East Dell Range Boulevard / US 30

CORRIDOR STUDY

SEPTEMBER 2019

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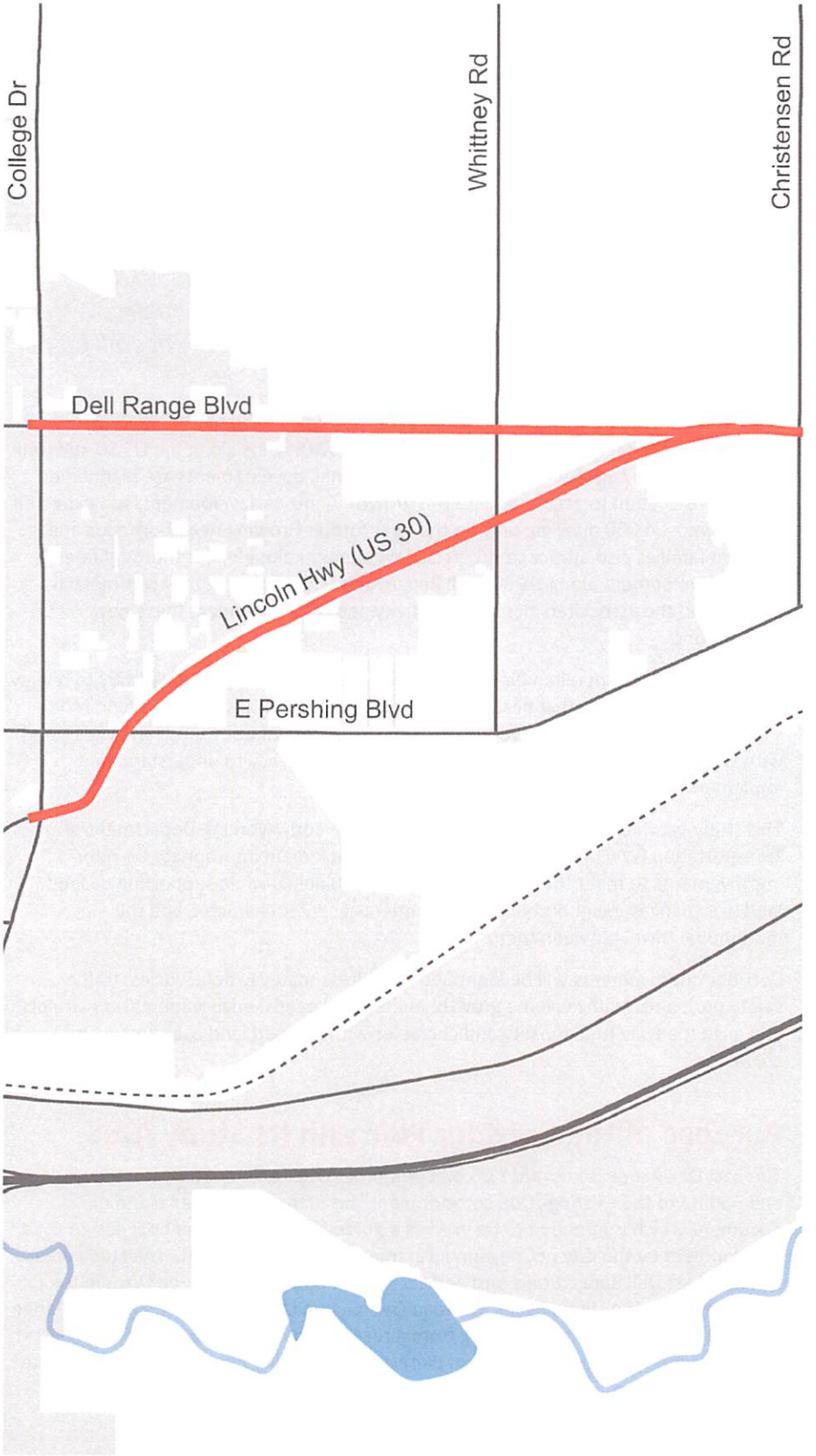

INTRODUCTION

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Introduction

As the Cheyenne region continues its trend of steady growth, the benefits and impacts require continued investments in planning to incorporate this growth into the community's vision for economic, environment, and mobility goals. PlanCheyenne and other planning efforts have captured and described this vision and defined the associated goals. As forecast growth transforms into new housing, commercial development, and the person trips associated, the responsible planning, design, and implementation of public infrastructure can weave these new elements into the overall fabric of the community's vision.

The east side of the Cheyenne Metro area is experiencing a significant land use transition as the region grows and much of this growth lands along the US 30 and Dell Range Boulevard corridors. New subdivision and infill developments are planned or under construction to accommodate this growth. A mix of developments are expected to add almost 4,000 dwelling units in the near future. Growing neighborhoods and resident families also attract commercial development along major thoroughfares. Infill redevelopment along US 30, Dell Range, and I-80 is creating new commercial centers and the associated increase in activity and trips to connect these new destinations.

The Cheyenne Metropolitan Planning Organization (MPO) initiated this study to review and update prior plans that described the investments in transportation required to support the vision of PlanCheyenne. Growth in this area of Cheyenne has accelerated with significant development activity increasing the urgency to understand and implement the right infrastructure investments.

This study provides a plan for the City of Cheyenne and Wyoming Department of Transportation (WYDOT) to improve safety and implement appropriate corridor improvements to meet the growing transportation needs while supporting desired land use changes, neighborhood and commercial center character, and the multimodal travel between them.

Corridor improvements will be identified to address roadway deficiencies, traffic safety problems, traffic volume growth, multimodal needs, environmental constraints, and align roadway functionality and character with planned land uses and desired character.

Purpose of the Corridor Plan and Its Study Area

The East Dell Range Boulevard / US 30 Comprehensive Corridor Study is a reevaluation and update to the existing 2008 corridor plan. This plan is 35% detail planning document which is intended to be used as a guide for a base for the final design development by the City of Cheyenne, Laramie County, and WYDOT. The study area includes East Dell Range Boulevard and US 30, extending from College Drive in the City of Cheyenne to the Union Pacific Railroad Overpass in Laramie County. East Dell Range Boulevard and US 30 is transitioning from a rural to a more suburban land use context, and the related change of both travel patterns and mobility needs requires an update to the existing plan.

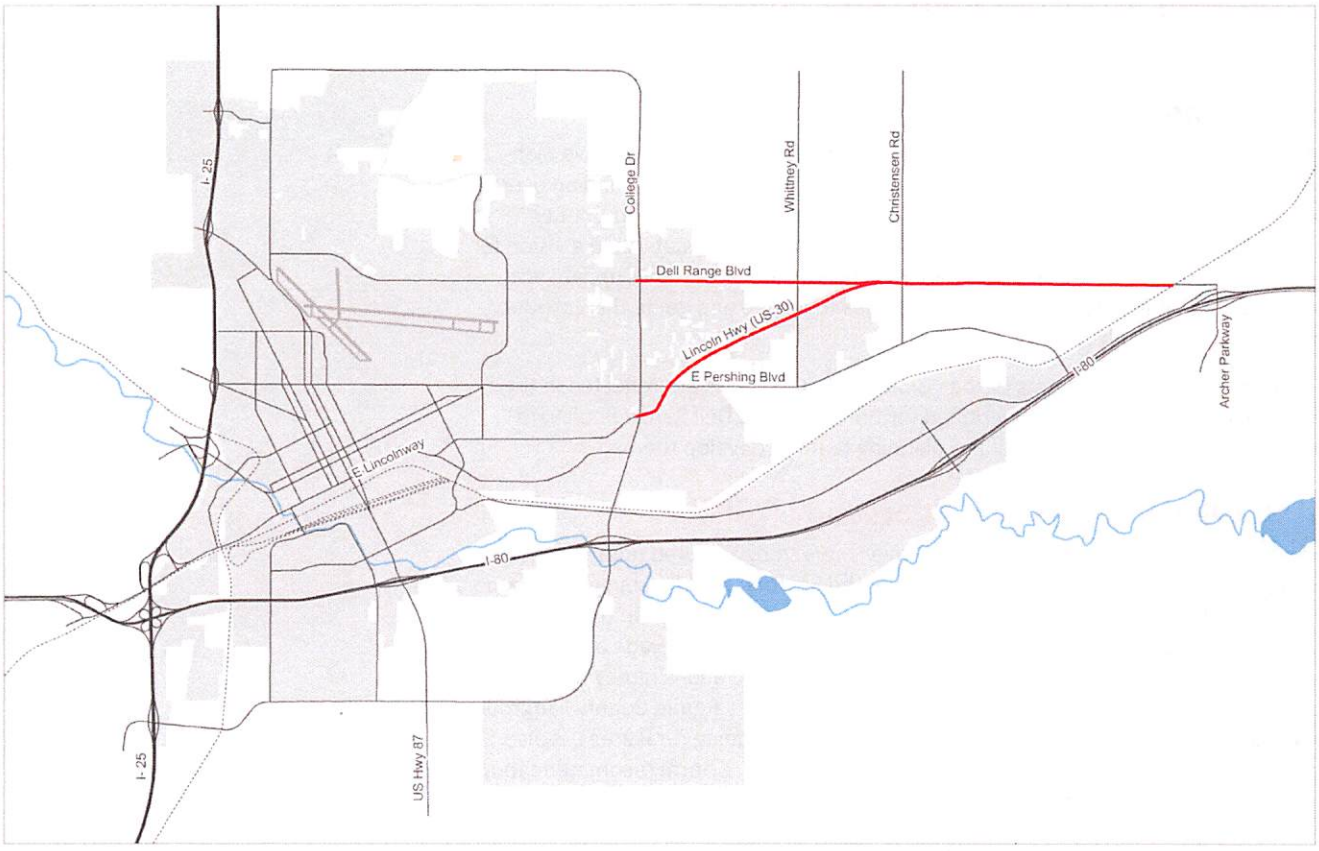


***Figure 1:** Project Study Area*

The PlanCheyenne Community Vision is organized around seven foundation areas:

1. Growing as a Community of Choice
2. Creating Livable "Hometown" Neighborhoods
3. Fostering Vital Employment and Activity Centers
4. Developing a Connected and Diverse Transportation System
5. Celebrating our Character and Varied Heritages
6. Creating a Legacy of Parks, Open Spaces, and Trails
7. Developing in a Fiscally Responsible Way

Relationship to Other Plans and Policies

This study builds upon the work of others and prior investments in planning.

PlanCheyenne

PlanCheyenne was originally crafted and adopted in 2006 as a comprehensive plan including elements of community, transportation, parks and recreation, and an overall summary. The 2014 update, Reflections and Progress, published City and County versions of the Community, Transportation, and Land Use Plans established a vision for the community that serves to inspire and guide this corridor study. This update also established a vision for the community that serves to inspire and guide this corridor study.

The seven foundational elements of the vision define the values are reflected in the solutions and recommendations identified for the US 30 and Dell Range Boulevard Corridors and the responsibilities of the planning team to develop them.

East Dell Range / US 30 Corridor Study (2008)

The area north of I-80 and east of College Drive is served by a limited number of east-west routes, including Campstool Road south of the Railroad, and Pershing Boulevard and the US 30/Dell Range corridor. With the recent and active growth in the area, the 2008 study has rapidly become outdated. The study completed a decade ago did not anticipate the reality of active developments, at Saddle Ridge and Whitney Ranch. The amount of growth east of these developments including the Laramie County Fairgrounds Complex at the Archer Parkway interchange and the surrounding rural areas, is also causing impacts that may not have been considered in 2008. Critical recommendations of the 2008 plan are in the process or nearing implementation including:

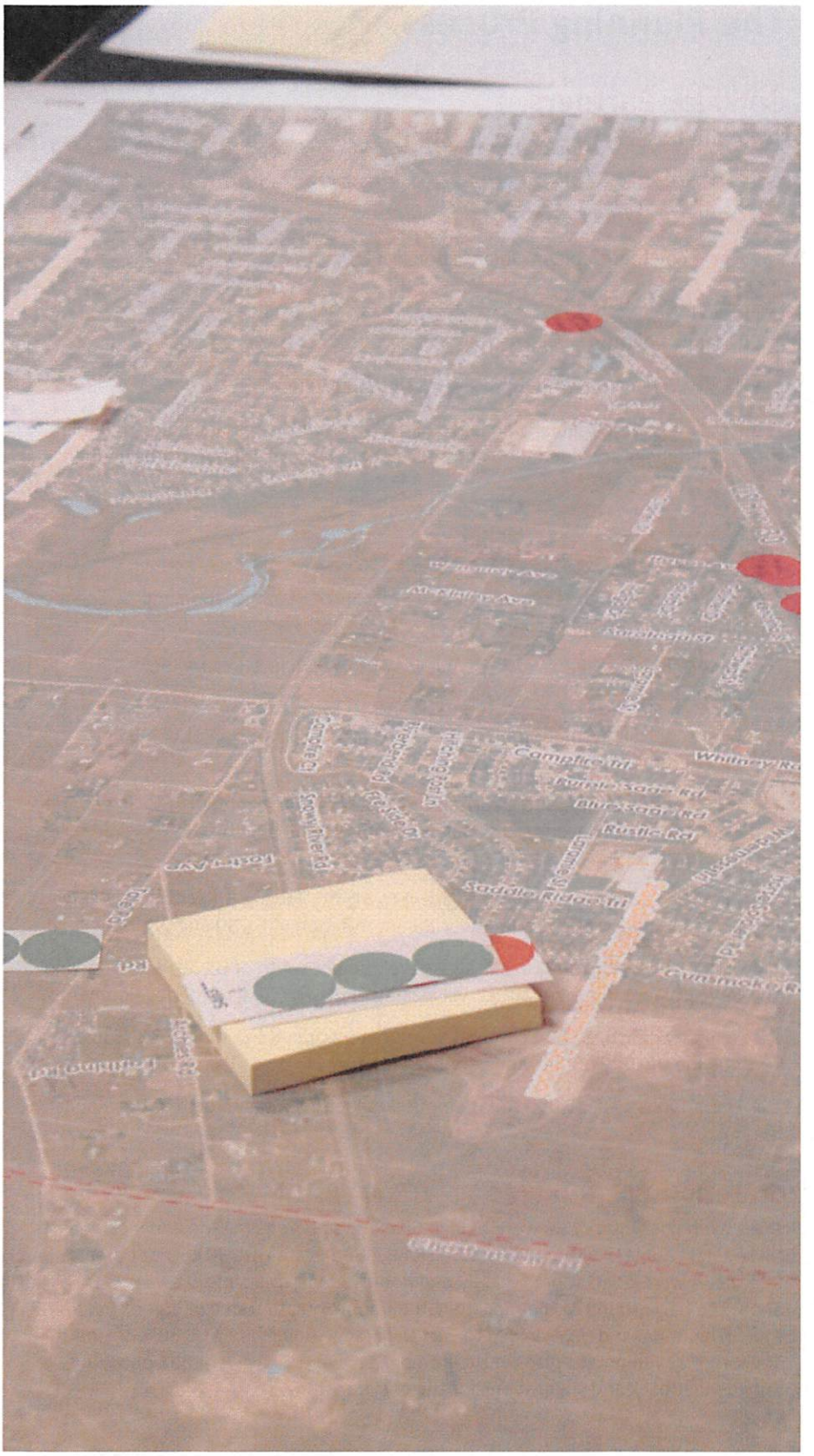
- The Dell Range/US 30 intersection reconfiguration
- The extension of Christensen Road south of US 30 and across the railroad to connect to the Campstool Interchange commercial area

These improvements and the current and newly-imagined context of the area require a reexamination. As the neighborhoods and commercial area develops and the roadway network is strengthened, this area will begin some transformation to a more urban character. This should be supported by investments that support additional modes of travel, enhanced connections, and access to businesses. The character of the roadway should also communicate a change in expectation to reduce travel speeds, increase awareness of pedestrian movements, and enhance safety for all users.

The East Dell Range Boulevard / US 30 Corridor Study builds upon prior recommendations to re-evaluate the transportation need and increased travel demand and confirm the roadway infrastructure required. This study will also incorporate the guidance and vision of PlanCheyenne into prior transportation-focused recommendations to develop roadway infrastructure that will support the transition to a more urban character and the desired land uses.

Intended Use of the Plan

This study and resulting plan will provide the partner agencies and the public with an implementation strategy of investments to meet the transportation need throughout the study area. These infrastructure project investments will enhance safety, multimodal operation, and accessibility. Recommended improvements and other actions will be designed to support the larger economic, environmental, and livability goals of the community.



THE PLANNING PROCESS

2

The Planning Process

Corridor Partners

As decisions are made for the future of East Dell Range Boulevard and US 30, it is vital that the corridor partners communicate and collaborate. These partners include:

- Cheyenne Metropolitan Organization (MPO)
- The City of Cheyenne
- Laramie County
- The Wyoming Department of Transportation (WYDOT)

These partners were regularly engaged in the planning process including multiple steering meetings and continuous presence at all the key community engagement events.

The Corridor's Stakeholders

The corridor stakeholders served as a primary source of information and perspective. Stakeholders comprised business and developers in the area, including:

- Big Al's Towing & Recovery, LLC/Big Al's Auto & Exhaust, located near the intersection of US 30 and Whitney Road
- Cheyenne Hills Church, south of US 30 near the intersection of US 30 and Christensen Road
- ERA Frontier Realty, with a current office at the intersection of 26th Street and Highway 25 in Cheyenne and a planned office to be built off the US 30 Service Road
- Pinnacle Cabinet & Millwork, adjacent to Big Al's Towing & Recovery, LLC/Big Al's Auto & Exhaust, also located near the intersection of US 30 and Whitney Road
- Saddle Ridge, currently a 220-acre development south of US 30, with a second development in progress that will include another 140 acres of development
- Whitney Ranch, a 580-acre total development area north of US 30 and just outside the City of Cheyenne annexed area
- Gater Industries, 25,000 square foot manufacturing plant north of Dell Range Boulevard.

Stakeholder Interviews

The stakeholder interviews were held in Cheyenne on August 22nd and included six key stakeholders within the East Dell Range Boulevard / US 30 corridor area. Interviews were brief, approximately one hour, and informal. Interviewees were asked about the background of their location, their approximate traffic operating volume, their orientation and relationship to East Dell Range Boulevard / US 30, and about any future development plans in their area. They were also given the opportunity to provide feedback and suggestions for the corridor study.

The most common theme identified stakeholders involved access. All stakeholders were concerned with either maintaining their existing points of access or improving them through better roadway connections. Businesses like Big Al's Towing & Recovery/ Big Al's Auto & Exhaust and Pinnacle Cabinet & Millwork expressed their dependence on US 30 in receiving both freight and customers.

Safety was a concern highlighted by stakeholders. Many identified US 30 as an essential arterial corridor that often carries quick-moving traffic, which provides few opportunities for pedestrians and/or bicyclists to cross. Stakeholders stated that children crossing US 30 from other developments to Saddle Ridge Elementary did not have frequent crossing points, and traffic does not travel at a safe speed along the roadway. Pinnacle Cabinet & Millwork indicated that high speed vehicles over the hill make it difficult for trucks to merge into traffic. Both of these stakeholders emphasized the importance of adding or modifying existing connection points to include traffic signals and to bring down the speed of US 30 to a safer level.

Traffic volumes were mentioned frequently by stakeholders. Specifically, at the intersection of College Drive and East Dell Range Boulevard, the eastbound dropped lane causes backups due to late merging through the intersection, interrupting flow. The stakeholder interviews also revealed a list of desired intersection and roadway issues that they would like to be addressed. For example, intersections of US 30 and East Dell Range Boulevard, US 30 and Whitney Road, along with US 30 and Christensen Road were identified as needing better intersection control to improve safety and calm traffic.

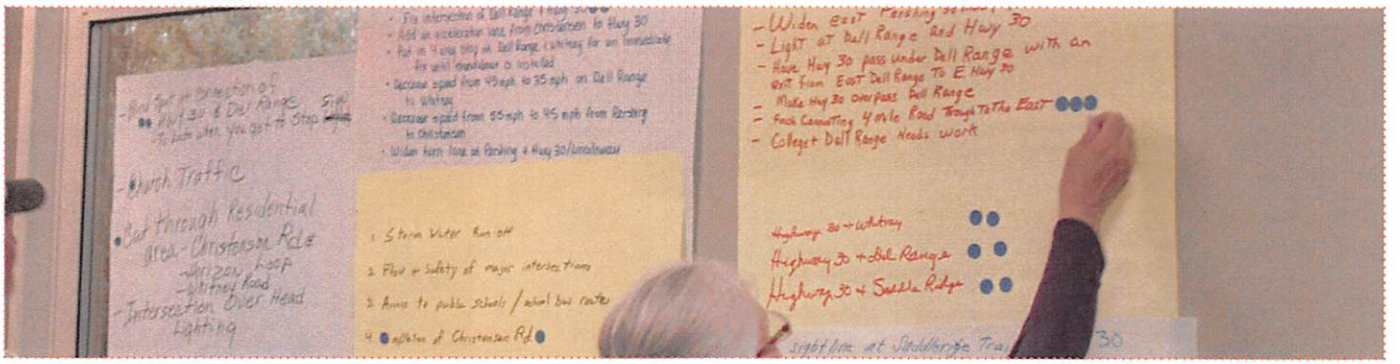
The Community

The study encompassed three workshops for the larger community throughout the project process. All three events were held at the Cheyenne Hills Church.

Workshop #1

The first community workshop for the East Dell Range Boulevard / US 30 Corridor Study was held the evening of Tuesday, August 21st 2018. The workshop was advertised through a press release, email notifications, social media, and variable message signs along the roadside in the corridor.

The purpose of the workshop was to introduce the project to the community and learn community issues, concerns, and objectives related to East Dell Range Boulevard and US 30. Approximately 50 people attended and participated in the community workshop. The workshop included a project introduction, table discussions, a presentation, and large group idea sharing and prioritizing.



Corridor Vision

The attendees were first asked to participate in a corridor visioning exercise. Attendees wrote up to three different aspects of the study area that they currently appreciate. The responses were grouped together into common ideas and themes, as shown.

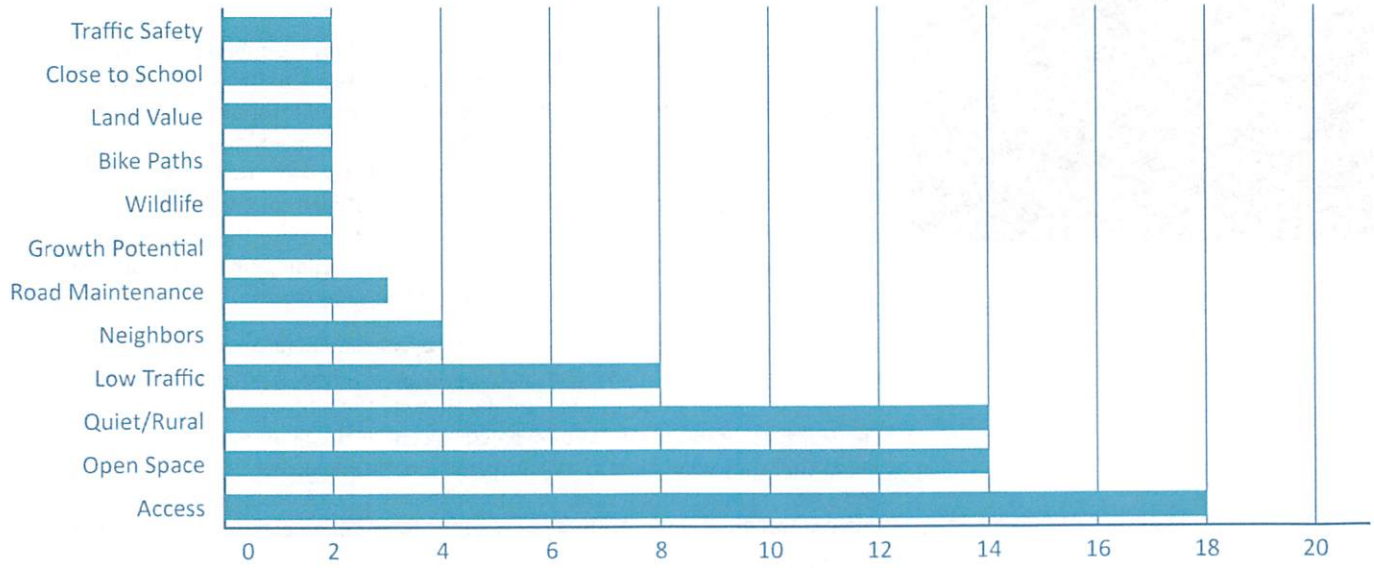


Figure 1: *Corridor Visioning Exercise Results*

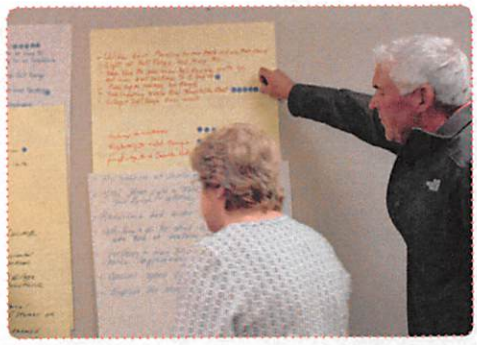
Land Use and Transportation Presentation

A presentation was then shared with workshop attendees that discussed the impact that land use and transportation have on each other. The purpose was to provide attendees with technical knowledge and equip them for participation in the remainder of the workshop. Some of the topics covered in the presentation included:

- Approaches to addressing additional traffic (more pavement vs. more efficiency)
- Induced demand
- Speed and its impact on safety and efficiency
- Land use and street networks and their impact on connectivity
- Pedestrian infrastructure

Issues and Opportunities

Workshop attendees were then asked to identify locations in the study area in which there are currently issues and opportunities by placing a red dot sticker on aspects of the area that they currently dislike and a green dot sticker on aspects of the area that they appreciate.



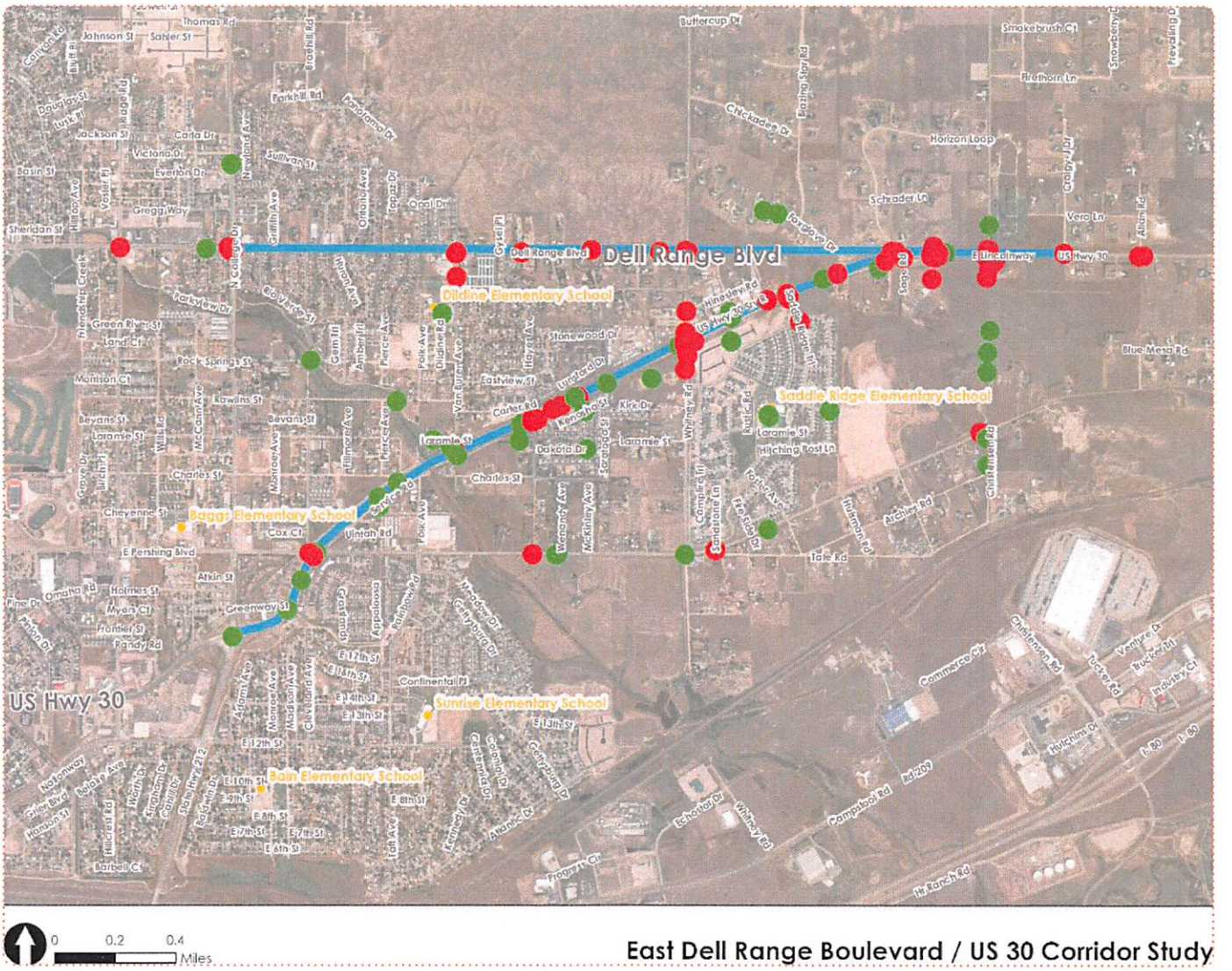


Figure 2: Issues and Opportunities Workshop Results

Corridor Strategies and Prioritization

Based on the issues and opportunities identified, workshop attendees were asked to brainstorm ideas for addressing the issues and building upon the opportunities. Each table shared their proposed strategies with everyone in attendance. Workshop participants were then tasked with voting for their favorite three strategies. The strategies identified for the corridor and the number attendees are shown in Figure 3, shown on the next page.

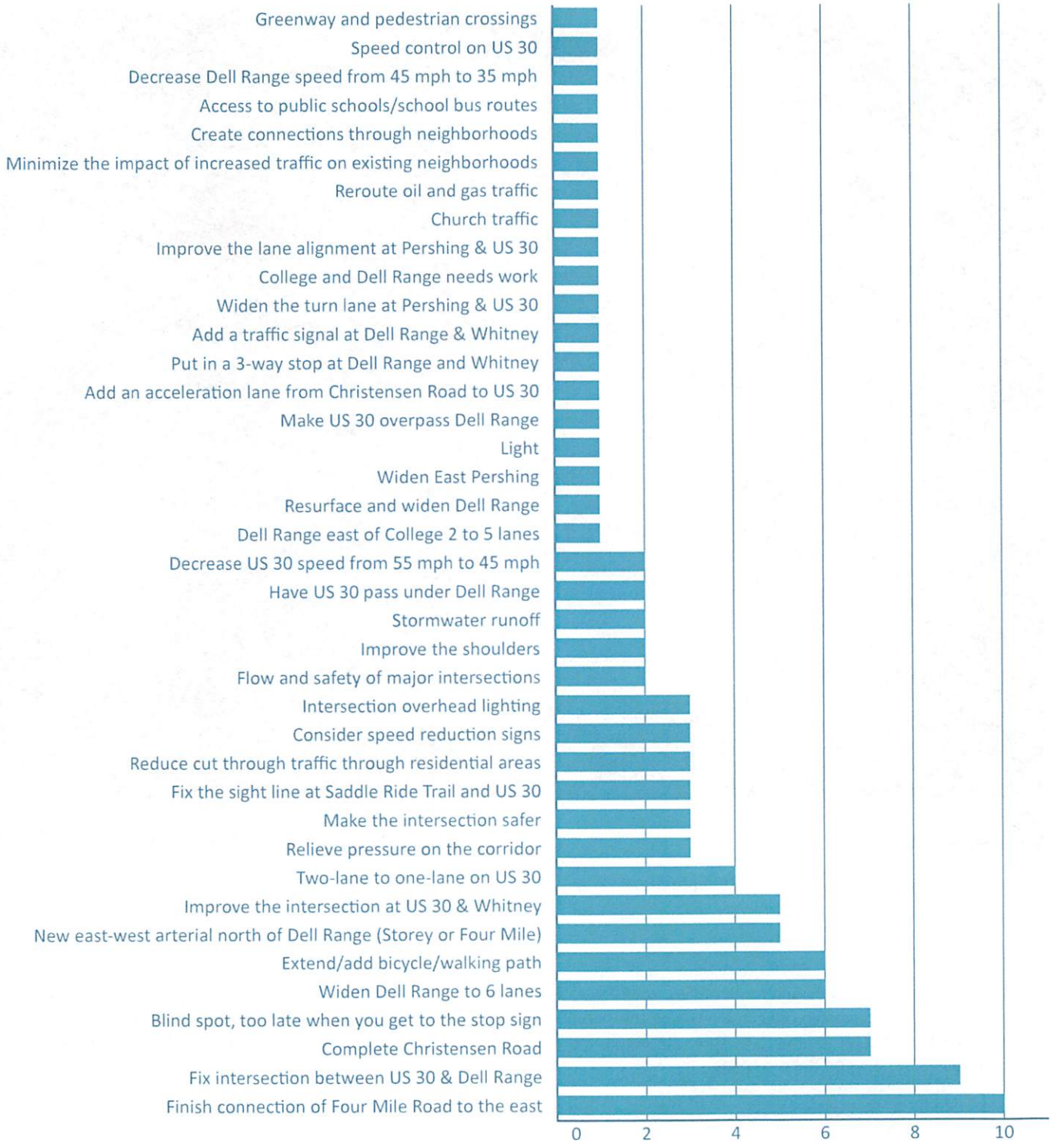


Figure 3: *Workshop #1 Prioritized Strategies*

Workshop #2

The second workshop occurred the evening of Tuesday, December 4th 2018 and was advertised through a press release, email notifications, social media and variable message signs along the roadside in the corridor.

This workshop contained informational boards for:

- Traffic analysis
- Crash analysis
- Property access
- Transit accessibility
- School accessibility
- "Initial Concepts" for the corridor which included access restrictions, signal improvements, road upgrades, and others.
- Gathering feedback for the various proposed roadway cross-sections throughout the study area
- Drafted goals and vision statement for the project

The layout was configured to provide seating in the center of a large gathering area with information and feedback boards on the sides of the room.

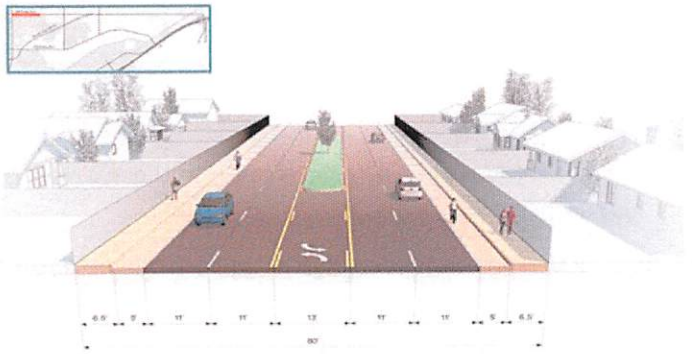
The date of the workshop corresponded with a number of recent severe traffic incidents in the project area, including a fatality. These crashes motivated a higher than expected attendance count. The event ended up attracting over 180 people.

Figure 4: Workshop #2 Room Layout

The workshop was followed up by an online survey, which sought to replicate the information provided during the in-person event. This online outreach was provided for people who were unable to attend as well as for those who attended but could not devote time to voting. There were 110 online responses.

Q4: Please rate the Proposed Dell Range Blvd. Concept (looking east) from College Drive to Gysel Place as shown above?

Answered: 101 Skipped: 9



Kimley»Horn

Proposed Typical Cross Section
East Dell Range - College to Gysel

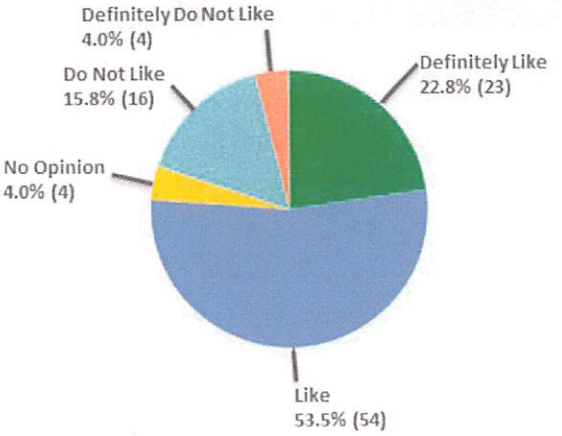


Figure 5: Example Online Question and Responses

Workshop #3

After continued steering meetings with the corridor partners, the project team felt that a third workshop was necessary. This event was held on April 16, 2019 and was focused around providing updates to the public for what the project team had done with their previous input from Workshop #2. The workshop consisted of a presentation, standing boards with intersection design choices, and large floor maps of the study area that displayed all aspects of the corridor design concept.

Figure 6: Workshop #3 Floor Layout

Figure 7: Workshop #3 Presentation

Figure 8: Example Workshop #3 Floor Map

The Corridor's Vision

The vision for the East Dell Range and US 30 corridors is to maintain accessibility and the character of the area, while improving safety and transportation modal options.

Goals and Success Measures

In order to guide the project and evaluate its outcomes, goals and success measures were drafted based on the values shared by the community at the first community workshop. These items will be reviewed by the community to guide the remainder of the study and the project outcomes.

Maintain Accessibility to Downtown Cheyenne and Interstate 80

Success Measures

- Complete the connection of Christensen Road to the south
- Complete the extension of Storey Boulevard to the east
- Complete the extension of Four Mile Road to the east
- Maintain a roadway level of service of D or better

Preserve the Character of the Existing Area Surrounding East Dell Range Boulevard and US 30

Success Measures

- Maintain the width of the existing right-of-way for East Dell Range Boulevard and US 30
- Support operations of existing businesses along US 30

Improve Safety of for All Users

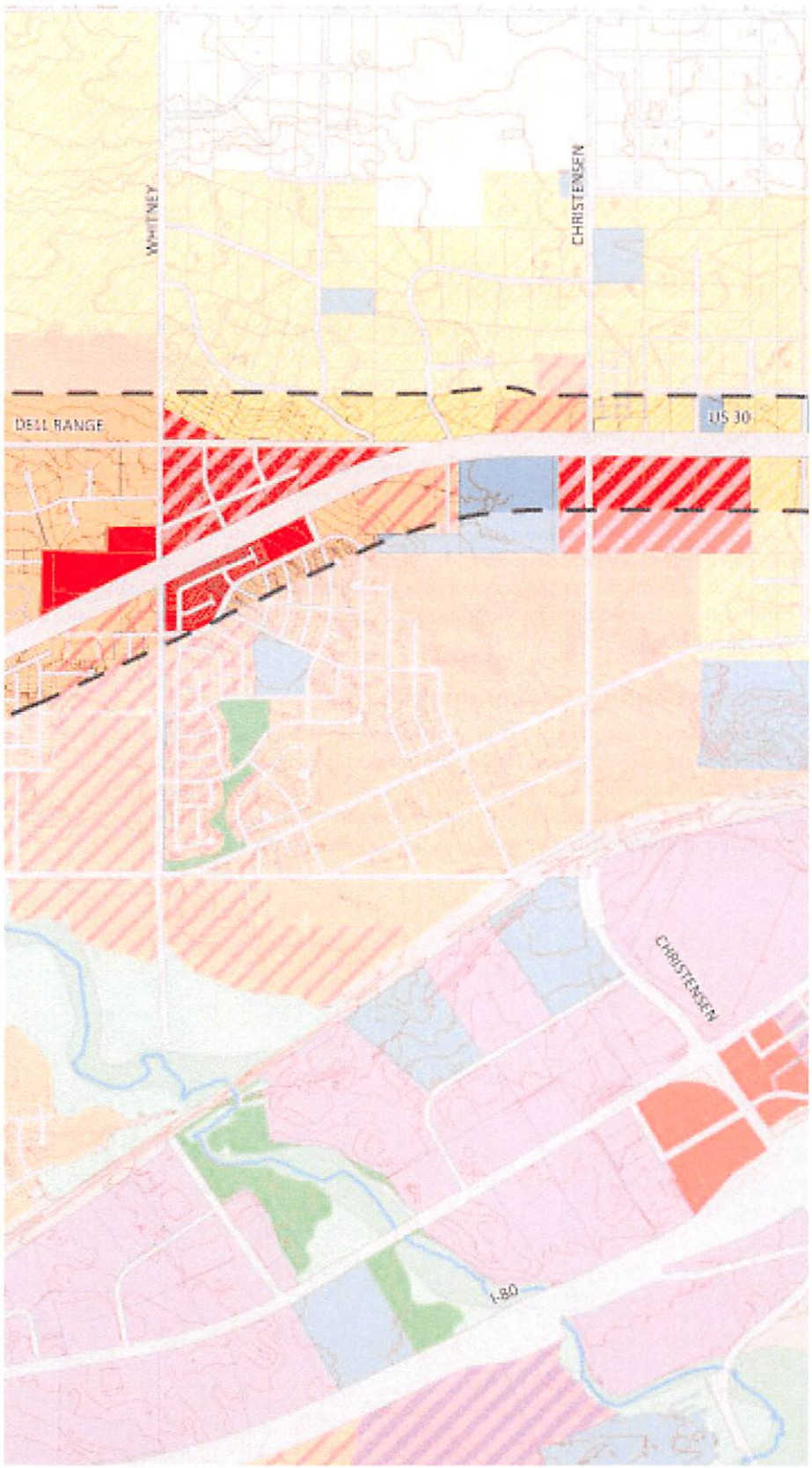
Success Measures

- Decrease the crash rate on East Dell Range Boulevard and US 30
- Add designated pedestrian crossings on East Dell Range Boulevard
- Increase the number of children walking and bicycling to Dildine Elementary School and Saddle Ridge Elementary School
- Increase the comfort of drivers turning onto US 30

Provide Additional Transportation Choices

Success Measures

- Add bicycle facilities along East Dell Range Boulevard
- Widen sidewalks along East Dell Range Boulevard
- Improve integration of the transit stop and the pedestrian and bicycle infrastructure along East Dell Range Boulevard and US 30
- Introduce a buffer between pedestrians and vehicles
- Increase the number of people walking and bicycling along East Dell Range Boulevard and US 30



CORRIDOR CONDITIONS

3

Corridor Conditions

The study area consists of a variety of land uses and roadway cross-sections within the historically rural character of eastern Cheyenne which is transitioning to a more suburban environment. This chapter will further describe the existing conditions of the study corridors and provide the context for future proposed improvements.

The Land Uses and Zoning

The relationship between transportation investments and land development are quickly changing the physical, economic and social conditions of eastern Cheyenne and these Dell Range and US 30 corridors in particular. This assessment highlights key land use, economic, and regulatory factors influencing the physical character, the economic performance, and the mobility operations of the corridor. Future recommended improvements and actions identified by the City, County, MPO and WYDOT are informed by the corridor's existing conditions.

Zoning consists of permissible activities and uses that occur within a piece of land. It plays an integral role in determining the overall function of a neighborhood and the type of development that can occur on any given parcel. Various allowed land uses come with associated building forms, densities, surface and edge treatments, and parking provisions.

Existing Conditions & Eminent Growth

These corridors are currently made up of mostly residential uses with a number of commercial parcels spread throughout the corridors. Both corridors have large developments planned in the form of Whitney Ranch and Saddle Ridge. These developments will add thousands of new homes to the east side of Cheyenne, as well as additional commercial and retail uses to support this growth.

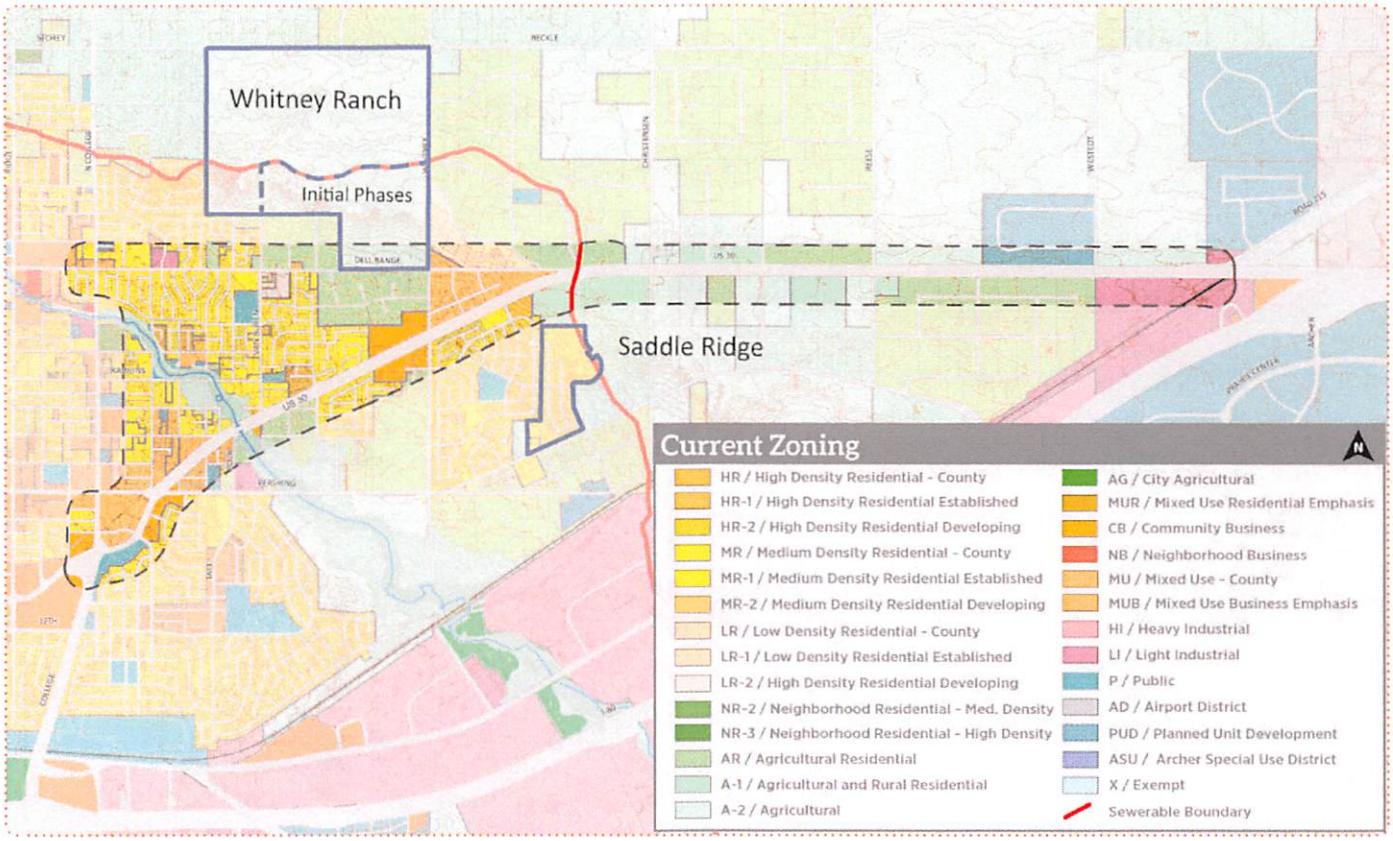


Figure 9: Current Zoning Map

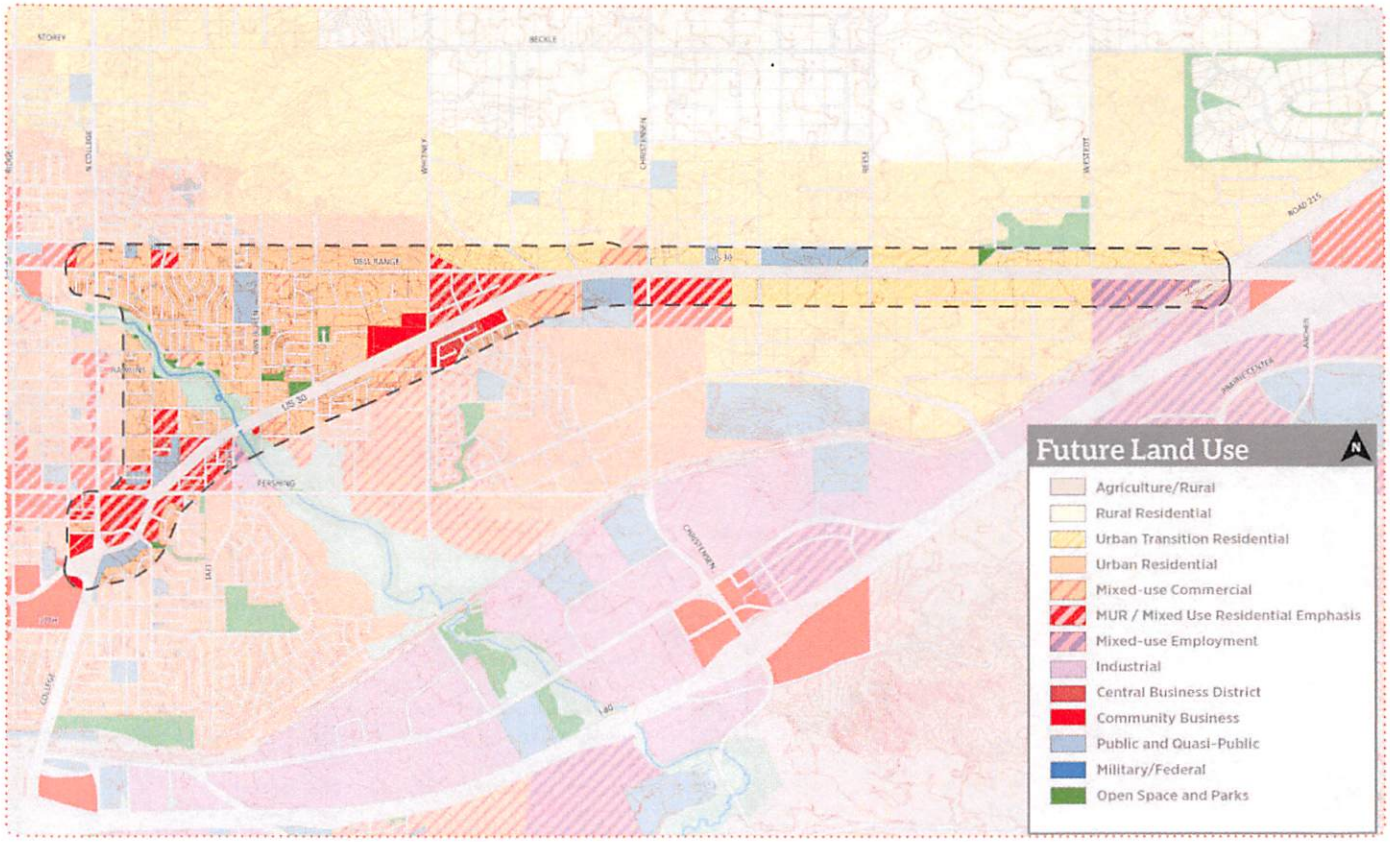


Figure 10: Future Land Use Map

The Future Land Use map in comparison to the current zoning shows changes primarily on the southside of the US 30 corridor. There are additional commercial and business land uses expected along US 30, as well as along Whitney Road south of US 30. **The future land use also shows more of the study area designated as "Urban Residential" which has a higher density connotation. The next chapter will discuss the opportunities and responsibilities of roadways in an urbanizing area.**

Utilities & Stormwater

As noted previously, the project study area spans between City and County jurisdictions. This transition can be seen clearly in the provided water and sanitary water utilities. East of Van Buren Avenue many of the buildings have been constructed in the Laramie County's jurisdiction and further development has not occurred to facilitate the need for additional infrastructure. The upcoming Whitney Ranch development, however, will fill that role and has furthered the conversation and design of future utility investments.

Stormwater runoff throughout the study area is primarily controlled with an open ditch. Wyoming Department of Transportation has utilized open ditch design historically lower density development and efficient maintenance costs. As shown on the map, most of the stormwater west of Christensen Road is funneled to the Dry Creek waterway. Dell range has stormwater infrastructure including inlets and pipe west of roughly Van Buren Avenue which also drain towards Dry Creek.

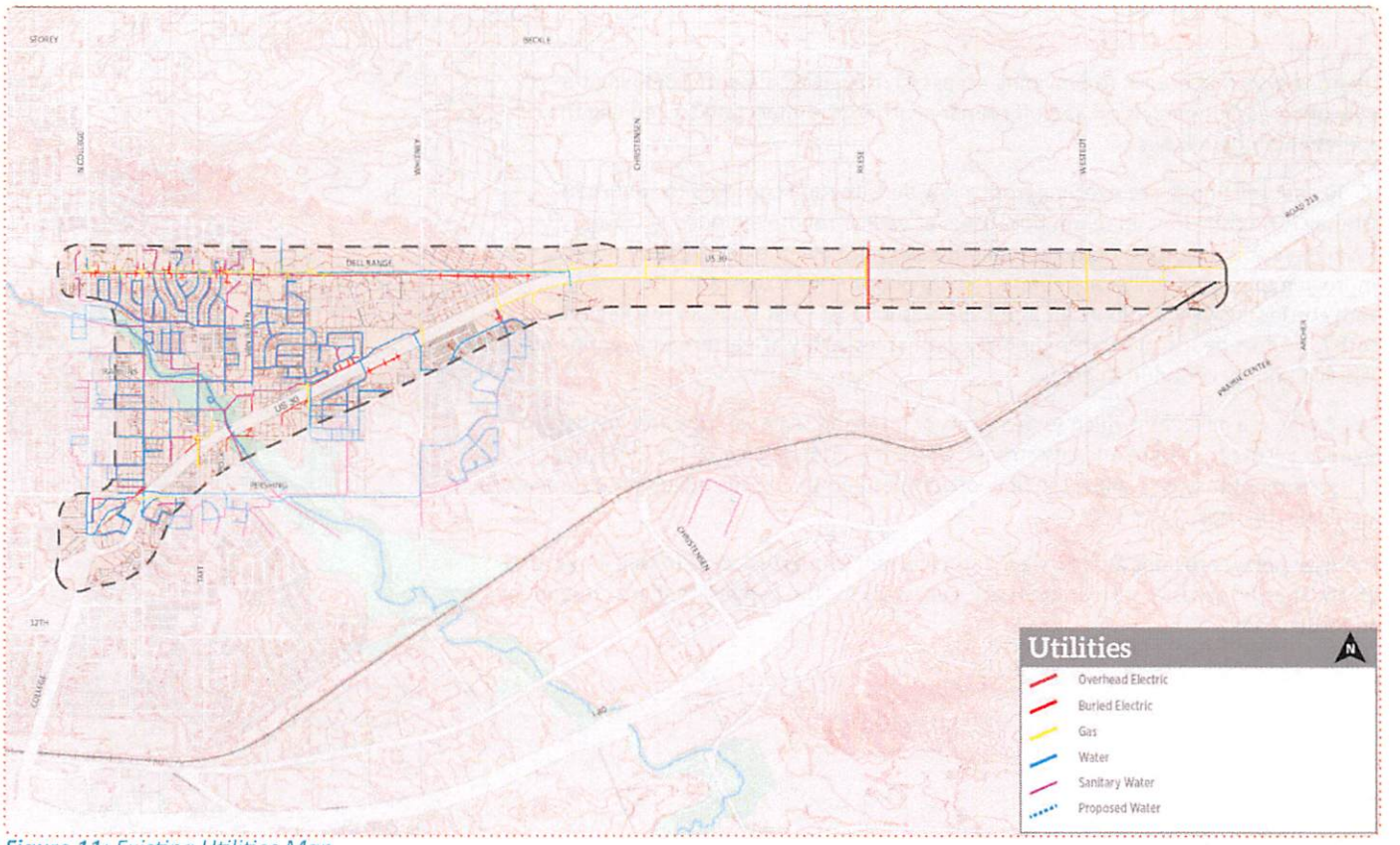


Figure 11: Existing Utilities Map

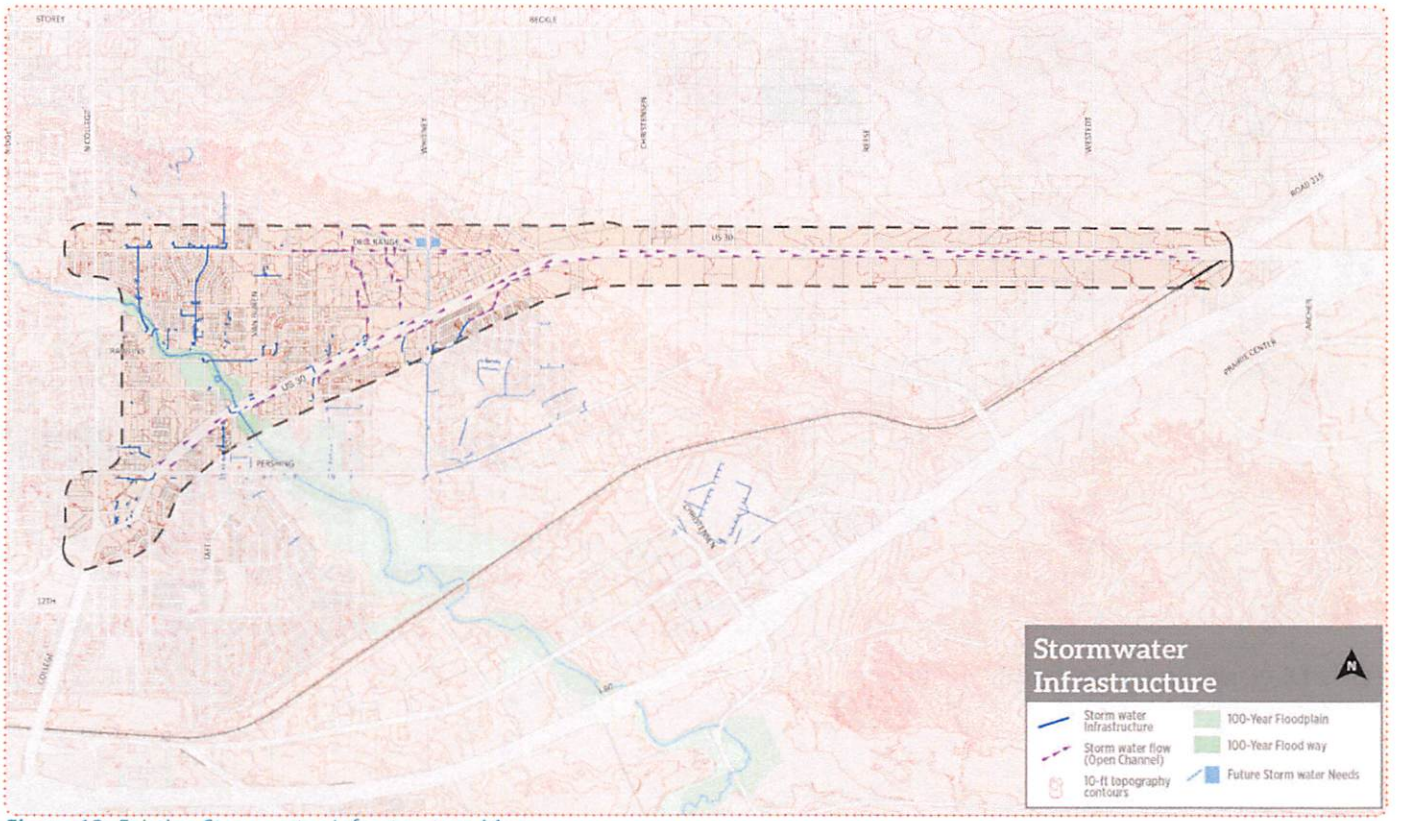


Figure 12: Existing Stormwater Infrastructure Map

Property Access Constraints

The road system is crucial to providing access to properties, however defining the level of access for parcels on and off primary corridors is important to defining the operation of the roadway.

US 30 and Dell Range are evolving from a low density rural corridors to suburban arterials. The corridors serve multiple users as well as multiple modes of travel. Businesses and neighborhoods throughout eastern Cheyenne are dependent on improving the accessibility and comfortability of both Dell Range and US 30. Yet, both corridors provide important mobility roles for east west travel in the Region. Both Corridors needs to balance mobility with accessibility as eastern Cheyenne and Laramie County continue to grow.

Dell Range is a collector, which serves a mix of local and regional trips and needs a to balance access to private and city streets. US 30 is a primary arterial for Cheyenne, so its main purpose is to allow the flow of vehicles and thus focus on longer distance, regional type trips.

The map below provides an overview of the current property access to Dell Range and US 30. Specific access considerations are necessary for the parcels that are dependent on these roads.

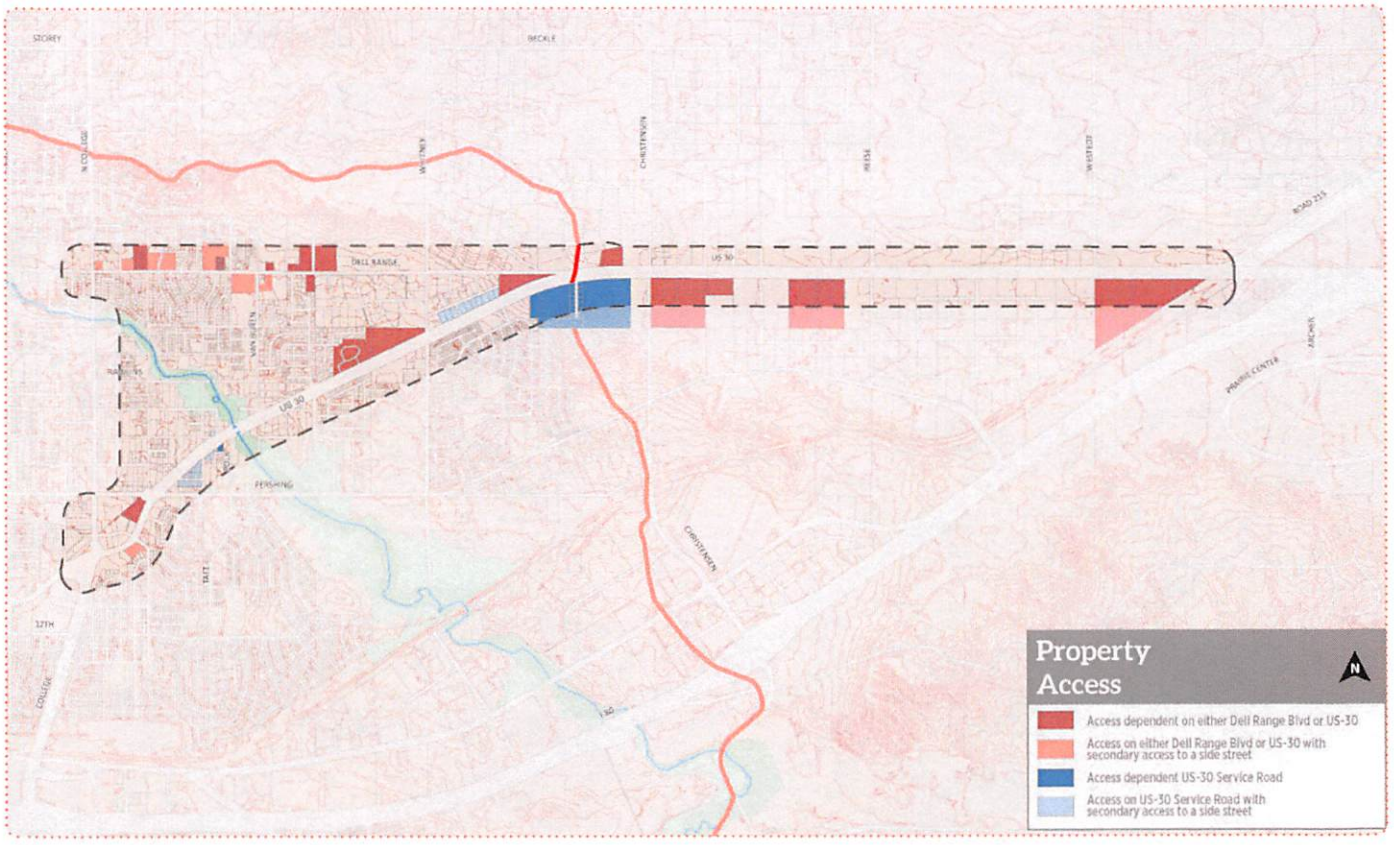
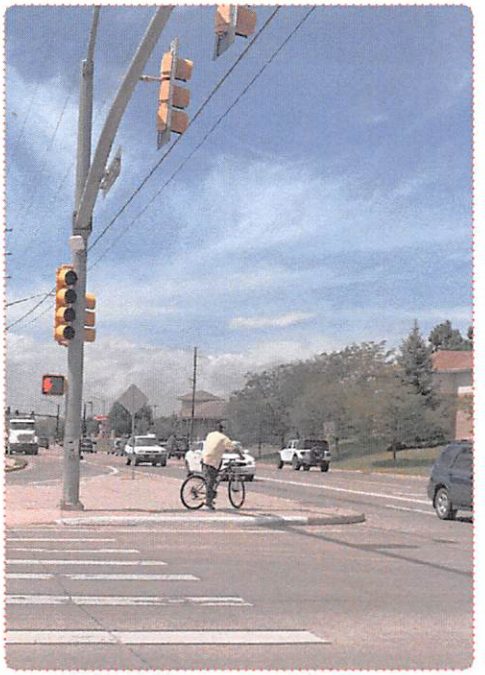


Figure 13: Property Access Constraints



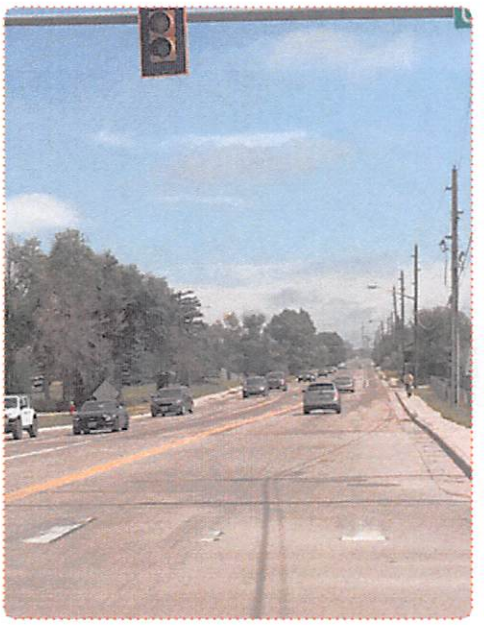
The Multimodal Transportation System and Its Assessment

Existing Lane Configurations

Dell Range Boulevard currently provides one through lane in each direction with a center two-way left-turn lane from College Drive to James Drive, then transitions to a two-lane roadway through the US 30 intersection. The posted speed limit is 35 miles per hour (mph) between College Drive and James Drive, increasing to 45 mph east of James Drive.

US 30 provides two through lanes in each direction with a center two-way left-turn lane from College Drive to Pershing Boulevard. From Pershing Boulevard through Hayes Avenue, the center two-way left-turn lane is replaced by a wide grass median. US 30 provides one lane in each direction with a center two-way left turn lane from east of Hayes Avenue to Christensen Road. The furthest east portion of the study area for US 30 is a two-lane roadway, providing left-turn lanes for the intersections at Allan Road, Reese Road, Westedt Road, and County Road 215 (Railroad Road). US 30 has a posted speed limit of 45 mph between College Drive and Pershing Boulevard and a speed limit of 55 mph east of Pershing Boulevard throughout the remainder of the project limits.

The next few pages show the existing cross-sections of the corridors at various locations throughout the study area. These are followed by a graphic that shows the lane configurations at key intersections.



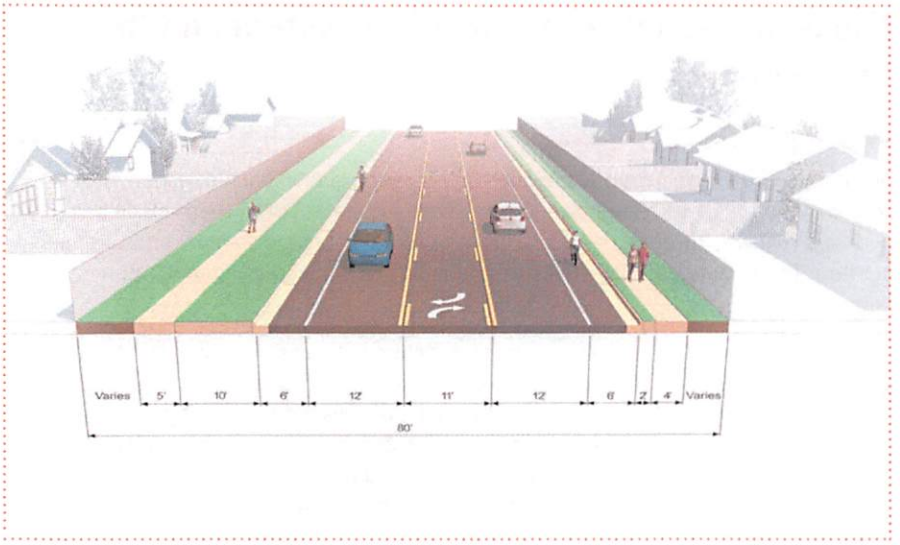


Figure 14: *Existing Cross-Section, Dell Range from College Drive to Gysel Pl.*

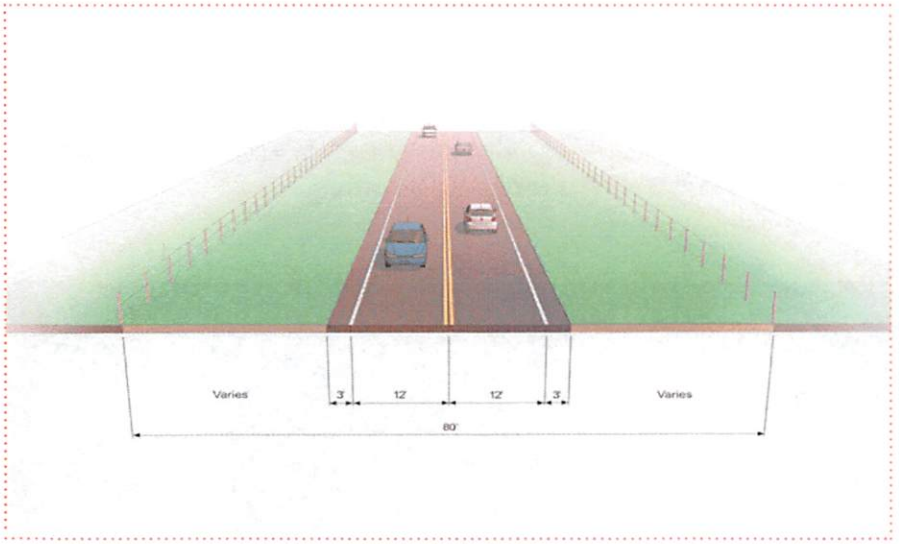


Figure 15: *Existing Cross-section, Dell Range from Gysel Pl. to US 30*

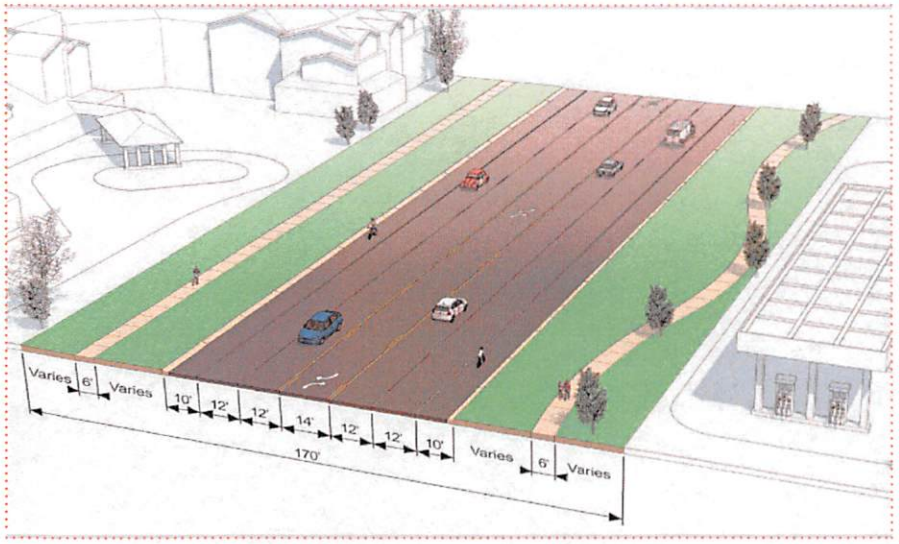


Figure 16: *Existing Cross-section, US 30 from College Drive to Pershing Blvd.*

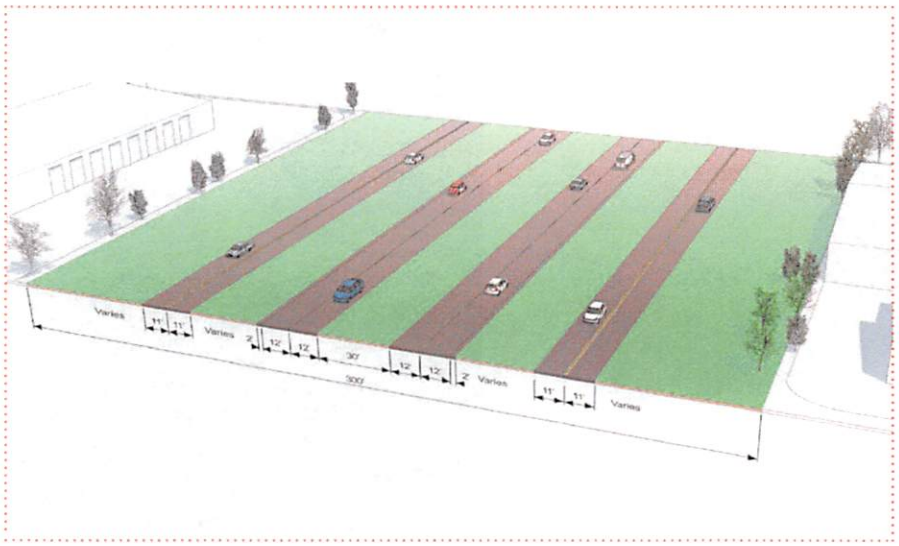


Figure 17: *Existing Cross-section, US 30 from Pershing Blvd. to Polk Avenue*

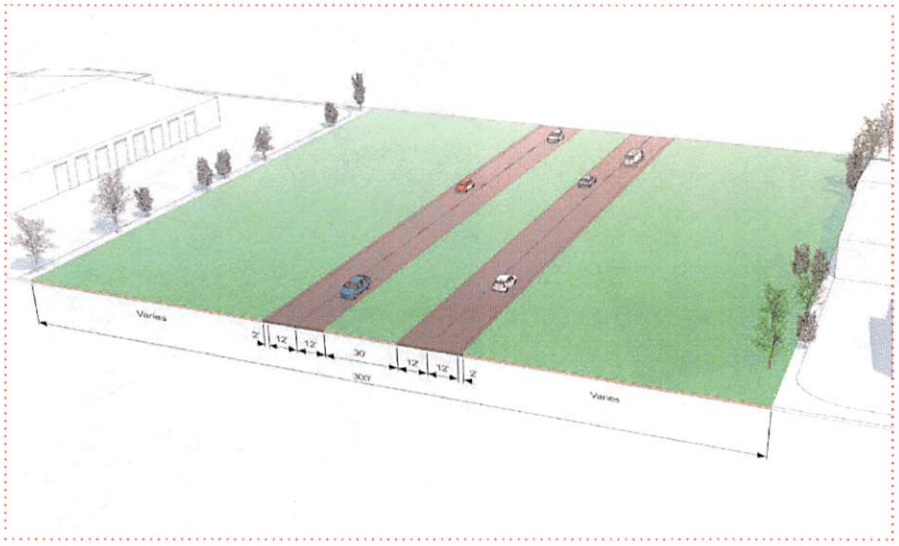


Figure 18: *Existing Cross-section, US 30 from Polk Avenue to Lunsford Drive*

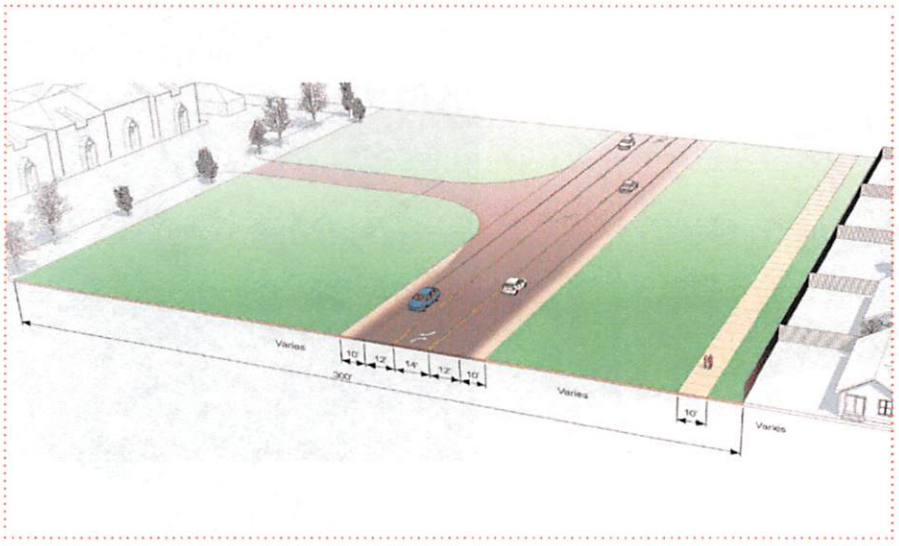


Figure 19: *Existing Cross-section, US 30 from Lunsford Drive to Whitney Rd.*

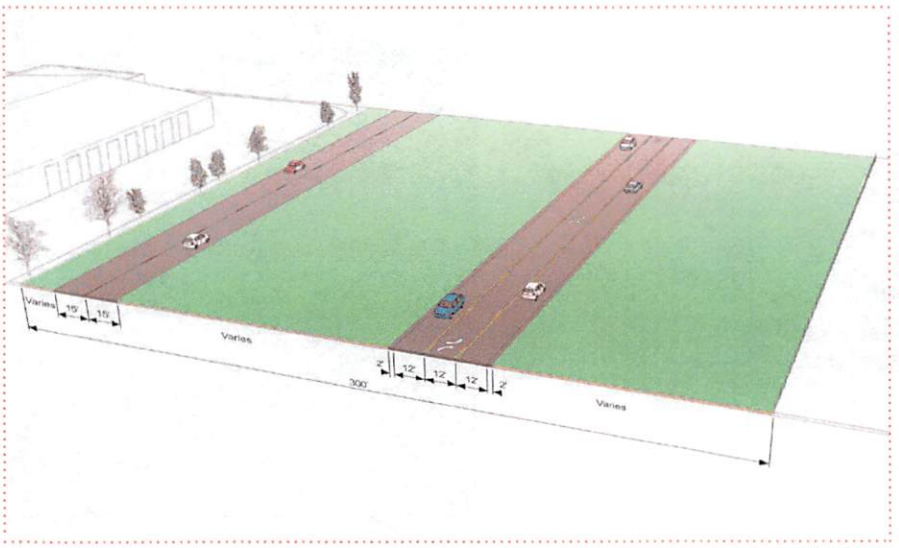


Figure 20: *Existing Cross-section, US 30 from Whitney Rd. to Saddle Ridge Tr.*

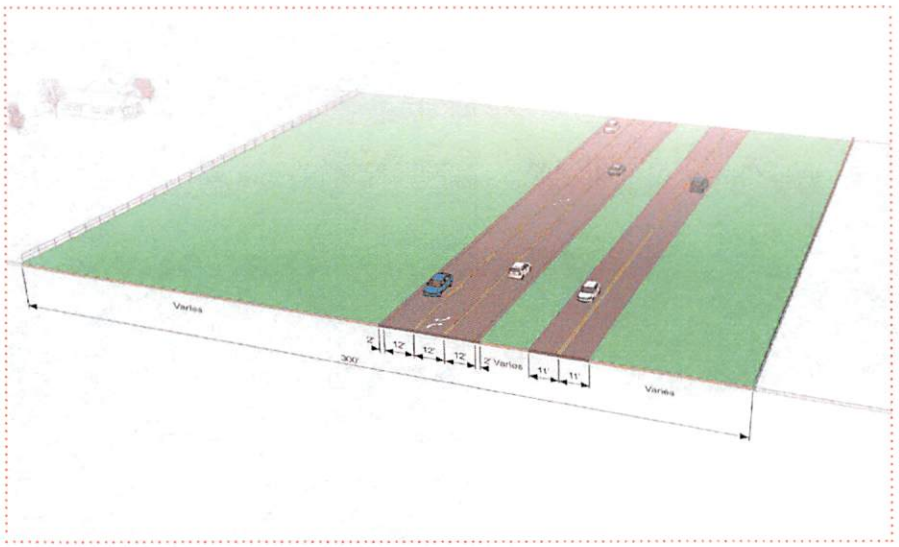


Figure 21: *Existing Cross-section, US 30 from Saddle Ridge Tr. to Christensen Rd.*

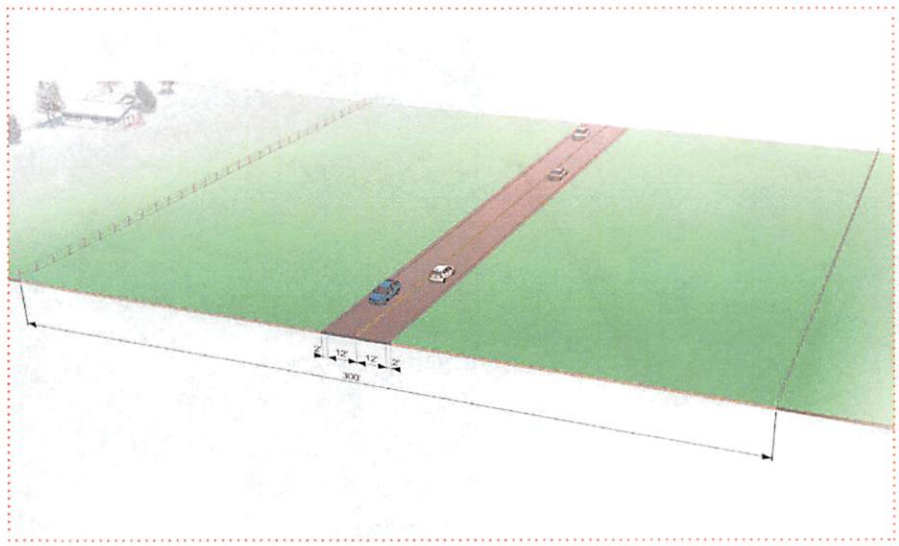


Figure 22: *Existing Cross-section, US 30 from Christensen Rd. to Union Pacific Railroad Overpass*

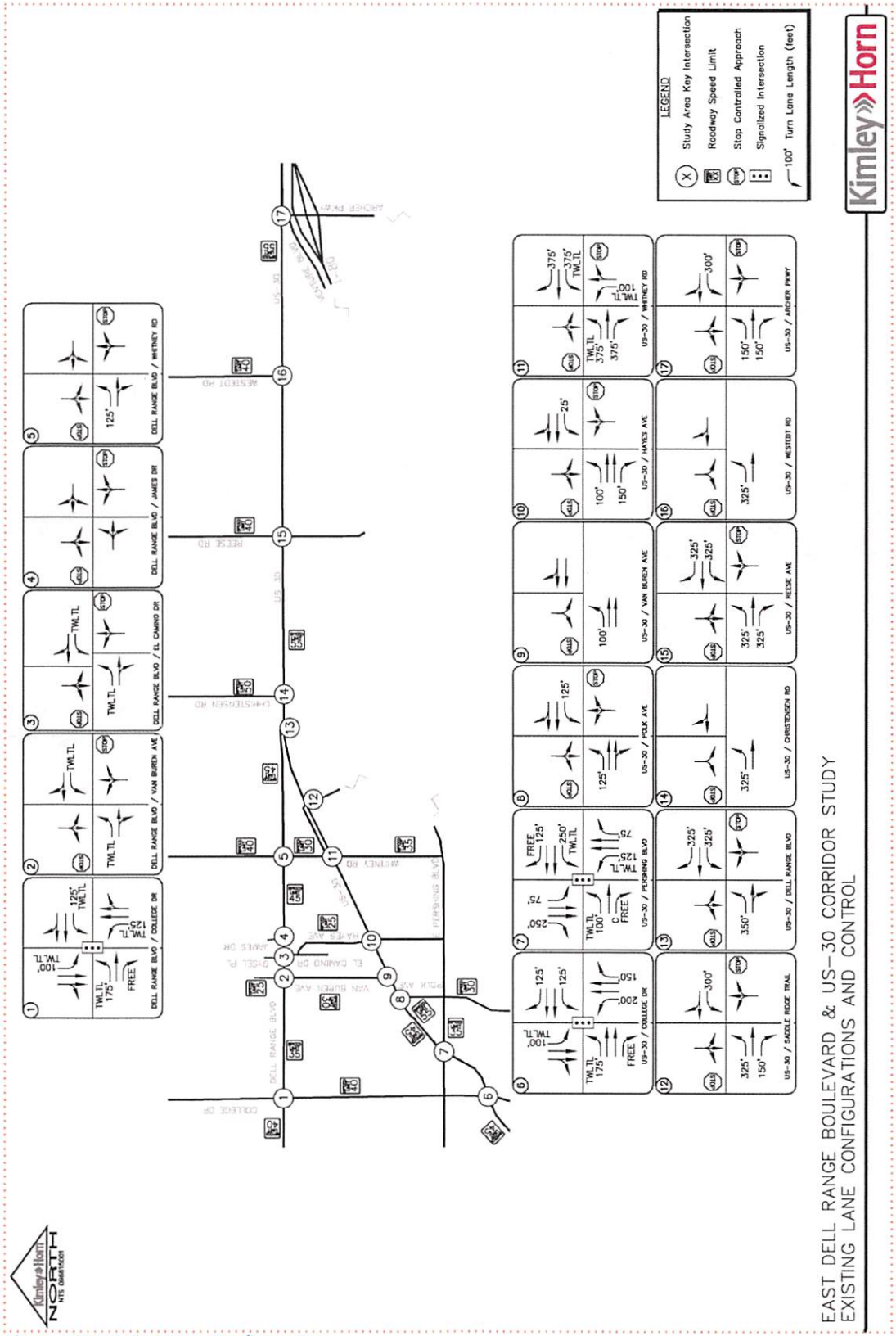


Figure 23: Existing Lane Configuration

Crash Analysis

A five-year crash history of (2013-2017) was analyzed to determine which segments, if any, had an abnormal number of incidents. The results were reported as Level of Service of Safety (LOSS) I through IV, corresponding to how the crash rates of the roadway segments compare to national rates. This methodology provides a crash frequency and severity comparison with the expected norm nationally.

The graphics on the next page provide a breakdown of the crashes by Type, Severity, and Location. These breakdowns are split into four different road segments, two for Dell Range and two for US 30. It is of note that a higher percentage of crashes on Dell Range from Ridge to James were Rear End than the other segments. This correlates with the higher frequency of turning movements found on this roadway segment.

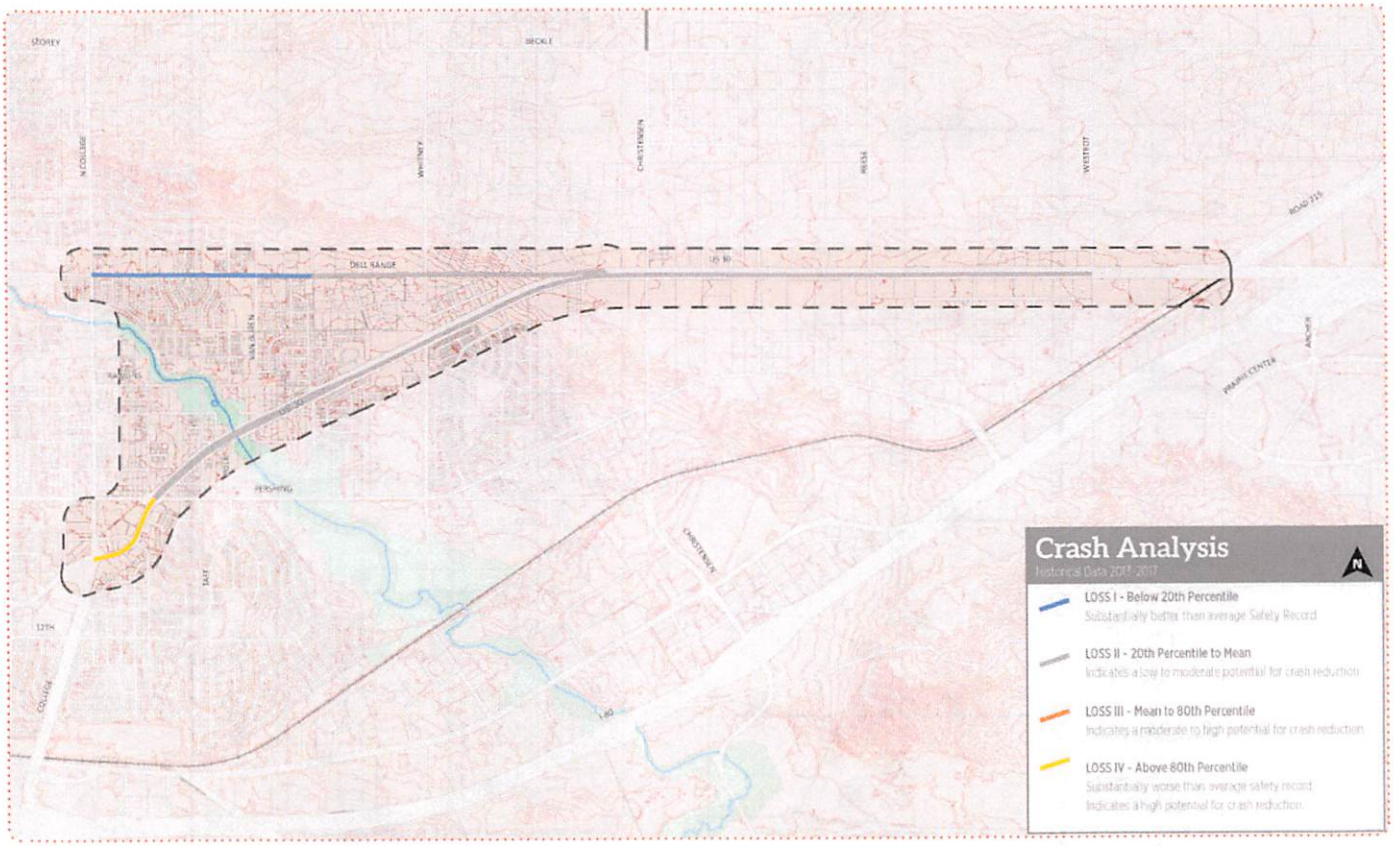
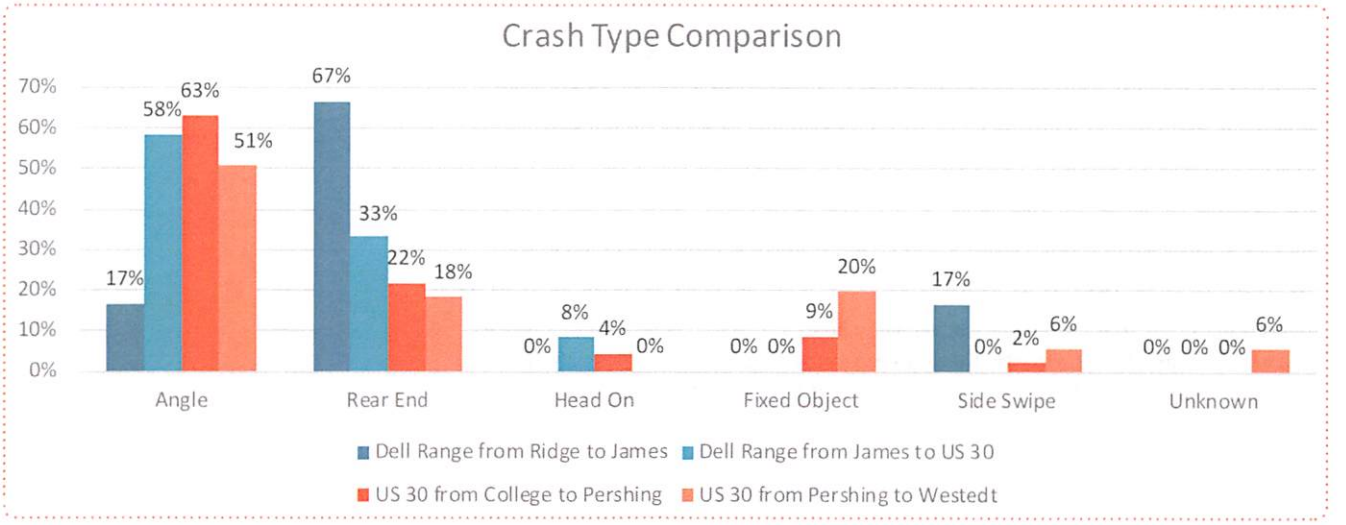
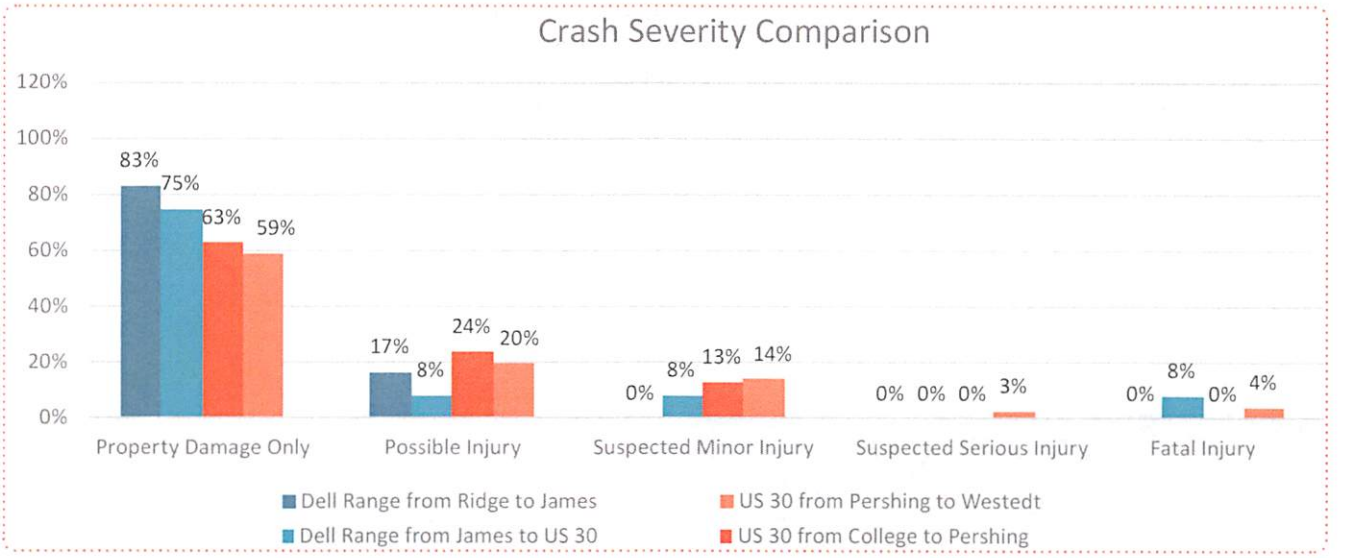


Figure 24: Crash History Analysis

2018 Crash Data

Due to the timing of this study and the availability of data, the crashes in 2018 and 2019 could not be accounted for in this analysis, however, these more recent incidents were considered qualitatively during the project process. For this reason, the raw data for 2018 is provided in Appendix D to this report.





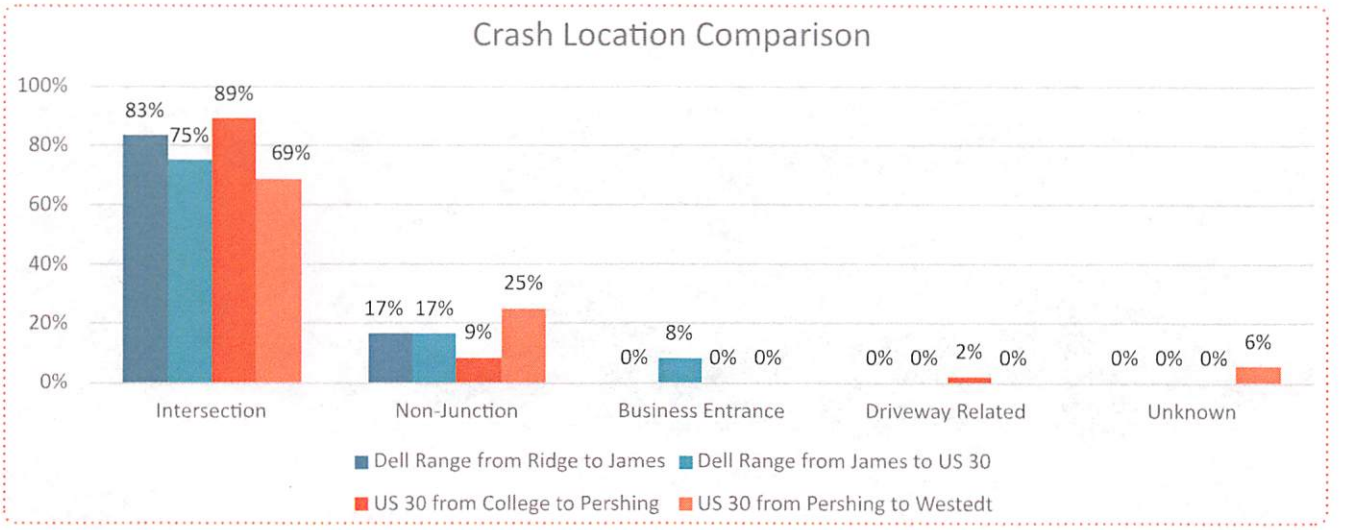


Figure 25: *Crash History Breakdowns*

Traffic Operations

The study corridors are currently poised to experience significant changes, not least of all an increase in the number of commuters and increased demand on the road system. For more detail, please see the Traffic Operations Analysis memo attached to the appendix of this report.

2018 Traffic & Level of Service

The overall increase in traffic, and the associated traffic patterns are shown in the following graphics. In general, volumes increase as traffic gathers moving east to west.

The graphic shows that currently only Whitney Road at US 30 has a Level of Service (LOS) worse than LOS D. Currently there are no study segments with over 20,000 vehicles per day (VPD). This volume is an important threshold because it is used as a good rule of thumb for the need to provide two lanes in each direction of travel.

2040 Traffic & Level of Service

As traffic volumes are forecast into the future, there will be 10 intersections that will operate at LOS F for at least one peak period. The traffic patterns are anticipated to change based upon the connection of Christensen Road to I-80. That connection will serve as an additional option for westbound traffic to College Drive and Archer Parkway. Many of the roadway segments are expected to double in VPD in the planning horizon, and several segments will surpass the 20,000 VPD general threshold.

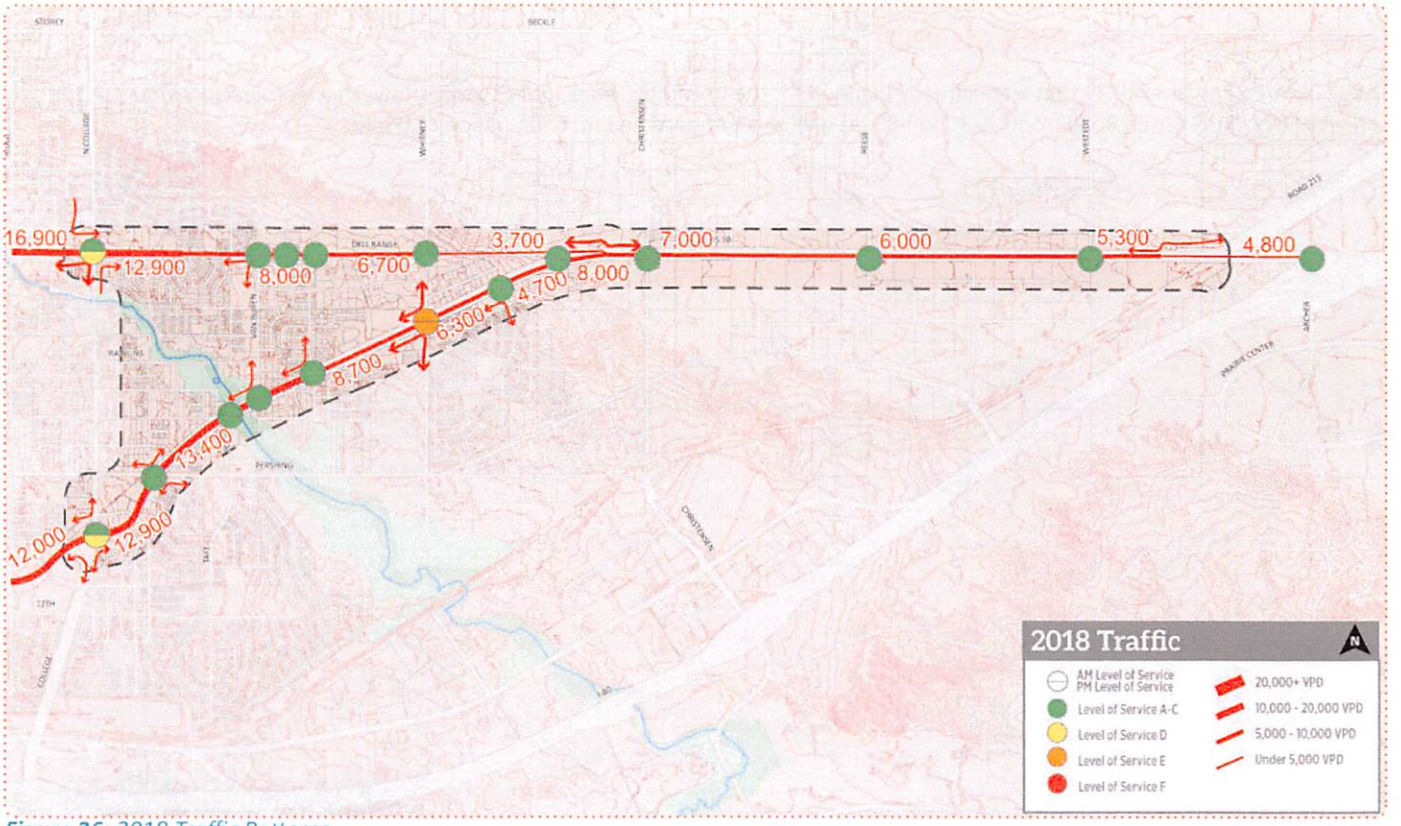


Figure 26: 2018 Traffic Patterns

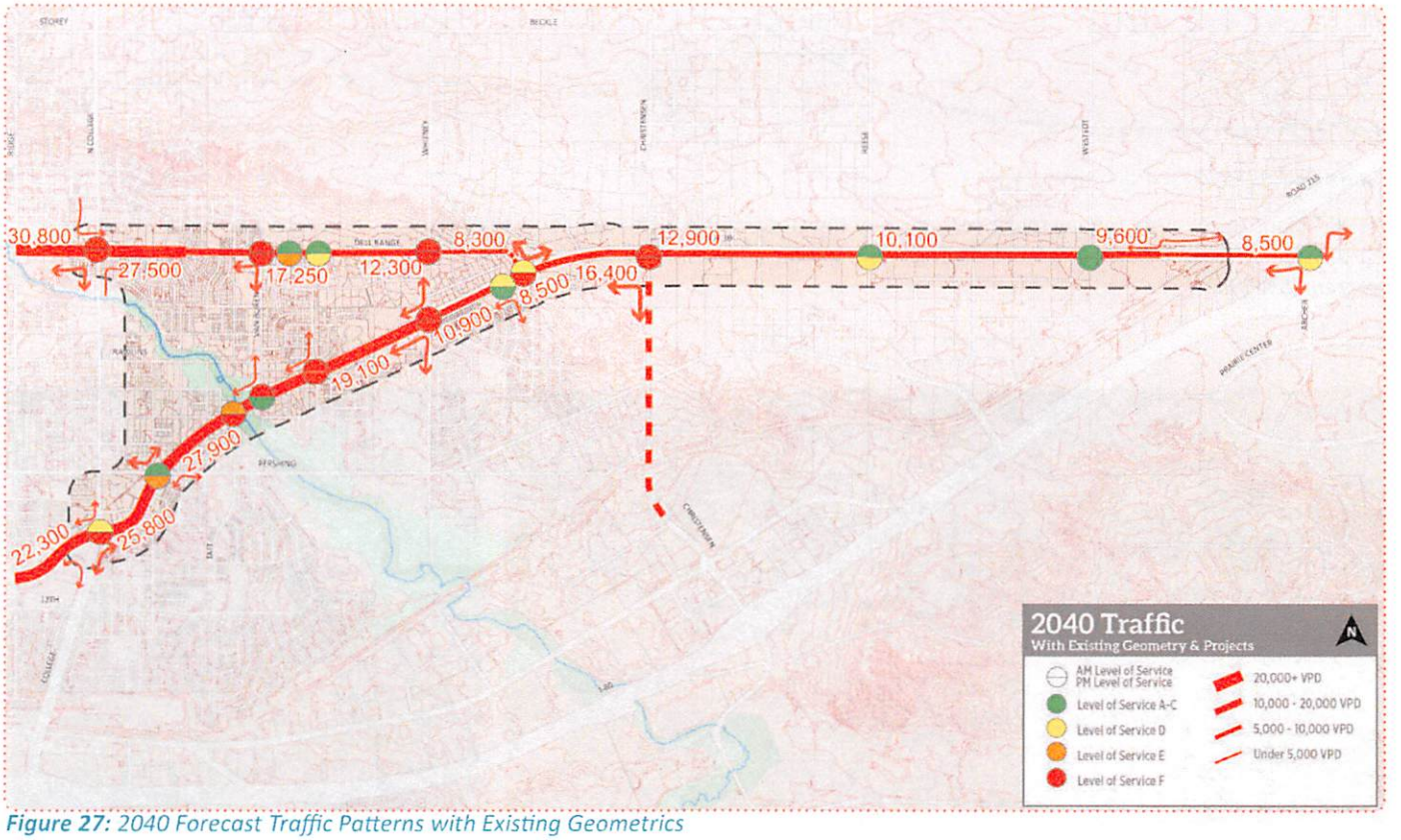


Figure 27: 2040 Forecast Traffic Patterns with Existing Geometrics

Capital Improvement Projects (CIP)

The study area has several CIP that were already planned for the upcoming years, prior to this study. These projects include the connection of Christensen Road from US 30 to I-80, as well as a programmed reconfiguration of US 30.

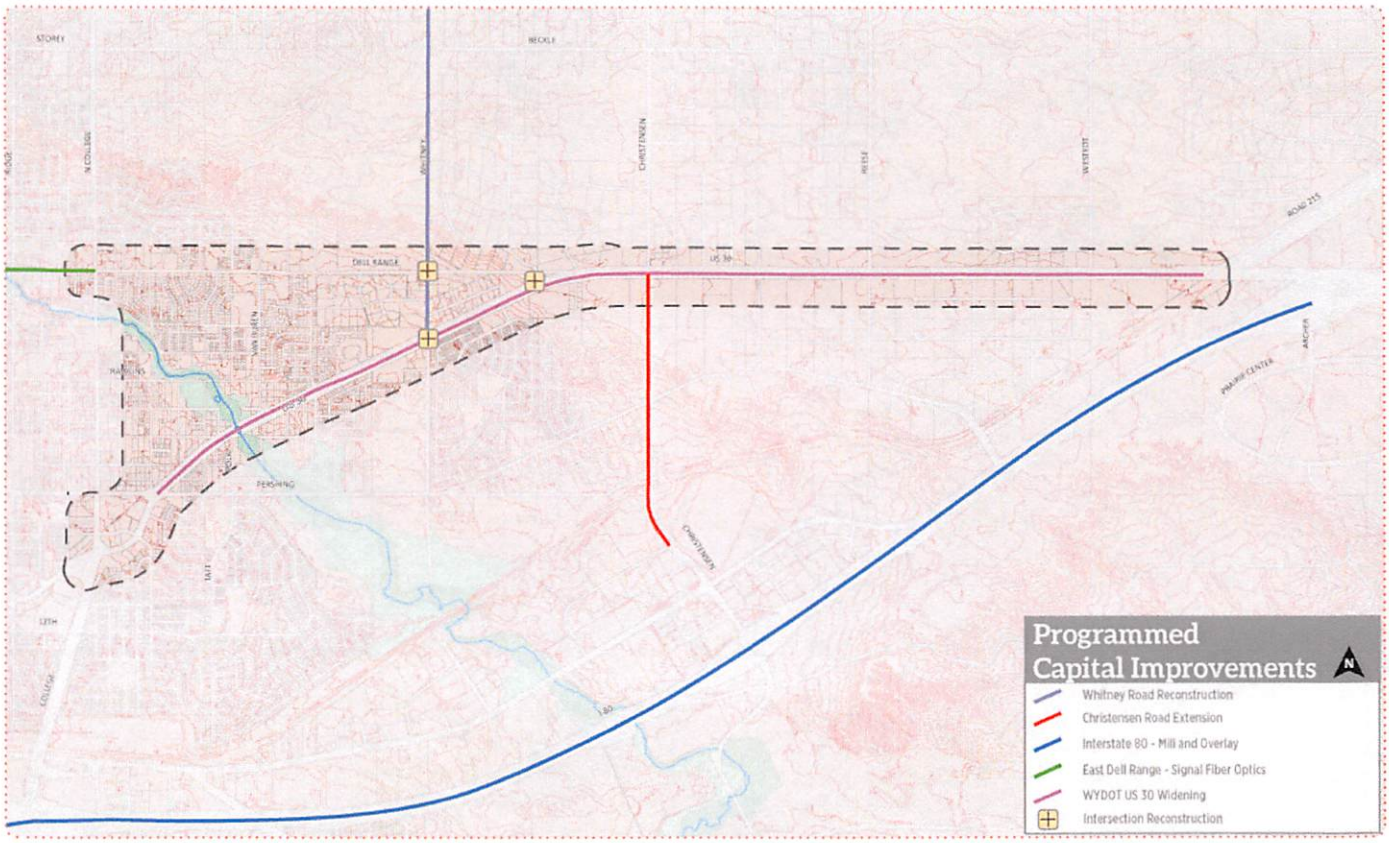


Figure 28: CIP in Immediate Area

WYDOT plans to set aside money to convert much of the study area's US 30 segments to a 5-lane section with a continuous center left-turn lane. This is a roughly $8.5 million engineering project identified in the fiscal year 2024 State Transportation Improvements Program (STIP) list.

Figure 29: Bus Stop amenities on Dell Range Blvd.

Transit Operations

Cheyenne Transit Program provides Americans with Disabilities Act (ADA) para-transit service by reservation and six fixed route services throughout the city. The East and Northeast routes travel in the direction of the project study area, as shown in the map below.

Currently the fixed routes operate on one-hour headways, servicing the study area at approximately the same time each hour. Weekday operations run from 6 AM through 7 PM with additional Saturday service from 10 AM through 5 PM. The city website has an interactive map with a live feed of the bus's current location on the route.

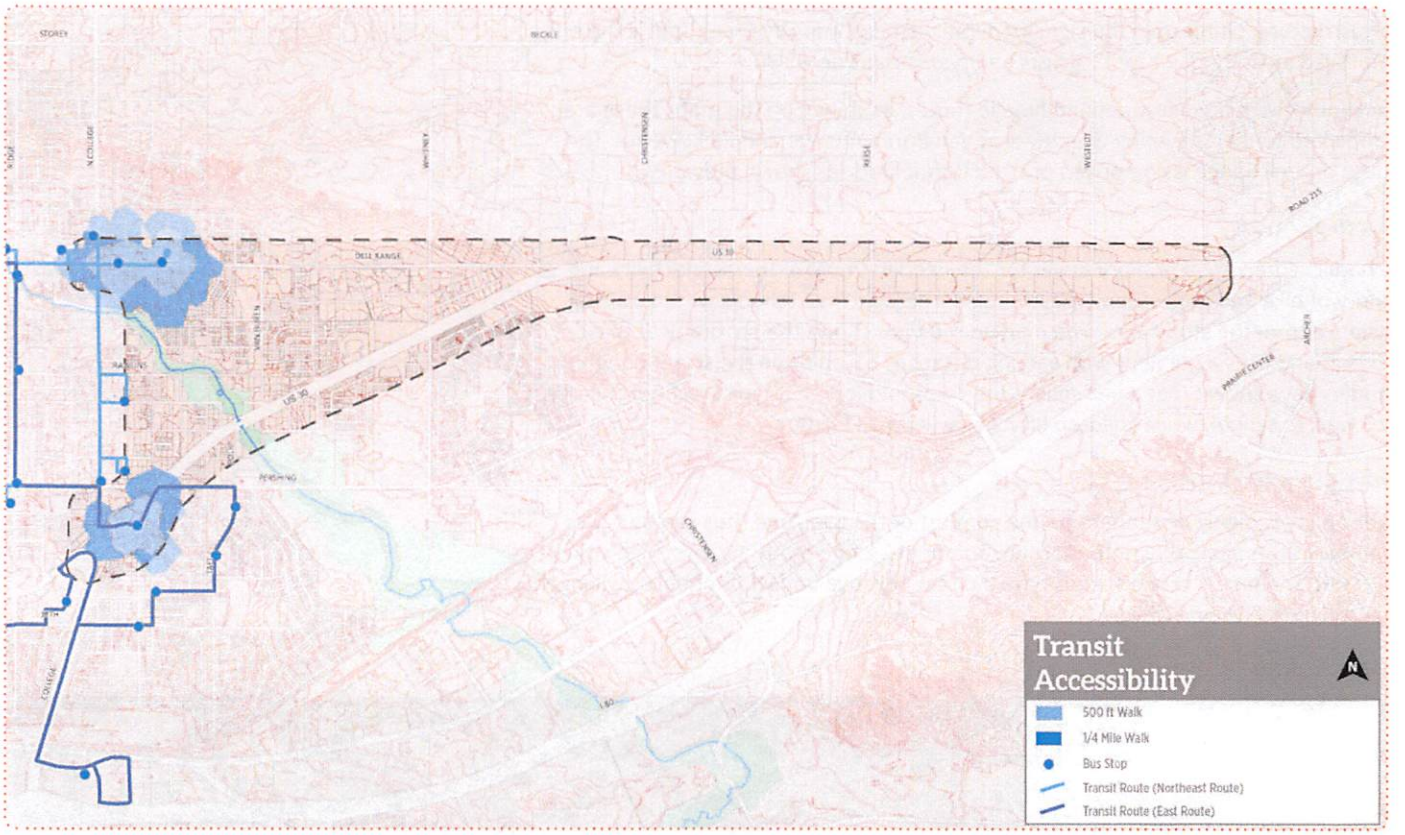


Figure 30: *Transit Accessibility*

Figure 31: *Bus Stop amenities on College Drive*

Bicycle Facilities and Trail Network

A walkable area, or "walkability," is a mix of the physical infrastructure and places or destinations to go. Studies have shown benefits to living in a walkable environment, starting with increased physical health.

Coverage and Connectivity

The existing trail and bike network connectivity is shown in the map below. The infrastructure exists primarily in the City's jurisdiction, similar to the utility infrastructure. Other than the signalized intersections, the Dry Creek Trail is the only improved crossing point for bicyclists and pedestrians on US 30.

Currently, there are a few defined bicycle routes, as shown on the map. These are connected to the Cheyenne Greenway at Van Buren Avenue and Polk Avenue The route on Dell Range is comprised of striped shoulders, as shown previously.

Local Schools

School children are a primary driver for the need to improve the connectivity and safety of bike and pedestrian infrastructure. There are five schools within walking distance from the study area. The map on the right shows the proximity of these schools and uses a gradient with varying distances based upon the street network. Studies have shown that a half-mile is the threshold for what typical school children will walk to school, while children bicycling will travel further.

Barriers and Gaps

Walkability is highly dependent on the comfort of the user, and thus can be significantly impacted by unfriendly environments. Large roadways with high volumes of traffic and higher travel speeds have a direct negative impact to people's willingness to walk or ride their bicycle.

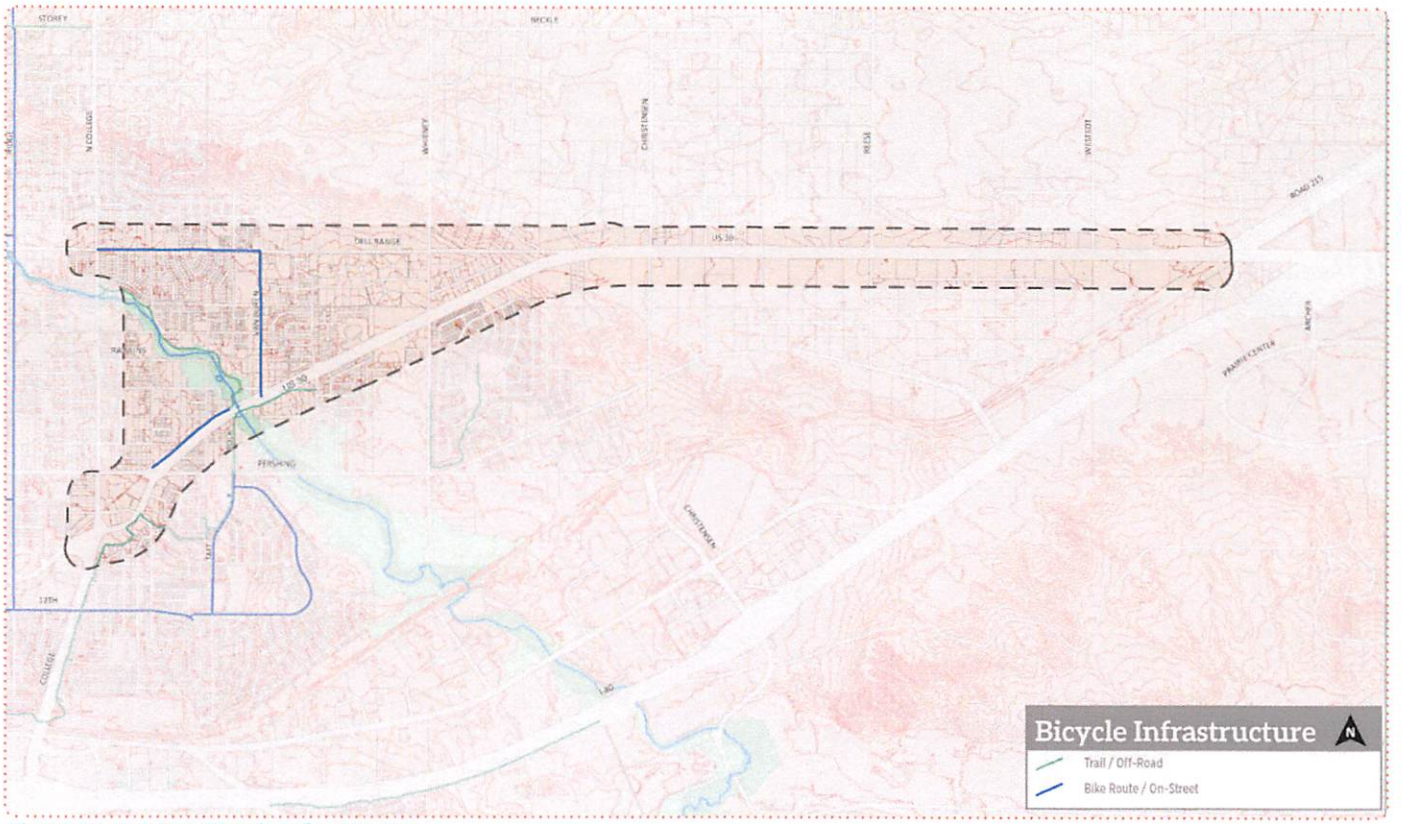


Figure 32: Existing Bicycle Infrastructure

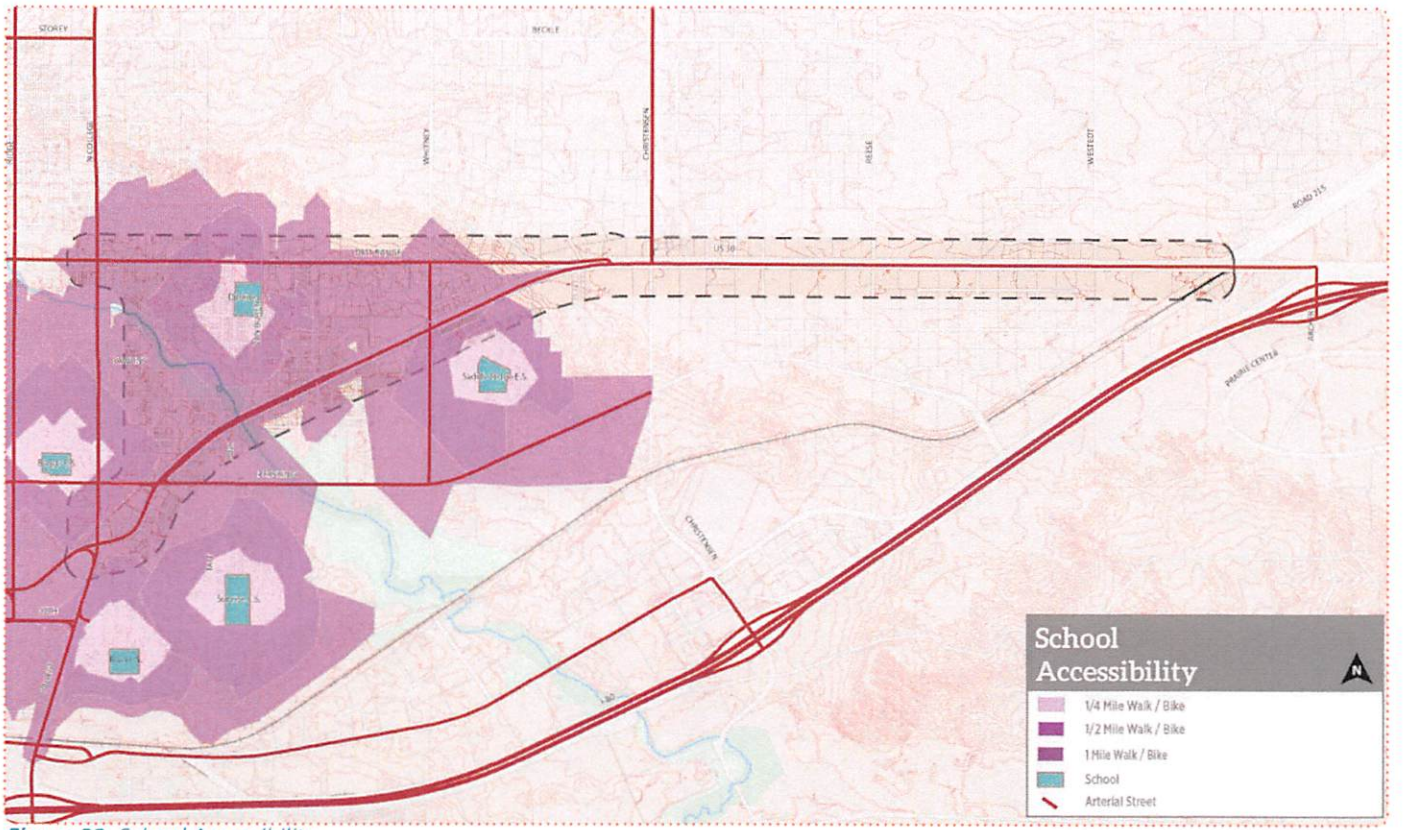


Figure 33: School Accessibility

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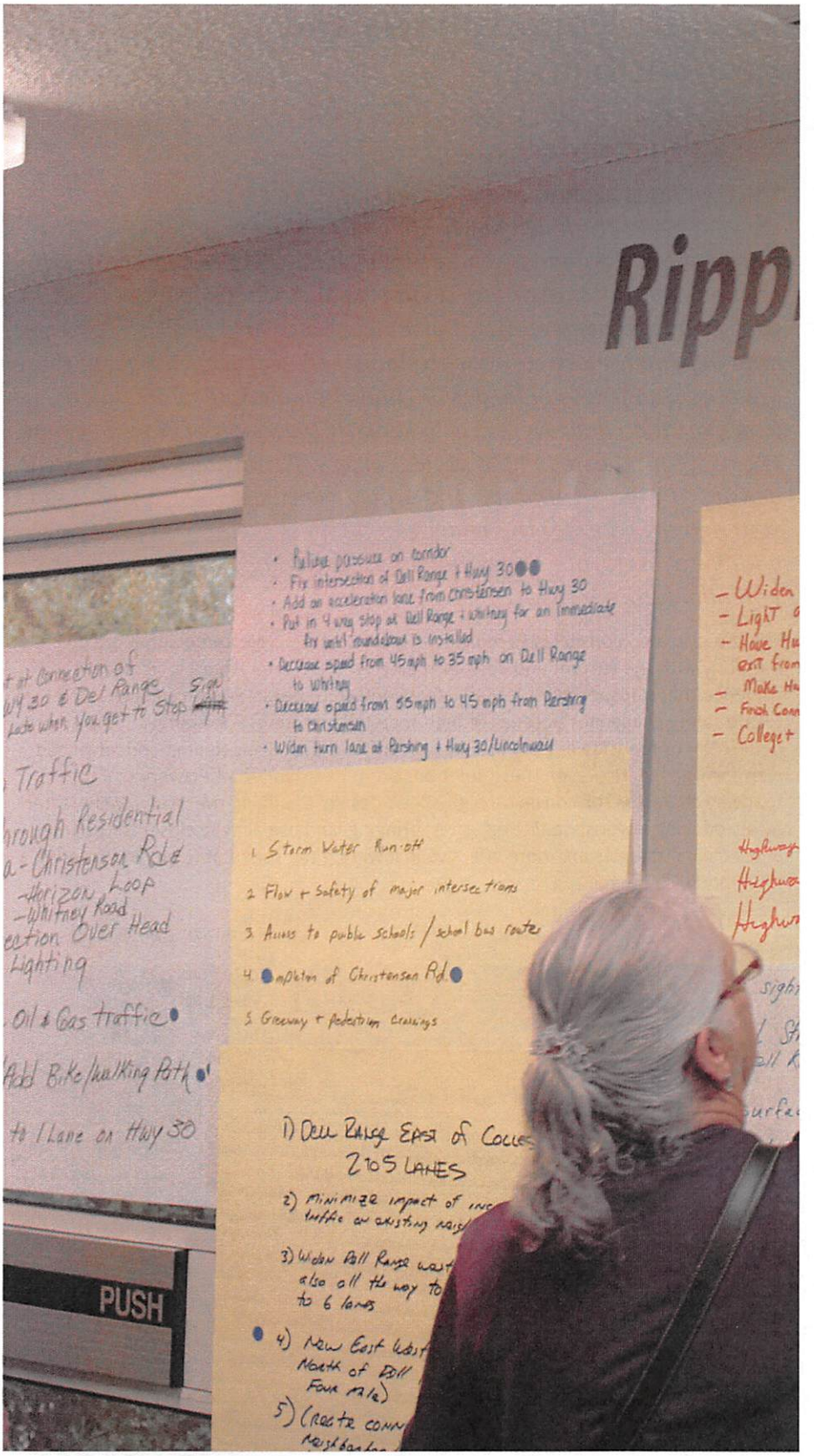


CORRIDOR OPPORTUNITIES & RESPONSIBILITIES

4

Corridor Opportunities and Responsibilities

Urbanizing and Safety

The continued growth and changing land uses in eastern Cheyenne and Laramie County are contributing to growing transportation demands. This study includes detailed analysis and recommendations regarding strategies and actions to meet the transportation need on East Dell Range Boulevard and US 30. As the area adjoining these corridors continues to evolve in character, there are opportunities to plan, design, and implement recommended transportation improvements to support the vision of PlanCheyenne. The growth expected in the project area will transition development density to a more suburban and urban character. The transportation system must consider this change and reflect the needs of not only additional users, but additional modes including pedestrians and potential future transit.

There is also a responsibility to make roadway and other investments that are in harmony with the current and desired character of the area. There is significant evidence that transportation facilities that conflict in character with adjacent land uses create safety challenges because of high speed differentials. For example, heavy pedestrian or roadside activity usually warrants a reduced speed limit and advanced warning signage. However, these solutions often have limited effectiveness if the roadway character still conveys a high-speed design. Changing the roadway character by introducing lower speed design cues, bringing land use activity closer to the road, and similar strategies are more effective in lowering the speed of travel and creating a multimodal character.

Roadway Segments and Networks

The roadway segments within the study area transition from the urban character of central Cheyenne to the rural environs of eastern Laramie County. As the area grows, this transition will shift eastward. This study will consider both the current and future travel demand and this transition from urban to rural character, and includes specific elements of design to enhance functionality within this changing environment.

Lane Widths

The standard 12-foot lane is a good match for America's rural highways and freeways and the desired speed of travel. An urban setting may be more appropriate for lane widths of 10 or 11 feet, depending on traffic volumes and other design considerations. There is a financial reason for this where urban property values and the built environment limit space, but a narrower lane also provides a practical benefit in reducing travel speeds and shortening the distance of pedestrian crossings.

Medians

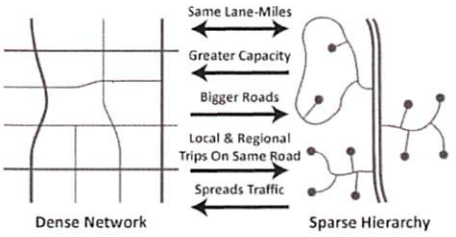
Well-designed raised medians provide an integral and multifaceted role in the design of urban streets. They function as a means for access control, but also provide opportunities for landscaping, utility placement, and roadway lighting. Raised medians at intersections provide refuge for pedestrian crossings. They also are a traffic calming tool reducing traffic speeds by up to 5mph per the FHWA Traffic Calming ePrimer (https://safety.fhwa.dot.gov/speedmgt/ePrimer_modules/module3pt3.cfm). Together, these benefits allow raised medians to contribute to crash reduction.

Curbs

While a raised median provides traffic calming benefits, they require curb and gutter. Curbs at the outside edges of the roadway are useful in defining and controlling access points, discouraging roadside parking and separates vehicles from roadside pedestrian traffic. Importantly, in the context of this project, curbs serve to communicate a change to more urban character.

Stormwater

As the project area continues to increase in density, there will likely be increased stormwater runoff from new rooftops and impervious paving. Curb and gutter in a more urbanized environment collect, convey, and capture this stormwater. Currently Dell Range Boulevard has curbing west of Van Buren Ave, as more curbing is built along with future development, stormwater treatment and detention needs will have to be addressed as required to meet local, state, and federal discharge requirements.



Network Connection

Prior studies and programmed projects will enhance the roadway network within the study area. The more urban environment of the future area should encourage ongoing development of this network. To reduce demand on the primary corridors, a contextually appropriate & robust street network will that provides a choice of routes and multiple connections to commercial developments and neighborhoods.

Intersections

The transition to suburban environment requires additional elements in the design and function of intersections. Intersection design should reflect consideration for additional travel modes including pedestrian and bicycle movements. With increasing traffic volumes and pedestrian crossings, signal timing, spacing and progression become more critical to preserve mobility while supporting accessibility needed to provide access to businesses and connect neighborhoods. Additionally, urban character also plays a role in the selection of intersection improvements.

Bicycle and Pedestrian Facilities

Bicycle and pedestrian mobility in the study area will grow in importance and function as the area grows. Transportation planning, design, and implementation should consider bicycle and pedestrian connections between neighborhoods and schools, recreation facilities and attractions, commercial areas, and employment centers. Street sidewalks and bike lanes are traditional choices and should be incorporated into the roadway design.

Making pedestrian and facilities more comfortable to users also increases their use. Dedicated multi-use paths outside of roadway facilities are more comfortable for more types of users and can provide more direct connections. Pedestrian scale lighting improves the functionality and safety of pedestrian facilities, especially for dedicated trails or meandering sidewalks that are not immediately adjacent to the road.

Figure 34: *Examples of Transit Amenities*

Transit Amenities

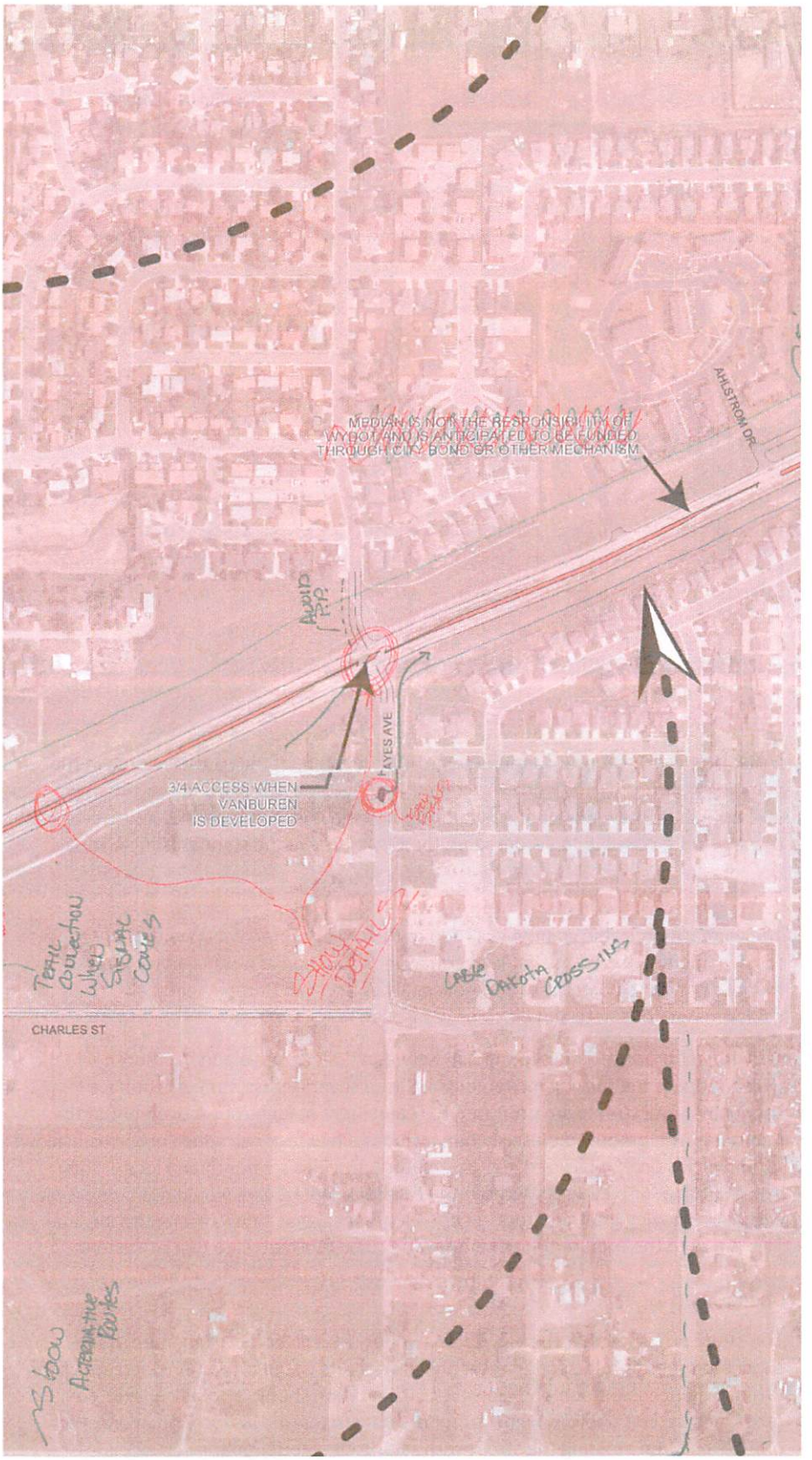
While transit service is currently only provided in the western edge of the study area, it should be considered in the overall corridor plan and design. Routing and stops for transit can impact roadway design. Bus stops, turnouts, lighting, and other items require investments that impact roadway design and implementation.

Additional Studies

For any next phase of preliminary design, the elements discussed here should be evaluated for inclusion in immediate or future implementation. A more detailed analysis of these elements will provide a means to capture additional opportunities to best align projects to meet the transportation need and harmonize improvements with current and future land uses, growth, and the desired character.

Key plans that may need to be explored prior to full design include:

- Stormwater master plan
- Transit operations plan
- Trails, parks, and recreation area plan
- Neighborhood plans



CORRIDOR INVESTMENTS

5

Corridor Investments

This section describes the proposed improvements to the study area that were developed, taking the existing conditions, crash history, and public process into account. The map to the right gives a big picture overview of these improvements; more in depth changes are detailed later in this section. The detailed conceptual design of the corridors is shown in the appendix of this report.

Dell Range Boulevard

Dell Range is expected to continue to grow in demand, doubling the volume in the planning horizon. The corridor will continue to become more urbanized with increased investment and new developments, for this reason it is recommended to reserve right-of-way where possible to accomodate the City of Cheyenne standards for Arterials.

College Drive to Van Buren Avenue

The increases in traffic volume will require the College intersection with Dell Range to have additional capacity if it is to continue to function at a satisfacotry level. The number of access points between College Drive and Van Buren Avenue also need to be addressed for safety and efficiency reasons.

This project proposes a raised median between College Drive and Van Buren Avenue, which reduces the turning movements to/from several cross-streets that have less connectivity. All streets are proposed to retain Right-in Right-out movement at the minimum. The proposed cross-section includes a five-foot extruded curb, which allows for the inclusion of a bicycle lane. This feature provides a smooth and long-lasting riding surface for bicyclists. Without the extension a bike lane would not be possible without removing another cross-section element such as sidewalk or a driving lane. This is due to the requirement of a bike lane to be five feet wide of a consistent pavement, meaning a two-foot concrete curb pan would require an additional five feet of dedicated asphalt.

This study proposes that the Van Buren Avenue intersection be signalized. It is expected that this intersection meet signal warrants based on volume increases from Whitney Ranch Development. However, signalization should also be considered due to other factors. The public is highly supportive of a signal at this location in order to provide children crossing the street with safer routes to schools.

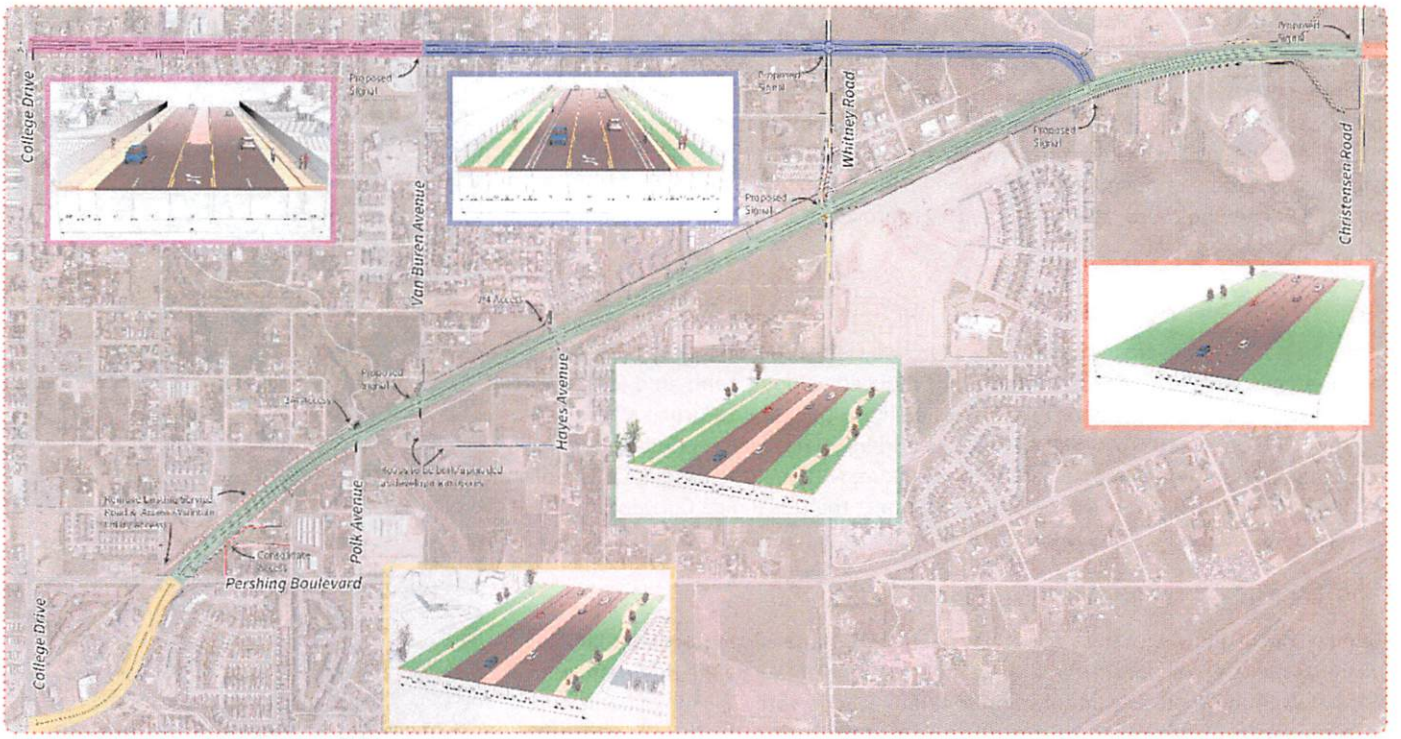


Figure 35: Big Picture Proposed Changes

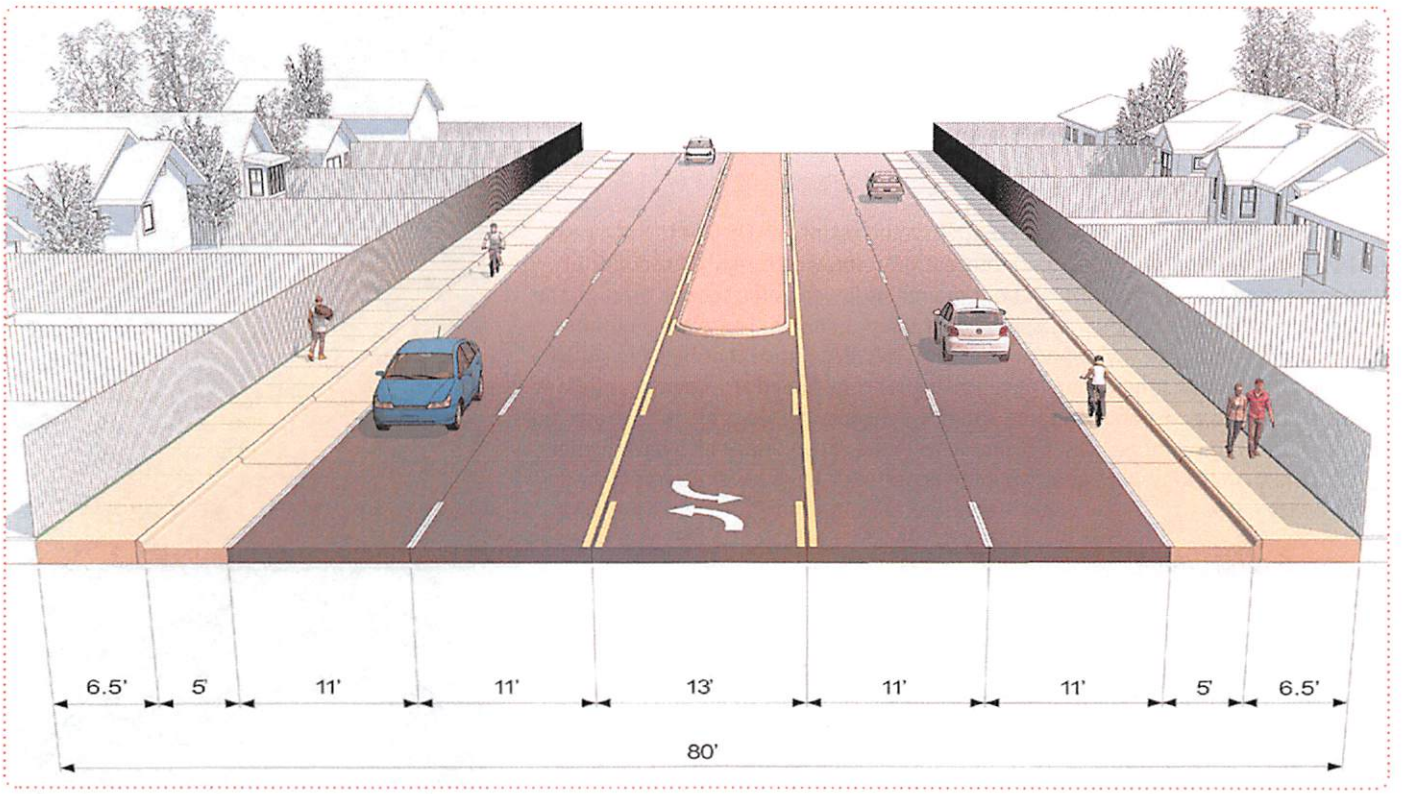


Figure 36: Proposed Dell Range Cross-section, College Dr to Van Buren Ave

Dell Range Access Reductions

With the inclusion of a raised median as a safety improvement, some streets are recommended to have reduced access. The graphic shows the recommended left-turn access control locations, with none of the streets proposed to have access denied. It is recommended that the eastern property access to Gater Industries onto East Dell Range Boulevard be removed. Access improvements to the western access location onto Dell Range Boulevard, as well as the access provided onto Ocean Loop should accompany this removal.

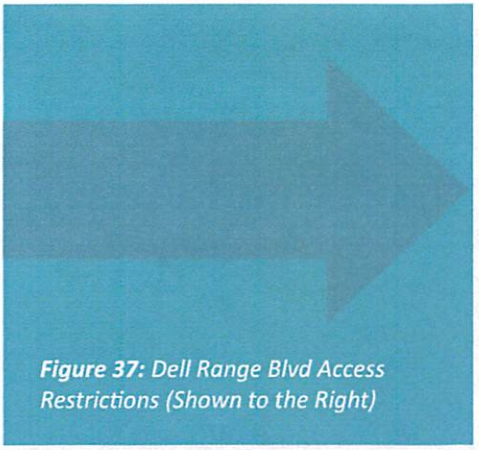


***Figure 37:** Dell Range Blvd Access Restrictions (Shown to the Right)*

Van Buren Avenue to US 30

A transition to a 3-lane cross-section with a two-way left-turn lane is proposed east of Van Buren Ave. This reduction is warranted by reduced volumes compared to the west segments as well as a lower density of access points in this rural-to-urban transitional segment. The proposed cross-section includes curbing, which corresponds to the increased development and associated infrastructure with an urbanized area. The plan also includes a 5' buffered bike lane that will connect the Dell Range Corridor on-street bike facility to the US 30 trail system on the east end.

Whitney Road Intersection

Running concurrently with this project has been the Whitney Road Corridor Plan, which has overlapping portions at the two intersections of Dell Range Boulevard and US 30 at Whitney Road. The intersection of Whitney Road with Dell Range Boulevard was a primary topic of conversation moving forward with this plan. The alternative originally proposed by the Whitney Road plan was a single-lane roundabout, which was later determined to be insufficient for planning-year traffic volumes when considering the rerouting of traffic to Christensen Road to the east. Through coordination and collaboration with that project and its stakeholders two alternatives were shown to the public at the third community workshop in April, shown bottom right. The public was also provided the following Opportunties and Challenges for these different solutions, and resulted in an even split of support.

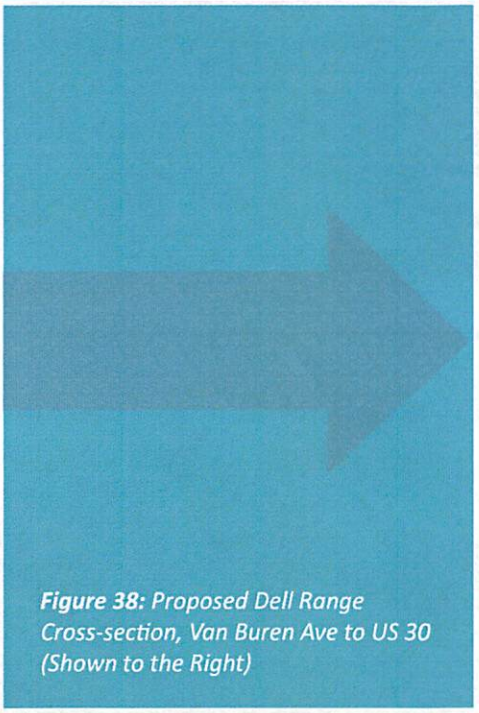


***Figure 38:** Proposed Dell Range Cross-section, Van Buren Ave to US 30 (Shown to the Right)*

Roundabout Alternative

The traffic analysis shows that this alternative would maintain LOS B in the AM peak and LOS D in the PM peak in the 2040 forecast year, showing roughly 4 seconds of delay more than the Signal. A roundabout maintains lower traffic speeds through the intersection with less conflict points, providing safety benefits. There are a number of urban design and gateway opportunities with this alternative that helps to signal changing urban character, helping transition higher rural speeds to slower suburban and urban travel speeds. Roundabouts are, however, less comfortable for pedestrians and more uncommon for bicyclists. Typically roundabout solutions also have higher capital costs than traditional signalized intersections but have lower operation and maintenance costs.

Signalized Alternative

A signal at this intersection would result in LOS B in the AM peak and LOS C in the PM peak, performing slightly better than the roundabout alternative. The intersection would maintain shorter vehicle queue lengths on average than a roundabout. Pedestrians are provided explicit walk times that are very clear to all, and users are more familiar with traffic signals. Signalization would not reduce vehicle conflict points and provide no physical traffic calming mechanism, resulting in less safety benefits than a roundabout. Additionally signals have higher maintenance costs than roundabouts.

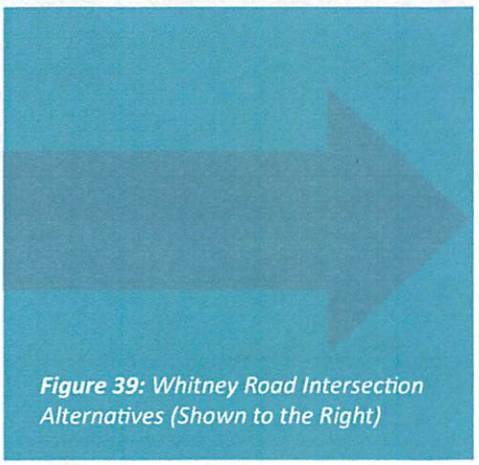
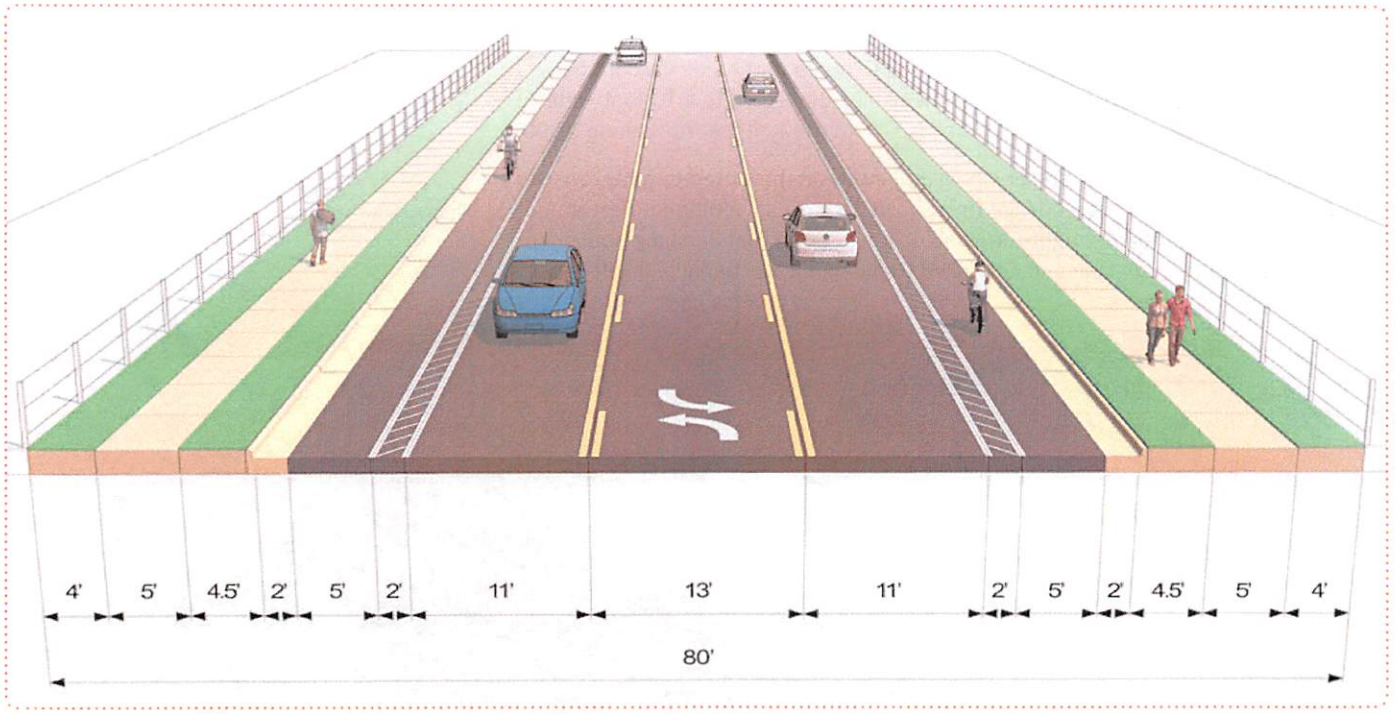
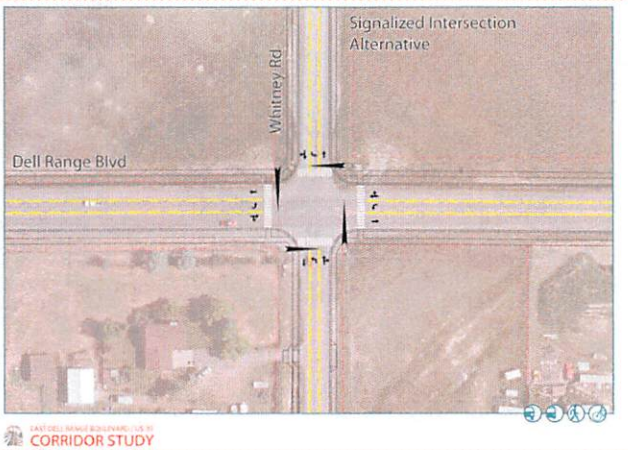


***Figure 39:** Whitney Road Intersection Alternatives (Shown to the Right)*


Dell Range Blvd
Griffith Ave
Gater Industries
Ocean Loop
Parks Maintenance Shop
Access to be restricted
Shell Beach Ave
Golden Meadows Ln
Shell Beach Ave
Access to be restricted
Access to be restricted
Access to be restricted
College Dr
Crystal Ave
Flamingo Gorge Ave
Cleveland Ave
Ocean Ave
Huron Ave
Ontario Ave
Glendo Ave
Pierce Ave
Pathfinder Ave
Van Buren Blvd


4'
5'
4.5'
2'
5'
2'
11'
13'
11'
2'
5'
2'
4.5'
5'
4'
80'


Roundabout with Slip Ramps Alternative
Dell Range Blvd
Whitney Rd


Signalized Intersection Alternative
Whitney Rd
Dell Range Blvd

US 30

The US 30 corridor is expected to change character in the planning horizon, becoming more urbanized and no longer serving primarily regional traffic, but accommodating local trafic associated with the growth on the eastern side of Cheyenne. This urbanization, along with growing safety concerns in the corridor, are key factors in the proposal of a raised center median for much of this study area. As mentioned before, raised medians serve to provide traffic calming to reduce speeds, and to control access points, thus reducing conflict points for vehicles.

College Drive to Pershing Boulevard

This western section of the study area is currently a 5-lane roadway. This project proposes introducing a raised median to control access and reduce speeds. It is recommended that the existing ten-foot shoulder remains for the potential future-lane reconfigurations utilizing the space. Full access movement is proposed at Cleveland Ave., Western Way, and the City Station #3 firehouse driveway with reduced access for the remaining driveways. It is proposed to upgrade the sidewalk on the south side of the road from Cleveland Ave. to Pershing Boulevard to a 10-foot-wide trail, which would connect the trail along College Dr. to the trail that runs along US 30.

The intersections of College Dr. and Pershing Boulevard are proposed to have capacity and operational improvements. College Dr is shown to have an additional westbound left-turn lane and southbound right-turn lane. It is suggested that Pershing Boulevard add an eastbound through lane and enhanced traffic signal functionality in left-turn phasing and optimization.

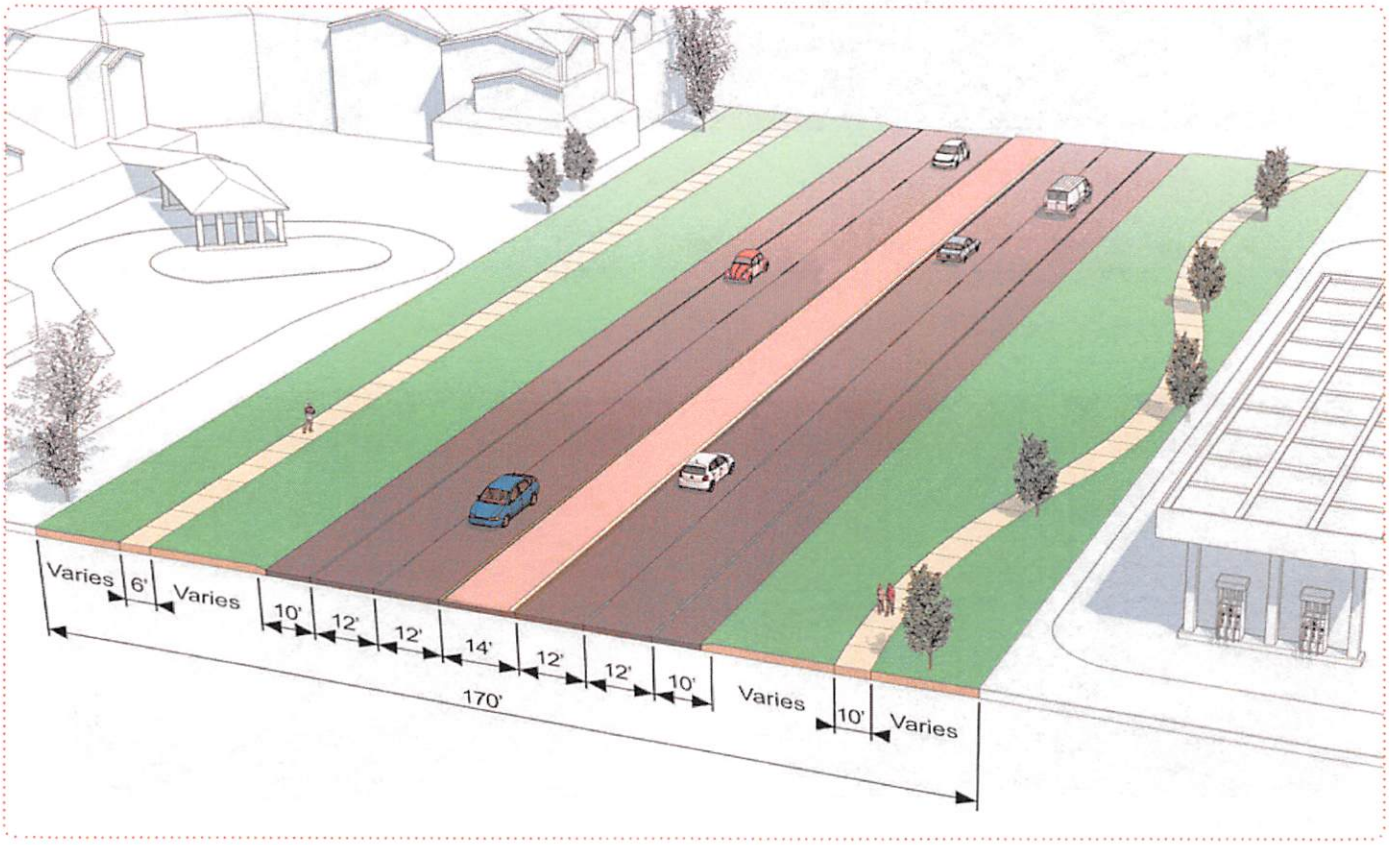
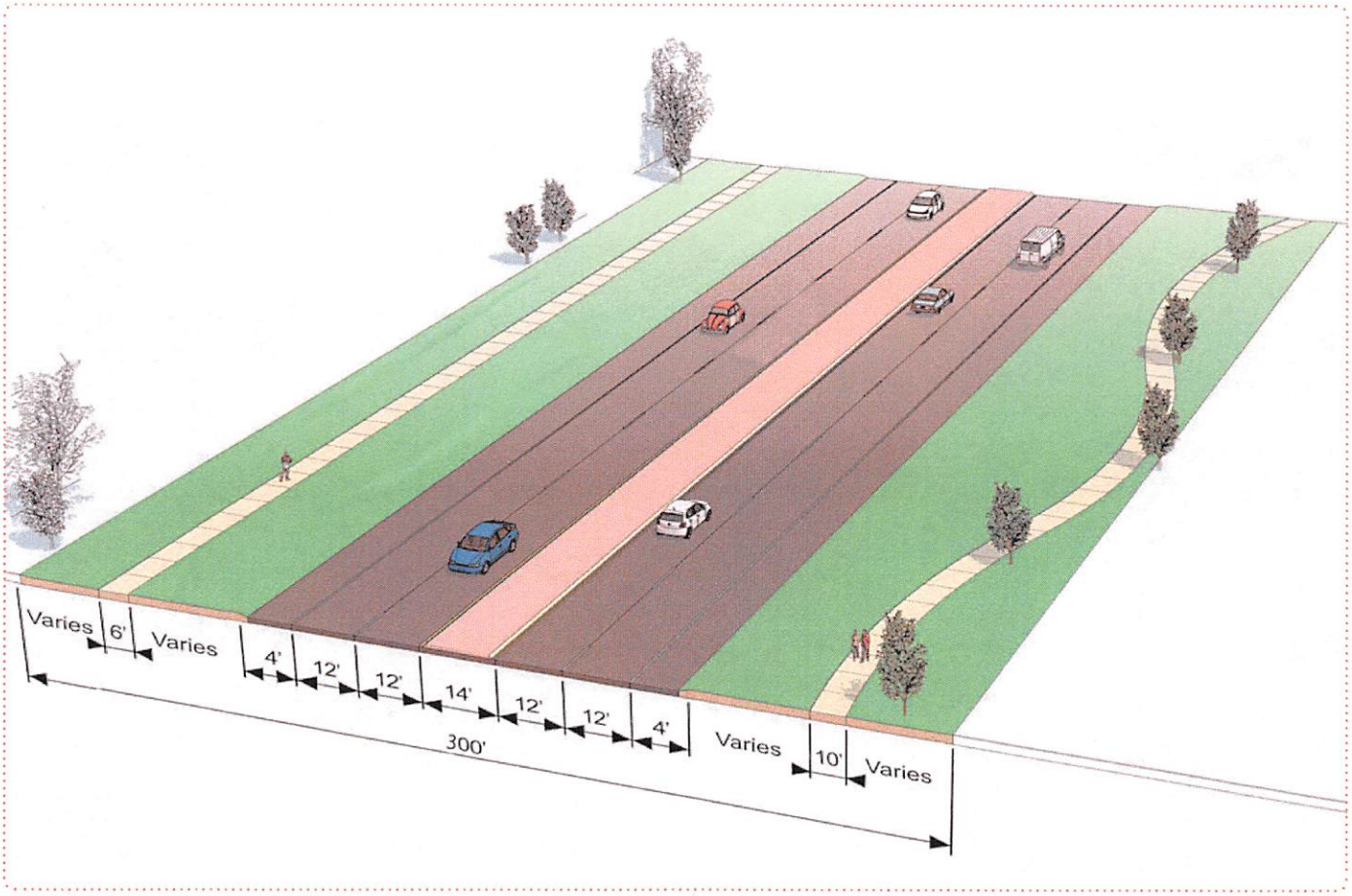


Figure 40: Proposed US 30 Cross-section, College Dr to Pershing Blvd

Pershing Boulevard to Christensen Road

The middle segment of the US 30 Corridor is proposed to continue the raised median and 10-foot trail. The project also proposes including a six-foot sidewalk on the north side of the roadway to provide mobility options for the north side of the arterial roadway to get to the designated crossings.



Proposed US 30 Cross-section, Pershing Blvd to Christensen Rd

Pershing Boulevard Area

It is suggested that the US 30 service roads are removed for the lengths shown in the map below. Consolidated access points are proposed for the south side service road on Uintah Road along with providing an additional right-in right-out access for Pierce Avenue The closely located access of Cleveland Ave. to Pershing Boulevard should be removed to improve safety by reducing turning movements and reduce confusion for drivers, and should be replaced with a wide sidewalk. It is suggested that a new road to be required to be constructed with new development, connecting Pershing Boulevard to Uintah Road.

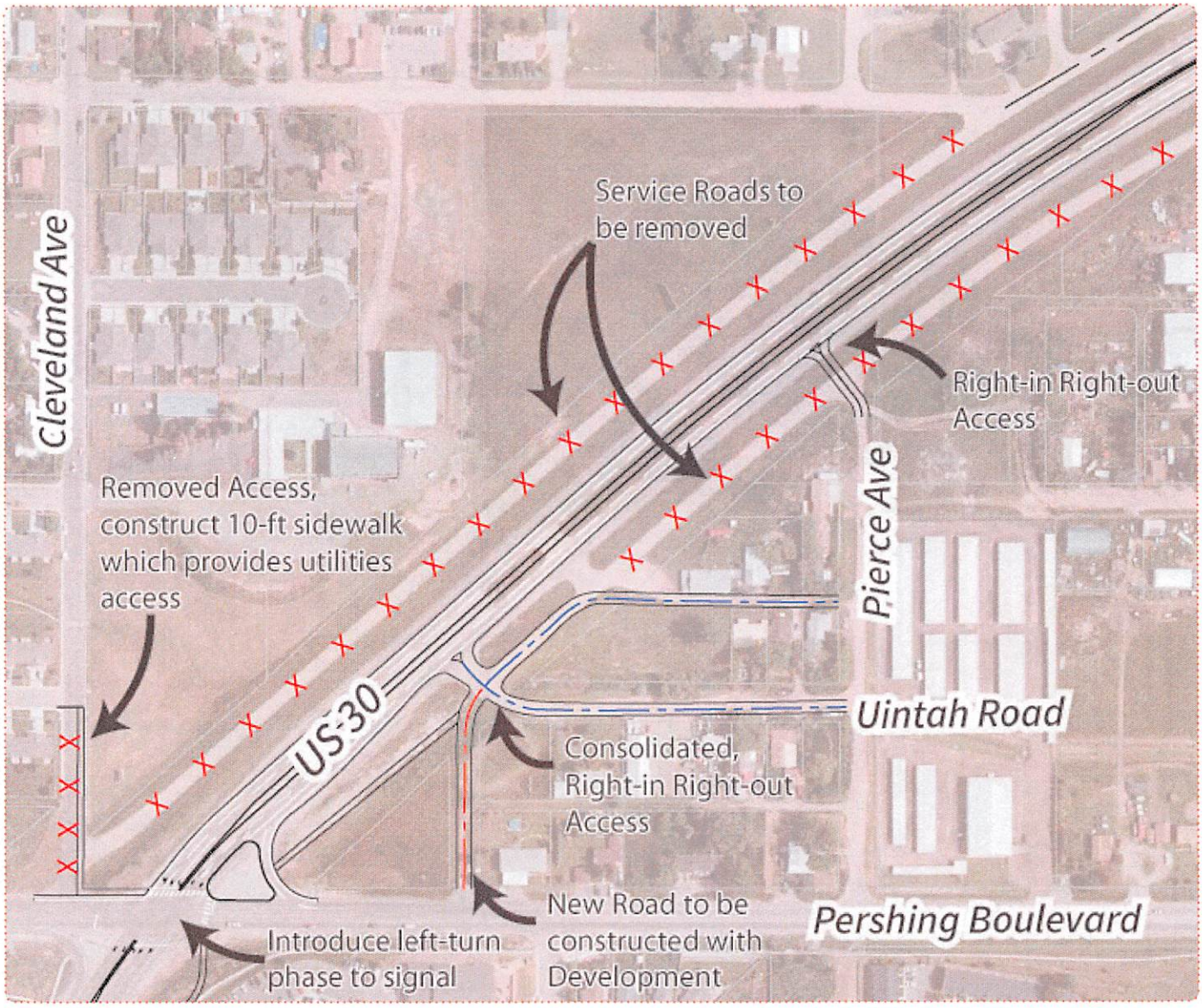


Figure 41: *US 30, Pershing Boulevard Area*

Van Buren Avenue Intersection

This plan proposes improving Van Buren Avenue to a signalized intersection, when warrented, along with upgrading and building the southern leg of this intersection as development occurs. This intersection improvement provides roadway network options for residents on the north side of US 30 trying to travel west including relieving the pressure of Whitney Road from the Whitney Ranch Development. The signal location also provides improved access to the Dildine Elementary School.

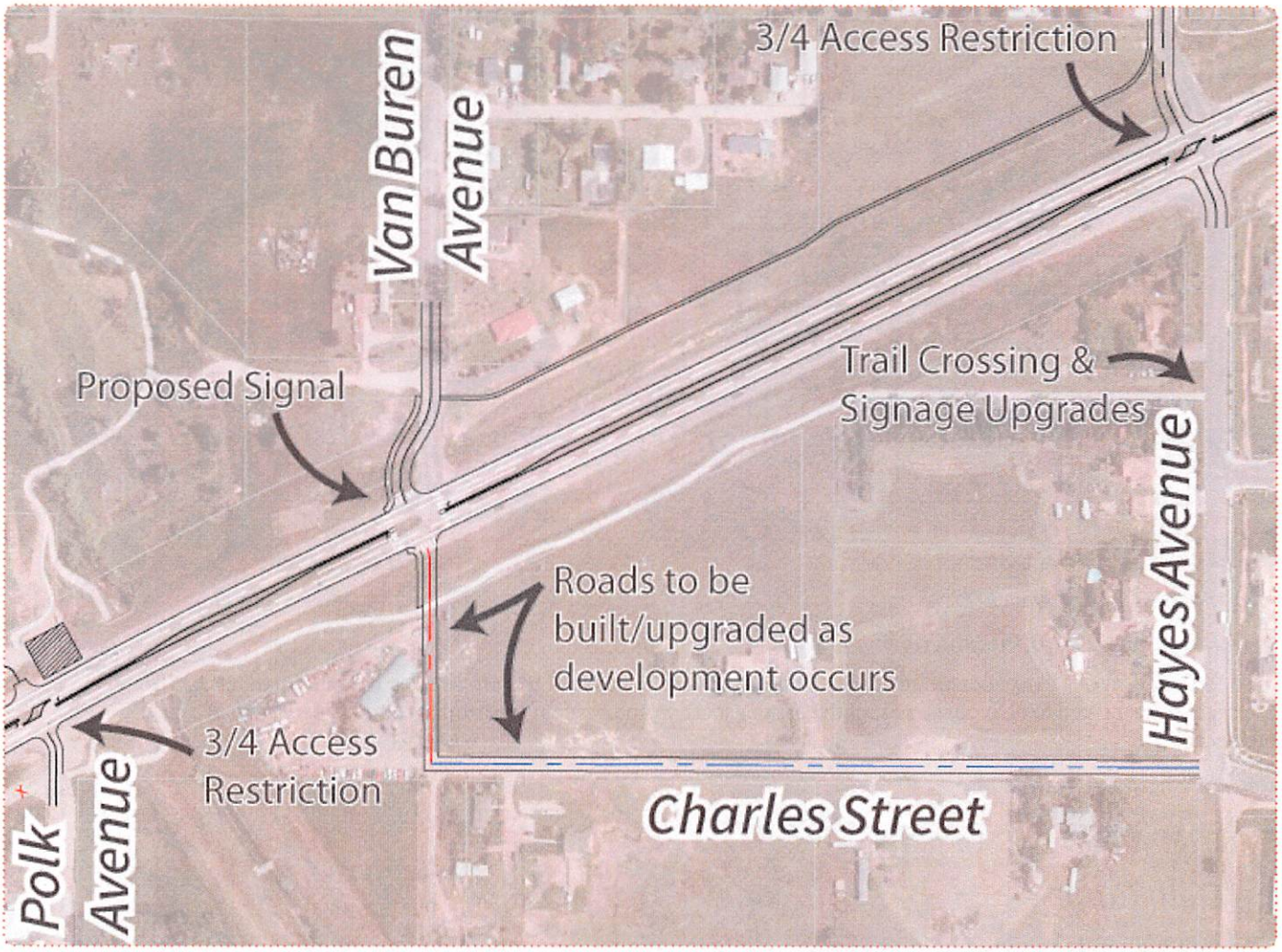


Figure 42: *US 30, Van Buren Avenue Area*

Other changes in the area include restricting access to 3/4 movements at Hayes Avenue and Polk Avenue, disallowing side-street through and left-turn movements. This will improve the safety of cross-traffic at these unsignalized intersections. A new connection location for Polk Avenue would also provide an area for trailhead improvements, if desired.

Whitney Road Intersection

The Whitney Road Corridor Plan proposed a realignment and signalization improvements at the intersection, shown below. With this realignment and inclusion of median access control, this plan proposes providing new and consolidated access locations for businesses located on US 30 due to intersection spacing requirements. Roadway improvements and upgrades are also proposed for Woodhouse Road and Hinesley Road to provide businesses appropriate ingress and egress. These roads should be designed with adjusted vertical alignments that address winter maintenance and access concerns.

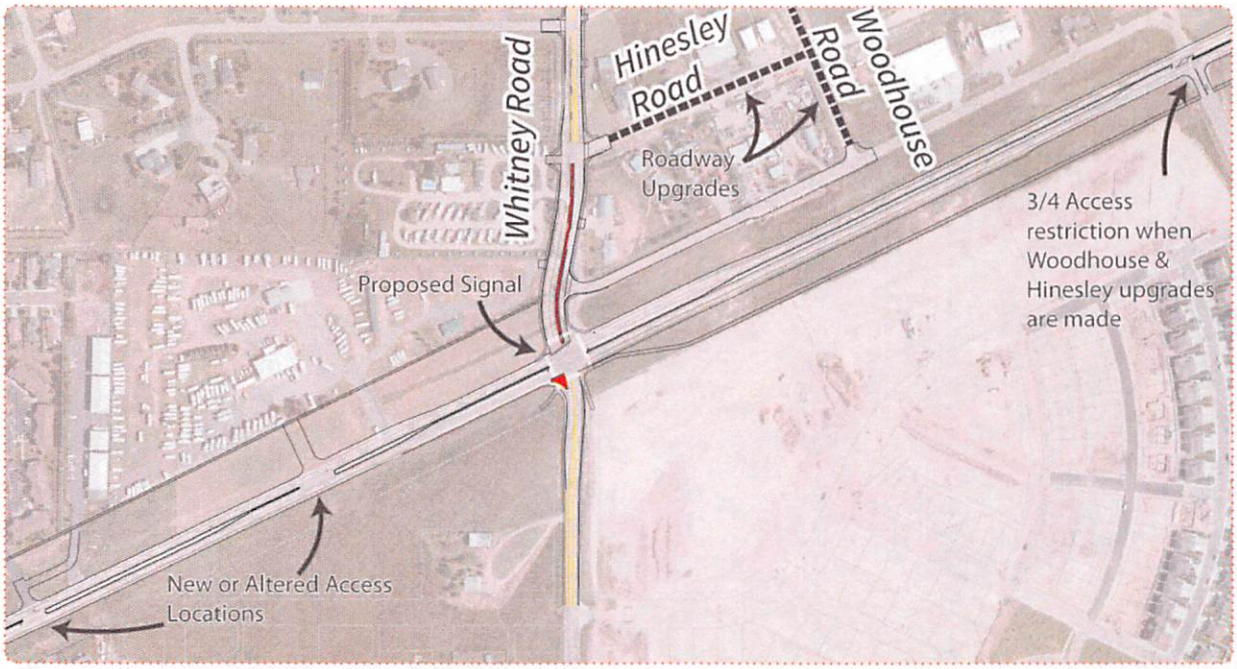


Figure 43: US 30, Whitney Road Area

Dell Range Boulevard Intersection

The intersection of Dell Range Boulevard at US 30 is being designed outside of this project. The new alignment of this intersection is expected to be brought west of the existing location and occur at the existing southern service road intersection.

Figure 44: US 30 & Dell Range Blvd New Alignment

Christensen Road to Union Pacific Rail Road Overpass

It is proposed that the eastern stretch of the corridor is constructed as programmed by WYDOT STIP funding, as a 5-lane rural cross-section. Right-turn lanes are proposed at the intersections of US 30 with Christensen Rd, Reese Rd, and Westedt Road. The right turn lanes are anticipated to meet warrants for the eastbound right at Christensen Rd and Reese Rd, the others are suggested to remove the slow turning movements from the higher speed through vehicles. It is proposed that the intersection of US 30 and Christensen Road is signalized when warranted.

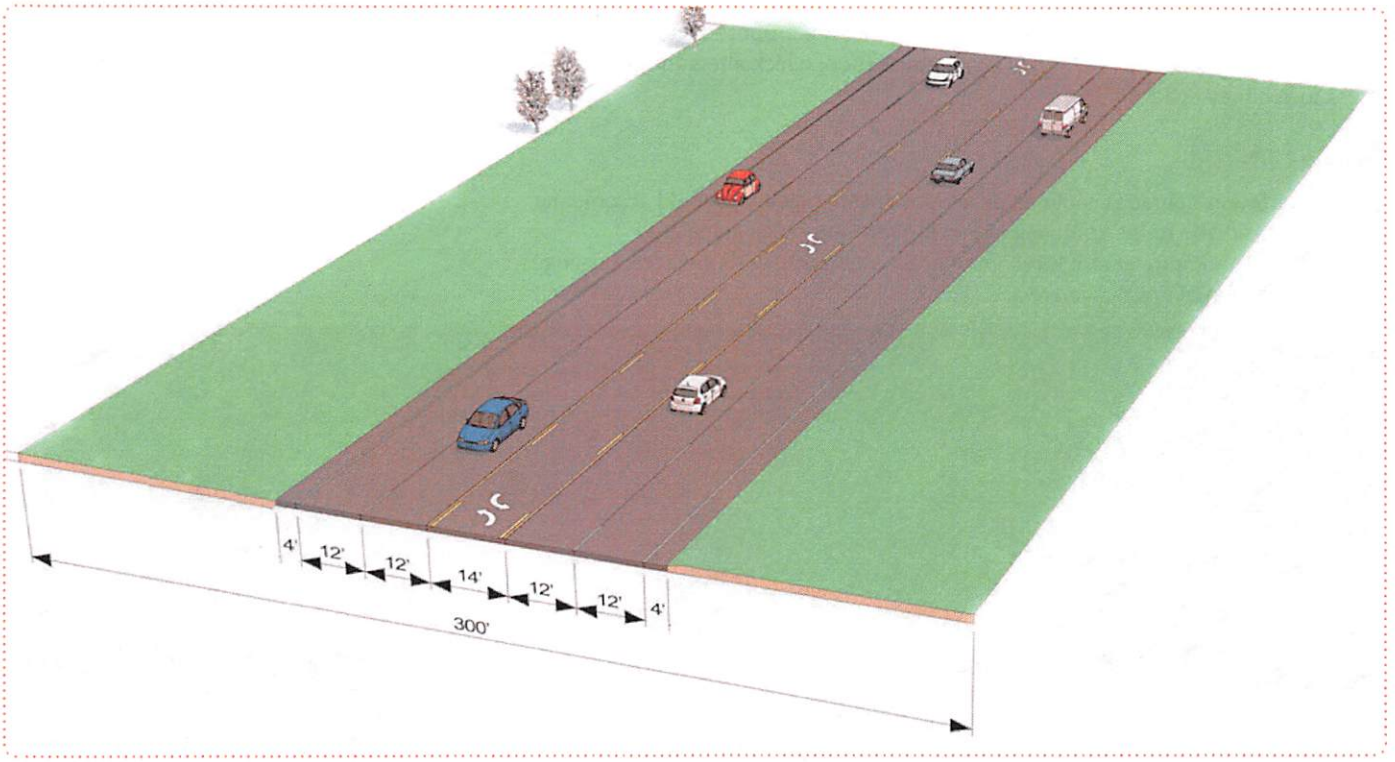


Figure 45: *Proposed US 30 Cross-section, Christensen Rd to Union Pacific Railroad Overpass*

Roadway Network

As the City of Cheyenne's eastern edges continue to develop and become more urbanized, it will be important to ensure the roadway network quality is brought up to city standards. The map below shows a number of roadways that are proposed to be upgraded from dirt or gravel to paved streets as well as proposed streets to improve connectivity. Many of the proposed upgrades can be driven by developer investments, however there are some that are driven by access changes made to US 30.

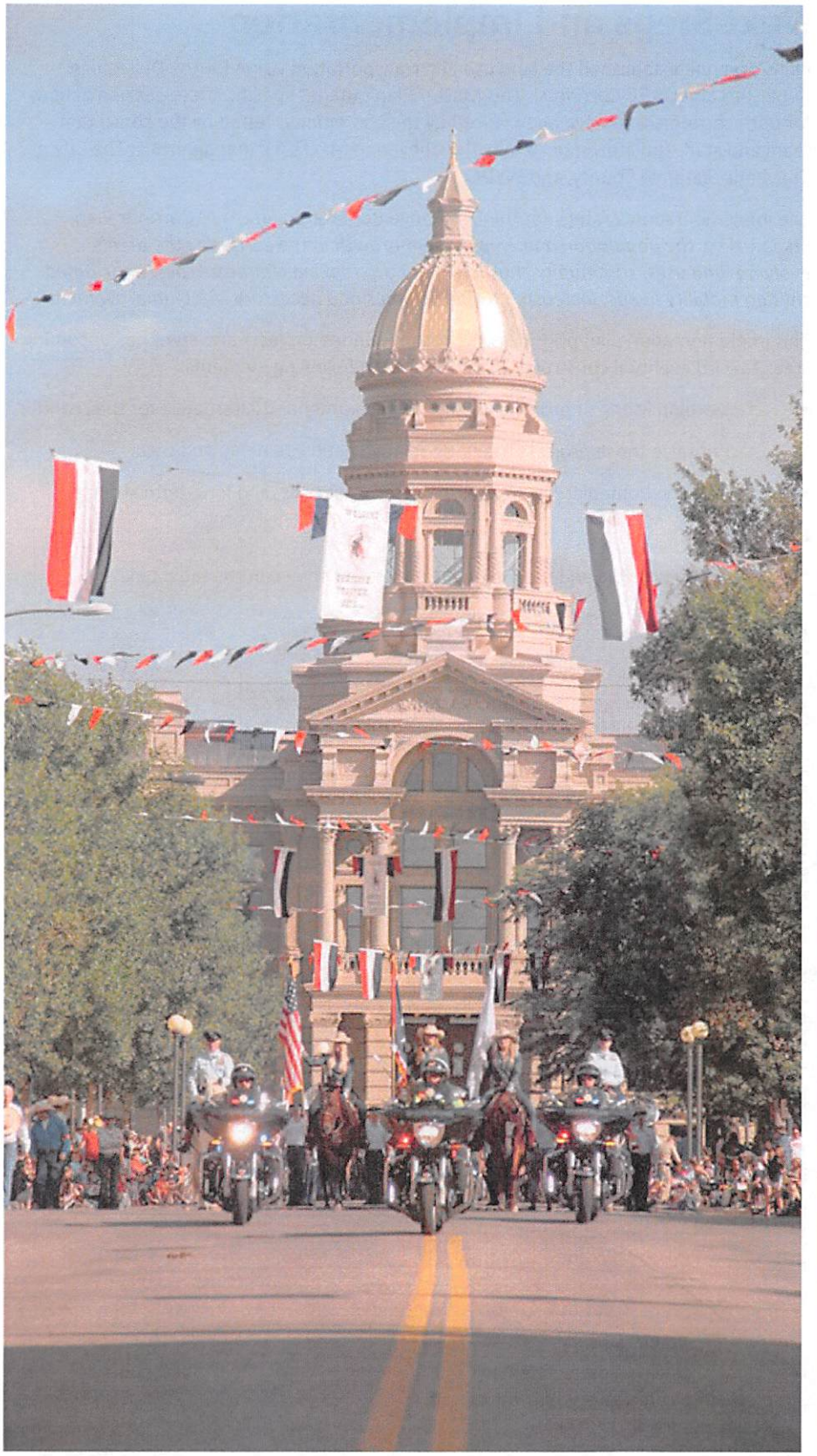
Whitney Road Parcel Access

The improvements to Hinesley Rd and Woodhouse Rd are proposed to supplement the new configuration of the Whitney Road intersection, which alters the service road access to Whitney Road.

Charles Street

The Charles Street upgrades could be developer driven, however should accompany improvements made to the south leg of Van Buren Avenue and associated signalization. This improvement is recommended concurrent with the access changes at the intersection of Hayes Avenue and US 30.

Figure 46: Proposed Network improvements



NEXT STEPS AND IMPLEMENTATION

6

Next Steps and Implementation

PlanCheyenne established the land use and transportation vision for the Dell Range Boulevard and US 30 Corridors. This Master Plan outlines specific strategies and actions for both corridors that have been voiced by the community, vetted by the consultant team and staff, and are supported by the Cheyenne MPO's partner agencies: The City of Cheyenne, Laramie County, and WYDOT.

The implementation strategy for the Dell Range Boulevard and US 30 Corridor Plan responds to: ***the population and employment growth in the corridors; the area's evolving land uses, community character, and trip making characteristics; anticipated shifting mobility needs, increasing traffic volumes and necessary safety improvements.***

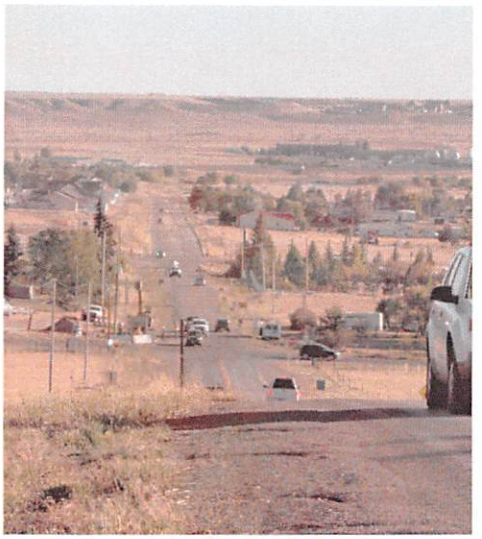
This implementation plan prioritizes the recommended projects and identifies upcoming steps toward eventual construction. It includes the following elements:

- Develop listing of projects within the Recommended Alternative for the corridor
- Prioritize those projects based on relative needs, benefits and costs
- Identify: Immediate next steps, near-terms actions, and long-term strategies.

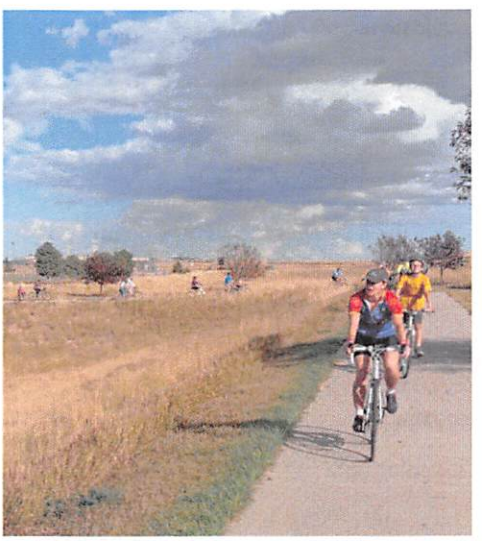
Project Listing

Recommended projects and their estimated costs are shown in the table below.

Recommended Projects	
Project Name	**Costs**
Dell Range and College Intersection: extending eastbound through lane, adding a northbound left turn-lane, and a southbound right turn-Line	$650,000
Dell Range and Van Buren Intersection: improvement and signalization	$400,000
Dell Range and Whitney Road intersection: improvement (signal or roundabout) including construction south to US 30	$3.2 Million
Dell Range Corridor Widening from three-lanes to five-lanes with raised median: College Drive -Van Buren	$3.0 Million
Dell Range Corridor widening from two-lanes to three-lanes: Van Buren – US 30	$5.25 Million
US 30 and College Drive Intersection Improvements: add southbound right turn-lane and additional westbound left turn-lane	$350,000
US 30 and Pershing Boulevard Intersection Improvements: Introduce protected left-turn phasing, enhanced pedestrian crosswalks, and eliminate Cleveland Avenue vehicular access to/from Pershing	$250,000
US 30 and Polk Avenue Intersection Improvements: Modify intersection configuration from full-movement to ¾ movement, not allowing side street through or left turn movements	$200,000
US 30 and Van Buren Avenue Intersection Improvements: Realign north leg of intersection and introduce south leg. Implement traffic signal when warranted.	$400,000



US 30 and Hayes Avenue Intersection Improvements: Modify intersection configuration from full-movement to ¾ movement, not allowing side street through or left turn movements	$150,000
US 30 and Whitney Road Intersection Improvements: Realign north and south legs of intersection and implement traffic signal when warranted according to the Whitney Road Corridor Plan recommendations.	$920,000
US 30 and Saddle Ridge Trail Intersection Improvements: Modify intersection configuration from full-movement to ¾ movement, not allowing side street through or left turn movements.	$175,000
US 30 and Dell Range Boulevard Intersection Improvements: Realign Dell Range approach and implement traffic signal. Including service roads to Christensen	$3.1 Million
US 30 and Christensen Road Intersection Improvements: construct Christensen Road south of US 30 and implement traffic signal when warranted according to the Christensen Road Design Plan.	$300,000
US 30: College Drive to Pershing Boulevard: Introduce raised median	$4.5 Million
US 30: Pershing Boulevard to Whitney Road: Reconstruct to five-lane configuration with raised median	$3.2 Million
US 30: Whitney Road to Dell Range Boulevard: Widen to five-lane configuration with raised median	$8 Million
US 30: Dell Range Boulevard to Union Pacific Railroad Overpass: Widen to five-lane configuration with center left-turn lane	$150,000
US 30 Service Road Pershing to Polk: Remove north service road. Consolidate access and remove portions of south access road.	$150,000
US 30 Access: Realign and consolidate Ahlstrom Avenue and warehouse parcel access	$75,000
US 30 Access: Reposition property access to properties northwest of Whitney Road and US 30 Intersection.	$75,000
US 30 Access: Reposition property access to/from US 30 Service Road with upgrades to Hinesley Road (access to Whiney Road) and Woodhouse Road (Access to Dell Range)	To be determined
County Roads: Upgrades and reconstruction dirt/gravel roads to paved streets in partnership with private development	$250,000



Project Prioritization

The projects identified range in urgency needed to address safety concerns, capacity deficiencies, and regional importance. Specific initiatives and recommendations presented in this implementation section are separated as follows:

Immediate Next Steps that should implemented within years 1 to 2 years to address safety concerns and establish a foundation for future success.

Near-Term Actions to be implemented in the coming 3 to 5 years to address acute transportation challenges.

Longer-Term Strategies for consideration that require and deserve additional evaluation and review before considering for implementation.

Project Prioritization
Immediate Actions (1-2 Years)
Dell Range and Whitney Road intersection: improvement (signal or roundabout) including construction south to US 30
US 30 and Dell Range Boulevard Intersection Realignment
Near-Term Recommendations (3-5 Years)
Dell Range and College Intersection Improvements- extend eastbound through lane, adding a dual northbound left turn-lane, and a southbound right turn-Lane
Dell Range and Van Buren Intersection improvement and signalization
Dell Range Corridor Widening: three-lanes to five-lanes with raised acccess control and safety median: College Drive to Van Buren
US 30 and Pershing Boulevard Intersection Improvements
US 30 and Polk Avenue Intersection Improvements
Whitney Road and US 30 Intersection Improvement
US 30 and Christensen Road Intersection Signalization (when warranted)
US 30: Pershing Boulevard to Dell Range Boulevard Reconstruct to five-lane configuration with raised access control and safety median
US 30: Dell Range Boulevard to Dell Range Boulevard Widen to five-lane configuration with raised access control and safety median
US 30: College Drive to Pershing Boulevard raised access control and safety median
US 30 Access: Realign and consolidate Ahlstrom Avenue and warehouse parcel access
US 30 Access: Reposition property access to/from US 30 Service Road with upgrades to Hinesley Road (access to Whitney Road) and Woodhouse Road (access to Dell Range)
Longer-Term Strategies (5+ Years)
Dell Range Corridor Widening: two-lanes to three-lanes with center turn lane: Van Buran Boulevard to US 30
US 30 and Van Buren Intersection Improvements
US 30 Access: Reposition property access to/from US 30 Service Road with upgrades to Hinesley Road (access to Whitney Road) and Woodhouse Road (access to Dell Range)
US 30 and Saddle Ridge Trail Intersection Improvements: Modify intersection configuration from full-movement to ¾ movement, not allowing side street through or left turn movements.
US 30 and Hayes Avenue Intersection Improvements congruent with Charles Street upgrades
US 30: Christensen Road to UPRR Overpass Widen to five-lane configuration with center turn-lane
County Roads: Upgrades and reconstruction dirt/gravel roads to paved streets in partnership with private development

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