Conceptual Plans

Dell Range Boulevard – College Drive to U.S. 30

&

U.S. 30 – College Drive to the Archer Interchange

BENCHMARK

ENGINEERING ✦ SURVEYING ✦ PLANNING

CHEYENNE ✦ TORRINGTON

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&

U.S. 30 – College Drive to the Archer Interchange

DOCUMENTATION

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Cheyenne Area Transportation Planning Process
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CHAPTER I
INTRODUCTION

Objectives

In general, the preparation of conceptual plans for Dell Range Blvd. and U.S. 30 is an example of good transportation planning, since these two principal arterials are located in a developing area at the east edge of Cheyenne and there are many variables requiring analysis to determine the best plan and design for these roads. Some of the objectives which preparing these conceptual plans should achieve, include:

- Provide guidance for future growth in the area.
- Reduce congestion and improve safety on the roads in the area.
- Consider the transportation needs of pedestrians, bicycles, handicapped persons, etc.
- Minimize future road construction costs for the improvement of these two roads.
- Give early consideration to environmental factors related to the roads.
- Provide for access to proposed economic development in the area.
- Support other economic activities such as tourism, agriculture, and industry.
- Provide a modern and energy-efficient transportation system for the future.

Purpose

The specific purpose of this project is to develop a conceptual plan for Dell Range Blvd. from College to U.S. 30, and for U.S. 30 from College to the Archer Interchange, that is agreed upon by the City of Cheyenne, Laramie County, the Wyoming Department of Transportation (WYDOT), and the general public. The conceptual plan should include general concepts to implement the plan including methods to control access and set forth the framework of a memorandum of understanding between the City, County and WYDOT to implement the conceptual plan.

This written documentation is submitted as a part of the conceptual plans and is intended to meet the requirement in the Request for Proposals that "Documentation will be written and provided with this plan that gives, at a minimum, the history of the corridor, an explanation of existing conditions, commentary of the traffic, pedestrian, and bicycle needs for today's traffic and 20-year forecast."

Issues

The major issues to be reviewed in the development of the conceptual plans were:

- *Traffic mobility vs. service to adjacent property on U.S. 30.*
- *Traffic mobility vs. service to adjacent property on Dell Range Blvd.*
- *The cross section on U.S. 30*
  - *East of the Dell Range intersection.*
  - *Southwest of the Dell Range intersection.*
- *The cross section of Dell Range Blvd.*
  - *U.S. 30 to James Drive*
  - *James Drive to College Drive*
- *Intersection Design – Dell Range Blvd. and U.S. 30*

Scope of Work:

The scope of work for the project was indicated in the Request for Proposals for the project, dated July 21,1999.

The initial scope of work was to develop conceptual plans to the 35% level for the reconstruction and widening of East Dell Range Blvd. from James Drive east to its intersection with U.S. 30. The project included the intersection of Dell Range and U.S. 30 and the effect on the intersection of Christensen Road and U.S. 30.

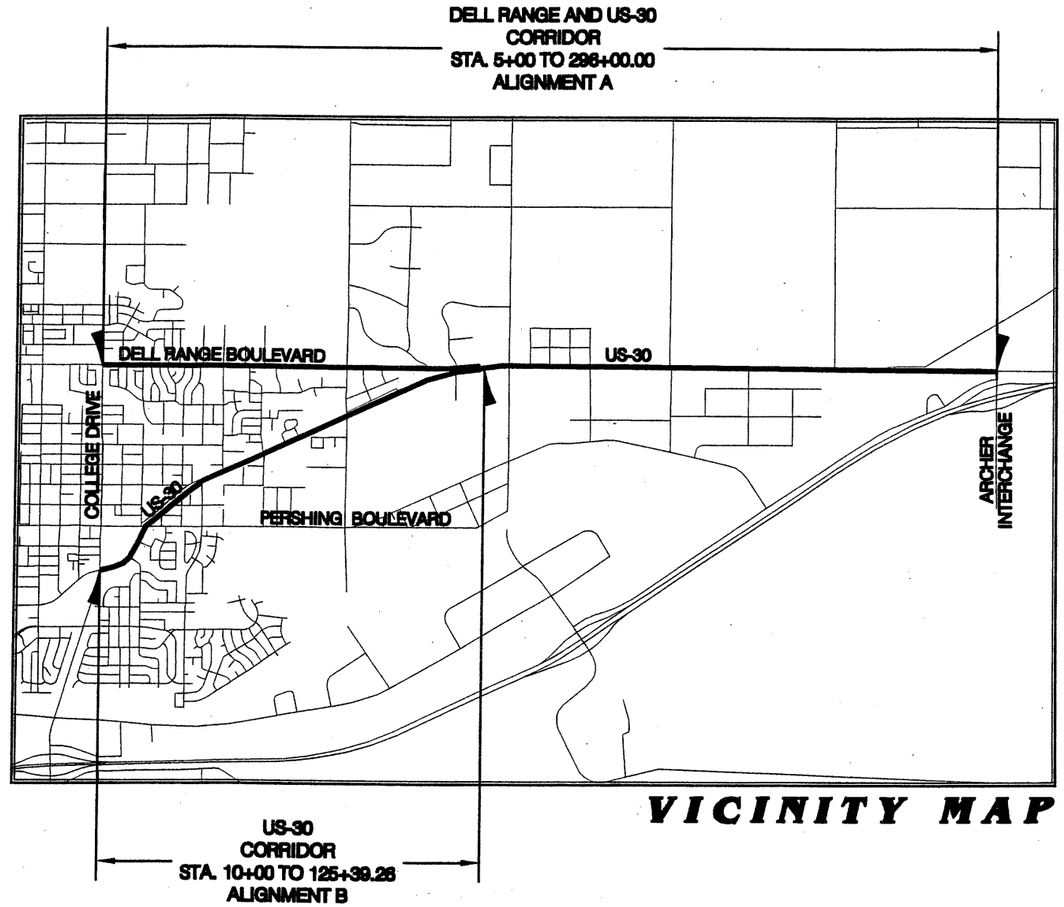
After the work was initiated, it became apparent that a plan was needed for U.S. 30 (Lincolnway) to the east and west of the intersection of Dell Range Blvd. and U.S. 30. In March, 2000, the project was expanded to include a corridor plan for U.S. 30 from College Drive to the Archer Interchange.

After a determination, based on the traffic projections, that Dell Range Blvd. warranted widening to four lanes between James Drive and U.S. 30, it became apparent the 2-lane segment of Dell Range Blvd. between College Drive and James Drive should also be included in the project. This conceptual design of this segment was added to the project in August, 2000.

In summary, the scope of work for the project is to develop conceptual plans to the 35% level for Dell Range Blvd. from College Drive to U.S. 30 (Lincolnway), and for U.S. 30 (Lincolnway) from College Drive to the Archer Interchange.

The roads included in the Scope of Work are indicated in Figure 1.1.

Figure 1.1



VICINITY MAP

Background

The East Cheyenne Infrastructure Improvement Plan was completed in 1998, to develop a vision for the area between Ridge Road and Reese Road. The land use plan for the east Cheyenne area projected urban type development below the topographic ridge that runs from northwest to southeast across both Dell Range Blvd. and U.S. 30 (Lincolnway) just west of where the two roads intersect. The land use plan projects very low density development for the area east of the ridge line.

The Cheyenne Area Master Transportation Plan (1994) includes a list of priority projects in the greater Cheyenne Area. However, a more current list was included in Innovative Finance Analysis, Transportation Improvement Programming Process, and 1997 Project List Update, December 3, 1997, by Planning Information Corporation. On the list, the improvement of Dell Range Blvd. between James Drive and U.S. 30 (including the U.S. 30 intersection) is shown as a Laramie County medium priority project with an estimated cost of $2,000,000.

The Cheyenne Water Supply Master Plan, Level 1, Volume 3, July 1994, by Black & Veatch, shows a 20 inch water line along Dell Range Blvd. between James Drive and Christensen Road, connecting to a proposed 16" water line along Christensen Road, south of U.S. 30.

Public Involvement:

A public open house was held on July 18, 2000, at the Baggs Elementary School located at 3705 Cheyenne Street. ChATPP advertised the open house in the newspaper, on the ChATPP website and sent out a PSA. ChATPP also sent notice of the meeting to adjacent property owners along both Dell Range Blvd. and U.S. 30. Thirty-four persons signed the sign-in sheets, and sixteen written comments were received.

The stated purpose of the meeting was to obtain input from the public regarding several suggested alternative designs for both the layout of the intersection of Dell Range Blvd. and U.S. 30, and the road cross sections. Comments related to the proposed alternative cross sections indicated equal preference for a median as opposed to a road with no median.

Most of the written comments, which are included as an appendix to this report, concerned the intersection of Dell Range Blvd. and U.S. 30. A general dislike was expressed for the roundabout (rotary) intersection. One comment indicated the citizen involvement process was inadequate. Another comment mentioned schools, and as a result a meeting was held with the School District staff to discuss its plans

for the area.

A second public meeting was held from 6 - 8 pm on September 19, 2000, at the Baggs Elementary School. The ChATPP sent a notice of the meeting to adjacent property owners along both Dell Range Blvd. and U.S. 30.

The stated purpose of the meeting was to present the recommendations of the consultant for the improvement of Dell Range Blvd. from College Drive to U.S. 30, and for U.S. 30 from College Drive to the Archer Interchange, and to receive comments from the public regarding those recommendations.

Twenty seven people signed in at the meeting, in addition to several who attended representing ChATPP, WYDoT and the Consultant.

Written comments were received from three people. The main concerns were:

- the project will increase the traffic in the residential area along Dell Range Blvd. between College Drive and James Drive
- the handling of the drainage across Dell Range Blvd., just east of Whitney Road
- noise from traffic and the possibility of sound fences
- safety at the intersection of Dell Range Blvd. and Whitney Road

Other public involvement included project updates to the Technical Committee of the ChATPP, and individual presentations of the study results to the Regional Planning Commission, the City Council, the County Commission, and the ChATPP Policy Committee.

Copies of the sign-in sheets and comments received at the public meetings are included as Appendices C (1st meeting) and D (2nd meeting).

Organization of the Report

Perhaps the most important step in implementing the conceptual plan will be the signing of a memorandum of understanding (MOU) by the City, Laramie County, and WYDOT, and Chapter V indicates the major points to be included in the MOU. Chapter II, The Current Situation, Chapter III, Planning Elements, and Chapter IV, Design Discussion and Recommendations, provide the basis for the Conceptual Plans and the MOU. Chapter VI discusses the traffic accident situation on the project and focuses on the intersection of U.S. 30 and College Drive.

CHAPTER II
THE CURRENT SITUATION

Dell Range Blvd.

Dell Range Blvd. is a principal arterial. Its west terminus is at Yellowstone Road and its east terminus is at U.S. 30, just west of Christensen Road. Dell Range Blvd. is currently a four-lane road from Yellowstone Road to College Drive; a two-lane road with a continuous left-turn lane from College Drive to James Drive; and a two-lane road from James Drive to its intersection with U.S. 30. East of James Drive, Dell Range Blvd. also carries the designation of Laramie County Road 211.

During the past thirty years Dell Range Blvd. has evolved into one of the busiest roads in the area, due to the abutting land uses. The numerous commercial land uses between Powder House Road and Converse Avenue include the Frontier Mall, Kmart, Target, Sam's Club, and Walmart, and are major traffic generators. Between Yellowstone Road and Powder House Road, the land use on the south side of Dell Range Blvd. is public (the Cheyenne Airport), and the land use on the north side of the road is primarily residential. Between Converse Avenue and College, the land use on the north side of Dell Range Blvd. is commercial and residential, and on the south side is public and residential. East of College Drive, the land use is residential to James Drive, and east of there is agricultural and rural residential.

A land survey was conducted along Dell Range Blvd. from James Drive to U.S. 30 and the existing location of driveways, utilities, etc. are indicated on the conceptual plans. One of the significant improvements is the Air Touch tower located approximately 1500' west of the present intersection of Dell Range Blvd. and U.S. 30.

U.S. 30 (Lincolnway)

At one time U.S. 30 was a coast-to-coast route, known as "The Lincoln Highway". The importance of U.S. 30 diminished with the construction of Interstate Highway 80, which overlapped much of the route across most of Wyoming. However, through Cheyenne, U.S. 30 is a separate route and is known as Lincolnway. U.S. 30 leaves I-80 at the Archer Interchange, east of Cheyenne, and rejoins it near Little America just west of Cheyenne.

The scope of this project included the development of conceptual plans for U.S. 30 from College Drive to the Archer Interchange. Currently, U.S. 30 is a four-lane road from College Drive to Hayes Avenue, and a two-lane road from Hayes to the Archer Interchange. There is a truck climbing lane from Whitney Road easterly to 300' west of the Dell Range Blvd. intersection.

The land use along U.S. 30 from College Drive to Dell Range Blvd. includes some commercial, scattered single-family residential, and recently some high-density residential development. East of Dell Range, the land use along U.S. 30 includes some very low-density residential and the rest is agricultural.

Current information available for U.S. 30 includes aerial photos taken in 2000, and the original construction plans which were developed in 1952. The aerial photos indicate the service roads which have been constructed along U.S. 30, and the location of improvements.

Current Traffic Volumes

Traffic volume counts, made by the ChATPP in 2000, indicate the 24 hour volume west of Whitney Road is approximately 3620, and east of Whitney Road is 2062.

A thorough study of traffic volumes along U.S. 30 was made by WYDOT. The study included classification counts, turning moving counts, and machine counts. In addition, WYDOT has a permanent counting station (ATR) on U.S. 30, west of Reese Road. The traffic volume information is summarized on the following pages.

Lincolnway
Summary of Classification Information
(Classification Information Provided by WYDOT)
Counts made February and March, 2000

Location	ADT	Pk. Hr.	Pk. Hr. ADT (%)	D*	T**
Between Railroad & Westedt Rd.	2771	280	10.1	.74	2.0%
Mile Post 368.9 (ATR #16)	3702	400	10.8	.72	2.5
Between Christensen & Dell Range	4477	490	10.9	.70	2.4
Just East of Whitney Road	3232	359	11.1	.72	3.3
Just West of Jolly Roger	4176	393	9.4	.75	2.9
Between Hayes & Van Buren	5947	612	10.3	.70	2.5
Between Pershing & Polk	7474	717	9.6	.78	2.3
On Pershing, E. of U.S. 30	3820	357	9.4	.62	2.1
On Dell Range, W. of U.S. 30	1744	182	10.4	.64	2.7

* D is the directional distribution – 0.74 indicates 74% of the vehicles were traveling in the predominant direction of flow.

**T is the percentage of trucks and other large vehicles in the traffic stream.

Summary of Traffic Analyzer Study
Location: Pershing Blvd. East of U.S. 30
Date of Information: March 14, 2000

	Eastbound Lanes	Westbound Lanes
Volumes		
24 hour	1903	2135
Peak 15 min.	57	62
Time	7:45 - 8 am	5:15 - 5:30 pm
Peak Hour	183	232
Time	7 - 8 am	4:30 - 5:30 pm
Speeds		
Average	33	42
Mode	30	40
85% Tile	40	50
Percent exceeding 45 mph	3	19.4
Classification		
% Passenger Vehicles	98.3	98
% Small Trucks	1.4	1.6
% Trucks / Buses	0.1	0.3
% Tractor Trailers	0.2	0.1
Significant Points	During the 24 Hour period, 11 vehicles were traveling over 70 mph.	

Summary of Traffic Analyzer Study
Location: U.S. 30 W. of Cleveland

	Eastbound Lanes		Westbound Lanes	
	Outside 3-30-00	**Inside 3-30-00**	**Inside 4-04-00**	**Outside 4-04-00**
Volumes				
24 Hour	1887	1181	1705	1429
Pk. 15 min.	68	54	62	58
@	5:15 - 5:30 pm	5 - 5:15 pm	7:45 - 8 am	7:45 - 8 am
Pk. Hour	237	177	180	178
@	4:45 - 5:45 pm	5 - 6 pm	7 - 8 am	7 - 8 am
Speeds				
Average	38	41	43	37
Mode	35	40	40	35
85 Percentile	50	45	50	45
% exceeding 45	17.5	14.6	24.7	5.74
Classification				
% Pass. Vehicles	94.9	97.5	94.9	97.3
% Small Trucks	3.8	1.4	2.3	2.1
% Trucks/buses	0.7	0.5	1.1	0.3
% Tractor/trlrs	0.6	0.5	1.8	0.3
Significant Points	Two-way volume exceeds 6200 vpd. 49 vehicles exceeded 70 mph.			

Summary of Traffic Analyzer Study Location: Pershing W. of U.S. 30				
	Eastbound Lanes		**Westbound Lanes**	
	Outside 3-14-00	**Inside 3-14-00**	**Inside 4-14-00**	**Outside 4-14-00**
Volumes				
24 Hour	511	3085	1328	2130
Pk. 15 min.	23	111	69	86
@	12 - 12:15 pm	5 - 5:15 pm	7:30 - 7:45 am	7:45 - 8 am
Pk. Hour	60	375	190	285
@	4:45 - 5:45 pm	5 - 6 pm	7 - 8 am	7 - 8 am
Speeds				
Average	37	37	36	34
Mode	35	35	35	35
85 Percentile	40	40	40	40
% exceeding 35	40.1	44.1	32.2	23.9
Classification				
% Pass. Vehicles	93.5	92.2	98.9	98.5
% Small Trucks	4.1	5.2	0.8	1.0
% Trucks/buses	2.3	1.9	0	0.3
% Tractor/trlrs	0	0.7	0.2	0.1
Significant Points	Volume variation by lane. % of vehicles exceeding speed limit.			

Summary of Traffic Analyzer Study Location: U.S. 30 W. of Pershing				
	Eastbound Lanes		**Westbound Lanes**	
	Outside 3-30-00	**Inside 3-28-00**	**Inside 3-14-00**	**Outside 3-14-00**
Volumes				
24 Hour	1266	1251	1640	1210
Pk. 15 min.	41	50	57	43
@	5:15 - 5:30 pm	5 - 5:15 pm	7:45 - 8 am	7:30-7:45 am
Pk. Hour	140	166	197	146
@	4:45 - 5:45 pm	4:45 - 5:45 pm	7:15-8:15 am	7 - 8 am
Speeds				
Average	42	39	42	41
Mode	40	40	40	40
85 Percentile	45	45	50	50
% exceeding 45	14.3	8.18	23.1	15.0
Classification				
% Pass. Vehicles	89.3	88.3	90.1	93.6
% Small Trucks	6.2	8.6	6.4	4.4
% Trucks/buses	3.1	2.5	2.4	1.4
% Tractor/trlrs	1.4	0.6	1.0	0.7

Traffic Crashes

Traffic crashes (accidents) are discussed in Chapter IV and particular emphasis is given to the Intersection of College Drive and U.S. 30.

Bridge Sufficiency Ratings

WYDOT prepares sufficiency ratings of the bridges in the State, with "100" being the higher possible rating. The bridges over I-80 at the Archer Interchange are rated "96", and the bridge on U.S. 30 over the Union Pacific Railroad just west of the Archer Interchange is rated "69".

Sewerable Area

Long range plans for the Cheyenne area are in general agreement that "urban type" development should occur with the sewerable area, and low-density development should occur outside of the sewerable area. The sewerable area is based on the area that can be served with sewers, using gravity flow, and is the area south of the ridge line on the north side of Dry Creek. Along Dell Range Blvd. and U.S. 30, the boundary of the sewerable area is approximately as follows:

At College Drive	3000' north of Dell Range Blvd.
At Highland	2500' north of Dell Range Blvd.
At Whitney Road	1500' north of Dell Range Blvd.

The boundary crosses Dell Range Blvd. and U.S. 30 approximately midway between Whitney Road and Christensen Road.

At Christensen Road	1800' south of U.S. 30.

The boundary then drops southerly and circles back to the Cheyenne Wastewater Treatment Plant which lies approximately on a southerly extension of Christensen Rd.

Drainage

The only major drainageway crossing either Dell Range Blvd. or U.S. 30, is Dry Creek which crosses U.S. 30 near the intersection with Taft/Polk Avenues.

The East Cheyenne Infrastructure Improvement Plan indicated a drainage problem along Uinta Road, west of Pierce Avenue, involving water which flows across U.S. 30. Laramie County has recommended the flow be diverted to Dry Creek along the north side of U.S. 30 as a solution to the problem. This change would solve the flooding problem along Uinta Road, and the additional flow in Dry Creek would not create a significant impact.

Cheyenne Greenway

The Cheyenne Greenway is proposed to be extended and cross U.S. 30 using one of the Dry Creek drainage boxes. A shared used path along U.S. 30 could connect to the Greenway at that point.

Cheyenne Transit Program

There is a bus route along Dell Range Blvd. between College Drive and Van Buren, and bus routes cross both Dell Range Blvd. and U.S. 30 at other locations. However, the Transit Manager indicates that no bus turnouts are needed along Dell Range Blvd., east of College Drive.

CHAPTER III
PLANNING ELEMENTS

Zoning

The current zoning along Dell Range Blvd. and U.S. 30, east of the Cheyenne City Limits is divided between Agricultural Residential (AR), Agricultural and Rural Residential (A-1), Agricultural (A-2), and other uses. The minimum lot size for AR zoning is 5 acres; for A-1 it is 10 acres; and for A-2 it is 20 acres. The other uses include an area of Light Industrial (LI) located near the Archer Interchange; some Commercial Business (CB) along U.S 30 (Jolley Roger); and areas of Mixed Use with Business Emphasis (MUB) located just west of the intersection of Dell Range Blvd. and U.S. 30, and scattered along U.S. 30 between College and Polk. The primary zoning within the City and just east of the City is Medium Density Residential/Developing (MR-2). There are also some areas of High Density Residential/Established (HR-1) along U.S. 30.

Land Use

The East Cheyenne Infrastructure Improvement Plan includes maps showing both the Existing Land Use (Map 2.2) and a Land Use Plan (Map 3.1). The major differences between the existing land use and the land use plan are that significant areas of land (1) within the sewerable boundary are converted from Agricultural to Low Density Residential; and (2) outside the sewerable boundary are converted from Agricultural to Very Low Density Residential.

Other new developments are occurring east of the study area for the East Cheyenne Infrastructure Improvement Plan. A new privately-owned juvenile correctional facility is under construction, just east of Archer Road and north of U.S. 30. The development includes a 25,000 sq. ft. facility and 20,000 sq. ft. of parking and access roads.

Just to the east of the juvenile correctional facility are two residential developments which have 10 acre residential lots – Durham Estates in Section 24 and Triple Crown Estates in Section 13.

Although the East Cheyenne Infrastructure Improvement Plan shows the conceptual location of a new school south of U.S. 30, between Whitney Road and Christensen Road, the School District indicates it has been losing students at the rate of about 100 per year and until this trend is reversed, it is doubtful than any new schools will be constructed.

Sanitary Sewer Service

In the Dell Range Blvd. corridor, the area west of James Drive is served by existing sanitary sewers which drain to the 30" sewer trunk line that parallels Dry Creek. In the area east of James Drive, there is not an existing sanitary sewer system, although the area is within the sewerable boundary. It is anticipated that future developments will have sewer systems that will flow to the south, and therefore no future sanitary sewer line is included in the conceptual plan for Dell Range Blvd.

The U.S. 30 corridor, from College to the intersection with Dell Range Blvd., is within the sewerable boundary, and in the future, should be served by the sewer trunk line that runs along Dry Creek. A 15" line does exist along the north right-of-line of U.S. 30 from the Dry Creek trunk line northeasterly for approximately 1600'. It appears desirable for this line to be extended northeasterly to the intersection with Dell Range Blvd. and a 15" line is indicated on the conceptual plans. A 12" line may be adequate toward the east end of the line depending on the development occurring in the corridor. The location of the new line is shown on the existing right-of-way, although WYDOT indicates the location of additional utilities on the right-of-way will depend on the availability of space.

Water Service

The Board of Public Utilities master plan indicates a 20" line along Dell Range Blvd. and U.S. 30 from College Drive to Christensen Road, and a 16" line connecting from the south on Christensen Road. The 20" line will replace an existing 12" line from west of College Drive to approximately ½ block west of James Drive. (The BOPU has indicated it may add a new 12" line rather than replace the 20" line.) The proposed water line is indicated within the right-of-way on the conceptual plans.

The construction of both water and sanitary sewer lines will be done by developers/landowners in accordance with the policies of the Cheyenne Board of Public Utilities and WYDOT, and maintenance of the lines will be done by the Board of Public Utilities.

Projected Traffic Volumes

Projections of traffic volumes were prepared by WYDOT, and provided to ChATPP. The traffic projections are based on a population of approximately 88,000 people in the Cheyenne area, which is the anticipated population in approximately 20 years. All projections are rounded to the nearest ten vehicles.

An analysis of the projected traffic volumes (first two lines in the table below) indicated that in the future, whether or not Christensen Road is connected to the Campstool Interchange on I-80, Dell Range Blvd. (west of U.S. 30) will carry more traffic than U.S. 30 (west of Dell Range Blvd.).

		Christensen Road	
Location	**1997**	**Not Conn. To I-80**	**Conn. To I-80**
On Dell Range, W. of U.S. 30	980	3470	5360
On U.S. 30, SW of Dell Range	3200	2740	1900
On U.S. 30, W. of Christensen	3840	6210	7260
On Christensen, N. of U.S.30	520	1380	1700
On U.S. 30, E. of Christensen	3520	6680	6710
On Christensen, S. of U.S. 30	0	4520	9470

On the basis of favoring the heavier flow, the ultimate design should provide the more direct connection to the west leg (Dell Range Blvd.) rather than the southwest leg (U.S. 30/ Lincolnway). However, in the meantime, an intersection that provides good service to both roads is desirable. (The topography appears suitable for a grade separation.)

The existing and projected traffic volumes decrease significantly as U.S. 30 goes east from College Drive.

		Christensen Road	
Location	**1997**	**Not Conn. To I-80**	**Conn. To I-80**
West of College	7126	12900	12776
E. of College	7048	10265	8660
S. of Pershing	5723	8097	6521
N. of Pershing	7219	9662	7741
W. of Hayes	6651	6196	4722
E. of Hayes	4779	4199	2970
W. of Whitney	3472	3775	2583
E. of Whitney	3370	3222	2346
W. of Dell Range	3202	2740	1900

To obtain an estimate of the growth in east/west traffic, a screen line was drawn east of Whitney Road across the east/west major streets. It was found the projected growth in the east/west traffic during the next 20 years will be about 250%. It was found that the only street with a projected decline is Lincolnway.

Beckle Road	—	490	538
Dell Range	759	3797	5623
U.S. 30/Lincolnway	3370	3222	2346
Pershing	1461	3350	5101
Campstool	628	7999	5836
I-80	8378	17755	17269
Total	**14596**	**36613**	**36703**

After a review of the projected volumes in the area, it is recommended that U.S. 30 be maintained as an attractive route for traffic to use. It has the potential to carry significant volumes at high speed which may result in higher future volumes than the computer model indicates. No action should be taken to reduce the road's capacity or ability to handle large volumes safely and efficiently.

Traffic Volume Criteria For A Four-Lane Facility

If the projected volumes exceed the level of service "B" capacity of a two-lane facility, a four-lane facility is justified.

Some of the factors which reduce the level of service are:

- % of trucks in the traffic stream
- % of busses in the traffic stream
- % of recreational vehicles in the traffic stream
- high directional distribution
- the % of the road in no passing zones
- the peak hour factor

AASHTO's publication, A Policy on Geometric Design of Highways and Streets, 1990, (Table II-5, p.90) indicates the level-of-service characteristics of LOS "B" with two lanes: "Average travel speeds of 50 mph or higher. Flow rates may reach 27 percent of capacity with continuous passing sight distance. Flow rates of 750 passenger cars per hour, total two-way, can be carried under ideal conditions."

A capacity analysis was made with highway capacity software using the projected volume on the east Dell Range leg of the intersection of Dell Range Blvd. and Whitney Road. It was assumed the peak hour was 15% of the projected 24 hour volume, and the traffic stream included 2% trucks, 1% busses, and 1% recreational vehicles. It was further assumed the directional distribution was 70-30, the peak hour factor was 0.93, and there were 20% no-passing zones. The analysis indicated the road would have a LOS of "D" with an actual flow rate of 910 vph. The maximum flow rate for LOS "B" is 506, and for LOS "C" is 858.

Assuming the design hourly volume is 15% of the projected average daily traffic (*See Design Traffic Volume, p. 494, A Policy on Geometric Design of Highways and Streets, 1990), then four lanes will be needed in the future on Dell Range Blvd. from James Drive east to U.S. 30, and on U.S.30 from Dell Range east to the Archer Interchange. The need for a four lane section on U.S. 30 between College Avenue and Dell Range Blvd. is discussed in the following section.

The projected design hour volumes on Dell Range Blvd. and U.S. 30 are:

On Dell Range Blvd.:	
East of College	1454
West of Whitney	968
East of Whitney	846
West of U.S. 30	804
On U.S. 30 (Lincolnway):	
East of College	1191
East of Cleveland	1001
Northeast of Pershing	1169
East of Van Buren	711
East of Hayes	446
West of Whitney	389
East of Whitney	351
Southwest of Dell Range	285
East of Dell Range	1089
East of Christensen	1005
West of Reese Rd. east to Archer Interchange	885

Need for Four Lanes on U.S. 30, Taft Avenue to Dell Range Blvd.

There is currently a truck climbing lane for eastbound traffic on U.S. 30 between the Whitney Road and Dell Range Blvd. intersections. It was constructed about 1952, before the construction of I-80 in the area. Most through truck traffic uses I-80.

The grade on U.S. 30 is 4.5%, and it extends for approximately 1200 feet.

AASHTO indicates the upgrade traffic flow should exceed 200 vehicles per hour, and the upgrade truck flow should exceed 20 vehicles per hour (along with other factors) to justify a truck climbing lane.

A classification count was conducted by WYDOT on U.S. 30, east of Whitney Road, between February 29 and March 2, 2000, and indicated only four hours (during the three days) where the eastbound volume exceeded 200 vehicles per hour and there were zero hours when the eastbound truck traffic was 20 vehicles or more.

However, the percentage of trucks is approximately 4.3% of the eastbound traffic stream and there were over 70 trucks during each of the three days counted. If there is not adequate provision for passing of these trucks, a hazardous condition will exist on the long upgrade.

Highway improvements are generally planned and designed for the projected traffic volume, rather than the existing volume. However, WYDOT computer model projects the eastbound average daily traffic to decrease from 1596 to 1270 during the next 20 years.

One solution to the problem of the slow moving vehicles on this long upgrade would be to plan for the section to be constructed with four lanes in the future. The right-of-way for four-lanes currently exists, and the road is functionally classified as a principal arterial in an urban area.

There is a need for consistency in design and a short section of slightly over one mile of two-lane road between sections of four-lane road may be confusing to the driving public. In addition the cost of providing the four-lane road can be expected to be reasonable when compared to the cost of providing adequate transitions between the two-and four-lanes sections, along with providing a truck climbing lane for eastbound traffic.

Medians

The AASHTO Green Book (1990) discusses medians.

Median width includes the width of the inside shoulders. (p. 368)

The functions of a median include:

- Separate opposing traffic
- Provide a recovery area for out-of-control vehicles

- Provide a stopping area in case of emergencies
- Allow space for speed changes and storage of left-turning and U-turning vehicles
- Minimize headlight glare
- Provide with for future lanes
- Offer open green space
- Regulate access points
- Snow Storage

In general, the median should be as wide as practical. (p. 368)

Advantages of two-way left turn lanes when compared to no median. (p. 368)

- Reduced travel time
- Reduced accident frequency, particularly of the rear-end type
- More flexibility because the two-way left turn lanes can be used as a travel lane during closure of a through lanes
- Public preference, both from drivers and owners of abutting property
- Lane widths 10 to 16' wide provide the optimum design for two-way left turn lanes.

Advantages of wider medians (p. 370)

"Insofar as through traffic is concerned, a desired ease and freedom of operation, in the sense of physical and psychological separation from opposing traffic, is obtained when medians are about 40' or wider. With such widths the facility truly is divided. The noise and air pressure of opposing traffic is not noticeable, and at night the glare of headlights is greatly reduced. With widths of 60' or more the median can be pleasingly landscaped in a parklike manner. Plantings used to achieve this parklike appearance should not compromise the roadside recovery areas. It must be pointed out, however, that there is demonstrated benefit in any separation, raised or flush."

The AASHTO Green Book (1990) indicates 7 typical medians on divided arterials (p. 514)

A – Flush with barrier
B – Paved Flush
C – Curbed & Crowned – Paved
D – Curbed & Crowned — Turf cover
E – Curbed & Depressed – Turf cover
F – Flush & Depressed – Turf cover
G – Existing Ground

Where left turns are made, a left turn lane is always desirable (p. 528)
Minimum 12'
Desirable 18'

Median width, desirably, should be of uniform width – except where intersection spacing exceeds 0.5 mile. (p. 528)

"Successful operation of a continuous left turn lanes requires adequate lane marking." (p. 529)

It is difficult to see markings when the pavement is wet (contrasting texture can help)

If a 24' median can be provided, a flush or depressed landscaped median offers most of the advantages of a raised median with few of the unfavorable attributes. (p. 530)

Access Control

The control of access to a principal arterial is important to maintain the roads ability to carry high volumes of traffic at reasonable speeds. The various methods of controlling access are outlined below.

No Control of Access

Access is permitted to both directions of travel in accordance with the driveway regulations of WYDOT, Laramie County, or the City of Cheyenne.

Examples include existing U.S. 30 between Christensen Rd. and the Archer Interchange.

A four-lane road with a paved median is also an example of no control of access.

Partial (or Limited) Control of Access

Access is limited to predetermined locations along the road.

A. Service Roads (Example: U.S. 30 in the vicinity of Pershing Blvd.)

B. Development Planning (Example: On the south side of U.S. 30 between Reese Road and Westedt Road)

C. Deed Restriction (Example: Interstate Highways 80 and 15)

D. Median Control (Example: Nationway or Central Ave. north of 8th Avenue).

E. A combination of the above methods.

Full Control of Access

Access is permitted to the road only at interchanges, rest areas, and ports of entry.

Example: Interstate Highway 80

Shared Use Path/Sidewalks

A shared use path provides a place for the movements of pedestrians, bicycles, joggers, skate boards, and wheelchairs. It is desirable for the safety of users of the path, as well as the movement of vehicles on the roadway, for there to be a shared use path along both Dell Range Blvd. and U.S. 30. The conceptual plans indicate the proposed location of the shared use path.

On the conceptual plans, the shared use path connects with the Cheyenne Greenway at Dry Creek where the City plans to modify the northeast box culvert to accommodate the traffic on the Greenway. The conceptual plans indicate two other locations where the shared use path will cross the roadways. The purpose of these crossings are to combine the shared use path on the north side of Dell Range Blvd. with the shared used path on the south side of U.S. 30 so there will be only one shared use path east of the intersection; and at the east end of the project to get the shared use path on the north side of U.S. 30 so that adequate width for the shared use path can be provided on the new structure over the Union Pacific Railroad tracks. The proposed locations should be considered preliminary for at least two reasons. 1) It is desirable for these crossings to be grade-separated, which if determined to be feasible, will make the location immaterial so long as the indicated purposes are met; and 2) It may be safer, if the crossing locations are at-grade, for the locations to be between intersections. Between intersections, there are fewer traffic movements to observe, there is less pavement to cross, and the median will be wider and provide more storage area.

Mail Box Clusters

Mail box clusters should be located on the entrance road to adjacent subdivisions, not on Dell Range Blvd. or U.S. 30, which are principal arterials. The location of

mail box clusters are not indicated on the conceptual plans.

Surplus Right-of-Way

The Wyoming Department of Transportation owns a tract of land on the north and west sides of US 30 between College Drive and Pershing Blvd. which is vacant and appears to be surplus. If it is used or sold, it is recommended that full control of access be maintained along US 30, and access be permitted only from the service road that exists along the northwest side of the parcel.

CHAPTER IV
DESIGN DISCUSSION & RECOMMENDATIONS

IV. Design Discussion and Recommendations

This Chapter discusses the recommended design Dell Range Blvd. and U.S. 30, east of College Drive. The design is based on the following assumptions:

Both Dell Range Blvd. and U.S. 30 will continue to serve as principal arterials.

The primary function of a principal arterial is to serve the movement of traffic, rather than provide service to abutting land.

Four lanes are justified for Dell Range Blvd. from College Drive to U.S. 30, and on U.S. 30 from College Drive to the Archer Interchange.

Site Control Data

The conceptual plans indicate most of the site control data that is pertinent to the project. However, some additional information is included as Appendix A.

Traffic Signals

There are currently three traffic signals related to the project:

Dell Range and College Avenue
U.S. 30 and College Avenue
U.S. 30 and Pershing Blvd.

A review was made of the projected traffic volumes at the intersections along both Dell Range Blvd. and U.S. 30 to determine the need for future traffic signals. Based on the projected volumes, the only intersection where the volumes will meet either Warrant 1 or 2, is at the intersection of U.S. 30 and Christensen Road and that will occur only after the connection is made to Campstool Road and I-80.

Based on this analysis, it is recommended that conduit for a future traffic signal be included in the design of the intersection of U.S. 30 and Christensen Road.

Design Criteria

Both Dell Range Blvd. and U.S. 30 are functionally classified as principal arterial

streets. The sections are within the Urban Boundary, which extends to the Archer Interchange.

One of the issues related to the design of this project is whether the area should be considered "urban" or "rural", or divided between the two categories.

The East Cheyenne Infrastructure and Improvement Plan indicates the limits of the area which can be serviced by public sewer is at the hill west of the intersection of Dell Range Blvd. and U.S. 30. The proposed land uses adjacent to the 3+ miles, east of the sewerable boundary, would be either very low density or agricultural. The sections of the arterial streets, west of the sewerable boundary, should clearly be considered urban.

A Policy on Geometric Design of Highways and Streets, 1990, suggests that roads within the Urban Boundary should be considered urban, but a definition of urban areas is included in Section 101 of Title 223, U.S. Code. It also defines rural areas as those areas outside the boundaries of urban areas. (The definition in the U.S. Code indicates the boundary is to be fixed by responsible State and local officials in cooperation with each other, subject to approval by the Secretary.)

Some of the major differences between urban and rural design are:

Design Speed: The design speeds on rural sections are generally higher than in urban areas. The current speed limit on the eastern section of U.S. 30 is 55 mph, and the operating speeds are probably higher. A speed study would be required to validate.

Level of Service: The minimum level of service in rural areas is generally "B", and Level of Service "C" is generally acceptable in urban areas.

Storm Water Design: Open ditches are usually acceptable in rural areas, while storm sewers or drainage in gutters and valley pans are common in urban areas.

Detached Joint Use Paths: Joint use paths are common as a part of urban street sections, and provision for them is also desirable on rural sections if there are potential users. Sidewalks should be constructed by developers when adjacent land is developed.

Lighting: Lighting should be planned on the project where warranted, such as major intersections, etc.

Maximum grades: Steeper grades are generally permitted in urban area, but flatter grades will not be detrimental to the project. The conceptual plans indicate a much flatter grade on Dell Range Blvd. than currently exists.

It does appear desirable, with some exceptions, for similar design standards to be used for both Dell Range Blvd. and for the full length of U.S. 30. The following design standards are recommended for the project:

Design Speed	50 mph
Level of Service	B
Number of Lanes	4
Maximum grade	6%
Vertical Clearance	16'
Structures	Full-width
Width of traffic lanes	12'
Width of outside shoulders	8'
Width of inside shoulders	3'
Access control & service roads	In accordance with MOU discussed later in this Chapter.
Deceleration lanes, storage, & taper	Required at access points to arterial.
Acceleration lanes and taper	Required at access points to arterial.
Minimum median width	30' where R/W is available.
Storm sewers, curb & gutter	On Dell Range Blvd.
Fencing	No, unless needed to contain livestock.
Joint use paths	Yes, as shown on conceptual plans.
Bus turnouts	Not required.
Lighting	Yes (planned for, as a minimum)
Right-of-way width, minimum	120' on Dell Range Blvd. 300', existing for U.S. 30

Information About New Mexico Project

Plans were obtained by ChATPP for a recently-completed project in New Mexico, southeast of Sante Fe. The cross section for that project were similar to those indicated above. A summary of the New Mexico project is included in Appendix B, and the plans for the project are available for review at the ChATPP office at 2101 O'Neil.

Segment from College Drive to James Drive

The development of conceptual plans for the segment from College Drive to James Drive was added to the contract after it was determined that the projected travel on

Dell Range Blvd justified four lanes from the east terminus at U.S. 30 to the west terminus at Yellowstone Road. Since Dell Range Blvd. currently is a four-lane street from Yellowstone to College, and with four lanes proposed from James to U.S. 30, the two-lane segment from College Drive to James Drive was an obvious future bottleneck in the traffic flow along Dell Range Blvd.

At the public open house on July 18, 2000, one of the exhibits (See Figure IV-1) indicated the existing cross section on this segment of Dell Range Blvd., and also indicated the cross section for a possible improvement. Both cross sections were based on the existing 80' right-of-way.

In lieu of conducting a survey, the Record Documents (as-built plans) for this segment of Dell Range Blvd. were obtained from the City and used to prepare the base plan and profile sheets. The Record Documents were prepared by Intermountain Professional Services, Inc., and the project was constructed in 1991.

The objective of developing the conceptual plans for this segment of Dell Range Blvd. was to show how four through lanes (two in each direction), provision for left-turning movement, and a shared used path could all be provided within the 80' right-of-way.

Since the south edge of the existing roadway is close to the south right-of-way line but includes a sidewalk, the proposed improvement is to widen only on the north side of the road. The proposed improvement, as shown on the Conceptual Plans, is to provide curb and gutter on both sides of the road, four 11' through lanes, a 12' continuous left-turn lane in the center of the through lanes, and have an 8' shared used path within the remaining right-of-way on the north side of the road.

The Cheyenne and Laramie County Road, Street & Site, Planning and Design Standards, (1990), indicate that a Principal Arterial with four lanes should have 20' physical median, and have a right-of-way width of 120'. Since this segment of Dell Range Blvd. has an 80' right-of-way and is fully developed with residential lots, it would be cost prohibitive to obtain a right-of-way width of 120'.

The possibility of incorporating a narrow physical median was reviewed. It was found there is a poor circulation system on the adjacent streets both to the north and to the south of Dell Range Blvd., which requires that all of the existing streets have access to both directions on Dell Range Blvd. Since the median is only 12' wide, there is not room for both a physical median and a left turn lane in the same area. The length of the left turn lanes should be a minimum of 450' (50' min. for storage, 315' for deceleration from 40 mph, and an 80' min. taper), so intersections should be separated by at least 450' (900' when adjacent intersections have left turns in opposing directions) for there to be sections of the Street where a median could be provided. There are no spaces of adequate length between the

intersections on this segment of Dell Range Blvd. where a physical median should be installed. Due to the close spacing of the intersections and the lack of circulation in the area, the installation of a physical median on Dell Range Blvd. between College Drive and James Drive is not recommended.

Intersection of Dell Range Blvd. and U.S. 30:

Right-of-Way To The West

The preferred location of a new intersection of U.S. 30 and Dell Range Blvd. is in the area immediately west of the existing intersection. The area is undeveloped except for a building and an associated cellular telephone tower.

The preferred location for the new intersection is to the west of the present location for two primary reasons – (1) the west and southwest legs of the intersection are further apart; and (2) the new intersection will be further away from the intersection of Christensen Road and U.S. 30, which is planned to be a major intersection in the future.

According to the records of the County Assessor, there are three privately owned tracts of land between U.S. 30 and Dell Range Blvd., which could possibly be utilized for a new intersection. All three of the tracts are owned by Millie S. Rentz, 1731 E. 22nd St., Cheyenne, Wyoming.

The existing R/W of U.S. 30 is 300'. Adjacent to these parcels, the existing R/W for Dell Range, on the north side of the section line, is 40' east of Foxglove Drive, and 60' west of Foxglove Drive. The R/W for Dell Range Blvd. on the south side of the section line varies with each parcel as indicated in the following paragraphs.

The furthest parcel to the east has the middle of Section of 25 as its west boundary and extends 435.3 ft. to the east. The north boundary is the section line, and the south boundary is the north R/W line of U.S. 30. The length of the west boundary is 161', and the length of the east boundary is 33'. The distance along U.S. 30 is 454.5'. The total area is 0.95 acres. The structure and tower are on this parcel. (It appears the north 33' of the tract is being used as R/W for Dell Range Blvd.)

The middle parcel is immediately to the west of the one described above. The north boundary, which is 33' south of the section line, is 500' in length. The length of the west boundary is 326', the east boundary along the center of Section 25 is 129', and the south boundary along U.S. 30 is 538'. The area is 3.00 acres.

The most western parcel is adjacent to the parcel discussed above. The length of

the north boundary, which is on the section line, is 396.13'. The length of the west boundary is 524.71', the east boundary is 355', and the south boundary along U.S. 30 is 438.4'. The area is 4.00 acres. (It also appears the north 33' of this parcel is being used as R/W for Dell Range Blvd.)

AASHTO Guidance

According to the 1990 AASHTO Green Book (page 853) "The ability to accommodate high volumes of traffic safely and efficiently through intersections depends largely on what arrangement is provided for handling intersecting traffic. The greatest efficiency, safety, and capacity are attained when the intersecting through-traffic lanes are separated in grades. An interchange is a system of interconnecting roadways in conjunction with one or more grade separations that provides for the movement of traffic between two or more roadways or highways on different levels."

Additional guidance regarding intersections is provided in the 1990 AASHTO Green Book on page 520: "The liberal use of high-type intersections and of interchanges is highly desirable on arterials that do not have full control of access. Adequate turning widths with acceleration and deceleration tapers will provide a minimum design for minor intersections on a minor arterial. Principal arterials that intersect should be served by interchanges, possibly of the free-flow type. A comprehensive study of all intersections is desirable, and a suitable design consistent with the level of service required should be selected."

Route Development

In the past, the major route in the area has been U.S. 30 and a wide right-of-way (300') was acquired in anticipation that Interstate 80 would be located on this alignment. However, I-80 was located further to the south and now carries the majority of the traffic in the corridor. Dell Range Blvd. has developed from an unpaved section line road to its current classification as a principal arterial. The current intersection is a poor design with Dell Range Blvd. being bent sharply to intersect with U.S. 30 where the two roads are almost parallel.

Traffic Volumes

Currently, the southwest leg of the intersection (U.S. 30) has an average daily traffic volume (ADT) of about 3200. The west leg (Dell Range) has an ADT of about 980. The east leg of the intersection (U.S. 30) has an ADT of about 3840.

Future plans call for the construction of a new road along the alignment of Christensen Road connecting U.S. 30 to Campstool Rd. (and the adjacent industrial park) and I-80. After that road is constructed the projected (approximately 20 years) traffic volumes at the intersection of Dell Range and U.S. 30 are:

Intersection Leg	ADT
Southwest	1900
West	5360
East	7260

However, if Christensen is not constructed to I-80, the projected ADT volumes are:

Intersection Leg	ADT
Southwest	2740
West	3470
East	6210

In summary, the construction of Christensen Road from U.S. 30 south to I-80 will increase the traffic on Dell Range Blvd., but reduce it on U.S. 30, southwest of its intersection with Dell Range Blvd.

However, in either case, at some date in the future the west leg (Dell Range) will carry more traffic than the southwest leg of the intersection (U.S. 30). The timing for this change is unknown, although the amount of development in the industrial park adjacent to Campstool Road and development of land adjacent to Lincolnway will be an important factor.

Road User Cost and Benefits

The above-described traffic volumes make it difficult to make an analysis of road user costs or benefits.

Generally, at an at-grade intersection with three legs, the stop control is placed on the conflicting movement with the lowest traffic volume. Which, based on the above volumes, would initially be the eastbound movement on Dell Range where it intersects the southwest bound movement of U.S. 30. However, at some date in the future, the volume will become higher on the eastbound Dell Range movement and the stop sign control should be switched to the southwest bound movement on U.S. 30.

Changing the stop control from controlling one movement to the conflicting

movement is not desirable since drivers become accustomed to a situation and pay varying degrees of attention to the traffic control devices in place at an intersection.

Even without reversing the stop signs at some future date, there will be safety problems in stopping any movement on either of these principal arterials when they are improved as four-lane facilities. Both facilities will have the right-of-way at most intersections and drivers will not be expecting to have to stop at a stop sign.

One way to avoid having stop sign control on any major movement would be to utilize a grade separation structure to separate the conflicting movement.

The major disadvantage of a grade separation and interchange is the cost. The construction cost will be higher than for an at-grade intersection since more right-of-way, earthwork, and pavement will be needed, and a structure will be required. In addition, the maintenance of an interchange can be expected to be higher since more facilities are required. It is estimated, using 1999 construction costs, that the construction of an interchange can be expected to cost $500,000 to $1,000,000 more than an at-grade intersection.

The additional construction costs of an interchange must be weighed against the benefits to the public. As discussed above, these benefits will include the elimination of the cost of one movement not having to stop, and any associated safety benefits. Other considerations include the reduction in noise, air pollution and fuel consumption associated with the construction of a grade separation.

The hill located to the west of this intersection is also a consideration in the design of the intersection.

(a) The hill will permit the earthwork required for a grade separation to be minimized.

(b) If vehicles on a downgrade are required to stop, the amount of braking and the stopping distance are increased. However, the time and fuel needed to regain speed are reduced.

An estimate was made of the number of vehicles which will be required to stop with an at-grade intersection assuming the eastbound Dell Range movement is required to stop for ten years, and then the stop signs are reversed so that the southwest bound movement on U.S. 30 is required to stop for the following ten years. The estimate indicated that almost 8 million vehicles will be required to stop during the twenty year period. However, the life of a grade separation structure is at least fifty years, and assuming the volume for the southwest bound movement continues at its projected volume for an additional thirty years, the number of stops will increase by 10,400,000. Thus, the construction of a grade separation at the intersection can be expected to save over 18,000,000 vehicles from stopping during the next fifty years.

Combining the number of estimated stops which can be eliminated with the estimated maximum cost of an interchange ($1,000,000), the cost to provide for each vehicle not having to stop will be approximately $0.05, not including the savings from increased safety at the intersection.

Alternate Layouts

Ten possible layouts of the intersection have been prepared, including six at-grade intersections, and four interchanges. An evaluation of each of the alternates is included with the layouts.

ALTERNATIVE 1

Design Features

- Channelized At-Grade Intersection

Operational Characteristics

- Westbound to southwest bound traffic on U.S. 30 is stopped.
- Approximately 85 - 90 vehicles will stop in the design hour.
- No provision for northeast bound to westbound movement
- Frontage roads serve adjacent development.
- Merging four lanes to two lanes, eastbound, may be a problem.

Ability to Handle Traffic

- Fair – not all movements can be made simply
- A stop of high-speed traffic is not desirable.

Probable Cost

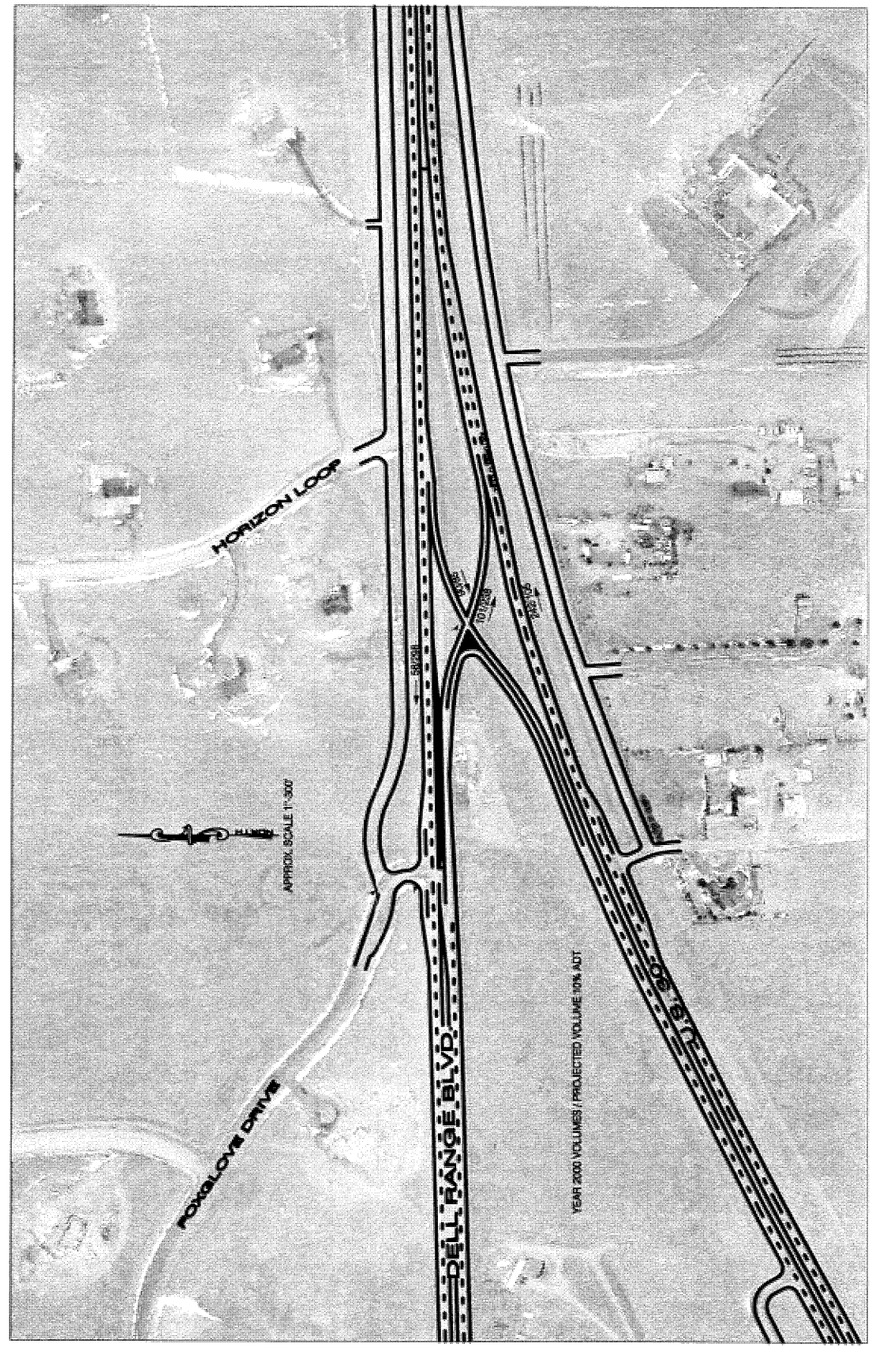
- Right-of-Way east of tower will need to be acquired.

Suitability to the Site

- Not recommended for the Intersection of two principal arterials.

Other Considerations

- Existing Peak Hour and projected peak hour volumes are indicated on the drawing.



ALTERNATIVE 2

Design Features

- Dell Range tees into U.S. 30, west of tower.

Operational Characteristics

- Site distance on U.S. 30 is limited.
- Distance to Christensen Rd. & Whitney Rd. is 0.5 miles.
- Provides for all movements

Ability to Handle Traffic

- Heaviest flow in future is forced to stop for minor flow, and travels out of direction.

Probable Cost

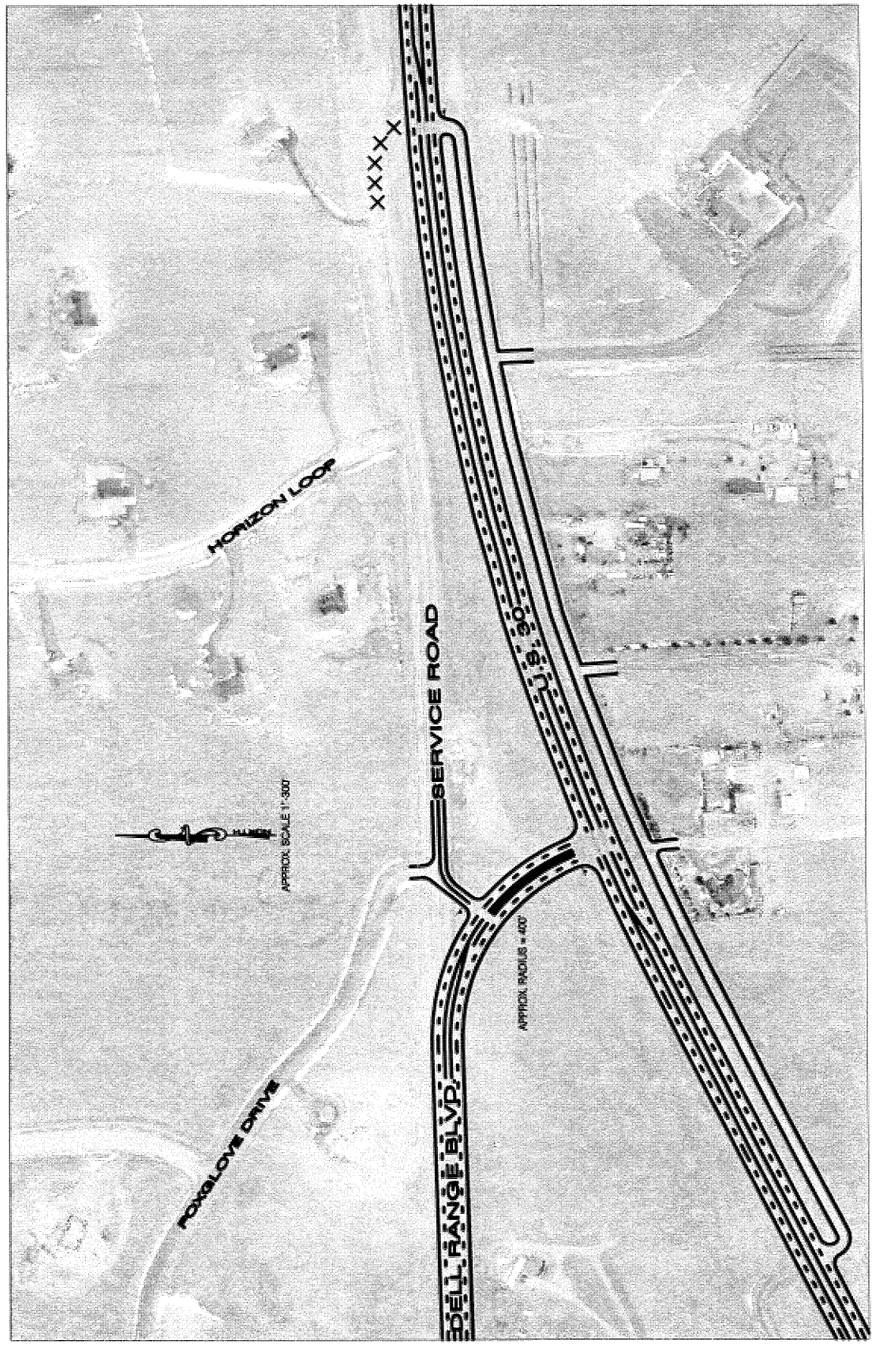
- Need to purchase right-of-way west of the tower.

Suitability to the Site

- Fair, requiring heavier and faster flow to travel out-of-direction is not desirable.

Other Considerations

- The AASHTO Green Book (1994 Edition, P. 509) states: "Principal arterials that intersect should be served by interchanges, possibly of the free-flow type."



ALTERNATIVE 3

Design Features

- Dell Range tees into U.S. 30, east of the tower.
- Similar to Alternative 2, except that intersection is east of the tower.

Operational Characteristics

- The future major flow is bent into the minor flow.
- All traffic movements are provided.

Ability to Handle Traffic

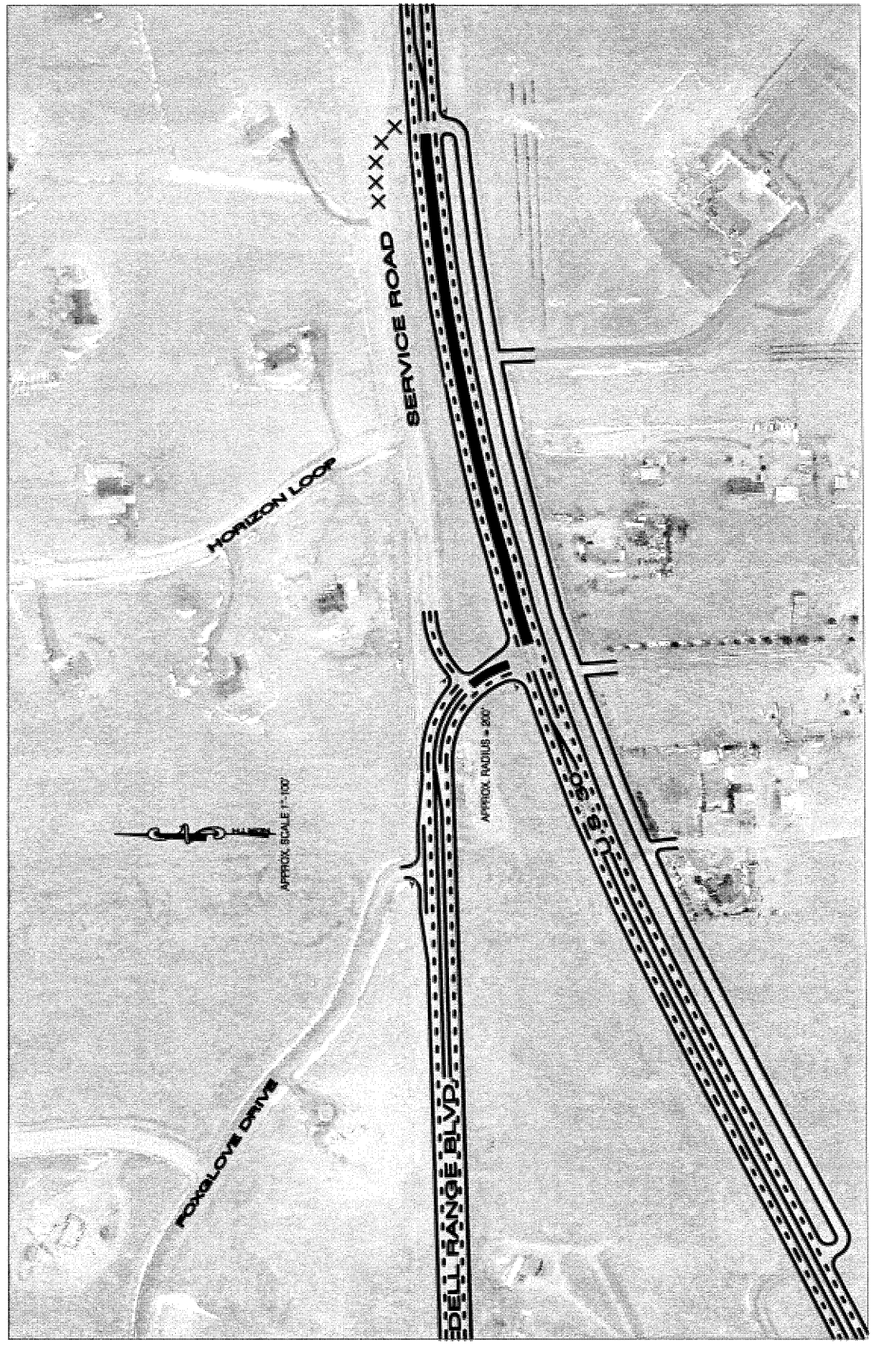
- Similar to existing intersection, except further west.
- Not considered to be a long range solution.

Probable Cost

- Some right-of-way east of the tower will be required.

Suitability to the Site

- Fair – it does not favor the future heavier and faster flows.



ALTERNATIVE 4

Design Features

- U.S. 30 is teed into Dell Range Blvd.
- Westbound traffic, continuing on U.S. 30, must yield to oncoming traffic.

Operational Characteristics

- Design favors future heavier flow on Dell Range.
- An overhead sign will be needed for the westbound traffic on U.S. 30.
- Provides for all movements.

Ability to Handle Traffic

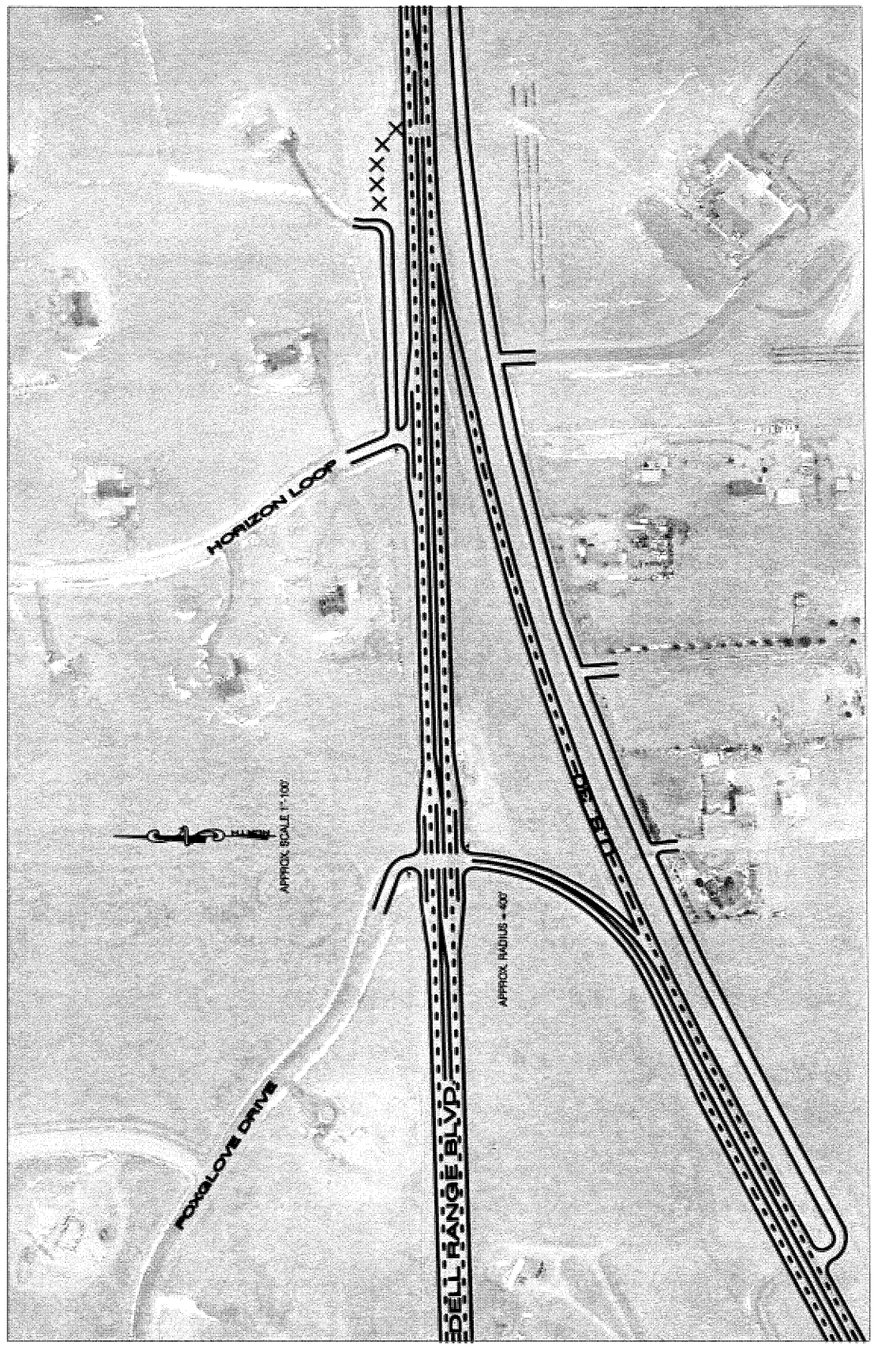
- The eastbound traffic on U.S. 30 is forced into one lane which is undesirable due to the slower moving vehicles on the upgrade.

Probable Cost

- Some right-of-way will be required.

Suitability to the Site

- Fair



ALTERNATIVE 5

Design Features

- Interchange with grade separation located west of the tower.

Operational Characteristics

- No stops or yields for major flows.
- The northeast on U.S. 30 to westbound on Dell Range movement is not easily accomplished.

Ability to Handle Traffic

- Excellent for major flows.

Probable Cost

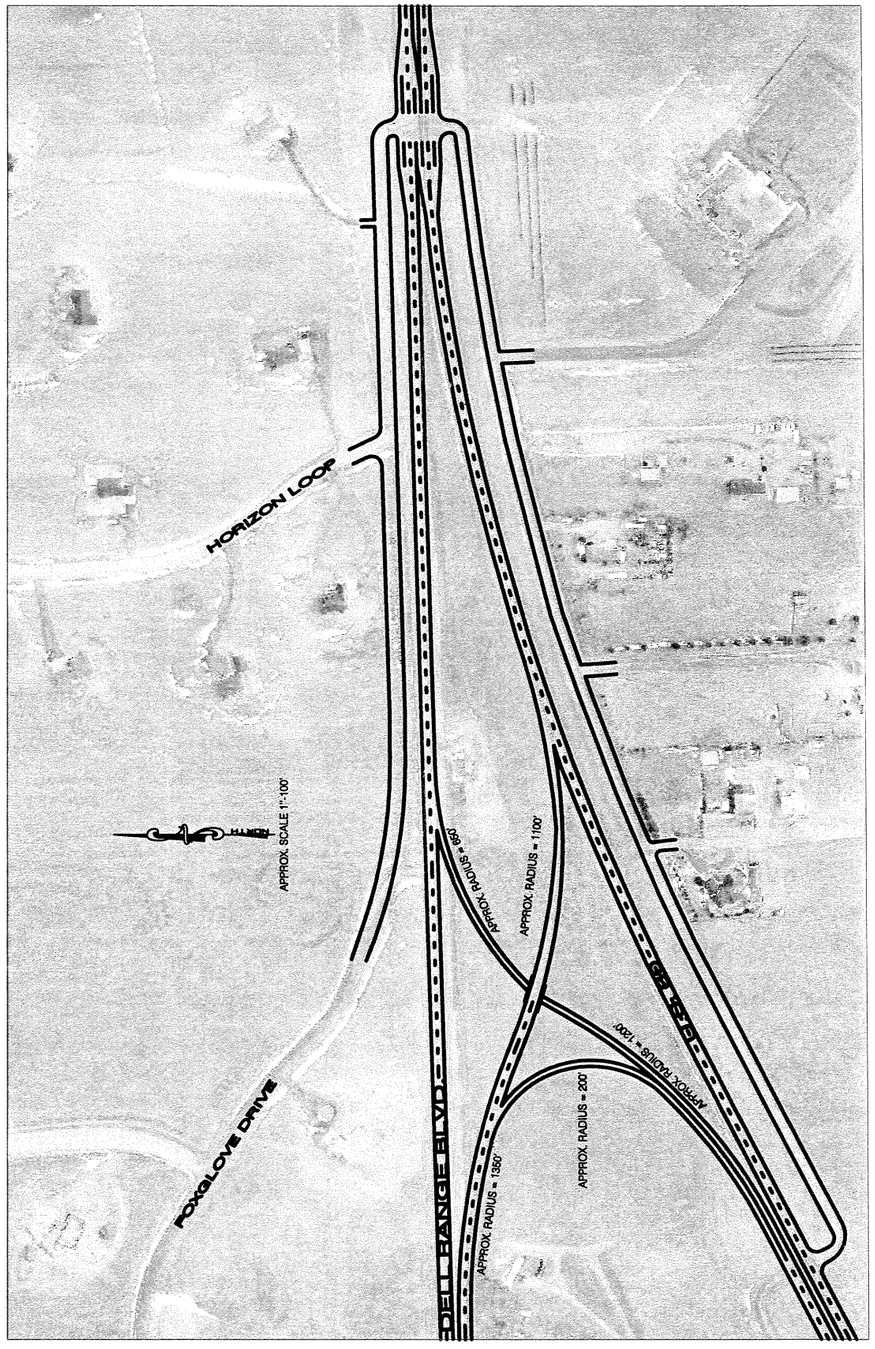
- Requires a large amount of right-of-way.
- Structure will increase the cost.
- New frontage roads will be needed.

Suitability to the Site

- Topography supports a grade separation.
- Major crossing traffic volumes are grade separated.

Other Considerations

- Traffic movement for the northeast on U.S. 30 to westbound on Dell Range can be accomplished by either using Whitney Road, or a U-turn at the frontage road intersection. (The projected traffic volume for this movement is zero.)



ALTERNATIVE 6

Design Features

- At-grade intersection.
- Left turn for westbound U.S. 30 occurs where routes separate.

Operational Characteristics

- All movements are provided.
- Intersection will operate better if U.S. 30 to the southwest is four-lane.

Ability to Handle Traffic

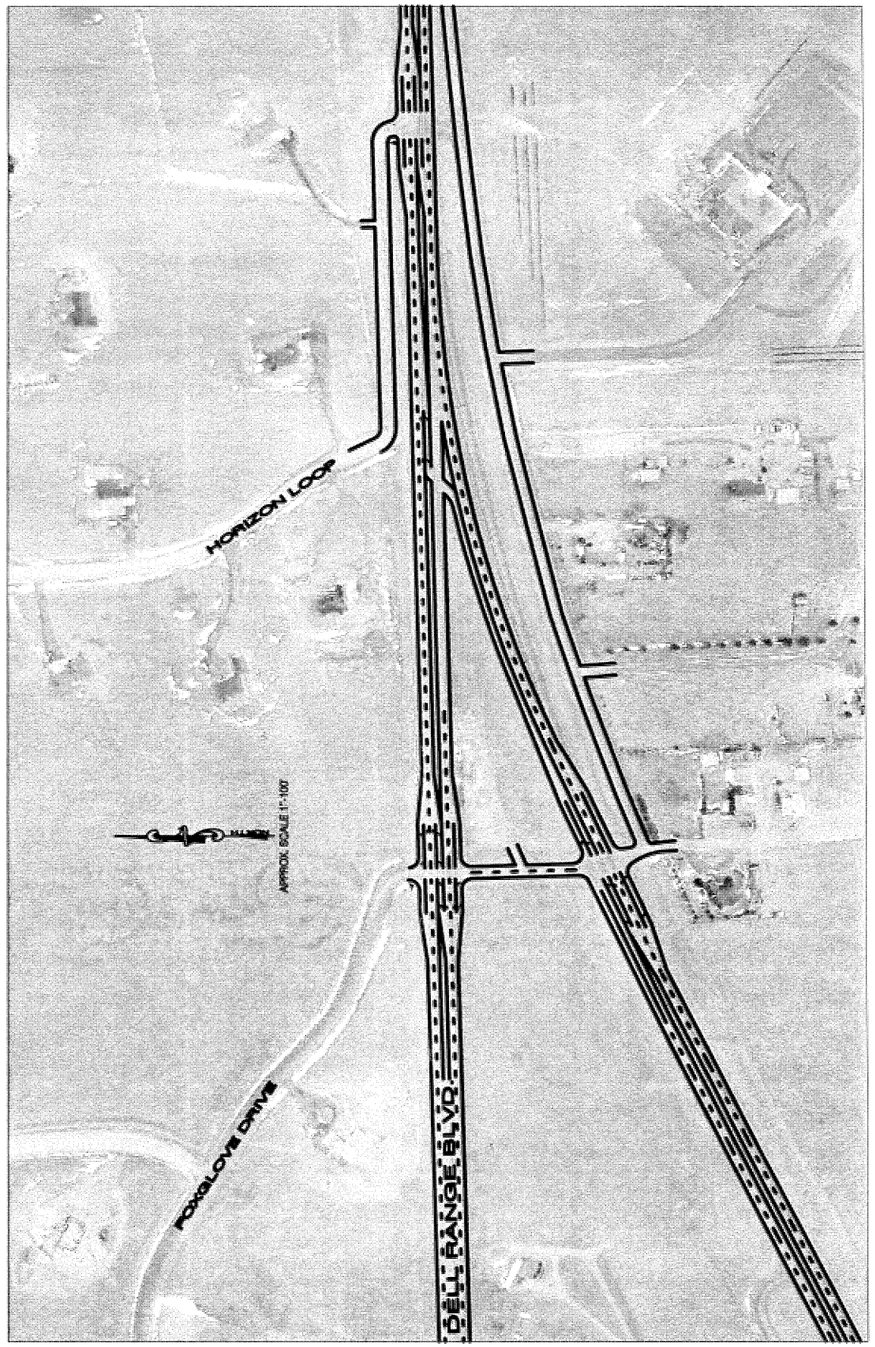
- Good.
- Probably will require an overhead sign for westbound U.S. 30 left turn.
- Extension of north service road to east (Christensen Rd.) and west (Foxglove Drive) is desirable (but not indicated on graphic).

Probable Cost

- A minimum amount of right-of-way will be required.
- There will be some cost for extension of service roads.

Suitability to the Site

- Good.



ALTERNATIVE 7

Design Features

- Roundabout (traffic circle or rotary intersection).

Operational Characteristics

- All traffic is required to yield to traffic on the circle.
- Low approach speeds are required.

Ability to Handle Traffic

- Suggested design could handle projected volumes.
- Approach speeds are expected to be too high.
- Eastbound trucks would not want to reduce speed at circle.

Probable Cost

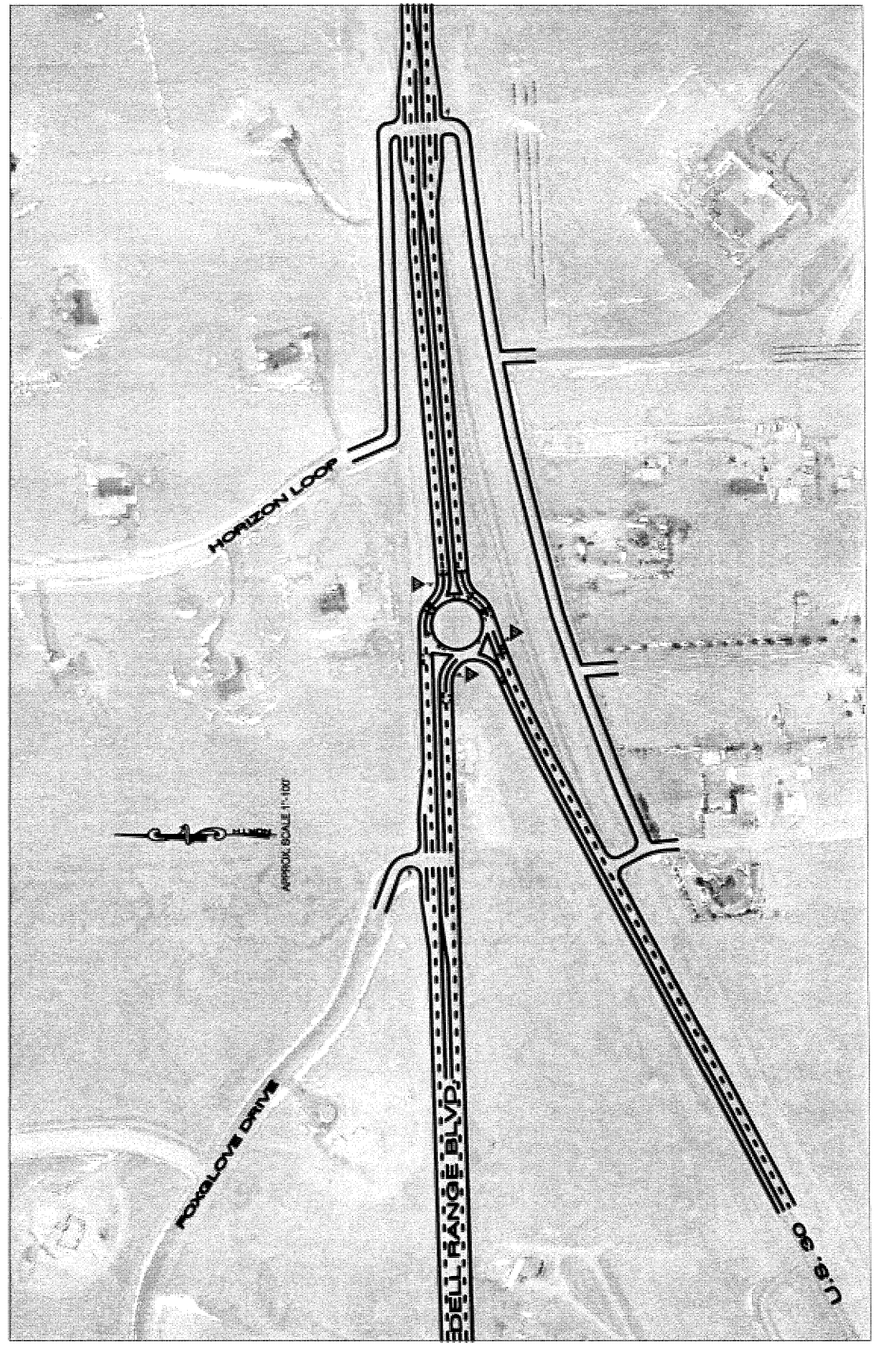
- Low
- Some right-of-way is required.

Suitability to the Site

- Not suitable due to the anticipated high approach speeds.

Other Considerations

- Roundabouts are difficult to navigate by unfamiliar drivers.
- Wyoming drivers are not familiar with roundabouts.
- Roundabout design procedures are not finalized.



ALTERNATIVE 8

Design Features

- An interchange located west of the tower.

Operational Characteristics

- Provides direct connections for all major movements.
- All adjacent land uses are separated from the through movements by service roads.
- The loop for the northeastbound to westbound movement is tight – forecast volume is 0.

Ability to Handle Traffic

- Excellent for through movements.
- Limited for the development on the north side of Dell Range.

Probable Cost

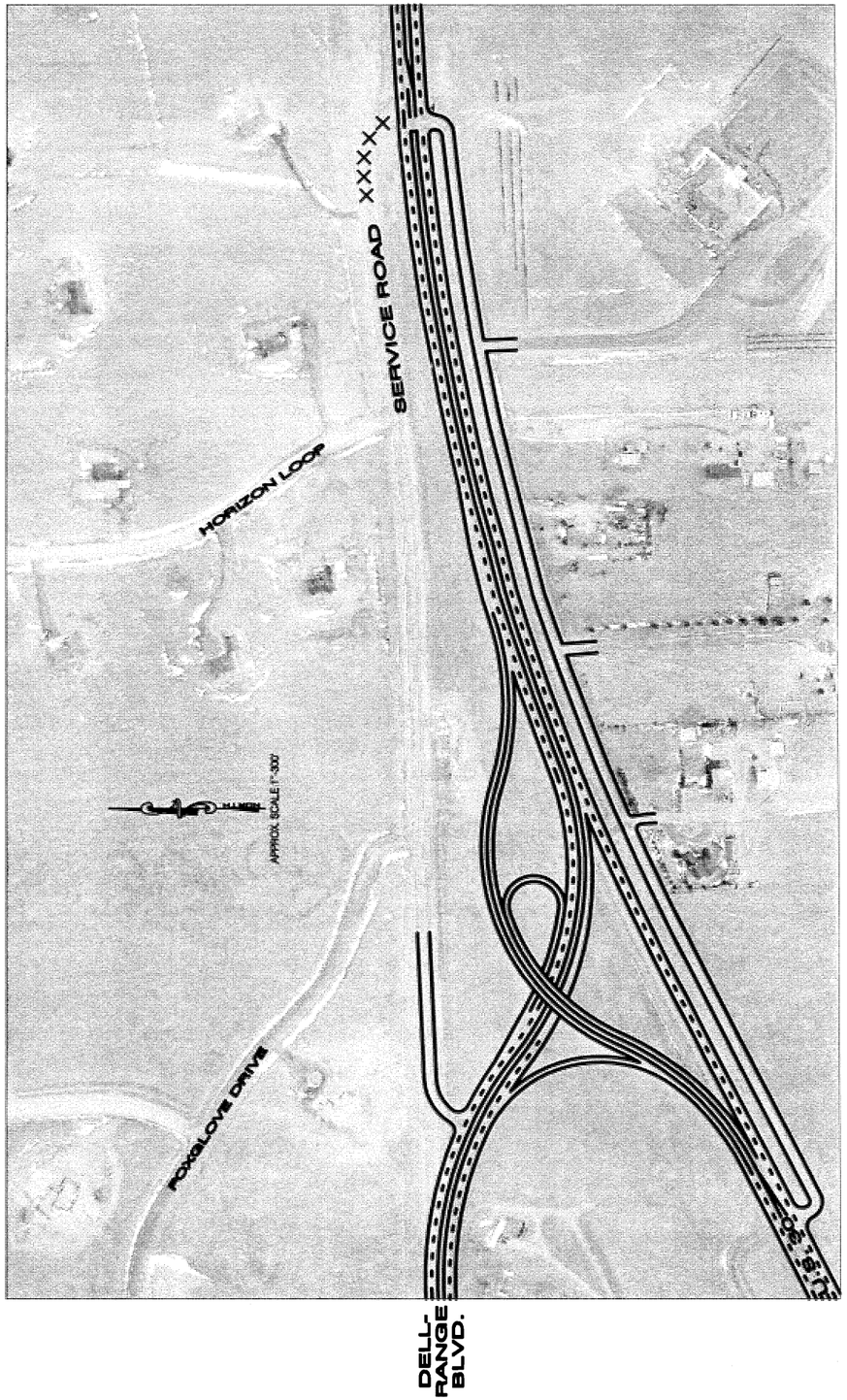
- Vacant right-of-way west of the tower will have to be acquired.
- A grade separation structure is required (probably a two-lane overpass).
- South service road will need to be extended.

Suitability to the Site

- An interchange is appropriate for the intersection of two principal arterials.

Other Considerations

- The north service road could be connected on the east to Christensen Rd.
- The north service road could be connected on the west to Foxglove Dr. & Whitney Rd.
- The north service road could be connected to U.S. 30 at the current Dell Range intersection.



ALTERNATIVE 9

Design Features

- A diamond interchange located west of the tower.

Operational Characteristics

- Provides direct connections for all major movements, except the westbound to southeastbound movement which will have to use the off ramp to cross road.
- The north end of the interchange ties directly to Foxglove Drive and the north service road.
- All adjacent land uses are separated from the through traffic movements by service roads.

Ability to Handle Traffic

- Excellent for all movements, except the westbound to southeastbound movement.

Probable Cost

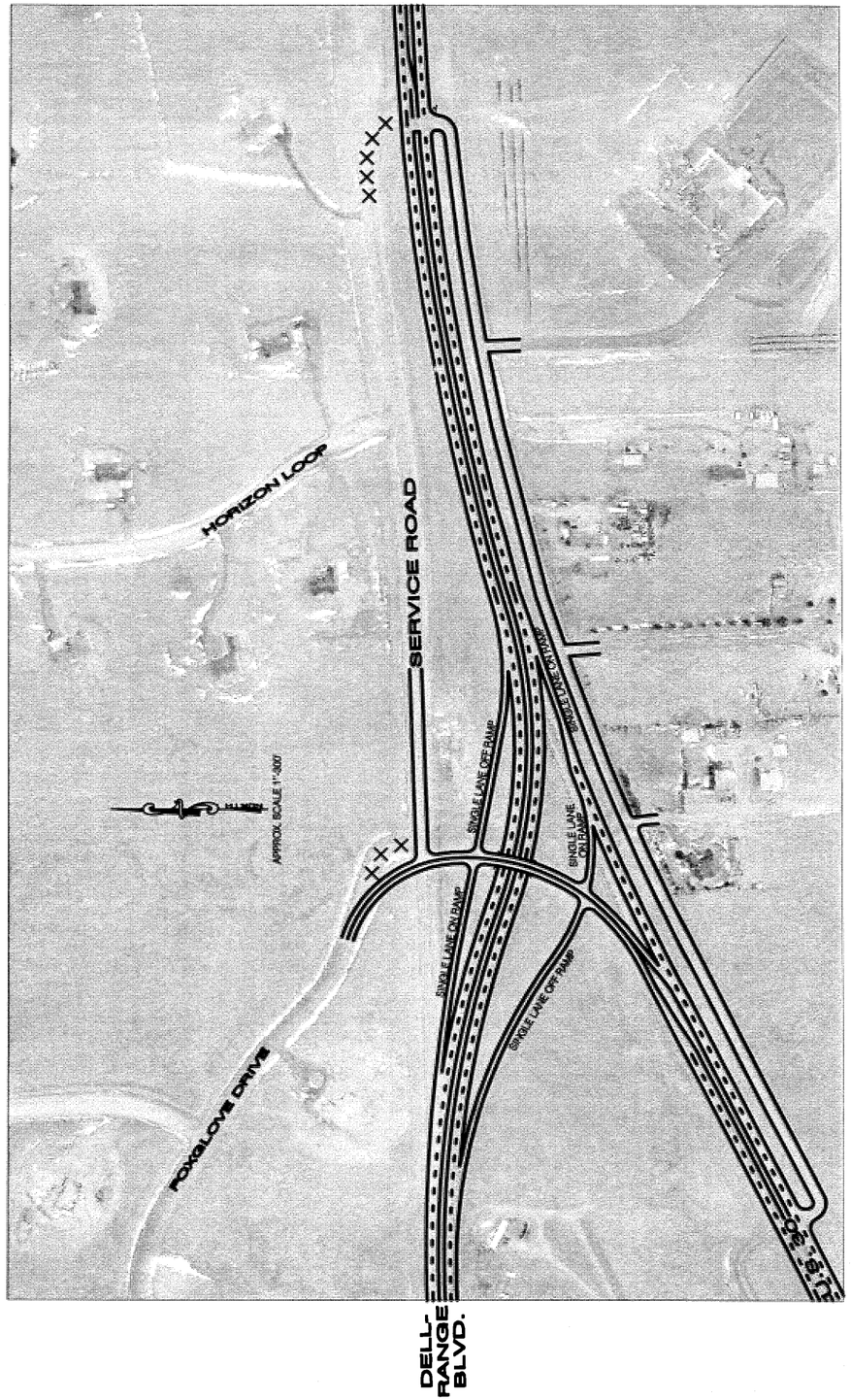
- Much of the vacant right-of-way west of the tower will have to be acquired.
- A grade separation structure is required (probably a two-lane overpass).
- South service road will need to be extended.

Suitability to the Site

- An interchange is appropriate for the intersection of two principal arterials.
- The requirements for westbound traffic on U.S. 30 to exit is poor, although it could be designed to favor this movement through the diamond interchange.

Other Considerations

- The residents along Foxglove Drive may not appreciate the direct connection to the interchange.
- The grades on the south side of the structure may not work.
- The south service road could be extended to Christensen to eliminate the intersection near the east edge of the drawing.



ALTERNATIVE 10

Design Features

- A parclo interchange located west of the tower.

Operational Characteristics

- Provides direct connections for all major movements, except the westbound to southeastbound movement which is a loop.
- The north end of the interchange ties directly to Foxglove Drive and the north service road.
- All adjacent land uses are separated from the through movements by service roads.

Ability to Handle Traffic

- Excellent for all movements, except the westbound to southeastbound movement.

Probable Cost

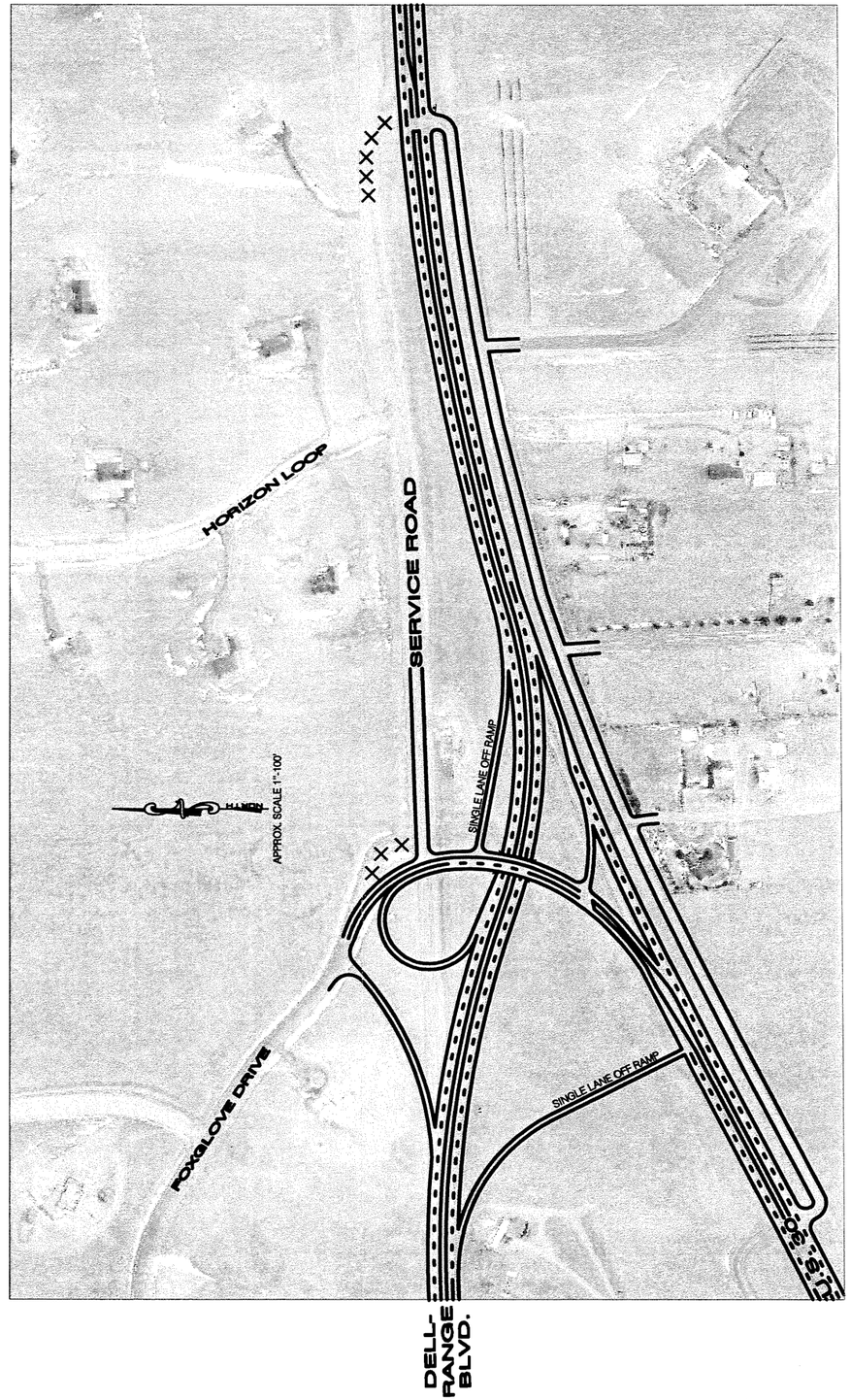
- The vacant right-of-way west of the tower will have to be acquired.
- A grade separation structure is required (probably a two-lane overpass).
- The south service road will need to be extended.

Suitability to the Site

- An interchange is appropriate for the intersection of two principal arterials.
- The requirement for westbound traffic on U.S. 30 to use the loop is poorer than a direct movement, but better than a stop sign.

Other Considerations

- The residents along Foxglove Drive may not appreciate the direct connection to the interchange.
- The grades on the south side of the structure are tight.
- The south service road could be extended to Christensen to eliminate the intersection near the east edge of the drawing.



Construction Priority

The construction of the intersection of Dell Range Blvd. and U.S. 30 will need to have a high priority in reference to the construction of the segments of the road leading to the intersection. One reason is that the reconstruction of Dell Range Blvd. in the vicinity of U.S. 30 should be located further south, which will create a conflict with the existing U.S. 30 alignment. Also, the east and west legs of the intersection should provide a continuous roadway, since the future heaviest flows are east-west. It will also be desirable for the Dell Range/U.S. 30 intersection to be located further away from the intersection at Christensen Road before it is developed as a major intersection.

Stage Construction

The feasibility of constructing an at-grade intersection initially, and later expanding it to an interchange was reviewed.

One option would be to design the interchange so that the exact location of the overpass structure was determined. Dell Range Blvd. could then be connected to an at-grade intersection with U.S. 30 using an alignment on the location of the road under the future structure. As shown in Figure 2, only a minor length of the temporary road would need to be moved when the interchange was constructed. It would be possible to extend the pavement widening, associated with the truck climbing lane, to the east and provide a center lane which could be used for eastbound left turns, and eastbound acceleration.

A second option would be to connect the new section of Dell Range Blvd., west of the intersection, with the existing two-lane Dell Range Blvd., and continue to have an intersection at the existing location. Another possible option would be to extend the north service road to Christensen Road and route traffic along the service road and the north leg of the Christensen/U.S. 30 intersection. Neither of these options using the future service road is recommended.

Alternative Alignments

An alternative alignment was considered that would route U.S. 30 along Dell Range Blvd. and Whitney Road. This would eliminate the need for an intersection at the existing location, but would require modification of the intersections at Dell Range and Whitney, and U.S. 30 and Whitney.

The advantages of this realignment would be elimination of the need to reconstruct (and maintain) approximately 4,600' of U.S. 30 east of Whitney Road; elimination

of the need to reconstruct the intersection of Dell Range Blvd. and U.S. 30; and the elimination of a section of road that does not appear to fit the basic street grid system in Cheyenne.

The apparent disadvantages of this realignment are:

- The intersections on Whitney Road, at Dell Range and U.S. 30, both have four legs, which will make it more difficult to adequately provide for the turning movements at the two intersections.
- Whitney Road had an 80' right-of-way and currently has developments along both sides. Significant additional right-of-way would be required for Whitney to be converted from a "collector" to a "principal arterial". (Existing U.S. 30 has 300' of right-of-way.)
- Traffic on U.S. 30 would be required to travel an additional 1,300', and be subjected to two additional sharp curves, which could jeopardize the U.S. 30 highway designation.
- The realignment would disrupt the established street system in east Cheyenne, and could increase traffic on Dell Range Blvd., west of Whitney Road.
- The Long Range Master Plan for the Cheyenne Business Parkway (Table 3, page 40) indicates that Whitney Rd., north of Campstool Rd., may in the future carry daily traffic volumes around 26,000.

One of the reasons for the consideration of the alternate alignment was to prevent the intersection of Dell Range Blvd. and U.S. 30 from becoming another intersection similar to Pershing/19th St./ Converse Avenue. The proposed intersection layouts generally will prevent this by placing the service to the adjacent developments on service roads, and with no provision for a major north/south road in the vicinity of the intersection.

Recommendations

The intersection should continue to be located in the vicinity of its current location.

An interchange should be constructed. Alternate 8 is recommended.

Estimated Project Costs

Preliminary cost estimates were prepared using the 35% Conceptual Plans to obtain a rough indication of the cost of the project segments. The segments used for cost estimating were:

- Dell Range Blvd.
  - College Drive to James Drive
  - James Drive to the U.S. 30 Intersection
- Intersection (Interchange area) of Dell Range Blvd. and U.S. 30
- U.S. 30
  - College Drive (Hayes for the roadway portion) to the Dell Range Intersection
  - Dell Range Intersection to the intersection north of the Archer Interchange on I-80

None of these segments are currently included in the approved construction programs of the agencies which are expected to construct them, and the proposed dates of construction are unknown.

Even if accurate estimates of the cost of construction were needed at this time, it is difficult to make such estimates based on conceptual plans. In addition, it is difficult to estimate the bid prices which contractors will submit since there are many factors involved in their determination of the prices they will submit. Some of these factors include:

- The size of the project
- The amount of work available and anticipated for contractors
- The anticipated cost of materials and labor
- The location of the work
- The time allocated to complete the work
- The competition for the work

To obtain the preliminary estimates, the cost of the major items was estimated, and an additional 20% was added to cover other items, such as mobilization, bonds and insurance, traffic control, flagging, contingencies, etc.

Unit costs selected for the major items were based on recent bids received on projects designed by BENCHMARK OF CHEYENNE, and on 1998 Cost Data, a publication of the Colorado Department of Transportation. Higher prices than the lowest bid prices were used, combined with engineering judgement, which was intended to provide a "cushion" in the estimated costs. For example, the estimated cost of the new structure over the Union Pacific Railroad, between Railroad Road and the Archer Interchange, was based on $40/square foot, while the estimated cost of the new structure in the interchange of Dell Range Blvd. and U.S. 30 was

based on $60/square foot. The reasons for the difference in the unit cost included the fact that the structure over the railroad is straight forward and will include the 10' shared use path, while the structure in the interchange is on a curve and will carry only highway traffic.

The preliminary cost estimates, which follow, should be considered preliminary the and approximate construction costs if the segments had been completed in 1999. The lengths of each segment are indicated on the individual estimates.

Summary **Preliminary Estimates of Cost**	
Dell Range Boulevard College Dr. to James Dr. James Dr. to U.S. 30	 $ 575,000.00 2,500,000.00
Intersection of Dell Range & U.S. 30	$2,180,000.00
U.S. 30 College Dr. (Hayes) to Dell Range Intersection Dell Range Intersection to Archer Interchange	 $2,600,000.00 8,215,000.00
Approximate Total Cost	**$16,070,000.00**

Approximate Cost **Widening Dell Range to 5 Lanes** (College to James – 5328.5') Assume widening on north, 1" overlay & stripe		
Item	**Cost per foot**	**Cost College - James**
Remove Path/Sidewalk	$3.60	$19,183
Remove Curb & Gutter	5.00	26,643
Widen Base & Pavement	28.00	149,198
New Curb & Gutter	10.00	53,285
New 8' Path	24.00	127,884
Overlay Full Width	11.20	59,679
Relocate Inlets/Slot Drains	—	40,000
Restripe	—	1,500
Add 20% for other items		$95,474
Preliminary Estimate of Cost		**$575,000**

Approximate Cost
New Four-Lane Divided Road
(Dell Range from James to U.S. 30 – 5,200')

Item	Cost per foot	Cost James to U.S. 30
Grading	$20.00	$104,000.00
Curb & Gutter	40.00	208,000.00
Base	50.00	260,000.00
Pavement	206.00	1,071,200.00
Drainage	20.00	104,000.00
10' Path	30.00	156,000.00
Landscaping	15.00	78,000.00
Removals	20.00	104,000.00
Add 20% for other items		$416,000.00
Preliminary Estimate of Cost		**$2,500,000.00**

Approximate Cost
Intersection of Dell Range Blvd. & U.S. 30
(Interchange)

Item	Cost for Intersection Area
Grading	$240,450.00
Base	128,530.00
Pavement	719,768.00
Structure	552,000.00
10' Path	96,000.00
Landscaping	80,000.00
Subtotal	$1,816,748.00
Add 20% for other items	363,350.00
Preliminary Estimate of Cost	**$2,180,000.00**

Approximate Cost

New Four-Lane Divided Road on U.S. 30
(Hayes Avenue to Dell Range Intersection – 5,600')
(Shared-use path from College Dr. to Dell Range Intersection – 11,000')

Item	Cost per foot	Cost College - James
Grading	$10.00	$56,000.00
Base	50.00	280,000.00
Pavement	206.00	1,153,600.00
10' Path (11,000')	30.00	330,000.00
Landscaping	15.00	84,000.00
Removals	20.00	112,000.00
Subtotal		**$2,015,600.00**
Service Roads		
North of Pershing		$12,000.00
Hayes – Whitney (North Side)		90,000.00
Extend South Service Road		33,000.00
Improve Drainage (North Side) Pershing to Dry Creek		$20,000.00
Add 20% for other items		$434,120.00
Preliminary Estimate of Cost		**$2,600,000.00**

Note: If existing two lanes are used, cost can be reduced approximately $800,000. (Total = $1,800,000)

Approximate Cost

New Four-Lane Divided Road on U.S. 30
Dell Range Intersection East To Archer Interchange
(1,400' W. of Christensen to 1,200' E. of Archer = 18,440')

Item	Cost per foot	Cost Full Length
Grading	$10.00	$184,400.00
Base	50.00	922,000.00
Pavement	206.00	3,798,640.00
10' Path	30.00	553,200.00
Landscaping	10.00	184,400.00
Removals	20.00	368,800.00
Structure (UPRR)		564,000.00
Service Roads @		
Westedt E.		67,500.00
Christensen – Reese		111,000.00
W. of Christensen		90,000.00
Add 20% for other items		$1,368,788.00
Preliminary Estimate of Cost		**$8,215,000.00**

Note: If existing 2 lanes are used, the cost can be reduced approximately $3,000,000. (Total = $5,200,000±)

CHAPTER V
MEMORANDUM OF UNDERSTANDING

V. Memorandum of Understanding

One of the purposes of this project was to develop a plan, mutually agreeable to the City, County and WYDOT. To formalize the agreement on the Plan, it is suggested the three agencies have a Memorandum of Understanding incorporating the following major points:

A. WYDOT will have the responsibility for necessary improvements associated with the reduction of the accident rate at College Avenue and U.S. 30.

B. The City of Cheyenne will be responsible for the improvement of Dell Range Blvd. from College Drive east to James Drive. The improvement will consist of widening Del Range Blvd. on the north side to obtain four through lanes, a continuous left-turn lane, and a shared use path.

C. The improvement of Dell Range Blvd., east of James to U.S. 30 will be a joint effort of the City of Cheyenne and Laramie County, as follows:

- The City and County Planning Office, the Development Office, and the ChATPP must be vigilant that a minimum of 120' of right-of-way is obtained (dedicated) from developers proposing to develop along Dell Range Blvd.
- Additional right-of-way needed for the project should be acquired by the local authorities at the time the improvement project is scheduled and funding is approved
- The City and County must not allow any new access points (streets or driveways) on Dell Range Blvd. except at median openings indicated on the approved conceptual plans.
- The construction, maintenance, and operation of this section of Dell Range Blvd. should be done by the local authorities (City and/or County).

D. U.S. 30 should be protected and developed as follows:

- WYDOT currently owns 300' of right-of-way along U.S. 30.
- No new access points (streets or driveways) should be permitted to the through lanes of U.S. 30, in accordance with the approved conceptual plans.
- All property owners and potential developers along U.S. 30

should be alerted that existing access points on U.S. 30 may, in the future, be changed to service road access in accordance with the approved conceptual plans.

- The County and City Planning Offices, the Development Office, and the ChATPP should be responsible for working with developers and other interested parties to see that the access controls shown on the approved conceptual plans are implemented.
- Land owners and developers shall be encouraged:

  1. To develop the land adjacent to U.S. 30 with the lots facing away from U.S. 30, and with access to streets parallel to U.S. 30;
  2. To develop street systems that have access to streets that are at right angles to, and have approved access to, U.S. 30.

- When (1) and (2) above, are not deemed practical, and with the prior written approval of WYDOT, local authorities and/or developers may construct a service road(s) within the U.S. 30 right-of-way in conformance with the approved conceptual plans. Prior to the construction of any such service road(s), either the City of Cheyenne or Laramie County must agree to maintain said service road(s).
- Local authorities, including the Greenway Committee, may construct segments of the shared use path or sidewalks along U.S. 30 in accordance with the approved Conceptual Plans or construction plans approved by WYDOT.
- WYDOT will construct improvements to U.S. 30 in accordance with its approved construction program. WYDOT will construct new service roads and upgrade existing service roads as it deems necessary for the proper control of access along U.S. 30.
- WYDOT will maintain U.S. 30, other than the service roads and the shared use path, as follows:
- The local authority, Cheyenne or Laramie County, responsible for the maintenance of the roads connecting to the service road, or within whose jurisdiction the road lies, will agree to assume the maintenance of the service roads adjacent to U.S. 30, when the improvement project on U.S. 30 is completed.
- A local authority, Cheyenne or Laramie County, will agree in writing to assume the maintenance of any proposed segment of shared used path, prior to its construction.

E. The intersection of Dell Range Blvd. and U.S. 30 should be protected and constructed as follows:

- It is critical that the right-of-way for the intersection be acquired at the earliest possible date. Right-of-way plans should be prepared by WYDOT, and the right-of-way needed in the intersection area acquired by WYDOT.
- One of the advantages of acquiring the right-of-way at an early date is that the location of any proposed future utilities in the area can be controlled. The relocation of existing utilities should be done when the construction of the intersection is scheduled and funded.
- The control of access points in the intersection area should be done as indicated in Section D, above, for U.S. 30, by the City, the County, and the State.
- The construction and maintenance of the intersection should be the responsibility of WYDOT.

CHAPTER VI
PRELIMINARY REVIEW OF ACCIDENTS ON EAST DELL RANGE / U.S. 30

Accident information was reviewed for the three year period – 1996, 1997 & 1998.

Most of the accidents were on U.S. 30, and most were at intersections.

Location	No.	Comments
College Drive	23	(9 injury accidents with 11 injuries)
Cleveland	1	
Pershing	4	(2 injury accidents)
Van Buren	1	
Whitney	3	(3 injury accidents with 3 injuries)
Dell Range	1	(3 accidents in vicinity)
Christensen	2	
Reese	5	(4 injury accidents with 8 injuries)
Railroad	3	(1 injury accident)
Archer	1	
Non-intersection	8	(5 injury accidents with 12 injured)
Total	**52**	

Reviews of the Summary Report indicated 2 of the 8 non-intersection accidents involved drinking. Eight of the injuries were in these two accidents.

At Reese Road, all of the accidents occurred during daylight when the road was dry. Two were rear-end going east; one was right-turn, one was left-turn, and one was an angle collision. Four were in the summer and four were in the late afternoon.

At Whitney Road & U.S. 30, all of the accidents occurred during daylight, when the road was dry and the weather was clear. All four occurred on Saturday afternoon. All four were in 1998 (March, May and July).

Because of the number of crashes, a more detailed study was made of the crash situation at the intersection of College Drive and U.S. 30.

Review of the Intersection of Lincolnway (U.S. 30) and College Drive (WYO 212)

The preliminary review of the crashes (accidents) on the project indicated over 50% of the intersections accidents were at College Drive and U.S. 30., which justified a more detailed review of the situation at the intersection.

The first signalized intersection, approaching Cheyenne from the east on U.S. 30, is at Pershing Blvd., and the College Drive intersection is the second signalized intersection. A puzzling question was to determine the reason that the College Drive intersection has several times as many crashes as the Pershing Blvd. intersection.

Traffic Crashes

Additional crash information was obtained so that a period of six years could be analyzed. During the six years, 1-1-94 to 12-31-99, there were 39 crashes at the intersection of College Drive and U.S. 30, as follows:

Year	No. of Crashes
1994	4
1995	4
1996	11
1997	4
1998	8
1999	8
Total	**39**

An analysis of the crashes by month indicated crashes occurred during every month of the year, with the most, nine, occurring in November. There were five in October, and four in both February and June.

An analysis of the crashes by the hour of the day indicated there were five between 2 and 3 p.m., and five between 6 and 7 p.m.. There was one in the morning peak traffic hour (7-8 a.m.) and none in the afternoon peak traffic hour (5-6 p.m.)

A review of the type of crash indicated:

Type of Crash	No. of Crashes
Angle	21
Rear-end	7
Left-turn	7
Right-turn	2
Head-on	1
Sideswipe	1
Total	**39**

Twenty-eight of the crashes occurred during daylight hours, ten when it was dark, and one during dusk.

Thirty of the crashes occurred when the road condition was dry, six when it was icy/snowpacked, and three when it was wet.

Thirty-two of the crashes occurred when the weather was clear or cloudy, four when it was snowing, and three when it was raining.

Drinking was a factor in two of the 39 accidents.

A review was made of the investigating officers report of the crashes for twenty of the angle crashes.

Initially, the four angle crashes occurring in 1999 were reviewed. It was determined:

- an 88 year old driver ran the red light from the south,
- an 83 year old driver ran the red light from the east,
- a 17 year old driver from eastern Laramie County ran the red light from the south, and
- a 74 year old driver from out-of-state ran the red light from the west.

An analysis of the twenty angle crashes indicated that westbound drivers were involved in fourteen of the crashes, northbound and southbound drivers were each involved in ten crashes, and eastbound drivers were involved in six of the crashes.

Further analysis indicated that westbound drivers ran the red light nine times, southbound drivers five times, northbound drivers four times and eastbound drivers once (One was unknown).

The major factor in the nine crashes involving westbound drivers were:

- 16 year old driver ran the red light.
- 67 year old driver pursued by Police – may have had a seizure.
- Very icy conditions
- 18 year old driver ran flashing red.
- 37 year old, truck driver by profession, ran red.
- Driver ran flashing red at 5:51 a.m.
- 63 year old driver ran red.
- Icy conditions.
- 83 year old driver ran red (occurred in 1999).

Traffic Volumes

The approach volumes at the intersection between 10 a.m. and 6 p.m. were

available from a turning movement count made by WYDOT on 3-2-00. Counts for a 24 hour period were available from a Traffic Analyzer Study on the east approach to the intersection on 3-30-00 and 4-4-00. The approach volumes on all of the approaches during a 24 hour period were estimated using the assumption that 54% of the daily volume occurs during the period from 10 a.m. to 6 p.m. The approximate approach volumes at the intersection are:

Approach	Volume from 10 a.m. to 6 p.m.	Est. Approach Volume
Eastbound	1521	2817
Westbound	2440	4518
Southbound	3027	5605
Northbound	3612	6689
Totals	**10600**	**19,629**

Based on the average crashes of 6.5 per year, and 19,629 vehicles through the intersection each day, the average number of crashes per million vehicles through the intersections is approximately 0.91. However, in 1996 when there were 11 crashes, the rate jumped to 1.53; and during the past two years when there were 8 crashes, the rate was 1.12.

Traffic Speeds

A Traffic Analyzer Study was done by WYDOT on March 14, 2000, on U.S. 30 east of the intersection with College Drive. The Study collected data for both the inside and outside westbound lanes, and found the 85th percentile speed to be 50 mph in the inside lane and 45 mph in the outside lane. In the inside lane, 24.7% of the vehicles were exceeding the 45 mph speed limit, and in the outside lane 5.7% of the vehicles were exceeding the 45 mph speed limit.

The design speed on U.S. 30, west of the intersection is 40 mph and is 45 mph east of the intersection. The posted speed limit is 45 mph.

Physical Conditions

The intersection has four lanes on each approach with separate left- and right-turn lanes. The right-turn lane on the west approach is physically separated from the through lanes by a large island. The medians on the approaches are indicated by paint markings. The pavement surface in the intersection is P. C. concrete.

There is a grade on the east approach of approximately 1.82%, which slopes from the east to the west. The grade on the west approach is uphill, on a vertical curve.

Traffic Signal

The traffic signal at the intersection operates from 6 a.m. to 11 p.m., and flashes from 11 p.m. to 6 a.m. The signal operates on a 60 second cycle, and is coordinated along College Drive. It has Walk/Don't Walk indications for the painted crosswalks on all four approaches.

The yellow clearance interval on College Drive is 4 seconds, and 4.5 seconds on U.S. 30. The yellow clearance interval is followed by a 1.0 all-red clearance interval on both streets.

The traffic signal is actuated and there are detectors on all four approaches. The signal operates as two phase, and there are four signal heads with lenses facing each of the four approaches. Only four seconds of green time is provided for the passage of traffic on the College Drive approaches, if there is only a single actuation. The loop detectors at the intersection are 20' in length, and the advance loop detectors on the College Drive approaches are 258' in advance of the beginning of the loop detectors at the intersection. It would therefore appear that a vehicle traveling less than 44 mph would lose the green light just as it arrived at the beginning of the second detector–which is only 20' from the intersection.

Conclusions and Discussion

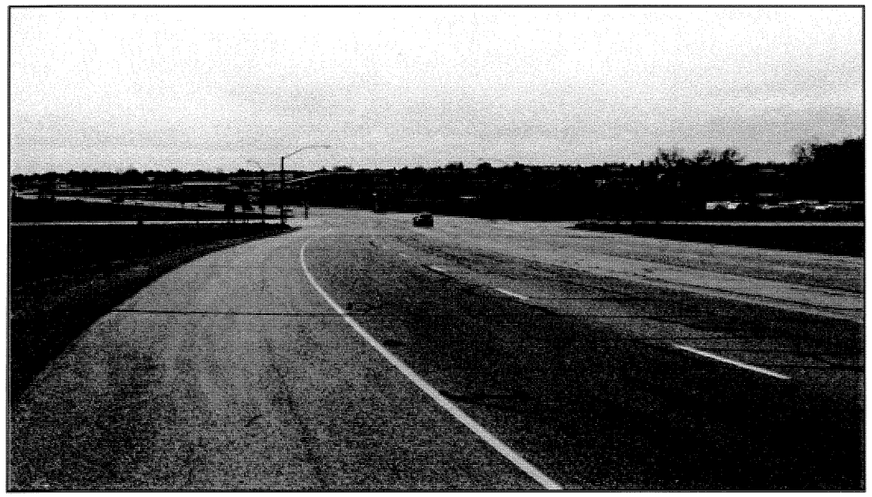
The crash analysis indicates that elderly and novice drivers are involved in many of the crashes at the intersection of College Drive and U.S. 30.

The crash rate during some years at the intersection is high, compared to other intersections in the Cheyenne area.

The drivers on the westbound (east) approach to the intersection are responsible for more angle crashes, than the drivers on the other approaches.

The approach speeds on the westbound approach are approximately 45 to 50 mph, which is higher than the posted speed of 45 mph. The design speed for the eastbound approach is 40 mph, and 45 mph for the westbound approach.

Photo 1



There is a downgrade on the westbound approach of about 1.82%, which increases the distance required to stop a vehicle, and tends to obscure the traffic signal for vehicles on this approach. Photo 1 illustrates this problem of the signal being difficult to see on the westbound approach to the intersection. (In contrast, the traffic signal on U.S. 30 at Pershing Blvd. is very visible for westbound traffic. It is on an upgrade of approximately 3.5%.)

There is a horizontal curve on the westbound approach to the intersection which reduces the time that the signal at the intersection is in the westbound driver's cone of vision. The Manual on Uniform Traffic Control Devices (MUTCD) (Table 4-1, page 4B-11) indicates the minimum visibility distance for a traffic signal, when the 85th percentile speed is 50 mph, should be 540'. (Although it is not stated, this distance should be increased due to the 1.82% downgrade. The 1990 AASHTO Green Book, Table III-2, page 125, indicates the increase for a 3% grade when the design speed is 50 mph, should be 30')

The 1990 AASHTO Green Book (Table III-3, page 127) discusses the decision sight distance, which is defined as the distance required for a driver to detect an unexpected or otherwise difficult-to-perceive information source or hazard in a roadway environment that may be visually cluttered, recognize the hazard or its threat potential, select an appropriate speed and path, and initiate and complete the required safety maneuver safely and efficiently. The recommended decision sight distance for an avoidance maneuver involving stopping on an urban road is 975' when the design speed is 50 mph, and 725' when the design speed is 40 mph.

The timing of the traffic signal seems to be a potential trap (under certain conditions) for the driver who approaches the traffic signal below the speed limit. The driver sees the signal turn green for the vehicle ahead of him and expects the green to last a reasonable amount of time which will permit him to enter the intersection. When the signal changes just as the driver nears the intersection, he is faced with either a panic stop, or proceeding on the clearance phase through the intersection. This would seem to be a particular problem for either the elderly or novice driver. (40 mph = 58.67 ft./sec.)

Recommendations

In addition to correcting the signal timing problem referred to in the previous paragraph, U.S.30 drivers on the westbound approach to College Drive need to be alerted to the existence of the traffic signal.

One possible method of alerting the drivers on the west approach is found on page 4B-11 of the MUTCD:

> *"2. Where the visibility requirements in Table 4-1 cannot be met, a suitable sign shall be erected to warn approaching traffic. Such sign may be supplemented by a Hazard identification Beacon (Section 4E-1), if drivers do not have a continuous view of at least one signal indication for the minimum visibility distance. A beacon used in this manner may be interconnected with the traffic signal controller in such a manner as to flash yellow during the period when drivers passing this beacon, at the legal speed for the roadway, may encounter a red indication upon arrival at the signalized location."*

It is realized that the use of the beacon interconnected to the signal is not feasible with the short initial actuated interval at this location. Therefore, other ways to attract attention to the signal indications should be reviewed.

Other suggestions which WYDOT may wish to consider are:

A. Coordinate the traffic signal with the traffic signals located at the intersections to the east and west, and

B. Post the progressive speed which can be maintained through the system to encourage drivers to travel that speed. (It is fortunate that the signal at Pershing and U.S. 30 is very visible for westbound traffic, which can safely get the vehicles started in the progression.)

C. Review the maximum speed limit through the area.

APPENDIX A
SITE CONTROL DATA

Site Control Data

Existing Right-of-Way Width – General
U.S. 30 – 300'
Dell Range Blvd. – 80'

The centerline tangents of Dell Range and U.S. 30 intersect at the P.T. of a curve on U.S. 30 at station 281+62.8. (Which is 749.2' west of the intersection of Christensen Rd. & U.S.30).

The actual intersection of Dell Range and U.S. 30 is approximately at station 279+27, which is about 985' west of the intersection of Christensen Rd. & U.S. 30.

Dell Range and U.S. 30 (east of the intersection) are on the section line, except Dell Range is offset in the intersection area.

A downgrade begins west of the intersection of Dell Range and U.S. 30.
Approximately 2200' on Dell Range
Approximately 1630' on U.S. 30

There is a truck climbing lane on the south side of U.S. 30 from Station 235+25 to 276+00 including a 150' transition on each end. The climbing lanes ends about 300' west of the intersection of Dell Range and U.S. 30.

There is a service road on the south side of U.S. 30, from the Dell Range intersection, west to approximately to the ½ section line. The service road serves a church and driveways to homes.

On the north side of Dell Range Blvd., in the vicinity of the U.S. 30 intersection, there are two residential subdivision streets and one driveway.

The Air Touch tower is approximately 1500' west of the intersection of Dell Range and U.S. 30.

There are two open areas west of the intersection of Dell Range and U.S. 30, one east of the Air Touch tower, and one west of the tower. The property both east and west of the tower is apparently owned by Millie S. Rentz, 1731 E. 22nd St., Cheyenne, WY 82001.

It is desirable that the intersection of Dell Range and U.S. 30 be moved to the west, away from the major intersection at U.S. 30 and Christensen Road.

There are no flood plains on either Dell Range Blvd. or on U.S. 30 in the area being analyzed.

Utility information is indicated on the survey of Dell Range Blvd.

APPENDIX B
HIGHWAY IN NEW MEXICO

Highway in New Mexico

Tom Mason, Director of ChATPP, was favorably impressed with a new highway in New Mexico and obtained information about the project, including several construction plan sheets.

The project is located on U.S. 285, southeast of Santa Fe, and extends south from I-25. The plans are:

NH-285-5(11)287
US 285
Santa Fe County

The project widened an existing 2 lane to a 4 lane divided highway. The median is raised and varies in width. The transmittal letter indicated a ½ half mile future access policy had been adopted for the corridor.

In addition to the Title Sheet and an Index Sheet, the following plan sheets were obtained:

Sheets	Description
2-1 to 2-6	Typical Section
2-7 to 2-10	Median Cross Over Details
2-37	Modified CWB (Concrete Wall Barrier
3-1 to 3-10	Plan & Profile – Main Line

The plans are in metric, and the units have been converted to feet in the following discussion.

Although the median width varies, the width for the majority of the project is 30.3'. The raised portion is 22.3', with a 2' curb and gutter, and a 2' inside shoulder on each side of the median. The curb and gutter is mountable and the median has a 2% slope from the center away from the centerline. The plans indicate the median is landscaped gravel with plantings.

The width of each driving lane is 11.81', and there is an outside shoulder that is 7.87'. The outside taper of the surface is also 7.87' in width. The total width of the roadway is 109', and the right-of-way width is 200'.

No facilities for pedestrians or bicycles are indicated on the plans.

The median crossovers have a width of 98.4'. The radius of the nose where there is a left turn lane is 8', and 11.8' where there is not a left turn lane. The length of the left turn bays is 459', and the taper to the left turn lane is 229.66' (20:10).

The project was designed by, and the information was provided by:

Bohannon Huston
Courtyard One
7500 Jefferson N.E.
Albuquerque, New Mexico 87109

APPENDIX C
7-18-00 MEETING

EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

CHATPP
Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

PLEASE SIGN IN

NAME	ADDRESS	PHONE
L.K. Conner	2109 Duff Ave	634-7404
W.F. Olmstead	8009 U.S. Hwy 30	778-7007
L. Deardorff	P.O. Box 5267 Sunnyside Bap. Church	6326496
J.E. Deardorff	" Sunnyside	6326496
Karen Schaefer	3532 Hayes Ave Chey	635 9945
PAUL & SHERYL SCHMIDT	7608 Dell Range BLvd	638-7791
Betty Gysel	5306 Dell Rand 82009	632-2347
PAT DEIBERT	8113 STAGECOACH RD	634-0917
Tom Bonds	604 SHAUN	638-8250
WADE VERPLANCKE	10500 Ranch Road	632-2453
Cheryl Verplancke	10500 Ranch Rd	632-2453
Jack Bass	Bapp Bros	632-6600
Kathleen Peterson	182 Big Sandy	638-2457
Jon Pesar		

EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

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NAME	ADDRESS	PHONE
MATT PHILLIPS	7314 ARCHER RD	632-4911
JERRY MAURER	Cheyenne Hills Church	637-3975
Shirley J Hayes	5700 Del Range	632-3065
John L. Hayes	5700 Del Range	632-3065
Mariella Whitney	5302 Whitney Rd	632-7904
Bob Whitney	" "	" "
C. J Brodin	1529 Adams Ave	632-5019
Jim Coyle	P.O. Box 20607 82003	634 3214
Bob Milburn	5574 Murray Hill (WYDOT)	777-4411
Ron Ruiz	709 m^c Covered	635-7372
David Griffin	807 Apache, Chey	778-8405
BRAD GRAHAM	5605 Bluff Pl.	778-6133
JACK + Agnes Colvin	4513 Pathfinder Ave	638-7701
Connie Berry	5020 King arthur way	635-4458
Melita Schaefer	3532 Hayes Ave	635-9945
Mary Parsons	122 Brookfield Ct. #6 82009	778-2822
PAUL JONES	1827 CR 217	777-4370
Melvin Gould	3558 I-8 Service RD	632-6160

EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

First the ones that I feel are bad - and why
#7 - Thus aint Boston - Rotarys suck -
#5 - May appear elegant - but will be expensive to build and will encourage high speed merging - over engineered - too complecated, too much land
#6 & #4 - You Build that street and you will end up with a bunch of mini marts & gas stations sprouting up Right in the view - scape & those .5 million dollar homes on the hill - very bad politics - Rich people don't Like truck stops in their front yard - these option(s) will get a Lot of Resistance —

- Next. The better of the bunch.
#'s 2 & 3 — improve the problem intersection a great deal and will Tend to channel traffic South on a Road that can handle the traffic - US30 - These solutions ~~and~~ CONSTITUTE Real improvements & Lend themselves to installing traffic control in The future - home owners to North will Like this plan as it diverts traffic from zooming past on US 30 straight on to Del Range - Slowing Down is OK!

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
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Paul & Sheryl Schmidt 7608 Dell Range Blvd

Comments, Concerns, Ideas...We Need Your Input!

We live at the intersection of Dell Range Blvd and Highway U.S. 30. After reviewing the different plans presented by CHATPP, we feel that our interest would be in proposals/alternatives #2 & #3. We like the idea of moving the current intersection further west, closer to the existing radio tower.

Our concerns would be if any of the plans proposed involved increasing the intersection in front of our residence or designing a new frontage road which would cause our access to Dell Range or U.S. 30 to increase considerably.

We feel that a medimum in U.S. 30 would not be appropriate, as State & County Highway Departments can not maintain the Highway in it's current condition. (Trash-weeds) In addition, a medimum would place the roadway that much closer to our property which is located north of U.S. 30.

We thank you for the chance to view our opinions and review the possible highway changes which will directly affect our home and property value.

U.S. 30 - ALTERNATE #1 / DELL RANGE BLVD ALTERNATE #2 & #3

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

Advertise the Open House Better. Perhaps in the newspaper a couple of times as well as sending postcards to land owners further back from Del Range & US. 30 (a mile back or so.)

(Use Much Space as Necessary)

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&
US 30
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Baggs Elementary School
July 18, 2000

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Comments, Concerns, Ideas...We Need Your Input!

My home is located at 5700 Del Range. At this time the traffic is almost at a level that access into or out of our driveway is impossible - Traffic speeds are way above the posted speed limits, increasing the number of lanes would only compound the problem.

My other concern is that adding these lanes would put the traffic pollution even closer than would be safe or even make occupancy of our home next to impossible

It appears to me that US 30 would be better served to connect to Christensen road. Traffic circles seldom do nothing but create problems

I would have liked to see the proposed changes on Del Range from College Drive to US 30. The plan presented here July 18, 2000 only indicates 4 lanes from James Place east. This particular draft shows no access into or out of homes on the north side of Del Range -

(Use Much Space as Necessary)
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EAST DELL RANGE & US 30 CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

No room for A frontage road
expanding roadway would put your road over our Septic System
No left turn or access into our property
Will increase speed of traffic So any design for
Connecting should consider this
Connecting Del Range to 30 probably best
Circle or roundabout is the most dangerous Alt 7
per all traffic reports Should Not even be considered

Why take FoxGlove to go across to 30 that
is dangerous

We have two Schools just west of where this
will Start So Consideration Should be given with
the increase of Children in the area

I live at 6700 Del Range. Are you prepared to buy
Our home as we would probably not be able to get out
also tearing up roadway in the city portion that was
Just built is foolish. Can't see how you can build
a 4 lane from James Place when its 2 lane
from there Clear to Yellow Stone.

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

ChATPP
Cheyenne Area Transportation Planning Process
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Comments, Concerns, Ideas...We Need Your Input!

US 30 Alternate 2 would be my choice, however I believe you need to rethink your traffic reduction projection for US-30.

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

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Comments, Concerns, Ideas...We Need Your Input!

US 30 Alternate 2 is the best choice.

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

I live S. of US 30 at the intersection of Christenson Rd.

I prefer US ~~Hwy~~ 30 ALTERNATE #1

I understand that at some time Christenson Rd is to be connected to I 80.

I don't mind that but do not like the possibility of having to give up another 70 feet off the west end of my property.

W J Christen
8009 U.S. Hwy 30

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

1. SEVERAL PEOPLE RAISED THE ISSUE OF DRAINAGE. IN PARTICULAR, SOME PARISHIONERS OF SUNNYSIDE BAPTIST CHURCH WERE CONCERNED ABOUT INCREASED FLOW ACROSS THEIR PROPERTY. THEY BELIEVE THE INCREASE IS CAUSED BY THE RECENT APARTMENT AND TOWN HOME DEVELOPMENT UPSTREAM IN THE BASIN.

2. SOME CONCERN FROM PEOPLE ABOUT (1) ACCESS AND (2) TAKING OF PROPERTY FOR RIGHT OF WAY.

GEORGE BARNES
BENCH MARK,

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
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Comments, Concerns, Ideas...We Need Your Input!

I like the US 30 Alternative #1. It would work better with all the houses that are along the Route. Alt 2 would require the addition of the Mtc Service road which increases the construction and maintenance costs.

The best alternative for the Del Range ~~[illegible]~~ US 30 Intersection is for option 2 or 3 if the sight distance will allow it.

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

I prefere to see U.S. 30 ALT 1 option with the Dell Range Alt plan 2. I would connect ~~over land~~ service road to Christensen off of Dell range to eliminate those users from getting on and off U.S. 30 for such a short distance

The shared use path should tie into the greenway also. I would ride my bike to WYDOT if this option was available and reduce the traffic count.

MATT PHILLIPS
7314 ARCHER RD
632-4916

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

I Represent Cheyenne Hills Church -

Any of the alternatives would probably work for the church. However, we would like for you to consider two (2) roads into the church property.

Thanks for allowing input.

Jerry Maurer
Cheyenne Hills Church
637-3975 - home
634-1112 - work

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

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Baggs Elementary School
July 18, 2000

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2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

I like the idea of limited acess to Hiway 30. Too many driveways or access to Hiway 30 will be/is dangerous. Need one acess, example Cherry Hills. Four lanes to Archer Intersection is a good idea. Dell Range/Hiway 30 interesection will be a challange, but needs to be improved. Access from Christianson to Campstool Road is good planning.

At the I-80/Exit 370/Hiway 30 exit. Traffic coming out of truckstop should have right of way. The main flow on that corner is in/out of truckstop. Truck/cars should come out of truckstop and merge to ramps going east or west without stopping.

Traffic from 30 should have a stop sign. Shorten up turning radius from service road on to I-80, make it a continuus moving lane to merge into Westbound traffic. With addition of a clinic and Frontier Correctional Center this corner is going to increase in traffic. Turn lanes need to be added.

I am glad the State/County is planning ahead.

Jack Sapp

Sapp Bros.

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

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Cheyenne Area Transportation Planning Process
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JUL 25 '00
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Comments, Concerns, Ideas...We Need Your Input!

2 or 3

I would support plan 2 or 3 — anything that would discourage more traffic on Del Range.

From College to James is heavy residential. There are many cars that access Del Range out of these residential side streets.

The speed limit is currently 35 mph and for the most part people pretty well go that speed.

With a 4 lane highway the speed limit would increase or would the potential for accidents or the residents would try to access the highway.

Keep the major flow of traffic going on industrial path if that is the reason to expand this area.

(Use Much Space as Necessary)

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(over)

Kathleen Petersen
182 Big Sandy Cir.

There was mention that Pershing Blvd is a 4 lane going into the base. The speed limit there is 30 mph. There is no way the traffic on this strip (Del Range) would go 30 if there are 4 lanes. The only thing that keeps some people at 35 now is because there is no way to pass the ones who obey the speed limit. We do not need semi's roaring through the neighborhood @ 60 mph while people are trying to pull out on the road.

Thank you for listening to our comments. V. [illegible]

EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

The TRAFFIC circle on ALTERNATIVE 8 would be Ridiculous it would cause a very bad slow down of speed to negotiate the circle — A circle in WYO —?

ALTERNATIVE 7 & 6 bring far close ACROSS two MINOR TRAFFIC ROADS is ASKING for accidents.

If the INTENTION is to build A 4 LANE And then REduce the speeds Lower than they are presently your wasting your money (Our money) Keep the traffic flowing don't make the ROAD A MILK RUN.

QUESTIONING the note about DRAINAGE North of INTERSECTION of Lincolnway / Pershing / US 30. Your REPRESENTATIVE shows this is AN After thought. The drainage ~~at~~ North of the INTERSECTION is poor it ALready backs up on the church property - DOWNHILL the pipe there would not be a wise move UNless adequate movement of the water off the property is facilitated at the same time.

RECEIVED
JUL 24 '00
PLANNING OFFICE

rnald & Charlene Ritz
9 M'Govern.

(Use Much Space as Necessary)

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Sunnyside Baptist Church - 3411 Cleveland

EAST DELL RANGE & US 30 CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
July 18, 2000

ChATPP
Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

7/25/00

The information displayed and the people who were present to answer questions is much appreciated. Our special thanks to George Barnes for taking the time to answer our questions. There's no doubt in my mind that considerable time, hard work and money has gone into this proposed project. As explained to Mr. Barnes, Sunnyside Baptist Church is very concerned about the water drainage problem the church experiences every summer. The apartment complex built across church property on Cleveland Avenue has certainly added to the problem. I believe tax payer money (and matching federal funding, if this applies) should be used to take care of water drainage problems first and before investing in traffic redesigns, etc. I hope your organization and City Planning give serious consideration to our concerns. Thank you for allowing us to comment!

I was appalled to learn provision for storm drainage was not included when improvements were made to Cleveland Avenue. Poor planning I'd say!

RECEIVED
JUL 20 '00
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Lilia Deardorff
Sunnyside Baptist Church.

(Use Much Space as Necessary)

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APPENDIX D
9-19-00 MEETING

EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
September 19, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

PLEASE SIGN IN

NAME	ADDRESS	PHONE
Tom Mason	2101 O'Neil Ave	637-6289
Bill + Virginia Magneson	4409 Whitney Rd.	635-4334
Craig Lotta	5430 LaVista	634-0845
Kent Nel	4506 Green Prairie PL	634-4781
Thierry MBAHA	4509 Green Prairie PL	635-1934
Lynda Mckee	6950 Westedt Rd	
Mary Sarich	3325 U.S. Hwy 30.	638-1113
Jay Goodell	WyDOT	745-2400
Doug Kallhoff	4523 EL CAMINO DR	778-6173
William Severson	5708 Dell Range Blvd	634-3017
Tim Carroll	5300 Bishop Blvd	777-4378
Dave Rose	6526 45 30	637-8955
Tom DeHoff	5802 CANYON RD	637-6188 / 777-4404
Betty Gysel	5306 Dell Range	632-2347
Bob Whitney	5802 Whitney Rd	632-7904
Marcella "	" "	"
Joe Tuck	3326 Laramie St	635-5770
Terry Swezey	4620 Wills Rd	637-4396
Kathleen Petersen	182 Big Sandy	638-2457
Shirley Hayes	5700 Del Range	632-3065
John Hayes	5700 Del Range	
LK Canner	2109 Duff	6347404
Bonnie Berry	5020 King Arthur Way	635-4458
Tom Bonds		
Don Woodhouse		
Larry Gallagher	5907 Townsend Pl	637-0681

EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
September 19, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

I Suggest 3 Lanes on Delrange continue ~~East~~ to Hwy-30 ~~Hwy 30~~ This would limit traffic through residential area on Delrange Between College and Van Burren an alternative route would be to make an exit from U.S. 30 to College VIA Dry Creek this would take traffic to Delrange Bussiness Area without increasing traffic in residential. The main problem I see is traffic coming onto Delrange from the south and turning west onto Delrange, As it is now people have long waits for access and with a 5 lane it would be worse. Other than that your plan 8 should work.

Dave Rose
6526 Hwy 30
6378955

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
September 19, 2000

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Comments, Concerns, Ideas...We Need Your Input!

Reference Dell Range / Green Prairie Place

(1) Drainage is an existing problem with up to 6" to 8" of water across 2 acre property flowing across Dell Range from North to South. Videos are available of this

(2) As the property owner - I would prefer grade to be extended on to my land so I can install a 6' "sound fence".

(3) Semi trucks are currently using engine braking coming down hill from US 30, west on Dell Range. Is a noise problem?

Kent Nelson
4506 Green Prairie Pl
634-4785

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
September 19, 2000

Cheyenne Area Transportation Planning Process
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Comments, Concerns, Ideas...We Need Your Input!

① What / Where are you going to discharge the water that comes off the road? Currently, the water drains over / across Dell Range North & South with 6-8" of rain over entire 2 acres of property

② The pavement is currently 2' grade above property line. The drawing indicates an additional 2'→3'. This means the road will be 4-5' above adjacent property.

What is the transition gradient proposed?

No one knows the answer.

③ Are you going to put in a "noise fence"? Currently noise is real problem. The additional road capability will increase the problem.

Summary - Two major problem.
(1) Noise
(2) Drainage

Kent Nelson
9506 Green Prairie Pl
634-4785

(Use Much Space as Necessary)

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EAST DELL RANGE
&
US 30
CONCEPTUAL PLANS

Public Open House
Baggs Elementary School
September 19, 2000

Cheyenne Area Transportation Planning Process
2101 O'Neil Avenue Cheyenne, WY 82001

Comments, Concerns, Ideas...We Need Your Input!

Traffic on Dell Range - especially at Whitney Rd. intersection has greatly increased due to all the new homes in area and traffic headed to the Mall area. Lots of speeders and can forsee accidents on that corner.

Bill + Virginia Magness

(Use Much Space as Necessary)

Please return to the above address or chatpp@cheyennecity.org.
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