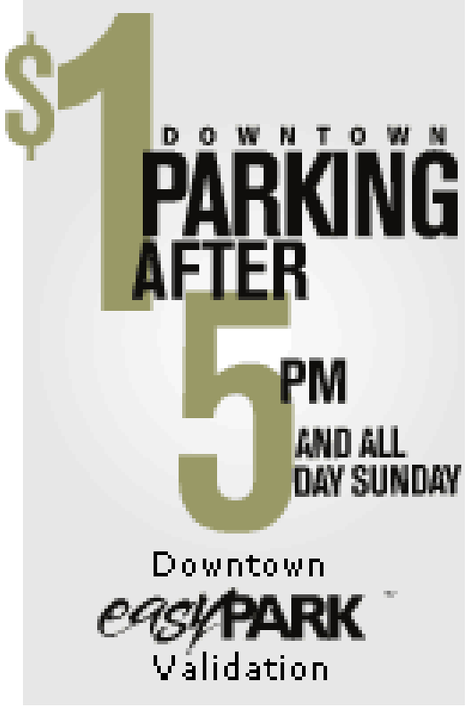
Available on the App Store

Discounted Parking to Attract Customers

If utilization of facilities is low, or if there is a desire to stimulate downtown activity, there are numerous ways in which parking can contribute to revitalization strategies.

ex.

Early Bird Specials
Discounted Rates If
In before 9:00 AM



Who Deserves A Little Something Extra?

It is a documented fact that women control the purse strings and account for the majority of consumer spending, so this practice can be made on the grounds of sound business philosophy.

- But perhaps more importantly, your own mother would approve of this policy (just ask her).

ex.

A Little Reminder Never Hurts!

Sure, we all know we should lock our car and take our keys, but …

- "I was just running in for a minute".
- "I was just picking up a prescription and was worried about my dad?.
- "I looked and there was no one around…"
- "It seemed like such a safe neighborhood".

» A little reminder might make all the difference.

ex.

First Hour Free Programs

First Hour Free programs are effective alternatives to traditional parking validation programs.

ex.

- In communities where we have assisted in implementing these programs we have seen increases in both revenue and facility utilization as well as positive community support.
- A thorough revenue assessment is recommended before undertaking a first-hour free program.
- Implementation of these programs are often accompanied with other adjustments to back-end parking rates.

On-Line Parking Coupons

Looking for a way to attract new customers, consider the time-tested use of coupons with an on-line spin - printed from a website.

ex.

- Placing coupons on your website or on the websites of related groups can be a positive way to invite new customers to your facilities.
- The coupons can also be used to promote new services.

Sponsorships/Fund Raising

Did you know that a parking lot, parking structure and/or light pole banner program could be a fundraiser for your parking system or downtown?

ex.

- Project Graphics assists municipalities, institutions and various civic organizations in developing or establishing parking structure and/or light pole banner displays as a repetitive source of revenue.
- Reviewing zoning requirements is recommended.
- www.projectgraphics.com

Contact Sylvia Klein
klein@projectgraphics.com
ph: 800-655-7311 x 314

V.I.P. Service Programs

Some parking systems have developed service programs through local vendors to provide “VIP” services for monthly customers.

Examples of VIP services include: Vehicle Washing/Detailing, Oil Changes, Dry Cleaning, etc.

ex.

- The Downtown Toledo Parking Authority’s VIP program directs customers to a specific area within their facilities and to a VIP Services Kiosk.
- A form is completed for the requested service and the vehicle keys are deposited in a security envelope.
- The requested service is completed while the customer is at work and the vehicle returned to the VIP area by a specified time.

Validation Program Promotions

Many communities have parking validation programs that are only honored by a handful of merchants. Like everything else, these programs need to be promoted to extend their reach and success.

ex.

- The development of validation program promotions supports participating merchants, increases awareness of the program and educates patrons as to program specifics.
- The promotion noted below placed bookmarks on customers windshields and offered a chance to win a $150 Downtown Shopping Spree.

Introducing Parking Validation Downtown

WE VALIDATE

CITY PARKING FOR CUSTOMERS

Look for the P!

Visit These New Program Members

- 8th Street Salon
- April Cornell
- Art Source Intl.
- Bloemenhaus
- Body Balance
- Bookend Cafe
- Borders Bookstore
- Boulder Army Store
- Boulder Arts & Crafts
- Boulder Bookstore
- Boulder Realty Brokers
- Boulder School of Music
- Cat-Man Do
- Colorado Canines
- Costa Rican Conn.
- CTX Mortgage
- DecorAsian
- Eastern Accupressure
- Elena Ciocione
- En Vision
- Express Press
- Feather Thy Nest
- Fiori Flowers
- Fleet Feet Sports
- Fresh Produce
- Frolic Shoes for Her
- Guaranty Bank
- Hello Mommy
- Heritage Bank
- High Crimes Books
- Hurdle's Jewelry
- Inlighten
- Jila Design
- John Atencio Jewelers
- Juanita's
- Little Mountain
- Lolita's
- Middlefish
- Millstone Evans
- MontBell
- Morning Star
- Paul Morrison Colours
- Pedestrian Shops
- Peppercorn
- Perry's Shoe Shop
- Pharmaca
- Pompadours
- Rio Grande
- Rocky Mtn. Joe's
- Smith-Klein
- Starrs Clothing
- The Parlour
- Tom's Tavern
- Walnut Brewery
- Weekends

Win $150 Downtown Boulder Shopping Spree

Visit www.boulderdowntown.com/parking.htm or stop by the information kiosk near 13th & Pearl to learn more about parking validation and to register for your chance to win.

DOWNTOWN Boulder

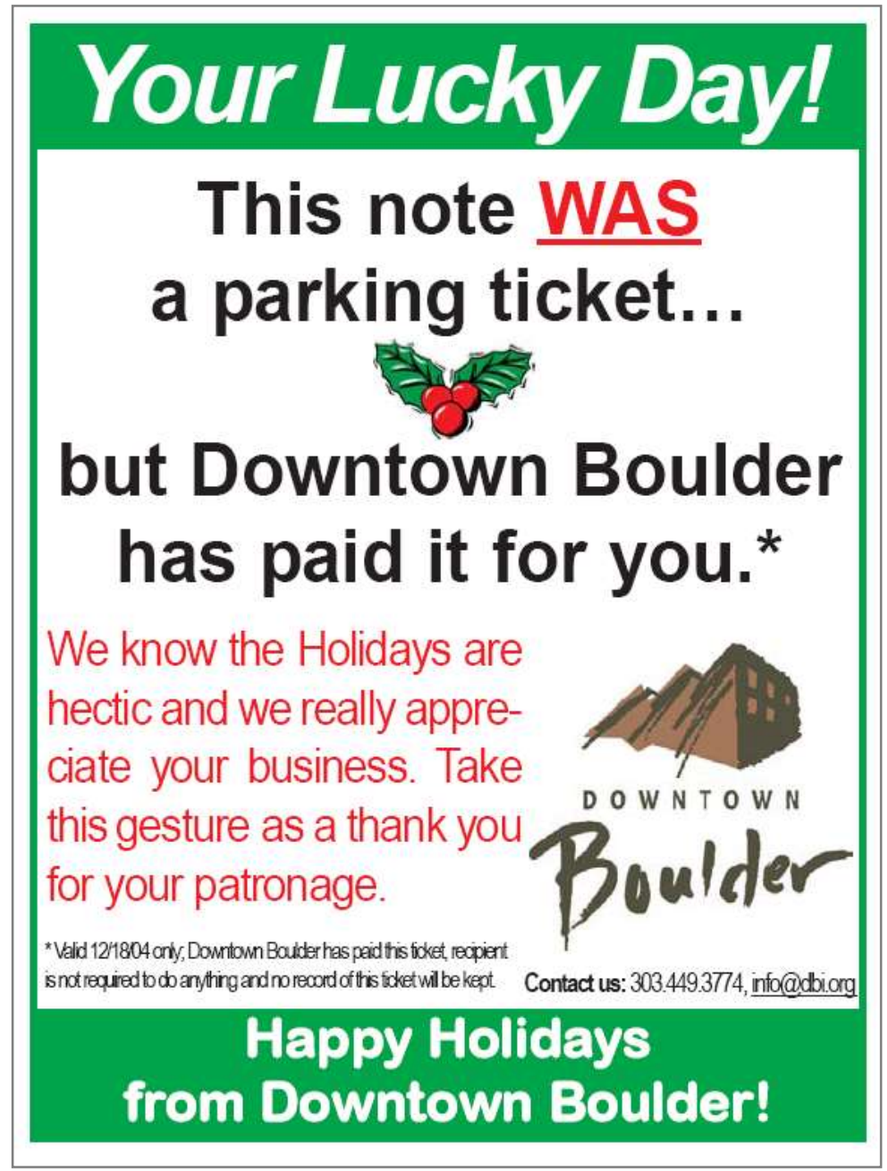
www.boulderdowntown.com/park.ht

Your Lucky Day!

Holiday parking ticket amnesties and other forgiveness programs are tools to balance the need for parking enforcement with business encouragement through customer appreciation.

- The Downtown Association paid over $6,000 in customer's parking tickets over the Christmas holidays in Boulder.
- In other communities, the parking system simply suspends parking enforcement or replaces citations with holiday notices.

ex.



Family Friendly Parking!

If you are a parent with small children, you will love this idea!

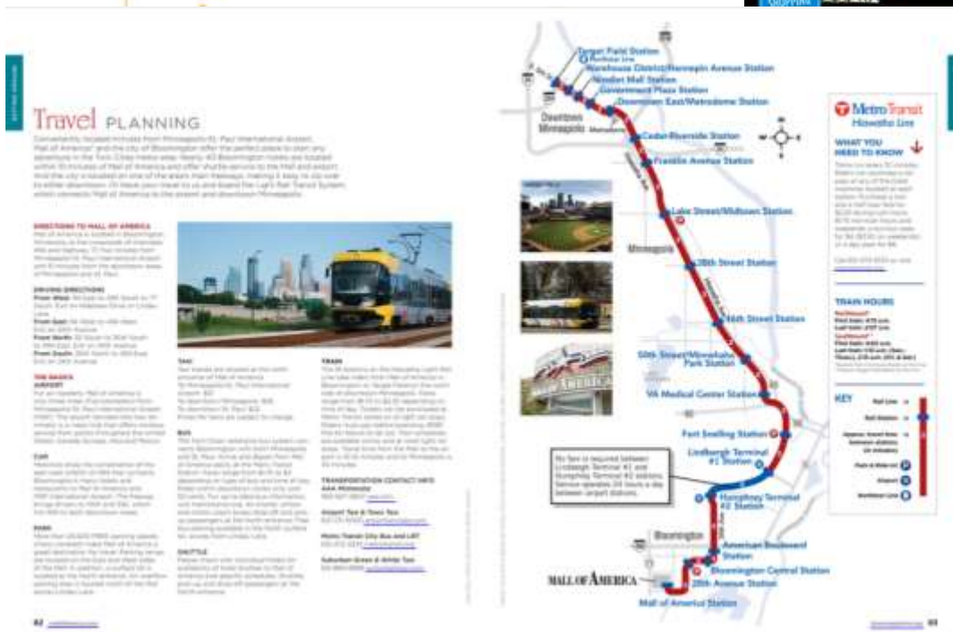
IKEA located and designed a special a special parking area out of the main traffic flow especially for family parking.

- The “Family Friendly Parking” area is near the entrance and also near children’s play area that is just inside the door adjacent to this lot.
- The lot is essentially a cul-de-sac which also helps minimize traffic and eliminates cut-through traffic.

ex.

Mall of America Lets Shoppers Find Parking by Phone

While shoppers might still hunt fruitlessly for a parking space during the holidays, Minnesota's Mall of America is trying to minimize the hassle with parking updates on its website, Twitter feed and interactive road signs. Since Black Friday, the mall has offered a Web-based, color-coded map of its parking lots that shows how congested they are.



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Sustainable Parking Design & Management Strategies

Demand Responsive Parking Pricing

Why it is Important?

- Circling for parking accounts for approximately 30 percent of city driving.
- Reducing this traffic by helping drivers find parking benefits everyone.
- More parking availability makes streets less congested and safer.
- Meters that accept credit cards reduce frustration and the need for parking citations.
- Public transit riders, bicyclists, pedestrians, business owners, residents and visitors can all expect this application of progressive parking management policy to improve their quality of life in tangible ways.

ex.

» This approach optimizes the use of existing parking resources in a way that benefits both drivers as well as everyone who spends time in our great urban areas.

The Ultimate Goal:
Circle Less, Live Better, Safe the Earth!

Car Sharing meets Fleet Operations

The UCAR car sharing program provides faculty, staff and students instant access to a fleet of vehicles within walking distance from campus offices.

UCAR

» The UCAR is a conveniently located and economically priced Fleet Services rental vehicle available for hourly rentals. The UCAR program is dedicated to supporting the short term transportation needs of the UW community for education, research, outreach and business.

ex.

» Trip tracking occurs automatically and billing is charged directly to a UW budget number. A copy of the receipt is sent to the reservation contact and department billing contact via email.

Recycled Rubber Products

24 million tires are being recycled per year through the creation of recycled rubber molded products. The great thing about this technology is that it not only helps to recycle and eliminate millions of scrap tires annually; products can be manufactured to fit various industries, some of which include: flooring, mats, playground surfaces, track and field footing, parking lot safety products & landscape mulch (pictured above).

» 100% recycled rubber wheel stops are a durable, reliable, long-lasting alternative to traditional concrete stops. Studies have shown that over a 10-year period, concrete wheel stops could cost six times more than recycled rubber models due to cracking & maintenance issues.

ex.

RUBBERFORM
RECYCLED PRODUCTS, LLC

Green Roofs

Boston's Prudential Center has been transformed in recent decades with the construction of new buildings, shopping arcades, and landscapes.

The most recent addition, the Mandarin Oriental Hotel, includes a public garden built in 2008 on the roof of a 1964 parking garage.

» To reduce loads on the existing structure, the soil rests on lightweight fills that include expanded shale and, in especially sensitive areas, stacked foam insulation panels.

ex.

» The half-acre garden stands in deliberate contrast to the buildings around it. Its native stone walls, reused brick pavement, and lush plantings give shoppers and hotel guests a chance to step outdoors and experience a taste of the New England landscape beyond the city.

Green Roofs (Sort of)

- Don’t have the budget for a “true green roof”?
- No ability to support the extra weight?
- No ability to detain water?
- An inhospitable climate?
- No funds for the long-term maintenance of a traditional green roof?

» No Problem! – Schwartz made a plastic fantastic half Japanese Zen, half French Renaissance garden.

http://www.marthaschwartz.com/

ex.

Xeriscape

Xeriscaping is the practice of water conservation through creative landscaping.

ex.

» Benefits of Xeriscaping:

- Low water consumption
- Low maintenance
- Protects water quality
- Increases health and beauty of surroundings
- Decreases pest control needs

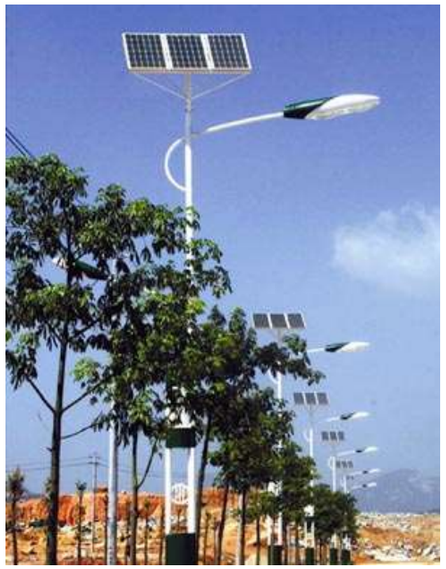
Solar Powered Parking Lot

A relatively new addition to our sustainable parking strategies is the introduction of individually powered solar parking lot lights.

ex.

Solar Parking Lot Light (S-SL27), from Greenshine has three solar panels and stronger light power, is a good solution for illumination of large areas.

Greenshine



» Each light pole/fixture is fed by an individual solar panel as pictured above.

The Eco Parking Lot

Bringing environmental technologies and green design practices under one roof is the Eco Parking Lot. The stylish design will incorporate green plantation and storm water remediation technology making it more efficient while maximizing greening potential.

ex.

» This visual treat with special student parking will benefit the Community and city of Windsor.

Design: Green Corridor

More info:
www.greendiary.com

The Solar Forest Concept

As the name suggests, this concept brings trees like structures into action. The Solar Forest Concept consists of trees that are made up of photovoltaic leaves, whose sole purpose is to collect solar power.

ex.

- At the “trunk” of each tree is a power outlet that is used to charge up electric vehicles.
- Apart from providing charge, the photovoltaic “leaves” also gives shade to the cars.

Designer: Neville Mars

More info:
www.greendiary.com

The Solar Parking Concept

Offering a dual solution to parking and charging of electric vehicles as well, the design proposes the wireless transmission of charge from the solar canopy to the charging coil embedded in the asphalt and later, to the car battery.

ex.

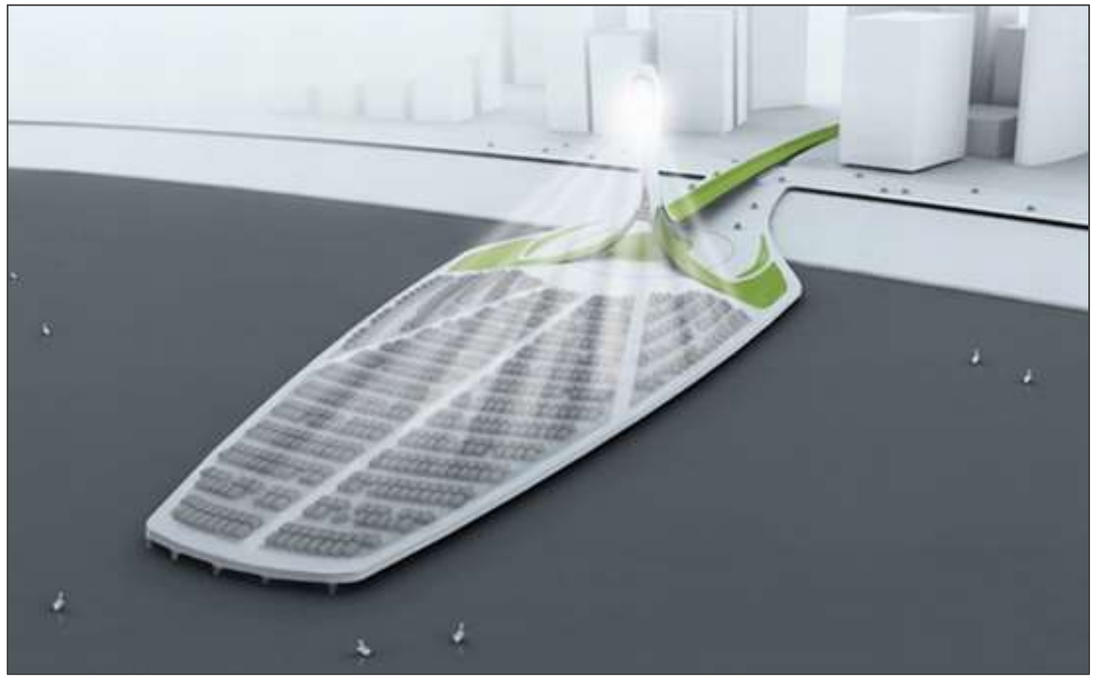
- After sensing an electric car parked, the parking system automatically starts the wireless charging process.
- Once the car's battery is full, the sensors embedded in the asphalt stop the charging process.

Designer: Nejur Andrei

More info:
www.greendiary.com

The Solasis Light Tower:

Here is a concept offshore parking area that generates solar energy to recharge electric cars and add valuable juice to the grid.



ex.

» This proposed renewable energy generating parking lot is equipped with a solar power concentrating tower that uses the windshields and hoods of cars as sun tracking and concentrating mirrors.

Designer: Klaud Wasiak and Yongbang Ho

More info:
www.greendiary.com

90 Degrees Vertical Parking System:

The 90 degrees vertical parking system, one-of-a-kind parking concept parks your car vertically.

ex.

- While you tuck your vehicles into the parking lot, the panels on the flip-side use solar panels to energize electric vehicle batteries.
- Along with power generation, the unique system allows three cars to park vertically where normally a single car is parked.

Designer: Baita Bueno

More info:
www.greendiary.com

Green P Parking System:

The concept is based on the decentralization of parking systems into many smaller spots that can be placed in unused spaces such as under flyovers and bridges.

ex.

» The Green P system also includes a lighting system that can replace or supplement ordinary road lights by charging them with solar energy generated by panels installed on the Green P's roof.

Designers: Algis Berziunas and Laima Rimkute

More info:

www.greendiary.com

Energy Efficient Vehicle – Parking Perks

Some municipalities are offering free metered parking to residents whose vehicles get 50 miles per gallon, have low emissions or are powered by an alternative fuel.

ex.

Utah already offers an income tax credit of up to $3,000 for residents who buy clean fuel vehicles and some electric hybrids.

- Salt Lake City joins New Haven, CT; Fresno, CA, Boulder & Manitou Springs, CO and Albuquerque, NM, in the free parking meter program. In the last year, Austin, Texas, also approved a green vehicle incentive that provides $100 in free parking.
- Commuters in Baltimore who use low-emissions vehicles can also buy parking passes at city-owned garages at a discounted rate.

Electric Vehicle Recharging

Electric vehicle charging stations in parking facilities is coming. Also coming is a new concept of “Networked Charging Stations” that provides unique benefits when compared to non-networked charging stations.

Coulomb Technologies

Fueling the Electric Transportation Industry

- Benefits include:
  - A revenue stream to pay for electricity, capital equipment and maintenance
  - Ability for drivers to find unoccupied charging stations via web-enabled cell phones
  - Notification by SMS or email when charging is complete
  - Authenticated access to eliminate energy theft
  - Green House Gas savings calculation per driver and per fleet
  - Authorized energizing for safety
  - Remote monitoring and diagnostics for superior quality of service
  - Fleet vehicle management
  - Smart Grid load management

Monthly Parking – Unbundled!

Boulder's 20 Day Punch Card is…

- Convenient: Valid in all 5 City of Boulder parking garages.
- Affordable: 20 days of parking for only $200 ($10/day).
- Available: No wait list!

ex.

- Flexible: Only pay for days you drive! Great option for anyone who works in downtown a few days a week, utilizes alternative commuting modes or who is on the wait list for a garage permit.
  - Intent: Options, options, options! Our intent is to offer more options. It was designed for long term parking (parking all day not leaving, maybe 8-10 hours) in our garages for people who do not have a long term permit.
  - Purchase: The purchaser pays $200 and receives a plastic day pass.
  - Usage: The buyer takes a ticket at the entrance gate as a normal short term parker would and upon exit gives the entrance gate ticket and punch card to the booth attendant. The booth attendant punches the card, returns it to the customer and opens the gate for the customer to exit. The booth attendant uses a pre-programmed register key and runs the ticket through.

Hotel Parking Perk for Hybrids

Hotels are beginning to offer parking perks for guests parking hybrids or electric vehicles.

ex.

THE Fairmont BANFF SPRINGS

Parking charges are $ 33 for Valet Parking or $ 25 for Self Parking, prices effective June 1st.

As part of commitment to the environment, the Fairmont Banff Springs is pleased to offer complimentary parking to guests bringing a hybrid or electric vehicle.

» FREE PARKING FOR HYBRID CARS IN NEW YORK CITY

- Your stay in the heart of Times Square and the Broadway theater district will be exciting and relaxing knowing your parking is free. So bring you hybrid to our front door and receive complimentary parking during your stay.

Marriott

Parking Guidance Systems

In today's complex marketplace, it's highly desirable to have all available parking spaces utilized in order to maximize driver satisfaction, enhance revenues and minimize greenhouse gas emissions.

ex.

Single Space

Level Counting

Facility Counting

Way Finding

» BENEFITS

▸ Parking Guidance Systems Provide:

- Assured Parking Availability
- Reduced Pollution and Congestion
- Advanced Notification to Drivers
- Control Parking Occupancy by Facility, Level, Zone or Individual Parking Space
- Economic, Environmental & Customer Friendly

Car Share Programs

Moving downtown?

Don’t need two cars any more?

Can’t afford a car, but need one from time to time?

Car Sharing may be just what the doctor ordered!

ex.

- With Car Sharing you can rent a car for a designated period.
- Pick it up at a designated spot.
- Return it to a designated spot.
- Your access car opens & starts the car.
- Your credit card is billed.
- (No don’t even have to fill it back up!)

Portable Bike Racks

How do you handle seasonal demand peaks for bike parking?

The creative folks at the Winnipeg Parking Authority created this “portable bike rack platform”.

- The base can be picked up by fork lift.
- The bike rack proper is protected by sturdy, high visibility bollards
- It can accommodate 6 – 8 bikes in a single on-street parking space.

Parking Day is Catching On!

Park[ing] Day is a grassroots movement that is gaining momentum around the country!

Once a year, urban activists around the country convert a public parking space to a “mini park” for the day.

ex.

» Organizers call it “an opportunity for community members to engage passers-by, motorists, members of the press, city leadership and yes, even the authorities, in a rational and respectful dialogue of everything from our city’s parks and public space to the environment and allocation of land to mobility issues and local beautification projects.”


Chicago


Cincinnati


Los Angeles

Ch.
29

Parking Facility Design and Construction

LEED Certified Parking

Yes, a parking garage can achieve a LEED Platinum certification! The University of Florida's new Southwest Parking Garage Complex includes a two story building made up of transportation, parking service, public safety offices and retail.

» The University of Florida’s (UF) new $20 million Southwest Parking Garage Complex opened in September 2010.

ex.

Designed and built by the architectural firm Pierce, Goodwin, Alexander & Linville, the parking facility, which consists of a six-level, 313,000 square-foot parking garage that can accommodate up to 950 cars, along with an attached 52,000 square foot, two story building. A 12,000 square foot office building for the University is also included.

Decorative Asphalt Treatments

Traditional asphalt is popular for it's practicality, efficiency and low cost, but some find it boring and unattractive. Decorative asphalt has all the benefits, but adds the design potential of more expensive products.

IPC INTEGRATED PAVING CONCEPTS™

http://www.integratedpaving.com/

- The shopping experience doesn't start at the front door, it starts in the parking lots.
- Extend branding into the parking lot.
- Create positive 1st impressions

Eliminate Blind Corners

Improving site lines is one of the most effective means of reducing vehicular accidents in a parking structure.

- The photos to the right shows examples of how a cut out in a sheer wall improves visibility at a blind turn.
- The use of convex mirrors to improve visibility in turns or along pedestrian paths is another good example.

ex.

Entrances – Don't Hide Them!

The trend towards wrapping parking structures with retail or office uses is a positive development, however, sometimes parking entrances can become hard to find.

- This photo shows that while the parking structure may be all but invisible, the entry way can be effectively highlighted.
- The overhead signage is also supplemented with a curb mounted sign perpendicular to traffic flow to further improve visibility and wayfinding.

ex.

Illuminated Entry/Exit Signs

Illuminated entry/exit signs are important to ensure that customers know “entrances” from “exits” after dark.

ex.

- Whether illuminated from within or from external sources, this is an important safety and traffic control feature that is sometimes overlooked.
- Lighted entry/exit signs should also include illumination of clearance height information.

Lighten up!

Painting or staining the interior of parking structures is one of the best ways to improve the perception of customer safety and facility cleanliness.

Painting the underside of parking levels as well as vertical elements such as wall and columns increases lighting levels through improved reflectivity.

CANYON TONE STAIN®
PIGMENTED WATER-REPELLENT STAIN
WITH PLIOTEC® TECHNOLOGY

Technical Data & Application Instructions

PRODUCT DESCRIPTION

PHYSICAL PROPERTIES
TABLE I

BASE USES

COLORS

WARRANTY

UNITED COATINGS

ex.

- Except from Paint/Stain Specification:
- Provide paint system consisting of two coats of a (white) water-base penetrating stain in accordance with Manufacturers recommendations.
- Approved stain systems are as follows:
  - H & C Concrete Stain AC1W, Glidden
  - W-1, Okon Inc.
  - Canyon Tone Stain “W”, United Coatings
  - Aquastain, Tamms Industries Co.
  - Or Approved Equivalent

Nested Parking Areas

With the trend toward more mixed-uses in parking structures, the need to create segregated parking areas within garages is becoming more common. One effective tool in accomplishing this is through the use of “nested parking areas”.

ex.

- The photo to the left shows a “secured and segregated” parking area for condo owners within a larger monthly parking structure used primarily by a large downtown technology center.
- In this case, separate AVI readers were installed and the readers programmed for residents.
- A separate pedestrian access gate and “California Style” swinging gates were installed to meet security requirements.

Parking Structure Pedestrian Safety

Areas that are adjacent to high volume traffic areas or entry/exit areas sometimes need special attention to protect pedestrians.

ex.

» The glass and metal gate system pictured here is one creative and effective option to consider.

Pedestrian Ways

In areas with high level of pedestrian traffic with parking garages, created protected pedestrian ways is a parking structure design best practice.

ex.

- Although this option adds cost, it is an extremely positive customer amenity and an effective safety enhancement.
- Care must be taken to ensure that ADA design parameters are taken into consideration.
- A 44” minimum is required if the access aisle is used as a “means of egress”, 36” if not.

Maximizing Parking Capacity

In some environments there are peak parking demand periods that will require special efforts to accommodate all your customers.

ex.

- At the Hotel Del Coronado, a special parking row behind the standard parking configuration allows them to add an additional 10% capacity to the normal self parking lot.
- During peak demand periods, they will shift to a valet stack operations mode.

Transitional Lighting

Transitional lighting (additional lighting provided at facility entrances) is both practical and an important safety feature in parking structures.

ex.

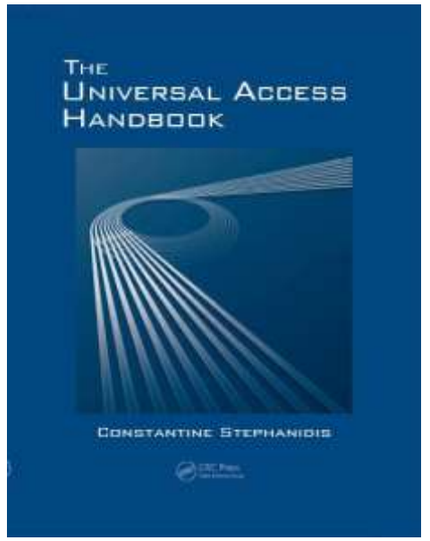
- The Illuminating Engineering Society of North America recommends a minimum of 50 foot candles for transitional lighting at parking facility entrances.
- Transitional lighting helps driver's eyes adjust from bright exterior conditions when entering the relatively dark conditions within a parking deck.

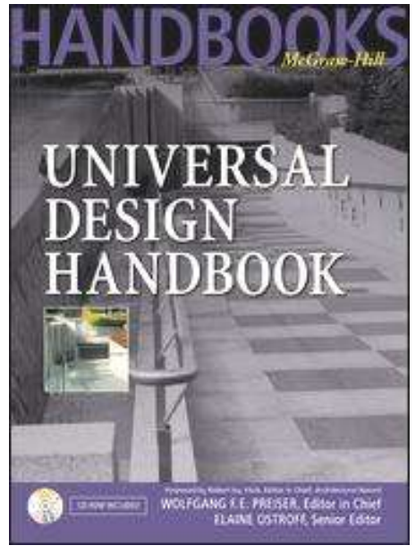
Universal Design

Universal design practices strive to eliminate accessibility issues through the incorporation of barrier free design strategies.

- Hands free parking through AVI systems is a non-traditional example of a universal design application.
- Other examples include, pay-by cell phone for on-street parking, audible cross-walk signals, voice activated elevator cabs, etc.

ex.





Parking Space Availability Signage

Single space monitoring systems with parking guidance signage make parking in large complex parking garages more user friendly.

These systems are being deployed in retail, airport, theme park and university environments.

- Baltimore Washington and Seatac International Airports were among the pioneers of this technology.
- Westfield mall at Century City installed an advanced parking guidance system in their large 2000 space below grade garage.

ex.

Creative External Architectural Treatments

To reinvigorate urban environments, some old parking garages are getting some interesting face-lifts!

ex.

Creative External Architectural Treatments

This award winning design shows just how far some architects will go in adapting their design to nature of the larger project.

This “Library Parking Garage” in Kansa City won an IPI Award of Excellence”

ex.

Securing Ground Level

Restricting the number of access points is a parking facility design security best practice.

This photo shows that the goal of securing the ground floor can be done in an tasteful and attractive manner.

ex.

Alternative Garage "Skin Treatments"

One alternative to traditional pre-cast concrete panels are metal panels.

Potential Advantages Include:

- » Greater openness
- » Cost savings
- » Attractive look

ex.

Specialized Parking Facility Types

Consolidated Rental Car Facilities

Some of the largest, most advanced and well designed parking facilities in the country today are Consolidate Rental Car Facilities supporting major airports.

ex.

- These facilities are multi-modal hubs, many are integrated with light rail or monorail systems.
- These facilities often times show the true potential for parking facilities “interior environment enhancements” as illustrated in the photo below.

Specialized Canopy Structures

While technically not a parking facility, the Helios House in LA is a great example of creative architectural treatments for canopies covering automobile related uses.

ex.

» This structure's visually arresting geometric construct is largely maintenance free non-rusting aluminum alloy.

Intermodal Parking and Transportation Facilities

These facilities are typically hubs for multiple forms of transportation including rail, bus, taxi and parking. By centralizing these services to one location, passengers are able to access their preferred means of transportation more easily. Passenger comfort and safety is also with the construction of an interior lobby and designated pick-up/drop-off areas out of the way of traffic.

ex.

» In addition, businesses located near these facilities are more visible and accessible to customers. This facility will also help make downtown more pedestrian-friendly and increase foot traffic to local businesses.

Airport Parking Garages

While airport parking garages come in many forms, there are some basic design criteria that tend to show up in airport parking facilities due to their basic functional needs.

» Some of these features include”

- Helical ramps to move large volumes of vehicles in short periods of time.
- A predominance of flat –floors to better serve customers with luggage.
- Large facilities requiring good wayfinding.
- Integration of light wells or other features to break up large facilities and provide orientation.
- External exit toll plazas
- Integrated multi-modal transportation elements
- Advanced access and revenue control systems

ex.

Mixed-Use Facilities

What is a mixed use facility? Simply a building or group of buildings in which you can work, shop and live. The integration of parking either in a “wrapped”, “stacked” or below grade fashion (or some combination) is common.

ex.

» Of course you’ll still want to get away from time to time to visit friends, explore cultural venues and take vacations but for these a rental through a “car sharing” system might make more sense. Proximity to transit and the addition of community bicycle programs is increasing commute options.

Event Parking Facilities

Some parking facilities may be designed primarily for office parking, but with an awareness that they will be used for special events as well.

Event parking requires a another level of planning and design to accommodate the acceptance of up-front payment and peak egress traffic flow.

ex.

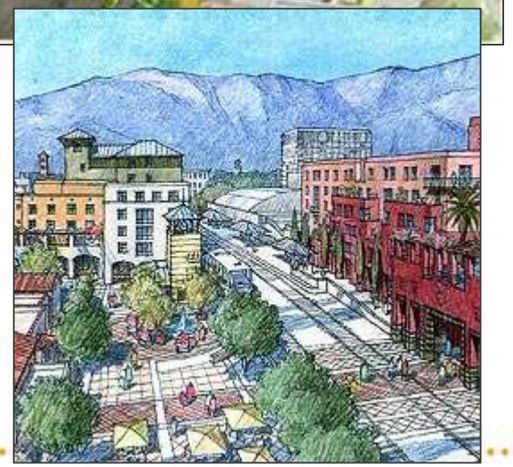
» Double-threaded helix circulation systems with separate up-bound and down-bound traffic patterns are common to expedite the high traffic volumes.

Transit Oriented Development Parking Facilities

The "new urban village" concepts designed around a rail/transit stop offers a picture of the emerging preferred urban development land-use type of the near future.

These “transit oriented developments” are characterized by relatively dense development patterns, strong permanent transportation elements that will support a “live/work/learn/play” environment.

ex. » While some parking is generally provided in tends to be less in overall numbers, provided in structures and supported by multiple transport options.



Temporary Parking Structures

There are temporary, modular, one deck car park systems designed to virtually double the capacity of an existing or new surface area, by use of a free-standing deck installed in the short amount of time with minimal site disruption.

Pre-fabricated elements are installed on the surface without traditionally excavated foundations.

The finished structure can be disassembled and 100% re-assembled on another site in different configurations.

In many cases installation can be phased to retain spaces for an ongoing parking operation and its revenue stream.

ex.

» For environments where major design decisions are in flux, or an immediate loss of existing parking needs to be mitigated this temporary modular parking deck option has distinct advantages.

Ch.
31

Automated Parking Facilities

High Density Vehicle Storage

There are products designed to meet higher-density parking requirements by providing more efficient space utilization through a variety of vehicle storage and retrieval options, from attended systems (valet) to fully automatic systems that require no human intervention.

ex.

» BENEFITS

- Designed or retrofitted in accordance with client specifications
- Cost-effective and can be installed with little to no site preparation; standard garage doors, facade siding and roofs can be used to enclose all systems
- Construction periods and costs are minimized - require no ramps or drive aisles
- Beneficial floor area ratio (FAR) – Systems regarded as one level in many cities

BoomeRang
WE ENGINEER SOLUTIONS.

Mechanical Parking Structures – "Tray Systems"

Benefits of Automated Parking

- Automated Parking Saves Space
- Automated Parking systems allow vehicles to be stored without human intervention and allow for much greater vehicle density within a parking facility.
- By consuming roughly half the space of a conventional parking garage, automated parking brings value to real estate development projects in any of the following four ways:
  - » Saves Valuable Air Rights
  - » Reduces Expensive Excavation
  - » Fits More Cars
  - » Conserves Open Space

ex.

Unique Capabilities of the RoboticValet™

- » Robot lifts only the tray - nothing touches the vehicle
- » Rolls on solid concrete decks (new or retrofit)
- » Easy to maintain over long lifecycle
- » Moves underneath vehicles from any side
- » Transports vehicles in any direction
- » Rotates vehicles without a turntable
- » Lifts payloads up to ~7,000 lbs
- » Battery operated

Boomerang Patent Pending PARKING SYSTEMS

Mechanical Parking Lift –Slide Systems”

Benefits of Automated Parking

- More efficient use of land
- Improved user security
- LEED credits available

ex.

Lift-Slide Systems

» 2 -15 levels, using hydraulic system

» 5 level using electric

» Suitable for all personal vehicles, SUVs, mini-vans, etc.)

» Semi-automatic operations

» Access card or PIN code

» Stand-alone structure or integrated into another structure

» Relocatable

» Can be configured with electric vehicle charging stations

» ISO 9001 Certified, LEED Credits and Innovative Design credits are available.

BoomeRang Patent Pending PARKING SYSTEMS

Kimley»Horn

DOWNTOWN
STRATEGIC PARKING PLAN
BEST PRACTICES TOOLBOX

Ch.
32

Parking and Economic Development

Develop a Parking Policy Geared to Support Economic Development

Some innovative parking programs that consider themselves as integral partners in overall downtown revitalization efforts have developed their overall parking policy framework to be geared toward support community and economic development.

Tempe, AZ is one such City. To the right is the overall policy framework they adopted.

ex.

Parking/Economic development Principles

- » Consider Parking as One Element of a Larger Transportation System
- » Effective Parking Resource Management
- » Define "Parking Adequacy" within the Transportation Context of Downtown
- » Create a "Proposed Development Parking Assessment Tool"
- » Maintain Shared Parking as a Core Parking Planning Element
- » Integrate Parking Planning Into the Larger "Downtown Business Strategy" Context
- » Long-Term - Build Toward a "Self-Supporting Parking Enterprise Program
- » Define a Specific Targeted "Return on Parking Investment Ratio"

Parking Benefit Districts

The establishment of "parking benefit districts" can serve as a financing tool to support improvements in downtown areas while also addressing traffic congestion and parking constraints.

Within a parking benefit district, public parking spaces (both on and off-street) are charged an hourly rate designed to keep approximately 15 percent of parking spaces vacant..

ex.

Other Key Parking District Attributes

- Funds collected from parking charges are poured directly into improvements that make the district more attractive, such as sidewalks, landscaping, and other amenities or aesthetic improvements.
- New parking meter technologies have improved customer convenience (customers can pay remotely by credit card or cell phone), increased pricing flexibility (rates can be changed in real-time based on location, time of day, day of week, or level of occupancy), reduced streetscape clutter, and reduced operating costs

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 10

On-Street Parking Technology White Paper

APPENDIX 10

White Paper: On-Street Parking Technology

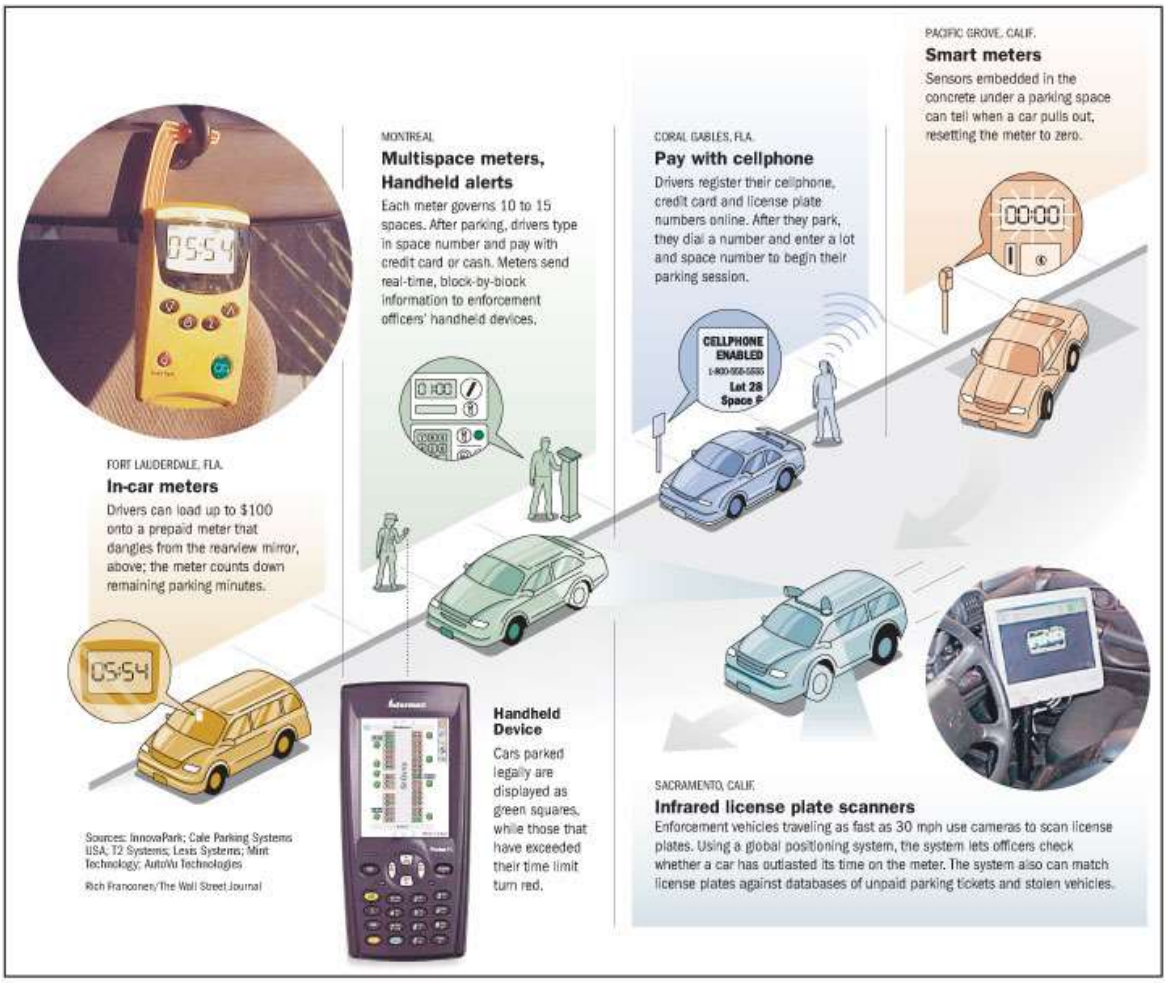
Introduction

This report provides the City of Cheyenne with a summary of current parking meter technology in use today. Our intent in providing this background information is to give you a comprehensive overview of parking meter technology as you prepare for upgrading your on-street meter program. There are many new features and applications that you should be aware of prior to finalizing you equipment RFP.

Over the past decade parking meters have evolved significantly from the traditional coin operated meters to a variety of technologies that include credit card enabled devices, centralized pay stations, and numerous payment methods including pay by cell phone, smart phone applications, in-car meters, etc.

The graphic below, which appeared in the Wall Street Journal, provides a depiction of the type and variety of both revenue control devices and enforcement technology. The following sections describe these technologies, as well as other tools in place today.

Source: Wall Street Journal



Operational Methodologies

The following sections provide a summary of current on-street parking revenue control technology devices, including Pay-by-Space Meters, Pay-and-Display Meters, Credit Card Capable Single-Space Meters, and Pay-by-License Plate Meters.

Pay-By-Space

Pay-By-Space is a multi-space meter operational methodology that has grown in popularity over the past decade. The user interface is initially more complicated, but has definite advantages that need to be considered when assessing multi-space meter selection and implementation.

EXAMPLE CITIES THAT USE PAY-BY-SPACE:

- Riverside, CA
- Atlanta, GA
- Raleigh, NC
- Tulsa, OK
- Las Vegas, NV
- Cedar Rapids, IA

This methodology first started in the off-street lots as a replacement option for manual "slot box" systems. These simple "slot box" systems allowed motorists to note the space number where they parked their vehicle, go to the "pay box or honor box", and slip in the proper payment for the amount of time desired into the slot that corresponded to the space number. This allowed the lot to be minimally monitored by the parking operator. Once the electronic version of the honor box was developed (the Pay-By-Space meter) this methodology then migrated to on-street parking where it has grown in popularity.

The basic premise of the Pay-By-Space methodology is that the motorist parks in a space, notes the space number, and proceeds to the closest multi-space meter located near their vehicle. In an on-street application, there are usually one or two machines per block face.

The motorist then operates the multi-space meter as directed by the manufacturer's instructions. Some of the newer meters have instructions right on their digital displays, giving the motorists step-by-step instructions on how to pay for their parking. They may also offer various options at the time of purchase such as the ability to add time or use coupons or special payment cards or codes. The motorist then takes their receipt and continues on to their destination (without having to return to their vehicle to display the receipt).

If all the Pay-By-Space machines are networked, the motorist could actually add more time for their space number at any meter (not just the one on the block face where they parked) as long as they did not exceed the time-limit that applied to their space. The amount of additional time allowed can be assigned on a space-by-space basis as defined in the parking policy rules of the governing agency.

Another important element of a Pay-By-Space system is the need to number each space. Some argue that this requirement defeats the use of multi-space meters to "de-clutter" the streetscape.

In some southern environments with warmer climates space numbering can be accomplished by painting space numbers on the pavement or curbs. However, in northern cities with significant snow accumulation, pole mounted signs are a requirement.

EXAMPLES OF WELL DONE PAY-BY-SPACE SIGNAGE

The above photo is from Ann Arbor, Michigan e-park program.

The photos above are from the on-street program in Milwaukee, Wisconsin. One positive element of this Pay-By-Space signage is how they incorporated the City's wayfinding signage "downtown district identifiers into the parking space signs.

Benefits of Pay-By-Space

1. The motorist does not need to return to their vehicle to display a receipt as proof of payment.
2. Enforcement can utilize handheld devices that allow the enforcement staff to note which spaces are not paid for (or generate a report from each multi-space meter), allowing them to enforce more efficiently than visually inspecting each meter.
3. Used in conjunction with in-street space sensors, occupancy data can be generated for statistical analysis projects for a given area. This data could be useful in determining actual number of vehicles that occupied a given space for a defined amount of time (i.e. a 24-hour period). The data could also aid in determining the amount of revenue collected for the space, and how much potential revenue could have been generated for that particular space, in the specified time period.
4. When the Pay-By-Space system has been networked, payment can be made anywhere within the system. The advantage being, the motorists can make additional time payments at any machine that is operational rather than just the machine near their vehicle.
5. Pay-By-Space systems can offer "pay-by-cell phone" as an option. This option works by the motorist calling a designated phone number, which requires a first time setup. Once the account is activated and tied to a credit card, the motorist pays for their space via their phone.
6. Pay-By-Space systems can also allow motorists the option to "add time" to their current parking space by using a cell phone. This feature is optional, but is seen as a real customer service enhancement. This feature can be set so the motorist cannot park longer than the time limits allow.

7. Pay-By-Space systems have been shown to increase parking revenue up to 40%. This growth in revenue is generated thru more efficient enforcement, freedom of payment (coin, bill, credit card, smart card and cell phone) and a reduction in "borrowed time" from the previous motorist.
8. Pay-By-Space systems provide a less cluttered streetscape while also reducing the amount of infrastructure that needs to be installed. Wireless operations provide standalone systems and remote access to control rates, occupancy and enforcement.
9. Reduces meter maintenance and collections costs. The wireless Pay-By-Space meter can notify you when collections or maintenance are necessary.
10. The Pay-By-Space system software can provide an audit trail both electronically and on paper to prevent theft or fraud in collections.

Disadvantages of Pay-By-Space

1. Motorists forget their space number and have to return to their vehicle to remind themselves of the space number.
2. Motorists enter the wrong space number in the machine and receive a violation. After using the wrong space number, the motorist will return to their vehicle, likely finding that they have received a citation for an expired meter even though they have paid for the parking. The motorist then will have to follow an adjudication process, showing payment to appeal the citation.
3. If the spaces are not properly marked, this can lead to problems with the overall performance of the system. Such problems as those systems in cold weather where the pavement markings or numbered sign posts will be covered by snow and ice. Confusing space signage, as in the photo to the right, would also create significant problems.
4. Regardless of what type of numbering system is used, the numbers are subject to vandalism, wear, abuse, and errors. Any or all of these can negatively affect system performance.
5. In very large cities, numbering systems can get confusing and difficult to manage as well as adding to the maintenance budget.

Pay-And-Display

EXAMPLE CITIES THAT USE PAY-AND-DISPLAY:

- San Antonio, TX
- Austin, TX
- Denver, CO
- Portland, OR
- Seattle, WA

The Pay-and-Display system has the greatest portion of market share in the US, partly because it was the first model introduced. The motorist parks, then walks to a multi-space meter operating in Pay-and-Display mode. The motorist then pays for the desired duration of parking using coin, cash, credit/debit, or smart card and receives a receipt for payment. The parking patron then returns to their vehicle and displays the receipt on the dashboard or window with the expiration time visible. The displayed receipt proves to the enforcement staff that the space has indeed been paid for through the time printed on the displayed receipt.

There are several reasons for the more widespread application of Pay-and-Display systems:

- Pay-and-Display has been in use longer than Pay-By-Space.
- Europe uses Pay-and-Display almost exclusively and only recently have they even considered Pay-By-Space.
- Pay-and-Display is favored for areas that have significant snowfall in the winter. This is because it is more problematic to keep space numbers visible (a requirement for the Pay-By-Space methodology) with snow or ice on the ground. There are also potential problems with snow removal tools accidently causing damage, or vandalism to the numbers used in a Pay-By-Space system.
- Pay-and-Display is a simpler technology to manage as an owner and use as a patron.

Benefits of Pay-and-Display:

1. Pay-and-display is a relatively simple operation, from both the motorist and the maintenance point of view. There are no space numbers to assign to spaces, less street clutter from signage and no maintenance required for space numbers.
2. In this approach, you are buying “time” not a “space”. This can be an advantage because you have what is referred to as “portability of time”. For example, if you paid for 2 hours and came back to your car after 45 minutes, you could drive to another location and park, and the receipt would still be valid for the additional 75 minutes.
3. There is also an argument that because you don’t’ have to designate specific spaces that you can actually increase the number of spaces on a block face. This would depend on a number of factors including available space, number of existing spaces, and typical vehicle space. If you consider that to gain one space you would need to add approximately 20’, there would need to be a lot of space reduction per block face.
4. Eliminates motorist confusion regarding space numbers.
5. All payment forms are available to Pay-and-Display operations, with the exception of Pay- by-Phone. The original transaction could be paid for using Pay-by-Phone systems but an interface with the machine would have to be developed to produce a receipt for display, which could be problematic.
6. Pay-and-Display systems have been shown to increase parking revenue up to 40%. This growth in revenue is generated thru more efficient enforcement and freedom of payment (coin, bill, credit card, smart card). Additionally, unmarked streets could potentially allow for greater capacity and higher revenue.
7. Pay-and-Display systems provide a less cluttered streetscape while also reducing the amount of infrastructure that needs to be installed. Wireless operations provide standalone systems and remote access to control rates, occupancy and enforcement.
8. Reduces meter maintenance and collections costs. The wireless Pay-and-Display meter can notify you when collections or maintenance is necessary.
9. The Pay-and-Display system software can provide an audit trail both electronically and on paper to prevent theft or fraud in collections.

Disadvantages of Pay-and-Display:

1. Motorists must return to the vehicle to display the printed receipt as proof of payment. This requirement is more problematic in certain environments with extremes in temperature, heat, snow and ice conditions, or extremes in topography.
2. While the use of electronic devices to issue citations is compatible in Pay-and-Display operations, visual inspection of each displayed receipt is required to determine if the vehicle is in violation.
3. Pay-by-Phone is not readily compatible with Pay-and-Display operations as there are no space numbers to associate with the vehicle.
4. With Pay-and-Display the motorist cannot add to the amount of time paid for parking without having to return to their vehicle to purchase additional time, which then has to be displayed in their vehicle.
5. Vehicle sensors and related technologies are problematic in combination with Pay-and-Display meters. Since there are no assigned space numbers (or in some cases even defined spaces) it is difficult to track parking occupancy, duration of stay and other key factors.

Credit Card Capable Single-Space Meters

A viable alternative to multi-space meters that provides many of the primary benefits (at least regarding improved customer payment options, ease of use and back-end software support) is credit card capable single-space meters. Currently, only a few vendors provide the option to retrofit current single-space meter housing with an electronic mechanism that can perform on-line credit card transactions as well as continued acceptance of coin, smart card and cell phone payments. Credit card capable single-space meters need to meet the Payment Card Industry (PCI) security standards. Credit card transactions are encrypted and authorized, and only the last four digits of each credit card number are stored within the meters for security purposes.

EXAMPLE CITIES THAT USE CREDIT CARD CAPABLE SINGLE-SPACE METERS:

- Austin, TX
- Los Angeles, CA
- Washington, DC
- San Francisco, CA
- San Diego, CA

Benefits of Credit Card Capable Single-Space Meters:

1. Because these new meters look like the conventional single-space meters that everyone knows, there is little to no special training needed.
2. Also, because they are so familiar looking, everyone intuitively knows that if you park in a space with a meter, that payment is expected (unlike with a switch to multi-space meters where the meter may be half a block away).
3. From a convenience perspective, the meter is located immediately at the head of each stall with no need to walk to a multi-space meter (and potentially back to the car to display a receipt).
4. The meters provide multiple customer payment options including electronic payment methods (i.e., credit cards, smart cards, etc.).

5. Increased credit card/smart card usage translates to reduced coin collection and handling.
6. Previous installations have demonstrated significant potential to increase the average revenue per meter by allowing for payment by credit card.
7. Improved security due to cashless transactions and reduced need for coin collection, counting and handling.
8. Reuse of existing meter bases and poles for implementation of meters.
9. Meter rates and schedules can be automatically and electronically updated to new meter heads using GIS and RFID technologies.
10. System rate programming and utilization data can be downloaded from a central location.

Disadvantages of Credit Card Capable Single-Space Meters:

1. Higher up-front cost for credit card capable meters than for conventional meters.
2. Credit card companies charge transaction fees ranging from 1-3% for large volumes and 3-6% for smaller merchants with low volumes.
3. Ongoing costs for wireless services and management system access.
4. Credit card number information could potentially be skimmed if physical access is obtained to the credit card reader's circuitry and the reader is tapped.

7Pay-by-License Plate

Pay-by-license plate is an operating methodology that has been brought from Europe to the U.S. and Canada. Rather than using space numbers, this operating method requires motorists to pay for parking by entering their license plate number (as well as parking zone, if applicable) into a multi-space meter or cell phone payment system.

EXAMPLE CITIES THAT USE PAY-BY-LICENSE PLATE:

- Washington, DC (Pilot Study)
- Pittsburgh, PA (Recently Implemented)
- Eugene, OR (Limited Implementation)
- Whistler, British Columbia, Canada
- Calgary, Alberta, Canada
- Missoula, MT (Off-Street)

While this works well in Europe, this methodology has been slower to take hold in the U.S., due to U.S. license plate numbers. Europe uses a standard license plate with straight-line numbers assigned by country. Europe does not allow vanity plates or special characters. In the U.S. the numbering systems varies by state with special plates, vanity plates, special characters and other items that complicate the entering of the "number." The success of the system will be contingent upon motorists remembering their own specific license numbers, and the ability of the system to accept specialized information.

Below are the fundamental steps in the pay-by-license plate/zone process:

1. **Vehicle parks in a zoned area**
   - Each metered space is located within a zone, with signage indicating zone numbering
   - Motorist uses multi-space meter or Pay-by-Phone option for payment
   - Motorist enters zone and license plate information
   - Motorist pays applicable parking rate
2. **License plate and payment information stored in a real-time database**
   - License Plate Recognition (LPR) equipped vehicle patrols zones
   - LPR Patrol takes digitized picture of parked vehicle's license plate
3. **License Plate Recognition Patrol Communicates with system database**
   - Database informs LPR Patrol of vehicle's payment status
   - If expired, a violation with photo, is processed and mailed to the vehicle owner
   - LPR Patrol continues route enforcement

Calgary is a great example of a successful implementation of this operating method in North America. In Calgary, the pay-by-license plate process utilizes both multi-space meters and pay-by-cell phone technology. For parking enforcement, the system incorporates a mobile License Plate Recognition (LPR) system. The LPR system allows the City to gather parking utilization data by date, time and zone. This data allows the City to better analyze parking usage, needs and enforcement patterns. Additionally, the City is able to effectively adjust parking rates to encourage short-term on-street parking while encouraging long-term parkers to utilize less expensive off-street parking facilities.

Benefits of Pay-by-License Plate:

1. Pay-by-License Plate cleans up streetscape by eliminating traditional per space meters.
2. Pay-by-License Plate eliminates the need for numbering spaces
3. Pay-by-License Plate provides the flexibility of taking your time with you to another parking space, similar to that of Pay-and-Display.
4. Reduces human error in enforcement and allows enforcement officers to patrol larger areas in less time.
5. Applicable with Pay-by-Phone integration for additional time and warnings for time expiration.
6. Versatility in payment options and locations. Pay-by-License Plate allows the motorist to pay at any location.

Disadvantages of Pay-by-License Plate:

1. Most motorists don't have their license plate memorized.
2. Requires additional License Plate Recognition equipment and software to be installed in order to assist enforcement.
3. License Plate Recognition does have a margin of error in when reading license plates.
4. Public perception of the license plate recording as a violation of privacy.
5. In cold climates with snow and ice buildup on and around the license plate can render the License Plate Recognition almost useless.

Additional Payment Technologies

The following sections provide a summary of additional payment technologies that can be used as either an add-on, or in some cases, a standalone payment method. These technologies include Pay-by-Cell Phone, Smart Cards, In-Car Metering, and one of the newest payment methodologies, Smart Phone Applications.

Pay-by-Cell Phone

EXAMPLE CITIES THAT USE PAY-BY-CELL PHONE:

- San Francisco, CA
- Washington, DC
- Albuquerque, NM
- Denver, CO
- Long Beach, CA

The Pay-by-Cell Phone system is just as it sounds – once the motorist has parked their vehicle, they then call a phone number, send a text, or use a smartphone application to begin the transaction. Once the transaction is initiated, the customer will enter the space number they're parked in and then complete the transaction. There is an initial, one-time set-up where the credit card number is matched with a phone number and a license plate of the vehicle(s) on the account. After the initial setup, the system then uses caller ID to match the user with the account or another type of account ID.

Pay-by-Cell Phone has been in use for a few years, however, the latest utilization numbers indicate that only 3% of those parking in a location that supports this technology use it on a regular basis. However, many parking professionals see this as the parking technology with the great potential going forward.

The big advantage of this type of system is the ability to "add" time remotely from your cell phone, especially in commuter lots. If the motorist, who planned to stay half an hour, decides to extend their trip for additional shopping or dining, they can call the number provided and "add" time to their parking to avoid a violation. Once the customer has paid for the maximum time allowed (per posted time limits) adding more time is not allowed.

Benefits of Pay-by-Cell Phone:

1. Eliminates the need to carry cash or coins when parking on-street
2. Warning text messages notify the motorist that their meter time is close to expiring and allows them to extend time remotely from anywhere, including a local restaurant or store.
3. Eliminates the need to stop at a meter to pay - simply identify your parking space number, dial the appropriate enforcement number and proceed to your destination at the same time.
4. Receipts can be viewed and printed online from your established Pay-by-Cell Phone account.
5. Handheld devices notify enforcement officers exactly where and when a time will expire and allows them to proactively move in that direction.

Disadvantages of Pay-by-Cell Phone:

1. Not everyone has a cell phone.
2. Requires each space to be numbered and if not properly marked this can lead to problems with the overall performance of the system. Such problems as those systems in cold weather where the pavement markings or numbered sign posts will be covered by snow and ice. Confusing space signage would also create significant problems.
3. Each motorist is required to set up an account with a credit card number linked to that account.
4. Some external companies that operate the payment processing can charge fees per transaction or apply a monthly user fee.

Smart Cards

Smart cards provide a mechanism to pay for parking (and potentially other services) with a single card. Merchants sell the smart card, and load/reload value on the cards with cash or credit/debit, similar to how a gift card works at retail stores. The Smart Card is then inserted into the parking meter and the cost of parking is deducted from the Smart Card.

EXAMPLE CITIES THAT USE SMART CARDS:

- Denver, CO
- Charleston, SC
- Boston, MA
- Des Moines, IA
- Philadelphia, PA

Benefits of Smart Cards:

1. They are very convenient for users - no need to carry coins or tokens. Some cards even utilize contactless communications.
2. Improved security due to cashless transactions and reduced need for coin collection, counting and handling.
3. Reduced vandalism because parking revenues are stored electronically instead of in coin format.
4. They can be used with other systems or as a new "stand alone" system.
5. The parking system receives payment "up front".
6. Motorists receive receipt whenever parking time is purchased.
7. Unique card numbers provide for additional features such as disallowing extra payments with the same card past the legal parking time limit, and refunding unused time back to a card.
8. Cards can be used to promote an image or brand.
9. Merchants participate in value chain "economics".
10. Pricing flexibility on rate increases.

Disadvantages of Smart Cards:

1. Value is stored in the card, and if the card is lost or stolen, the value is lost.
2. Customers must purchase cards in advance.
3. Limited locations where value can be added (if user cannot add time via cell phone or online).
4. Smart card programs are generally not economically viable unless widely utilized by a large portion of the target market.
5. There is a high implementation and operation cost for the smart card system.
6. Interoperability with other agencies' smart card systems can be challenging.
7. Smart card programming can be hacked to obtain unlimited free parking on the card.

In-Car Metering

The in-car meter allows the parking operator to sell a small metering device, which remains in the car, to a motorist. The motorist pre-pays for parking by adding time to this device, usually by taking it into a location that will "add time" to the system. In another version of in-car meters, time is added to the meter via cell phone.

EXAMPLE CITIES THAT USE IN-CAR METERING:

- Fort Lauderdale, FL
- Arlington, VA
- Miami, FL

When the motorist parks, the motorist activates the in-car meter device, which usually has a digital readout indicating that the motorist has "paid" for the parking they're using.

These devices have not caught on in large numbers throughout the U.S., but still remain a good alternative for those parking systems with a large regular or repeating customer base that would benefit from this type of device.

Benefits of In-Car Metering:

1. In-car meters can be programmed for multiple parking zones, with different rates for each zone.
2. They can be used with other systems or as a new "stand alone" system.
3. Controlled parking areas can be increased by adding in-car meters only in fringe areas with minimal capital investment.
4. They are very convenient for users - no need to carry coins or tokens, or to interface with parking revenue control equipment.
5. The system is fair - charging only for the actual time parked.
6. The parking system receives payment "up front".
7. Motorists receive receipt whenever parking time is purchased.

Example instructions for motorists (*taken from City of Fort Lauderdale, FL website*):

The SmartPark device uses a SmartCard that's loaded with a prepaid amount of parking hours. The SmartCard is inserted into the SmartPark, which is then placed inside the vehicle and displays the parking zone selected. The SmartPark unit is a one-time $55 (plus sales tax) purchase and customers must purchase the SmartCard for a one-time fee of $10. Customers can preload the SmartCar[illegible]rements of $25, $50, $75, $100, $150, $2

Disadvantages of In-Car Metering:

1. If value is stored in the device and the device is lost or stolen, the value is lost.
2. Customers must purchase meters and time in advance.
3. Limited locations where value can be added (if user cannot add time via cell phone or online).
4. Motorists may forget to turn meter on, resulting in a parking violation.
5. Motorists may forget to turn meter off, resulting in wasted parking time.
6. Meter batteries have to be replaced.

Smart Phone Applications

Similar to the pay-by-cell phone methodology described previously, the motorist is able to pay for their parking transaction using a Smart Phone application. This technology is relatively new, and is currently in limited markets. The motorist must download the application to their Smart Phone. The application could either be free or cost a nominal purchase fee (usually less than $5).

Most applications require the motorist to register online, or through their phone, prior to the first usage. The motorist will have to store a credit card on file, just like the pay-by-cell phone system. After initial registration, the motorist locates a parking meter, opens the application, and then pays for their transaction.

Some of the newer applications not only allow you to pay for parking, they also help you locate available parking. One of the early methods of this premise relied solely on its network of application users. If you were a user of this (titled OpenSpot and developed by Google), you would use your application not only to find parking, but also to notify other application users of available parking. The methodology included opening the application and indicating that you had left a spot, which notified other users of the space, and gave you "Karma Points" which indicated your level of parking generosity. While a primitive method (albeit, with a tech savvy approach) for locating parking spaces, it symbolizes that the parking public is looking for easier methods to find open spaces and reduce cruising.

Newer and more advanced applications that use either parking operator back end data or in-street sensors are able to actually provide real-time occupancy information and location of available spaces. These applications are relatively new and are being marketed as a solution for cruising and delay related to hunting for that last on-street space. These applications also let you pay for parking, and just like the pay-by-cell phone method, will provide you notifications when you are about to exceed your time and allow you to add time up to the regulated limit.

Benefits of Smart Phone Applications:

1. Provides real time information related to parking occupancy
2. Can provide turn-by-turn directions to available parking
3. Eliminates the need to carry cash or coins when parking on-street
4. Warning text messages notify the motorist that their meter time is close to expiring and allows them to extend time remotely from anywhere, including a local restaurant or retail store.
5. Eliminates the need to stop at a meter to pay - simply use your application and proceed to your destination at the same time.
6. Receipts can be viewed and printed online from your established application account.
7. Handheld devices notify enforcement officers exactly where and when a time will expire and allows them to proactively move in that direction.

Disadvantages of Smart Phone Applications:

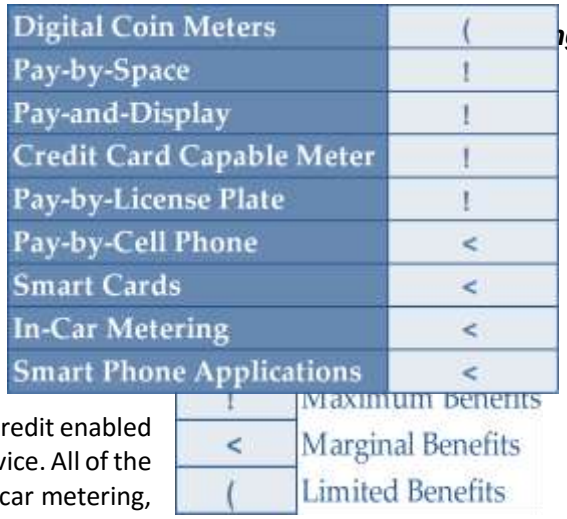
1. Not everyone has a Smart Phone.
2. If the wireless network is not operating, the application is not functional.
3. Requires user to download application to their Smart Phone, which could have a cost.
4. Requires each space to be numbered and if not properly marked this can lead to problems with the overall performance of the system. Such problems as those systems in cold weather where the pavement markings or numbered sign posts will be covered by snow and ice. Confusing space signage, as in the photo on the following page, would also create significant problems.
5. Each motorist is required to set up an account with a credit card number linked to that account.
6. Some external companies that operate the payment processing can charge fees per transaction or apply a monthly user fee.

Specific Meter Benefits

The following subsections provide a brief overview of several potential smart meter benefits, and provide a generic scoring to define how well each of the previously described meter technologies provide these benefits.

Flexible Methods of Payment

One of the primary reasons for upgrading your on-street revenue control equipment is to provide your customers with more payment options. Up until the past decade, most on-street revenue control equipment has been limited to coins, with the addition of pre-paid cards or cash keys in some instances. The newest technology allows for much more flexible payment options, including credit cards, bills, coins, smart cards, and pre-paid metering devices.



- **Credit/Debit Cards** – the use of credit/debit cards is available in all of the devices that are being evaluated for this study. Both the multi-space meter and the single-space credit enabled meter use the credit/debit card as their primary payment device. All of the other add-on payment options (pay-by-cell, smart cards, in-car metering, smart phone applications) use credit card payment to either pre-pay the transaction or pay for the transaction virtually through a pre-stored credit card.

- **Coins** – All of the on-street metering options allow for payment via coin. In some situations, cities have chosen not to allow coin payment to force motorists to pay via credit card, but this application is extremely limited, given the fact that some members of the population either prefer not to use or don't have credit/debit cards. The add-on features typically do not allow coin payment, although technically a person-to-person transaction for loading a smart card or in-car meter could be paid via coins.

- **Cash** – the use of paper money in the newer on-street revenue control equipment is fairly limited. Some meter types allow for it, but the cost of maintaining and monitoring that system is fairly high, for several reasons. First, the storage space for bills in most of these machines is small, so a heavier occurrence of bill usage would mean more collections. Second, a large occurrence of paper money stored in the machine adds the incentive for vandalism. Third, and most importantly, the use of bills creates an increased maintenance situation as the fibers from the bill tend to accumulate in the reader over time, causing jamming and malfunctioning problems. In locations with high rainfall, humidity, or snow accumulation, the moisture can also create issues with the bill acceptor and cause further jams.

- **Alternative Payment Methods** – the alternative methods described in the initial research document, including pay-by-cell phone, smart cards, in-car metering, and smart phone applications, are all compatible with the newer on-street revenue collection equipment, including both the multi-space meter and the single-space credit enabled meter.

Cleaner Streetscape

Cleaner Streetscape Benefit Rankings

Digital Coin Meters	(
Pay-by-Space	<
Pay-and-Display	!
Credit Card Capable Meter	(
Pay-by-License Plate	!
Pay-by-Cell Phone	(
Smart Cards	(
In-Car Metering	(
Smart Phone Applications	(

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

The notion of a cleaner streetscape is typically attributed to the multi-space meter devices, because they are the most likely to remove the visual and physical clutter associated with individual parking meters affixed at each parking space along a block. The notion of cleaner streetscape is an urban design initiative, with the additional street space gained from removing meter poles rededicated to pedestrian use, restaurant and retail activity, and enhanced streetscape.

The meter technology that best fits this notion is pay-and-display, which only requires the multi-space parking meter to regulate parking on the block. Under the pay-and-display system, you can even remove pavement space markings for your meters. The only installation needed in these systems is the meter itself and the appropriate signage indicating where to pay for parking.

Pay-by-license plate is similar to pay-and-display in its ability to remove clutter. Assuming that the appropriate signage is minimal, the pay-by-license plate system can be limited to the meter and signs. The pay-by-license plate system will need signage that indicates instructions for how to enter your license plate number, what particular zone you are in, and how to pay. All of this signage can be located at or on the machine, reducing much of the clutter. In regards to zone numbers, these especially need to be advertised well in conjunction with a pay-by-cell system to allow for adding time from any location in the community.

Pay-by-Space can be just as effective at de-cluttering street space through the removal of individual parking meters, assuming that climate and local conditions do not require the installation of pole mounted space numbering systems. If the space markings are able to be painted on the asphalt, curb, or both locations, you essentially remove the vertical clutter, which frees up the curb space for additional pedestrian and business use. Similar to pay-and-display (in climates with no snow accumulation) can be limited to the installation of the meter and the appropriate signage.

The single-space credit enabled meter does not reduce the visual and physical clutter, because like the current digital meter technology, the meters are placed at each parking space.

Additional add-on features don't provide much impact in the way of de-cluttering streetscape, because most are tied in with an actual metering system. Pay-by-cell phone and in-car metering have replaced actual meters in other countries, but for applications within the United States, it is still necessary to provide a physical parking meter for motorists who either don't have a cell phone, or access to an in-car metering device.

Ability to Add Time from Anywhere

One of the features of the newer revenue collection equipment is the ability to add time from anywhere in the system. For example, if a motorist parks and then visits several destinations throughout the downtown and then realizes that they are four blocks away and about to run out of time, they can go to the nearest pay station and add more time. This system only works with a pay-by-space, pay-by-license plate, or pay-by-cell phone system (including smart phone applications).

Ability to Add Time Remotely Benefit Rankings

Digital Coin Meters	(
Pay-by-Space	!
Pay-and-Display	(
Credit Card Capable Meter	(
Pay-by-License Plate	!
Pay-by-Cell Phone	!
Smart Cards	(
In-Car Metering	<
Smart Phone Applications	!

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

This feature is an added benefit for consumers and allows your downtown parking system to be more user-friendly and dynamic. For this system to be truly effective, you will need to market this feature and have appropriate signage on parking meters notifying customers. Many communities have this feature, but because it is not properly communicated, the benefit is lost on the unknowing consumer.

From a pay-by-cell phone component, this feature is typically communicated by the pay-by-cell vendor, either through online user registration or notification text messages. The ability to provide these notification texts is quickly growing as one of the primary features that downtown parkers respond to and appreciate. While this might lower the number of overtime citations written in the downtown, the positive reinforcement from downtown parkers through increased time and money spent in the downtown will offset this lost revenue.

Portability

Portability of Time Benefit Rankings

Digital Coin Meters	(
Pay-by-Space	(
Pay-and-Display	!
Credit Card Capable Meter	(
Pay-by-License Plate	<
Pay-by-Cell Phone	<
Smart Cards	(
In-Car Metering	!
Smart Phone Applications	(

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

The concept of portability of time refers to the ability of a motorist to take their remaining paid time with them when they leave the parking space. The only meter system that truly provides portability of time is the pay-and-display meter. Because the motorist is paying for a period of time, rather than a specific space, the time is transferable within the parking area (specific zones or areas may be defined). The pay-by-license plate system can also set up to be transferable, depending on the size and location of parking zones.

This feature is another added benefit for consumers, especially those who move around the downtown area frequently, such as shoppers who move from retail area to retail area, or delivery drivers. Much like the previous benefit, for the portability of time to truly be an effective benefit, there needs to be good marketing and communication of the feature so that motorists understand that they can take their time with them.

Eliminates "Borrowed Time" Transfer

One of the biggest drawbacks of the traditional single-space meter (from an operations and revenue collection point of view) is the lost revenue from "Borrowed Time". Borrowed time (or found time in the eyes of the consumer) is the remaining time on a meter, from the previous parking space inhabitant, that is utilized by a new motorist. Because of this found time, the motorist does not need to pay for a full duration of stay, because the previous motorist left them their overage.

Elimination of Borrowed Time Benefit Rankings

Digital Coin Meters	(
Pay-by-Space	!
Pay-and-Display	!
Credit Card Capable Meter	<
Pay-by-License Plate	!
Pay-by-Cell Phone	!
Smart Cards	!
In-Car Metering	!
Smart Phone Applications	!

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

All of the researched meter technologies have the ability to eliminate this borrowed time, although some need additional features to realize the full elimination of borrowed time. All of the multi-space meters eliminate borrowed time, basically by requiring the motorist to start a new transaction on that space. For example, in a pay-by-space system, the previous motorist might have left 15 minutes on their space, but the new motorist will have not been aware of this borrowed time once they start their new transaction.

In a pay-and-display system, because the previous motorist was paying for a block of time, once they leave, the next motorist has to pay for their own block of time. Pay-by-cell, pay-by-license plate, and smart phone applications are all similar in that they require the next user to begin a new transaction, essentially voiding, or zeroing out remaining time. However, the voided time is still paid for by the previous user, so there is an opportunity for the City to collect additional revenue for the overlapping time.

The only system that does not expressly eliminate borrowed time is the single-space credit capable meter. To truly zero out time or eliminate borrowed time, the single-space meter needs a vehicle sensor to notify the meter that the previous vehicle has left, which zero's out the remaining time.

Reduces Maintenance and Collection Costs

Reduced Maintenance and Collections Benefit Rankings

Digital Coin Meters	(
Pay-by-Space	!
Pay-and-Display	!
Credit Card Capable Meter	<
Pay-by-License Plate	!
Pay-by-Cell Phone	!
Smart Cards	!
In-Car Metering	<
Smart Phone Applications	!

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

All of the new technologies reduce maintenance and collections costs in some form or fashion, typically through better responsiveness to each element. Maintenance and collections are two of the highest and most frequent administrative costs associated with on-street parking management. Maintenance of the traditional on-street parking meter system usually requires either constant meter observations (including frequently checking each meter on a route) or responding to complaints and notices from motorists or enforcement officers. Collections for traditional on-street meters usually requires a collection employee following a route or a beat, collecting certain meters on certain days, whether the meter has five cents or five hundred dollars in it.

The new technologies all provide some level of improvement over these methods. For the meter technologies, each of the technology types provides better real time information to help determine when and where to deploy maintenance and collections employees. For example, both multi-space and credit card enabled single-space meter systems provide notifications when they reach a certain threshold of currency, to allow for proper collection timing. In addition, they can provide the same data about battery levels, paper availability, paper jams, and mechanical issues. This allows parking management to deploy employees in reaction to problems, rather than along maintenance or collections routes.

Additionally, the use of credit cards as a form of payment reduces the physical currency that has to be collected from meters. For example if a meter that used to hold two hundred dollars in quarters (800 coins) now has fifty percent credit card usage, the meter can go twice as long without needing to be collected. Along these same lines, pay-by-cell phone, smart cards, in-car metering, and smart phone applications all provide lower collections cost, through increased credit card usage. Additionally, these applications don't add to the wear and tear of the meters themselves, which helps reduce maintenance needs.

For the benefits ranking system noted in the table on the previous page, the single-space credit enabled meter receives a lower ranking, only because the use of this technology requires a larger number of meters, which will naturally require more maintenance for the volume of meters. However, these meters have the same capability of the multi-space meters to provide real-time input related to maintenance needs and collection times.

Eliminates "Visual Inspection" Enforcement

Under traditional on-street meter systems, enforcement officers must visually inspect or observe each parking meter to determine whether there are violations, including staying over time limits, not paying, or illegally parking. With each of the new meter technologies, there is an enhanced approach to enforcement that helps improve efficiency, and in some cases, react to violations rather than searching for them.

Eliminates "Visual Inspection" Enforcement Benefit Rankings

Digital Coin Meters	(
Pay-by-Space	!
Pay-and-Display	<
Credit Card Capable Meter	<
Pay-by-License Plate	<
Pay-by-Cell Phone	(
Smart Cards	(
In-Car Metering	(
Smart Phone Applications	(

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

For the pay-by-space system, the locating of parking violations is as easy as the enforcement officer going to the pay station, printing a report that details payment by space, and then moving to spaces in violation. This report can also be pushed to handheld devices that the officers utilize, which will improve efficiency even further, allowing officers to check compliance as the enter an area or start down a block.

The new single-space credit capable meters provide a more enhanced version of the current enforcement method – the flashing red light. In traditional on-street meter technology, when a meter is not paid, the screen flashes red, indicating either a violation or an unpaid meter. The new version of this technology uses LED lighting to indicate the violation. The concept is basically the same, but the newer version is easier to distinguish for enforcement officers, from further distances.

Pay-and-display and pay-by-license plate can both provide more advanced data related to number of paid parkers, but enforcement still requires some level of visual inspection. For pay-and-display, the enforcement officer must visually inspect each vehicle to ensure that the receipt indicates payment. With the pay-by-license plate system, the officer must visually inspect license plates, either manually, with a handheld device, or with a mobile license plate recognition system.

The add-on payment options don't provide any measurable benefits related to enforcement, because the primary source of enforcement information will still come from the parking meters.

Improved Maintenance (Pavement Markings or Signage)

Improved Signage and Pavement Marking Maintenance Benefit Rankings

Digital Coin Meters	!
Pay-by-Space	<
Pay-and-Display	<
Credit Card Capable Meter	!
Pay-by-License Plate	<
Pay-by-Cell Phone	(
Smart Cards	(
In-Car Metering	(
Smart Phone Applications	(

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

Depending upon the meter technology selected, there might be additional maintenance needs or reductions, based on the level of pavement or curb markings and signage. For example, pay-by-space technologies will require space numbering painted on the curb or a sign, which will require additional maintenance to ensure that numbers are visible and legible. Additionally, all multi-space meter equipment will require signage directing motorists to the pay station for parking. This signage usually requires posted signs at each end of the block directing motorists to the centrally located pay station, as well as a sign at the pay station identifying that as the payment location.

Single-space credit enabled meters don't require any additional signage over the current levels provided, and can actually reduce needed directions and/or signage that is posted directly on the traditional meter (i.e. time limit and regulatory stickers) by posting that information on the digital interface. The single-space meters also don't require space numbering on the pavement, even in a numbered system. The numbered system would be required due to the use of pay-by-cell phone, which would be connected to specific space numbering. With the single-space system, the space numbering can be included on the meter, or even in the digital interface.

The add-on payment options don't provide any measurable benefits related to reduced maintenance, because the primary maintenance requirements will still come from the parking meters.

Ease of Use

Ease of Use Benefit Rankings

Digital Coin Meters	!
Pay-by-Space	<
Pay-and-Display	!
Credit Card Capable Meter	!
Pay-by-License Plate	<
Pay-by-Cell Phone	!
Smart Cards	!
In-Car Metering	!
Smart Phone Applications	!

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

Ease of use measures the complexity of each technology, in terms of user interface and operations. All of the new technologies are rated fairly high in this category, because they have been designed to provide easy operations and use. The only two technologies that score marginal are pay-by-space and pay-by-license plate, because they require the user to input either a space number or license plate number, which increases the difficulty of the transaction.

Pay-and-display is widely considered the easiest multi-space meter technology, requiring the user to pay and then return the valid receipt to their vehicle. Single-space credit enabled meters are also considered to be easy to understand and operate, primarily because they are so similar to the existing technologies. Pay-by-cell phone has an initial setup that requires a little more effort on the part of the consumer, but after this setup the use and operation is as easy as a phone call or text message to initiate service. Similarly, smart phone applications simply require the push of a button to initiate parking transactions, as well as find available parking, and information about rates and restrictions.

User Walking Distance

The comparison of walking distances is based on how far each motorist must go to complete a transaction and move towards their destination. All of the technologies score fairly high in this regard, because walking is confined to the distance from the car to the meter and then from the meter to the destination.

Pay-and-display technology requires the most walking distance, requiring the user to walk to the pay station and then back to their vehicle before they can move on to their destination. Pay-by-space and pay-by-license plate requires less walking distance, but still requires the user to walk from their vehicle to a pay station and then to their destination, which may be prohibitive if the pay station and the destination are in opposing directions. The single-space credit enabled meter does not increase the existing walking distance because it is configured exactly like the traditional meter.

Walking Distance Benefit Rankings

Digital Coin Meters	!
Pay-by-Space	<
Pay-and-Display	(
Credit Card Capable Meter	!
Pay-by-License Plate	<
Pay-by-Cell Phone	!
Smart Cards	(
In-Car Metering	!
Smart Phone Applications	!

!	Maximum Benefits
<	Marginal Benefits
(	Limited Benefits

Pay-by-cell phone and smart card applications actually reduce walking distances, because the user can complete the transaction as they walk to their destination. In-car metering also does not require additional walking distances, because the parking transaction is initiated in the vehicle. Smart cards don't really have any impact on walking distance, because the user must still travel to the meter to initiate payment.

Collections and Maintenance – General Benefits

Collections and maintenance benefits are not vendor specific, but rather should be improved with the implementation of new parking machinery. Several of our previous clients have indicated to us that increased credit card usage and larger coin cashboxes have reduced the number of times the change in a meter needs to be collected. In addition, the meter technology informs parking management of which meters are approaching capacity and need to be collected, instead of making collection rounds regardless of the amount of money in the meter. As a result, collection costs have decreased since employees only have to collect money when necessary. One of the cities mentioned that their single-space meters are collected based on the fullness of the cashbox. As a result, some meters are collected weekly while others are collected monthly.

Similarly, peer cities have also indicated that maintaining the meters has become more efficient with the new parking meter technology. Maintenance personnel no longer have to learn about a meter failure from a citizen or from a parking officer. The meters send a text or email to parking management and maintenance staff when the meters have an issue, allowing maintenance personnel to track and solve maintenance issues quicker and more efficiently. However, the cities indicated that even though maintenance issues could be identified easier, this did not necessarily translate into reduced maintenance costs. Instead, the costs have been shifted to retrain staff and technicians on how to appropriately work on the new parking meters and its features. Additionally, maintenance funds also need to be set aside to pay for parts once the warranty expires. Administration costs also have been shifted with implementation of the new technology. The new technology provides data and reports that are useful to parking personnel for a number of reasons. However, personnel have to be trained on the new software associated with the data, and new field devices have to be acquired to record and access the data. Although collection and maintenance benefits are inherent with the implementation of new technology, there will be offsetting demands from staff training and operations that will lessen the implied impacts of the installation.

Secondary Features

The following section provides an initial look at some key secondary features that support the previously described technologies. The review of secondary features includes information provided by parking meter vendors as well as industry research conducted by Kimley-Horn.

Solar Power Backup

Most new parking meter technologies take advantage of solar power to enhance battery life and promote sustainable energy use within the parking system. Many communities are implementing solar powered machines as a function of reduced cost. With the addition of a self-sustaining power source, meters no longer need underground power mains, which have the potential to lower implementation costs significantly.

In the southwestern part of the country, the use of completely solar meters is more likely sustainable than in the northwest where rain and overcast skies can drain a system. However, the parking meters don't necessarily need direct sunlight to operate. Many meters are designed to operate with ambient light sources only recharging internal sealed lead acid batteries, which are capable of completely powering the machines. In the event that the panels fail and the battery voltage drops too low, the meters typically have a backup power source that they can automatically roll over to.

Many of the systems have battery lives of five to seven years, which is a stark improvement over the traditional coin meters with 9 volt alkaline batteries that expire annually. The battery type varies by vendor, but these were identified as common types by vendors: Ni-MH rechargeable battery pack, 12V DC 27 AH batteries, and 12V/54Ah battery. Because the batteries are sealed lead acid batteries, they can be recycled once the life of the battery has expired.

Real-Time Maintenance Status Capability

Many new parking meter technologies provide the ability to provide real-time maintenance status updates, either at the meter or in the parking management center. This provides a more functional maintenance program, as parking operators can react to problems as they occur, rather than when a patron discovers the problem and phones it in. There are several forms that the vendor can provide this information to the operator or client, including:

- Text and email to operators
- Management system reports
- Alarms sent to cell phone accounts, emails, or via a web portal
- A query of individual meters to determine maintenance, collections, and operation needs
- Most of this information can be accessed via the back-office software management provided by the vendor

Parking Space Detection (Sensors) and Monitoring

The use of parking space detection devices is a rather new technology that provides enhanced management and operations capabilities. These devices allow the parking operator, through wireless communications, to know when a vehicle is parked in an on-street space. This allows for better understanding and maintenance of occupancy data, more efficient enforcement, and better management of the entire system.
There are generally three types of vehicle detection devices. The first is an "above pavement" sensor that resembles a retro reflective pavement marking. This sensor is essentially glued to the pavement. The second type is "in pavement", and is often referred to as a puck because of its resemblance to a hockey puck. These devices are placed into the pavement, via a cored out section of asphalt, and when inserted, are flush with the pavement. The third type is a device that can be mounted securely to the meter pole.

All three devices provide real-time information back to the parking management center, including whether a space is occupied and whether or not the motorist has paid for their parking space. The enforcement benefits are numerous, as the officers no longer have to "chalk" tires and can actually be deployed to violations based on data provided from the devices. The devices can also be used to reset or "zero out" meters that are vacant, removing the "found time" occurrence where a motorist drives up to a paid meter.

One of the more recent uses of these devices has been patron wayfinding to on-street spaces, through the use of Smart Phone applications. The sensors can identify when a spot is empty, update an online inventory, and then push the information out through the application. This provides for less time circling for parking, as motorists can actually make an open space their end trip destination. Once at the space, the motorist then has the ability to pay for the space through the smart phone application.

Additional networking hardware is not necessary for any of these devices. Inside the sensors are electronics powered by an internal battery that can detect a vehicle parked in a space. All three devices can be integrated with other parking equipment (digital parking meters, mobile handheld devices, and ticket and payment technology) to monitor near real-time occupancy status, equipment status, violation status, and collection status. The sensors communicate to a central server over a wireless short-range radio network and cell phone-based internet connection.

<u>Benefits of Parking Space Detection</u>

1. The sensors can be integrated with other parking technologies (single-space and multi-space parking meters, handheld enforcement devices, central information servers).
2. Parking managers have the option to adjust parking rates based on demand. Where parking demand is higher and/or at higher demand times, the parking rates can be increased. Conversely, where parking demand is less, the rates can be lowered.
3. The sensors can enforce the parking meter time limit, which improves efficiency in enforcement by providing violation data to handheld devices used by enforcement officers.
4. Since the devices collect real-time occupancy status, that information can be relayed from the server to wayfinding signs or smart phone applications (discussed in greater detail in the next section) to provide motorists with the location of available parking spaces, number of available spaces, rates, and time limits. This reduces the time it takes motorists to find parking and relieves aggravation associated with finding an open parking space.

5. The devices can reset or "zero out" meters that are vacant, removing the "found time" occurrence where a motorist drives up to a paid meter.
6. Occupancy data can be generated for statistical analysis projects for a given area. This data could be useful in determining actual number of vehicles that occupied a given space for a determined amount of time (i.e. a 24-hour period). The data could also aid in determining the amount of revenue collected for the space, and how much potential revenue could have been generated for that particular space, in the determined amount of time.
7. Systems typically offer "pay-by-cell phone" as a payment option.
8. For a parking manager, these devices provide additional data that helps to understand the actual use of their parking system. This data can be used to inform policy decisions like parking rates and time restrictions. It can also be used to inform infrastructure decisions, as higher occupancy areas can be identified for additional parking capacity.

Disadvantages of Parking Space Detection

1. One of the values of the sensors, for the parking managers and motorists, is the reliability of the real-time occupancy status. The system is technologically advanced and communicates with other parking devices; therefore it must be monitored frequently to identify any glitches or failings in the relaying of information. False information can result in missing a vehicle that is illegally parking or a wrongful citation of a vehicle that is legally parked. Both of which are costly for the city.
2. The sensors have to be configured to block out "interferences" such as other cell phone traffic, underground cables, and overhead wires. This can be achieved with noise cancelling filters.

Real-time Parking Management Applications

The next generation of parking management is in the form of applications that can be accessed through the internet, smart phones, and navigation systems. Parking applications communicate with parking management servers, and link parking managers and the public to the data collected by the parking meters (multi-space and single-space meters).

The data is collected from partners at parking lots and garages, and distributed in the application. The technology is starting to offer this same service for on-street parking spaces. However, this data is reliant on cities installing vehicle detection sensors that relay near real-time parking occupancy for each space to a centralized server. The application can access the data on the server and make it available on the web, smart phones, and navigation systems. The application uses a Google maps interface to display the parking information.

Benefits of Real-time Parking Management

1. Users can view percentage of occupancy, view rates, identify parking restrictions, locate entrances to the garages or lots, make payments to the meter by cell phone, and to reserve a parking spot by paying in advance at participating garages all before they get in their vehicle. One application, soon to be rolled out in San Francisco, has the ability to warn drivers not to use the application when it is being used while driving faster than 10 miles per hour. This is to remind drivers that it is unsafe to use a cell phone while driving.
2. Allows parking managers to identify and track areas with higher parking demands and can then make improvements to the parking system based on that information.
3. Provides users with flexible payment options, such as pay-by-cell phone, and the ability to reserve parking spaces in advance, at participating locations.

4. The applications are typically free and require no software or network installations.

Disadvantages

1. The applications are reliant on available parking data collection technologies and therefore only provide information for parking lots and garages for the time being. As cities install new parking technologies that have the ability to monitor and track on-street parking occupancy in near real-time, the application will be expanded to include on-street parking occupancy as well.
2. As with other applications (i.e. traffic applications) the parking application is near real-time, meaning that parking rates and occupancies may change before they can be updated in the system. This can frustrate some drivers and give those drivers the perception that the application is unreliable.

Electric Vehicle Charging Stations

In recent years, the United States has seen an increase in the number of electric cars. In fact, President Obama announced in January 2011 a challenge to place one million electronic vehicles on the road by 2015. As the market of electronic vehicles grows, parking facilities must grow along with it to accommodate such vehicles. A number of cities across the U.S. have implemented electronic vehicle charging stations in garages, residential areas, and metered on-street parking spaces. Charging stations are similar in appearance to pay stations, except they have a cord that attaches to an electric vehicle. The stations accept credit cards and can charge two vehicles at once typically at 240V/30A (3-4 hours to fully charge a car). The cost to charge ranges depending on the city, vehicle type, length of charge, and price of electricity. Some stations are solar powered or they can draw electricity from the pay station or meter. Appropriate signage, similar to that on a pay station, should be present on a charging station to indicate payment and charging instructions, time limits, and rates. Similar to pay stations, charging stations are capable of communicating maintenance and other critical information.

Wayfinding Technology

Wayfinding technology for parking is used to direct drivers to available parking areas. The purpose of using wayfinding is to reduce vehicle miles traveled and congestion by limiting the amount of time it takes for drivers to find available parking. Wayfinding can be static or dynamic. Static wayfinding signs are positioned to direct drivers to parking areas, but do not provide further information, such as availability. Dynamic wayfinding signage uses electric messages to provide real-time parking availability as well as the location of parking. In areas with special events, the dynamic wayfinding signs are flexible and can accommodate changes in parking rates and times on those event days.

Off-street parking can utilize both static and dynamic wayfinding systems. Theses signage systems prove beneficial to off-street parking locations, because they are confined to single locations with large capacities of parking that are ideal for directing large amounts of traffic to. Additionally, it is easier to use parking space detection sensors in off-street garages and lots to monitor availability in real-time. These sensors can relay the availability information to the dynamic wayfinding system to show real-time availability for that garage or lot.

Using wayfinding technology for on-street parking is more challenging. On-street parking spaces are spread out, making it difficult to direct drivers to specific locations. The signage required to direct motorists to available parking would number in the hundreds or thousands and would create an especially clustered look in the downtown area. At this point, there are no known communities that have used dynamic wayfinding signage to provide navigation to on-street parking. The closest possible alternative is the use of GPS or smart phone applications to direct drivers on an individual basis. However, the use of on-street parking space detection sensors has yet to be thoroughly tested and proven to be effective and cost efficient.

PCI Compliance & Certification

A critical consideration in implementing multi-space meters or credit card capable single-space meters, is the need to provide data security related to credit card data. The purpose of this section of the report is to provide an overview of the Payment Card Industry (PCI) standard for ensuring credit card security. This is not an exhaustive treatise on PCI and all of the ramifications of PCI certification. However, it is important to note that under no circumstances should you, the parking system or your contracted private parking management firm, allow the operation of equipment under your control that is not PCI certified. It should also be noted that PCI certification requires verification; that is, if a vendor shows you a certificate of PCI certification you need to obtain independent verification that the certificate is valid.

PCI certification is ever evolving and will change each year – it should be noted that all vendors who are currently certified PCI compliant will have to renew their certificates. It should be a requirement that these updates be part of your standard operating procedures to minimize your liability.

PCI compliance is a complex subject affecting millions of businesses – including banks, Independent Sales Organizations (ISOs), processors, hosts, e-commerce and retail merchants and other merchant services providers.

PCI compliance is critical in terms of protecting consumers from identity theft. The Identity Theft Resource Center, a non-profit organization located in San Diego, is committed to helping victims of identity theft and to protect others from the crime. According to two studies done in July 2003 (Gartner Research and Harris Interactive), approximately 7 million people became victims of identity theft in the prior 12 months. That equals 19,178 per day or 799 per hour or 13.3 per minute. Today, the number of identity theft victims is much larger - it has increased to more than 10 million people per year. What is even more shocking is that, in 2005, at least 152 data disclosure incidents were disclosed, potentially affecting more than 57.7 million individuals.

Getting Ready for EMV

The purpose of this section is to provide an overview of the EMV1 specifications and processes. The document is intended to describe the “what” and the “why” of EMV within the context of the wider payments industry. The EMV Integrated Circuit Card Specifications for Payment Systems are global payment industry specifications that describe the requirements for interoperability between chip-based consumer payment applications and acceptance terminals to enable payment. The specifications are managed by the organization EMVCo and are expected to be rolled out in the US sometime around October of 2015. This information is being provided here because any agency looking to upgrade their technology that will utilize credit card payments, should be planning to incorporate these new payment card specifications and processing into their new system requirements.

Named after the original organization’s that created the specification, Europay, MasterCard and Visa, the EMV specifications were first published in 1996. Fourteen years later, there are now one billion active EMV chip cards used for credit and debit payment, at 15.4 million EMV acceptance terminals deployed around the world.

The distinguishing feature of EMV is that the consumer payment application is resident in a secure chip that is embedded in a plastic payment card, often referred to as a chip card or smart card, or in a personal device such as a mobile phone. The chip provides three key elements - it can store information; it can perform processing; and because it is a secure element, it is able to store secret information securely, and perform cryptographic processing. These capabilities provide the means for secure consumer payments.

In order to execute a payment, the chip must connect to a chip reader in an acceptance terminal. There are two possible means by which this physical connection may be made which are often referred to as contact or contactless. With contact, the chip must come into physical contact with the chip reader for the payment transaction to occur. With contactless, the chip must come within sufficient proximity of the reader, (a maximum of 4cm), for information to flow between the chip and the acceptance terminal. In both scenarios, the acceptance terminal provides power to the chip to enable the chip to process.

Chips that are embedded in form factors such as plastic payment cards may support only a contact interface, only a contactless interface, or both contact and contactless. Chip cards that support both contact and contactless interfaces are referred to as dual interface. When the chip is installed inside a non-card form factor, such as a mobile phone, contactless is typically the only option for connection to the acceptance terminal.

Why EMV

EMV is designed to significantly improve the security for consumer card payments by providing enabling features for reducing fraudulent payment that results from counterfeit and lost and stolen cards.

The features that are defined by EMV are as follows:

1. Authentication of the chip card to verify that the card is genuine so as to protect against counterfeit fraud for both online authorized transactions and offline transactions.

2. Risk management parameters to define the conditions under which the issuer will permit the chip card to be used and force transactions online for authorization under certain conditions such as offline limits being exceeded.
3. Digitally signing payment data for transaction integrity.
4. More robust cardholder verification to protect against lost and stolen card fraud for EMV transactions.

Counterfeit and lost and stolen card fraud represents significant cost to all participants in the payment process, including retailers, acquiring banks, card issuers and cardholders. Costs are realized through the processing of cardholder disputes, research into suspect transactions, replacement of cards that have been counterfeited or reported as lost and stolen, and eventual liability for the fraudulent payment itself. By reducing counterfeit and lost and stolen card fraud, EMV offers real benefits to retailers, acquirers, card issuers and cardholders.

For more information, the following references are provided:

1. The EMVCo web site www.emvco.com
2. EMV Integrated Circuit Card Specifications for Payment Systems, version 4.2, June 2008 (EMVCo LLC)
3. EMV Contactless Payment Specification For Payment Systems, version 2.1, September 2010 (EMVCo LLC)
4. Type Approval Process Documentation for terminals and cards available from EMVCo LLC.

EMV Security Guidelines, version 4.0, December 2010 (EMVCo LLC)

Wireless Communications

Practically all new parking meters use wireless communications to transmit data between the parking meters and the parking management center. Wireless parking meters offer many advantages over hard-wired meters, such as lower installation costs and more flexibility in the placement of the meters. Wireless communications also allow for remote monitoring of the parking meters and for real-time encrypted credit card transactions that meet PCI security standards – functionalities not possible in stand-alone parking meters. There are two primary wireless communications technology options for parking meters: cell phone technology and Wi-Fi broadband technology.

In parking meters using cell phone technology for wireless communications, the source modem inside the parking meter transmits data to a nearby cell phone tower, which then relays that data to a destination modem at the parking management center via other cell phone towers. Data can be transmitted through buildings and trees over relatively long distances between the modems and towers. Existing third-party cell phone carrier networks and towers need to be in place in order for communication to be possible between the parking meter and the parking management center. These third-party cell phone carriers (e.g., Verizon and AT&T Wireless) assess monthly fees of $3-$20/month/meter for the “airtime” used by the parking meter wireless communications. Most existing parking meters utilize cell phone technology for wireless communications because of the low initial cost and the ease of installation and maintenance of the communications network.

In parking meters using Wi-Fi broadband technology for wireless communications, the source modem inside the parking meter transmits data to a nearby router, which then relays that data to a destination modem at the parking management center via other routers and gateways. Gateways are the transition point where wireless communications are converted to wire communications (e.g., a fiber optic cable). Data can be transmitted through buildings and trees over relatively short distances between the modems and routers. Routers need a clear line of sight to be able to transmit long distances.

While both methods of communications are technically feasible, the city should be careful when making a selection to choose one alternative over the other. By utilizing the city's Wi-Fi network, a city may be placing unnecessary risk on its system by assuming PCI compliance responsibility.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 11

White Paper: License Plate Recognition

License Plate Recognition

DATA COLLECTION

WHITE PAPER SERIES

May 2014

#2 vol.

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Introduction

This is the second in a series of white papers intended to strengthen the Park+ User Group experience through enhanced education and application of modeling principles. This white paper discusses addressing ongoing data collection needs through the use of license plate recognition (LPR) technology. The Park+ model utilizes parking occupancy data as one of the primary calibration inputs. As such, the accuracy of the model depends on the ability to collect good parking occupancy data in the field. LPR technology provides a more streamlined and efficient approach in the field and also creates tabular data fields that can be input into the Park+ model easily.

History of the License Plate[1]

The use of license plates in America is older than the automobile. The first record of vehicular registration plates dates back to the 1850's, with horse drawn carriages in Philadelphia, PA requiring registration to be identified on the carriage in letters at least four inches high. The advent of the motor vehicle accelerated the use of license plates, with New York becoming the first state to require license numbers in 1901and Massachusetts becoming the first state to issue a standard statewide plate in 1903. Between that time and the 1950's, all states began to issue license plates and require a vehicular registration fee for operation on public roads; however, plate types and configurations varied widely from state to state. In 1956, license plates began to become standardized across jurisdictions, with standard plate sizes (12" x 6") dictated at the request of auto manufacturers.

In the 1930's, the license plate took on a secondary use, providing a retroreflective surface that was more easily identified at night. The first retroreflective license plate was issued in New Mexico in 1936, using glass beads embedded in the plates for retroreflectivity. The issuance became more widespread in the late 1940's, and these plates have long been endorsed by U.S. law enforcement office for improved safety through increased nighttime visibility.

Prior to World War II, most states required front and back license plates to improve the opportunity to read and identify plates from both sides of a vehicle. During the war, the practice was limited to one plate to conserve resources needed for manufacturing defense products.

TABLE 1 - STATES REQUIRING ONE LICENSE PLATE
Alabama
Arizona
Arkansas
Delaware
Florida
Georgia
Indiana
Kansas
Kentucky
Louisiana
Michigan
Mississippi
New Mexico
North Carolina
Oklahoma
Pennsylvania
South Carolina
Tennessee
West Virginia

After the war, most states returned to the dual license plate practice. However, many states are beginning to only require one plate to save manufacturing costs. Today, there are 19 states that do not require both a front and back license plate, identified in **Table 1.** Further advancements have evolved the license plate in the last 50 years, including:

- In the 1970's states began to introduce distinctive background graphics to depict their state's distinct landmarks or historical events. While attractive, they add another layer of complexity for law enforcement when trying to distinguish between jurisdictions.
- In the 1990's digital printing technology allowed manufacturers to move away from raised and embossed characters on plates and instead produce flat, digital-printed plates. These new printing processes have also increased the visibility of license plates, further distinguishing between the characters and the background graphics.
- In the near future, new technologies such as two dimensional bar codes can provide an even more legible and readable plate when combined with automated reading technology. These advancements could further enhance the readability and accuracy of both human-read and license plate recognition technologies.

These advancements in license plate technology have made it more efficient and effective to utilize license plate recognition technology to observation and record license plates. In the parking data collection realm, this provides a perfect platform to improve operations and efficiency for large areas of data collection.

[1] Best Practice Guide for Improving Automated License Plate Reader Effectiveness through Uniform License Plate Design and Manufacture" (July 2012). American Association of Motor Vehicle Administrators.

License Plate Recognition

The use of automated license plate reader systems is becoming increasingly popular throughout the world. Generally, the technology is known as license plate reader (LPR), automated license plate reader (ALPR), or automated number plate reader (ANPR), and the terms are fairly interchangeable. The technology uses image processing to identify vehicles through their license plates. Various industries, such as parking enforcement, access control systems, and law enforcement, have begun using the technology, with growth of the technology projected to be exponential over the next ten years.

A typical LPR system uses cameras to capture images of the front and/or rear of a vehicle. The images are sent through image processing software that analyzes the image and extracts license plate information (using the retroreflective properties of the license plate). In an enforcement setting, the system will use real-time database matching, which is helpful in scofflaw or stolen vehicle enforcement.

While the system seems simple enough, consistent challenges affect the accuracy of the system – jurisdictional license plate designs, varying fonts, graphic designs, cleanliness, coverings, and the presence of only one license plate to name a few. The inconsistencies can result in misreads, diminishing the effectiveness of enforcement efforts. In the data collection realm, these misreads can impact the accuracy of the data being collected. While the prevalence of misreads is unclear, some studies have shown misreads can be as high as 20%, which would severely impact the accuracy of data collection efforts.

Later in this document, we will explain how we overcome typical LPR misreads to improve data collection accuracy.

Two types of LPR units are typically available—mobile and stationary. For the purposes of this white paper, we will focus on mobile units. A mobile LPR is one that is mounted on a vehicle for the purposes of reading license plates over a large coverage area. A mobile LPR unit can include between one and four cameras, depending upon its purpose. Typical components of a mobile LPR unit include:

- Cameras for capturing images of plates
- Image processor, typically trunk mounted
- Mobile data terminal, typically mounted near the driver, which receives alerts registered from the processor

ALTERNATIVE USES FOR LPR

- Recovery of stolen vehicles
- Amber Alerts
- Open road tolling (pay by plate)
- Congestion charging
- Parking enforcement
- Access control
- Traffic studies
- Electronic vehicle registration
- Automatic speed enforcement
- Asset recovery
- Insurance fraud investigation
- On-street parking enforcement
- Travel or journey time calculations
- Security monitoring

Data from the processor can also be transmitted and/or stored in a back-office software application. The capture and transfer process typically follow these steps:

1. Detect the vehicle and license plate
2. Locate the license plate in the image
3. Extract license plate characters from the license plate background
4. Identify the license plate number
5. Determine the license plate jurisdiction
6. Transfer capture results to the back-end system

In the data collection process, these steps are performed, but only the detection of the vehicle and unique license plate are necessary for a valid observation of a parked vehicle.

When capturing images with the LPR cameras, there are typically two approaches. The first approach captures a single still image of the license plate using controlled illumination, lens settings, and field of view to optimize the read. This approach would be used to capture the best possible image of the offending plate. A second approach captures multiple images as the vehicle travels through the cameras field of view. This approach requires the system to perform adjustments to flash, shutter, and gain of the cameras, almost instantaneously as the vehicle moves.

Monochrome (black and white), color, and infrared cameras can be used, although black and white cameras tend to yield the best resolution and are generally the most cost effective. Color cameras separate characters from graphic backgrounds, which help to distinguish jurisdictions. Color cameras do not perform especially well at night due to their need for white light to produce accurate color information.

Potential Data Collection Applications

While LPR is most often used for enforcement purposes, Kimley-Horn saw an opportunity to introduce this technology in our parking studies practice (particularly Park+) as a means of automating collection efforts and improving overall accuracy and effectiveness. The remainder of this document will discuss our pilot study and subsequent investment in this technology, as well as typical data collection processes to consider as you begin to explore LPR data collection.

Prior to that discussion, here are a few data collection opportunities to consider using LPR

- **PARKING OCCUPANCY –** Use the images and information captured in the typical LPR collection process to compare number of plate reads against facility capacity to understand overall utilization.
- **PARKING DURATION/TURNOVER –** Compare license plate reads from the LPR unit against subsequent reads of the same block face or facility to understand overall parking duration. This effort will require short duration trips through a defined circuit. Many studies capture turnover or duration in increments as small as 15 minutes and as long as one hour.
- **PARKING FREQUENCY –** Use stationary LPR units to capture the frequency with which a vehicle enters a parking facility. This can be especially effective in situations where vehicles will enter and leave a facility to take advantage of free time periods (e.g., First Hour Free) by leaving and returning.
- **TRAFFIC COUNTS –** Use stationary LPR units to capture license plate information to count the number of vehicles at an intersection or on a segment of roadway.
- **ORIGIN/DESTINATION –** Use the registration information from license plates captured through stationary LPR units along a segment to understand drivers' origin points and destinations.

LPR vs Traditional Data Collection Methods

Traditional data collection methods require multiple data collection analysts in the field, either on foot or in a vehicle, manually counting and recording vehicular occupancy in a parking facility. LPR data collection allows for a more streamlined approach, typically reducing field staff required since the collection efforts become automated through roof-mounted cameras. The analysis of data is also streamlined, since the cameras offload the data into a reporting structure that allows for quick calculation of parking occupancy data, rather than returning to the office to catalogue hand-tabulated facility counts. The removal of hand tabulation inherently increases accuracy as it eliminates misreads of hand-written data. Calculating parking occupancies with the traditional method is largely manual, which increases human error and requires a more extensive review of data to ensure accuracy, increasing the hours spent analyzing and reviewing the data.

AutoVu Sharp X LPR camera

Kimley-Horn's LPR Technology

In the fall of 2013, Kimley-Horn pilot-tested and purchased AutoVu SharpX LPR cameras (and the associated LPR processing unit) to evaluate the system's potential to improve traditional data collection methods. After a successful pilot testing effort, Kimley-Horn purchased the LPR system and has used the system to collect parking occupancy data for several projects throughout the U.S.

The LPR equipment Kimley-Horn utilized to conduct data collection includes:

- Two mobile LPR cameras
- Trunk port that acts as a server and processing unit for the system
- A GPS tracker that identifies location of plate reads by address and XY coordinates
- In-unit laptop/tablet containing the following programs:
  - Patroller software
  - Security Desk software

The AutoVu Sharp X LPR cameras are positioned at a 45 degree angle to collect the varying heights and positions of license plates and for parallel and 90 degree parking.

• LPR Pilot Study

The 2013 pilot study focused on testing the use of LPR to increase efficiency and accuracy in parking data collection efforts. This evaluation was largely initiated out of the need for higher-quality data collection practices and standards for the Park+ practice. In addition, the LPR system streamlined the data collection process by reducing labor and time associated with the collection and processing of data.

Testing was conducted across two different settings. The first tested the limits of the LPR system across a variety of different "problem scenarios." The second tested accuracy in a variety of actual data collection settings. All tests were conducted by multiple Kimley-Horn employees to provide parallel manual data collection efforts, observe driving tendencies, and provide additional input on troubleshooting efforts.

The first testing types – those intended to measure problematic areas – were conducted on a small scale, typically in a handful of surface parking lots that provided a variety of lighting, access, and parking configurations. These tests were intended to evaluate the abilities of the LPR system against potentially adverse field collection scenarios. Testable factors included measuring "read accuracy" against:

- Angled parking
- Perpendicular parking
- Poorly lit garages
- Tight travel lanes
- Wide travel lanes
- Peak afternoon sun
- Shaded parking
- Variations in plate types and designs
- Driving speeds

These tests were conducted in Phoenix, Arizona. The initial test results were favorable and indicated that the equipment would perform well against the tested conditions. The predominant "misread" was found in newer plate variations and with backed-in vehicles, since Arizona does not require a front license plate. The following section presents initial findings and corresponding troubleshooting methods used in the initial data collection testing. Some of these troubleshooting elements were tested both in the initial "problem solving" phase and the subsequent field data collection testing period.

• Initial Experiences in the Field

The initial "problem testing" of the LPR system in the field provided a few observations on the LPR system's capabilities to retrieve accurate data for facility parking counts. Each of these potential pitfalls were met with troubleshooting attempts.

BACKED-IN VEHICLES – The most notable contributor that affected accuracy rates involved the presence of backed-in vehicles. In Arizona, no front plate is required, which caused an instant misread as the LPR unit is unable to capture any type of read from these vehicles. During testing, manual counts were compared against the counts of the LPR unit to evaluate the impact of backed in vehicles on vehicle count accuracy. The initial results of the data collection were less than ideal, with misreads ranging from 18 to 43 percent of vehicles in a facility, with the overwhelming majority occurring due to backed-in vehicles (discussed in greater detail in the following sections).

TROUBLESHOOTING ATTEMPT –
In an effort to offset the presence of backed-in vehicles, the data collection team created a process to manually count backed-in vehicles using a handheld counter. At the end of the collection process, these manually counted reads were added to the actual reads by the LPR unit and then compared to the full manual count. The hand-counted method resulted in a much more accurate reading.

NEW AND VANITY PLATE DESIGNS – During initial testing, it was observed that the cameras were unable to read newer, redesigned plates including new custom variations of Arizona plates. Based on this observation, it was determined that plates not included in the existing LPR database could impede accurate parking counts. Also, the system had difficulty capturing vanity plates, especially when traveling at an average speed of about 10 miles per hour.

TROUBLESHOOTING ATTEMPT –
Some, but not all, of these new and vanity plates were more easily read when traveling at a much lower speed. However, this low speed may not be ideal for efficient data collection. Although we were unable to account for license plate designs that are not entered into the system (i.e., the new Arizona Golden Rule plate), the LPR program allows for users to "manually capture" license plates that cameras are unable to read. This "manual capture" could be used on vanity plates, new plate designs, and obstructed plates. Additionally, this manual capture allows users to send new plate images to the system vendor, who may add this new plate into the system for future collection efforts.

LACK OF PLATE RETROREFLECTIVITY –
Throughout testing, it was observed that certain licenses plates had a form of film covering them. Some were installed purposefully as part of the license plate covering, while others were from the plate being dirty, or in some cases, being essentially disintegrated (this was most prevalent in Arizona, which faces harsh weather conditions in the summer months). It turns out that Arizona license plates come in two types, where one has raised and embossed characters and the other plate has flat digital printed characters. The embossing on the raised plates was found to most be the most likely to disintegrate, due to the Arizona sun. This strange phenomenon removed all retroreflectivity from the plate and prevented the license plate from being read by the LPR cameras.

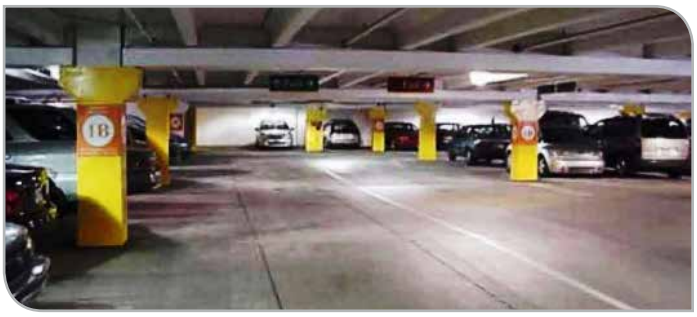
TROUBLESHOOTING ATTEMPT –
When a disintegrated Arizona plate was not captured by the cameras, attempts were made to see if lowering speeds would allow time for cameras to capture the image. In some cases, the additional time for obstructed plates allowed the cameras to capture the parked vehicle. In most cases, though, all retroreflectivity of the plate had been removed, which the system could not account for.

SUN – Glare from the sun caused misreads, especially when reflecting off metallic or other similarly shiny license plate coverings. However, this phenomenon was very rarely observed.

GEOPOSITIONING IN GARAGES – During testing, it was determined that the mobile GPS unit, which is used to track positioning of the images, could not project accurate coordinates for counts within a garage because the structure blocks the satellite connection with the unit. The results mapped garage reads anywhere from 1 foot to 1 mile away from their actual read location.

TROUBLESHOOTING ATTEMPT –
Not much can be done to improve the accuracy of GPS in garages, considering the enclosed nature of the facilities. Although disadvantageous, GPS coordinates are not absolutely critical in calculating parking occupancy counts because offload times can be used as an identifier in the collection and data analysis processes.

TURN RADIUS – When driving through a parking facility, turning radii and corner configuration of travel lanes are a potential misread point for capturing parked vehicles. When leaving one aisle and turning down another, the camera is unable to capture vehicles on the inner corner of the turn as they are too close to the vehicle and are outside of the LPR collection window.



TROUBLESHOOTING ATTEMPT –
Based on this observation, the most important step in capturing accurate data is the proper configuration of camera position and proper management of capture times. Proper configuration of the camera position is required to best capture the range in heights and positions of parked vehicle plates. This requires taking the time to calibrate, test, and recalibrate cameras until the cameras are in the most optimal position to capture plates. While the extra time needed to properly position and reposition cameras increases time spent in the field, the time proved to be beneficial as the data collected better reflected occupancies observed manually.

Managing capture times requires the user to use the pause and resume functions on the mobile computing system to set effective capture configurations. For example, three-bay garages will often require some single-side counts, which utilize only one camera, to capture a bay without double counting previous bays. The image above depicts a situation in which the right camera should be paused so that license plates in the passing aisles are not collected, as those vehicles would have already been collected when driving down that aisle. Recalibrating camera positioning and understanding when it is beneficial to use a single side of the camera system allowed data collection to reach optimal accuracy levels, rectifying most of the initial inaccuracy experienced in the field.

Although met with initial obstacles in reaching ideal accuracy rates in parking occupancy rates, the troubleshooting processes improved overall accuracy and efficiency in data collection, supporting the belief that the LPR system provides a greater benefit to the data collection process when compared to traditional collection methods. The results were sufficiently favorable for us to proceed to the second phase of testing – actual field data collection within a large area. The results of the field data collection tests are detailed in the following section.

• Field Data Collection Tests

To simulate settings that would be experienced during actual parking data collection, employees went into the field for three to five hours to capture parking occupancy rates in surface lots, garages, and on-street settings. These tests were conducted within surface lots and parking garages in a number of different locations including Tempe, AZ; Fort Collins, CO; Houston, TX; and Beverly Hills, CA. The first two sites were used to test the accuracy of the system. The second two sites were used to test the transferability of the system, including ease of remote calibration and ease of training additional users in the field.

For the test which evaluated the accuracy of the system manual counts and LPR counts were collected in parallel to identify disparities between the two data sets. These disparities indicate limitations in the LPR collection capabilities. The first series of accuracy tests were conducted on August 16 in Fort, Collins, Colorado, at the Colorado State University campus. The second series of tests were conducted on August 20 in Tempe, Arizona. The final series of accuracy tests were conducted on August 26, again in Tempe. The following tables detail the findings of each test.

TABLE 1 - STATES REQUIRING ONE LICENSE PLATE

FACILITY TYPE	MANUAL COUNT	LPR	% DIFFERENCE
Surface	86	72	16%
Surface	41	41	0%
Surface	27	20	26%
Surface	100	93	7%
On-Street	42	35	17%
Surface	201	172	14%
On-Street	21	22	5%
Garage	137	121	12%
Garage	151	123	19%
Surface	83	61	27%
Surface	83	75	10%
Surface	79	77	3%
Surface	73	69	5%
Garage	158	158	0%
Surface	173	162	6%
Surface	193	172	11%
Garage	146	138	5%
AVERAGE MISREAD % PER FACILITY			**10%**

The testing at Fort Collins was the first in-field data collection using the LPR data collection, and the results were mixed as to the overall accuracy of the system. While certain lots saw accuracy rates within five to ten percent of actual observed occupancies, the overall average misread was 10 percent. A closer look at the results indicates that the accuracy of the readings improved during the data collection, largely due to repositioning and recalibrating the equipment mid-collection. This proved to be one of the first effective lessons – camera position and calibration are critical to the success of the data collection efforts.

The **second test** was conducted for a series of surface parking lots and parking garages within Downtown Tempe, Arizona – a state that does not require front license plates. For this test, the data collection team performed a manual count parallel with the LPR counts for comparison. When comparing LPR and manual data in the field, the

difference between LPR and manual counts was high and unacceptable, indicating that the testing setup was not accurate enough to predict overall parking occupancy. It was realized that backed in vehicles severely impacted the collection of accurate parking, and was likely the biggest obstacle to accurate data gathering using the LPR system. On the final few facility passes, the data collection team attempted to manually count the backed in-vehicles after completing the overall count. The number of backed-in vehicles was almost exactly the delta between the LPR counts and manual counts.

The **third test** was conducted in Downtown Tempe, Arizona, within three parking garages and a number of surface lots, similar to those found in Test 2. One step that differs largely from Test 2 was that manual counts were conducted for backed-in vehicles, and the results were included with the automated LPR reads to better reflect the total number of vehicles in the facility. Similar to the previous tests, manual counts of all vehicles in the facility were collected for comparison purposes. The combination of LPR and manual counts for backed-in vehicles decreased misreads to a total of five percent of the manually counted total. In a few instances, LPR counts were greater than manual counts, such as in the City Hall Garage Test 3. This higher difference was a result of the LPR unit catching reflective objects, such as wall-mounted signs. Even with these misreads, the low percentage that impacts the overall accuracy of the facility is normalized among the greater data collection efforts, and the data collection team decided it was not a significant hindrance to overall accuracy of the system.

TEST 2 – TEMPE, ARIZONA – DOWNTOWN TEMPE

**It should be noted that Colorado requires both front and back license plates, which greatly improved the accuracy of the initial testing session.*

FACILITY	TEST	MANUAL COUNT EXCLUDING BACKED-IN VEHICLES	LPR	% DIFFERENCE
US Airways Garage	Test 1	1206	929	23%
	Test 2	1138	826	27%
Hayden Square	Test 1	172	101	41%
	Test 2	152	86	43%
City Hall Garage	Test 1	245	160	35%
	Test 2	217	145	33%
Brickyard Garage	Test 1	170	138	19%
	Test 2	159	101	36%
Surface Lots	Test 1	78	61	22%
	Test 2	54	42	22%
Centerpoint Garage	Test 1	733	468	36%
	Test 2	598	417	30%
Farmer Lot	Test 1	55	45	18%
	Test 2	51	40	22%
AVERAGE MISREAD % PER FACILITY				29%

TEST 3 – TEMPE, ARIZONA – DOWNTOWN TEMPE

FACILITY	TEST	MANUAL COUNT INCLUDING BACKED-IN VEHICLES	LPR	% DIFFERENCE
City Hall Garage	Test 1	239	229	4%
	Test 2	239	229	4%
	Test 3	216	219	1%
Centerpoint Garage	Test 1	674	611	9%
Brickyard Garage	Test 1	173	160	8%
Surface Lots	Test 1	254	258	2%
AVERAGE MISREAD % PER FACILITY				5%

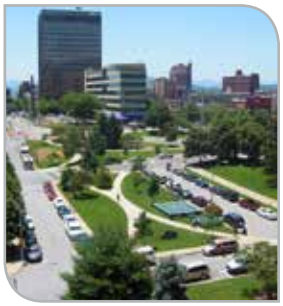
After completing the detailed testing in Tempe, Arizona, the data collection team took the equipment on the road for testing in remote sites, primarily to test the ability to calibrate in the field on the fly, as well as train non-familiar users with the equipment. The first such test took place in Houston, Texas, in the Rice Village area. During this test, one Kimley-Horn employee and one City of Houston employee alternated the driving and collection positions to determine the variability in collection techniques. The testing also included a complete tear down and reassembly of LPR equipment in the field to determine any impacts to accuracy. Based on the recorded LPR counts and the observed data, the presence of misreads was between five and ten percent of total counts.

Similar tests were conducted in Beverly Hills, California. In these tests, Kimley-Horn employees performed brief training for city parking staff and then helped them assemble the LPR unit onto the enforcement vehicle. Under this test, on-street parking observations were evaluated. Through several phases or iterations of a predetermined route, the staff member was instructed to drive with one camera on, both cameras on, and alternating between cameras. The results were then transferred back to the Kimley-Horn office in Phoenix for review. The results indicated that the on-street routing with one camera was the most accurate and provided the best level of detail for parked vehicles on the curb side. When operating with both cameras, the camera on the traffic side of the vehicle recorded passing vehicles, which created disturbances in the counts and lowered the overall accuracy.

• Additional Field Data Collection Efforts

After completion of the pilot testing period and purchase of the equipment, Kimley-Horn has continued to use the LPR unit to enhance data collection techniques in communities throughout the country. Most of these efforts are in support of the Park+ modeling process, but some are simply to provide quality data to help strengthen parking planning processes. A few examples of these efforts include:

- **ATLANTA, GA –** LPR data collection was conducted over a three-day period in 37 surface lots and garages in Downtown Atlanta, amounting to 8,200 spaces. The results of the data collection effort and parking occupancy calculations provided a better understanding of parking demand in Downtown parking facilities.



- **ASHEVILLE, NC –** Parking counts were collected over a ten-hour period in 51 of Downtown Asheville's parking facilities, amounting to a total of 5,568 spaces. The parking occupancies calculated as a result of this data collection effort were utilized to update Asheville's Park+ model. The updated occupancy data included in the model better reflect the current parking demands of the Downtown area, which can then be utilized to inform management decisions regarding provision of parking.

- **TEMPE, AZ –** LPR data collection was conducted in Downtown Tempe to determine occupancy and identify parking demand in Downtown facilities. Data was collected in one day from 7:00AM to 5:00PM, surveying 12,756 spaces in 89 parking facilities. The occupancy data collected provided the basis for developing the Downtown Tempe Park+ model.

Data Collection Processes and Procedures

Now that we have covered the why and what of data collection using LPR, we would like to conclude with a brief primer on how to collect the data. Many of these elements are covered throughout the paper, but this section provides a typical work flow for conducting LPR data collection.

In general, the following steps should be considered when collected parking occupancy data with an LPR unit.

1. **PRE-PLAN DATA COLLECTION EFFORTS IN THE OFFICE –** Prior to going into the field, the data collector should determine the key elements of the collection process, including routing, collection time periods, facilities to count, and known facility capacities. If necessary, the collector should also prepare notifications of data collection, either pre-delivered or carried in the vehicle, to help interested parties understand the process and needs associated with the data collection efforts.
2. **SET UP EQUIPMENT –** If your system is like Kimley-Horn's, you will need to position cameras on the roof of the car and set up processing equipment. For most communities that use LPR units for enforcement efforts, this step can be skipped as the equipment will be permanently mounted on the vehicle.
3. **CALIBRATE –** Use the in-vehicle computing system to test the positioning of the cameras to ensure a proper mount. If needed, perform a small area test to determine the accuracy of the system. If the potential misreads are too high, reposition cameras for optimal license plate reads.
4. **PERFORM FACILITY-BY-FACILITY DATA COLLECTION –** Based on the predetermined routing and facilities to collect, the collector should begin data collection and follow the assigned route to ensure that timing of counts is comparable between hourly reads. After completing the counts within a facility, the collector should offload the LPR counts, which will send the reads from that facility back to the vendor's database for use in reporting. The collector should also manually document the offload timestamp, as well as manual counts of backed-in vehicles. Following this method, the collector should complete the daily cycle of data collection (based on predefined collection times).
5. Once the collector is back in the office, they should use the vendor's back-end system software to create reports that document offload time and plate reads. This combination of offload times and plate reads will be used to define facility occupancy for each cycle of data collection. Once the reports are created, they can be offloaded to a tabular format (e.g., .xls or .csv file formats), which will be input into a custom database that sorts and reads the offload times. The collector will need to manually input the documented offload times and facility capacities in the database. This is defined further in the following section.
6. Once the data is in the database, the collector can push the data through a pivot table that will provide the hourly occupancy counts for each facility.

These six steps represent the primary steps associated with the data collection. Following those steps should provide the collector with the basic framework for completing LPR data collection. However, based on our experiences in the field, we offer the following lessons learned to help strengthen each of the elements of the process, including Pre-Planning, In the Field, and Back at the Office.

PRE-PLANNING[2]

- Identify which facilities you are interested in collecting parking occupancy data for and for what period of time
- Determine the parking capacity for those facilities
- Create tables to use in the field that include the facility name and a placeholder to write down offload timestamps
- Print a spreadsheet for each hour of data collection
- Plan the most efficient route before collecting data at each facility. This includes determining the locations of any one-way streets and construction zones.
- Drive the route prior to conducting data collection to circumvent any additional obstacles not previously realized.

[2] It is assumed that users of the LPR system have a permanently mounted unit, rather than a mobile LPR unit that needs to be set up prior to each data collection effort

- Does the state in which you are collecting only require a rear license plate? In states that require only a rear license plate, it will be necessary to manually count vehicles that are backed into a parking space, typically using a handheld counter to do so.
- Would the study area environment require a letter from the city to enter some parking facilities? Although most parking facility employees are only curious about the LPR system, some prohibit vehicles with LPR cameras from entering due to preconceived notions of the system's purpose (i.e., enforcement or collection of private license plate data). It may be necessary to obtain a signed letter from the city to communicate that our only purpose is to collect parking occupancy information.

IN THE FIELD

- Carefully drive through the facility, making sure the vehicle is located in the center of the aisle to ensure all plates are captured
  - With 12' LPR cameras, the vehicle must be located in the center of the aisle to capture license plates on the right side of the vehicle.
- Maneuver through the aisles, turning the cameras on and off to ensure cars are not counted twice
- If a front license plate is not required where you are collecting data, manually count the backed-in vehicles using a handheld counter
- After exiting a facility, offload the information into the LPR software to determine how many "reads" or how many cars were in the facility at that time. Write down the offload time and the number of backed-in vehicles counted, if necessary.
- Repeat these steps for each facility for each hour of data collection.

BACK AT THE OFFICE

- Generate a report from the vendor's software for the applicable hours of data collection.
  - The report is generated in the form of an Excel spreadsheet that lists every license plate read for that period of data collection.
- Using a pivot table to mine the LPR data, the number of reads for each hour for each facility is added to identify how many vehicles were in each facility for each hour.
- The number of vehicles in a facility is divided by the facility's capacity, generating an occupancy percentage and displaying that information in a user-friendly format

GENERATE THE REPORT

Once the report is generated, Security Center displays the GPS coordinates of the "reads" on a map, which visually represent where data was collected and where reads or vehicles are concentrated. The points on the map are clickable, and once clicked, will display the image of the license plate, and characteristics of that specific read including when that plate was captured. The Security Desk software allows the user to draw a rectangle around a specific area, and regenerate a report to show the number of reads in that region alone. As a reminder, the accuracy of geospatial coordinate reads is typically compromised when generated inside a garage parking facility.

Reporting

After data collection is complete, the information is offloaded to Security Desk[3], the data management program that accompanies the LPR system. Security Desk creates reports of the reads captured during data collection. Reports can be generated for a specific date and time or by a general range of days (e.g., reads in the past 8 days). When the report is modified to meet the user's specific data, time, and place inputs, it can then be exported to an Excel file.

[3] LPR software and reporting capabilities may differ from that used by Kimley-Horn and therefore an evaluation of otherLPR software reporting processes may be necessary to identify the most appropriate data mining methods

The resulting Excel document is a robust spreadsheet that identifies information related to each read captured during data collection, including:

- Plate images
- Event timestamp (the time the plate was captured)
- Latitude and longitude coordinates of the read
- Offload timestamp (the time the data was sent to Security Desk)
- License plate numbers

	A	B	C	D	E	F	G	H
1	Plate image	Context image	Event timestamp	Manual capture	Latitude	Longitude	Offload timestamp	Plate read
2			10/8/2013 9:42:38 AM	False	0	0	10/8/2013 9:52:07 AM	BVN1244
3			10/8/2013 9:42:39 AM	False	0	0	10/8/2013 9:52:07 AM	958YRV
4			10/8/2013 9:42:40 AM	False	0	0	10/8/2013 9:52:07 AM	281TFS
5			10/8/2013 9:42:40 AM	False	0	0	10/8/2013 9:52:07 AM	KEC9068
6			10/8/2013 9:42:41 AM	False	0	0	10/8/2013 9:52:07 AM	BIP6363
7			10/8/2013 9:42:42 AM	False	0	0	10/8/2013 9:52:08 AM	8PWB102
8			10/8/2013 9:42:42 AM	False	0	0	10/8/2013 9:52:08 AM	AQ818A
9			10/8/2013 9:42:43 AM	False	0	0	10/8/2013 9:52:08 AM	8UJ636

Modifying the Reporting Process

The report created by the Security Desk software provides detailed information related to the license plate reads captured during data collection. The typical default reports do not provide much detail in relation to vehicular occupancy, as they are configured to provide information about the license plate reads observed during the collection process. However, after evaluating the reporting capability of the software program, Kimley-Horn determined that creating reports grouped by capture time or offload time will yield the best results, especially when compared to ingress and egress times from the observed parking facility. These reports are linked with a unique Microsoft Excel workbook that Kimley-Horn created specifically for the purpose of evaluating LPR offloads.

Offload timestamp	Facility
11/20/2013 8:56:56 AM	A8
11/20/2013 9:09:31 AM	B6
11/20/2013 9:26:10 AM	B8
11/20/2013 9:38:00 AM	B9
11/20/2013 9:39:39 AM	C1
11/20/2013 9:46:11 AM	D1
11/20/2013 10:01:51 AM	D2
11/20/2013 10:03:10 AM	E1
11/20/2013 10:07:18 AM	E2
11/20/2013 10:11:01 AM	E6
11/20/2013 10:13:23 AM	E7
11/20/2013 10:28:09 AM	COURT
11/20/2013 10:33:15 AM	G4
11/20/2013 10:50:51 AM	H3
11/20/2013 10:58:27 AM	I9
11/20/2013 11:04:09 AM	I14
11/20/2013 11:10:59 AM	I2
11/20/2013 11:12:44 AM	I2A
11/20/2013 11:15:54 AM	J3
11/20/2013 11:17:33 AM	J1
11/20/2013 9:57:41 AM	COURTHOUSE

For Kimley-Horn data collectors, the process for capturing accurate data reads includes using offload time stamps in the field to catalogue the entry and exit from each facility. The automated reads captured within each parking facility are offloaded immediately after exiting the facility. These offload timestamps are used to identify the groups of plate reads within that facility. All reads with the same offload timestamp are grouped and considered to represent the same facility.

Row Labels	Sum of Capacity
A1	29
A10	121
A11	15
A12	16
A2	25
A3	169
A4	16
A5	8
A6	15
A7	25
A8	85
A9	52
B1	42
B10	15
B11	50
B12	182
B13	20
B14	10
B15	15
B16	14
B17	44
B18	26
B19	178

A separate table was created on another sheet within the workbook to identify the capacity for each parking facility. These capacities are used to define the denominator in the parking occupancy calculation for each hour of data collection. The labels within this table correspond back to a designated naming convention for the parking facilities within the study area.

In the event that the location for collection is in one of the states that do not require both front and back license plates, another sheet provides a location for the data collector to input the manual counts from each facility observation. These manual counts would have been hand collected in the field and described by the facility location and the offload time.

The final step in the analysis process is to push the LPR counts through a pivot table that combines the manual counts and the capacities and sorts the data by hour to provide an hourly occupancy table. This hourly occupancy table provides measured occupancy levels for each individual facility during the day. Because our process was intended to provide an easily updatable data source for our Park+ model, the final output tables are set up to easily transfer to ArcGIS for joining and transferring data into the parking shapefile within a community's Park+ model.

% Cap	xc Event D	xc Event H								
	11/20/2013									
Facility	9:00 AM	10:00 AM	11:00 AM	12:00 PM	1:00 PM	2:00 PM	3:00 PM	4:00 PM	5:00 PM	6:00 PM	7:00 PM
B2	47%		72%		51%					89%	
B3	61%		60%			69%		54%		95%	
B4	44%		50%			50%		93%			
B6	28%		77%		71%			59%	48%		
B7	17%		53%		63%			40%			
B8	19%		48%			57%		50%		48%	
B9	43%					55%		50%		33%	
C1	35%		50%			50%		50%		19%	
C14	55%			59%		73%		68%		59%	
C18	6%					28%		11%			
C2	12%		25%			26%		19%		11%	
C2A	14%		29%			43%		29%		50%	
C4			20%			8%		16%		52%	
C5	21%					67%		58%		60%	
C6	50%					117%		100%		67%	
C7	37%			48%		59%		48%		27%	
County Deck		67%		59%			50%		35%	5%	
D1	37%			48%		58%		67%		48%	
D2	8%	21%		26%							29%
E1		50%		80%		70%			109%	98%	
E2		104%		84%		58%				81%	
E3		8%		36%		13%		19%		11%	
E4		49%		16%		9%		12%			
E6		49%		44%		44%		69%		64%	
E7		88%		84%		73%		71%		39%	
E8	23%			50%		46%			43%	42%	

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 12

White Paper: Parking As An Economic Development Strategy

KIMLEY-HORN AND ASSOCIATES, INC.

Parking Planning White Paper Series

Parking AS AN Economic DEVELOPMENT STRATEGY

Kimley»Horn

Parking AS AN Economic DEVELOPMENT STRATEGY

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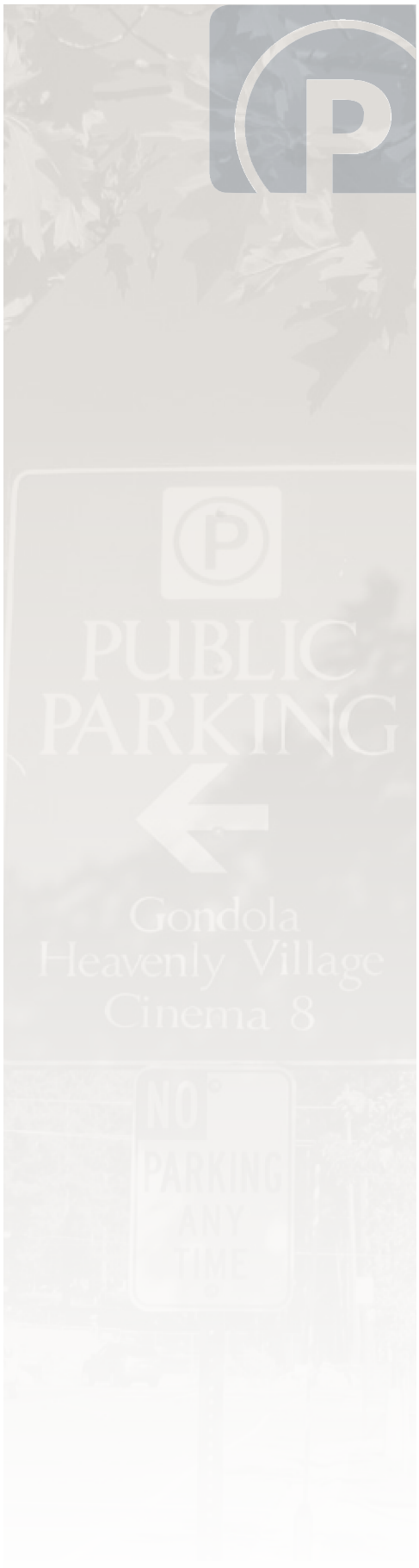


Acknowledgements

This research began with at the request of several clients that desired more information on the topic of "Parking as an Economic Development Strategy".

A series of initial research questions was developed and refined internally and then an email was sent out to respected industry experts and economic development practitioners.

We would like to acknowledge several individuals that made special contributions to the production of this "white paper".

- **Mr. Phillip K. Kushlan**
  Executive Director, Capital City Development Corporation, Boise, Idaho
- **Mr. Daniel A. Howe, ASLA, AICP**
  Assistant City Manager,
  City of Raleigh, North Carolina
- **Ms. Susan Pollay**
  Executive Director, Downtown Development Authority,
  City of Ann Arbor, Michigan
- **Mr. Lorne Persiko**
  Vice President of Real Estate and Development,
  Toronto Parking Authority

Introduction

Parking as an Economic Development Strategy?

The idea that parking can be an effective economic development strategy has gained greater and greater acceptance as innovative programs from around the country have proven this concept with many successful examples. We have documented several of these case studies in this white paper.

However, as the principles have become more accepted many clients are asking us how they can take this concept to the next level.

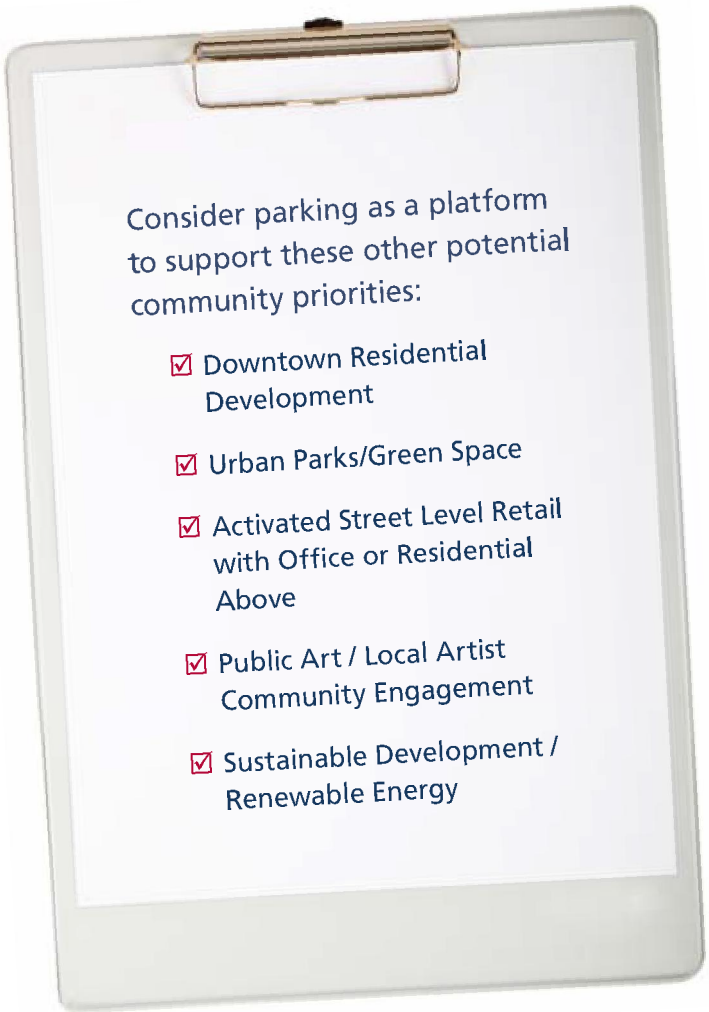
- What new trends are emerging?
- What are the specifics strategies that have proven to be most successful?
- What are realistic 'return on investment' ratios?

In this White Paper we will evaluate these questions and many more.

Leverage parking development to catalyze additional community development.

Having a well-defined and shared vision relative to preferred or targeted types of development is a key first step in the process.

Parking can also be used as a "platform" to achieve a variety of other community goals, beyond parking infrastructure.



Overview

Several maturing parking programs across the US want to move into a new phase for their organizations. They are looking for ways to improve their communities and stimulate additional community and economic development opportunities by leveraging strategic parking and mixed-use facility development.

These programs have developed more advanced and sophisticated planning capabilities in recent years. They have well defined ”parking analysis zones” and actively monitor changes to parking supply and demand. They measure and track changes to on-street utilization. Using pricing and regulation (time-limits, special permitting strategies, etc.) they are managing their limited on-street resources to maximize their value by promoting turn-over. Price is being used, as recommended by the noted UCLA economist Dr. Donald Shoup, to achieve a targeted on-street vacancy rate of 15%.

New technologies are emerging that will greatly change the parking management landscape in ways that would have been hard to image even a few years ago. The impact of “smart meters”, wireless sensors, web-based parking availability data, on-line parking reservation systems and even satellite-based mechanisms that employ GPS and GIS “geo-fencing” technologies will combine to create “smart parking systems” that will help reduce green house gas emission, improve parking availability and make paying for parking easier and more customer friendly. All of this is even more powerful when combined with sophisticated new mobile devices such as the I-Phone. Indeed, at last count there were already 60+ “apps” designed just for parking related uses. It is hoped that this new data rich world of “smart parking” will allow us to better utilize existing parking resources (and recapture some the value inherent in the “over-built” parking supply of the past decades) as well as to begin providing better designed parking facilities that are integrated with a variety of mixed-uses and that better complement the urban fabric in which they exist.

Mixed-Use Parking as an Economic Development Catalyst

There are many variations on the theme of parking as an integrated use in a mixed-use development project. There is little doubt that parking is an essential element in the success of these projects. In many cases, it is often the parking dimension that, from a developers perspective, makes the project “not pencil”. Parking facility design and management have dramatically improved in recent years. We no longer “deaden an entire block or half block in a downtown for a “vehicle warehouse”. We now see parking facilities more as the “interface between the vehicular and pedestrian experience”. Parking facilities are being designed more as “people places” than simply as dull, grey, utilitarian storage facilities.

Mixed-Use Parking Design Advances

Architecturally, parking is being developed to better blend into and even contribute positively to the "urban form". Several successful design approaches for integrating parking in urban environments with other uses are becoming well accepted. These models include:

Parking Design Approach

Parking facilities **book-ended** with other uses

Design Approach Example

City of Greenville, SC **Spring Street Garage**

Description: This 912 space, 3 bay parking facility is located at 316 S. Spring Street, Greenville, SC. This multi-level parking garage, located adjacent to the Wachovia Building and the Bookends development, provides monthly, daily and event parking in downtown Greenville.

Parking Design Approach

Parking facilities **wrapped** with other uses

Design Approach Example

City of Boulder, CO **15th & Pearl Street Garage**

Description: This 686 space, 2 bay parking facility is located at 15th Street and Pearl Street in downtown Boulder is conveniently located near the Pearl Street Mall. This multi-level parking garage is wrapped with retail uses on the street level and office space above.

The facility provided monthly and hourly parking.

Parking Design Approach

Parking facilities **stacked** between other uses

Design Approach Example

LoDo District Downtown Denver, CO **Wynkoop Garage**

Description: The Wynkoop garage in the LoDo District of downtown Denver is an example of a "stack" garage design with 2 levels of below grade parking, a destination restaurant at grade, 4 levels of above grade parking below 4 floors of residential development.

Parking Design Approach

Parking facilities **'below'** with other uses

Design Approach Example

The City of Greenville, SC **Terrace at Riverplace**

Description: The Terrace at Riverplace is located just off of Main Street and across from the $13.5 million River Falls Park on the Reedy River in downtown Greenville, SC. The Terrace is part of the $65 million RiverPlace mixed use development which includes 155 RiverPlace, RiverHouse, The Terrace, and The Hampton Inn and Suites. The project includes office space, retail space, restaurants, and condos. RiverPlace also offers underground secured parking with card access.

Parking as an Economic Development Strategy?

Best Practices Research

Innovative municipal parking programs, urban redevelopment agencies, business improvement districts and downtown development authorities have led the charge as it relates to leveraging investments in strategic parking and mixed-use facility development as a key strategy to improve their communities and stimulate additional economic development opportunities.

One key trend we have identified is that many of these parking programs have developed more advanced and sophisticated planning capabilities in recent years. They have well defined "parking analysis zones" within their downtowns and actively monitor changes to off-street parking supply and demand. They also have begun measuring and tracking changes to on-street utilization. Using demand-based pricing and other creative parking management strategies such as extended time-limits combined with progressive on-street parking pricing, pay-by-cell phone options, special permitting strategies, etc., they are beginning to manage their limited on-street resources to maximize their value by more effectively promoting turnover and also providing enhanced customer services and more flexible parking options. Price is being used to achieve the goal of a 15% on-street vacancy rate. This has had the related effect of improving access to businesses, reducing traffic congestion, lowering fuel consumption and lessening greenhouse gas emissions.

These advances in planning and management are being combined with another, and perhaps more important trend – a philosophy that aims at making parking more visitor friendly (and thereby positively impacting the "overall downtown experience"). It is important to note however, that "friendly" does not equal "free". Parking is never free, even when there is no direct charge to the customer – someone somewhere is paying the price for providing not only the space, but the utility costs, the maintenance, the management, etc.

As part of the research effort for this project we focussed on identifying new or creative approaches to using parking as a tool for economic development.

Following are a series of interview questions and responses from several respected industry professionals.

Research Interviews

1. What are the current industry best practices and successful strategies related to parking facility development? How are these development deals structured?

    a. "Generally public/private deals are not unlike pure private deals insofar as each side has assets to bring to the table to leverage the assets of their partner. The primary negotiation revolves around how much each side is willing to offer to get what the partner can provide. Thus it is very important on the private side to understand what the public interest is for any given project, and tailor a response to that. Usually it is clearly articulated in a plan (a downtown plan for example) or in a series of goals in the community's comprehensive plan.

    b. From the public side, it is important to understand how the developer is structuring a proforma…what market they are trying to land and where their cost centers and risk centers are. For example, if a major tenant is insisting on available parking while the lender is insisting on a certain return ratio, the ability of the public to bring the parking availability to bear to remove the cost and risk of building and operating parking from the developer's proforma, while addressing the tenant's demand, can make the difference as to whether a project gets the necessary bank funding to get off the ground. Understand, however, that unlike private / private agreements, the public side is heavily wrapped in legal limitations, public process and transparency. This comes with the territory, so any time a private developer wants to leverage their idea by working with a public entity, they need to build in sufficient time and resources to work through a lot of the necessary "fairness" limitations the public side has to work with, and be ready for the "sunshine" laws to come to bear…so lots of documentation will be necessary.

    c. Consider the concept of a "Bridge Investment" rather than a full subsidy as in the example below. From the public entity perspective, understanding the "real needs" of the private sector partner can mean the difference between a project moving forward or not. Our agency was in discussions with a partner to redevelop a surface parking lot into a 600,000 square foot mixed-use project. Originally the developer asked the agency to build them a $12,000,000 parking structure. Ultimately it was determined that the there was financing gap of $180,000 per year for five years. Rather than a cash incentive, the agency ultimately agreed to lease the developer 200 parking spaces/year (which it had available in a nearby parking facility) for five years

at no charge (an in-kind contribution of approximately $1,000,000 in value). This essentially equated to a "bridge Investment" by the agency that allowed the deal to move forward.

2. What is the best way to interest potential development partners?

   a. Transformational investments. If an existing property or area has inherent value that is not being tapped, the market will already have responded to that and you will be fending off development proposals. Usually the case is that the public is trying to interest developers in property that really does not appear to have inherent value beyond its current use. The way to change that is for the community to decide on what can be done on the public side to inject value where there was none before.

      For example, before our Fayetteville Street Renaissance project was funded and under construction, nobody would take a risk on downtown Raleigh. After…suddenly a lot of properties were being acquired, new buildings built and everything seems to have taken on new value and a transformed market image that generated a lot of tax base. Deciding what that transformational investment or investments are is the key. You need LOTS of private sector, market savvy input before pulling the trigger on expensive public projects to ensure that there will be a fish on the end of the hook when you cast it.

   b. Boise essentially created a parking district that over-built supply in strategic locations and then worked on multiple tracks to stimulate community development to "grow into it". We approached parking as a utility to support long-term growth. Under this approach it is perfectly logical to build capacity ahead of immediate demand needs.

   c. Our approach also considered the "idealized build out" of the downtown based on our downtown master plan. We developed our parking development plan to support the desired build out. We were guided by two major principles – first, we desired to keep the public parking supply between 30 – 40% of the total parking supply. This approach provides us flexibility relative to attracting new development and allows us the capacity to address uses in the realm of the "public good". Second, we understood that we would have to make more of our parking investment on the front end of the process.

   d. Boise made it to the top of the Forbe's "Best Places to Do Business" list by "creating places where people want to

The Cube is a unique and innovative landmark tower that will occupy a prime location within Dubai Sports City. Parking condos are available in the basement level.

be". The combination of integrated parking (all of our parking is in convenient, mixed-use facilities with activated street-level uses) and a concentrated effort on "place making" and public realm improvements.

e. We embraced the idea of an "E Zone" or "Energy Zone" in the downtown core. The synergies created by the downtown environment is large part of our success. Parking, and specifically parking facility design, is an important component because it contributes to our compact urban form and the reduction of surface parking lots.

3. What combinations of financing options are most popular and most successful?

   a. One successful strategy is "Certificates of Participation". They offer several benefits. First, they are mortgage-backed, essentially, because City assets are put up as collateral, thus making them low risk and thereby low cost investment vehicles. We have found them equivalent to General Obligation financing in terms of cost, without the necessity of any kind of taxpayer referendum on their use.

   b. When putting together public / private partnerships, one of the benefits of working with the public is that public sector entities are often more tolerant of longer-term payback schemes where an asset is provided by the public to leverage private development, much more so than equity partners or banks, so this ability to be around long enough to tolerate a longer horizon is a potential "asset" that public entities bring to the table.

   c. Another option to consider is the "condominiumization of parking". Under this scenario the land doesn't have to be purchased by either party. The condominium association owns the land and manages the property including shared expenses and taxes.

4. What combinations of incentives are currently being offered?

   a. Right now (due to the economic downturn) we are not offering a lot of direct incentives, but generally when it comes to land development, the cost of land is one of the first things the developer goes after. If the public can acquire land and then re-sell it at favorable terms, this helps leverage a private proforma.

   b. Many communities provide cash incentives based on jobs or total investment. Some believe that this rarely determines whether the project gets built, particularly in a downtown. Usually after the private side team has already determined where it wants to build, then it goes after as much cash as it can leverage out of the elected officials.

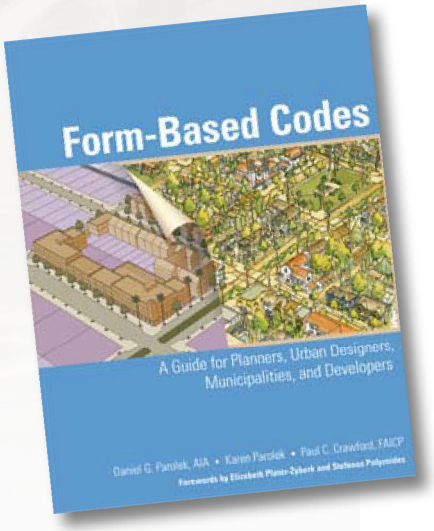
   c. Parking is a favorite downtown leverage tool, as it is a business the public is often already in and it is usually (unless you are in a REALLY big or very enlightened mar-

With capital funds in short supply, public investment can sometimes make the difference with "projects on the bubble". The key is often understanding the real estate equation. The agency needs to understand where to draw the line. Sometimes, the fact that an incentive is offered at all is as important as the amount.

ket) a key factor for lenders as to whether they will finance a project. Co-development with transit stations for those communities with a fixed-guideway transit system is also a huge incentive to partner with the public.

5. What specific options are seen as producing "win - win" scenarios for different communities?
    a. Deals that are structured where there are documented returns to the public are often easiest to justify…a cash flow that can be documented such as specific tax base enhancement commitments, creation of permanent jobs if a major employer is involved, etc.
    b. On the other side, developers need to see both a short term (this current project is profitable in the short run) and a longer term (this deal will potentially spin off more deals with the same public entity) benefit from playing ball with the public sector. This is often why working with local developers with more of a stake in the success of the local market sometimes works better than going after the big, national development entity who may flee the market if times turn bad.
6. What are the common obstacles that tend to sour these public-private partnerships?
    a. Unrealistic expectations…on both sides. Also an unwillingness to trust. There is no way you can write down every last contingency in a deal. All deals involve some level of trust on both sides. This has to be clear up front, and a commitment made to work through things in the middle when something unexpected comes up. The best thing to do is to talk clearly about how to deal with unexpected issues, not to try to anticipate all of them and write them all into an agreement up front.
    b. The public sector is all about process and fairness. There will be multiple committee meetings. The design will likely be micromanaged to some degree. It is very important for private side entities to build this extra time into the project schedule and make sure somebody on their team is good at navigating the public process.
7. What types of deals should public agencies avoid? Why?
    a. Avoid anything that involves putting the public in the role of primary risk-taker. Risk analysis in land development is not something public sector agencies do particularly well, and in a public/private deal it should be made clear up front that the public is not in the entrepreneur role in a typical deal. That should be the private sector entity's role, and the public risk ought to be clear, simple, and limited…the major financial benefits may need to go to the private side but the primary risk should be there also.

And if you are really creative, your parking garage can compliment your new library very nicely (Kansas City Public Library Parking Garage)



b. Public entities also ought not to make their decisions based on a glorious vision of a very cool development. Instead, the decision should be made looking at a spreadsheet and a balance sheet. The key success factors on public / private developments revolve around the strength of the private side financing package and the predictability of behavior of the public side partner. To the extent these can be maximized, the likelihood of the project being a success is enhanced.

8. What creative combinations of land uses have produced special benefits for their communities?

   a. Projects that attract the young as well as the working age public. Kids bring parents. Parents bring money and come back on the weekend if they like what they see. Youth brings energy.
   b. Libraries are excellent tools for attracting kids, as are museums. Places to have big outdoor parties that generate lots of press (New Year celebrations, food celebrations, concerts, etc.) are great compliments to retail and office as well as urban residential. In Boise, housing projects have generated the greatest amount of "spin off" benefits.
   c. Sports venues bring lots of people but beware…they also tend to spawn lots of surface parking that kills life around it when an event is not taking place. The best public investments we have made in Raleigh have SYMBOLIC value! The reconnection of iconic architectural views between the state capitol and the performing arts center. A major artwork that can be seen on the skyline, creating a postcard view. These things change the way people think about a place, and lift everyone's boats.

9. From a planning perspective, are there new concepts or specific development code approaches that encourage creative urban designs and special partnership opportunities?

   a. "Form-based" codes often work well in dense urban areas, by creating an emphasis less on land use and more on form, relationship of the building to the street, density and amenity access. Having a rehabilitation code option that applies realistic building code standards to old buildings means more investment in historic buildings that bring character and interest to a city.
   b. Most of the incentives that might encourage more public-private arrangements would happen on the state level in states that govern the activities of cities. The ability of public entities to engage in private projects is often limited by "no-competition" limitations or by restrictions on the ability of the community to provide tax or fee incentives for projects with a public benefit.

Case Studies

Case Study #1

The Ashley Mews Project

ANN ARBOR, MICHIGAN

Ashley Mews was one of the first downtown developments since the early 1980's. The city owned a piece of land at the intersection of Main/Packard and wanted to sell it for redevelopment with the goal of seeing at least some affordable housing units (80% of AMI) included as part of the project.

The Ann Arbor Downtown Development Authority (DDA) helped facilitate the conversation between the City & the developer (Syndeco is the real estate arm of Detroit Edison). Final arrangement had a 9 story office building with first floor retail and penthouses on the top, and approx. 50 stacked townhouses of which 8 are permanently affordable.

The developer brought 120 of their own underground parking spaces, but needed 100 more parking spaces plus some gap financing. The DDA provided some funds toward the affordable housing units and additional funds toward the project's pedestrian improvements to make the numbers work.

We gained a wonderful mixed use project that made it possible for Detroit Edison to bring 400-500 high paying jobs (the building houses all the energy company's subsidiaries such as Detroit Edison Nuclear, Detroit Edison Wind, etc.) plus more than 50 new downtown residents (the penthouses were a slower sale because the space wasn't built out and residents clearly had trouble understanding what $1 million was buying them).

Lesson Learned:

1. The City must know what it wants up front in a development deal like this so we can understand if it's worth providing a limited public asset (lots of public parking spaces) to accomplish their goal.
2. If possible, use these public/private arrangements to clean up previous mistakes (before the DDA took over parking, the City had given away parking permits in a contract for 3 renewable 20 year terms at the cost of operations plus bond payments. The bond payments were ending/if we hadn't revised the agreement the developer would have been paying $10-20/month for permits that cost other downtown users $100/month).
3. Consider all the elements that can make a project work, not just the parking elements.

4. Supporting Documents:
    a. Ashely Mews Development Agreement
    b. Ashely Mews Parking Agreement
    c. Ashely Mews Planned Unit Development (PUD) Agreement

Case Study #2

"BoDo" Development
Capital City Development Corporation, Boise, Idaho

The Capital City Development Corporation (CCDC) is the urban renewal agency in Boise, Idaho. The CCDC manages three separate districts in the downtown area as well as managing the off-street public parking system.

CCDC has a stated goal of a 5 to 1 return on infrastructure investments. With the recent completion of the so called "BoDo" (Boise Downtown) project, they leveraged $15.5 million dollars in public infrastructure investment (The Civic Center parking garage [$8,000,000], the Myrtle street garage [$6,000,000] and a $1,500,000 investment in streetscapes) in return for $87,000,000 in private development – a 5.61 return on investment!

Beyond this initial success, the "BoDo" project also generated another $650,000 in tax increment financing revenues that the CCDC will reinvest in downtown and the project is generating an additional 1,000 parkers per day for an estimated $800,000 in additional parking revenue per year. It is also worth noting that the "BoDo" project brought several targeted types of development to the downtown including a 17 story residential development, a multi-plex cinema and a new hotel.

Lessons Learned:

1. CCDC has successfully used "parking development as a catalyst for other development"
2. They have a defined expectation (5 to 1) relative to parking and other infrastructure investments.
3. Their standard agreement is a "blank page". Be flexible. Consider all options,
4. Housing/Residential development projects have more spin-off benefits.
5. Their parking strategy was based on an "idealized build out" of the downtown based on the downtown master plan. Their parking development plan is designed to support the desired build out.
6. Goals: Keep the public parking supply between 30 – 40% of the total parking supply & realize that more parking investment is needed on the front end of the process.

Case Study #3

Village Green
Ann Arbor, Michigan

Village Green is the Ann Arbor DDA's most recent development project. The City distributed an RFP to sell/redevelop the site of our oldest parking structure. The Village Green project was selected and plans include a multi-story apartment building with an underground public parking structure.

The development agreement was much simpler than the Ashley Mews Project discussed above. The DDA formulated early what it was willing to provide to make this deal work ($100K per unit for up to 4 units of affordable housing to 60% AMI = $400,000 and exact dollar amounts for what it would pay to have the underground parking structure constructed ($35,000/above ground space + $45,000/below ground space). This eliminated negotiations later on, as the developer bids on the property were made knowing that these were the only two sources of local funds for the project.

Currently the DDA has no developers on its board so knowing the cost up front made sense for us. Since we no longer had folks on the board with real estate experience to negotiate for us.

Lessons Learned:

1. If the developer is building a public parking structure as part of this public/private development, come to an agreement up front on what the DDA or City is willing to pay per parking space since it is virtually impossible to delineate what is/isn't part of an underground parking structure (earlier developers wanted to charge the DDA for their construction crane costs, all costs to bring utilities to the site, etc.) Once this price is established, it makes it easier to sort between various bids for the site since the variables are reduced.
2. The DDA /Village Green parking agreement has us providing 73 spaces for monthly parking + 73 flex parking spaces, leaving some number for public parking. The flex parking numbers made the banks happier about providing financing since the project has more parking spaces per unit - even though the flex spaces can only be used at night.

Supporting Documents

1. Village Green Parking Agreement

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 13

Guidelines for Using Parking as an Economic Development Strategy

APPENDIX 13

Guidelines for Using Parking as an Economic Development Strategy

The following general guidelines have been developed as a checklist for consistently evaluating potential development projects and the use of parking as a development incentive within the context of advancing defined strategic goals.

General Guidelines

1. Parking can be a very powerful development incentive but must be applied in a fair and consistent manner that advances the larger community strategic goals. The following issues are examples of the type of criteria that we recommend as part of the assessment for either committing a significant number of existing parking resources or the development of future parking assets as an element of a public/private partnership project:

    a. Does the proposed development contribute to economic health of the downtown/community?
    b. Does the proposed development project include prioritized or highly valued development goals or program elements supported by the City?
    c. Are the proposed land-uses, or combination of land-uses, appropriate for the specific area?
    d. Is the proposed development project in alignment with the downtown master plan and/or strategic plan?
    e. Does the proposed development project incorporate special elements valued by the City, the downtown association or other appropriate groups/plans? If yes, specify.

2. Has the City Planning Department reviewed and endorsed the proposed development plan?

    a. Does the proposed development project create any unusual or unacceptable parking or traffic impacts?
    b. Does the proposed development project create any other conditions, or impacts that cause concerns?
    c. Does the proposed development project require any variances to applicable zoning codes or special district requirements?

3. Is the developer willing to develop new parking assets in accordance with City's parking structure design guidelines in order to ensure compliance with downtown development standards and parking structure design best practices?

4. Has the initial economic development impact of the project been estimated?

    a. New jobs for downtown?
    b. Jobs retained in downtown?
    c. Increase in property taxes/TIF contributions?
    d. Estimated increase in sales tax revenue (if applicable)?

e. Stimulation of additional development?
f. Stimulation of support jobs?
g. Support of existing retail, restaurant and other existing service providers?

5. Is participation in this development project appropriate and consistent with the economic development goals of the City/downtown?

Parking System Support/Program Management

1. Will this project generate additional parking revenue to support or contribute to the City's parking program?

   a. If yes, specify:
      i. Estimated monthly spaces contracted: _____
      ii. Estimated additional annual monthly revenue: _____
      iii. Estimated transient revenue per month: _____
      iv. Special event revenues: _____
      v. Other annual revenue: _____

2. Does this proposed development project create any new or unusual operating expenses that might negatively impact the City parking program?

3. Are there opportunities for the municipal parking program to operate new parking capacity for a management fee?

   a. Is this desirable relative to this specific project?

4. Is the net financial impact of this project projected to be positive?

5. Are the activities proposed, relative to participation in this development opportunity, in compliance with City parking program bond covenant requirements/restrictions?

6. Are there opportunities for partnership/collaboration with the developer or property management firms relative to other downtown parking program goals?

   a. Possible public use of spaces after typical weekday work hours, weekends, holidays, etc?
   b. Possible public use of spaces after typical weekday work hours for special events?

7. Does this development project create any special conditions that undermine the financial or market position of the City parking program?

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 14

White Paper: Tax Increment Financing

APPENDIX 14

White Paper: Tax Increment Financing

One of the successful strategies for funding parking facility development noted in this parking strategic is Tax Increment Financing. While this concept is well known within economic development circles, not all parking and transportation professionals are familiar with the specifics of how TIF programs function. This whitepaper is intended to answer basic questions for those that are interested in better understanding this concept.

Introduction

Tax Increment Financing is a tool with great flexibility that allows a municipality to address some of the problems of urban decline. With the reduction in federal and state funding, it provides one of the few mechanisms where a municipality can make a major effort to revitalize older parts of the community. When used properly, it can create an opportunity to focus on what the municipality thinks is important for the area in question and what steps need to be taken to turn an area around.

What Is Tax Increment Financing?

Tax Increment Financing (TIF) is a redevelopment tool authorized by state statute to help revitalize certain areas by eliminating certain blighting conditions and instituting conservation measures in order to encourage private investment and to enhance the tax base. The "tax increment" is the difference between the amount of property taxes collected before and after the designation of a TIF District. TIF originated in California in 1954, and is currently in use in some form in 47 states. It is a concept designed for municipalities of all sizes.

How TIF Works

In theory, tax increment financing works as follows:

- A geographic area is designated (the TIF district)
- A plan for specific improvements in the TIF district is developed
- Bonds are issued and the proceeds are used to pay for the planned improvements;
- The improvements encourage private development and thus raise property values above where they would have been without the improvement
- With higher values, property tax revenues rise, and
- Property tax revenue from increased assessments over and above the level before the TIF project began (the tax increment) is used to service the debt.

Although TIF differs from traditional methods of financing public investments, it is still a form of public debt and as such must be authorized by state legislation. In some states, private developers can also arrange their own financing, and the municipality uses the tax increment to reimburse the developers as the tax revenues are received.

The widespread adoption of TIF laws since 1970 reflects a combination of several factors. While the continued decline of urban areas — particularly of central cities — created a growing need for redevelopment in the 1970s and 1980s, federal assistance for urban renewal projects fell, and voter opposition to new taxes rose. Tax increment financing represented a politically viable tool for local government officials to publicly finance infrastructure and other economic development initiatives without drawing on existing revenues or proposing new taxes.

How Does "Blight" Factor into TIF Designation?

One avenue to qualifying as a TIF District involves demonstrating that an area is in decline, or that it shows signs of "blight." The TIF law defines a "blighted" area as meeting at least 5 of 13 listed criteria, which include dilapidation, structures failing to meet minimum building codes, inadequate utilities, excessive vacancies, declining assessed values, and the necessity of environmental clean-up.

Please note that the TIF law does not require every parcel in the area must have blighting characteristics for the area to qualify either as a blighted or a conservation area. In fact, new construction can exist in the proposed area. Rather, the blighting factors must be present to a meaningful extent and be reasonably distributed throughout the area.

What is the "But For" Test?

For a municipality to establish a TIF District, the municipality must determine that the TIF District, as a whole, would not develop without the assistance to be provided by TIF. This is what is known as the **"But For"** test and is one of the safeguards to prevent the abusive use of TIF. This test does not imply that any new proposed development occurring without TIF assistance would disqualify the District. Rather, you have to look throughout the District to see if the whole area would develop without the benefit of TIF, and not just one or two parcels.

How Does TIF Make Development Occur?

The Municipality undertakes certain activities or agrees to pay certain private costs as incentives to make the TIF District attractive for private redevelopment. The costs connected with these actions by the municipality are paid for with the tax increment, caused by new private development. The types of activities include: construction of public improvements, acquisition of property, relocation costs, demolition of buildings, site preparation, creation of certain training programs, developing planning studies, the rehabilitation of existing structures, and occasionally the construction of facilities for other taxing bodies.

What Happens to Property Located Within a TIF District?

Some properties will remain unchanged, while others will be purchased and redeveloped either by the Town or by private interests.

How Is the TIF Process Organized?

The process of establishing a TIF District is very open. Well before the municipality adopts TIF, it must have a tentative plan which describes the proposed boundaries, why the area might qualify as a TIF District, what the municipality intends to do to eliminate problem areas and attract private investment, what the general land uses are proposed to be, what private and public projects are anticipated, what the estimated budget is and what the estimated life of the TIF District will be.

Citizens can take an active role by attending public hearings and meetings to voice their opinions on the TIF proposal. Notice of the availability of the plan and the date and time of a public hearing must be sent to all property owners within the proposed TIF District, as well as other interested parties. In addition, a Joint Review Board, composed of representatives from local taxing bodies, such as the school district, is organized to review the proposal. Prior to the adoption of the plan and the TIF District, the JRB votes and makes a recommendation to the municipality. Final approval of a TIF District is given by the City Council.

Finally, a detailed annual report of activities and the financial status of the TIF District must be filed with the State Comptroller and with members of the Board. This will indicate how successful the municipality is in utilizing TIF.

What Is the Life of a TIF District?

The maximum life of a TIF District is 23 years. However, it can be shorter if the municipality determines that a shorter period is more appropriate. The municipality has the ability throughout the life of the TIF District to terminate the District at any time, subject to any contractual obligations that may exist.

Characteristics of TIF Laws

TIF laws in most states provide TIF as a tool to eliminate "blight," subject to the constraint that a municipality can only engage in redevelopment, which "…cannot be accomplished by private enterprise alone…" The law stops short of saying how this private enterprise condition should be satisfied, however, and gives the municipality significant discretion in defining blight. Relatively few state laws provide quantitative criteria to be applied in identifying blight. Some state laws explicitly allow the use of TIF for economic development without a finding of blight.

In contrast to general obligation bonds, TIF bonds are not secured by the "faith and credit" of either the city or the state, and the TIF debt does not count against the municipality's constitutional debt limit. Like general obligation debt, however, interest on TIF debt may be tax exempt if it satisfies certain criteria set out in the federal Tax Reform Act of 1986.

What Are Some of the Popular Myths Concerning TIF?

- Some property owners would be receiving some kind of tax break. This is not true. Property owners pay the same amount of property taxes they would have paid had the TIF District not existed.
- Property taxes for owners within the TIF District will increase**.** This is also not true. Their property taxes are the same as everyone else in the municipality. They will only increase if the value of their property increases.
- The school district will be deprived of revenues during the life of the TIF District. Again this is not true. First, because of the way tax rates of the various taxing bodies are calculated when a TIF District is established, the school district as well as the county, the municipality and the other taxing bodies continue to receive the full amount of the taxes that they have levied during the life of the District. Secondly, the school aid formula at the state level has been adjusted so that during the life of the TIF District, the school district actually receives more school aid from the state than it would have, had the TIF District not been in place. Third, because the area would not have been developed without TIF, the school district could not take advantage of any increased equalized assessed value.

Typical TIF-Funded Projects

TIF has been used to finance a wide array of projects, including public infrastructure, private development, and brownfield cleanup. Public works projects are typically small-scale.

Examples include land acquisition, installation of streetlights and water and sewer lines, roadway expansions, and construction of public parking garages. Large-scale projects have usually been joint ventures, most often with private partners. In joint ventures, the TIF financing is used only to finance the public contribution to the project. Examples of relatively large TIF-funded projects include the following:

- Chicago helped finance the expansion of the University of Illinois at Chicago ($50 million in 2000), renovation of several theaters ($18 million for the Cadillac Theater, for example), and streetscaping of Michigan Avenue

in the Central Loop ($15 million in the late 1990s). Chicago is currently financing the construction of two schools (about $50 million per school).

- Fremont, California is contributing to the upgrade of four major interstate interchanges ($50 million for construction in 1999 through 2005) and is planning to finance the construction of a Bay Area Rapid Transit (BART) station ($75 million).
- Indianapolis helped finance the construction of the Circle Centre mall downtown ($187 million in 1995) and the United Airlines Maintenance Center ($244 million in 1991).
- Los Angeles helped finance the renovation of the Los Angeles Central Library ($135 million in the early 1990s) and expansion of the Los Angeles Convention Center ($126 million in 1986-1987).
- Minneapolis helped finance 900 Nicollet Mall, a downtown Target store and office complex ($62 million in 2001), and City Center, a downtown retail and hotel complex ($50 million in the mid-1980s). It also used TIF to acquire the Target Center, home of the Timberwolves basketball team ($72 million in 1994).
- San Jose financed the San Jose Arena ($140 million in 1993) and a convention center ($163 million in 1986), and it is currently financing its share of the total cost of a Joint City/University Library with San Jose State University ($73.4 million).
- Washington, D.C. used TIF to help finance the International Spy Museum ($6.9 million in 2001), the Mandarin Oriental Hotel Project ($46 million this year), and the Gallery Place Project, a downtown retail and entertainment complex ($73.6 million this year).

The Draw and Drawbacks of TIF

For local policymakers, TIF has many attractive features. But it also has potential drawbacks that need consideration.

The TIF Draw

There are several features that draw policymakers to using TIF financing. As noted previously, TIF debt typically does not count against a municipality's debt limit, nor is the municipality or state responsible for repayment from sources other than the tax increment for the TIF district. Perhaps equally as important, the local government essentially has full control once the state TIF law is in place. Plans are generally not subject to state approval.

Another factor explaining TIF's popularity is voter opposition to tax increases. Because property tax revenue from pre-TIF assessments flow from the TIF district to the municipality as before, it is possible to portray any additional property taxes paid by property owners in the TIF district as payment for benefits received from TIF improvements.

Potential Drawbacks

While TIF has proven to be an effective and flexible financing method in a variety of settings, some municipalities have encountered problems with their TIF projects.

Sufficient Revenue

Actual TIF revenues may fall short of the projections made when the TIF bonds were sold.
Unlike a municipality with a variety of revenue sources to draw upon for debt service obligations, a TIF district generally has only one source: incremental property taxes. A shortfall risks default or a bailout using other municipal revenues, undermining the reason for using TIF in the first place.

A revenue shortfall can occur for a variety of reasons. The projected level of development might not be reached - or might be reached with significant delay. Assessed property values for a TIF district might also decline, at least temporarily. The city of St. Petersburg, Florida ran into difficulties in its TIF districts because of recession, public acquisition of private property, and acquisition of private property by tax-exempt entities within the district,

removing them from the TIF tax base as well.10 In their Bayboro Harbor TIF district (established in 1988), for example, the actual 1998 taxable property value for the district was $20.7 million—about 60 percent less than the projection made at the start of project, and about 25 percent less than its pre-TIF value of $28.1 million.

Tax increments may also drop or grow more slowly than expected due to policy decisions. California's Proposition 13 probably represents the most familiar example of an unexpected change in the property tax code. More recently, when the state of Minnesota took over education finance last year, the education portion of local property tax increments that previously had gone to TIF projects was redirected to the state. TIF districts suddenly lost about 37 percent of the total increment they had received before the change in policy.

Property tax abatements or exemptions, which are often used as incentives for developers, can also reduce tax revenues below projections if not anticipated correctly. A study of Michigan TIF districts found that taxable property values in some districts actually declined from their base values, despite positive growth in commercial property values. The reason was the concurrent granting of property tax abatements for properties in the districts.

Some project costs or changes in property values also are very difficult or impossible to anticipate. For example, the town of Greenburgh, New York accumulated legal bills and settlement costs when it was sued over the price it paid for a property in its TIF district. The city of East Grand Forks, Minnesota saw a drop in taxable property value in one of its TIF districts when a grain elevator burned down.

To reduce the risk of default, a municipality may designate a relatively large TIF district. Indianapolis did this when it used TIF to finance its downtown Circle Centre mall. Alternatively, a back-up revenue source can be built into the plan. St. Petersburg has used franchise taxes and parking revenue as its secondary revenue source, while East Grand

Forks used lease payments and general revenue to fill its gap. Of course, both of these policies redirect resources from other uses and stand at odds with the conceptual underpinnings of TIF.

The Redevelopment Agency of the City of San Jose, California uses a third strategy to reduce the risk of default—joint financing of TIF districts. Bonds are issued for all projects funded by the agency and tax increments from all TIF districts are used to service the debt. Their 2003-2007 Capital Improvement Plan includes 157 capital projects and programs in TIF districts all over the city with a total cost of $882 million.

Yet another strategy to reduce risk is a loan guarantee from a private developer. Hoffman Estates, a suburb of Chicago, required such a guarantee when it entered a TIF deal with Sears for relocation of its headquarters and development of a new office park in Hoffman Estates. When tax increments have fallen short of required payments, Sears has paid the difference.

In the event that tax increments do fall far short of projections, the initial debt might be refinanced or restructured. St. Petersburg has taken both measures in recent years, in addition to lining up secondary revenue sources.

Cost Spillovers

Another potential problem with TIF is spillover of costs to taxpayers outside the TIF district.
Municipal service requirements - such as police, fire, sanitation, education, and transportation -will almost certainly rise as development occurs within a TIF district.

In turn, the regular property taxes paid to a municipality by property owners within the TIF district - which are based on pre-TIF assessments - could well fall short of the cost of services provided for the TIF district. When this happens, taxpayers outside the TIF district are faced with the tab. The larger the TIF district, the larger this impact will be on the surrounding area. One source of revenue to cover these additional costs could

be the additional sales and income tax revenue generated by the new development in the TIF district. Whether these additional revenues are sufficient will depend on the intensity of the development induced by the TIF-financed improvements and whether other sales and income tax incentives are also available within the TIF district.

Some critics of TIF have questioned whether the amount of tax revenue generated by TIF improvements actually equals the tax increment revenue allocated to pay for the improvements. Using data for a sample of 38 TIF districts in California and 38 matched areas with similar characteristics, the most comprehensive analysis of this question found only four TIF districts where property values outgrew their matches by enough to justify the tax increment received by the TIF districts. A total of eight projects generated at least 80 percent of the revenue they received. Not surprising, the TIF districts with the most vacant land before the projects began showed the greatest tax increment growth. Overall, the study found that the 38 TIF districts collectively generated about half the tax revenue they received. This suggests that, on average, the TIF districts could have generated additional revenue equal to half the revenue generated with the TIF improvements even if the improvements had not been made, and that this revenue would have been available to pay for some portion of the additional services required by the TIF districts or other capital improvements.

Benefit Spillovers

In direct contrast to concerns about cost spillovers are concerns about benefit spillovers. If a TIF improvement has regional benefits, many who benefit significantly from the improvement may make no contribution to cover the cost. For example, the taxpayers of Indianapolis are financing a mall and two sports arenas with TIF, while benefits are enjoyed by all in central Indiana.

Fragmentation of the Tax Base

Some observers say that the use of TIF may ultimately lead to fragmentation of the tax base, under which thriving neighborhoods would retain all growth in their property tax collections for their own development, rather than contributing part of this growth to citywide investments and assistance for less prosperous neighborhoods. Concern about fragmentation has been expressed in Chicago, which now has over 100 TIF districts within its boundaries.

Distribution of Development

Another potential problem is not specific to TIF but instead pertains to all geographically targeted economic development programs. It is possible that TIF projects may simply shift development around the city, rather than attracting new business to Charlotte from elsewhere in the region and beyond. This appears to be happening in Columbus, Ohio, where the city has sold more than $30 million in TIF bonds to finance infrastructure improvements for the new Arena District, a large office and retail development project that is centered on the new home of the Columbus Blue Jackets hockey team. Just a few miles downtown, office vacancy rates are above 20 percent and the City Center mall (which was built in the 1980s with city assistance) sits half empty. Similar criticism has been voiced in Dallas about the proposed Victory office-retail complex between the city's new hockey arena and downtown. Opponents argue that downtown Dallas retailers will be hurt, and they point to other city priorities, including more than $1 billion in needed roadway repairs elsewhere in the city.

In a worst-case scenario, TIF could shift development from more to less productive locations. If this happens, tax revenue—property, sales, income, and others—could actually be reduced from its potential maximum. A study of municipalities surrounding Chicago found evidence consistent with this hypothesis. Their results suggest that total assessed property values in cities that used TIF grew more slowly than in cities that did not, after controlling for area characteristics.

Potentially Expensive Debt

Also of concern may be the relative cost of TIF debt. Because TIF debt is not backed by the "faith and credit" of the city or state, investors could view it as more risky than general obligation debt and demand a higher interest rate. To reduce the potential risk of default to investors, policymakers might designate a relatively large TIF district or build in a back-up revenue source, but these tactics have opportunity costs, as noted above.

An additional issue that arises with large-scale TIF-financed projects is required payment of debt service before significant revenue gains are realized. For large projects in a city's general capital plan, funds may be drawn from alternative sources. But in the absence of such other funding sources, the first several years of debt service must also be borrowed, adding to the total project cost.

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DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 15

White Paper: Parking In-Lieu Fees

APPENDIX 15

White Paper: Parking In-Lieu Fees

Parking In-Lieu fees are one of the successful strategies for funding parking facility development noted in this parking strategic. This concept is generally well known, it can take several forms and can be applied in mandatory or optional formats. This whitepaper is intended to answer basic questions for those that are interested in better understanding this concept.

Note: The data in this whitepaper is now several years old. While the general principles remain valid, the costs per space are considered out dated.

Fees In Lieu of Required Parking

Introduction

Some cities allow developers to pay a fee in lieu of providing parking spaces required by zoning ordinances, and use this revenue to finance public parking spaces to replace the private parking spaces the developers would have been required to provide.

These in-lieu programs can reduce the cost of development, encourage shared parking, improve urban design, support historic preservation and allow development of sites that cannot physically accommodate the required parking. Establishment of in-lieu fees also reveals that the cost of complying with minimum parking requirements is more than four times the cost of the impact fees that cities levy for all other public purposes combined. The high cost of meeting parking requirements suggests other promising in-lieu policy options that allow developers to reduce parking demand rather than increase the parking supply and provide a mechanism to support alternative transportation modes that help accomplish that goal. Reducing parking demand can cost far less than increasing the parking supply.

Advantages of In-Lieu Fees

In-lieu fees have five major advantages for both cities and developers.

1. *A new option*. In-lieu fees give developers an alternative to meeting the parking requirements on sites where providing all the required parking spaces would be difficult or extremely expensive.

2. *Shared parking*. Public parking spaces allow shared use among different sites where the peak parking demands occur at different times. Shared public parking is more efficient and cost effective than single-use private parking because fewer spaces are needed to meet the total peak parking demand. Shared parking also allows visitors to leave their cars parked while making multiple trips on foot, and is one of the easiest ways to make better use of scarce urban land.

3. *Better urban design.* Cities can put public parking lots and structures where they have the lowest impact on vehicle and pedestrian circulation. Less on-site parking allows continuous storefronts without "dead" gaps for adjacent surface parking lots. To improve the streetscape, some cities dedicate the first floor of the public parking structures to retail uses. Developers can undertake infill projects without assembling large sites to accommodate on-site parking, and architects have a greater range of design options that can translate into more attractive buildings.

4. *Fewer variances.* Developers often request parking variances when providing the required parking would be difficult. These variances create unearned economic windfalls, granted to some but denied to others. If developers can pay cash rather than provide the required parking, cities do not have to grant parking variances and can therefore treat all developers consistently.

5. *Historic preservation*. In-lieu fees allow adaptive reuse of historic buildings where the new use requires additional parking that is difficult to provide. The in-lieu policy therefore makes it easier to preserve historic buildings and rehabilitate historic areas.

Disadvantages of In-Lieu Fees

Officials in many cities recommended in-lieu fees, but some report that developers were initially skeptical. The following four points summarize the potential disadvantages mentioned by developers.

1. *Lack of on-site parking.* Parking is a valuable asset for any development. A lack of on-site, owner-controlled parking can reduce a development's attractiveness to tenants and customers. While a lack of on-site parking is a real disadvantage, developers who are concerned about this problem can normally provide the parking rather than pay the fee.

2. *High fees*. Cities may not construct and operate parking facilities as efficiently as the private sector. For example, cities may pay extra to improve the architectural design of parking lots and structures. The resulting in-lieu fees may be high. Although some cities charge high in-lieu fees, most set their in-lieu fees lower than the cost of providing a public parking space. Because the fixed cost for ramps, elevators, stairwells, and curb cuts can be spread among more spaces in large public parking structures, economies of scale in building these structures can further reduce the in-lieu fees.

3. *No guarantees.* Cities may intend to use the in-lieu fee revenue to finance public parking, but they do not guarantee when or where the parking spaces will be provided. To address this concern, some cities build public parking structures before receiving the in-lieu fees. The in-lieu fees are then used to retire the debt incurred to finance the structures. Other cities return the in-lieu fees if they do not provide the parking within a certain time. A city can also delay collecting the in-lieu fees until the revenue is needed to construct the public parking.

4. *Fewer parking spaces*. In-lieu fees will reduce the parking supply if cities provide less than one public parking space for each in-lieu fee paid. A smaller parking supply can put an area at a competitive disadvantage. Cities may not provide one public parking space for each in-lieu fee paid, but if a city uses in-lieu fees to build public parking spaces rather than grant variances to reduce parking requirements, the

In-lieu policy will increase rather than decrease the parking supply. Even if an in-lieu policy does reduce the parking supply, shared public parking reduces the parking supply needed to meet the sum of all individual peak parking demands.

While the developers' concerns cannot be ignored, officials in most of the surveyed cities said that the fees had become a form of administrative relief for developers who do not want to provide the required parking spaces. In practice, the in-lieu fees have benefited developers by offering them an alternative to building expensive parking spaces.

In Lieu Parking Program Examples

Miami's Coconut Grove, Florida (an upscale neighborhood of Miami)

Coconut Grove adopted a fee-in-lieu program in 1993 and has experienced considerable success. The fee is $10,000 per stall, or payments of $50/month/stall. Developers have opted out of 938 spaces, generating approximately $3 million in revenues. The majority of the funds were used to develop a 416-space garage with ground floor retail. The fund also paid for a $250,000 study for a downtown circulator, and $100,000 for a Parking Mitigation Project, that included landscaping changes and installation of traffic control devices to improve parking and pedestrian access. Business licenses can be revoked after 90 days of non-payment.

Lake Forest, Illinois

Lake Forest has had a fee-in-lieu policy for about 15 years. All funds generated must pay for parking acquisition or development. The impetus was a desire to preserve the historic character of the downtown. The fee was recently increased from $14,000 to $22,000 per stall. The parking requirements are also relatively high in Lake Forest, at four spaces per thousand. Still, developers want to use the option because of the scarcity of developable land.

The city considers the program effective, and developers use the option frequently. Originally, it was an automatic opportunity for developers to pay instead of building. However, due to limited opportunities for the city to provide new facilities, they recently restricted the fee-in-lieu option to a special use permit.

Jackson, Wyoming

Jackson Wyoming adopted a fee-in-lieu policy in 1994, in conjunction with a new Comprehensive Plan and the adoption of parking minimums. The fee-in-lieu option was in response to concerns that the parking minimums would hinder economic development. The per-stall fee ranges from $1,000 (up to four stalls) to $10,000 (more than 41 stalls), depending on the number of stalls being opted out. The City does not have a specific obligation regarding timeline or proximity of new parking, but the funds raised are restricted to construction of parking only.

The policy is used frequently. When the fee-in-lieu was adopted, existing properties that did not have parking were given transferable parking credits, so that even as the properties have been redeveloped, there has been no parking requirement. The City Planner interviewed felt that a Local Improvement District would have been more effective for providing parking.

Bend, Oregon

Bend's policy was adopted in 1992. It was initiated due to concerns about constrained land for development. Developers have the option of building, leasing off-site, or paying the fee. The option has been used frequently but the fee was set very low ($510 per stall). There are no specific obligations regarding timeline or proximity, but the fees must go into the parking fund and can pay for parking only (no TDM) either in or

adjacent to the CBD. They are currently having their policy evaluated, with consideration of increased fee. The limited funds generated have become problematic with expectations from property owners for the city to provide for parking.

Skokie, Illinois

Skokie adopted its fee-in-lieu policy in 1976. It was used primarily in the early 1980s, and once in the 90s, but not since. The city has high downtown vacancy rates (up to 40%), and parking shortages was not severe. The impetus for the policy was a desire to maintain the urban landscape, and to keep employee parking in the periphery of the core. The fee was set at $3,500, which most businesses consider "outrageous". There were no specific guarantees regarding proximity, timeline, etc., but the money was limited to parking only. Developers do not have an option to variance out: they must either build parking or pay the fee. With adoption of a downtown redevelopment plan, the parking requirements were modified to a uniform one stall per 400 sf (commercial) and one per unit (residential). Most of the development recently has been mixed use with residential, so developers have provided parking.

Kirkland, Washington

The City of Kirkland adopted a fee-in-lieu policy in the late 1970s for use in the downtown core. The fee is set at $6,000 per stall, and has generated approximately $300,000. Some of the funds were used to conduct various parking studies. In addition, a portion of the funds was contributed to a parking structure the city recently built, but was not a significant share. The city has no specific obligations regarding proximity or timeline, but has not had problems with expectations on the part of property owners. The impetus was to reduce create shared parking facilities. The primary use of the program has been for changes in existing properties to uses that require more parking (such as changing retail to restaurant). It has not been used for new development or redevelopment projects, and therefore the funds generated have been limited.

City of Parksville, BC Canada

The City of Parksville adopted the following specific amendments to their cash-in-lieu parking program:

- Within the area identified as "Downtown Core" on Schedule "B" of the Official Community Plan, the Municipal Council will accept cash payment in lieu of the provision of on-site parking in the amount of $9,800.00 per space. (AMENDMENT BYLAW NO. 2000.25)
- Notwithstanding the foregoing, 100% of the parking requirement may be met through cash-in-lieu payment or a combination of cash payment in lieu of parking and the provision of on-site parking is acceptable. (Amendment Bylaw No. 2000.25)
- All monies received pursuant to the requirements of this Section shall be placed in a reserve fund established under Section 378 of the Municipal Act for the provision of new and existing off-street parking space, and the City shall use such funds only for that purpose.
- The requirements contained in this Section shall not be applied to any land, building or structure existing at the date of the adoption of this Bylaw so long as the land, building or structure continues to be put to a use which does not require more off-street parking spaces than were required of the use existing at the time this Bylaw was adopted.

How Cities Set the Fees

Cities use two basic approaches to set their in-lieu fees. The first is to calculate the appropriate fee per space on a case-by-case basis for each project. The second is to have a uniform fee per space for all projects.

One city has employed both methods. Until 1994, Beverly Hills used the first approach – a specific fee for each project. The in-lieu fee for a project was the estimated land-and-construction cost per space to build a nearby public parking structure. Between 1978 and 1992, developers paid in-lieu fees for 52 parking spaces. The per-space fee set for each project was the sum of (1) the value of 60 square feet of land within a 300 foot radius of the site, and (2) the average construction cost per space in municipal parking structures. The average fee was $37,000 per space, and the highest was $53,000 per space. Therefore, in the extreme case, a developer was willing to pay the city $53,000 for the right not to provide a parking space (Beverly Hills 1992).

This case-by-case procedure required a land-value appraisal to estimate the cost of public parking near each project that applied to pay the fee. After waiting four to six months to be notified of the fee, applicants usually appealed to the City Council to reduce it. Developers complained that not knowing the fee until after the appraisal created uncertainty in project planning. The case-by-case approach was complicated, time-consuming, and expensive.

To address these problems, Beverly Hills adopted the second approach in 1994 – it set uniform fees for all projects. These new fees are easier for the city to administer and for developers to use. Developers can easily incorporate the fee in a financial analysis and decide whether to provide the required parking or pay the fee. Thirty-seven of the 46 surveyed cities set uniform fees, probably because of their certainty, simplicity, and equity. Most cities' in-lieu fees do not cover the full cost of providing a public parking space. Cities aim to set their fees high enough to pay for public parking, yet low enough to attract development. Most cities have no explicit policy, regarding how often to revise their fees and some cities' fees have not changed for many years. A few cities automatically link their fees to an index of construction costs. For example, Beverly Hills and Palo Alto adjust their fees annually by the ENR Construction Cost Index, a measure of cost inflation in the construction industry.

Kirkland has two unusual in-lieu options. Developers can pay $6,000 per parking space not provided, and the subsequent owners must purchase one parking permit in a public lot for every three spaces not provided (because the city estimates that employees use one-third of the required parking spaces). Alternatively, developers pay no initial in-lieu fee but subsequent owners must purchase a parking permit in a public lot for each space not provided. This annual option reduces the capital cost of development and encourages the use of public parking. A property owner may cancel the annual agreement at any time by providing the required on-site parking.

German cities often have a graduated schedule of in-lieu fees (Ablösebeträge). The fees are highest in the city center and decline with distance from the center. For example, Hamburg's fee is $20,705 per parking space in the city center, and $11,300 in the area surrounding the center.

Vancouver has the most sophisticated method for calculating its in-lieu fee ($9,708 per space). This fee is the parking subsidy implicit in constructing a new public parking space, as measured by: (1) the land-and-construction cost per space in a public parking structure, minus (2) the present discounted value of the net operating income per space during the expected 30-year life of the structure, minus (3) the present discounted value of the residual property value of the structure, per space, after 30 years. The in-lieu fee is thus the expected net present cost per space – all parking costs minus all parking revenues – over the

structure's life. Developers who pay the fees do not subsidize the city, and the city does not subsidize developers. Instead, developers subsidize parking.

To summarize, some cities set the fees on a case-by-case basis, but most set uniform fees for all development. Cities use a wide variety of methods to set their in-lieu fees, which range from $2,000 to $27,520 per parking space not provided.

Who Decides Whether to Provide Parking or Pay Fee?

Most cities allow developers to choose whether to pay the fee or provide the parking, but a few cities require developers to pay the fee rather than provide the parking. Officials in these latter cities cited several reasons for requiring developers to pay the fees: to centralize parking facilities, put more of the parking supply under public management, encourage shared parking, discourage the proliferation of surface parking lots, emphasize continuous shop fronts, improve pedestrian circulation, reduce traffic congestion, and improve urban design. Some cities allow property owners to remove existing required spaces by paying in-lieu fees. This option consolidates scattered parking spaces, facilitates reinvestment in older buildings, and encourages more efficient use of scarce land previously committed to surface parking.

Most American cities reduce their parking requirements in the central business district (CBD). In contrast, German cities often have uniform parking requirements throughout the city, but allow developers in the CBD to provide only part of the required parking, and require them to pay fees for the rest.

For example, developers may provide at most 25 percent of the parking required for land uses in the center of Hamburg, and must pay fees in lieu of providing the rest of the parking.

In-lieu fees in the United States are legally justified by the nexus between the fees and the cost of providing public parking spaces. American cities therefore offer the in-lieu option only where they are prepared to spend the fee revenue to provide new public parking facilities. The nexus argument does not necessarily imply that the in-lieu revenue must be used to provide public parking, however, because a variety of transportation improvements can substitute for more parking. For example, British and German cities often use the in-lieu revenue to improve public transportation.

The Impact Fees Implicit in Minimum Parking Requirements

In some ways, parking requirements resemble impact fees. Many cities require developers to pay impact fees to finance public infrastructure – such as roads and schools – that development makes necessary. In Regulation for Revenue, Alan Altshuler and José Gómez-Ibáñez (1993) define these impact fees as "mandated expenditures by private land developers, required as a price for their obtaining regulatory permits, in support of infrastructure and other public services" (vii).

Parking requirements resemble impact fees because developers provide the required infrastructure – parking spaces – to obtain building permits. In-lieu parking fees also resemble impact fees because developers pay the fees to obtain building permits, and cities then use the revenue to pay for public infrastructure – parking spaces– that the development makes necessary. When cities require developers to pay the fees rather than provide the parking, the in-lieu fees are impact fees.

We can use the in-lieu fees to estimate the impact fees implicit in parking requirements. Impact fees are usually levied per square foot of building area, while in-lieu fees are levied per required parking space not provided. To compare in-lieu fees with impact fees, we must first convert the in-lieu fees into a cost per square foot of building area. We can do this because cities usually require parking spaces in proportion to

building area (on the assumption that building area determines parking demand). The in-lieu parking fees per square foot of building area reveal the impact fees implicit in the parking requirements themselves.

CITY	IN-LIEU PARKING FEE ($/space)	LAND USE	PARKING REQUIREMENT (spaces per 1,000 square feet)	PARKING IMPACT FEE ($/square foot)
(1)	(2)	(3)	(4)	(5)=(2)X(4)/1,000
Palo Alto, Calif.	$17,848	Offices	4.0	$71
Beverly Hills, Calif.	$20,180	Offices	2.9	$59
Walnut Creek, Calif.	$16,373	Offices	3.3	$55
Kingston upon Thames, U.K.	$20,800	Offices	2.3	$48
Carmel, Calif.	$27,520	Offices	1.7	$46
Mountain View, Calif.	$13,000	Offices	3.0	$39
Sutton, UK	$13,360	Offices	2.7	$36
Harrow, UK	$14,352	Offices	2.3	$33
Hamburg, Germany	$20,705	Offices	1.5	$32
Lake Forest, Ill.	$ 9,000	Offices	3.5	$32
Mill Valley, Calif.	$ 6,751	Offices	4.4	$30
Palm Springs, Calif.	$ 9,250	Offices	3.1	$28
Reykjavik, Iceland	$13,000	Offices	2.2	$28
Claremont, Calif.	$ 9,000	Offices	2.9	$26
Concord, Calif.	$ 8,500	Offices	2.9	$24
Davis, Calif.	$ 8,000	Offices	2.5	$20
Orlando, Fla.	$ 9,883	Offices	2.0	$20
Kitchener, Ontario	$14,599	Offices	1.3	$19
Chapel Hill, N.C.	$ 7,200	Offices	2.5	$18
Kirkland, Wash.	$ 6,000	Offices	2.9	$17
Hermosa Beach, Calif.	$ 6,000	Offices	2.6	$16
Berkeley, Calif.	$10,000	Offices	1.5	$15
Burnaby, British Columbia	$ 7,299	Offices	2.0	$15
Vancouver, British Columbia	$ 9,708	Offices	1.0	$10
State College, Penn.	$ 5,850	Offices	1.3	$ 8
Ottawa, Ontario	$10,043	Offices	0.7	$ 7
Calgary, Alberta	$ 9,781	Offices	0.7	$ 7
Port Elizabeth, South Africa	$ 1,846	Offices	2.3	$ 4
Waltham Forest, U.K.	$ 2,000	Offices	0.9	$ 2
MEAN	$11,305		2.3	$26
MEDIAN	$ 9,781		2.3	$24

Minimum Parking Requirements Considered as Impact Fees (for office buildings)

- In-lieu fees and parking requirements are for the city center in 1996. In-lieu fees and impact fees are expressed in US$.
- To obtain the parking requirement in spaces per 100 square meters, multiply the required spaces in Column 4 by 1 .076.
- To obtain the parking impact fee in dollars per square meter, multiply the impact fee in Column 5 by 10.76.

CITY	IN-LIEU PARKING FEE	LAND USE	PARKING REQUIREMENT	PARKING IMPACT FEE
	($/space)		(spaces per 1,000 square feet)	($/square foot)
(1)	(2)	(3)	(4)	(5)=(2)x(4)/1,000
Beverly Hills, Calif.	$20,180	Restaurant	22.2	$448
Palm Springs, Calif.	$ 9,250	Cabaret	28.6	$264
Mountain View, Calif.	$13,000	Assembly Hall	18.0	$234
Kingston upon Thames, U.K.	$20,800	Food Superstore	7.7	$160
Davis, Calif.	$ 8,000	Funeral Home	20.0	$160
Sutton, U.K.	$13,360	Food Superstore	8.5	$114
Kitchener, Ontario	$14,599	Manufacturing	7.7	$112
Calgary, Alberta	$ 9,781	Billiard Parlor	10.3	$101
Ottawa, Ontario	$10,043	Church	9.8	$ 98
Claremont, Calif.	$ 9,000	Theater	10.0	$ 90
Hermosa Beach, Calif.	$ 6,000	Theater	13.0	$ 78
Burnaby, British Columbia	$ 7,299	ArtGallery	10.3	$ 75
Palo Alto, Calif.	$17,848	All Uses	4.0	$ 71
Mill Valley, Calif.	$ 6,751	Assembly Hall	10.0	$ 68
Harrow, U.K.	$14,352	Garden Center	4.6	$ 67
Hamburg, Germany	$20,705	Garden Center	3.1	$ 64
Walnut Creek, Calif.	$16,373	Nonresidential	3.3	$ 55
Kirkland, Wash.	$ 6,000	Restaurant	8.0	$ 48
Carmel, Calif.	$27,520	Commercial	1.7	$ 47
Concord, Calif.	$ 8,500	Restaurant	4.0	$ 34
Port Elizabeth, South Africa	$ 1,846	Recreation Hall	18.6	$ 34
Reykjavik, Iceland	$13,000	Nonresidential	2.2	$ 28
Lake Forest, Ill.	$ 9,000	Restaurant	2.5	$ 23
Orlando, Fla.	$ 9,883	Nonresidential	2.0	$ 20
Chapel Hill, N.C.	$ 7,200	Offices	2.5	$ 18
Berkeley, Calif.	$10,000	Nonresidential	1.5	$ 15
Vancouver, British Columbia	$ 9,708	Nonresidential	1.0	$ 10
Waltham Forest, U.K.	$ 2,000	Shops	4.5	$9
State College, Penn.	$ 5,850	All Uses	1.3	$8
MEAN	$11,305		8.3	$ 88
MEDIAN	$ 9,781		7.7	$ 67

- In-lieu fees and parking requirements are for the city center in 1996. In-lieu fees and impact fees are expressed in US$.
- To obtain the parking requirement in spaces per 100 square meters, multiply the required spaces in Column 4 by 1.076.
- To obtain the parking impact fee in dollars per square meter, multiply the numbers in Column 5 by 10.76.
- The land uses are those with the highest minimum parking requirements in each city.

Minimum Parking Requirements Considered as Impact Fees
(For land uses with the highest parking requirements)

The average parking impact fee for the U.S. cities in the Table above is $31 per square foot, which dwarfs the impact fees levied for all other public purposes. A 1991 survey of 100 U.S. cities found that the impact fees for all purposes (roads, schools, parks, water, sewers, flood control, and the like) averaged $6.97 per square foot of office buildings (see Altshuler and José Gómez-Ibáñez 1993, 40). The average parking impact fee for office buildings is thus 4.4 times the average impact fee for all other public purposes combined. If impact fees reveal a city's priorities for public services, many cities' highest priority is free parking.

Sources:

- Excerpts from: Journal of Planning Education and Research 18:307-320.
  © 1999 Association of Collegiate Schools of Planning. Donald C. Shoup

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- Planning Advisory Service. 19 64. Off-Street Parking Requirements.
  Report # 182. Chicago, Ill.: American Planning Association.

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  Parking Demand. Report # 27 0. Chicago, Ill.: American Planning Association.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 16

ADA Parking Reform

Paying for parking improves access for all

Changes are coming to the City of Portland Bureau of Transportation's Disabled Parking Program. **Effective July 1, 2014**, new rules take effect to make it easier for persons with disabilities to park near their destinations as well as to increase the availability of short-term parking spaces for all people parking in downtown Portland and other metered districts.

1 Pay to Park

If you use a state-issued Disabled Parking Placard, you will be required to pay at parking meters. If you use a state-issued Wheelchair User Placard, there will be no change in parking rules.

2 Payment Options

The Portland Bureau of Transportation is creating several payment options to make paying and parking easier for persons using Disabled Parking Placards.

3 New Reserved Spaces

To improve access for people who need it most, 50 parking spaces are being installed and reserved for persons using Disabled Parking Placards. Pay to park rules apply. The City is also installing 30 parking spaces reserved for persons holding Wheelchair User Placards.

Si necesita mas informacion sobre el programa de estacionamiento para discapacitados de Portland en espanol, por favor contacte a la Oficina de Transporte de Portland en disabledparking@portlandoregon.gov o llama a 503-823-5185.

To help ensure equal access to City programs, services and activities, the City of Portland will reasonably modify policies and procedures and provide additional aids and services to persons with disabilities. Call 503-823-5185 or TDD 503-823-6868.

CITY OF PORTLAND BUREAU OF TRANSPORTATION

1120 SW 5th Ave., 8th flr.
Portland, OR 97204
503-823-5185 | @PBOTinfo
disabledparking@portlandoregon.gov
portlandoregon.gov/transportation/disabledparking

NEW DISABLED PARKING RULES

EFFECTIVE: JULY 1, 2014

If You Have A Wheelchair User Parking Placard

Parking is free

If you have a Wheelchair User Placard from Oregon or another state you may continue to park for free at any meter that is marked for 30 minutes or longer.* You may also park at one of the 30 new wheelchair user only spaces the City is installing, or use one of the 50 new spaces marked for disabled parking.
To view reserved spaces: www.portlandoregon.gov/transportation/disabledparking.

Pay to park

For meters with time limits under 30 minutes, you are required to pay the meter rate and comply with all meter regulations.

**Oregon State Law requires free parking for people holding Wheelchair User Placards.*

If You Have a Disabled Parking Placard

Pay to park

If you hold a Disabled Parking Placard you will be required to adhere to all applicable parking regulations and pay for parking at all meters beginning July 1, 2014 (see chart below). Park at any open parking space, or use one of the 50 new Disabled Parking spaces the City is installing. Pay to park rules apply. To view reserved spaces: www.portlandoregon.gov/transportation/disabledparking.

The Portland Bureau of Transportation recognizes that persons with disabilities may benefit from additional time at parking meters. For example, if you park in a 90 minute parking space, pay for 90 minutes but stay up to 3 hours. Get extra time at 1 hour, 90 minute, or 2 hour meters. Refer to the chart below:

Meter Time	Pay Up To	Stay Up To
15 or 30 mins	Time Limit	Meter Time Limit
1 hr	1 hr	3 hrs
90 mins	90 mins	3 hrs
2 hrs	2 hrs	3 hrs
3 hrs	Actual Time Used	Actual Time Used
5 hrs	Actual Time Used	Actual Time Used
11 hrs	Actual Time Used	Actual Time Used

Note: You cannot repark on the same block for at least three hours after the time expires or you may be cited.

Convenient alternatives to paying at the meter

Scratch-off permit

Handy scratch-off permits allow you to pay from your vehicle, so you don't have to visit the meter and return to your vehicle to place a meter receipt.

Monthly parking permit

If you live or work in a metered district and cannot reasonably use public transportation or an existing garage, you may purchase a monthly parking permit from the Portland Bureau of Transportation. With a monthly permit, you may park within 3 blocks in all directions of your residence or place of employment. You must obtain and pay for your monthly permit by the 20th of each month to use it the following month. For example, pay by June 20th for your July permit.

Do you live in subsidized housing?

If you live in subsidized housing in a metered district, you may obtain a free permit through June 30, 2015.

For all these options contact:

503-823-5185
disabledparking@portlandoregon.gov

A Monthly Publication of The International Parking Institute www.parking.org

the parking professional

IPI Receives TSA Partnership Award for First Observer

NEW! The Back Page: Up, Up, With People

Airport Site Characteristics Influence Parking Revenue

Fundamental Principles for Delivering a High-Quality Airport Parking Experience

Enhancing Parking for the Disabled: A Case Study

Baby It's Cold Outside

January 2011

Gordon Dash, CAPP

ENHANCING

Parking for the Disabled in Raleigh, NC

Abuse of handicapped placards is an increasing problem in cities throughout the United States. The City of Raleigh, North Carolina, faced this problem head-on and business owners, residents and visitors alike are reaping the benefits.

As is the case with many municipalities, Raleigh was faced with a shortage of available on-street parking spaces and an overabundance of vehicles displaying disabled parker placards. As a result, precious short-term parking spaces in the city's recently revitalized downtown district were being monopolized by all-day parkers.

North Carolina state law requires communities to provide unlimited parking for people with disabilities and, as many cities do, Raleigh had always interpreted this law to mean free parking. To ensure turnover of on-street spaces adjacent to businesses, the city took a closer look at how the state statute regulations could best serve the interests of all stakeholders, including members of the disabled community. To remove the incentive for people to abuse the placards, the city decided to require disabled parkers to pay just like everyone else; however, they are not subject to time limits. Simultaneously, new multi-space pay stations were installed that enabled the city to provide these innovative and flexible parking policies.

From Nine to Five Government City to Thriving Downtown

Raleigh is one of the fastest growing areas in the country, largely due to the richness of local resources, mild climate, top educational institutions, and outstanding health care facilities. Even in light of the recent economic downturn, the local economy has fared relatively well, making Raleigh an attractive place to live.

The growth in recent years has both promoted and required the transformation of Raleigh from a "9-to-5" government town to a vibrant city that blends office, retail and housing with pedestrian-friendly streets and commercial activity. The city has carefully created a balance of office, restaurants and retail, as well as attractive new construction and recently renovated housing.

In 2003, the City Council approved Raleigh's "Livable Streets" Downtown Plan, the cornerstone of which was reinvigorating the historic main street, Fayetteville Street, as the heart of downtown. In its prior incarnation, Fayetteville Street with the State Capital at the north end was a pedestrian mall but vehicular traffic was finally returned with a newly constructed 500,000-square-foot convention center to the south and an outdoor City Plaza for entertainment and special events. As an interim measure, the parking spaces on Fayetteville Street were un-metered, time-limit parking.

In addition to the convention center, other projects have increased the demand on the city's on- and off-street parking inventory, including:

- A four-star, 400-room hotel.
- The RBC bank headquarters — a 32-story, mixed-use skyscraper, including retail, parking, offices and condominiums.
- Expansion of the Wake County Courthouse that includes 20 new courtrooms.
- Over 2,000 new housing units were constructed in downtown in the last decade, boosting the number of residents living downtown to approximately 8,000.

On-street parking had been free downtown since the early 1970s, when merchants persuaded the city to remove parking meters. Using an argument familiar to most municipal parking administrators, they contended that suburban shopping centers, surrounded by acres of free parking, drew business away — some still have this worry. More recently, however, many business owners complained that most of the on-street parking was taken over by downtown workers, not customers. To avoid tickets for exceeding time limits that range from 15 minutes to two hours, they shifted to different spots during the day. And there were days when as many as half of the cars on a block were adorned with handicapped-parking placards. Some of those placards were properly registered to the disabled drivers and riders who used them — many were not.

Placard Abuse

Time limits for metered and unmetered parking spaces downtown range from 15 minutes to two hours; however, as described above, North Carolina state law requires communities to provide unlimited parking for people with disabilities. Like many cities, Raleigh interpreted that law to mean free parking. As a result, cars with handicapped placards filled many of the on-street parking spots on Fayetteville Street and surrounding streets.

The local business owners suspected abuse, complaining that a small percentage of the population was abusing the privilege and taking up spaces all day. There was a general suspicion that some of these cars belong to unscrupulous drivers who would use placards issued to relatives with genuine disabilities, which is legal only when the disabled permit holder is present in the vehicle when the vehicle is parked.

Speaking on behalf of business owners, David Diaz, president of the nonprofit Downtown Raleigh Alliance stated, "We're hearing from the downtown business owners that they see a lot of placards in cars on the streets, and they seem to be there all day. That's not encouraging the turnover we need." Even members of the disabled community, including the Mayor's Committee for People with Disabilities, suggested that the city should start clamping down on able-bodied abusers.

While Raleigh interpreted state law to let cars with handicapped placards park for free in metered spaces where other drivers must pay, our sister city, Charlotte, had a different take — disabled users there can park without time limits, as long as they put money in the meters.

New Meters Accommodate Variable Regulations

While parking spaces on Fayetteville Street were unmetered as an interim solution, the city's ultimate objective was to regulate them with more customer-friendly multi-space pay stations. After a pilot and subsequent procurement, new pay stations were installed in March 2010. In addition to the spaces on Fayetteville, most of the single space meters in Raleigh were replaced with these new pay stations — all told, nearly 200 new pay stations were installed. In addition to accepting credit card and cell phone payments, the city realized that these new parking meters could be programmed to accommodate variable rate and time limits, features that would enable Raleigh to adopt a regulatory approach not available with traditional single-space meters.

To remove the incentive for people to abuse the placards, the city decided to require disabled parkers to pay just like everyone else; however, we wanted to make it clear that we were not launching an attack against citizens with disabilities. In fact, city officials met with various disabled user groups, including the Mayor's Committee for People with Disabilities, for discussion and input. The consensus was that persons with handicapped placards were not averse to paying for parking. Their main concern was accessibility and not having to return to the pay station to purchase more time. The city asked its pay station technology provider, Duncan Solutions, to program the new pay stations so that customers with a disabled placard could access a special tier to pay for an unlimited number of hours — in a space where non-disabled parkers would be limited to the posted time.

To discourage non-disabled customers from using this option, Duncan created a warning screen prior to purchasing time stating that a substantial fine would be imposed for failure to display a valid placard. The patron is then asked to accept these terms or to cancel out of the screen. Once a disabled patron accepts the terms, they are required to enter their space number and make payment. With this option, any customer who displays a handicap placard can exceed the one-hour or two-hour limit and purchase time for the whole day in one transaction. It can cost the driver as much as $9 during the nine hours that payment is required (8 a.m. to 5 p.m., weekdays only). To support this new protocol, Duncan re-configured a button on the meter keypad to be the "handicap button."

For enforcement purposes, enforcement agents are able to see on their handhelds how much time was purchased and at what time the transaction took place, which will confirm if the handicapped tier was used. Vehicles found parked without a valid handicapped placard are subject to being cited.

Enhancements Generate Increased Turnover

Although the city eliminated "free" parking for the motorists with handicap placards, availability of spaces in close proximity to businesses has resulted in greater convenience for all parkers. Abuse of handicapped placards has become a rarity on Fayetteville and other downtown streets. Anyone walking downtown can readily see vacant spaces where there used to be none.

Now customers that rely on the city's on-street spaces can easily find short-term parking. "That first day (when the city implemented the new policy), I saw a family pull up and park out front and come into our store," said the owner of one local business. "You never saw that before." Merchants say they've seen increased turnover in curbside parking since March, when the city activated parking pay stations and the new parking policy. More turnover means more parking options for anybody who ventures downtown to eat lunch, consult a lawyer or make a bank deposit.

"It's nice to be able to let my clients know there's a good chance there will be an open spot right outside the building," said the manager of one bank. "That has been a hindrance for folks visiting downtown banks in the past." ■

Gordon Dash, CAPP, is the Parking Administrator for the City of Raleigh, N.C. He can be reached at *gordon.dash@raleighnc.gov* or 919.996.4041.

Item #09-1 – Downtown Parking Spaces. Mayor Meeker stated the Committee received in their agenda packet the statutory language and information on the Charlotte ordinance. He questioned if there is case law with Deputy City Attorney Leapley pointing out there is. She stated the City doesn't have the ability to rent out parking spaces and the funds that go into the parking meters are simply to mark the time. It does not generate revenue. Mayor Meeker stated the Statute doesn't refer to paying but talks about the time a person could stay in a place. He questioned when someone parks in a space and pays and the time expires if they have to move along. Parking Administrator Dash indicated the current ordinance requires that the vehicle be moved. Mayor Meeker questioned if the meters or stations could be set up so that some one who has a handicapped placard could pay and stay more than the time limit. Deputy City Attorney Leapley pointed out Charlotte requires those with handicap placards to pay other municipalities have not gone that route. Mayor Meeker stated he would need to see the case law to understand the total situation.

Ms. McFarlane questioned if she had a handicap placard if there was a way that she could stay and pay a separate rate and the enforcement people would realize that. Parking Administrator Dash pointed out a person could park and pay for a longer time and the parking enforcement person could look at the pay station and then to go the vehicle to make sure they had a placard.

David Diaz, Downtown Raleigh Alliance, indicated his group met with a couple of representatives of two disability organizations. H stated he thought it was less of an issue about paying to park than the accessibility for parking spaces. He stated there were some suggestions that we have special spaces at the end of a street near the curb cuts spaces to be designated for those people with handicapped placards. He talked about the meter and parking spaces pointing out the group seems to be more concerned about having locations for parking. He stated it is up to the City as to whether they want to enter into a parking program like in Charlotte for the short term and then look for long term solutions. Mayor Meeker stated if there was a way to have the ability to say that handicapped parkers could pay for additional time he has no problem with Parking Administrator Dash pointing out we have that ability. Mayor Meeker stated a person without a handicapped placard could park and pay for the stated time and then they have to move. A person with a handicapped placard could pay for as much time as they wanted and not have to move. Mayor Meeker pointed out in a quick reading of the 1952 case, it deals with other Statutes. He stated his tendency is to take the Charlotte approach and give preference to the handicapped parker and allow them to stay as long as they want to pay for. Mayor Meeker moved that the Committee make that recommendation. His motion was seconded by Ms. McFarlane. Mayor Meeker if the City Attorney's office felt that there should be some clarifications as to how this is done the City Attorney could do that at the table.

Item #07-49 – Capacity Fee Structure – Incentives and Rebates.
Item #07-57 – Water Conservation Recommendations. Mayor Meeker stated the Committee received all the information in discussions that have been held before. He stated he was thinking of three different possibilities including adjusting the capacity fees to get closer to the $2,500 fee that surrounding municipalities' charge. The second suggestion would be have a builder or an individual who has drought resistant or native plants received some type "green star" or some type recognition that they could use in selling the property. He stated he feels we should go that

motion was seconded by Ms. Baldwin and a roll call vote resulted in all members voting in the affirmative. The Mayor ruled the motion adopted on an 8-0 vote.

RALEIGH CHAMBER OF COMMERCE – QUARTERLY REPORT – RECEIVED

This item is the submittal of quarterly reports outlining the City's marketing and economic development program efforts October - December 2009.

Recommendation: That the report be received.

Adrianne Cole pointed out Council members did receive the report in their agenda packet. She stated they remain strong. They are working on some projects that are carry over from 2009 and continue to be strong and briefly touch on some of the projects or promotions they are working on.

The report was received without comment.

REPORT AND RECOMMENDATION OF BUDGET AND ECONOMIC DEVELOPMENT COMMITTEE

DOWNTOWN PARKING SPACES – DIRECTION GIVEN RELATIVE TO USE BY THOSE DISPLAYING HANDICAP PLACARD

Mayor Meeker reported the Budget & Economic Development Committee recommends that the parking meters pay station give preference to those vehicles displaying a handicap placard by allowing them to stay in a parking space as long they want as long as they pay for the time. On behalf of the committee, Mayor Meeker moved approval of the recommendation pointing out hopefully this will help solve the problem. The motion was seconded by Mr. Crowder and a roll call vote resulted in all members voting in the affirmative. The Mayor ruled the motion adopted on an 8-0 vote.

REPORT AND RECOMMENDATION OF THE COMPREHENSIVE PLANNING COMMITTEE

TC-3-09 HOLLY RIDGE FARMS BUILT ENVIRONMENTAL REGULATIONS – DENIED

Chairperson McFarlane reported the Comprehensive Planning Committee recommends upholding the Planning Commission's recommendation for denial of TC-3-09 - Holly Ridge Farms Built Environmental Regulations as outlined in CR #11323. On behalf of the Committee, Ms. McFarlane moved that recommendation be upheld. Her motion was seconded by Mayor Meeker.

Mr. Odom stated this area is in District B and partly in the County's jurisdiction. He questioned what process we need to save some of these areas that are basically rural residential. He

know the rules

blue spaces

If you have a disability parking placard or license plate...

- You must either be the driver or a passenger of the vehicle to park in a disability parking "blue space."
- Don't park on the blue striped lines needed by vans with wheelchair lifts.
- Disability parking anywhere in the U.S. is available to you.
- Hang the placard from the rearview mirror. (Remove when driving.)

NOTE: Vehicles with a disabled veteran plate need to use a disability parking placard or obtain a red handicap sticker for their disabled veteran license plate to park in a "blue space."

Visit the Secretary of State at ExpressSOS.com

know the rules
blue spaces

It is against the law to:

- Loan your disability placard to another person.
- Knowingly use a disability placard that has been canceled or replaced.
- Use a disability placard or plate when the disability no longer exists.
- Use the disability placard or license plate of a deceased family member.
- Copy, alter or forge a disability placard or license plate.

Report violations to the local police. Penalties may include fines as high as $500 and up to 30 days in jail.

Gas Station Assistance for the Disabled

You can find an online directory of Michigan gas stations providing full service to motorists with disabilities at **ThePumpGuide.com.**

To report fraud, contact the Department of State Information Center at 888-SOS-MICH (767-6424) or online at www.ExpressSOS.com.

SOS-386 300,000; PA 300, 1949 as amended; $8,608.38/$0.029 (rev. 07/12)

Article 2A.
Afflicted, Disabled or Handicapped Persons.

§ 20-37.1: Repealed by Session Laws 1989, c. 157, s. 1.

§§ 20-37.2 through 20-37.4: Repealed by Session Laws 1991, c. 411, s. 5.

§ 20-37.5. Definitions.

Unless the context requires otherwise, the following definitions apply throughout this Article to the defined words and phrases and their cognates:

(1) "Distinguishing license plate" means a license plate that displays the International Symbol of Access using the same color, size of plate, and size of letters or numbers as a regular plate.

(2) "Handicapped" shall mean a person with a mobility impairment who, as determined by a licensed physician:

a. Cannot walk 200 feet without stopping to rest;

b. Cannot walk without the use of, or assistance from, a brace, cane, crutch, another person, prosthetic device, wheelchair, or other assistive device;

c. Is restricted by lung disease to such an extent that the person's forced (respiratory) expiratory volume of one second, when measured by spirometry, is less than one liter, or the arterial oxygen tension is less than 60 mm/hg on room air at rest;

d. Uses portable oxygen;

e. Has a cardiac condition to the extent that the person's functional limitations are classified in severity as Class III or Class IV according to standards set by the American Heart Association;

f. Is severely limited in their ability to walk due to an arthritic, neurological, or orthopedic condition; or

g. Is totally blind or whose vision with glasses is so defective as to prevent the performance of ordinary activity for which eyesight is essential, as certified by a licensed ophthalmologist, optometrist, or the Division of Services for the Blind.

(3) "International Symbol of Access" means the symbol adopted by Rehabilitation International in 1969 at its Eleventh World Congress on Rehabilitation of the Disabled.

(4) "Removable windshield placard" means a two-sided, hooked placard which includes on each side:

a. The International Symbol of Access, which is at least three inches in height, centered on the placard, and is white on a blue shield;

b. An identification number;

c. An expiration date that is visible from at least 20 feet and the month and year of expiration; and

d. The seal or other identification of the issuing authority. (1967, c. 296, s. 5; 1977, c. 340, s. 1; 1991, c. 411, s. 1; 2009-493, s. 1.)

§ 20-37.6. Parking privileges for handicapped drivers and passengers.

(a) General Parking. – Any vehicle that is driven by or is transporting a person who is handicapped and that displays a distinguishing license plate, a removable windshield placard, or a temporary removable windshield placard may be parked for unlimited periods in parking zones restricted as to the length of time parking is permitted. This provision has no application to those zones or during times in which the stopping, parking, or standing of all vehicles is

prohibited or which are reserved for special types of vehicles. Any qualifying vehicle may park in spaces designated as restricted to vehicles driven by or transporting the handicapped.

(b) Handicapped Car Owners; Distinguishing License Plates. – If the handicapped person is a registered owner of a vehicle, the owner may apply for and display a distinguishing license plate. This license plate shall be issued for the normal fee applicable to standard license plates. Any vehicle owner who qualifies for a distinguishing license plate may also receive one removable windshield placard.

(c) Handicapped Drivers and Passengers; Distinguishing Placards. – Handicapped Drivers and Passengers; Distinguishing Placards. – A handicapped person may apply for the issuance of a removable windshield placard or a temporary removable windshield placard. Upon request, one additional placard may be issued to applicants who do not have a distinguishing license plate. Any organization which, as determined and certified by the State Vocational Rehabilitation Agency, regularly transports handicapped persons may also apply. These organizations may receive one removable windshield placard for each transporting vehicle. When the removable windshield or temporary removable windshield placard is properly displayed, all parking rights and privileges extended to vehicles displaying a distinguishing license plate issued pursuant to subsection (b) shall apply. The removable windshield placard or the temporary removable windshield placard shall be displayed so that it may be viewed from the front and rear of the vehicle by hanging it from the front windshield rearview mirror of a vehicle using a parking space allowed for handicapped persons. When there is no inside rearview mirror, or when the placard cannot reasonably be hung from the rearview mirror by the handicapped person, the placard shall be displayed on the driver's side of the dashboard. A removable windshield placard placed on a motorized wheelchair or similar vehicle shall be displayed in a clearly visible location. The Division shall establish procedures for the issuance of the placards and may charge a fee sufficient to pay the actual cost of issuance, but in no event less than five dollars ($5.00) per placard. The Division shall issue a placard registration card with each placard issued to a handicapped person. The registration card shall bear the name of the person to whom the placard is issued, the person's address, the placard number, and an expiration date. The registration card shall be in the vehicle in which the placard is being used, and the person to whom the placard is issued shall be the operator or a passenger in the vehicle in which the placard is displayed.

(c1) Application and Renewal; Physician's Certification. – The initial application for a distinguishing license plate, removable windshield placard, or temporary removable windshield placard shall be accompanied by a certification of a licensed physician, ophthalmologist, or optometrist or of the Division of Services for the Blind that the applicant is handicapped. The application for a temporary removable windshield placard shall contain additional certification to include the period of time the certifying authority determines the applicant will have the disability. Distinguishing license plates shall be renewed annually, but subsequent applications shall not require a medical certification that the applicant is handicapped. Removable windshield placards shall be renewed every five years, and the renewal shall require a medical recertification that the person is handicapped. Temporary removable windshield placards shall expire no later than six months after issuance.

(c2) Existing Placards; Expiration; Exchange for New Placards. – All existing placards shall expire on January 1, 1992. No person shall be convicted of parking in violation of this Article by reason of an expired placard if the defendant produces in court, at the time of trial on the illegal parking charge, an expired placard and a renewed placard issued within 30 days of the expiration date of the expired placard and which would have been a defense to the charge had it been issued prior to the time of the alleged offense. Existing placards issued on or after July 1, 1989, may be exchanged without charge for the new placards.

(c3) It shall be unlawful to sell a distinguishing license plate, a removable windshield placard, or a temporary removable windshield placard issued pursuant to this section. A

violation of this subsection shall be a Class 2 misdemeanor and may be punished pursuant to G.S. 20-176(c) and (c1).

(d) Designation of Parking Spaces. – Designation of parking spaces for handicapped persons on streets and public vehicular areas shall comply with G.S. 136-30. A sign designating a parking space for handicapped persons shall state the maximum penalty for parking in the space in violation of the law.

(d1) Repealed by Session Laws 1991, c. 530, s. 4.

(e) Enforcement of Handicapped Parking Privileges. – It shall be unlawful:

(1) To park or leave standing any vehicle in a space designated with a sign pursuant to subsection (d) of this section for handicapped persons when the vehicle does not display the distinguishing license plate, removable windshield placard, or temporary removable windshield placard as provided in this section, or a disabled veteran registration plate issued under G.S. 20-79.4;

(2) For any person not qualifying for the rights and privileges extended to handicapped persons under this section to exercise or attempt to exercise such rights or privileges by the unauthorized use of a distinguishing license plate, removable windshield placard, or temporary removable windshield placard issued pursuant to the provisions of this section;

(3) To park or leave standing any vehicle so as to obstruct a curb ramp or curb cut for handicapped persons as provided for by the North Carolina Building Code or as designated in G.S. 136-44.14;

(4) For those responsible for designating parking spaces for the handicapped to erect or otherwise use signs not conforming to G.S. 20-37.6(d) for this purpose.

This section is enforceable in all public vehicular areas.

(f) Penalties for Violation. –

(1) A violation of G.S. 20-37.6(e)(1), (2) or (3) is an infraction which carries a penalty of at least one hundred dollars ($100.00) but not more than two hundred fifty dollars ($250.00) and whenever evidence shall be presented in any court of the fact that any automobile, truck, or other vehicle was found to be parked in a properly designated handicapped parking space in violation of the provisions of this section, it shall be prima facie evidence in any court in the State of North Carolina that the vehicle was parked and left in the space by the person, firm, or corporation in whose name the vehicle is registered and licensed according to the records of the Division. No evidence tendered or presented under this authorization shall be admissible or competent in any respect in any court or tribunal except in cases concerned solely with a violation of this section.

(2) A violation of G.S. 20-37.6(e)(4) is an infraction which carries a penalty of at least one hundred dollars ($100.00) but not more than two hundred fifty dollars ($250.00) and whenever evidence shall be presented in any court of the fact that a nonconforming sign is being used it shall be prima facie evidence in any court in the State of North Carolina that the person, firm, or corporation with ownership of the property where the nonconforming sign is located is responsible for violation of this section. Building inspectors and others responsible for North Carolina State Building Code violations specified in G.S. 143-138(h) where such signs are required by the Handicapped Section of the North Carolina State Building Code, may cause a citation to be issued for this violation and may also initiate any appropriate action or proceeding to correct such violation.

(3) A law-enforcement officer, including a company police officer commissioned by the Attorney General under Chapter 74E of the General Statutes, or a campus police officer commissioned by the Attorney General under Chapter 74G of the General Statutes, may cause a vehicle parked in violation of this section to be towed. The officer is a legal possessor as provided in G.S. 20-161(d)(2). The officer shall not be held to answer in any civil or criminal action to any owner, lienholder or other person legally entitled to the possession of any motor vehicle removed from a space pursuant to this section, except where the motor vehicle is willfully, maliciously, or negligently damaged in the removal from the space to a place of storage.

(4) Notwithstanding any other provision of the General Statutes, the provisions of this section relative to handicapped parking shall be enforced by State, county, city and other municipal authorities in their respective jurisdictions whether on public or private property in the same manner as is used to enforce other parking laws and ordinances by said agencies. (1971, c. 374, s. 1; 1973, cc. 126, 1384; 1977, c. 340, s. 2; 1979, c. 632; 1981, c. 682, s. 7; 1983, c. 326, ss. 1, 2; 1985, c. 249; c. 586; c. 764, s. 24; 1985 (Reg. Sess., 1986), c. 852, s. 17; 1987, c. 843; 1989, c. 760, s. 3; 1989 (Reg. Sess., 1990), c. 1052, ss. 1-3.1; 1991, c. 411, s. 2; c. 530, s. 4; c. 672, s. 5; c. 726, s. 23; c. 761, s. 5; 1991 (Reg. Sess., 1992), c. 1007, s. 30; c. 1043, s. 4; 1993, c. 373, s. 1; 1994, Ex. Sess., c. 14, s. 31; 1999-265, s. 1; 2005-231, s. 11; 2009-493, s. 2.)

§ 20-37.6A. Parking privileges for out-of-state handicapped drivers and passengers.

Any vehicle displaying an out-of-State handicapped license plate, placard, or other evidence of handicap issued by the appropriate authority of the appropriate jurisdiction may park in any space reserved for the handicapped pursuant to G.S. 20-37.6. (1981, c. 48; 1991, c. 411, s. 3; 1991 (Reg. Sess., 1992), c. 1007, s. 31.)

ADA Q&A

What is the best website to visit for ADA rules and regulations and recent changes?

www.ada.gov

Does ADA address holding or reserving an accessible space for an individual?

No, ADA does not address this issue.

Are there any specific regulations or requirements for on-street parking?

No, there are no specific regulations for on-street parking.

Are there any comments in ADA for electric vehicle (EV) charging stations and cable management (i.e. when cables are left on the ground during charging or when the charging cable is disconnected from the electric vehicle)?

There are no requirements in ADA that address EV stations and cable management per se. The closest thing to that would be the requirement to have level floors within a certain tolerance.

If small parking lot serves three separate buildings, does the required number of disabled spaces in the lot depend on the minimum number of disabled spaces for each building? Or is the number of disabled spaces dependent on the number of spaces in the small lot?

The number of spaces required is based on the number of spaces in the lot.

Universities have consistently aggregated their total parking to determine the number of ADA spaces they should have on campus, and generally locate those around the academic and administrative buildings where the greatest congregation of the population is. Is our understanding correct in that the 2010 rules no longer permit this practice? If you have a 1,000-space surface lot two miles from the core of campus, does it really make sense to put ADA spaces where there is no access to their final destination?

The regulations require you to calculate the total number of spaces facility by facility according to Section 208 table 208.2. Section 208.3 exception 1 allows you to locate the spaces in different parking facilities if substantially equivalent or greater accessibility is provided. This would allow you to locate spaces closer in to the core. However, the burden of proof on substantially equivalent or greater is on the owner if challenged. It may be prudent to still locate some spaces in the remote lot.

For a group of 10 to 15 accessible parking spaces at 90-degree parking against a curb, what is typical to provide access aisles to reach the sidewalk for the non-van accessible spaces?

ADA regulations require 5-foot access aisles and require you to provide a ramp up on to the curb that does not encroach into the parking space or access aisle. You are allowed to share access aisles between two parking spaces except for angled van parking spaces. Reference section 502 in ADA.

If the parking garage is full and there are no spaces, are we required to open the garage to allow an ADA parker to look for parking?

ADA legislation does not address this operational issue. It would seem if ADA spaces are available you would allow them in; if not, then it would not seem necessary.

Is there a stated distance from ADA parking to the building entrance that a route must conform to?

There is no stated distance--just the “shortest accessible route.” Refer to section 208.3.1.

Does a college campus have to have a passenger loading zone? Our students are currently dropped off on the city street.

Where a passenger loading zone is provided, at least one zone must be made accessible per Section 209. So if the drop-off is a passenger loading zone, it would need to be accessible regardless of its location on or off campus. ADA does not specify whether it needs to be on or off campus. Per Section 206.2.1: “At least one accessible route shall be provided within the site from accessible parking spaces and accessible passenger loading zones; public streets and sidewalks; and public transportation stops to the

accessible building or facility entrance they serve." So you need to connect an accessible route to that location.

What about pay-in-lane machines?

ADA does not address reach issues from sitting in a vehicle.

What are the implications for gravel parking lots?

ADA applies to "all areas newly designed and newly constructed buildings and facilities and altered portions of existing building and facilities," per Section 201.1. In addition, per section 201.3, "These requirements shall apply to temporary and permanent buildings and facilities." A gravel parking lot would be a facility and these standards would apply.

Can you clarify the elevator/stair requirements for a simple parking deck above a paved parking area?

The ADA requirements only address a portion of the requirements for elevators and stairs. A single-level parking deck is a building and is required to provide the number of stairs based on building code requirements. The 1991 Standards required stairs to be accessible only when they provided access to floor levels not otherwise connected by an accessible route (e.g., where the accessible route is provided by an elevator, lift, or ramp). The 2010 Standards, at sections 210.1 and 504, require all newly-constructed stairs that are part of a means of egress to comply with the requirements for accessible stairs, which include requirements for accessible treads, risers, and handrails. In existing facilities where floor levels are connected by an accessible route, only the handrail requirement will apply when the stairs are altered. Exception 2 to section 210.1 of the 2010 Standards permits altered stairs to not comply with the requirements for accessible treads and risers where there is an accessible route between floors served by the stairs. Note that local jurisdictions may have additional or more restrictive requirements.

Regarding elevators, multi-story buildings must provide elevators unless they meet the exemption requirements in Title III, which, for a parking deck, would be "in a facility that is less than three stories or has less than 3000 sf per story." Please refer to Title III for the entire exemption language. A single-level parking deck is a multi-story building.

If a renovation project commenced prior to the March 15th effective date, and the project is still ongoing, is it subject to the new 2010 ADA standards?

Generally, the answer is no. Please refer to Title II or Title III for the definitions of what "commenced" means.

In a university setting, please explain the need for a number of ADA spaces in a lot/facility not serving a building, and the need for ADA spaces at residence halls.

Per ADA, each lot/facility, whether it serves a particular building or not, must provide the number of accessible parking spaces required by Table 208.2. The location of the stalls within the lot/facility that does not serve a particular building should be located per 208.3.1, "on the shortest accessible route to an accessible pedestrian entrance of the parking facility."

Refer to Section 208.2.3 and 208.3.2 for requirements for accessible parking for residential uses.

At what point is a parking lot repair a safety or code compliance issue?

Refer to the definition of alteration in Title II or Title III. If a parking lot repair meets the definition of an alteration, then it needs to be brought up to 2010 ADA standards.

We would like clarification on required use and proper location of detectable warning strips where accessible paths of travel intersect drive aisles. Also, we are interested in an update on EV parking requirements.

ADA has removed detectable warning strips from its requirements, however, local jurisdictions still may have these requirements. ADA does not have EV parking requirements specifically; they are counted as parking spaces like any other parking space relative to determining the number of accessible spaces. However, it is prudent to provide an accessible EV parking space if you are providing EV parking spaces, and local jurisdictions may have additional requirements.

If stalls are in designated slip hazards, is a painted man on the ground still mandatory? Please list new symbols and signage for ADA stalls.

The painted symbol on the ground is mandatory in all cases. ADA has not modified dramatically the marking requirements or signage requirements, however, local jurisdictions may have more detailed requirements. The ADA-specific requirements can be found in Section 502. Local jurisdictions may have additional requirements.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 17

Parking Requirements Reform White Paper

KIMLEY–HORN

November 2015

PARKING Requirements Reform

A White Paper

Kimley»Horn

Expect More. Experience Better.

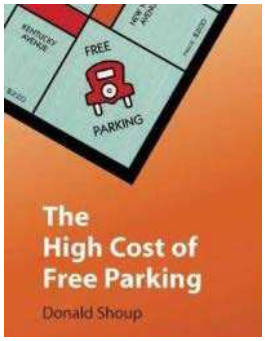
Table of Contents

Introduction

This whitepaper is an excerpt from a review of parking requirements commissioned by the City of Fort Collins as they addressed issues arising from the implementation of a new Bus Rapid Transit (BRT) system. The area in which the BRT would operate was rezoned to create a new Transit Oriented Development (TOD) Overlay Zone. Initially, all minimum parking requirements within the TOD Overlay Zone were eliminated and were replaced by parking maximums. This very progressive policy decision was challenged and revisited once several new student oriented housing developments were constructed with less than anticipated parking in relation the number of bedrooms provided and City Council received complaints from local neighborhood groups fearing parking overflow into their neighborhoods.

This review brought into focus a larger national debate regarding the use of minimum parking requirements. This national discussion is summarized in this paper.

Parking Requirements Reform – The Scholarly Debate



There is in fact a serious and significant national discussion occurring related to benefits and problems associated with the ubiquitous use of minimum parking requirements across the US and the world. Professor Donald Shoup, author of the “High Cost of Free Parking” and a Distinguished Professor of Urban Planning at UCLA, has been led the charge in this area; promoting how better parking policies can improve cities, the economy, and the environment. Shoup recommends that cities should charge fair market prices for on-street parking, use the meter revenue to finance added public services in the metered neighborhoods, and remove off-street parking requirements.

Recently several other noted academicians and planners have weighed in on the discussion of the importance of parking in general, expanding the research related to minimum parking requirements and proposing new options for how Cities should approach these issues. We will focus on three publications in particular. The first is a book entitled “Parking Management” published by Mr. Todd Litman, founder of the Victoria Transport Policy Institute. The second is a recently published book by Richard Willson entitled: “Parking Reform Made Easy”. The third is a book by Eran Ben-Joseph entitled: “Re-Thinking A Lot – The Design and Culture of Parking”.

However, before we launch into that discussion, there is another key issue worthy of exploration – the surprising importance of parking to Transit Oriented Developments.

Parking and Transit Oriented Developments

The following is an excerpt from an article by Mark Gander, Principal Planner; Director of Urban Mobility and Development at AECOM and a member of the Board of Directors for the Green Parking Council.

“There are approximately 250 million registered vehicles (2010) in the United States. When these vehicles are not in use, which accounts for more than 90 percent of their time, they must be parked. Because of this, off-street parking space availability is ubiquitous; its footprint is vast in scale. As MIT Professor of Landscape Architecture and Planning Eran Ben-Joseph recently noted, in some U.S. cities, parking lots cover more than a third of the land area, becoming the single most salient landscape feature of our built environment. This ubiquity is further compounded because cities require parking everywhere, yet ironically its absence is noticed most.”

"The ubiquity of parking is not accidental: Parking matters. It plays an important role in the success of cities, communities and places as well as in the development of mixed-use projects and sustainable transportation. Parking supply and pricing often have a direct impact on the ability to create compact, healthy communities. Too much parking at residential properties correlates with more automobile ownership, more vehicle miles traveled, more congestion, more carbon emissions, and higher housing costs. It also results in lost development opportunity because excess parking area could have been used instead for residential or commercial development or public realm uses such as parks and plazas."

Parking also has both direct and indirect environmental consequences. Direct environmental impacts include excessive land consumption, increased storm water flows, degraded water quality, and exacerbated heat island effects. Additionally, parking structures themselves use substantial amounts of natural resources and energy to construct and require on-going maintenance to operate. In many cases parking structures are seen as unsightly when they are not internalized in mixed-use buildings or wrapped by liner buildings. Parking also indirectly affects the environment because it influences how and where people choose to travel. Where free and ample parking is provided, people make the rational choice to drive almost everywhere — and these areas register more vehicle miles of travel per capita with resulting increases in greenhouse gases and other pollutants.

Striking a balance between parking supply and development is a crucial challenge in developing the character of transit-oriented development (TOD). Residents in TOD projects are twice as likely not to own a car as other US households. They're also two to five times more likely to commute by transit than others in the region. On the other hand, residents will need access to cars even if not on a daily basis and commercial establishments require some amount of parking to service their non-walking clientele. In many cases, developers will be unable to secure financing unless parking is provided.

Unfortunately, many communities have simply applied conventional parking ratios to TOD projects. Because such standards have a suburban bias and are based largely on low-density single land uses they limit the expected community benefits of TOD, and possibly, lead to project failure.

- Transit Oriented Development includes four foundational elements:
- Development around transit that is dense and compact, at least relative to its surroundings;
- A rich mix of land uses—housing, work, and other destinations, creating a lively place and balancing peak transit flows;
- A great public realm—sidewalks, plazas, bike paths, a street grid that fits, and buildings that address the street at ground level; and
- A new deal on parking—less of it; shared wherever possible; energy efficient and designed properly.

Right sizing parking for TOD necessitates a multipronged approach to understanding the existing and projected parking utilization and available supply in and around a TOD project area as well as the projected demand for new parking once the project is completed. Conducting a diagnostic parking study that is comprehensive and aligned with mobility choices is essential to this effort. Once the facts about demand, price, utilization, built form/development pattern, and household characteristics are understood, then appropriate strategies can be employed.

Key elements include understanding differences among markets, unbundling or separating the full cost of parking from the associated use, and reducing (or eliminating) minimum parking requirements for certain land uses or certain areas. Understanding the parking uses by market and type then make it possible to look for opportunities for implementation of a wide range of measures from new technology (e.g. smart parking), to specific policies and physical design modification to consolidate and locate parking more efficiently.

To ensure that parking meets the needs of a TOD project, while not impacting TOD's benefits, there are a number of strategies that municipalities can employ working in conjunction with developers to provide the appropriate amount of parking. These strategies can be grouped into several categories, including reduction; demand; design; and pricing. Each of these categories is discussed briefly.

Reduction

Given the research, along with the information developed by a parking supply and demand study, municipalities should make every effort to reduce the parking requirements for TOD projects. Eliminating parking minimums and instead employing parking maximums for TOD projects will help decrease parking oversupply. Similarly, requiring shared parking where multiple developers combine parking needs into one shared parking lot or structure may also help eliminate an oversupply of parking.

Demand

Reducing the need for car travel is critical to decreasing parking demand. Municipalities or developers should consider establishing car sharing programs where multiple users have access to a fleet of cars when they need them. Similarly, municipalities and transit agencies could increase incentives for using public transportation, including providing subsidized transit passes, establishing residential parking programs for adjacent neighborhoods backed by parking enforcement, and constructing bicycle parking facilities.

Design

Designing for pedestrians is an important element to right-sizing parking. This requires reducing or eliminating design elements that hamper pedestrian use such as the number and size of curb cuts. It also requires adding elements that provide for greater pedestrian safety and aesthetic appeal. These elements might include constructing pedestrian walkways separated from parking and roads, wrapping parking behind existing buildings, designing the first level of parking structures to include other uses such as stores and restaurants, and adding public amenities like art space or public plazas which incorporate green infrastructure.

Pricing

Pricing is another strategy that can be used to influence how and where parking is used and located within a transit station area. On-street parking can be priced to encourage availability of on-street spots for preferred populations such as short term customers. In this case, the cost of parking for 15 or 30 minutes near shops located in the transit station area might be minimal while parking prices for more than 30 minutes is set quite high. Another strategy is to price parking to reflect parking desirability, i.e. spaces closest to activity hubs and on-street are priced higher than spaces at the downtown fringe and parking garages.

While increasing transit ridership, walking and biking are essential to establishing sustainable and livable communities, the car will continue as the principle mobility choice for years to come. Given this circumstance, municipalities and developers will have to provide parking for TOD projects and the surrounding area, but should do so in a way that is appropriately sized and located.

A Growing Interest in Parking Requirement Reform

In the graphic below, architect and designer Seth Goodman shows how parking and living spaces compare in major cities across the U.S. A more localized version of this research concentrated on the Northwest US is also available as is research on other land uses compared to parking spaces.

The research that focused on the northwest US challenges the common assumption that smaller cities behave more like suburbs in terms of parking requirements. It's actually a mixed bag. Spokane, Washington and Eugene, Oregon all mimic the requirements of larger cities. Fort Collins is another good example of this. We should not take for granted that a relatively small population (around 200,000 in the city proper) automatically translates to higher parking requirements. These examples demonstrate that cities don't need Manhattan-like conditions to ease up on parking minimums.

In Auckland, New Zealand, their City Council is debating whether to include traditional parking minimum requirements as an element of their Unitary Plan (comparable to City Comprehensive Plans in the US). The ad to the right illustrates how some advocacy groups are trying to influence the debate.

In the following pages we examine the origins of parking requirements, the impediments to change, and how these policies can be reformed.

The Case For and Case against Reforming Parking Requirements

Background on Traditional Minimum Parking Requirements

According to research published by professors Donald Shoup, Richard Willson and others, in many instances, efforts to accommodate parking have overextended actual need. The approach used by many cities to establish minimum parking requirements (typically a generic formula based on satisfying the maximum demand for free parking). Although this practice allows city planners to err on the side of caution, it has some serious drawbacks. In practical terms, this practice increases the cost of development and creates disincentives with respect to smart growth development and redevelopment. In addition, generic parking requirements create excess parking spaces that consume land and resources, encourage automobile use and associated pollution, and degrade water quality. The oversupply of parking is of particular concern for smart growth development in urban areas where the existing parking infrastructure can be better utilized and parking alternatives, such as shared parking and increased use of transit and pedestrian modes, can be more readily implemented.

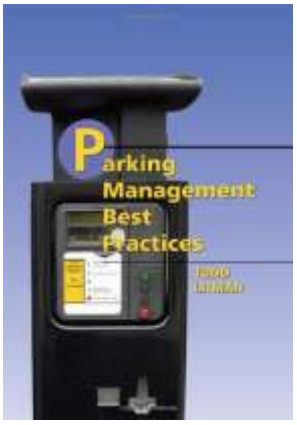
With the shifting trend toward urban revitalization over the past decade, the timing is opportune for instituting changes in parking requirements and transportation behavior. An important way to reduce the demand for parking and the need to supply parking to meet maximum demand is to provide transportation choices. This can be achieved by reducing the supply of parking in areas where transportation choices exist and by providing incentives for making other choices. Such changes will encourage infill redevelopment and reduce vehicle miles traveled, mobile source emissions and congestion. They will also increase ridership for public transit and, in turn, provide the additional revenues needed to support public transit improvements.

There are, of course, potential drawbacks to reducing the supply of parking. Lenders, for example, may be unwilling to approve loans because plans do not meet their minimum parking requirements; developers may be concerned about the long-term marketability of their property; and residents may fear that parking will spill over into surrounding residential neighborhoods. Such concerns can be more readily addressed if:

- The factors that affect parking demand are understood;
- Walkable, pedestrian-oriented development design is implemented; and
- Viable transportation choices exist.

Concerns are also alleviated when developers, employers, and employees are aware of programs that balance the attractiveness of other transportation choices. The Transportation Equity Act for the 21st Century (TEA-21), for example, allows businesses to give their employees up to $100 per month in tax free transit subsidies. TEA-21 also allows employees who commute by public transit or vanpool to deduct the cost of commuting from their taxable income if they do not receive a subsidy.

Establishing Parking Requirements



On the Victoria Transport Policy Institute (VTPI) website and in his book on Parking Management, noted planner and transportation consultant Todd Litman does a good job of laying out the traditional approach to establishing parking requirements and makes a strong case for the use of more flexible and localized criteria in creating zoning codes especially as it relates to parking requirements.

In setting parking requirements, planners typically use generic standards that apply to general land use categories (e.g., residential, office, retail). Such standards have been developed and published by professional organizations, including the Institute of Transportation Engineers (ITE), based on experience in many locations. Much of the data on which these standards are based comes from low-density, single-use developments with limited transportation choices. Therefore, the generic parking rates cannot take into account the mix of context-sensitive, community specific variables - density, demographics, availability of transportation choices, or the surrounding land-use mix - all of which influence the demand for parking and should be reflected in parking requirements. Instead, requirements are based on the maximum demand for parking, when parking is provided at no charge to users, and walking, biking, and transit are not available choices. This formula yields a surplus of parking that is costly for developers to provide, and it subsidizes personal automobile use and encourages auto use even in areas where convenient transportation choices exist. Because of the way in which they are typically established, parking requirements are remarkably consistent across different cities, despite varying levels of economic vitality, population size, and development density.

Alternatively, parking requirements can be established using methods that are better tailored to specific development projects. This approach entails careful consideration of the following land use characteristics that relate to parking demand:

- Development type and size.
  - Takes into account the specific characteristics of the project.
  - Parking demand is influenced by the size of the development (typically measured by total building square footage), as well as the type of land use (e.g., retail, industrial). Generic parking formulas address these factors to some extent.

- Population and development density.
  - Considers the density and demographic characteristics of the people using the building, including employees, customers, residents, and visitors. Information on income, car ownership, and age distribution also helps in projecting total parking demand.
- Availability of transportation choices.
  - Takes into account the modes of transportation available to employees, visitors, and residents. Proximity of public transportation to a particular development, for example, will reduce parking demand.
  - Walkable neighborhoods and bicycle amenities will also reduce parking demand.
- Surrounding land use mix.
  - Considers the surrounding land uses and density to better understand parking needs, and evaluates whether overall peak demand is lower than the sum of peak demands for different uses. This concept takes the timing of parking demand into account in determining the aggregate demand of multiple uses.
  - The type of community in which a development is located will also affect parking demand. For example, if a project is located in a city's central business district, the availability of general use parking will reduce onsite parking demand. On the other hand, if the development is located in a residential area, on-street parking may be unacceptable to local residents, increasing the need for off-street parking at the development.

Land use and demographic information are important tools for establishing project-specific parking requirements that create a better match of supply and demand for parking than do many generic requirements.

Moreover, adjusting parking requirements downward to reflect realistic demand helps reduce the total cost of development, particularly in urban areas. By reducing cost, a potential deterrent to smart growth development and redevelopment can be removed.

The following table from the VTPI website summarizes a wide range of parking management strategies and indicates typical reductions in the amount of parking required at a destination, and whether a strategy helps reduce vehicular traffic, therefore providing congestion, accident and pollution reduction benefits.

Strategy	Description	Typical Reduction	Traffic Reduction
Shared Parking	Parking spaces serve multiple users and destinations.	10-30%	
Parking Regulations	Regulations favor higher-value uses such as service vehicles, deliveries, customers, quick errands, and people with special needs.	10-30%	
More Accurate and Flexible Standards	Adjust parking standards to more accurately reflect demand in a particular situation.	10-30%	
Parking Maximums	Establish maximum parking standards.	10-30%	
Remote Parking	Provide off-site or urban fringe parking facilities.	10-30%	
Smart Growth	Encourage more compact, mixed, multi-modal development to allow more parking sharing and use of alternative modes.	10-30%	X
Walking and Cycling Improvements	Improve walking and cycling conditions to expand the range of destinations serviced by a parking facility.	5-15%	X
Increase Capacity of Existing Facilities	Increase parking supply by using otherwise wasted space, smaller stalls, car stackers and valet parking.	5-15%	X
Mobility Management	Encourage more efficient travel patterns, including changes in mode, timing, destination and vehicle trip frequency.	10-30%	X
Parking Pricing	Charge motorists directly and efficiently for using parking facilities.	10-30%	X
Improve Pricing Methods	Use better charging techniques to make pricing more convenient and cost effective.	Varies	X
Financial Incentives	Provide financial incentives to shift mode, such as cash out.	10-30%	X
Unbundle Parking	Rent or sell parking facilities separately from building space.	10-30%	X
Parking Tax Reform	Change tax policies to support parking management objectives.	5-15%	X
Bicycle Facilities	Provide bicycle storage and changing facilities.	5-15%	X
Improve User Information and Marketing	Provide convenient and accurate information on parking availability and price, using maps, signs, brochures and electronic communication.	5-15%	X
Improve Enforcement	Insure that parking regulation enforcement is efficient, considerate and fair.	Varies	
Transportation Management Associations	Establish member-controlled organizations that provide transport and parking management services in a particular area.	Varies	X
Overflow Parking Plans	Establish plans to manage occasional peak parking demands.	Varies	
Address Spillover Problems	Use management, enforcement and pricing to address spillover problems.	Varies	
Parking Facility Design and Operation	Improve parking facility design and operations to help solve problems and support parking management.	Varies	

Environmental Impacts of Parking

The significant environmental costs associated with parking are not typically factored into development decisions, and only recently have begun to be considered in setting parking requirements. Construction of unnecessary impervious surfaces increases the impacts of storm water runoff, either on the storm sewer system or the surrounding land. Paved surfaces can also result in water pollution and flooding, resulting in a decline in adjacent property values. Heat islands, or areas of artificially raised temperatures, also are exacerbated by unnecessary pavement.

Consuming land for parking also reduces the land available for green space or other, more productive development. Land preserved as part of the green infrastructure allows storm water to percolate into the soil, provides wildlife habitat, provides air quality and noise reduction benefits, and is aesthetically desirable. Land developed for living, working, and shopping rather than just parking provides more intensive use. This lowers the demand to develop other land nearby or elsewhere in the region. Intensifying uses also creates a more supportive environment for transit and walking, and potentially for bicycling as well.

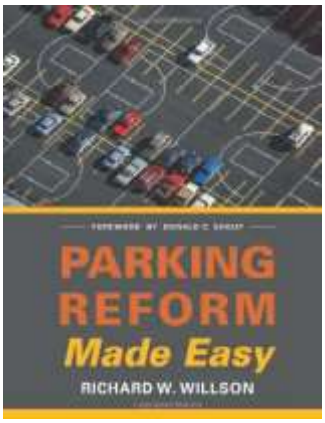
Providing more parking than demanded, and at artificially low prices, contributes to several harmful environmental impacts. First, this subsidy of automobile use leads directly to excess driving. This results in increased auto dependency and air pollution, accidents, and congestion. Second, it indirectly degrades the attractiveness of walking and biking, by increasing distances between activities and creating uninteresting routes.

Third, it indirectly undermines the potential for transit service by decreasing the density potential of development projects.

All of these environmental costs tend to be greater for parking built in green field areas where there is more inexpensive but ecologically-sensitive open space available and where development densities are lower thus requiring more and longer automobile trips. Because these environmental costs are not realized by developers, they do not influence development decisions which are driven primarily by the direct financial costs that are typically lower in green field areas.

Parking Requirement Reform

The following is an excerpt from the book "Parking Reform Made Easy" by Richard Wilson. Richard W. Willson, Ph.D., FAICP, is Professor and Chair in the Department of Urban and Regional Planning at California State Polytechnic University, Pomona.



Parking requirements in zoning ordinances create one of the most wasteful elements of transportation and land use systems: unoccupied parking spaces. Each space requires over 300 square feet of valuable land or building area, yet many sit empty. Minimum parking requirements at shopping malls, for example, often lead to sprawling developments surrounded by large, underused parking lots. Spaces for workplaces may be well-used during the day but remain unoccupied in the evening because they are not shared with other land uses.

Sometimes, the parking required is greater than the amount of parking ever used. Parking is overbuilt and underutilized for two reasons: 1) zoning requires an excessive parking supply, and 2) it prevents efficient sharing of parking among different land uses. Both reasons reflect a legacy of single-use zoning and an automobile-first approach to planning. Minimum parking requirements prevent private developers from responding to market conditions, and lessen developers' interest in sharing parking or developing sites that are accessible without driving. Planners sometimes claim that developers would build the same amount of parking regardless of regulations, but if that's true, then why impose minimum parking requirements in the first place?

Parking requirements should be framed as a means of providing access, not an end. Parking requirements are only one of several ways to ensure storage for private automobiles. Private auto transportation, in turn, is only one of several ways to provide access. To carry out parking reform, we must counteract the decades-old practice of thinking about access in terms of roadways and parking.

Why Parking Requirements?

Early zoning ordinances did not have parking requirements. Zoning sought to manage the external impacts of properties, such as when a new building represented a fire hazard to the structure next door.

In the mid-20th century, parking requirements were added to address surface street congestion caused by patrons driving in search of parking. Planners didn't foresee that minimum parking requirements would favor private vehicle travel, lower overall density, and increase traffic.

In surveys conducted in 1995 and again in 2013, local planners in southern California were asked about parking requirements and found a repetitious justification for minimum parking requirements: planners wished to "ensure an adequate number of parking spaces." This response reflects a lack of critical thinking about fundamental public objectives, such as accessibility, economic development, and sustainability. The response also reflects an outdated vision of separated land uses, unrestricted auto-mobility, and plentiful free parking. Thus, many parking requirements are relics that undermine current land use and transportation goals.

The following tables from Richard Willson's book summarize the cases both for and against minimum parking requirements.

The Case FOR Parking Minimum Requirements

- Reduce street congestion around the development site
- Avoid parking spillover
- Create orderly development patterns
- Anticipate possible intensification or changes in the use of a development
- Create a level playing field among developers
- Encourage growth of core areas by increasing parking supply in those areas
- Reduce parking management by making the adjudication of conflicts between property owners unnecessary
- Reduce the demand for public provision of parking

The Case AGAINST Parking Minimum Requirements

- Encourages private vehicle usage and lengthens trips
- Adversely impacts transit and alternative modes
- Reduces development density
- Creates inhospitable project design
- Thwarts development and economic activity (little or no direct revenue)
- Makes construction of affordable housing more challenging
- Hampers investment in infill development and adaptive reuse in core areas
- Directly and indirectly harms the environment
- Lowers physical activity with consequences for public health
- Imprecisely represents actual parking utilization levels (parking utilization ratios typically are not based on local empirical evidence)

Why Change Is Difficult

Some regional and state policymakers recognize that existing parking requirements are excessive, but most have neglected the issue because parking is a responsibility of local governments. Yet parking requirements are crucial to accomplishing federal, state, and regional objectives in transportation, land use, and the environment. There are recent indications that if local governments do not carry out reforms, states may do it for them. In 2012, a proposal in the California legislature (AB 904) sought to override local parking requirements in transit-rich areas. Legislators subsequently tabled the proposal, however, showing the power of local governments to resist state interference in parking policies.

Many local planners know the parking requirement status quo is wrong. They have observed wasted land, turned away restaurant proposals in historic districts, and seen affordable housing not pencil out. Despite these undesirable outcomes, planners have not made changes. Why? Some may feel powerless to change ossified regulations, sensing weak political support and lacking technical expertise to justify changes. Others may want the negotiating leverage that excessive parking requirements provide to extract public benefits from developers. Furthermore, planners know that parking is a key point in NIMBY (not-in-my-back-yard) resistance to development, so avoiding parking controversy can help ensure economic development. In effect, cities are addicted to parking requirements. The addiction is analogous to smoking, where immediate gratification overwhelms future costs.

Change means freeing ourselves of parking dogma, habits, and golden rules. The old reality dictated fixed parking requirement ratios and exhibited an unwillingness to deviate from standard practice, even when it made sense to do so. This approach emphasized precision and uniformity. It undervalues important considerations of local variability, policy relationships, environmental capacity, and human behavior. All the land-use plans, design reviews, and streetscape renderings in the world will not produce desired outcomes if we do not reform parking requirements.

It is important to note that this reticence to address the negative impacts of minimum parking requirements has not been the issue in the City of Fort Collins, which is known for its progressive planning and sustainability policies. However, the fact that this study was commissioned is a testament to the complexity and sensitivities that these complex and interrelated policy issues generate. In particular, a key issue in this study has to do with timing. With the investment in the Mason Corridor transit planning and the new MAX Bus Rapid Transit line, a Transit Overlay District was created in the City. Zoning codes (including parking requirements) were adjusted to reflect the different transportation dynamics of the corridor as well as a vision for increased development density and enhanced transit neighborhood urban design characteristics. However, these zoning changes preceded the actual implementation of the MAX BRT. As a result, new development projects have proceeded under the revised zoning conditions of the TOD Overlay Zoning district without the benefit of having the transit component in place.

The development of the Summit project in particular (a fairly large student housing development near the CSU campus), which planned to provide 676 bedrooms with only 217 parking spaces (471 spaces would have been required in the development had been outside the TOD Overlay Zone – a difference of -254 spaces or -54% of the standard parking requirement)caused a rethinking of the policy to not to require minimum parking requirements for multi-family development within the TOD Overlay Zone and a temporary reinstatement of minimum parking requirements, on an adjusted basis, while the policy could be further examined. This policy adjust will sunset in September 2014 when recommendations from this study will be used to reassess both TOD zoning policies and parking policies on a more comprehensive basis.

Why Not Eliminate Parking Requirements?

According to national experts, deregulating off-street parking allows markets to determine parking supply levels and provokes a fresh debate about justifications for public regulations and subsidies for all transportation modes. Currently, minimum requirements compel the provision of access for driving and parking, whereas zoning codes seldom impose equivalent requirements for bus, bicycle, or pedestrian facilities. When they do, those requirements have been added more recently and are at a lower investment level.

Under minimum requirements, even those who do not drive share in paying the cost of parking. Parking costs are embedded in higher retail prices, lower workplace salaries, higher rents, and the like. In these ways, most minimum requirements tend to prioritize private vehicles. Eliminating minimum requirements would begin to level the playing field for all travel modes.

Cities such as Philadelphia, Portland, and Seattle have recently reformed their parking requirements and adopted limited deregulation. Deregulation shifts the approach from automatically requiring parking to not supplying it until it is economically justified. It is a big change from standard practice and should be coupled with programs for shared parking and advanced parking management. Still, the idea of eliminating minimum parking requirements hasn't gained traction in many places. Local officials are often buffeted by demands from residents, storeowners, and employees for more parking, not less.

City staff researched TOD parking requirements in several other communities including the following:

- Denver Zoning Code: Maximum number of spaces shall not exceed 110% of the minimum parking spaces required by context-specific ratios (Denver's method of calculating parking requirements everywhere). Parking in structures doesn't count toward the maximums.

- Aurora TOD Zoning Sub-District: Minimum 0.5 – 1.0 space per multi-family dwelling unit depending on proximity to a transit station compared to 1.0 – 2.5 spaces per unit depending on number of bedrooms outside TOD.
- Lakewood Transit Mixed Use Zone District: Minimum 1 space per unit, maximum 2 spaces per unit. Parking in structures doesn't count toward the maximums. The parking requirements may be met on-site or off-site at a distance of up to 600 feet from the use.
- Eugene, Oregon: Establishes parking exempt areas not subject to minimums including Downtown and a couple other areas.
- Metro Portland recommends three actions when the parking ratio is below 1.0 space/unit:
  - Charge for all covered parking
  - Add car-share in the area
  - Provide first rate bicycle facilities (lockers, wash areas, secured bike parking, etc.)

Examples of progressive parking requirements from additional communities are reviewed later in this report (See Peer Cities section).

Developers Responses to Different Approaches to Parking Requirements

Approaches to parking reform vary from community to community. Accordingly, the table below shows the range of reform options, including the traditional approach in which the minimum requirements exceed expected use. At the other end of the spectrum is deregulation, with no minimum or maximum parking requirements. In many cities and towns, the best approach is somewhere in between, with deregulation in central business districts and transit-oriented developments, and reduced minimum requirements in other areas.

Approach	Minimum Requirement	Maximum Requirement	Developer Response
Traditional	>Utilization	None	Rarely builds more than the requirement
Moderate Reform	=Utilization	None	Assesses market for project, may exceed the minimum
Big City Approach	<Utilization	A fixed ration or percentage minimum	Makes market decision whether to supply the minimum or build to the maximum
Partial Deregulation	None	A fixed ratio	Makes market decision whether to supply any parking or build to the maximum
Deregulation	None	None	Makes the market decision whether/how much to build

In Praise of Incrementalism

According to Richard Willson, in the past decade, many cities initiated comprehensive zoning code reform, and others are planning such efforts. Comprehensive reform efforts allow planners to rethink parking requirements while they consider the basic organization and functioning of the zoning code. These efforts also allow planners to bypass the complexity of older codes that have undergone countless revisions. Ideally, planners will amass enough political clout and financial resources before undertaking the daunting task of comprehensive zoning code revision.

There are many situations, however, where financial resources and political capital are not sufficient for comprehensive parking reform. In these cases, an incremental approach can produce good results. It makes sense to start where there is support, either from elected officials or from community or district stakeholders. Code reformers can work with these stakeholders and produce parking requirement reforms, parking overlay zones, or partial deregulation without creating opposition that might emerge in a citywide effort.

These early successes often build support for larger, more comprehensive efforts. Rather than viewing pilot projects or experiments as somehow inferior to comprehensive parking reform, we should see them as effective ways of producing valuable information, testing innovative ideas, and ultimately generating change.

Rethinking Parking – Another Perspective on the Potential of Parking Lots

In his 2012 book entitled "Rethinking a Lot: The Design and Culture of Parking", Eran Ben-Joseph, professor of landscape architecture and urban planning at the Massachusetts Institute of Technology, argues that parking lots are so prevalent in our daily life that we should take them more seriously. There are an estimated 600,000,000 passenger cars in the world, and that number is increasing every day. So too is Earth's supply of parking spaces. In some cities, parking lots cover more than one-third of the metropolitan footprint. It's official: we have paved paradise and put up a parking lot. In ReThinking a Lot, Eran Ben-Joseph shares a different vision for parking's future. Parking lots, he writes, are ripe for transformation. After all, as he points out, their design and function has not been rethought since the 1950s. With this book, Ben-Joseph pushes the parking lot into the twenty-first century.

Can’t parking lots be aesthetically pleasing, environmentally and architecturally responsible? Used for something other than car storage? Ben-Joseph shows us that they can. He provides a visual history of this often ignored urban space, introducing us to some of many alternative and non-parking purposes that parking lots have served - from RV campgrounds to stages for “Shakespeare in the Parking Lot.” He shows us parking lots that are not concrete wastelands but lushly planted with trees and flowers and beautifully integrated with the rest of the built environment. With purposeful design, Ben-Joseph argues, parking lots could be significant public places, contributing as much to their communities as great boulevards, parks, or plazas. For all the acreage they cover, parking lots have received scant attention. It’s time to change that; it’s time to rethink the lot.

The parking lot is the antithesis of nature’s fields and forests, an ugly reminder of the costs of our automobile-oriented society. But as long as we prefer to get around by car (whether powered by fossil fuel, solar energy or hydrogen), the parking lot is here to stay.

It's hard to imagine an alternative. Or is it? I believe that the modern surface parking lot is ripe for transformation. Few of us spend much time thinking about parking beyond availability and convenience. But parking lots are, in fact, much more than spots to temporarily store cars: they are public spaces that have major impacts on the design of our cities and suburbs, on the natural environment and on the rhythms of daily life. We need to redefine what we mean by "parking lot" to include something that not only allows a driver to park his car, but also offers a variety of other public uses, mitigates its effect on the environment and gives greater consideration to aesthetics and architectural context.

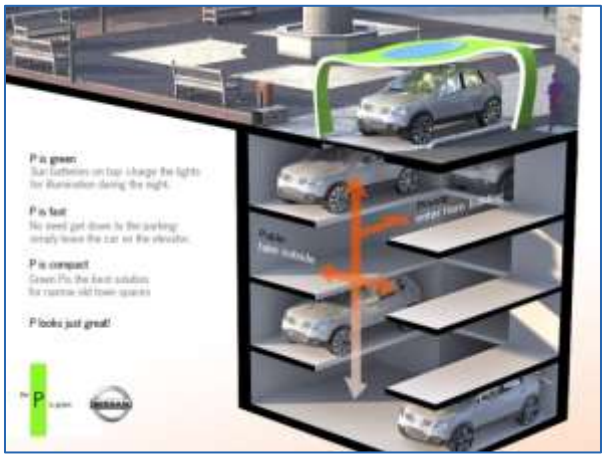
It's estimated that there are three nonresidential parking spaces for every car in the United States. That adds up to almost 800 million parking spaces, covering about 4,360 square miles — an area larger than Puerto Rico. In some cities, like Orlando and Los Angeles, parking lots are estimated to cover at least one-third of the land area, making them one of the most salient landscape features of the built world.

Such coverage comes with environmental costs. The large, impervious surfaces of parking lots increase storm-water runoff, which damages watersheds. The exposed pavement increases the heat-island effect, by which urban regions are made warmer than surrounding rural areas. Since cars are immobile 95 percent of the time, you could plausibly argue that a Prius and a Hummer have much the same environmental impact: both occupy the same 9-by-18-foot rectangle of paved space.

A better parking lot might be covered with solar canopies so that it could produce energy while lowering heat. Or perhaps it would be surfaced with a permeable material like porous asphalt and planted with trees in rows like an apple orchard, so that it could sequester carbon and clean contaminated runoff.

The ubiquity of parking lots has also led to an overlooked social dimension: In the United States, parking lots may be the most regularly used outdoor space. They are public places that people interact with and use on a daily basis, whether working, shopping, running errands, eating, even walking — parking lots are one of the few places where cars and pedestrians coexist.

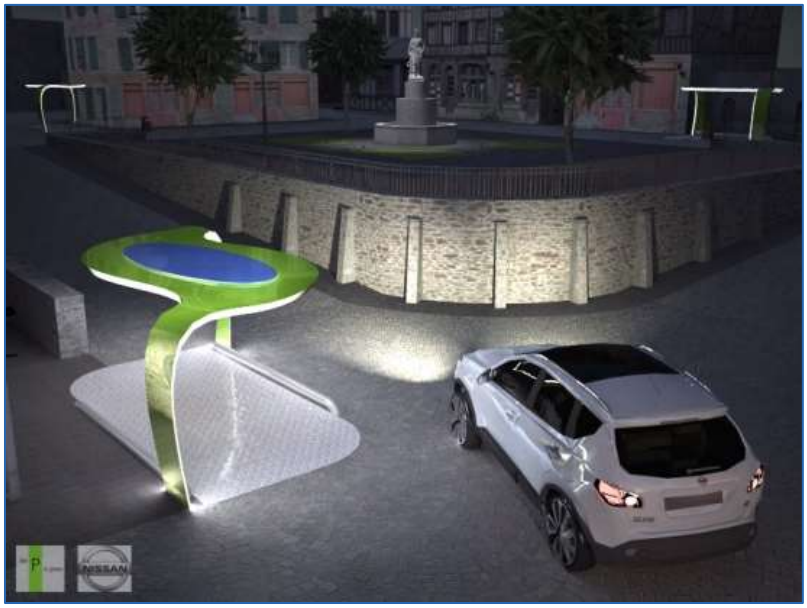
Better parking lots would embrace and expand this role. Already, many lots provide space for farmers' markets, spontaneous games of street hockey, tailgating, even teenagers' illicit nighttime parties. This range of activities suggests that parking lots are a "found" place: they satisfy needs that are not yet met by our designed surroundings. Planned with greater intent, parking lots could actually become significant public spaces, contributing as much to their communities as great boulevards, parks or plazas. For instance, the Italian architect Renzo Piano, when redesigning the Fiat Lingotto factory in Turin, eliminated the parking lot's islands and curbs and planted rows of trees in a dense grid, creating an open, level space under a soft canopy of foliage that welcomes pedestrians as naturally as it does cars.



The parking lot also has an underutilized architectural function. A parking lot is the first part of a space you visit or live next to. It is typically the gateway through which dwellers, customers, visitors or employees pass before they enter a building. Architects and designers often discuss the importance of “the approach” as establishing the tone for a place, as the setting for the architecture itself. Developers talk about the importance of “first impressions” to the overall atmosphere conveyed to the user.

Yet parking lots are rarely designed with this function in mind. When they are, the effect is stunning. For instance, the parking lot at the Dia art museum in Beacon, N.Y., created by the artist Robert Irwin and the architecture firm OpenOffice, was planned as an integral element of the visitor’s arrival experience, with an aesthetically deft progression from the entry road to the parking lot to an allée that leads to the museum’s lobby.

For something that occupies such a vast amount of land and is used on a daily basis by so many people, the parking lot should receive more attention than it has. We need to ask: what can a parking lot be?



In Summary

The strategies and policy considerations discussed above are alternatives to setting a parking requirement based on a neighboring city's requirement or a national average. Fort Collins has long moved beyond most communities in this regard, however through this study we will be evaluating options to reassess parking requirements based on specific land use categories (for example applying differing standards to "student housing oriented projects" compared to other multi-family housing developments based on the demonstrated differences in parking demand generated by this specific use). We are also assessing varying requirements based on development size or context features, such as transit accessibility, mixed-land uses, shared parking and overall development density. The use of alternative compliance mechanisms that provide more context specific data from which to make rational and measured adjustments to parking requirements are also being assessed.

Parking reform can also be coordinated with regional planning and modeling activities. For example, in King County, Washington, the Metro Transit's web-based GIS tool provides data on parking utilization for multi-family housing and tests alternative parking ratios in terms of costs and impacts.

Note: More information about King County, Washington's King County Multi-Family Residential Parking Calculator can be found at http://www.rightsizeparking.org/.

In the case of Fort Collins, the use of the "Park+" parking demand modelling software that has been purchased by both the City and CSU could provide a similar analysis tool.

Best Practices Review

This section of the parking study summarizes some of the parking best management practices that are recommended and/or have been successfully implemented in other communities. These practices are tools to address existing parking issues and accommodate future demand. It is important to remember that these strategies are not mutually exclusive and may need to be modified to suit the needs of the City of Fort Collins. Many of these strategies are complementary and are most effective when used in conjunction with one another.

Innovative Alternatives or Supplements to Minimum Parking Requirements

Some local governments have implemented alternatives to generic parking requirements that increase availability from existing supply, reduce the demand for parking, or create more cost-effective and environmentally sensitive parking structures that preserve pervious surfaces. By lowering total development costs, some of these parking alternatives have consequently encouraged smart growth development and redevelopment. This section summarizes proven alternatives and includes discussion of their establishment, advantages, and potential concerns. The alternatives are organized according to their influence on parking supply, parking demand and pricing.

Increasing Availability From Existing Supply Or Limited Expansion

Frequently, the supply of parking in developed areas is sufficient to meet parking demand, but a combination of reasons limit the availability of that supply.

Context-specific Minimum Requirements

As discussed in the Introduction, generic minimum requirements are typically set based on maximum observed demand for free parking in areas with no transportation choices. However, parking demand is determined by a range of factors that lead to significant variations within and across jurisdictions, meaning that a single standard for each land use may not be appropriate. Other factors that are strongly correlated with lower vehicle ownership in urban areas are frequent transit service, small household sizes, low incomes, a high proportion of seniors, and rental housing.

Similarly, at commercial developments, transit access, mix of uses, and density are good predictors of parking demand. Often developers are interested in finding ways to reduce the vehicle trip generation calculations for their expected development, so that they can demonstrate fewer impacts on the surrounding roadway network, while they may not always be so eager to reduce the amount of parking to supply.

A major challenge for cities is how to convert this research and data, together with experience from other settings, into local parking requirements or planning approvals for specific developments. Some of the mechanisms being used are:

- Transit Zoning Overlays
- New Zoning Districts or Specific Plans
- Parking Freezes
- Reductions for Affordable and Senior Housing
- Case-By-Case Evaluation
- Land Banking and Landscape Reserves

Maximum Limits and Transferable Parking Entitlements

In contrast to generic minimum parking requirements, maximum limits restrict the total number of spaces that can be constructed rather than establish a minimum number that must be provided. Planners set maximum limits much like they set minimum requirements. Typically, a maximum number of spaces is based on square footage of a specific land use. For example, the City of Portland, Oregon restricts offices in the central business district to 0.7 parking spaces per 1,000 square feet, and retail to 1.0 space per 1,000 square feet of net building area. Contrary to what might be expected, the maximum limits in Portland have not led to a parking shortage because of the balance of transportation choices available.

Maximum requirements are not ideal for all locations. It is crucial for municipalities that employ maximum requirements to have accompanying accessible and frequent public transportation. It is also important for the area to be sufficiently stable economically to attract tenants without needing to provide a surplus of parking. A number of cities have implemented maximum parking requirements, including San Francisco, California; Portland, Oregon; and Seattle, Washington.

Shared Parking

Different types of land uses attract customers, workers, and visitors during different times of the day. Shared parking is another alternative that city planners can employ when setting parking requirements in mixed-use areas. An office that has peak parking demand during the daytime hours, for example, can share the same pool of parking spaces with a restaurant whose demand peaks in the evening. This alternative also reduces overall development costs.

By allowing for and encouraging shared parking, planners can decrease the total number of spaces required for mixed-use developments or single-use developments in mixed-use areas. Developers benefit, not only from the decreased cost of development, but also from the "captive markets" stemming from mixed-use development. For example, office employees are a captive market for business lunches at restaurants in mixed-use developments.

Shared parking encourages use of large centralized parking facilities and discourages the development of many small facilities. This results in more efficient traffic flow because there are fewer curb cuts, and turning opportunities on main thoroughfares. This has the added benefits of reducing accidents and reducing emissions from idling vehicles stuck in traffic.

Establishing shared parking requirements involves site-specific assessment or use of time-of-day parking utilization curves. Montgomery County, Maryland allows for shared parking to meet minimum parking requirements when any land or building under the same ownership or under a joint use agreement is used for two or more purposes. The county uses the following method to determine shared requirements for mixed-use developments:

- Determine the minimum amount of parking required for each land use as though it were a separate use, by time period, considering proximity to transit.
- Calculate the total parking required across uses for each time period.
- Set the requirement at the maximum total across time periods.

Many available sources document procedures for calculating shared parking requirements, from 1983's "Flexible Parking Requirements" to 2003's SmartCode.

In-Lieu Parking Fees and Centralized Parking

Municipalities establish in-lieu parking fees as an alternative to requiring on-site parking spaces. With in-lieu fees, developers are able to circumvent constructing parking on-site by paying the city a fee. The city, in return, provides centralized, off-site parking that is available for use by the development's tenants and visitors. The fees are determined by the city and are generally based on the cost of providing parking. Cities set fees in one of two ways, either by calculating a flat fee for parking spaces not provided by a developer on-site or by establishing development-specific fees on a case-by-case basis. Shoup reports that in-lieu fees in the United States range from $5,850 to $20,180 per parking space. These fees can be imposed as a property tax surcharge.

In-lieu parking fees provide advantages to both planners and developers. Allowing developers to pay fees in-lieu of constructing parking has the following benefits:

- Overall construction costs may be reduced;
- Construction of awkward, unattractive on-site parking is avoided;
- Redevelopment projects involving historic buildings can avoid constructing parking that would compromise the character of the buildings;
- Planners can ensure that existing parking facilities will be more fully utilized; and
- Planners can encourage better urban design with continuous storefronts that are uninterrupted by parking lots.

In establishing in-lieu parking fees, planners must be cognizant of potential developers' concerns about the impact of a lack of on-site parking on the attractiveness of developments to tenants and visitors. This can be an issue if available public parking is insufficient, inconveniently located, or inefficiently operated. Planners must carefully consider the parking demand for each participating property and provide enough parking to meet this demand in order to avoid creating a perceived or real parking shortage. Planners must also work to ensure that public parking facilities are centrally located and operated efficiently.

Centralized parking facilities can reduce the costs of parking because large facilities are less expensive on a per space basis to build and maintain than small facilities. Centralized parking, as an alternative to on-site parking, also improves urban design and preserves the historic nature of communities. Some cities mandate centralized parking facilities and finance them through development impact fees in lieu parking fees or negotiated contributions established during the environmental review process.

Increasing Availability by Decreasing Demand

Demand reduction can be achieved through a variety of programs and policies that attempt to reduce the automobile transportation demand, and thus reduce the needed supply of parking. While these programs are typically developed by local governments, their success often depends on the commitment of businesses to implement them effectively.

Demand reduction programs include: car sharing, subsidies for transit, transit improvements, pedestrian and bicycle amenities, and vehicle trip reduction programs. When employers allow telecommuting and/or flexible work schedules that reduce commuting, demand is also reduced.

Car Sharing

Car sharing is a neighborhood-based, short-term vehicle rental service that makes cars available to people on a pay-per-use basis. Members have access to a common fleet of vehicles on an as-needed basis, gaining most of the benefits of a private car without the costs and responsibilities of ownership. In programs with the most advanced technology, members simply reserve a car via telephone or the Internet, walk to the nearest lot, access the car using an electronic card, and drive off. They are billed at the end of the month.

In commercial developments, car-sharing can also be a useful tool to reduce parking demand. Employees can use a shared vehicle for errands and meetings during the day, allowing them to take transit, carpool, walk or bicycle to work. Car-sharing works best in compact, mixed-use neighborhoods, where firms with corporate memberships tend to use the vehicles during the day and residents use them in the evenings and on weekends.

As well as reduced parking demand, car-sharing brings a broad range of other benefits, including fewer vehicle trips, and improved mobility for low-income households who may not be able to afford to own a car. Formal car-sharing programs have been established in many cities including Boston, Massachusetts; Washington, DC; San Francisco, California; Oakland, California; Portland, Oregon; Seattle, Washington; and Boulder, Colorado. Many others are in the process of establishing operations. Alternatively, developers can provide shared vehicles themselves, or facilitate informal car-sharing among residents.

Improvements to Transit Service, Pricing, and Information

Transit subsidies can be provided by employers, by cities, or by residential property managers. In the case of employer-paid transit pass schemes, the employer pays the cost of employees' transit, converting the fixed cost for parking spaces into a variable cost for the public transportation subsidy. This fringe benefit for employees reduces the demand for parking at the workplace, which in turn reduces traffic, air pollution, and energy consumption. It also reduces the cost associated with providing parking, as transit subsidies are generally less expensive than providing parking.

Improvements to Pedestrian and Bicycle Service

Demand for parking can be reduced by providing pedestrian and bicycle amenities that make it easier and more pleasant for people to walk or bicycle rather than drive. These amenities and design changes can alleviate traffic congestion. In particular, improving the walkability and pedestrian orientation of employment centers can address the increasingly common "drive to lunch" syndrome. For example, the auto-orientation of Tyson's Corner, Virginia has resulted in terrible traffic at lunch time because people cannot walk to eating establishments or to do errands.

Vehicle Trip Reduction Programs

Another direct form of demand reduction involves instituting vehicle trip reduction programs. Vehicle trip reduction programs combine several types of demand reduction components to meet explicit vehicle trip reduction goals.

Thus, instead of capping the number of parking spaces, local officials limit the number of vehicle miles traveled in a particular region. These types of programs attempt to decrease the number of trips by single occupancy vehicles (SOVs) and increase the use of a variety of commuting alternatives, including transit, carpooling, walking, and bicycling.

To increase the effectiveness of vehicle trip reduction programs, cities or employers can incorporate an assortment of complementary program elements to balance transportation choices. The following are some examples:

- "Guaranteed ride home" services that allow employees who use public transit to get a free ride home (e.g., via taxi) if they miss their bus or if they need to stay at work late.
- Company fleet cars that can be used for running errands during the workday (e.g., doctor appointments).
- Preferential and/or reserved parking for vanpools/carpools.
- Carpooling and/or vanpooling with ride matching service. Ride matching can facilitate the identification of people who live close to one another. This service can be accomplished by providing "ride boards" or by using an employee transportation coordinator.
- Cellular phones for car and vanpooling to facilitate timing of pickups.

There is little incentive for employers to implement vehicle trip reduction programs if they are not granted reductions in minimum parking requirements. They would not be able to realize the potential cost savings from providing less parking, but would simply be faced with a large number of empty spaces. Several cities, such as South San Francisco, have acknowledged this through ordinances that reduce parking requirements for projects that include vehicle trip reduction programs.

Efficient Pricing

Although it is often provided at no charge to the user, parking is never free. Each space in a parking structure can cost upwards of $2,500 per year in maintenance, operations and the amortization of land and construction costs. Even on-street spaces incur maintenance costs and an opportunity cost in foregone land value. The cost of parking is generally subsumed into lease fees or sale prices for the sake of simplicity and because that is the more traditional practice in real estate. However, providing anything for free or at highly subsidized rates encourages overuse and means that more parking spaces have to be provided to achieve the same rate of availability. Charging users for parking is a market-based approach by which the true cost of parking can be passed through to parking users. If the fee charged to users of parking facilities is sufficient to cover construction, operation, and maintenance costs, it will likely cause some users to choose not to park. Even where there are few alternatives to driving, parking pricing can encourage employees to seek out carpooling partners. In addition to reducing the cost of parking provision, pricing strategies bring major environmental and congestion benefits, particularly since they tend to reduce peak-period vehicle trips the most.

Parking charges have been found to reduce employee vehicle trips, and thus daily parking demand, by between 7 percent and 30 percent or more, depending on factors such as the level of charges and the availability of alternatives to driving alone. Parking price elasticities generally range from –0.1 to –0.6, with the most common value being –0.3, meaning that each 1 percent rise in parking fees is accompanied by a 0.3 percent decrease in demand.

Cash-Out Programs

Cash-out programs provide alternatives to directly charging users for parking. Under such programs, employers offer employees the choice of free or subsidized parking, a transit/vanpool subsidy equal to the value of the parking (of which up to $100 is tax-free under current federal law), or a taxable carpool/walk/bike subsidy equal to the value of the parking.

Employees who opt for the non-parking subsidies are not eligible to receive free parking from the employer, and are responsible for their parking charges on days when they drive to work. The cost savings associated with cash-out payments depend on the amount of the payments. If the full cash equivalent is provided, this demand reduction program does not reduce the total costs of providing parking. However, employees may accept cash payments lower than the full equivalent of the parking subsidy. If partial cash payments are used, employers face lower overall transportation subsidy costs and employees still benefit.

Differential Pricing by Trip Type

Parking pricing can be used as a sensitive tool to prioritize some types of trip over others, according to their purpose and duration. It allows managers to cater for desirable trips, such as short-term shoppers, while discouraging undesirable commuter trips, which add to peak-hour congestion and occupy a parking space for an entire day. These pricing strategies allow the overall supply of parking to be minimized, while ensuring spaces are available for critical users. They can also alleviate pressure to provide more parking from retailers and businesses, who may be concerned that poor parking availability discourages shoppers. Examples include:

- Lower or zero rates for short-term parking encourage shopping trips, while proportionally higher rates for long-term parking discourage all-day commuter parking, freeing up spaces for customers. Short-term parking allows many people to use a single space over the course of a day, rather than a single commuter, and generates revenue for businesses and sales tax dollars for cities.
- Parking charges that are levied by the hour or day, with no discounts for monthly parking, remove the financial disincentive to take transit occasionally. There is no perverse incentive to drive every day to “get your money’s worth” from the monthly parking pass.
- Parking charges at transit stations that only apply before a certain time (such as 9 or 10 am) encourage off-peak transit ridership where spare capacity is available, rather than contributing to crowding in the peak.

Residential Parking Pricing

Parking charges can also be introduced at residential developments, through separating or “unbundling” the cost of parking from rents or sale prices. Rather than being provided with a set number of spaces whether they need them or not, residents can choose how many spaces they wish to purchase or rent. An alternative to direct charges is to provide “rent rebates” or discounts to residents who own fewer vehicles and do not use their allocated parking spaces.

Parking Benefit Districts

Parking pricing strategies can also be implemented through Parking Benefit Districts. Under this concept, revenue from meters and residential permits is returned to local neighborhoods. Once administrative costs are covered, all money goes to transportation and neighborhood improvements such as undergrounding of utility wires. Parking Benefit Districts allow developments to be built with less parking, while addressing potential spillover problems through market pricing of curb parking.

Earmarking revenue to directly benefit the neighborhood or commercial district helps to generate support for charges from local residents and businesses, which might otherwise resist charging for parking that used to be free. Cities such as San Diego and Pasadena, California, have implemented Parking Benefit Districts in their downtown business districts, using parking meter revenue.

Peer City Reviews

In our research related to peer city parking requirements, we applied two primary criteria: communities of similar size or characteristics to Fort Collins or communities with progressive parking planning policies similar in values to Fort Collins. We identified five primary communities that met these criteria. These communities include:

- Ann Arbor, Michigan
- Berkeley, CA
- Portland, OR
- Eugene, OR
- Arlington County, VA

A summary of the key elements of each of these city's policies are provided below. More detailed information for each community is provided in Appendix B. Appendix B contains selected examples of well-developed or progressive zoning codes including some not on the Peer Cities list noted above.

City of Ann Arbor, Michigan

- City's web page: www.a2gov.org
- Downtown Development Authority web page: www.a2dda.org
- Commuting programs and services web page: www.getdowntown.org

KEY POLICIES AND INITIATIVES

- GetDowntown Program – This is a commuter service and assistance program. It offers commuting programs and services to employees and employers in downtown Ann Arbor. Programs and services include the go!pass, Commuter Challenge, Bike Locker Rentals, Zipcars, free commuting assistance, and commuting materials.

- Go! Pass Program – It is an employee benefit which offers unlimited rides on the City buses with in Downtown Development Authority's (DDA) boundaries. Additionally, this program offers discounts for other commuter services and at downtown businesses.
- Commuter Challenge – It offers prizes for trying alternative modes of transportation. The modes include busing, biking, walking, carpooling, and van pooling. The program is offered only for the month of May.
- Bike Locker Rental – Locker rentals are offered at $60/month. The rentals are offered from April 1 to March 31. The fee is prorated if the rental starts after April. Monthly rentals are not available.
- To encourage alternative modes of transportation, the parking demand for office buildings were dropped from 4 to 3 per 1,000sf.
- Maximum parking demand ratio was implemented for many land uses.
- For downtown projects, developers are not required to provide parking for up to 400% of FAR.
- For some mixed-use land uses, 700% of FAR is allowed and parking is required for FAR above 400%.
- Bicycle parking is required for many land uses.
- Outside bicycle parking spaces can be used for meeting "useable open space" requirements.
- Areas for inside bicycle parking spaces are not included in calculating the vehicular parking requirements.
- Up to 30% of parking supply could be designed for compact cars only.

Arlington County, Virginia

- Arlington County web page: www.arlingtonva.us
- Commuter Service web page: www.commuterpage.com
- Mobility Lab: http://mobilitylab.org/

KEY POLICIES AND INITIATIVES

- Office parking requirement is 1 space per 580sf (with associated apartment use), which is significantly less than the national average. Without apartment use, the requirement is 1/530sf.
- Hotel parking requirement is 0.7 per room. Again, significantly less than national average.
- Underground parking is encouraged.
- Parking requirements for Medical Office Buildings could be reduced by 10%.
- Parking requirements are reduced if approved shared parking programs are implemented.
- Parking is not required for the first 5,000sf of development (some land uses are excluded). For grocery stores, first 15,000sf is exempt, if the grocery store is not the principal land use.
- Office parking requirements could be reduced by up to 10%.
- 100% of required parking could be provided up to ¼-mile away.
- Reduced parking demand with approved TDM programs.
- Up to 15% of parking supply could be designed for compact cars only.
- Maximum parking requirements for many land uses.
- Parking near metro stations is not required if the development is located within 1,000 feet (with some exemptions).

- Mobility Lab is one of the most aggressive and successful transportation alternative programs in the country is a recommended model for Fort Collins to review.

City of Berkeley, California

- City's web page: www.ci.berkeley.ca.us
- Commuter Service web page: www.ci.berkeley.ca.us/commute

KEY POLICIES AND INITIATIVES

- The City offers many commuter programs. These include:
  - The Tax Relief Action to Cut Commuter Carbon (TRACC)
  - Commuter Benefit Services for Employers
  - The City requires that employers with ten or more employees provide a commute program to encourage employees to use public transit, vanpools or bicycles. TRACCC, gives employers several options - businesses can offer their employees commuter tax benefits as a payroll deduction, provide a subsidized benefit, or offer a combination of the two.
- Commute Programs
  - Guaranteed Ride Home Program
  - Ride matching for carpools and vanpools
  - Transportation Programs at UC Berkeley
- Transit Information Services
  - 511 Transit Information
  - Getting There on Transit
  - Clipper, the Bay Area's Smart Card for Transit
- AC Transit Local and Transbay Bus Service
  - Other Bus Services in Berkeley

- Paratransit Services
- Rail Service in Berkeley
- Bay Area Rapid Transit (BART)
- Capitol Corridor (train service from San Jose to Sacramento)
- Connecting AMTRAK passenger rail services

- Car Sharing
- Parking can be provided up to 300 feet away from the development.
- Joint-use, off-street parking is allowed if there are no substantial conflicts.
- Transit Service Fee (TSF) is collected to provide paratransit passes and promote ride sharing.
- Parking requirements are reduced if the development is located within 1/3-mile from a BART station.
- Subsidies available for approved TDM programs.

City of Eugene, Oregon

- City's web page: http://www.eugene-or.gov

KEY POLICIES AND INITIATIVES

- Parking requirements may be reduced (for some land uses) if the developer offers an approved shared parking plan.
- Bicycle parking is required with many land uses.
- Maximum parking ratio is used.
- Maximum parking cannot exceed 125% of minimum parking requirements.
- Parking requirements may be reduced if an approved Transportation Demand Management (TDM) plan is implemented.
- The City offers typical commuter services including bus, car pool, and van pool.

CITY OF PORTLAND, OREGON

- City's web page: www.portlandonline.com
- Commuter Assistance web page: www.portlandoregon.gov/transportation/43820

KEY POLICIES AND INITIATIVES

- Maximum parking for many land uses.
- Parking could be provided up to 500 feet away.
- Stacked parking with valet attendant is allowed.
- Parking requirements could be reduced by 5% for approved carpool programs.
- Parking requirements for residential developments are reduced and completely eliminated for all other land uses, if:
  - The development is located within 1,500 feet from a transit station, or
  - 500 feet from transit street where peak-hour service is provided at 20-minute intervals.
- Bicycle parking is required for many land uses.
- For every five bicycle parking, one vehicle parking could be eliminated.
- Parking requirements could be reduced by 10% if a transit supportive plaza is provided with the development.
- Motor cycle parking could be used to reduce vehicle parking by 5%.
- For every two car sharing parking one vehicle parking could be eliminated.
- "Smart Trip Business" initiative to encourage use of alternate modes of transportation. Some of the programs include:
  - Encourage use of bicycle at work place.

- Businesses could be certified for as, “Sustainability Work Certified.” The certifications include “Certified,” Silver,” and “Gold.”
- Car sharing programs.
- Centralized Transportation Resource.
- Employee education about use of transit.
- “Commuter Challenge” program to encourage the use of alternate modes of transportation.

The table on the following page provides a comparison of the City of Fort Collins to the selected peer cities regarding key zoning code policies and issues.

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DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 20

Recommended Maintenance Procedures

APPENDIX 20

Recommended Maintenance Procedures

Recommended Maintenance Procedures

The recommended maintenance procedures listed in this appendix are based on direct ***Kimley-Horn and Associates, Inc.*** experience and the recommendations presented in the National Parking Association (NPA) Parking Garage Maintenance Manual. For ease of reference, the procedures have been divided into categories and are presented in the same order as used in the NPA Parking Garage Maintenance Manual.

7.01. Cleaning

Maintaining a clean facility is important because it affects the overall appearance of the structure, promotes a good reputation and increases the user's perception of safety. Likewise, poor housekeeping invites disregard for proper waste disposal and may indicate an increased tolerance for vandalism or abuse of the facility. It is our experience that the increased user satisfaction and facility reputation often offset the costs of keeping the facility clean. Generally, the membrane waterproofing, sealant, and expansion joint warranties require that the structure be maintained in a clean, safe and serviceable condition. As a result, we recommend that the maintenance program should include the following housekeeping and preventative maintenance items

Housekeeping Items:

1) Sweep weekly all parking floor areas

- One of the most frequently overlooked aspects of parking garage maintenance is proper floor cleaning. If not removed, debris will eventually end up in the floor drains and drain lines and cause slow or blocked drainage.

- Sweeping can be done either with hand brooms or sweeping machines designed for parking garage floor slabs. All sweeping equipment must first be reviewed "in action" to identify any sharp or rigid components which might contact the traffic bearing membrane or expansion joints and cause damage. Sweeping machines should also be reviewed for weight to be sure that it is less than the design live loads. Sweeping machines should be checked regularly to confirm that they are not causing damage.

2) Sweep or mop elevator lobbies, attendant booths, entrance and exit lanes, and elevators daily. Stairs should be cleaned daily and more frequently if they are heavily used.

- Stair and elevator lobbies are highly visible areas and will experience high volumes of patron foot traffic. These areas should be maintained in a clean and safe condition at all times.

3) Periodically sweep or wash out expansion joints and joint sealants.

- Debris and dirt accumulation within expansion joint and/or joint sealant recesses can hasten deterioration of the joint systems.
- Stones, glass, and miscellaneous debris trapped against the expansion joint or joint sealant may puncture the gland/sealant during repeated pounding from tires and the continued expansion and contraction of the gland with seasonal structural movement.

4) Windows in attendant booths should be washed daily. Other windows in the stairways, elevator cabs, and elevator shafts should be cleaned once a month to once a quarter, depending on their conditions and accessibility.

5) Stair enclosures, doors, and frames should be cleaned monthly. The elevator floors and walls should be cleaned monthly.

6) Trash receptacles should be emptied daily:

- Clearly marked trash receptacles should be placed at areas of pedestrian traffic flow such as the stair and elevator lobbies, etc. The absence of trash receptacles, or poor maintenance and collection of trash will tend to encourage littering.

7) Floor drains should be cleaned out weekly.

- Debris can buildup in floor drains and drainpipes causing slow or blocked drainage. Ponding water, which will occur with blocked drains, creates a slip hazard and can affect the durability of the concrete.

8) Grease and oil spots that build up in parking stalls, drive lanes and entry/exit locations should be cleaned at least twice a year. Large spots should be cleaned immediately and other spots should be cleaned as soon as significant “build up” occurs.

9) Signs should be cleaned with a mild detergent semi-annually to maintain appearance and visibility of the signs.

10) Parking control equipment should be cleaned weekly.

Preventative Maintenance Items:

1) Semi-annual wash down of the floor slabs and lower vertical surfaces of walls and columns with high volume low-pressure water source such as a fire hose.

- Preceded by sweeping, a wash down of the garage will help clean the deck of debris.
- Before and after washing floors, all drains should be checked to see that they are functioning properly. Sand washed off floors can clog drains. Temporary burlap filters may be used to prevent sand from entering drains, but must be removed immediately after washing.
- A high-pressure, low volume water source (maximum 2,500 psi) may be used to remove spots the fire hose was unable to clean. This high-pressure method should first be

reviewed to confirm that the high-pressure water would not cause damage to the traffic bearing membrane, stripes, sealants, expansion joints, or concrete, etc.

- After several months of vehicular traffic, the traffic striping will become less visible due to an accumulation of dirt and debris. Cleaning during the wash down should help to "brighten" the striping.

2) More frequent (monthly) washing should be considered at high traffic areas and at any areas where slower drainage is observed.

- During winter months washing can be performed whenever moderate temperatures occur.

3) The underside of each level should be reviewed during each wash down to identify any leaking through the slab system.

- Leak locations should be identified on plans and sealants repaired as necessary as soon as possible.

7.02. Doors and Hardware

1) **Lubricate all doors.** Lubrication of doors and related hardware should be performed according to manufacturer's recommendations or at least semi-annually.

Frequency: 6 months

Procedure: According to Manufacturer's recommendations

Supplies: Lubricant and rags

2) **Check operation of all doors.** All door hardware should be reviewed to assure proper operation. When a malfunction is noted, it should be corrected immediately to maintain the safety and security of the garage.

Frequency: 6 months

Procedure: According to Manufacturer's recommendations

Supplies: Flashlight

3) **Checks doors for signs of corrosion.** Proper cleaning and painting of the doors is important to maintain an attractive entrance to the facility. Inspections should be scheduled to review all doors and hardware for signs of corrosion and damage.

Other preventative maintenance includes painting, which is addressed in Section 7.06.

Frequency: 6 months

Procedure: According to Manufacturer's recommendations

Supplies: Flashlight, wire brushes, rags, and paint supplies

Electrical Systems

1) **Inspect lights for proper operation.** A properly illuminated facility promotes safer travel within the facility and provides a more secure feeling among its users. Daily inspection of luminaries (complete lighting unit), lamps, lenses, emergency lights, ballasts, electrical conduit, light fixture attachment to structure, distribution panels, time controls, etc. should be scheduled to ensure adequate illumination within the facility at all times. Defective luminaries should be repaired or replaced immediately. A properly illuminated facility promotes safer travel within the facility and tends to instill a more secure feeling among users.

   Frequency: Weekly

   Procedure: According to Manufacturer's recommendations

   Supplies: Ladder

2) **Clean and replace lights.** Uniformity of lighting is a very important safety concern in parking structures. Scheduled cleaning of lights including lenses and replacement of lamps should be set up to maximize the uniformity of the lighting systems. Lamps should be replaced in groups at the end of their average rated life (refer to lamp cut sheets and local lamp supplier for average rated life). Lamp manufacturer studies indicate that energy costs may be reduced if lamps are replaced in groups before they burnout.

Illumination reduction also occurs due to dirt and dust that accumulates both inside and outside of the light fixture. Annual cleaning of light fixtures is recommended in order to maintain adequate luminance.

Replacement of the acrylic lenses may be necessary if "yellowing" of the plastic is reducing the light output

   Frequency: Every 12 months

   Procedure: According to Manufacturer's recommendations for replacement of lamps

   Supplies: Tool kit, ladder, lamps, recommended lens cleaner, and rags

3) **Inspect electrical conduits and panel boxes.** Electrical conduits and distribution panels should be inspected monthly to determine if they are functioning properly. Any water leaking into the conduit or panel boxes must be noted and remedied promptly. Identify and repair the source of leaking water in such locations as cracks, joints, and floor openings. Weekly re-secure, as necessary, electrical conduit and electrical fixtures for proper mounting. Cleaning and repainting of metal items or replacement and repair to reduce leaking should be performed as needed.

   Frequency: Weekly

   Procedure: Visually inspect conduits and panel boxes

   Supplies: Tool kit, ladder, waterproof sealant, and rags

7.04. Elevators (for Parking Structure #3)

1) **Check elevators for proper operation.**

   Frequency: Daily

Procedure: Visually inspect conduits and panel boxes

Supplies: Tool kit

2) **Perform annual inspection of elevators.** Preventative maintenance and good housekeeping is essential for proper operation of elevators and associated equipment. Additionally, most elevator codes and local building codes require periodic safety and maintenance inspections. Since requirements vary with the type of equipment, we recommend that the University verify local requirements and review the service contract provided with the equipment installation. Specific maintenance requirements for each piece of equipment are described in the operation and warranty manuals provided by the equipment supplier. Copies of these should be kept with this manual for ease of reference.

Frequency: Every 12 months

Procedure: Contact installer & have annual inspection performed

Supplies: None

7.05. HVAC

HVAC systems in the cashier booth (PS-1) should be inspected monthly. Air conditioner filters should changed monthly.

Specific maintenance requirements for each piece of equipment are described in the operation and warranty manuals provided by the equipment supplier. Copies of these should be kept with this manual for ease of reference.

7.06. Painting

1) **Inspect painted surfaces for corrosion damage.** Maintenance of painting systems is necessary to preserve the facility appearance as well as protect the underlying metal from corrosion. Painted elements that are operations or safety related should be inspected monthly. Painted steel requiring maintenance and inspection includes hollow metal doors, mechanical lines, bollards, and miscellaneous metal.

Frequency: Monthly

Procedure: These surfaces should be inspected noting paint chipping and corrosion of the underlying metal. Rusting areas should be properly prepared by removing all rust down to bare, near white metal followed by priming and painting. As a minimum, miscellaneous metals requiring painting or touch-up should be painted using a two-coat alkyd enamel system. Application preparation should include removing all dirt, oil, grease and other foreign matter followed by a prime coat and two coats of alkyd enamel paint (i.e. Glid-Guard Silicone-Alkyd Enamel, by Glidden).

Supplies: Paint, brushes, rollers, paint thinner (cleaner), rags, ladder, and wire brushes,

2) **Clean and restripe parking stalls.** In order to avoid confusion for parking facility users, restriping of parking stalls should be initiated when the existing stripes begin to fade and are

difficult to see. What appear to be faded stripes may only be stripes covered with an accumulated film of dirt, oil and grease.

Frequency: Every 12 months

Procedure: Therefore, the maintenance staff should first wash down the striped areas using a mild detergent if necessary, prior to considering the repainting of stripes. This may be adequate to sufficiently brighten the existing stripes. When restriping is required, ”non-chlorinated rubber” paint should be used.

When painting over existing stripes, the existing paint should be thoroughly cleaned and prepared by removing all de-bonded paint prior to applying new paint. When changing the striping layout the existing stripes should be completely removed. Painting over the existing stripes with gray paint is not recommended because as the gray paint begins to fade the old strips will become visible and create confusion.

Supplies: Paint (as listed below), brushes, rollers, paint thinner (cleaner), rags, ladder, and wire brushes,

1. “Latex Traffic Paint, ” Glidden, Cleveland, OH.

a. No. 22685 Yellow
b. No. 22683 White
c. No. 20090 Blue

2. “Setfast Acrylic Latex Traffic Paint,” Baltimore Paint and Chemical Co., Division of the Sherwin-Williams Company, Baltimore, MD.

a. No. TM225 Yellow
b. No. TM226 White
c. No.TM2133 Blue

7.07. Parking Control Equipment

To ensure proper function and minimize equipment down time, inspections and preventative maintenance should be performed on a regular basis. The parking control equipment consists of control software, loop detectors, card readers, mechanical gates, and revenue control equipment. The particulars of the parking control equipment are in the operations manual and maintenance manuals provided by the manufacturer. These operation manuals are provided and should be located near this manual for ease of reference. In addition to any specific recommendation provided by manufacturer, we recommend the following:

Procedure: The control software should be tested every 90 days.

The loop detectors should be tested every 90 days to verify that they are functioning properly.

The card reader optics should be cleaned once a month with a standard bar code cleaning card.

Each gate should be observed on a monthly basis to watch the motion of the gate arms. Any unusual motion should be noted and limit switches adjusted.

Any unusual noises should be noted and the parts lubricated with SAE #10 oil. Belts should be checked for tension and tightened to proper tension. In addition, each gate should have preventive maintenance performed by an authorized equipment supplier every 6 months.

The system computer should be kept dust free and away from excessive heat and cold.

Supplies: Tool kit, rags, oil,

7.08. Plumbing Systems

1) **Clean and flush drainage system.** The plumbing system design consists of floor drains, drain risers, and a dry fire protection standpipe. Floor drains and piping should be inspected monthly to assure proper drainage and the rapid disposal of water. Remove sediment from the piping and flush the drain system thoroughly in conjunction with the semi-annual floor slab wash down. During the wash down procedures, it is recommended that temporary filters, such as burlap, be installed over the drains to minimize debris and sediment collection in the drainage system.

Frequency: Floor drains and piping – monthly
Floor slab wash down – every 6 months

Procedure: Floor drains and piping should be inspected monthly to assure proper drainage and the rapid disposal of water. Remove sediment from the piping and flush the drain system thoroughly in conjunction with the semi-annual floor slab wash down. During the wash down procedures, it is recommended that temporary filters, such as burlap, be installed over the drains to minimize debris and sediment collection in the drainage system.

All piping and fittings should be checked for damage, leaks or corrosion. Damaged components should be immediately repaired or replaced upon discovery. Appropriate action should be initiated to correct or minimize any leaking observed. All corrosion damage should be promptly repaired to arrest the process before a larger scale problem develops.

Floor drain grates should be replaced as required to minimize the risk of a pedestrian tripping hazard.

Supplies: Hoses, flashlights, bristle push brooms, and burlap bags

2) **Inspect and drain standpipe system.** The dry fire protection standpipe system should be maintained in a condition to function properly at all times. Pipes, sleeves, and pipe hangers must be kept free of corrosion.

Frequency: Monthly

Procedure: Pipes, sleeves, and pipe hangers must be kept free of corrosion. These surfaces should be inspected noting paint chipping and peeling. Areas should be properly prepared by removing loose paint followed by priming and painting. Application preparation should include removing all dirt, oil, grease and other foreign matter.

Supplies: Paint, brushes, rollers, paint thinner (cleaner), rags, ladder, and wire brushes,

7.09. Waterproofing

As indicated in Section 7.01, to maximize the service life of this structure, it is very important to minimize water penetrations into the structure. As a result, the waterproofing components require rigorous monitoring and maintenance. The waterproofing system design consists of traffic bearing membrane (over occupied spaces), penetrating surface sealer, control joint and cove sealants, and expansion joints. These components have a limited life span and will require periodic repair, reapplication and total replacement at the end of their service life. Lack of periodic maintenance may lead to premature deterioration of the concrete and embedded reinforcing steel and will increase future repair and maintenance costs. Water leaking through damaged waterproofing components can also damage vehicle paint finishes, light fixtures and electrical distribution systems, and in general be a nuisance to facility users and maintenance staff.

1) **Inspect traffic-bearing membrane (deck coating).** The primary function of this membrane is to prevent water leakage through the concrete in these areas.

Frequency: Monthly

Procedure: Monthly inspection of the traffic bearing membrane should be performed, noting cracks, tears, blistering, debonding, and worn or deteriorated areas. Isolated failures may lead to localized water leaking, increased chloride contamination, and a potential increase in subsequent corrosion induced concrete deterioration. Membrane failures associated with or leading to concrete deterioration should be repaired only after any concrete deterioration or corrosion damage is addressed and repaired. Membrane damage from wear, vandalism, or accidents will generally require only proper recoating. Recoating or reapplication must be performed only by a licensed applicator and the Manufacturer's recommendations for repairs or reapplication must be followed. The traffic bearing waterproofing membrane system is warranted for five years. Damage from vandalism or lack of maintenance will generally not be covered under the warranty. Therefore, it is important to maintain the scheduled cleaning and maintenance program noted in Section 7.01.

It is recommended that all repairs be fully documented and recorded in a maintenance log.

Supplies: None required

2) **Test penetrating sealer for effectiveness.** The penetrating sealer has a limited effective life due to traffic wear, sun exposure, and internal concrete reactions. Generally, the sealer manufacturers recommend reapplication of the sealer every 3 to 7 years, however, we

recommend sealer effectiveness testing prior to reapplication to minimize total long-term cost (may be possible to delay reapplication).

Frequency: 3 to 7 years

Procedure: To test for the effectiveness of the penetrating sealer the manufacturer of a testing laboratory should perform the test. If the sealer has lost its effectiveness, a waterproofing contractor should complete another application.

Supplies: None required

3) **Inspect and repair joint sealants.** Sealants have been installed at concrete construction joints, and horizontal/vertical concrete interfaces (coves).

Frequency: Monthly and every 6 months during wash downs

Procedure: Monthly inspections of the sealants should be performed to visually determine where and if any sealants have failed. Failed/damaged sealants should be repaired and checked with the deck wash down for leaks. If failed sealants are not repaired, then potentially expensive restoration may be required to preserve structural safety. Thus, if leaking is observed, the source of leaking should be identified and resealed as soon as possible. The contractor must replace all failed joints for a period of five years.

Supplies: None required

3) **Inspect and repair expansion joints.** All expansion joint glands should be inspected monthly for signs of leaking. Failed joint systems and subsequent leaking will cause contamination to the adjacent concrete and underlying cast-in-place members as well as a continuous nuisance to the facility users. Check individual product warranties for limitations. Damage from vandalism or neglect will not be warranted and therefore it is important to adhere to the cleaning and maintenance schedule as described in Section 7.01.

Frequency: Monthly and every 6 months during wash downs

Procedure: Monthly inspections of the expansion joints should be performed to visually determine where and if any expansion joints have failed. Failed/damaged expansion joints should be repaired and checked with the deck wash down for leaks. If failed expansion joints are not repaired, then potentially expensive restoration may be required to preserve structural safety. Thus, if leaking is observed, the source of leaking should be identified and resealed as soon as possible. The contractor must replace all failed joints for a period of five years.

Supplies: None required

7.10. Safety Checks

Safety checks include assuring the proper operation of the lighting and illuminated pedestrian exit signs.

1) **Inspect walkways, handrails, stairwells, and walking surfaces for hazards.** Pedestrian walk paths must be maintained to avoid trip hazards such as loose stair nosings, damaged

expansion joints, deteriorated concrete surfaces, or debris. Handrails should also be checked to verify rigidity and ability to withstand handrail loading.

Refer to the NPA Maintenance Manual for a discussion on safety checks.

Frequency: Daily

Procedure: Pedestrian walk paths must be maintained to avoid trip hazards such as loose stair nosings, damaged expansion joints, deteriorated concrete surfaces, or debris. Handrails should also be checked to verify rigidity and ability to withstand handrail loading. The loose fittings should be tightened or repaired as necessary. Damaged expansion joints or deteriorated concrete surfaces should be repaired according to the procedures recommended in this section.

Supplies: Tool kit

7.11. Security System

Security adds to the overall user perception of security in a structure and represents an additional liability for the owner if they are not functioning properly. Thus, it is critical that these systems are maintained and monitored during all hours of operation. If this cannot be done, it is our opinion that these systems should be removed from the structure.

The security systems in this structure include:

- Push for assistance intercoms (all structures).
- Security cameras (PS-6)
- Monitors and VCR's located in the security office (PS-6).

By having these systems the user assumes that the systems are operational and that there is someone monitoring their actions 24 hours a day. As a result we recommend that the systems be checked daily as part of a walk-through inspection, but no less often than weekly, to determine if the systems are functioning properly. Equipment should be maintained as described in the literature provided with the equipment.

Frequency: Daily

Procedure: The camera-housing lens should be cleaned off at least once a month to ensure a clear view.

The monitors and other camera control equipment should be kept as dust free as possible.

Each VCR should be sent in once a year for a complete reconditioning.

The tapes used in the VCR's should be rotated daily. New tapes should be purchased quarterly and the old tapes thrown away.

Supplies: Tool kit

7.12. Signs (Graphics)

The signs should be reviewed weekly for damage from corrosion or vandalism. Replacement, if necessary, should be performed immediately to avoid possible traffic flow problems. Also, signs placed on the top levels of the facilities (or in other areas facing the sun) should be inspected for sun damage annually.

Frequency: Weekly

Procedure: Signs should be washed periodically with a mild detergent to maintain appearance and visibility of the signs

Supplies: Tool kit, mild detergent, water, rags, ladder, and hoses

7.13. Structural Systems

Maintenance of the structural system is one of the most important goals of this maintenance manual. Monthly inspections of the slab system and annual inspection of the beams, columns, walls, etc., are important in order to locate, monitor and record cracking and water leakage observed and allow for immediate repairs that will reduce further deterioration. Maintaining the waterproofing system, including sealants, coatings, expansion joints, etc. (See Section 4.10) is crucial for reducing deterioration of the structural system.

1) **Perform inspections of slabs, beams, columns, and walls and make necessary repairs.**

Frequency: Monthly – slabs
Every 12 months – beams, columns, and walls

Procedure: Inspect slabs, beams, columns, and walls for cracks, spalls and water leakage. Repair deterioration after review and recommendation by qualified concrete restoration engineer.

If, for any reason, concrete repairs are to be made, **PRESTRESSING TENDONS ARE UNDER HIGH TENSILE STRESSES AND MAY RELEASE WITH EXPLOSIVE FORCE DURING CONCRETE REMOVAL.**

Supplies: Tool kit, flashlights, and ladder

NO drilling or installation of powder driven fasteners in beams or tees should be allowed prior to confirming that this operation will not damage the prestressing tendons or components.

7.14. Stair and Elevator Enclosures

The stair enclosures include steel framed stairs and glass curtain wall systems. Semi-annual cleaning of exterior frames and glazing should be performed as needed.

1) **Clean outside of stair and elevator enclosures and inspect for leakage.**

Frequency: Every 6 months

Procedure: Most dirt may be removed with a moderate pressure water rinse and a brush or sponge. A mild detergent may be added to aid in cleaning the frames. Thoroughly rinse after using any detergent. The handrails are painted steel. Refer to Section 7.06 for recommended maintenance of painted surfaces.

Leakage observed at caulked or gasketed glazing joints or at flashing joints should be repaired immediately. Broken panels should be replaced as soon as possible to maintain a safe passageway and minimize potential water damage to the structure or equipment.

Supplies: Tool kit, ladders, mild detergent, sponges, rags, buckets, and hoses

7.15. Masonry

Masonry is a durable construction material that, if properly designed and installed, requires little maintenance. Maintenance that may be required includes cleaning, tuckpointing or preventive measures such as sealing the masonry and/or joints.

1) **Clean masonry and inspect masonry for signs of distress and clean.** Masonry should be inspected every six months for signs of distress such as bowing masonry, corrosion stains through mortar joints, failure of sealants, spalled or cracked masonry or excessive efflorescence. If these conditions are observed, the consultation of a masonry design professional is recommended.

Frequency: Every 6 months

Procedure: ***Cleaning***

Cleaning of stains on masonry is only necessary to maintain its original color and beauty. Stains may be due to paint, efflorescence, dirt, smoke, mildew, graffiti, etc. The most common cleaning solutions for masonry are the following :

- Proprietary Cleaning solutions - such as “SureKlean” by Prosoco, Inc., Kansas City, KS (913)281-2700 or masonry cleaning products by Diedrich Technologies, Inc., Milwaukee, WI (414)764-0058.
- Detergent Solutions - suggested solution of ½ cup trisodium phosphate and ½ cup laundry detergent in one gallon of clean water.
- Acid Solutions - suggested solution of 10% muriatic acid (9 parts clean water to 1 part acid).

Most masonry stains should be removed with either proprietary cleaning solutions or detergent solutions. These cleaners should be used in strict compliance with manufacturers instructions. Acid solutions are not recommended and should only be used for extremely tough stains and on old stained masonry. Acid washing should only be used with a maximum 10% of acid, as overuse of acid will weaken the mortar and discolor masonry units. Acid should never be used on limestone, marble, calcareous sandstone, glazed brick, architectural terra-cotta, polished granite, light colored brick or dark brown or black brick. Caution must be used with acid and proprietary cleaners to prevent damage to adjacent elements, plantings, and injury to personnel.

Methods used for cleaning masonry include bucket and brush hand cleaning and pressurized water (maximum of 700 psi). Sandblasting is

not recommended for cleaning any type of masonry as the risk of damaging mortar joints and scarring brick surfaces is too great. When cleaning masonry it is very important to saturate the masonry surface with clean water before and after cleaning. This prevents the cleaning agent from being absorbed into the masonry thus keeping it at the surface where the cleaning is necessary. With all cleaning methods a small trial should be completed to determine the affect on the masonry, i.e. effectiveness, color change etc.

EFFLORESCENCE - One of the most common stains on masonry in new construction is efflorescence. Efflorescence is typically white in color and is a deposit of water-soluble salts on the surface of masonry. Water-soluble salts are brought to the surface of masonry in solutions of water and deposited there by evaporation. The salts come from soluble salts in masonry units, in mortar or from penetration by rain or groundwater. Efflorescence is not at all detrimental to masonry, but only affects the aesthetics of the masonry. Moisture is the vehicle that brings the salts to the surface. In new masonry walls the moisture typically comes from water trapped in the brick materials and in the wall system from original construction. New buildings typically "bloom" with efflorescence for the first one or two years. If efflorescence continues beyond two years there is a source of moisture that needs to be identified and eliminated. This source of moisture may be through masonry joints, sealant joints, flashings etc.

Efflorescence is a relatively easily stain to remove. Over time rainwater will wash the efflorescence off the wall. Methods of removal include dry brushing or brushing with a stiff brush and clear water. Efflorescence stains that are more difficult can be removed with the use of a detergent solutions or proprietary cleaners as previously described. Efflorescence removal using wet methods should only be completed in warm dry weather since the added moisture will tend to bring more salts out of the wall.

Supplies: Tool kit, ladders, sponges, rags, buckets, cleaning, detergent, or acid solutions, and hoses

2) **Inspect and repair deteriorated tuckpointing.** The water penetration of masonry walls is most dependent on the condition of the mortar joints. Over time mortar will degrade due to atmospheric exposure. When mortar can be easily removed with a finger or with light pressure with a car key, tuckpointing of the mortar joints should be completed to maintain a water resistant wall. Excessive water penetration over time will lead to deterioration of the masonry units and corrosion of embedded metal materials.

Frequency: Every 6 months

Procedure: Inspect the mortar joints in the masonry and test the mortar for soundness with a small screwdriver. When soft areas are located, they should be visibly marked. The areas should be repaired by a masonry contractor.

Tuckpointing involves removal of deteriorated mortar to a minimum depth of ½". Repair mortar should match the color and strength of the existing mortar. With soft masonry materials such as soft brick,

limestone etc. using a soft tuckpointing mortar is essential. Type N mortar is most commonly used in tuckpointing of masonry walls.

Supplies: Tool kit, keel or marking pens, and ladders

3) **Preventive Maintenance**

It is important to maintain joint sealants at construction joints and perimeters of masonry walls. Water penetration at these locations can lead to the deterioration of masonry materials, increased efflorescence, and the corrosion of steel support angles, masonry ties and supports.

Often it is recommended that masonry walls be sealed with a proprietary silicone, silane or siloxane type sealer to reduce water penetration. However, the sealing of masonry walls should not be completed without the consultation of a masonry professional as sealing masonry can at times cause more harm than good. For example, applying certain sealers to brick masonry that has efflorescence due to trapped moisture can result in the spalling of the face of the brick units. Crystallization of the salt deposited behind the sealer will result in spalling of the surface of the masonry. There is also a potential for moisture being trapped behind the sealer resulting in freeze/thaw damage to masonry units and mortar.

Numerous proprietary products are available for sealing masonry walls. Two suggested masonry sealers are "Hydrozo Clear Double 7" - water based by Degussa Corporation (Chemrex) (952) 496-6000 and "Aqua-Trete" by Huls America, Inc., (800) 828-0919. A trial area should be complete to determine if the sealer changes the color and appearance of the masonry.

4) **Remove graffiti from concrete and masonry surfaces.** Graffiti results from the application of paint, felt tipped marker, crayons, lipstick or other materials. Graffiti should be removed as soon as possible after it is observed.

Frequency: When needed

Procedure: Inspect area where graffiti is observed. If it is on a painted surface, consider mechanical removal, such as sand blasting or grinding and repainting. If it is on a masonry surface the cleaning method may depend on the type of graffiti medium used. Sand blasting, water blasting, and chemical cleaning are available. Sand and water blasting may damage the masonry surface, while chemical cleaners pose environmental problems and may not be effective. Presently there are over 500 products listed that purportedly prevent, discourage, or remove graffiti.

Blasting with baking soda and blasting with dry ice have been found to be effective and pose minimum damage to masonry and the environment.

It may take several attempts with different materials before the graffiti is removed from masonry. Local firms specializing in graffiti removal should be retained for removal.

Supplies: None required.

7.16. RECOMMENDED MAINTENANCE SCHEDULE

This section provides a recommended schedule of cleaning, inspection, and other maintenance activities. In general, the need for repairs will be determined during the inspection or maintenance phase. The following symbols are used to designate scheduled activity:

H Housekeeping - Housekeeping represents that work conducted by in-house staff consisting of basic cleaning, sweeping, wash downs, etc.

I Inspection - Inspections may be performed by properly instructed in-house staff. Periodic inspections are necessary to confirm proper operation of systems or components.

M Maintenance - Maintenance is usually performed by in-house staff, however, it may occasionally require an outside contractor. Maintenance represents tasks necessary to ensure proper operation of systems and components.

The recommended maintenance record form should be utilized by Parking Services maintenance staff or their designee to record periodic inspections, maintenance and repair.

All repairs should be performed on an "as needed" basis.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 20

2012 Missoula Parking Commission Annual Report

2012 ANNUAL REPORT

missoula parking commission





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WHY PARKING MATTERS?

The International Parking Institute (IPI – of which the Missoula Parking Commission (MPC) is an active member) has a new ad campaign ("Parking Matters") that succinctly sums up what every parking and Downtown management professional knows to be true. However, the specifics about "how" and "why" need to be conveyed much more broadly and effectively. Disseminating this information locally is a role that the MPC will embrace going forward. The MPC has a great story to tell about how it has emerged as a valued and professional "partner for success" in Downtown Missoula and the larger community that it serves.

One of the on-going goals of this new Annual Report initiative will be to educate the community as to the growing importance and impact of the parking profession in the world at large. The report will annually summarize emerging trends and recent advances in the areas of parking planning, design, technology, communications, governance, community engagement, and a more strategic approach to parking management.

In this inaugural edition of the MPC Annual Report, a special emphasis will be placed on four key areas that have been explored over the past couple of years by the MPC staff and its Board of Directors:

- **Emerging Technologies –** We have been exploring the dynamic role of emerging technologies and their impact on our ability to provide enhanced customer service and improved program management.
- **Integrated Access Management –** We continue to emphasize the importance of broadening our scope to include an integrated approach to parking, transportation and demand management programs as a means of delivering more sustainable community access strategies.

INTRODUCTION

- **Parking and Economic Development –** We believe leveraging parking as an important community and economic development strategy is an important role for the Parking Commission. Working with our community partners, we will continue to explore the application of various parking management and community investment strategies for the overall benefit of our community.
- **Strategic Parking Management –** The MPC was a key funding partner of the Downtown Master Plan project a few years ago. One of the major outcomes for the MPC was the development of our first parking program "strategic plan". It was significant that this plan was an integrated element of the larger Downtown master planning process. Having this plan has been extremely beneficial in guiding the direction and annual work plans of the MPC. Most of the major priority action items within the strategic plan have been accomplished. Updating the MPC strategic plan is a priority for the Board in 2013.

Other areas of focus for 2013 will be our relationships with related associations and professional organizations. We will continue to explore the huge potential for shared benefits that can be realized through improved connections, shared resources, and enhanced community collaboration.

Ultimately, one of our key focus areas is to increasingly embrace our role in contributing to the overall "Downtown Missoula experience". There is a growing respect for the complexity and multi-faceted nature of both parking and downtown management. Strategic communications, effective collaboration, and enhanced customer services are keys to success.

In early 2013, with the opening of the new "Park Place" garage at the corner of East Front and Pattee Streets, the community will see the realization of the largest single project to date from the MPC and the largest project to date to grow from the Downtown Master Plan.

To quote Oliver Wendell Holmes, Jr., "A mind that is stretched by a new experience can never go back to its old dimensions." The MPC plans to keep on stretching!

A Message from MPC Director, Ms. Anne Guest

The last several years have been filled with significant accomplishments for the MPC. Collectively, they have enhanced our overall parking program and have positioned the MPC to be a major partner for economic development in downtown Missoula.

One significant catalyst for these accomplishments has been the Downtown Master Plan that was approved by the City of Missoula (City) Council in 2009. An integral part of the Downtown Master Plan was the development of a Parking Strategic Plan that included the establishment of ten program guiding principles and wide range of specific recommendations.

The Downtown Master Plan identified a core area in the downtown as a "retail hot spot" and recommended the development of a new parking structure at the corner of East Front and Pattee Streets. In response to that, the MPC along with the Missoula Redevelopment Agency successfully negotiated and financed a new parking structure, "Park Place", at this location. It is designed to support the First Interstate Bank Project while providing additional parking supply to serve the development of the Missoula Mercantile while also providing shared parking for the many evening and weekend events in Caras Park. Park Place will be completed by the beginning of 2013, adding 336 new parking spaces to our downtown inventory. It will be a tremendous asset to the Missoula community.

Most of the other Parking Strategic Plan recommendations have been completed, taking our parking program to a new level. However, there is more work to be done. One of the goals for this upcoming year is to replace the old mechanical meters with new multi-space parking technology that will offer an exciting array of new payment and user-friendly program options for downtown patrons.

I would like to thank our Board of Directors, our dedicated staff, and our community partners for their support and hard work over the past few years. We are very proud of our parking program and look forward to continuing to develop innovative and customer-friendly programs to support downtown Missoula as one of the most vibrant and exciting downtowns in the state.

Anne Guest
Director, Missoula Parking Commission

INTRODUCTION

A Message from MPC Board Chair, Mr. Rod Austin

The MPC is an active partner in many downtown and community interests, including being a significant partner in the Downtown Master Plan. Over the past three years we have worked hard at the many parking and mobility-related tasks associated with the Downtown Master Plan. The MPC has been a leader in keeping that plan relevant and alive through our community investments and on-going planning initiatives. The MPC has also embraced economic development as a core element of our overall mission in support of the downtown's larger strategic goals.

Key to this thinking is embracing an approach where parking is directly linked to and actively engaged with other local agencies and organizations whose primary objectives are downtown management and community development. This includes organizations like the Missoula Downtown Association and the Missoula Redevelopment Agency, City Planning and Public Works, and a variety of community mobility partners.

As part of our economic development mission, we want to stimulate future community development by leveraging parking development and strategic investments in land acquisition. These activities will include partnerships with other public agencies and/or private development and will encourage the creation of new mixed-use projects, the promotion of adaptive reuse and infill development, good urban design, and the creation of walkable and inviting "people places". The new Park Place project is a first step in this direction with the creation of street-level retail space in conjunction with needed parking infrastructure on the corner of East Front and Pattee Streets.

The MPC will also continue its leadership role in efforts to create a balanced parking and transportation system for the City. We will work closely with Mountain Line, Missoula In Motion, Missoula Ravalli Transportation Management Association (MRTMA) and other local agencies to develop a more integrated and comprehensive mobility management system for the greater Missoula community. This will be critical as Downtown Missoula works to build retail, residential, and employment opportunities. Supporting multiple modes of access is good for business, the environment, and the overall quality of life that makes Missoula a special place. The MPC is proud to be an active partner in the success of Downtown Missoula.

Rod Austin
Board Chair, Missoula Parking Commission

ABOUT THE MPC

Purpose

The MPC works with government, businesses, and citizens to provide and manage parking and parking alternatives. MPC identifies and responds to changing parking needs in the area for which it is responsible.

Overview

The MPC has for years been a well managed and progressive parking and transportation program. In addition to the management of significant on- and off-street parking assets, the MPC also actively participates in a variety of community transportation initiatives in collaboration with Missoula in Motion, Mountain Line (Missoula Urban Transit District) and the MRTMA.

Awards

As a key partner in a comprehensive downtown master plan, the MPC has been a community leader in master plan implementation, including the introduction of new "downtown-friendly" parking policies, new technology, expanded support for transit and transportation alternatives programming, and an aggressive investment in new parking infrastructure, despite an economy in recession.

- 2010 – The Missoula In Motion Best Practices Award Finalist was awarded to the Downtown Streetscape Consortium, which included the MPC.
- 2011 – The MPC was honored by the International Downtown Association highlighting the positive community benefits that can occur when a progressive parking and transportation management organization works collaboratively with downtown management groups, urban renewal agencies and the overall community.
- 2012 – The MPC was awared the 2012 International Parking Institute (IPI) Award of Merit for its *"Integrated Downtown Master Plan and Parking."*

IDA DOWNTOWN ACHIEVEMENT AWARDS

PARTNERSHIPS FOR SUCCESS

One of the characteristics that sets the MPC apart from most parking programs in the country is its level of community engagement. The MPC is involved in a wide range of community initiatives and is actively involved with almost every community development agency and significant institutional organization. According to MPC Board Chair Rod Austin, much of this credit belongs to MPC Director Anne Guest, however, she also has strong support from the MPC Board of Directors who clearly see the value of strong community engagement.

There are strong and effective working relationships between the MPC, the primary downtown management, redevelopment, transportation, and other City agencies whose job it is to make Missoula a world class community.

The MPC is also actively involved with the University of Montana, Hellgate High School, St. Patrick's Hospital, the Hip Strip Neighborhood, Missoula In Motion, Mountain Line, and the MRTMA, just to name a few.

This type of consistent, high level engagement helps ensure that the parking program is connected, better understood, and respected as a community partner and leader.

The MPC is not only engaged in the planning and operational contexts, but they have proven to be an effective contributor in the community and economic development arenas as well. Early in 2013, the community will be invited to the grand opening of the MPC's largest capital project to date—the new Park Place garage.

Downtown Business Improvement District

Missoula Redevelopment Agency

Missoula Parking Commission

Missoula Downtown Association

CURRENT PROGRAM SUMMARY

Overview

The MPC is the city department responsible for parking operations, maintenance, and enforcement within Missoula's central business district (CBD) and around the University of Montana. The MPC oversees 15 parking facilities in the downtown core, the Residential Parking Permit Program (RPPP), meter collections, maintenance and enforcement, and the issuance of permits for disabled, commercial, and loading zone spaces. The MPC has established itself as more than just an organization that provides parking for vehicles. The MPC is striving to be an active and collaborative partner with other organizations to develop and promote strong parking, transportation alternatives and transportation demand management strategies.

Jurisdiction

The MPC's jurisdiction includes two basic areas:

- The Central Business District, including the area downtown where the meters are located
- The Residential Parking Permit Program (RPPP), adjacent to the University of Montana

Organization

The MPC is governed by a Board of Directors consisting of five members with four-year terms. The Board members are recommended by the Mayor and approved by the City Council and are required to be residents of the City. The Parking Commission works in coordination with the City Council to further the transportation and economic goals of the City, especially the downtown.

The City of Missoula's parking organization is "vertically integrated" under the leadership of the MPC Director. (i.e., on-street, enforcement, off-street operations and planning are managed as one unit). The Director reports to the MPC's Board, and the position also serves as an ex-officio board member of the Missoula Downtown Association. The MPC Director also takes counsel and advisement from the Missoula Redevelopment Agency (MRA).

The MPC is comprised of eleven full-time equivalent (FTE) employees and one half-time employee under the following operating and service entities;

- Administrative Group (4 FTE)
- Parking Enforcement Group (3 FTE)
- Parking Operations / Maintenance Group (3 FTE)
- Booth Attendants (1.5 FTEs)

The parking Operations/Maintenance and Administrative groups are the largest sections each with approximately 36% of the staff, while the Enforcement Group comprises approximately 28%. Each Group has clearly defined tasks and responsibilities under the leadership of a supervisor who reports to the MPC Director.

Key Program Elements

Overall Parking Resources

The MPC manages approximately 3,000 on-street and off-street downtown public parking spaces of which 11% were provided in structured parking facilities (not including the new Park Place garage scheduled to open in early 2013). The table below provides a breakdown of parking spaces by type.

MANAGED MPC PARKING RESOURCES OVERVIEW

	Number of Facilities	Spaces	% of Total Spaces	Number Permits Issued
	OFF-STREET			
SURFACE LOTS	13	787	26%	627
GARAGES	2	325	11%	280
TOTAL OFF-STREET	15	1,112	37%	907
	ON-STREET			
METERS		1,075	36%	N/A
RPPP		820	27%	1,100
TOTAL ON-STREET		1,895	63%	1,100
TOTAL ON-STREET AND OFF-STREET		**3,007**	**100%**	**2,007**

Off-Street Parking Facilities

In 2012 the MPC owned/managed two parking structures and 13 surface lots. Three surface lots (Greyhound, Caras Park, and Woody) allow hourly parking through the use of meters and contain a total of 45 meter spaces. All other surface lots are designated for monthly parking.

On-Street Parking

There are a total of 1,075 metered on-street parking spaces in Downtown Missoula, 820 Residential Parking Permit Program (RPPP) spaces near the University of Montana, and an additional 714 on-street spaces that are unsigned, signed with time limits, or designated as loading zones.

The table below summarizes parking spaces by type and area.

TOTAL PARKING SPACES BY TYPE/AREA				
	OFF-STREET		ON-STREET	TOTAL
	PUBLIC	PRIVATE		
DOWNTOWN CORE	631	1,433	872	2,936
E. DOWNTOWN	51	396	499	946
FRONT STREET	37	652	125	814
CARAS PARK	300	134	31	465
HIP STRIP	93	611	368	1,072
TOTAL	**1,112**	**3,226**	**1,895**	**6,233**

Residential Parking Permit Program

MPC's RPPP zone is shown in the figure below. The MPC's jurisdiction includes 820 residential parking permit spaces adjacent to the University of Montana.

New Facility Development

One of the primary responsibilities of the MPC is to plan for, finance, and construct new parking infrastructure.

Having been a good steward of parking revenues for many years, the MPC is excited to be opening their newest and largest parking facility to date with the new Park Place garage in early 2013.

On the following page are a few photos tracking the progress of the garage from the earliest days of construction.

Photos of the Park Place Garage During Construction















FINANCIAL OVERVIEW

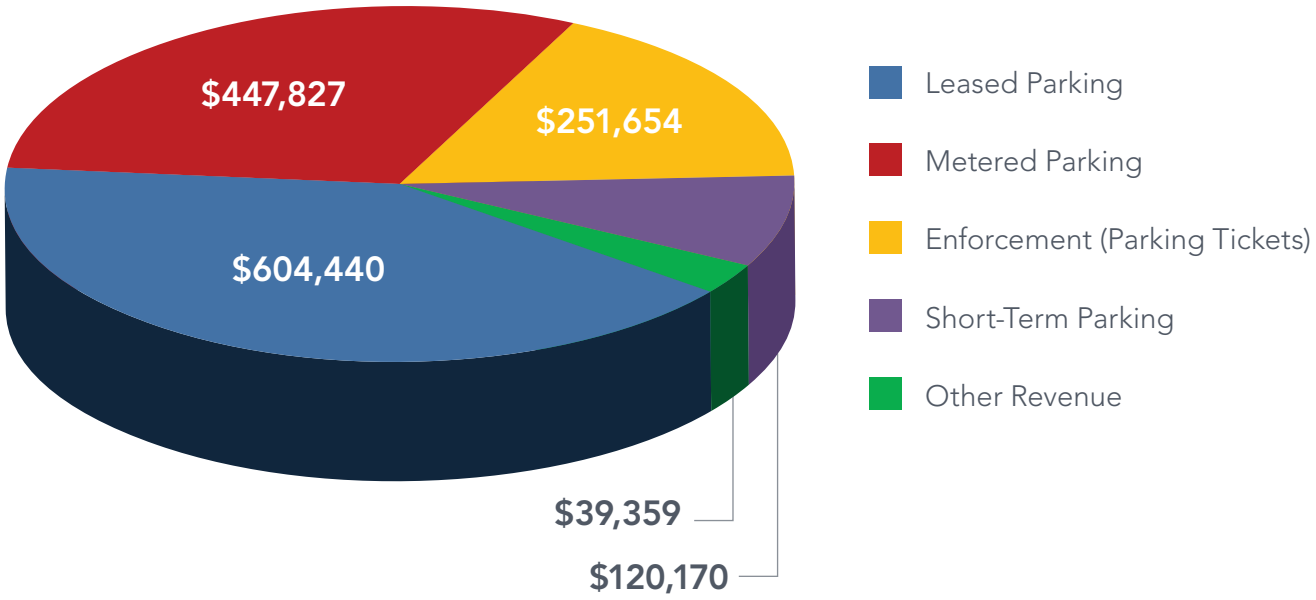
From a high level perspective, the parking program's financials can be summarized into two major categories – "revenue by type" and "expenses by major categories". These two categories of financial data are summarized below:

Revenue by Type

The figure below illustrates the MPC's FY 2012 revenue budget. This figure breaks out revenues by category; excluding non-parking related revenues. Based on the FY 2012 data, the "leased" and "metered" revenue categories generate the majority of the program revenue.

Revenue by Major Categories

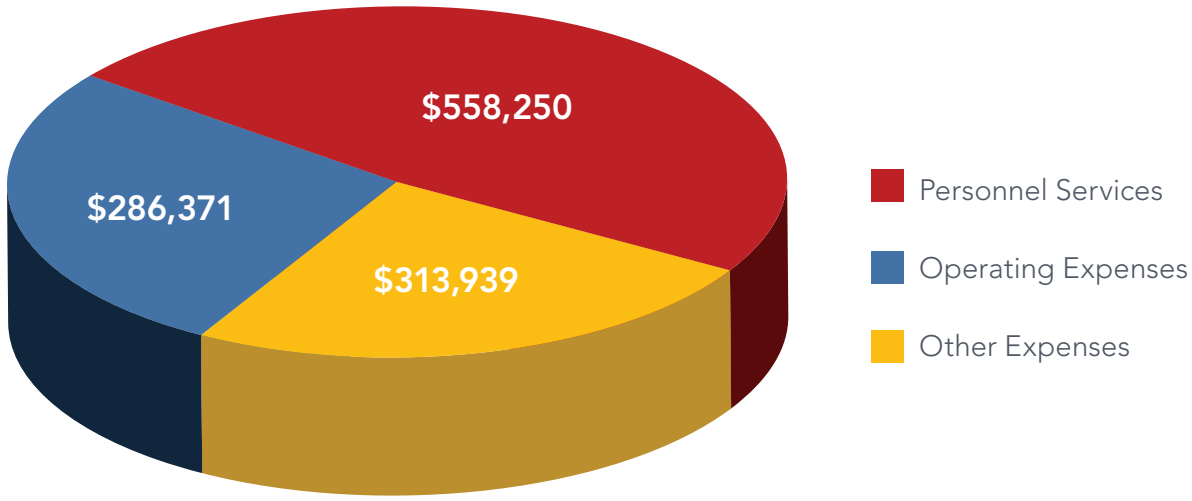
Leased Parking	$604,440
Metered Parking	$447,827
Enforcement (Parking Tickets)	$251,654
Short-term Parking	$120,170
Other Revenue	$39,359
TOTAL	**$ 1,463,450**



Expenses by Major Categories

The amended 2012 MPC expense budget totaled $1,158,560. The "Personnel Services" category accounted for largest percent of the expenses (48%) followed by "Other Expenses" (27%) and "Operating Expenses" (25%). A more detailed breakdown of expenses is provided on the following page.

Personnel Services	$558,250
Operating Expenses	$286,371
Other Expenses	$313,939
TOTAL	**$1,158,560**



On the following page is a summary of the audited financial statements of the MPC dated June 30, 2012. The draft financial statements were prepared by the firm Junkermier, Clark, Campanella, Stevens, PC of Missoula, Montana and were submitted to the MPC Board on August 9, 2012.

MPC EXPENSES – JUNE 30TH, 2012

PERSONNEL EXPENSES	
Salaries	$384,846
Employer Contributions	$173,404
TOTAL PERSONNEL EXPENSES	$558,250
OPERATING EXPENSES	
Outside Labor	$5,750
Office Supplies	$7,059
Operating Supplies	$10,720
Special Clothing	$2,581
Gas and Diesel	$7,524
Postage and Freight	$14,745
Printing - General	$8,676
Printing - Tickets	$12,582
Publicity and Subscriptions	$2,711
Business Promotions	$15,419
Transportation Demand Management (TDM)	$21,000
Electricity	$39,008
Water	$(2,194)*
Telephone	$4,797
Garbage	$1,467
Prof. Fees Misc.	$35,158
Prof. Fees Acct.	$18,018
Prof. Fees Audit	$11,165
Central Park Security	$5,478
State License Inquiry	$905
Internal	$11,488
External	$13,289
Parking Structures	$8,077
Bank Street Repairs	$63
West Broadway	$7,650
Bridge	$6,986
Midtown Lot	$4,950
Travel and Per Diem	$1,073
Education and Training	$395
Collection Bureau Expense	$1,283
Property Taxes and SID	$8,482
Bank Charges	$66
TOTAL OPERATING EXPENSES	**$286,371**

*Refund for non-functional water line

MPC EXPENSES – JUNE 30TH, 2012 (CONTINUED)	
OTHER EXPENSES	
City Contract	$149,812
Bond Interest Expense 2010A	$11,759
Bond Amortization Expense	$18,718
Depreciation/Amortization Expense	$133,650
TOTAL OTHER EXPENSES	**$313,939**

KEY FINANCIAL METRICS (5 YEAR COMPARISON)	2012	2011	2010	2009	2008
Total Parking Revenue	$1,463,450	$1,306,657	$1,402,318	$1,439,912	$1,475,308
Total General Expenses	$844,619	$947,789	$858,587	$920,786	$1,005,428
Total Other Expenses	$313,939	$337,451	$323,057	$338,455	$302,734
Net Operating Rev/(Loss)	$280,171	$3,150,417	$276,873	$347,809	$331,700

CAPITAL PROJECT – PARK PLACE	
Cash Reserve Fund	$2,500,000
Revenue Bonds (supported by parking revenues)	$4,500,000
Missoula Redevelopment Fund (MRA) TIF funds	$3,000,000
TOTAL CAPITAL	**$10,000,000**

PLANNING

Parking Strategic Plan

As mentioned in the introduction, the development of a Parking Strategic Plan as an integrated element of the larger Greater Missoula Downtown Master Plan was an important planning element for the MPC. The MPC adopted a strategic framework of ten Guiding Principles as part of the 2008 plan that aligned parking philosophies and programs with the larger downtown strategic goals and objectives.

The following nine primary action plan items formed the initial MPC work plan:

1. New Parking Facility Planning and Development
2. Adjust Parking Rates and Fines
3. Invest in New Parking Technology
4. Continue to Support and Invest in Multi-modal Access Strategies
5. Develop More Open and Collaborative Public Processes
6. Focus on Economic Development Support Strategies
7. Implement Recommended Retail Parking Strategies
8. Parking Program Growth/Expansion
9. Parking Program Marketing

Seamless Integration of Downtown Master Plan and Parking and Transportation Strategic Plans

Strategic Plan Implementation

The MPC moved quickly to implement its primary strategic plan action items and generate momentum for overall Master Plan implementation.

The strategic plan implementation involved transportation, parking and access elements that led to improved economic development and renewed vitality of Missoula's downtown.

Capital Investment Projects

The most significant parking program action item was an initiative to embark on a capital investment program to support the overall Master Plan development strategies. This program, while stretching parking program finances, is currently being implemented and the new Park Place garage is the largest single Master Plan implementation project to date.

The investment in a multi-million dollar design and construction project in the heart of a recession was both important and smart. This investment generated jobs in the local economy when it was most needed and leveraged their capital assets while design and construction services were at the lowest prices in decades—creating even greater project value.

The new parking structure project has generated an exciting and original design that incorporates good urban design principles, sustainability elements as well as creative façade treatments designed to integrate the structure with the surrounding Montana environment.

New Technology Investments/New Downtown-Friendly Policy Investments

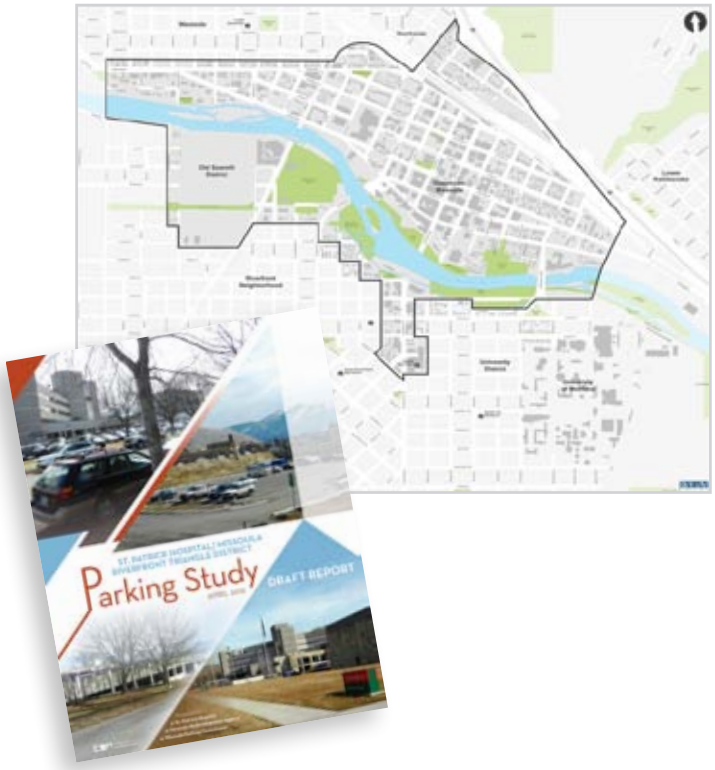
In addition to the new parking garage, several other investments in new technology and management programs were initiated. Some these investments included:

- A pilot program to replace 40 old mechanical parking meters on North Higgins Avenue with new credit card enabled meters
- Implementation of First Hour FREE Parking in Central Park Garage to compliment the existing validation program
- Replacement of old parking pay-stations in New Park lots and the Bank Street Parking Structure
- Adjusted parking rates to support parking capital infrastructure investments
- Implemented new fine structure in 2012

Other Planning Initiatives

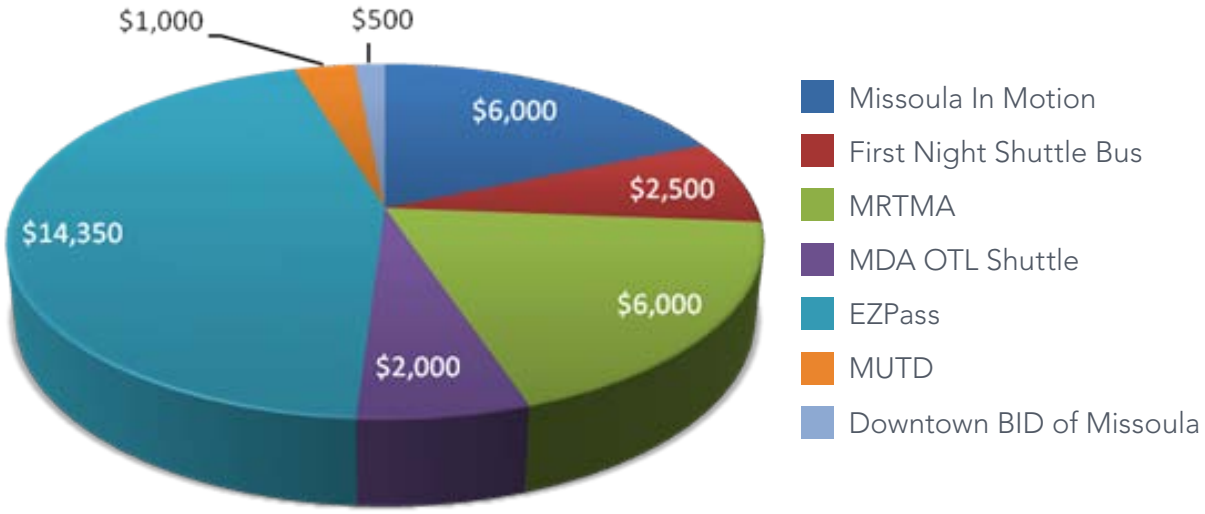
The MPC partnered with the Missoula Redevelopment Agency and Providence Health and Services – Montana (St. Patrick Hospital) to fund a parking study for the "Riverfront Triangle Urban Renewal District" (the "District") and the adjacent St. Patrick Hospital campus located in Missoula, Montana.

The overall goal of this project was to assist St. Patrick Hospital, the MRA, and the MPC in assessing current and future parking needs related to the development of the District and a defined area adjacent to the district. The study area included the main campus of St. Patrick Hospital and the neighborhoods to the north and northwest of the hospital.



LARGER COMMUNITY TRANSPORTATION SUPPORT

The MPC actively participates in a variety of community transportation initiatives in association with Missoula in Motion, Mountain Line and MRTMA. In 2011, MPC funded approximately $32,350 to support Transportation Demand Management (TDM) efforts.



Missoula in Motion runs the TDM program. The program is designed to help businesses and employees save money and time while helping to maintain the quality of life in Missoula. The TDM programs help curb parking costs, improve employee productivity, realize tax benefits, and free up spaces for customer parking. Currently 4,835 members are signed up for the Momentum program.

The MRTMA works in conjunction with Montana Department of Transportation to develop comprehensive transportation alternatives to reduce traffic and parking congestion. MRTMA provides transportation choices for citizens of Missoula, Ravalli, and Lake Counties, including employer TDM programs, carpool and vanpool programs, guaranteed ride programs, school outreach, and park and ride sites.

Mountain Line is the public transit agency, providing service to Missoula and the University of Montana. Mountain Line operates fixed-route and para-transit bus service in and around Missoula and offers a car free way to get around Missoula. Service between downtown and the University of Montana has helped both areas address parking and congestion issues.

SUMMARY OF PROGRAM ACCOMPLISHMENTS

- Participation and funding support for the Greater Missoula Downtown Master Plan by the MPC was a significant and important investment that is paying positive dividends for the agency and the downtown.
- The significant community engagement process has created strong momentum and a consensus for action.
- The investments made by the MPC are helping keep Master Plan momentum alive and are helping to stimulate new economic development opportunities.
- Investments in new parking technology are creating positive downtown customer service enhancements.
- The strategic decision to reinvest parking system revenues to support downtown development projects is an important practice that will have long-term positive impacts on the downtown.
- By adopting a more strategic approach to downtown access management, the MPC is positioned to be a more engaged and effective downtown community member as well as being an active partner in community and economic development.
- The MPC should be applauded for its progressive approach to supporting an integrated approach to parking and transportation alternatives.
- The MPC has moved quickly and aggressively to implement its primary strategic plan action items and has thus adopted a leadership position within the downtown community.
- The investment in the new Park Place garage is the largest and most significant project-to-date for the MPC. The timing of this multi-million dollar design and construction project, during the heart of a major recession, helped to generate local jobs and boost the local economy when it was most needed. The MPC's quality management and fiscal prudence over many years has resulted in this important investment in downtown Missoula; an investment that reflects the organization's growing focus on being an engaged and contributing community partner in the area of economic development.

MPC BOARD AND STAFF

Ms. Anne Guest,
MPC Director

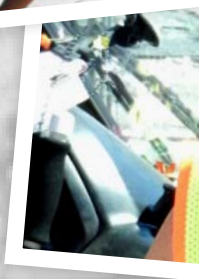
Mr. Rodney Austin,
Board Chair

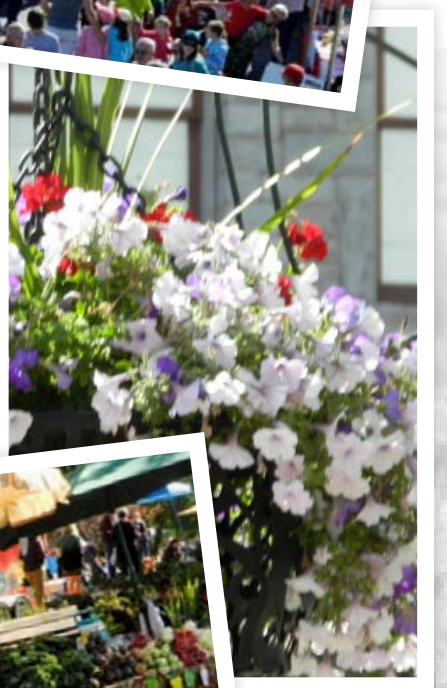
Ms. Theresa Cox

Ms. Carol Williams

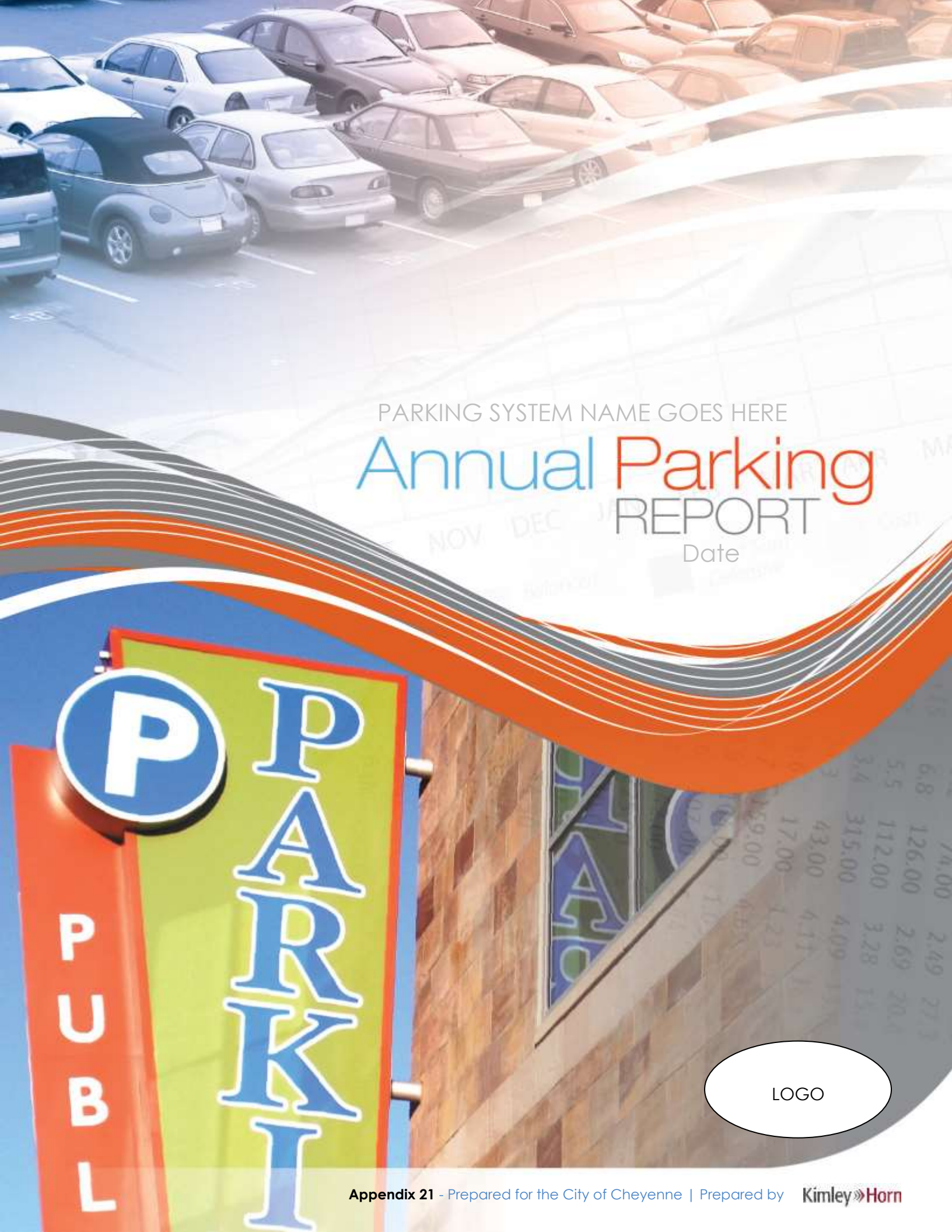
Mr. John Smith

Mr. John Roemer





missoula parking commission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DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 22

New Parking Manager Integration Strategy

APPENDIX 22

New Parking Manager Integration Strategy

This document was developed for another community that was planning to hire a new parking manager. This is being provided to the City of Cheyenne only as a reference document that could apply to the recommendation to engage a private parking management firm. This document lays out a proposed timeline for the integration of the new Parking Manager that would come with the new parking management firm. Its format is a high level overview of major tasks that need to be accomplished within the first month, first 3 months, first 6 months and major goals to be accomplished in the first year.

First Month

A - 1 Standard City new employee orientation.

A - 2 Provide the new manager with previous studies and planning documents related to parking and transportation.

A - 3 Meet with local private parking operators.

A - 4 Conduct a critical assessment tour of parking facilities with KHA staff on our next visit.

A - 5 Conduct a safety and security audit of all parking facilities. Address areas of concern. It may be good to do this with the assistance of the Cheyenne PD.

A - 6 Meet with other community groups and partners.

A - 7 Meet with current City department managers and discuss transition plans.

A - 8 Conduct an in-depth review of current parking management contracts, leases, etc.

A - 9 Initial introductory meetings with key downtown stakeholders. Some of this was achieved by having Tracy involved in the Panel Process, however, a follow-up including meeting with key individuals is recommended.

A - 10 Meet with City planning officials to discuss future parking system expansion plans and other downtown development plans that will impact parking.

A - 11 Meet with City departments responsible for marketing and discuss how parking can be included in marketing materials and programs.

Within the First Three Months

B - 1 Develop new Vision/Mission Statements for the Parking Department (KHA will be developing draft Vision/Mission statements and Guiding Principles as part of our report)

B - 2 Assess parking system organization, work plans and staffing needs for the next 1 - 2 years. Make recommendations and hire needed staff.

B - 3 The Parking Strategic Plan will provide a prioritized action plan for implementing changes to parking system management, technology, etc. We will work to actively engage with the new parking manager throughout the process. We encourage the new parking manager to contact us immediate needs and issues as they arise and we will provide on-going technical assistance.

B - 4 Identify "low hanging fruit" and develop a checklist for accomplishing tasks that can completed with the next three months. Look for items that can show that positive change is occurring. (For example, employing the “First 30 Foot Principle” related to garage entrances and exits).

B - 5 Critique parking technology currently in use. Develop a detailed inventory of all existing parking and access control equipment. A recent announcement by the parent company of the current off-street parking equipment provider for the city (3-M/Federal APD) that they are getting out of the parking equipment business will make this action item a more important priority). This item has been elevated to one of the primary strategic plan action items.

B - 6 Begin assessment of parking system marketing and branding.

B - 7 Continue meetings with key downtown stakeholders - identify critical issues to be addressed with each group.

B - 8 Begin development of plans to update all position descriptions, operational policies and procedures, etc.

B - 9 Analyze and flow chart current parking system revenues and expenses - begin process of creating a consolidated financial report.

B - 10 Register for membership in the International Parking Institute (IPI) and the Pacific Intermountain Parking and Transportation Association (PIPTA). Begin meeting with peers that operate parking systems in Montana and the Northwest region (beginning with the panelists that were part of the strategic plan project).

Within the First Six Months

C - 1 Begin development of a parking technology plan. Identify technology enhancement goals and objectives.

C - 2 Create first draft of a parking technology capital budget

C - 3 Finalize parking system consolidated financial reporting plan.

C - 4 Develop consolidate parking program budgeting process.

C - 5 Begin development of parking program comprehensive facility maintenance plan

C - 6 Gather information on existing parking facility warranties and develop a schedule to conduct walk-through evaluations of warranty items six months prior to warranty expiration (expansion joins, sealants, lighting fixtures, etc.), especially from the new Empire Garage.

C - 7 Identify facility maintenance critical issues. Evaluate the potential need for a parking facilities condition appraisal.

C - 7 Begin development of parking program capital facilities plan.

C - 8 Conduct a parking market rate assessment and evaluate a potential “first hour free” program for downtown garages.

C - 9 Conduct a review of on-street parking and parking enforcement policies and practices. Detailed templates for a parking enforcement manual and parking enforcement audit program are provided as appendices to the parking strategic plan.

C -10 Begin the process of developing an Annual Parking Report to keep City management updated on departmental goals, objectives, plans and accomplishments. A template for such a report is provided as appendix item in the parking strategic plan.

C -11 Begin evaluating opportunities for parking to work with and support larger downtown transportation and access issues, including transit, transportation alternatives, signage and wayfinding, etc.

C -12 Assess Parking’s role in supporting downtown special events. Develop or refine specific parking special events policies. Work closely with the Downtown Cheyenne Alliance.

C -13 Assess current parking revenue control processes. Work with the City’s Auditing Department to develop procedures for conducting annual parking audits. Consider engaging a parking consultant to conduct an external parking system operational audit. Review and address specific operational issues identified in the 2011 Desman Associates “Parking Technology Study”.

C -14 Create detailed operations manuals for all City Parking facilities. A template for a facility operations manual is provided as appendix item in the parking strategic plan.

Within the First Year

Major goals to be accomplished within the first year:

- Make significant progress is assessing all on and off-street parking management activities. Make recommendations regarding needed improvement and departmental staffing needs. Implement process improvements.
- Work closely with Kimley-Horn as they prepare the Parking Strategic Plan.
- Develop a parking peer network as an additional tool to increase parking knowledge. Conduct peer program reviews by visiting the programs of the parking advisory panel participants.
- Conduct a safety and security audit and identify and resolve any significant security and risk management concerns.
- Develop effective working relationships with key downtown stakeholders. Work collaboratively to resolve major operational issues and begin development of a strategic approach to position parking as a positive asset in support of larger community goals and objectives.
- Develop a comprehensive parking facilities maintenance plan.
- Begin development of a defined Parking planning function and become an active partner in downtown planning efforts.

- Conduct a parking market rate survey and make recommendations regarding parking rate setting guidelines. Evaluate parking validation alternatives.
- Develop a consolidate parking financial statement and monthly management/financial reporting package. Develop consolidated parking department operations and capital budgets.
- Review and evaluate the scope of future departmental operations including an evaluation of on-street parking and enforcement responsibilities.
- Begin development of parking system branding and marketing program.
- Develop an Annual Parking Report. (I will provide a template.)

This plan may be overly aggressive, but all of these items need to be addressed. It may simply be a matter of the degree to which they are addressed. The new parking manager will need time to get situated into her new role and environment, develop new relationships, and begin building a strong background of industry knowledge.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 23

Developing a Retail Parking Support Strategy

APPENDIX 23

Developing a Retail Parking Support Strategy

The provision of short-term, retail supportive parking is a key issue to encourage and strengthen the resurgence of downtown Cheyenne. Specific strategies and approaches are outlined below.

Characteristics of Effective Retail Parking

Revitalizing retail in a downtown setting is one of the most difficult elements of downtown revitalization to get right. Convenient, plentiful and easily accessible parking is especially critical to the success of retail in a downtown area.

What is often overlooked or underestimated in retail revitalization projects is a comprehensive "retail parking strategy". In many cases this will involve significant investment in new parking infrastructure or at least a restructuring or reallocation of existing parking resources. Once the parking supply issues have been addressed, a wide range of parking management strategies should also be considered.

Taking a comprehensive approach to downtown retail parking is important because of the significant differences in the downtown environment compared to "the competition" i.e., suburban malls or the big box store approach. The suburban malls and big box stores have several obvious advantages over downtowns.

- Plentiful land on which to provide cheap (perceived as free) surface parking
- Simple, easily understood access characterized by direct line of sight from the parking lot to the store(s)
- Generally high levels of service as expressed through short walking distances, more generous parking stall widths, etc.
- Single ownership/control and dedicated parking resources
- More ability to control employee parking behaviors through direct management

Downtowns have, in recent years, seen unparalleled success in their revitalization efforts. It is interesting to note that this success has not gone unnoticed by the shopping center industry. They have adapted their strategies to stay competitive. There is only one enclosed (now considered "old style") mall under construction in the US this year. The new trend for shopping centers is "Life Style Centers". These new shopping destinations emulate the character and features of "genuine downtowns" or "main streets". They often have all the amenities of downtowns and few of the "warts". The worst that can be said of them is that they lack that ineffable quality that comes with time, history and the diversity of a real downtown. They may feel inauthentic and "cookie cutterish". However, they usually have plentiful, well located and (very often) free parking.

While we can rarely start with a "clean slate" in downtown environments when it comes to parking, there are some basic principles relative to effective retail parking strategies that can be employed to give retail a fighting chance in the downtown. The key elements of a downtown retail parking strategy are outlined below:

I. **On-street Parking** – As the most conveniently located parking assets (and therefore the most valuable), effective management of on-street parking is critical. This generally includes:

- On-street parking being prioritized for short-term, visitor parking.
- On-street parking being priced higher than off-street parking.

- Having an effective and consistent parking enforcement function – the primary goal of which is to enforce the rules designed to promote on-street space turnover.
- Having an effective combination of time-limits to support the specific uses on downtown retailers. For example, coffee shops and dry cleaners have different needs than restaurants and clothing stores.
- The use of easy to read/color-coded time-limit stickers on meters is a simple but important tool that lets drivers know the time-limit of an on-street space before pulling in to park.
- Having an effective downtown loading zone plan to support retail deliveries.
- Implementing a fine structure for on-street parking that is more forgiving to the occasional violator and more aggressive toward the real problem – repeat long-term parkers taking up what should be short-term parking.
- Defining a well-developed legislative framework that supports enforcement practices (such as having a local ordinance that requires vehicles to move more than 1 block face after moving from one time-limited space to another.)
- The use of new parking enforcement technologies to improve the efficiency and effectiveness of enforcement efforts, such as computerized parking enforcement hardware and software programs and mobile license plate recognition systems with GPS capability.
- Consistent but unpredictable parking enforcement routes.
- A combination of on-street parking rates, fines and enforcement that ultimately promotes a consistent 15% vacancy rate for on-street spaces. Having a 15% on-street vacancy rate is considered important because it makes the downtown area appear to be more accessible and encourages potential customers to stop and shop if they see a well-designed storefront that appeals to them.
- In combination with the strategy above, providing signage about the availability of off-street retail parking is also important so that customers feel they have choices.
- The use of new on-street parking meter technologies that provide more customer-friendly payment options (this can either be multi-space meter or new single space meters that accept credit or debit cards) is becoming a primary strategy for downtowns. This has been aided by technological advances that incorporate wireless communications and solar power to reduce system installation costs.

II. **Off-street Parking** – In a downtown environment the primary issues related to retail parking are to provide large, easy-to-find reservoirs of parking within close proximity to the retail cores or corridors. Small pockets of off-street parking may be useful for those who frequent the downtown area, but these resources are not adequate to effectively support a successful retail “hot spot”. Specific issues for retail parking include:

- As much as practical, retail parking reservoirs should be located within line-of-sight of the retail anchors and very convenient to the contiguous retail corridors.
- The street level of retail parking structures should be designed to maintain the street-level activation of the area by incorporation retail into the at-grade level. To support this primary design criterion, higher first floor heights should be planned.
- To the greatest degree practical, designing for a higher parking facility level of service of “user comfort factor” is recommended. Creation of a defined set of parking garage design criteria with higher levels of service for short-term retail is recommended. These design criteria include such items as more generous parking bay and stall width dimensions, end-bay turn radii, floor-to-floor heights, enhanced lighting, etc.
- For a parking facility that is specifically designed to support a retail patronage, “user comfort factors” of A or B are recommended (high ease of use standards).

- Direct connections from the retail parking structure to a retail anchor (via sky bridge, for example) are desirable features.
- The perception of safety and security is critically important for a retail parking facility. Recommended design strategies for improving parking facility security include: glass-backed stair and elevator towers, adopting enhanced lighting levels (in excess of IES minimum requirements), painting interiors white to improve lighting reflectivity and enhancing the feeling of openness, securing the areas beneath stairwells, etc.
- Effective wayfinding and facility signage is essential. Parking signage should be a significant element of a comprehensive wayfinding program. As we do a better job of architecturally incorporating parking into mixed-use facilities, sometimes we "hide the parking" too well. Because of this, enhanced parking facility entrance signage is also very important.
- Other interior facility enhancements such as creative level-theming concepts, interior wayfinding and level identification signage can also help make garages more colorful, visually interesting and aid patrons by making it easier to remember where they parked. This approach can also be used to connect with other community groups – for example some communities engage local artists by using garage level theming projects as art competitions. Similar projects include turning bike racks and bus stops into opportunities for community art.

III. **Overall Parking Management** - From a management and operations perspective, there are many effective strategies that downtown parking programs can employ to better support the larger community's strategic goals. Parking programs too often become focused on parking facility revenues or enforcement quotas to justify their programs. The best programs are those with a broader perspective and that align their policies to help the communities they serve achieve success. Often, by doing this, they achieve an even higher level of success themselves – both in terms of stimulating additional traffic (and therefore parking revenue) and also by becoming a valued and integral partner in the success of the downtown. The following is a short-list of strategies to frame the possibilities:

- Programs such as a "First Hour Free" for off-street public parking facilities can make downtown appear more visitor friendly while providing both a more equitable program and simplifying the administration of traditional parking validation programs. While we support programs such as "First Hour Free" as an element of a larger downtown revitalization initiative, we recognize that paid parking in a downtown environment is a basic economic reality. We support the philosophy that "Parking should be friendly – not free". In one community where the "First Hour Free" program was enacted, parking rates were reassessed after four years. The downtown stakeholders were given a choice of no rate increase, but elimination of the "First Hour Free" program and they unequivocally wanted to keep the "First Hour Free". This intrigued us enough to do some more research. It turned out that in the four years the "First Hour Free" had been in effect, downtown sale tax revenues had doubled and the average parking transient length of stay had grown from 2.11 hours to 3.56 hours. Not all of this is direct attributable to the "First Hour Free" program, but the downtown merchants credited the program as one of the key elements to the revitalization of the downtown.
- Another positive trend in the industry is the reinvestment of a portion of on-street and enforcement parking revenues back into the districts from which they were generated. This reinvestment can take the form of financial contributions to downtown organizations to promote the marketing of the district, investment in specific district projects such as wayfinding projects, area wide Wi-Fi, flower basket programs, pop jet fountains, banner programs, etc. This reinvestment makes the districts more attractive and customer friendly

and therefore more successful. It also makes the local merchants more tolerant of needed paid parking and enforcement programs, because they see the benefits of not only the increased on-street space turnover, but also tangible downtown improvements that their customers appreciate.

- In off-street retail parking facilities the lower levels (or more accurately, the most convenient parking areas) should be reserved for retail customer use. Employees or other groups should be assigned to park in other areas of the facility. Depending on the facility design, enforcement of these allocation strategies can often be enhanced through the use of what is termed “nested parking areas” using access control gates and card readers.
- Improving the training and customer service of frontline parking employees can have a huge effect because of all the individual “touches” parking staff make with the public on a daily basis. Training parking staff (cashiers, maintenance and enforcement staff) to adopt the role of “downtown ambassadors” rather than just parking attendants is a key attitude shift that should be actively promoted.
- Painting the interior of parking facilities and adding color (either through level theming graphics or even advertisements) can enhance parking facility interior environments and make facilities feel brighter and safer. Generally speaking parking facilities have been treated as very utilitarian structures – at best they were dull, grey and functional. At worst, they were dark, scary and dangerous. Investment in parking facility interior facility enhancements is part of making downtowns a more interesting and attractive destination.
- The use of newer technologies and more customer friendly parking access and revenue control systems can reduce wait times upon exiting and improve customer service by providing more convenient customer payment options.
- These days there is a both a “real world” and a “virtual program identity” on-line. Enhancing parking websites with effective tools such as interactive parking maps, on-line payment options, parking rate, special events and other information is expected these days. An important “best practice” in this area is a website that provides a comprehensive overview of downtown including retail and restaurant offering, cultural and special event venues and of course parking and transportation info. The best websites have an overall map of the downtown with the ability to turn on each of the elements above as a “map overlay”.
- Leveraging all of these program enhancements into a recognizable parking “Program Brand” can make people associate all the program enhancements with the public parking facilities and therefore they are more comfortable with downtown parking. Some communities even have radio ads promoting their parking system. In some communities the public parking programs have made such noticeable strides forward that all the private parking operations were forced to also raise the standards of their operations. We call this the “high tide raises all boats” phenomenon.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 24

White Paper: Enhancing Parking Facility Security

KIMLEY-HORN AND ASSOCIATES, INC.

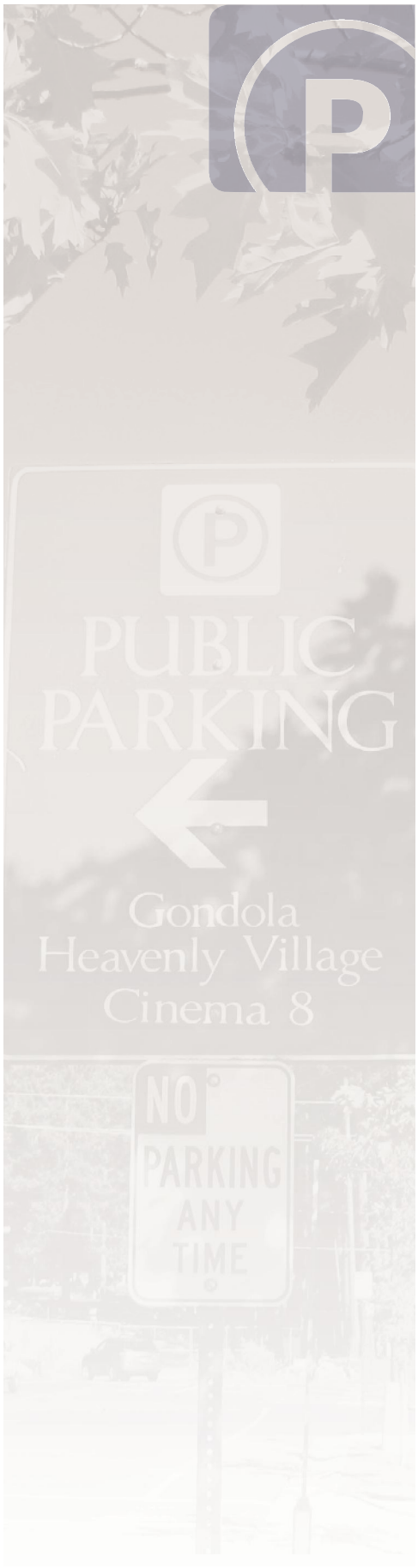
Parking Planning White Paper Series

ENHANCING PARKING Facility Security And Assessing Security Program Effectiveness

Kimley»Horn

ENHANCING PARKING Facility Security And Assessing Security Program Effectiveness

Table of Contents



Foreword

This article on parking facility security is presented in two parts. The first part reviews basic security concepts specific to parking facility management and parking facility design. The second part provides a detailed look at assessing security programs in general.

Part One

Enhancing Parking Facility Security

Security within parking facilities is always a major concern. Statistically, over 90% of people attacked in parking decks are women who are alone. The longer they are alone the more at risk they are. The negative publicity associated with this type of crime can damage any business or institution. Liability is a key concern for garage owners and operators. There are many security techniques available for owners or operators of parking lots or garages. Most are common sense; others involve design issues that should be evaluated in the planning phases of new garage development.

Security techniques related to parking facilities are classified as either "*ACTIVE*" or "*PASSIVE.*" Active security is defined as any technique requiring a human response, such as security patrols, guards, or audio-visual surveillance. Any device or technique not requiring a human response, such as lighting, fencing, glass-backed elevators and stairwells, etc. is defined as passive security. Passive security is more cost effective, and if done well, contributes to a patron's feeling of safety and comfort within a facility.

A facility designed with security in mind can incorporate many passive security features into the construction of the garage and minimize active security costs. Among the features to be considered in the design/development phase of a new parking structure are:

Clear-Span Construction

Clear-span construction techniques reduce the number of columns within the structure creating better visibility and eliminating potential hiding places. In addition to these passive security advantages, the increased floor to ceiling height adds to improved facility wayfinding though enhanced signage placement options. Much depends on the structural system used.

External Ramping Systems

Some sites are well suited to a design that allows flat plates for parking with vertical ramping being external to the structure. This design increases visibility within the structure and has other way finding and pedestrian circulation advantages. In larger facilities, the same effect can be achieved even with internal ramps as illustrated in the photo below.

Glass-Backed Elevators and Stairwells

In general, the more open and visible confined spaces can be made the better. The general theory is that the criminal is less likely to attack standing in front of a window or open stair than in an enclosed area.

Security Screening/ Limiting Access Points Into The Facility

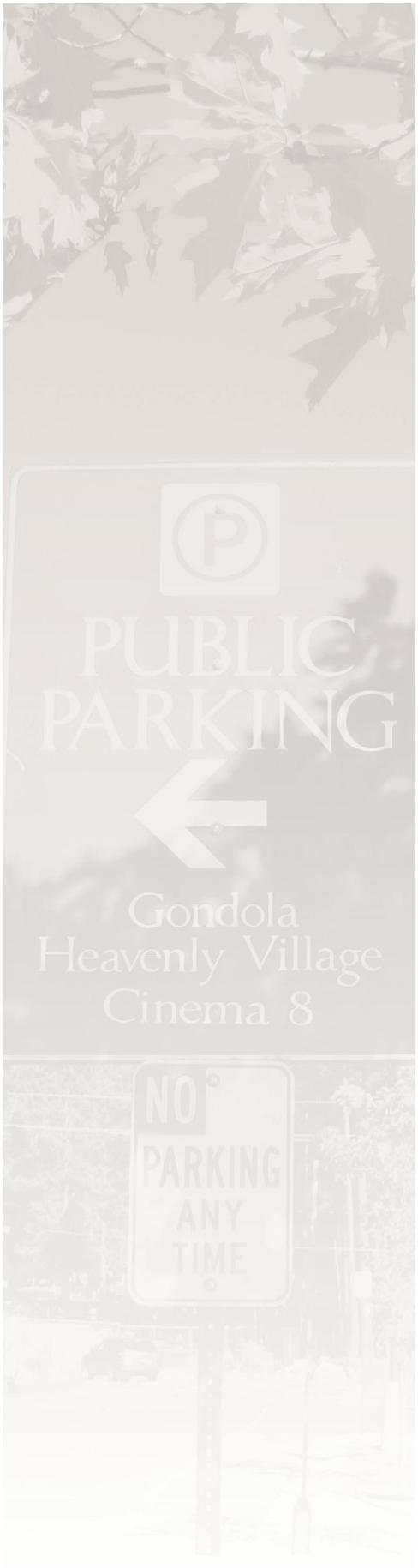
Restricting access to the parking facility on the lowest levels through the use of architectural screening or fencing better controls access into a structure and funnels pedestrians through designated points that can be more easily monitored. In addition, securing potential hiding places such as areas below stairs enhances facility security.

Lighting Design

Lighting is universally acknowledged as the most important security feature in a parking facility. Eliminating dark areas deters crime and promotes enhanced user comfort and improves the perception of safety. Good lighting permits the safe movement of pedestrians and vehicles within the parking facility, and it promotes internal facility way-finding.

Light levels are generally not mandated by the building codes, other than certain minimum levels required for emergency egress. The industry standard for lighting design in parking facilities is established by the Illuminating Engineering Society of North America (IESNA). While not a legal building code, failure to comply with IESNA standards does carry significant liability.

The IESNA standards are defined in terms of illuminance, or, in other words, the amount of light falling on an object. In general terms, parking structures require a minimum illuminance of 1 foot-candle and 10:1 maximum to minimum ratio for uniform light distribution. Stairways and lobbies require 2 foot-candles minimum. Vehicle entries and exits require 50 foot-candles during daylight hours to allow for safe transition from bright sunlight to the interior space.



Typically, the white light provided by metal halide or florescent lamps is more comfortable to patrons because it is perceived to be brighter. Currently, florescent lighting is the least expensive lighting type to operate, due to lower energy demand and longer lamp life. Recent innovations have also made florescent fixtures more effective in cold weather climates.

Ideally, fixtures should be paired in each parking bay, spaced at approximately 30 feet on-center in each direction. This somewhat mitigates the shadows created by the parked cars, as well as reducing the lighting glare in the drive aisles. The paired fixtures improve the uniformity of the lighting and allow for a certain amount of forgiveness if a single lamp fails.

When used in conjunction with CCTV systems the color rendition of the lighting should be considered (for example, the whiter light produced by metal halide lighting may be preferable to the yellow tinted light produced by High Pressure Sodium fixtures if color cameras are used).

Security Office

Locating a security office within the parking facility adds significant security presence within the garage. This is especially effective if camera monitoring is visible by garage patrons.

Landscape Design

Landscaping should be kept low to the ground to minimize hiding places around the deck. Placement of trees, shrubbery, and hedges can also restrict line of sight vision for turning traffic if inappropriately placed or allowed to grow too tall, causing a safety hazard.

Other Security Enhancements

- Painting the interior of the facility improves the "feel" of the deck. Painting or staining interior surfaces white makes better use of existing lighting by increasing reflectivity.
- The addition of convex mirrors in elevator cabs allows patrons to see, before entering, if anyone is hiding inside the cab.
- In general, eliminate hiding places within and around the garage. Small areas can be enclosed with chain link fencing to create storage areas and at the same time eliminate potential hiding places.
- Installing glass panels in stairwell doors improves visibility. (Check with local codes on whether stairwell doors are required to be fire rated. Typically they are not).

In Summary

Developing a comprehensive program with both passive and active security features tailored specifically for each project is a key component to a successful parking operation.

Part Two

Assessing Security Program Effectiveness

Introduction

This article series on parking facility security is being presented in two parts. The first part reviewed some of the basic security concepts specific to parking facility management and parking facility design. This second part takes a detailed look at assessing security programs in general.

Building security has always been a concern for facilities management and parking professionals, but since the September 11th terrorist attacks and more recently the shootings on several university campuses, campus and facility security issues must be consistently reevaluated. In this article, we will provide you with a methodology to assess the effectiveness of the security programs at your facilities.

STAGE ONE – Conducting a Risk Analysis of Your Facility

A risk analysis consists of three major steps.

Step 1 – Conducting a Security Survey

The purpose of a security survey is to identify your organization's assets and their value and to identify threats to those assets.

Assets

The security survey should include walking through the facility and talking to the people who own it and work in it to determine the potential risks posed by the building's design and management. The physical areas to be inspected include the perimeter, offices themselves, and any areas where deliveries are received. Prior to a walk through, prepare worksheets or checklists to guide those conducting the security survey. It is also a good idea to take along copies of site plans, building plans etc. so that area of concern can be noted for easy reference.

Some of the assets that should be considered in the risk analysis include: employees, the facility itself, money, manufactured products, raw materials, intellectual property assets and industrial processes. As each asset is identified, the sources of external and internal threats to it should also be noted.

Threats

The most common external threats to a facility and the people in it include, but are not limited to, theft of equipment or data, assault, or perceived threats from loiterers.

One traditional means of evaluating external threats is to examine the community's most recent crime statistics to find out if the trends in rape, murder, theft, and burglaries are heading up or down and how long the trends have been going that way, and why. Statistics of criminal incidents for each calendar year are summarized and published by category and jurisdiction by the U.S. Department of Justice in the Uniform Crime Reports. (All U.S. jurisdictions are required to report crime statistics to this department.)

Since September 11th, many facilities are also reassessing their exposure and their preparedness for bomb threats or threats to potential building contamination by chemical or biological agents. If there is one point that cannot be overemphasized, it is the value of being prepared. Do not allow a bomb incident to catch you by surprise. By developing a bomb incident plan and considering possible bomb incidents in your physical security plan, you can reduce the potential for personal injury and property damage. The website for the US Bureau of Alcohol, Tobacco and Firearms (ATF) is a good resource for developing a bomb incident plan for your facility.

Internal threats may come from disgruntled or dishonest employees. Examples of internal threats to assets are theft, fraud, destruction

of property, arson, assaults, and crimes of passion resulting from interoffice romances. Companies should record all crimes, no matter how insignificant, that occur at the facility(ies) they own/operate.

Analysis of the incidents can reveal patterns of crime, which in turn can lead to identifying the perpetrators. Maintaining these records can also help owners avoid litigation for negligent security, as well as, support decisions to invest in new security measures.

Environment

Crime Prevention Through Environmental Design (CPTED) suggests that architects, facility planners, designers, and facilities/security professionals can create a climate of safety in a community or on a campus by designing a physical environment that positively influences human behavior. These concepts can also be used to retrofit environments to address specific security issues as they develop or to address emerging concerns as conditions change.

CPTED builds on four key strategies: territoriality, natural surveillance, activity support, and access control.

1. Territoriality

People protect territory that they feel is their own and have a certain respect for the territory of others. Fences, pavement treatments, art, signs, good maintenance, and landscaping are some physical ways to express ownership. Identifying intruders is much easier in a well-defined space.

2. Natural Surveillance

Criminals don't want to be seen. Placing physical features, activities, and people in ways that maximize the ability to see what's going on discourages crime. Barriers, such as bushes, sheds, or shadows, make it difficult to observe activity. Landscaping and lighting can be planned to promote natural surveillance from inside a home or building and from the outside by neighbors or people passing by. Maximizing the natural surveillance capability of such "gatekeepers" as parking lot attendants and front desk clerks is also important.

3. Activity Support

Encouraging legitimate activity in public spaces helps discourage crime. A public break area or outdoor lunch patio creates activity and opportunities for casual surveillance. Any activity that gets people out and working together -- a company picnic, a tenant party, a civic meeting -- helps prevent crime.

4. Access Control

Properly located entrances, exits, fencing, landscaping, and lighting can direct both foot and automobile traffic in ways that discourage crime.

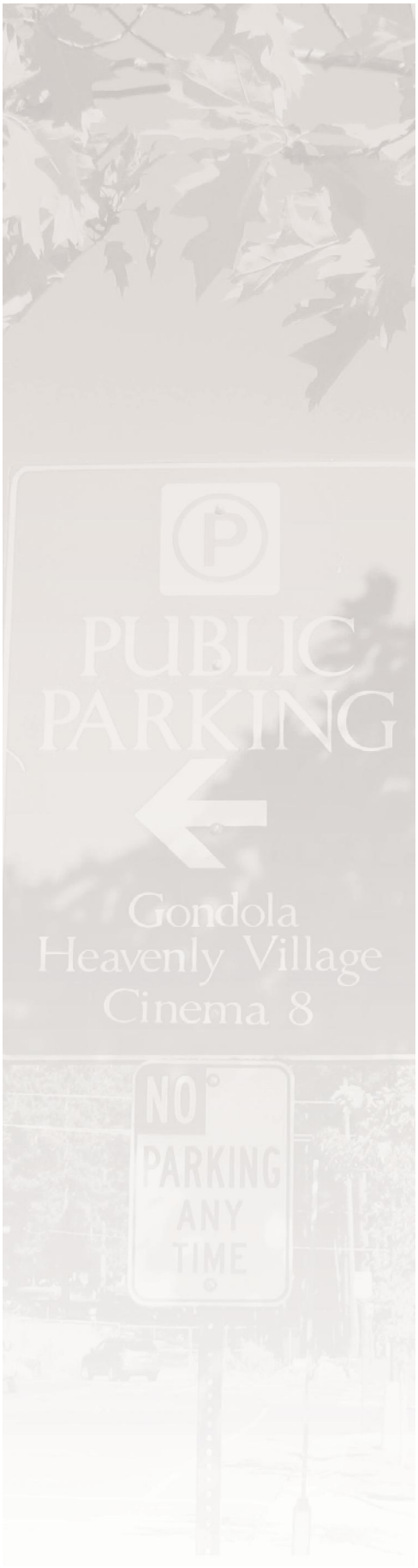
These principles are blended in the planning or remodeling of public areas that range from parks and streets to office buildings and housing developments. Some institutions have incorporated these principles into more comprehensive facility and security approaches.

CPTED works best when integrated into a comprehensive crime prevention or security program. Several approaches can discourage undesirable vehicular traffic, including instituting perimeter and/or time-related restrictions, restricting access points, channeling traffic flow, monitoring in-coming traffic, etc.

A basic security planning checklist is provided below:

Basic Security Planning Checklist

- ☑ Assess overall physical security needs with regard to facility location, layout, design, construction, etc.
- ☑ Assess effectiveness of external/ internal controls with regard to an analysis of barriers, control points, entrances/ exits, lighting, authorization levels, hardware, security devices, etc.
- ☑ Establish effective programs for personnel screening – particularly prior to employment. Establish programs for ongoing evaluation, monitoring, and assessment of personnel, especially those in high risk areas.
- ☑ Control and enforce authorization levels, key usage, access restrictions, sign-in/sign-out, opening/closing procedures, proper use of security systems, vigilance and surveillance, etc.
- ☑ Ensure full documentation of all security problems and violations.
- ☑ Develop levels of classification and restrictions (including written policies) on all sensitive material, etc.
- ☑ Establish procedures for handling/ safeguarding sensitive materials.
- ☑ Develop and enforce restrictions for employee access within the facility and around sensitive/high risk areas.
- ☑ Promote an ongoing program of monitoring and evaluation for the potential exploitation of persons with personal problems who work in sensitive and high risk areas.
- ☑ Establish effective ongoing security education training programs.
- ☑ Evaluate and plan for the possibility of electronic eavesdropping and ensure proper countermeasures.



- ☑ Use appropriate security systems, safes/vaults, and other anti-intrusion and theft devices.
- ☑ Develop a comprehensive business security planning program with ongoing evaluation and upgrade efforts.

A more comprehensive checklist is available upon request. Please send requests to dennis.burns@kimley-horn.com.

Step 2 – Estimating Probability

The second step in a risk analysis is to identify the probability that a risk will occur.

When assessing risks for security planning, employ this rule:

"The more ways a particular event can occur, the greater the probability is that it will occur."

For example, to evaluate the risk posed to office equipment, ask and answer these questions:

- » Is the equipment stored within secured rooms?
- » Is the equipment secured within the room by anchor pads or other physical locking devices, or is it protected by electronic asset protection devices?
- » How frequently do security patrols cover the area?
- » How easy would it be for a thief to dispose of an item for profit?
- » Is there a record of the serial numbers of the equipment?

Step 3 – Determining Criticality of Assets

When determining how critical an asset is to an organization, consider both the direct and indirect costs that will result from the loss of the asset. For example, many companies depend on the continuous and secure flow of electronic data inside and outside the facility. If the data flow were interrupted, the company would be unable to do business. The data, the facility where people use or manipulate it, and the connection lines the data travel over are all essential assets to the operation of many businesses. Therefore, data processing centers, telecommunication equipment, and the building infrastructure that supports them all have very high criticality.

Direct costs of the loss of an asset include permanent replacement, temporary substitution, or lost income. The indirect costs that should not be overlooked include the adverse effect on the enterprise's reputation and employee morale, loss of goodwill, and possible employee turnover.

Establishing Security Needs

To complete the risk analysis, the information gathered from the security survey, probability estimates, and criticality decisions must be integrated to determine which assets are to be protected and which are not. Prioritizing assets and determining how vulnerable

they are helps management decide the amount of resources to devote to security measures.

STAGE TWO – Selecting a Security System

We've just outlined how to conduct a risk analysis of your facility -- the first of three stages in developing an effective security program. Now, we'll continue with stage two: selecting a security system. A risk analysis should define which of your organizations assets require protection and which ones can remain at a level of risk your company is willing to tolerate. Once the risk analysis is complete and a need for an electronic security system has been established, the next step is to explore the types of systems available.

Because there are innumerable security systems with innumerable components, it's a good idea to break your research into four areas: access control, intrusion detection, surveillance, and command and control.

Access Control

Access control systems regulate who is able to enter your building through devises such as electronic card readers and electronic locks on doors. Some of the most popular capabilities of access control systems include:

- User Card Number – a basic feature that identifies the access card user by a unique alphanumeric code defined by the system manufacturer.
- Anti-Pass Back – a time-delay feature that prevents a cardholder from passing his or her access card back through or under a closed or controlled door to be used by another person who may not be authorized to enter.
- Different or Multiple Access Levels – a feature that assigns different levels of access to different building areas and allows a facility to be partitioned to prevent access to some areas while simultaneously granting access to other areas. It can also define what days and hours occupants can use the access card.
- Historical Access and Departure Reports – a feature that provides reports of entries and departures from a building, or specific areas of a building, during certain dates and times.

Intrusion Detection

Intrusion detectors use sensors to detect either the open or closed status of protected points of entry, or the presence of a person in an area and the place where the alarm terminates. Intrusion detection sensors are integrated into a system that transmits alarms to a processing location. The specific components, such as the status of latches, latch bolts or deadbolts (locked or unlocked); related power relays; switches; fittings; and keypads vary according to the type and level of protection.

Surveillance

Surveillance systems use video cameras and monitors to alert people to events that occur. Surveillance equipment is generally comprised of television cameras and monitors, video amplifiers, video switches, video tape recorders, audio tape recorders, and related cables, fittings and attachments. Closed-circuit television (CCTV) has long been associated with the security function. In the modern commercial building environment, its highest value is in providing an audit trail, which is critical in investigating a security breach or a violation of the law after such an event has occurred. (Very little crime is discovered through the CCTV surveillance system as it occurs.) Studies of individuals assigned to security consoles where CCTV cameras are monitored often indicate that console operators spend very little time watching the monitors; however, the gaming casino industry and retail environments use it to look for fraud or shoplifting. High security environments, such as the nuclear industry, military, and airports take a more vigilant approach to the use of CCTV in real-time environments. The features needed in a CCTV system depend on the purposes of security equipment as revealed by the risk analysis.

If the purpose of installing the camera is to reduce crime by immediately alerting an operator so the security force can be dispatched, the CCTV camera should be coupled with an alarm sensor device, such as a motion detector. If the purpose of the installation

is to record events, such as entries and departures, the recordings must be clear enough in terms of focus, resolution, and light levels to permit a positive identification of individuals and their activities.

If the video images and events will be used later in an investigation and criminal prosecution, the equipment must be able to produce the desired results. A management program must be devised to ensure proper archiving of the recorded events on videotape or CD-Rom for future use.

Command and Control

A central command and control station is required to manage the above-listed items and equipment. This station coordinates the control equipment and devices throughout a business's facility. This system includes a central console that coordinates the control equipment and devices required to manage the other equipment.

It also has central and remote signal processors that receive, transmit, discriminate, process, and convert signals from various security equipment into displayed and recorded intelligence or command and control functions. It has printing equipment to make permanent records of significant changes of status and graphic display equipment to project two-dimensional views of protected areas.

STAGE THREE – Managing Your Security Program

The third and final stage in setting up an effective security program is managing the program.

Electronic security systems require more management after they are turned on than they do before and during installation, including attention to systems integration, the network they are connected to, the hardware, and the people using the system. Let's start with the people.

Occupant Orientation

All of your building's occupants should be made aware of how the system will operate during an emergency requiring building evacuation, local work rules, admittance procedures, and entry control system operation. In some cases, all personnel should view a brief videotape describing the local security and emergency procedures before they are issued access or identification cards.

Managing the System

The person responsible for managing a security system has duties to perform related to three primary areas: system administration, network operations, and hardware maintenance.

System Administration

Management of the access control systems and the intrusion detection and fire alarm systems are the key responsibilities of a security system's manager.

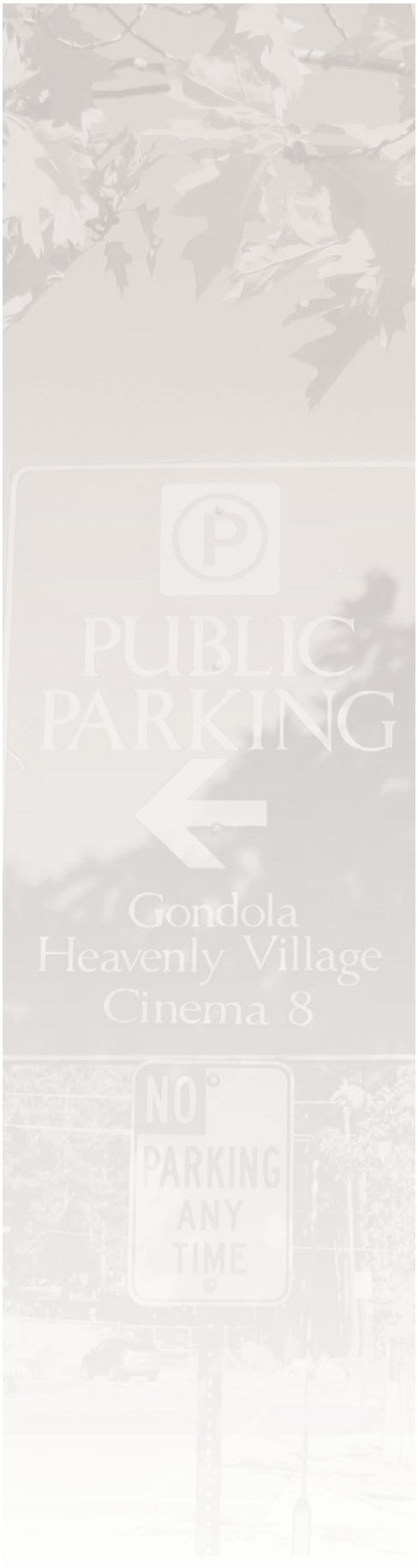
Managing the access control systems: Actual intrusions cause less than one percent of the alarms generated by electronic security systems. Many of these false alarms are triggered by faulty equipment, doors propped open, user error, someone exiting from an emergency door, an air conditioning or heating system activating a sensor, or a person trying to use a mechanical key to enter a door controlled by a card reader.

The system's manager should analyze and categorize the alarms and initiate corrective action to eliminate or minimize false alarms through prompt repair of faulty equipment, user retraining, adjustment of sensor sensitivity, or retrieval of mechanical keys from individuals who are violating access control procedures.

The access control system database usually contains two main types of information: the badge records of authorized individuals to locations where card readers are installed and the information used to automatically lock and unlock doors.

A security system manager should ensure that one person and a backup are assigned system administration duties, which include:

» Deleting system records of people who have left the payroll or tenancy, or whose entry privileges have expired. This task requires close collaboration with the human resources depart-



ment and organizations responsible for hiring contracted workers.

- Printing hard-copy access reports from the system for a given period and retaining them for a specified period of time, usually three to six months.
- Periodically polling the system to determine whether cardholders have stopped using their cards or have left the payroll or tenancy without notifying the security department.
- Programming the system to deny entry privileges to a certain person or groups of people as business needs dictate.
- Programming door schedules to accommodate user requirements.
- Providing archived reports of entries and departures of specific individuals and matching the reports to video recordings of entries and departures for investigative purposes.
- Assuring that the time stamp for the entry control system is perfectly synchronized with the time stamp for the video surveillance system so that actual facility entry and departure times are properly matched with recorded times.

Managing Intrusion Detection and Fire Alarm Systems: Intrusion detection and fire alarm system databases will usually contain the name of each protected department within the facility (referred to as an account), its location, device numbers, contact names, telephone numbers, pass codes, and response directions. In addition, the database may also contain the name and phone numbers of the head person of the protected area. The database also requires updating when a new employee is hired, or a new device is added to or removed from the system.

Network Operations

The network established to link components of the access control and intrusion detection systems may consist of several different integrated transmission systems - copper wire, point-to-point fiber optic cabling, radio or microwave signals, and either proprietary or leased telephone lines that require maintenance.

Whether the transmission system is a single dedicated system or a fragmented system, arrangements must be made for maintenance and repair. Provision should be made for annual preventive maintenance, particularly when the transmission system is complex. During this annual inspection, all equipment, such as routers, switches, and transmitting or receiving devices, should be examined to assure that the equipment is operating according to specifications. Any equipment found deficient must be properly calibrated or replaced if necessary. Arrangements also must be made to provide immediate repair in case the network fails.

Hardware Maintenance

Most security system manufacturers and installers guarantee or warrant the reliable operation of their system and components for at least one year. Before a warranty period expires, be sure to execute a service contract with knowledgeable suppliers certified by the manufacturers to service the equipment.

In Summary

Though our primary responsibilities may in the areas of parking and facility management, all of us need to sharpen our skills and knowledge of fundamental security issues. Success often lies in understanding the basic principles, developing collaborative relationships with security professionals and educating our customers on how to best protect themselves.

Acknowledgements

The following articles were researched for the development of this article and the author gratefully acknowledges these experts.\

Taking a Holistic Approach to Security
David R. Duda, P.E., CSC, CPP, PSP, and LEED AP

Protecting Corporate Secrets
Dr. Randy Gonzalez
Gonzalez is an instructor at the Sarasota Criminal Justice Academy in Sarasota, FL.

"Fear of Parking" & Pay Now ... Or Later
Dr. Randall Atlas, AIA, CPP
Vice President of Atlas Safety & Security Design, Inc.
Security Management (02/08) Vol. 52, No. 2

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Mr. Burns is the author of over 250 parking studies. His specific areas of expertise include: parking master planning, parking strategic planning, feasibility studies, supply/demand analysis, shared parking analysis, parking revenue control and operational audits, and parking system organizational development.

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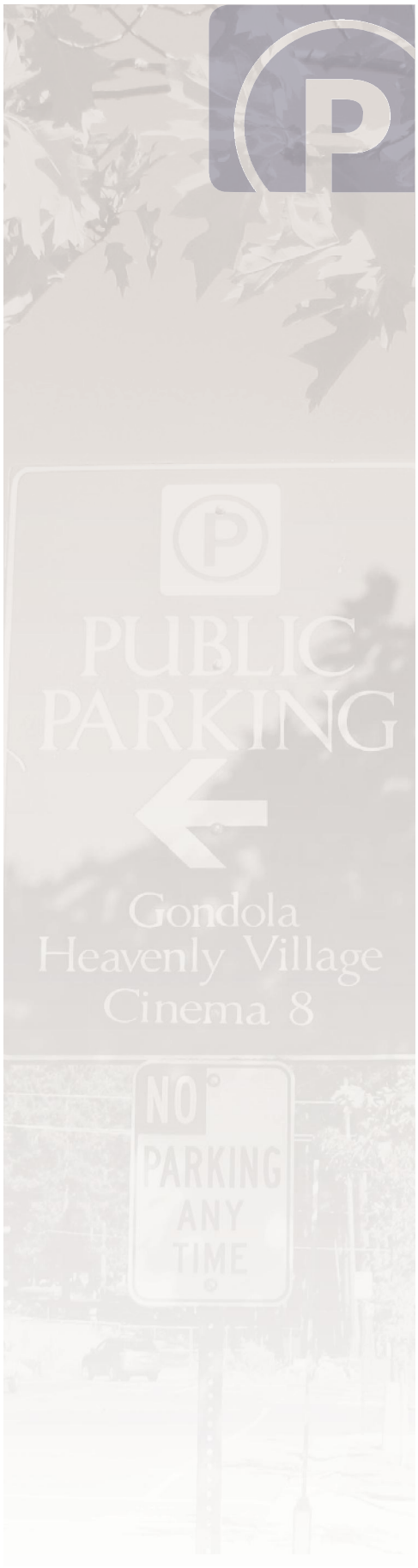


Appendix

Detailed Security Planning Checklist

1. Access Controls and Facility Surveillance Aspects
   - *A. Identification and assessment of access controls, point of entry limitations, personnel vigilance, etc.*
     - i. Types of controls and level of effectiveness in operations
       - a. In-house security personnel: patrols and inspections
       - b. Alarm systems and anti-intrusion devices
       - c. Closed circuit television and electronic monitoring
       - d. Key control management and accountability
       - e. Levels of access and authorization
       - f. I.D. badges and recognition systems
       - g. Pre-employment screening and on-the-job monitoring
       - h. Security education and emphasis on enforcement
       - i. Other types of access controls
     - ii. Perimeter and barrier protection
       - a. Natural barriers: landscape and terrain
       - b. Fencing: type and construction
       - c. Walls and ceiling construction: high risk areas
       - d. Gate facilities: security checkpoints
       - e. Frequency of patrols and security checks
       - f. Door and window locations and security devices used
       - g. Reception areas: location and control of entry
       - h. Employee surveillance and vigilance
       - i. Parking areas: entrance/exit, access to facility

2. Identification of importance of product, process, information, etc.
   - *A. Importance of specific product, process, or service, and current security efforts applied to protect same*
   - *B. Levels of classification and authorization for access to specific product or service*
   - *C. Determination of how critical a security breach would be to company operations*

D. Identification of critical office and work areas involving the use of the product, process, information, or service

i. How vulnerable are these areas at the present time?

ii. How frequent is an evaluation made of critical areas?

iii. How effective is pre-employment screening for persons in high risk or critical areas?

iv. What are the levels of authorization?

v. What levels of accountability are in force?

vi. Have security classifications been assigned?

vii. Has an assessment been made of the value, critical nature, and related impact on the company if a loss occurs?

viii. What special advantages might be lost?

ix. Have effective countermeasures been implemented?

3. External planning and assessment factors: security environments

A. Assessment of the business or facility in relation to the surrounding neighborhood, business district, industrial park, and other related setting

i. Is good surveillance of the property possible?

ii. Are effective access controls in place?

iii. Is the structure located in a high crime area?

iv. What has been the history of crime and/or security breaches?

v. Is the facility isolated and located in a remote area?

vi. If so, what has been done to protect/safeguard approaches to the facility? (Identification of visitors, vendors, etc.)

vii. Are all possible access points monitored and protected?

viii. What would be the probable response time by police or in-house security staff if a security breach occurs?

B. Assessment of factors pertaining to freedom of access and factors related to layout and design considerations

i. Are external areas designed and developed in conjunction with security needs?

ii. Who is allowed access to the facility and during what times of the day? Levels of authorization?

iii. Have high risk areas, such as those containing trade secrets, confidential information, computer files, sensitive records, and documents been given special atten-

tion for security and protective needs?

iv. What factors are specific to this particular operation?

v. Are there any aspects of the facility in need of upgrade with regard to security?

vi. How effective are the current security aspects of the following areas?

a. Barrier controls, fencing, building design, etc.

b. Lighting conditions for security illumination

c. Obstructions to security patrols and surveillance visibility

d. Exterior doors, access points, entrances, etc.

e. Exterior windows and other openings

f. Possible points of concealment and climbing aids

g. Trash collection areas and disposal of documents, papers, etc.

h. Alarm systems and related security devices

i. Personnel, visitors, and others: control of movement, etc.

C. Assessment of the potential of unauthorized entry to high risk or sensitive areas

i. Do neighboring facilities, structures, buildings, etc. present or create any observable security hazards? Could access control be compromised by an intruder gaining access from another building or facility?

ii. Could locking mechanisms be compromised?

iii. Do other openings create security problems?

iv. Is there an effective program of lock maintenance and key control management?

v. Has everyone been identified who has keys or other forms of access to high risk areas? Is the list up-to-date? Are there restrictions combined with levels of authorization?

vi. If a locking system or other protective device is compromised, what procedures and/or actions are taken?

vii. Are intrusion detection devices adequate? Could they be compromised? What changes would improve security?

viii. How effective is wall, ceiling, hallway, or office construction in preventing compromise of high risk areas?

ix. Is there an effective level of employee vigilance?

4. Procedural security and policy formulation

A. *Identification of essential needs for a written security policy with well-defined procedures*

i. Is there written company policy regarding security practices and procedures? Are there specific statements pertaining to the protection of company secrets, information, documents, etc.?

ii. Does policy incorporate specifics with regard to enforcement and penalties?

iii. Will the company prosecute?

iv. Is policy translated into actual practice?

v. Does the policy make an effort to cover all possible situations?

vi. Do employees understand the policy? Is it made available?

B. *Procedures and rules specify operational areas*

i. Are specific guidelines provided to all personnel with particular emphasis on operational areas?

ii. Do guidelines cover the locations and operations of the high risk and sensitive locations, such as: visitor control points; files and cabinets; labs and research; safes and vaults; library storage; copy centers; document storage areas; computer sites/centers; production/process areas; critical office areas; blueprint rooms; office equipment/machines; other special areas.

iii. Are there checks and balances to ensure proper security regarding check-out, check-in, borrowing, loan, etc.?

C. *Procedures, rules, and policies are clear-cut and understood with regard to all levels of operation in high risk locations within the company:*

i. Employee orientation programs and training

ii. Signed statements by employees attesting to policies, procedures, etc. (e.g., nondisclosure agreements)

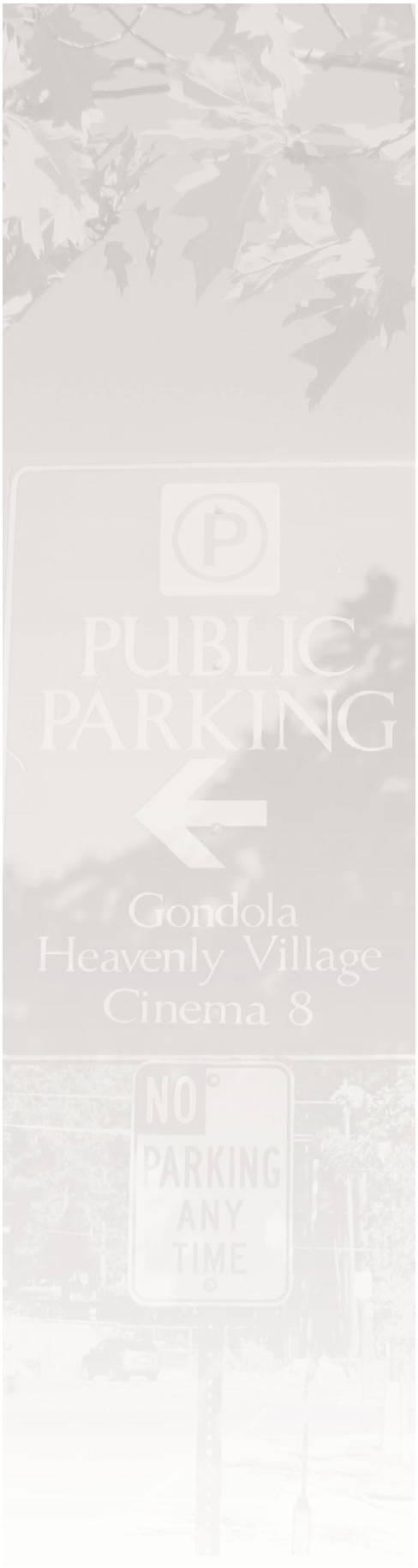
iii. Assignment of certain personnel (security staff) for monitoring, enforcement, etc.

iv. Selective monitoring and evaluation (undercover officers, investigators, etc.)

v. Enforcement applied to everyone in a fair manner without regard to position or level in company

vi. Security practices emphasized on regular basis

vii. Opening and closing procedures



viii. Log-in and log-out procedures followed closely

ix. I.D. badges worn at all times where required

x. Centralization of access points, entrances, exits, etc.

xi. Disposal areas and trash collection points monitored

xii. Appropriate use of security systems and devices

xiii. Unannounced inspections and checks

xiv. Inventories and audits on regular basis

D. Procedure security planning

i. Is management satisfied that appropriate steps have been made to ensure reasonable security procedures to safeguard sensitive and critical information, processes, materials, etc.?

ii. Is every effort made to ensure that personnel understand that a certain product, process, or information is classified as secret or confidential, or some other sensitive classification?

iii. Has every effort been made to enforce and restrict the access to sensitive areas and materials? Have procedures been followed in a consistent manner?

iv. Have guidelines been published within the company listing those materials, processes, information, papers, etc., that are classified as sensitive and restricted? Are these provided for each specific group or project area?

v. Have levels of sensitive classification been established? (For example, "secret," "classified," "confidential," "restricted," etc.)

vi. Are restrictive signs posted in sensitive areas?

vii. How effective are current procedures with regard to:

a. Access controls

b. Opening and closing

c. Control of documents

d. Supervision/monitoring

e. Property control

f. Check-in and check-out

g. Control of contractors, vendors, repairmen, custodial services

h. Disposal/removal of records, papers, etc.

i. Key control and key usage

j. Locking and unlocking

k. Shipping/receiving controls

l. Storage of materials, etc.

m. Employee vigilance/surveillance

n. Security systems/devices

o. Other procedures and controls

5. Sensitive document security planning Considerations

A. Assignment of levels of responsibility for the security and protection of sensitive documents and papers

i. Establishing internal controls, degree of security needed, and levels of responsibility

a. Who has primary responsibility to ensure the safeguarding of the sensitive documents and papers?

b. Do security personnel play a key role in such efforts?

c. What levels of clearance have been established?

d. How is responsibility delegated and how are persons held accountable for security requirements?

e. What is the current degree of security and what can be done to improve current conditions?

f. Is there a document control officer and what are his or her responsibilities?

g. Is there an on-going security education program?

ii. Establishing internal controls and procedures

a. Has an identifications means been established to classify documents according to degree of sensitivity?

b. Are all documents covered by proper controls and audits, receipt verification, logging, etc. at all times?

c. Is a well-defined chain of custody maintained at all times?

d. Do control officer(s) ensure that documents are hand delivered to authorized persons with proper checks and balances?

e. Do all persons handling documents have proper clearances and were they properly screened through an effective pre-employment background investigation?

f. Do all storage facilities provide effective physical security?

g. Are all combinations, codes, or other access means to storage facilities protected at all times, and are these combinations changed periodically?

h. Are all files, safes, cabinets, etc. kept locked and secured at all times when authorized persons aren't present?

i. Are daily inspections conducted by control officer(s) to ensure that all materials are safe-guarded and located in their proper locations?

B. Basic physical security planning

i. What measures have been taken to protect the areas containing sensitive documents and papers?

a. Personnel controls

b. Document controls

c. Lighting security

d. Door/window protection

e. Identification controls

f. External barriers

g. Alarm systems

h. Inspections/monitoring

6. Safes, vaults, and safe rooms

A. General considerations for safes and vaults

i. Review and analyze current usage, design, security aspects, related criteria concerning all safes and vaults

a. What types are used and how effective are they?

b. Where are they located and how well can they be protected?

c. Are they properly secured to a fixed position (if a small or portable safe)?

d. Are they being used appropriate to design and specifications as prescribed by manufacturer? UL ratings, etc.?

e. Who has the combination, how often is it changed, and how is the combination safeguarded?

f. How effective will the safes or vaults be against a burglary attack? What physical security needs are there?

g. Are any security alarm systems used to protect the safe or vault, including areas in which they are located?

ii. Procedures for safeguarding safe and vault areas

a. What access controls are used?

b. How frequently are these areas patrolled or inspected?

c. Are there levels of authorization required for access to the area or office location?

d. What other procedural safeguards are taken?

B. General considerations for a "safe" room (Note: A "safe" room could be used to safeguard small safe units, computer files, records, documents, and other sensitive material storage in lieu of a large vault if such would not be practical. Security alarms, maximum security hardware for doors, etc. would be critical to the design. The entire room would have to be protected on all sides, including roof and floor areas, with no other access points other than doors, in order to be effective.)

i. Has consideration been given to a special location within the facility for construction of a well protected, alarmed, and restricted "safe" room?

ii. If so, could small safes, sensitive files, documents, and related materials be placed within this room?

iii. Could a "safe" room be designed that would resist intrusion for several hours?

7. Personnel controls and security planning

A. Develop and identify critical needs with regard to screening, training, education, and access levels for all personnel

i. Screening and background investigations

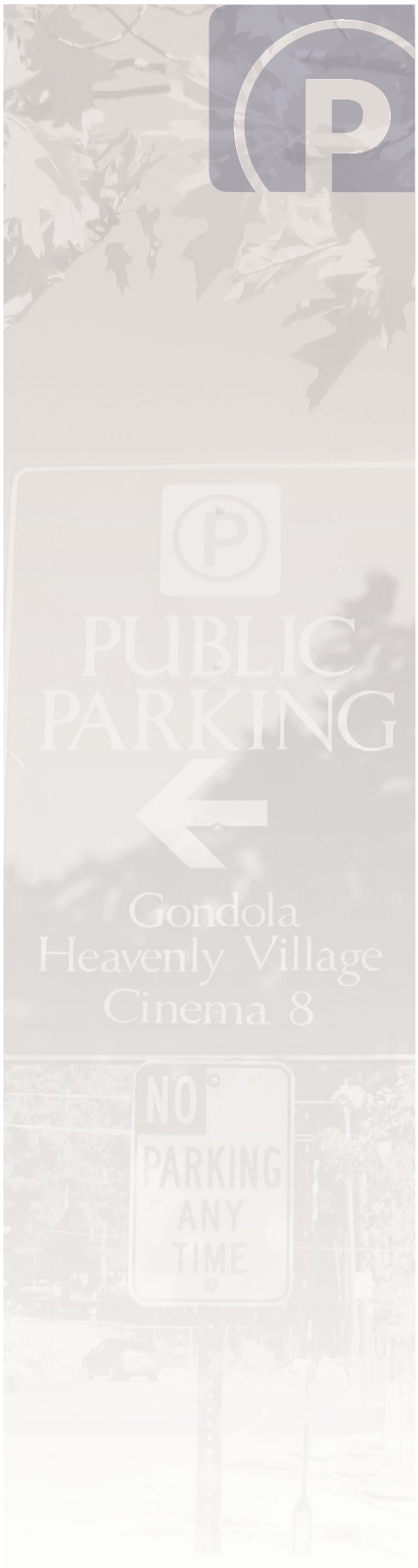
a. Is someone assigned to conduct a thorough pre-employment screening for all personnel? Is this done at all levels where there is the possibility that contact will be made with sensitive/high risk information, materials, products, etc.?

b. Are all references thoroughly checked?

c. Are investigative tools such as a polygraph, special tests, or a combination of devices used in pre-employment screening?

ii. Supervision, monitoring, and evaluation

a. Do supervisors provide an effective level of supervision at all levels? Do they set good examples for subordinates? Is there a good level of surveillance and vigilance in critical areas?



b. Are periodic checks and inspections made by supervisors?

c. Are personnel effectively evaluated in the handling of sensitive materials?

d. Are all rules, policies, and procedures enforced?

e. When a security violation occurs, is it documented?

B. Assess training, education, and other security needs

i. Is there an effective security education program?

ii. Are there any possible warning signs of potential problems with personnel in critical areas such as: personnel making threats, upset, dissatisfied, etc.; personnel with financial problems; personnel arriving earlier and/or staying later than normal; personnel with extravagant personal lifestyle or habits; personnel who avoid taking vacations, working weekends, etc.; other possible indications or problem areas.

iii. What special security needs might be added to upgrade and enhance security of the area:

a. Additional barriers and access controls

b. Identification systems/I.D. badges

c. Restrictions on access and related control measures

d. Effective system of internal audits and inspections

e. Entry/exit screening packages, containers, etc.

f. Key control system/key control management

g. Strict enforcement of all security policies

h. Checks and balances/log-in and log-out controls

i. Change all locks and combinations when an employee leaves, transfers, terminates, etc. Change locks/combinations if a security breach occurs or is suspected

j. Upgrade security systems

The Security Checklist was created by Dr. Randy Gonzalez, an instructor at the Sarasota Criminal Justice Academy in Sarasota, FL.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 25

Valet Parking Program Development

KIMLEY-HORN

Parking Planning White Paper Series

VALET Parking Program DEVELOPMENT

Kimley»Horn

Expect More. Experience Better.

VALET Parking Program DEVELOPMENT

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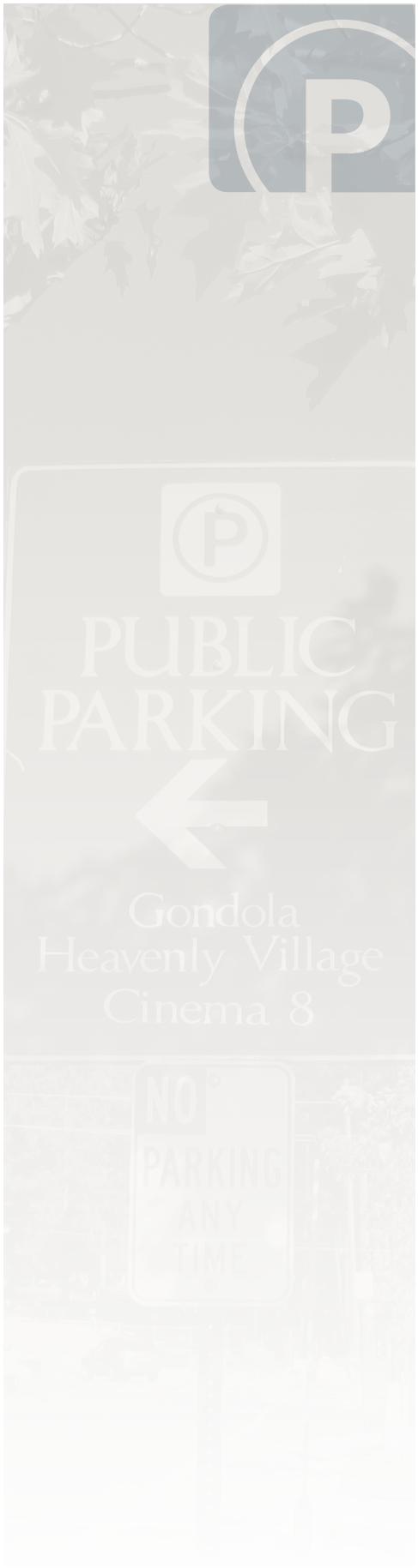


Valet Parking Program Development

The development of a valet parking program is not as simple a proposition as it might seem, especially if the operation is to be run in-house, by staff that has never previously performed this function. A number of programming and physical assessments must be evaluated.

Programming

- What is the nature of the clientele and the owner's expectations for service?
  - Will the service be limited or open to anyone?
  - Will some customers receive the service for free?
- Given the physical layout of the drop-off area(s), how many vehicles can be accommodated? Physical limitations can often be overcome by additional staffing.
- What are the service-level expectations of the facility served? (What is the minimum acceptable wait time for patron vehicle retrieval?)
  - What provisions can be made to make the wait more pleasant?
- What physical changes in traffic flow and parking might be required to make the system function well?

The worst thing that can happen is that an institution invests significant resources to market and implement a system that generates more customer complaints than compliments.

Operational Issues

The following operational issues should be included in a review of valet operations.

1. Evaluate parking layout:
   a. Efficient utilization of available space
   b. Ease of vehicle storage and retrieval–minimizing the number of vehicle movements
2. Plan vehicle circulation routes to reduce conflicts and delays in the parking and retrieval of vehicles.
3. Develop revenue control/ticket control procedure (not applicable if service is to be free) for:
   a. Effective revenue control
   b. Efficiency in ticket issuance, vehicle tracking, and vehicle retrieval.
   c. Special procedure or "stacked" spaces.

4. Staffing
    a. Planning and scheduling
    b. Contingency plans
5. Ensure effective communications between valet staff and client facilities operational staff.
6. Ensure effective communications between valet starters and runners (radio or cellular phone systems) to:
    a. Minimize lost time
    b. Minimize wasted travel time and energy
    c. Improve customer service
7. Proactively develop plans for restaging of parked vehicles to take full advantage of predictable departure patterns to reduce retrieval times.
8. Critically assess valet staging and queuing areas to:
    a. Minimize congestion and delays
    b. Minimize confusion and errors
    c. Determine physical configuration and dimensions of the available staging area for workability
    d. Develop operational procedures
    e. Determine contingencies for oversized vehicles
    f. Determine special provisions for, and control of, short-park vehicles not put into storage area (if applicable)
9. Evaluate typical "trouble areas," both physical and operational, which may be affecting operational efficiency and liability. For example:
    a. Unusual delays in vehicle retrieval
    b. Retrieval of the wrong vehicle
    c. Customers failing to leave keys
    d. Lost keys incidents
    e. Vehicles "lost" in the system
    f. Vehicles retrieved out of sequence
    g. Actual damage incidents
    h. Claimed damage incidents
    i. Actual theft incidents
    j. Claimed theft incidents
    k. Stolen vehicle incidents
10. Thoroughly assess potential liability issues:
    a. Maneuvering hazards in the facility
        i. Blind spots
        ii. Pedestrian/vehicular conflicts
    b. Customer liability
        i. Transferring of patients from vehicles to wheelchairs
        ii. Custody documentation procedures and practices

iii. Legal language on signage and tickets
iv. Procedures for noting and recording damage
v. Procedures for vehicles with valuables exposed
vi. Physical security within the facility

11. Carefully review potential customer service issues:
    a. Identification and alignment of client expectations and operator objectives
    b. Special demands of the specific location
    c. Customer expectations vs. service provided
    d. Marketing the service – getting the word out

Operations Checklist

The following is a detailed operations checklist that may be valuable when considering the creation of a new valet parking operation or the evaluation of an existing program. This checklist provides an indication of the level of detail that needs to be addressed before a valet operation is implemented.

Physical/Functional Issues

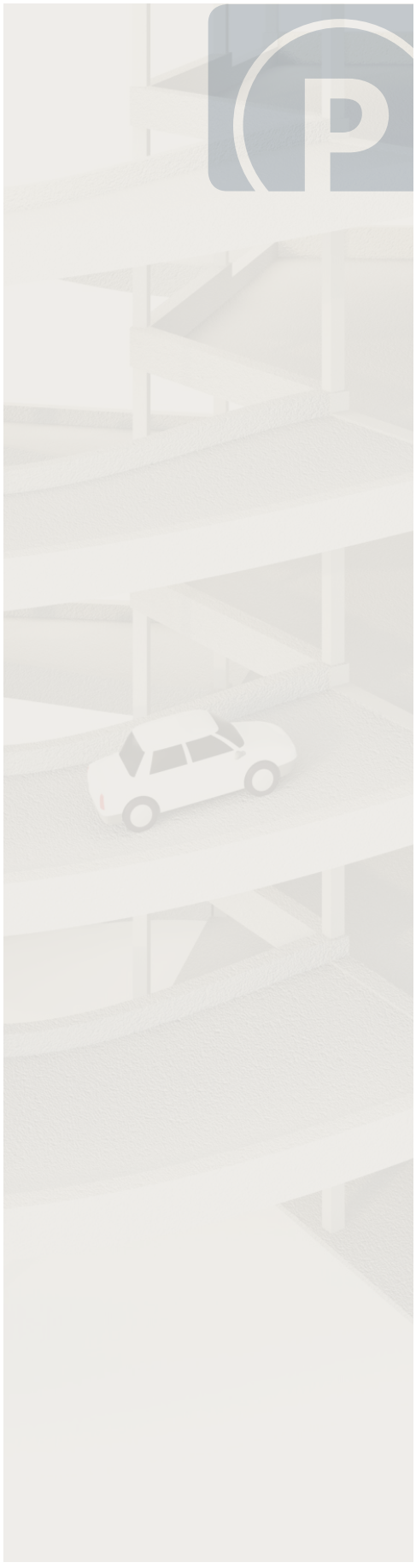
1. How close is the primary vehicle storage area?
2. How long does it take a runner to walk the distance? How long to run it?
3. Is the valet area separate from self-parkers to avoid damage?
4. If the valet storage area is separate from self-parkers, how is it controlled? Does that control keep self-parkers out of the valet area?

Valet Stack Parking

5. Is "valet vehicle stacking" required to achieve sufficient storage?
6. If stacking is used, what is the pattern?
7. What is the minimum number of vehicles that must be moved to retrieve a single car that is "buried"?
8. What is the maximum number of vehicles that might have to be moved to retrieve a single car that is "buried"?
9. What percentage of stored vehicles are "buried" when the valet storage area is full?
10. What is the "normal" filling level of the valet storage area and, under normal filling, what % of stored vehicles are "buried" vs. first car accessible?

Operational Issues

11. What is the maximum number of vehicles that are likely to arrive within any given 30-minute period?
12. What is the normal number of runners available at peak times?
13. How much queuing space is available at the front drive?



14. Do self-parkers also end up on the front drive?
15. If so, can something be done to remedy that?
16. Given the number of runners on duty, how many arrivals at one time will it take to fill the front drive (after all runners have taken a car)?
17. If the primary storage area is too far away, is there an intermediate stacking area available for "emergency" overloads of the front drive?
18. Develop procedures to ensure that customers do not drop off their cars without leaving their keys.
19. Does the starter have possession of the keys or car (with keys) before giving the customer the receipt?
20. Discourage leaving cars in the drop-off area with keys still in the cars.
21. Ensure that keys are secured at all times and that key access is restricted.
22. Develop strong policies for tracking tickets and keys.
23. Develop procedures to "re-stage" (repark) cars for more expeditious vehicle retrieval, especially during peak demand periods.
24. Develop effective procedures for tracking vehicle location changes if "restaging" is used.
25. Perform periodic verification of ticket locations against vehicle locations.
26. Ensure that procedures are in place requiring the starter or runner to check vehicles for damage prior to taking custody. One best practice for larger operations is to utilize video to document vehicle conditions upon drop off.
27. Ensure vehicle inspections occur consistently to reduce liability.
28. Develop effective policies and procedures regarding documentation of valuables left inside cars at the time the valet accepts custody.
29. Ensure that during busy periods valet staff control where arriving parkers stop their cars to maintain traffic flow and patron safety.
30. Have contingency procedures in place to address abnormally high in-bound traffic volumes.
31. Whenever possible, develop procedures to improve operational efficiency such as delivering vehicles to storage and returning a vehicle for pick-up using a single trip.

32. When establishing routes from the drop-off area(s) to the vehicle storage areas, identify the shortest and most effective routes possible. Avoid intersections or high traffic areas that can introduce complications and delays whenever possible.
33. Select valet uniforms that are appropriate for local/seasonal weather conditions.
34. Create a defined policy on solicitation of gratuities.
35. Create a defined policy on staff uniforms and grooming.
36. Develop strong pre-employment hiring policies regarding background and driver's license checks.
37. Require all starters and runners to submit an updated driving record every six months.

Vehicle Damage/Liability

38. Ensure that valet tickets provide a graphic aid for noting damage upon vehicle acceptance. All damage noted should be confirmed with the customer before the vehicle is accepted.
39. Create a defined policy regarding discipline and employee retention related to damage to customer vehicles.
40. Create defined procedures to address the reporting of damage to vehicles including policies on what to do when damage is not properly reported.
41. Create a defined procedure for when a customer reports damage to their vehicle.
42. Create a defined procedure for when a customer reports damage to their vehicle after the vehicle has left the premises.
43. Whenever possible utilize video-recording camera systems to document pre-existing vehicular damage.

Valet Management Systems and Special Programs

44. Leverage new automated valet parking management systems to track and manage keys, tickets, and revenues.
45. Ensure that high-quality operational and customer service staff training programs are in place.
46. Evaluate the benefits of enhanced customer service features, such as:
    a. A "Valet Express Park" program – Allows customers to notify valet attendants that they are returning to expedite the vehicle retrieval process.
    b. A "First Visit Complimentary Valet Program" – Generally used for complex or challenging facilities or campuses to provide a positive first impression and education on how to park on future visits.
    c. VIP Parking Program – Generally used to reward regular program users and to promote customer or vehicle identification through patron name recognition and the offering of special perks.

d. Operations tracking and monitoring – This management strategy can be employed even without an automated parking system, but it is much easier with one. Tracking data on vehicle arrival/departure patterns and volumes, vehicle processing times, damage claims, individual valet staff productivity, etc. can be very valuable and lead to significant program operational enhancements.

For more information or questions, please feel free to contact:

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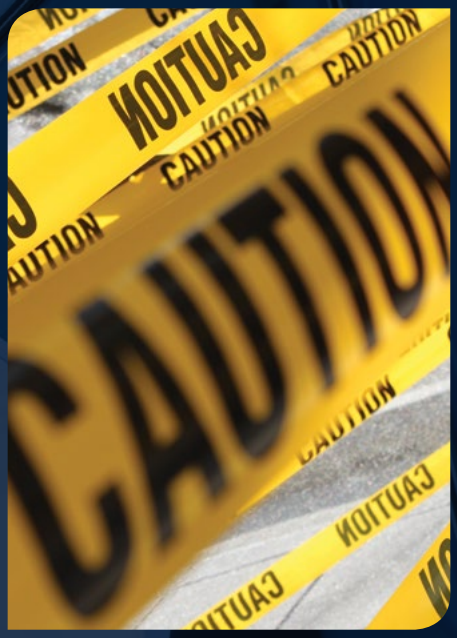
DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 26

IPI Emergency Preparedness Manual

INTERNATIONAL PARKING INSTITUTE™

EMERGENCY PREPAREDNESS MANUAL



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PREFACE

Photo: Elvert Barnes Photography

Parking and transportation professionals go to work every day knowing in any given moment an emergency could turn things upside-down.

A vehicle fire could require rapid evacuation of an underground parking garage. Mother Nature could decide to throw an earthquake, tornado, flash flood, or other unexpected natural event near a facility. Then, there are the emergencies we usually get a little warning about — hurricanes, tornadoes, and blizzards.

We all live with heightened awareness that a terrorist could wreak havoc without warning. Images from such attacks are indelibly marked into our collective memory: from Oklahoma City to the Boston Marathon in 2013.

As parking and transportation professionals charged with the safety and welfare of our customers and stakeholders, we have only one responsible choice: prepare and plan.

This Emergency Preparedness Manual is a great example of how IPI's committees work to anticipate members' needs. The IPI Safety & Security Committee created a parking and transportation-specific reference tool that will directly benefit you in your operations.

There's no question we in parking touch lives: those of our employees, our parking customers, our transportation system users, and many others. Parking and mobility management play an important role in every community, and our professionals stand front and center when emergencies arise.

Let's make sure we do the best we can to be prepared. And on behalf of IPI, my thanks to the Safety & Security Committee for its valuable work toward that goal.

Shawn Conrad, CAE
IPI Executive Director

FOREWORD

As co-chairs of the IPI Safety & Security Committee, we are proud to have been involved in the development of this Emergency Preparedness Manual. Emergency planning is vital for all segments of the parking industry. The development and subsequent implementation of a sound emergency plan is critical to the successful response and mitigation of an event.

As parking and transportation professionals, both of us arrived at an intimate understanding of the role emergency planning and management plays through different — but equally consequential — paths in our careers. We present to you the following insights gleaned from our own experiences.

Bruce Barclay, CAPP, *Operations Manager, Salt Lake City Department of Airports*

Geary L. Robinson, PhD, CAPP, *Director, Parking & Transportation Services, University of North Texas*

INTRO LETTERS

The need for a solid emergency plan did not hit home for me until a day that changed my life and the lives of many other Americans: the tragedy of Sept. 11, 2001. I had been in the parking profession for about eight years at the time and didn't realize the effect an emergency situation could have on a city/airport/university until then.

On Sept. 11, 2001, I was general manager for the parking contract at Newark International Airport. My client was the Port Authority of New York and New Jersey. I attended regular meetings at 1 World Trade Center — known then as the North Tower, the first building hit by the hijackers, at 8:46 a.m. Eastern time. The South Tower was hit at 9:03 a.m. and burned until it collapsed at 9:59 a.m. The North Tower was in flames until 10:26 a.m. — 102 minutes. Then it collapsed.

Ironically, the North Tower's collapse severely damaged World Trade Center Building 7, one of whose tenants was the New York City Office of Emergency Management. Imagine living through the onset of the world's largest human disaster and not having the technical infrastructure required to coordinate rescue and recovery efforts.

When events unfolded in Lower Manhattan, we experienced major disruptions at Newark International. After the planes hit the towers, reports came in about bombs set to explode in one of Newark's terminals. The terminals were evacuated. People fled to their parked cars and scrambled to leave, but the exit plaza was clogged with vehicles queued well back into the parking lots. In the interest of public safety, we opened the gates and allowed everyone to exit without charge. (Port Authority staff was tied up with immediate events but later concurred with our decision.) At 9:40 a.m., the Federal Aviation Administration grounded all U.S. aircraft, which precipitated another mass exodus of passengers, many of whom were in a state of panic and shock.

Rumors spread like wildfire that morning. No one knew what was truth and what were rumors surrounding the attacks or the events unfolding at Newark. One rumor claimed that flights were grounded because there were bombs on additional planes at Newark International. Indeed, many assumed that the massive fireballs generated during the crashes into the Twin Towers came from explosives on those aircraft. This fed the rumors of other planes with bombs.

Two memories from that day will stay with me forever: first, the crystal-clear blue sky and the smoke rising from the towers to the east. Second, the eerie silence of no planes taking off and landing as the day wore on.

Bruce Barclay, CAPP, *Operations Manager, Salt Lake City Department of Airports*

Photo: Penn State

Photo: Michael B.

As I wrote in the opening paragraphs of my doctoral dissertation (*Disaster Preparedness For University/Community Transit Systems, Clemson University, May 2011*), public transportation, along with parking assets and their open access, creates an opportunity for masses of people to be hurt during human-made or natural disasters.

My doctoral research focused on two questions:

1. How are universities/communities planning on using and protecting transit systems in a disaster event?
2. How are universities/communities planning on using and protecting transit assets in a disaster event?

My hypothesis at the outset of that research was that university/community transit systems do have appropriately prepared emergency operating plans. The research I conducted, however, did not support my hypothesis.

During my dissertation research, my analysis of survey results showed that university/community transit systems do not comply with the National Incident Management System (NIMS) and do not have appropriately prepared emergency operating plans. All institutions of higher education, other post-secondary educational institutions, transit and parking organizations, as well as private/public and non-governmental/governmental organizations, should develop comprehensive and holistic emergency operations.

Public and private transportation assets have been designated as a part of the nation's critical infrastructure and key resources (CIKR), which includes university and community transit systems owned by or used to provide transit services to post- secondary institutions of higher education. The transit industry's lack of involvement with emergency management agencies and the lack of disaster/emergency experience within the transportation community have caused some of the nation's most knowledgeable and useful resources for information regarding the use of transportation resources for emergency conditions to be underutilized (Wolshon 2009).

Additionally, Directive 8 of the Homeland Security Act of 2002 (6 U.S.C. 101) mandates the use of NIMS for all local, state, or federal agencies receiving federal funding, while the Federal Transit Administration (FTA) only provides recommendations in the form of a technical resource for its grantee transit agencies. This FTA assistance may also be used by non-federally funded transit systems.

This manual includes an overview of NIMS and provides references so readers can avail themselves of further information resources provided by the U.S. Department of Homeland Security and others.

As I concluded from my research, the following key issues need to be kept in mind when developing or revising a university/community transit system emergency operating plan:

1. Senior management of all participating organizations must not only be committed to the effort but also dedicate the needed resources, including funding.
2. Those involved with the implementation of the plan, including the transit system's director or designee, must be part of the planning process.
3. The plan must incorporate the university/community transit system(s).
4. Training in various forms (tabletop exercises, drills, etc.) needs to be part of the plan.
5. A comprehensive assessment process must be included as an essential part of the plan.

This emergency preparedness manual includes as one of its appendices an outline (i.e., the table of contents) of the emergency operations plan I drafted as part of my dissertation. I hope it serves as a useful guide to the many elements such a plan may contain as you explore an appropriate emergency planning process for your institutions of higher education, other post-secondary educational institutions, transit and parking organizations, as well as private/public and non-governmental/governmental organizations.

Geary L. Robinson, PhD, CAPP, *Director, Parking & Transportation Services, University of North Texas*

INTRODUCTION

Who Needs this Manual?

The U.S. Department of Homeland Security (DHS) and Federal Emergency Management Agency (FEMA) define preparedness as "a continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action in an effort to ensure effective coordination during incident response. This cycle is one element of a broader National Preparedness System to prevent, respond to, and recover from natural disasters, acts of terrorism, and other disasters." (Source: dhs.gov/topic/plan-and-prepare-disasters)

FEMA released its National Preparedness Goal in September 2011 to define what it means for the whole community to be prepared for all types of disasters and emergencies.

The National Preparedness Goal (included in the appendix of this manual) identified five mission areas and 31 core capabilities, defined as the distinct critical elements needed to achieve the goal.

This manual was developed as a hands-on preparedness tool for parking and transportation professionals. Regardless of your title or experience level, you have organizational and individual responsibilities to fulfill during an emergency.

Organizationally, professionals own specific functions and tasks during an emergency event. A department director will need to do x, y, and z, while a shuttle bus driver will attend to a, b, and c. Job-specific tasks ensure that the entire parking and transportation operation functions appropriately and effectively in an emergency.

Individually, emergency situations require quick action. For example, the first person on-scene at a garage fire needs to know what to do — and then do it — when someone stumbles out of the smoke and collapses.

Being prepared for an emergency requires having the knowledge, skills, policies, and procedures in place to not only fulfill departmental roles but also function professionally and sensibly in unexpected scenarios.

The parking industry is ever-changing and subject to ongoing changes (e.g., building relocations, new construction, etc.), it is recommended that you reevaluate your plan on an annual or regular basis with those who are directly involved or affected.

IPI adopted a broad approach in developing this manual. This is a tool intended to emphasize practical and actionable steps, rather than theory. Moreover, IPI recognizes that planning specifics will

Photo: Jeremy Brooks

vary depending on the differing environments and roles of parking and transportation departments. Responses to emergencies affecting freestanding garages, for example, will vary from responses to emergencies affecting underground garages.

An emergency preparedness plan should be part of an institution's larger safety and security plan. This manual is best used as a resource for making your own plan. It might also spark other conversations about overall safety, security, and continuity of operations..

Here are 10 suggestions for making the most of this manual:

1. Review it thoroughly, considering your operation.
2. Identify the elements that apply to your operation.
3. Share those elements with your colleagues and your organization's Emergency Management Team.
4. Compare the sector-specific sample plan with the roles and people in your own operation.
5. Establish a schedule to develop your own plan.
6. Arrange for your team to own specific preparedness planning tasks.
7. Involve other internal and external stakeholders in the plan's development and review.
8. Implement the plan.
9. Practice the plan and evaluate practice sessions after they occur.
10. Update the plan annually.

Your Feedback Requested

This is the first emergency preparedness manual published by IPI. While the manual's content is intended to be as "evergreen" as possible, your comments to IPI's Safety & Security Committee will help inform any future updates. For more information about the committee, visit parking.org/about-ipi/committees/ipi-safety-and-security-committee.aspx.

Learning about the National Incident Management System (NIMS)

As you begin to think about emergency preparedness planning for your parking and transportation operation, the IPI Safety & Security Committee recommends becoming familiar with the National Incident Management System (NIMS).

Created by DHS and FEMA, NIMS is, in FEMA's words, "a comprehensive, national approach to incident management. NIMS provides the template for incident management, regardless of cause, size, location, or complexity. NIMS is applicable at all jurisdictional levels and across functional disciplines."

According to FEMA, the benefits of NIMS include:

- Standardized approach to incident management that is scalable and flexible.
- Enhanced cooperation and interoperability among responders.
- Comprehensive all-hazards preparedness.
- Efficient resource coordination among jurisdictions or organizations.
- Reflects best practices and lessons learned.

NIMS focuses on five key components:

- Preparedness.
- Communications and information management.
- Resource management.
- Command and management.
- Ongoing management and maintenance.

The NIMS Resource Center (fema.gov/national-incident-management-system) offers online resources to implement and maintain NIMS concepts and principles. Coordinating with other NIMS stakeholders is imperative for proper preparedness. A parking and transportation department at a university, for example, will need to coordinate with campus security or its police department and the emergency management team, as well as specific administrators who have public safety and public communication responsibilities, along with off-campus stakeholders such as fire/EMS and transit. A municipal parking department would need to coordinate with police, fire/EMS, transit, and likely the municipality's public information officer at a minimum.

Each region handles emergency operations and incident management in its own way, in coordination with state and federal stakeholders, depending on the nature and scope of the emergency. Your parking and transportation operation might also factor into those plans, depending on the scenario.

At the heart of NIMS is communication and adaptability. If you haven't already, you will need to assert your voice, provide your expertise, and candidly discuss your available assets and level of readiness with NIMS stakeholders — preferably before any emergency scenario arises.

Parking Facility Roles during Emergencies

While parking facilities can be the focus of specific emergencies, lots and garages can also serve as vital assets and resources for first responders and others:

Staging Area

An open parking lot can be a critical asset for firefighters, police, and/or National Guard units while responding to a large event that requires staging of personnel, materials, and vehicles. Knowing and communicating the availability of and access to parking areas during different times of the day or night can help on-site incident commanders make quick decisions about storing and deploying resources.

Temporary Shelter

A parking garage can serve as an effective temporary shelter in the event of certain forms of inclement weather. A basement garage could prove to be a lifesaver during a tornado or violent wind event. Certain floors of an above-ground garage could provide refuge during a severe thunderstorm, hail storm, or flash flood. Law enforcement officials may decide that a garage is a suitable impromptu holding area to isolate the public from an active shooter situation or other public safety hazard in which quick access to cover could save lives and prevent injury.

Anticipating and planning for the potential use of parking areas as temporary shelter will position your operation to better serve the public and first responders.

EMERGENCY PREPAREDNESS PLAN ELEMENTS

Identifying Applicable Vulnerabilities and Scenarios

One of the first steps in preparing your plan will be identifying the likely — and even not-so-likely — events that could affect your parking operation, either directly or indirectly. What threats do you face? What threats do your institution, your community, your region, and your state face? While your planning will focus primarily on your own operation, that operation exists in a larger context, and it's important to consider how you might figure into someone else's larger plan.

The main task of your plan is answering this question: What must be done, when, and by whom, if this particular event occurs?

Natural Risks

Examples of natural risks include (but are not limited to):

- Earthquake
- Extreme cold weather
- Fire
- Flood
- Lightning
- Mudslide
- Sinkhole
- Snow/ice
- Solar flares/electrical disruption
- Tornado
- Tsunami/storm surge
- Wind

Photo: /dave/null

Man-made Risks

Examples of man-made risks include (but are not limited to):

- Active shooter
- Biological attack
- Bomb threats/explosions
- Broken pipe (water, gas, fuel, oil, etc.)
- Building condemnation/collapse
- Chemical attack
- Combustible gas leak
- Computer virus/DDoS attack
- Crowd stampede
- Employee actions (labor strikes, etc.)
- Environmental failure (frozen pipes, HVAC issues, etc.)
- External accidents (plane crash, train derailment, etc.)
- External actions (civil unrest, terrorism)
- Fire
- Hazardous material spills
- Hijacking
- Internal accidents
- Nuclear material/facility accident
- Nuclear device/bomb attack
- Plane crash
- Sabotage/vandalism
- Security breach evacuation
- Service failure (electrical, phones, Internet)
- Theft/fraud/embezzlement

Other Risks

Other risks that necessitate preparation include:

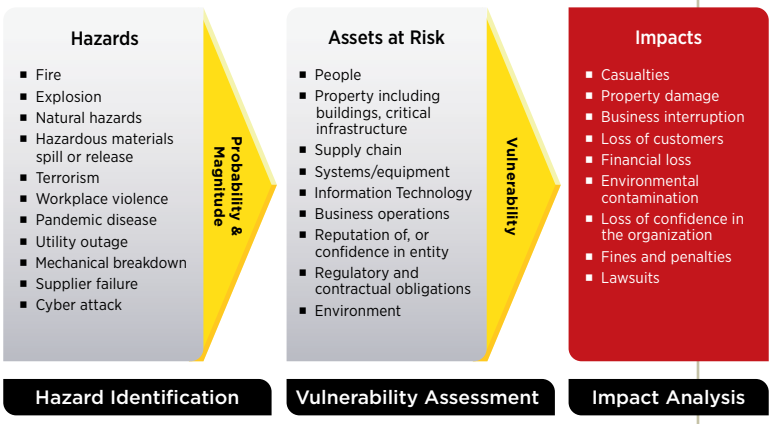
- Cell signal blocking by law enforcement during incident
- Denial of access
- Disease/epidemic/pandemic
- Equipment failure
- Governmental shutdowns/policy changes
- Loss of critical staff
- Loss of lease/agreement/contract
- Other nearby facilities issues
- Power failure
- Power surge
- Transportation disruption

Identifying Critical Operational Functions, Systems and Supplies

An emergency forces us to prioritize. A "must" on an ordinary day can suddenly become optional in an emergency.

You can save your entire operation time and heartburn by identifying the critical functions, systems, and supplies that will likely be affected in an emergency. This is very much a team exercise; no single individual can think of everything, and no single individual can anticipate how every aspect of an operation might be affected.

A useful first step in this process can be creating a spreadsheet of all key elements of your operation. Consider using a budget as an accurate guide. Once that's been created, referencing the applicable vulnerabilities and risk scenarios discussed above, assess the degree (e.g., high, medium, low; or use a quantitative 1–10 scale) to which each element would be affected by each risk. The illustration below offers a model[1].



Once you have identified the degree to which a program element is likely to be affected, you can then focus on how each high-priority threat would ripple through your operation. That way, your emergency preparedness plan can address actions required in an appropriate level of detail.

In the simple example above, the parking and transportation operation would want its plan to thoroughly explain how the shuttle buses would be affected by a snow/ice event and provide specific guidance to staff for appropriate preparation and response. The plan would focus on specifics that might include modified shuttle schedules, fuel supplies, snow tires or chains, cold-weather engine maintenance, reviewing snow/ice vehicle handling with drivers, and other issues.

While identifying critical functions, systems, and supplies that will likely be affected by various types of emergencies, your preparedness plan should include steps to address three essentials: resilience, redundancy, and restoration.

Resilience

Resilience is a key concept in emergency preparedness. As Christopher Neuwirth wrote in "Reducing Uncertainty from Inevitability" at EmergencyMgmt.com, "Resiliency is the ability of a society, or the parts thereof, to absorb the impact of a disaster and readily return to a pre-disaster state. ... Resiliency is, itself, a measure of emergency preparedness. ... It is a ready-state that demonstrates exemplary preparedness and not a coincidental experience. ... If emergency preparedness is not done well, or in isolation of other considerations and factors, resiliency may become minimized, limited, or — worse yet — not experienced at all."

Emergency preparedness means asking what you need to do today to ensure the survival (or restoration) of essential operational elements should an emergency strike tomorrow. Securing vital records, for example, must be addressed in advance of an event; failure to do so could mean their total loss.

Redundancy

Building redundancy — backups — into your operation allows you to continue functioning during an event or return to normal more quickly afterward. Ideally, redundancy has to become as automatic as possible in an operation. It might mean automating data backup, for example.

Part of redundancy might entail stockpiling vital supplies to ensure their availability during an emergency and for a length of time thereafter. Stockpiling will likely require requisitioning an extra quantity of certain supplies or equipment for your operation on a regularly scheduled basis.

Redundancy and stockpiling are simple ideas but not always easy to turn into action. Budget constraints, competing priorities, distractions, and procrastination can all conspire to foil good intentions. They should, therefore, be a standard part of someone's job.

Restoration

Restoring vital equipment and systems as quickly as possible after they've been affected by an emergency requires advance planning and thorough training. In fact, some equipment and systems must be shut down prior to the arrival of an expected event, such as a hurricane or flood, to prevent or limit their damage.

Your emergency preparedness plan should include specific steps and assigned responsibilities to ensure the safe powering down/up of your operation's equipment and systems. These might include computers, electronic parking meters, garage gates and payment systems, vehicles and fueling stations, and others. A complete set of equipment documentation (start-up, operating, and shut-down procedures) should be updated regularly and be easily accessible to all staff trained and cleared for its use.

1 http://www.ready.gov/risk-assessment

Excerpts from the Salt Lake City Department of Airports Basic Emergency Plan

Levels of Emergencies (Non-Airport/ FAA categories)

Following are three categories of emergencies, which are primarily useful for assessment purposes. These correspond with the levels of emergencies as defined in the SLC Corporation Emergency Plan.

Level III

Any emergency that is capable of being handled using local resources, such as a routine medical emergency, traffic accident, etc.

1. Emergency occurs.
2. The Airport Control Center is notified.
3. First responders go to the scene/establish command.
4. Recovery efforts take place.

Level II

Any emergency where one or more of the following criteria are present:

1. The emergency is not routine in nature.
2. Notifications to administration are required.
3. There is extraordinary media coverage.
4. The emergency results in a fatality.
5. There is a situation where 1–9 individuals have sustained moderate injuries.
6. Significant damage to a single structure is sustained.
7. Additional resources from other agencies are requested.
8. If necessary, a PIO is made available for media inquiries.
9. Staging areas are identified by command staff when required.

Level I

Any emergency where any Level II elements are present and:

1. There are mass causalities (10 or more).
2. Resources available on airport are insufficient to effectively handle the situation.
3. Two or more airport structures have sustained significant damage
4. If necessary, the EOC is activated.
5. Additional notifications of airport employees/EOC staff are made by the Control Center.

Sections of the Airport Emergency Plan	
Basic Plan	Provides an overview of general philosophies pertaining to disaster management and contains general guidelines pertinent to all functional sections, and hazard-specific annexes. Unlike the rest of the plan, which contains security sensitive information, this basic plan can be shared with the general public.
Hazard Analysis	The hazard analysis is a document intended to look at the potential emergencies that could occur at or impact the SLC International Airport; to assess, then prioritize each based upon likelihood of occurrence, historical precedence, and other factors.
Functional Sections	A functional section describes a series of general actions that are applicable to multiple disaster situations. For example, an adequate management structure and communications system must exist in every disaster; therefore, functional sections have been created which focus on how both may be established under a variety of circumstances.
Hazard Specific Annexes	Those emergency actions that are applicable to only one or a few types of disasters are placed in hazard-specific annexes.
Checklists	Checklists are summaries of functional sections and hazard-specific annexes, condensed in such a way that they may be immediately useful to field personnel facing emergency situations.
Agreements	This is a listing of memorandums of understanding and letters of agreement between the Department of Airports and organizations willing to provide assistance not found elsewhere in the certification manual.
Glossary	The glossary is a centralized listing of definitions used throughout the Airport Emergency Plan.
Training & Testing	This section provides an indication of the testing/review schedule for various components of the AEP and training methods.
Maps & Resources	This section contains various maps of the airport and surrounding areas, as well as a snapshot list of non-traditional airport resources that will assist the airport in managing an incident/event.

Functional Sections in the AEP

- Alert and Warning
- Direction and Control
- Emergency Communications
- Emergency Personnel, (including Search and Rescue)
- Emergency Public Information
- Health and Medical
- Public Protection (Evacuation and Shelter in Place)

Specific Situations Addressed by the AEP

- Airfield power failure
- Aviation accident
- Bomb threat (terrorism)
- Combustible gas
- Crowd management
- Earthquake
- Flooding
- Hazardous materials (terrorism)
- Hijacking (terrorism)
- Terrorism, (chemical, biological)
- North Support Business (maintenance and fueling facilities)
- Security breach evacuation
- Structure fire

Used by permission. Source: Bruce Barclay, CAPP, Operations Manager, Salt Lake City Department of Airports. Copyright © Salt Lake City Department of Airports

Louisiana State University

As Antonio Casas, director of parking services at the LSU Health Sciences Center in New Orleans, told *The Parking Professional* in March 2013, "Each storm presents its own challenges and is unique."

Casas said the effect depends on how a storm hits the region. Hurricane Isaac in August 2012 was primarily a wind-and-rain event for the campus, he explained, while Hurricane Katrina's biggest effect in 2005 was flooding.

"Katrina pretty much wiped us out," he said. At that time, most of the department's computer servers were on the ground floor, which meant having to almost completely start over after the storm.

"Katrina taught us that when we do a new equipment installation or renovation, we raise the parts and the electrical usually four feet up off the ground and use weatherproof boxes. Our IT department hosts all of our servers now on an elevated floor. Once electrical equipment goes in the water it's shot."

While those steps add resilience to systems, storms have their own way of finding weak points. Lightning and electrical surges during Hurricane Isaac blew out the controls in a couple of the campus's parking areas, and wind-driven rain found its way past weather stripping around doors.

"Card reader parts got water damage and became inoperable even after the power came back," said Casas. "In one of our lots, we had gate operators that had their entire circuit boards fried, either by lightning or when nearby transformers blew."

USDA photo by Dave Kosling

Another lesson learned from Katrina, and applied during Isaac and Gustav, was to have an emergency plan that governs a campus-wide shutdown process. As a storm approaches, the plan details and prioritizes actions to be taken 72 hours out, then 48, then 24. Shutdown begins between 48 and 24 hours in advance, powering down all controls, IT, and parking areas.

"By shutting it all down proactively, we hope to avoid some of the failures and damage from power surges, wind, etc.," said Casas. The buildings have top priority, then parking. Disconnecting equipment from electrical power where possible helps to protect it.

"We were able to recover a lot quicker after Isaac," thanks to all the prep work, he said.

The Parking Professional, March 2013

Identifying Roles and Responsibilities

Even the best-planned, best-organized, and most effectively coordinated responses during an emergency can seem chaotic in the moment. Being crystal clear in advance about roles and responsibilities while preparing (and drilling) your plan helps counteract that sense of chaos.

It's important to integrate your operation into the larger structure of a multi-agency response to an emergency event, and your plan should reflect that.

According to FEMA:

> Emergency management and incident response activities require carefully managed resources (personnel, teams, facilities, equipment and/or supplies) to meet incident needs. Utilization of the standardized resource management concepts, such as typing, inventorying, organizing, and tracking will facilitate the dispatch, deployment, and recovery of resources before, during, and after an incident.
>
> Resource management should be flexible and scalable in order to support any incident and be adaptable to changes. Efficient and effective deployment of resources requires that resource management concepts and principles be used in all phases of emergency management and incident response.

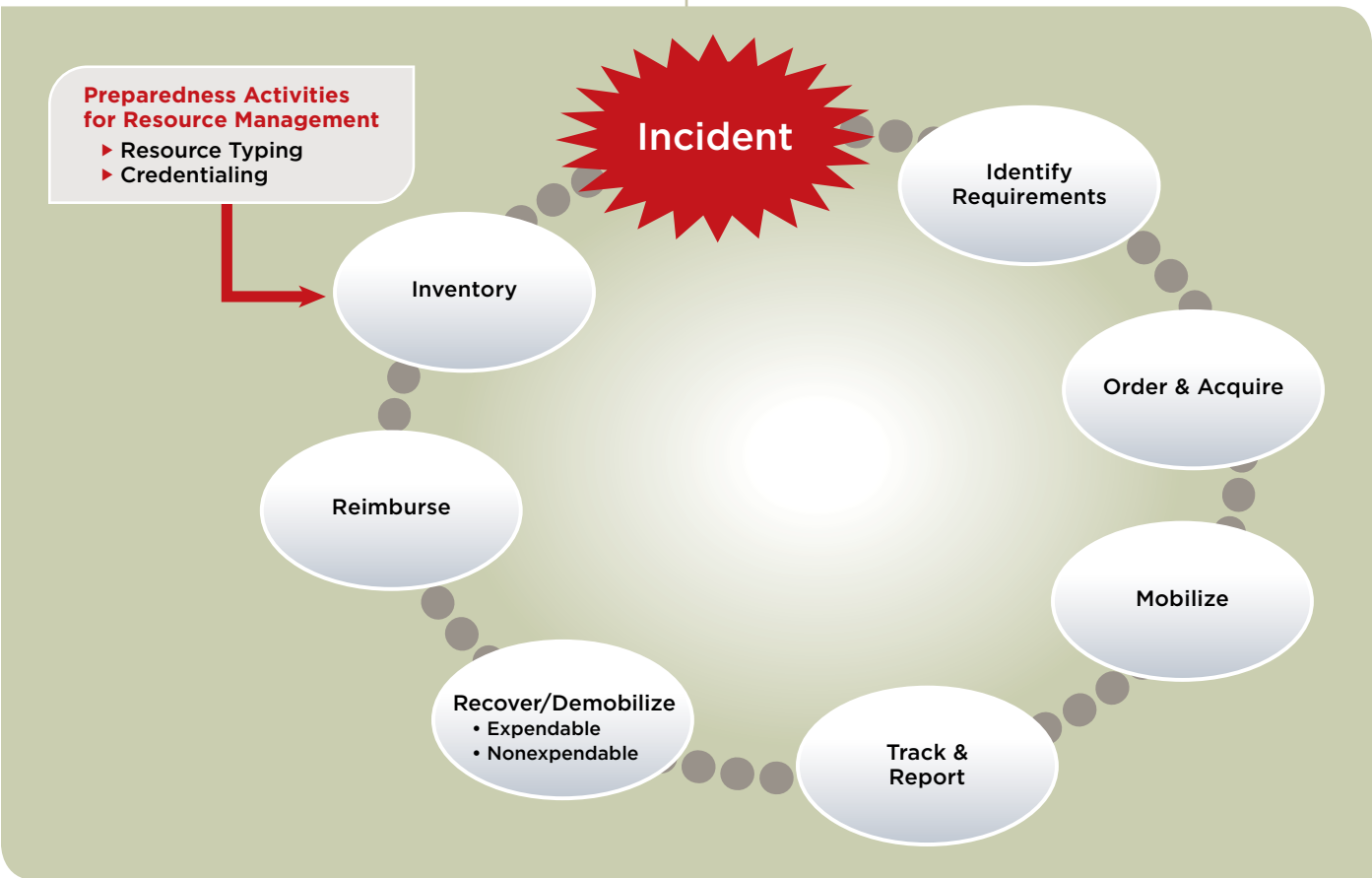
The resource management process can be separated into two parts: resource management as an element of preparedness and resource management during an incident. The preparedness activities (resource typing, credentialing, and inventorying) are conducted on a continual basis to help ensure that resources are ready to be mobilized when called to an incident. Resource management during an incident is a finite process, as shown in the below figure, with a distinct beginning and ending specific to the needs of the particular incident.

(Source: fema.gov/resource-management)

Disaster Response/Management Team

This team will be specific to your community and institution. The composition of this team will vary for each parking sector. IPI suggests using FEMA's Incident Command System (ICS). FEMA explains that it:

- Allows for the integration of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure.
- Enables a coordinated response among various jurisdictions and functional agencies, both public and private.
- Establishes common processes for planning and managing resources.



ICS is flexible and can be used for incidents of any type, scope, and complexity. ICS allows its users to adopt an integrated organizational structure to match the complexities and demands of single or multiple incidents.

ICS is used by all levels of government — federal, state, tribal, and local — as well as by many nongovernmental organizations and the private sector. ICS is also applicable across disciplines. It is typically structured to facilitate activities in five major functional areas: command, operations, planning, logistics, and finance/administration. All of the functional areas may or may not be used based on the incident needs. Intelligence/ investigations is an optional sixth functional area that is activated on a case-by-case basis.

As a system, ICS is extremely useful; not only does it provide an organizational structure for incident management, but it also guides the process for planning, building, and adapting that structure. Using ICS for every incident or planned event helps hone and maintain skills needed for the large-scale incidents.

FEMA explains why ICS is needed:

> When an incident requires response from multiple local emergency management and response agencies, effective cross-jurisdictional coordination using common processes and systems is critical. The Incident Command System (ICS) provides a flexible, yet standardized core mechanism for coordinated and collaborative incident management, whether for incidents where additional resources are required or are provided from different organizations within a single jurisdiction or outside the jurisdiction or for complex incidents with national implications.

In addition:

> The ICS is a widely applicable management system designed to enable effective, efficient incident management by integrating a combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure. ICS is a fundamental form of management established in a standard format, with the purpose of enabling incident managers to identify the key concerns associated with the incident — often under urgent conditions — without sacrificing attention to any component of the command system. It represents organizational "best practices" and, as an element of the Command and Management Component of NIMS, has become the standard for emergency management across the country. Designers of the system recognized early that ICS must be interdisciplinary and organizationally flexible to meet the following management challenges:

Photo: Brussels Airport

- Meet the needs of incidents of any kind or size.
- Allow personnel from a variety of agencies to meld rapidly into a common management structure.
- Provide logistical and administrative support to operational staff.
- Be cost effective by avoiding duplication of efforts.

ICS consists of procedures for controlling personnel, facilities, equipment, and communications. It is a system designed to be used or applied from the time an incident occurs until the requirement for management and operations no longer exists.

Chain of Command

The process of developing your emergency preparedness plan must include discussion of and clarity about the specific positions in your community and at your institution that would participate in various types of incidents and how specific personnel in your parking and transportation operation fit into that command structure.

FEMA says:

> A basic premise of NIMS is that all incidents begin and end locally. NIMS does not take command away from state and local authorities. NIMS simply provides the framework to enhance the ability of responders, including the private sector and NGOs, to work together more effectively. The federal government supports state and local authorities when their resources are overwhelmed or anticipated to be overwhelmed. Federal departments and agencies respect the sovereignty and responsibilities of local, tribal, and state governments while rendering assistance. The intention of the federal government in these situations is not to command the response but, rather, to support the affected local, tribal, and/or state governments.

Lines of Communication

Communication is one of the most challenging elements of any incident response. The 9/11 terrorist attacks, hurricanes Katrina (2005) and Sandy (2012), the loss of the Granite Mountain

Hotshots in an Arizona wildfire, the Washington, D.C., Navy Yard shooter in 2013, and Malaysian Airlines Flight 370 lost in 2014 all demonstrate how problems with communication have compounded catastrophe.

Photo: Penn State

Communication problems can be technological or result from human error. Regardless, prudence dictates anticipating communication difficulties and preparing contingency plans and back-up systems.

As the U.S. Department of Education's Office of Safe and Healthy Students explains in "Developing an Emergency Communication Plan for an Institution of Higher Education," an emergency communication plan serves a number of purposes:

- Prepares the institution to effectively manage emergency communication.
- Identifies possible gaps in warning, notification, response, and resource requests.
- Provides an inventory of all existing communication technologies and a guide for how to activate, use, and deploy these devices.
- Helps staff to respond in an accurate, professional, and timely manner.
- Manages the distribution of critical/sensitive information to the media, students, faculty and staff, and the general public.
- Demonstrates a proactive commitment by the campus to prepare for a crisis before it happens.
- Empowers staff to know what to do, what steps to take, and how to prioritize key functions in crisis.

(Source: rems.ed.gov/docs/FY10EMHE_FGM_ATGA_EmergencyCommPlanIHE.pdf)

Internal

Start with your own operation. Decide whether you need a hierarchical command-tree model of communication, a flat horizontal approach that empowers each team member, or a hybrid of the two. You might decide that if one of your team members spots a vehicle fire in a parking facility, he or she should dial 911 first and then call a supervisor. On the other hand, if one of your team members encounters a television news crew that asks for guidance on where to set up their coverage about a nearby shooting, you might decide the team member should first consult with someone in your operation's management structure or public relations.

An emergency preparedness plan provides a vehicle for you to think in advance about different scenarios and take stock of your current communication systems and policies. If those systems need upgrading or those policies need changing or clarifying, be sure to update your preparedness plan accordingly.

External

An emergency preparedness plan should clarify the "who, what, when, where, and how" of communication with all of your stakeholders. How will you respond to inbound communication? How will you coordinate outbound messaging? Such questions must be thought through carefully, thoroughly, and in coordination with both internal and external stakeholders. In particular, you will want to involve your institution's public information staff in this planning.

"Developing an Emergency Communication Plan for an Institution of Higher Education" outlines the following questions:

- Who are your key audiences?
- What are your key messages at various stages of the emergency?
- How will you communicate the message and the facts?
- How will you activate crisis website, social media, and crisis hotline?
- What type of guidance will you provide to the public?
- How will you control the message?
- How will you control the flow of information?

(Source: rems.ed.gov/docs/FY10EMHE_FGM_ATGA_EmergencyCommPlanIHE.pdf)

The Centers for Disease Control and Prevention (CDC) offers the Crisis and Emergency Risk Communication (CERC) training program, which "draws from lessons learned during public health emergencies and incorporates best practices from the fields of risk and crisis communication. With this comprehensive training program, CDC has moved forward in meeting the needs of partners and stakeholders in preparing for, responding to, and recovering from the threat of bioterrorism, emergent diseases, and other hazards." (Source: bt.cdc.gov/CERC/)

Coordinating/Integrating

Identify and Communicate with Related Entities/Departments

Because no department or organization exists in a vacuum, an emergency preparedness plan should include guidance on working with other entities so relationships and contacts are clear in advance. Parking and transportation will have relationships with any number of related departments, and these will likely be different for campuses versus airports versus other environments.

Review and Reference Emergency Preparedness Plans

In addition to identifying and guiding communication with other departments or entities, the parking and transportation department's emergency preparedness plan should reference and integrate with those other entities' own plans. Ideally, this would involve in-depth discussions and clear agreements with the principals representing those other entities.

Communicate and Ensure Staff Understanding

All parking and transportation staff should be well-versed in the details of the emergency preparedness plan. While not all staff will participate to the same degree in the plan's development, all should have an equal understanding of its details and recognize not only their own roles and responsibilities in an emergency but those of all other team members as well.

Training and Inspection Support from Local First Responders

Local first responders should serve as vital resources and partners for emergency preparedness planning. Be sure to ask them about available training and on-site inspection assistance.

Partnering with first responders not only helps parking and transportation staff get up to speed on how to prepare and react in an emergency but also aids the first responders in better understanding how to interact and work with your department, including possible assets during an emergency.

As IPI Safety & Security Committee Co-Chair Geary Robinson, PhD, CAPP, observed in his doctoral dissertation, "Emergency management agencies should extend their training to include transportation agencies responsible for providing transit assets during disaster events. The goal should be the development of a dialogue to define expectations for the full utilization of transportation systems and their employees during a disaster event."

Robinson also noted that DHS "lists five strategic goals of national concern: awareness, prevention, protection, response, and recovery. Transportation assets and transit operations should be considered in relation to each of these goals."

Annual inspections co-supervised by first responders can help the parking and transportation staff and other relevant departments maintain a higher level of readiness and awareness. Coordinating with first responders in advance on an inspection checklist would be wise and might include:

- Emergency exit access and signage checks and changes.
- Smoke/heat/CO detector and alarm checks.
- Flammable/explosive/noxious chemical and equipment storage (paints, thinners, etc.).

National Guard photo by Laura L. Lopez

Ready.gov provides a handy overview that might inform your training decisions:

WHO NEEDS TRAINING?	WHAT TRAINING SHOULD BE PROVIDED?
All employees	■ Protective actions for life safety (evacuation, shelter, shelter-in-place, lockdown) ■ Safety, security, and loss prevention programs
Emergency Response Team (evacuation, shelter, shelter-in-place)	■ Roles and responsibilities as defined in the plan ■ Training as required to comply with regulations or maintain certifications (if employees administer first aid, CPR, or AED or use fire extinguishers or clean up spills of hazardous chemicals) ■ Additional training for leaders, including incident management
Business Continuity Team	■ Roles and responsibilities as defined in the plan ■ Additional training for leaders, including incident management
Crisis Communications Team	■ Roles and responsibilities as defined in the plan ■ Additional training for leaders, including incident management ■ Training for spokespersons

(Source: ready.gov/business/implementation/training)

FEMA offers a free independent study program for all staff, featuring NIMS-compliant courses at http://training.fema.gov/IS/NIMS.aspx. These classes include:

- ICS 100: Introduction to ICS.
- ICS 200: Basic ICS.
- ICS 700.A: National Incident Management System (NIMS) — An Introduction.
- ICS 800.B: National Response Framework — An Introduction.

Locally offered classes can supplement FEMA's offerings.

Evacuation vs. Refuge in an Emergency

Decision Making

Because the parking and transportation function is a key asset in an institution's (or community's) ability to prepare and respond — particularly in facilitating mobility or refuge — parking and transportation management must participate in decision-making during planning and preparation and certain types of emergencies.

Coordination between Parking and Transportation

In the event that your institution or community splits parking and transportation into separate departments, coordinating in advance becomes all the more important.

Photo: Steve Schaaf

MONTHLY PLANNER TOOL

Purpose

An emergency preparedness plan needs to be a living, often-used document to remain relevant and current for your parking/transportation operation. This monthly planner tool is one example of how you can integrate emergency preparedness planning into your staff meetings on a regular basis.

IPI Annual Emergency Preparedness Planner

Depending on the type of parking venue you operate (airport, hospital/medical center, university, stadium, municipal, or commercial), what kinds of issues or threats can you anticipate — and integrate into your emergency preparedness planning — throughout the year?

Nature (1)	Events (2)	Org'l Changes (3)	HR/Budget Changes (4)	Tech Changes (5)	Infrastructure Changes (6)
Jan					
Feb					
Mar					
Apr					
May					
Jun					
Jul					
Aug					
Sep					
Oct					
Nov					
Dec					

Category Examples:

(1) Seasonal, earthquakes, hurricanes, thunderstorms, hail, lightning, severe winds, flooding, snow/ice, fires, etc.
(2) Large gatherings, fairs, games, races, other crowd generators
(3) New management, new policies, new reporting structures, new departments, eliminated departments, etc.
(4) Planned furloughs, fleet vehicle reductions/maintenance
(5) New computers/software, mobile devices, parking meters, security systems, fire alarm/sprinkler systems, etc.
(6) Planned work on nearby roads/bridges, electrical, water, etc. affecting access/egress from facilit

Anticipate, Update, and Drill

Your planning and the resulting documentation should help you and your team think ahead. What seasonal threats might you face (e.g., weather)? What about event-related threats (e.g., large crowds during football games or parades)?

Ideally, you and your team will have a master calendar to use for anticipating both what's planned and what's possible far in advance. Then you can update that forward view on a regular basis and schedule drills and exercises, both internally and in cooperation with outside partners, to run through likely scenarios and identify changes that need to be made to keep your preparedness level sharp.

Photo: Brussels Airport

EXERCISES

Sourced verbatim from Ready.gov.

Post-incident critiques often confirm that experience gained during exercises was the best way to prepare teams to respond effectively to an emergency. Exercises should be designed to engage team members and get them working together to manage the response to a hypothetical incident. Exercises enhance knowledge of plans, allow members to improve their own performance, and identify opportunities to improve capabilities to respond to real events.

Exercises are a great method to:

- Evaluate the preparedness program.
- Identify planning and procedural deficiencies.
- Test or validate recently changed procedures or plans.
- Clarify roles and responsibilities.
- Obtain participant feedback and recommendations for program improvement.
- Measure improvement compared to performance objectives.
- Improve coordination between internal and external teams, organizations, and entities.
- Validate training and education.
- Increase awareness and understanding of hazards and the potential impacts of hazards.
- Assess the capabilities of existing resources and identify needed resources.

Types of Exercises

There are different types of exercises that can be used to evaluate program plans, procedures, and capabilities.

- Walkthroughs, workshops, or orientation seminars.
- Tabletop exercises.
- Functional exercises.
- Full-scale exercises.

Walkthroughs, workshops, and orientation seminars are basic training for team members. They are designed to familiarize team members with emergency response, business continuity, and crisis communications plans and their roles and responsibilities as defined in the plans.

Tabletop exercises are discussion-based sessions where team members meet in an informal classroom setting to discuss their roles during an emergency and their responses to a particular emergency situation. A facilitator guides participants through a discussion of one or more scenarios. The duration of a tabletop exercise depends on the audience, the topic being exercised and the exercise objectives. Many tabletop exercises can be conducted in a few hours, so they are cost-effective tools to validate plans and capabilities.

Functional exercises allow personnel to validate plans and readiness by performing their duties in a simulated operational environment. Activities for a functional exercise are scenario-driven, such as the failure of a critical business function or a specific hazard scenario. Functional exercises are designed to exercise specific team members, procedures, and resources (e.g., communications, warning, notifications, and equipment set-up).

A full-scale exercise is as close to the real thing as possible. It is a lengthy exercise that takes place on location using, as much as possible, the equipment and personnel that would be called upon in a real event. Full-scale exercises are conducted by public agencies. They often include participation from local businesses.

Cities Readiness Initiative

Local and state agencies conduct joint Cities Readiness Initiative Full-Scale Exercises around the U.S. to assess the ability of personnel from different departments and agencies to collaborate in mass-dispensing of medications operations, implement a traffic control and security plan, and assess the ability of mass dispensing staff to receive on-site training.

The Centers for Disease Control and Prevention (CDC) Cities Readiness Initiative (CRI — http://www.bt.cdc.gov/cri/) is a federally funded program designed to enhance preparedness in the nation's largest cities and metropolitan statistical areas, where more than 50 percent of the U.S. population resides. Through CRI, state and large metropolitan public health departments have developed plans to respond to a large-scale bioterrorist event by dispensing antibiotics to the entire population of an identified Metropolitan and Micropolitan Statistical Areas MSA[2] within 48 hours.

Developing an Exercise Program

Develop an exercise program beginning with an assessment of needs and current capabilities. Review the risk assessment and program performance objectives. Conduct a walkthrough or orientation session to familiarize team members with the preparedness plans. Review roles and responsibilities and ensure everyone is familiar with incident management. Identify probable scenarios for emergencies and business disruption. Use these scenarios as the basis for tabletop exercises. As the program

2 This data is used to count the number of people living in a geographical area and or other data about a specific population. From the U.S. Census Bureau "A metro area contains a core urban area of 50,000 or more population, and a micro area contains an urban core of at least 10,000 (but less than 50,000) population". https://www.census.gov/population/metro/

matures, consider holding a functional exercise. Contact local emergency management officials to determine if there is an opportunity to participate in a full-scale exercise within your community.

Evaluating Exercises

Exercises should be evaluated to determine whether exercise objectives were met and to identify opportunities for program improvement. A facilitated "hot wash" discussion held at the end of an exercise is a great way to solicit feedback and identify suggestions for improvement (e.g., discuss what went right, what went wrong, what assets were sufficient, what were deficient, what can be done better, and other points) and allows the organization to update the plan more effectively.

Evaluation forms are another way for participants to provide comments and suggestions. An after-action report that documents suggestions for improvement should be compiled following the exercise, and copies should be distributed to management and others. Suggestions for improvement should be addressed through the organization's corrective action program.

Photo: Jacinta Quesada

Texas A&M Buses Helped Relocate Hurricane Victims

Following Hurricane Katrina in 2005, Transportation Services at Texas A&M University used 10 of its buses to carry arriving Hurricane Katrina evacuees from Kelly Air Force Base to shelters in San Antonio. The effort included a team of 23 student drivers, four managers, and four university police department representatives.

According to the *Aggie Hotline*, Rod Weis, who was director of transportation services, said his department quickly took action after receiving word that the Federal Emergency Management Agency (FEMA) needed assistance with the evacuation of 25,000 people from New Orleans to San Antonio. After receiving approval from the Texas governor's office, the buses departed to meet the first four plane loads of evacuees.

Source: Peter W. Lange, VP, Administration, Executive Director for Transportation Services; based on article in *Aggie Hotline*, Sept. 2, 2005. Full article: http://transport.tamu.edu/About/news/2005/05_9_2AggieKatrina.aspx

"Transportation, especially at an airport, can have a huge effect on an emergency situation. Our shuttle fleet is on standby for many in-flight emergencies. In any circumstances where there is a possibility of passenger evacuation, shuttle operations are placed on standby or into action. Examples of such circumstance include landing gear issues, smell of smoke in the cockpit or galley, flat tires, and even bird strikes."

Bruce Barclay, CAPP, Operations Manager, Salt Lake City Department of Airports

"The U.S. Federal Emergency Management Agency and Public Safety Canada have worked diligently since 2001 to develop standardized emergency management systems for both countries, with well-defined roles for emergency planners and responders. One of the outgrowths of this effort is a growing recognition of the critical role of support functions in emergency preparedness and response.

One of the most important support functions needed in an emergency is transportation. Without transportation, first responders can't respond, supplies can't be delivered, victims can't be evacuated, people can't be moved, and business can't operate. That simple fact makes fleet management a critical support function in an organization's emergency operations plan. As fleet managers, we all share a responsibility to help guide our organizations successfully through emergencies."

Bryan Flansburg, CAFM, *Director, Transportation Services, University of Colorado at Boulder*

RESOURCES & REFERENCES

Federal

- National Preparedness Goal
  - Online overview: http://www.fema.gov/national-preparedness-goal
  - Manual (PDF): http://www.fema.gov/media-library-data/20130726-1828-25045-9470/national_preparedness_goal_2011.pdf
- NIMS (http://www.fema.gov/national-preparedness/national-incident-management-system)
- FloodSmart (http://www.floodsmart.gov/)
- NFIP (http://www.fema.gov/national-flood-insurance-program-2/garages)
- http://www.fema.gov/library/viewRecord.do?id=1719
- http://www.fema.gov/protecting-your-businesses
- http://www.ready.gov/business-continuity-planning-suite
- http://www.ready.gov/campus
- http://www.dhs.gov/topic/plan-and-prepare-disasters
- http://www.dhs.gov/national-infrastructure-protection-plan
- http://www.dhs.gov/transportation-systems-sector
- http://www.fema.gov/national-response-framework-0
- http://www.phe.gov/preparedness/Pages/default.aspx
- http://www.dhs.gov/how-do-i/prepare-my-business-emergency
- http://emergency.cdc.gov/planning/

Private

- http://www.nfpa.org/aboutthecodes/AboutTheCodes.asp?DocNum=1600
- http://www.scnus.org/page.aspx?id=104616
- http://www.disasters.org/deralink.html
- http://www.wbdg.org/design/park_surface.php
- http://www.wbdg.org/design/secure_safe.php
- http://www.wbdg.org/design/park_basement.php
- http://www.wbdg.org/design/park_outside.php
- http://www.redcross.org/prepare/location/workplace

APPENDIX and SAMPLE PLAN EXCERPTS

- National Preparedness Goal (PDF) (Source: http://www.fema.gov/media-library-data/20130726-1828-25045-9470/national_preparedness_goal_2011.pdf)
- Federal Aviation Administration Sample Airport Emergency Plan (pages 1–40)
- Clemson University Draft Emergency Operations Plan Table of Contents (Source: Doctoral dissertation © of Geary L. Robinson, PhD)
- The University of Texas at Austin Severe & Inclement Weather Response Annex 2013 (draft) (Source: Gerald R. Harkins, Associate Vice President, Campus Safety and Security, the University of Texas at Austin)
- Ready Business ERP Form

Photo: Brussels Airport

Photo: Seaman Barry Riley

International Parking Institute

1330 Braddock Place, Suite 350

Alexandria, VA 22314

parking.org

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 27

White Paper: Residential Parking Permit Programs

KIMLEY-HORN

Parking Planning White Paper Series

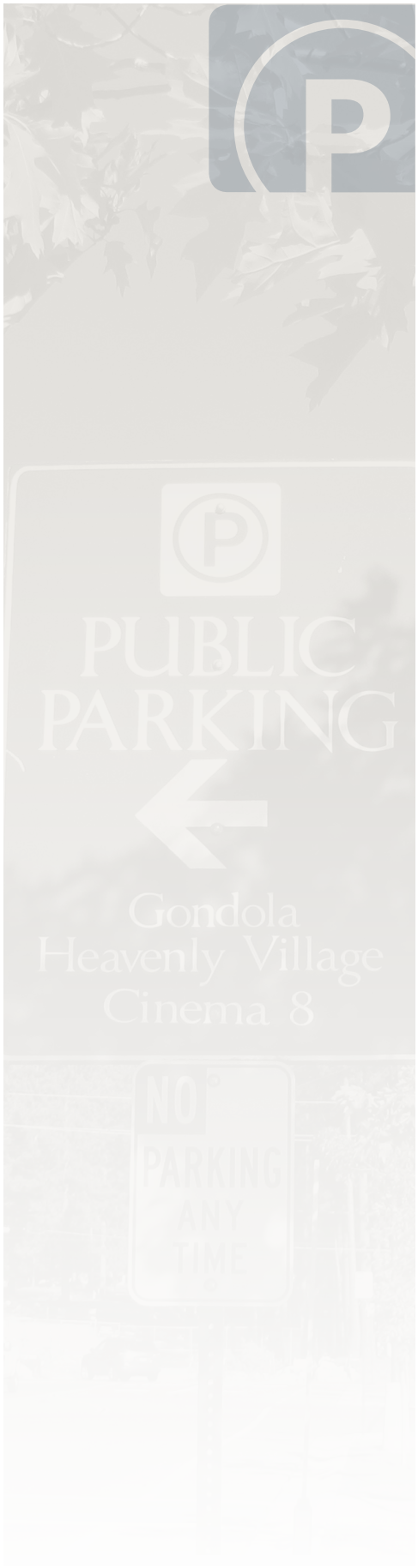
RESIDENTIAL PARKING Permit Programs

Kimley»Horn

Expect More. Experience Better.

RESIDENTIAL PARKING Permit Programs

Table of Contents



Introduction

This paper will describe Residential Parking Permit Programs (RPPP), including their need and applications, typical requirements for initial designation and implementation, and policies and procedures for identification and enforcement.

Increased local parking and/or the introduction of parking charges in business districts, hospitals, colleges, and universities has increased demand for free parking spaces off-site. Residential areas in close proximity to these parking generators often experience "spillover" parking from non-resident vehicles parking in front of their homes, especially during weekday hours.

Some of the potential parking generators in residential neighborhoods include:

- Commuters into central business districts (CBDs) or other commercial office districts.
- Retail establishment employees and their customers.
- College and university students, faculty, staff, and visitors since most colleges and universities charge a fee to park on campus.
- Public transit riders, for those residential streets near transit routes.
- Hospital staff and visitors, since many hospitals now charge a fee to park.
- Public schools, since most high schools have high numbers of students competing for smaller numbers of parking spaces.

In response to these issues, many municipalities have developed RPPPs to address parking encroachment into residential areas, typically by requiring special resident parking permits be displayed during certain hours while parked on specific streets. Such programs allow parking availability for residents while limiting non-resident parking on residential streets.

The goals of the residential permit program in Fort Collins, CO are described below:

"The Residential Parking Permit Program (RP3) is designed to make Fort Collins neighborhoods safe and pleasant places to live, work, and attend school by reducing on-street parking congestion. The program helps to provide close and convenient on-street parking for residents by reducing the volume and impact of non-resident vehicles in neighborhoods. It protects residential streets by using a system that limits parking in a neighborhood to only those residents and their guests with permits during the posted time limits."

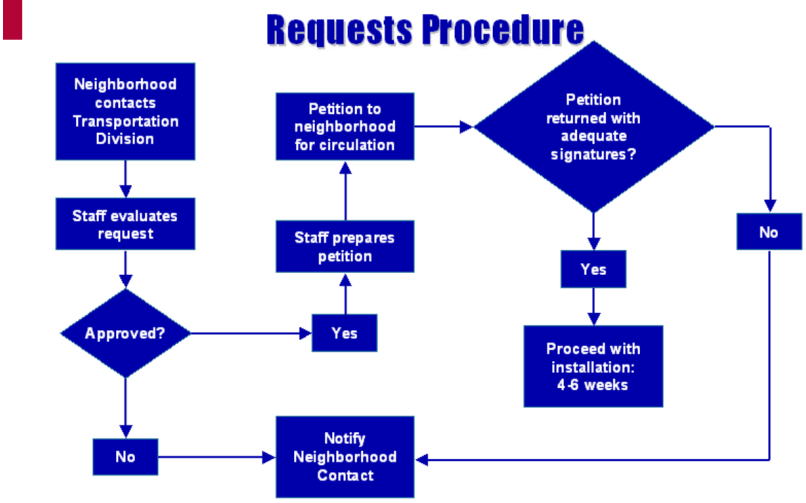
Residential Parking Permit Programs

Requirements/Guidelines for Residential Parking Permit Program Creation

Requirements by cities and counties vary somewhat, but most RPPPs require the following guidelines be met:

- Citizen participation is essential to the development of an effective RPPP.
  - The residents/neighborhood association must petition the local governing body to request implementation of an RPPP.
  - Governments normally require a certain percentage of residents to sign the petition to ensure there is popular support for the change.
  - The resident percentage necessary for signing the petition can range from 50% to 80%.
- The total number of street(s) affected must be identified.
- Governing bodies may restrict the petitioners on a street-by-street, block-by-block, subdivision, or other basis.
  - The block(s) surrounding the street(s) on which the RPPP is requested must be zoned residential.
  - The governing body should conduct a parking survey to verify one or more of the following:
    - At least "X"% (e.g., 33%) of vehicles parked on the affected street are registered to non-residents. This information can be verified by vehicle license/registration checks.
    - At least "X"% (e.g., 33%) are parked a minimum continuous number of hours (i.e., four hours or more). A vehicle inventory and turnover analysis can verify this information.
    - At least "X"% (e.g., 33%) are parked at least nine months out of the year (designed to include public school/college/university parkers).
    - A similar parking demand occurs on at least "X" number (e.g., five) contiguous blocks.
    - The residents petitioning the local government are willing to pay for the initial cost and installation of parking signs required to enforce the RPPP regulations. This requirement is not very common, however. When the cost of the program signage must be passed on to the residents, it is usually through residential parking permit fees.

The flow chart below depicts a typical approval process for a municipal RPPP.



Once the above requirements have been met, the municipality may approve the request for implementation of a RPPP.

Typical Process for Implementing a Neighborhood Parking Permit Program

The City

- Conducts a parking survey and gathers information to assess the need for a Neighborhood Parking Permit (NPP) zone.
- Develops a draft proposal (including zone boundaries, the type of zone, recommended parking restrictions, permits available, and other details). A neighborhood meeting may be held to assist in developing the proposal and receive public input.
- Modifies the original proposal if necessary.
- Holds a public hearing before the Transportation Advisory Board to review the proposal.
- Forwards Board recommendation and public hearing comments to the City Manager for review.
- The City Manager makes the final decision regarding the zone and informs the City Council.

RPPP Policies, Options, and Restrictions

RPPP permits are issued to residents by the municipality in order to restrict parking within the RPPP zone. Below are some typical permit issuance policies:

- Residents are issued a limited number of permits per household. The permit price can vary from no charge to $50 per permit per year or more.
- The number of permits issued can vary based on resident demand and lot frontage size/parking area within the permit zone.
- The price for the permits is normally based on whether or not the municipality wishes to recoup the cost of the program (signage, permits, and/or enforcement) from the residents.
- Short-term visitors are often accommodated by allowing for up to two hours of free parking without a permit.
- Longer-term visitors can be accommodated in several ways:
  - Some cities offer one visitor permit per household, either at no charge or at the prevailing rate.
  - Some cities offer visitor permits for up to 30 days at a time, normally at no charge.
  - Cities usually restrict the number of times a visitor permit will be issued to the same vehicle (i.e., once per year).
  - Some cities offer work permits for contractors or repair people needing parking for longer than the typical two-hour limit.

Permit Fees

The residential permit programs in general all have quite low fees, from free to $20 for the year. Many state laws regulate how much a municipality can charge for residential permits, limiting the price of the permit to a statutorily defined amount or the cost of issuing the permit. Many communities have found it politically undesirable to attempt to limit demand for parking in residential neighborhoods by increasing the price for existing residents.

In some cities, permit fees can run as high as $60 per year (San Francisco) or over $100 per year (Toronto, Canada). Some places structure fees so that second and third permits for a household are more expensive. For example, in Alexandria, Virginia, residential parking permits cost $15 for the first vehicle, $20 for the second vehicle, and $50 for each additional vehicle. This discourages households from parking multiple cars on the street.

RPPP Enforcement

The basis for any effective enforcement program is adequate signage restricting parking within the RPPP zone. Signage must indicate the type of permit required (i.e., zone-specific), the hours of enforcement, and the parking time limit (if applicable).

Enforcement hours are normally 8:00 a.m. to 6:00 p.m. weekdays, depending on the nearby parking demand generator and enforcement capabilities. RPPP applicants must prove residency, such as by drivers license, vehicle registration, and utility bills, in order to obtain permits.

Most cities require payment in full of any outstanding parking tickets issued to permit applicants before any RPPP permits are issued/sold.

Enforcement should be aware that it is not uncommon for residents to sell their permits to non-residents, sometimes for a large profit. This is especially true in neighborhoods near a college or university.

RPPP FAQs

A best practice when introducing a new RPPP is to provide a well-developed and easy to understand "Frequently Asked Questions" or FAQ Brochure. Questions typically addressed in an FAQ might include:

- What is the process for initiating a residential parking permit area?
- Who initiates the process to designate a permit area?
- Who is eligible for a residential parking permit?
- What areas are eligible to apply for a residential parking permit area?
- What qualifies a neighborhood to be eligible for RPPP?
- How do I obtain parking permit(s) for my vehicle(s)?
- Does the parking permit allow me to park my vehicle anywhere?
- Is my parking permit valid in other parking permit zones in the City?
- How long is a Residential Parking Permit Valid?
- Is there a charge for the parking permit?
- I own a residence located in a parking permit zone but do not live there. I lease the property to others. Can I obtain a parking permit?
- What is a guest permit?
- Is there a fee for a guest permit?
- Do I have to obtain the permit(s) for my guest or can my guest apply for the permit(s)?
- What information must I present to obtain my parking permit or a permit for my guest's vehicles?
- Can I get a permit for someone who is doing work at my residence?
- My business is in one of the parking permit zones. Can my employees and I obtain parking permits for our vehicle(s)?
- How is the parking permit program enforced?
- Is there a grace period from the date when my permit expires?
- What happens if permits are obtained or used illegally?
- How do I get permits for my block?
- How does a resident obtain an application form?
- Who must sign the petition?

- Where does a resident submit the application and petition form?
- Once the application and petition are submitted, what are the next steps in designating a permit area?
- Are holidays or special events exempt from these restrictions?
- Do the restrictions affect delivery, service, or emergency vehicles?
- Who can purchase permits?
- What happens once the area is designated?
- Which City departments are involved in the Residential Permit Parking Program?

RPPP Permit Display Instructions

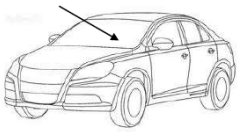
To improve compliance and reduce citations related to improper display of permits, some communities provide specific permit display instructions (see example from Madison, WI below).

ATTACH PERMIT IN LOWER LEFT HAND CORNER OF THE WINDSHIELD (DRIVER'S SIDE).

The Madison Police Department may issue a ticket if the permit is improperly displayed or unreadable, there is more than one permit displayed, or if the license plate or vehicle type do not match the permit information in the City's permit database.

If you need a replacement permit for any reason during the permit year (new vehicle or plate, move, broken windshield, etc), **you must remove the sticker and apply for a replacement. Replacement permits will not be issued without the original permit returned.**

Place Permit Here



All vehicles except motorcycles

Place permit on fork

Motorcycles

Contact the City Parking Utility with questions about the residential parking program at parking@cityofmadison.com or (608) 266-4761. The office is located at 215 Martin Luther King Jr. Boulevard, Suite 100, and is open Monday through Friday from 7:30 a.m. and 4:30 p.m.

RPPP Conclusions

RPPPs can be an excellent tool to ensure adequate parking for residents on streets in front of their homes and to encourage non-resident parkers to park in more appropriate areas.

While protecting parking spaces for residents is typically the primary purpose of an RPPP, communities experiencing severe parking shortages or featuring residential areas blended with commercial areas can be differently motivated. These conditions are not uncommon in transit oriented developments where on-street parking is allowed to apply toward residential parking requirements. In these situations, maximizing the use and turnover of public on-street parking during business hours and ensuring availability of parking for residents after business hours can be dual program goals.

An often overlooked aspect of RPPPs is that they can generate additional parking revenue for the demand generators in an area by eliminating nearby free parking options (assuming paid parking is in place within the area).

RPPPs are sometimes seen as a bureaucratic headache requiring residents and their guests to obtain permission to park in front of their own homes, while prohibiting other citizens from parking on public streets. Once a petition process has been initiated by area residents and a parking survey has been completed, assuming the utilization data indicates the need for such a program, the decision to implement an RPPP should consider these other factors.

Sample Documents

A variety of sample RPPP documents from several U.S. cities is provided on the following pages. These samples illustrate the type of information typically provided by a municipality to explain the program's goals and processes.

Resident Information/Application

Sharing the Streets

In 1996 the City of Boulder adopted a new Transportation Master Plan (TMP) with the support of its citizens. One item addressed was the need to manage parking and balance transportation demands while preserving the quality of life in Boulder.

In this effort, the City developed a number of options, among them the use of residential permit parking system. Residential permit parking programs have been used successfully in cities nationwide and are most often implemented in neighborhoods adjacent to major employment and activity centers.

Preserving the Character of Our Neighborhoods

The Neighborhood Permit Parking Program (NPP) is designed to make Boulder neighborhoods safe and pleasant places to live, work and attend school by encouraging less driving and reducing on-street parking congestion. Each neighborhood in the program has public parking limits that are unique to that area and take into account the neighborhood's particular needs.

PARKING SERVICES P City of Boulder

RESIDENT
NEIGHBORHOOD PERMIT PARKING (NPP)

INFORMATION & APPLICATION

Downtown University Hill Management Division
and Parking Services
1500 Pearl Street, Suite 302 • Boulder, CO 80302
Phone: (303) 413-7300 • Fax: (303) 413-7301
www.ci.boulder.co.us/duhmd

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RESIDENT NPP APPLICATION

PLEASE PRINT ___ Owner ___ Tenant

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: (H)_____ (B) _____

Fax: _____ (optional)

Email: _____ (optional)

Under the Boulder Revised Code, 1981, a vehicle with a valid, properly affixed residential permit will be exempt from the NPP zone time limit restrictions where there is a Permit Excepted sign in the zone where the permit was issued. I understand that the permit does not exempt the permitted vehicle from all other parking restrictions or laws, or from restrictions posted on other NPP zones.

I will affix the permit issued to me to the interior lower left-hand corner of the windshield in the vehicle for which it is issued. I will remove the decal (permit) if the vehicle is sold or transferred to another. Should the decal (or pass) be lost, I will report it to Parking Services within three (3) business days.

I will retain possession of the visitor pass(es) issued to me. Visitor passes can only be used for 24 consecutive hours while the visitor is on the premises of the address the permits were issued. Abuse of any permit issued by the City of Boulder can result in the revocation of **Resident** permits for up to one year.

_____ _____
Applicant Signature Date

FOR OFFICE USE ONLY

Issued by: _____ Date:_____ NPP Zone:_____

Proof of residency: ☐ Proof of vehicle registration: ☐

License Plate _____ Vin._____ Exp. Mo/Yr:____

License Plate _____ Vin._____ Exp. Mo/Yr:____

Vehicle 1 Decal #_____ Vehicle 2 Decal #_____

Vehicle 3 Decal #_____ Vehicle 4 Decal #_____

Visitor permit #1 _____ Visitor permit #2 _____

Resident NPP Information

FEES AND PAYMENT METHODS
- $12 per vehicle per year.
- Accepted payment methods include: cash, check, Visa and MasterCard.

ELIGIBILITY (Who can get a NPP?)
- Residents living in an NPP zone
- Businesses located in an NPP zone.
- Nonresident commuters (limited availability).

REQUIREMENTS
- Complete the attached NPP Application.
- Application requirements include:
  - **Proof of residency** (current lease, recent utility bill, or vehicle registration).
  - **Current Vehicle Registration** in your name. If your last name is not on the registration, you must provide a statement from the owner verifying you as the primary driver. The statement must include the owner's name, address, telephone number and signature.

RESTRICTIONS
- Vehicles without parking permits may park in an NPP zone up to the posted time restriction one time per day. After parking in a zone for the posted time limit, vehicles must leave the zone and may NOT park in that zone again on the same day.
- Vehicles with NPP permits are exempt from posted NPP parking restrictions.

PERMITS PER UNIT
- Mapleton, High /Sunset 3 unrelated people per unit.
- Columbine, Fairview, Goss Grove, University Hill & Whittier: 4 unrelated people per unit.

Resident NPP Information

VISITOR AND GUEST PASSES
- Two non-replaceable visitor passes are available per unit with purchase of a permit.
- Use of the visitor pass is valid only while the visitor is on the residential premises.
- Visitor passes shall not exceed 24 consecutive hours and are to be used within a one-block radius of the residence address.
- Guest passes are available on an as-needed basis for a specified time period.

PERMIT DISPLAY
- Affix the resident permit to the interior lower left-hand corner of the windshield.
- Remove the permit if vehicle is sold or transferred.
- Visitor and Guest Passes are hangtags and must be hung from the rearview mirror with the zone name facing out while the vehicle is in the zone. For safety, please remove when driving.

LOST PERMITS
- Report lost permits or passes to Parking Services within three business days.

NPP ZONES & PUBLIC PARKING TIME LIMITS

Columbine	9am – 5pm Mon - Fri	2 hour limit
Fairview	8am – 3pm School Days	2 hour limit
Goss Grove	8am – 6pm Mon - Fri	2 hour limit
High / Sunset	8am – 6pm Mon - Fri	2 hour limit
Mapleton	8am – 6pm Mon - Fri	3 hour limit
University Hill	9am – 5pm Mon - Fri	2 hour limit
Whittier	8am – 8pm Mon - Fri	3 hour limit
Whittier Night	8pm – 12am Fri & Sat	3 hour limit

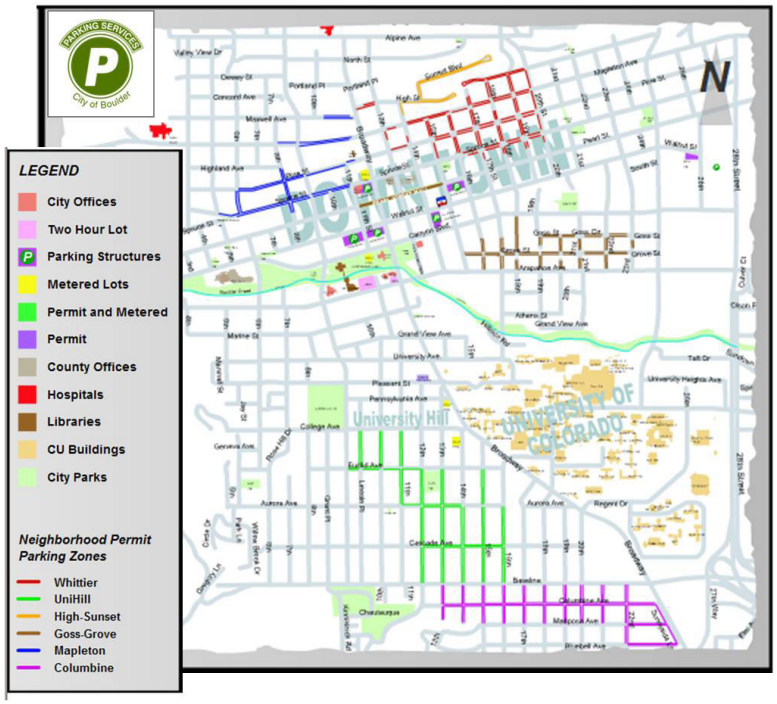
NPP RENEWAL DATES

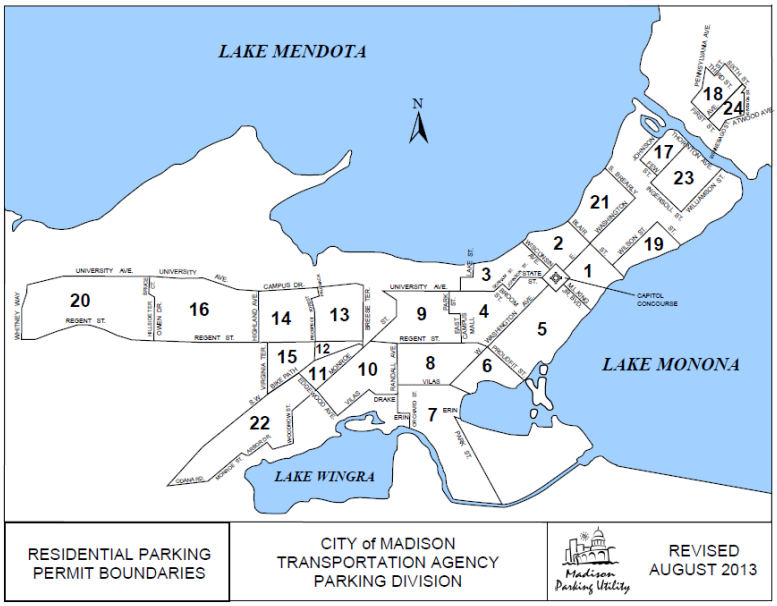
Columbine & Goss Grove	August 31st
University Hill	September 30th
High / Sunset & Whittier	October 31st
Fairview & Mapleton	November 30th

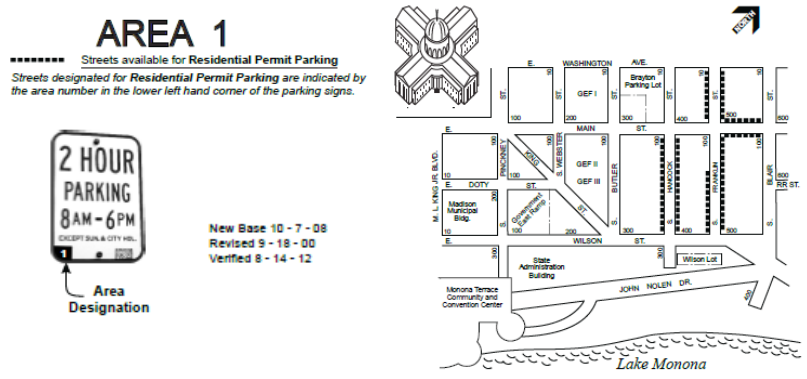
More Information: Downtown University Hill Management Division and Parking Services
1500 Pearl Street, Suite 302 • Boulder, CO 80302
Phone: (303) 413-7300 • Fax: (303) 413-7301 www.ci.boulder.co.us/duhmd

9/10/2004

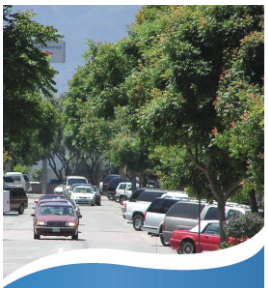
NPPP Area Map







NPPP Brochure



RESIDENTIAL PARKING in Fort Collins

The Residential Parking Permit Program (RP3) is designed to make Fort Collins neighborhoods safe and pleasant places to live, work and attend school by reducing on-street parking congestion.

The program helps to provide close and convenient on-street parking for residents by reducing the volume and impact of non-resident vehicles in neighborhoods. It protects residential streets by using a system that limits parking in a neighborhood to only those residents and their guests with permits during the posted time limits. Each neighborhood in the program has its own unique parking requirements, and solutions are tailored to each area to take into account the neighborhoods' particular needs.

City of Fort Collins
Parking Services
215 North Mason Street
PO Box 580
Fort Collins, CO 80522-0580

City of Fort Collins
Residential PARKING PERMIT **Program**
City of Fort Collins Parking Services
fcgov.com/parking/residential
970.221.6617

SETTING UP RESIDENTIAL PERMIT PARKING in your Neighborhood

The Residential Parking Permit Program (RP3) is voluntary and is only established in neighborhoods where residents request the program and there is a measurable parking problem:

- Resident contacts Parking Services about their neighborhood parking problem.
  - Call: 970-416-2036
  - Email: jmoyer@fcgov.com
- City Staff verifies that a parking problem exists by monitoring the neighborhood.
- City Staff defines boundaries and other characteristics of the program for the neighborhood.
- The City contacts residents to give them the opportunity for input and to determine if the program will work in their neighborhood.
- If more than 50% of responding residents are in favor of the program then the implementation process will begin.

City of Fort Collins Parking Services

How the **RP3** works

- Residents who live in a designated permit district may obtain one free permit and may purchase additional permits.
- To obtain your parking permit:

Come to Parking Services located at 215 N. Mason

Bring with you:

- Valid vehicle registration
- Current driver's license
- One of the following proofs of residency bearing your name and address within the permit zone:
  - Gas, Electric or Telephone Bill
  - Cable Television Bill
  - Monthly Bank Statement
  - Credit Card Bill
  - Water and Sewer Bill
  - Notarized/signed Rental Agreement

**Note: If your vehicle registration or driver's license contains your name and address within the permit zone then you do not need to provide another form of residency.*

Guest Permits

- Residents in a permit parking zone may also obtain short-term guest passes for visitors.
- To obtain a permit for your guest you must supply the following:

License plate number

State of issue

Vehicle make

Color

Body style
- Sedan
- Pickup
- Motorcycle,etc.

FOR MORE INFO:
In person: 215 N. Mason
Call: 970-221-6617
Email: jmoyer@fcgov.com
fcgov.com/parking/residential

NPPP Required Documentation Checklist

City of SACRAMENTO

APPLY FOR A RESIDENTIAL PERMIT

Use the chart and definitions below to determine the Residential Permit type that you may qualify for. Then click on that permit type to apply. Instructions are on the application.

DMV Registration: A valid DMV registration reflecting resident's name and the address where the residential permit will be registered to. Local post office box is acceptable only with proper proof of permit address reflected on registration.

Proof of Residency: Current (last 45 days) utility bill, phone bill, cable bill, bank statement or insurance declaration page. Local post office box is acceptable with proper proof of address reflected on the bill or statement.

*Chart below reflects eligibility in general. Each application is still subject to review for correct documentation and limits to the number of permits per household.

Documentation you have...	Permit Type*		
	VEHICLE	VISITOR	TEMPORARY
Valid DMV Registration and Proof of Residency	•	•	
Valid DMV only. No Proof of Residency			•
Proof of Residency only. No DMV Registration		•	•
Military Personnel with Proof of Residency	•	•	
Property Owners with Current Property Tax Statement		•	
Business Owners with DMV Registration and Proof of Residency for business address	•		
Proof of Residency only. Accommodating Short-Term Visitors (Guests, Contractors, etc.)			•
Proof of Residency with new vehicle. Waiting for DMV Registration		•	•
New Resident. No DMV Registration or Proof of Residency			•

Special Permit Needs	VEHICLE	VISITOR	TEMPORARY	
Leased or Company Vehicles	•			Company Vehicle Form Required
Student (college or university) with Proof of Residency only. No DMV Registration.			•	Subject to Student Temporary Permit Requirements
Home Health Care Providers			•	Please call 916-808-5117

Permit Type	Description and Required Documents	Limit	Special Requirements
Student Temporary	Available to residents who are students currently enrolled in a local college or university and who may not have DMV registered to their residence. Students must apply in-person at the Revenue Division and must have all required documentation ready upon application. • Student ID • Current Semester or Quarter Course • DMV Registration • Proof of Residency (i.e. SMUD, PG&E, bank statement) • Temporary Permit Application	One per student	Must be renewed on a semester basis
Home Health Care	Residents who require a health care provider to visit their residence may be eligible to obtain a Home Health Care Permit. These permits and their expiration dates are determined on a case-by-case basis. These permits are placards which are not license-plate specific. The permit must be displayed on the inside of the vehicle on the driver's side of the dashboard. The VIN number of the vehicle must still be visible when placing the placard on the dashboard. For a list of required documentation, please click on the link below.	Case-by-case basis	To apply please call 916-808-5117
Leased or Company Vehicles	• Current DMV registration • Proof of Residency: Current utility bill (last 45 days) reflecting business name and address where the permit will be registered to. • Declaration of possession of a leased or company-owned vehicle either on company letterhead or on a completed Company Vehicle Verification Form.	Vehicle Permit	

DOWNTOWN
STRATEGIC PARKING PLAN

PARKING STRUCTURE
Design Guidelines

Kimley»Horn
Expect More. Experience Better.

Table of Contents

Introduction

This document was developed for the Capital City Development Corporation as a guide for future parking structure design in Downtown Boise. It contains information to help developers and designers incorporate parking structure components into proposed projects. The concepts presented will help produce functional, well-designed and patron friendly parking structures that will become valued infrastructure elements for the Downtown. The concepts are presented so that common design mistakes can be avoided by being addressed early in the design process. The document is based on internal *Guidelines for Functional Parking Design* and should be periodically updated to reflect state-of-the-art parking design practices and principles. It includes the following categories:

- Project Delivery
- Sustainable Design - LEED
- Site Requirements
- Site Constraints
- Concept Design
- Circulation and Ramping
- Access Design
- Parking Geometrics
- Parking Layout Efficiency
- Pedestrian Requirements
- Accessible Parking Requirements
- Safety and Security
- Lighting
- Signage and Wayfinding
- Drainage
- Open or Enclosed Parking Structure
- Structural Systems
- Durability Design
- Other Considerations

In any future parking development project it is highly recommended that qualified parking structure design specialty firm be engaged in the project due to the unique characteristics and design expertise required to develop a successful project.

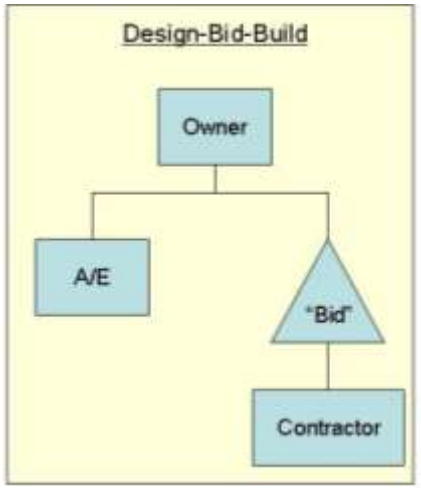
Project Delivery

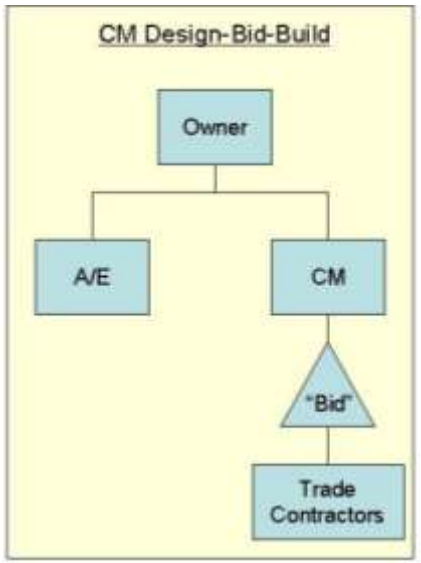
There are four primary project delivery methods commonly used to design and construct parking structures. Two Design Professional's Handbooks titled the *Design-Build Project Delivery* and the *Design/Contract-Build Project Delivery,* published by the American Council of Engineering Companies (ACEC), are helpful references.

Each method is described on the following pages, along with a graphical depiction of the contractual relationships for each:

1. *Design-Bid-Build* (D-B-B) projects are those where the owner selects and contracts with the lead designer (Parking Consultant or Architect/Engineer). They in turn represent the owner in defining the project and preparing drawings and specifications to meet the owner's needs for competitive bidding to contractors. Often on public projects the owner is required to select the lowest "responsive and responsible" bid, with the contractors' qualifications often not given consideration. The D-B-B method is sometimes referred to as the "traditional" process and is still the most common method.

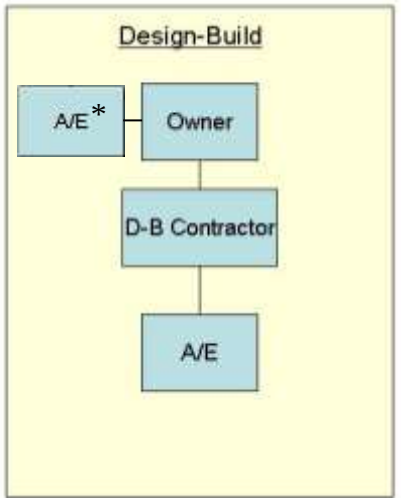
2. *Construction Manager - Design-Bid-Build* (CM D-B-B) is where the owner selects and contracts with the A/E who represents the owner in defining the project and preparing drawings and specifications to meet the owner's needs for bidding. However, the owner also retains a construction manager (CM) who works with the A/E during the design phases, sets the project schedule, and performs construction cost estimates. The CM bids the work to subcontractors for the various trades. This is a better method than D-B-B for projects where the owner wants fast track or phased construction.



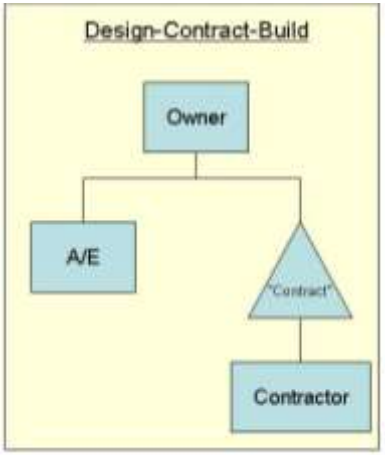


3. *Design-Build* (D-B) are cases where the owner retains a D-B contractor who in turn retains the A/E so there is a single entity responsible for both design and construction. Often the owner prepares or retains another A/E to prepare design build criteria documents as described below. Often, the owner can select the D-B team based on qualifications and cost, consistent with the bidding documents. There has been more interest in D-B type projects recently because of owners who perceive benefits regarding cost, schedule, and risk management.

4. *Design-Contract-Build* (D-C-B) are projects where the owner selects and contracts with the A/E. The A/E prepares preliminary documents that are the basis for the owner contracting with the contractor early in the design process, rather than waiting for final design documents to be prepared as for D-B-B. This method combines the advantages of the D-B-B and D-B methods while reducing many disadvantages to allow the owner to have the most qualified A/E and contractor involved in their project from the design phase through the completion of construction.



*: Optional but recommended; A/E prepares design build criteria documents that are basis for contract with contractor.



In recent years there has been an increasing interest and use of Design-Build in the construction of parking structures. Legislation has been enacted in many states to allow D-B to be used by public entities because prior laws required publicly funded construction contracts to be awarded based upon completed design documents.

Advantages of Design Build:

- Owner has a single point of responsibility for design and construction.
- Potential for better design and construction coordination because the A/E is working for the contractor.
- Owner does not have to arbitrate disputes between the A/E and contractor.
- Owner reduces their risk because the D/B contractor is responsible for errors or omissions in the design documents.
- Could be less administrative burden on the owner.
- Potential for accelerated schedule because the contractor is onboard at the beginning and because of the overlapping of design and construction work.
- Potential for lower costs due to the contractor being in greater control of the project and due to the accelerated schedule.
- Costs are well defined earlier in the process

Disadvantages of Design Build:

- The D-B contractor has the incentive to complete projects faster and less expensively which can mean reduced quality of materials and workmanship.
- The owner has less involvement and control of the design because the A/E represents the D-B contractor's best interests, not the owner's. Not only is this a disadvantage for the owner, but it creates a difficult conflict of interest for the A/E.
- The owner does not benefit from independent advice and input from the A/E and contractor.
- Greater definition of the project is required up front to define goals, objectives, and minimum requirements for project function, appearance, quality, materials, operation, etc. prior to bidding to D-B teams.
- More risk for D-B teams, which can negate the potential cost saving opportunities.

When owners decide that D-B is right for their project, they can have a better chance of achieving a successful project utilizing the following procedures.

Recommendations Regarding the Design-Build Delivery Method:

1. The owner should retain an A/E at project initiation to prepare the D-B criteria documents. This allows the owner to have more input into the concept design and set standards and criteria for the project. Also, due to the uniqueness of parking structures, it is important to have the A/E led by a parking consultant or for a parking consultant to have a significant role on the design team.
2. D-B criteria documents should clearly define the project scope, function, appearance, quality, materials, and operations. The level of completeness of these documents varies, but generally they are in the 10 to 30 percent range (between Schematic Design and Design Development level of completeness).

3. The owner should use a very transparent selection process to hire the D-B contractor, using the D-B criteria documents as the basis of the Request for Qualifications/Proposals (RFQ/RFP).

4. The selection process should consider the D-B teams' technical qualifications and experience in addition to cost. Typically there is a weighting of selection criteria such as the experience and expertise of the firms and key personnel making up the team, experience of the team working together, technical merits of design, project appearance, quality and safety programs of the contractor, references, schedule, and cost. The selection criteria and weighting should be defined in the RFQ/RFP.
5. The owner's A/E who prepared the D-B criteria documents should continue on during the final design and construction to represent the owner's interest and help assure that the design and construction are completed in conformance with the D-B criteria documents.

Parking structure built for Baylor University using the Design-Build delivery method

As an alternative to using the D-B method, the D-C-B or CM methods can often result in a project that meets the owner's best interests because:

- The A/E contracts to the owner, thus representing their interests, not the contractors, which should enhance quality
- Design decisions can more easily be made that are in the best long-term interest of the owner, considering factors that will provide the lowest life cycle maintenance or operational cost, rather than emphasizing those that just provide the lowest first cost or schedule advantage
- The CM or contractor is onboard early in the design process so the A/E and contractor collaborate during design, enhancing innovation and opportunities to consider the contractor's cost saving ideas
- Similar schedule and cost advantages compared to D-B.
- Less risk for all parties as responsibilities can be allocated where they most belong

Successful parking structure projects have been completed using all four of the construction methods discussed above. Understanding the advantages and disadvantages of each and following a process to address them will help assure that the completed project is a success for the user, owner, community, designer and builder.

Sustainable Design and Accreditation

While it is possible for parking structures to achieve certification, typically only occupied buildings receive certification for their sustainable design through the U.S. Green Building Councils (USGBC) Leadership in Energy and Environmental Design (LEED) accreditation program. However, parking structures that are part of a mixed use project can help attain LEED points for the entire building project. The fact that stand-alone parking structures are generally not eligible for LEED certification should not discourage including sustainable design elements in parking structures.

Note: The Green Parking Council was recently acquired by the Green Building Certification, Inc. (GBCI), the certification body for US Green Building Council's (USGBC) global LEED green building rating system, which will now administer the Green Garage Certification Program.

Examples of sustainable design features for parking structures include:

- Sustainable Site Development
  - Green roofs
  - Solar panel sunshades on the top levels
  - Alternative transportation accommodations
- Water Savings
  - Water-efficient landscaping
  - Irrigation using non-potable water
  - Innovative technologies for water retention/detention
- Energy Efficiency
  - Energy efficient light sources such as natural lighting, fluorescent, induction, and light emitting diodes (LED)
  - Photovoltaic solar panels
  - Computerized lighting controls and voltage reduction

Materials and Resources Selection

- Reuse of existing facades or shell
- Use of recycled materials such as silica fume, fly ash, and steel
- Carbon fiber reinforcement
- Thin brick façade panels
- Recycled rubber

- Indoor Environmental Quality
  - Low VOC products (e.g., paint, sealers and coatings)
  - CO monitoring and venting
  - Maximum natural ventilation and lighting (e.g., interior light wells)
  - Sustainable cleaning products
- Innovation and Design Process
  - Multi-modal facilities
  - Automated parking facilities on smaller site footprints
  - Designs for 75-100 year life
  - Bicycle storage lockers

Sustainable Parking Operations and Management

This chapter identifies the many areas that can be addressed when a program wishes to enhance the sustainability of their parking operations program. Ideas are presented for the parking operator or owner to consider, whether the parking system includes one or multiple facilities, and whether it is an established system or a new one.

In the introduction to the Green Parking Garage Certification manual it is noted that "as an asset class and building type, historically parking has lagged in the sustainability movement. Yet, parking and mixed-use structures constitute a substantial portion of the built environment. Additionally, parking and transportation have significant environmental impacts, especially regarding carbon emissions, pollution, and fuel consumption."

Parking sits at the critical intersection of the built environment and transportation modes. As such, parking structures create new opportunities to advance sustainability – both in how we plan, design, and maintain parking structures (the built environment) and our commuting and travel options (transportation modes).

Note: A more comprehensive discussion of these concepts as well as a structured approach to developing a parking operations and management program that is designed to meet specific sustainability goals can be found in the book "The Sustainability of Parking" jointly published by the International Parking Institute and the National Parking Association. (See CHAPTER 5, Sustainable Parking Operations and Management.)

It should be noted that, while this chapter references programs geared toward reducing greenhouse gasses and other climate change related issues, we are not saying that carbon emission reductions is necessarily the ultimate goal, but that it is one example of "measurable outcomes" if your program has adopted a climate change based philosophy. Many other ways to quantify sustainable parking and transportation program impacts exist and more are being developed as these programs evolve.

Sustainable Parking Operation and Management Checklist

The following check list of sustainable parking and transportation demand management strategies was developed after reviewing several current texts on this topic as well as reviewing programs such as LEEDs, Green Globes and the Green Parking Council. This checklist provides a wide range of options in a number of categories designed to promote:

- Increased energy efficiency and performance
- Reduced environmental impact
- Efficient parking space management
- Integrated sustainable mobility services and technologies
- Enhanced performance as mobility hub
- Stronger community relationships

The Green Parking Council uses a standard that is organized into four major categories: Management. Programming Technology/Structure Design and Innovations.

- Management highlights ways in which garage operations can maximize the use of a parking asset while minimizing waste. Embracing these practices ensures facility staff utilizes resources to their full potential.
- Programming guides garages to new revenue sources, greater customer satisfaction and stronger community relations. Green garage programs ensure effective vehicle ingress/egress, provide access to alternative mobility solutions, and leverage the garage's potential as a public space.
- Technology and Structure Design outlines the physical attributes a garage can deploy to increase energy efficiency, lower waste and support customer mobility choice.
- Innovations focuses on emerging sustainability initiatives and concepts that while not yet in the mainstream usage provide creative ideas and inspiration for potential future adoption.

The Sustainable Parking Operation and Management Checklist is organized into the following categories:

1. Planning
2. Parking Management
3. Facility Design/Layout
4. Demand Reduction / Transportation Demand Management (TDM)
5. Alternative Transportation Support Programs
6. Wayfinding and Parking Guidance
7. Use of Recyclables
8. Energy Savings/Generation Strategies
9. Water Management
10. Facility Maintenance and Cleaning
11. Electric Vehicle Charging
12. Green Garages

1. Planning

- **Integrated Parking and Transportation Planning**
  - Develop a parking strategic plan in conjunction with a larger community-wide transportation plan
- **Parking Requirements or Guidelines**
  - Ensure parking requirements or guidelines (where exempt) are appropriate and "right-sized" for the environment
- **Flexible Zoning Code Standards**
  - Adopt flexible zoning code standards that take multiple factors into account
- **Environment Specific Parking Ratios**
  - Develop a parking space-to-gross square foot (GSF) ratio goal that reflects "essential need"
  - Use the target ratio in parking planning appropriate for the environment
- **Shared Parking**
  - Promote shared parking whenever possible

- Utilize the ULI "Shared Parking Model" to promote the "rightsizing" of parking development, (taking advantage of complementary peak parking accumulation patterns by certain combinations of land-uses when the parking resources can be effectively shared.
- Encourage and design parking facilities to support shared parking

- **Parking Location Planning**
  - Consider providing public parking in locations that strategically supports an area or district
  - Plan for some additional public supply when a new development is created to anticipate adaptive reuse and in-fill projects in the area
  - Strategically consider the proximity of parking facilities to transit resources to promote a "Park Once" environment.
- **Life Cycle Cost Assessment**
  - Conducting a life cycle cost assessment especially of durability design elements, may increase initial facility development costs, but can provide significant savings in terms of long-term life cycle costs for a parking facility.

2. Parking Management

- **Charge for Parking**
  - Charging market rates for parking makes the public aware of the fact that parking is never free and promotes consideration of alternative
  - Implement "Demand-Based Parking Pricing" strategies
  - Coordinate on and off-street parking rates
    - Set pricing for on-street parking to promote short-term, high turnover parking
    - Set off-street pricing to encourage longer-term parking
- **Develop a parking allocation program based on "essential need".**
  - The way we allocate our resources gets to heart of a parking program's philosophy and core principles. If sustainability is considered a core value, then decisions related to parking resource allocation should reflect sustainability principles. For example, at the Seattle Children's Hospital, all parking is provided only on a daily fee basis (monthly parking charges were eliminated. With no sunk costs

related to monthly parking passes, other commute options are encouraged.
- Develop parking policies designed to meet the needs of multiple parking patron types (i.e. commercial, retail, residential, etc.)

- **Reserved Parking Areas**
  - In general the use of "reserved parking" is discouraged in that it promotes inefficiency in utilizing available resources and limits the ability to share and over-sell spaces
  - Implement or expand reserved areas for car/vanpools
  - Implement or expand reserved areas for hybrid/low emission vehicles
- **Discounted Parking Rates and special offers**
  - Offer "Clean Air Car Discounts" or "Green Parking Permits" (i.e., reduced parking rates) for car/vanpools
  - Offer "Clean Air Car Discounts" or "Green Parking Permits" (i.e., reduced parking rates) for hybrid/low emission vehicles
- **Technology**
  - Help drivers exit the garage with little or no idle time with traffic control (i.e. pay-on-foot kiosks, automatic vehicle identification (AVI) technology, etc.)
  - Evaluate space availability systems to reduce the search time for spaces within parking facilities
- **Special Programs / Events**
  - Participate in annual events such as "Parking Day" to promote awareness of program alternatives
  - Offer tire inflation stations to encourage proper tire pressure which can contribute to increased fuel economy
  - Work with local TMAs or Transit Agencies to develop and promote "Transportation Fairs" or other community-based programs to educate and encourage the use of transportation alternatives

3. Facility Design/Layout

- **Facility Design**
  - Consider "Green Roofs" (vegetation), "Blue Roofs" (retains water), or "Cool Roofs" (roof coated with a light colored, solar reflective materials)
- **Facility Lighting**
  - Light with energy-efficient fixtures / Reevaluate lighting types (consider replacement with LED or fluorescent lights to reduce power usage)
  - Develop a fluorescent lamp recycling program
  - Stain or paint interior parking garage surfaces to maximize reflectivity and enhance facility lighting without increasing energy costs
  - Consider the use of sensors/timers to reduce light levels in certain zones when not in use, or during daylight hours
  - Evaluate individually powered solar parking lot lights
- **Parking Layout**
  - Assess current parking space layouts, and consider options to maximize use of existing spaces

4. Demand Reduction / Transportation Demand Management (TDM)

- **Evaluate changes to parking pricing that could reduce parking demand**
  - Belong to an organized Transportation Management Association
  - Provide easy access to alternatives
  - Consider restricting parking availability
  - Offer discounted transit passes and sell them along with parking permits
  - Develop a "commute options" program to make patrons more aware of the alternatives to driving alone
  - Offer a "parking Cash-Out" option
    - Commute bonus for alternative commute—up to $65/month (pre-tax deduction)

- Develop an on-line commute management system that allows employees to claim commute bonus, track parking charges and plan alternative commute trips and find carpool/vanpool partners.
- Offer an option to the traditional "monthly parking contract" – Consider offering a "Parking Scratch-off Card"
  - "Unbundle" monthly parking by offering a punch card option instead of a traditional access card
  - Drivers only pay for days they drive
  - Creates an incentive to consider alternatives to driving

Support Active Transportation Program Development

- Promote zero-impact modes of travel
- Add or expand secured parking facilities for bikes
- Company bike or a free bike for an employee who commits to bike to work at least 2 days/week
- Implement a program of providing temporary bike racks to handle seasonal demand peaks for bike parking. The temporary bike rack pictured to the right takes up only one on-street parking spaces
- Implement or participate in promoting a bike-share program
- Offer parking for bicycles
- Offer bike sharing (or have one nearby)

Marketing and Communications

- Improve marketing of transportation alternatives
- Improve TDM marketing outreach to include direct participation in all new student and employee orientations
- Solicit and convey vanpool and bus club customer testimonials about their positive experiences as members
- Solicit/Expand transportation department's participation in the larger community "Sustainability Committees" or "Transportation Master Planning processes"
- Promote an increase in funding for pretax transit and downtown shuttle programs
- Generate/Expand car-sharing program participation through user-based promotional efforts

- **Fleet Management**
  - Reduce campus fleet vehicles' reliance on fossil fuels
  - Increase percentage of "alternative fuel" vehicles in fleet
  - Expand car-share fleet to meet daily vehicle trip demand of departments, employees, and students
  - Integrate campus or corporate fleet management with carsharing programs providing faculty, staff, and students with instant access to a fleet of vehicles within walking distance from campus or downtown offices
  - Offer reserved or discounted parking for vanpool or carpool customers
  - Provide reserved or discounted parking for fuel efficient vehicles
  - Provide reserved or discounted parking for alternative fuel vehicles

5. Alternative Transportation Support Programs

- **Provide or support a range of transport alternatives**
  - Increase the amount and types of bike parking
  - Become a funding partner for campus or community bike rental programs
  - Invest in changing rooms/showers
  - Partner with bike concierge services
  - Provide reduced priced parking in remote “ride sharing” collector lots, supported by transit of shuttle programs

6. Wayfinding and Parking Guidance

- **Improve parking signage and information**
  - Help drivers find your parking facility more easily with enhanced signage and wayfinding outside of your garage
  - Consider incorporating parking availability data into external and internal parking signage
  - Help patrons locate available spaces more quickly and efficiently with internal wayfinding
  - Evaluate or implement parking guidance systems to improve parking efficiency

- Develop a parking availability/location mobile device application to reduce the circling of vehicles

7. Use of Recyclables

Recyclable Resources

- Replace all light bulbs in office environments with compact fluorescent bulbs
- Replace concrete parking and traffic products with those made from 100% recycled rubber (e.g., wheel stops, speed humps, sign bases, etc.)
- Implement a parking garage lighting recycling program (especially if fluorescent lighting fixtures are in use.)
- Offer recycle bins for patrons & employees
- Purchase recycled, organic or local products
- Recycle disposed materials, use local labor, or source local or recycled materials when undergoing new construction or renovations

8. Energy Saving/Generation Strategies

Energy Related Strategies

- Have climate controlled occupied areas (programmable thermostats/sensor controls)
- Have an open air design with no ventilation system in the parking areas
- Ventilate the decks with variable controlled air flow (i.e. VFD) or sensor activated (i.e. DCV) technology
- Generate renewable energy (i.e. solar PV, wind turbines, hydroelectric)
- Cover parking lots and garage roofs with solar panels.
- Generate renewable energy strategies (i.e. solar PV, wind turbines, etc.)

9. Water Management

- Water Saving
  - Replace plumbing fixtures with water-saving fixtures
  - Use water-efficient landscaping (e.g., xeriscaping/native plants to reduce irrigation needs)
  - Develop a storm water management plan
  - Capture "grey water" for use in watering parking landscaped areas

10. Facility Maintenance and Cleaning

- Maintenance, Recycling and Environment Enhancements
  - Implement on-site wastewater treatment
  - Use sustainable cleaning supplies/Clean with green, non-toxic cleaning products
  - Apply low- or no- VOC (Volatile Organic Compound) coatings to all surfaces
  - Make interior spaces tobacco free
  - Add recycling containers for all facilities where they are convenient to patrons and staff

11. Electric Vehicle Charging

- Promote the use of non or reduced emission vehicles
  - Provide charging stations for electric vehicles
  - Develop electric vehicle charging system specifications

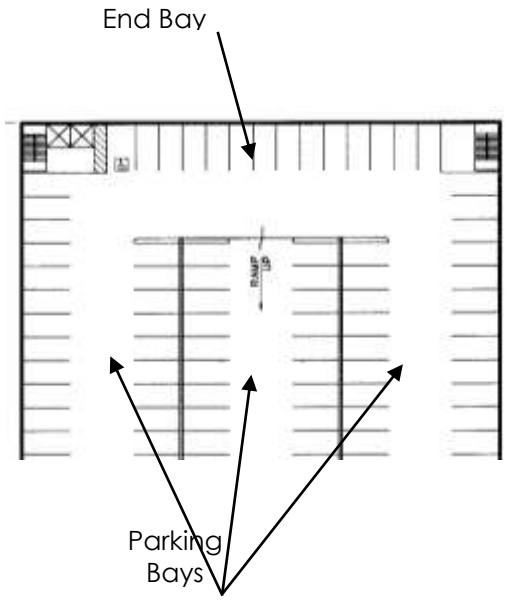
12. Green Garages

- Consider third party sustainability certifications, such as LEED or Green Globes
- Adopt a standard that all parking construction will seek a LEED ®-based equivalency rating of "Silver" or better when feasible and/or Green Parking Council standards.
- Adopt a standard for new garage development that solar arrays that generate up to 50% of the facility's power needs must be integrated

Site Requirements

Large and rectangular shaped sites are ideal for parking structures. Although flat sites are generally more economical to develop, sloped sites can provide design opportunities such as access on different levels and/or no ramping between levels. For a reasonably efficient parking layout, double-loaded parking "bays" range in width from about 54 to 60 feet, depending upon the angle of parking and the width of the parking space. The overall width of the structure should be determined based upon multiples of the chosen parking bay width. An ideal length for a parking structure is at least 240 feet. Longer sites provide the opportunity to park along the end bays, which provides more parking spaces, improves efficiency, and lowers the cost per space. A longer site also allows for shallower ramps which provide improved user comfort.

Generally, parking bays should be oriented parallel to the longer dimension of the site and preferably in the predominate direction of pedestrian travel. Walking distance tolerances from parking to a primary destination are typically 200 to 300 feet for shoppers, 500 to 800 feet for downtown employees, and 1,500 to 2,000 feet for special event patrons and students.



Site Constraints

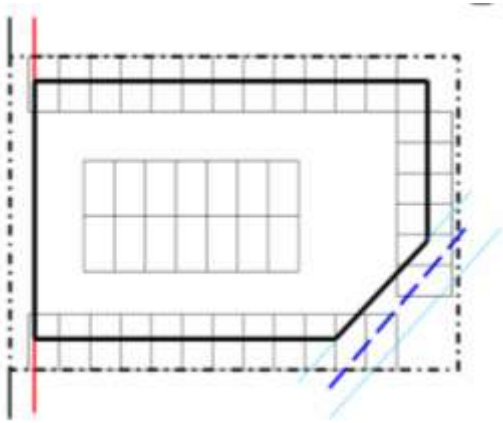
Other site issues to be considered when evaluating a potential site for a suitable parking facility include the following:

- Site Survey – a topographic survey of the site is a very important precursor to develop a conceptual plan. The site survey should delineate property lines, easements, and utility lines.

- Site Slope – The topographic information will define the slope of the site. Sometimes the slope of a site can used to reduce internal ramping in a parking structure, resulting in significantly lower costs. A parking structure that is built into a hillside can also reduce the visual mass of the facility.

- Geotechnical & Soils – Obtaining a soils report with sample borings and a geotechnical analysis early in the design process is prudent. If soils with poor bearing capacity are present on the site, the added cost for structural foundations can be significant.

- Codes and Ordinances – Municipal ordinances often specify setbacks, building height and bulk limitations, floor area ratio to site area, etc. than can significantly affect the allowable area on a site for a parking structure. The local planning organization may also impose development guidelines that must be followed.



Concept Design

Much of the remainder of these guidelines addresses issues and elements of parking structures that should be considerations during the conceptual design phase.

Parking Structures for People

An overall design principal to keep in mind is that parking structures are for people. Designing to accommodate the users of a particular structure will help produce a better parking structure.

- Different user types will have different needs.
- Some user types may need to be physically separated to ensure revenue control or for security reasons.
- Different users require different pedestrian circulation systems.
- Parking space widths and circulation geometry needs vary depending on the user type.
- Some vehicular circulation system are better for specific user types:
    - Residential – Regular users enter and exit two times a day.
    - Education – May have peak loads in and out.
    - Hotel – Overnight guests, maybe event parking too.
    - Office – Low turnover. Regular users enter and exit two times a day.
    - Health Care Visitors –Wayfinding very important. Need to accommodate elderly drivers and passengers.
    - Health Care Staff – Shift time overlap and loading. Security issues, particularly at night.
    - Retail – High turnover. Occasional users - wayfinding to and from vehicle.
    - Elderly or Families with Small Children – Wayfinding again important. May need larger spaces and more elevators.

- Events – Easy quick loading and unloading of structure. Multiple vehicular paths. Consider revenue collection methods, typically a flat fee on entry. Provide queuing space. Consider pedestrian flow to event - avoid crossing traffic.
- Multiuse Garages – These guidelines focus on parking garage design for downtown Boise. Most of the garages in downtown will serve at least two user groups – short-term and long-term parkers – and may serve many other user groups. This is due to the fact that future garages will be located in activity centers that include office, entertainment, special event, restaurants, retail, lodging, and residential land uses – all of which have different parking characteristics. Attention should be given to creating entry, exit, and circulation designs that are flexible and adaptable to particular situations. Dual exit lanes that allow parkers with passes to exit quickly without having to wait in line with parkers who are paying should be considered to lower frustration levels for customers.

Circulation and Ramping

The basic circulation element for a parking structure is the continuous ramp with parking on both sides of the drive aisle. In continuous ramp structures, some of the parking floors are sloped in order for traffic to circulate from one level to another. Only on a sloping site that permits direct access to each level from the exterior roadways are ramps unnecessary; but they still may be desirable for internal circulation.

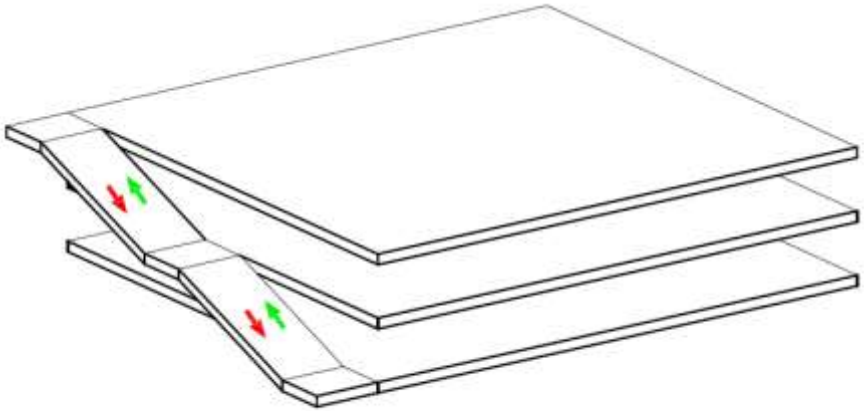
The basic criteria for choosing a circulation system are the simplicity or complexity of the system and the architectural compatibility. Ingress and egress capacities are also a consideration in the selection of a circulation system. Some circulation systems provide the opportunity for level façades which may be desirable.

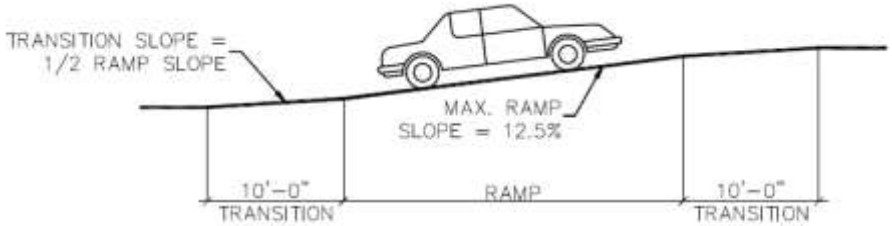
A parking ramp slope of 5% or less is preferred, although parking ramp slopes up to 7% are tolerated by the public in very dense urban areas. Parking ramp slopes should not exceed a 6.67% slope, which is the maximum parking slope permitted in the International Building Code (IBC). The acceptable ramp slope must also conform to the current Boise City Building Code.

Non-parking ramps are often employed at airports, casinos, large retail structures, for special event structures, and on small and irregularly shaped sites. Non-parking ramps consist of circular helixes (most common), express ramps (external), and speed ramps (internal). Non-parking ramp slopes should have a maximum slope in the 12% to 14% range. Non-parking ramp slopes up to 20% are sometimes considered if covered or equipped with snow melt systems.

Parking structures with non-parking ramps tend to be less efficient in terms of square feet of structure per parking space which directly increases the construction cost per parking space.

A grade difference of 8% or more requires transition slopes so vehicles do not bottom out. Recommended are minimum 10'-0" transition slopes at the top and bottom of the ramp that are one-half of the differential slope. For instance, two 10'-0" transition ramps sloped at 6.25% would be required at the bottom and the top of a ramp sloped at 12.5%.





One-Way vs. Two-Way Traffic

One of the primary factors in the design of parking structure is determining the traffic flow: one-way or two-way. Typically, a parking bay for a one-way traffic flow is narrower than for a two-way flow. The available site dimensions will influence the parking bay width and thus also influence the circulation pattern. There are advantages and disadvantages to both circulation patterns. One-way traffic flow should never be combined with 90° parking. In parking facilities with one-way traffic flow, the angle of the parking stalls establishes the direction of vehicle traffic.

Advantages of One-Way Traffic Flow:

- Easier for parkers to enter/exit parking spaces.
- Vehicles are more likely to be centered in angled spaces.
- Less circulation conflict and reduced potential for accidents.
- Better visibility when backing out of a stall.
- Separation of inbound and outbound traffic and improved flow capacity of the circulation system.
- The intended traffic flow is self-enforcing.
- One-way traffic allows the angle of parking to be changed to accommodate changes in vehicle sizes.

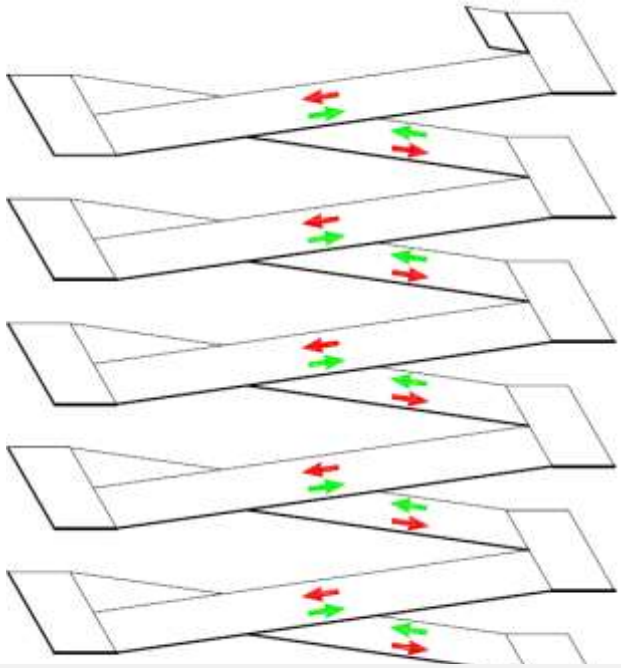
Advantages of Two-Way Traffic Flow:

- Wider drive aisles allow parkers to pass other vehicles.
- Wider drive aisles are safer for pedestrians.
- Better angle of visibility when searching for a parking space.
- Traffic flow follows its own pattern rather than one that is forced.
- Two-way traffic and 90° parking makes more efficient use of parking aisles (more spaces in a run).
- Two-way parking facilities can essentially operate as one-way facilities when there is heavy directional traffic.

Single Threaded Design

In order to develop a reasonably efficient free-standing parking structure, the **minimum** dimensions needed are about 122 feet in width by 155 feet in length. A width of 122 feet allows for a two-bay facility with two-way traffic flow and 90-degree parking. A facility with two-way traffic and a five-foot rise along each bay requires approximately 155 feet in length for a minimum floor-to-floor height of about ten feet. That is, one 360-degree turn within the facility equates to a vertical rise of ten feet. A structure in this configuration has sloping floors along both façade sides. However, sloping floors can make façade treatments challenging. On larger sites that allow a structure length of about 255 feet, one bay can be sloped rising 10 feet with opposite façade having a "level" floor.

Because of the number of 360° turns needed to ascend in a single threaded structure, the number of levels (floors) should preferably be limited to a maximum of six, otherwise the number of turns required and the number of spaces passed becomes inconvenient. A structure with a two-bay single thread design has a capacity for a maximum of approximately 750 spaces. The isometric diagram to the right represents a two-bay single-threaded helix.



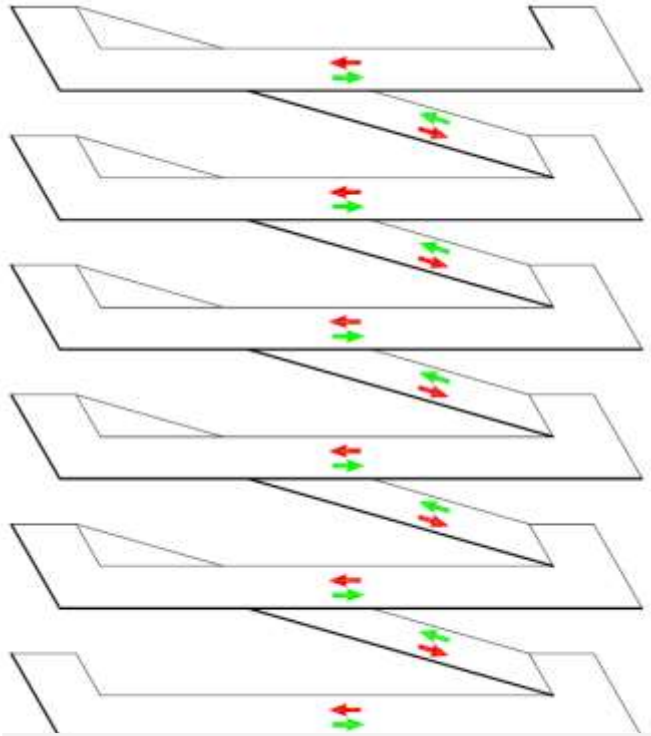
Single Threaded Helix with Sloping Floors

Principal Advantages of a Single-Threaded Helix:

- Repetitive and easy to understand for users.
- Potentially more flat-floor parking and level façade elements.
- Better visibility across the structure, which enhances security.

Principal Disadvantages of a Single-Threaded Helix:

- More revolutions required going from bottom to top and top to bottom.
- Two-way traffic bays have less flow capacity than one-way traffic bays. Traffic in both directions is impeded by vehicles parking and vacating a space.

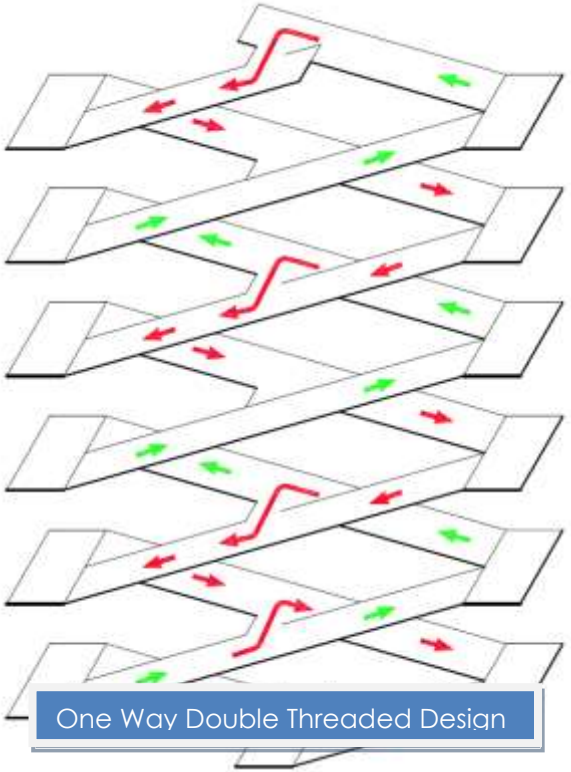


Single Threaded Helix with One Level Bay

Double Threaded Design

A facility with a one-way circulation system and angled parking can be provided in a double-threaded helix with modules ranging from 54 to 58 feet in width, depending upon the angle of parking. The preferred angles of parking for an efficient layout are 60°, 70° and 75°. A double thread, which requires a ten-foot rise along each module, requires 240 feet in length. More efficient layouts can be achieved on longer sites. The isometric right represents a two-bay double-threaded helix with one-way traffic.

A double-threaded helix can work with either one-way or two-way traffic flow, although one-way traffic is more common. A two-way double threaded design can be configured as two separate structures with no vehicular connection. A double-threaded helix rises two levels with every 360 degrees of revolution, which allows for two intertwined "threads" and the opportunity to circulate to an available parking space without passing all parking spaces as inbound and outbound traffic can be separated. Because of this, double-threaded helices are often recommended for larger facilities with seven or more levels. A two-bay double thread has a functional system capacity for up to approximately 2,000 spaces with angled parking and one-way traffic flow.



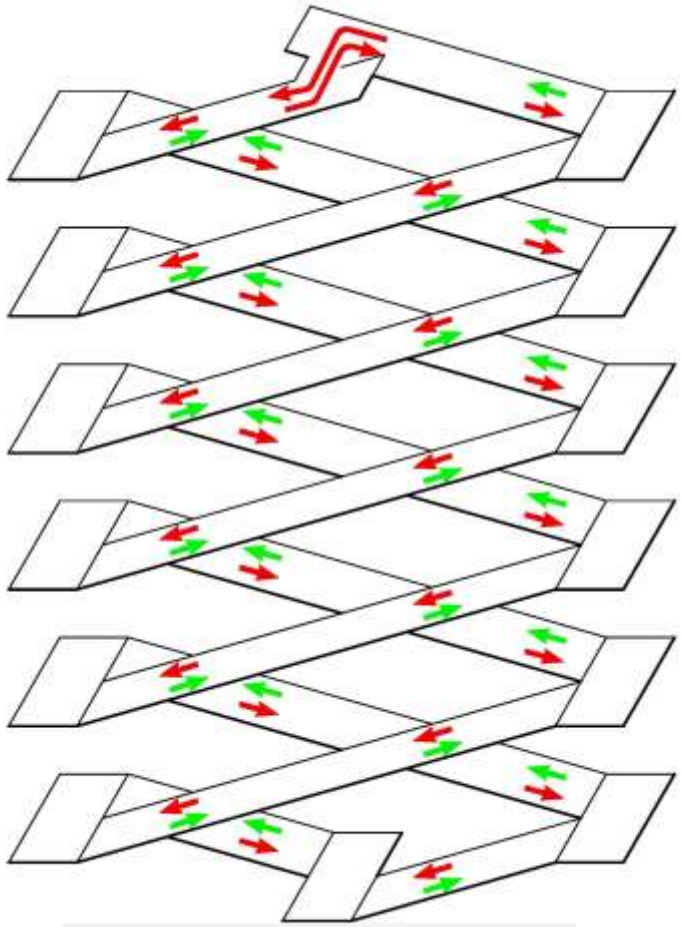
One Way Double Threaded Design

Principal Advantages of a Double-Threaded Helix:

- Efficient circulation and more traffic flow capacity
- Pass fewer spaces both inbound and outbound.

Principal Disadvantages of a Double-Threaded Helix:

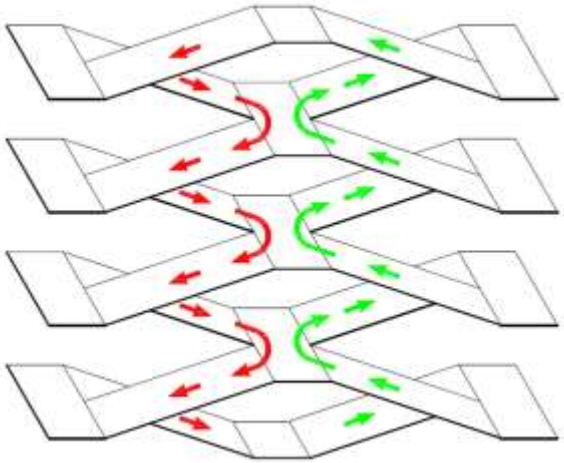
- Can be complex and confusing, particularly in finding one's vehicle upon return to the parking facility.
- Two-sloped bays and minimal flat-floor parking.



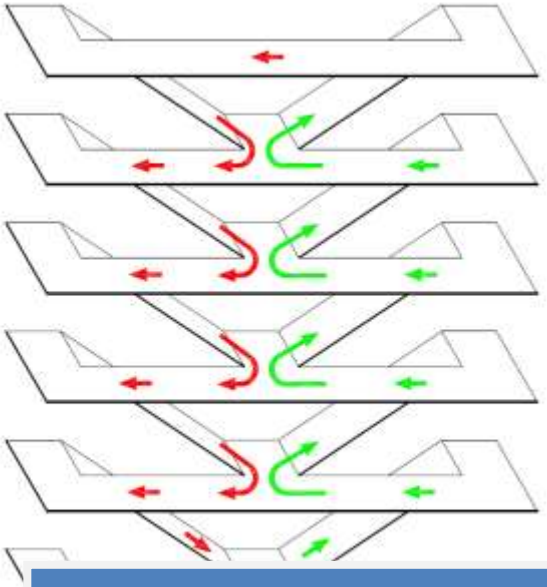
Two Way Double Threaded Design

Other Circulation Systems

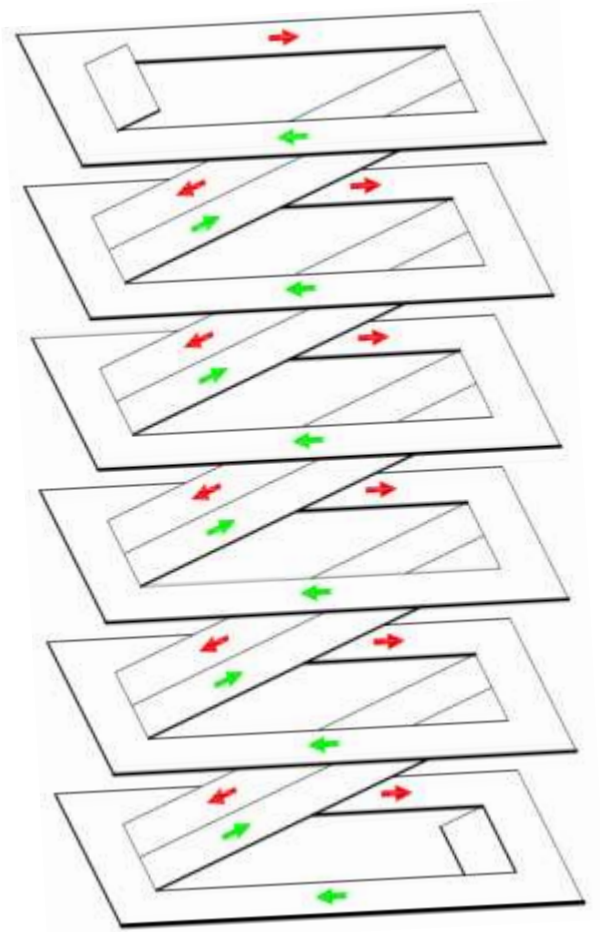
There are other parking and circulation systems that are often used in parking structures.



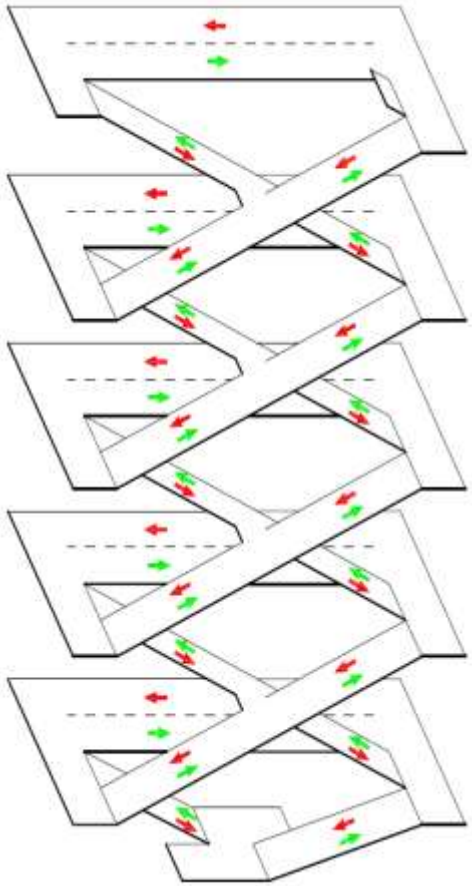
End-to-End Helix Both Bays Sloped



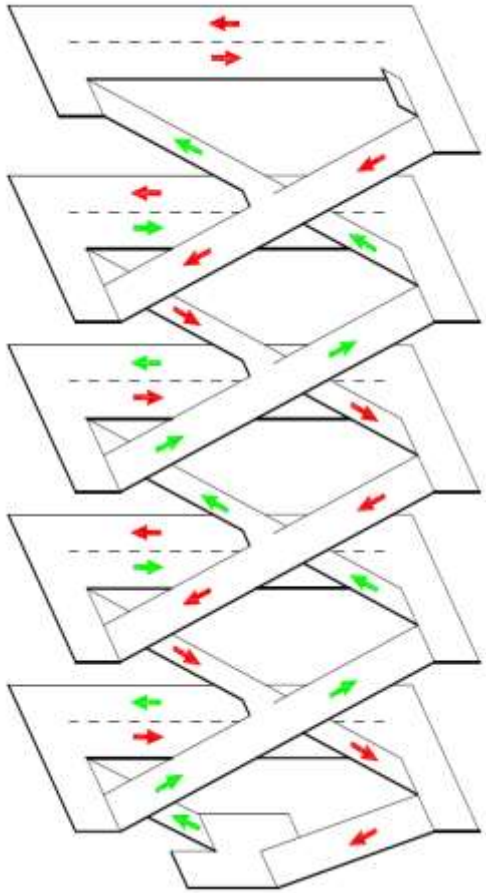
End-to-End Helix One Bay Sloped



Side-by-Side Helix



Two-way Double Threaded w/ Flat Bays



One-way Double Threaded w/ Flat Bays

Access Design

Vehicle entrances should be visible and easily identifiable. The minimum distance of entry/exits from corner intersections is at least 75 to 100 feet (preferably 150 feet). Entrances and exits should have clear lines of sight. It is preferable to enter a facility from a one-way street or by turning right from a two-way street and to exit a facility by turning right on a low-volume street. High traffic volumes and left turns can slow exiting and cause internal traffic backups. Consideration should be given to acceleration/deceleration lanes on busy streets. Gates should be located far enough away from the street to allow at least one vehicle behind the vehicle in the service position (at a ticket dispenser, card reader or cashier booth) without blocking the sidewalk. Entry/exit areas that have parking control equipment should have a maximum 3% slope.

It is very important to provide the appropriate number of entry/exit lanes to meet projected peak traffic volumes. The number of lanes is a function of user groups served, peak-hour traffic volumes, and service rates of the parking control equipment. It is recommended to have a parking professional prepare a lane and queuing analysis to guarantee sufficient entry and exit capacities.

Cross-traffic at entry/exits should be minimized and preferably eliminated. When placing vehicle entries and exits together on one-way streets it is preferable to avoid "English" traffic conditions where traffic keeps to the left instead of to the right. Pedestrian/vehicular conflicts should be minimized by providing a pedestrian walkway adjacent to entry/exit lanes. Stair/elevator towers should be located so pedestrians do not have to cross drive aisles on their way to primary destinations.

Important Issues for Vehicle Entry and Exit Lanes:

- The approach and the departure area from the lanes will also affect the rate of flow into or out of the structure. Tight turns equal a slower throughput.
- Pedestrian safety at entry and exit portals is paramount. Consider the vision cone of drivers entering or exiting the facility.
- Check and recheck vehicle turning radii at all entry / exit lanes and adjacent ramps.
- Vehicle queuing analyses should be performed to ensure traffic does not back-up onto the exiting street system or the inside of the facility during peak periods of traffic flow.

Parking Geometrics

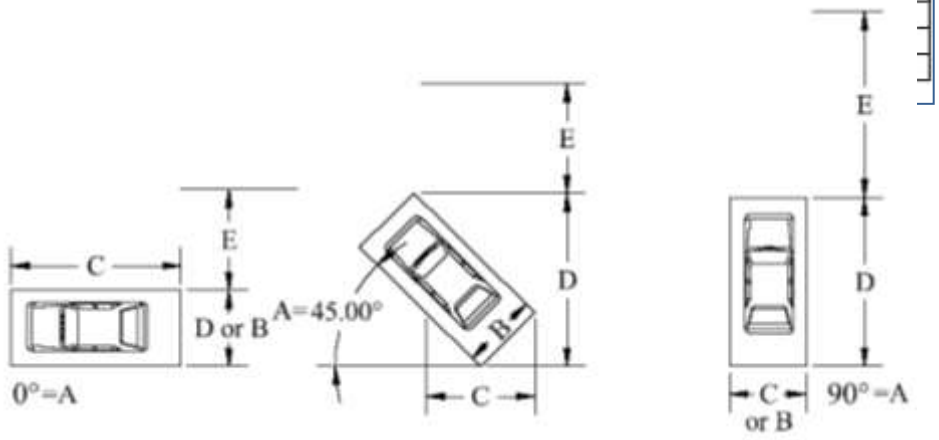
Parking geometrics refers to parking stall and drive aisle dimensions. Parking dimensions have been developed to comfortably accommodate the composite design vehicle, which refers to the dimensions of the 85th percentile vehicle in the range of vehicles from smallest (zero percentile) to largest (100th percentile). The composite design vehicle is the size of a Ford F150 truck (6'-7" x 17'-3").

The table on this page lists City of Boise parking geometrics by parking angle for standard and compact spaces.

Parking Angle A	Stall Width B	Curb Length Per Car C	Stall Depth D	Driveway Width E
0°	9'- 0"	23'- 0"	9'- 0"	12'- 0"
20°	9'- 0"	26'- 4"	15'- 3"	11'- 0"
30°	9'- 0"	18'- 0"	17'- 8"	11'- 0"
40°	9'- 0"	14'- 0"	19'- 6"	12'- 0"
45°	9'- 0"	12'- 9"	20'- 5"	13'- 0"
50°	9'- 0"	11'- 9"	21'- 0"	14'- 0"
60°	9'- 0"	10'- 5"	21'- 10"	16'- 0"
70°	9'- 0"	9'- 8"	21'- 10"	18'- 0"
80°	9'- 0"	9'- 2"	21'- 4"	20'- 0"
90°	9'- 0"	9'- 0"	20'- 0"	22'- 0"

MINIMUM STANDARDS FOR COMPACT VEHICLES

Parking Angle A	Stall Width B	Curb Length Per Car C	Stall Depth D	Driveway Width E
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



The city's parking dimensions for standard spaces exceed industry standards. The table on the following page lists parking geometrics by User Comfort Factor (UCF) which correlates with a Level of Service (LOS) approach. Traffic engineers developed the LOS approach to classify traffic conditions on roadways from A (free flow) to F (gridlock). The UCF/LOS approach has been adopted by many parking consultants to help classify conditions in parking facilities. The recommended UCF categories for parking geometrics are as follows:

UCF 4 = LOS A = Excellent
UCF 3 = LOS B = Good
UCF 2 = LOS C = Acceptable

LOS criteria should be related to the needs and concerns of users. Generally, users with low familiarity and high turnover should be accorded a higher UCF. If the city's parking standards are not used, we recommend minimum UCF 3 geometrics for moderate to high turnover parking (visitor, retail, etc.) and minimum UCF 2 geometrics for low turnover parking (employee, commuter, resident, etc.).

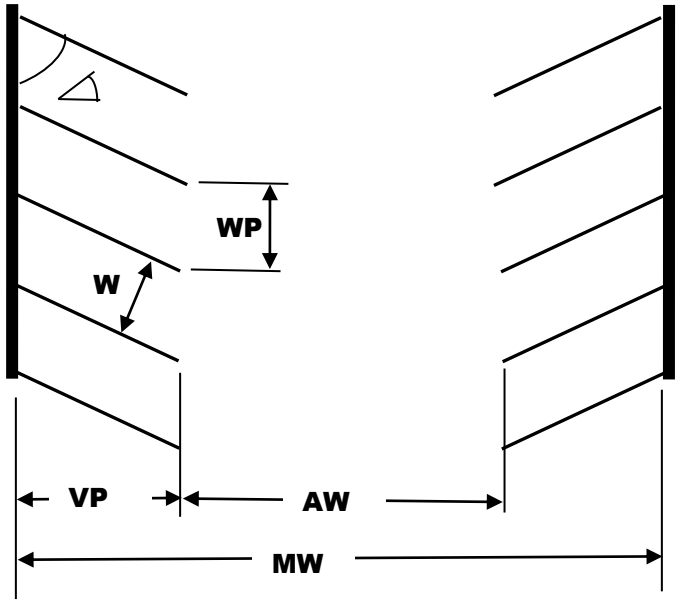
We recommend using "one-size-fits-all" parking spaces rather than segregating standard and small car spaces. However, if they are used, small car spaces should not exceed 15% to 20% of the total capacity of a facility.

Parking Layout Dimensions

PARKING LAYOUT DIMENSIONS

Parking Angle	Stall Width Projection (WP)	Module Width (1) (MW)	Vehicle Projection (VP)	Aisle Width (AW)
User Comfort Factor 4				
		w = 9'-0"		
45	12'-9"	49'-10"	17'-7"	14'-8"
50	11'-9"	51'-7"	18'-2"	15'-3"
55	11'-0"	53'-0"	18'-8"	15'-8"
60	10'-5"	54'-6"	19'-0"	16'-6"
65	9'-11"	55'-9"	19'-2"	17'-5"
70	9'-7"	57'-0"	19'-3"	18'-6"
75	9'-4"	58'-0"	19'-1"	19'-10"
90	9'-0"	62'-0"	18'-0"	26'-0"
User Comfort Factor 3				
		w = 8'-9"		
45	12'-4"	48'-10"	17'-7"	13'-8"
50	11'-5"	50'-7"	18'-2"	14'-3"
55	10'-8"	52'-0"	18'-8"	14'-8"
60	10'-1"	53'-6"	19'-0"	15'-6"
65	9'-8"	54'-9"	19'-2"	16'-5"
70	9'-4"	56'-0"	19'-3"	17'-6"
75	9'-1"	57'-0"	19'-1"	18'-10"
90	8'-9"	61'-0"	18'-0"	25'-0"

Parking Angle	Stall Width Projection (WP)	Module Width (1) (MW)	Vehicle Projection (VP)	Aisle Width (AW)
User Comfort Factor 2				
		w = 8'-6"		
45	12'-0"	47'-10"	17'-7"	12'-8"
50	11'-1"	49'-7"	18'-2"	13'-3"
55	10'-5"	51'-0"	18'-8"	13'-8"
60	9'-10"	52'-6"	19'-0"	14'-6"
65	9'-5"	53'-9"	19'-2"	15'-5"
70	9'-1"	55'-0"	19'-3"	16'-6"
75	8'-10"	56'-0"	19'-1"	17'-10"
90	8'-6"	60'-0"	18'-0"	24'-0"

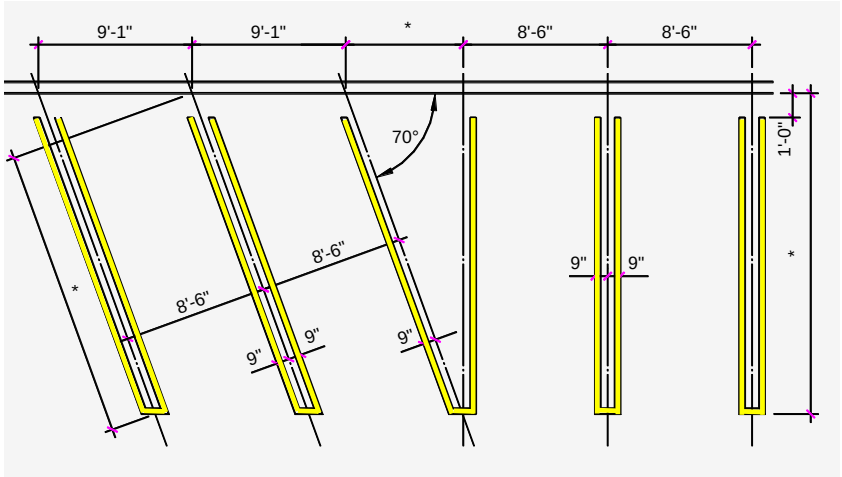


Note: (1) Wall to wall, double loaded aisle.

Parking spaces adjacent to walls, columns, elevators, stairs, etc. should be widened, if possible, by one foot so that vehicle doors can be more easily opened.

End bay drive aisles with two-way traffic should be a minimum of 26' wide for improved turning maneuverability. Wider end bay drive aisles are recommended for high turnover parking facilities. If possible, it is also suggested for more comfortable turns to hold back the first stall on either side of the turning bay. Small-Car-Only (SCO) spaces are also recommended at the ends of interior parking rows. It is very difficult to make a turn around only one row of parking. Refer to the following graphic.

Double stripes for space striping are recommended as they help parkers center their vehicles between stripes, maximizing the space between vehicles (refer to the graphic below). Also recommended is the use of traffic yellow paint for stall striping as yellow paint is more visible over time than white paint.



Parking Layout Efficiency

Parking Efficiency is expressed in square feet of construction per parking space. Parking efficiency directly correlates with the construction cost per space. Build less structure per space and the cost per space drops. Non-parking speed ramps for example increase the square feet per space.

Parking efficiency should be calculated considering the total parking structure size including the stairs and elevators and non-parking ramps. Any retail space that is incorporated within the structure is also usually included in the calculation.

Typical ranges of parking structure efficiencies are:

- Short Span Structural System = 330 to 390 Square Feet per Space
- Long Span Structural System = 300 to 340 Square Feet per Space
- Mixed Use Developments with retail, residential and parking can be as high as 400+ square feet per space

PARKING EFFICIENCY MAKES A BIG DIFFERENCE – EXAMPLE

- 360 sf / space X 500 spaces X $45 / sf = $8,100,000
- 330 sf / space X 500 spaces X $45 / sf = $7,425,000

A difference of $675,000 or $1,350 per space!

Pedestrian Requirements

Pedestrian traffic is equally as important in a parking structure as vehicle traffic. A safe, secure and well signed pedestrian path must be provided. Pedestrian access at the grade level should be separated from vehicular ingress and egress. Pedestrian access is usually adjacent to stair/elevator towers. It is also desirable to place a dedicated pedestrian aisle adjacent to a vehicle entry/exit because pedestrians are naturally attracted to these openings. Maximum lines of sight for both pedestrians and vehicles should be provided, and mirrors and warning devices should be incorporated when necessary. Access locations should be restricted to a few locations for security reasons.

A minimum of two stairs are required to meet code-required means of egress for fire exits in parking structures. Stairs shall be open or glass enclosed and be visible to the street for security reasons. The minimum stair width in parking structures is 44" and wider stairs are required for special events. Travel distance between exit stairs is specified in the IBC and is a maximum 300 feet without a sprinkler system and 400 feet with a sprinkler system. Stairs are usually placed in dead corners.

Elevators should be located at terminus in the direction of pedestrian travel. Hydraulic elevators can be used for up to 5 levels or 50' to 60'. Traction elevators should be used beyond 5 levels. The minimum capacity and size is 3,500 lbs. and 5'-0" x 7'-0". The number of elevators is based on the number of spaces, the number of levels, user group(s) served, peak-hour flow rates, and the size and capacity of the elevator. A parking consultant can provide a preliminary indication of the number of elevators based on a formula that takes into account the information presented above. **We highly recommend that elevators have glass backs for security reasons.** Enclosed lobbies are recommended for protection from the elements on the top level.

Accessible Parking Requirements

The following table presents the required number of accessible parking spaces based on the total number of spaces provided in any given facility.

The accessible parking requirement for an institution like a hospital campus is not based on the total parking capacity but rather on the capacities of the individual facilities within a parking system, which always results in the provision of more accessible spaces overall. Accessible spaces for the institution do not have to be provided in each parking area, but can be supplied at a different location provided at least equivalent accessibility in terms of distance, cost, and convenience is provided.

All accessible spaces are 8' wide with either a 5' or 8' access aisle. An accessible space and access aisle cannot be placed at a location with a running or cross slope greater than 1:50 (2%).

The current 1 to 8 ratio for the provision of van accessible spaces is changing to 1 to 6, and it is required to round up to the nearest whole number when determining the number of van spaces. The barrier free section of the International Building Code (IBC) has the same requirement. It is recommended to use the new 1 to 6 ratio when determining the number of van spaces. Van accessible spaces require minimum 8'-2" vertical clearance and have 8'-0" wide access aisles.

Each accessible space must have a sign showing the international symbol of accessibility mounted at least five feet above the pavement. All van accessible spaces must have an additional "Van Accessible" sign mounted below the symbol of accessibility (mount minimum of 5' above pavement with other sign above).
ADA requires rounding up to the next whole number when calculating the required number of spaces based on a percentage or ratio. For example, a parking facility with 810 spaces will have 17 accessible spaces (810 x .02 = 16.2 = 17 spaces), and 3 spaces will have to be van accessible (17 ÷ 6 = 2.833 = 3).

Required Accessible Spaces	
Total Spaces in Facility	**Minimum Accessible Spaces**
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of total
1,001 and over	20 plus 1 for each 100 over 1,000

Accessible stalls cannot share access aisles when the parking is angled. Access aisles for van spaces must be on the passenger side when the parking is angled because vehicles cannot back into these spaces.

All accessible spaces must have an accessible route to public streets or sidewalks, accessible elevators, or accessible building entrances. An accessible route must have a minimum unobstructed width of 3'. A vehicle way (drive aisle) may be part of an accessible route, although it is preferred to place the accessible route at the front of the stalls. An accessible route can only pass behind other accessible spaces. It is permitted to cross a vehicle way with an accessible route. Automatic or push button door opening devices will be needed if the accessible path includes doors that patrons will need to enter/exit.

The running slope along an accessible route cannot exceed 1:20 (5%) and the cross slope cannot exceed 1:50 (2%).

It is recommended to cross hatch all access aisles and accessible routes.

Ultimately, accessible parking must be provided as required by existing city building and zoning codes. However, it is recommended that the standard ADA requirements detailed in this section be used if they exceed existing city requirements.

Safety and Security

Because curbs can be a potential tripping hazard, curbs in all pedestrian areas (at the end of parking rows, around stairs and elevators, dead corners, etc.) are strongly discouraged. The faces and edge of curbs that remain should be painted traffic yellow to enhance visibility.

Glass-backed elevators and glass enclosed and/or open stairways, visible to the adjacent street, are highly recommended for enhanced security. Security fencing should be installed below stairwells to eliminate the possibility of a person hiding under the stairs.

Lighting that enables users to see and be seen is one of the most important security features of a parking structure. A separate discussion on lighting is included in these guidelines.

Other important aspects of security design:

- Short span construction is not recommended. In short span construction, the columns are placed more closely together; thereby adding additional obstructions to lines of sight.
- Security fencing at the ground level should not be climbable. Security fencing ensures pedestrians enter/exit the facility only at designated pedestrian points.
- Landscaping should not provide hiding places.
- Security cameras are a deterrent to criminal activity.
- Panic alarms and two-way communication systems are recommended in prominent locations on each level.

In general, assure that as much openness as possible is provided in the design to improve sight lines, eliminate hiding places, and enhance perceived security.

Lighting

- Key Security Measure
- Enhances User Comfort & Perception of Safety
- Business Attraction Amenity
- Permit Safe Movement for Pedestrians and Vehicles
- Enhances Signage Visibility
- Typically Light Levels Are Not Code Regulated
  - Except Emergency Lighting @ 1 footcandles Minimum
- Industry Standards
  - Illuminating Engineering Society of North America (IESNA)
  - They Publish Minimum Standards
  - Liability Risk for Non-Compliance

The recommended lighting standards listed in the table to the right, slightly exceed the Illuminating Engineering Society of North America (IES) lighting standards for parking facilities. Staining the ceilings white to enhance light levels is suggested.

Recommended Parking Structure Lighting Standards

Areas	Minimum Horizontal Illuminance on Floor Footcandles	Minimum Vertical Illuminance at 5 feet Footcandles	Maximum to Minimum Uniformity Ratio
General Parking & Pedestrian	2	1	10:1
Ramps and Corners			
Days	2	1	10:1
Nights	1	0.5	10:1
Entrance Areas			
Days	50	25	10:1
Nights	1	0.5	10:1
Stairways	7 avg.		10:1

Lighting Entry and Exit Lanes

- Provide Additional Lighting (50 fc) for 10'- 60' Zone From Building Edge (Transitional lighting)
- Include Daylight Infiltration (> 15 fc)
- Typically 10' X 10' Spacing of 150 W Fixtures
- Turn 2/3 of Fixtures Off @ Night

Light Source Types

- **High Pressure Sodium**
  - Golden White HPS Light Color
  - Common Parking Structure Lighting
  - Lamp Life = 24,000-28,500 Hours
- **Metal Halide**
  - White Light Color
  - Perceived Greater Brightness
  - Lamp Life = 15,000 Hours
  - Operating Cost Slightly **>** HPS
- **Light Emitting Diode (LED)**
  - Emerging Technology
  - Energy Efficient
  - Long Life
- **Fluorescent**
  - White Light Color
  - New Technology – Use in Cold Climates
    - Cold Weather Ballast (If Temps **<** 50° F)
    - Phosphor Coating
    - Sealed Fixtures
  - Lamp Life = 30,000 Hours
  - Energy Cost Effective
- **Induction Lighting**
  - White Light – Best color rendition
  - Instant Ignition Long Life Bulbs = 100,000 Hours
  - Energy Efficient
  - High Initial Costs

Lighting Expense Reduction Strategies

We recommend that the exterior bay lighting of "open" parking structures as well as roof top lighting be on separate circuits so that these lights can be turned off during the day to reduce energy consumption/costs as depicted in the lower picture on the right.

Signage and Wayfinding

Parking facilities can be very large, complex, and confusing. A well-designed graphics and signage system will effectively communicate necessary information to patrons, reduce confusion, improve safety, and enhance the overall user experience.

Sign messages should be simple and succinct. Messages on signs that are to be read quickly, such as vehicular signs, should be no more than 30 characters and six words in length. The typeface used should be simple and easy to read, and there is a general preference for Helvetica medium in the parking industry. Signs with lower case letters and initial caps are most easily read. The simple block arrow is recommended for parking signs. If a left turn is required, the arrow should be placed on the left side of the sign. The opposite is true for a right turn.

In parking structures, signs with a dark background and white letters are more easily read than signs with a white background and dark letters. The opposite is true in surface lots, where signs with white background and dark letters are better.

Vehicle Signs

Examples of vehicular signs include "Park" and "Exit" directional signs. Vehicular signs are ten or twelve inches in height with six or seven inch letters. Ten-inch signs are recommended for precast structures where sign visibility can be a problem. Vehicular signs should be centered over the drive lane or centered over the drive aisle when signs are mounted back-to-back.

Pedestrian Signs

Examples of pedestrian signs include "Level #," "Remember Level #," "Row #,"and "Stair" and "Elevator" identification and directional signs. Pedestrian signs can be all one color or be color-coded by level. Pedestrian signs should be clearly distinguishable from vehicle signs so as not to interfere with vehicular traffic. Pedestrian signs in parking bays are most effective if located perpendicular to traffic flow, and they should be placed at the rear of parking stalls. Color-coding is often used to help patrons find their vehicles. It is not necessary to provide color-coding in parking facilities that are three levels or less. When color coding, it is recommended to use primary and secondary colors including red, blue, yellow, orange, purple, and green. If there are more than six levels that need to be color-coded, it is recommended to use white, brown, and black. Confusing colors such as turquoise (blue or green?) and taupe (brown, tan, or gray?) should be avoided.

The elevator core area provides an excellent location to utilize super graphics. Super graphics is defined as a graphic that covers a large area and is generally painted on a vertical surface, such as painted walls or elevator doors, with level designation incorporated.

Once colors have been determined, the color coding must appear on each parking floor (e.g., on columns and walls) and adjacent to elevator lobbies and stairwells – as well as inside elevators.

Level Theming

"Level Identification Theming" and other wayfinding aids provides an opportunity to enhance parking interior environment enhancement while also providing a practical tools to assist patrons in remembering where they parked. Several creative examples or illustrated below.

Entry Signs

Emphasizing the entrance to a parking facility is important. Large illuminated signs are often used to emphasize the facility entry and attract patrons. These signs often spell out "Parking" or use the International symbol for parking. Architectural features, such as an arch, canopy, or some different treatment of the façade, are often used to highlight the entry area as well. A height clearance bar is required for all parking structures, including the top (surface) level of below-grade facilities to prohibit over-height vehicles. Generally, the height clearance bar is located at the facility entrance(s). There may be instances when the clear height in a parking structure changes from one level to another (for example, a higher ground level than typical level to accommodate ADA vans), which may require additional height clearance bars within the facility itself. Generally, the height clearance bar is an eight-inch PVC pipe.

Regulatory Signs

Regulatory signs are often used in parking facilities. Examples include "STOP," "YIELD," "ONE WAY," "NO PARKING" "DO NOT ENTER," and accessible parking signs. When used it is imperative that they comply with local and federal requirements. The Manual of Uniform Traffic Control Devices (MUTCD) provides examples of standard highway signs.

Illuminated Signs

Illuminated signs are becoming more and more common in parking facilities. Technology has advanced significantly in recent years and illuminated signs have become more reliable. Generally, illuminated signs are used for the following parking applications:

- Entry and Exit Lanes (Open in green/Closed in red)
- Facility Full Signs
- Stop (red)/Go (green)
- Level Space Capacity
- Directional Control
- Fee Display
- Space Count Systems
- Variable Message Signs

Pavement Markings

Pavement makings should conform to Manual of Uniform Traffic Control Devices (MUTCD) or local standards. MUTCD specifies that white paint be used for markings for traffic flow in the same direction and yellow paint used for traffic flow in opposite directions, which implies a warning.

Pavement markings can be an effective way to direct and control traffic flow in a parking facility. However, pavement markings must be re-applied due to wear and deterioration from vehicular traffic. Pavement arrows may enhance traffic flow. They are often utilized on surface lots or the top level of parking structures where overhead directional signage is not possible. Traffic arrows are also commonly used in facilities with a combination of one-way and two-way traffic flow.

Drainage

Proper floor drainage is essential for all types of parking structures in all climates. While direct rain or snow may not enter all areas of the parking garage, windblown rain and snow and/or vehicles carrying ice, snow and water will distribute water throughout the facility. Heavy rains will also overload top floor drains and water will run down the ramped floors to lower levels. In addition, the frequent floor wash-downs (e.g., washing the parking surfaces/floors) that should be part of a good maintenance program are a source of water throughout the parking facility. If the floor is not adequately sloped, water is allowed to pond and deterioration will accelerate beneath the ponds.

A design slope of 2%, or ¼ inch per foot, is desired, with a minimum design slope of 1-½%. Water should be drained away from exterior columns/walls and pedestrian paths. Washes may be needed in slab corners to achieve drainage slopes.

Floor drain locations are determined by the circulation system, number of bays, and structural system. The top level drain system should be designed to accept a 10-year design rainfall or as required by local code. Three to four inch piping is generally used on covered levels.

Open or Enclosed Parking Structure

Natural ventilation requires openings in exterior walls of sufficient size distributed in such a way that fresh air will enter the facility to disperse and displace contaminated air. The 2003 and 2006 International Building Code (IBC) states:

> *"For natural ventilation purposes, the exterior side of the structure shall have uniformly distributed openings on two or more sides. The area of such openings in exterior walls on a tier must be at least 20 percent of the total perimeter wall area of each tier. The aggregate length of the openings considered to be providing natural ventilation shall constitute a minimum of 40 percent of the perimeter of the tier. Interior walls shall be at least 20 percent open with uniformly distributed openings."*
>
> *"Exception: Openings are not required to be distributed over 40 percent of the building perimeter where the required openings are uniformly distributed over two opposing sides of the building."*

Setbacks can affect openness as firewalls are required if certain distance requirements from property lines and other buildings are not maintained. Parking structures are typically classified as enclosed if other uses (retail, office, residential) are located above the parking, but may remain open if parking is above or adjacent other uses. When a parking structure is positioned below grade, areaways can be used to achieve natural ventilation. The building code addresses the geometry required to permit acceptance of an areaway.

Parking structures classified as "open" do not require mechanical ventilation, fire suppression (sprinklers), and enclosed stairs.

"Enclosed"

- **Enclosed Shafts**
- **Mechanical ventilation**
- **Increased illumination**
- **Increased fire rating**
- **Fire sprinklers**

"Open"

- **"Open" structures are allowed much larger floor plates and many more levels**
- **"Open" structures are naturally ventilated, so do not usually need mechanical ventilation**
- **"Open" structures do not require stairs to be enclosed**
- **"Open"**

Structural Systems

Following are the advantages and disadvantages of the three primary structural systems commonly used in parking structures today:

- ***Cast-in-Place Concrete***
- ***Precast Concrete***
- ***Steel Framed***

The selection of the structural system should be given careful consideration. The decision is often made based on the following:

- Owner preference
- Design team preference
- Development Review Agency (or Agencies) input
- Schedule
- Construction budget
- Openness and perceived headroom
- Owner's tolerance and budget for maintenance
- Local availability of product and labor

Cast-in-Place Concrete

Advantages of Cast-in-Place Construction:

- Monolithic construction so fewer sealant joints
- Positive drainage is easier to achieve
- Post-Tensioning forces reduces slab cracking
- Floor vibration imperceptible
- Flexible column spacing (20' to 27')
- Generally no shear walls
- Lower maintenance cost
- Wide beam spacing creates more open feeling with perception of higher ceiling
- Accommodates parking structures on irregular sites, beneath buildings, and underground

Disadvantages of Cast-in-Place Construction:

- Potentially higher construction cost
- Quality control is more difficult to attain due to exposed weather conditions
- May require architectural cladding to improve exterior aesthetics
- Less adaptable to winter construction in cold climates
- Longer on-site construction schedule
- Closer expansion joint spacing
- Congestion of tendons and rebar at beam column joints
- Larger on-site staging requirement

Precast Concrete

Advantages of Pre-Cast Construction:

- Quality control because members are fabricated at a plant
- Potentially lower construction cost in some regions
- Shorter on-site construction schedule
- Greater expansion joint spacing (up to 300 feet)
- More adaptable to winter construction
- Architectural façade spandrels also serve as structural load bearing elements

Disadvantages of Pre-Cast Construction:

- More propensity for leaking at the joints
- Higher maintenance cost for sealants
- The close spacing of thee tee stems creates the perception of lower ceiling height
- Tee stems can block signage and interfere with lighting distribution
- Shear walls affect architecture at the exterior and reduce visibility at the interior
- Reduced drainage slopes
- More bird roosting ledges
- Might not be performed by local subcontractors

Steel Framed

Advantages of Steel Construction:

- Flexible column spacing of 18' to 22'
- Generally no shear walls
- Can be performed by local subcontractors
- Shorter on-site construction schedule
- Potentially lower construction cost
- Easily accommodates vertical expansion

Disadvantages of Steel Construction:

- Erection concerns due to mixing foundation, steel, and precast subcontractors
- Not recommended where the steel is required to be fire rated by the building code
- Depending upon code requirements, steel structure may need to be fireproofed
- Steel painting for corrosion protection
- Maintenance of steel paint system
- Steel delivery times can fluctuate
- Extensive bird roosting ledges on the beam flanges

Durability Design

It is recommended to perform an analysis in the schematic design phase to determine which durability elements should be included in the design of a parking structure. These elements include sealers, deck coatings, concrete additives, corrosion inhibitors, and epoxy coated reinforcement. Durable parking structures also require quality concrete (low water-to-cement ratio), adequate concrete cover, proper concrete curing, and good drainage. Tradeoffs between initial costs and long-term maintenance costs should be considered. Enhanced durability systems should be provided in areas with severe exposure, such as supported structure near vehicular entries and snow storage areas on the roof level. Deck coatings (membrane) are recommended over occupied space and over electrical and storage rooms.

The design of a parking structure should at a minimum conform to the intent of American Concrete Institute's Guide for the Design of Durable Parking Structures (ACI 362). The design life of a parking structure should be 60 years.

Incorporating Other Land Uses

Many cities today are encouraging or requiring the design of parking structures that enhance the urban environment. Design Guidelines have been established that require parking structures to have level façades on the street sides (no exposed ramps) and pedestrian-active uses on the ground level. Even if not required by local code, there has definitely been a trend away in recent years from stand-alone, single-purpose parking structures. The development of ground-floor retail space in parking structures is often encouraged as even second-rate retail space will typically generate more income per square foot than a good parking space. This is an important consideration as most new parking structures are not self supporting. When selecting a site for the development of a parking structure, the site that offers the best possibility for ground-floor retail space should be an important consideration.

- New parking structures should incorporate other land uses (e.g., first level commercial space or commercial/residential space wrapping one or more sides) whenever physically/financially possible.
- First level commercial space will increase first level floor-to-floor heights and may necessitate adjustments to the structure's ramping scheme (e.g., inclusion of non-parkable speed ramps).
- Designs should minimize the impact of commercial space on the first level circulation system.
- Designs may need to consider loading dock space and garbage space in the parking structure.
- Restaurant space will need adequate ventilation, which may impact parking efficiency on the levels above the space.
- Entry/exit locations should be adequately positioned to account for adjacent traffic patterns and roadway conditions. Entry/exits should provide for easy identification and access from adjacent streets.

- Parking demand for the integrated commercial/residential land uses should be included in the parking supply and demand analysis for the structure.

- If there is no current market for additional commercial space, the parking facility could be designed to accommodate additional land uses in the future when market conditions warrant.

Other Considerations

There are other aspects of parking structure design that will not be specifically addressed but should be kept in mind, including:

- Zoning Requirements (permitted uses, setbacks, easements, etc.)
- Building Code Compliance
- Subsurface Conditions and Foundations
- Aesthetics
- Fire Rating, Fire Protection and Life Safety
- Mechanical Systems
- Storm Drainage and Water Storage
- Parking Access and Revenue Control Equipment
- Impact of Mixed Uses (retail, residential and office)
- Parking Office Requirements
- Maintenance

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 29

Parking Enforcement Program Audit Checklist

Kimley»Horn

Parking Enforcement Audit Check-List for Citation Revenue, Receivables Management and Permit Operations

Kimley»Horn

This document can serve two purposes for the City of Cheyenne. Initially, this checklist can be used by program managers as a tool for the refinement of the current parking enforcement program. This document was originally designed to be used as a checklist to support the auditing of various aspects of a municipal parking enforcement program. For each audit standard, auditors can note whether or not the program complies, or if the result is unclear, and can also add comments or observations supporting their conclusion. Since this document was created based on several communities, it is recommended that this tool be customized to the Cheyenne parking enforcement program and used on an on-going basis.

A. Ordering and Control of Citation Stock

Blank citation stock—whether for handwritten citations or for handheld issuance devices - is an often neglected but critical aspect of parking programs. Blank citations are also potential receivables. Therefore it is essential that the enforcement program always have an adequate supply of citation stock. In addition, inadequate controls on inventory can allow blank citations to be used for fraudulent purposes. The following are some of the basic checks that apply to this component.

#	Standard	Yes	No	Unclear	Observation/Comments/Action Taken
A.1	**Are there written procedures governing the ordering, acceptance, distribution and tracking of citation stock?**		x		In the past – when we employed more parking patrol folks and before using T2 we had had written procedures to order citation stock. Now with 2 patrol folks and being mostly automated with T2 – we reorder on a need basis.
A.2	**Do the procedures govern all necessary aspects of the ordering, delivery, acceptance and storage processes?**				
A.2.1	Is there an inventory tracking system that tracks additions to, withdrawals from, and the current citation inventory?		x		
A.2.1.1	Is the tracking system maintained on an electronic spreadsheet or database to avoid mathematical error?		x		
A.2.1.2	Does the tracking system cover distribution to subordinate levels, i.e., individual enforcement locations and individual officers?		x		
A.2.2	Are there specific "trigger points", i.e., inventory levels that when reached, trigger the start of the	x			We order X amount per year, supply company sends an order reminder and our patrol techs

	reorder process with sufficient lead time to insure that inventories are not exhausted prior to delivery of the new order?				inform the office when approximately 6 months supply remains.
A.2.3	Is responsibility for ordering stock assigned to a senior manager who understands the importance of this function?	x			
A.2.4	Does the reordering process include adequate time and instructions to incorporate updates of the citation form to include any recent changes in program business rules or boilerplate information (mail-in payment address, customer service phone numbers, etc.)?	x			
A.2.5	Are previous orders for citation stock filed for easy access and (as applicable) do they contain the number ranges of the previous orders so that number ranges are not duplicated in subsequent orders?	x			
A.2.6	Are deliveries of new citation stock both logged against the current order and updated to the inventory tracking system?			x	
A.2.6.1	Is there a written quality control check list against which the new stock is immediately compared to the written specifications in the purchase order?		x		
A.2.7	Is citation stock stored in a secure, locked room or closet?	x			
A.2.8	Is ticket stock periodically inventoried and compared to the tracking system and any discrepancies investigated and reconciled?				
A.3	**Do the procedures govern all necessary aspects of distributing citation stock to the enforcement staff?**		x		
A.3.1	As appropriate based on the number of agencies and individuals who issue citations, are there intermediate distribution points (i.e., from central	x			

	storage to the responsible department or the Parking Enforcement office)?				
A.3.2	If the program uses intermediate storage locations, are they also be subject to a periodic inventory review process?				
A.3.3	Are such distributions properly logged to the inventory tracking system?				
A.3.4	At the officer level, is distribution of blank ticket books logged to the tracking system?				
A.3.5	Periodically, are the number of blank books/citations distributed to enforcement offices and individual officers compared to issued tickets updated to the citation processing system or otherwise voided?				
A.3.5.1	Are any discrepancies between citations distributed to offices/individual officers and citations updated to the system investigated and reconciled?				
A.4	**The control of citation stock for handheld issuance devices can present some additional challenges. While some devices may continue to rely on stock with pre-printed citation numbers (which can be handled in the same manner as discussed above for handwritten citations), most handheld systems in use today generate an automatically incremented citation number at the time of issuance. Is generation of citation numbers carefully controlled and monitored?**	x			
A.4.1	At the macro level, does the handheld system exercise control over the range of citation numbers assigned?	x			
A.4.1.1	Is the range of numbers used for handheld devices separate and distinct from the numbers used for handwritten citation stock?	x			

A.4.2	Whether from a central server or from a local base station linked to the handheld docking cradles, are distinct number ranges assigned to individual handheld devices?	x			
A.4.3	Do base stations (if applicable) and individual handhelds have "trigger" points so that when some set percentage of the assigned number range has been assigned/issued, a new block of numbers can be assigned?			x	T2 controls the handheld number ranges
A.4.4	As with handwritten citations, are periodic audits performed to insure that number ranges are being fully used? (While not a problem on individual handhelds, some older systems allow number ranges to be stalled at the base station and remain unassigned to handhelds.)		x		
A.4.5	If handhelds are not permanently assigned to specific officers, is a daily log kept of which officers use which handheld devices?			NA	Handhelds are permanently assigned
A.4.6	Do the handheld devices require the officer to sign on to the device at the start of a shift using a secure password?	x			
A.4.6.1	Is the date and time of violation printed on each citation automatically generated by the handheld device?	x			
A.4.6.2	Is the accuracy of the devices' time and date regularly verified by the supervisor/manager?	x			

B. Control and Processing of Issued Citations

Once issued, a citation becomes a receivable whose value may increase (with late penalties, for example) or decrease (dismissals or reductions in the hearing process, payments, etc.) It is critical, therefore, that all proper actions be taken to both provide due process to the recipient and achieve a payment or other satisfactory outcome for the program, and that all transactions relative to each citation be tracked throughout the citation's life cycle. Key issues to be addressed include:

#	Standard	Yes	No	Unclear	Observation/Comments/Action Taken
B.1	**Are there written procedures governing the control of issued citations and their update to the system?**	x			
B.2	**Are all issued citations uploaded to the processing system database or otherwise accounted for?**	x			
B.2.1	For handwritten citations, is there a detailed process for controlling batches of issued citations? Ideally, this should be a three point process in which counts of citations are made and reconciled at the appropriate enforcement office where the citations are first batched, at the data entry point, and after the citations have been updated to the database.	x			
B.2.1.1	For handheld citations, is there a procedure to ensure that all handhelds used during the prior shift are cradled and the tickets uploaded to the processing system?	x			
B.2.2	Does the processing system have sufficient quality control edits to ensure that all required fields have been completed by the officer and that the data in critical fields is correctly formatted?	x			
B.2.3	Does the parking program follow a procedure for controlling and tracking voided citations, including the issuing officer, date and the reason the citation was voided. This can be done within the processing system or separately?	x			

B.2.3.1	In addition, is there a process to periodically review individual officer's void history to identify those with excessive numbers of voids?			NA	We have the capability but don't currently engage in this
B.2.4	With regards to "courtesy warnings", are individual officer's warnings ever checked against the database to see that a warning (instead of a citation) was appropriate?	x			
B.2.4.1	If a PCO has issued inappropriate warnings, is a notation made in his/her record and follow-up training conducted?			NA	
B.3	**Since the vast majority of parking citations are issued when the driver is not present, the responsible party (usually the registered owner) must be identified after the fact. Does the program have an effective process for identifying the responsible party and his/her mailing address for each citation issued?**			x	We get our owner information from the County Vehicle Registration records – a good bit of these records and information is not reliable – we are working to improve upon this
B.3.1	Does the program have the necessary relationships and data exchanges (either directly or through a vendor) with the appropriate Departments of Motor Vehicles to identify the registered owners of vehicles with in-state, out-of-state plates?		x		We are currently working on this
B.3.2	Does the program have a process for obtaining renter information from rental companies whose vehicles are cited?			NA	
B.3.3	Does the processing system have the ability to update name and address information gained from third parties such as rental companies and National Change of Address (NCOA)?				
B.3.4	When notices are returned as undeliverable, does the program have the ability to prevent mailings to the bad address and obtain and update new,		x		This again is something we are currently working to address

	current addresses from the USPS and third party vendors?				
B.3.5	Does the processing system provide regular reports on the percentage of citations for each category (in-state, out-of-state, etc.) for which a responsible party name and address is obtained?				
B.3.5.1	Are deviations from the normal rates investigated?				
B.3.6	Are citations for which a name and address are not obtained (no hits) flagged by the system and scheduled for a follow-up DMV inquiry?		x		
B.4	**A fair and accessible adjudication function is both legally required and critical to maintaining the program's integrity and support. Does the program, and the processing system, provide such an adjudicatory capability?**	x			
B.4.1	Are there written guidelines regarding the timeframes under which citations are eligible for the various types of reviews/hearings offered to respondents?	x			
B.4.2	Does the processing system automatically enforce hearing eligibility rules by edits and security provisions?			x	
B.4.3	Is the scheduling of a review or hearing subject to governing law or ordinance?	x			
B.4.3.1	Does a scheduled review or hearing suspend noticing and the imposition of late penalties?	x			
B.4.4	Does the processing system allow for the updating of citation records with the results of reviews/hearings and any appropriate modifications to the balance due on the citation?	x			
B.4.5	Are there provisions for defaulting (to the extent allowed by law) respondents who do not appear	x			

	for hearings. (A default is a legal acceptance of liability for the fine.)?				
B.4.6	Does program staff have access to the data necessary to process administrative claims (i.e., claims of broken meter, missing sign, etc.)?	x			
B.4.7	In order to allow proper monitoring of the adjudication function, does the program maintain or is it able to produce analyses of decision patterns for the program overall and by hearing examiner/judge, issuing officer, and regulation?		x		
B.4.8	On a daily basis, does staff perform a reconciliation of all adjudicatory decisions rendered and then update to the citation database to insure that citation balances are being adjusted appropriately?	X			
B.4.9	Do materials provided by the program (on the citation itself, on notices, hearing decisions, program handouts, web-site, etc.) fully and clearly inform citation recipients of their rights and obligations, and how to access service?	X			
B.5	**Once issued, are citations processed through their life cycle in a timely manner in compliance with applicable laws? (Ideally, this is largely done on an automated basis by the citation processing software.)**	X			
B.5.1	Is the citation life cycle documented and is the system audited on a regular basis to ensure that citations are being processed in compliance with it?	X			
B.5.2	Are late penalties applied to eligible citations at the proper time and in the proper amount?	X			
B.5.3	For delinquent citations, are notices mailed on a timely basis?	X			

B.5.4	When mail is returned as undeliverable, are the citation records flagged so that a more current address can be sought?		x		County records issue
B.5.5	When appropriate—such as pending a scheduled hearing or while a claim is being researched—are other processing actions (such as notices) suspended?	x			
B.5.6	At a minimum, is the processing system able to generate exception reports for citations that have been in a suspended status for an excessive number of days?				
B.5.7	How often are such reports run and reviewed?				
B.5.8	Does the system have the ability to identify citations that have aged into a new status, such as eligibility for referral to a collection agent or write-off?	x			
B.5.9	Does the processing system automatically carry out the appropriate "next action"?		x		
B.6	**Are citation payments processed in such a manner that ensures complete, timely and accurate application of all payments?**	x			
B.6.1	Does the program have a written security policy which is provided to all new employees?		x		
B.6.2	Are employees required to acknowledge receipt and familiarity with the security policy in writing and is such documentation included in the employee's personnel file?		x		
B.6.3	Does access to the processing system require sign-on with a User ID and a password?	x			

B.6.4	Are user ID's controlled by a management level employee and documented in writing, with the documents stored securely?	x			
B.6.5	Are users required to change passwords on a regular basis (no less frequently than every 60 days)?		x		
B.6.6	Does the system provide various levels of access—based on job requirements, such as read only, routine update, and restricted access to sensitive transactions?	X			
B.6.7	Does the processing system provide a complete audit trail for all transactions which directly or indirectly impact the balance of a citation or the program's ability to collect outstanding fines?	X			
B.6.8	Do the audit trails include the User ID of the person performing the transaction and the date and time of the transaction?	X			
B.6.9	Does the processing system prevent the deletion of any transaction record or citation and plate records? If a transaction must be reversed (e.g., an incorrectly entered payment) the system should reflect the original transaction, a reversal transaction, and the corrected transaction.	X			
B.6.10	Does the system (or the server/network which supports it) provide sufficient levels of back-up so that program data is always secure?	X			
B.6.11	Does the program have a written disaster recovery/business continuity plan which is tested on at least an annual basis?		X		
B.6.12	Are ongoing or intermediate tasks which support the larger DR plan (such as regular database backups) carefully monitored and documented?	x			

C. Pursuit of Delinquent Citations

While a high percentage of citations are paid in a timely manner, either after issuance or following a hearing, many require addition action. These generally fall into three categories: in-house pursuit of delinquent accounts, booting and towing of "scofflaw" vehicles, and use of third party collection firms. Each has its own requirements.

C.1	**Are in-house collection efforts sufficiently robust to insure that citations are not unnecessarily assigned to collections and therefore subject to commission?**			N/A	We do not send citations to collections
C.1.1	Are the citation life cycles (for normal citations, fleets, rentals, etc.) documented and understood by all program staff?	X			We are currently in the process of cleaning this process up
C.1.2	As noted above, does the program have an effective means of obtaining name and address information on the party responsible for each citation in a time manner after issuance, as well as the ability to obtain updated addresses for citations which result in returned mail?		X		This is an issue that we need to work on to get better information from the county and look to see what if any information we may be able to get from the state DOT
C.1.3	Does the processing system automatically add late penalties and generate delinquent notices according to the approved life cycle(s)?	X			
C.1.4	If required or permitted by law or ordinance, does the system support different life cycles for citations issued to different categories of respondent (in-state, out-of-state, rental, government, etc.)?				
C.1.5	Does the system support generation of all required notices, as well as additional collection notices prior to assignment to collection agents?	X			We are coming up with new 30-60-90 day notices to address this
C.1.6	If allowed by state law, is the program's in-state DMV informed of registered owners with sufficient delinquent citations to qualify for registration non-renewal or denial of other privilege?		X		

C. 2	**Does the program utilize a strong, accountable booting/towing program by which scofflaw vehicles identified on the street can be immobilized or impounded until outstanding fines are paid?**	X			We do have a boot program – however not as robust as it could be with 2 Patrol technicians
C.2.1	Does the program have a dispatching system which tracks all authorized boot and tow assignments and actual boots and tows or reasons why the assigned action was not carried out? Ideally, this system should be automated.	x			
C.2.2	Does the system have strict procedures and operational/technical support so that booted and towed vehicles cannot be released without payment of all fines, penalties and boot/tow/storage fees?	X			
C.2.3	(If appropriate) On a daily basis, are boot releases reconciled to boots authorized, boots still on the street, and vehicles not found ("Gone on arrivals")?	x			
C.2.4	On a regular basis--no less than monthly, Is the tow lot inventory report reconciled to vehicles physically on the lot?			NA	
C.2.5	Does the tow lot inventory system allow for the aging of tows so that un-redeemed tows are auctioned in a timely manner and auctioned as appropriate?			NA	
C.2.6	Whether or not a private tow vendor is used, is the tow operation audited on a regular basis to insure that the correct tow and storage fees are collected?				
C.2.7	If a vendor is used, is it responsible for any citation fines and fees it fails to collect prior to release of a vehicle?				

C.3.	**Are third party collection firms used as appropriate and with proper controls and safeguards?**		X		We do not use a collection service – as our Attorneys have deemed it not legal according to local and state statutes
C.3.1	Is the assignment of cases to the collection agent based on documented criteria and based on time- or event-driven criteria (i.e., a set number of days since issuance or since a particular in-house notice or the lapse of a DMV registration hold)?			NA	
C.3.2	Are citations only assigned after the completion of all in-house collection actions with a reasonable expectation of success?			NA	
C.3.3	Are citations assigned on a timely, regular schedule, such as monthly or quarterly?			NA	
C.3.4	When cases are assigned, is the processing system updated with relevant information, particularly the date?			NA	
C.3.5	Are assigned citations flagged so that in-house noticing is suspended?			NA	
C.3.6	Does the agreement with the collection agent specify particular collection actions that will be taken and a set timeframe for completing those actions?			NA	
C.3.7	Does the agreement with the collection agent specify City rights such as the right to recall cases at any time, and the right to assign cases to another collection agent following recall?			NA	
C.3.8	Is there a set schedule on which the collection agent remits payments to the parking operator? While daily remittance might not be practical, it should be no less than weekly.			NA	
C.3.9	Does the parking staff have a documented process in place to immediately reconcile all payments from the collection agent and investigate/reconcile any payments that cannot be applied?			NA	

C.3.10	Does the system provide regular reports on the inventory of cases held by the collection agent, including aging by date of assignment, so that the collection agent's effectiveness can be evaluated?			NA	
C.3.11	Does the program have an ongoing process for "salting" payments on assigned cases to insure that the collection agent applies and forwards all payments in a complete and timely manner?			NA	
C.3.12	Does the City regularly audit the records of the collection agent, not only to insure that all payments are being forwarded in a timely and accurate manner, but also to insure that all contractually required collection actions are being taken and documented?			NA	
C.3.13	As part of its citation life cycle, does the City have write-off criteria? Generally, when cases are returned or recalled from the collection agent, write-off is the appropriate action. Otherwise, the potential value of the program's accounts receivable will be overestimated and possibly misinterpreted.			NA	

D. MONITORING AND AUDITING OF PARKING PERMIT OPERATIONS

In the municipal environment parking permits are often used to control parking in designated lots and structures or to limit parking in residential neighborhoods whose quality of life is threatened by nearby parking generators. Because of the privileges they convey, and sometimes the cost, permits can be valuable commodities and must be safeguarded much like cash. In addition, it is vital that they be sold/issued in strict accordance with program rules and only to those who are eligible. Key elements to be audited include:

#	Standard	Yes	No	Unclear	Observation/Comments/Action Taken
D.1	**Are there written procedures governing the ordering, receipt, distribution, and sale of permits?**	X			
D.2	**Do the procedures govern all necessary aspects of the ordering/receipt/sale process?**	X			
D.2.1	Is there an inventory tracking system that tracks additions to, withdrawals from, and the current permit inventory? Ideally this should be maintained on an electronic spreadsheet to avoid mathematical errors.	X			
D.2.2	Are there written "trigger points", i.e., inventory levels that when reached, trigger the start of the reorder process with sufficient lead time to insure that inventories are not exhausted prior to delivery of the new order? This is particularly important for permits which generally expire on a set schedule with a change in colors used to differentiate between current and out-dated permits.	X			
D.2.3	Is responsibility for ordering stock vested in a manager who understands the importance of this function?	X			
D.2.4	Is permit stock designed to discourage counterfeiting (such as reflective decals) and to facilitate easy verification by enforcement staff (large numbers or letters for permit	x			

	districts/structures, and bold colors that readily distinguish current permits from old)?				
D.2.5	In addition, is each permit for a type/district numbered consecutively so that inventories can be controlled and fraudulent use of lost/stolen permits can be minimized?	X			
D.2.5	Does the documented reordering process include adequate time and instructions to incorporate any desired changes in color or fraud deterrent features, and delivery dates that support the renewal cycle?	x			
D.2.6	Are previous orders for permit stock filed for easy access and (as applicable) contain the number ranges of the previous orders so that number ranges are not duplicated in subsequent orders?	X			
D.2.7	Are deliveries of new permit stock both logged and reconciled against the current order and updated to the permit inventory tracking system?	X			
D.2.8	In addition, is there a written quality control check list so the new stock can immediately be compared to the written specifications in the purchase order?	X			
D.2.9	Is unissued permit stock stored in a secure, locked room or closet?	X			
D.2.10	Is the permit stock periodically inventoried and compared to the tracking system and any discrepancies reconciled?	X			
D.3	**Do the procedures govern all necessary aspects of distributing permits to the sales staff?**	X			We only sell permits at the Municipal building
D.3.1	As appropriate based on the number of locations and individuals who sell permits, are there intermediate distribution points (e.g.,, from central storage to the sales locations)?			NA	

D.3.2	If the program uses such intermediate storage locations, are they subject to a periodic inventory process?			NA	
D.3.4	Are any such distributions properly logged to the inventory tracking system?			NA	
D.3.5	At the cashier or customer service representative level, are distributions of permits logged and reconciled each day, with the number of permits sold and those still on hand equaling the number distributed at the start of business?	X			
D.3.6	Are permit sales also incorporated into the daily cashier balancing process?	X			
D.3.7	If permits sales are tracked within the citation processing system or another automated tracking system, is that system periodically audited for gaps in the permits sold, and missing permit numbers investigated?	x			
D.4	**Are permits sold in compliance with eligibility standards and other business rules?**	X			
D.4.1	Are written guidelines regarding eligibility to buy permits, permit costs, and permit duration and format available to the public?	X			
D.4.2	Is all staff involved in the sale of permits, otherwise serving permit customers, and enforcing permit regulations fully familiar with the business rules and eligibility guidelines governing the program?	X			
D.4.3	Does the process for opening a permit account include a written application and provision of documentary evidence as required by the program guidelines? Such documentation usually includes proof of residence at an eligible address (such as a utility bill) and proof that the permitted vehicle is registered at that address.	X			

D.4.4	As an aid to the confiscation of improperly used permits, do the program rules state—to the extent legally permitted—that issued permits remain the property of the program and can be confiscated by enforcement personnel if used contrary to program rules?	X			
D.4.5.	Are copies of completed applications and supporting documentation filed for at least as long as the account is active plus some reasonable period?	X			
D.4.6	Do program managers periodically audit permit sales to see that the sampled permits/accounts comply with program guidelines with regard to residence, vehicle registration and number of permits issued (as applicable)?	X			
D.4.7	If renewal notices are mailed to account holders, is this done with ample lead time to insure that mail orders can be processed such that new permits can be received and displayed by the required date(s)? Failure to do so can result in laborious work-arounds that can be abused.	X			
D.4.8	If supported by the enforcement handheld devices, are automated lists/files of permits reported as lost or stolen periodically downloaded to the handhelds so that officers can screen permits on vehicles for possible abuse?	X			

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix *30*

Sample Parking Enforcement Operations Manual

Appendix 30

Sample Parking Enforcement Operations Manual & Operating Procedures

This sample parking enforcement operations manual & officer handbook is being provided to the City of Cheyenne as a mechanism to facilitate parking enforcement program development, training and implementation.

Many of the specific rules and regulations have been derived from highly effective parking enforcement programs from around the country. These rules and regulations should be reviewed and modified as needed to reflect the standards of the City of Cheyenne.

Table of Contents

Chapter 1

Mission – Duties and Responsibilities

1/100 Introduction

This manual was prepared for Parking Ambassadors of the City of Cheyenne, hereafter referred to as PA's or Officer's[1].

PA's are not Peace Officers; however, they are involved in the enforcement of state law and local ordinances, and they provide a highly visible and valuable service to the community. Most citizens appreciate having parking regulations enforced. Few, however, appreciate receiving parking citations or finding that their vehicles have been impounded. Due to this unique job status, a PA's duties must be performed with greater sensitivity and a different perspective than other parking program personnel.

This Manual sets forth the Policies and Procedures of the Parking Services Division of The City of Cheyenne. It also provides a tool for PA's to effectively and efficiently perform their required duties. Every officer shall be issued a manual and be responsible to read and be aware of the information written herein.

1/101 Mission of the Parking Services Division

It is the mission of the Parking Services Division of The City of Cheyenne to serve the City's residential and commercial communities by providing quality public works services and infrastructure with environmental and fiscal responsibility.

Parking Services will provide for the safe and efficient movement of people and goods while promoting the economic vitality of the City and the quality of life of it residents through diligent enforcement of authorized regulations with integrity and empathy.

1/102 Duties and Responsibilities

The Parking Services Division manages the on-street residential parking permit program and the parking enforcement function.

1/102. 1 Parking Ambassador (PA)

- Patrols an assigned route, identifies vehicles parked illegally or with expired registrations, and issues a parking citation.
- Responds to parking complaints.
- Conducts field investigations of posted signage.
- Operates a vehicle, two-way radio, handheld computer, and other miscellaneous tools such as a chalk-stick, flashlight, etc.
- Maintains equipment and adheres to safe operating procedures.

[1] Technically, the ordinances authorizing the current enforcement set-up refer to Parking Control Officers, but the Program has adopted the operating title of Parking Ambassador because it better describes the positive role that PA's are expected to fill.

- Reports traffic accidents, abandoned vehicles, missing/vandalized signage, miscellaneous municipal code violations, and traffic hazards.
- Responds to miscellaneous inquiries from the public and City staff.
- Performs special assignments upon request.
- Performs other related duties as assigned.

Chapter 2

CONDUCT

2/100 Code of Ethics

PA's have a fundamental duty to serve the public. In doing so they must display honesty and integrity while obeying all laws and City policies.

PA's shall enforce parking regulations and perform all other required duties courteously and appropriately without favor, malice or ill will. PA's shall never accept favors or gratuities.

Gratuities are defined as any type of gift or service of value, free beverages, free or reduced-priced meals, or money. If a resident, visitor or business person along the enforcement route offers any such item it must be refused. You are expected to decline graciously any such gifts or tokens of appreciation. Acceptance of gratuities is a disciplinary offense.

2/101 Professional Demeanor and Conduct

It is policy of the Parking Services Division, the City of Cheyenne, that when dealing with the public and co-workers, PA's should be courteous, respectful, cooperative and professional at all times.

At no time shall an officer make inappropriate comments or gestures, make physical contact with a member of the public or a co-worker, or use profane or insolent language.

A member of the public has the legal right to report behavior he or she believes to be unprofessional. The officer shall readily provide his/her first name, their manager's name and the office address and phone number to a member of the public upon request.

City and company policy prohibits discrimination on the basis of age, race, gender, color, national origin, disability, or sexual preference in any work related activities. Sexual harassment in the workplace is a form of discrimination. Parking enforcement staff shall comply with these policies.

2/102 Roll Call Demeanor

Roll call is the beginning of the duty shift and is a mandatory duty assignment. Officers are required to report to roll call on time and be prepared to begin work. This preparation includes being in complete uniform with all necessary equipment ready.

Roll call is the time for assignment, instructions and briefings to be given as a team. Roll call shall be brief and concise. On occasion roll call training is presented, which extends the time allotted. Officers shall behave in a professional manner throughout roll call. Officers shall not leave roll call

unless excused by the Supervisor. Lengthy personal discussions are to not be held while roll call is in session.

When roll call is completed, all officers are excused and shall report immediately to their assignments.

2/102. 1 Conduct Towards Fellow Employees

Officers shall treat Managers, Supervisors, fellow Officers and City Employees with respect. Officers shall be professional, courteous and civil at all times in their conduct toward one another.

2/102. 2 Standard of Conduct

As a PA, you are constantly in the public eye. The services you provide for the people must be free of hazards and liabilities. Drugs and alcohol can impair public trust and public safety and create criticism of all parking program employees. Therefore, being under the influence of or possession of illegal drugs or alcohol in the workplace is strictly prohibited. If you are found to possess illegal drugs/substances or alcohol, you are subject to termination of employment. This can also apply to off-duty drug use by parking enforcement staff. If a supervisor believes you are affected by the use of drugs or alcohol, the supervisor may require a drug test through a local medical facility. Refusal to submit to such tests may be considered insubordination and grounds for termination.

2/103 Court Demeanor

From time to time PA's may be required to testify in court or at an official hearing. An officer may be summoned for the following:

- County Court citation appeals.
- Administrative impound hearings.
- Witness to a traffic accident or a crime.
- Involvement in a traffic accident or a crime.

Notifications to appear in such hearings come in the form of subpoenas or other official documents. These notices indicate that attendance is a primary duty assignment. Should an officer experience an illness or other emergency, which will prevent attendance, immediate notification to the proper person is required, since attendance is mandatory. If notification is made to the immediate supervisor, the officer must indicate the inability to attend the hearing and give the supervisor the necessary information.

Prior to attending such hearing, the officer shall review all necessary documents and relevant notes. Hearing cases shall be reviewed with staff prior to representing the City. Cases may be discussed with the City Attorney or other appropriate personnel if an officer is asked to do so.

When testifying, the officer shall respond only with facts as they are known and shall not express personal opinions, prejudices or ideas. The officer shall answer questions that are asked as directly and briefly as possible.

Chapter 3

Guidelines for Personal Appearance and Uniform Standards

3/100 General Provisions

PA's shall be neat, clean and well-groomed at all times while on duty.

PA's shall wear uniforms that are clean, neat and pressed at all times. Leather accessories shall be kept shined; metal accessories shall be polished.

The City will provide a laundry/cleaning service which will rotate clean uniforms on a bi-weekly basis. It is the officer's responsibility to have soiled uniforms ready for pickup on the appropriate day and to use the clean uniforms in such a manner so they last until the next delivery of clean uniforms.

Officers shall present a professional appearance at all times while on duty. The full required uniform shall be worn on duty. No unapproved articles of clothing are to be worn with the required uniform. In addition, no part of the uniform shall be worn in conjunction with civilian clothes while the PA is off-duty.

3/101. 1 Hair Standards

Hair shall be neatly trimmed/combed at all times with no eccentricities of style, color or fashion. Hair shall be arranged so as not to interfere with vision in any way.

When male officers choose to wear mustaches, beards, or sideburns they shall be worn short and neatly trimmed. No other facial hair is authorized.

3/101. 2 Jewelry

For the officers' safety, excessive jewelry shall not be worn. No jewelry shall be worn that dangles or can be grabbed or pulled off the officers.

For officers, "excessive jewelry" shall include nose rings or any other type of pierced jewelry or decoration, other than earrings, that is worn on the body and exposed to public view. Only one pair of stud earrings is authorized, one per ear.

3/101. 3 Makeup

When female officers wear makeup it shall be worn moderately.

3/102 Uniform Standards

Uniformed personnel shall possess at all times while on duty a serviceable uniform and the required equipment to perform assigned duties. The official uniform shall be worn in a professional manner. Buttons and zippers shall be secured at all times. Nothing shall be carried in the uniform pockets, which would detract from the proper appearance of the uniform.

3/102. 1 Required Uniform Items

PA's shall be provided basic articles of uniform and other articles of uniform as needed that shall be replaced as necessary. The uniform currently includes shirts, pants, shorts (for summer), a jacket, a parka for winter, and winter boots. Officers are expected to provide their own black shoes for patrol when winter boots are not necessary. If the Manager determines an article of clothing is no longer serviceable, a new one will be issued.

3/102. 2 Shoes and Socks

Shoes shall be solid black in color, either low or high cut and plain. Leather shall have a polished or glazed finish.

3/103 ID Badges

Officers shall wear the official ID Badge, which will contain their last name for identification purposes. The nameplate shall be legible to members of the public facing the PA.

3/103. 1 Lost, Stolen or Damaged ID Badges

When a badge is lost, stolen or damaged, the Officer shall immediately report this to the On-Street Manager. The Supervisor shall arrange for immediate replacement of the lost, stolen or damaged badge.

3/103. 2 Misuse of an ID Badge

The ID badge shall not be carried, worn, displayed, or used in any manner by an officer who is off duty. It shall never be displayed in an attempt to gain favor, obtain gratuities, or otherwise receive a benefit to which the PA would not otherwise be entitled. The ID badge shall not be used as a law enforcement device under color of authority or in any attempt to gain exemption from any law enforcement action. The badge shall never be used to harass, discriminate against, and intimidate others.

3/104 Accessories

Accessories are personal items not issued nor required by the Department. If officers choose to wear or carry such items they must conform to company guidelines. Approval of all accessories must be obtained in advance.

3/104. 1 Purses and Bags

Any purses or bags that are carried while in uniform shall be conservative in appearance. Officers shall not wear or carry any backpack, "fanny pack" or similar type bag while in uniform and on duty.

3/104. 2 Timepieces

Timepieces or watches worn or carried by officers shall be conventional, conservative and inconspicuous, preferably the type worn on the wrist.

3/104. 3 Cell Phones

In the interest of safety, Officers shall not talk or text message on a cell phone while driving. Use of cell phones for personal calls should be kept to an absolute minimum. If the PA must conduct personal business on the cell phone, this should be done during the break.

Chapter 4

Proper Use of Equipment

4/100 General Provisions

All assigned equipment is City property and the care and maintenance of such are the responsibility of the PA. Officers shall treat assigned equipment with responsibility and the care necessary to maintain it in safe and effective operating condition. All equipment must be returned to the proper location at the end of the work shift. Vehicles shall be parked in the designated areas.

Radios shall be turned off and returned to the appropriate charging units. Handheld citation writers shall be returned to the specific assigned charging port.

4/101 Vehicles

Officers may be assigned to drive an enforcement vehicle. The program is currently using Ford Escapes and Chevy Trackers, but this could change over time.

4/101. 1 Assignment of Vehicles

Each officer assigned a vehicle is responsible for the proper care, fueling and monitoring of that assigned vehicle, as well as any other vehicle that may be assigned on a temporary basis. Each officer is also responsible for ensuring that any assigned vehicle is left clean and free of trash at the end of shift. Each officer is required to use the vehicle assigned to him/her, as applicable. When an assigned vehicle is inoperable or unavailable due to routine maintenance, the On-Street Manager will assign the officer another vehicle, if available. At the beginning of each shift, each officer shall complete the vehicle sign-in and out sheets (found in each vehicle). If it becomes necessary during a shift to change vehicles, the officers shall ensure that the new assignment is entered on the assignment sheets.

4/101. 2 Safety Checks

Prior to driving the vehicle at the beginning of each shift each officer shall complete a safety check of that vehicle. The safety check includes checking all lights, turn signals, brakes, tires, windshield wipers, and mirrors. If any safety item needs repair, the fact should be reported to the On-Street Manager immediately and his/her instructions followed. Any dents or other minor damage that does not affect the safe operation of the vehicle, including handles, hinges or other parts that many be loose, shall be reported to the Manager at the end of the shift.

4/101. 3 Maintenance

The Vehicles used for parking enforcement are the property of the City of Cheyenne. Each Officer is responsible for monitoring the condition of his/her assigned vehicle(s). Vehicles that exhibit

operating problems or damage should be reported to the On-Street Manager who will arrange for repair by the City.

It the vehicle becomes disabled while the Officer is on patrol and it is totally inoperable or unsafe to drive it to the shop, the PA should communicate with the On-Street Manager (or the office) and await instruction.

4/101. 5 Vehicle Fueling

Officers assigned a vehicle are responsible for refueling the vehicle at the designated City fueling station which is currently the Police Station. When fueling, officers will need to use both their employee card and the vehicle card. This allows the City to track fuel usage by both officer and vehicle. Any officer driving a vehicle on a temporary assignment basis shall ensure that it is left with a full gas tank at the end of shift. PA's may fuel their assigned vehicles during their shift, consistent with efficient patrol practices.

4/101. 6 Driving Safety

The emergency flashers and directional arrows must be activated any time the vehicle is being driven slower than the normal flow of traffic.

The rotating lights on top of the vehicle must be activated during inclement weather for visibility.

To ensure safety and minimize traffic congestion during the issuance of parking citations, officers are to park vehicles safely; whenever possible vehicles shall be parked at the curb, out of the flow of traffic. Vehicles should not be double-parked while the officer is issuing a citation; this can be dangerous for the PA and contributes to traffic congestion.

4/101. 7 Traffic Accidents

Whenever an officer is involved in a traffic accident while on the duty, the Police Department should be notified by cell phone immediately, advising the dispatcher if there are injuries or if an ambulance is needed. The officer must not leave the scene until the Police respond and take appropriate reports. Do not move the vehicle until instructed to do so. If the vehicle is not drivable the Off-Street Manager should be advised.

4/102 Radios

Officers will usually use the cell phones integrated into their handheld issuance devices to communicate with the office and other enforcement personnel as necessary. However, two-way radios provided by the City will be used on Saturdays during University of Nebraska home football games (or other special events as deemed necessary). The following rules apply to the use of radios:

4/102. 1 Assignment of Radios

All radios are identified by a Program-assigned ID number. PA's will sign out radios by name and log the ID number. If an assigned radio is out of order and there are no spares available, the Manager is to be notified.

4/102. 2 Maintenance of Radios

Each officer is responsible for the proper care of his/her assigned radio. Should the radio become inoperable the officer shall notify the On-Street Manager.

4/102. 3 Charging Radio Batteries

When not in use, radio units must be placed in the charging port. The Officer shall verify that radios are charging.

4/103 Handheld Enforcement Computers

Handheld citations writers must be properly cradled in designated ports. Officer shall verify that unit is charging and transmitting data.

4/103. 1 Assignment of Handhelds

Each handheld unit is numbered and each officer has an assigned unit. If the assigned unit is out of order, a spare shall be used. If there are no spares available the Supervisor shall be notified and shall assign a unit that is normally assigned to an officer who is off- duty.

Chapter 5

Personnel Issues

5/100 General Provisions

Scheduling and deployment of personnel for the purpose of optimum effectiveness in serving the needs of the program and the Department and company as well as the personal concerns of the officers requires management to address many priorities. Both management and employees have the responsibility of conforming to the necessary requirements to effectively meet these needs.

5/101 Personnel Schedules

Officers who are full-time employees currently work a five day, Monday to Friday schedule with individual shifts starting at various times so as to provide coverage across the times that meters and other regulations are in effect. One part-time PA currently works 20 hours per week. The current full-time daytime assignments are as follows:

- 7:00am to 3:30pm
- 8:00am to 4:30pm
- 9:00am to 5:30pm

The current part-time assignment is:

- Thursday: 6:00pm to Midnight
- Friday: 2:00pm to Midnight
- Saturday: 2:00pm to Midnight

5/101. 1 Deployment Schedules

Schedules are developed for optimum field coverage and are subject to change by management as the need arises. Schedules are reviewed periodically.

5/101. 2 Sick/Personal Leave

When an officer is unable to report for duty as assigned due to an illness or unexpected personal emergency he/she must immediately contact the On-Street Manager. If this is not possible a message must be left in the office stating the reason for absence, the length of time off anticipated and a phone number where the Supervisor may reach the officer.

5/101. 3 Vacation Schedules

PA's will receive 5 (five) days' vacation per year. Vacations must be requested a minimum of seven days in advance. If there tow employees request the same week or days for vacation, the decision will be made by the Manager at his discretion.

5/102 Personnel Assignments

It is the policy of the program to make beat/route assignments based on priority enforcement requirements and public complaints. Day Shift officers are normally assigned to beats/routes on a rotating basis. Management reserves the right to make assignments to meet the best interests of the City.

5/103 Meal Periods/Breaks

Officers are entitled to a half-hour break which can be used for meals. The time of the break period may be defined by the Manager based on the needs of the assignment.

It is necessary for officers to conduct themselves in a manner that provides the highest level of professional service to the City. Officers on all shifts are to sign out of service (by clocking in and out at the Haymarket site) when they leave their assigned route to begin the break period. The time it takes to travel to a location for a meal is included in the half hour time period. It is important also to be aware that program vehicles are to be used solely for program business.

Chapter 6

Parking Enforcement Procedures

6/100 General Provisions

The purpose of parking enforcement is to ensure the availability of parking in commercial and residential parking areas, to prevent congestion during peak traffic periods, to keep safety zones clear such as crosswalks, fire lanes and bus zones, and to maintain disabled persons' access. Parking enforcement is also necessary to clear the streets as required for a variety of other situations such as street sweeping, construction and special events.

6/101 Citing Instructions

PA's are authorized to enforce parking regulations pursuant to the following sections of the City of Cheyenne Municipal Code:

10. 08. 030, 10. 08. 050, 10. 32. 010, 10. 32. 015, 10. 32. 020, 10. 32. 050, 10. 32. 070, 10. 32. 080, 10. 32. 090, 10. 32. 100, 10. 32. 110, 10. 32. 140, 10. 32. 150, 10. 32. 160, 10. 32. 170, 10. 32. 190, 10. 32. 200, 10. 32. 210, 10. 32. 220, 10. 32. 240, 10. 32. 250, 10. 32. 260, 10. 32. 280, 10. 32. 290, 10. 32. 300, 10. 32. 310, 10. 32. 320, 10. 32. 330, 10. 32. 350, 10. 34. 050, 10. 34. 060, 10. 40. 110, and 10. 44. 030. (Update with appropriate City of Cheyenne ordinance numbers)

Parking citations may be issued when a vehicle is found to be in violation of any of the above City of Cheyenne Municipal Code Sections or Montana Vehicle Code Sections covering the proper registration of motor vehicles, and in accordance with Department Policy. Under certain circumstances, PA’s may also issue citations for illegal parking in taxi zones.

PA's shall not enforce or cite vehicles outside the City of Cheyenne Downtown Enforcement Boundary. Parking citations shall only be issued for parking violations or registration-related violations.

A citation shall not be issued if at the time of the violation, any required sign or marking is not in place and sufficiently legible and visible to be seen by any ordinarily observant person.

6/102 Issuance of Citations

Prior to issuing a parking citation, the officer shall thoroughly check the vehicle (front, rear, dash) to determine that it is in violation and there is no obvious problem such as a flat tire or a person inside who needs assistance. If there is a note or the hood is up indicating a possible mechanical problem, the officer may allow a reasonable period of time for the driver to get assistance, depending on the nature of the violation.

Generally, the PA will list the license plate of the vehicle being cited; DMV records will later be accessed to identify the registered owner/responsible party. If a vehicle lacks a license plate, the officer should carefully record the vehicles VIN number, which can be found on the driver's side of the dashboard, just inside the windshield.

The citation and the envelope shall be secured to the vehicle in a conspicuous location, preferably under the windshield wiper on the driver's side.

6/102. 1 Return of Vehicle Operator

If the operator of the vehicle is present during the issuance of the citation and has been given the opportunity to move the vehicle or if some other communication has taken place, the officer shall so indicate in the comments/notes section of the citation.

When the officer becomes aware that a driver may leave without waiting for completion of the citation, it is important to make every attempt to ensure that the driver is aware that a citation will be issued, and serve the individual personally if she/he remains at the site. Nevertheless, at no time shall an officer make any attempt to forcibly detain the driver or stop a moving vehicle and place him/herself in danger. Even if the driver/vehicle leaves before the citation can be served, the officer should immediately complete the citation, retain the "respondent" copy and record the citation as a "driveway." The respondent copy will be mailed to the registered owner at a later time. At no time shall an officer make a determination of a violation and then wait to complete the citation at a later time.

6/102. 2 Issuance of Warnings

It is City policy that out-of-county vehicles are given two "courtesy warnings" per year. Warnings are intended to educate the vehicle owner/operator without creating a bad impression of the City for a visitor. The enforcement handhelds communicate with the live database to indicate whether the vehicle has had previous warning in the last calendar year, and the plate configuration will indicate whether it is registered out-of-county. The issuance of a warning should be treated identically to issuance of a citation by the PA (i.e., the same required circumstances, same signage requirements, same conduct on the part of the officer).

6/102. 3 Real-time Transmission of Citations

PA's should be aware that in normal operations, citations are transmitted to and updated to the database on a real-time basis as soon as the officer completes the entry process on the handheld. If a vehicle owner returns to his/her vehicle just as a citation has been completed and protests that the citation should not be issued, he/she should be told that issuance is complete, and the PA should briefly explain the contest process, and direct the owner to the back of the citation and the program's web-site. The PA should complete the discussion as quickly as possible without being rude and resume patrol.

6/102. 4 Voided Citations

Occasionally it is necessary to void a citation after it has been issued. The most frequent examples are when the PA makes a mistake in issuing the citation (such as citing the wrong ordinance) or when the PA issues a citation prior to noticing that the vehicle is occupied.

When an officer wishes to void a citation, s/he should flag it as a void in the handheld. Then when back at the office, the citation must be printed out and sent to the Violations Bureau which will actually void the citation.

6/103 Completion of Citation

NEED SOMETHING HERE

6/103. 1 Computerized Handheld Citation

When issuing citations by the use of a computerized handheld citation writer, the officer shall ensure that the unit is in working order prior going into the field. The officer shall ensure the battery and printer are operational, the date and time are accurate, and that there is a sufficient supply of blank citation stock. When issuing his/her first citation of the day, the PA shall also verify that his name, ID and beat/route are being printed accurately.

6/103. 2 Manual Citation

On rare occasions an officer may need to issue a citation by writing it manually due to problems with the handheld computers. When this is necessary the following procedures must be followed:

The citation must be filled in completely and legibly. Black ink is required; in inclement weather pencil may be used. Officers shall print using block letters. When entering information on the citation the officer must remember to press hard enough for all copies to be legible. The original copy of the citation shall not contain any information which does not appear on the violator's copy.

If critical elements are not included on the citation it may not be upheld in the hearing process.

Those important elements are:

- Date and Time
- Vehicle License, Make and Model
- Violation code
- Meter # (if applicable)
- Time first observed (if applicable)
- Location of violation

6/103. 3 Entering Violation Date

The date is the day on which the vehicle is observed in violation and is entered as month, day and year (i.e.: 03/06/00). In the hand held computer the date is pre-programmed. On the manual citation this shall be entered in the space provided for date.

6/103. 4 Entering Violation Time

The hand held computer keeps time and will indicate the time of the citation. On the handwritten citation, the time must be written in the space provided. The time used on the citation is based on the 24-hour (Military) clock. If the hour is less than 10, fill in with a zero to the left so that the time is always a four-digit number (i.e.: 9:05 a. m. is 0905; 9:05 p. m. is 2105).

6/103. 5 Entering Vehicles License Number or VIN

The license number is to be entered exactly as it appears on the license plate of the vehicle in violation using standard letters and numbers. If there is no plate on the vehicle, the officer should enter the Vehicle Identification Number (VIN) in the appropriate field on the citation form. The VIN can be found on the front dashboard just inside the driver's side windshield. It is a long, complex list of numbers and letters and should be copied carefully to avoid misidentifying the vehicle.

The State in which the license plate is registered is important. The officer shall ensure that the correct State is entered. There is a drop down menu of state abbreviations in the handheld device. It is also important to identify the month and year that the license plate registration expires and enter it correctly.

6/103. 6 Entering Vehicle Make, Body Type and Color

For proper identification of the vehicle it is necessary to indicate the correct vehicle make; do not guess. Body type and color are important for corroborating evidence. Several makes and body types are preprogrammed in the computer but must be written on the manual citation. Vehicle color also is used to describe the vehicle, and the officer shall indicate the color as correctly as possible. It is understood that many colors are difficult to identify and a judgment decision may be called for. The handheld issuance devices will provide drop-down menus of the vehicle makes, body types and colors. In the course of normal operations, officers should endeavor to learn these codes in case they have to use handwritten citations at some point.

6/103. 7 Entering Vehicle Location (Verify)

It is necessary to be as accurate as possible when indicating the location of the vehicle in violation. When using a description, don't put "St", "Street", "Rd", "th", or "nd" at the end of numbers. Indicating the block number only is unacceptable in determining specifically where the vehicle was parked.

Example of acceptable addresses:

1) 11-12
2) P 11-12

Example of unacceptable address:

1) Between 11th and 12th
2) P Street between 11th and 12th

6/103. 8 Entering Beat or Route Number

It is important for statistical purposes to know what beat or route a citation was written in, so officers shall indicate the correct beat route number the appropriate place on the citation. (On Handheld citations, this should be done automatically if entered correctly at the start of the shift.)

6/103. 9 Entering Officer Name

The handheld computer will enter the officer's name once set up properly at the beginning of the shift. The officer must clearly print their name on a handwritten citation.

6/103. 10 Notes

On both the handheld computer and the manual citation there is a space for remarks/notes. This space is to be used for pertinent information that may be necessary to further establish a prima facie case or to help the officer remember a specific incident or circumstance. PA's should remember that citation notes can be reviewed during citation appeal or in Court, so notes should be business-like and relevant to the violation or the circumstances of its issuance.

Some comments that are helpful in upholding the validity of the citation include:

- "Sign visible-XX feet"
- "Meter working"
- "RO present/talked with PA".

6/104 Patrol Techniques

In order to effectively patrol an assigned beat/route the officer must become familiar with the characteristics of the area, the restrictions, and the sign posting's and so forth. The development each day of an enforcement plan ensures effective and efficient coverage. A part of this plan must include being on patrol during peak times, taking the break during quiet times (and when approved by the Manager) and ensuring that the Manager and fellow PA's know that one is on break.

At the same time, to the extent possible and practical, it is desirable that officers do not patrol a beat in the same manner each day. If possible, PA's should "mix it up" and vary the pattern by which they patrol a particular beat. This will both make the patrol day more interesting for the Officer and make

it more difficult for habitual violators (such as meter-feeders) to “game” the system by anticipating when the PA will be coming down the street.

Chapter 7

Vehicle Towing/Impounding

7/100 General Provisions

For PA’s, the purpose of towing and impounding is to provide for the removal of the vehicles of habitual parking violators who have failed to respond appropriately to previous citations. Habitual violators are otherwise known as scofflaws and, per Program policy, must have accumulated three (3) or more unpaid parking citations, all of which must be more than 15 days old.

While the towing and impounding of another person’s property becomes a service to the public, it also places a responsibility upon the Officer.

7/101 Authority to Tow/Impound

Illegally parked vehicles may be towed and impounded subject to the provisions of Cheyenne City Ordinance Section 10. 44. 030 (insert correct ordinance number). Vehicles towed and impounded pursuant to this provision are subject to City rules, regulations and policies and/or approval by the City.

7/102 Verifying Need to Tow/Impound

Although a tow and impound may be authorized, it is not always mandatory. An officer must use good judgment in determining that a vehicle is in violation and should be towed and impounded.

The officer shall contact dispatch to verify necessary information. If the vehicle is being impounded as a scofflaw the officer shall ask violation bureau to check DMV records and the processing agency records. The checks are to determine if the vehicle is stolen, has outstanding citations or has been recently impounded.

Once all criteria have been met for the impounding and a determination has been made to tow and impound a vehicle, the tow truck is to be requested and the following steps are taken.

7/102. 1 Completion of Vehicle Tow/Impound Form

When towing and impounding a vehicle, someone’s personal property is being taken. This creates an atmosphere for City liability and all due caution must be observed. A Tow Authorization Report shall be completed by the PA to indicate the date and time of the tow, who authorized it,, the location the vehicle was removed from, any damage to the vehicle at the time of impound, and any valuable items observed in the vehicle (such as cell phones, purses, or computers).

Once copy of the form is completed, the driver of the responding tow truck is required to sign the report indicating he is taking possession of the vehicle.

7/102. 2 Vehicle Inventory

When completing the Tow Authorization Form it is necessary to thoroughly check the condition of the vehicle and make appropriate notations. It is also necessary to note any items of value inside the vehicle by looking through the window and noting items on the form. Officers may only enter the vehicle when another officer or tow operator is present. At no time shall an officer enter a vehicle while alone.

7/102. 3 Processing the Impound Form

Upon completion of the tow, the officer clears the location and reports to the Police Service Desk so that if the vehicle owner reports the vehicle as stolen he/she can be informed that it was actually towed.

7/103 Stolen Vehicles

When the officer checks with the Violations Bureau to verify information on the vehicles and the information returns that the vehicles is reported as stolen, Officer will call Cheyenne Police Department to report, advise location, and continue on patrol. For personal safety reasons, the officer should standby at a distance and be prepared to advise if the driver is present.

Chapter 8

Citation Adjudication

8/10 General Provisions

Parking citations may be contested in accordance with the administrative procedures outlined in the Nebraska Vehicle Code and local ordinance. In brief, a vehicle owner who wishes to contest a parking citation must first request a review of the citation with a representative of the City Attorney's office. It is possible that a decision might be held up pending research of a claim that a meter was not operational, or that proper signage was missing. If the City Attorney makes a decision to uphold the protest, the balance due is reduced to zero and the citation is considered dismissed.

If the City Attorney determines that the citation is valid, the respondent (customer) can either pay the fine or can request a hearing before a judge in County Court. It is quite possible that PA's will be called upon to testify at County Court hearings under oath.

There are two things that PA's can do both to reduce inconvenience to members of the public and see that legitimate violations are sustained once cited. First, PA's should endeavor to always issue valid, legally sufficient citations. Second, they should always testify completely and truthfully in County Court as required.

8/107 Establishing a Proper Case

To ensure that citations are upheld during the initial administrative review process and the subsequent Hearing process, it is important for officers to complete each citation clearly and legibly, with all proper information required to establish the violation, and issued for the proper violation based on the facts the PA observes. Finally, all citations must be signed by the officer.

8/108 Testimony in Court

It is also critical that officers testify properly in Court when required. Elements of proper Court testimony include the following:

Appearing on-time and at the designated place. (Officers will be informed in writing about required Court appearances.) Presenting a professional appearance that reflects well on the PA and the program. (This includes both good grooming and proper attire consistent with the requirements stated previously in this manual.)

Answering all questions directly and accurately. Officers must tell the truth and only respond to the exact question asked. They are not to embellish, offer their personal opinions, or provide answers beyond the question asked. They should return to the office as soon as told by Court personnel that they are no longer required.

8/109 Understanding the Difference between Citation Issuance and the Results of Administrative Reviews and Court Hearings

It is important that each PA appreciate that subsequent dismissal of a citation which he/she wrote is not a negative reflection. The nature of our system calls for PA's to make quick judgments in the field and issue citations based on the situations they observe, sometimes without all of the relevant facts known to them. Administrative reviews by the City Attorney and Court hearings allow citation recipients to put forward facts or evidence of which the PA might not have been aware. Thus, PA's should not be concerned if they later hear that one of their citations has been dismissed.

Chapter 9

Manual Maintenance

9/100 Manual Issuance Procedures

Each manual will be numbered. Each person who is issued a manual will be required to sign for it. Each person who is assigned a manual will be responsible for the care, maintenance and updating of that manual. More significantly, offices are responsible for knowing the material in the manual and performing their duties in compliance with the manual. If there are any questions or uncertainty regarding what is expected, please ask the supervisor.

9/101 Manual Updating Instructions

As pages are revised or new pages are added, each manual holder will be required to sign for receipt of the update. The page numbering is used to locate the spot for new or revised pages. A revised page that is replacing an old page will have the same page number as the one it is replacing. To differentiate the replacement page from the old page, the replacement page will be coded with its effective date in the lower right hand corner.

When a revision requires more than one page it shall be numbered with a decimal such as 28, 28. 1, and 28. 2. When revisions occur, insertion instructions shall accompany the new pages.

9/102 Manual Revision Inserts

The new and revised pages are to be incorporated into the Parking Enforcement Manual. It is suggested that the old pages not be immediately discarded. Replaced pages should be filed in the rear of the binder along with this notice of manual revisions. These should be retained for reference purposes for six (6) months from the date above.

9/103 Manual Rewrites

Changes of policies and procedures as well as legislative changes may require a rewrite of certain portions of the manual. In order to ensure the immediate dispatch of new information to officers, Training Bulletins will be prepared and issued while manual updates are being prepared. Each Training Bulletin will indicate which Manual Chapter is being superseded or amended. As appropriate, a Manual rewrite will be completed to address the necessary changes.

Appendix 31 - Recommended Parking Benchmarks

#	Benchmark Name	Type	Description
1	Total operating cost per space.	Cost	**Overall key benchmark.** Useful for year to year comparisons and for comparisons with operations of similar profiles. Divides total operating expenses by number of parking spaces.
2	Total revenue per space.	Productivity	**Overall key benchmark**. Measures revenue to size of program in relation to spaces.
3	Facilities and equipment long-term debt per space.	Cost	Measures total long-term debt to size of program in terms of spaces.
4	Percent of annual revenue committed to current principal and interest payment.	Relationship	Measures amount of revenue consumed by current debt payments.
5	Debt for facilities and equipment incurred for the last five years per space.	Cost	Measures five year debt assumption for facilities and equipment against size of program in terms of spaces. Important in setting baseline measurement for comparison with multi-year year parking improvement plans.
6	Average monthly permit revenue per space.	Relationship	Measures the monthly permit revenue to the number of spaces.
7	Total operating costs per Parking department FTE.	Cost	Useful for internal year to year tracking and comparisons to other operations with similar profiles. Divides total operating expenses by departmental FTE.
8	Total revenue per Parking department FTE.	Efficiency	**Overall key benchmark.** Measures income to staffing level.
9	Parking spaces per Parking department FTE.	Productivity	**Overall key benchmark.** Measures total staffing to size of program in relation to parking spaces.
10	Surface parking lot spaces as a percent of total spaces.	Relationship	For profile comparisons, this shows the balance between surface lot spaces and structured or on-street spaces.
11	On-street parking spaces as a percent of total spaces.	Relationship	Shows balance between on-street parking and surface lots or structured spaces.
12	Structured parking spaces as a percent of total spaces.	Relationship	Shows balance between structured spaces and street or surface lot spaces.
13	Administrative cost per space.	Cost	Measures administrative costs to size of program in respect to number of spaces.
14	Administrative costs as a percent of total costs.	Relationship	Reflects the portion administrative costs represent as a part of the whole. Look for "norms" within your peer group. Compare to operations with similar management profiles.
15	Security costs per space.	Cost	Measures security expenses to the size of the facility or operation.
16	Security costs as a percent of total costs.	Relationship	Reflects the portion security costs represent as a part of the whole. Look for "norms" within your peer group. Compare to operations with similar security profile.
17	Total enforcement process costs per space.	Cost	Quantifies total enforcement process costs by measuring to number of spaces in the program. Compare with similar enforcement profiles. (Total enforcement includes: issuing warnings/citiations, processing, adjudication and collections.)
18	Total maintenance costs per space.	Cost	Measures total maintenance expense to the size of the program in respect to spaces. Compare to operations with similar maintenance profiles. Match weather characteristics and American Concrete Institute (ACI) "durability zones".
19	Total maintenance costs as a percent of total operating costs.	Relationship	Reflects the portion of total operating costs which all maintenance absorbs. Match weather characteristics and American Concrete Institute (ACI) "durability zones" when making comparisons.
20	Equipment maintenance cost per space.	Cost	Measures equipment maintenance costs by size of program in respect to spaces.
21	Equipment maintenance costs as a percent of total maintenance costs.	Relationship	Measures what percent of maintenance costs are absorbed by equipment maintenance.
22	Equipment maintenance costs as a percent of total operating costs.	Relationship	Measures equipment maintenance costs as a percent of total operating costs.
23	Cashier station costs per space.	Cost	Measure cost of cashier operations to size of program in relation to spaces.
24	Cashier FTEs per space.	Productivity	Measure cashier staffing levels to size of program in respect to spaces.

DOWNTOWN
STRATEGIC PARKING PLAN

Appendix 32

Parking Branding and Marketing Best Practices

Parking System Branding & Marketing

Best Practices

Strategies and Tools

For Your Toolbox

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Best Practices

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Presentation Overview

- **Marketing Program Development Strategies**
  - Goals & Objectives
  - Communications Issues
  - Planning Process Overview
- **Marketing Program Budget Guidelines**
- **Tools for Your Marketing Tool Box**
  - Examples of Parking Marketing Best Practices
    - The Latest in Parking/Transportation Web-Sites

Parking System Branding & Marketing

Best Practices

What Can Be Gained?

What can be gained by implementing a comprehensive parking marketing plan?

- Increased facility usage
- Increased parking system revenues
- Decreased negative perceptions of parking
- Increased consumer acceptance and understanding of parking
- Increased activity in the downtown
- Promotion of Parking program accomplishments / contributions

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Perception of Parking

What is the Perception of Parking in your Community?

- Parking is one of the biggest deterrents to downtown usage.

OR

- Our parking program is a significant contributor to the success of our downtown.

Consider the possibility that…

- Parking can also be a tool that helps drive increased usage of downtown or campus offerings.
- What if parking could be turned from an impediment to visiting to an amenity?

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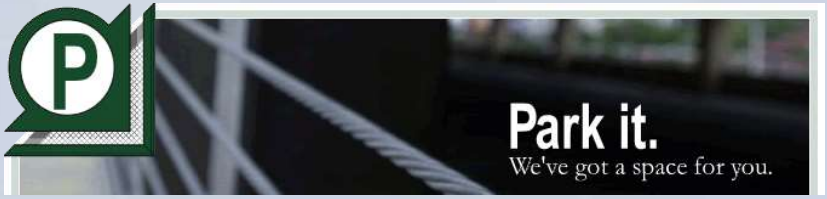
Elements of Success

What are some of the elements of a successful Parking Marketing program?

- Coordinated parking system branding
- Consumer marketing/communications
- Internal training and communications
- Public information and public relations
- Usage of parking to drive other downtown usage
- Cooperative strategies/partnerships with other agencies



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Developing Your Marketing Plan

Parking System Branding & Marketing

Best Practices

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Overview of the Planning Process

- Situation Analysis and Profile of the Parking Product
- Identification of Target Markets
- Establish Marketing Objectives
- Establish Key Strategies and Tactical Plan
- Brand and Image Development
- Budget and Timeline Development

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Step One: Situation Analysis And Product Profile

- Interviews with customers, stakeholders
  - Can be formal or informal
- Analysis of existing research
- Create SWOT analysis
- Identify key issues and challenges
- Coordination with other campaigns

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Best Practices

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Step One: Situation Analysis and Product Profile

Situational Analysis Keys

- Identify positive program elements
- Identify potential issues
- Sorting out perception vs. Reality
- Seeing the system from various customer perspectives

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Best Practices

Step One: Situation Analysis and Product Profile

Each Facility Can Be Defined as a Product

- Different characteristics are attractive to different parker groups
- Develop a profile for each facility
  - List the characteristics of each facility
    - Generational differences
    - National heritage
  - Match your facilities to your customer profiles
  - Compare with competing facilities

Developing Your Marketing Plan

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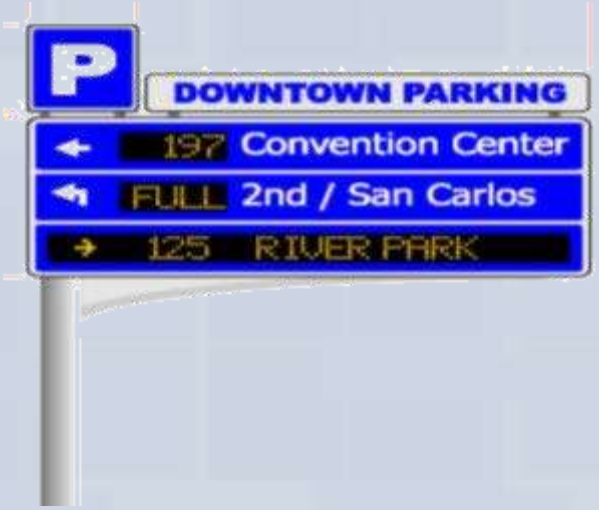
Best Practices

Step One: Situation Analysis and Product Profile

Facility Characteristics

- ❑ Distance from generator(s)?
- ❑ Garage or surface lot?
- ❑ Clearly identifiable?
- ❑ External traffic flow?
- ❑ Internal traffic flow and parking geometrics?
- ❑ Parking availability information



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Step One: Situation Analysis and Product Profile

Facility Characteristics

Security

– Activity levels?

– Glass-backed stair/elevator towers?

– Lighting (levels/distribution)?

– Emergency phones?

– Security patrols?

– History of security incidents?

– Openness/floor-to-floor heights?

– Security cameras?

– Panic buttons?

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Developing Your Marketing Plan

Step One: Situation Analysis and Product Profile

Facility Characteristics

Physical Condition / Maintenance

- Cleanliness?
- Painted Interior?
- Painting and stripping?
- Signage and wayfinding?
- Landscaping (CPTED compliant)?
- Expansion joints in good repair?
- Concrete damage?
- Condition of elevator lobbies?
- Drains clear?

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Step One: Situation Analysis and Product Profile

Facility Characteristics

Rates

- Rates at competing facilities (local/regional)
- Surface vs. structured?
- On-street vs. off-street rates?
- Validation programs?
- Rate structure Options?
  - Merchant validations
  - One-hour free programs
  - Holiday programs
  - Front-end loaded
  - Back-end loaded

Enforcement

- Parking fine structure
- Negative perception mitigation strategies

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Step One: Situation Analysis and Product Profile

Facility Characteristics

Amenities

- Attendants on duty?
- Valet parking?
- Car wash?
- Battery/flat tire services?
- Shuttle service?
- Dry cleaning/laundry?
- Audio books?
- Customer service patrols?
- Frequent parker programs?

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Step One: Situation Analysis and Product Profile

Facility Characteristics

Use of Technology

- Traditional attended facility?
- Automated pay stations?
- Pay-by space options?
- Pay-by cell phone options?
- Automatic vehicle identification (avi)?
- Credit card in / credit card out?
- Credit card payment for monthly/daily patrons?
- Use of internet-based payment options?
- Parking availability information
- Parking reservation services

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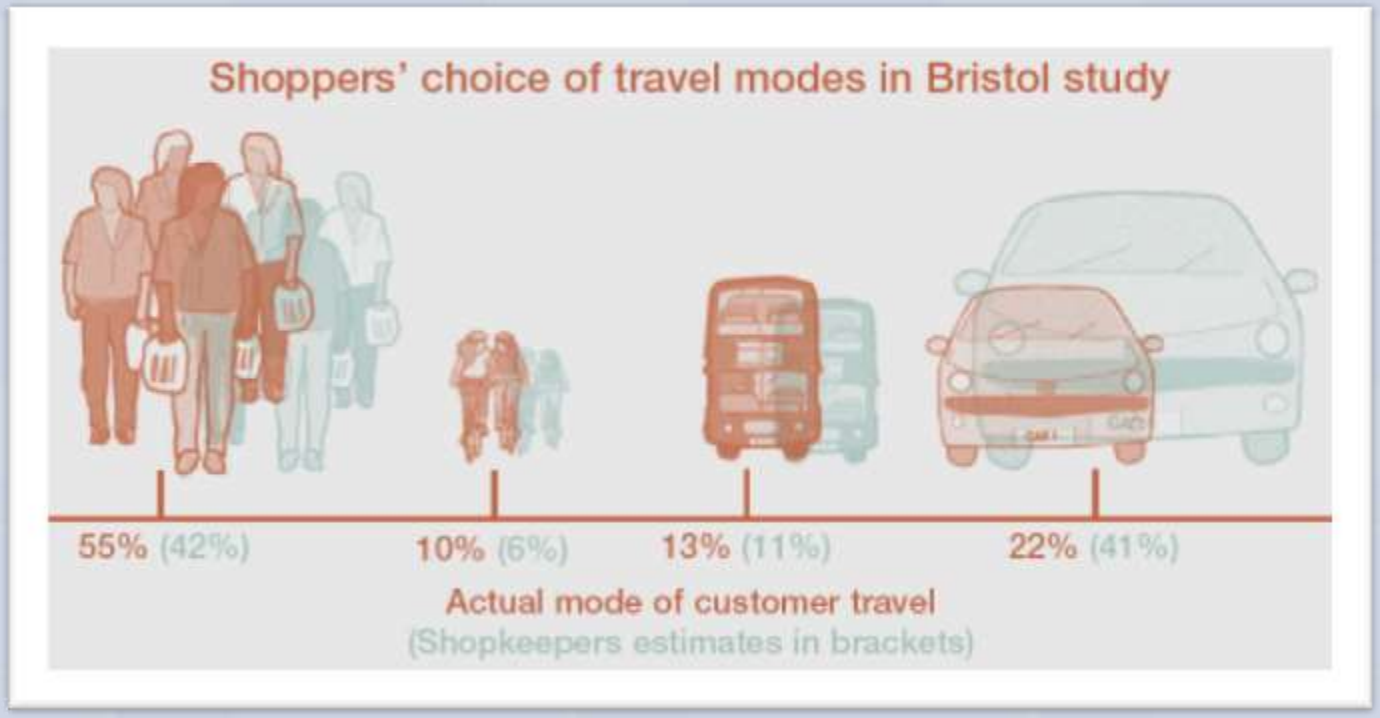
Step One: Situation Analysis and Product Profile

Understanding Customer Travel Patterns and Preferences

- Perception vs. Reality



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Step One: Situation Analysis and Product Profile

Understanding Customer Travel Patterns and Preferences

42% travelled under ½ mile

86% travelled under 2 miles

Underestimated local market by 2/3

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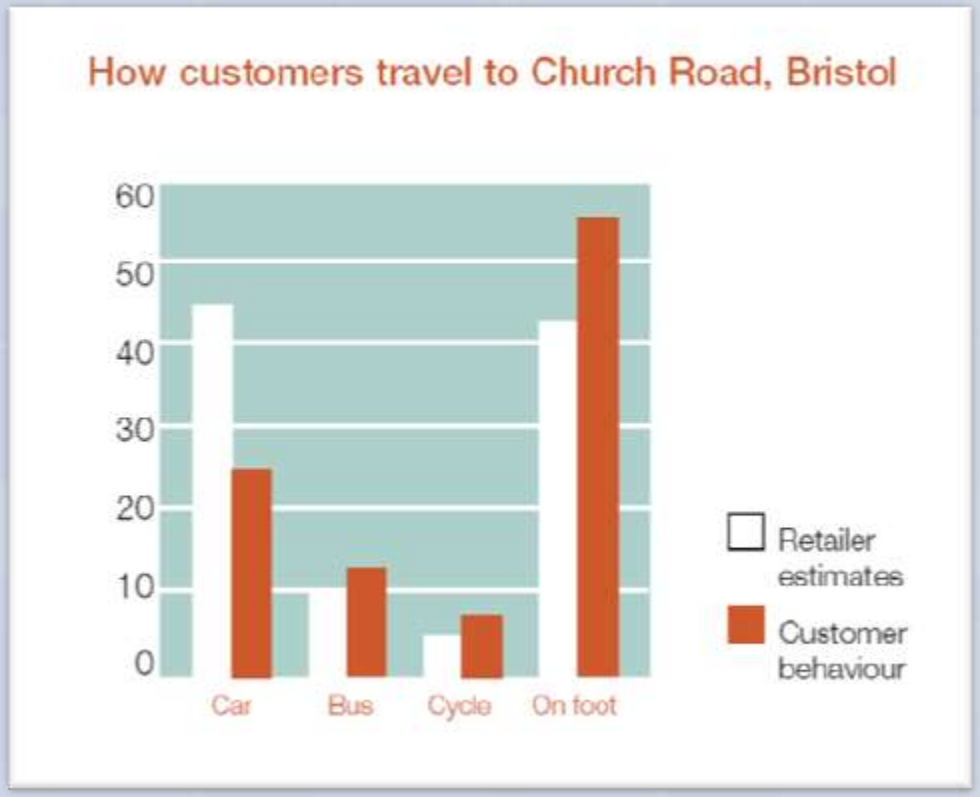
Step One: Situation Analysis and Product Profile

Understanding Customer Travel Patterns and Preferences

Overestimated importance of the car by 80%



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Step One: Situation Analysis and Product Profile

Understanding Customer Travel Patterns and Preferences

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Step Two: Identify Target Markets

Possible Target Markets Include:

- Consumers (specific types)
- Store owners/employees
- Key stakeholders (board, DDA, city management, etc.)
- Parking staff: management and operations
- Media

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Step Two: Identify Target Markets

Develop a customer profile

- Info to match parker needs to services provided
- Understand the wants and desires of your customers
- What role do they play in the market?

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Step Two: Identify Target Markets

Customer profiles

Visitors

- One-time or frequent
- Regular
- Length of stay
  - Short-term
  - All day
  - Multi-day
  - Week or more
- Male or female
- All of the above
- Individuals with disabilities
- VIPs

Employees

- Principals
- Senior management
- Middle management
- Staff
- Clerical
- Hourly / Transient

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Best Practices

Step Three: Establish Program Objectives

- ❑ Enhance parking revenues
- ❑ Improve awareness levels of specific programs/offers (I.E. validations, free parking on weekends, etc.)
- ❑ Service measurement
- ❑ Usage of marketing programs
- ❑ Customer satisfaction survey
- ❑ Awareness of program contributions

Developing Your Marketing Plan

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Step Four: Establish Strategies

Tactical Planning

- What are you trying to achieve?
  - Increase downtown utilization
  - New technology introduction
  - Change the perception of inadequate parking supply
  - Change the perception that parking is over-priced
  - Facilitate a parking rate increase
  - Educate the community on parking issues
- How will you execute your parking marketing program?
- What specific promotions, collateral materials, advertising, etc. will be needed?

Developing Your Marketing Plan

Parking System Branding & Marketing

Best Practices

Defining your Parking Brand?

- ❑ What is your parking brand?
- ❑ More than a parking system logo!
- ❑ Parking brand — what sets your parking program apart?
  - ❑ Can your brand have a personality? Yes!
  - ❑ What is your brand's core message?
  - ❑ What is your brand's voice?
  - ❑ What is your brand's look/feel?

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Parking System Branding & Marketing

Best Practices

Program Budgets

- The average US parking system branding and marketing budget is $6.00 - $10.00 per space per year.
- Average US Parking Program Marketing Budget $35,000 – $60,000 per year.
- The largest US parking system branding and marketing budget we have documented was $21.00 per space per year.

Developing Your Marketing Plan

Parking System Branding & Marketing

Best Practices

Execution and Measurement

- Before setting out on a marketing program try to establish a set of goals
- Prior to rolling out the campaign do some base-line measurements
  - Customer surveys
  - Facility utilization statistics
  - Parking and/or area sales tax revenues
  - Etc.
- Following the campaign, reassess program goals and re-measure key benchmarks

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Best Practices

In Summary… Now that you have analyzed your operation, your environment and developed customer profiles - now comes the hard part….

- ❑ Don't try to communicate too much
- ❑ Develop a simple core message for each campaign
- ❑ Target different audiences with distinct messages
- ❑ Parking marketing campaigns can be multi-faceted and multi-dimensional
- ❑ Find the right voice!
- ❑ Image is everything – use graphic design professionals
- ❑ Monitor program impacts

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Ideas For Your Toolbox

Examples of Parking Marketing from around the U.S. and Canada.

SMART PARK

ParkiT™

CITYPark

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Parking System Branding & Marketing

Best Practices

ParkiT™

ParkiTempe™

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Portland's Smart Park Branding and New Technology Intro

SMART PARK

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Toledo's Park Smart Program

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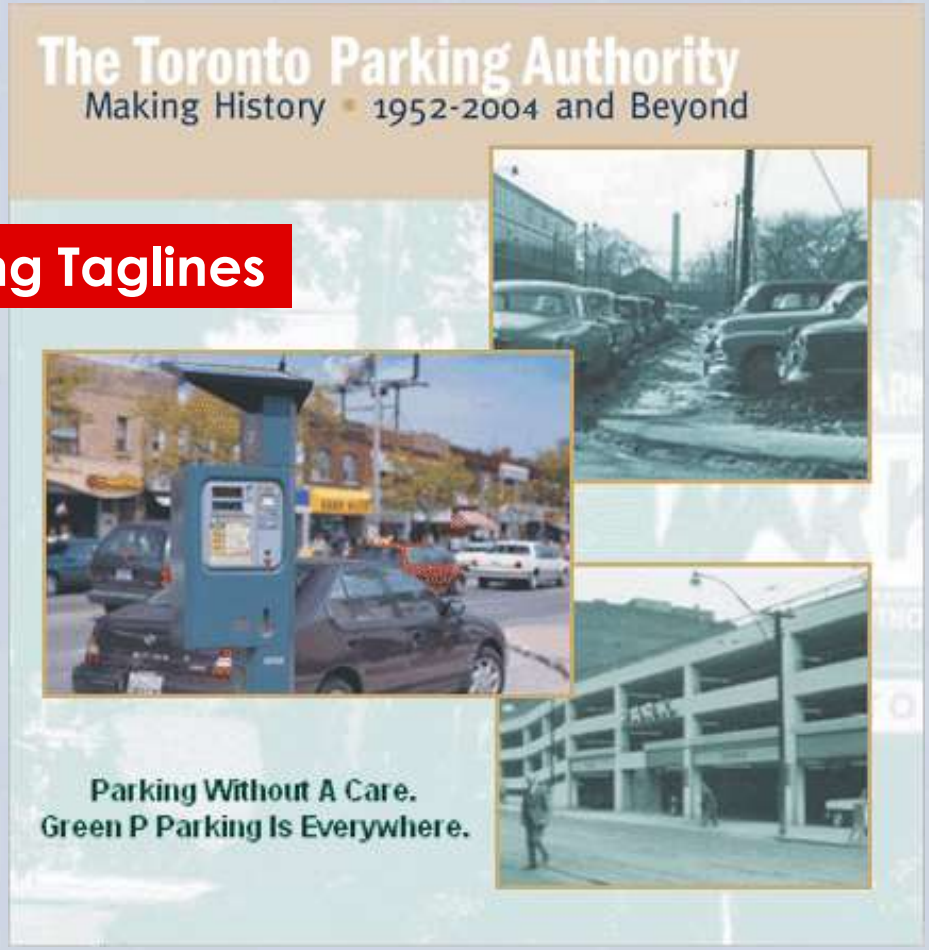
Parking Positioning Taglines



Toronto Parking Authority

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Parking Educational Materials

•What are their methods?

Most thieves look for cars left unattended with keys in the ignition. In a very small number of cases the thief may tow the vehicle away. If keys are not present the thief opens the vehicle by using a 'Slim Jim' down the window glass of the driver's door, drills out the lock, or breaks a window. Once inside, the ignition lock is punched out and the wires crossed to "hot wire" or activate the ignition. Depending on the method used and the skill of the thief, the process generally takes from 30 seconds to three minutes.

•What cars do they target?

The favourite cars to target may change from city to city or even by area of the city. In Toronto popular vehicles appear to be Chrysler vans and wagons, Nissan Maximas and a variety of Hondas. The cars easiest to steal go first. It is as simple as that. This means unattended cars with the keys in the ignition and the engine running.

•How can you protect against this type of theft?

There are electronic disabling products on the market that make a car virtually impossible to steal unless the key is in the vehicle with the ignition on, or, if the thief tows the vehicle away. Cheaper than electronic kill systems are car alarms. Alarms may scare off a less than determined thief and may alert security or neighbours to a problem. Additionally, visible extra mechanical steering wheel locks offer some deterrence even though they can be sawed through. No anti-theft system is 100% guaranteed, but each increasing level of security added to your vehicle and its environment make it more likely that the thief will pick an easier target in a more congenial environment.

Lock Me!

This is a client service bulletin for the Parking Authority of Toronto by Intelligarde International Inc.

For further information, security audits, recommendations, seminars or services call (416) 760-0000 or 1-800-387-0000.

An Information Bulletin for the Parking Authority of Toronto

Car Crime

by Intelligarde International Inc.

The Problem : There is now an epidemic of car related crime in most major North American cities. Car crime has attracted a broad range of criminals because of the possibility of quick gain and nominal penalties.

Car Break-Ins

•What do the thieves want?

Cash, including visible 'meter money' billfolds, credit cards, compact discs, stereo tapes, keys, remote door openers, cellular phones, pagers, photographic and electronic equipment, expensive sound systems, expensive clothing, sunglasses, brief cases, suitcases. Cash is preferable but anything that can quickly be turned into cash has almost equal appeal.

•Who are the thieves?

Independent criminals acting alone or in pairs, youth gang members, users of hard drugs, vagrants. Many thieves who steal from parked cars are young men (14-22) who are looking for meter money to use directly and other items to turn into quick cash.

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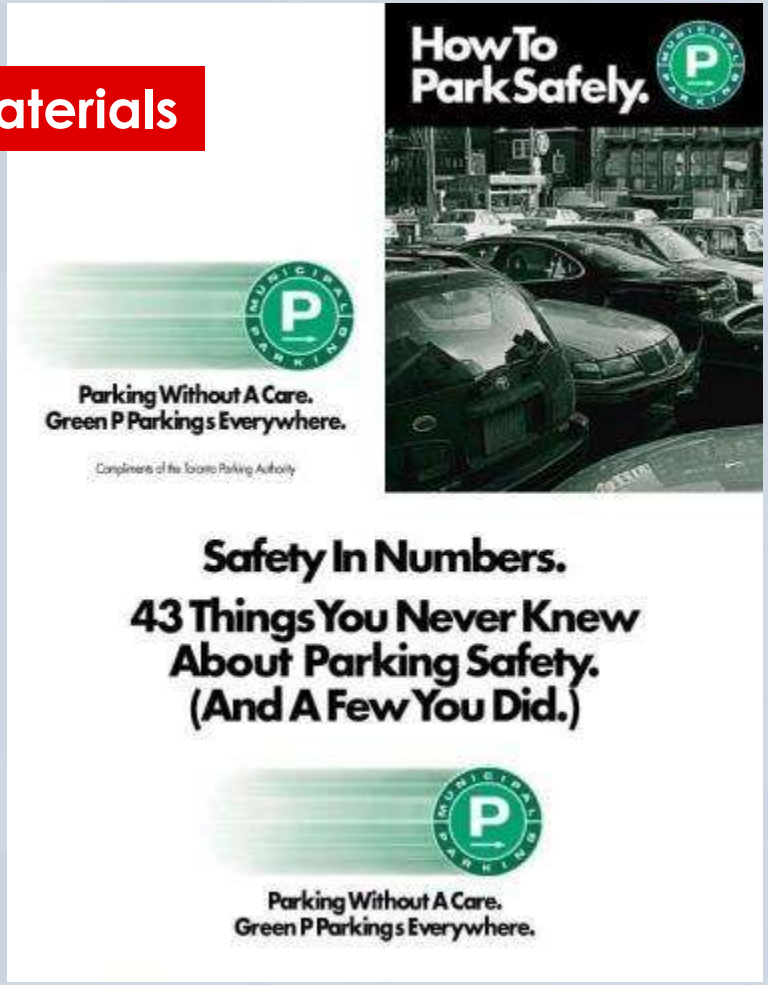
Parking Educational Materials



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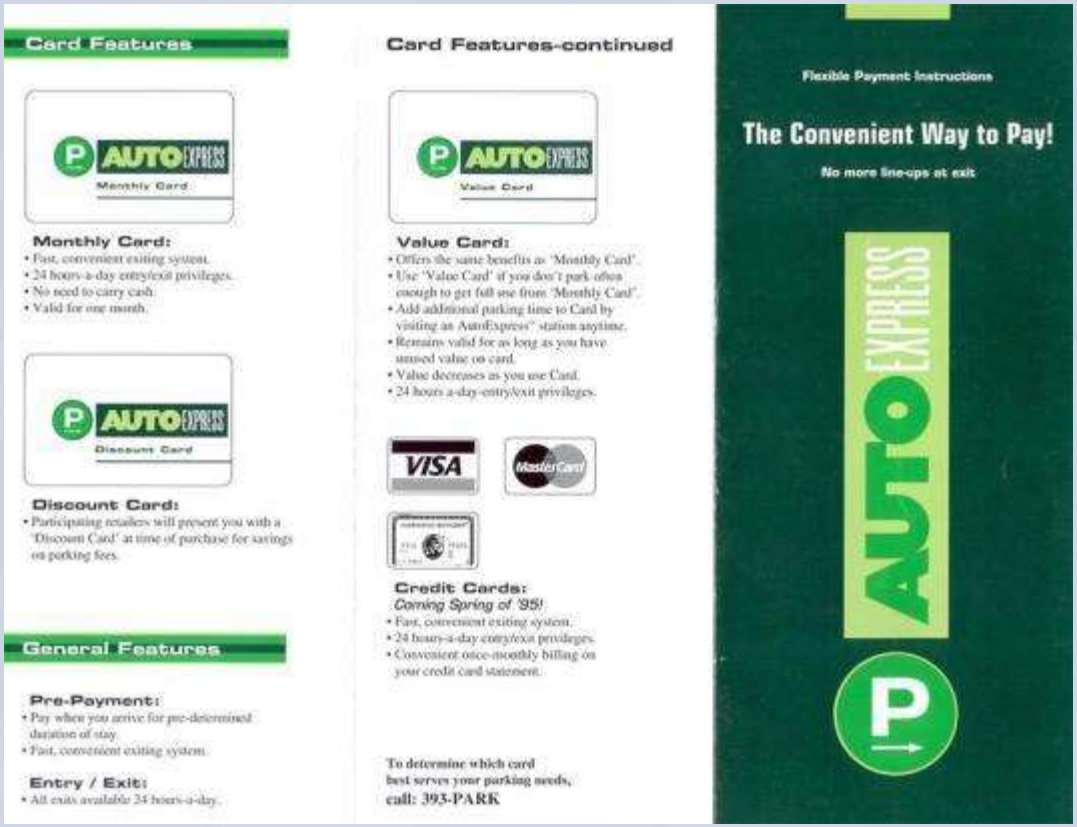

Card Features

AUTOEXPRESS Monthly Card

Monthly Card:
- Fast, convenient exiting system.
- 24 hours-a-day entry/exit privileges.
- No need to carry cash.
- Valid for one month.

AUTOEXPRESS Discount Card

Discount Card:
- Participating retailers will present you with a 'Discount Card' at time of purchase for savings on parking fees.

General Features

Pre-Payment:
- Pay when you arrive for pre-determined duration of stay.
- Fast, convenient exiting system.

Entry / Exit:
- All exits available 24 hours-a-day.

Card Features-continued

AUTOEXPRESS Value Card

Value Card:
- Offers the same benefits as 'Monthly Card'.
- Use 'Value Card' if you don't park often enough to get full use from 'Monthly Card'.
- Add additional parking time to Card by visiting an AutoExpress™ station anytime.
- Remains valid for as long as you have unused value on card.
- Value decreases as you use Card.
- 24 hours a-day-entry/exit privileges.

VISA MasterCard

Credit Cards:
Coming Spring of '95!
- Fast, convenient exiting system.
- 24 hours-a-day entry/exit privileges.
- Convenient once-monthly billing on your credit card statement.

To determine which card best serves your parking needs, call: 393-PARK

Flexible Payment Instructions

The Convenient Way to Pay!

No more line-ups at exit

AUTOEXPRESS

P

New Technology Introduction

MUNICIPAL PARKING

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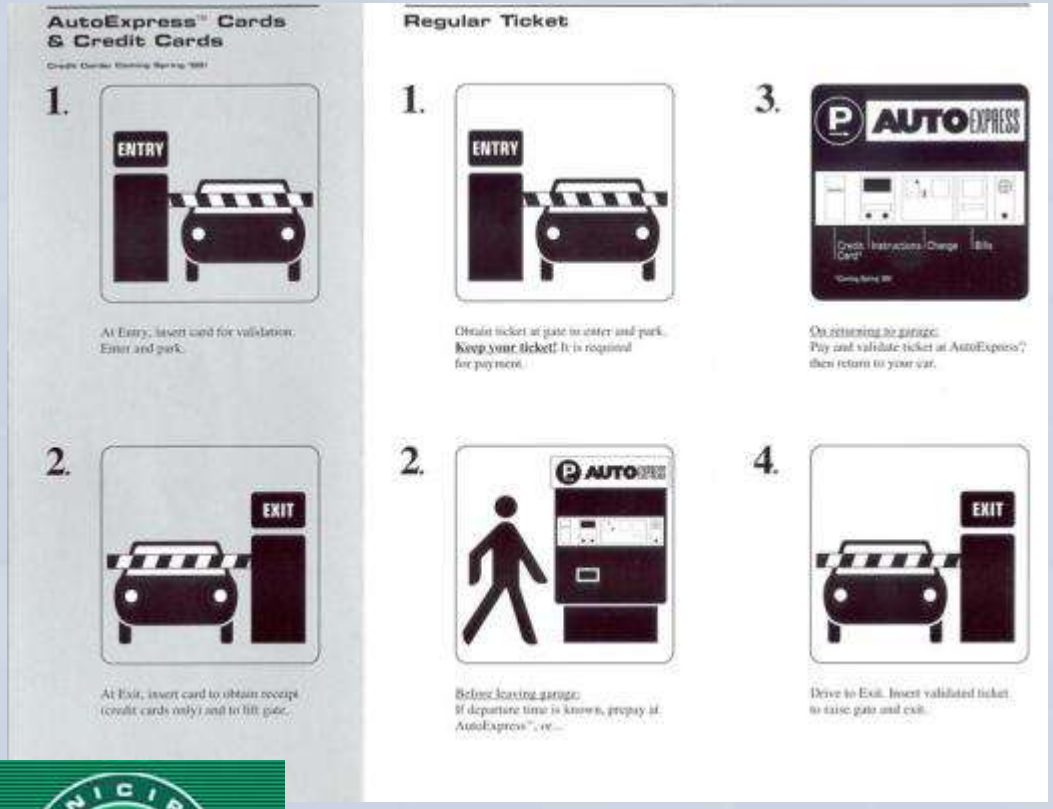
New Technology Introduction



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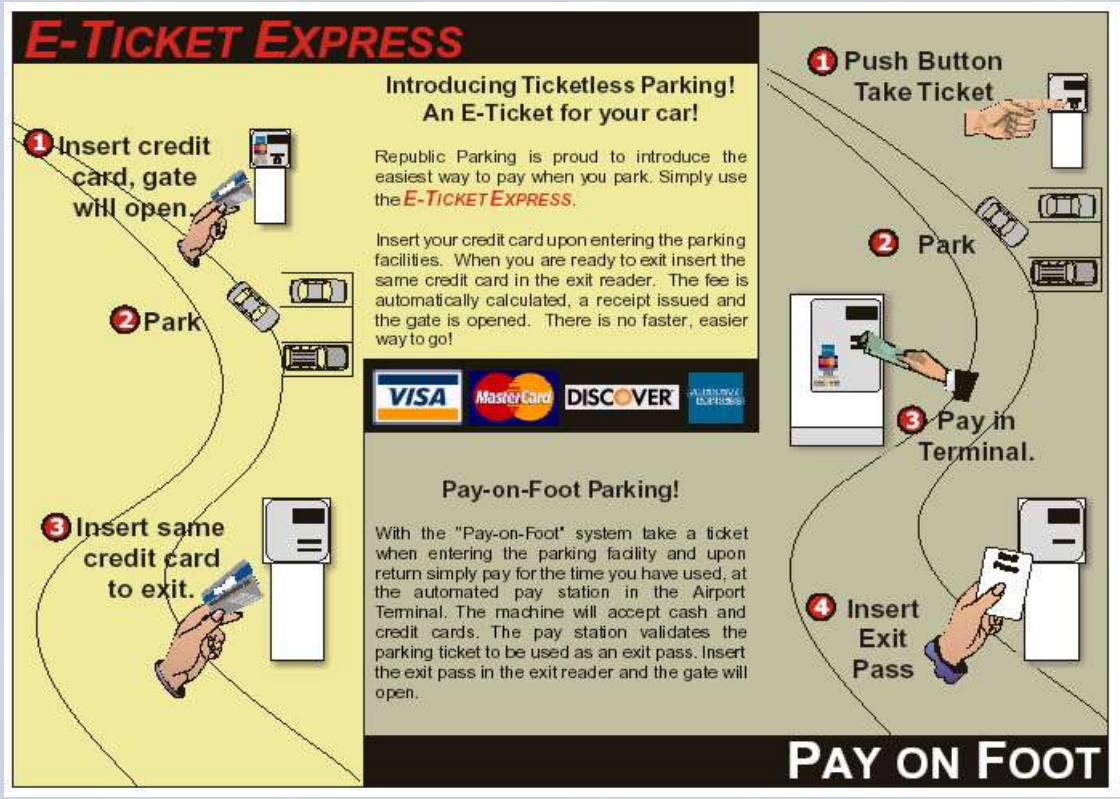
New Technology Introduction



Republic Parking – E-Ticket Express

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New Technology Introduction

Process Is Important !

- Get stakeholder input
- Use parking greeters
- Give warnings
- Provide good information

PARKING SERVICES
P
City of Boulder

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New Technology Introduction

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New Technology Introduction
Pay-On- Foot Systems

Effective Signage

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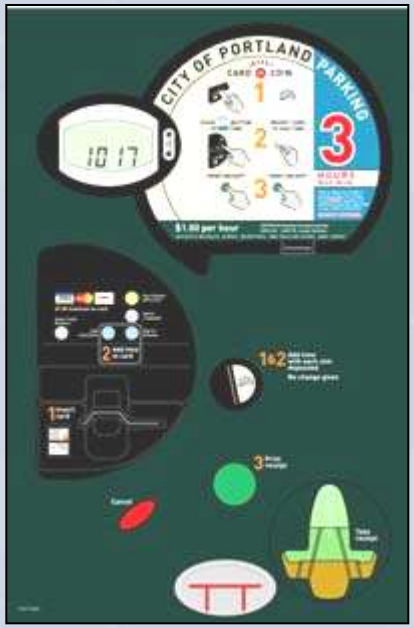
New Technology Introduction
Pay & Display Systems



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Express Pay Parking

Press Releases

PRESS RELEASE
06 June 2003
"PAY-ON-FOOT" - MAKING PORTLAND AIRPORT PARKING MORE CUSTOMER-FRIENDLY

The Port of Portland is introducing Pay-On-Foot parking to improve customer service at Portland International Airport. "We believe that people visiting the airport and using the parking facilities should be encouraged to relax and stay longer rather than being ever conscious of the fact that they have bought a parking ticket and need to be back to their cars by a certain time. If people stay longer they can enjoy more of the airport or see their loved ones off.

With the "Pay-on-Foot" system people take a ticket when entering the park deck and upon their return they simply pay for the time they have used, at a machine in the terminal. The machine validates their ticket for exiting the park deck, and can also provide change if necessary. The machines are also capable of using smart card technology, opening up all sorts of opportunities for the future. "Pay-on-Foot" is a much more customer-friendly system and has been adopted by many airports across the country. It also reduces the time spent in line at peak times exiting the parking deck or lots and also has positive environmental impacts by reducing the time vehicles spend idling in exit lines.

We support the extension of Park & Ride and the use of light rail and see the introduction of the "Pay-on-Foot" system as another important part of the overall strategy of enhancing the visitor experience through accessibility, transportation alternatives and advanced the use of technology for all those who choose to visit Portland.

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Press Editorials

THE IDAHO STATESMAN

Edition Date: 02-09-2004

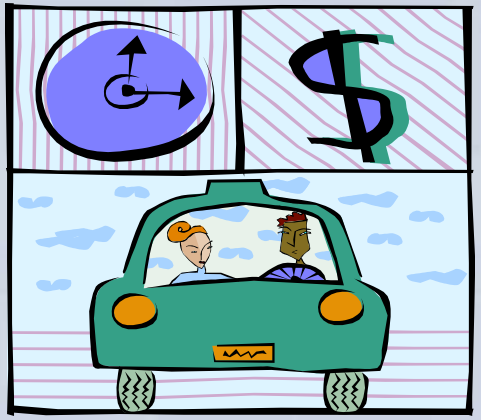
Our View: Parking plan will work for customers, merchants

"Give the Capital City Development Corp. credit for paying attention to the critics and coming up with parking fees that meet the needs of people who work and play downtown.

The CCDC board will discuss the parking fee changes today. If the changes are approved — and they deserve to be — they would go into effect March 1.

Here's what we like: …"

CAPITAL CITY DEVELOPMENT CORP.



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Radio Ads

Toronto Parking Authority

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Best Practices

Hot Tips!

Pocket Pointers

Pick up a meal to take on the plane, since many airlines do not include food.

Purchase a unique Arizona gift to give to associates, family and friends when you reach your destination.

Protect carry-on bags. Never leave baggage unattended or carry anything on board the aircraft for a stranger. Report any unattended packages or baggage to airport personnel.

Passengers with tickets only and those accompanying children or persons with disabilities will be allowed past the security checkpoint.

Place any knives, scissors or sharp objects in your checked baggage only.

Please check as much baggage as possible. One carry-on plus one personal item are permitted beyond the checkpoints.

Packages and gifts should be unwrapped to get through security.

Purple-shirted Navigator volunteers are available throughout the terminals to answer your questions.

Phoenix Sky Harbor International Airport
www.phxskyharbor.com

Remember where you parked:

(Write it here!)

CAN'T FIND YOUR CAR? If you forgot where your car is parked, call ACE Parking at (602)273-4545, pick up a white paging phone or find the nearest information booth inside the terminal and the agent will call for you. ACE will also assist with jumpstarts, locked keys and flat tires.

Contact us!

Parking Info: (602) 273-4545, 4546 or 4547
Airport Info: (602)273-3300
Radio: 1610 AM

3400 Sky Harbor Blvd, Phoenix, AZ 85034
www.phxskyharbor.com

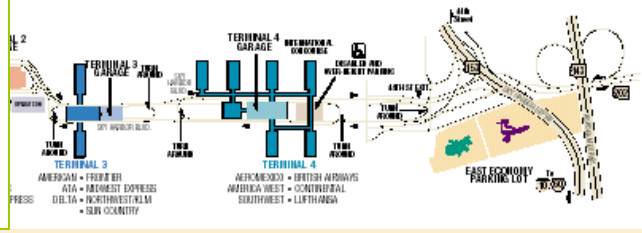
Special accommodations/alternate format materials (large print, braille, audio tape or diskette) are available upon request. Call 602-683-3654. ADA/TTY 1-800-781-1010.

April 2002

Phoenix Sky Harbor
INTERNATIONAL AIRPORT

Parking Pocket Pal

Parking System Orientation Tools



Economy Lots: For long term visits, use the east or west economy lots. Remember which lot and section you park in and look for the same free shuttle bus on your return.

GECKO *east* · ROADRUNNER *east* · JACKRABBIT *west*

Terminal Garage Parking: The Terminal 4 garage is now complete with double the number of original spaces. Convenient Terminal parking is also available in Terminals 2 & 3. As of April 1, Terminal parking rates are $16/day and $1/half hour.

Express Greeter Parking: For quick trips to the terminal and easy pick-up or drop-off, try the Express Greeter Parking. Located in Terminal 4, Level 4, these spaces are reserved for short-term use at only $1 for thirty minutes.

Curbs Are for Active Pick-up & Drop-off Only: Please stay with your vehicle at all times while loading or unloading. Curbside airport staff are there for your safety and security. Please cooperate with them as they follow federal government guidelines.

Lost & Found Tips: If you lose something, contact the airline or the airport where you think you lost it. Label personal items such as keys, cameras and computers with name and telephone number. Airport Lost and Found Office: (602)273-3307.

DIRECTIONS TO AREAS WEST OF AIRPORT

Downtown Phoenix • West Phoenix:
Take I-10 west; exit 7th Street south.

North-Central Phoenix:
Take I-10 west to AZ-51 north.

Glendale • Peoria • Sun City West
Take I-10 west to AZ-101.

DIRECTIONS TO AREAS NORTH OF AIRPORT

Northeast Phoenix • Scottsdale • Paradise Valley:
Take AZ-153 north to 44th Street or to the AZ-202.

Flagstaff:
Take I-10 west to I-17 north.

DIRECTIONS TO AREAS EAST/SOUTHEAST OF AIRPORT

Gilbert • Mesa • Tempe:
Take Sky Harbor Blvd. east to AZ-202 east to AZ-101 south to US-60.

Chandler • Tucson:
Take Sky Harbor Blvd. east to AZ-153 south to University Drive to Hohokam Expressway AZ-143 south to I-10 east.

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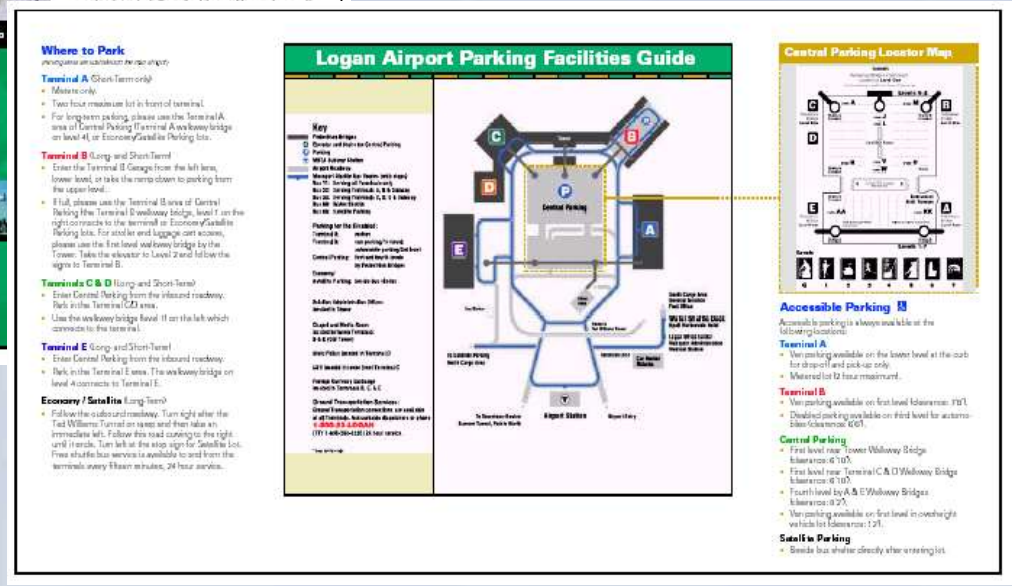

Parking System Orientation Tools/ Brochures

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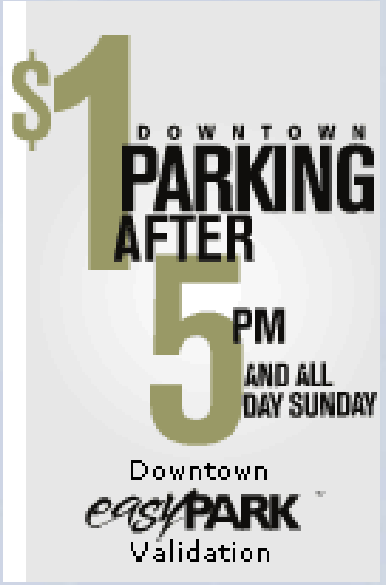
Parking System Special Promotions



Parking System Branding & Marketing

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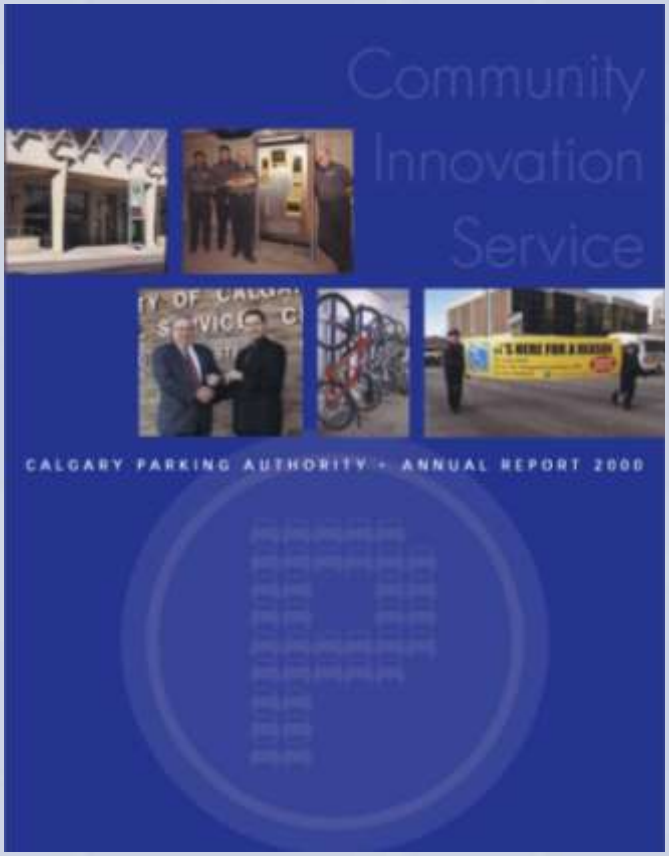
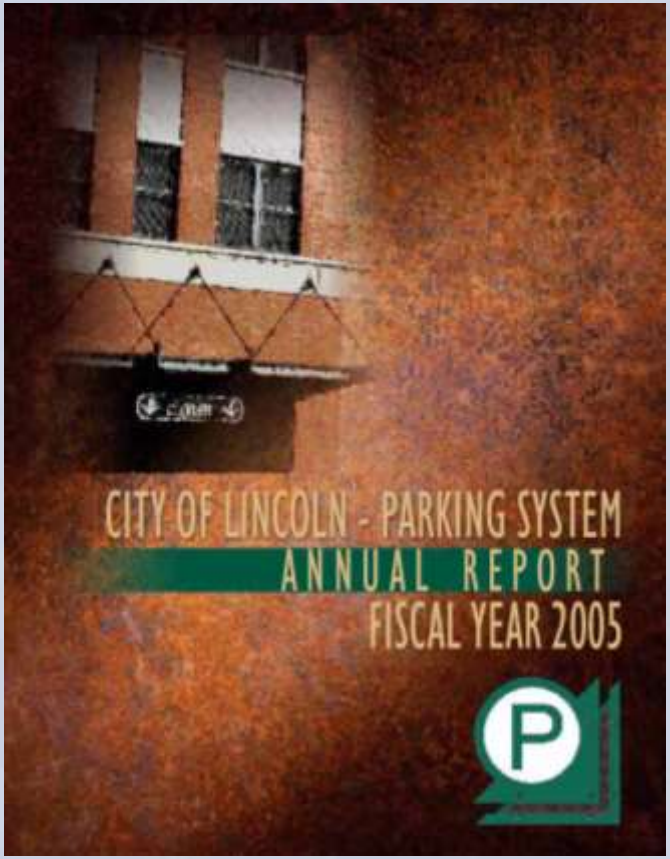
Annual Parking Reports to Promote Parking System Accomplishments





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Annual Parking Reports to Promote Parking System Accomplishments

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Best Practices

Program "Fast Facts"

"Fast-Fact" Categories

- Founded
- Mission
- 3 Focus Areas
- Slogan
- Strategic Goals
- Redevelopment Districts
- Urban Renewal Districts
- Urban Renewal Projects
- Parking System
- Parking Facilities & Long-Term Debt
- Board of Commissioners
- Staffing
- Whose Job Is it?
- Phone Numbers
- Budget
- Top 10 Policy Positions
- Budget Highlights
- Selected Boise Rankings
- Address/Phone Numbers
- Website

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Best Practices

Parking System Logos

Park! Center City

PARK IT! Downtown

Central City Parking

PARK 'n GO

SMART PARK

PARK Smart

ParkiT

CITYPark

Municipal Parking

PARK IT! Taking it to the Street

Parking Services P City of Boulder

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Parking System Signage

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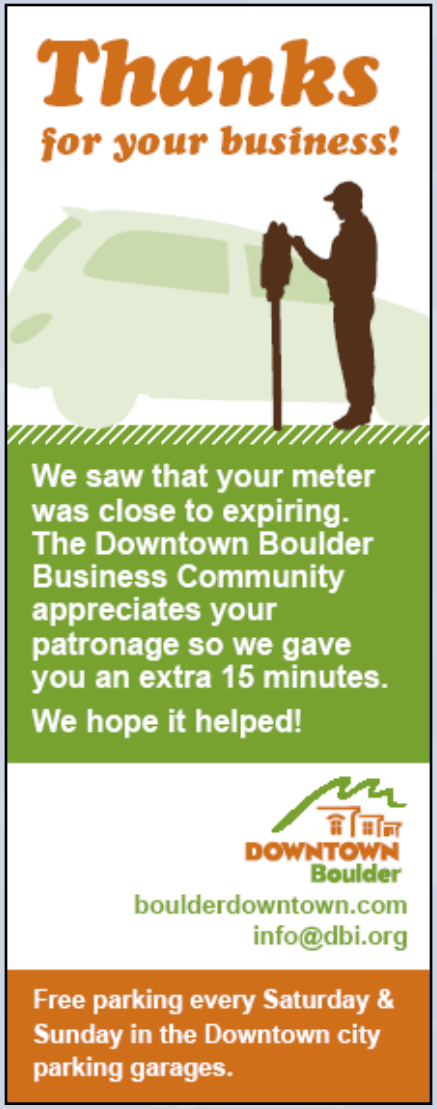
Parking Meter Angels



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Best Practices

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Meter Promotions

- **Use meters to promote:**
  - Downtown Attractions
  - Events
  - Special Programs
  - Transportation Alternatives
  - Local Businesses
  - Etc.

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- **"Green Meters" set aside meter revenues from specific meters for various purposes.**

- Some systems create special meters and dedicate the revenues from those meters for specific community valued goals. Examples include:
  - Downtown beautification
  - Investment in sustainability programs
  - Support of the homeless
  - Support for women's/children's shelters.

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Best Practices

"Howdy Partner"

- Warning citations – creatively marketed & combined with parking educational information.

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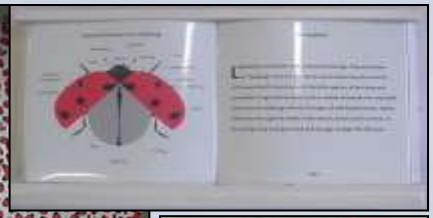
Incorporating Art & Interior Parking Environment Improvements



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Incorporating Art & Interior Parking Environment Improvements

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Sample Web–Based Communications Strategies

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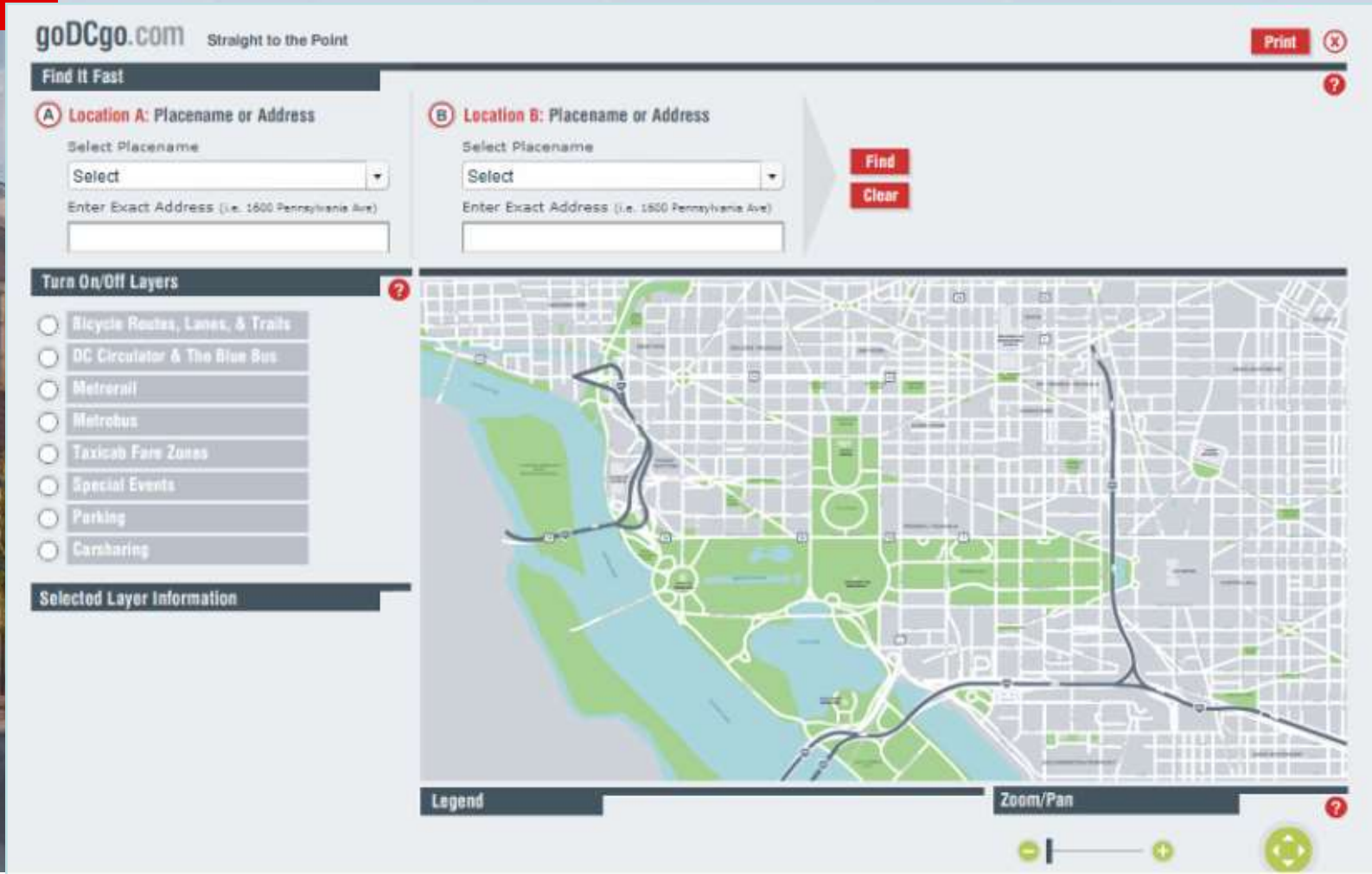
Sample Web–Based Communications Strategies



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Sample Web–Based Communications Strategies

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Best Practice

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Sample Web–Based Communications Strategies

Turn On/Off Layers

- Bicycle Routes, Lanes, & Trails — legend/info
- DC Circulator & The Blue Bus — legend/info
- Metrorail — legend/info
- Metrobus — legend/info
- Taxicab Fare Zones — legend/info
- Special Events — legend/info
- Parking — legend/info
- Carsharing — legend/info

Carsharing

Carsharing is a membership-based program that provides the use of privately owned and maintained vehicles for short-term use in the metropolitan area. Vehicles can be rented for as little as an hour.

Carsharing is provided by two companies: www.flexcar.com and www.zipcar.com

Legend

Zip Car Location (click icon on map for more information)

Flexcar Location (click icon on map for more information)

Zoom/Pan

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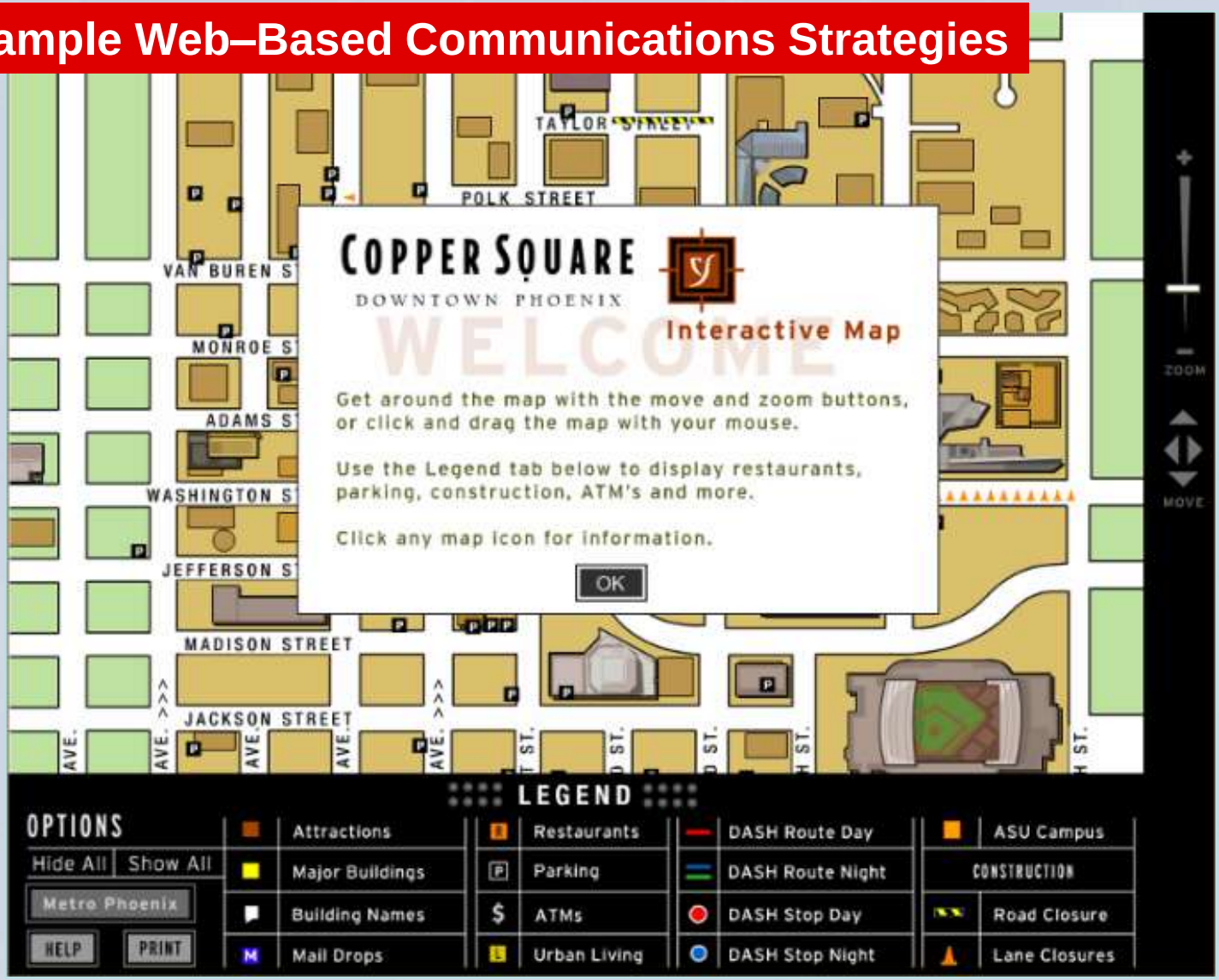
Sample Web–Based Communications Strategies



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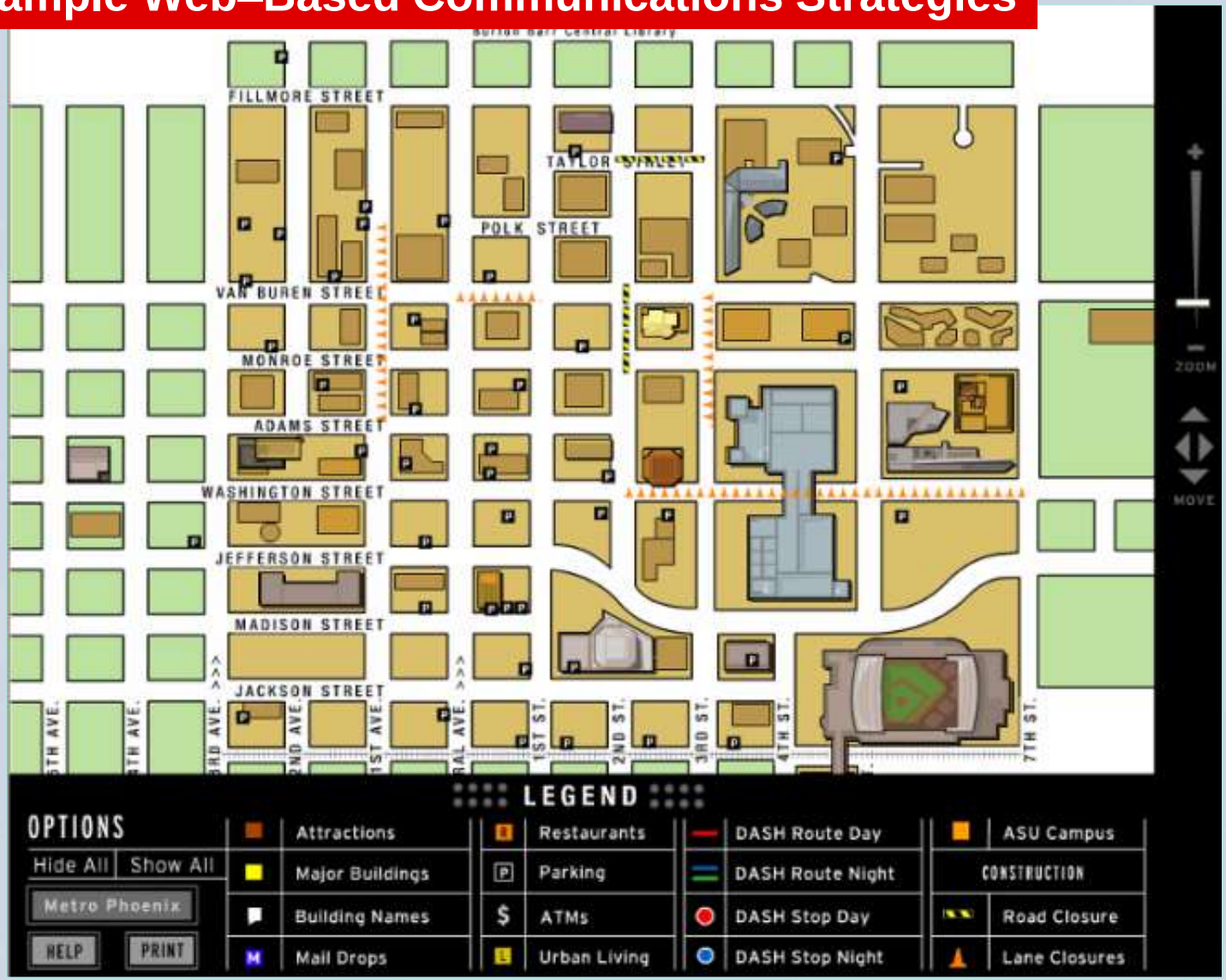

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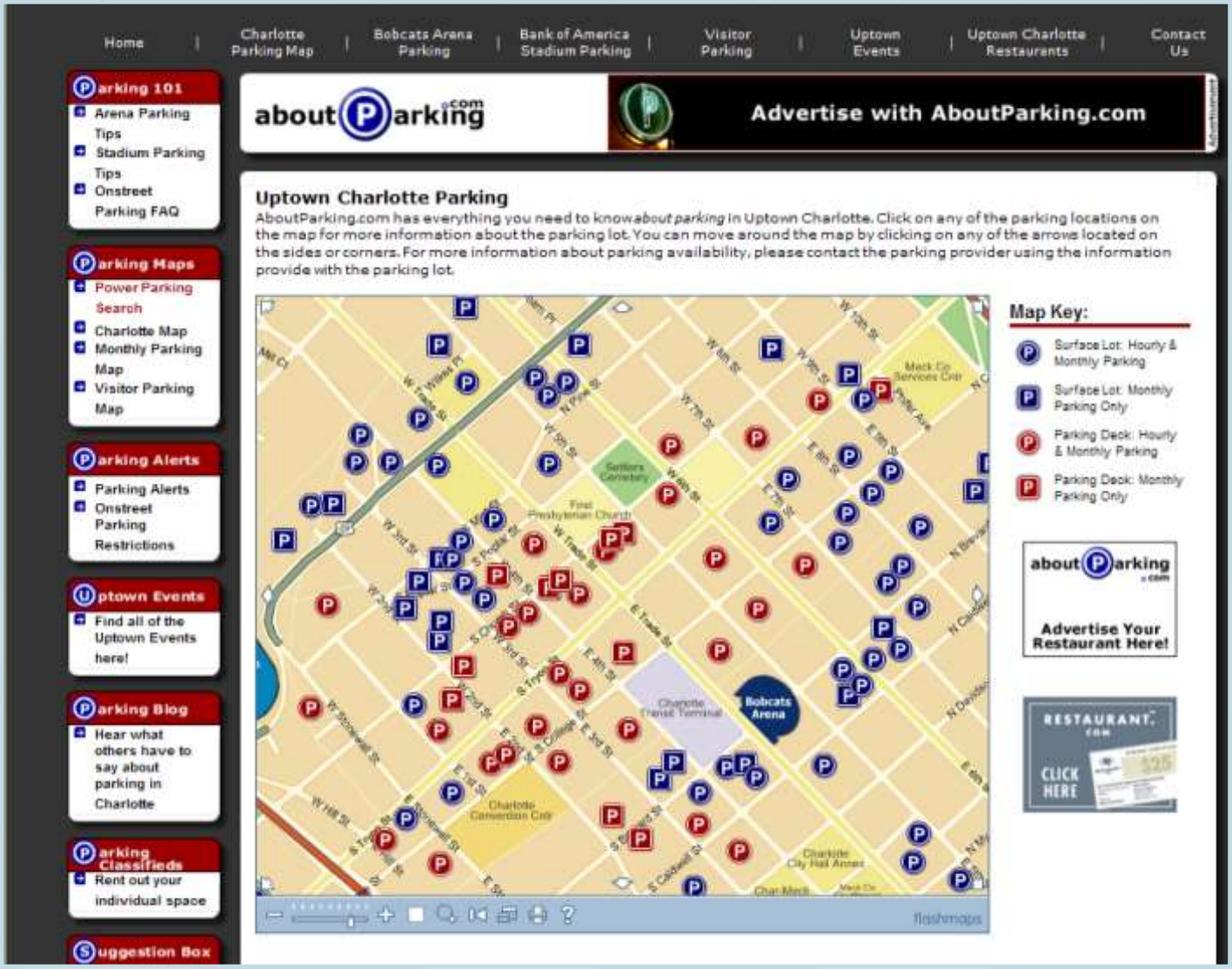

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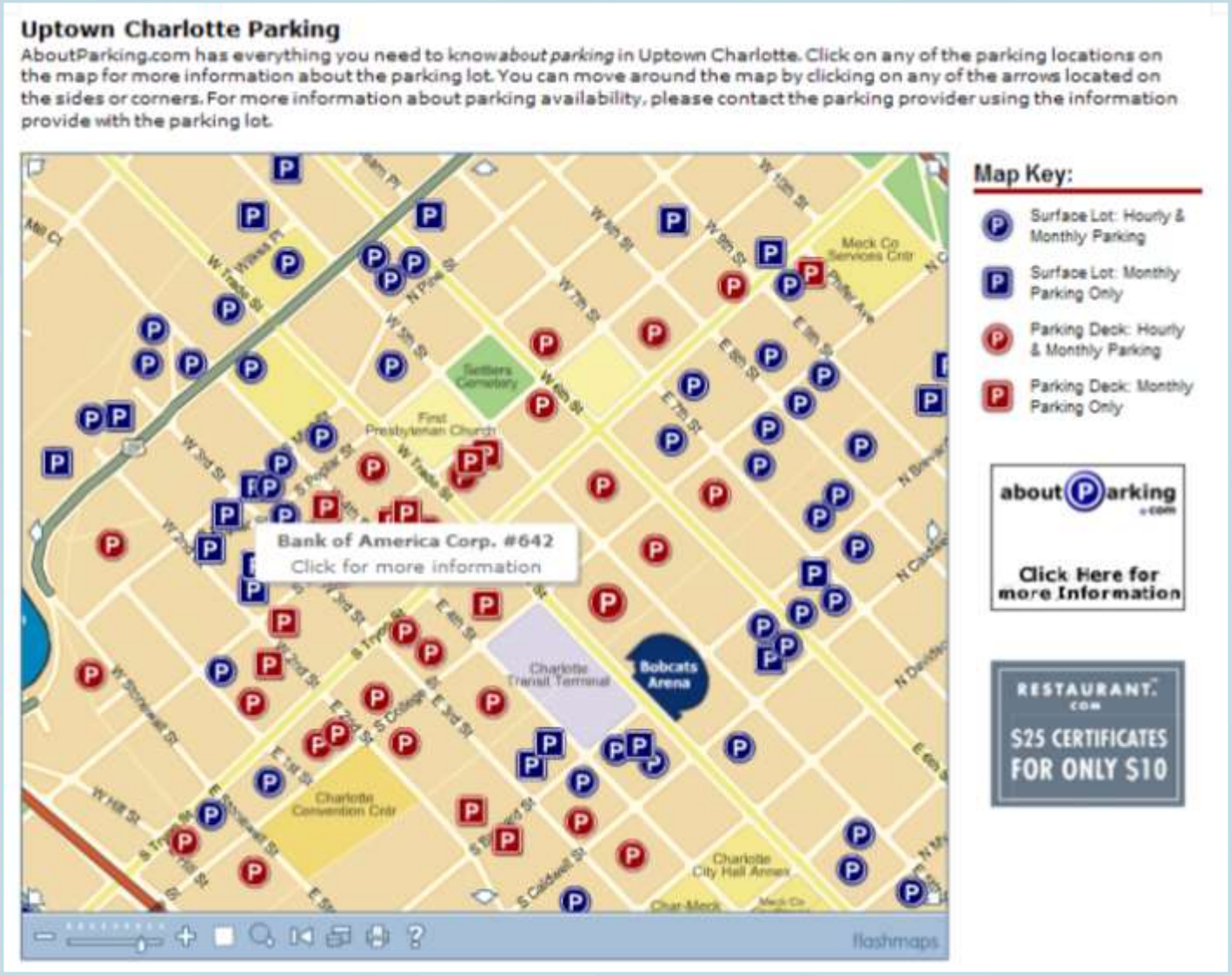

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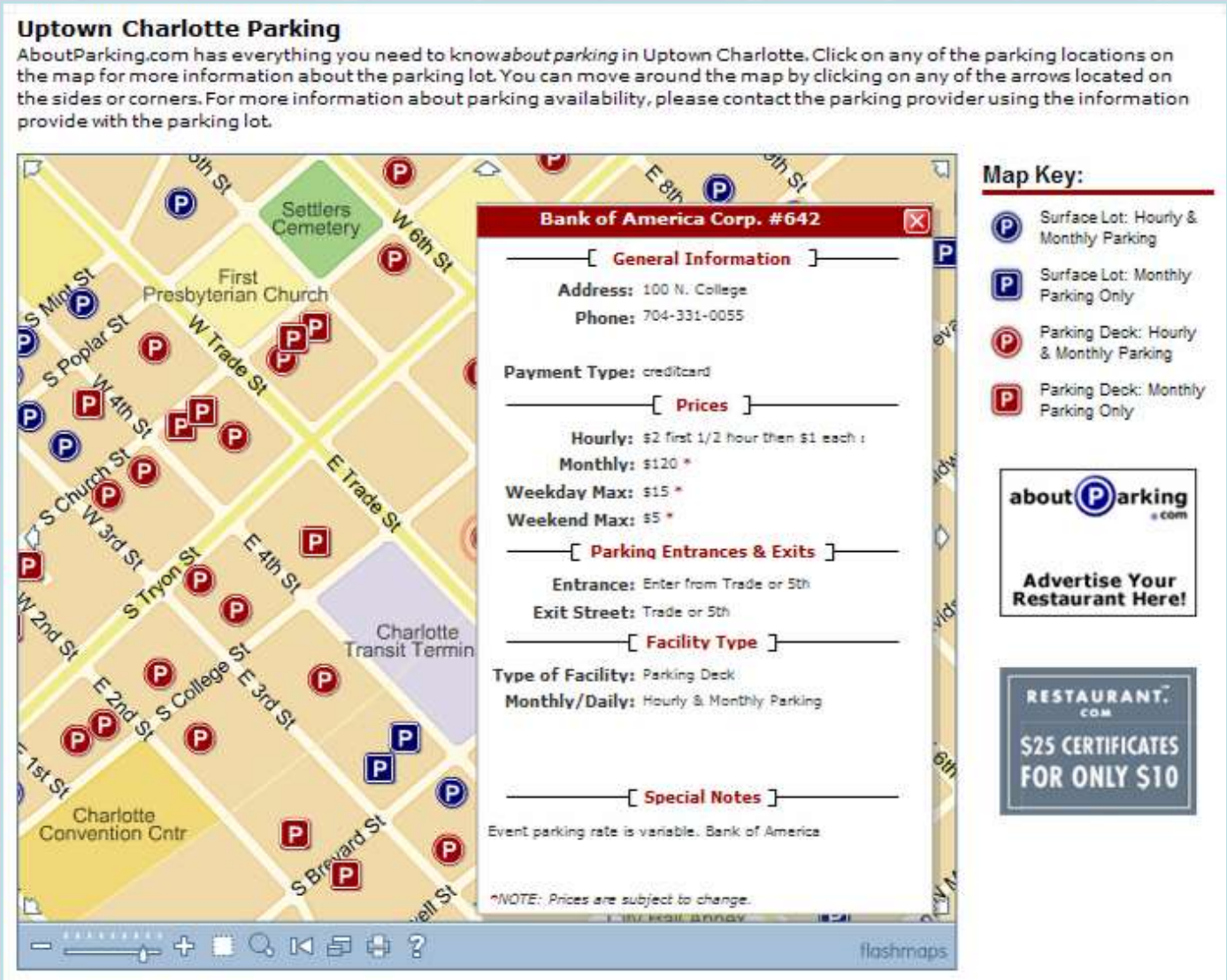
Sample Web–Based Communications Strategies



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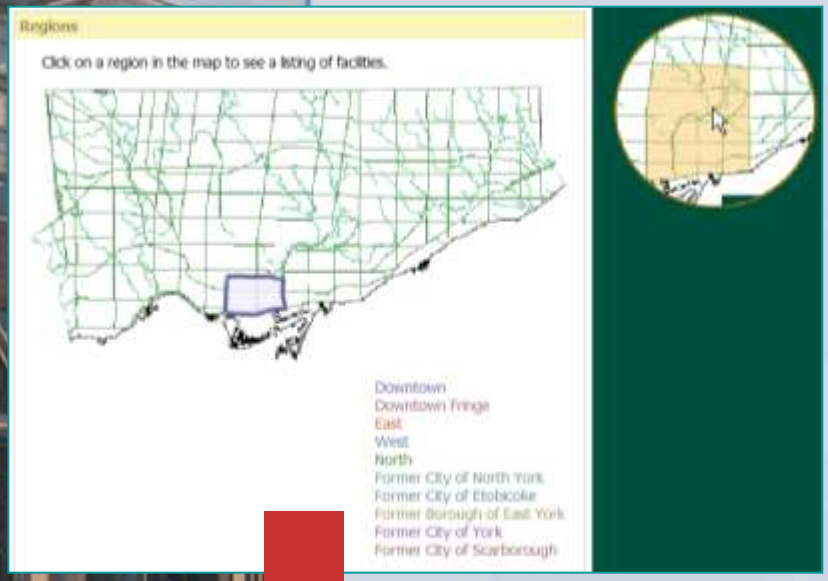
Web-Based Parking Locators

Searchable Parking Locator map features on websites allow customers to zoom in on their areas of interest and get detailed parking location, contact info, maps, cost and sometimes parking availability information.



Visit www.greenP.com to see an example of this website feature.

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Quality Parking Maps

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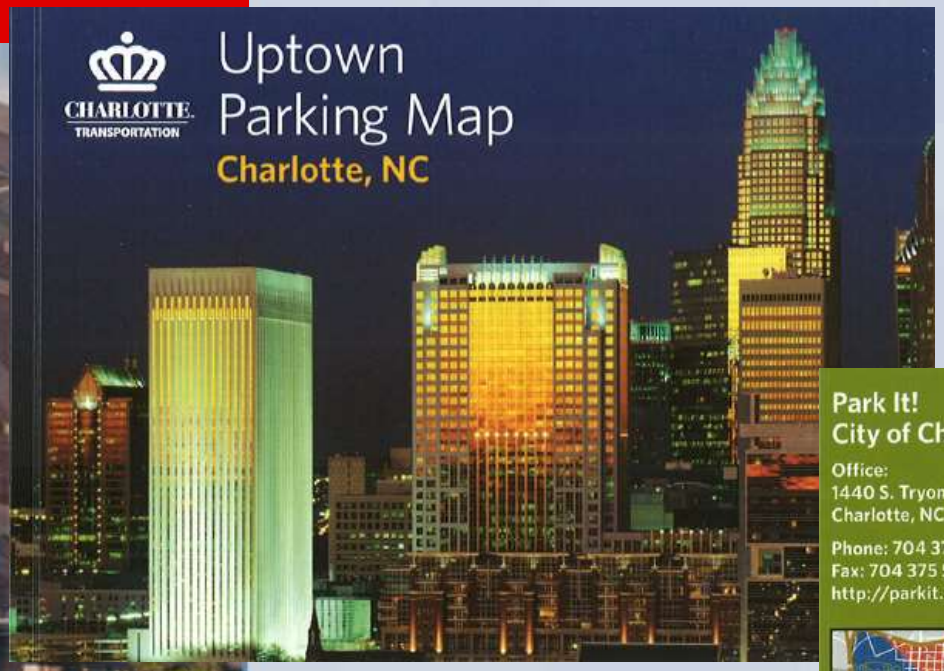
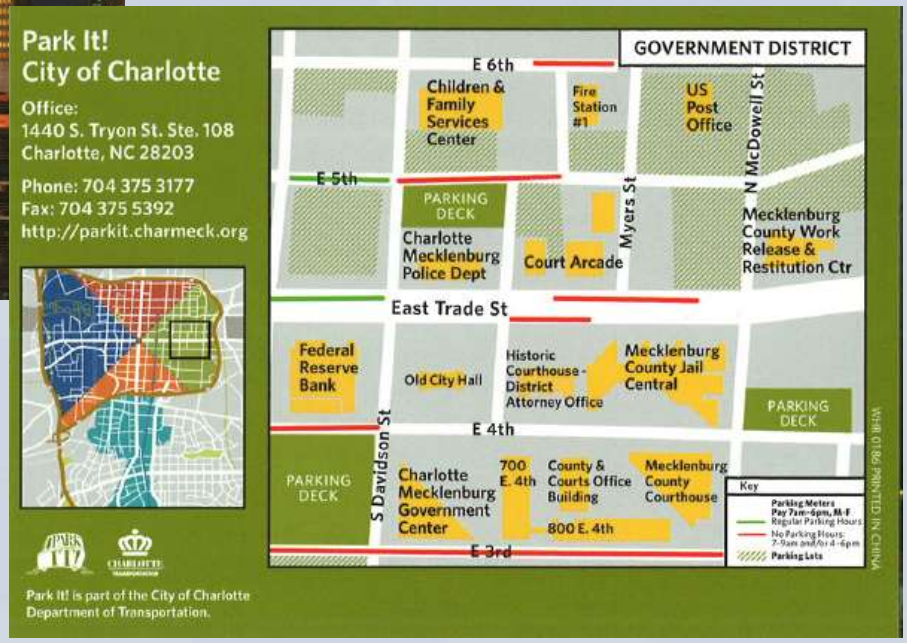
Best Practices

Parking System Maps





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Ideas For Your Toolbox

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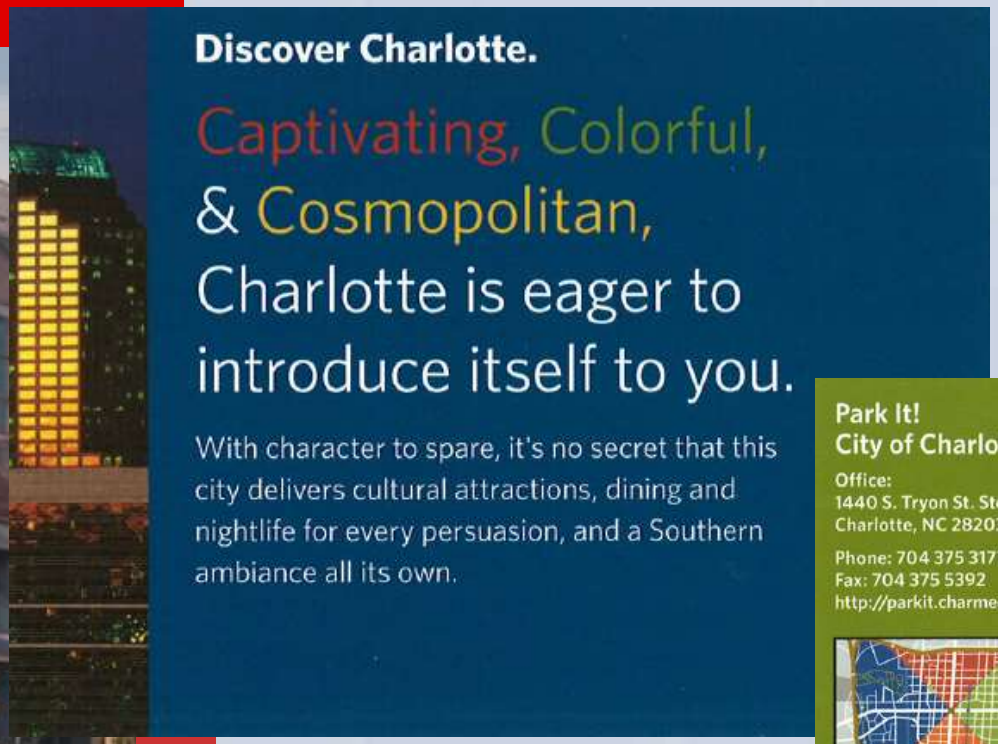
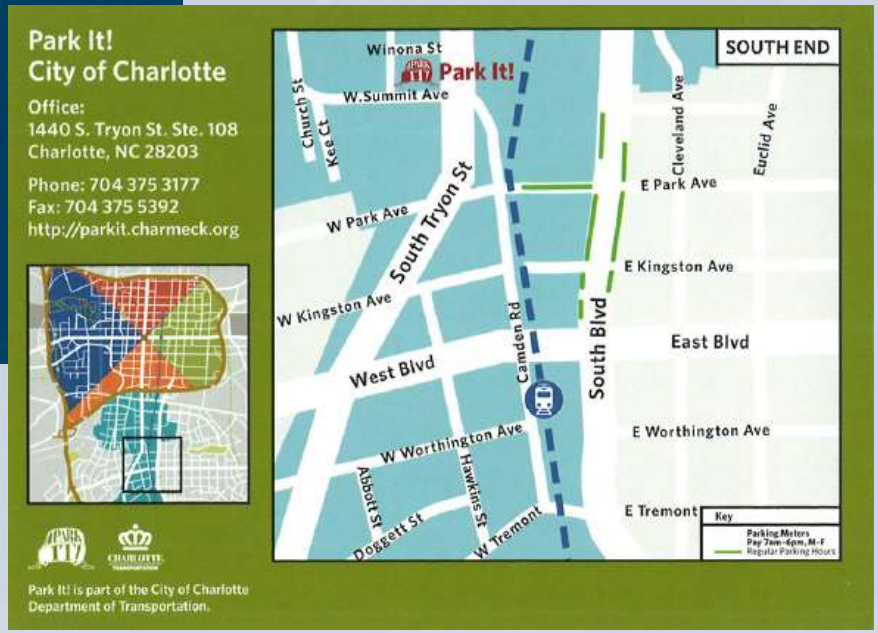
Best Practices



Parking System Maps Coordinated with Downtown Promotion



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Parking System Maps Linking Downtown and University Parking Resources

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Flash Based Mapping Programs

Flash based mapping programs provide the ability to map out walking routes from parking locations on campus to specific destinations and could also be translated to walking times.

- Visit www.wisc.edu to see an example of this technology application.
  - Click on the "Campus Map"
    - Ruler feature.

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Flash Based Mapping Programs

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E-Newsletters

Even if you don't have your own parking "E-Newsletter (and why not?), see if you can tag a message onto other appropriate E-venues.

- Promote parking validations.
- Links to parking info/websites.
- Promote merchants that participate in validation programs.
- Promote parking availability.
- Promote alternative transportation options.

Downtown Boulder

DOWNTOWN UPDATE

Hit the Bricks!

Downtown Boulder Business Improvement District — August 5, 2005

What's Cooking on the East End

Join us at our monthly Downtown Community Exchange and check out Coburn Development's newest projects.

When: Thursday, August 11, 2005; 5:30-7pm
Cost: FREE
Where Coburn Development--1811 Pearl Street (upstairs)
What Else: Great door prizes, updates on Downtown Boulder
RSVP: to Downtown Boulder info@dbi.org --303-449-3774 by August 9th--to ensure plenty of refreshments

Don't Miss These Events in Downtown Boulder!

August 5th-7th--Sidewalk Sales in Downtown Boulder. Take advantage of fabulous savings.

August 10th--Farmer's Market--4-8pm on 13th Street between Arapahoe and Canyon

August 13th & 14th--Asian Festival

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VIP Services

Some parking systems have developed service programs through local vendors to provide "VIP" services for monthly customers. Examples of VIP services include: Vehicle Washing/Detailing, Oil Changes, Dry Cleaning, etc.

- The Downtown Toledo Parking Authority's VIP program directs customers to a specific area within their facilities and to a VIP Services Kiosk.
- A form is completed for the requested service and the vehicle keys are deposited in a security envelope.
- The requested service is completed while the customer is at work and the vehicle returned to the VIP area by a specified time.

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Complimentary Customer Services

ParkSmart Ambassador Arnold Theobolds finds the Segway to be very convenient for monitoring meters.

Customer Service Amenity Programs

- Free on-street parking at meters on weekends
- Free parking at meters between 11:00 a.m. and 2:00 p.m., and after 5:00 p.m. on weekdays
- Free lock service for lost or locked-in car keys
- Jump-start service for cars with dead batteries
- Escort service
- Package carrying service
- Downtown Toledo Location maps for customers
- Free candy at exit
- Lock de-icer
- Window washing (at scheduled locations)

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Validation Program Promotions

- Many communities have parking validation programs that are only honored by a handful of merchants. Like everything else, these programs need to be promoted to extend their reach and success.

- The development of validation program promotions supports participating merchants, increases awareness of the program and educates patrons as to program specifics.
- The promotion noted below placed bookmarks on customers windshields and offered a chance to win a $150 Downtown Shopping Spree.

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Valet Express Programs

- Call ahead service for Valet operations to reduce waiting times for vehicle retrieval.

- Preprinted cards handed out upon arrival with local phone number to call 10-minutes prior to departure.

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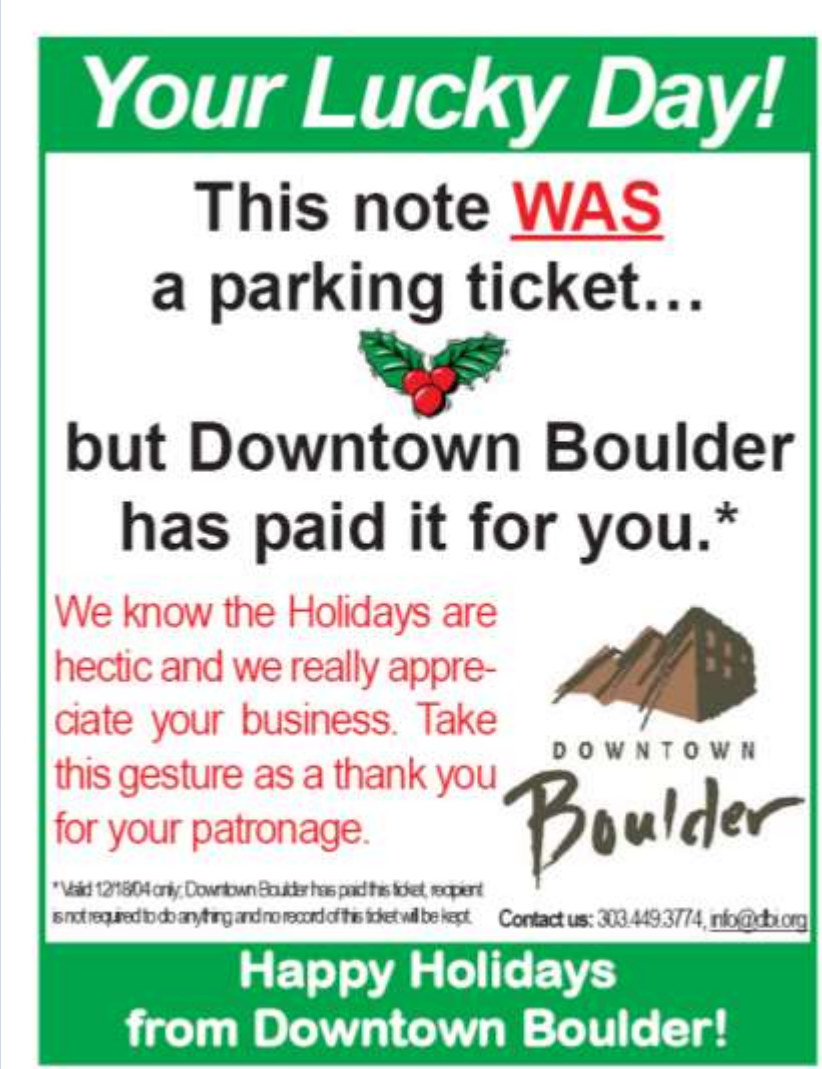
Holiday Parking Ticket Payment



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Fight the Perception of "Lack of Parking"

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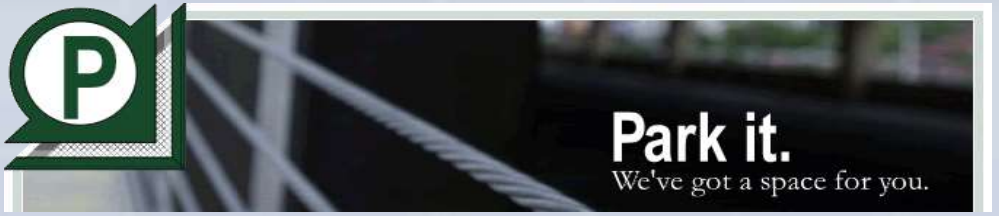
Ad Campaign Concept Development

The City of Lincoln and the Downtown Lincoln Association worked with the University of Nebraska – Lincoln staff and students to develop a parking marketing campaign.



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Parking Program Promotion
Co-Promotion with Other Agencies

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Celebrating Program Accomplishments

New paint, improved lighting, safer elevators and security guards are just part of the $1.6 million renovation recently completed at the JC Penney Garage in downtown Anchorage.

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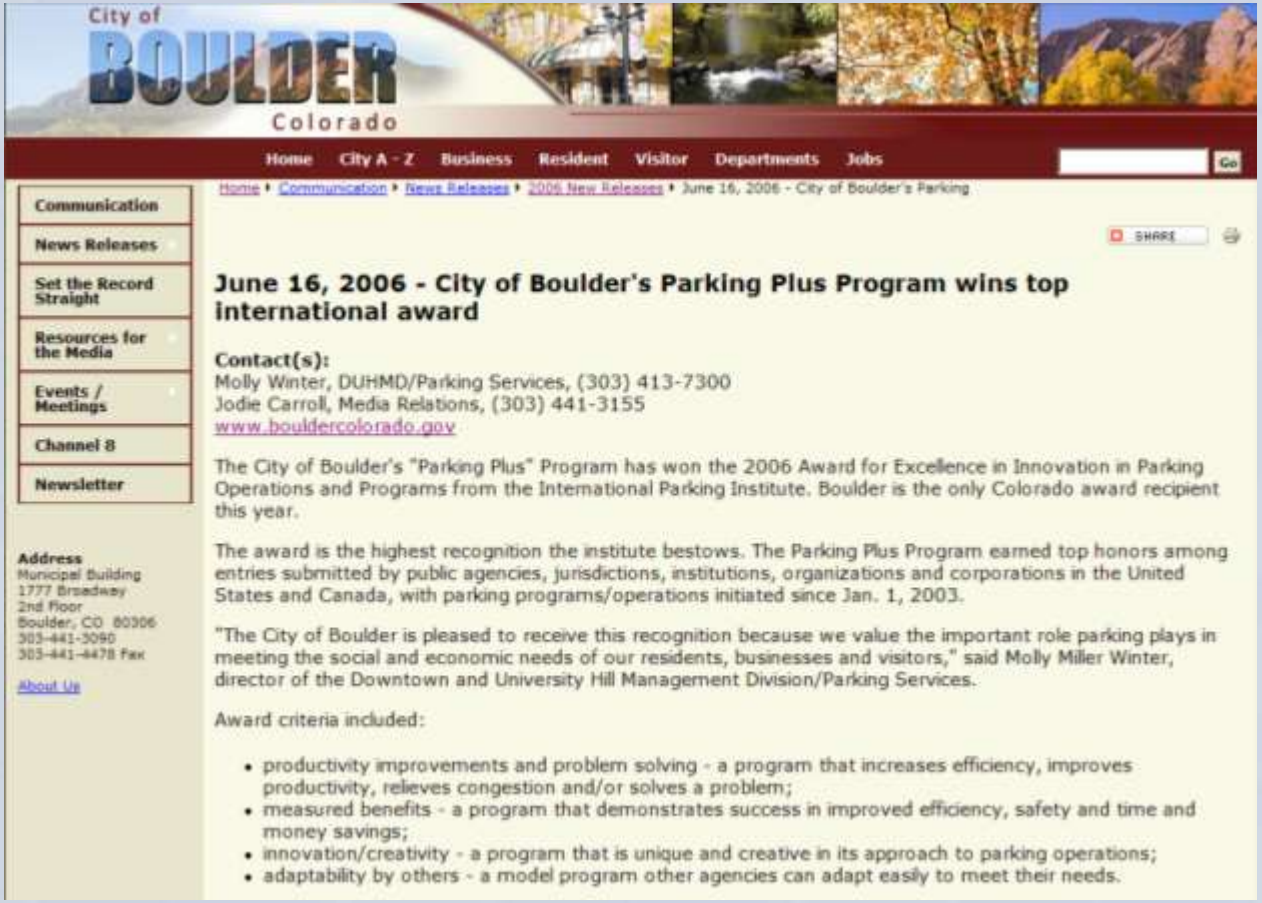
Celebrating Program Accomplishments



City of BOULDER Colorado

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Communication
News Releases
Set the Record Straight
Resources for the Media
Events / Meetings
Channel 8
Newsletter

Address
Municipal Building
1777 Broadway
2nd Floor
Boulder, CO 80306
303-441-3090
303-441-4478 Fax

About Us

SHARE

June 16, 2006 - City of Boulder's Parking Plus Program wins top international award

Contact(s):
Molly Winter, DUHMD/Parking Services, (303) 413-7300
Jodie Carroll, Media Relations, (303) 441-3155
www.bouldercolorado.gov

The City of Boulder's "Parking Plus" Program has won the 2006 Award for Excellence in Innovation in Parking Operations and Programs from the International Parking Institute. Boulder is the only Colorado award recipient this year.

The award is the highest recognition the institute bestows. The Parking Plus Program earned top honors among entries submitted by public agencies, jurisdictions, institutions, organizations and corporations in the United States and Canada, with parking programs/operations initiated since Jan. 1, 2003.

"The City of Boulder is pleased to receive this recognition because we value the important role parking plays in meeting the social and economic needs of our residents, businesses and visitors," said Molly Miller Winter, director of the Downtown and University Hill Management Division/Parking Services.

Award criteria included:

- productivity improvements and problem solving - a program that increases efficiency, improves productivity, relieves congestion and/or solves a problem;
- measured benefits - a program that demonstrates success in improved efficiency, safety and time and money savings;
- innovation/creativity - a program that is unique and creative in its approach to parking operations;
- adaptability by others - a model program other agencies can adapt easily to meet their needs.

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Learns about options.

Use alternative transportation next time.

City of Austin, TX

Chooses to pay and park

Revenue for improvements in neighborhood.

Promote Transportation Alternative & Community Reinvestment

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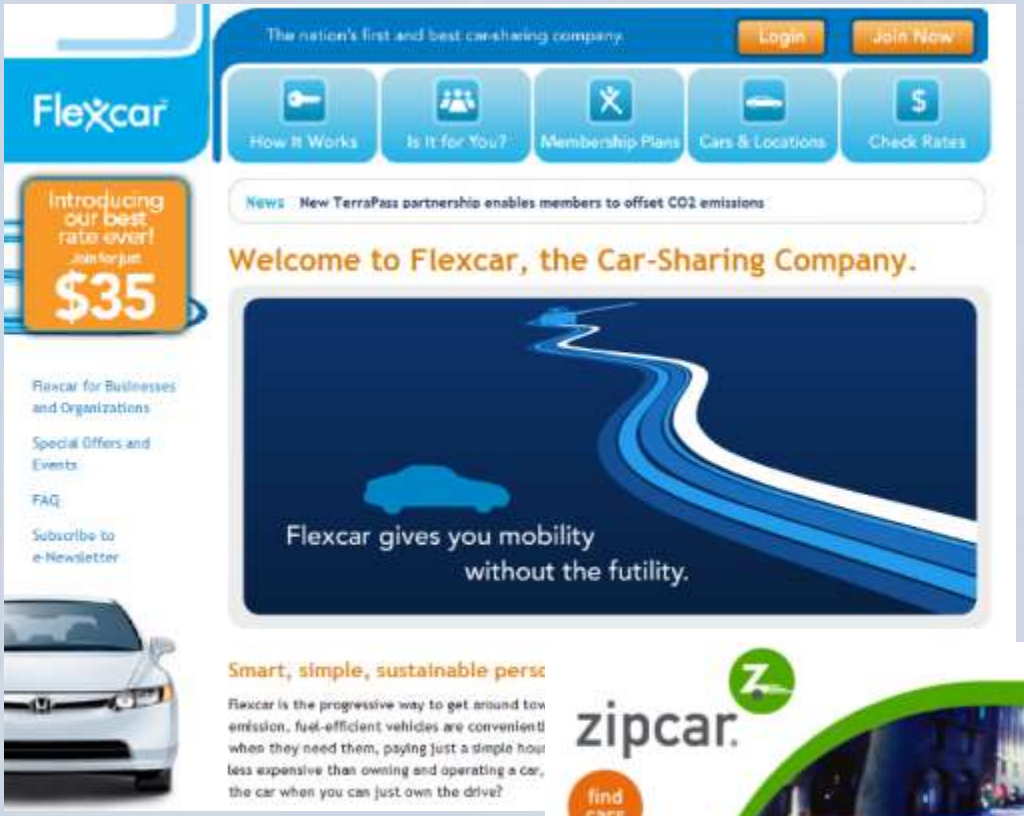

Promoting Transportation Alternatives

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Continue To Be Creative!

Think Beyond The Parking Space!

This is just the beginning!!!

Discussion