

B: PUBLIC ENGAGEMENT INFO & SURVEY RESULTS

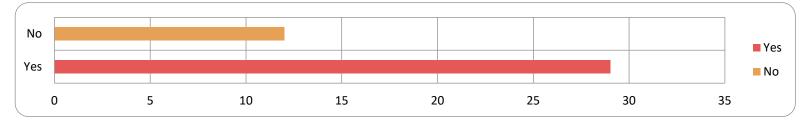


How do you use the corridor?

Choice		Responses
Driving		41 95.35%
Bicycling		12 27.91%
Walking / Running		13 30.23%
Does not or rarely uses the corridor		0 0.00%
Answered		43
Skipped		0
Does not or rarely uses the corridor Walking / Running Bicycling Driving		 Driving Bicycling Walking / Running Does not or rarely uses the corrid
0	5 10 15 20 25 30 35 40	45

Do you feel safe driving along the corridor?

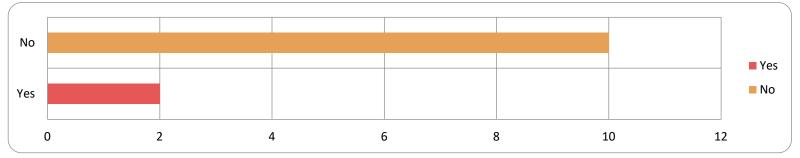
Rating	Responses
Yes	29 70.73%
No	12 29.27%
Average	0
Answered	41
Skipped	2





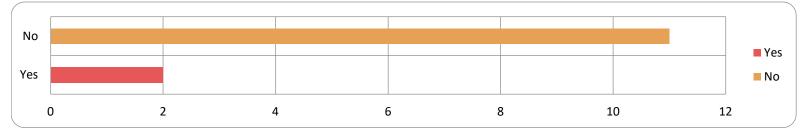
Do you feel safe bicycling along the corridor?

Rating	Responses
Yes	2 16.67%
No	10 83.33%
Average	0
Answered	12
Skipped	31



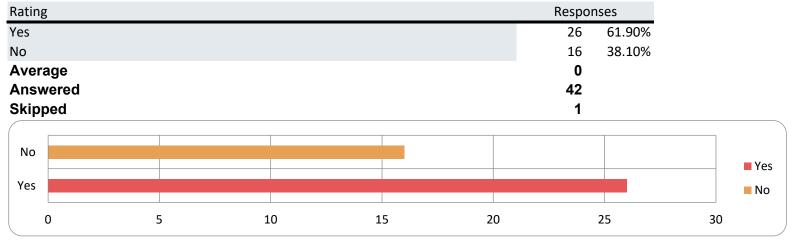
Do you feel safe walking / running along the corridor?

Rating	Responses
Yes	2 15.389
No	11 84.629
Average	0
Answered	13
Skipped	30

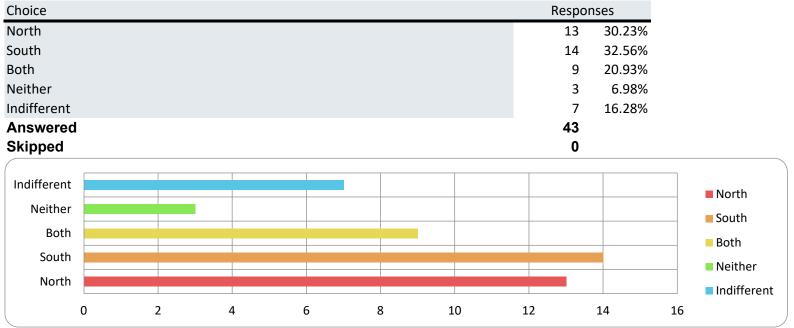




Do you feel that speeding is an issue along the corridor?



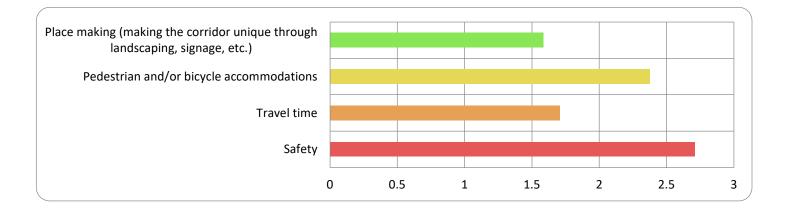
Which side of East Pershing Boulevard would you like to see a shared use path (Sidewalk / Greenway) constructed on?





Rank your priorities for the corridor from top to bottom.

					Ran	king			
Choice	-	1		2		3		4	Weighted Score
Safety	8	33.33%	9	37.50%	3	12.50%	0	0.00%	2.708333333
Travel time	5	20.83%	2	8.33%	3	12.50%	9	37.50%	1.708333333
Pedestrian and/or bicycle accommodations	8	33.33%	5	20.83%	4	16.67%	2	8.33%	2.375
Place making (making the corridor unique through									
landscaping, signage, etc.)	3	12.50%	2	8.33%	7	29.17%	6	25.00%	1.583333333
Answered	24								
Skipped	19								

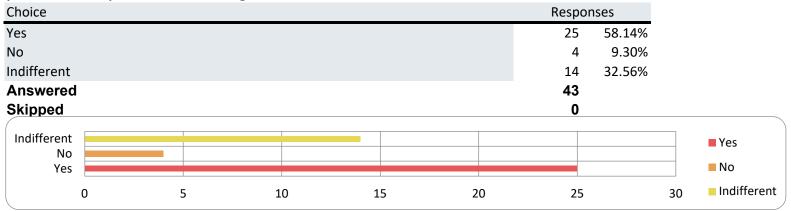




Are there intersections along the corridor that should be provided pedestrian crossing improvements?

Choice	Responses
Intersection with Taft / Polk Ave	17 48.57%
Intersection with Hayes, Wenandy, or McKinley Ave	9 25.71%
Intersection with Whitney Road	27 77.14%
Intersection with Tate Road	5 14.29%
Intersection with Fireside Drive or Foster Ave	12 34.29%
Intersection with Farthing Road	8 22.86%
Answered	35
Skipped	8
Intersection with Farthing Road Intersection with Fireside Drive or Foster Ave Intersection with Tate Road Intersection with Whitney Road Intersection with Hayes, Wenandy, or	 Intersection with Taft / Polk Ave Intersection with Hayes, Wenandy McKinley Ave Intersection with Whitney Road Intersection with Tate Road
Intersection with Taft / Polk Ave	 Intersection with Fireside Drive or Ave

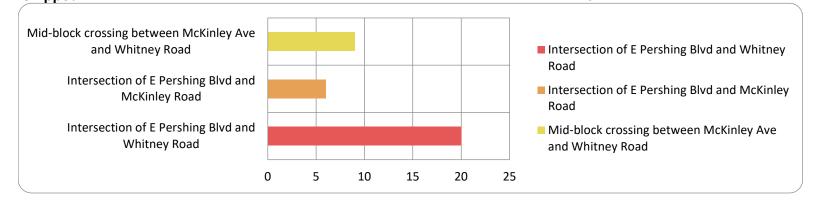
Given the recent opening of the East Cheyenne Community Open Space, do you feel that a pedestrian crossing should be provided to help cross East Pershing Boulevard?





Where do you believe a crossing would be effective?

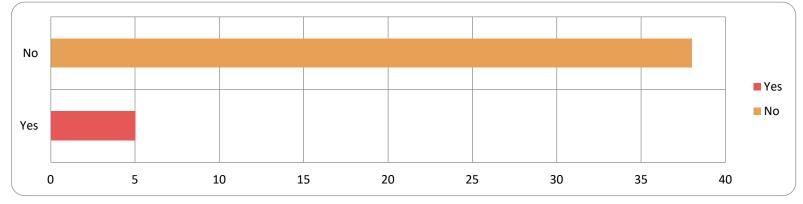
Choice	Responses
Intersection of E Pershing Blvd and Whitney Road	20 86.96%
Intersection of E Pershing Blvd and McKinley Road	6 26.09%
Mid-block crossing between McKinley Ave and Whitney Road	9 39.13%
Answered	23
Skipped	20





Have you noticed any drainage issues along the corridor?

Rating	Responses
Yes	5 11.63%
No	38 88.37%
Average	0
Answered	43
Skipped	0



Can you describe the drainage issues?

Response

Excess storm water from the North West of the US 30/ Pershing intersection floods down Uintah Rd and across Pierce.

The tire channels in the road collect water and ice

Minor flooding

The greenway tunnel under highway 30 at Polk was filled with water and impassable for literally months this past summer.

Answered	4
Skipped	39



What else should we consider when reviewing the corridor for the future?

Response

If no separate bike path along East Pershing, continue to have wide shoulder to allow safe bicycling. Development of North College Dr. years ago took that opportunity away.

4 lanes from Lincoln way to Taft, or right turn lane onto Taft

Increasing speed limit. Correcting right turn onto Taft eastbound on Pershing. It needs to have a separate turn lane. Also, there needs to be a turn lane red-yellow-green light from Pershing westbound to HWY 30.

Maybe start with stop lights, the intersection of 30/Whitney. Mow and landscaping along this corridor would make it more appealing. Now all that grows are weeds and trees in and along the drainage ditch. The Saddle Ridge entrance sign looks horrible. There is no safe way to walk from neighborhoods to the new park. This could be a very nice area of town if it received the same landscaping and care from the city as other parts of town. Keep it residential housing, no apartments. It would be different if rentals we're taking care of and not trashed. Patrol the area more often, has been a lot of unwanted foot traffic, causing crime to go up. I can go on and on but nothing will come of this anyway. Traffic lights at the intersection of Whitney and hwy30

Stop building out in the county and realize food comes from somewhere, Agriculture is and should always be a priority!

Stop the uncontrolled building! You are losing the uniqueness of Cheyenne and turning it into CO all for your love of money. I personally fear for my well with all the new well drilling in the county are you going to pay for that. No I don't think so.

Consider the future growth of Saddle Ridge and whether we want to promote a culture of walking, bicycling, children outside playing, etc. Put a roundabout at Pershing Christensen Rd

Fix/replace all the bumps on E Pershing from Christensen road to Reese.

More flashing lights on Lincolnway at the intersection of Pershing and Lincolnway. Traffic from the east comes up fast and sometimes runs the red light. I have to be extremely defensive at this intersection.

Intersection with US 30

Please note, my answers relate to utilizing the area of the corridor from Highway 30 to Taft.

A big concern I have is being able to get out of the Cheyenne Ranch subdivision. Wait times to turn into traffic on Pershing seem to be increasing and my concern is it will only get worse as traffic and population increase. The timing of the stoplights at Highway 30 and Taft Keep the split median (such as at Hayes). Turning left out of Dakota Crossing is hard and usually the only safe way to do it is to cross east bound, wait in median and then turn left when traffic is clear.

It gets narrower the more east it goes.

Protected green arrows at the light onto Taft, it is very difficult to turn onto Taft after picking my kids up from Saddle Ridge area.

Answered	16
Skipped	27

Public Meeting 1 - 11/2/2021 Saddle Ridge Elementary

Name	Address	Phone	EMAIL
LORI Altenbern	3542 Shenando ah St, Cheyenne	(307)631.9740	Jastenbern @ yahoo, com
Teri Wei'sz	10532 Cherry wood lu		54 Hweisz 62 Cgmau'l.
Jody Madson	3305 Fire Side DR	719-458-91,99	jody. Madson & yahos. com
Mark Christenen	1730 Chastine Dr		man stenser cheyennecity, and
Steve Lee	8912 Enot Hershig		- enerolasta Adl com
Anthony Wallace	10663 Chote Cherry Road	307-632-65	z quallace Quan. Com
Ireq Weisz	10532 Cherry Wood Love		queisze penceandmac. com
Charles Bloom	2101 0'mel-		coloomd the cheyen city ing
Dan Placke	3934 Farthing Rd	(970)397-9082	diplacke @ outlook.com
JEFF NIETERS	3806 BLUE JAGE RO. 5201	(307) 871-6256	STALETERS & LIVE. COLL
Bob Simpson	3402 Hayestve	(307)20.1994	Kotablessing12@gmail.com
Kodi King	3405 McKinley Ave		o Kodi K. Ng 930 grail. com
Bryong Helly Cury	3675 Ruphe Saye Rd	5407348237	
50 WADDELL	WESTORM RED		
GARY GRIGSBO	the Co	307-632 5656	GGRIGSBY @WRD-LTD. com
Christopler Yaney	2101 O'Neil Auz	307-638 4308	cyancy Ocheyennempo.org

Public Meeting 1 - 11/2/2021 Saddle Ridge Elementary

Name	Address	Phone	EMAIL
Rick + D'Ann Griego	6705 Tate Rd.	307-421-	
Dave Burvill	3534 Saratigu	307-534	
Mick & Stern' Merril	8331 E PERshing Blud	307-	dave_burrill@yahoo, coo
om & Debbis Dimick	3633 Christenson Rd	367 314-828	dimick 3633@ live, com
Donn L Edmus	7309 E Pershing Bla	636 4835	edmandsdmsz () Yaha ic
Tom Mason	2101 O' Neil AUC	6376299	Friasan Echyempenpo.og
Jeannie Veiter	2101 O'Meil NUZ	638-437	1 justen schegenneity.
Te vis Vogel	3402 Compsive trl	60.5 765-4592	Trogelatahar Can
Donna lib; taszew=k:	6214 & Pershing Blue	307-638-4468	duoi ta co hotmail.com
Ear Meill	3423 Christensen RD	6304445	tailment st @ icloud con
uli Monahan	1908 Trasslands Pkny		julimonaharw agnail. com
Susty Brinkman	4713 Vintah Rd/4704 Epershing	303.523	LavacaPuspusa @gmail.com
avrie King	3405 HAYESTUR	307 -6364	gran, com
AlenKing	3905 mcKinley AV	307 414 0823 307	
	reacon vine VF	307 178 1362	Chue. Kling Q Va. gov
Shelby Carlson	YZ Consultants		

EAST PERSHING BOULEVARD **CORRIDOR STUDY**



Background

There has been significant growth in residential and industrial development within the immediate vicinity. This combined with the recent extension of Christensen Road from US 30 to the Campstool Road Interchange have had direct impacts on how those in the community use the East Pershing Boulevard corridor. Based on these changes, it is time to provide a new vision for the future of the corridor that meets the needs of local citizens and the public...

Goals

EYEN

This project will undertake a comprehensive review of the current and future traffic demands as well as the needs of non-motorized users along the corridor. The final goal of this project is to develop a conceptual design for the future of East Pershing Boulevard that meets the needs and desires of the community. There is currently no estimated timeline for the final design and implementation of the outcomes of this plan.

Introduction **Existing Conditions**

East Pershing Boulevard, within the study limits, exists as a three-lane road section with little or no non-motorized accommodations. The rural three lane section stands in contrast to the evolving community to which it serves. The wide open feel of the roadway provides the impression that drivers can drive above the posted speed limit, endangering those that walk or bike along the shoulder of the roadway.



expected to be completed by 2025.

GOAL / RANK	Plan Cheyenne				
MAINTENANCE / 1	Extend the life of the transportation s				
SAFETY / 2	Transportation facilities				
EFFICIENCY / 3	Optimize the use of existing infrastru in the transpor				
CONNECTIVITY / 4	Develop and maintain a multimodal t nections betwe				
GROWTH / 5	Stimulate growth in the economy, dev commodates current and futur				
RESILIENCY / 6	Design transportation facilities and ne				
INTEGRATION/ 7	Integrate transportation and land use commun				
CHOICES / 8	Provide travel choices that are access transportati				

DATA DRIVEN DECISION MAKING



Evolving Community

Recent developments along the corridor that are reshaping the community include the Saddle Ridge Sub division and the East Cheyenne Community Park. Full build out of the Saddle Ridge Development will see an almost doubling in the current residential homes and the addition of an elementary school. Full build out is

The East Cheyenne Community Open Space was officially opened on July 1st of this year. The City of Cheyenne is currently developing a Master Plan for the development of this park. Both of these developments will reshape the dynamic of this corridor through the introduction of pedestrians and children. It is paramount that this corridor is re-envisioned with them in mind.

e Connect 2045 Goal Statements

system and promote fiscal responsibility by emphasizing maintenance over system expansion.

provide safe travel options for all residents and visitors.

- cture and opportunistic funding options to make prudent investments tation network to maintain system predictability.
- transportation system that provides direct, continuous, and safe coneen local and regional destinations and services.
- evelopment, and tourism by providing a transportation system that acare demand for the movement of residents, visitors, and goods.
- etworks so they are secure and resilient to impacts from manmade or natural disasters.
- decisions to create and preserve neighborhoods that promote vibrant nity character and encourage active living.
- sible to all travelers, promote local mobility, and reduce the impacts of ion on the environment and neighborhoods.

EAST PERSHING BOULEVARD \ge

CORRIDOR STUDY

Traffic Data

EYEN

Under the current (2021) traffic volumes, all of the intersections operate at or above an acceptable level.

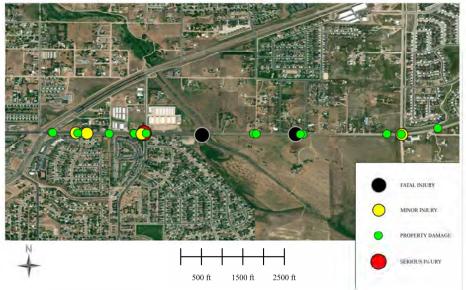
Future traffic volumes for the corridor were projected to 2045 using Cheyenne MPO's Regional Traffic Model, as well as, potential land use changes and redevelopments that may occur in the next 25 years. Under these projected volumes, three locations were identified for concern and are list below:

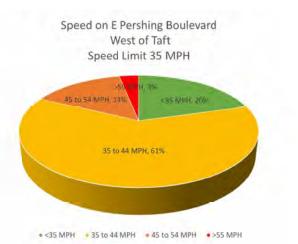
- Grasslands Parkway northbound turning movement onto E Pershing Boulevard
- Whitney Road northbound turning movement onto E Pershing Boulevard
- Christensen Road northbound turning movement onto E Pershing Boulevard



A three-lane road section provides adequate capacity up to and beyond the 2045 design year for the corridor.

Recorded Crash Locations



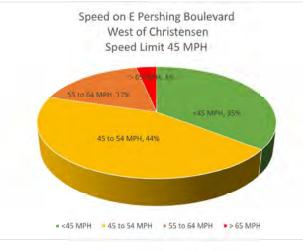


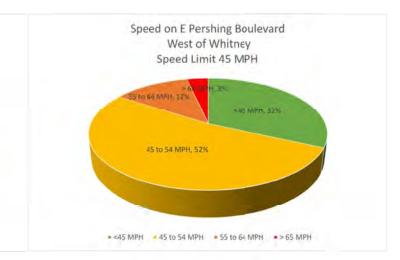
DATA DRIVEN DECISION MAKING **Preliminary Findings Core Issue—Speeding and Safety**

East Pershing Boulevard currently lacks continuous bicycle and pedestrian facilities for the length of the corridor. Based on recent developments in the vicinity it is crucial that accommodations be provided for the evolving community. The recent opening of the East Cheyenne Community Green Space and its future planned development creates an additional need of providing a safe pedestrian crossing.

Speeds along the corridor appear to be a prevailing issue. The recorded 85th percentile speeds were found to be consistently 10 mph above the posted limit. The 85th percentile speed benchmark is used in traffic studies as it captures the generally observed flow of traffic while excluding gross offenders.

Location	Dested Speed (MDU)	Percent	Speeding	85th Percentile Speed (MPH)			
Location	Posted Speed (MPH)	EB	WB	EB	WB		
Taft / Polk	35	87.80%	70.95%	48.75	43.27		
Hayes	45	86.59%	93.35%	58.86	61.16		
Whitney	45	82.74%	54.33%	58.8	51.71		
Fireside	45	91.43%	73.77%	68.6	58.66		
Farthing	45	79.45%	35.61%	59.84	49.98		
Christensen	45	64.31%	73.51%	54.8	57.65		





EAST PERSHING BOULEVARD CORRIDOR STUDY

Potential Treatments Corridor Enhancements

Intersection at Whitney Road

The intersection with Whitney Road currently operates acceptably without stop control measures along East Pershing Boulevard. With the expected increased capacity as a result of development, this intersection will eventually fall below an acceptable level of service, requiring the implementation of some form of vehicle control to alleviate demand from Whitney Road. The options available for implementation include:

- A four way stop
 - Pro—Cheap. Easy to implement in the short term.
 - Con— Every vehicle must stop.
- A signalized intersection
 - Pro—Provides ability to create gaps for secondary street movements.
 - Con—Expensive to construct and maintain. May increase accidents.
- A Roundabout
 - Pro—Statistically safest option for drivers and pedestrians. Operates at highest Level of Service.
 - Con—May require Right of Way acquisition to accommodate full design. Snow removal can be problematic.

All three options will provide a safe at-grade crossing for pedestrians.

Single Lane Roundabout











DATA DRIVEN DECISION MAKING

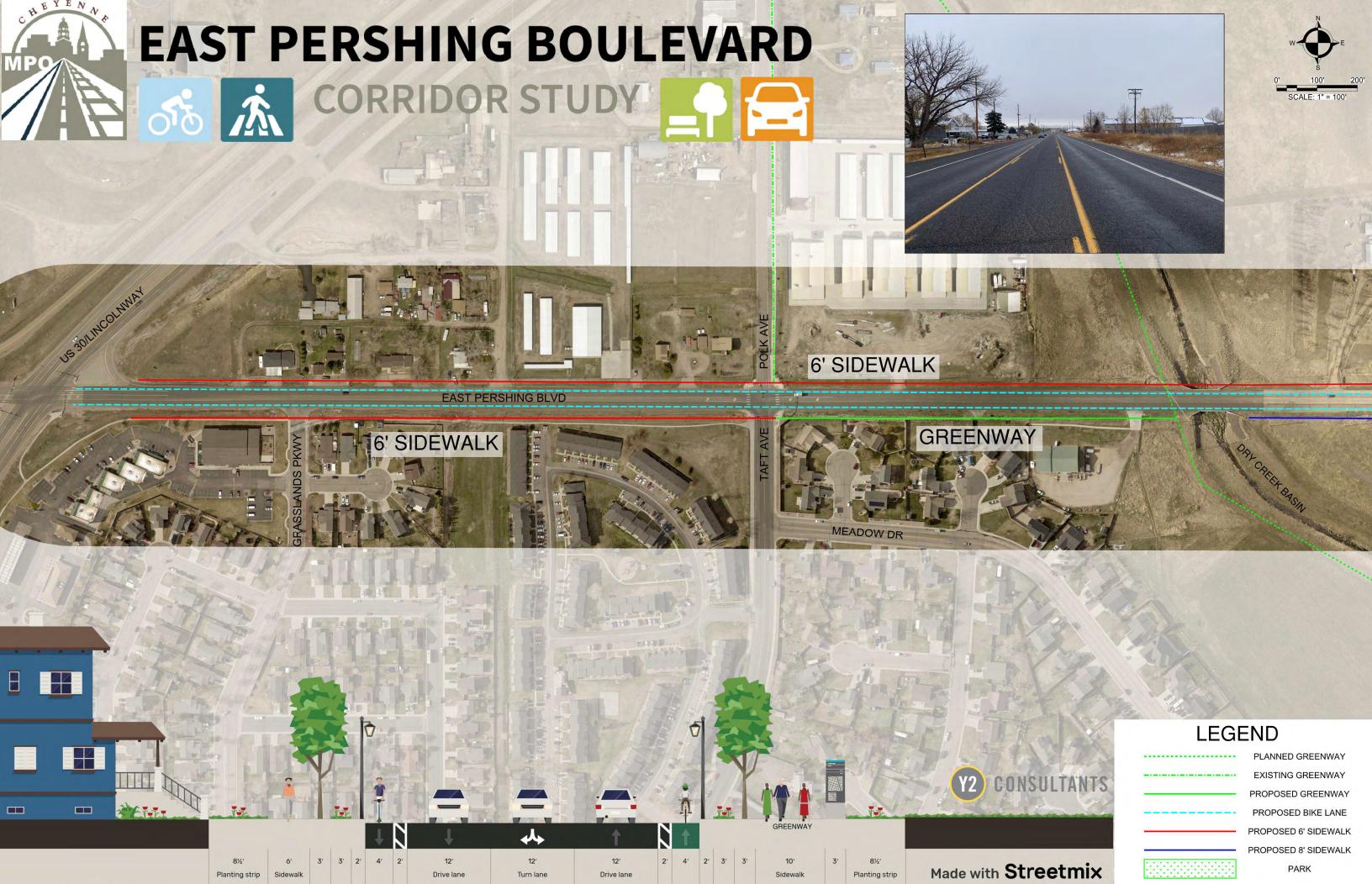


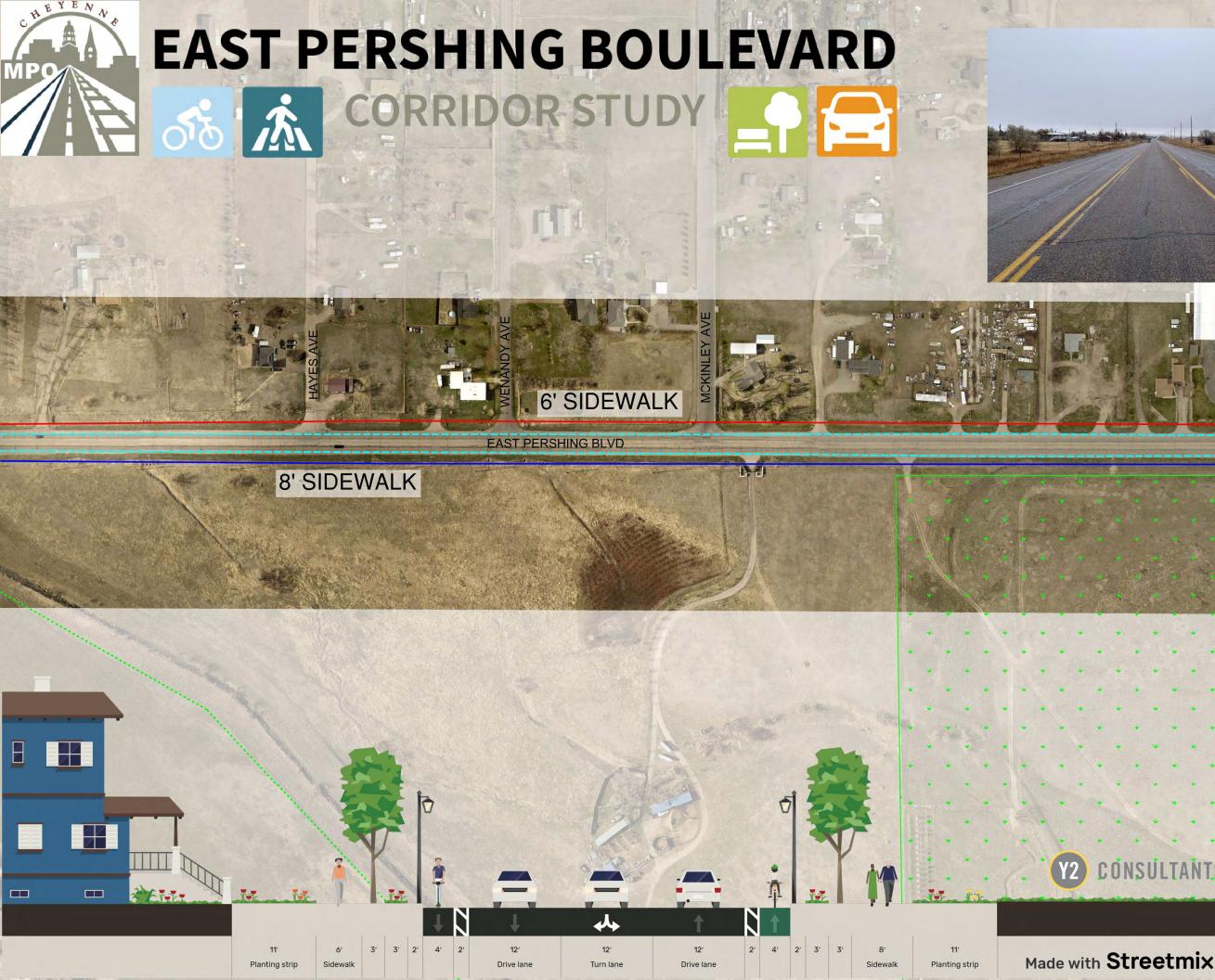








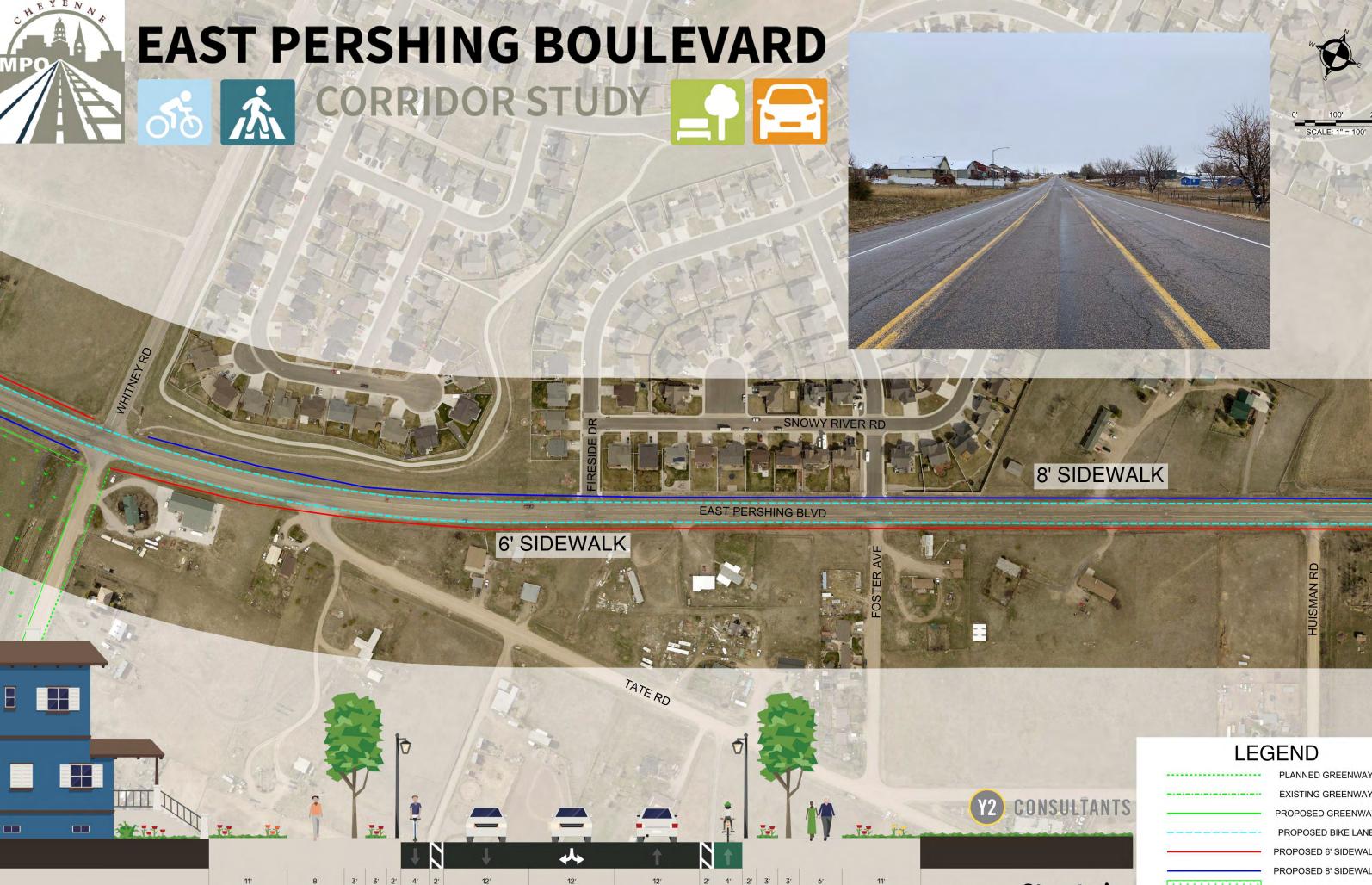






LEGEND

PLANNED GREENWAY EXISTING GREENWAY PROPOSED GREENWAY PROPOSED BIKE LANE PROPOSED 6' SIDEWALK PROPOSED 8' SIDEWALK PARK



Planting strip

Sidewall

Drive lane

Turn lane

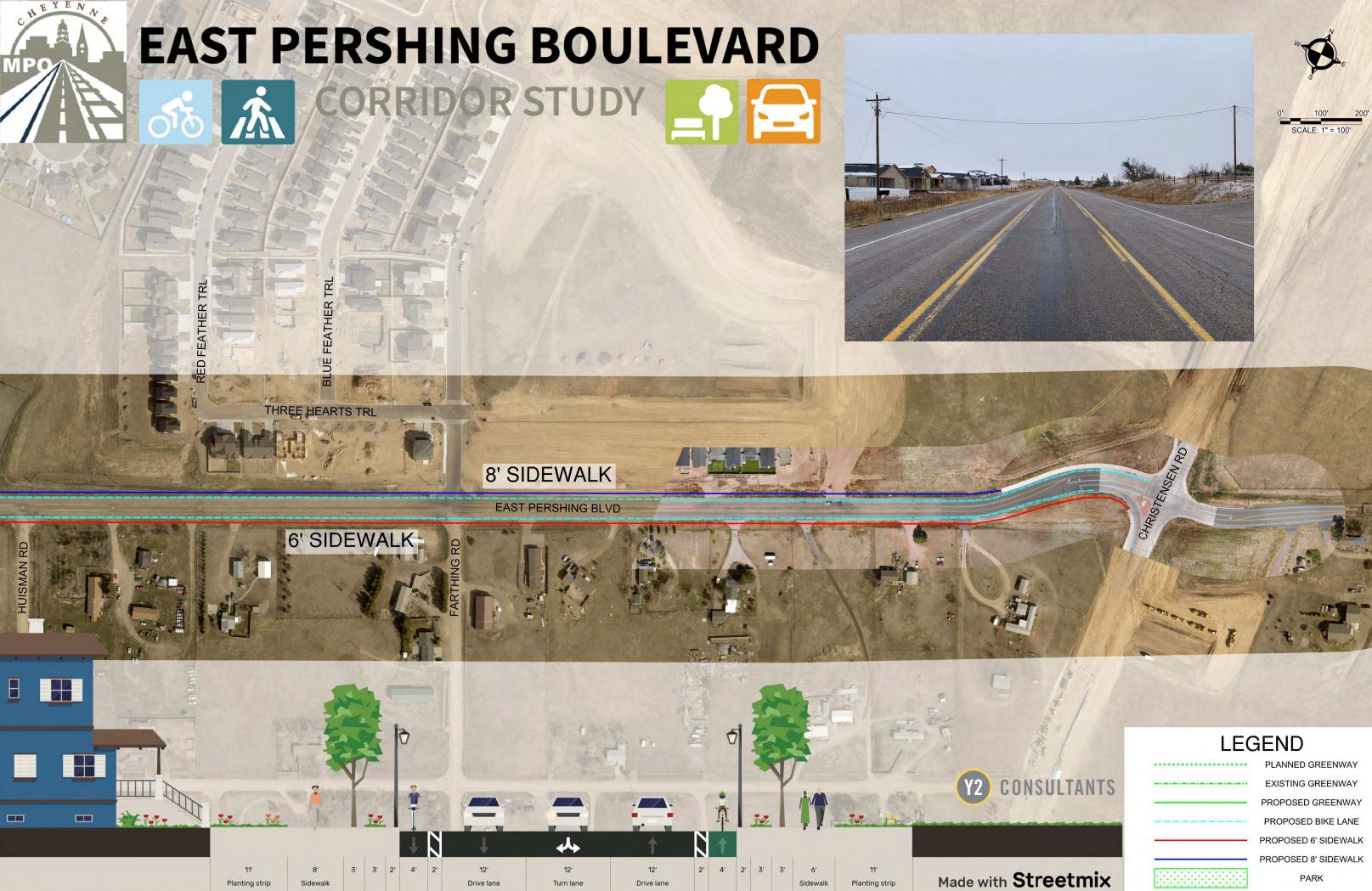
Drive lane

Made with Streetmix

Planting strip

Sidewall

EXISTING GREENWAY PROPOSED GREENWAY PROPOSED BIKE LANE PROPOSED 6' SIDEWALK PROPOSED 8' SIDEWALK PARK





30

How do you currently relate to the corridor?

Choice				Respor	nses			
Live adjacent to the corridor				20	47.62%			
Live in the surrounding neighborhoods				27	64.29%			
Commute using the corridor				28	66.67%			
Work in immediate vicinity to the corridor				3	7.14%			
Children are enrolled at Saddle Ridge or Sunrise Element	ary			10	23.81%			
Answered				42				
Skipped				1				
Children are enrolled at Saddle Ridge or Sunrise Elementary								
Work in immediate vicinity to the corridor								
Commute using the corridor								
Live in the surrounding neighborhoods								
Live adjacent to the corridor								
	0	5	10	15	5	20	2	25

How do your children get to school?

Choice	Respor	nses
Driven by parent	6	60.00%
Carpool by parent	0	0.00%
School bus	5	50.00%
Walk	7	70.00%
Bike	4	40.00%
Answered	10	
Skipped	33	

Bike Walk								
School bus Carpool by parent Driven by parent								
Driven by parent	0	1 :	2	3	4	5 (5	7 {



How often do you drive on East Pershing Boulevard?

Choice	Responses
Daily	17 89.47%
Weekly	2 10.53%
Monthly	0 0.00%
lever	0 0.00%
Answered	19
Skipped	1
Never	
Monthly Monthly	Daily Weekly
Weekly	Month
Daily	Never
0 2 4 6 8 10	12 14 16 18

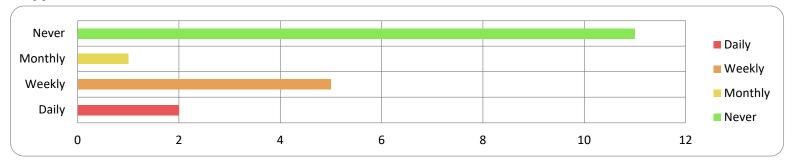
What sections of East Pershing Boulevard do you use most often?

Choice										R	Respor	nses
JS 30 to Taft / Polk											14	73.68%
aft / Polk to Whitney Road											17	89.47%
Whitney Road to Christensen Road	k										9	47.37%
Answered											19	
Skipped											1	
Whitney Road to Christensen Road Taft / Polk to Whitney Road US 30 to Taft / Polk	0	2	4	6	8	10	12	14	16	18	Ta	5 30 to Taft / Polk Ift / Polk to Whitney Road hitney Road to Christensen R



How often do you use East Pershing Boulevard as a pedestrian or Bicyclist?

Choice	Responses
Daily	2 10.53%
Weekly	5 26.32%
Monthly	1 5.26%
Never	11 57.89%
Answered	19
Skipped	1

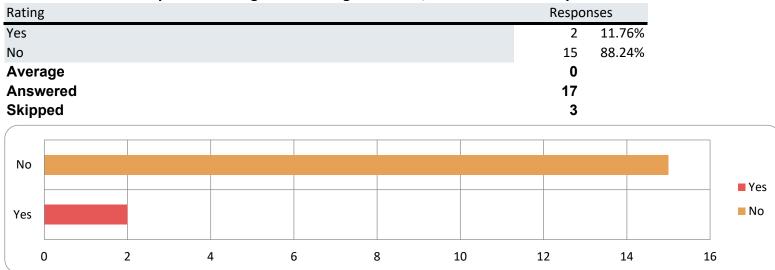


What type of bicycle facility do you prefer?

hoice						R	esponses		
hared Lane							0	0.00%	
On-Street Bike Lane							2	14.29%	
Off-Street Bike Path							12	85.71%	
Answered							14		
Skipped							6		
Off-Street Bike Path									
									Shared Lane
On-Street Bike Lane									On-Street Bike Lane
Shared Lane									Off-Street Bike Path
	0	2	4	6	8	10	12	14	

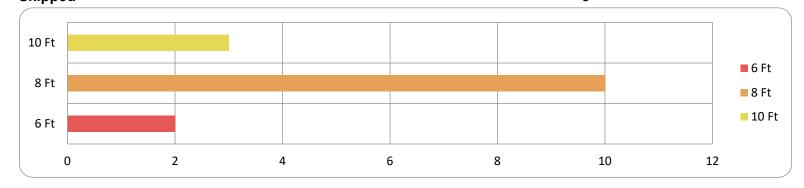


If a transit service was provided along East Pershing Boulevard, would a member of your household use it?



If a sidewalk was provided along East Pershing, what width would you prefer?

Choice	Responses
6 Ft	2 13.33
8 Ft	10 66.67
10 Ft	3 20.00
Answered	15
Skipped	5





Have you experienced or observed any problems along East Pershing Boulevard?

Choice							Respo	nses
Speeding							10	55.56%
Congestion / Traffic							7	38.89%
Safety Concerns							6	33.33%
_ack of Signage							1	5.56%
Drivers not obeying stop signs	5						1	5.56%
Dther							8	44.44%
Answered							18	
Skipped							2	
Other								Speeding
Drivers not obeying stop signs								Congestion / Traffic
Lack of Signage								-
Safety Concerns								Safety Concerns
Congestion / Traffic								Lack of Signage
Speeding								Drivers not obeying stop si
	0	2	4	6	8	10	12	

Please describe the problems encountered.

Response	Response
Racing	Bicycles, People walking at night.
People turning in front of bicycles	uneven pavement
Large volume of traffic turning south of taft	narrow and rough road beyond Christensen
Ridiculous traffic	No place to walk safely. Whitney / Pershing is dangerous
Speeding, Have formally complained with no results.	People pulling out in front of others. Light cycle at Taft
East bound traffic from 4:45-5:30 PM	People driving to slowly
I have no problem speeding.	Crashes
too narrow beyond Christensen.	Traffic light at Taft routinely gets out of sorts.
Answered	16
Skipped	4



What improvements do you think are most needed on the East Pershing boulevard corridor?

Choice							R	espor	nses
Pedestrian accommodations	5							5	29.41%
Bicycle accommodations								2	11.76%
Speed control								3	17.65%
Intersection enhancements								5	29.41%
Other								12	70.59%
Answered								17	
Skipped								3	
Other									Pedestrian accommodations
Intersection enhancements									Bicycle accommodations
Speed control									Speed control
Bicycle accommodations									
Pedestrian accommodations									Intersection enhancements
	0	2	4	6	8	10	12	14	Other

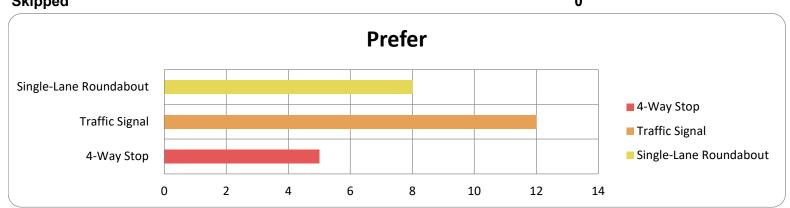
Please describe the improvements that you believe are most needed on East Pershing Boulevard.

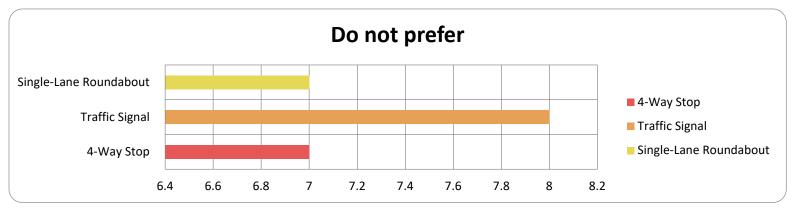
Response	
Police Enforcement	
Widening east of Christensen	
Lighting at intersections.	
Turn lane at Taft.	
2nd east bound lane from US 30 to Taft	
Roundabout at Whitney	
Local traffic only past Christensen	
Shoulder, curb and gutter, and sidewalk	
Keep trucks / semis off east pershing	
Put up signs	
Pavement widening and extend project further east of Christensen	
Remove S curve prior to Christensen and add lighting.	
Answered	12
Skipped	8



Given the likely need for traffic control at the intersection of Whitney and E Pershing Boulevard in the future, please provide you feedback on the following possibilities:

	Prefer	Do not prefer
4-Way Stop	5 25.0	00% 7 35.00%
Traffic Signal	12 60.0	00% 8 40.00%
Single-Lane Roundabout	8 40.0	00% 7 35.00%
Answered	20	
Skipped	0	







Why is a 4-Way Stop not a preferred option?

Response	
must be observed	
Requires all vehicles to stop.	
People will run sign.	
E Pershing should have right of way more often than 4 way	
Answered	
Skipped	1
Why is a Traffic Signal not a preferred option? Response	
Requires unnecessary stops	
Answered	
Skipped	1
Why is a Single-Lane Roundabout not a preferred option?	
Response	
Roundabout at converse	
Slow down flow of traffic. People in this town don't know how to use these for some	reason.
Narrow and useless. Larger vehicles need more room.	
Big trucks cannot fit	
Answered	
Skipped	1



Is there anything else that should be considered moving forward with the project?

Response

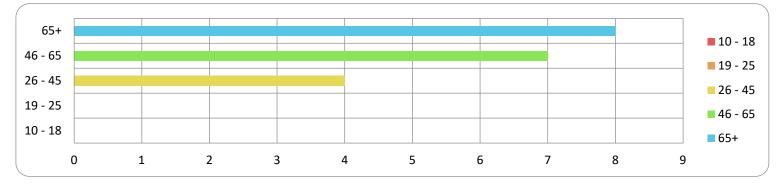
Pull out areas for mailboxes

Worst part of East Pershing is between Christensen and the Old railroad bridge at Archer. This part is narrow, very rough and poor quality pavement and has high traffic. Some pedestrians and bicycles with no sidewalks or shoulders. Likely belongs to Laramie County but has high traffic and needs to be considered as part of the whole network.

Answered	2
Skipped	18

What age bracket do you fall in?

Choice	Responses	
10 - 18	0	0.00%
19 - 25	0	0.00%
26 - 45	4	21.05%
46 - 65	7	36.84%
65+	8	42.11%
Answered	19	
Skipped	1	



Public Meeting 2 - 3/24/2022 Baggs Elementary School

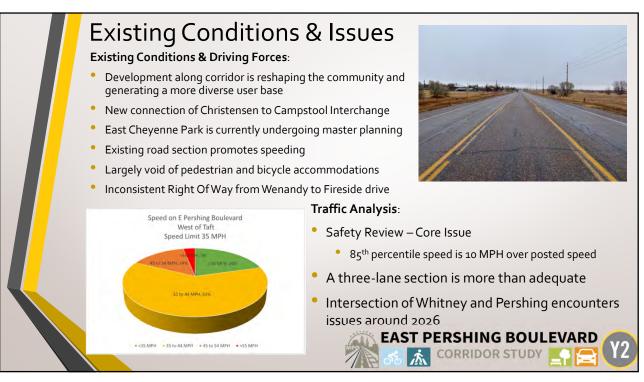
Name	Address	Phone	EMAIL
Budg Tennemt	2800 Me Cann B-12		buddy-twing nt Byshee. com
Son Haveliff	4720 Split Rail Ct	397-631-6282	jonhazliff @ gmail.com
Tam Mason	3403 Foxcroft Rd	307632-876	24
Kim Prince - Carlon	3314 Fireside Dr	307-214-2875	×prowgir1z@gmail.com
Edward & Ann Carlson	7435 Three Near to Trail	307-632-52	22 ecuris # 20009 @ guail.com
Donna Spatz	1126 Albin Ln 3	67-231-55	54 d'\$patz@yahoo.com
KATHER Locksport	2013 PRAIRIEDOU DR	267-739-94	Pb - READER 225 @ MAIL. COM
D. Michille Aldrich	4505 E 17 St	307.760 6113	teachurgoe yehrs in
D. Michille Aldrich Bergent Grigni Stevens	7224 Heritage Dr	203-26954	à ginnisterens@ghailscom
Bairy & Good Stark	7224 Heritage Dr 5326 Fire Side Dr	307-247-0065	d ginnisterens@gwailocom - Bstarke bresnan.net
Karen Milmont	2111 Meadow Dr.	514-2386	
Ruchouson	4720 E175 55	425351 7319	REHOUSCR @GMALL_con
Billaman	7112 E, Pershing	214-2938	be Willie 98 @ G. mail - Com
KAROLYN MIDDLESON		220-1090	KCNKKM C bresnan. net

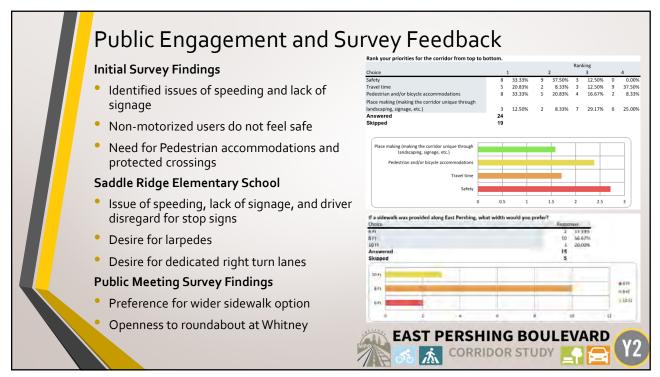
Public Meeting 2 - 3/24/2022 Baggs Elementary School

Name	Address	Phone	EMAIL
Sandra Koehn	4713 Long Branch hp 82001		SLK marketing vol @ gmail.
A/ Simpson	200 Gardenia De		21-Simpson Owyoming. com
Tom Dimick	3633 ChRISTINSSA RD		dimick 3633 @ live tom
Donn Edmand	7300 E Pershins		edments of ms 2 & Yehrer com
Den Holano	1211 HESSAVE		driney squails
Mark Titus	5916 E. Aershing		burning - bronco & yahoo.com
Mary Steiner	5916 E. Persking		0
Chris Milmont	2111 Meadow Dr.		cmilmont@hotmail.com
Jim Boyd	4608 Van Buren Ave		j1boyd6@gmail.com
Barbara Boyd	4608 Van Buren Ave		blboyd 7@gmail. Com
Stelaybar	Council		
Dary Wohnson	3385 Hales Rauch		
GalonKing	3405 McKinley AV		

Public Meeting 2 - 3/24/2022 Baggs Elementary School

Name	Address	Phone	EMAIL
ED WAPDER	5218 A SUNSET, CHEVERNE	307 286-3705	ED & JZCONSULTANTS. COM
Cedric Fairweather	6702 Chickadee Dr. chy		317 Cednic@ChurchWare.com
Duve & Back Stark	10389 (Hoke CHEREY Rd	970-689-290	2
PARN SHIELDS	3911 5 32 57	307-760-4102	RYAN-SHELDSE WYD.60V
Donna Woitasewski	6214 EPershing-Blvd	307-63(-946(divoitacototrailecor
Carrie King	3405HAyes Ave	3078 636	
0		/	
			the second







- Three lane with Shared Left Turn
- Curb and Gutter
- Bike lanes
- Alternating 6' & 8' width detached sidewalks

Short Term

- Pedestrian accommodations
- Safety additional signage & enforcement
- Four-way stop at Whitney and Pershing

Long Term

- Right of Way Acquisition, Access Management, & Geometry realignment
- Roundabout at Whitney & E Pershing





EAST PERSHING BOULEVARD **CORRIDOR STUDY**



Background

There has been significant growth in residential and industrial development within the immediate vicinity. This combined with the recent extension of Christensen Road from US 30 to the Campstool Road Interchange have had direct impacts on how those in the community use the East Pershing Boulevard corridor. Based on these changes, it is time to provide a new vision for the future of the corridor that meets the needs of local citizens and the public...

Goals

EYEN

This project will undertake a comprehensive review of the current and future traffic demands as well as the needs of non-motorized users along the corridor. The final goal of this project is to develop a conceptual design for the future of East Pershing Boulevard that meets the needs and desires of the community. There is currently no estimated timeline for the final design and implementation of the outcomes of this plan.

Introduction **Existing Conditions**

East Pershing Boulevard, within the study limits, exists as a three-lane road section with little or no non-motorized accommodations. The rural three lane section stands in contrast to the evolving community to which it serves. The wide open feel of the roadway provides the impression that drivers can drive above the posted speed limit, endangering those that walk or bike along the shoulder of the roadway.



expected to be completed by 2025.

GOAL / RANK	Plan Cheyenne
MAINTENANCE / 1	Extend the life of the transportation s
SAFETY / 2	Transportation facilities
EFFICIENCY / 3	Optimize the use of existing infrastruc in the transport
CONNECTIVITY / 4	Develop and maintain a multimodal t nections betwe
GROWTH / 5	Stimulate growth in the economy, dev commodates current and futur
RESILIENCY / 6	Design transportation facilities and ne
INTEGRATION/ 7	Integrate transportation and land use commun
CHOICES / 8	Provide travel choices that are accessi transportati

DATA DRIVEN DECISION MAKING



Evolving Community

Recent developments along the corridor that are reshaping the community include the Saddle Ridge Sub division and the East Cheyenne Community Park. Full build out of the Saddle Ridge Development will see an almost doubling in the current residential homes and the addition of an elementary school. Full build out is

The East Cheyenne Community Open Space was officially opened on July 1st of this year. The City of Cheyenne is currently developing a Master Plan for the development of this park. Both of these developments will reshape the dynamic of this corridor through the introduction of pedestrians and children. It is paramount that this corridor is re-envisioned with them in mind.

e Connect 2045 Goal Statements

system and promote fiscal responsibility by emphasizing maintenance over system expansion.

provide safe travel options for all residents and visitors.

- cture and opportunistic funding options to make prudent investments tation network to maintain system predictability.
- transportation system that provides direct, continuous, and safe coneen local and regional destinations and services.
- evelopment, and tourism by providing a transportation system that acare demand for the movement of residents, visitors, and goods.
- etworks so they are secure and resilient to impacts from manmade or natural disasters.
- decisions to create and preserve neighborhoods that promote vibrant nity character and encourage active living.
- sible to all travelers, promote local mobility, and reduce the impacts of ion on the environment and neighborhoods.

EAST PERSHING BOULEVARD \ge

CORRIDOR STUDY

Traffic Data

EYEN

Under the current (2021) traffic volumes, all of the intersections operate at or above an acceptable level.

Future traffic volumes for the corridor were projected to 2045 using Cheyenne MPO's Regional Traffic Model, as well as, potential land use changes and redevelopments that may occur in the next 25 years. Under these projected volumes, three locations were identified for concern and are list below:

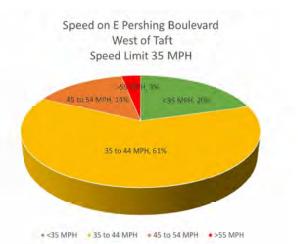
- Grasslands Parkway northbound turning movement onto E Pershing Boulevard
- Whitney Road northbound turning movement onto E Pershing Boulevard
- Christensen Road northbound turning movement onto E Pershing Boulevard



A three-lane road section provides adequate capacity up to and beyond the 2045 design year for the corridor.

Recorded Crash Locations



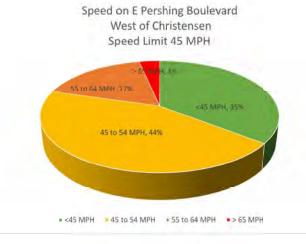


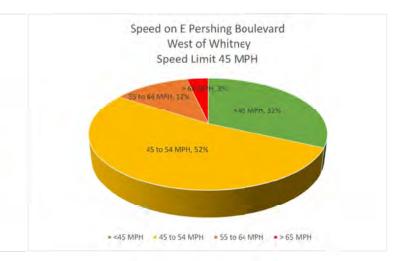
DATA DRIVEN DECISION MAKING **Preliminary Findings Core Issue—Speeding and Safety**

East Pershing Boulevard currently lacks continuous bicycle and pedestrian facilities for the length of the corridor. Based on recent developments in the vicinity it is crucial that accommodations be provided for the evolving community. The recent opening of the East Cheyenne Community Green Space and its future planned development creates an additional need of providing a safe pedestrian crossing.

Speeds along the corridor appear to be a prevailing issue. The recorded 85th percentile speeds were found to be consistently 10 mph above the posted limit. The 85th percentile speed benchmark is used in traffic studies as it captures the generally observed flow of traffic while excluding gross offenders.

Location	Dested Speed (MDU)	Percent	Speeding	85th Percentile Speed (MPH)		
	Posted Speed (MPH)	EB	WB	EB	WB	
Taft / Polk	35	87.80%	70.95%	48.75	43.27	
Hayes	45	86.59%	93.35%	58.86	61.16	
Whitney	45	82.74%	54.33%	58.8	51.71	
Fireside	45	91.43%	73.77%	68.6	58.66	
Farthing	45	79.45%	35.61%	59.84	49.98	
Christensen	45	64.31%	73.51%	54.8	57.65	





EAST PERSHING BOULEVARD CORRIDOR STUDY

Potential Treatments Corridor Enhancements

Intersection at Whitney Road

The intersection with Whitney Road currently operates acceptably without stop control measures along East Pershing Boulevard. With the expected increased capacity as a result of development, this intersection will eventually fall below an acceptable level of service, requiring the implementation of some form of vehicle control to alleviate demand from Whitney Road. The options available for implementation include:

- A four way stop
 - Pro—Cheap. Easy to implement in the short term.
 - Con— Every vehicle must stop.
- A signalized intersection
 - Pro—Provides ability to create gaps for secondary street movements.
 - Con—Expensive to construct and maintain. May increase accidents.
- A Roundabout
 - Pro—Statistically safest option for drivers and pedestrians. Operates at highest Level of Service.
 - Con—May require Right of Way acquisition to accommodate full design. Snow removal can be problematic.

All three options will provide a safe at-grade crossing for pedestrians.

Single Lane Roundabout









DATA DRIVEN DECISION MAKING















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LAST SAVED: 3/24/2022 2.43 PM BY: SKYLERH PLOT BY: SKYLER HELFF F.\2021/21072_E_Pershing_Blvd/GWilACAD/21072_Overview.dwg

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C: SPEED STUDY

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Taft Ave/Polk Ave

A study of vehicle traffic was conducted with the device having serial number 404091. The study was done in the Eastbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/24/2021 at 12:00 PM and concluded on 05/25/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 4,781 vehicles passed through the location with a peak volume of 190 on 05/24/2021 at [05:15 PM-05:30 PM] and a minimum volume of 1 on 05/25/2021 at [01:15 AM-01:30 AM]. The AADT count for this study was 4,781.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 40 - 45 MPH range or lower. The average speed for all classifed vehicles was 42 MPH with 87.80% vehicles exceeding the posted speed of 35 MPH. 4.85% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 40MPH and the 85th percentile was 48.75 MPH.

<	1	5 C	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to		to	to	to	to	to	to	to	to	to	to	to	to	to
9	1		19	24	29	34	39	44	49	54	59	64	69	74	>
2	1	0	11	30	108	413	1323	1507	794	279	93	55	24	21	35



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 1691 which represents 36 percent of the total classified vehicles. The number of Vans & Pickups in the study was 2656 which represents 56 percent of the total classified vehicles. The number of Busses & Trucks in the study was 233 which represents 5 percent of the total classified vehicles. The number of Tractor Trailers in the study was 125 which represents 3 percent of the total classified vehicles.

<	18	21	24	28	32	38	44				
to 17	to 20	to 23	to 27	to 31	to 37	to 43	to >				
1691	2147	509	85	90	69	56	58				

CHART 2

HEADWAY

During the peak traffic period, on 05/24/2021 at [05:15 PM-05:30 PM] the average headway between vehicles was 4.712 seconds. During the slowest traffic period, on 05/25/2021 at [01:15 AM-01:30 AM] the average headway between vehicles was 450 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 115.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Taft Ave/Polk Ave

A study of vehicle traffic was conducted with the device having serial number 404061. The study was done in the Westbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/24/2021 at 12:00 PM and concluded on 05/25/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 4,718 vehicles passed through the location with a peak volume of 157 on 05/25/2021 at [07:15 AM-07:30 AM] and a minimum volume of 0 on 05/25/2021 at [01:15 AM-01:30 AM]. The AADT count for this study was 4,718.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 35 - 40 MPH range or lower. The average speed for all classifed vehicles was 38 MPH with 70.95% vehicles exceeding the posted speed of 35 MPH. 1.37% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 35MPH and the 85th percentile was 43.27 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
1	5	5	31	156	1162	1985	969	244	59	22	16	11	5	10



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 2890 which represents 62 percent of the total classified vehicles. The number of Vans & Pickups in the study was 1613 which represents 34 percent of the total classified vehicles. The number of Busses & Trucks in the study was 108 which represents 2 percent of the total classified vehicles. The number of Tractor Trailers in the study was 70 which represents 1 percent of the total classified vehicles.

< to 17	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
2890	1457	156	31	42	57	30	18				



HEADWAY

During the peak traffic period, on 05/25/2021 at [07:15 AM-07:30 AM] the average headway between vehicles was 5.696 seconds. During the slowest traffic period, on 05/25/2021 at [01:15 AM-01:30 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 115.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Hayes Ave

A study of vehicle traffic was conducted with the device having serial number 404055. The study was done in the Eastbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/24/2021 at 12:00 PM and concluded on 05/25/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 2,579 vehicles passed through the location with a peak volume of 104 on 05/24/2021 at [05:15 PM-05:30 PM] and a minimum volume of 0 on 05/25/2021 at [01:15 AM-01:30 AM]. The AADT count for this study was 2,579.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50 - 55 MPH range or lower. The average speed for all classifed vehicles was 52 MPH with 86.59% vehicles exceeding the posted speed of 45 MPH. 26.46% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 50MPH and the 85th percentile was 58.86 MPH.

<	 10	15	20	25	30	35	40	45	50	55	60	65	70	75
tc	to	to	to	to	to	to	to	to	to	to	to	to	to	to
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
1	4	1	3	1	12	64	253	665	855	374	172	55	27	41



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 1001 which represents 40 percent of the total classified vehicles. The number of Vans & Pickups in the study was 1354 which represents 54 percent of the total classified vehicles. The number of Busses & Trucks in the study was 108 which represents 4 percent of the total classified vehicles. The number of Tractor Trailers in the study was 65 which represents 3 percent of the total classified vehicles.

<	18	21	24	28	32	38	44				
to 17	to 20	to 23	to 27	to 31	to 37	to 43	to >				
1001	1141	213	37	39	40	22	35				

CHART 2

HEADWAY

During the peak traffic period, on 05/24/2021 at [05:15 PM-05:30 PM] the average headway between vehicles was 8.571 seconds. During the slowest traffic period, on 05/25/2021 at [01:15 AM-01:30 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 109.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Hayes Ave

A study of vehicle traffic was conducted with the device having serial number 404022. The study was done in the Westbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/24/2021 at 12:00 PM and concluded on 05/25/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 2,719 vehicles passed through the location with a peak volume of 100 on 05/25/2021 at [07:15 AM-07:30 AM] and a minimum volume of 0 on 05/25/2021 at [01:00 AM-01:15 AM]. The AADT count for this study was 2,719.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50 - 55 MPH range or lower. The average speed for all classifed vehicles was 54 MPH with 93.35% vehicles exceeding the posted speed of 45 MPH. 43.18% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 50MPH and the 85th percentile was 61.16 MPH.

ti	<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	0	to	to	to	to	to	to	to	to						
	9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
()	1	0	2	2	7	35	131	463	880	681	311	94	37	33



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 574 which represents 21 percent of the total classified vehicles. The number of Vans & Pickups in the study was 1815 which represents 68 percent of the total classified vehicles. The number of Busses & Trucks in the study was 211 which represents 8 percent of the total classified vehicles. The number of Tractor Trailers in the study was 76 which represents 3 percent of the total classified vehicles.

<	18	21	24	28	32	38	44				
to 17	to 20	to 23	to 27	to 31	to 37	to 43	to >				
574	1403	412	80	102	42	20	44				

CHART 2

HEADWAY

During the peak traffic period, on 05/25/2021 at [07:15 AM-07:30 AM] the average headway between vehicles was 8.911 seconds. During the slowest traffic period, on 05/25/2021 at [01:00 AM-01:15 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 109.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Whitney Rd

A study of vehicle traffic was conducted with the device having serial number 404055. The study was done in the Eastbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/26/2021 at 12:00 PM and concluded on 05/27/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 2,394 vehicles passed through the location with a peak volume of 93 on 05/26/2021 at [05:15 PM-05:30 PM] and a minimum volume of 0 on 05/27/2021 at [12:00 AM-12:15 AM]. The AADT count for this study was 2,394.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50 - 55 MPH range or lower. The average speed for all classifed vehicles was 51 MPH with 82.74% vehicles exceeding the posted speed of 45 MPH. 25.72% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 50MPH and the 85th percentile was 58.80 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to							
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
1	3	2	2	5	27	78	288	615	726	329	154	56	33	



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 950 which represents 40 percent of the total classified vehicles. The number of Vans & Pickups in the study was 1228 which represents 52 percent of the total classified vehicles. The number of Busses & Trucks in the study was 115 which represents 5 percent of the total classified vehicles. The number of Tractor Trailers in the study was 57 which represents 2 percent of the total classified vehicles.

t 1	7	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
9	50	1033	195	44	45	38	18	29				

CHART 2

HEADWAY

During the peak traffic period, on 05/26/2021 at [05:15 PM-05:30 PM] the average headway between vehicles was 9.574 seconds. During the slowest traffic period, on 05/27/2021 at [12:00 AM-12:15 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 106.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Whitney Rd

A study of vehicle traffic was conducted with the device having serial number 404061. The study was done in the Westbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/26/2021 at 12:00 PM and concluded on 05/27/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 2,493 vehicles passed through the location with a peak volume of 78 on 05/27/2021 at [07:00 AM-07:15 AM] and a minimum volume of 0 on 05/27/2021 at [12:30 AM-12:45 AM]. The AADT count for this study was 2,493.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 MPH range or lower. The average speed for all classifed vehicles was 46 MPH with 54.33% vehicles exceeding the posted speed of 45 MPH. 6.28% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 45MPH and the 85th percentile was 51.71 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to	to						
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
0	0	0	5	3	45	231	844	859	328	87	27	16	9	16



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 1480 which represents 60 percent of the total classified vehicles. The number of Vans & Pickups in the study was 868 which represents 35 percent of the total classified vehicles. The number of Busses & Trucks in the study was 65 which represents 3 percent of the total classified vehicles. The number of Tractor Trailers in the study was 57 which represents 2 percent of the total classified vehicles.

< to 1	7 I	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
148	80	791	77	11	29	36	23	23				



HEADWAY

During the peak traffic period, on 05/27/2021 at [07:00 AM-07:15 AM] the average headway between vehicles was 11.392 seconds. During the slowest traffic period, on 05/27/2021 at [12:30 AM-12:45 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 102.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Fireside Dr

A study of vehicle traffic was conducted with the device having serial number 404022. The study was done in the Eastbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/26/2021 at 12:00 PM and concluded on 05/27/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 1,453 vehicles passed through the location with a peak volume of 43 on 05/26/2021 at [05:30 PM-05:45 PM] and a minimum volume of 0 on 05/27/2021 at [12:00 AM-12:15 AM]. The AADT count for this study was 1,453.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50 - 55 MPH range or lower. The average speed for all classifed vehicles was 57 MPH with 91.43% vehicles exceeding the posted speed of 45 MPH. 55.31% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 50MPH and the 85th percentile was 68.60 MPH.

	<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
	0	to	to	to	to	to	to	to							
	9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
()	7	2	4	7	10	22	61	180	296	274	193	89	54	119



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 345 which represents 26 percent of the total classified vehicles. The number of Vans & Pickups in the study was 714 which represents 54 percent of the total classified vehicles. The number of Busses & Trucks in the study was 195 which represents 15 percent of the total classified vehicles. The number of Tractor Trailers in the study was 64 which represents 5 percent of the total classified vehicles.

<	18	21	24	28	32	38	44				
to 17	to 20	to 23	to 27	to 31	to 37	to 43	to >				
345	499	215	62	91	47	20	39				

CHART 2

HEADWAY

During the peak traffic period, on 05/26/2021 at [05:30 PM-05:45 PM] the average headway between vehicles was 20.455 seconds. During the slowest traffic period, on 05/27/2021 at [12:00 AM-12:15 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 106.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Fireside Dr

A study of vehicle traffic was conducted with the device having serial number 404091. The study was done in the Westbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 05/26/2021 at 12:00 PM and concluded on 05/27/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 1,452 vehicles passed through the location with a peak volume of 42 on 05/26/2021 at [04:30 PM-04:45 PM] and a minimum volume of 0 on 05/27/2021 at [12:30 AM-12:45 AM]. The AADT count for this study was 1,452.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 MPH range or lower. The average speed for all classifed vehicles was 50 MPH with 73.77% vehicles exceeding the posted speed of 45 MPH. 24.05% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 45MPH and the 85th percentile was 58.66 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to							
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
0	1	0	3	3	19	97	251	367	342	175	79	32	23	



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 429 which represents 30 percent of the total classified vehicles. The number of Vans & Pickups in the study was 823 which represents 58 percent of the total classified vehicles. The number of Busses & Trucks in the study was 118 which represents 8 percent of the total classified vehicles. The number of Tractor Trailers in the study was 55 which represents 4 percent of the total classified vehicles.

< tc	7	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
42		625	198	42	51	34	17	30				

CHART 2

HEADWAY

During the peak traffic period, on 05/26/2021 at [04:30 PM-04:45 PM] the average headway between vehicles was 20.93 seconds. During the slowest traffic period, on 05/27/2021 at [12:30 AM-12:45 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 50.00 and 104.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Farthing Rd

A study of vehicle traffic was conducted with the device having serial number 404091. The study was done in the Eastbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 06/01/2021 at 12:00 PM and concluded on 06/02/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 1,148 vehicles passed through the location with a peak volume of 31 on 06/02/2021 at [06:30 AM-06:45 AM] and a minimum volume of 0 on 06/01/2021 at [10:00 PM-10:15 PM]. The AADT count for this study was 1,148.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 50 - 55 MPH range or lower. The average speed for all classifed vehicles was 52 MPH with 79.45% vehicles exceeding the posted speed of 45 MPH. 28.38% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 50MPH and the 85th percentile was 59.84 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to							
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
0	2	2	0	8	13	62	144	265	309	152	89	38	17	23



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 292 which represents 26 percent of the total classified vehicles. The number of Vans & Pickups in the study was 666 which represents 59 percent of the total classified vehicles. The number of Busses & Trucks in the study was 120 which represents 11 percent of the total classified vehicles. The number of Tractor Trailers in the study was 43 which represents 4 percent of the total classified vehicles.

< to 17	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
292	469	197	32	65	30	15	24				

CHART 2

HEADWAY

During the peak traffic period, on 06/02/2021 at [06:30 AM-06:45 AM] the average headway between vehicles was 28.125 seconds. During the slowest traffic period, on 06/01/2021 at [10:00 PM-10:15 PM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 54.00 and 113.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Farthing Rd

A study of vehicle traffic was conducted with the device having serial number 404061. The study was done in the Westbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 06/01/2021 at 12:00 PM and concluded on 06/02/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 1,113 vehicles passed through the location with a peak volume of 41 on 06/01/2021 at [05:00 PM-05:15 PM] and a minimum volume of 0 on 06/01/2021 at [09:15 PM-09:30 PM]. The AADT count for this study was 1,113.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 40 - 45 MPH range or lower. The average speed for all classifed vehicles was 43 MPH with 35.61% vehicles exceeding the posted speed of 45 MPH. 7.47% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 40MPH and the 85th percentile was 49.98 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to	to	to	to	to	to	to	to
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
1	5	3	3	15	103	251	326	227	82	43	11	5	9	



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 601 which represents 55 percent of the total classified vehicles. The number of Vans & Pickups in the study was 404 which represents 37 percent of the total classified vehicles. The number of Busses & Trucks in the study was 48 which represents 4 percent of the total classified vehicles. The number of Tractor Trailers in the study was 45 which represents 4 percent of the total classified vehicles.

< to 17	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
601	361	43	13	19	22	16	23				



HEADWAY

During the peak traffic period, on 06/01/2021 at [05:00 PM-05:15 PM] the average headway between vehicles was 21.429 seconds. During the slowest traffic period, on 06/01/2021 at [09:15 PM-09:30 PM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 113.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Christensen Rd

A study of vehicle traffic was conducted with the device having serial number 404055. The study was done in the Eastbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 06/01/2021 at 12:00 PM and concluded on 06/02/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 838 vehicles passed through the location with a peak volume of 30 on 06/02/2021 at [06:30 AM-06:45 AM] and a minimum volume of 0 on 06/01/2021 at [10:00 PM-10:15 PM]. The AADT count for this study was 838.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 MPH range or lower. The average speed for all classifed vehicles was 48 MPH with 64.31% vehicles exceeding the posted speed of 45 MPH. 14.25% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 45MPH and the 85th percentile was 54.80 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to							
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
0	1	0	3	10	28	81	175	239	179	81	21	7	3	7



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 315 which represents 38 percent of the total classified vehicles. The number of Vans & Pickups in the study was 447 which represents 54 percent of the total classified vehicles. The number of Busses & Trucks in the study was 43 which represents 5 percent of the total classified vehicles. The number of Tractor Trailers in the study was 30 which represents 4 percent of the total classified vehicles.

< to 17	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
315	368	79	12	25	10	12	14				

CHART 2

HEADWAY

During the peak traffic period, on 06/02/2021 at [06:30 AM-06:45 AM] the average headway between vehicles was 29.032 seconds. During the slowest traffic period, on 06/01/2021 at [10:00 PM-10:15 PM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 52.00 and 113.00 degrees F.

MH Corbin Traffic Analyzer Study Computer Generated Summary Report City: Cheyenne Street: Pershing Blvd Location: West of Christensen Rd

A study of vehicle traffic was conducted with the device having serial number 404022. The study was done in the Westbound lane at Pershing Blvd in Cheyenne, Wy in Laramie county. The study began on 06/01/2021 at 12:00 PM and concluded on 06/02/2021 at 12:00 PM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 786 vehicles passed through the location with a peak volume of 32 on 06/01/2021 at [05:00 PM-05:15 PM] and a minimum volume of 0 on 06/01/2021 at [11:30 PM-11:45 PM]. The AADT count for this study was 786.

<u>SPEED</u>

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 MPH range or lower. The average speed for all classifed vehicles was 50 MPH with 73.51% vehicles exceeding the posted speed of 45 MPH. 22.35% percent of the total vehicles were traveling in excess of 55 MPH. The mode speed for this traffic study was 45MPH and the 85th percentile was 57.65 MPH.

<	10	15	20	25	30	35	40	45	50	55	60	65	70	75
to	to	to	to	to	to	to	to							
9	14	19	24	29	34	39	44	49	54	59	64	69	74	>
0	2	0	6	5	17	50	125	215	181	102	39	12	5	15



CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin. Most of the vehicles classified during the study were Vans & Pickups. The number of Passenger Vehicles in the study was 179 which represents 23 percent of the total classified vehicles. The number of Vans & Pickups in the study was 463 which represents 60 percent of the total classified vehicles. The number of Busses & Trucks in the study was 79 which represents 10 percent of the total classified vehicles. The number of Tractor Trailers in the study was 50 which represents 6 percent of the total classified vehicles.

< to 17	18 to 20	21 to 23	24 to 27	28 to 31	32 to 37	38 to 43	44 to >				
179	327	136	28	39	16	13	36				

CHART 2

HEADWAY

During the peak traffic period, on 06/01/2021 at [05:00 PM-05:15 PM] the average headway between vehicles was 27.273 seconds. During the slowest traffic period, on 06/01/2021 at [11:30 PM-11:45 PM] the average headway between vehicles was 900 seconds.

WEATHER

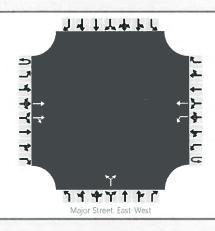
The roadway surface temperature over the period of the study varied between 54.00 and 109.00 degrees F.

D: HCS OUTPUTS

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information						
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing					
ncy/Co.	Western R&D, Ltd	Jurisdiction						
Date Performed	8/23/2021	East/West Street	E. Pershing					
Analysis Year	2021	North/South Street	Grasslands					
Time Analyzed	PM Peak	Peak Hour Factor	0.92					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	East Pershing Blvd Plan							

Lanes



Approach		Easth	bound			West	bound			North	bound			South	oound	
vement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
ority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			Т	TR		L	т				LR					
Volume, V (veh/h)			452	48		22	303			34		39				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										())					Research Control of Co
Right Turn Channelized		٦	lo			N	lo			N	lo			N	0	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96			5	
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				
Delay, Queue Length, ar	nd Leve	l of S	ervice	3												A course of the second
Flow Rate, v (veh/h)						24					79					
Capacity, c (veh/h)						1015					407					
v/c Ratio						0.02					0.19					
95% Queue Length, Q ₉₅ (veh)						0.1					0.7					
trol Delay (s/veh)						8.6					16.0					
Level of Service, LOS						A					С					
Approach Delay (s/veh)			di.	Baselon and Addisord		0	.6	20		16	5.0	Report of the second second second				
Approach LOS											С					

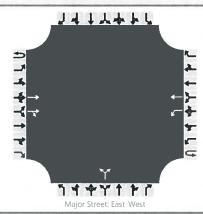
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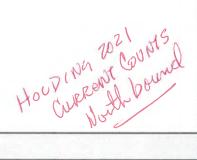
HCS 2010 TWSC Version 6.90 TWSC1.xtw Generated: 8/23/2021 11:46:24 AM

HCS 2010 Two-\	Way Stop-	Control	Report
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General Information		Site Information	
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing
cy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/23/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Grasslands
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	East Pershing Blvd Plan		

Lanes





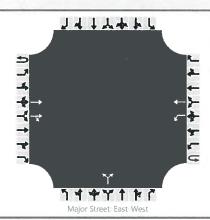
Approach		Eastb	bound			West	ound			North	bound			South	oound	
rement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Fourity	10	1	2	3	4U	4	5	6		7	8	9		10	11	1
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	(
Configuration			Т	TR		L	Т				LR					
Volume, V (veh/h)			676	49		25	453			34		39				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)						A	haranconstant and			(D					
Right Turn Channelized		١	10			N	io			N	lo		1	N	0	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys										-				
Base Critical Headway (sec)			1													
Critical Headway (sec)																
Base Follow-Up Headway (sec)					1											
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	9									territer and the second			
Flow Rate, v (veh/h)						27					79					
Capacity, c (veh/h)						821				- 9	243					
capacity, c (ventin)						0.03					0.33					
v/c Ratio		and the second second	1			0.1					1.4					
			1			Sec			-		26.0					-
v/c Ratio						9.5					26.8					
v/c Ratio 95% Queue Length, Q ₉₅ (veh)						9.5 A					26.8 D				250	
v/c Ratio 95% Queue Length, Q ₉₅ (veh) ol Delay (s/veh)							.5			26						

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HCS 2010 TWSC Version 6.90 Grasslands-E.Pershing 2045 PM.xtw Generated: 9/15/2021 3:48:45 PM

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information							
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing						
ıcy/Co.	Western R&D, Ltd	Jurisdiction							
Date Performed	8/23/2021	East/West Street	E. Pershing						
Analysis Year	2045	North/South Street	Grasslands						
Time Analyzed	PM Peak	Peak Hour Factor	0.92						
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25						
Project Description	East Pershing Blvd Plan								

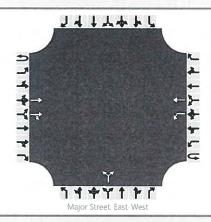


Vehicle Volumes and Ad	,								-				1			-
Approach		Eastl	oound			West	oound			North	bound			South	bound	
vement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
ority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			Т	TR		L	Т				LR	\land				
Volume, V (veh/h)			676	49		25	453			34		43	9			
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)										1	D			D		
Right Turn Channelized		r	No			N	10			N	lo			N	ю	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)						4.1		na n		7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				
Delay, Queue Length, an	d Leve	l of S	Service	9												
Flow Rate, v (veh/h)	1		1			27					84					
Capacity, c (veh/h)						821					252					
v/c Ratio						0.03			1		0.33					
95% Queue Length, Q ₉₅ (veh)						0.1					1.4					
trol Delay (s/veh)						9.5					26.3					
Level of Service, LOS						A					D					
Approach Delay (s/veh)						0	.5			26	5.3					h
Approach LOS											0					

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HCS 2010 TWSC Version 6.90 Grasslands-E.Pershing 2045 PM.xtw Generated: 8/23/2021 11:52:26 AM

Seneral Information		Site Information	
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/23/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Grasslands
Time Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	East Pershing Blvd Plan		



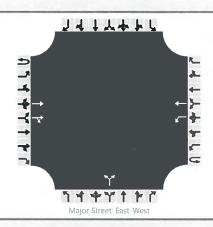
Approach	1	Eastb	ound			West	bound			North	bound			South	bound	
vement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
mority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			Т	TR		L	Т				LR					
Volume, V (veh/h)			286	38		35	823			63		12				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)						A				1	0				A	
Right Turn Channelized		N	10			N	10	In the second		N	10			N	lo	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys							-Anno 1997							
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				
Delay, Queue Length, ar	nd Leve	l of S	ervice	9	Bullet, Corrector					2				A second s		Lationary
Flow Rate, v (veh/h)						38			1		81					
Capacity, c (veh/h)						1196					169					
v/c Ratio						0.03					0.48					
95% Queue Length, Q ₉₅ (veh)						0.1					2.3					
trol Delay (s/veh)						8.1			1		44.7					
Level of Service, LOS		-				A					E					
Approach Delay (s/veh)			Accession	Netter and the second		0	.3			44	4.7					hanna
Approach LOS											E					

HCS 2010 TWSC Version 6.90 Grasslands-E.Pershing 2045 AM.xtw Generated: 9/15/2021 4:07:28 PM

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information						
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing					
icy/Co.	Western R&D, Ltd	Jurisdiction						
Date Performed	8/23/2021	East/West Street	E. Pershing					
Analysis Year	2021	North/South Street	Grasslands					
Time Analyzed	AM Peak	Peak Hour Factor	0.92					
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25					
Project Description	East Pershing Blvd Plan							

Lanes



Approach		Eastb	bound			West	bound			North	bound			South	bound	
vement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			Т	TR		L	Т				LR					
Volume, V (veh/h)			189	38		35	546			63		12				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)						hu					D				h	h
Right Turn Channelized		٢	lo			N	lo			Ν	lo			N	lo	
Median Type/Storage	1			Undi	vided									and a second		
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				
Delay, Queue Length, an	d Leve	l of S	ervice													
Flow Rate, v (veh/h)	1					38					81					
Capacity, c (veh/h)						1310					305					
v/c Ratio						0.03			1		0.27					
95% Queue Length, Q ₉₅ (veh)						0.1					1.0			3.44		
trol Delay (s/veh)						7.8					21.0					
Level of Service, LOS						A					С					
Approach Delay (s/veh)						0).5			2'	1.0					A
Approach LOS											С					

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> HCS 2010 TWSC Version 6.90 Grasslands-E.Pershing 2021 AM.xtw

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		ACS	0 201	0 1 1	0 00		.op (rol R	epor	L					
General Information							Site	Inform	natio	n						
Analyst	G Grig	jsby					Inters	ection	e de constante		Grass	lands &	E. Persh	ing		
cy/Co.	Weste	rn R&D	, Ltd				Jurisd	iction								
Date Performed	8/23/2	2021					East/	Nest Str	eet		E. Per	shing	And the second s			
Analysis Year	2045						North	/South	Street		Grass	lands				
Time Analyzed	AM Pe	eak					Peak	Hour Fac	ctor		0.92	11110-00				
Intersection Orientation	East-V	Vest					Analy	sis Time	Period	(hrs)	0.25					
Project Description	East P	ershing	Blvd Pla	n												
Lanes																
				2 4 1 4 4 5 F		Y + r Street Ea	st-West									
Vehicle Volumes and Ad	justme	nts														
the second se	-	Contraction of the local division of the loc	and the second s	the second s	V. Contraction of the local division of the	the second days and	No. of Concession, Name		and the second se	And street in case of the						
Approach		Eastb	ound		-	Westb	bound			North	bound			South	bound	_
	U	Eastb L	Т	R	U	Westb L	Т	R	U	North L	bound T	R	U	South L	bound	R
Approach rement	10	L 1	T 2	3	4U	L 4	T 5	6	U	L 7	T 8	9	U	1		R 12
Approach vement ority Number of Lanes		L	T 2 2	3 0		L 4 1	T 5 1		U	L	T 8 0	-	U	L	Т	12
Approach vement vement Number of Lanes Configuration	10	L 1	T 2 2 T	3 0 TR	4U	L 4 1 L	T 5 1 T	6	U	L 7 0	T 8	9	U	L 10	T 11	12
Approach vement Vority Number of Lanes Configuration Volume, V (veh/h)	10	L 1	T 2 2	3 0	4U	L 4 1 L 35	T 5 1	6	U	L 7 0 63	T 8 0	9 0 12	U	L 10	T 11	12
Approach vement virity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	10	L 1	T 2 2 T	3 0 TR	4U	L 4 1 L 35 3	T 5 1 T	6	U	L 7 0 63 3	T 8 0	9 0 12 3	U	L 10	T 11	12
Approach vement Vority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	10	L 1	T 2 2 T	3 0 TR	4U	L 4 1 L 35	T 5 1 T	6	U	L 7 0 63 3 0.250	T 8 0 LR	9 0 12	U	L 10	T 11	12
Approach /ement /ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	10	L 1 0	T 2 2 T 286	3 0 TR	4U	L 4 1 35 3 0.000	T 5 1 T 823	6	U	L 7 0 63 3 0.250	T 8 0 LR	9 0 12 3	U	L 10 0	T 11 0	12
Approach //ement //ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	10	L 1 0	T 2 2 T	3 0 TR 38	4U 0	L 4 1 35 3 0.000	T 5 1 T	6		L 7 0 63 3 0.250	T 8 0 LR	9 0 12 3	U	L 10 0	T 11	12
Approach /ement /ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage	1U 0		T 2 2 T 286	3 0 TR 38	4U	L 4 1 35 3 0.000	T 5 1 T 823	6		L 7 0 63 3 0.250	T 8 0 LR	9 0 12 3	U	L 10 0	T 11 0	-
Approach vement vement Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage	1U 0		T 2 2 T 286	3 0 TR 38	4U 0	L 4 1 35 3 0.000	T 5 1 T 823	6		L 7 0 63 3 0.250	T 8 0 LR	9 0 12 3	U	L 10 0	T 11 0	12
Approach /ement /ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H	1U 0		T 2 2 T 286	3 0 TR 38	4U 0	L 4 1 35 3 0.000	T 5 1 T 823	6		L 7 0 63 3 0.250	T 8 0 LR	9 0 12 3 0.000	U	L 10 0	T 11 0	12
Approach /ement /ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)	1U 0		T 2 2 T 286	3 0 TR 38	4U 0	L 4 1 25 3 0.000	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5	T 8 0 LR	9 0 12 3 0.000	U	L 10 0	T 11 0	12
Approach /ement /ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	1U 0		T 2 2 T 286	3 0 TR 38	4U 0	L 4 1 35 3 0.000 N 4.1 4.16	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86	T 8 0 LR	9 0 12 3 0.000	U	L 10 0	T 11 0	1.
Approach rement Srity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 25 3 0.000 N 4.1 4.16 2.2	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR	9 0 12 3 0.000 6.9 6.9 6.96 3.3	U	L 10 0	T 11 0	1:
Approach /ement /ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 35 3 0.000 N 4.1 4.16 2.2 2.23	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR	9 0 12 3 0.000 6.9 6.9 6.96 3.3		L 10 0	T 11 0	1.
Approach rement Sumber of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 25 3 0.000 N 4.1 4.16 2.2	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR 0 10	9 0 12 3 0.000 6.9 6.9 6.96 3.3	U	L 10 0	T 11 0	1:
Approach //ement //ement //ement Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 .L 35 3 0.000 N 4.1 4.16 2.2 2.23 38	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR 0 0 0 0	9 0 12 3 0.000 6.9 6.9 6.96 3.3		L 10 0	T 11 0	1.
Approach //ement //ement Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Gritical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 35 3 0.000 N 4.1 4.16 2.2 2.23 38 1196	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR 0 0 0 0 10 81 81 288	9 0 12 3 0.000 6.9 6.9 6.96 3.3		L 10 0	T 11 0	1.
Approach //ement //		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 35 3 0.000 N 4.1 4.16 2.2 2.23 38 1196 0.03	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR 0 0 0 0 0 0 0 10 10 10 10 10 10 10 10 1	9 0 12 3 0.000 6.9 6.9 6.96 3.3		L 10 0	T 11 0	1.
Approach //ement //ement //ement Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) V/c Ratio 95% Queue Length, Q ₉₅ (veh)		L 1 0	T 2 7 286	3 0 TR 38 Undi	4U 0	L 4 1 35 3 0.000 N 4.1 4.16 2.2 2.23 38 1196 0.03 0.1	T 5 1 T 823	6		L 7 0 63 3 0.250 N 7.5 6.86 3.5	T 8 0 LR 0 30 30 30 30 30 30 30 30 30 30 30 30 3	9 0 12 3 0.000 6.9 6.9 6.96 3.3		L 10 0	T 11 0	1.

HCS 2010 TWSC Version 6.90 Grasslands-E.Pershing 2045 AM.xtw Generated: 9/16/2021 10:45:39 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing
cy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/23/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Grasslands
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	East Pershing Blvd Plan		
			town but here bound

Vehicle Volumes and Adj																
Approach		East	bound			Westb	bound			Northi	bound			South	bound	
rement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	Т	R
mority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			Т	TR		L	Т			A	LR	6				
Volume, V (veh/h)			286	43		35	823		1	(63)		12				
Percent Heavy Vehicles (%)				33		3				3		3				
Proportion Time Blocked																
Percent Grade (%)										()					
Right Turn Channelized		٩	No			N	lo			N	0			N	ю	
Median Type/Storage	1			Undiv	/ided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)									ĺ							
Follow-Up Headway (sec)																
Delay, Queue Length, an	d Leve	l of S	ervice	9												
Flow Rate, v (veh/h)			1			38			1		81					1
Capacity, c (veh/h)						1190					168		-			1
v/c Ratio						0.03					0.48					
95% Queue Length, Q ₉₅ (veh)						0.1					2.3					
rol Delay (s/veh)						8.1					45.1					
Level of Service, LOS						А					E					
Approach Delay (s/veh)						0	.3	No. of Concession, Name		45	i.1					Acres 1
Approach LOS														-	1.00	

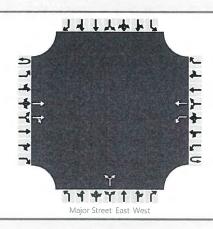
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HCS 2010 TWSC Version 6.90 Grasslands-E.Pershing 2045 AM.xtw Generated: 9/15/2021 3:50:29 PM

HCS 2010 Two-Way Stop-Control Report

General Information		Site Information	
Analyst	G Grigsby	Intersection	Grasslands & E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/23/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Grasslands
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	East Pershing Blvd Plan		

Lanes



Approach		Eastb	bound			West	bound			North	bound			South	bound	
vement	U	L	Т	R	U	L	Т	R	υ	L	Т	R	U	L	Т	R
ority	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	1	0		0	0	0		0	0	0
Configuration			Т	TR		L	т			0	LR					
Volume, V (veh/h)			286	43		35	823			68	3	12				
Percent Heavy Vehicles (%)						3				3	-	3				
Proportion Time Blocked		5						-								
Percent Grade (%)											D					
Right Turn Channelized		N	10			N	lo			N	lo			N	0	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)						4.1			[7.5		6.9				
Critical Headway (sec)						4.16				6.86		6.96				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.23				3.53		3.33				
Delay, Queue Length, ar	nd Leve	l of S	ervice													
Flow Rate, v (veh/h)						38				1	87					
Capacity, c (veh/h)		-				1190					166					
v/c Ratio						0.03					0.52					
95% Queue Length, Q ₉₅ (veh)						0.1					2.6					
trol Delay (s/veh)						8.1					48.5					
Level of Service, LOS						A					E					
Approach Delay (s/veh)		White a second				0	.3			48	3.5					house
Approach LOS						-					E	-				

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Intersection: 170 - Pershing & Taft¬9/15/2021 7:13 AM

Phase Timing Plans

Phase	1	2	3	4	5	6	7	8	9	1 0	1 1	1 2	1 3	1 4	1 5	1 6	1 7	1 8	1 9	2 0	2 1	2 2	2 3	2 4	2 5	2 6	2 7	2 8	2 9	3 0	3 1	3 2	3 3	3 4	3 5	3 6	3 7	3 8	3 9	
Walk	0	5	0	5	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	1 0	0	1 0	0	1 0	0	1 0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Stead Y Don't Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	5	4	5	4	5	4	5	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 Passa	1	3	1	3	1	3	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ge	0	0	0	0	0	0	ò	0	ò	ò	0	0	0	0	0	0	ò	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	ò
Max 1	0	1	0	3 9	0	2 1	0	3 9	0	0	0	0	0	0	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Max 2		Ø	0	0	0	0	_	0	0	0		0	0		0	0	0		0	0		0	0		0		0	0	0		0	0		0	0		0	0	0	
Max 3 Condit	U	0	0	0	0	10	0	0	10	0	0	0	0	0		0	0	U	0	0	0	0	0	U	0	0	U	0	U	0	0	0	0	0	0	0	U	0	0	10
ional Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yello w	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Chang e	ò	9	0	2	0	9	0	ż	0 0	0	0	0	0	0	0	0	ò	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0
Red	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Clear Add	0	0	0	Ó	Ó	0	0	0	0	Ó	0	0	Ó	0	Ó	Ó	0	Ó	0	Ó	0	0	0	Ò	0	0	0	Ó	0	Ó	0	0	0	0	Ó	Ó	0	Ó	0	Ó
Red Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Red	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Rever t	0		0	0	0	ò	0	0	ò	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Initial	0	ò	0	0	ò	0	0 0	0	ò	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0	0	0	0	0	0	0	0	ò	0	0	0	0	ò	ò
Maxi mum Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Befor							F		T			-																												Γ
e Reduc tion	0	0	0	0	0	0	0	0	0	0	0	0.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Befor			6									_																	-		0	_	6							
e Reduc tion	0	0	0	0	0	0	0	0	0	0	0	U	0	0	0	0	0	U	U	0	0	0	0	0		0	U	0	U	U	U	0	0	0	0	0	0	0	0	0
Time To																Γ									Γ															
Reduc e	0	0	0	0	0	0	0	0	0	0	1.						0									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduc e By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

0

General Inform	nation							1	nters	ectior	ı Info	ormatio	n		14741	₽ 4
Agency		Western R&D, Ltd.						I	Durati	ion, h		0.25			*	1
lyst		G Grigsby		Analys	sis Date	9/15/2	021	1	Area 1	Гуре		Other		4 4 4 4 4 4 4		
sunsdiction				Time F	Period	1		F	PHF			0.92		+		
Urban Street				Analys	is Year	2021		1	Analys	sis Per	iod	1> 7:0	00	7		
Intersection		Polk-Taft @ East Pe	ershing			-	aft-E.Pe		Contraction of Contra	V					*	ſ
Project Descrip	tion	2021 PM Peak				4									ነ ተተም	74
	361		1	1. 4 -1	Lin			1.1.1	12-1		2				1000	
Demand Inform	And the owner of the local division of the l				EB			WB	3			NB			SB	
Approach Move	OF COME OF COME			L	T	R	L	Т		R	L	T	R	L	Т	
Demand (v), v	eh/h			14	296	311	27	209		2	199	22	22	3	41	1
				-		1 112	1	T	-	1						
Signal Informa			-	4												\mathbf{x}
Cycle, s	60.0	Reference Phase	2		E .	512	9						1	e 2	3	
Offset, s	0	Reference Point	End	Green	39.3	12.7	0.0	0.0	0	.0	0.0			K		
Uncoordinated	No	Simult. Gap E/W	On	Yellow		3.0	0.0	0.0			0.0			Y		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0	.0	0.0	the second	5	6	7	
Timer Desults	1			EDI		CDT			MOT		NIDI	-	NDT	05		0.01
Timer Results Assigned Phas	0			EBI	-	EBT 2	WB	-	WBT 6		NBL	-	NBT 8	SB	L	SBT
Assigned Phas Case Number	6					6.0										4
Phase Duration					-			-	6.0				8.0			8.0
and the second s						43.3			43.3	-			16.7			16.7
Change Period	and the second se	and the second sec	and the second second			4.0			4.0			other division in which the real of the local division in which the local division is not the local division in the local division i	4.0			4.0
Max Allow Hea					_	0.0		_	0.0				4.2			4.2
Queue Clearan	and the second second second	And a second											12.8			3.6
Green Extensio	the second se	(ge), s				0.0		_	0.0	-			0.0			1.0
se Call Pro	Contraction of the local division of the loc			-		-				_			1.00			1.00
Max Out Proba	DIIITY												1.00	-	-	0.01
Movement Gro	oup Res	ults			EB			WB	-	-		NB		-	SB	-
Approach Move	ement			L	Т	R	L	Т	R		L	Т	R	L	Т	
Assigned Move	ment	Company and a second seco		5	2	12	1	6	16	3	3	8	18	7	4	1
Adjusted Flow	Rate (v), veh/h		15	660		29	229	1			264			61	•
Adjusted Satura	ation Flo	w Rate (s), veh/h/l	n	1169	1740		787	1897				1425			1828	1
Queue Service	Time (g	g s), S		0.3	12.7		1.3	2.9	-			9.1			0.0	1
Cycle Queue C	and the second s	and the second		3.2	12.7		14.0	2.9				10.8			1.6	1
Green Ratio (g	and the second diversion of th			0.65	0.65		0.65	0.65				0.21			0.21	T
Capacity (c), v	-			830	1139		469	1241	1			411			451	
Volume-to-Cap	And and a state of the state of	itio (X)		0.018			0.063	0.185	_			0.642			0.135	1
	Station in the local division in the local d	In (50 th percentile)		1.6	87.6	and in case of a difference of	5.5	20.2				90.6		Name and Descent of	16.2	1
and the second sec	and the second data	eh/In (50 th percenti		0.1	3.5		0.2	0.8	1			3.6		-	0.6	1
the second secon	and the second s	RQ) (50 th percent	and the second second	0.00	0.00		0.00	0.00				0.00			0.00	1
Uniform Delay	and the second second			4.7	5.8		9.7	4.1		-		22.8			19.3	1
Incremental De	the local division of	and the second sec		0.0	2.2		0.3	0.3	1	-		3.3			0.1	-
Initial Queue D		the second s		0.0	0.0		0.0	0.0	1	-		0.0	-		0.0	-
Control Delay (4.7	7.9		9.9	4.4				26.1			19.4	1
Level of Service	and the second second	the second se		A	A		A	A	-	-		C			B	1
Approach Dela	the second s	NOW - I WAR I AN AN AN AND A STREET AND A ST	ees Cinemaniador	7.9		A	5.0	the second second	A	-	26.1	and the second second	С	19.4	1	В
Intersection De	And a state of the	# 54.MC		1.0		11				-	20.1			B		0
									-	-						
A LID	sults				EB			WB		T		NB			SB	
Multimodal Re		and the state is a set of the set	and the second design of the					1	-	_		1		-		-
Multimodal Re Pedestrian LOS	S Score	/LOS		2.0		В	2.0		В		2.3		B	2.3	3	В

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General Inforn	nation							1	ntersec	tion In	formatic	n	1	147411	be la
Agency		Western R&D, Ltd.							Duration		0.25			*	2
'yst		G Grigsby		Analys	sis Date	9/15/20	021	-	Area Typ		Other		4		
Suisdiction				Time F					PHF		0.92		1 4 T		
Urban Street					sis Year	2045			Analysis	Period	states and states and states and	00	4 4		
Intersection		Polk-Taft @ East Pe	ershina	Com.		And in case of the local division of the loc	aft-F Pe		2045 P						r
Project Descrip	tion	2045 PM Peak	Johning	There		1 0/10.10		Johning	20401	WIT CO				ቸ ነፋተቀጥነ	۲đ
Toject Descrip	lion	20401 MT Cak	2.3	E						-		1 - 1	1.1.1		
Demand Inform	nation				EB			WB			NB			SB	
Approach Move	ement			L	Т	R	L	Т	R	L	Т	R	L	T	
Demand (v), v	eh/h			65	481	366	8	335	5 2	230) 21	7	5	50	7
					-	1 102	1								
Signal Informa			-			1213					-				\mathbf{Y}
Cycle, s	60.0	Reference Phase	2		R.	STZ	9					1	2	3	
Offset, s	0	Reference Point	End	Green		13.0	0.0	0.0	0.0	0.0			A		
Uncoordinated	No	Simult. Gap E/W	On	Yellow		3.0	0.0	0.0	0.0	0.0	the second se		Y		R
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0		5	6	7	
Timer Results	1000	and the second se		EBL		EBT	WB		WBT	NB		NBT	SBI		SB
Assigned Phas	e					2	VVD	-	6			8	00	-	4
Case Number	-	an a		1		6.0			6.0			8.0			8.0
Phase Duration						43.0			43.0			17.0			17.0
Change Period	the second se					4.0			4.0			4.0			4.0
Max Allow Hea	the second day of the second day	A REAL PROPERTY OF A READ REAL PROPERTY OF A REAL P		-	-	0.0			0.0			4.0			4.0
Queue Clearan				-		0.0			0.0	-		4.5 14.6			4.3
Green Extensio				-		0.0			0.0	-		0.0	-		1.2
Contraction in the local division in the loc	the second s	(<i>ge</i>), s		-		0.0			0.0			and the second			-
e Call Pro Max Out Proba	and the second second		-							-		1.00			1.00
wax Out Proba	Unity		Ter	1.1.5		1000		1000			-	1.00			0.00
Movement Gro	oup Res	ults			EB			WB			NB			SB	
Approach Move	ement			L	Т	R	L	Т	R	L	Т	R	L	Т	
Assigned Move	ement			5	2	12	1	6	16	3	8	18	7	4	1
Adjusted Flow	Rate (v), veh/h		71	921		9	366		1	280			136	1
Adjusted Satur	ation Flo	ow Rate (s), veh/h/l	n	1032	1763		617	1898			1323			1769	
Queue Service	and the second se	and the second		1.9	23.0		0.6	5.0			8.6			0.0	1
Cycle Queue C		the second s		6.9	23.0		23.6	5.0	1		12.6			4.0	
Green Ratio (g	the state of the s			0.65	0.65		0.65	0.65			0.22			0.22	
Capacity (c), v	ALC: NOT THE OWNER OF THE OWNER OWNER OF THE OWNER OWNE			704	1146		285	1234			400			446	
Volume-to-Cap	and the second division of	ntio (X)		0.100	0.803		0.031	0.297			0.701			0.305	1
Contraction of the local division of the loc	and the second se	/In (50 th percentile)		9.2	180.2		2.4	36.3			103.3			37.8	1
		eh/In (50 th percenti		0.4	7.2		0.1	1.5			4.1			1.5	T
and the state of t		RQ) (50 th percent		0.00	0.00		0.00	0.00			0.00			0.00	
Uniform Delay		and the second design of the		6.1	7.7		16.3	4.6			23.4			20.0	1
Incremental De	A second s	Contraction of the second s		0.3	6.0		0.2	0.6			5.4			0.4	T
Initial Queue D	and the second division of the	and the second design of the s		0.0	0.0		0.0	0.0			0.0			0.0	T
Control Delay (6.3	13.7		16.5	5.2			28.7		-	20.4	
Level of Servic	and the second second	the second s		A	В		B	A		1	C			C	1
Approach Dela	Address of the owner			13.2	burning exercised	В	5.4	Conservation and	A	28.	-designation	С	20.4	decemperature of	С
Intersection De	and the second se	the second s		10.2		14							B		-
									1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1						
		and the second sec		-			-	14.00		1	NID			00	
Multimodal Re	sults				EB			WB			NB			SB	
		/LOS		2.0		В	2.0	-	В	2.3		В	2.3	1	В

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General Inform	nation							1	ntersect	tion Inf	ormatio	n		14741	եև
Agency		Western R&D, Ltd.		Anna Million		10.7	with the second	0	Duration,	h	0.25			*	
lyst		G Grigsby		Analys	is Date	9/15/2	021	and in case of the local division of the loc	Area Typ	and the second second	Other		1 4		
suisdiction				Time F					PHF		0.92		-		
Urban Street				-	is Year	2021			Analysis	Period	1> 7:0	00	4		
Intersection		Polk-Taft @ East Pe	ershina	Name of Concession, Name	-	and strength of the local division of the lo	aft-E.Pe		2021 AM					٠	
Project Descrip	tion	2021 AM Peak	J	1		1				in our	inde		-	ነ። ነ። የቀጥ	۲
r reject becchip	alon a		1 March	1	E Mar	-	- Toplat	E. S.C.	The state		C. Marriell	To And	1.3.2.5	1000	
Demand Inform	nation	an a faith an			EB		1	WB			NB			SB	-
Approach Move	ement			L	Т	R	L	T	R	L	Т	R	L	Т	
Demand (v), v	eh/h			8	118	70	22	352	6	216	31	12	0	15	
	12.20		1111		1				120		100		Real Property		
Signal Informa	tion				. 2						1				X
Cycle, s	60.0	Reference Phase	2		11 a	512	77				1.11		e l		4 11
Offset, s	0	Reference Point	End	Green	38.0	14.0	0.0	0.0	0.0	0.0	1	1	R I	3	
Uncoordinated	No	Simult. Gap E/W	On	Yellow		3.0	0.0	0.0	0.0	0.0	1		7		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0		5	6	7	
1 1 1 1			1	-		1							1		
Timer Results				EBL	-	EBT	WB		WBT	NB	L	NBT	SB	L	SBT
Assigned Phas	e				-	2			6			8			4
Case Number						6.0			6.0	-		8.0			8.0
Phase Duration	STREET, SQUARE, STREET, SQUARE,					42.0			42.0			18.0			18.0
Change Period	and the second strends of the	When the second s				4.0			4.0			4.0	-		4.0
Max Allow Hea	and the second se	And the second se				0.0			0.0			4.1			4.1
Queue Clearan	And the second s	and the second se									and in case of the local division of the loc	13.8			2.7
Green Extensio	Contraction of the local division of the loc	(g e), s				0.0			0.0			0.3			0.9
se Call Pro	bability											0.99			0.99
Max Out Proba	bility											1.00			0.00
Movement Gro		ulte		-	EB		-	WB	-	No.	NB	1000	-	SB	-
Approach Move	the second s	u163		L	T	R	L	T	R	L	T	R	L	T	F
Assigned Move	and real or other states of the second states of th			5	2	12	1	6	16	3	8	18	7	4	1
Adjusted Flow) veh/h		9	204	12	24	389	10		282	10		0	
to we will be a state of the second state of t		w Rate (s), veh/h/l	n	1010	1781		1196	1705			1395		-	0	-
Queue Service		CONTRACTOR OF A DESCRIPTION OF A DESCRIP		0.2	2.9		0.5	6.5			11.1		-	0.0	-
Cycle Queue C	and the second se	CONTRACTOR OF THE OWNER		6.8	2.9		3.4	6.5			11.1	-	-	0.0	-
Green Ratio (g	The Party of the P	- me (yc), s		0.63	0.63		0.63	0.63			0.23	-	-	0.0	
the second s	the second se				1127			1079					-		-
Capacity (c), v	the state of the s	tio (X)		649	the same strength of the		820				436			0.000	-
Volume-to-Cap	No. of Concession, Name	the second s		0.013	0.181		0.029	0.361			0.645			0.000	-
A COMPANY OF THE OWNER OF THE OWNER OF THE OWNER OF	and the second se			1.2	20.2		2.7	45.1		-	92.6			0	-
Back of Queue		ENTER SU TH DECENT	161	0.0	0.8		0.1	1.8			3.7			0.0	-
Back of Queue Back of Queue	A THE OWNER WATCHING TO A	and the second se	and the second se	0.00			0.00	0.00			0.00			0.00	-
Back of Queue Back of Queue Queue Storage	Ratio (RQ) (50 th percent	and the second se	0.00	0.00			EO			22.4	P		1	-
Back of Queue Back of Queue Queue Storage Uniform Delay	Ratio ((d 1), s	<i>R</i> Q)(50 th percent /veh	and the second se	6.9	4.6		5.3	5.2		Section and so the	0.0			0.0	100
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De	Ratio ((d 1), si lay (d 2	RQ) (50 th percent /veh), s/veh	and the second se	6.9 0.0	4.6 0.4		5.3 0.1	0.9			2.2			0.0	-
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D	Ratio ((d 1), s lay (d 2 elay (d	RQ) (50 th percent /veh), s/veh 3), s/veh	and the second se	6.9 0.0 0.0	4.6 0.4 0.0		5.3 0.1 0.0	0.9 0.0			0.0			0.0	
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (e Ratio ((<i>d</i> 1), s elay (<i>d</i> 2 elay (<i>d</i> <i>d</i>), s/ve	RQ) (50 th percent /veh), s/veh 3), s/veh	and the second se	6.9 0.0 0.0 6.9	4.6 0.4 0.0 4.9		5.3 0.1 0.0 5.3	0.9 0.0 6.2			0.0 24.6				
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic	e Ratio ((d 1), si elay (d 2 elay (d d), s/ve e (LOS)	RQ) (50 th percent /veh), s/veh 3), s/veh eh	and the second se	6.9 0.0 0.0 6.9 A	4.6 0.4 0.0 4.9 A		5.3 0.1 0.0 5.3 A	0.9 0.0 6.2 A			0.0 24.6 C			0.0	
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	e Ratio ((d 1), su elay (d 2 elay (d d), s/ve e (LOS) y, s/veh	RQ) (50 th percent /veh), s/veh 3), s/veh eh	and the second se	6.9 0.0 0.0 6.9	4.6 0.4 0.0 4.9 A	A	5.3 0.1 0.0 5.3 A 6.1	0.9 0.0 6.2 A	A	24.0	0.0 24.6 C	C	17.	0.0	B
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De	e Ratio ((d 1), su elay (d 2 elay (d d), s/ve e (LOS) y, s/veh	RQ) (50 th percent /veh), s/veh 3), s/veh eh	and the second se	6.9 0.0 0.0 6.9 A	4.6 0.4 0.0 4.9 A	A 11	5.3 0.1 0.0 5.3 A 6.1	0.9 0.0 6.2 A	A	24.0	0.0 24.6 C	-	17. B	0.0	B
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela Intersection De	e Ratio ((<i>d</i> 1), s elay (<i>d</i> 2 elay (<i>d</i> <i>d</i>), s/ve e (LOS) y, s/veh elay, s/ve	RQ) (50 th percent /veh), s/veh 3), s/veh eh	and the second se	6.9 0.0 0.0 6.9 A	4.6 0.4 0.0 4.9 A		5.3 0.1 0.0 5.3 A 6.1	0.9 0.0 6.2 A	A	24.0	0.0 24.6 C 6	-	And the second s	9	B
Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	e Ratio ((<i>d</i> 1), s, elay (<i>d</i> 2 elay (<i>d</i> <i>d</i>), s/ve e (LOS) y, s/veh elay, s/ve	RQ) (50 th percent /veh), s/veh 3), s/veh eh / LOS h / LOS	and the second se	6.9 0.0 0.0 6.9 A	4.6 0.4 0.0 4.9 A EB		5.3 0.1 0.0 5.3 A 6.1	0.9 0.0 6.2 A WB	A	24.0	0.0 24.6 C 6 NB	-	And the second s	0.0 9 SB	B

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General Inform	nation							1	nter	secti	on Inf	ormatio	n		ا ا الجار ال	þ. L
Agency		Western R&D, Ltd.						[Dura	tion, l	n	0.25			*	L
lyst		G Grigsby		Analys	is Date	9/15/20	021	and the second design of the s	side in the second	Туре	Contra da la contra da	Other		4		
suisdiction		<u> </u>		Time F					PHF	-		0.92		1 4 1 7 4 1		
Urban Street				Analys	is Year	2045		I	Analy	vsis F	eriod	1> 7:0	0	4		
Intersection		Polk-Taft @ East Pe	ershina	File Na			aft-E.Pe			-					at a	-
Project Descrip	tion	2045 AM Peak				1								-	ግ ነፋተቀም	7 4
			- Dest	all and and	ET.	318	1		1	TR.		- mil	1			1.15
Demand Inform	nation				EB			WB	3			NB		T	SB	
Approach Move	ement			L	Т	R	L	T		R	L	Т	R	L	Т	
Demand (v), v	eh/h			38	173	78	10	530)	12	226	44	5	0	19	3
			1.11		1.4											1.3
Signal Informa						- ella								_		\mathbf{x}
Cycle, s	60.0	Reference Phase	2		B.	517	9	1				6	1	€ ₂	3	-
Offset, s	0	Reference Point	End	Green	39.0	13.0	0.0	0.0		0.0	0.0			K		
Uncoordinated	No	Simult. Gap E/W	On	Yellow	3.0	3.0	0.0	0.0	1	0.0	0.0			2		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0		0.0	0.0		5	6	7	
		in the second of				FOT	1.4	100	10.00				UDT	-		0.00
Timer Results				EBL	-	EBT	WBI	-	WB	1	NBI	_	NBT	SB		SBT
Assigned Phase	e					2			6	-			8			4
Case Number						6.0			6.0	and the second se			8.0			8.0
Phase Duration	in the second second					43.0			43.0				17.0			17.0
Change Period	and the second sec	sensitive a second contract of the second con		-		4.0			4.0	-			4.0			4.0
Max Allow Head	Colorest processing the	the second se				0.0		_	0.0				4.2			4.2
Queue Clearan	and the second second second	and the second						-		-			15.0			3.6
Green Extensio	the second s	(ge), S				0.0		_	0.0	_			0.0			1.1
se Call Pro	NAMES AND ADDRESS OF				_							-	1.00	-	Concession of the owner owner owner owner owne	1.00
Max Out Proba	bility		-		_				1501		-		1.00	-		0.01
Movement Gro	oup Res	ults			EB			WB				NB			SB	
Approach Move	and the second division of the			L	Т	R	L	Т	I	R	L	T	R	L	Т	F
Assigned Move	ment			5	2	12	1	6	1	6	3	8	18	7	4	1
Adjusted Flow I	And the second se), veh/h		41	273		11	589	1			299			0	1
and the second s		w Rate (s), veh/h/l	n	840	1799		1124	1892	1			1263	1		1704	
Queue Service	And the owner of the owner of the owner.			1.6	3.8		0.2	9.5	1			11.4		-	0.0	1
Cycle Queue C	A DOLLARS AND AN	and a second		11.1	3.8		4.0	9.5	1			13.0			0.0	1
Green Ratio (g				0.65	0.65		0.65	0.65	T			0.22		-	0.22	1
Capacity (c), v				533	1170		780	1230	-		-	383				
Volume-to-Cap		itio (X)		0.077	0.233		0.014	0.479	-			0.780		-	0.000	1
in the second	and the second second	In (50 th percentile)		6.8	25.8		1.2	69.9	-			124.4			0	1
and the second se	and the second s	eh/In (50 th percenti		0.3	1.0		0.0	2.8	T			5.0			0.0	
and the second s		RQ) (50 th percent		0.00	0.00		0.00	0.00				0.00			0.00	
Uniform Delay	in an other states	and a standard stand and a standard standard and		8.2	4.3		5.2	5.3	T		-	24.8		1		T
Incremental De	And in case of the local division of the loc			0.3	0.5		0.0	1.3	1		Contraction of the second	9.9			0.0	
Initial Queue D	-	the state of the second st		0.0	0.0		0.0	0.0	1			0.0		-	0.0	T
Control Delay (and the Andrews of Concerning Street of Concerning	NAME OF A DESCRIPTION OF A		8.4	4.8		5.2	6.7	1			34.7				
Level of Service		Westerner with a with a second second second	2000 - 2012 - 20	A	A		A	A	1			С		1	1	1
Approach Dela	and the second se	and a second that is the press of the prime to be particular to contract the property of the prime of the pri		5.3	Commentary are surrent of	A	6.6	lan and the second	A		34.7	lange and	С	19.	2	В
Intersection De	and the second se					13								B		-
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Multimodal Re	sults				EB			WB				NB			SB	
Pedestrian LOS	S Score	/LOS		2.0		В	2.0		В		2.3		В	2.3	3	В
	core / LC			1.0		A	1.5		А		1.0		A	0.0	-	Α

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HCS 20 0 Streets Version 6.90

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General Information				-			Site	nfor	natio	n	-			-		
Analyst	G Grig	ishv	-					ection			Wons	andy @	E. Pershi	0.0		
ncy/Co.		ern R&D	Itd				Jurisd			-	Wene	andy @	L. Persili	ing	-	
Date Performed	8/27/2	-	,					Nest Stre	eet		F Per	rshing				
Analysis Year	2021							/South S			Wena	-			,ui	
Time Analyzed	PM Pe	ak					-	Hour Fac	-		0.92					
Intersection Orientation	East-V							sis Time		(hrs)	1.00					
Project Description	East P	ershing	Blvd Pla	n						(10	0	
Lanes	-							-								
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					Majo	r Street: E	ast-west									
Vehicle Volumes and Adj	justme	nts														
Vehicle Volumes and Adj Approach	justme		ound				bound			North	bound			South	ibound	
-	justme		ound	R	U		bound T	R	U	North	bound T	R	U	South L	bound T	R
Approach Vement Jority	U 1U	Eastb L 1	T 2	3	4U	West	T 5	6	U	L 7	T 8	9	U	1		12
Approach Vement Jority Number of Lanes	U	Eastb L 1 1	T 2 1			West L	Т	6 0	U	L	Т	-	U	L	T 11 0	
Approach Vement Jority Number of Lanes Configuration	U 1U	Eastb L 1 1 L	T 2 1 T	3	4U	West	T 5 1	6 0 TR	U	L 7	T 8	9	U	L 10 0	T 11	12 0
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h)	U 1U	Eastb L 1 1 L 7	T 2 1	3	4U	West	T 5	6 0	U	L 7	T 8	9	U	L 10 0 1	T 11 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	U 1U	Eastb L 1 1 L	T 2 1 T	3	4U	West	T 5 1	6 0 TR	U	L 7	T 8	9	U	L 10 0	T 11 0	12
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	U 1U	Eastb L 1 1 L 7	T 2 1 T	3	4U	West	T 5 1	6 0 TR	U	L 7	T 8	9	U	L 10 0 1 3	T 11 0 LR	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	U 1U	Eastb L 1 L 7 3	T 2 1 7 265	3	4U	West	T 5 1 214	6 0 TR	U	L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	U 1U	Eastb L 1 L 7 3	T 2 1 T	3	4U 0	West	T 5 1	6 0 TR	U	L 7 0	T 8	9	U	L 10 0 1 3	T 11 0 LR	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		Eastb L 1 L 7 3 N	T 2 1 7 265	3	4U	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H		Eastb L 1 L 7 3 N	T 2 1 7 265	3	4U 0	West	T 5 1 214	6 0 TR	U	L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)		Eastb L 1 L 7 3 N	T 2 1 7 265	3	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)		Eastb L 1 L 7 3 N	T 2 1 7 265	3	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		Eastb L 1 L 7 3 N	T 2 1 7 265	3	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)		Eastb L 1 L 7 3 N	T 2 1 7 265	3	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
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Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)	U 1U 0	Eastb L 1 1 L 7 3 	T 2 1 7 265	3 0 Undi	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0	12 0 4
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Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Capacity, c (veh/h) v/c Ratio	U 1U 0	Eastb L 1 1 2 3 3 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	T 2 1 7 265	3 0 Undi	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0 0 No 5 715 0.01	12 0 4
Approach Vement Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)	U 1U 0	Eastb L 1 7 3 M ys I of S 8 1326 0.01 0.0	T 2 1 7 265	3 0 Undi	4U 0	West	T 5 1 214	6 0 TR		L 7 0	T 8 0	9		L 10 0 1 3	T 11 0 LR 0 NO NO 5 715 0.01 0.0	12 0 4

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General Information			C. In Contraction						natio	n	-			-		_
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ncy/Co.	-	ern R&D	, Ltd				Jurisd	10								
Date Performed	8/27/	2021						Nest Str				rshing				_
Analysis Year	2045							/South			Wena	andy	_			
Time Analyzed	PM Pe		Contrast					Hour Fa			0.92			-		
Intersection Orientation	East-\			-			Analy	sis Time	Period	(hrs)	1.00			-		
Project Description	East P	Pershing	Bivd Pla	n					_		ait and the second second					
Lanes						-									_	
						۲۲ r Street E	ት ት ሶ									
Vehicle Volumes and Ad	justme	ents			(Majo	Street L	131 WC31									
Approach		Eastb	ound			West	bound			North	bound			South	bound	
	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	Т	-
vement	-					-	-			-		-			-	R
	10	1	2	3	4U	4	5	6		7	8	9		10	11	
Number of Lanes		1	1	3 0	4U 0	4 0	5 1	0				9 0		10 0	11 0	12
Number of Lanes Configuration	1U	1 L	1 T				1	0 TR		7	8	-		0	11	12 0
Number of Lanes Configuration Volume, V (veh/h)	1U	1 L 15	1					0		7	8	-		0	11 0	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	1U	1 L	1 T				1	0 TR		7	8	-		0	11 0	12 0 9
Number of LanesConfigurationVolume, V (veh/h)Percent Heavy Vehicles (%)Proportion Time Blocked	1U	1 L 15	1 T				1	0 TR		7	8	-		0 2 3	11 0 LR	12 0 9
Number of LanesConfigurationVolume, V (veh/h)Percent Heavy Vehicles (%)Proportion Time BlockedPercent Grade (%)	1U	1 L 15 3	1 T 485			0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	1U	1 L 15 3	1 T	0	0	0	1	0 TR		7 0	8	-		0 2 3	11 0 LR	12 0 9
Number of LanesConfigurationVolume, V (veh/h)Percent Heavy Vehicles (%)Proportion Time BlockedPercent Grade (%)Right Turn ChannelizedMedian Type/Storage		1 L 15 3	1 T 485	0		0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H		1 L 15 3	1 T 485	0	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)		1 L 15 3	1 T 485	0	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR	12 0 9
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Oprity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		1 L 15 3	1 T 485	0	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR	12 0 9
 Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) 		1 L 15 3 N	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR	R 12 0 9 3
Sority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar		1 L 15 3 N ys	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR 0 No	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Right, Queue Length, ar Flow Rate, v (veh/h)		1 L 15 3 N N Sys L of S 16	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR 0 NO 12	12 0 9
 ,ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h) 		1 L 15 3 N N Sys L of S 16 1124	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	111 0 LR 0 No 12 512	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Readway (sec) Media, v (veh/h) Capacity, c (veh/h) v/c Ratio		1 L 15 3 N N Sys L I of S 16 1124 0.01	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR 0 0 NO 12 512 0.02	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Keadway (sec) Follow-Up Headway (sec) Solare, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		1 L 15 3 N N Sys L of S 16 1124 0.01 0.0	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR 0 0 NO 12 12 512 0.02 0.1	12 0 9
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) State, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Qas (veh) trol Delay (s/veh)		1 L 15 3 N Vys L of S 16 1124 0.01 0.0 8.2	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-		0 2 3	11 0 LR 0 0 0 1 0 1 1 2 12 5 12 0.02 0.1 12.2	12 0 9
 Jority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Follow-Up Headway (sec) Sase Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Sase Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Sase Follow-Up Headway (sec) Follow-Up Headway (se		1 L 15 3 N N Sys L I of S 1124 0.01 0.0 8.2 A	1 T 485	Undiv	0	0	1 393	0 TR		7 0	8	-			11 0 LR 0 0 NO 12 12 512 0.02 0.1	12 0 9

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General Information							Cito	Inform	natio									
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Analyst	G Grig	-			with a sum		-	ection			Wena	andy @	E. Pershi	ng				
ncy/Co.		ern R&E	D, Ltd			Jurisdiction												
Date Performed	8/27/2	2021					East/	West Str	eet	agent made	E. Pershing							
Analysis Year	2021				_		North/South Street				Wenandy 0.92							
Time Analyzed	AM Pe						Peak Hour Factor											
Intersection Orientation	East-V						Analy	sis Time	Period	(hrs)	1.00							
Project Description	East P	ershing	g Blvd Pla	in		war wy												
Lanes																		
				2414460				1										
Vehicle Volumes and Ac	ljustme	nts				۲ ۲ r Street E	ተ ዮ ፖ ast-West		-									
Vehicle Volumes and Ac Approach	ljustme	and the second designed	bound			r Street. E			-	North	bound			South	bound			
and the second second second	ljustme	and the second designed	bound	R		r Street. E	ast-West	R		North	bound T	R	U	South	bound	R		
Approach		East	1	*	Majo	r Street. E West	bound			1		R 9	U	1	1	R 12		
Approach	U	Eastl L	T	R	Majo U	West	bound T	R		L	Т		U	L	Т	12		
Approach Ovement Ourity	U 1U	Eastl L 1	T 2	R	Majo U 4U	West	bound T 5	R 6		L 7	Т 8	9	U	L 10	T 11	-		
Approach Svement Drity Number of Lanes	U 1U	East L 1	T 2 1	R	Majo U 4U	West	bound T 5	R 6 0		L 7	Т 8	9	U	L 10	T 11 0	12		
Approach vement Jrity Number of Lanes Configuration	U 1U	East L 1 1 L	T 2 1 T	R	Majo U 4U	West	bound T 5 1	R 6 0 TR		L 7	Т 8	9	U	L 10 0	T 11 0	12		
Approach Overnent Ority Number of Lanes Configuration Volume, V (veh/h)	U 1U	Eastl L 1 L L 2	T 2 1 T	R	Majo U 4U	West	bound T 5 1	R 6 0 TR		L 7	Т 8	9		L 10 0 2	T 11 0	12 0 16		
Approach vement vity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	U 1U	Eastl L 1 L L 2	T 2 1 T	R	Majo U 4U	West	bound T 5 1	R 6 0 TR		L 7	Т 8	9		L 10 0 2 3	T 11 0	12 0 16		
Approach Dyvement Dyrity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	U 1U	Eastl L 1 L 2 3	T 2 1 T	R	Majo U 4U	West L 4 0	bound T 5 1	R 6 0 TR		L 7 0	Т 8	9		L 10 0 2 3	T 11 0 LR	12 0		
Approach vement vity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	U 1U	Eastl L 1 L 2 3	T 2 1 T 133	R 3 0	Majo U 4U	West L 4 0	bound T 5 1 311	R 6 0 TR		L 7 0	T 8 0	9		L 10 0 2 3	T 11 0 LR	12 0		
Approach vement vity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage	U 1U 0	Eastl L 1 L 2 3	T 2 1 T 133	R 3 0	Majo	West L 4 0	bound T 5 1 311	R 6 0 TR		L 7 0	T 8 0	9		L 10 0 2 3	T 11 0 LR	12 0		
Approach vement vity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage	U 1U 0	Eastl L 1 L 2 3	T 2 1 T 133	R 3 0	Majo	West L 4 0	bound T 5 1 311	R 6 0 TR		L 7 0	T 8 0	9		L 10 0 2 3	T 11 0 LR	12 0		
Approach vement vity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H	U 1U 0	Eastl L 1 L 2 3	T 2 1 T 133	R 3 0	Majo	West L 4 0	bound T 5 1 311	R 6 0 TR		L 7 0	T 8 0	9		L 10 0 2 3	T 11 0 LR	12 0		
Approach Verment Ority Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)	U 1U 0	Eastl L 1 L 2 3	T 2 1 T 133	R 3 0	Majo	West L 4 0	bound T 5 1 311	R 6 0 TR		L 7 0	T 8 0	9		L 10 0 2 3	T 11 0 LR	12 0		

1214

0.00

0.0

8.0

А

0.1

Capacity, c (veh/h)

95% Queue Length, Q95 (veh)

trol Delay (s/veh)

Level of Service, LOS

Approach LOS

Approach Delay (s/veh)

v/c Ratio

HCS 2010 TWSC Version 6.90 Wenandy-E.Pershing 2021 AM.xtw Generated: 8/27/2021 11:00:36 AM

10.5

В

680

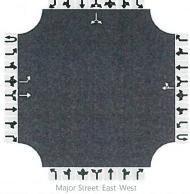
0.03

0.1

10.5

В

General Information		Site Information	
Analyst	G Grigsby	Intersection	Wenandy @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/27/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Wenandy
Time Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		

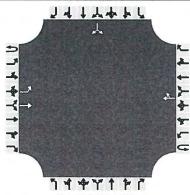


Vehicle Volumes and Ad	Justine								-							
Approach		Eastb	ound			West	bound			North	bound			South	bound	
vement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
ority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		4	244				572	0						5		35
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked						- 3										
Percent Grade (%)															0	
Right Turn Channelized	No					٦	lo			N	lo	No				
Median Type/Storage		ivided														
Critical and Follow-up H	leadway	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	nd Leve	l of S	ervice													
Flow Rate, v (veh/h)		4													43	
Capacity, c (veh/h)		953									-				454	
v/c Ratio		0.00													0.09	
95% Queue Length, Q ₉₅ (veh)		0.0													0.3	-
trol Delay (s/veh)		8.8		5											13.7	
Level of Service, LOS		А													В	
Approach Delay (s/veh)		0	.1			A	A							13	3.7	
Approach LOS													1	and design of the second s	В	

HCS 2010 TWSC Version 6.90 Wenandy-E.Pershing 2045 AM.xtw Generated: 8/27/2021 11:02:27 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinley @ E. Pershing
icy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/27/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	McKinley
Time Analyzed	PM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		

Lanes



Major Street: East-West

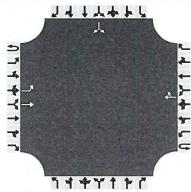
Approach		Eastb	ound			West	bound			North	bound			South	bound		
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R	
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0	
Configuration		L	Т					TR							LR		
Volume, V (veh/h)		23	285				220	0						1		19	
Percent Heavy Vehicles (%)		3												3		3	
Proportion Time Blocked																	
Percent Grade (%)															0	home	
Right Turn Channelized	No					N	10			N	lo	-	No				
Median Type/Storage		ivided								and the second							
Critical and Follow-up H	eadway	ys															
Base Critical Headway (sec)																	
Critical Headway (sec)																	
Base Follow-Up Headway (sec)																	
Follow-Up Headway (sec)																	
Delay, Queue Length, an	d Level	l of S	ervice						hannothead							harteteren	
Flow Rate, v (veh/h)		25										Γ			22		
Capacity, c (veh/h)		1320													770		
v/c Ratio		0.02													0.03		
95% Queue Length, Q ₉₅ (veh)		0.1													0.1		
rol Delay (s/veh)		7.8				And the second second									9.8		
Level of Service, LOS		А													A		
Approach Delay (s/veh)	1	0	.6											9	.8	American	
Approach LOS	1				1										Ą		

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HCS 2010 TWSC Version 6.90 McKinley-E.Pershing 2021 PM.xtw Generated: 9/14/2021 4:45:02 PM

General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinley @ E. Pershing
cy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/27/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	McKinley
Time Analyzed	PM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
roject Description	East Pershing Blvd Plan		

Lanes



Major Street. East-West

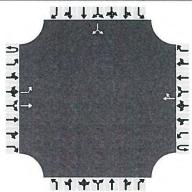
Approach	T	Facth	ound		1	West	bound			North	bound			South	bound		
the second				-			-										
Movement	U	L	T	R	U	L	Т	R	U	L	Т	R	U	L	Т	R	
fity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0	
Configuration		L	Т					TR							LR		
Volume, V (veh/h)		50	477				376	0						4		41	
Percent Heavy Vehicles (%)		3												3		3	
Proportion Time Blocked																	
Percent Grade (%)															0	1	
Right Turn Channelized		N	lo			1	No			N	10		No				
Median Type/Storage				Undi	ivided								A				
Critical and Follow-up H	eadwa	ys															
Base Critical Headway (sec)																	
Critical Headway (sec)																	
Base Follow-Up Headway (sec)																	
Follow-Up Headway (sec)																	
Delay, Queue Length, an	d Leve	l of S	ervice	•													
Flow Rate, v (veh/h)		54													49		
Capacity, c (veh/h)		1143						-							565		
v/c Ratio		0.05													0.09		
95% Queue Length, Q ₉₅ (veh)		0.1													0.3		
trol Delay (s/veh)		8.3													12.0		
Level of Service, LOS		А													В		
Approach Delay (s/veh)		0	.8				-			L				12	2.0		
Approach LOS															В		

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HCS 2010 1 TWSC Version 6.90 McKinley-E.Pershing 2045 PM.xtw

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General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinley @ E. Pershing
cy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/27/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	McKinley
lime Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



Major Street East West

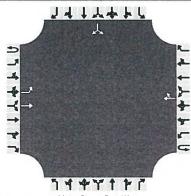
Approach		Eastb	ound			West	bound			North	bound			South	bound	
rement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		6	128				336	1						6		38
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized		N	lo			٢	No			N	io			N	10	
Median Type/Storage				Und	ivided								A			
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)												12.51				
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	•											Bits	
Flow Rate, v (veh/h)		7													48	
Capacity, c (veh/h)		1186													646	
v/c Ratio		0.01					1								0.07	
		0.0													0.2	
95% Queue Length, Q ₉₅ (veh)		8.1													11.0	
95% Queue Length, Q ₉₅ (veh) trol Delay (s/veh)		0.1						The All series in which the Party of	1							-
A CONTRACTOR OF A CONTRACTOR O		A													В	
trol Delay (s/veh)		А	.4											1	B 1.0	

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HCS 2010 TWSC Version 6.90 McKinley-E.Pershing 2021 AM.xtw

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General Information		Site Information	
Analyst	G Grigsby	Intersection	McKinley @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	8/27/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	McKinley
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



Major Street East-West

Approach		Eastb	bound			West	bound			North	bound			South	bound	
vement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		13	216				574	3						16		82
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														1	0	
Right Turn Channelized		١	No			٩	١o			N	lo			N	lo	
Median Type/Storage				Und	ivided											
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	d Leve	l of S	ervice	9												
Flow Rate, v (veh/h)		14			1										106	
Capacity, c (veh/h)		949										0.00			442	
v/c Ratio		0.01													0.24	
95% Queue Length, Q ₉₅ (veh)		0.0													0.9	
rol Delay (s/veh)		8.9													15.7	
Level of Service, LOS		А													С	
Approach Delay (s/veh)		().5											1	5.7	
Approach LOS										-					с	

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HCS 2010 TWSC Version 6.90 McKinley-E.Pershing 2045 AM.xtw Generated: 9/14/2021 4:47:22 PM

									3				FSF.	1 11		
General Inform	nation	the second second second	ale and a						Inters	sectio	on Inf	ormatio	n		4.441	են
Agency		Western R&D, Ltd.					a a compare rate		Durat	tion, h	1	0.25			46	
Anlyst		G Grigsby		Analys	is Date	9/15/20	021		Area	Туре		Other		4		
diction				Time F	and the second second second	1			PHF			0.92		1 to 1		4
Urban Street				Analys	is Year	2045			Analy	/sis P	eriod	1> 7:0	0	17 17		
Intersection		Whitney Rd @ East	t Per	File Na			ey - Eas	- A.				JS	-		+	ſ
Project Descrip	otion	2045 PM Peak	-									and the set		- 1	1444	* *
Demand Infor	motion				EB	1		W	2	1		NB	12.2		SB	
				L	T	R	L		-	R	L	T		1	T	F
Approach Mov	the second s			149	308		6	28	_	12		6	R 5	L	7	10
Demand (v), v	/en/n	CONTRACTOR OF	-	149	308	14	0	20	0	12	14	0	0	4	1 /	
Signal Informa	ation				. 2	1215			T					_		X
Cycle, s	93.0	Reference Phase	2		100	5/12	9						-	Q	1	47
Offset, s	0	Reference Point	End	Green	39.0	21.0	21.0	0.0		0.0	0.0	1	1	M 2	3	-
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow		3.0	3.0	0.0		0.0 0.0	0.0			2		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0		0.0	0.0		5	6	7	
Timer Results			2.7.10	EBL		EBT	WB		WB	T	NBI		NBT	SBI	1	SBT
Assigned Phas				COL	-	2	VVB	-	6	1	INDI	-	8	381	-	3B1
Assigned Phas Case Number	0C					6.0			6				8			4
				-		43.0										25.0
Phase Duration		10				4.0			43.0			-	25.0 4.0			4.0
Change Period	and the second se	the second							and so the second	-						
Max Allow Headway (<i>MAH</i>), s Queue Clearance Time (<i>g</i> s), s						4.2			4.2				4.1			4.3
						24.4		-	14.7	-			3.1		-	7.7
Green Extension Time (g e), s e Call Probability						2.9		-	3.3				0.0			0.3
Max Out Proba	Contraction of the local division of the loc		-			0.09		-	1.00	_		-	0.00	-		0.00
	ability				1	0.05			0.01				0.00	1		0.00
Movement Gr	Contract of the local division of the local	sults			EB			WB	-			NB			SB	
Approach Mov	and the second se			L	Т	R	L	Т	F	२	L	Т	R	L	Т	F
Assigned Move	ement			5	2	12	1	6	1	6	3	8	18	7	4	1
Adjusted Flow	the second s	- We will see a see a second s		162	350		7	317	-			27		4	120	
CONTRACTOR OF THE OWNER	Contract of Contract of Contract	ow Rate (s), veh/h/	n	1079	1885		1047	1886				1786		1810	1626	
Queue Service	and the second se	and the second se		11.5	12.3		0.4	. 10.9	-			1.1		0.2	5.7	
Contractive and the second second second second	the second se	e Time (g c), s		22.4	12.3		12.7	10.9	_			1.1		0.2	5.7	
Green Ratio (0.42	0.42		0.42	0.42	-			0.23		0.23	0.23	
Capacity (c),	veh/h			403	791		378	791				403		409	367	
Volume-to-Cap	oacity Ra	atio(X)		0.402	0.443		0.017	0.40	1			0.067		0.011	0.326	
the state of the s	Concept Statement and statements	/In (50 th percentile)		73	129.7		2.6	115.1	-			11.8		1.9	55.8	
Back of Queue	e (Q), v	eh/In (50 th percent	ile)	2.9	5.2		0.1	4.6				0.5		0.1	2.2	
Queue Storage	e Ratio (RQ) (50 th percen	tile)	0.00	0.00		0.00	0.00				0.00		0.00	0.00	
Uniform Delay	(d1), s	/veh		26.7	19.3		23.8	18.8				28.3		27.9	30.1	
Incremental De	elay (d a	2), s/veh		0.6	0.4		0.0	0.3				0.1		0.0	0.5	
Initial Queue D)elay (d	₃), s/veh		0.0	0.0		0.0	0.0				0.0		0.0	0.0	
Control Delay	(d), s/v	eh		27.3	19.6		23.8	19.2	2			28.4		27.9	30.6	
Level of Servic	Contraction of the local division of the loc	the state of the s		С	В		С	В				C		С	С	
Approach Dela	ay, s/veh	/LOS		22.1		С	19.3	3	В		28.4	4	С	30.5	5	С
Intersection De	elay, s/ve	eh / LOS				22	2.4		_				_	С		
		Angelen Bran		-	FR			1.4.15		-	-	NID		Part of	0.5	
Martimodal R		11.00			EB	-	2.3	WB	-	_		NB	P	-	SB	-
Hodoctrion I O	edestrian LOS Score / LOS			2.1		B			В		2.3	1	В	2.3		В

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HCS 2010 Signalized Intersection Results Summary

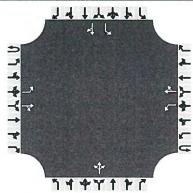
1.1.1	12-12-	HC3 20		gnan								27 5		1	
General Inform	nation		1				and and		Interse	ction l	nformati	on	2	4741	ել
Agency		Western R&D, Ltd.		6 W.					Duratio	AND DESCRIPTION OF A DE	0.25			44	
Amlyst		G Grigsby		Analys	is Date	9/15/2	021		Area Ty		Othe	r	4		
diction		le engezy		Time F	Carlos Landon and Carlos and Carl				PHF	po	0.92				4
Urban Street					and the second second	2045			Analysi	s Perio		00	4 4 4 4 1 4 1 7		
Intersection		Whitney Rd @ East	Per	File Na		-	ey - Eas	and the owner where the owner where	Concernance of the local division of the loc	and the second second	in the second	00			
Project Descrip	tion	2045 AM Peak		110140					ning 20		AU0		-	Ψ 14 14 91	7 4
Toject Descrip	lion	2045 AM 1 Cak		111				Ne - Ne - Ne - Ne				1.1			
Demand Inform	nation				EB		1	WE	3		NB			SB	
Approach Move	ement			L	T	R	L	T	R	L	T	R	L	T	F
Demand (v), v	eh/h			71	148	10	13	243	3 5	9	7	6	5	8	2
0:				1	1 -	1 100		1					1		
Signal Informa		D.f.	0	1	1.2 3							5 11			人
Cycle, s	93.0	Reference Phase	2	-	R.	Sti	73					1		3	
Offset, s	0	Reference Point	End	Green		21.0	21.0	0.0	0.0				A		
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	And the second se	3.0	3.0	0.0	0.0				Y		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0) 0.	0	5	6	7	-
Timer Results			-	EBL		EBT	WB		WBT	N	BL	NBT	SBI		SBT
Assigned Phas	e					2		-	6			8		-	4
Case Number						6.0			6.0	-		12.0			10.0
Phase Duration	I. S					43.0	-	-	43.0	1		25.0	1		25.0
Change Period	in the second	c). S				4.0	-		4.0			4.0			4.0
Max Allow Hea	Contract of the local division of					4.1			4.1	-		4.2			4.4
Queue Clearan	And in case of the local division of the loc					15.6			11.0	-		3.0			14.7
Green Extensio	Non-seal of the seal of the se	and the second				1.9			2.0	-		0.0			0.5
e Call Probability						1.00			1.00	1		1.00	1		1.00
Max Out Probability						0.00			0.00			0.00			0.32
	-	14-	1	-	ED		-	14.00		-	LID		-		- and
Movement Gro	Contraction of the local division of the loc	SUITS		L	EB T	R	L	WB T	R	L	NB T	R	L	SB T	F
Approach Move Assigned Move					2	R 12			16		8	18	7		-
the second s) uph/h		5	the second s	12	1	6	10	3		18		4	1
Adjusted Flow	and the second se	The second se		77	172		14	270			24		5	242	-
A DESCRIPTION OF THE REAL PROPERTY OF	Contraction of the local division of the	w Rate (s), veh/h/l	in	1127	1879		1232	1893			1776		1810	1619	-
Queue Service	When the sub-	And a supplicity of the suppli		4.6	5.4		0.7	9.0			1.0		0.2	12.7	-
and a second	And in case of the local diversion of the local diversion of the local diversion of the local diversion of the	e Time (<i>g c</i>), s		13.6	5.4		6.1	9.0		-	1.0		0.2	12.7	-
Green Ratio (g	Statement and			0.42	0.42		0.42	0.42			0.23		0.23	0.23	-
Capacity (c), v Volume-to-Cap		atio (X)		441 0.175	788 0.218		522 0.027	794 0.340	-		401	-	409 0.013	366 0.663	-
A DECEMBER OF A		(In (50 th percentile)		Service Process			NOVEMBER OF STREET	94.8	CANADACT AND DESCRIPTION OF	-	10.4		of passion of the second	131.6	-
the second s	the subscription of the local division of the local division of the local division of the local division of the	eh/in (50 th percentile)	the state of the local division in which the	30.4 1.2	56.9 2.3		4.9 0.2	94.8 3.8		-	0.4	-	2.3 0.1	5.3	-
The second se	· · · · · · · · · · · · · · · · · · ·	RQ) (50 th percent	-	0.00	0.00		0.2	0.00			0.4		0.00	0.00	-
Uniform Delay	our section of the se	and the second se	aic)	22.9	17.3		19.2	18.3	-	-	28.3		28.0	32.8	-
Incremental De	Contraction of the local division of the loc	the second se		0.2	0.1		0.0	0.3		-	0.1	-	0.0	4.4	-
Initial Queue D	and the second second	and the second sec		0.0	0.0		0.0	0.0		-	0.0		0.0	0.0	
Control Delay (NAME AND ADDRESS OF TAXABLE PARTY.	and the second se		23.1	17.4		19.2	18.5		-	28.3		28.0	37.2	
Level of Servic	www.www.www.www.www.	Warners MWW.co.e. MWW.co.e. CAMPACITY and CAMPACITY CO.E. CAMPACIT	Alla Analas	C	В		B	В			C	1	C	D	1
Approach Dela	ARCHITECTURE OF THE OWNER OWNER OF THE OWNER OWNE	THE OWNER CONTROL OF A DESCRIPTION OF A		19.2	Constitute of providence of	В	18.6	In case of the local division of the local d	В	21	3.3	С	37.0		D
Intersection De	the second s	A REAL PROPERTY AND A REAL		10.2			4.7						C		-
						E Bak									
Maitimodal Re	sults				EB			WB			NB			SB	
Pedestrian LOS	S Score	/LOS		2.1		В	2.3		В	2	.3	В	2.3		В
1 odootnan Eot	edestrian LOS Score / LOS cycle LOS Score / LOS					A	1.0	COLUMN TWO IS NOT	A		.5	А	0.9	and the second se	А

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Generated: 10/21/2021 7:26:44 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Whitney Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



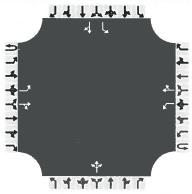
Major Street: East-West

Approach		Eastb	ound			West	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume, V (veh/h)		112	156	2		0	142	12		3	0	0		4	0	81
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)											0			()	
Right Turn Channelized		N	lo			N	0			٦	lo			N	o	
Median Type/Storage				Undi	vided											-
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice													
Flow Rate, v (veh/h)		122				0					3			4		88
Capacity, c (veh/h)		1403		-		1397				1.5	335			398		882
v/c Ratio		0.09				0.00					0.01			0.01		0.10
95% Queue Length, Q ₉₅ (veh)		0.3				0.0					0.0		2	0.0		0.3
trol Delay (s/veh)		7.8				7.6					15.8			14.1		9.5
nevel of Service, LOS		A				A					С			В		A
Approach Delay (s/veh)		3	.2			0	.0			1	5.8			9	.7	
Approach LOS						-		-			С	-		ŀ	4	

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HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2021 PM.xtw Generated: 9/10/2021 9:31:12 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	0.0
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Whitney Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan	in the second	



Major Street East West

Approach		Eastb	ound			Westb	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume, V (veh/h)		149	308	5		0	280	12		7	0	0		4	0	103
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked												20				
Percent Grade (%)						Automatica and					0			()	A
Right Turn Channelized		N	0			N	ю			٦	lo			N	0	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)		-														
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)				1 Bring												
Delay, Queue Length, ar	nd Leve	l of S	ervice	•	Concernance of the second											
Flow Rate, v (veh/h)		162				0					8			4		112
Capacity, c (veh/h)		1236		1		1212					161			208		727
v/c Ratio		0.13				0.00				2 Martin	0.05			0.02		0.15
95% Queue Length, Q ₉₅ (veh)		0.5				0.0					0.2			0.1		0.5
trol Delay (s/veh)		8.4				8.0					28.5			22.7		10.9
Level of Service, LOS		A			-	A					D			С		В
Approach Delay (s/veh)		2	.7			0	.0			2	8.5			11	.3	-
Approach LOS		39.74								- 0	D			F	3	

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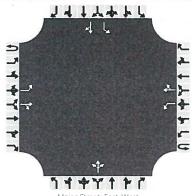
HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2045 PM.xtw Generated: 9/10/2021 9:53:37 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Whitney Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		

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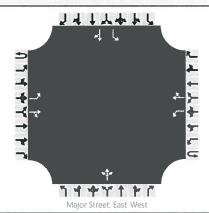
Major Street. East West

Approach		Eastb	ound			Westh	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume, V (veh/h)		54	75	2		0	126	3		2	0	0		3	0	168
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)											0			(0	
Right Turn Channelized		N	lo			N	lo			٦	lo			N	lo	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	eadwa	ys										an an				
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																1
Follow-Up Headway (sec)			1													
Delay, Queue Length, an	d Leve	l of S	ervice	9									former innamice and			
Flow Rate, v (veh/h)		59				0					2			3		183
Capacity, c (veh/h)		1435				1505					412			592		907
v/c Ratio		0.04				0.00					0.00			0.01		0.20
95% Queue Length, Q ₉₅ (veh)		0.1				0.0					0.0			0.0		0.8
trol Delay (s/veh)		7.6				7.4					13.8			11.1		10.0
Level of Service, LOS		A				A					В			В		A
Approach Delay (s/veh)		3	.1			0	.0			1.	3.8			1(0.0	
Approach LOS							a distant				В				Ą	

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HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2021 AM.xtw Generated: 9/10/2021 9:56:39 AM

ieneral Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Whitney Rd
fime Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



Vehicle Volumes and Adjustments

Approach		Eastb	ound			West	oound			North	bound			South	bound		
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R	
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0	
Configuration		L		TR		L		TR			LTR			L		TR	
Volume, V (veh/h)		71	148	5		0	243	1		5	0	0		1	0	215	
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3	
Proportion Time Blocked																	
Percent Grade (%)											0			()		
Right Tum Channelized		N	lo			N	10			ſ	No		No				
Median Type/Storage				Undi	vided												
Critical and Follow-up H	leadwa	ys															
Base Critical Headway (sec)																	
Critical Headway (sec)																	
Base Follow-Up Headway (sec)																	
Follow-Up Headway (sec)																	
Delay, Queue Length, an	nd Leve	l of S	ervice	•													
Flow Rate, v (veh/h)	T	77				0					5			1		234	
Capacity, c (veh/h)		1292				1404					235			403		772	
v/c Ratio		0.06				0.00					0.02			0.00		0.30	
95% Queue Length, Q ₉₅ (veh)		0.2				0.0					0.1			0.0		1.3	
trol Delay (s/veh)		8.0				7.6					20.7			13.9		11.7	
Level of Service, LOS		A				A					С			В		В	
Approach Delay (s/veh)		2	.5			0.0			20.7				11.7				
Approach LOS											С			E	3		

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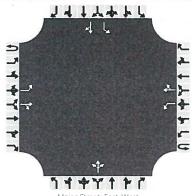
HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2045 AM.xtw Generated: 9/10/2021 9:59:33 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Whitney Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		

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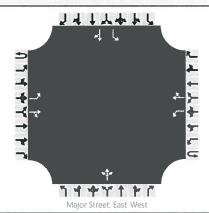
Major Street. East West

Approach		Eastb	ound			West	bound			North	bound			South	bound		
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R	
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0	
Configuration		L		TR		L		TR			LTR			L		TR	
Volume, V (veh/h)		54	75	2		0	126	3		2	0	0		3	0	168	
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3	
Proportion Time Blocked																	
Percent Grade (%)											0		0				
Right Turn Channelized		N	lo			N	lo			٦	lo			N	lo		
Median Type/Storage				Undi	vided												
Critical and Follow-up H	eadwa	ys										an an					
Base Critical Headway (sec)																	
Critical Headway (sec)																	
Base Follow-Up Headway (sec)																1	
Follow-Up Headway (sec)			1														
Delay, Queue Length, an	d Leve	l of S	ervice	9									former innannes sine				
Flow Rate, v (veh/h)		59				0					2			3		183	
Capacity, c (veh/h)		1435				1505					412			592		907	
v/c Ratio		0.04				0.00					0.00			0.01		0.20	
95% Queue Length, Q ₉₅ (veh)		0.1				0.0					0.0			0.0		0.8	
trol Delay (s/veh)		7.6				7.4					13.8			11.1		10.0	
Level of Service, LOS		A				A					В			В		A	
Approach Delay (s/veh)		3	.1			0	.0		13.8				10.0				
Approach LOS							a distant				В				A		

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HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2021 AM.xtw Generated: 9/10/2021 9:56:39 AM

ieneral Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Whitney Rd
fime Analyzed	AM Peak	Peak Hour Factor	0.92
ntersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



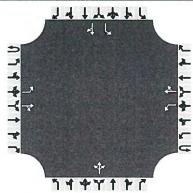
Vehicle Volumes and Adjustments

Approach		Eastb	ound			West	oound			North	bound			South	bound		
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R	
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12	
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0	
Configuration		L		TR		L		TR			LTR			L		TR	
Volume, V (veh/h)		71	148	5		0	243	1		5	0	0		1	0	215	
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3	
Proportion Time Blocked																	
Percent Grade (%)											0			()		
Right Tum Channelized		N	lo			N	10			ſ	No		No				
Median Type/Storage				Undi	vided												
Critical and Follow-up H	leadwa	ys															
Base Critical Headway (sec)																	
Critical Headway (sec)																	
Base Follow-Up Headway (sec)																	
Follow-Up Headway (sec)																	
Delay, Queue Length, an	nd Leve	l of S	ervice	•													
Flow Rate, v (veh/h)	T	77				0					5			1		234	
Capacity, c (veh/h)		1292				1404					235			403		772	
v/c Ratio		0.06				0.00					0.02			0.00		0.30	
95% Queue Length, Q ₉₅ (veh)		0.2				0.0					0.1			0.0		1.3	
trol Delay (s/veh)		8.0				7.6					20.7			13.9		11.7	
Level of Service, LOS		A				A					С			В		В	
Approach Delay (s/veh)		2	.5			0.0			20.7				11.7				
Approach LOS											С			E	3		

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HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2045 AM.xtw Generated: 9/10/2021 9:59:33 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Whitney Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



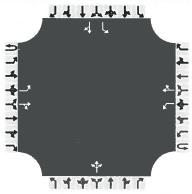
Major Street: East-West

Approach		Eastb	ound			West	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume, V (veh/h)		112	156	2		0	142	12		3	0	0		4	0	81
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)											0			()	
Right Turn Channelized		N	lo			N	0			٦	lo			N	o	
Median Type/Storage				Undi	vided											-
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice													
Flow Rate, v (veh/h)		122				0					3			4		88
Capacity, c (veh/h)		1403		-		1397				1.5	335			398		882
v/c Ratio		0.09				0.00					0.01			0.01		0.10
95% Queue Length, Q ₉₅ (veh)		0.3				0.0					0.0		2	0.0		0.3
trol Delay (s/veh)		7.8				7.6					15.8			14.1		9.5
nevel of Service, LOS		A				A					С			В		A
Approach Delay (s/veh)		3	.2			0	.0		15.8				9.7			
Approach LOS						-		-			С	-		ŀ	4	

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HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2021 PM.xtw Generated: 9/10/2021 9:31:12 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Whitney @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	0.0
Date Performed	9/10/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Whitney Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan	in the second	



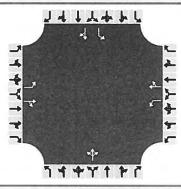
Major Street East West

Approach		Eastb	ound			Westb	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		1	1	0
Configuration		L		TR		L		TR			LTR			L		TR
Volume, V (veh/h)		149	308	5		0	280	12		7	0	0		4	0	103
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked												20				
Percent Grade (%)						Automatica and					0			()	A
Right Turn Channelized		N	0			N	ю			٦	lo			N	0	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)		-														
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)				1 March												
Delay, Queue Length, ar	nd Leve	l of S	ervice	•	Concernance of the second											
Flow Rate, v (veh/h)		162				0					8			4		112
Capacity, c (veh/h)		1236		1		1212					161			208		727
v/c Ratio		0.13				0.00				2 Martin	0.05			0.02		0.15
95% Queue Length, Q ₉₅ (veh)		0.5				0.0					0.2			0.1		0.5
trol Delay (s/veh)		8.4				8.0					28.5			22.7		10.9
Level of Service, LOS		A			-	A					D			С		В
Approach Delay (s/veh)		2	.7			0	.0		28.5				11.3			
Approach LOS		39.74								-	D			F	В	

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HCS 2010 TWSC Version 6.90 Whitney-E.Pershing 2045 PM.xtw Generated: 9/10/2021 9:53:37 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	
Agency/Co.	Western R & D, Ltd.	Jurisdiction	
Date Performed	10/20/2021	East/West Street	East Pershing Blvd
Analysis Year	2045	North/South Street	Whitney Road
Time Analyzed	1.00	Peak Hour Factor	0.92
Anaylysis Time Period (hrs)	AM Peak - 1 Hour		
Project Description	New City Park		

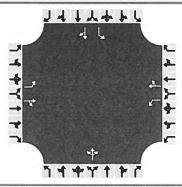


Vehicle Volume and Adjustments

Approach		Eastbound			Westbound		N	lorthboun	d	9	Southboun	d
Movement	L	Т	R	L	Т	R	L	Т	R	L	Т	R
Volume	71	148	10	13	243	5	9	7	6	5	8	215
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	L	TR		L	TR		LTR			L	TR	
Flow Rate, v (veh/h)	77	172		14	270		24			5	242	
Percent Heavy Vehicles	2	2	-	2	2		2			2	2	
Departure Headway and S	Service Ti	ime	100									
Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20		3.20			3.20	3.20	
Initial Degree of Utilization, x	0.069	0.153		0.013	0.240		0.021			0.005	0.215	
Final Departure Headway, hd (s)	6.12	5.57		6.09	5.57		5.95			6.43	5.26	
Final Degree of Utilization, x	0.131	0.266		0.024	0.417		0.040			0.010	0.354	
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.0			2.3	2.3	
Service Time, ts (s)	3.82	3.27		3.79	3.27		3.95			4.13	2.96	
Capacity, Delay and Level	of Servic	e										
Flow Rate, v (veh/h)	77	172		14	270		24			5	242	
Capacity	588	646		591	646		605			560	685	
95% Queue Length, Q ₉₅ (veh)	0.5	1.1		0.1	2.1		0.1			0.0	1.6	
Control Delay (s/veh)	9.7	10.3		8.9	12.2		9.2			9.2	10.8	
Level of Service, LOS	A	В		A	В	de aprò	A			A	В	
Approach Delay (s/veh)		10.1			12.1			9.2			10.8	
Approach LOS		В			В			А	В			
Intersection Delay, s/veh LOS			1	1.0				В				

Generated: 2/10/2022 3:34:38 PM

General Information		Site Information	
Analyst	G Grigsby	Intersection	
Agency/Co.	Western R & D, Ltd.	Jurisdiction	
Date Performed	10/20/2021	East/West Street	East Pershing Blvd
Analysis Year	2045	North/South Street	Whitney Road
Time Analyzed	1.00	Peak Hour Factor	0.92
Anaylysis Time Period (hrs)	PM Peak - 1 Hour		
Project Description	New City Park		



Vehicle Volume and Adjustments

Approach		Eastbound			Westbound		N	lorthboun	d	9	outhbound	Ł	
Movement	L	Т	R	L	Т	R	L	Т	R	L	Т	R	
Volume	149	308	14	6	280	12	14	6	5	4	7	103	
% Thrus in Shared Lane													
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3	
Configuration	L	TR		L	TR		LTR			L	TR		
Flow Rate, v (veh/h)	162	350		7	317		27			4	120		
Percent Heavy Vehicles	2	2		2	2		2			2	2		
Departure Headway and S	Service Ti	ime											
Initial Departure Headway, hd (s)	3.20	3.20		3.20	3.20		3.20			3.20	3.20		
Initial Degree of Utilization, x	0.144	0.311		0.006	0.282		0.024			0.004	0.106		
Final Departure Headway, hd (s)	5.83	5.30		6.05	5.52		5.76			7.02	5.86		
Final Degree of Utilization, x	0.262	0.515		0.011	0.487		0.043			0.008	0.195		
Move-Up Time, m (s)	2.3	2.3		2.3	2.3		2.0			2.3	2.3		
Service Time, ts (s)	3.53	3.00		3.75	3.22		3.76			4.72	3.56		
Capacity, Delay and Level	of Servic	e							A				
Flow Rate, v (veh/h)	162	350		7	317		27			4	120		
Capacity	618	680		595	652		625			513	614		
95% Queue Length, Q₃₅ (veh)	1.1	3.1		0.0	2.8		0.1			0.0	0.7		
Control Delay (s/veh)	10.6	13.6		8.8	13.4		9.0			9.8	10.0		
Level of Service, LOS	В	В		A	В		A			A	А		
Approach Delay (s/veh)		12.6			13.3			9.0			10.0		
Approach LOS		В			В				А				
Intersection Delay, s/veh LOS			1	2.4						B			

									3				FSF.	1 11		
General Inform	nation	and the state of the state of the	ale and a						Inters	sectio	on Inf	ormatio	n		4.441	են
Agency		Western R&D, Ltd.					a a compare rate		Durat	tion, h	1	0.25			46	
Anlyst		G Grigsby		Analys	is Date	9/15/20	021		Area	Туре		Other		4		
diction				Time F	and the second se				PHF			0.92		1 P		4
Urban Street				Analys	is Year	2045			Analy	/sis P	eriod	1> 7:0	0	17 17		
Intersection		Whitney Rd @ East	t Per	File Na		-	ey - Eas	- A.				JS	-		+	ſ
Project Descrip	otion	2045 PM Peak	-									and the set		- 1	1444	* *
Demand Infor	motion				EB	1		W	2	1		NB	12.2		SB	
				L	T	R	L		-	R	L	T		1	T	F
Approach Mov	the second s			149	308		6	28	_	12		6	R 5	L	7	10
Demand (v), v	/en/n	CONTRACTOR OF	-	149	308	14	0	20	0	12	14	0	0	4	1 /	
Signal Informa	ation				. 2	1215			T					_		X
Cycle, s	93.0	Reference Phase	2		100	5/12	9						-	Q	1	47
Offset, s	0	Reference Point	End	Green	39.0	21.0	21.0	0.0		0.0	0.0	1	1	M 2	3	-
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow		3.0	3.0	0.0		0.0 0.0	0.0			2		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0		0.0	0.0		5	6	7	
Timer Results			2.7.10	EBL		EBT	WB		WB	T	NBI		NBT	SBI	1	SBT
Assigned Phas				COL	-	2	VVB	-	6	1	INDI	-	8	381	-	3B1
Assigned Phas Case Number	0C					6.0			6.0	-			8			4
				-		43.0			43.0				25.0			25.0
Phase Duration		10				4.0		-	43.0	-		-	4.0			4.0
Change Period	and the second se	the second							and so the second	-						
Max Allow Hea		and the second se				4.2			4.2				4.1			4.3
Queue Clearar	statement in succession of the					24.4		-	14.7	-			3.1		-	7.7
Green Extensio		(ge), s				2.9		-	3.3				0.0			0.3
e Call Pro Max Out Proba	Contraction of the local division of the loc		-			0.09		-	1.00	_		-	0.00	-		0.00
	ability				1	0.05			0.01				0.00	1		0.00
Movement Gr	Contract of the local division of the local	sults			EB			WB	-			NB			SB	
Approach Mov	and the second se			L	Т	R	L	Т	F	२	L	Т	R	L	Т	F
Assigned Move	ement			5	2	12	1	6	1	6	3	8	18	7	4	1
Adjusted Flow	the second s	- We will see a see a second s		162	350		7	317	-			27		4	120	
CONTRACTOR OF THE OWNER	Contract of Contract of Contract	ow Rate (s), veh/h/	n	1079	1885		1047	1886				1786		1810	1626	
Queue Service	and the second se	and the second se		11.5	12.3		0.4	. 10.9	-			1.1		0.2	5.7	
Contractive and the second second second second	the second se	e Time (g c), s		22.4	12.3		12.7	10.9	_			1.1		0.2	5.7	
Green Ratio (0.42	0.42		0.42	0.42	-			0.23		0.23	0.23	
Capacity (c),	veh/h			403	791		378	791				403		409	367	
Volume-to-Cap	oacity Ra	atio(X)		0.402	0.443		0.017	0.40	1			0.067		0.011	0.326	
the state of the s	Concept Statement and statements	/In (50 th percentile)		73	129.7		2.6	115.1	-			11.8		1.9	55.8	
Back of Queue	e (Q), v	eh/In (50 th percent	ile)	2.9	5.2		0.1	4.6				0.5		0.1	2.2	
Queue Storage	e Ratio (RQ) (50 th percen	tile)	0.00	0.00		0.00	0.00				0.00		0.00	0.00	
Uniform Delay	(d1), s	/veh		26.7	19.3		23.8	18.8				28.3		27.9	30.1	
Incremental De	elay (d a	2), s/veh		0.6	0.4		0.0	0.3				0.1		0.0	0.5	
Initial Queue D)elay (d	₃), s/veh		0.0	0.0		0.0	0.0				0.0		0.0	0.0	
Control Delay	(d), s/v	eh		27.3	19.6		23.8	19.2	2			28.4		27.9	30.6	
Level of Servic	Contraction of the local division of the loc	the state of the s		С	В		С	В				C		С	С	
Approach Dela	ay, s/veh	/LOS		22.1		С	19.3	3	В		28.4	4	С	30.5	5	С
Intersection De	elay, s/ve	eh / LOS				22	2.4		_				_	С		
		Angelen Bran		-	FR			1.4.15		-	-	NID		Part of	0.5	
Pedestrian LO		11.00			EB	-		WB	-	_		NB	P	-	SB	-
Hodoctrion I O	S Score	1105		2.1		В	2.3		В		2.3	1	В	2.3		В

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HCS 2010 Signalized Intersection Results Summary

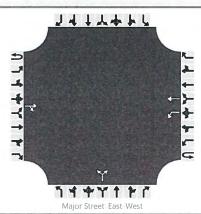
1.1.1	12-12-	HC3 20		gnan								27 5		11 100	
General Inform	nation		1				and and		Interse	ction l	nformati	on	2	4741	ել
Agency		Western R&D, Ltd.		5 W					Duratio	No. of Concession, Name	0.25			44	
Amlyst		G Grigsby		Analys	is Date	9/15/2	021		Area Ty		Othe	r	4		
diction		c engesy		Time F	Carlos Landon and Carlos and Carl				PHF	po	0.92				4
Urban Street					and the second second	2045			Analysi	s Perio		00	4 4 4 4 1 4 1 7		
Intersection		Whitney Rd @ East	Per	File Na		-	ey - Eas	and the owner where the owner where	Conception of the local division of the loca	and the second second	in the second	00			
Project Descrip	tion	2045 AM Peak		110140					ning 20		AU0		-	Ψ 14 14 91	7 4
T Toject Descrip	lion	2045 AM 1 Cak		111				Ne - Ne - Ne - Ne				1.1.1			
Demand Inform	nation				EB		1	WE	3		NB			SB	
Approach Move	ement			L	T	R	L	Т	R	L	T	R	L	T	F
Demand (v), v	eh/h			71	148	10	13	243	3 5	9	7	6	5	8	2
0:				1	1 -	1 100		1					1		
Signal Informa		D.f.	0	1	1.2 3							5 11			人
Cycle, s	93.0	Reference Phase	2	-	R.	Sti	73					1		3	
Offset, s	0	Reference Point	End	Green		21.0	21.0	0.0	0.0				A		
Uncoordinated	Yes	Simult. Gap E/W	On	Yellow	And the second se	3.0	3.0	0.0	0.0				Y		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0) 0.	0	5	6	7	-
Timer Results			-	EBL		EBT	WB		WBT	N	BL	NBT	SBI		SBT
Assigned Phas	e					2		-	6			8		-	4
Case Number						6.0			6.0	-		12.0			10.0
Phase Duration	I. S					43.0	-	43.0		1		25.0	1		25.0
Change Period	in the second	c). S				4.0	-		4.0			4.0			4.0
Max Allow Hea	Contract of the local division of					4.1			4.1	-		4.2			4.4
Queue Clearan	And in case of the local division of the loc					15.6			11.0	-		3.0			14.7
Green Extensio	Non-seal of the seal of the se	and the second				1.9			2.0	-		0.0			0.5
e Call Pro	and the second se	(J-7)-				1.00			1.00	1		1.00	1		1.00
Max Out Proba	No. of Concession, Name	North an an				0.00			0.00			0.00			0.32
	-	14-	1	-	ED		-	14.00		-	LID		-		- and
Movement Gro	Contraction of the local division of the loc	SUITS		L	EB T	R	L	WB T	R	L	NB T	R	L	SB T	F
Approach Move Assigned Move					2	R 12			16		8	18	7		-
the second s) uph/h		5	the second s	12	1	6	10	3		18		4	1
Adjusted Flow	and the second se	The second se		77	172		14	270			24		5	242	-
A DESCRIPTION OF THE REAL PROPERTY OF	Contraction of the local division of the	w Rate (s), veh/h/l	in	1127	1879		1232	1893			1776		1810	1619	-
Queue Service	When the same statement	And a supplicity of the second s		4.6	5.4		0.7	9.0			1.0		0.2	12.7	-
and a second	And in case of the local diversion of the local diversion of the local diversion of the local diversion of the	e Time (<i>g c</i>), s		13.6	5.4		6.1	9.0		-	1.0		0.2	12.7	-
Green Ratio (g	Statement and			0.42	0.42		0.42	0.42			0.23		0.23	0.23	-
Capacity (c), v Volume-to-Cap		atio (X)		441 0.175	788 0.218		522 0.027	794 0.340	-		401	-	409 0.013	366 0.663	-
A DECEMBER OF A		(In (50 th percentile)		Service Process			NOVEMBER OF STREET	94.8	CALCULATION OF TAXABLE	-	10.4		of passion of the second	131.6	-
the second s	the subscription of the local division of the local division of the local division of the local division of the	eh/in (50 th percentile)	the state of the local division in which the	30.4 1.2	56.9 2.3		4.9 0.2	94.8 3.8		-	0.4	-	2.3 0.1	5.3	-
The second se	· · · · · · · · · · · · · · · · · · ·	RQ) (50 th percent	-	0.00	0.00		0.2	0.00			0.4		0.00	0.00	-
Uniform Delay	our section of the se	and the second se	aic)	22.9	17.3		19.2	18.3	-	-	28.3		28.0	32.8	-
Incremental De	Contraction of the local division of the loc	the second se		0.2	0.1		0.0	0.3		-	0.1	-	0.0	4.4	-
Initial Queue D	and the second second	and the second se		0.0	0.0		0.0	0.0		-	0.0		0.0	0.0	
Control Delay (NAME AND ADDRESS OF TAXABLE PARTY.	and the second se		23.1	17.4		19.2	18.5		-	28.3		28.0	37.2	
Level of Servic	www.www.www.www.www.	Warners MWW.co.e. MWW.co.e. CAMPACITY and CAMPACITY CO.E. CAMPACIT	Alla Analas	C	В		B	В			C	1	C	D	1
Approach Dela	ARCHITECTURE OF THE OWNER OWNER OF THE OWNER OWNE	THE OWNER CONTROL OF A DESCRIPTION OF A		19.2	Constitute of providence of	В	18.6	In case of the local division of the local d	В	21	3.3	С	37.0		D
Intersection De	the second s	A REAL PROPERTY AND A REAL		10.2			4.7						C		-
						E Bak									
Maitimodal Re	sults				EB			WB			NB			SB	
Pedestrian LOS	S Score	/LOS		2.1		В	2.3		В	2	.3	В	2.3		В
1 odootnan Eot				0.9		А	1.0	COLUMN TWO IS NOT	A		.5	А	0.9	and the second se	А

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General Information		Site Information						
Analyst	G Grigsby	Intersection	Tate @ E. Pershing					
icy/Co.	Western R&D, Ltd	Jurisdiction						
Date Performed	9/10/2021	East/West Street	E. Pershing					
Analysis Year	2021	North/South Street	Tate Rd					
Time Analyzed	PM Peak	Peak Hour Factor	0.92					
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00					
Project Description	East Pershing Blvd Plan							



Vehicle Volumes and Adjustments

Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	Т	R
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	0		0	0	0
Configuration				TR		L	Т				LR					
Volume, V (veh/h)			154	5		0	153			6		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)											0					A
Right Turn Channelized		No No							No				No			
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys			-											
Base Critical Headway (sec)																
Critical Headway (sec)												-				
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	•	-December 1											
Flow Rate, v (veh/h)						0					7					
Capacity, c (veh/h)						1397		1			657					
v/c Ratio						0.00					0.01					
95% Queue Length, Q ₉₅ (veh)		-				0.0		1			0.0					
trol Delay (s/veh)						7.6					10.5					
Level of Service, LOS						A					В					
Approach Delay (s/veh)					0	.0		10.5								
Approach LOS											В					

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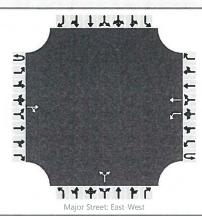
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General Information							Site	nfor	natio	n						
Analyst	G Grig	sby					Inters	ection			Tate @	D E. Pers	shina			
ncy/Co.		ern R&D	. Ltd				Jurisd					- NA				
Date Performed	9/10/							Vest Str	et		E. Per	shina				
Analysis Year	2045							/South		-	Tate R					
Time Analyzed	PM Pe	eak						Hour Fac			0.92				and the second	
Intersection Orientation	East-V	Vest					Analy	sis Time	Period (hrs)	1.00					
Project Description			Blvd Pla	n							-			Maria and a factor		
Lanes															and in the survey of	
				J 4 1 1 4 4 4 4 4		Y.		K.								
Vehicle Volumes and A	djustme	nts		2 4 1 4 4		Y + Y Street: Ea	t t č	K.								
Vehicle Volumes and A Approach	djustme		pound	2 4 1 4 7 2		र् भ भ		K.		Northl	bound			Southl	bound	
	.djustme			R		र् भ भ	ast-West	K.		North	bound	R	U	South	oound T	F
Approach		Eastb	oound		Major	Street: Ea	bound		•			R 9	U			-
Approach Movement	U	Eastb	oound T	R	Major U	Street: Ea	bound T	R	•	L	Т		U	L	Т	1
Approach Movement rity	U 1U	Eastb L 1	round T 2	R 3	Major U 4U	Street: Ea West	bound T 5	R 6	•	L 7	Т 8	9	U	L 10	T 11	1
Approach Movement rity Number of Lanes	U 1U	Eastb L 1	round T 2	R 3 0	Major U 4U	Street Ea West L 4	bound T 5 1	R 6	•	L 7	T 8 0	9	U	L 10	T 11	1.
Approach Movement rity Number of Lanes Configuration	U 1U	Eastb L 1	oound T 2 1	R 3 0 TR	Major U 4U	West L 4 1 L	bound T 5 1 T	R 6	•	L 7 0	T 8 0	9	U	L 10	T 11	F 1. (
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h)	U 1U	Eastb L 1	oound T 2 1	R 3 0 TR	Major U 4U	West U 4 1 L 0	bound T 5 1 T	R 6	•	L 7 0 13	T 8 0	9 0 0	U	L 10	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	U 1U	Eastb L 1	oound T 2 1	R 3 0 TR	Major U 4U	West U 4 1 L 0	bound T 5 1 T	R 6	•	L 7 0 13 3	T 8 0	9 0 0		L 10	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	U 1U	Eastb L 1 0	oound T 2 1	R 3 0 TR	Major U 4U	Vest U 4 1 0 3	bound T 5 1 T	R 6	•	L 7 0 13 3	T 8 0 LR	9 0 0		L 10	T 11 0	1
Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	U 1U	Eastb L 1 0	oound T 2 1 289	R 3 0 TR 11	Major U 4U	Vest U 4 1 0 3	00000000 T 5 1 7 2899	R 6	•	L 7 0 13 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		Eastb L 1 0	oound T 2 1 289	R 3 0 TR 11	U 4U 0	Vest U 4 1 0 3	00000000 T 5 1 7 2899	R 6	•	L 7 0 13 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized		Eastb L 1 0	oound T 2 1 289	R 3 0 TR 11	U 4U 0	Vest U 4 1 0 3	00000000 T 5 1 7 2899	R 6	•	L 7 0 13 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1

Chucal Headway (Sec)							1		 and the second		
Base Follow-Up Headway (sec)											
Follow-Up Headway (sec)											
Delay, Queue Length, and Leve	el of Se	rvice									
Flow Rate, v (veh/h)			0					14			
Capacity, c (veh/h)			1227					441			
v/c Ratio			0.00					0.03			
95% Queue Length, Q ₉₅ (veh)			0.0					0.1			
trol Delay (s/veh)			7.9					13.4			
Level of Service, LOS			A					В			
Approach Delay (s/veh)			C	0.0	-		1.	3.4			
Approach LOS								В			

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General Information		Site Information							
nalyst G Grigsby		Intersection	Tate @ E. Pershing						
רבאר ארע ארע ארע ארע ארע ארע ארע ארע ארע א	Western R&D, Ltd	Jurisdiction							
Date Performed	9/10/2021	East/West Street	E. Pershing						
Analysis Year	2021	North/South Street	Tate Rd						
Time Analyzed	AM Peak	Peak Hour Factor	0.92						
ntersection Orientation East-West		Analysis Time Period (hrs) 1.00							
Project Description	East Pershing Blvd Plan								



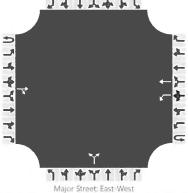
Vehicle Volumes and Adjustments

Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
lity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	0		0	0	0
Configuration				TR		L	Т				LR					
Volume, V (veh/h)			87	1		0	144			4		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)	1	No					Louis and the second second				0					
Right Turn Channelized		No					No				No				lo	
Median Type/Storage	1			Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	9												
Flow Rate, v (veh/h)						0					4					
Capacity, c (veh/h)						1490					734					
v/c Ratio						0.00					0.01					
95% Queue Length, Q ₉₅ (veh)						0.0					0.0					
trol Delay (s/veh)						7.4					9.9					
Bevel of Service, LOS						A		1.11			A					
Approach Delay (s/veh)						0	.0		9.9							
Approach LOS											A					***

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HCS 2010 TWSC Version 6.90 Tate-E.Pershing 2021 AM.xtw

HCS 2010 Two-Way Stop-Control Report **General Information Site Information** Intersection Analyst G Grigsby Tate @ E. Pershing Western R&D, Ltd ncy/Co. Jurisdiction **Date Performed** 9/10/2021 East/West Street E. Pershing 2045 Analysis Year North/South Street Tate Rd Time Analyzed AM Peak Peak Hour Factor 0.92 Intersection Orientation East-West Analysis Time Period (hrs) 1.00 **Project Description** East Pershing Blvd Plan Lanes 14+4+1



Vehicle Volumes and Adjustments

Approach		Eastb	bound			West	oound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	Т	R
rity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	1	1	0		0	0	0		0	0	0
Configuration				TR		L	Т				LR					
Volume, V (veh/h)			164	2		0	272			9		0				
Percent Heavy Vehicles (%)						3				3		3				
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized		١	10	No No								No				
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	•												
Flow Rate, v (veh/h)						0					10					
Capacity, c (veh/h)						1388					546					
v/c Ratio						0.00					0.02					
95% Queue Length, Q ₉₅ (veh)						0.0					0.1					
trol Delay (s/veh)						7.6					11.7		1			
Level of Service, LOS					A					В						
Approach Delay (s/veh)						C	0.0			1	1.7					
Approach LOS											В					

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HCS 2010 TWSC Version 6.90 Tate-E.Pershing 2045 AM.xtw

	HCS 2010 Two	-Way Stop-Control Rep	port
General Informatio	n	Site Information	the second second second second
Analyst	G Grigsby	Intersection	Fireside @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year 2021		North/South Street	Fireside Rd
Time Analyzed	PM Peak	Peak Hour Factor	0.92

Analysis Time Period (hrs)

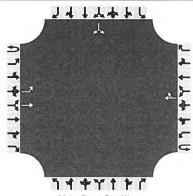
1.00

Intersection Orientation Project Description

East-West

East Pershing Blvd Plan

Lanes



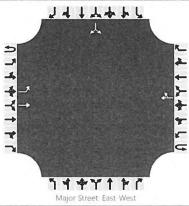
Major Street: East West

Movement U L T R U D D D D D<	U	L 10 0 1 3	T 11 0 LR	0	
Number of Lanes 0 1 0 0 0 1 0 0 1 0 0 1 0		0	0	12 0 12	
Configuration L T M M TR M		1			
Volume, V (veh/h) 21 136 141 1 <th< td=""><td></td><td>-</td><td>LR</td><td>12</td></th<>		-	LR	12	
Percent Heavy Vehicles (%) 3 A A A A A A Proportion Time Blocked A A A A A A A A		-		12	
Proportion Time Blocked		3	1		
		-		3	
Descent Can de (0/)	T				
Percent Grade (%)			0		
Right Turn Channelized No No No		٢	No		
Median Type/Storage Undivided					
Critical and Follow-up Headways					
Base Critical Headway (sec)					
Critical Headway (sec)					
Base Follow-Up Headway (sec)		1			
Follow-Up Headway (sec)					
Delay, Queue Length, and Level of Service					
Flow Rate, v (veh/h) 23			14		
Capacity, c (veh/h) 1419 1419			864		
v/c Ratio 0.02 0.02			0.02		
95% Queue Length, Q ₉₅ (veh) 0.0			0.0		
trol Delay (s/veh) 7.6			9.2		
Level of Service, LOS A	-		A		
Approach Delay (s/veh) 1.0	9.2				
Approach LOS			A		

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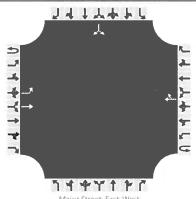
HCS 2010 TWSC Version 6.90 Fireside-E.Pershing 2021 PM.xtw Generated: 9/13/2021 4:36:40 PM

	HCS 2010 Two	-Way Stop-Control Repor	t				
General Information		Site Information					
Analyst	G Grigsby	Intersection	Fireside @ E. Pershing				
cy/Co.	Western R&D, Ltd	Jurisdiction					
Date Performed	9/13/2021	East/West Street	E. Pershing				
Analysis Year	2045	North/South Street	Fireside Rd				
Time Analyzed	PM Peak	Peak Hour Factor	0.92				
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00				
Project Description	East Pershing Blvd Plan						



Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Crity	10	1	2	3	4U 4 5 6				7	8	9		10	, 11	12	
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		24	273				268	0						0		13
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)							-0							Brown and the second	0	harrison and the
Right Turn Channelized		N	lo	-		ſ	No			N	lo			N	ło	
Median Type/Storage				Undi	ivided										a bà ng	
Critical and Follow-up H	eadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	d Leve	l of S	ervice	9												
Flow Rate, v (veh/h)		26					1								14	
Capacity, c (veh/h)		1264								1					745	
v/c Ratio		0.02					1								0.02	
95% Queue Length, Q ₉₅ (veh)		0.1													0.1	
+rol Delay (s/veh)		7.9													9.9	
Level of Service, LOS		А													A	
Approach Delay (s/veh)		0	.6	ter.										9	.9	
Approach LOS					1										A	

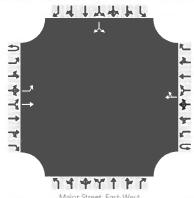
	1103 2010 1100	-Way Stop-Control Repo	
General Information		Site Information	
Analyst	G Grigsby	Intersection	Fireside @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Fireside Rd
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



Major Street: East-West

Vehicle Volumes and Ad	justme	Istments														
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	T	R
rity	10	1	2	3	4U 4 5 6				7	8	9		10	11	12	
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		6	82				125	0						2		20
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														demonstration	0	
Right Turn Channelized		N	ю			1	No			1	10			Ν	No	
Median Type/Storage	1			Undi	ivided											
Critical and Follow-up H	leadwa	ys							A							
Base Critical Headway (sec)												1				
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	nd Leve	l of S	ervice	e												
Flow Rate, v (veh/h)		7													24	[
Capacity, c (veh/h)		1440													893	
v/c Ratio		0.00													0.03	
95% Queue Length, Q ₉₅ (veh)		0.0													0.1	
trol Delay (s/veh)		7.5								1	1				9.1	
evel of Service, LOS		A									-				A	
Approach Delay (s/veh)		0	.5							Announcer				ç	9.1	
Approach LOS															A	

General Information		Site Information					
Analyst	G Grigsby	Intersection	Fireside @ E. Pershing				
ncy/Co.	Western R&D, Ltd	Jurisdiction					
Date Performed	9/13/2021	East/West Street	E. Pershing				
Analysis Year	2045	North/South Street	Fireside Rd				
Time Analyzed	AM Peak	Peak Hour Factor	0.92				
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00				
Project Description	East Pershing Blvd Plan						



Major Street: East-West

Vehicle Volume	es and	l Adjustmen	its
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Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	T	R
Jrity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		LT						TR							LR	
Volume, V (veh/h)		7	160				236	0		-				1		22
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)															0	-
Right Turn Channelized		N	ю			٦	No			N	10			N	lo	
Median Type/Storage				Undi	ivided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	•												
Flow Rate, v (veh/h)		8													25	
Capacity, c (veh/h)		1301	1.0					-		_					767	
v/c Ratio		0.01													0.03	
95% Queue Length, Q ₉₅ (veh)		0.0						-							0.1	
ntrol Delay (s/veh)		7.8													9.9	
Level of Service, LOS		А													A	
Approach Delay (s/veh)	0.3													9).9	
Approach LOS		0.5													A	

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HCS 2010 TWSC Version 6.90 Fireside-E.Pershing 2045 AM.xtw

General Information		1.5			secold the ministration		Sito	Inform	natio	n						
	Leci			-			-	the star bins	liatio				5.0.1		in the second	-
Analyst	G Grig		1.1.1				-	ection			Foste	r Ave @	E. Persh	ing		
ncy/Co.		rn R&D	, Lta	ne l'ante e s			Jurisd				E Day	ala in a				
Date Performed	9/13/2	2021						West Stre			E. Per					
Analysis Year	2021 PM Pe	alı	- this section and					/South S		and a second second second	0.92	r Avenu	e		10000	
Time Analyzed Intersection Orientation	East-V							sis Time		(hrs)	1.00					
Project Description			Blvd Pla	n			Analy	sis nine	Period	(IIIS)	1.00					
Lanes	Lastr	ersning	DIVU FIA													
				<mark>2 4 1 4 4 5 5 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2</mark>		T Street Ea										
Vehicle Volumes and Ad	ljustme	-			T			- an and a								
Approach	_		ound			Westb					bound			T	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	T	R
rity	10	1	2	3	4U 0	4	5	6		7	8	9		10	11	
	0	1	1	0			4	0		0	4			0	4	-
Number of Lanes		-			0	1	1			0	1	0		0	1	-
Configuration		L	100	TR	0	L		TR			LTR				LTR	0
Configuration Volume, V (veh/h)		27	106			L O	1			0	LTR 1	2		5	LTR 0	0
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)			106	TR		L		TR			LTR				LTR	0
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked		27	106	TR		L O		TR		0	LTR 1 3	2		53	LTR O 3	2:
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)		27 3		TR		L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	12 0 2! 3
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized		27 3	106 106	TR 3		L O	120	TR		0 3	LTR 1 3	2		53	LTR O 3	0
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		27 3		TR 3	vided	L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	2:
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H	leadwa	27 3		TR 3		L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	0 2!
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)	leadwa	27 3		TR 3		L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	0 2!
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)	leadwa	27 3		TR 3		L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	0 2!
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	leadwa	27 3		TR 3		L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	2:
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		27 3 N ys		TR 3 Undi		L 0 3	120	TR		0 3	LTR 1 3	2		53	LTR 0 3	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		27 3 ys		TR 3 Undi		L 0 3 N	120	TR		0 3	LTR 1 3 0 10 10 10 10 10 10 10 10 10 10 10 10 1	2		53	LTR 0 3 0 No	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		27 3 ys		TR 3 Undi		L 0 3 N	120	TR		0 3	LTR 1 3 0 10 10 10 10 10 10 10 10 10	2		53	LTR 0 3 0 V0 V0 V0 V0 V0 V0 V0 V0 V0 V0 V0 V0 V	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		27 3 ys		TR 3 Undi		L 0 3 N	120	TR		0 3	LTR 1 3 0 10 10 10 10 10 10 10 10 10	2		53	LTR 0 3 0 No 3 2 32 849	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		27 3 N ys I of S 29 1433 0.02		TR 3 Undi		L 0 3 N 0 1462 0.00	120	TR		0 3	LTR 1 3 0 10 10 10 10 10 10 10 10 10	2		53	LTR 0 3 0 	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, au Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		27 3 ys l of S 29 1433 0.02 0.1		TR 3 Undi		L 0 3 N 0 1462 0.00 0.0	120	TR		0 3	LTR 1 3 0 10 10 10 10 10 10 10 10 10	2		53	LTR 0 3 0 NO NO NO NO NO NO NO NO NO NO NO NO NO	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, au Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		27 3 N ys ! of S 29 1433 0.02 0.1 7.6		TR 3 Undi		L 0 3 N 0 1462 0.00 0.0 7.5	120	TR		0 3	LTR 1 3 	2		53	LTR 0 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2
Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, au Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q₅5 (veh)		27 3 ys l of S 29 1433 0.02 0.1 7.6 A		TR 3 Undi		L 0 3 N 0 1462 0.00 0.0 7.5 A	120	TR			LTR 1 3 0 10 10 10 10 10 10 10 10 10	2			LTR 0 3 0 NO NO NO NO NO NO NO NO NO NO NO NO NO	2

Approach LOS

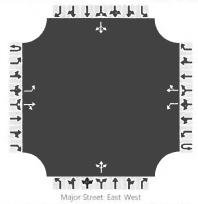
HCS 2010 TWSC Version 6.90 Foster-E.Pershing 2021 PM.xtw Α

Analyst G Grigsby Intersection Foster Ave @ E, Pershing orycCo. Western R&D, Ld Jurisdiction Eart/West Street E Pershing U Date Performed 9/13/2021 Eart/West Street E Pershing U	General Information							Site	Infor	natio	n						-
iny/Co. Western R&D, Ltd Jurisdiction East/West Street E. Pershing Analysis Year 2045 North/South Street E. Pershing Image: Street E. Pershing Time Analysis Year 2045 North/South Street E. Pershing Image: Street E. Pershing Time Analysis Year 2045 Analysis Time Period (hrs) 1.0 Image: Street <		C Cris	achu		-			-		natio		Easta	- Aug @	E Dorchi	ina		
Date Performed 9/13/2021 East/West Street E. Pershing Analysis Yaar 2045 North/South Street Foster Avenue Image: Street Avenue Image:) 1td								FUSIE	Ave @	E. Persii	ing		
Analysis Year 2045 North/South Street Foster Arenue Time Analyzed PM Peak Paek Hour Factor 0.92 Intersection Orientation East-West Analysis Time Period (hrs) 1.00 Project Description East-West Analysis Time Period (hrs) 1.00 Analysis Year 0.92 Intersection Orientation East-West Analysis Time Period (hrs) 1.00 Intersection Orientation East-West Intersection Orientation East-West Intersection Orientation Intersection Orientation East-West Intersection Orientation In				ν, εια			_	-	-			E Dor	ching				
Time Analyzed PM Peak Peak Hour Factor 0.92 Intersection Orientation East-West Analysis Time Period (hrs) 1.00 Project Description East Pershing Blvd Plan 1.00 Cancel Struct Period (hrs) 1.00 USAN Struct Period (hrs) 1.00 Struct Period (hrs) S	and the second	-	2021					harris	10-100 · · · · ·				-				
Intersection Orientation East-West Analysis Time Period (hrs) 1.00 Project Description East Pershing Bird Plan	where we are an a second provide the second s							-	-				r Avenu	e			
Project Description East Pershing Blvd Plan Annes Annes Annes Annes Annes Annes Annes Annes Approach Restbound Northbound Southbound Mayerment U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R U L T R <																	
Interstep interster int		-	1.1.1			description and		Analy	sis Time	Period	(hrs)	1.00					
Image: Selection of Selecti		East P	ershing	Blvd Pla	n												
Approach North-Ourd South-Ourd Myrement North-Ourd South-Ourd Myrement U L T R U L R U L R	anes																
Movement U L T R U L <										*							
ity 1U 1 2 3 4U 4 5 6 7 8 9 10 11 1 Number of Lanes 0 1 1 0 0 1 1 0 0 0 1 0 0 0 1 0 0 1 0 0 0 1 0 0 0 1 0 0 0 1 <td< th=""><th>/ehicle Volumes and Ad</th><th>ljustme</th><th>nts</th><th></th><th></th><th></th><th>ΨŸ</th><th></th><th></th><th>•</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	/ehicle Volumes and Ad	ljustme	nts				ΨŸ			•							
Number of Lanes011001100101010101010101011011011011011011011011011011011011011011011011011101110111011110111111111	interesting to a statement of	ljustme					Street: Ea	ast West			North	bound			South	bound	
ConfigurationLILITRILITRITTR<	Approach		Eastb	oound		Major	Street: Ea	bound				1	R	U	-		R
Volume, V (veh/h) 37 243 7 0 272 5 0 1 5 2 0 3 Percent Heavy Vehicles (%) 3	Approach Movement	U	Eastb	pound T	R	Major U	Street: Ea West	bound	R		L	Т		U	L	Т	R 12
Percent Heavy Vehicles (%)33 <td>Approach Movement ity</td> <td>U 1U</td> <td>Eastb L 1</td> <td>T 2</td> <td>R 3</td> <td>Major U 4U</td> <td>Vest</td> <td>bound T 5</td> <td>R 6</td> <td></td> <td>L 7</td> <td>T 8</td> <td>9</td> <td>U</td> <td>L 10</td> <td>T 11</td> <td></td>	Approach Movement ity	U 1U	Eastb L 1	T 2	R 3	Major U 4U	Vest	bound T 5	R 6		L 7	T 8	9	U	L 10	T 11	
Proportion Time Blocked Image: Section of the sect	Approach Movement ity Number of Lanes	U 1U	Eastb L 1	T 2	R 3 0	Major U 4U	West L 1	bound T 5	R 6 0		L 7	T 8 1	9	U	L 10	T 11 1	12
Percent Grade (%) O O Right Turn Channelized No No No Median Type/Storage Undivided O No No Critical and Follow-up Headway (sec) O No No No No Base Critical Headway (sec) O O No No No No No Base Follow-Up Headway (sec) O O No	Approach Movement rity Number of Lanes Configuration	U 1U	Eastb L 1 1 L	Dound T 2 1	R 3 0 TR	Major U 4U	Vest L 4 1 L	bound T 5 1	R 6 0 TR		L 7 0	T 8 1 LTR	9 0	U	L 10 0	T 11 1 LTR	12
Right Turn Channelized No No Median Type/Storage Undivided Undivided Individed Indit Individed Individed <t< td=""><td>Approach Movement ity Number of Lanes Configuration Volume, V (veh/h)</td><td>U 1U</td><td>Eastb L 1 L L 37</td><td>Dound T 2 1</td><td>R 3 0 TR</td><td>Major U 4U</td><td>Vest L L L L L O</td><td>bound T 5 1</td><td>R 6 0 TR</td><td></td><td>L 7 0</td><td>T 8 1 LTR 1</td><td>9 0 5</td><td>U</td><td>L 10 0 2</td><td>T 11 1 LTR 0</td><td>12</td></t<>	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h)	U 1U	Eastb L 1 L L 37	Dound T 2 1	R 3 0 TR	Major U 4U	Vest L L L L L O	bound T 5 1	R 6 0 TR		L 7 0	T 8 1 LTR 1	9 0 5	U	L 10 0 2	T 11 1 LTR 0	12
Median Type/Storage Undivided Critical and Follow-up Headway (sec) Image: Critical Headway (sec)	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	U 1U	Eastb L 1 L L 37	Dound T 2 1	R 3 0 TR	Major U 4U	Vest L L L L L O	bound T 5 1	R 6 0 TR		L 7 0	T 8 1 LTR 1	9 0 5	U	L 10 0 2	T 11 1 LTR 0	12 0 30
Critical and Follow-up Headways Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	U 1U	Eastb L 1 L L 37	Dound T 2 1	R 3 0 TR	Major U 4U	Vest L L L L L O	bound T 5 1	R 6 0 TR		L 7 0 0 3	T 8 1 LTR 1 3	9 0 5	U	L 10 0 2 3	T 11 1 LTR 0 3	12 0 30
Base Critical Headway (sec) Image: Critical Headway (sec)	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	U 1U	Easth L 1 L 37 3	T 2 1 243	R 3 0 TR	Major U 4U	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	12 0 30
Critical Headway (sec) Image: Critical Headway (sec) <	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	U 1U	Easth L 1 L 37 3	T 2 1 243	R 3 0 TR 7	U 4U 0	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	12 0 30
Base Follow-Up Headway (sec)	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		Eastb L 1 1 L 37 3 N	T 2 1 243	R 3 0 TR 7	U 4U 0	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	12 0 30
Base Follow-Up Headway (sec)	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H		Eastb L 1 1 L 37 3 N	T 2 1 243	R 3 0 TR 7	U 4U 0	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	12 0 30
	Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)		Eastb L 1 1 L 37 3 N	T 2 1 243	R 3 0 TR 7	U 4U 0	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	12 0 30
	Approach Movement Tity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)		Eastb L 1 1 L 37 3 N	T 2 1 243	R 3 0 TR 7	U 4U 0	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	1; C
	Approach Movement Tity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)		Eastb L 1 1 L 37 3 N ys	Dound T 2 1 243	R 3 0 TR 7	U 4U 0	Vest L L L C C C C C C C C C C C C C C C C	bound T 5 1 272	R 6 0 TR		L 7 0 3	T 8 1 LTR 1 3 0	9 0 5		L 10 0 2 3	T 11 1 LTR 0 3	1 (

Flow Rate, v (veh/h)	40	0	6	35
Capacity, c (veh/h)	1253	1284	654	699
v/c Ratio	0.03	0.00	0.01	0.05
95% Queue Length, Q ₉₅ (veh)	0.1	0.0	0.0	0.2
trol Delay (s/veh)	8.0	7.8	10.6	10.4
tevel of Service, LOS	A	A	В	В
Approach Delay (s/veh)	1.0	0.0	10.6	10.4
Approach LOS			В	В

HCS 2010 TWSC Version 6.90 Foster-E.Pershing 2045 PM.xtw

HCS 2010 Two-Way Stop-Control Report **General Information Site Information** G Grigsby Intersection Analyst Foster Ave @ E. Pershing cy/Co. Western R&D, Ltd Jurisdiction Date Performed 9/13/2021 East/West Street E. Pershing Analysis Year 2021 Foster Avenue North/South Street Time Analyzed AM Peak 0.92 Peak Hour Factor Intersection Orientation East-West Analysis Time Period (hrs) 1.00 **Project Description** East Pershing Blvd Plan Lanes



Eastbound Westbound Approach Northbound Southbound U Т R U L Т Т R Movement. L R U L U L 4U rity 1U 1 2 3 4 5 6 7 8 9 10 Number of Lanes 0 1 0 0 0 0 0 1 1 1 0 1 TR Configuration L L, TR LTR 9 0 2 Volume, V (veh/h) 72 0 84 0 1 1 11 Percent Heavy Vehicles (%) 3 3 3 3 3 3 **Proportion Time Blocked** Percent Grade (%) 0 **Right Turn Channelized** No No No Median Type/Storage Undivided **Critical and Follow-up Headways** Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) **Delay, Queue Length, and Level of Service** 10 0 2 1493 1512 814

Flow Rate, v (veh/h) 54 Capacity, c (veh/h) 902 0.01 0.00 0.00 0.06 v/c Ratio 0.0 0.0 0.0 0.2 95% Queue Length, Q95 (veh) trol Delay (s/veh) 7.4 7.4 9.4 9.2 Level of Service, LOS А А А А Approach Delay (s/veh) 0.8 0.0 9.4 9.2 Approach LOS А A

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Vehicle Volumes and Adjustments

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Т

11

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LTR

1

3

0

No

R

12

0

38

3

General Information		Site Information	Site Information						
Analyst	G Grigsby	Intersection	Foster Ave @ E. Pershing						
псу/Со.	Western R&D, Ltd	Jurisdiction							
Date Performed	9/13/2021	East/West Street	E. Pershing						
Analysis Year	2045	North/South Street	Foster Avenue						
Time Analyzed	AM Peak	Peak Hour Factor	0.92						
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00						
Project Description	East Pershing Blvd Plan								
Lanes									
		<u>↓ ↓ ↓ ↓ ↓ ↓</u> 							

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Major Street: East-West

Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume, V (veh/h)		10	161	0		0	181	1		0	1	3		4	2	47
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked															1	
Percent Grade (%)											0				0	
Right Turn Channelized		N	lo			N	10			٢	lo			١	No	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)			[
Critical Headway (sec)																
Base Follow-Up Headway (sec)											1					
Follow-Up Headway (sec)																
Delay, Queue Length, an	nd Leve	l of S	ervice	9	See a guilte and the se	- Andrew and a second	Approximation to serve					And a second state		Are an and a second second second		
Flow Rate, v (veh/h)		11				0					4				57	
Capacity, c (veh/h)		1367				1394				-	750				796	
v/c Ratio		0.01				0.00					0.01				0.07	
95% Queue Length, Q ₉₅ (veh)		0.0				0.0					0.0				0.2	
trol Delay (s/veh)		7.7				7.6					9.8				9.9	
Level of Service, LOS		A				A					A				A	
Approach Delay (s/veh)		C	.5	Republic		0	.0	By good of a local day		9	9.8			ç	9.9	
Approach LOS		S(610									A				A	

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General Information			Conception and the				Sito	Infor	natio	n			and the second second			
	G Grig				-		-	ection	natio		Liuian		D C Dow	abin a		
Analyst		ern R&E) Itd				-	liction			Huish	nan Rd (WE. Per	sning		
Performed	9/13/2	-	, Ltu					West Str	eet		E. Per	shina				-
Analysis Year	2021	2021						/South				nan Roa	d			
Time Analyzed	PM Pe	ak						Hour Fa			0.92	num ricu				-
Intersection Orientation	East-V							sis Time	-	(hrs)	1.00					
Project Description	East P	ershing	Blvd Pla	n												
Lanes				And the second			inen lier er				a tonia mate dang			teres and the	-	-
				J 4 4 4 4 5 1		۲ • • • • •										
Vehicle Volumes and Ad	ljustme				Мајо	r Street. Ea										
Approach		East	oound			Westb	bound			North	bound			South	bound	
Approach			1					-		1	T		1		1	1
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	
Movement	1U	1	2	3	4U	4	5	6	U	7	8	9	U	10	11	12
Movement ity Number of Lanes		1000	-	3 0		4	5 1		U	-	8		U			12
Movement ity Number of Lanes Configuration	1U	1	2	3 0 TR	4U	4 1 L	5 1 T	6	U	7	8	9	U	10	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h)	1U	1	2	3 0	4U	4 1 L 0	5 1	6	U	7 0 5	8	9 0 1	U	10	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	1U	1	2	3 0 TR	4U	4 1 L	5 1 T	6	U	7	8	9	U	10	11	R 12 0
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	1U	1	2	3 0 TR	4U	4 1 L 0	5 1 T	6		7 0 5 3	8 0 LR	9 0 1		10	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	1U	1	2	3 0 TR	4U	4 1 L 0	5 1 T 130	6		7 0 5 3	8	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	1U	1	2 1 1 112	3 0 TR 0	4U	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		1 0	2 1 1 112	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		1 0	2 1 1 112	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H		1 0	2 1 1 112	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)		1 0	2 1 1 112	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)		1 0	2 1 1 112	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	1.
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	1.
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 L 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0	9 0 1		10 0	11	1.
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 0 3 N	5 1 T 130	6		7 0 5 3	8 0 LR 0 0 No	9 0 1		10 0	11	1.
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h)		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 0 3 N	5 1 T 130	6		7 0 5 3	8 0 LR 0 0 No	9 0 1		10 0	11	1.
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h)		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 0 3 N	5 1 T 130	6		7 0 5 3	8 0 LR 0 0 No	9 0 1		10 0	11	12
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Capacity, c (veh/h) v/c Ratio		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 0 3	5 1 T 130	6		7 0 5 3	8 0 LR 0 0 NO 0 NO 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 0 1		10 0	11	1.
Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h) v/c Ratio 95% Queue Length, Q ₉₅ (veh)		1 0	2 1 112 No	3 0 TR 0	4U 0	4 1 2 3 N N 1 1 1 1 1 1 1 1 1 1 1 1 1	5 1 T 130	6		7 0 5 3	8 0 LR 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	9 0 1		10 0	11	1

HCS 2010 TWSC Version 6.90 Huisman Rd-E.Pershing 2021 PM.xtw

General Information							Site	Inform	natio	n						
Analyst	G Grigst	DV					Inters	ection	to be taken to prove	and the second	Huism	nan Rd (@ E. Pers	shina		
ncy/Co.	Western		td			e interi di tetta i	Jurisd	-				-				
Date Performed	9/13/202	-					East/\	Nest Str	eet		E. Per	shina				
Analysis Year	2045							/South				an Roa	d			
Time Analyzed	PM Peak				and section			Hour Fac			0.92					
Intersection Orientation	East-We	st					Analy	sis Time	Period	hrs)	1.00					
Project Description	East Pers		lvd Plai	n							(here store					
Lanes						of successive distances				press and	in the star	and a star in the second	a sur daire			
				<mark> </mark>		Y										
						+Y '										
	justmen	ts				+ Y 4		No. of Street of Con-								
Vehicle Volumes and Ad Approach		ts Eastbou	und			r Street: Ea				North	bound			South	bound	
			und T	R		r Street: Ea	ost-West	R	U	North	bound T	R	U	South	bound T	R
Approach Movement rity		Eastbou		R 3	Majo	r Street: Ea	ost West	R 6	U			R 9	U	1	1	-
Approach Movement rity Number of Lanes	U	Eastbou	Т	1974	Majo U	r Street: Ea Westt	oound T		U	L	Т		U	L	Т	12
Approach Movement rity	U 1U	Eastbou L 1	T 2	3	Majo U 4U	Westt	oound T 5 1 T	6	U	L 7	Т 8	9	U	L 10	Т 11	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h)	U 1U	Eastbou L 1 0	T 2	3 0	Majo U 4U	Westt L 1	oound T 5 1	6	U	L 7	T 8 0	9	U	L 10	Т 11	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	U 1U	Eastbou L 1 0	T 2 1	3 0 TR	Majo U 4U	Westh L 4 1 L	oound T 5 1 T	6	U	L 7 0	T 8 0	9 0	U	L 10	т 11	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	U 1U	Eastbou L 1 0	T 2 1	3 0 TR	Majo U 4U	Westl L 4 1 L 0	oound T 5 1 T	6	U	L 7 0 11	T 8 0	9 0 2	U	L 10	т 11	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	U 1U	Eastbou L 1 0	T 2 1	3 0 TR	Majo U 4U	Westl L 4 1 L 0	oound T 5 1 T	6		L 7 0 11 3	T 8 0	9 0 2		L 10	т 11	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	U 1U	Eastbou L 1 0	T 2 1 282	3 0 TR 0	Majo U 4U 0	Westl L 4 1 L 0 3	oound T 5 1 T	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	Т 11	-
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	U 1U	Eastbou L 1 0 4	T 2 1 282	3 0 TR 0	Majo U 4U	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	R 12 0
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		Eastbou L 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	T 2 1 282	3 0 TR 0	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage		Eastbou L 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	T 2 1 282	3 0 TR 0	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H		Eastbou L 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	T 2 1 282	3 0 TR 0	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)		Eastbou L 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	T 2 1 282	3 0 TR 0	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)		Eastbou L 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	T 2 1 282	3 0 TR 0	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		Eastbou L 1 0 I I I I I I I I I I I I I I I I I I	T 2 1 282	3 0 TR 0 Undi	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		Eastbou L 1 0 I I I I I I I I I I I I I I I I I I	T 2 1 282	3 0 TR 0 Undi	Majo U 4U 0	Westl L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h)		Eastbou L 1 0 I I I I I I I I I I I I I I I I I I	T 2 1 282	3 0 TR 0 Undi	Majo U 4U 0	Vesta L 4 1 L 0 3 N	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR 0 10	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Ease Follow-Up Headway (sec) Follow-Up Headway (sec) Character (veh/h) Capacity, c (veh/h)		Eastbou L 1 0 I I I I I I I I I I I I I I I I I I	T 2 1 282	3 0 TR 0 Undi	Majo U 4U 0	Vestt L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR 0 0 0 0	9 0 2		L 10 0	T 11 0	12
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec) Follow-Up Headway (sec)		Eastbou L 1 0 I I I I I I I I I I I I I I I I I I	T 2 1 282	3 0 TR 0 Undi	Majo U 4U 0	Vesti L 4 1 L 0 3 N	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR 0 10	9 0 2		L 10 0	T 11 0	12
Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, ar Flow Rate, v (veh/h) Capacity, c (veh/h)		Eastbou L 1 0 I I I I I I I I I I I I I I I I I I	T 2 1 282	3 0 TR 0 Undi	Majo U 4U 0	Vestt L 4 1 L 0 3	bound T 5 1 T 328	6		L 7 0 11 3	T 8 0 LR 0 0 0 0 0 0 0 10 10 14 451 0.03	9 0 2		L 10 0	T 11 0	12

Approach Delay (s/veh)

Approach LOS

HCS 2010 1 TWSC Version 6.90 Huisman Rd-E.Pershing 2045 PM.xtw

0.0

13.2

В

General Information							Site	Infor	matio	n						
Analyst	G Gri	asby					Inters	ection			Huisn	nan Rd (@ E. Pers	shina		
icy/Co.		ern R&D), Ltd				Mangalan and Analysis in contrasts	liction								
Date Performed	9/13/						d	Nest Str	eet		E. Per	shing				
Analysis Year	2021						North	/South	Street			nan Roa	d			
Time Analyzed	AM P	eak					Peak	Hour Fa	ctor		0.92					
Intersection Orientation	East-	West					Analy	sis Time	Period ((hrs)	1.00					
Project Description	East F	Pershing	Blvd Pla	n											0.7451) <u>- 475-996</u> G	
Lanes	-															
				2 4 1 4 4 F F		or Street: Ea										
Vehicle Volumes and Ad	ljustme	ents														
a putter and a superior part of the	1								1				-			
Approach			bound			Westb					bound			1	bound	
Approach Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	
Approach Movement rity	10	L 1	T 2	3	4U	L 4	T 5	6	U	L 7	T 8	9	U	L 10	T 11	1
Approach Movement rity Number of Lanes		L	Т	3 0		L 4 1	T 5 1		U	L	T 8 0		U	L	Т	1
Approach Movement rity Number of Lanes Configuration	10	L 1	T 2 1	3 0 TR	4U	L 4 1 L	T 5 1 T	6	U	L 7 0	T 8	9	U	L 10	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h)	10	L 1	T 2	3 0	4U	L 4 1 L 1	T 5 1	6	U	L 7 0 2	T 8 0	9 0 0	U	L 10	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	10	L 1	T 2 1	3 0 TR	4U	L 4 1 L	T 5 1 T	6	U	L 7 0	T 8 0	9	U	L 10	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	10	L 1	T 2 1	3 0 TR	4U	L 4 1 L 1	T 5 1 T	6	U	L 7 0 2 3	T 8 0 LR	9 0 0		L 10	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%)	10	L 1 0	T 2 1 93	3 0 TR	4U	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	
Approach Mavement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized	10	L 1 0	T 2 1	3 0 TR 0	4U	L 4 1 L 1	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage			T 2 1 93	3 0 TR 0	4U 0	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage			T 2 1 93	3 0 TR 0	4U 0	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec)			T 2 1 93	3 0 TR 0	4U 0	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec)			T 2 1 93	3 0 TR 0	4U 0	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec)			T 2 1 93	3 0 TR 0	4U 0	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec)		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 L 1 3	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 1 3 N	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR 0 10	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h)		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 1 3 N	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR 0 0 0 No	9 0 0		L 10 0	T 11 0	1
Approach Mayement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 3 N	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR 0 10 10	9 0 0		L 10 0	T 11 0	1
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, an Flow Rate, v (veh/h) Capacity, c (veh/h)		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 1 3 	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR 0 NO 2 773 0.00	9 0 0		L 10 0	T 11 0	
Approach Movement ity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, au Flow Rate, v (veh/h) V/C Ratio 95% Queue Length, Q₅5 (veh)		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 3 3 N	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR 0 10 10 10 10 10 10 10 10 10 10 10 10 1	9 0 0		L 10 0	T 11 0	
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked Percent Grade (%) Right Turn Channelized Median Type/Storage Critical and Follow-up H Base Critical Headway (sec) Critical Headway (sec) Base Follow-Up Headway (sec) Follow-Up Headway (sec) Delay, Queue Length, au Flow Rate, v (veh/h) Capacity, c (veh/h)		L 1 0	T 2 1 93	3 0 TR 0	4U 0	L 4 1 1 3 	T 5 1 T 100	6		L 7 0 2 3	T 8 0 LR 0 NO 2 773 0.00	9 0 0		L 10 0	T 11 0	

Approach LOS

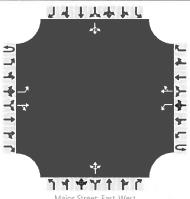
HCS 2010 TWSC Version 6.90 Huisman Rd-E.Pershing 2021 AM.xtw А

General Information							Site	Inform	nation							
Analyst	G Grig	jsby					Inters	ection			Huism	nan Rd (D E. Pers	hing		
ncy/Co.	Weste	rn R&D	, Ltd				Jurisd	iction								
Date Performed	9/13/2	2021					East/\	West Stre	eet		E. Pers	shing				
Analysis Year	2045						North	/South S	Street		Huism	nan Roa	d			
Time Analyzed	AM Pe	eak					Peak I	Hour Fac	tor		0.92		BB-21040/0105			
Intersection Orientation	East-V	Vest					Analy	sis Time	Period (hr	s)	1.00					
Project Description	East P	ershing	Blvd Pla	n		Source and a second	And and a second second									-111-
Lanes																
				2 4 4 4 4 4 5 C		Y										
Vehicle Volumes and A	diustme	nts		<u> 1 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 </u>			1 Pr									
	\djustme			2 4 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		★¥ street E	ast-West			Northl	bound			South	bound	
Approach		Eastb	bound			به ۲ r Street E West	bound				pound	B	U		bound	F
Approach Movement	djustme U 1U			R 3	Major	★¥ street E	ast-West		→	Northl L 7	bound T 8	R	U	South L	Т	-
Approach	U	Eastb	oound T	R	Major U	به ۲ r Street E West	bound	R	→	L	Т		U	L		1.
Approach Movement rity Number of Lanes	U 1U	Eastb L 1	oound T 2	R 3	U 4U	West L 4	bound T 5	R 6	→	L 7	T 8	9	U	L 10	T 11	1
Approach Movement rity	U 1U	Eastb L 1	oound T 2	R 3 0	U 4U	West L 4	bound T 5 1	R 6	→	L 7	T 8 0	9	U	L 10	T 11	1.
Approach Movement rity Number of Lanes Configuration	U 1U	Eastb L 1	T 2 1	R 3 0 TR	U 4U	West L 4 1 L	bound T 5 1 T	R 6	→	L 7 0	T 8 0	9 0	U	L 10	T 11	1.
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h)	U 1U	Eastb L 1	T 2 1	R 3 0 TR	U 4U	West L 4 1 L 2	bound T 5 1 T	R 6	→	L 7 0 4	T 8 0	9 0 0	U	L 10	T 11	1.
Approach Movement rity Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%)	U 1U	Eastb L 1	T 2 1	R 3 0 TR	U 4U	West L 4 1 L 2	bound T 5 1 T	R 6	→	L 7 0 4	T 8 0 LR	9 0 0		L 10	T 11	F 1. C
Number of Lanes Configuration Volume, V (veh/h) Percent Heavy Vehicles (%) Proportion Time Blocked	U 1U	Eastb L 1 0	T 2 1	R 3 0 TR	U 4U	Vest L 4 1 L 2 3	bound T 5 1 T	R 6	→	L 7 0 4 3	T 8 0 LR	9 0 0	U	L 10 0	T 11	1

Critical and Follow-up Heady	vays			
Base Critical Headway (sec)				
Critical Headway (sec)				
Base Follow-Up Headway (sec)				
Follow-Up Headway (sec)				
Delay, Queue Length, and Le	vel of Service			
Flow Rate, v (veh/h)		2	4	
Capacity, c (veh/h)		1304	505	
v/c Ratio		0.00	0.01	
95% Queue Length, Q ₉₅ (veh)		0.0	0.0	
trol Delay (s/veh)		7.8	12.2	
cevel of Service, LOS		A	В	
Approach Delay (s/veh)		0.1	12.2	
Approach LOS			В	

HCS 2010 1 TWSC Version 6.90 Huisman Rd-E.Pershing 2045 AM.xtw

	HCS 2010 Two	-Way Stop-Control Repor	rt
General Information		Site Information	
Analyst	G Grigsby	Intersection	Farthing Tr @ E. Pershing
cy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Farthing Trail
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



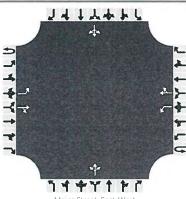
Major Street: East West

Vehicle Volumes and Ad	justme	nts			-											
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Lity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0	-	0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume, V (veh/h)		51	56	6		1	87	14		7	0	0		9	0	29
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized		N	ю			N	lo			ľ	No			٩	ło	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	nd Leve	l of S	ervice	e												
Flow Rate, v (veh/h)		55				1					8				42	
Capacity, c (veh/h)		1472				1525					614				856	
v/c Ratio		0.04				0.00					0.01				0.05	
95% Queue Length, Q ₉₅ (veh)		0.1				0.0					0.0				0.2	
trol Delay (s/veh)		7.5				7.4					10.9				9.4	
Level of Service, LOS		A				A					В				A	
Approach Delay (s/veh)		3	.4			0	.1			1	0.9			g	.4	
Approach LOS							Without Mines				В				A	

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HCS 2010 TWSC Version 6.90 Farthing Trail-E.Pershing 2021 PM.xtw

General Information	the second subly of the second sec	Site Information	
Selleral Information		Site mornation	
Analyst	G Grigsby	Intersection	Farthing Tr @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Farthing Trail
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



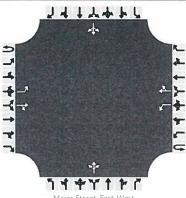
Major Street East West

Vehicle Volumes and Ad	justme	nts														
Approach		Eastb	ound			West	bound	San and a second second		North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Vrity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume, V (veh/h)		130	142	13		2	221	34		15	0	0		22	0	74
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked										6-						
Percent Grade (%)											0			A	0	hannanaanna
Right Turn Channelized		N	0			N	lo			١	10			N	10	
Median Type/Storage				Undi	vided					and the second se	Welling and the second				and the second	
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)					1											
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	9												
Flow Rate, v (veh/h)		141				2					16				104	
Capacity, c (veh/h)		1279		-		1402	1			-	269				584	
v/c Ratio		0.11				0.00				1	0.06				0.18	
95% Queue Length, Q ₉₅ (veh)		0.4				0.0					0.2				0.6	
trol Delay (s/veh)		8.2				7.6					19.2				12.5	
evel of Service, LOS		A				А					С				В	
Approach Delay (s/veh)		3	.7	Ar w		0	.1	and the second se		1	9.2			1	2.5	A
Approach LOS											с				В	

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General Information		Site Information	
Analyst	G Grigsby	Intersection	Farthing Tr @ E. Pershing
icy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2021	North/South Street	Farthing Trail
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



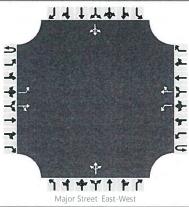
Major Street: East West

Approach	1	Eastb	ound			Westb	bound			North	bound			South	bound	
	U		T	R	U	L	T	R	U		T		U	_	T	-
Movement		L						-	U	L		R	U	L		R
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume, V (veh/h)	0130	33	47	2		0	47	10		6	0	1		15	2	55
Percent Heavy Vehicles (%)	3	3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)											0				0	
Right Turn Channelized		N	0			N	lo			٩	lo			N	lo	
Median Type/Storage				Undi	vided	and the lot of the second s										
Critical and Follow-up H	leadwa	ys										*****				
Base Critical Headway (sec)										and a state		***				
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, a	nd Leve	l of S	ervice	9			1									
Flow Rate, v (veh/h)		177				0					8				78	
Capacity, c (veh/h)		1638				1544					669	10.70			901	
v/c Ratio		0.11				0.00					0.01				0.09	
95% Queue Length, Q ₉₅ (veh)		0.4				0.0					0.0				0.3	
trol Delay (s/veh)		7.5				7.3					10.4				9.4	
Level of Service, LOS		A				A					В				A	
Approach Delay (s/veh)		5	.7			0	.0			1	0.4			9	.4	-
Approach LOS							in on the second				В				A	

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General Information		Site Information						
Analyst	G Grigsby	Intersection	Farthing Tr @ E. Pershing					
ncy/Co.	Western R&D, Ltd	Jurisdiction						
Date Performed	9/13/2021	East/West Street	E. Pershing					
Analysis Year	2045	North/South Street	Farthing Trail					
Time Analyzed	AM Peak	Peak Hour Factor	0.92					
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00					
Project Description	East Pershing Blvd Plan		where any common succession of the second second					



Vehicle Volumes and Ad	Justine								-		_		-			
Approach	Eastbound			Westbound				Northbound			Southbound					
Movement	U	L	Т	R	U	L	Т	R	U	L	T	R	U	L	T	R
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	1	1	0		0	1	0		0	1	0
Configuration		L		TR		L		TR			LTR				LTR	
Volume, V (veh/h)		83	119	4		0	119	25		13	0	2		37	4	140
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)							0				0					
Right Turn Channelized	No				No				No			No				
Median Type/Storage	Undivided															
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)											1					
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	9		A			A							
Flow Rate, v (veh/h)	1	90				0					16				196	
Capacity, c (veh/h)		1416				1444					388				757	
v/c Ratio		0.06				0.00					0.04				0.26	
95% Queue Length, Q ₉₅ (veh)		0.2				0.0					0.1				1.0	
trol Delay (s/veh)		7.7				7.5					14.7				11.4	
Level of Service, LOS		A				A					В				В	
Approach Delay (s/veh)	3.1			0.0			14.7			11.4						
Approach LOS							В			В						

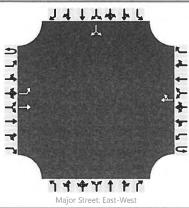
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HCS 2010 TWSC Version 6.90 Farthing Trail-E.Pershing 2045 AM.xtw

Generated: 9/14/2021 10:49:55 AM

		-Way Stop-Control Repor	E
General Information		Site Information	
Analyst	G Grigsby	Intersection	Dickson Dr @ E. Pershing
су/Со.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Dickson Drive
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan	2	

Lanes



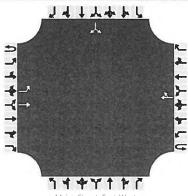
Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
rity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		23	135				123	21						30		28
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized		N	10			٢	No			N	lo			N	10	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)											-					
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	d Leve	l of S	ervice	•												
Flow Rate, v (veh/h)		25													63	
Capacity, c (veh/h)		1415													742	-
v/c Ratio		0.02													0.08	
95% Queue Length, Q ₉₅ (veh)		0.1													0.3	
trol Delay (s/veh)		7.6													10.3	
Level of Service, LOS		А					-								В	
Approach Delay (s/veh)		1	.1								-	Sweet Street		1(0.3	
Approach LOS															В	

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HCS 2010 TWSC Version 6.90 Dickson Drive-E.Pershing 2045 AM.xtw

	HCS 2010 Two	-Way Stop-Control Repor	t
General Information		Site Information	
Analyst	G Grigsby	Intersection	Dickson Dr @ E. Pershing
cy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Dickson Drive
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		

Lanes



Major Street: East-West

Approach		Eastb	ound			West	bound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	T	R	U	L	Т	R	U	L	Т	R
lity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	0	0	0	1	0		0	0	0		0	0	0
Configuration		L	Т					TR							LR	
Volume, V (veh/h)		17	147				231	26						13		18
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)															0	
Right Turn Channelized		N	lo			1	No			N	lo			N	lo	
Median Type/Storage				Undi	ivided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervice	•												
Flow Rate, v (veh/h)		18													34	
Capacity, c (veh/h)		1277													661	
v/c Ratio		0.01													0.05	
95% Queue Length, Q ₉₅ (veh)		0.0													0.2	
rol Delay (s/veh)		7.9							-						10.7	
Level of Service, LOS		А													В	
Approach Delay (s/veh)		0	.8				1.c.			Contraction of the local division of the loc				1().7	
Approach LOS															В	

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HCS 2010 TWSC Version 6.90 Dickson Drive-E.Pershing 2045 PM.xtw

HCS 2010 Signalized Intersection Results Summary

General Inform	ation	and the second second		prol 1					ntore-	tion Inf	ormeti		1	47411	b L
	ation											on	- 1	41	
Agency		Western R&D, Ltd.		1.4		011=15	004		Duration		0.25				
Analyst		G Grigsby		Constantine Constantine		9/15/2	021		rea Typ	be	Other				4
diction				Time F					PHF		0.92		++ -+ -+		¥
Urban Street				-	is Year				nalysis		1> 7:0		_ T		
Intersection		Christensen Rd @ I	East	File Na	ame	Christi	iansen f	Rd.Eas	t.Pershi	ng 2045	AM.xu	5		ግዮ	
Project Descrip	tion	2045 AM Peak	-		100				-		-			1 ተ ተ ሞ 1	۴ ľ
Demand Inform	nation				EB	Const de	1	WB			NB		1	SB	
Approach Move				L	T	R	L	T	R	L	Т	R	L	T	F
Demand (v), v				26	9	181	39	25	3	207	161	18	12	277	4
				112-11	and a			1.1.1.1				1		1	
Signal Informa	tion				. 5										Л
Cycle, s	60.0	Reference Phase	2		臣 8	RAN	77				-	_	A	•	4
Offset, s	0	Reference Point	End	Green	24.4	13.4	10.2	0.0	0.0	0.0	-	1	2	3	
Uncoordinated	No	Simult. Gap E/W	On	Yellow		3.0	3.0	0.0	0.0	0.0	-		$\mathbf{\Theta}$		K
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	1.0	0.0	0.0	0.0		5	6	7	
		all's free a			-	- DT									
Timer Results	-	Contraction of the second s		EBI	-	EBT	WB		WBT	NBI	-	NBT	SBI	-	SBT
Assigned Phase	e					2			6			8			4
Case Number	-			-		5.0			6.0			10.0			10.0
Phase Duration	-					28.4		_	28.4		_	14.2			17.4
Change Period	and the second se	and the second se				4.0	-		4.0	-		4.0			4.0
Max Allow Hea					_	0.0			0.0			4.1			4.1
Queue Clearan	and the second second second	and the second					-				-	9.1			12.9
Green Extensio	and the second se	(ge),s			_	0.0			0.0			1.2			0.5
e Call Pro	and the second second										-	1.00		-	1.00
Max Out Proba	bility		-			_						0.03			0.97
Movement Gro	oup Res	ults		1	EB			WB		-	NB			SB	
Approach Move	the second se			L	Т	R	L	Т	R	L	Т	R	L	Т	F
Assigned Move	and the second se			5	2	12	1	6	16	3	8	18	7	4	1
Adjusted Flow), veh/h		28	10	197	42	30		225	195		13	350	
and the second se	and state in the local division of the	ow Rate (s), veh/h/l	n	1401	1900	1610	1427	1864		1810	1866		1810	1853	
Queue Service	the set of the set is	and the second		0.7	0.2	5.0	1.1	0.6	1	7.1	5.8		0.3	10.9	-
the second se	the second second second second	e Time (<i>g</i> _c), s		1.3	0.2	5.0	1.3	0.6		7.1	5.8		0.3	10.9	-
Green Ratio (g	A DARCE ALCON MANY			0.41	0.41	0.41	0.41	0.41	1	0.17	0.17		0.22	0.22	1
Capacity (c), v	the second s			676	773	655	696	759		308	318		403	413	-
Volume-to-Cap		tio (X)		0.042			0.061	0.040		0.729	0.612		0.032	0.848	-
of the owner water water to see the owner water	and the second division of the second divisio	/In (50 th percentile)		5.5	1.8	43.2	8.3	5.8		75.8	62.3		3.3	135.2	-
which which is the second s	AND DESCRIPTION OF THE OWNER.	eh/In (50 th percentile,	and the second se	0.2	0.1	43.2	0.3	0.2	-	3.0	2.5		0.1	5.4	-
AND THE REAL PROPERTY	CONTRACTOR OF TAXABLE PARTY.	RQ) (50 th percent	ANY WEST AND ANY	0.2				0.2		0.00	0.00		-	0.00	-
	and the second se		uie)		0.00	0.00	0.00	and the second division of the second divisio		-			0.00		-
Uniform Delay	Charles and a state of the	the second se		11.1	10.6	12.0	11.0	10.7		23.6	23.0		18.3	22.4	
Incremental De	and the second se	· · · · · · · · · · · · · · · · · · ·		0.1	0.0	1.2	0.2	0.1	-	3.3	1.9		0.0	10.1	-
Initial Queue D				0.0	0.0	0.0	0.0	0.0	-	0.0	0.0		0.0	0.0	-
Control Delay (a second second second second			11.2	10.6	13.2	11.2	10.8	-	26.9	25.0		18.3	32.5	-
Level of Servic	-	and the set of the set		B	В	В	B	В	1	C	С		B	С	1
	Concernance of the local division of the loc	the second s		12.9	4	В	11.0	J	В	26.0	5	С	32.0)	С
Approach Dela	lav s/ve	eh / LOS				24	1.2						С		
Approach Dela Intersection De															
Intersection De			-	1	FR		-			1	MR			SB	
and the second se	sults	// 05		2.3	EB	В	2.3	WB	В	2.3	NB	В	2.4	SB	В

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HCS 2010[™] Streets Version 6.90

Generated 10/21 2021 Strates 405

HCS 2010 Signalized Intersection Results Summary

General Inform	ation			the setting			The second second	1	ntersec	tion Inf	ormatic	n	1	4441	Ja La
and the second se	auon	Western R&D, Ltd.							Duration	AND INCOME.	0.25	11	-	46	
Agency		G Grigsby		Analua	ie Dete	9/15/2	024		Area Typ	the local division of the local division of the	0.25 Other				
		G Grigsby				9/15/2	021			e	-				
diction				Time F		0015			PHF		0.92	-			1
Urban Street				No. of Concession, name	sis Year			and the second division of the second divisio	Analysis	and the second se	1> 7:0		-		
Intersection		Christensen Rd @ I	_ast	File Na	ame	Christi	ansen F	Rd.Eas	t.Pershi	ng 2045	PM.xu	S		11	
Project Descrip	tion	2045 PM Peak		0.000			-		-					14149	***
Demand Inform	nation			ma triation	EB		T	WB	and the second	T	NB			SB	-
Approach Move	Web You wat	Strange		L	T	R	L	T	R	L	T	R	L	T	TI
Demand (v), v	the second s			72	27	296	33	18	5	259	399	51	18	223	3
Demand (V), v	CIMI			12	LI	2.50	00	1 10		200	1 000	51	10	225	-
Signal Informa	tion				5	J.U.	T		1				1		I
Cycle, s	68.0	Reference Phase	2	1	38								2		4
Offset, s	0	Reference Point	End	-					-	-	-	1	2	3	
Uncoordinated	Yes	Simult. Gap E/W	On	Green Yellow		21.0 3.0	0.0	0.0	0.0	0.0			—		-
Force Mode	Fixed	Simult. Gap N/S	On	Red	1.0	1.0	0.0	0.0	0.0	0.0	-	5	6	7	K
									15.0	10.0					
Timer Results				EBL		EBT	WBI		WBT	NBI		NBT	SBL		SBT
Assigned Phas	е					2			6			8			4
Case Number						5.0			6.0			6.0			6.0
Phase Duration	1, S					43.0			43.0			25.0			25.0
Change Period		c), S				4.0			4.0			4.0			4.0
Max Allow Hea	TAX DOLLARS AND ADDRESS OF				COLUMN TWO IS NOT	4.3	-		4.3			4.3			4.3
Queue Clearar		whether a strain we want the second				9.2	-		3.2			23.0			20.1
Green Extensio	And the Association of the International Property lies of the International Property l				and the second second second	2.0			2.0	-		0.0			0.5
e Call Pro	The second second second	(90),0				1.00			1.00			1.00			1.00
Max Out Proba	The Party of Concession, Name				International Property lines	0.00			0.00		statement of the local division of the	1.00	-		1.00
	y								5.50						1.00
Movement Gro	oup Res	ults			EB			WB			NB			SB	90- 00-
Approach Move	ement			L	Т	R	L	Т	R	L	Т	R	L	Т	F
Assigned Move	ement			5	2	12	1	6	16	3	8	18	7	4	1
Adjusted Flow	Rate (v), veh/h		78	29	322	36	25	1	282	489		20	276	1
						(management of the local division of the loc			1	1121	1862				1
Adjusted Satur		w Rate (s), veh/h/l	n	1408	1900	1610	1402	1828	1	1121	1001		922	1859	
Adjusted Satur Queue Service	And in case of the local division of the loc	and the second	n	1408 1.7	1900 0.5	1610 7.2	1402 0.8	1828 0.4		12.8	16.7		922	1859 8.2	
Queue Service	Time (g	g s), S	n	1.7	0.5	7.2	0.8	0.4		12.8	16.7		1.4	8.2	
Queue Service Cycle Queue C	Time(g learance	g s), S	In	1.7 2.1	0.5 0.5	7.2 7.2	0.8 1.2	0.4 0.4		12.8 21.0	16.7 16.7		1.4 18.1	8.2 8.2	
Queue Service Cycle Queue C Green Ratio (g	Time(g learance g/C)	g s), S	In	1.7 2.1 0.57	0.5 0.5 0.57	7.2 7.2 0.57	0.8 1.2 0.57	0.4 0.4 0.57		12.8 21.0 0.31	16.7 16.7 0.31		1.4 18.1 0.31	8.2 8.2 0.31	
Queue Service Cycle Queue C Green Ratio (<u>c</u> Capacity (c),	Time(g learance g/C) veh/h	g s), s e Time (g c), s	In	1.7 2.1 0.57 905	0.5 0.5 0.57 1090	7.2 7.2 0.57 923	0.8 1.2 0.57 901	0.4 0.4 0.57 1049	-	12.8 21.0 0.31 317	16.7 16.7 0.31 575		1.4 18.1 0.31 164	8.2 8.2 0.31 574	
Queue Service Cycle Queue C Green Ratio (Capacity (c), Volume-to-Cap	Time(g learanco g/C) veh/h acity Ra	g s), s e Time (g c), s tio (X)		1.7 2.1 0.57 905 0.086	0.5 0.5 0.57 1090 0.027	7.2 7.2 0.57 923 0.348	0.8 1.2 0.57 901 0.040	0.4 0.4 0.57 1049 0.024	-	12.8 21.0 0.31 317 0.888	16.7 16.7 0.31 575 0.851		1.4 18.1 0.31 164 0.120	8.2 8.2 0.31 574 0.481	
Queue Service Cycle Queue C Green Ratio (<u>c</u> Capacity (<u>c</u>), Volume-to-Cap Back of Queue	Time((clearanco g/C) veh/h acity Ra (Q), ft/	g s), s e Time (g c), s tio (X) /In (50 th percentile))	1.7 2.1 0.57 905 0.086 10.7	0.5 0.5 0.57 1090 0.027 3.7	7.2 7.2 0.57 923 0.348 51	0.8 1.2 0.57 901 0.040 4.8	0.4 0.4 0.57 1049 0.024 3.2	-	12.8 21.0 0.31 317 0.888 165.7	16.7 16.7 0.31 575 0.851 211.2		1.4 18.1 0.31 164 0.120 7.7	8.2 8.2 0.31 574 0.481 83	
Queue Service Cycle Queue C Green Ratio (c Capacity (c), Volume-to-Cap Back of Queue Back of Queue	Time (g learance g/C) veh/h acity Ra (Q), ft/ (Q), ve	g s), s e Time (g c), s tio (X) /In (50 th percentile) eh/In (50 th percenti) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4	0.5 0.5 0.57 1090 0.027 3.7 0.1	7.2 7.2 0.57 923 0.348 51 2.0	0.8 1.2 0.57 901 0.040 4.8 0.2	0.4 0.57 1049 0.024 3.2 0.1	-	12.8 21.0 0.31 317 0.888 165.7 6.6	16.7 16.7 0.31 575 0.851 211.2 8.4		1.4 18.1 0.31 164 0.120 7.7 0.3	8.2 8.2 0.31 574 0.481 83 3.3	
Queue Service Cycle Queue C Green Ratio (Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage	Time (g learance g/C) veh/h acity Ra (Q), fu (Q), ve e Ratio ((g s), s e Time $(g c)$, s ttio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00	0.5 0.57 1090 0.027 3.7 0.1 0.00	7.2 7.2 0.57 923 0.348 51 2.0 0.00	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00	0.4 0.57 1049 0.024 3.2 0.1 0.00	-	12.8 21.0 0.31 317 0.888 165.7 6.6 0.00	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00	8.2 8.2 0.31 574 0.481 83 3.3 0.00	
Queue Service Cycle Queue C Green Ratio (g Capacity (c), v Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay	Time (g clearance g/C) veh/h acity Ra (Q), ft/ (Q), ve e Ratio ((d 1), s	g s), s e Time (g c), s tio (X) /In (50 th percentile) eh/In (50 th percenti <i>RQ</i>) (50 th percent /veh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3	-	12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1	
Queue Service Cycle Queue C Green Ratio (c Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De	Time (g clearance g/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d1), si elay (d2)	(g s), s e Time $(g c)$, s tio (X) In (50 th percentile) eh/In (50 th percent RQ) (50 th percent /veh), s/veh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0	-	12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6	
Queue Service Cycle Queue C Green Ratio (Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D	Time (g learance g/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d 1), s elay (d 2 elay (d	g s), s e Time ($g c$), s ttio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent /veh), s/veh 3), s/veh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0 0.0	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 0.0	-	12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0	
Queue Service Cycle Queue C Green Ratio (Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Time (g clearance g/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d_1), so elay (d_2 elay (d_2 elay (d_3), so	g s), s e Time ($g c$), s tio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent /veh), s/veh s), s/veh eh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0 6.8	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0 6.3	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0 8.0	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0 6.6	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 0.0 6.3	-	12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0 54.1	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0 33.7		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0 30.8	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0 19.7	
Queue Service Cycle Queue C Green Ratio (g Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic	Time (g (learance g/C) veh/h acity Ra (Q), fu (Q), ve Ratio ((d_1), s elay (d_2 elay (d_2 elay (d_2 elay (d_3	g s), s e Time ($g c$), s itio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percenti /veh), s/veh $_3$), s/veh eh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0 6.8 A	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0 0.0 6.3 A	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0 8.0 A	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0 6.6 A	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 0.0 6.3 A		12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0 54.1 D	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0 33.7 C		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0 30.8 C	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0 19.7 B	
Queue Service Cycle Queue C Green Ratio (g Capacity (c), v Volume-to-Cap Back of Queue Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	Time (g learance g/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d 1), s, elay (d 2 elay (d d), s/ve e (LOS) y, s/veh	(g s), s e Time $(g c)$, s ttio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent /veh), s/veh g), s/veh eh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0 6.8	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0 0.0 6.3 A	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0 8.0 8.0 A	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0 6.6 A A 6.4	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 0.0 6.3 A	-	12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0 54.1	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0 33.7 C		1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0 30.5 0.3 0.0 30.8 C 20.4	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0 19.7 B	
Queue Service Cycle Queue C Green Ratio (g Capacity (c), Volume-to-Cap Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic	Time (g learance g/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d 1), s, elay (d 2 elay (d d), s/ve e (LOS) y, s/veh	(g s), s e Time $(g c)$, s ttio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent /veh), s/veh g), s/veh eh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0 6.8 A	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0 0.0 6.3 A	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0 8.0 8.0 A	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0 6.6 A	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 0.0 6.3 A		12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0 54.1 D	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0 33.7 C	D	1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0 30.8 C	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0 19.7 B	
Queue Service Cycle Queue C Green Ratio (g Capacity (c), v Volume-to-Cap Back of Queue Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	Time (g clearance q/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d_1), so elay (d_2 elay (d_2 elay (d_2 elay (d_3 solve e (LOS) y, s/veh elay, s/veh	(g s), s e Time $(g c)$, s ttio (X) /In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent /veh), s/veh g), s/veh eh) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0 6.8 A	0.5 0.57 1090 0.027 3.7 0.1 0.00 6.3 0.0 6.3 A	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0 8.0 8.0 A	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0 6.6 A A 6.4	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 6.3 A		12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0 54.1 D	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0 33.7 C	D	1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0 30.5 0.3 0.0 30.8 C 20.4	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0 19.7 B 4	
Queue Service Cycle Queue C Green Ratio (Capacity (c), v Volume-to-Cap Back of Queue Back of Queue Back of Queue Queue Storage Uniform Delay Incremental De Initial Queue D Control Delay (Level of Servic Approach Dela	Time (g (learance g/C) veh/h acity Ra (Q), ft/ (Q), ve Ratio ((d_1), s. elay (d_2 elay (d_2 elay (d_2 elay (d_3 d), s/ve e (LOS) y, s/veh elay, s/ve	$(g \circ)$, s e Time $(g \circ)$, s etio (X) In (50 th percentile) eh/In (50 th percenti RQ) (50 th percent /veh), s/veh 3), s/veh eh /LOS eh /LOS) ile)	1.7 2.1 0.57 905 0.086 10.7 0.4 0.00 6.7 0.0 0.0 6.8 A	0.5 0.5 1090 0.027 3.7 0.1 0.00 6.3 0.0 0.0 6.3 A EB	7.2 7.2 0.57 923 0.348 51 2.0 0.00 7.7 0.2 0.0 8.0 8.0 A	0.8 1.2 0.57 901 0.040 4.8 0.2 0.00 6.5 0.0 0.0 6.6 A A 6.4	0.4 0.57 1049 0.024 3.2 0.1 0.00 6.3 0.0 6.3 A VVB		12.8 21.0 0.31 317 0.888 165.7 6.6 0.00 29.2 24.9 0.0 54.1 D	16.7 16.7 0.31 575 0.851 211.2 8.4 0.00 22.0 11.6 0.0 33.7 C 1 NB	D	1.4 18.1 0.31 164 0.120 7.7 0.3 0.00 30.5 0.3 0.0 30.5 0.3 0.0 30.8 C 20.4	8.2 8.2 0.31 574 0.481 83 3.3 0.00 19.1 0.6 0.0 19.7 B 4 SB	

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HCS 2010 Two-Way Stop-Control Report

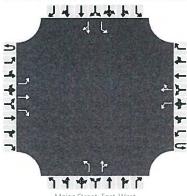
General Information		Site Information	
Analyst	G Grigsby	Intersection	Christensen @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Christensen Road
Time Analyzed	AM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		

Lanes

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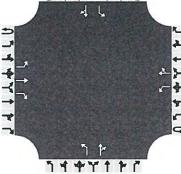
Major Street: East-West

Approach		Eastb	ound			Westb	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Crity	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	0		1	1	0		1	1	0
Configuration		L	Т	R		L		TR		L		TR		L		TR
Volume, V (veh/h)		26	9	181		39	25	3		207	161	18		12	277	45
Percent Heavy Vehicles (%)		3				3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										()			1)	
Right Turn Channelized		N	0			N	0			N	ю			N	lo	
Median Type/Storage				Undi	vided											
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)			-													
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, ar	nd Leve	l of S	ervic	e												
Flow Rate, v (veh/h)		28				42				225	1	195		13		350
Capacity, c (veh/h)		1574				1357				360		704		511		714
v/c Ratio		0.02				0.03				0.62		0.28		0.03		0.49
95% Queue Length, Q ₉₅ (veh)		0.1				0.1				4.7		1.1	1000	0.1		2.8
trol Delay (s/veh)		7.3				7.7				31.2		12.1		12.2		14.9
Level of Service, LOS		A		1		A				D		В		В		В
Approach Delay (s/veh)		0.	9			4	.5			22	2.3			14	4.8	
Approach LOS										(С				В	

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HCS 2010 TWSC Version 6.90 Christensen Rd-E.Pershing 2045 AM.xtw Generated: 9/14/2021 11:09:38 AM

General Information		Site Information	
Analyst	G Grigsby	Intersection	Christensen @ E. Pershing
ncy/Co.	Western R&D, Ltd	Jurisdiction	
Date Performed	9/13/2021	East/West Street	E. Pershing
Analysis Year	2045	North/South Street	Christensen Road
Time Analyzed	PM Peak	Peak Hour Factor	0.92
Intersection Orientation	East-West	Analysis Time Period (hrs)	1.00
Project Description	East Pershing Blvd Plan		



Major Street: East-West

Approach		Eastb	ound			Westb	ound			North	bound			South	bound	
Movement	U	L	Т	R	U	L	Т	R	U	L	Т	R	U	L	Т	R
Jrity	10	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	1	1	0	1	1	0		1	1	0		1	1	0
Configuration		L	Т	R		L		TR		L		TR		L		TR
Volume, V (veh/h)		72	27	296		33	18	5		259	399	51		18	223	31
Percent Heavy Vehicles (%)		3		1		3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)											0				0	hater
Right Turn Channelized		N	lo			N	0			N	10			N	10	
Median Type/Storage				Undi	vided	-										
Critical and Follow-up H	leadwa	ys														
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																
Delay, Queue Length, an	nd Leve	l of S	ervic	e												
Flow Rate, v (veh/h)		78				36				282		489		20		276
Capacity, c (veh/h)		1581				1201				334		607		159		611
v/c Ratio		0.05				0.03				0.84		0.81		0.13		0.45
95% Queue Length, Q ₉₅ (veh)		0.2				0.1				11.3		10.6	1	0.4		2.4
trol Delay (s/veh)		7.4				8.1				65.2		34.1		30.9		15.7
Level of Service, LOS		A				A				F		D		D		С
Approach Delay (s/veh)		1	.3			4	.8			4	5.5			1	6.7	
Approach LOS		Concernant Street									E				С	

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HCS 2010 1 TWSC Version 6.90 Christensen Rd-E.Pershing 2045 PM.xtw

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E: DRAINAGE CALCULATIONS

Rational Formula Calculations - US 30 to Dry Creek

																Calcul	ation of P	eak Runo	off using	Rational N	1ethod																	
Compar Da Proje	er: Adrienne y: Y2 Cons te: 2/23/202 ct: East Per n: West of	sultants 22 rshing Corrido	- Study		Cells of th	iis color ar	ed May 201 e for require e for option e for calcula	ed user-ir al overrid	de values	on overrides		$=\frac{\frac{0.395(1.1-0)}{S_{i}^{0.33}}}{=\frac{L_{t}}{60K_{s}/S_{t}}}=$	Lt	Computed Regional t	$t_c = t_i + t_t$ $t_c = (26 - 17i)$	$+\frac{L_t}{co(t+t)}$	15		10 (non-urbar		ited t _c , Regional	t _c)}		-hour rainfall d	lepth, P1 (in) =	2-yr 0.71 a	tlas 14 Rainfall E 5-yr 10-y 1.10 1.40 b c 10.00 0.78	r 25-yr		100-yr 2.72			otained from		A website (cli (cfs) = CIA		<u>)</u>	
				_			off Coeffici					*****	rland (Initial) FI	ow Time		60(14i + 9)	$\sqrt{S_t}$	Channe	elized (Travel) Flow Time				e of Concentra				fall Intensit	(0 + 1	-c)*					k Flow, Q (cf			
Subcatchme Name	nt Area (ac)	NRCS Hydrologi Soil Grou	Percent Imperviousnes	s 2-yr	5-yr	10-yr	25-yr	50-yr	· 100-y	r 500-yr	Overland Flow Lengt L _i (ft)		on D/S Elevatio (ft) (Optional)	n Overland Flow Slope S _i (ft/ft)	Overland Flow Time t _i (min)	Channelized Flow Length L _t (ft)		D/S Elevation (ft) (Optional)	Flow Slop St (ft/ft)	e Conveyance		Channelized Flow Time t _t (min)	Computed t _c (min)	Regional t _c (min)	Selected t _c (min)	2-yr	5-yr 10-y	r 25-yr	50-yr	100-yr	500-yr	2-yr	5-yr	10-yr	25-yr	50-yr 1	100-yr {	500-yr
Pre-Developm	ent 3.69	С	2.0	0.01	0.05	0.15	0.33	0.40	0.49	0.59	500.00	5961.10	5957.70	0.007	48.08	1150.00	5957.10	5948.60	0.007	7	0.60	31.85	79.93	49.68	49.68	0.81	1.26 1.60	2.14	2.61	3.12	3.60	0.03	0.24	0.87	2.61	3.88	5.66	7.89
Post- Development North Side	, 1.87	с	63.0	0.50	0.55	0.60	0.67	0.70	0.74	0.79	300.00			0.010	16.97	1250.00			0.014	15	1.75	11.87	28.85	25.28	25.28	1.23	1.90 2.42	2 3.24	3.95	4.71	5.44	1.14	1.95	2.70	4.07	5.20	6.53	8.00
Post- Development South Side	, 1.82	с	63.0	0.50	0.55	0.60	0.67	0.70	0.74	0.79	300.00			0.010	17.48	1230.00			0.015	15	1.83	11.20	28.68	24.72	24.72	1.25	1.93 2.46	3.28	4.00	4.77	5.51	1.13	1.93	2.66	4.01	5.13	6.44	7.88
											-					-																				=	=	
																																E	F	F	\equiv	=	=	

Rational Formula Calculations - 6221 East Pershing to Christensen Upgrade

																Calcul	ation of P	eak Runo	ff using F	Rational M	/lethod																	
Compar Da Proje	te: 4/18/2022	Research & Dev 2 shing Corridor S	velopment. Ltd Study	-	Cells of th Cells of th	nis color an nis color an	ed May 20 re for requin re for option re for calcu	ired user-i nal overri	ide values	s d on override		$\frac{\frac{0.395(1.1 - C_5)}{S_1^{0.33}}}{= \frac{L_t}{60K\sqrt{S_t}} = \frac{L}{60K}$	rt IVt		$t_c = t_i + t_t$ $c = (26 - 17i)$	$+\frac{L_t}{60(14i+9)}$	$\overline{\sqrt{S_t}}$	Selected t _c =	10 (non-urban) = max{t _{minimu}	ım , min(Compu	ited t _c , Regional	t _c)}		-hour rainfall o	lepth, P1 (in) =	2-yr 0.71 a	Stas 14 Rainfall 5-yr 10- 1.10 1.4 b c 10.00 0.78	yr 25-yr 0 1.87		100-yr 2.72			btained from		AA website (Q(cfs) = CI		<u>0</u>	
Subcatchme Name	nt Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	s 2-yr	5-yr	Run 10-yr	25-yr		r 100-	-yr 500-y	Overland r Flow Lengt L _i (ft)	U/S Elevation	and (Initial) Flo D/S Elevation (ft) (Optional)	1	Overland Flow Time t _i (min)	Channelized Flow Length L _t (ft)	U/S Elevation (ft) (Optional)	1	lized (Travel) Channelized Flow Slope S _t (ft/ft)	d NRCS	Channelized Flow Velocity V _t (ft/sec)	Channelized Flow Time t _t (min)	Tim Computed t _c (min)	e of Concentra Regional t _c (min)	tion Selected t _c (min)	2-yr	Rai 5-yr 10-	nfall Intensi yr 25-yr			500-yr	2-yr	5-yr	Pea 10-yr	ak Flow, Q (25-yr		100-yr 👯	500-yr
Pre-Developm	ent 13.52	В	2.0	0.01	0.01	0.07	0.26	0.34	0.4	4 0.54	500.00	6029.20	6024.40	0.010	44.51	4910.00	6024.40	5951.60	0.015	7	0.85	96.01	140.52	98.08	98.08	0.51	0.79 1.0	1 1.34	1.64	1.95	2.26	0.06	0.13	0.99	4.75	7.51	11.50	16.57
Post- Developmen North Side	t 3.39	В	100.0	0.84	0.86	0.86	0.88	0.89	0.8	39 0.90	300.00	6029.20	6027.70	0.005	9.55	5580.00	6026.20	5964.82	0.011	20	2.10	44.34	53.89	47.55	47.55	0.84	1.30 1.6	5 2.20	2.69	3.21	3.70	2.37	3.77	4.83	6.55	8.07	9.68	11.32
Post- Developmen South Side	t 3.25	В	100.0	0.84	0.86	0.86	0.88	0.89	0.8	39 0.90	300.00			0.005	9.55	5580.00			0.011	20	2.10	44.34	53.89	47.55	47.55	0.84	1.30 1.6	5 2.20	2.69	3.21	3.70	2.27	3.61	4.63	6.28	7.74	9.28	10.85

Rational Formula Calculations - East of Dry Creek to Low Point (Hess Property)

																Calcula	ation of P	eak Runo	ff using R	Rational N	/lethod																	
Compan Dat Projec	Designer: Adrienne Lemmers Company: Western Research & Development. Ltd Date: 4/18/2022 Project: East Pershing Corridor Study				Version 2.00 released May 2017 Cells of this color are for required user-input Cells of this color are for optional override values				t _i = -	S ₁ ^{0.33} L _t L			Computed $t_c = t_i + t_t$ Regional $t_c = (26 - 17i) + \frac{L_t}{1 + (1 + 1)^2}$			$\begin{bmatrix} t_{minimum} = 5 \text{ (urban)} \\ t_{minimum} = 10 \text{ (non-urban)} \end{bmatrix}$				•))	Select UDFCD location for NOAA Atlas 14 Rainfall Depths from the pulldown list OR enter your own depths obtained from the NOAA website (click this link) 2-yr 5-yr 10-yr 25-yr 50-yr 100-yr 500-yr 1-hour rainfall depth, P1 (in) = 0.71 1.10 1.40 1.87 2.28 2.72 3.14 Rainfall Intensity Equation Coefficients = 28.50 10.00 0.786 $I(in/hr) = \frac{a * P_1}{(h + h +)c}$ $Q(cfs) = CIA$																	
Location: Cheyenne, WY				Cells of this color are for calculated results based on overrides Runoff Coefficient, C					$t_t = \frac{1}{60K\sqrt{S_t}} = \frac{1}{60V_t}$ Overland (Initial) Flow			60(14		$\int 60(14i+9)\sqrt{S_t}$		Selected $t_c = max{t_{minimum}, min(Computed t_c, Regional t_c)}$ Channelized (Travel) Flow Time				Rainfall Intensity Equation Coefficients = 28.5				$I(in/hr) = \frac{a * r_1}{(b + t_c)^c}$ Rainfall Intensity. I (in/hr)				Q(cfs) = CIA Peak Flow, Q (cfs)										
Subcatchmer Name	t Area (ac)	NRCS Hydrologic Soil Group	Percent Imperviousness	2-yr	5-yr	10-yr	25-yr	50-yr	100-уі	r 500-yr	Overland Flow Length L _i (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S _i (ft/ft)	Overland Flow Time t _i (min)		U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)					Computed t _c (min)	Regional t _c (min)	Selected t _c (min)	2-yr 5-	yr 10-yr	25-yr	50-yr	100-yr	500-yr	2-yr	5-yr	10-yr	25-yr 8	50-yr 1	100-yr 500	J0-yr
Pre-Developme	ent 3.69	С	2.0	0.01	0.05	0.15	0.33	0.40	0.49	0.59	500.00	5961.10	5957.70	0.007	48.08	1150.00	5957.10	5948.60	0.007	7	0.60	31.85	79.93	49.68	49.68	0.81 1.	26 1.60	2.14	2.61	3.12	3.60	0.03	0.24	0.87	2.61	3.88	5.66 7	7.89
Post- Development	0.88	с	100.0	0.83	0.85	0.87	0.88	0.89	0.89	0.90	300.00	5960.75	5959.25	0.005	9.83	1250.00	5959.00	5952.75	0.005	15	1.06	19.64	29.47	21.81	21.81	1.33 2.	07 2.63	3.51	4.28	5.11	5.90	0.98	1.55	2.01	2.72	3.34	4.02 4.	4.69
North Side Post- Development South Side	0.88	с	100.0	0.83	0.85	0.87	0.88	0.89	0.89	0.90	- 300.00	5963.00	5961.20	0.006	9.25	1230.00	5955.00	5947.62	0.006	15	1.16	17.64	26.90	20.51	20.51	1.38 2.	14 2.72	3.63	4.43	5.28	6.10	1.01	1.60	2.07	2.81	3.46	4.15 4.	4.84
																								_														

Rational Formula Calculations - Low Point (Hess Property) to 6221 East Pershing

																Calcul	ation of P	eak Runo	ff using R	Rational M	lethod																	
Designer: Adrienne Lemmers Company: Western Research & Development. Ltd Date: 4/18/2022 Project: East Pershing Corridor Study Location: Chevenne, WY					Version 2.00 released May 2017 Cells of this color are for required user-input Cells of this color are for optional override values Cells of this color are for calculated results based on overrides					ι _i = .	$\frac{0.395(1.1 - C_5)}{S_1^{0.33}} = \frac{L_t}{60K_s\sqrt{S_t}} = \frac{L}{60}$			Computed $t_c = t_i + t_t$ Regional $t_c = (26 - 17i) + \frac{L_t}{60(14i + 9)\sqrt{S_t}}$			$\label{eq:training} \begin{bmatrix} t_{minimum} = 5 \text{ (urban)} \\ t_{minimum} = 10 \text{ (non-urban)} \end{bmatrix}$ Selected $t_c = max\{t_{minimum}, min(Computed t_c, Regional t_c)\}$				t _c)}	Select UDFCD location for NOAA Atlas 14 Rainfall Depths from the pulldown list OR enter your own depths obtained from the NOA 2-yr 5-yr 10-yr 20-yr 50-yr 30-yr 30-yr						Q(cfs) = CIA										
			- T	Runoff Coefficient, C					Overland (Initial) Flow T					Channelized (Travel) Flow Time			Time of Concentration				$\frac{(0+t_c)}{Rainfall Intensity. I (in/hr)}$				—			ak Flow, Q (c										
Subcatchm Name	ent Area (ac)	NRCS Hydrologie Soil Group	Percent Imperviousnes	s 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr	Overland Flow Length L _i (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Overland Flow Slope S _i (ft/ft)	Overland Flow Time t _i (min)	Channelized Flow Length L _t (ft)	U/S Elevation (ft) (Optional)	D/S Elevation (ft) (Optional)	Channelized Flow Slope St (ft/ft)		Channelized Flow Velocity Vt (ft/sec)		Computed t _c (min)	Regional t _c (min)	Selected t _c (min)	2-yr	5-yr	10-yr 25-	yr 50-y	r 100-yr	r 500-yr	r 2-yr	5-yr	10-yr	25-yr	50-yr	100-yr	500-yr
Pre-Developr	nent 2.83	В	2.0	0.01	0.01	0.07	0.26	0.34	0.44	0.54	500.00	5954.15	5952.83	0.003	68.16	920.00	5952.83	5950.26	0.003	7	0.37	41.44	109.60	56.92	56.92	0.74	1.15	1.47 1.9	96 2.39	2.85	3.29	0.02	0.04	0.30	1.45	2.29	3.51	5.05
Post- Developme	nt 0.79	в	100.0	0.84	0.86	0.86	0.88	0.89	0.89	0.90	300.00	5952.52	5952.02	0.002	13.69	800.00	5952.02	5950.42	0.002	20	0.89	14.91	28.60	21.96	21.96	1.33	2.06	2.62 3.5	60 4.27	7 5.09	5.88	0.88	1.39	1.79	2.42	2.99	3.58	4.19
North Side		5	100.0								300.00	3332.3Z	3332.02	0.002		000.00	3332.02	3330.42	0.002	20	0.05	14.51		21.50						4		4						
Post- Developme South Side		В	100.0	0.84	0.86	0.86	0.88	0.89	0.89	0.90	300.00			0.002	12.92	800.00			0.002	20	0.89	14.91	27.83	21.96	21.96	1.33	2.06	2.62 3.5	60 4.27	7 5.09	5.88	0.88	1.39	1.79	2.42	2.99	3.58	4.19
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DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.04 (February 2021)

Project: <u>East Pershing Corridor Study</u> Basin ID: <u>Pre-Development, West of Dry Creek</u>

Watershed Information

Flood Control Only

Note: L / W Ratio > 8

L / W Ratio = 16.94

		•••••
Selected BMP Type =	No BMP	
Watershed Area =	3.69	acres
Watershed Length =	1,650	ft
Watershed Length to Centroid =	825	ft
Watershed Slope =	0.007	ft/ft
Watershed Imperviousness =	2.00%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =		hours
Location for 1-hr Rainfall Depths =	User Input	

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Water Quality Capture Volume (WQCV) =		acre-feet
Excess Urban Runoff Volume (EURV) =		acre-feet
2-yr Runoff Volume (P1 = 0.71 in.) =	0.002	acre-feet
5-yr Runoff Volume (P1 = 1.1 in.) =	0.026	acre-feet
10-yr Runoff Volume (P1 = 1.4 in.) =	0.092	acre-feet
25-yr Runoff Volume (P1 = 1.87 in.) =	0.252	acre-feet
50-yr Runoff Volume (P1 = 2.28 in.) =	0.374	acre-feet
100-yr Runoff Volume (P1 = 2.72 in.) =	0.534	acre-feet
500-yr Runoff Volume (P1 = 3.14 in.) =	0.665	acre-feet
		1

Optional User	Overrides
	acre-feet
	acre-feet
0.71	inches
1.10	inches
1.40	inches
1.87	inches
2.28	inches
2.72	inches
3.14	inches

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.04 (February 2021)

Project: <u>East Pershing Corridor Study</u> Basin ID: <u>Post-Development Conditions, West of Dry Creek, North Side</u>

Watershed Information

Flood Control Only

Selected BMP Type =	No BMP	
Watershed Area =	1.87	acres
Watershed Length =	1,550	ft
Watershed Length to Centroid =	775	ft
Watershed Slope =	0.013	ft/ft
Watershed Imperviousness =	63.00%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =	N/A	hours
Location for 1-br Painfall Denths -	Licer Input	-

Note: L / W Ratio > 8

L / W Ratio = 29.49

Location for 1-hr Rainfall Depths = User Input

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

Water Quality Capture Volume (WQCV) =	0.038	acre-feet
Excess Urban Runoff Volume (EURV) =	0.114	acre-feet
2-yr Runoff Volume (P1 = 0.71 in.) =	0.062	acre-feet
5-yr Runoff Volume (P1 = 1.1 in.) =	0.110	acre-feet
10-yr Runoff Volume (P1 = 1.4 in.) =	0.155	acre-feet
25-yr Runoff Volume (P1 = 1.87 in.) =	0.236	acre-feet
50-yr Runoff Volume (P1 = 2.28 in.) =	0.303	acre-feet
100-yr Runoff Volume (P1 = 2.72 in.) =	0.380	acre-feet
500-yr Runoff Volume (P1 = 3.14 in.) =	0.450	acre-feet
Approximate 2-yr Detention Volume =	0.061	acre-feet
Approximate 5-yr Detention Volume =	0.106	acre-feet
Approximate 10-yr Detention Volume =	0.132	acre-feet
Approximate 25-yr Detention Volume =	0.165	acre-feet
Approximate 50-yr Detention Volume =	0.184	acre-feet
Approximate 100-yr Detention Volume =	0.215	acre-feet

Optional User Overrides

	acre-feet
	acre-feet
0.71	inches
1.10	inches
1.40	inches
1.87	inches
2.28	inches
2.72	inches
3.14	inches

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

MHFD-Detention, Version 4.04 (February 2021)

Project: <u>East Pershing Corridor Study</u> Basin ID: <u>Post-Development Conditions, West of Dry Creek, South Side</u>

Watershed Information

Flood Control Only

Selected BMP Type =	No BMP	
Watershed Area =	1.82	acres
Watershed Length =	1,530	ft
Watershed Length to Centroid =	765	ft
Watershed Slope =	0.014	ft/ft
Watershed Imperviousness =	63.00%	percent
Percentage Hydrologic Soil Group A =	0.0%	percent
Percentage Hydrologic Soil Group B =	0.0%	percent
Percentage Hydrologic Soil Groups C/D =	100.0%	percent
Target WQCV Drain Time =	N/A	hours
Location for 1-hr Rainfall Depths =	User Input	-

Note: L / W Ratio > 8 L / W Ratio = 29.53

Location for 1-hr Rainfall Depths = User Input

After providing required inputs above including 1-hour rainfall depths, click 'Run CUHP' to generate runoff hydrographs using the embedded Colorado Urban Hydrograph Procedure.

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Water Quality Capture Volume (WQCV) =	0.037	acre-feet
Excess Urban Runoff Volume (EURV) =	0.110	acre-feet
2-yr Runoff Volume (P1 = 0.71 in.) =	0.061	acre-feet
5-yr Runoff Volume (P1 = 1.1 in.) =	0.107	acre-feet
10-yr Runoff Volume (P1 = 1.4 in.) =	0.151	acre-feet
25-yr Runoff Volume (P1 = 1.87 in.) =	0.229	acre-feet
50-yr Runoff Volume (P1 = 2.28 in.) =	0.295	acre-feet
100-yr Runoff Volume (P1 = 2.72 in.) =	0.370	acre-feet
500-yr Runoff Volume (P1 = 3.14 in.) =	0.438	acre-feet
Approximate 2-yr Detention Volume =	0.059	acre-feet
Approximate 5-yr Detention Volume =	0.103	acre-feet
Approximate 10-yr Detention Volume =	0.128	acre-feet
Approximate 25-yr Detention Volume =	0.160	acre-feet
Approximate 50-yr Detention Volume =	0.179	acre-feet
Approximate 100-yr Detention Volume =	0.209	acre-feet

acre-feet				
acre-feet				
inches				

CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: Culvert under Grasslands Parkway

rh t	Tc OTW Area D	↓ ↓γ	
Design Information (Input)			
Pipe Invert Slope	So =	0.0558	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	42.00	inches
Design discharge	Q =	10.00	cfs
Full-Flow Capacity (Calculated)			
Full-flow area	Af =	9.62	sq ft
Full-flow wetted perimeter	Pf =	11.00	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	238.30	cfs
Calculation of Normal Flow Condition Half Central Angle (0 <theta<3.14) Flow area</theta<3.14) 	Theta = An =	0.77	radians sq ft
Top width	Tn =	2.43	ft
Wetted perimeter	Pn =	2.68	ft
Flow depth	Yn =	0.49	ft
Flow velocity	Vn =	12.25	fps
Discharge	Qn =	10.00	cfs
Percent of Full Flow	Flow =	4.2%	of full flow
Normal Depth Froude Number	Fr _n =	3.72	supercritical
Calculation of Critical Flow Condition Half Central Angle (0 <theta-c<3.14) Critical flow area Critical top width Critical flow depth</theta-c<3.14) 	Theta-c = Ac = Tc = Yc =	1.10 2.13 3.12 0.96	radians sq ft ft
Critical flow velocity	Vc =	4.69	fps
Critical Depth Froude Number	$Fr_c =$	1.00	

CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: Culvert from Cheyenne Ranch Detention

ri Fi	T _c How Area D	↓ Y	
<u>Design Information (Input)</u>			
Pipe Invert Slope	So =	0.0174	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	42.00	inches
Design discharge	Q =	10.00	cfs
Full-Flow Capacity (Calculated)			
Full-flow area	Af =	9.62	sq ft
Full-flow wetted perimeter	Pf =	11.00	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	133.07	cfs
Calculation of Normal Flow Condition			
Half Central Angle (0 <theta<3.14)< td=""><td>Theta =</td><td>0.89</td><td>radians</td></theta<3.14)<>	Theta =	0.89	radians
Flow area	An =	1.23	sq ft
Top width	Tn =	2.72	ft
Wetted perimeter	Pn =	3.12	ft
Flow depth	Yn =	0.65	ft
Flow velocity	Vn =	8.13	fps
Discharge	Qn =	10.00	cfs
Percent of Full Flow	Flow =	7.5%	of full flow
Normal Depth Froude Number	Fr _n =	2.13	supercritical
Calculation of Critical Flow Condition	· · n =	2.115	
Half Central Angle (0 <theta-c<3.14)< td=""><td>Theta-c =</td><td>1.10</td><td>radians</td></theta-c<3.14)<>	Theta-c =	1.10	radians
Critical flow area	Ac =	2.13	sq ft
Critical top width	Tc =	3.12	ft
Critical flow depth	Yc =	0.96	ft
Critical flow velocity	Vc =	4.69	fps
Critical Depth Froude Number	Fr _c =	1.00	

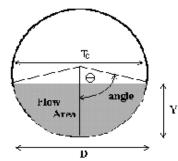
CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: Culvert from Pershing Pointe Detention

Fic	Te Orwangle Area	↓Υ	
Design Information (Input)			_
Pipe Invert Slope	So =	0.0175	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	30.00	inches
Design discharge	Q =	10.00	cfs
Full Flow Conscity (Colculated)			
Full-Flow Capacity (Calculated) Full-flow area	Af =	4.91	
Full-flow wetted perimeter	AI = Pf =	7.85	sq ftft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity		54.41	cfs
	Qf =	54.41	LIS
Calculation of Normal Flow Condition			
Half Central Angle (0 <theta<3.14)< td=""><td>Theta =</td><td>1.14</td><td>radians</td></theta<3.14)<>	Theta =	1.14	radians
Flow area	An =	1.18	sq ft
Top width	Tn =	2.27	ft
Wetted perimeter	Pn =	2.85	ft
Flow depth	Yn =	0.73	ft
Flow velocity	Vn =	8.45	fps
Discharge	Qn =	10.00	cfs
Percent of Full Flow	Flow =	18.4%	of full flow
Normal Depth Froude Number	Fr _n =	2.06	supercritical
Calculation of Critical Flow Condition Half Central Angle (0 <theta-c<3.14) Critical flow area Critical top width Critical flow depth Critical flow velocity</theta-c<3.14) 	Theta-c = Ac = Tc = Yc = Vc =	1.42 1.97 2.47 1.06 5.07	radians sq ft ft ft ft fps
Critical Depth Froude Number	Fr _c =	1.00	

CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Corridor Study Pipe ID: RCP running West to East under Taft Ave

¢	T ₆ How angle Area) ↓ ↓ Y	
<u>Design Information (Input)</u>			
Pipe Invert Slope	So =	0.0593	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	30.00	inches
Design discharge	Q =	5.00	cfs
Full-Flow Capacity (Calculated)			
Full-flow area	Af =	4.91	sq ft
Full-flow wetted perimeter	Pf =	7.85	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	100.15	cfs
<u>Calculation of Normal Flow Condition</u> Half Central Angle (0 <theta<3.14) Flow area</theta<3.14) 	Theta =	0.80	radians sq ft
Top width	All = Tn =	1.79	sq n
Wetted perimeter	Pn =	2.00	ft
Flow depth	Yn =	0.38	ft
Flow velocity	Vn =	10.63	fps
Discharge	On =	5.00	cfs
Percent of Full Flow	Flow =	5.0%	of full flow
Normal Depth Froude Number	$Fr_n =$	3.66	supercritical
Calculation of Critical Flow Condition Half Central Angle (0 <theta-c<3.14)< td=""><td>Theta-c =</td><td>1.15</td><td>Iradians</td></theta-c<3.14)<>	Theta-c =	1.15	Iradians
Critical flow area	Ac =	1.15	sq ft
Critical top width	AC = Tc =	2.28	Sq it
Critical flow depth	1C = Yc =	0.74	ft
Critical flow velocity	VC =		
Critical Depth Froude Number		4.13	fps
	Fr _c =	1.00	

IRCULAR CONDUIT FLOW (Normal & Critical Depth Computation MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: Culvert outlet into Dry Creek, from West, South Side of Creek CIRCULAR



Design Information (Input)			
Pipe Invert Slope	So =	0.0018	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	24.00	inches
Design discharge	Q =	5.00	cfs
Full-Flow Capacity (Calculated)			
Full-flow area	Af =	3.14	sq ft
Full-flow wetted perimeter	Pf =	6.28	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	9.49	cfs
Calculation of Normal Flow Condition			
Half Central Angle (0 <theta<3.14)< td=""><td>Theta =</td><td>1.60</td><td>radians</td></theta<3.14)<>	Theta =	1.60	radians
Flow area	An =	1.63	sq ft
Top width	Tn =	2.00	ft
Wetted perimeter	Pn =	3.20	ft
Flow depth	Yn =	1.03	ft
Flow velocity	Vn =	3.06	fps
Discharge	Qn =	5.00	cfs
Percent of Full Flow	Flow =	52.7%	of full flow
Normal Depth Froude Number	Fr _n =	0.60	subcritical
Calculation of Critical Flow Condition			
Half Central Angle (0 <theta-c<3.14)< td=""><td>Theta-c =</td><td>1.36</td><td>radians</td></theta-c<3.14)<>	Theta-c =	1.36	radians
Critical flow area	Ac =	1.15	sq ft
Critical top width	Tc =	1.95	ft
Critical flow depth	Yc =	0.79	ft
Critical flow velocity	Vc =	4.35	fps
Critical Depth Froude Number	Fr _c =	1.00	

CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: North to South Culverts, East of Dry Creek

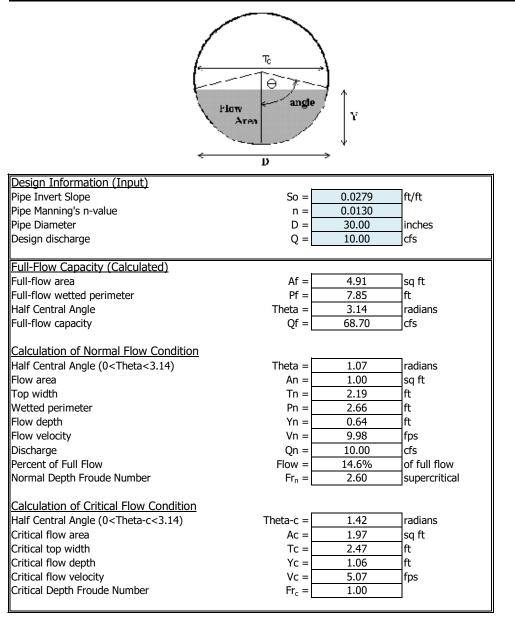
←	Tc Plow Area D	↓ ↓γ	
Design Information (Input)			
Pipe Invert Slope	So =	0.0035	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	24.00	inches
Design discharge	Q =	10.00	cfs
Full-Flow Capacity (Calculated)	. —		
Full-flow area	Af =	3.14	sq ft
Full-flow wetted perimeter	Pf =	6.28	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	13.42	cfs
Calculation of Normal Flow Condition	The star	1.00	us dia na
Half Central Angle (0 <theta<3.14)< td=""><td>Theta =</td><td>1.86</td><td>radians</td></theta<3.14)<>	Theta =	1.86	radians
Flow area	An =	2.14	sq ft
Top width	Tn =	1.92	ft
Wetted perimeter	Pn =	3.72	ft
Flow depth	Yn =	1.29	ft
Flow velocity	Vn =	4.68	fps
Discharge	Qn =	10.00	cfs
Percent of Full Flow	Flow =	74.5%	of full flow
Normal Depth Froude Number	Fr _n =	0.78	subcritical
Calculation of Critical Flow Condition		1 70	us dia na
Half Central Angle (0 <theta-c<3.14)< td=""><td>Theta-c =</td><td>1.70</td><td>radians</td></theta-c<3.14)<>	Theta-c =	1.70	radians
Critical flow area	Ac =	1.83	sq ft
Critical top width	Tc =	1.98	ft
Critical flow depth	Yc =	1.13	ft
Critical flow velocity	Vc =	5.46	fps
Critical Depth Froude Number	Fr _c =	1.00	
	-		

CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation)

MHFD-Culvert, Version 4.00 (May 2020)

Project: East Pershing Planning Study

Pipe ID: Three RCP Culverts under Road, 5320 East Pershing



CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: RCP Culvert on the West side of Wenandy

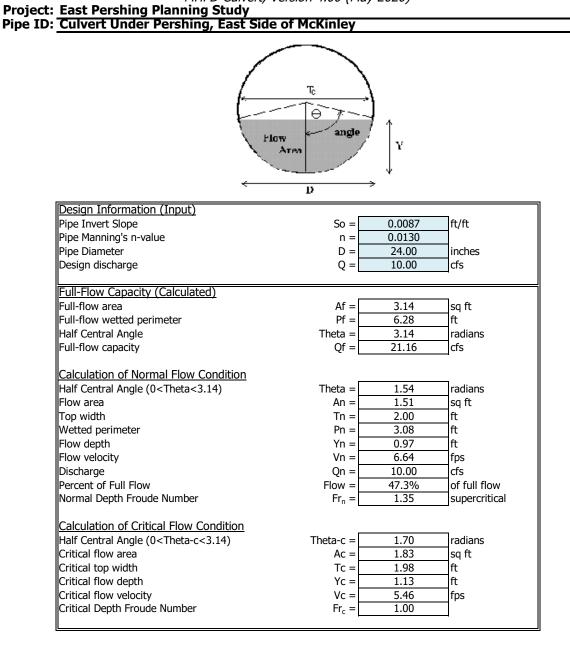
	T _c tiony Area D	ļ ↓v	
Design Information (Input)			
Pipe Invert Slope	So =	0.0105	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	36.00	inches
Design discharge	Q =	10.00	cfs
			<u> </u>
Full-Flow Capacity (Calculated)			
Full-flow area	Af =	7.07	sq ft
Full-flow wetted perimeter	Pf =	9.42	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	68.53	cfs
Calculation of Normal Flow Condition Half Central Angle (0 <theta<3.14) Flow area Top width Wetted perimeter Flow depth Flow velocity Discharge Percent of Full Flow Normal Depth Froude Number</theta<3.14) 	Theta = An = Tn = Pn = Yn = Vn = Qn = Flow = Fr _n =	1.07 1.45 2.63 3.20 0.77 6.92 10.00 14.6% 1.64	radians sq ft ft ft ft fps cfs of full flow supercritical
Calculation of Critical Flow Condition Half Central Angle (0 <theta-c<3.14) Critical flow area Critical top width Critical flow depth Critical flow velocity Critical Depth Froude Number</theta-c<3.14) 	Theta-c = Ac = Tc = Yc = Vc = Fr _c =	1.23 2.06 2.83 1.00 4.85 1.00	radians sq ft ft ft fps

CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation) MHFD-Culvert, Version 4.00 (May 2020) Project: East Pershing Planning Study Pipe ID: Culvert Under Pershing, East Side of Wenandy

(T _c Flow Area D	Ì ↓ ↓	
Design Information (Input)			
Pipe Invert Slope	So =	0.0052	ft/ft
Pipe Manning's n-value	n =	0.0130	
Pipe Diameter	D =	36.00	inches
Design discharge	Q =	10.00	cfs
Full-Flow Capacity (Calculated)			
Full-flow area	Af =	7.07	sq ft
Full-flow wetted perimeter	Pf =	9.42	ft
Half Central Angle	Theta =	3.14	radians
Full-flow capacity	Qf =	48.23	cfs
Calculation of Normal Flow Condition			
Half Central Angle (0 <theta<3.14)< td=""><td>Theta =</td><td>1.18</td><td>radians</td></theta<3.14)<>	Theta =	1.18	radians
Flow area	An =	1.86	sq ft
Top width	Tn =	2.77	ft
Wetted perimeter	Pn =	3.54	ft
Flow depth	Yn =	0.93	ft
Flow velocity	Vn =	5.38	fps
Discharge	Qn =	10.00	cfs
Percent of Full Flow	Flow =	20.7%	of full flow
Normal Depth Froude Number	Fr _n =	1.16	supercritical
Calculation of Critical Flow Condition			
Half Central Angle (0 <theta-c<3.14)< td=""><td>Theta-c =</td><td>1.23</td><td>radians</td></theta-c<3.14)<>	Theta-c =	1.23	radians
Critical flow area	Ac =	2.06	sq ft
Critical top width	Tc =	2.83	ft
Critical flow depth	Yc =	1.00	ft
Critical flow velocity	Vc =	4.85	fps
Critical Depth Froude Number	Fr _c =	1.00	

FLOW (Normal & Critical Depth Computation CONDU IRCULAR

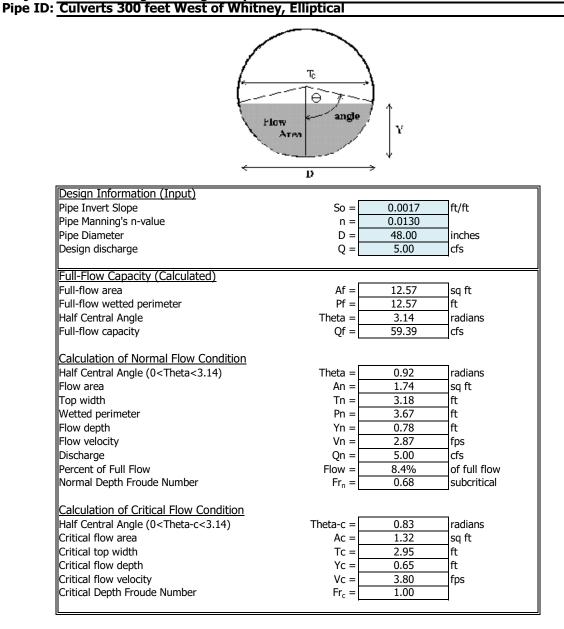
MHFD-Culvert, Version 4.00 (May 2020)



CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation)

MHFD-Culvert, Version 4.00 (May 2020)

Project: East Pershing Planning Study

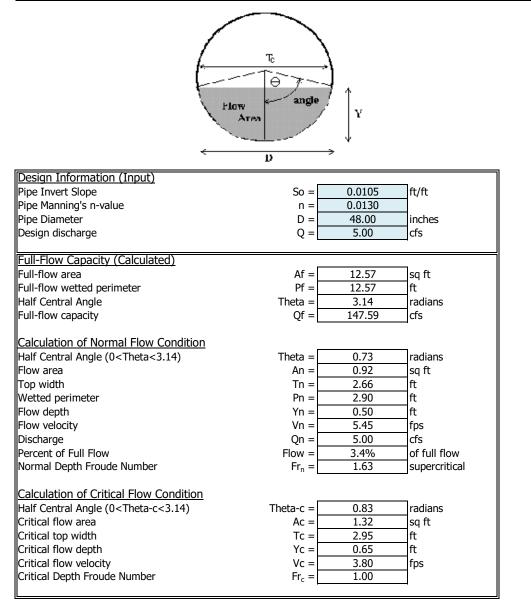


CIRCULAR CONDUIT FLOW (Normal & Critical Depth Computation)

MHFD-Culvert, Version 4.00 (May 2020)

Project: East Pershing Planning Study

Pipe ID: RCP Culverts under Whitney/Pershing Intersection



Open Ditch Calculations West of Dry Creek

outlet into biy creek	Manifalli chisting	pipe size and slope to	not increase outle	t late					
Have 13.8 ft distance b	oetween - use 12 ft	:			Desired Acre-ft=				
					Attained Acre-ft=	0.872 South	1.070082645 North		
Ditch, south side upgr			1.49 AR 2/3 S 1/2						
Q=		ate, CFS	= n						
Slope=									
Top Width=	12								
Height=	3								
z=	2 width c	of channel slope (for a	rise of 1 ft)						
rh=	1.34 Hydrau	ilic Radius (ft)							
Pw=	13.4 Wetteo	l perimeter (ft)							
n=	0.027 Mannir	ng's n value							
A=	18 Flow Ar	rea (ft2)							
Ditch Length=	70 ft								
Ditch volume=	1260 ft3	0.029 acre-ft							
North side ditch - typic	al culverts have a	capacity of 30 CES							
Q=				Q=	286.2 Flow Rate,	CES			
Slope=				Slope=	0.013	0.5			
Top Width=				Top Width=	23.6				
Height=				Height=	3				
z=		of channel slope (for a	rise of 1 ft)		3.933333 width of ch	annel slone (for a rise	e of 1 ft)		
rh=		lic Radius (ft)	1150 01 210	rh=	1.45 Hydraulic F				
Pw=		l perimeter (ft)		Pw=	24.4 Wetted pe				
n=				n=	0.027 Manning's				
A=		•		A=	35.4 Flow Area				
~	27 1100 A	100 (112)		A-	33.4 How Area	(112)			
ingth of ditch section=									
Ditch volume=		1.783471 acre-ft							
Reduce by 40%=	46612.8 ft3	1.070083 acre-ft	To allow for a	ccesses, road cross	ings, and other imped	iments on ditch volun	ne		
South side ditch, from	Toft/Bolk to last a	core ungradient of D	ov Crook outlat					Q=	106.
Q=			ly cleek outlet	Q=	80.5 Flow Rate,	CEC		Slope=	0.007
Slope=		ate, cr5		Slope=	0.0078	CF3		Top Width=	0.007
Top Width=				Top Width=	12			Height=	1
Height=				Height=	2.5			•	
reignt=		of channel slope (for a	rico of 1 ft)	reignt=		nannel slope (for a rise	o of 1 ft)	z= rh=	1.3
z= rh=		lic Radius (ft)	inse of 1 nj	rh=	1.15 Hydraulic F		201111)	Pw=	1.5
Pw=		l perimeter (ft)		Pw=	13.0 Wetted pe			n=	0.02
n=				n=	0.027 Manning's			A=	1
A=	15 Flow Ar	rea (ft2)		A=	15 Flow Area	(#2)			
Length=				Length=	357 ft				
Volume=	6900 ft3			Volume=	5890.5 ft3	0.293629	acre-ft		

Outlet into Dry Creek Maintain existing pipe size and slope to not increase outlet rate

 Q=
 106.8 Flow Rate, CFS

 p=
 0.0078

 ht=
 12

 ht=
 3

 z=
 2 width of channel slope (for a rise of 1 ft)

 h
 1.34 Hydraulic Radius (ft)

 w=
 1.34 Wetted perimeter (ft)

 n=
 0.027 Manning's n value

 A=
 18 Flow Area (ft2)

Open Ditch Calculations West of Dry Creek

South Ditch along Pers	shing Pointe Apartments						
Section 1		Section 2		Section 3		Section 4	
Q=	476.1 Flow Rate, CFS	Q=	476.1 Flow Rate, CFS	Q=	263.2 Flow Rate, CFS	Q=	243.5 Flow Rate, CFS
Slope=	0.0178	Slope=	0.0178	Slope=	0.0178	Slope=	0.0178
Top Width=	26	Top Width=	26	Top Width=	15	Top Width=	14
Height=	3.5	Height=	3.5	Height=	3.5	Height=	3.5
Z=	3.714286 width of channel slope (for a rise of 1 ft)	z=	3.714286 width of channel slope (for a rise of 1 ft)	Z=	2.142857 width of channel slope (for a rise of 1 ft)	Z=	2 width of channel slope (for a rise of 1 ft)
rh=	1.69 Hydraulic Radius (ft)	rh=	1.69 Hydraulic Radius (ft)	rh=	1.59 Hydraulic Radius (ft)	rh=	1.57 Hydraulic Radius (ft)
Pw=	26.9 Wetted perimeter (ft)	Pw=	26.9 Wetted perimeter (ft)	Pw=	16.6 Wetted perimeter (ft)	Pw=	15.7 Wetted perimeter (ft)
n=	0.027 Manning's n value	n=	0.027 Manning's n value	n=	0.027 Manning's n value	n=	0.027 Manning's n value
A=	45.5 Flow Area (ft2)	A=	45.5 Flow Area (ft2)	A=	26.25 Flow Area (ft2)	A=	24.5 Flow Area (ft2)
Length=	197 ft	Length=	110.5 ft	Length=	110.6 ft	Length=	288 ft
Volume=	8963.5 ft3	Volume=	5027.75 ft3	Volume=	2903.25 ft3	Volume=	7056 ft3
						0	.549828 acre-ft
South Ditch - Grasslan	ds Parkway to Pershing Pointe						
Street slope at 1005+0	00 is 0.64%, vertical curve to increase slope to 1.78% at sta	tion 1010+00					
Section 1 (Sections go	from west to east) Sta 1007+25	Section 2 - r	natches section 1 above, Sta 1011+50				
0=	530.6 Flow Rate CES	0=	476.1 Flow Rate CFS				

IT I (Sections go	monn west	10 easi) 51a 1007+25	Section 2 *	matches s	ection 1 above, 5ta 1011+50
Q=	530.6	Flow Rate, CFS	Q=	476.1	Flow Rate, CFS
Slope=	0.014118		Slope=	0.0178	
Top Width=	22		Top Width=	26	
Height=	4.5		Height=	3.5	
z=	2.444444	width of channel slope (for a rise of 1 ft)	Z=	3.714286	width of channel slope (for a rise of 1 ft)
rh=	2.08	Hydraulic Radius (ft)	rh=	1.69	Hydraulic Radius (ft)
Pw=	23.8	Wetted perimeter (ft)	Pw=	26.9	Wetted perimeter (ft)
n=	0.027	Manning's n value	n=	0.027	Manning's n value
A=	49.5	Flow Area (ft2)	A=	45.5	Flow Area (ft2)
Length=	444	ft			
Volume=	21090	ft3			
	0.48416	acre-ft			

Road Capacity Calculations and Inlet/Curb Cut Placement

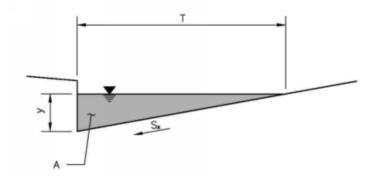


Figure 7-1. Gutter section with uniform cross slope

For a triangular cross section as shown in Figure 7-1, Manning's equation for gutter flow is written as:

$$Q = \frac{1.8}{n} A R^{2/3} S_o^{1/2} = \frac{0.56}{n} S_x^{5/3} S_o^{1/2} T^{8/3}$$
 Equation 7-1

Where:

Q = calculated flow rate for the half-street (cfs)

n = Manning's roughness coefficient (0.016 for asphalt street with concrete gutter, 0.013 for concrete street and gutter)

R = hydraulic radius of wetted cross section = A/P (ft)

A = cross-sectional area (ft²)

P = wetted perimeter of cross section (ft)

 S_x = street cross slope (ft/ft)

 $S_o =$ longitudinal slope (ft/ft)

T = top width of flow spread (ft).

The flow depth can be found using:

$$y = TS_x$$

Where:

y = flow depth at the gutter flowline (ft).

Note that the flow depth generally should not exceed the curb height during the minor storm based on Table 7-2. Manning's equation can be written in terms of the flow depth, as:

$$Q = \frac{0.56}{nS_x} S_L^{1/2} y^{8/3}$$

0.00

Equation 7-3

The cross-sectional flow area, A, can be expressed as:

 $A = \frac{S_x T^2}{2}$ Equation 7-4

The gutter velocity at peak capacity may be found from continuity (V = Q/A).

Equation 7-2

Road Capacity Calculations and Inlet/Curb Cut Placement

n= y=		016 for asphalt with c 0.5 curb height (ft)	oncrete curb and gu	tter						A1 north= Q1 minor north=	3.	54 acres, from 38 cfs	sta 1002+71.	35 to 1029+62.	56		A1 south= Q1 minor south=	3	.77 cfs	ta 1002+71.35 to 1	029+62.56					
									ŭ	21 major north=	6.	76 cfs					Q1 major south=	/	.55 cfs							
										A2 north=		88					A2 south=			ta 1002+71.35 to 1	029+62.56					
										Q2 minor north= Q2 major north=		01 02					Q2 minor south= Q2 major south=		.07 cfs .15 cfs							
										A3 north=		79					A3 south=			ta 1002+71.35 to 1	029+62.56					
										Q3 minor north= Q3 major north=		79 58					Q3 minor south= Q3 major south=		.79 cfs .58 cfs							
												20						2	25	- 4002 - 74 25 1- 4	020.02.50					
									c	A4 north= Q4 minor north=		39 83					A4 south= Q4 minor south=		.25 acres, from st .63 cfs	ta 1002+71.35 to 1	029+62.5t					
						6-1	leader of Arrest			Q4 major north=		68	Coloria				Q4 major south=		.28 cfs		Coloulater		Allassabla	the columba	Allowship fil	
		Minor Storm	Major Storm			for	Iculated Area North	Side Top Peak I		Allowable Flow ate for North		or rate for Nor	low Calcula th Runoff	for Maior				Calculated Are for		p Peak Flow rat	Calculated e Runoff for			Flow Calculated outh Runoff for	Allowable Flo Minor rate for Sout	
			Reduction Factor	North Roa	d North Road	sub						side, Minor			of with Inlets S	outh Road	South Road	subcatchment					with Inlets side, Majo		year side, Minor	
	adway Slope (%		for Gutter Flow	Width (ft)		(%) (ft2	2) Spread	., .,	-	11 N 11	(cfs)	Storm (cfs)	(cfs)	(cfs) V	. ,	Cross Slope (%)	. ,	Spread (ft)	(cfs)	(cfs)	(cfs)	Storm (cfs)	(cfs)	Storm (cfs)	Notes
100271.75 100503.76		21	1		0.58 5.46	2 - 1.9	6501	43.16 19.46	17.6 35.1	17.6 35.1		33	17.6 - 35.1	- 0.66		24.58 36.58			095 30	0 0.58 3	0 - 35.1	0.72	0.72	0.0 - 35.1	0.36	0.0 Begin new alignment, all flow is going towards the north
100503.76		21	1		5.46	1.9	8951	19.46	35.1	35.1		33 45	35.1	0.66		36.58					35.1 35.1	1.07	0.72	55.1	0.30	35.1 Begin vertical curve Curb cut on south side, intersection with Grasslands Parkway
100753.76	-1	50	-	1 2	4.58	3.22	12793	18.58	25.6	25.6	0.	64	25.6	1.29		24.58	3.34	147	740 18	8.58 2	24.7	1.49	1.20	24.7		24.7 VPI
101003.76		78	1 0			4.03	18938 36618	18.58 18.58	24.3	21.9		95	24.3	1.91	2.20	24.58 36					28.4	2.11	1.82	25.6		28.4 End vertical curve
101723.06 102023.06		21 93	1			3.78 3.76	43992	18.58	17.6 13.6	17.6 13.6		84 22	17.6 13.6	3.69 4.43	2.29	36 24.58	2.76 3.27				24.2 15.6	4.30 5.22	2.75 3.66	24.2 15.6		24.2 Begin vertical curve, curb cut on north and south side just west of Taft/Polk intersection 15.6 VPI
102323.05		0.64	1			3.76	51366	18.58	9.4	9.4		59	9.4	5.18		24.58					9.4	5.96	4.41	9.4		9.4 End vertical curve
102800		0.64	1			3.56	63089	18.58	9.9	9.9		18	9.9	6.36	4.10	24.58					9.9	7.15	5.59	9.9	3.57	9.9
102862.56 102962.56).71).61	1			3.56 3.56	64627 67085	18.58 18.58	11.0 9.4	11.0 9.4		26 38	11.0 9.4	6.51 6.76		24.58 24.58					9.4	7.30 7.55	4.83 5.07	11.0 9.4	3.65 3.77	11.0
102962.56			1		4.58	2	8294	18.58	24.0	24.0		30 44	24.0	0.87	4.97	24.58					9.4 24.0	0.90	5.97	24.0	0.45	24.0
103399.06		0.42	1			3.45	10729	18.58	6.7	6.7		56	6.7	1.13	5.23	24.58					6.7	1.16	6.24	6.7	0.58	6.7
104221.44		.21	1			2.67	30943	18.58	4.3	4.3		62	4.3	3.25	5.00	24.58					4.3	3.35	6.08	4.3		4.3 Begin vertical curve, took average of two
104521.44 104821.44		0.32	1 1			0.6	38317 7374	18.58 18.58	0.0	0.0	-	01 38	0.0	4.02	5.77	24.58 24.58					0.0 6.9	4.15	6.88	0.0 6.9	2.07 0.38	0.0 VPI (Low point), need inlet
104821.44		1.32	1			2.57	34549	18.58	6.9	6.9		36 79	6.9 6.9	3.58		24.58					6.9	0.76 3.58		6.9	1.79	6.9 End Vertical curve 6.9
106177.69		1.76	1			1.93	5410	12.58	21.6	21.6	0.	18	21.6	0.35		24.58					32.0	0.40		32.0		32.0 Begin vertical curve, took average of two
106677.69		19	1		4.58	3.3	16200	31.29	19.9	19.9		53	19.9	1.06		18.71			984		0.0	1.11		0.0		0.0 End Vertical curve
106847.62 107047.62	0	0.60	1			3.17 2.38	20377 25293	37.16 37.16	10.3 0.0	10.3 0.0		<mark>67</mark> 83	10.3 0.0	1.33 1.66 Elov	ws west to inle	24.58 24.58			579		0.0	1.36 1.68 Flows	west to inle	0.0 0.0	0.00 0.00	0.0 Begin vertical curve, took average of two 0.0 VPI, High Point
107247.62	-0	0.85	1			2.63	30209	37.16	17.8	17.8		99	17.8	1.98	0.32	24.58			495		0.0	2.00	0.32	0.0	0.00	0.0 End Vertical curve
107406.99		.43	1			3.65	34126	37.16	6.4	6.4		11	6.4	2.23	0.58	24.58					0.0	2.26	0.58	0.0	0.00	0.0 Begin vertical curve, took average of two
107600 108006.99		0 .18 0.9			4.58 4.58	2.62 1.9	38870 48874	37.16 18.58	0.0 63.2	0.0 48.1		27 60	0.0 59.5	2.54 3.20	0.89 1.54	24.58 24.58		391 491			0.0 40.1	2.57 3.23	0.89 1.55	0.0 30.4	0.00 1.61	0.0 Flat spot on curve, but top of curve so no inlet 37.7 VPI
108652.22		14	1			4.13	64734	18.58	15.2	15.2		11	15.2	4.24	2.58	24.58					15.8	4.27	2.59	15.8		15.8 End Vertical curve
109152.22	-0		1		4.58	1	77024	18.58	14.9	14.9		52	14.9	5.04	0.81	24.58					14.9	5.08	0.81	14.9		14.9 Begin vertical curve, took average of two
109248.7 109623.7		0 84	1 1 0.8		4.58 4.58	0.5 0.66	79395 88613	18.58 18.58	0.0 153.3	0.0 134.9		59 89	0.0 153.3	5.20 5.80	0.96 1.56	24.58 24.58					0.0 14.5	5.23 5.84	0.96 1.57	0.0 127.2		0.0 End Vertical curve
109623.7 109998.7		84 1.67 0.6				1.95	97830	18.58	103.7	134.9		89 20	66.4	6.40	2.17	24.58					14.5 92.7	5.84 6.44	2.17	96.3		44.5 Begin vertical curve, took average of two, low spot, need inlet 23.3 VPI
110325			1 0.8			1.76	105851	18.58	58.7	50.5		46	58.7	6.93	2.69	24.58					51.2	6.97	2.70	52.6		61.2 End Vertical curve
110625		.98	1		6.58	1.7	115025	30.58	31.7	31.7		76	31.7	7.53	3.29	24.58					26.0	7.45	3.18	26.0		26.0 Begin vertical curve
110925 111008.45			1		4.58 4.58	1.3 2.62	124199 126250	18.58 18.58	3.4 22.4	3.4 22.4		06 12	3.4 22.4	8.13 8.26	0.60 0.74	24.58 24.58					3.5 22.9	7.94 8.07	0.49 0.62	3.5 22.9	3.96 4.03	3.5 VPI 22.9 End Vertical curve
111158.45			1 0.9			1.53	129937	18.58	56.1	55.6		24	56.1	8.51	0.98	24.58					52.2	8.31	0.86	61.6		62.2 Begin vertical curve
111308.45		.05 0.9				2.95	133624	18.58	38.3	31.0	4.	36	37.9	8.75	1.22	24.58		1303	310 18		46.1	8.55	1.11	37.4	4.27	45.7 VPI
111324.56 111424.56		36 02	1			2.95 1.82	134020 137078	18.58 30.58	25.4 30.7	25.4 30.7		38 48	25.4 30.7	8.77 8.97	1.25 1.45	24.58 24.58					30.6 26.0	8.58 8.74	1.13 1.29	30.6 26.0		30.6 End Vertical curve
111424.56			1			1.82	140736	30.58	22.8	30.7		48 60	22.8	9.21	1.45	24.58					20.5	8.74 8.90	1.29	26.0		26.0 Begin vertical curve 20.5 VPI
111758.02			1		4.58	0.5	147875	18.58	1.8	1.8		83	1.8	9.68	2.15	24.58					1.8	9.28	1.83	1.8	4.63	1.8 End Vertical curve
111807.63																										Begin vertical curve End new alignment

Curb Cut Capacity Checks

	n=	0.016 for asphalt with concr			Street Cross Slope, S _x	Curb Opening Length				Cumulative Reductio	n	
Station with In	nlet Sump	Continuous Grade To	otal Flow (CFS)	Slope, S _L (ft/ft)	(ft/ft)	for 100% Capture (ft) C	urb Opening Efficiency	Flow after Inlet (CFS)	Reduction in Flow (CFS)	in Flow (CFS)	Inlet Location	Inlet Type
1006+00.00	No	Yes	1.07	0.0121	0.019	12.6	0.27	0.78	0.29	0.29	SW	2' curb cut, southwest corner of intersection with Grasslands Parkway
1017+23.06	No	Yes	4.01	0.0121	0.0276	20.9	0.17	3.35	0.67	0.95	SW	
	No	Yes	3.35	0.0121	0.0276	19.0	0.18	2.74	0.61	1.56	SE	
1028+24.00	No	Yes	5.64	0.0064	0.0356	21.3	0.16	4.72	0.92	2.48	South	2' curb cut on the south side, just before release into Dry Creel
				Longitudinal Street	Street Cross Slope, S _x	Curb Opening Length				Cumulative Reductio	n	
Station with In	nlet Sump	Continuous Grade To	otal Flow (CFS)	Slope, S ₁ (ft/ft)	(ft/ft)	for 100% Capture (ft) C	urb Opening Efficiency	Flow after Inlet (CFS)	Reduction in Flow (CFS)	in Flow (CFS)	Inlet Location	Inlet Type
1017+23.06	No	Yes	3.69	0.0121	0.0387	17.1	0.20	2.95	0.74	0.74	NW	2' curb cut at all four corners of the intersection with Taft/Poll
	No	Yes	2.95	0.0121	0.0387	15.3	0.22	2.29	0.66	1.40	NE	
1027+41.06	No	Yes	4.96	0.0064	0.0356	19.9	0.17	4.10	0.86	2.26	North	2' curb cut on the north side, just before culverts that cut south to eventually release into Dry C

Inlet Capacity Checks

n=	= 0.01	L6 for asphalt with o	concrete curb a	nd gutter	N _w =	0.7									
L=	-	3 ft, grate length fo	or Type A inlet		C _W =	3.3									
W=	= 2.	.5 ft, grate width fo	r Type A inlet		N ₀ =	0.43									
α=	-	0			C ₀ =	0.6									
β=	= 0.6	58			C _m =	0.93									
v=	= 0.0	06			Q _w =	6.53	Wier Flow, CFS								
n=	= 0.002				Q ₀ =		Orifice Flow, CFS								
V ₀ =		6 ft/sec Splash Ove	er Velocity		Q _M =		Mixed Flow, CFS								
-0			,				Interception Capaci	ty (cfs)							
					9	Total Spread of	interception capaci	(0.5)	More than	Ratio of flow					
		Continuous	Total Flow	Longitudinal Street	Street Cross Slope.	Water in half-	Full Gutter Flow	Velocity of Flow in	Splash	intercepted by	Frontal Discharge	Flow Intercepted	Flow After Grate	Inlet	
Canadiana sudah dad							A	Gutter (ft/sec)	Velocity?	Grate	Flow (CFS)	by Grate (CFS)	(CFS)	Location	Inlet Type
Station with Inl	le Sump	Grade	(CFS)	Slope, S. (ft/ft)	S _v (ft/ft)	Street (ft)	Area (rt.)								
Station with Inl 1042+21.44	le Sump No	Yes Grade	(CFS) 7.35	Slope, S _L (ft/ft) 0.0021	S _x (ft/ft) 0.0267	Street (ft) 18.58	Area (ft ²) 4.61					2.35	. ,	North	
1042+21.44 1045+21.44			. ,		S _x (ft/ft) 0.0267	. ,		1.59	yes	0.997	2.35	, , ,	5.00		New Type A inlets on north and south side of road
1042+21.44	No	Yes	7.35		A. C.	. ,						2.35	5.00	North	
1042+21.44 1045+21.44	No Yes	Yes No	7.35 11.01		A. C.	. ,						2.35 13.07	5.00 0.00	North North	New Type A inlets on north and south side of road New Type A inlets on north and south side of road
1042+21.44 1045+21.44 1076+00	No Yes Yes	Yes No No	7.35 11.01 2.58		A. C.	. ,						2.35 13.07 6.53	5.00 0.00 0.00	North North North	New Type A inlets on north and south side of road New Type A inlets on north and south side of road New Type A inlets on north and south side of road
1042+21.44 1045+21.44 1076+00 1092+48.7	No Yes Yes Yes	Yes No No No	7.35 11.01 2.58 3.29		A. C.	. ,						2.35 13.07 6.53 6.53	5.00 0.00 0.00 0.00	North North North North	New Type A inlets on north and south side of road New Type A inlets on north and south side of road New Type A inlets on north and south side of road New Type A inlets on north and south side of road
1042+21.44 1045+21.44 1076+00 1092+48.7	No Yes Yes Yes	Yes No No No	7.35 11.01 2.58 3.29		A. C.	. ,						2.35 13.07 6.53 6.53	5.00 0.00 0.00 0.00	North North North North North	New Type A inlets on north and south side of road New Type A inlets on north and south side of road New Type A inlets on north and south side of road New Type A inlets on north and south side of road

		Continuou	is Total Flow	Longitudinal Street	Street Cross Slope,	Water in half-	Full Gutter Flow	Velocity of Flow in	Splash	intercepted by	Frontal Discharge	Flow Intercepted	Flow After Grate	Inlet	
Station with I	nle Sump	Grade	(CFS)	Slope, S _L (ft/ft)	S _x (ft/ft)	Street (ft)	Area (ft ²)	Gutter (ft/sec)	Velocity?	Grate	Flow (CFS)	by Grate (CFS)	(CFS)	Location	Inlet Type
1042+21.44	No	Yes	7.35	0.002	0.0267	18.58	4.61	1.59	yes	0.997	2.35	2.35	5.00	South I	New Type A inlets on north and south side of road
1045+21.44	Yes	No	12.14									13.07	0.00	South I	New Type A inlets on north and south side of road
1076+00	Yes	No	2.59									6.53	0.00	South I	New Type A inlets on north and south side of road
1092+48.7	Yes	No	3.18									6.53	0.00	South I	New Type A inlets on north and south side of road
1109+25	Yes	No	1.83									6.53	0.00	South I	New Type A inlets on north and south side of road

n=	0.016 for asphalt with concrete curb and gutter	N _w =	0.7
L=	2 ft, grate length for Type B inlet	C _W =	3.3
W=	2 ft, grate width for Type B inlet	N ₀ =	0.43
α=	0	C ₀ =	0.6
β=	0.68	C _m =	0.93
γ=	0.06	Q _w =	4.90 Wier Flow, CFS
η=	0.0023	Q ₀ =	5.86 Orifice Flow, CFS
V ₀ =	1.14 ft/sec Splash Over Velocity	Q _M =	4.98 Mixed Flow, CFS
		Q _i =	4.90 Interception Capacity (cfs)

F: COST ESTIMATES

East Pershing Boulevard - US 30 to Taft / Polk Avenue

Length LF 1775

			Estimated		
Item	Description	Unit	Quantity	Unit Price	Total Price
201.03201	CLEARING AND GRUBBING	ACRE	2	\$12,077.29	\$23,622.25
202.03260	REMOVAL OF PIPE	FT	500	\$19.57	\$9,785.00
202.03305	MILLING PLANT MIX	SY	10257	\$1.21	\$12,411.35
202.03400	REMOVAL OF SURFACING	SY	1578	\$19.46	\$30,703.56
202.03430	REMOVAL OF SIDEWALK	SY	267	\$17.11	\$4,562.67
202.03600	CUTTING BIT PVMT	FT	4001	\$2.25	\$9,002.54
202.03500	RESET MAILBOX (SINGLE)	EA	5	\$390.17	\$1,950.85
203.02500	UNCLASSIFIED EXCAVATION	CY	997	\$12.30	\$12,259.33
207.03100	TOPSOIL STORING	CY	750	\$3.20	\$2,400.00
207.03200	TOPSOIL PLACING	CY	750	\$3.60	\$2,700.00
216.03105	SEEDING	SY	4500	\$0.81	\$3,645.00
301.01010	PIT RUN SUBBASE	CY	223	\$22.31	\$4,976.93
301.01085	CRUSHED BASE	CY	604	\$47.73	\$28,852.20
401.02000	HOT PLANT MIX	TON	1892	\$51.31	\$97,056.18
401.02055	HOT PLANT MIX APPROACHES	TON	27	\$98.52	\$2,699.58
407.01000	ΤΑϹΚ ϹΟΑΤ	TON	6	\$598.71	\$3,838.22
414.01050	CONCRETE PVMT (10 in)	SY	291	\$75.00	\$21,805.17
603.20024	RCP 24 in	FT	634	\$111.44	\$70,652.96
603.20030	RCP 30 in	FT	240	\$121.15	\$29,076.00
608.10200	SIDEWALK (CONC)	SY	2387	\$60.97	\$145,531.33
609.10200	CURB AND GUTTER TYPE A	FT	3627	\$44.49	\$161,378.58
701.17120	CONDUIT-RIGID PVC 2 in	FT	3550	\$10.04	\$35,642.00
701.20100	PULL BOX TYPE A	EA	18	\$616.22	\$11,091.96
701.21100	SERVICE POINT LIGHTING	EA	1	\$6,060.00	\$6,060.00
701.29070	SINGLE CONDUCTOR WIRE #8 AWG	FT	3550	\$1.37	\$4,863.50
701.62100	ROADWAY LUMINAIRE	EA	18	\$1,011.33	\$18,203.94
799.60300	PAVEMENT LINE 4 in	FT	9198	\$0.16	\$1,471.68
799.70105	THERMOPLASTIC PAVEMENT MARKINGS	SF	1368	\$29.09	\$39,795.12
	#N/A	#N/A		#N/A	#N/A

Subtotal		\$796,037.89
Design	12.00%	\$95,524.55
Mobilization	10.00%	\$79,603.79
Traffic Control	15.00%	\$119,405.68
Construction Engineering	10.00%	\$79,603.79
Force account	5.00%	\$39,801.89
Subtotal		\$1,209,977.59
Contingency	15.00%	\$181,496.64
Total		\$1,391,474.22

East Pershing Boulevard - Taft / Polk Avenue to Hayes Avenue

	Length	LF	1950		
			Estimated		
ltem	Description	Unit	Quantity	Unit Price	Total Price
201.03201	CLEARING AND GRUBBING	ACRE	2	\$12,077.29	\$23,289.54
202.03170	REMOVAL OF GUARDRAIL	FT	400	\$2.37	\$948.00
202.03260	REMOVAL OF PIPE	FT	125	\$19.57	\$2,446.25
202.03305	MILLING PLANT MIX	SY	9653	\$1.21	\$11,679.72
202.03400	REMOVAL OF SURFACING	SY	1733	\$19.46	\$33,730.67
202.03430	REMOVAL OF SIDEWALK	SY	222	\$17.11	\$3,802.22
202.03600	CUTTING BIT PVMT	FT	3847	\$2.25	\$8,655.4
202.03500	RESET MAILBOX (SINGLE)	EA	1	\$390.17	\$390.1
203.02500	UNCLASSIFIED EXCAVATION	CY	1445	\$12.30	\$17,768.42
207.03100	TOPSOIL STORING	CY	820	\$3.20	\$2,625.54
207.03200	TOPSOIL PLACING	CY	820	\$3.60	\$2,953.73
216.03105	SEEDING	SY	4920	\$0.81	\$3,985.20
301.01085	CRUSHED BASE	CY	548	\$47.73	\$26,162.6
401.02000	HOT PLANT MIX	TON	1575	\$51.31	\$80,792.19
407.01000	ΤΑϹΚ ϹΟΑΤ	TON	6	\$598.71	\$3,611.90
414.01050	CONCRETE PVMT (10 in)	SY	72	\$75.00	\$5,390.50
603.20024	RCP 24 in	FT	285	\$111.44	\$31,796.0
606.01020	MGS GUARDRAIL	FT	200	\$33.93	\$6,786.0
608.10200	SIDEWALK (CONC)	SY	3255	\$60.97	\$198,465.2
	CURB AND GUTTER TYPE A	FT	3847	\$44.49	
	CONDUIT-RIGID PVC 2 in	FT	3900	\$10.04	\$39,156.00
701.20100	PULL BOX TYPE A	EA	20	\$616.22	\$12,324.40
701.21100	SERVICE POINT LIGHTING	EA	1	\$6,060.00	\$6,060.00
701.29070	SINGLE CONDUCTOR WIRE #8 AWG	FT	3900	\$1.37	\$5,343.00
701.62100	ROADWAY LUMINAIRE	EA	20	\$1,011.33	
799.60300	PAVEMENT LINE 4 in	FT	10965	\$0.16	
799.70105	THERMOPLASTIC PAVEMENT MARKINGS	SF	200	\$29.09	\$5,818.00
	BRIDGE WIDENING	LS	1	\$450,000.00	\$450,000.00
	#N/A	#N/A		#N/A	#N/A
	#N/A	#N/A		#N/A	#N/A
	#N/A	#N/A		#N/A	#N/A
	#N/A	#N/A		#N/A	#N/A
	#N/A	#N/A		#N/A	#N/A
			Subtotal		\$1,177,108.69
			Design	12.00%	\$141,253.04
			Mobilization	10.00%	\$117,710.8
		Ti	raffic Control	15.00%	\$176,566.3
	Cons		Engineering	10.00%	\$117,710.8
		F	orce account	5.00%	\$58,855.43
			Subtotal		\$1,789,205.23
			Contingency	15.00%	\$268,380.78
			Total		\$2,057,585.99

	Length	LF	3900		
			Estimated		
ltem	Description	Unit	Quantity	Unit Price	Total Price
201.03201	CLEARING AND GRUBBING	ACRE	4	\$12,077.29	\$51,902.40
202.03260	REMOVAL OF PIPE	FT	550	\$19.57	\$10,763.50
202.03261	ABANDON PIPE IN PLACE-FLOWABLE FILL	FT	595	\$30.00	\$17,850.00
202.03305	MILLING PLANT MIX	SY	17490	\$1.21	\$21,163.18
202.03400	REMOVAL OF SURFACING	SY	3467	\$19.46	\$67,461.33
202.03430	REMOVAL OF SIDEWALK	SY	100	\$17.11	\$1,711.00
202.03600	CUTTING BIT PVMT	FT	7041	\$2.25	\$15,842.90
202.03500	RESET MAILBOX (SINGLE)	EA	11	\$390.17	\$4,291.87
203.02500	UNCLASSIFIED EXCAVATION	CY	1129	\$12.30	\$13,888.10
207.03100	TOPSOIL STORING	CY	841	\$3.20	\$2,691.70
207.03200	TOPSOIL PLACING	CY	841	\$3.60	\$3,028.16
216.03105	SEEDING	SY	5047	\$0.81	\$4,088.02
301.01010	PIT RUN SUBBASE	CY	3165	\$22.31	\$70,619.71
301.01085	CRUSHED BASE	CY	2054	\$47.73	\$98,039.25
401.02000	HOT PLANT MIX	TON	1549	\$51.31	
407.01000	ΤΑϹΚ ϹΟΑΤ	TON	14	\$598.71	\$8,321.43
	CONCRETE PVMT (10 in)	SY	649	\$75.00	\$48,704.17
603.20012		FT	583	\$149.73	
603.20015		FT	549	\$95.00	\$52,200.60
603.20018		FT	563	\$97.02	
603.20024		FT	3500	\$111.44	
	MANHOLE TYPE B	EA	14	\$7,300.00	
	INLET TYPE A	EA	12	\$4,376.52	\$52,518.24
	INLET TYPE B	EA	19	\$4,376.52	\$83,153.88
	SIDEWALK (CONC)	SY	6441	\$60.97	\$392,725.79
	CURB AND GUTTER TYPE A	FT	9632	\$44.49	
	CONDUIT-RIGID PVC 2 in	FT	7800	\$10.04	
	PULL BOX TYPE A	EA	40	\$616.22	
	SERVICE POINT LIGHTING	EA	1	\$6,060.00	
	SINGLE CONDUCTOR WIRE #8 AWG	FT	7800	\$1.37	\$10,686.00
	ROADWAY LUMINAIRE	EA	40	\$1,011.33	
	PAVEMENT LINE 4 in	FT	22000	\$0.16	
	THERMOPLASTIC PAVEMENT MARKINGS	SF	600	\$29.09	
			Subtotal	<i>+</i>	\$2,344,139.43
			Design	15.00%	\$351,620.91
			Mobilization	10.00%	\$234,413.94
			affic Control	15.00%	\$351,620.91
	Const		Engineering	10.00%	\$234,413.94
	Const		orce account	5.00%	\$117,206.97
		10	Subtotal	5.00%	
	Pight of May Acquisition AP	C E	7272	\$8.50	\$3,633,416.12
	Right of Way Acquisition -AR	SF		Ş0.5U	\$61,812.00
			Subtotal	15.00%	\$3,695,228.12
			Contingency	13.00%	\$554,284.22
			Total		\$4,187,700.34

East Pershing Boulevard - Fireside Drive to Christensen Road

	Length	LF	4150		1
			Estimated		
tem	Description	Unit	Quantity	Unit Price	Total Price
	CLEARING AND GRUBBING	ACRE	5	\$12,077.29	\$57,530.7
202.03260	REMOVAL OF PIPE	FT	350	\$19.57	\$6,849.50
202.03305	MILLING PLANT MIX	SY	21973	\$1.21	\$26,587.79
202.03400	REMOVAL OF SURFACING	SY	2767	\$19.46	\$53,839.33
202.03430	REMOVAL OF SIDEWALK	SY	133	\$17.11	\$2,281.33
202.03600	CUTTING BIT PVMT	FT	8472	\$2.25	\$19,061.73
202.03500	RESET MAILBOX (SINGLE)	EA	16	\$390.17	\$6,242.72
203.02500	UNCLASSIFIED EXCAVATION	CY	889	\$12.30	\$10,933.33
207.03100	TOPSOIL STORING	CY	1921	\$3.20	\$6,148.1
207.03200	TOPSOIL PLACING	CY	1050	\$3.60	\$3,779.1
216.03105	SEEDING	SY	6299	\$0.81	\$5,101.86
301.01010	PIT RUN SUBBASE	CY	167	\$22.31	\$3,720.50
301.01085	CRUSHED BASE	CY	1267	\$47.73	\$60,459.92
401.02000	HOT PLANT MIX	TON	3748	\$51.31	\$192,290.89
401.02055	HOT PLANT MIX APPROACHES	TON	30	\$98.52	\$2,966.4
407.01000	ΤΑϹΚ ϹΟΑΤ	TON	14	\$598.71	\$8,256.84
414.01050	CONCRETE PVMT (10 in)	SY	941	\$75.00	
603.20012	RCP 12 in	FT	4230	\$149.73	
603.20018	RCP 18 in	FT	683	\$97.02	\$66,224.88
	MANHOLE TYPE B	EA	13	\$7,300.00	
	INLET TYPE A	EA	6	\$4,376.52	
	SIDEWALK (CONC)	SY	6440	\$60.97	\$392,620.9
	CURB AND GUTTER TYPE A	FT	8406	\$44.49	
	CONDUIT-RIGID PVC 2 in	FT	8300	\$10.04	· · ·
	PULL BOX TYPE A	EA	42	\$616.22	
	SERVICE POINT LIGHTING	EA	1	\$6,060.00	. ,
	SINGLE CONDUCTOR WIRE #8 AWG	FT	8300	\$1.37	\$11,371.00
	ROADWAY LUMINAIRE	EA	42	\$1,011.33	
	PAVEMENT LINE 4 in	FT	26000	\$0.16	
	THERMOPLASTIC PAVEMENT MARKINGS	SF	648	\$29.09	\$18,850.32
	#N/A	#N/A		#N/A	#N/A
	#N/A	#N/A		#N/A	#N/A
			Subtotal		\$2,297,235.96
			Design	12.00%	\$275,668.32
			Mobilization	10.00%	\$229,723.60
		Т	raffic Control	15.00%	\$344,585.3
	Cons		Engineering	10.00%	\$229,723.60
	Cons		orce account	5.00%	\$114,861.80
			Subtotal	5.0070	\$3,491,798.60
			Contingency	15.00%	\$523,769.80
			Total	10.0070	\$4,015,568.46
			Total		\$4,015,508.4

G: ADD ALTERNATE FOR BIKE LANE AT US 30

APPENDIX G

During the MPO Technical Committee on October 12, 2022, a motion was made to "Recommend this plan's adoption to the MPO Policy Committee" with this comment and amendment. The comment was to continue the On-Street Bike Lane west to the U.S. 30 Intersection. To do so would change the curb-line and sidewalk placement and move the curb-line of the southern side of the triangle island; shown in red. When this planning effort began, the intersection of East Pershing and U.S. 30 was not included in the work of the consultant. The MPO had already included this intersection in a previous planning effort; The 2019 "*East Dell Range Boulevard / U.S. 30 Corridor Study*". It is understood that when WYDOT and the City work to do any redesign of this intersection that all elements of traffic operations and Complete Streets designs will need to be considered. Given this proposed Bike-Lane extending west to the intersection, it would be expected that the Bike-Lane would be continued west of this intersection.

