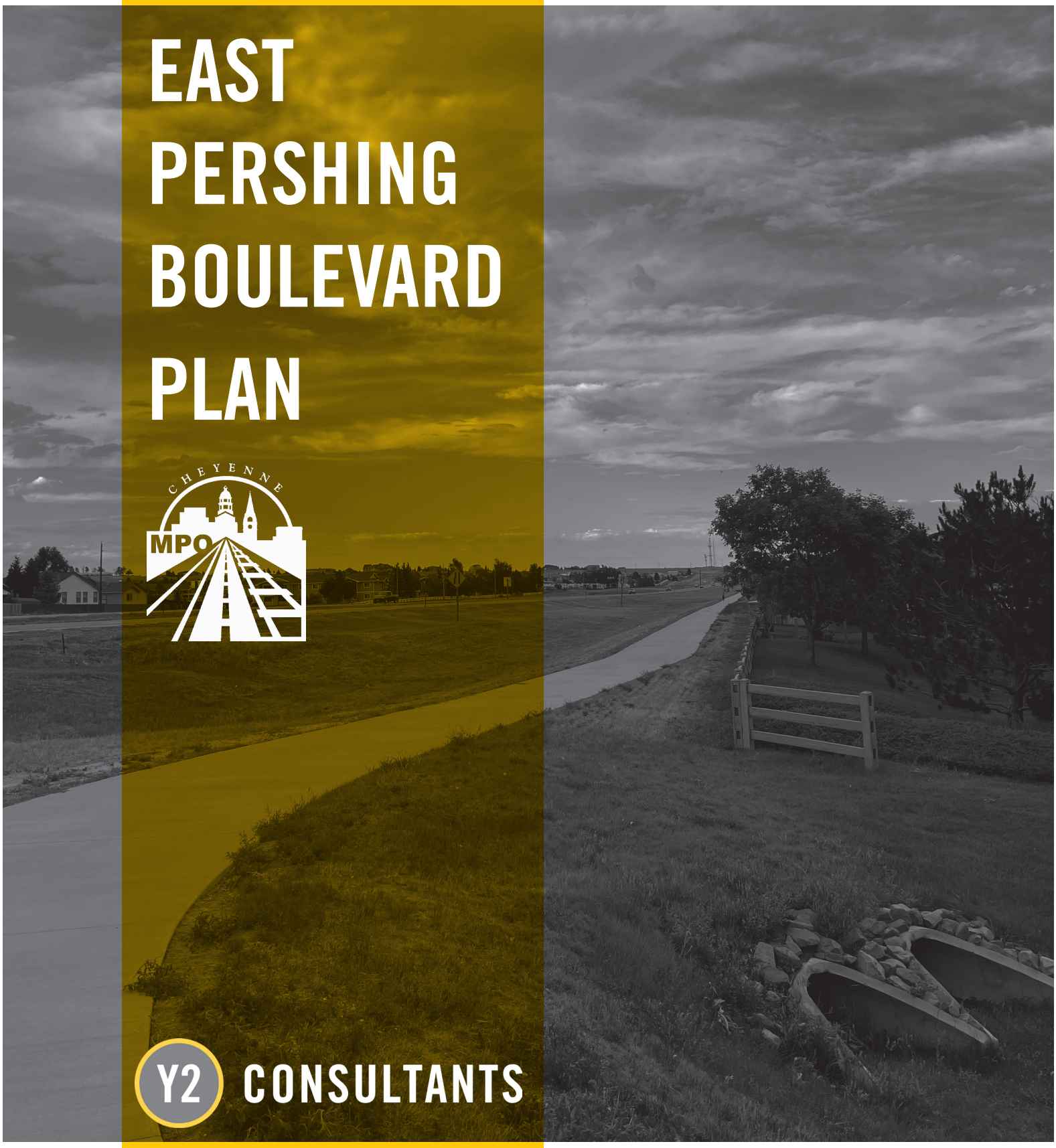
FALL, 2022 - CHEYENNE, WYOMING

EAST PERSHING BOULEVARD PLAN



Y2 CONSULTANTS

ACKNOWLEDGEMENTS

CITY OF CHEYENNE ENGINEERING
CITY OF CHEYENNE PLANNING
AND DEVELOPMENT

CHEYENNE METROPOLITAN
PLANNING ORGANIZATION

LARAMIE COUNTY
PUBLIC WORKS

LARAMIE COUNTY
SCHOOL DISTRICT #1

WYOMING DEPARTMENT
OF TRANSPORTATION

DISCLAIMER NOTICE

Y2 Consultants and the Cheyenne Metropolitan Planning Organization (MPO), City of Cheyenne, and Laramie County have developed this report for the use of the MPO and the City of Cheyenne to support planning efforts and future design for East Pershing Boulevard. Some additional data collection and validation, and design refinement will be required during the final design phase, and some plan recommendations may change or be altered during final design.

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

OVERSIGHT COMMITTEES

During the course of the project, meetings were held with steering committee members at milestones and to discuss critical design related decisions. Members of the steering committee were meant to represent the public agencies that would be affected by the outcome of the project. Agencies present at steering committee meetings were as follows:

- Cheyenne Metropolitan Planning Organization
- City of Cheyenne Engineering
- City of Cheyenne Planning and Development
- Laramie County Public Works
- Laramie County School District #1
- Wyoming Department of Transportation

Steering committee members were informed of the consultants findings and provided oversight in decision making to guide the project to successful completion. The consultant team also provided presentations to both the MPO Citizens Advisory Committee and Technical Advisory Committee to inform and address any concerns or issues they had regarding the projects direction.

OTHER CONTRIBUTING AGENCIES

Other public agencies consulted during the course of the project included:

- Cheyenne Board of Public Utilities
- Cheyenne Transit Program

A special thanks to Laramie County School District No. 1, specifically Saddle Ridge and Baggs Elementary schools and their staff, for their input and the use of their school facilities for public meetings.

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PREFACE

This study focuses on East Pershing Boulevard between US 30 and Christensen Road as shown in the figure below. The study was commenced in July of 2021 on the behalf of the Cheyenne Metropolitan Planning Organization (MPO) and concluded with the adoption of this report in late 2022.

East Pershing Boulevard has been subject to significant growth in residential and industrial development within the immediate vicinity. This, combined with the recent extension of Christensen Road from US 30 to the Campstool Road / I-80 Interchange, has had direct impacts on how those in the community use the East Pershing Boulevard corridor. Based on these changes, a new vision for the future of the corridor that meets the needs of local citizens and the public is needed.

This report will undertake a comprehensive review of the current and future traffic demands, as well as the needs of non-motorized users along the corridor. The final goal of this project is to develop a conceptual design for the future of East Pershing Boulevard that meets the needs and desires of the community.

As part of this report, preliminary engineering plans were produced to represent the final recommendations for the corridor, found in Appendix A. There is currently no estimated timeline for the final design and implementation of the outcomes of this plan.

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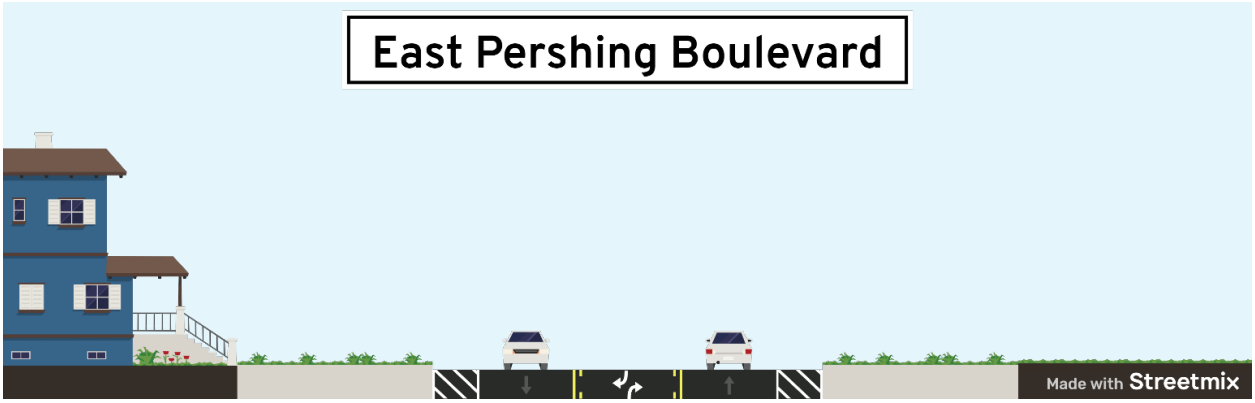


EXISTING CONDITIONS

East Pershing Boulevard, within the limits of the project, is classified as a Minor Arterial. The allocated right of way for the roadway is approximately 100' throughout the corridor, with a section near Whitney Road deviating from that standard width to 80'. The three-lane section currently conveys from 11,300 vehicles near US 30 to about 1600 vehicles per day near Christensen Road. This three-lane section is ubiquitous throughout the length of the corridor, providing a 6' shoulder and 12' driving lane on either side of a 14' shared turn lane. While there are sections of pedestrian accommodations provided sporadically along the corridor, its location and width are not consistent.

KEY POINTS OF INTEREST & TRIP GENERATORS

There are a number of key points of interest and trip generators along the corridor for special consideration in our review. There are numerous High Density Residential Developments in the vicinity of the corridor including:

- Cheyenne Ranch
- Pershing Pointe
- Sunrise Estates
- Dakota Crossing
- Saddle Ridge Phases I & II

As a result, a number of schools have been built in close proximity to the corridor including:

- Baggs Elementary School
- Bain Elementary School
- Sunrise Elementary School
- Saddle Ridge Elementary School
- Platted elementary school part of Phase II of Saddle Ridge

The latest addition to the corridor contributing to a demographic change of the typical user is the opening of the Kiwanis Park. Currently undergoing its master planning phase, once built out it will be a large draw for pedestrians from the surrounding community.

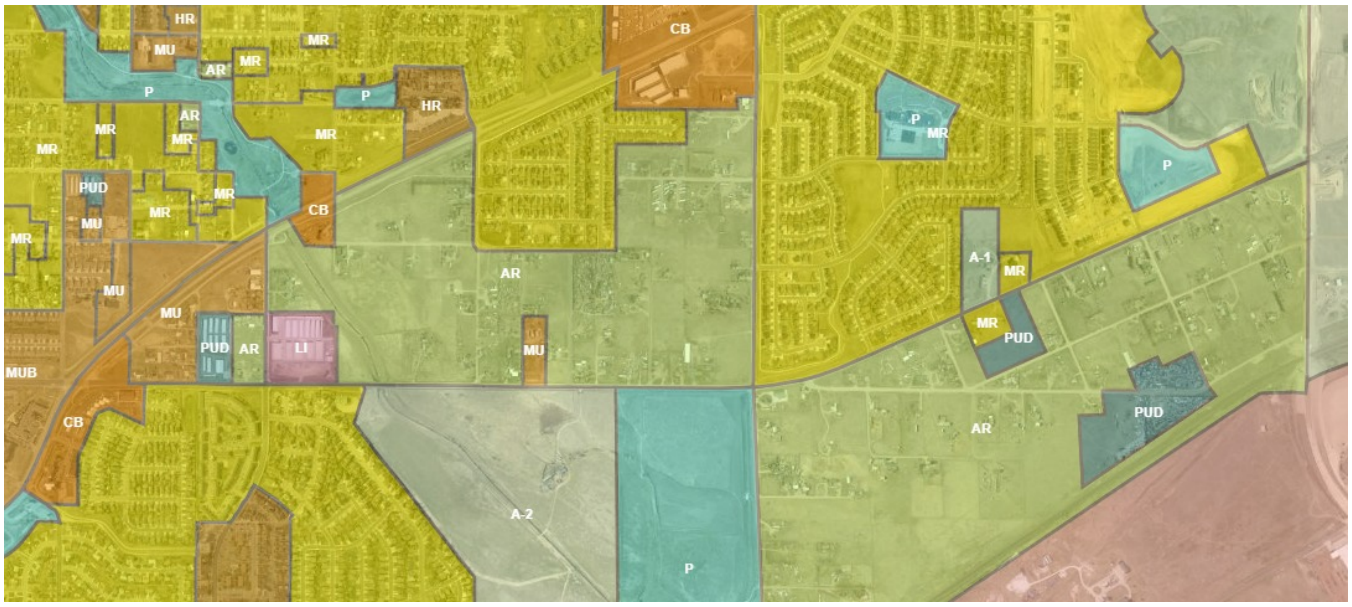
JURISDICTIONAL BREAK UP

The boundary between city and county jurisdictions has been gradually changing as the city annexes more land in conjunction with subdivisions and developments that want to tie into city owned and operated infrastructure. Currently, ownership of East Pershing Boulevard is weighted equally between the city and county; however, the break up is dispersed rather than a clean separation.

ZONING AND DEVELOPMENT

The existing zoning along the corridor is divided between two general types, Medium Density Residential and Agricultural/Agricultural Residential, with a few exceptions mixed in. These zones depict the story of East Pershing Boulevard's transformation over the past decade, and likely future chapters as well. Property in the vicinity of East Pershing Boulevard has been undergoing subdivision and redevelopment over the past few years, and the trend is likely to continue with current housing trends. Other uses along the corridor include Light Industrial, Mixed Use, and Public Lands (East Cheyenne Park).

The 2.3-mile corridor can be split into three distinct sections based on the status of development within



the region. These sections are US 30 to Dry Creek, Dry Creek to Whitney Road, and Whitney Road to Christensen Road.

US 30 TO DRY CREEK

The west side of the corridor is home to the Cheyenne Ranch subdivision, Pershing Pointe townhouses, and Sunrise Estates and is, for the most part, fully developed. The south side of the roadway through this segment, with the high-density subgdivisions and help of developers, has been provided detached pedestrian accommodations. However, as a result of this piecemeal approach, the location and width of the sidewalk varies and is substandard when reviewed against the current City of Cheyenne Unified Development Code (UDC). The north side of the corridor through this segment does not currently have pedestrian accommodations.

INTERSECTION WITH TAFT/POLK AVENUE

The Taft/Polk Avenue intersection is the only signalized intersection along the corridor other than US 30. With the recent implementation of the greenway along Taft/Polk Avenue, this intersection provides a safe crossing for pedestrians and bicyclists alike. Currently this intersection has dedicated left turn lanes but does not provide an auxiliary right turn lane.

DRY CREEK BRIDGE

Made up of 5 – 6' X 12' box culverts of approximately 55' feet in length, the bridge currently spans approximately 70' over the Dry Creek Basin. The existing width is just large enough to accommodate the three-lane road section and leaves pedestrians no choice but to walk along the shoulder directly adjacent to vehicular travel. Planning documents depict a future pathway along Dry Creek. The Dry Creek Bridge along East Pershing Boulevard would be a logical location for a future access point for this pathway.

DRY CREEK TO WHITNEY ROAD

Moving east beyond Dry Creek the corridor opens, reflective of the change in zoning from Medium Density Residential to Agricultural and Public Lands. The south side of the roadway is made up of three large parcels, two of which are private, with the third being Kiwanis Park. The north side has been slowly subdivided into numerous parcels of varying acreage, ranging from 25 acre to half an acre lots. This section does not have any pedestrian accommodations, and all non-motorized users currently make use of the shoulder.

Notable items to touch on within this section of the corridor include the Kiwanis Park and issues involving right of way and access management.

KIWANIS PARK

This property acquired by the city includes a parking area for public use. It recently underwent a Master Plan for future redevelopment; and more information on the park's future development and its interaction with the corridor is addressed later in this report.

INCONSISTENT RIGHT OF WAY

Starting at Hayes Avenue, the right of way begins to narrow from 100' down to a minimum of 80' at the intersection with Whitney Road. Right of way width is inconsistent up until Fireside Drive, though the segment north of East Pershing Boulevard was annexed by the City of Cheyenne during the development of Saddle Ridge.

ACCESS MANAGEMENT

The land along the north side of East Pershing Boulevard, east of McKinley Avenue, was divided in a decentralized manner. Many of the properties maintain their own individual, and in some cases multiple, accesses, creating an issue of separation distance between accesses, which can negatively impede traffic flow. UDC standards for a Minor Arterial lists the desired separation between accesses to be 330', while in some cases the existing separation is less then 50'.

INTERSECTION OF EAST PERSHING BOULEVARD AND WHITNEY ROAD

Currently the intersection of Whitney Road and East Pershing Boulevard is a two-way stop controlled intersection with unrestricted flow along East Pershing Boulevard. This intersection's role has changed drastically over the past decade, and is still developing today. There are three main contributors to this ever-changing relationship to the network; the development of Saddle Ridge, the construction of the Christensen Road link to the Campstool /I-80 interchange, and the creation of Kiwanis Park. These three changes have increased traffic volumes, changed existing driver behaviors, and will introduce more pedestrians to the interactions of the intersection.

The opening of Kiwanis Park will create a large trip generator for vehicles and pedestrians alike. Given the higher density developments and construction of the greenway along Whitney Road, a large number of pedestrians will be crossing East Pershing Boulevard at the intersection with Whitney Road.

WHITNEY ROAD TO CHRISTENSEN ROAD

East of Whitney Road, East Pershing Boulevard is split between the existing properties on the south side of the roadway that have remained zoned as Agricultural Residential, and the Saddle Ridge Subdivision to the north that has been rezoned to Medium Density Residential. This includes a recently submitted plat for the Pershing Valley subdivision that exists between Saddle Ridge Phases I & II. Saddle Ridge has had a profound effect on the corridor, with Phase II currently under construction along with the recently completed Dixon Drive. Another recent development includes the preliminary approval of a new medium density subdivision along Christensen Road just north of the corridor. The 2021 opening of the new connection to I-80 has increased traffic volumes and changed how drivers get to and from where they need to go, and how they interact with the East Pershing Boulevard corridor.

Along this segment of the corridor the only pedestrian accommodations are those created in conjunction with the Saddle Ridge subdivision. There is no sidewalk east of Fireside Drive. As part of the construction of the new intersection at Christensen Road, a 10' sidewalk connection was installed for future connection to the west of Christensen.

TRAFFIC ANALYSIS

CORRIDOR DESCRIPTION

- The western segment, from US 30 to Taft/Polk Avenue, has the highest traffic volume but the least potential for additional growth due to the current level of development in the area.
- The central section from Taft/Polk Avenue to Whitney Road crosses the Dry Creek flood-way and has some potential for traffic growth from infill development on the north and a new 105-acre City park on the southwest corner of Whitney Road. A greenway trail is proposed to continue south from US 30 along Dry Creek, passing East Pershing Boulevard, until it intersects with other proposed greenways near the railroad.
- The east segment from Whitney Road to Christensen Road has low traffic volumes now, but has high growth potential due to completion of the Saddle Ridge subdivision by 2025, and future development further east. Properties south of East Pershing Boulevard are rural residential lots with some limited infill or redevelopment potential.
- The December 2020 opening of the Christensen Road connection south to I-80 and north to US 30 significantly altered fastest routes to various destinations, and also altered traffic patterns on East Pershing Boulevard. This new corridor connection can be expected to increase development along the Christensen Road corridor.

TRAFFIC VOLUMES AND REGIONAL TRAFFIC MODELING

Current traffic volumes on East Pershing Boulevard range from 11,300 ADT near US 30 to about 1600 ADT near Christensen Road.

The Cheyenne MPO maintains a traffic model of the regional traffic network. A comparison of the 2021 field traffic counts and ADT estimates versus 2019 model forecast ADT shows good model calibration and reasonable model agreement with existing volume counts. Model growth factors for the year 2045 are consistent with expectations in a developing rural-to-urban corridor.

East Pershing Corridor Daily Traffic Volumes and Forecasts

Road System Link	2021 Average Daily Traffic Est. (ADT)	2019 Model ADT	2045 Model ADT	2021-2045 Model Growth Factor
East Pershing, College to US-30	13,739	12,122	16,226	1.34
East Pershing, US-30 to Grasslands	11,319	10,666	15,903	1.45
East Pershing, Grasslands to Pierce	10,365	10,666	15,903	1.45
East Pershing, Pierce to Polk-Taft	9410	9935	14,979	1.47
East Pershing, Polk-Taft to Hayes	5205	5672	10,830	1.84
East Pershing, Hayes to Wenandy	-	5566	10,011	1.74
East Pershing, Wenandy to McKinley	-	5566	10,011	1.74
East Pershing, McKinley to Whitney	4822	5561	9838	1.71
East Pershing, Whitney to Tate	-	3844	7532	1.89
East Pershing, Tate to Fireside	2744	3235	7122	2.11
East Pershing, Fireside to Foster	-	3235	7122	2.11
East Pershing, Foster to Huisman	-	3235	7122	2.11
East Pershing, Huisman to Farthing	2222	3235	7122	2.11
East Pershing, Farthing to Dickson	1609	2259	5985	2.52
East Pershing, Dickson to Christensen	1609	2259	5985	2.52
East Pershing, Christensen to Red Mesa	-	2259	1251	-0.41

EXISTING TRUCK PERCENTAGES

Vehicle classification counts were completed in May 2021 (see table below). This percentage would have been influenced by ongoing construction of the Saddle Ridge subdivision. When construction is completed, there will be fewer trucks.

East Pershing Boulevard Commercial Truck Percentages

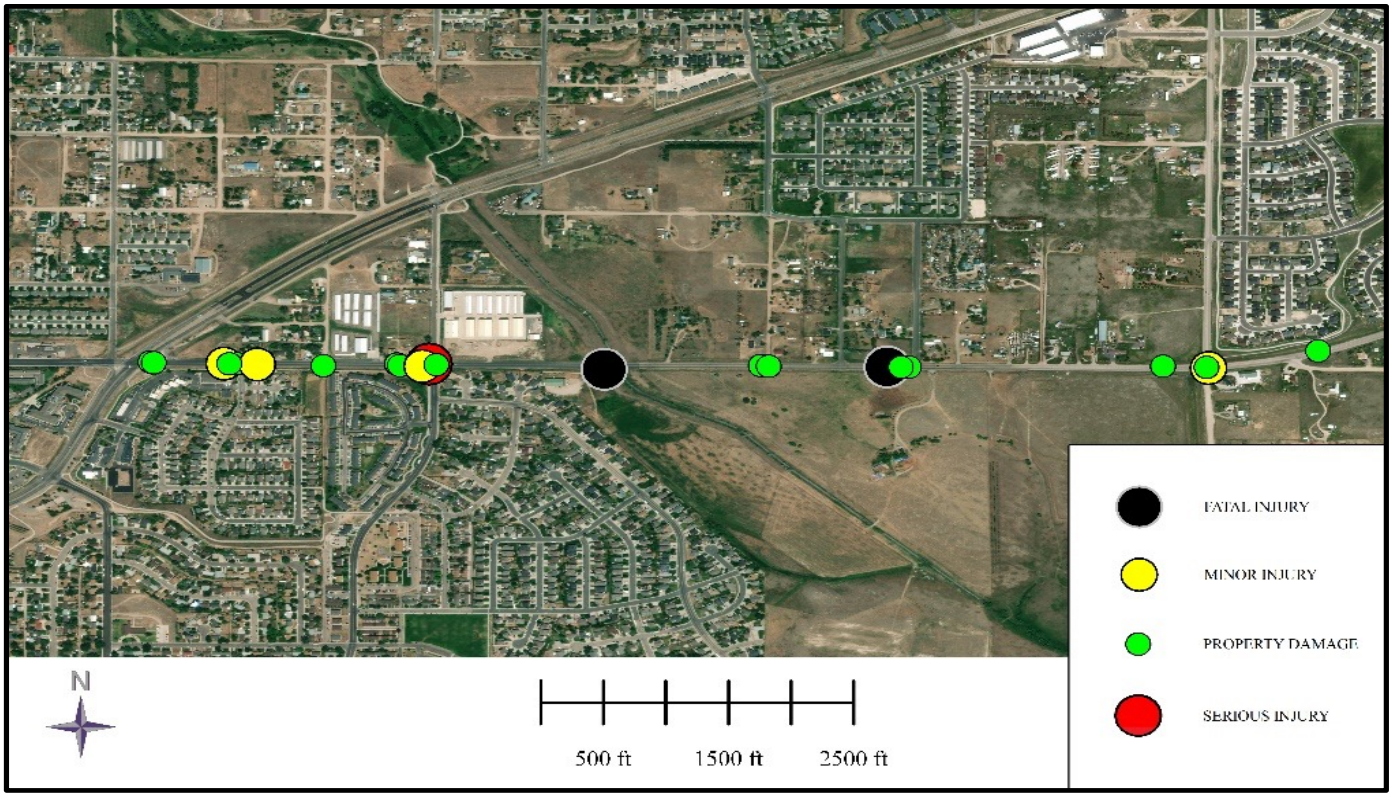
East Pershing Blvd (Counter Location)	Eastbound Commercial Truck %	Westbound Commercial Truck %	Two-Way Average
West of Polk-Taft Avenue	3%	1%	2.0%
West of Hayes Avenue	3%	3%	3.0%
West of Whitney Road	2%	2%	2.0%
West of Fireside Drive	5%	4%	4.5%
West of Farthing Road	4%	4%	4.0%
West of Christensen	4%	6%	5.0%

CRASH HISTORY

WYDOT records from 2011 through June 2021 list 25 crashes between US 30 and Tate Road: 2 fatalities, 1 serious injury, 4 minor injuries, and 18 property damage collisions.

Fatalities: Two fatal crashes occurred during darkness on the straightway segment between Polk-Taft and Whitney Road. The first fatality occurred at 2AM in March 2017 when a driver left the roadway in clear dry conditions and struck the end of a guardrail at the Dry Creek culvert. The second fatality occurred at 5:37 PM in November 2017 in a head-on crash during a snowfall in slushy conditions west of McKinley Avenue.

Serious Injuries: The only serious injury occurred in a right-angle crash at the East Pershing Boulevard / Taft/Polk intersection at 6:24 PM on Feb 15, 2019. Conditions were clear, dry, and dark but with street-lights.



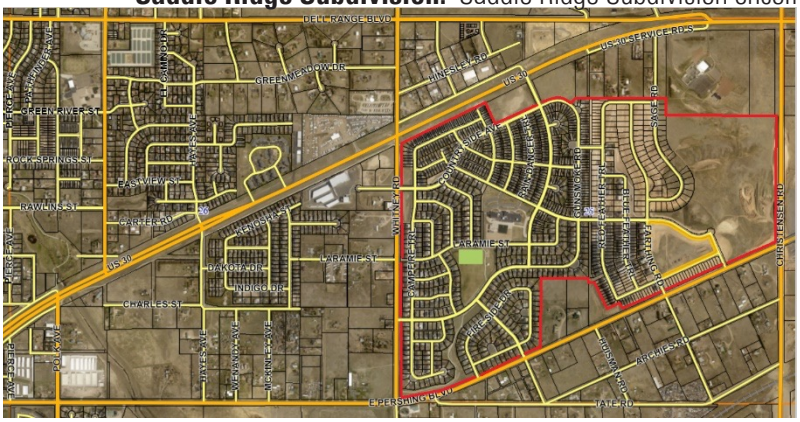
CRASH DISTRIBUTION PATTERN

- Taft/Polk Avenue Intersection: Four crashes were associated with the Taft/Polk Avenue intersection. Three were rear end crashes common at signalized intersections, with one resulting in minor injury. The remaining crash was the angle collision with serious injury described previously.
- Grasslands Parkway Intersection: This intersection area experienced four crashes with two minor injuries. Two were rear end crashes that occurred in snowy conditions.
- Whitney Road Intersection: Three opposing direction angle crashes were associated with the Whitney Road Intersection. All three occurred in daylight. One resulting in minor injury.
- No crashes had been recorded by WYDOT between Tate Road and Christensen Road at the time of requesting data for this report.
- US 30: The US 30 intersection is not part of this study.

CURRENT DEVELOPMENTS

Two major developments are currently underway along the study corridor: Saddle Ridge Subdivision and Kiwanis Park. These developments will load traffic onto the study corridor and interact with each other via the East Pershing Boulevard/Whitney Road intersection. Because these developments are both served by the greenway and only 300 feet apart, we anticipate heavier traffic by pedestrians and bicycles.

Saddle Ridge Subdivision: Saddle Ridge Subdivision encompasses approximately 380 acres of Section 25, between East Pershing Boulevard and US 30, and between Whitney Road and Christensen Road. The Saddle Ridge 1 Subdivision plat, at the northeast corner of Whitney Road and East Pershing Boulevard, was recorded on March 6, 2006. As of this writing, Saddle Ridge 14 is still in draft form, but construction of the entire project from Whitney Road to Christensen Road is expected to be completed by 2025. Traffic volumes at the future East Pershing Boulevard/Dixon Drive intersection were developed based on estimated trips from the Institute of Traffic Engineers' (ITE) Trip Generation Manual, Land Use 210 (Single Family Homes) and land use 520 (Elementary School), with traffic evenly divided three ways between Dixon Drive and two new roadways on Christensen Road.



Kiwanis Park: The City of Cheyenne proposes a new 105-acre city park on the southwest corner of East Pershing Boulevard and Whitney Road. As of this writing, the park is still an undeveloped open space, with a 50-space gravel parking lot and driveway located on the south side of East Pershing Boulevard 1300 feet west of Whitney Road (Aerial Image).

Park development plans are yet to be determined and exact traffic is not yet known. Institute of Traffic Engineers' (ITE) Trip Generation Manual estimates a typical 105-acre City Park (Land Use 411) will generate the following traffic volumes:

Traffic Estimate: 105-Acre City Park (ITE Land Use 411)				
Total Daily Vehicles	AM Entering	AM Exiting	PM Entering	PM Exiting
198	26	21	21	16

Major Corridor Areas and Precent of Growth in Corridor Traffic Generation	Percent of Corridor Traffic Increase	Buildout Year
Northeast of East Pershing/Whitney:	57.1%	2025
Southeast of East Pershing/Whitney:	12.9%	2045
Dry Creek to Whitney North	22.0%	2045
Dry Creek to Whitney South:	7.1%	2045
US-30 to Dry Creek North	13.2%	2045
US-30 to Dry Creek South:	1.7%	2045

STREET ACCESS

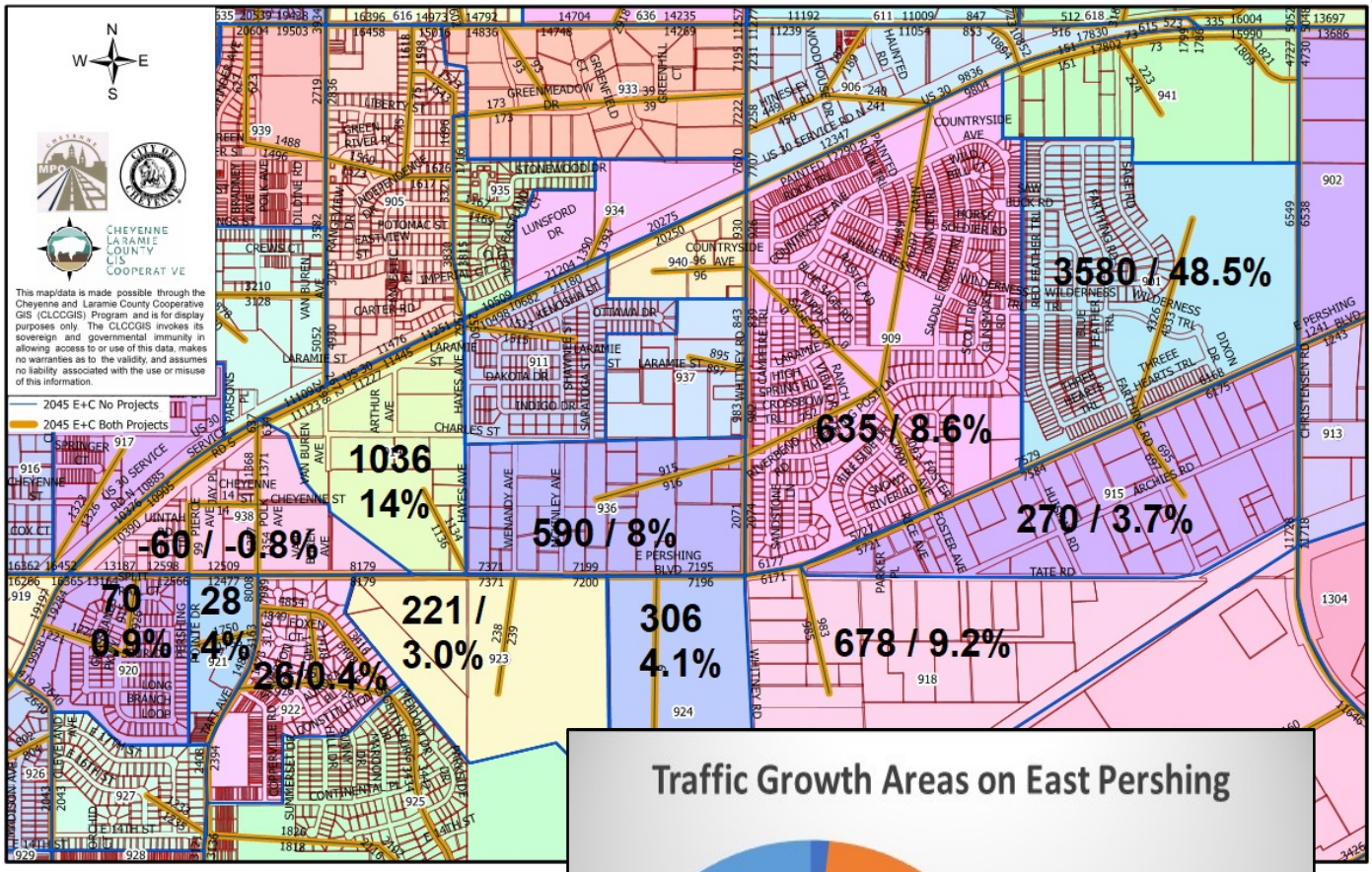
For traffic assignment purposes, this analysis will assume a future second entrance drive to the Kiwanis Park will be provided on Whitney Road, located at the existing entrance gate and 48-foot-wide concrete culvert, 990 feet south of East Pershing Boulevard (yellow arrow, shown on previous page).

TRAFFIC ASSIGNMENT

Assuming two future access points, additional westbound traffic will be assigned to the East Pershing Boulevard driveway, and northbound and eastbound traffic will be assigned to a new Whitney Road access drive.

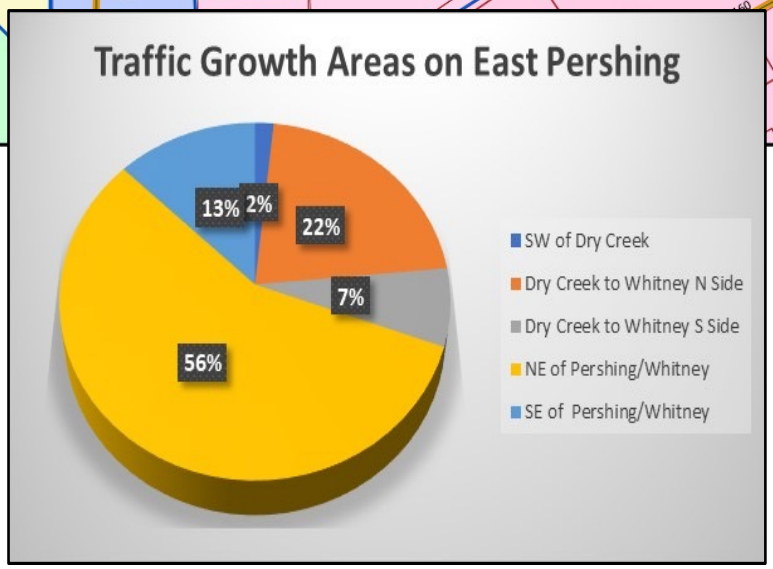
PROJECTED BUILDOUT YEARS

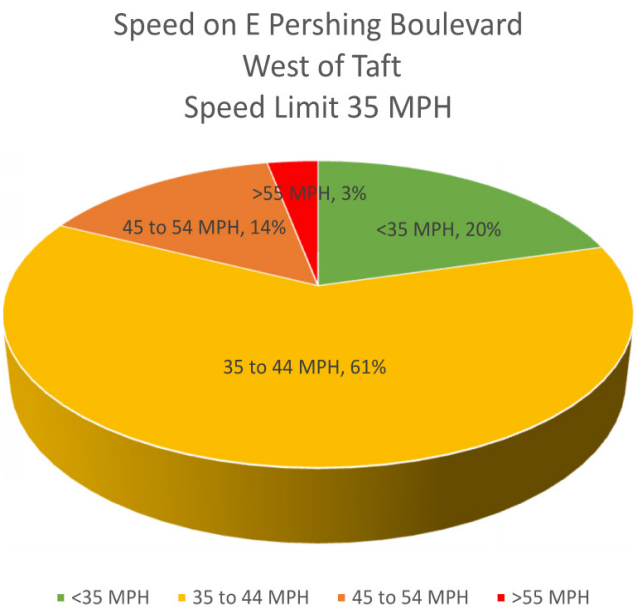
The Cheyenne MPO Traffic Model provides estimated future dwelling units and employment by type. Using that data we can plot the new traffic feeding the corridor by percentages from each adjacent zone. Current plans call for full buildout of the Saddle Ridge community by 2025. Remaining areas have no firm construction date and can be assumed to infill between 2021 and 2045.

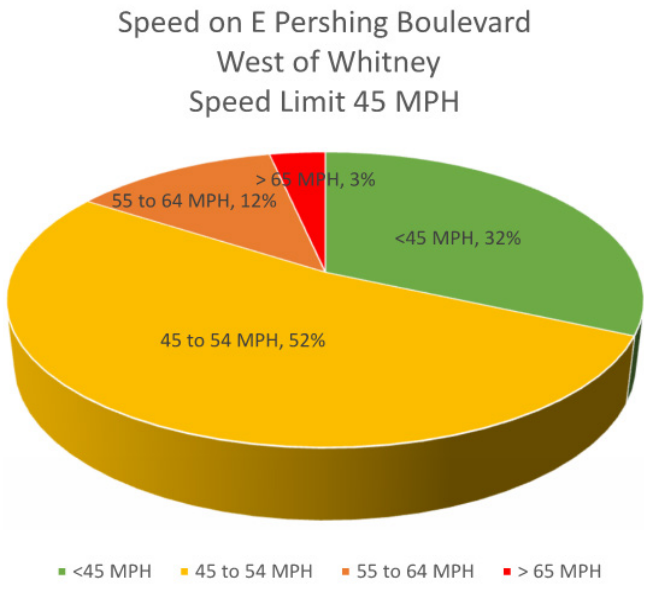


Legend: XXX / X.X%

(Traffic growth) / (Percent traffic growth)





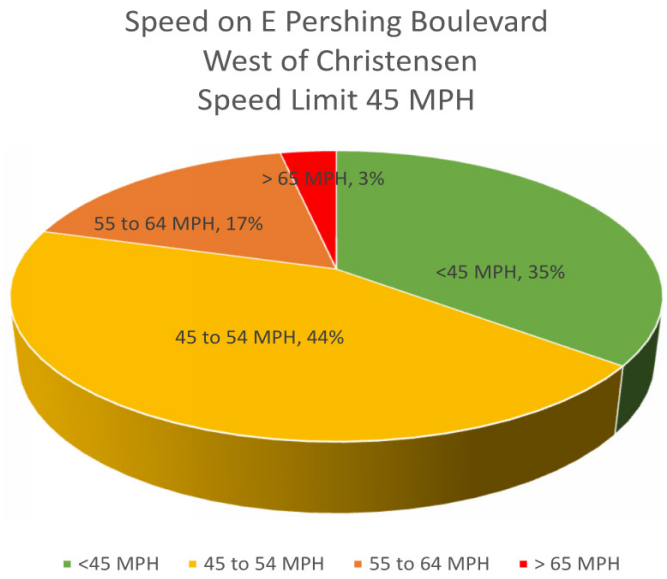


EXISTING TRAFFIC SPEEDS

Vehicle speed studies were completed in May 2021. Speed limits on East Pershing Boulevard are 35 MPH from US 30 to Taft/Polk Avenue, and 45 MPH from Taft/Polk Avenue to Christensen Road. Speed studies show a high percentage of speeding vehicles, with many exceeding 65 MPH or even 75 MPH.

The high percentage of speeders could be due to several factors:

- Nearby Signals: Urban signalized corridors on College Drive and US 30 may frustrate drivers' forward progress. The lack of stop control on East Pershing Boulevard allows them to travel at high speeds.
- Rural Road Geometry: East Pershing Boulevard was previously a rural highway, with shoulder and drainage ditch, with development set back from the roadway. There is no "side friction" to constrain speed.
- Speed Desensitization: Many drivers have recently left higher-functional class roadways (I-80 and US 30) with speed limits of 75 MPH and 55 MPH, respectively, so they may be desensitized to speed.



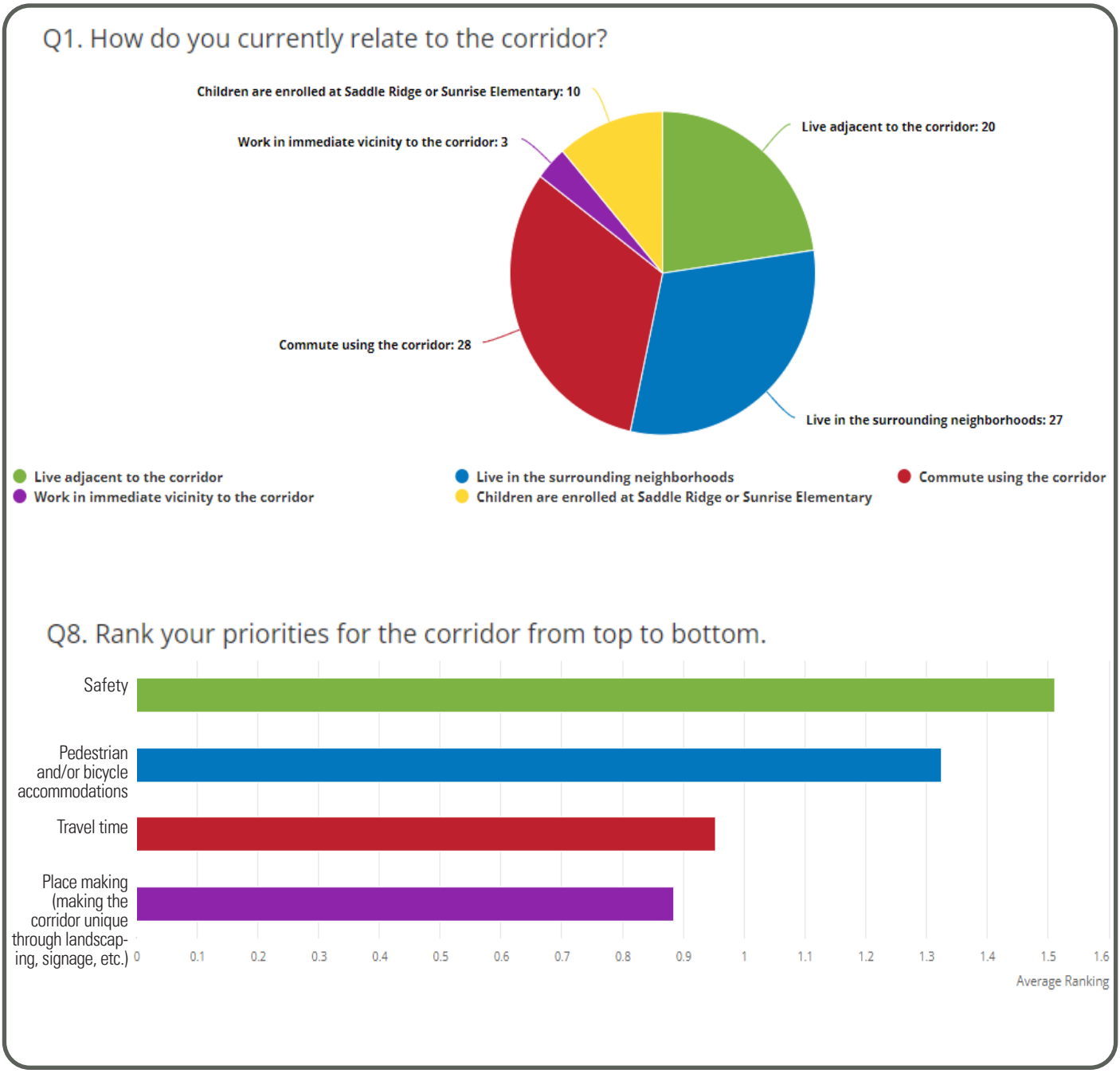
East Pershing Boulevard Traffic Speeds				
East Pershing Blvd (Counter Location)	Speed Limit	Percent Speeders	Percent Exceeding 55 MPH	85th Percentile Speed
West of Polk-Taft Avenue	35 MPH	80%	3%	49 MPH Eastbound 43 MPH Westbound
West of Hayes Avenue	45 MPH	90%	35%	59 MPH Eastbound 61 MPH Westbound
West of Whitney Road	45 MPH	67%	15%	59 MPH Eastbound 52 MPH Westbound
West of Fireside Drive	45 MPH	74%	24%	69 MPH Eastbound 59 MPH Westbound
West of Farthing Road	45 MPH	58%	18%	60 MPH Eastbound 50 MPH Westbound
West of Christensen	45 MPH	64%	20%	55 MPH Eastbound 58 MPH Westbound

PUBLIC ENGAGEMENT

To engage and inform the public throughout the life of this project, a project web page was created using Social Pinpoint. The project web page was populated and updated as the project progressed with new information posted in line with project milestones. This information included displays and recommendations presented at public meetings and also created the opportunity for virtual engagement with surveys. The QR code on the left will take you to the landing page to access information posted during the project.

INITIAL SURVEY

An initial survey was provided to the public via the Social Pinpoint website. The survey consisted of 15 questions to solicit some initial feedback from participants ranging from how they interacted with the corridor, to their perceptions of the corridor and issues along it. The results from a few of the questions have been highlighted below. The full report can be found in the appendix.



PUBLIC MEETING

The first in-person public engagement meeting was held on Tuesday, November 2nd, from 5:30- 7:00 PM at Saddle Ridge Elementary School. Preliminary concepts were presented to the public that had been reviewed and approved by the Steering Committee. These concepts ranged from traffic calming enhancements to possible typical sections for the corridor, considering the capacity of the roadway and UDC standards.

TRAFFIC CALMING ELEMENTS

To address the critical issue of speeding along the corridor, a multitude of measures will need to be implemented. These options include:

- Increased enforcement
- Increased signage
- Speed feedback signage
- Curb and gutter
- Medians
- A roundabout

A few of these options overlap with other objectives and visions for the corridor.

GOAL / RANK	Plan Cheyenne Connect 2045 Goal Statements
MAINTENANCE / 1	Extend the life of the transportation system and promote fiscal responsibility by emphasizing maintenance over system expansion.
SAFETY / 2	Transportation facilities provide safe travel options for all residents and visitors.
EFFICIENCY / 3	Optimize the use of existing infrastructure and opportunistic funding options to make prudent investments in the transportation network to maintain system predictability.
CONNECTIVITY / 4	Develop and maintain a multimodal transportation system that provides direct, continuous, and safe connections between local and regional destinations and services.
GROWTH / 5	Stimulate growth in the economy, development, and tourism by providing a transportation system that accommodates current and future demand for the movement of residents, visitors, and goods.
RESILIENCY / 6	Design transportation facilities and networks so they are secure and resilient to impacts from manmade or natural disasters.
INTEGRATION/ 7	Integrate transportation and land use decisions to create and preserve neighborhoods that promote vibrant community character and encourage active living.
CHOICES / 8	Provide travel choices that are accessible to all travelers, promote local mobility, and reduce the impacts of transportation on the environment and neighborhoods.

ALTERNATING WIDENED SIDEWALK

An early concept considered by the steering committee due to the strong desire for pedestrian accommodations, the high potential for children using the corridor, and the future development of the Cheyenne East Park, was to provide for wider pedestrian accommodations on one side of the corridor in all segments. Under this proposed scenario, a widened sidewalk would be provided on the side of East Pershing Boulevard that provides the greatest connections for users within that segment. The opposite side would have a standard width sidewalk, also allowing an off-road connection for pedestrians.

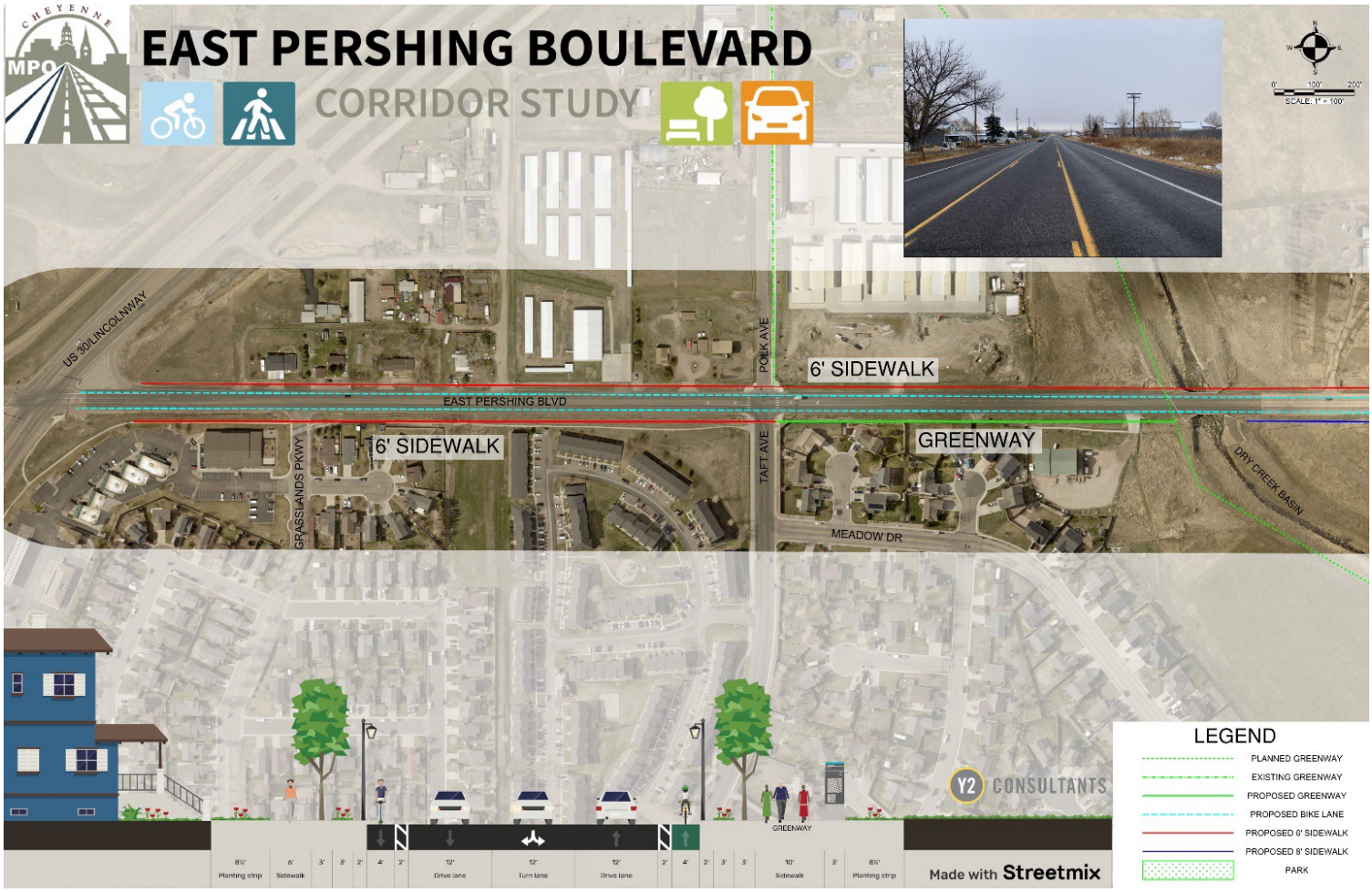
As a result of the analysis, a widened sidewalk was provided on the south side from US 30 to Whitney Road. The widened sidewalk would then switch to the north side of the road where it would continue until meeting the stubbed sidewalk at the Christensen Road intersection.

GRADE SEPARATED CROSSING

Due to the anticipated demand for a safe pedestrian crossing at the intersection of Whitney Road and East Pershing Boulevard, a tunnel underneath the intersection was reviewed. This would involve the replacement of existing culverts with a minimum 10' X 10' box culvert, and require a combination of raising the intersection and re-grading the drainage swales on the NE and SW sides to accommodate the lower entry and exits. Other issues facing this option would include contending with historically high groundwater encountered in the area, and would require the continued operation of a lift station to keep the tunnel clear of water. It is for these reasons that the tunnel option was removed from consideration.

INTERSECTION ALTERNATIVES

A few alternatives were presented for the intersection of Whitney Road and East Pershing Boulevard, including a four-way stop, a roundabout, and a signalized intersection

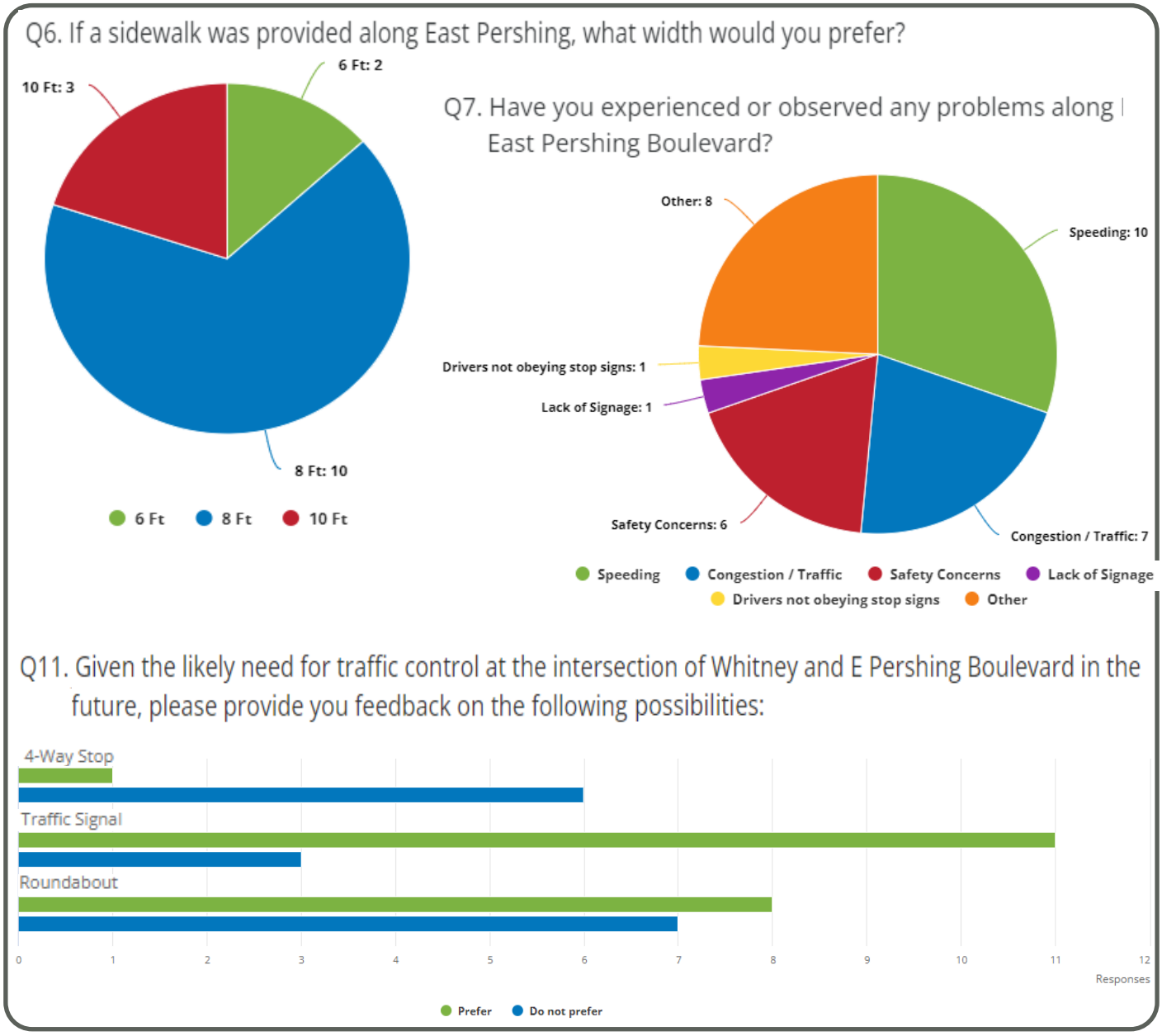


FEEDBACK

The first public meeting gave the consultant team and other steering committee members in attendance the ability to speak with members of the public and get their initial thoughts and feedback. Attendees were also able to write notes on idea boards to ensure their input was captured. The feedback identified during the meeting and from the survey confirmed many of the initial survey results, and added a few new ones:

- Issues with speeding and safety along the corridor
- Desire for pedestrian accommodations, with a preference for 8' width
- Openness to the concept of a roundabout at Whitney Road

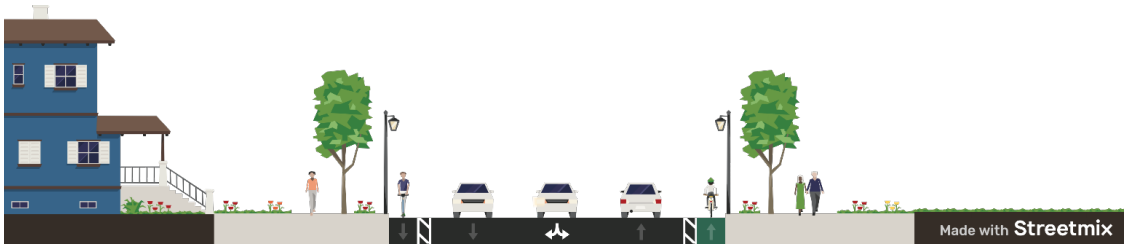
A few of the survey question results have been displayed below, while the complete results can be found in the appendix.



PHASE II

CONCEPTUAL DESIGN
PROPOSED ALTERNATIVES
DRAINAGE DESIGN

East Pershing Boulevard



CONCEPTUAL DESIGN

JURISDICTIONAL BOUNDARIES

One of the items considered during this project was a review of the jurisdictional boundaries between the City and the County. The current discontinuity of City and County jurisdiction along the corridor creates issues to implementing a uniform design throughout its length. Considering the recent trend of properties getting developed into medium density residential areas and being annexed by the city, both the County and the City agreed that the right of way for East Pershing Boulevard should ultimately be overseen by the City of Cheyenne. This allowed the roadway to be designed in line with the UDC standards.

PROPOSED ALTERNATIVES

Using results from the review in Phase I, feedback collected from the public, and direction from the steering committee, design alternatives were chosen to carry forward into conceptual design. The most notable was confirmation of the lane configuration, and general typical section for the corridor. Main elements of the typical section included the existing three-lane section, the addition of bike lanes in both directions, curb and gutter, and detached sidewalks. Lighting was another element that was reviewed for the long-term development of the corridor.

US 30 TO DRY CREEK

A widened sidewalk was identified along the south side of the roadway for this segment, however due to the current and future connections planned within the segment this width fluctuates. The only part of this segment that has not been provided a widened sidewalk is from US 30 to Grasslands Parkway, which will be upgraded to be a 6' detached sidewalk. An 8' sidewalk will be provided from Grasslands Parkway to Taft/Polk Avenue. Given the greenway along Taft/Polk Avenue and the future greenway planned for Dry Creek, a 10' path connection will be provided to facilitate this connection. The north side of the roadway will be provided a continuous 6' sidewalk through this section.

CONNECTION TO US 30

The intersection of East Pershing Boulevard and US 30 is beyond the scope of this study, however, coordination with WYDOT has occurred throughout the duration of the study. The current lane configuration will continue to align with WYDOT's need for capacity through the intersection. Bike lanes will end and begin east of the intersection to ensure bicyclists can safely transition into traffic. Sidewalk connections will be provided to each of the east side corners of the intersections to facilitate crossings.

AUXILIARY DECELERATION LANES

Based on the volume of traffic recorded during turning movements counts, and projections to the design year, auxiliary deceleration lanes for right turns were provided at Grasslands Parkway and in both directions for Taft / Polk Avenue.

DRY CREEK BRIDGE

To accommodate pedestrians on the bridge it will need to be widened. The bridgeis proposed to be widened by adding sections of pre-cast box culverts on north and soith sides to extend the existing culvert sections. Rather than being detached, sidewalks crossing the bridge will be attached to minimize costs related to the widening of the bridge. Attached sidewalks will be widened to 8', as required by the UDC, to provide buffer from the roadway.

DRY CREEK TO WHITNEY ROAD

The widened sidewalk will continue along the south side of the corridor for this segment, providing a connection to the Cheyenne East Park. This section of road is fairly straight forward with a few items of note.

CHEYENNE EAST PARK

Master planning for the new Cheyenne East Park has been on a parallel track to our review of the corridor. This effort has come a long way since its beginning and can be seen in the graphic on the left. Another element to consider is the relocation of the existing entrance of the park further to the east. The new location still observes a separation distance of 500 ft from the entrance to the roundabout and should function safely for both left and right turn maneuvers. A secondary entrance has also been provided off Whitney to the south of the roundabout and will help balance traffic flow through the intersection.

Based on the proposed full build out of this facility, the Cheyenne East Park will be a large draw for the surrounding community, and traffic generator for the corridor. For this reason, it is recommended that an auxiliary right turn lane should be installed to facilitate the volume of traffic entering the site.

ACCESS MANAGEMENT

Given the existing zoning and character along the north side of the corridor, there are numerous private accesses that serve both singular and multiple properties. There are also a few properties with multiple private accesses. While these properties have a high potential for redevelopment into higher density neighborhoods, similar to Cheyenne Ranch and Saddle Ridge, our recommendation needs to consider the properties and accesses currently in existence. The desired access separation for a minor arterial in the Cheyenne UDC is 330ft. Currently none of the accesses off East Pershing Boulevard from McKinley Avenue to Whitney Road meet this separation distance, and some are as close together as 50 ft.

(See Apendix for larger graphics.)

The above design is our recommended approach to help consolidate accesses by formalizing and making use of the existing shared accesses. Driveways unable to be consolidated, have been provided concrete entrances per UDCs guidelines. Local roads within the section; Hayes Avenue, Wenandy Avenue, and McKinley Avenue, have been provided curb fillets in accordance with UDC guidelines.

INTERSECTION WITH WHITNEY ROAD

There are two issues at the forefront when considering how to address the Whitney Road intersection for the long-term, capacity and safety.

CAPACITY

The intersection with Whitney Road will begin to encounter traffic related issues following the full build out of Saddle Ridge, anticipated to be around the year 2026. To address this issue, three alternatives to the existing two-way stop controlled intersection were reviewed; a four-way stop, a roundabout, and a signal. All of these options were found to provide an adequate level of service out to the design year with the roundabout providing the highest level of service.

During the alternative analysis phase, feedback was expressed from both the steering committee and the public that preference should be provided to the through traffic along East Pershing Boulevard. This conflicts with the proposition of a signal, which is also likely the costliest option of the three alternatives. For these reasons, a signal was ruled out of consideration. Additional feedback identified the need for all the designs to be able to accommodate a WB-67 truck (typical commercial semi-trailer) , given the existing traffic make up along the road.

SAFETY AND CONNECTIVITY

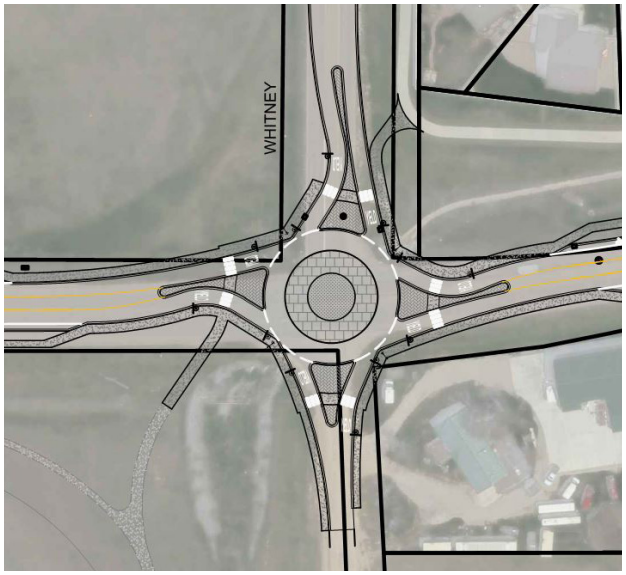
East Pershing Boulevard has been plagued by speeding and safety issues within the limits of the corridor. The public has also expressed there is a general lack of other traffic control signage along the corridor, including stop signs. These persisting issues should be considered when planning for the future of the intersection.

The full build out of East Park will draw a number of bicyclists and pedestrians from the neighborhoods to the north, using the existing greenway along Whitney Road and others traveling along the north side of the road. These users will be funneled to the intersection of Whitney Road and East Pershing Boulevard to cross the road safely. This crossing was identified by the steering committee and public as a high priority for an enhanced crossing.

When faced with this combination of factors facing the intersection, we recommended a roundabout be constructed. A roundabout will provide a physical impediment, forcing drivers to slow down and observe

speed limits. To provide greater safety for pedestrians, enhanced signage and lighting will be provided. Signage will be placed in advance of the intersection and at all pedestrian crossings.

An additional pedestrian connection was also requested by the steering committee to extend from the roundabout to the existing pathway adjacent to Whitney Road.



RIGHT OF WAY ENCROACHMENT

Due to both the geometric shift and the general space requirement of a roundabout, there will be some minor encroachment on all four associated properties. The northwest and southeast property owners will have minor taking associated, mostly for pedestrian accommodations. The southwest corner is the proposed park property. As stated previously, public park property is not meant to be taken for use in public infrastructure, however, the intent of the roundabout is mainly to facilitate pedestrian safety through vehicular speed reduction, and to provide a protected crossing. A large majority of the associated property is already encumbered by Whitney Road. The northeast corner is similarly owned by the City of Cheyenne as a result of a development requirement of Saddle Ridge and should not be an issue.

WHITNEY ROAD TO CHRISTENSEN ROAD

This section of East Pershing Boulevard is largely affected by the Saddle Ridge Subdivision Phases I & II. At this point the widened sidewak is proposed to switch to the north side of the corridor to service the significant user base generated by the Saddle Ridge Development. This would provide a continuous 8' sidewalk from the existing greenway along Whitney Road to the existing 10' attached sidewalk at the Christensen Road intersection. The south side of the corridor would be provided a standard width sidewalk that will blend well with the lower density, rural residential feel. Given the issues noted, there are a few design recommendations for this segment going forward.

AUXILIARY DECELERATION LANES

Entrances to Saddle Ridge at Farthing Road and the newly constructed Dixon Drive have been recommended to have right turn deceleration lanes provided, based on turning movement counts and anticipated volumes.

TRAFFIC CONTROL MEASURES

It was identified that eastbound traffic along East Pershing Boulevard experiences a cresting effect when approaching the intersection with Tate Road. At night, the horizontal and vertical geometry along East Pershing Boulevard, combined with the opening at the intersection with Tate Road, can cause drivers to believe the road continues straight rather than continuing the turn to the northeast. To address this issue, we are recommending that curve warning signs, such as chevrons, be provided just before and after the intersection with Tate Road to ensure drivers can effectively navigate the roadway.

Speed management is also of high importance along the corridor. Speed limits need to be clearly displayed for drivers accessing the corridor from the Campstool / I-80 Interchange. Speed limit signage needs to be implemented just west of the Christensen Road intersection. Given the roundabout recommendation at Whitney Road, speeds will need to be reduced in advance of the intersection. Signage will be implemented just after Farthing Road to warn drivers of the reduction of speed to 30 MPH to navigate the roundabout. Variable speed feedback signage along this section of roadway is recommended as a short-term solution, however, speeds should be observed to evaluate whether it should remain in the finished condition.

EXISTING DRAINAGE CONDITIONS

The East Pershing Boulevard corridor from US 30 to Christensen Road resides primarily within the Dry Creek Drainage Basin. The easternmost part of the corridor, about 400 feet to Christensen Road, contributes to the Crow Creek Drainage Basin infrastructure. The farthest east 400 feet of the corridor was recently reconstructed, including drainage and detention, and was not reanalyzed as part of this study.

The Dry Creek Basin has strict drainage requirements due to limited capacity where it flows under the Union Pacific Railroad. As additional development is made in the Dry Creek Basin, the City of Cheyenne requires that the improved sites meter flow for the 100-year post development storm down to the 20-year pre-development storm rate. This means that, as the East Pershing corridor and surrounding area develops further, the peak runoff rate will continue to decrease.

The 1988 Dry Creek Drainage Master Plan for the City of Cheyenne quantified, modeled, and proposed long-term improvements for the major surface drainage features in the East Pershing Boulevard study corridor. The plan recommended that East Pershing Boulevard be vertically raised, and concrete box culverts be installed at the Dry Creek Crossing to allow for a flow rate of 2,720 cubic feet per second (CFS) to flow through. These improvements have been made and the existing culverts have the capacity to pass this water without overtopping the Dry Creek Bridge.

In order to inventory the existing infrastructure drainage patterns and capacities, the corridor was segmented into smaller portions and analyzed. Existing LiDAR data, supplemented with the City of Cheyenne GIS and a drone flight over the easternmost part of the corridor, was utilized to estimate the existing stormwater capacity of in the corridor. Field verification of pipe sizes was completed by measuring the pipe diameters and estimating installed pipe slopes with a level. The corridor was broken into three portions due to grade breaks and discharge points: US 30 to Dry Creek, Dry Creek to 6221 East Pershing Boulevard, and 6221 East Pershing Boulevard to 400 feet west of Christensen Road.

US 30 TO DRY CREEK

The section of the corridor west of Dry Creek behaves as two separate catchments that combine and then discharge into Dry Creek on the southwest side of the existing concrete culvert bridge. One catchment is the north side of the road. There is a ditch that runs parallel to the road, underneath side roads and accesses. Just west of the Dry Creek Bridge, two concrete culverts go underneath East Pershing Boulevard and tie to the drainage on the south side of the road. The ditch on the north side of the road carries much less capacity than the ditch on the south side. The intersection of US 30 and East Pershing Boulevard has a large, graded open area that provides drainage towards the north and then flows east, south of the corridor. The ditch continues east, collecting water from the East Pershing Boulevard corridor and developments to the south, as well as tying in with the north ditch. The Cheyenne Ranch and Pershing Pointe townhouses have detention ponds that outlet into this ditch. The outlet pipe into Dry Creek is smaller in diameter than many of the culverts leading into it. There is some storage occurring in this ditch during large storm events, metering the flow into the creek.

Figure 1: Major Drainage Features from US 30 to Dry Creek

Table 2: Major Drainage Features from US 30 to Dry Creek Capacity Estimates

Location	Type and Size	Slope (ft/ft)	Estimated Capacity (CFS)
Grasslands Parkway, South Ditch	RCP, 42"	0.06	240
Cheyenne Ranch, South Ditch	RCP, 42"	0.02	130
Pershing Pointe, South Ditch	RCP, 34"	0.02	55
West of Dry Creek, from North to South Ditch	2 RCPs, 24"	0.004	30
Outlet into Dry Creek, South Side of Bridge	CMP, 24"	0.002	10

Notes:
1. Culverts contributing towards outlet into Dry Creek sums up to 455 CFS with a 10 CFS Outlet.
2. RCP – Reinforced Concrete Pipe
3. CMP – Corrugated Metal Pipe

DRY CREEK TO 6221 EAST PERSHING BOULEVARD

As the corridor proceeds east of Dry Creek, it continues to slope down for another 0.3 miles, to the lowest elevation of the corridor. This low spot is just on the north side of 5909 East Pershing Boulevard, which is known as the Hess property. Due to this topographic feature, the Hess property receives runoff from the corridor and ponding can be seen in the aerial imagery of the project corridor (see the figure on page 31). Not only is this property receiving runoff from the road corridor itself, but from the properties to the north as well. There are culverts south of 5320 East Pershing Boulevard that also feed south, crossing the undeveloped Walden property, and draining towards the structures on the Hess Property. The Dakota Crossings Subdivision drains toward the south. Wenandy Avenue carries a significant amount of storm-water on the east and west side of this north-south road through multiple culverts on both sides under all of the property accesses. Wenandy Avenue has a culvert on the east and west side of the connection with East Pershing Boulevard that drains south. McKinley Avenue also drains water from the north. The McKinley Avenue connection with East Pershing Boulevard has two culverts on the east side that drains south. All of the accesses to the east of McKinley Avenue, according to the LiDAR data, are draining towards McKinley Avenue and diverted south at the previously mentioned culverts. To the east of the access at 6221 East Pershing there is a change in stormwater diversion towards the East Park property and Whitney Road.

Table 2: Major Drainage Features from US 30 to Dry Creek Capacity Estimates

Location	Type and Size	Slope (ft/ft)	Estimated Capacity (CFS)
5320 East Pershing, Draining South	3 RCPs, 36"	0.03	210
West Side of Wenandy Ave	RCP, 36"	0.01	70
East Side of Wenandy Ave	RCP, 36"	0.005	50
East Side of McKinley Ave	2 RCPs, 24"	0.01	40
Total capacity towards the low spot in the corridor is estimated at 370 CFS			

6221 EAST PERSHING BOULEVARD TO 400 FT WEST OF CHRISTENSEN ROAD

East of the access on 6221 East Pershing Boulevard up to the new Christensen Road construction, stormwater is directed southwest of the Whitney Road/East Pershing Boulevard intersection. There are three concrete culverts approximately 300 feet west of the Whitney intersection. These culverts receive water from the north side of Pershing and drain it south into the East Park Property.

The intersection of Whitney Road and East Pershing Boulevard is a drainage hub for this corridor. There are several detention ponds on the east side of Whitney Road that drain to the south from US 30 towards East Pershing Boulevard. Just north of the intersection on Whitney, there is also a large curb cut, surface draining into the northeast corner of the intersection. Much of Saddle Ridge drains into this area from the east. There is one culvert from the east that collects stormwater and drains into this intersection as well.

The Saddle Ridge Subdivision is a recent development and has been following the current requirements per the City of Cheyenne UDC Drainage Criteria. The final drainage report for the 16th Filing of Saddle Ridge shows two ponds taking stormwater runoff from the development. Just west of Red Feather Trail, there is a pond that drains toward the west and into the culverts under East Pershing Boulevard and Whitney Road and then south in the Dry Creek Basin. Once Farthing Road is reached, the drainage from that point towards the east will be collected in a detention pond on the northwest corner of the East Pershing Boulevard and Christensen Road intersection and drain south into Crow Creek.

East of Whitney Road on the south side of the corridor are residential lots that are several feet lower in elevation than the road. This area has historical drainage issues and ponding. There are no culverts or other stormwater infrastructure from this area contributing to stormwater flow in the corridor itself.

(See Figures 3 and 4 on page 31.)

Location	Type and Size	Slope (ft/ft)	Estimated Capacity (CFS)
300' West of Whitney	3 RCPs, Elliptical (48" Equivalent)	0.002	180
Whitney/Pershing Intersection	4 RCPs, Elliptical (48" Equivalent)	0.01	450
Notes: 1. Whitney/Pershing Intersection is the drainage hub, receiving stormwater flow from the north and east.			

Table 3: Major Drainage Features from 6221 East Pershing Boulevard Capacity Estimates

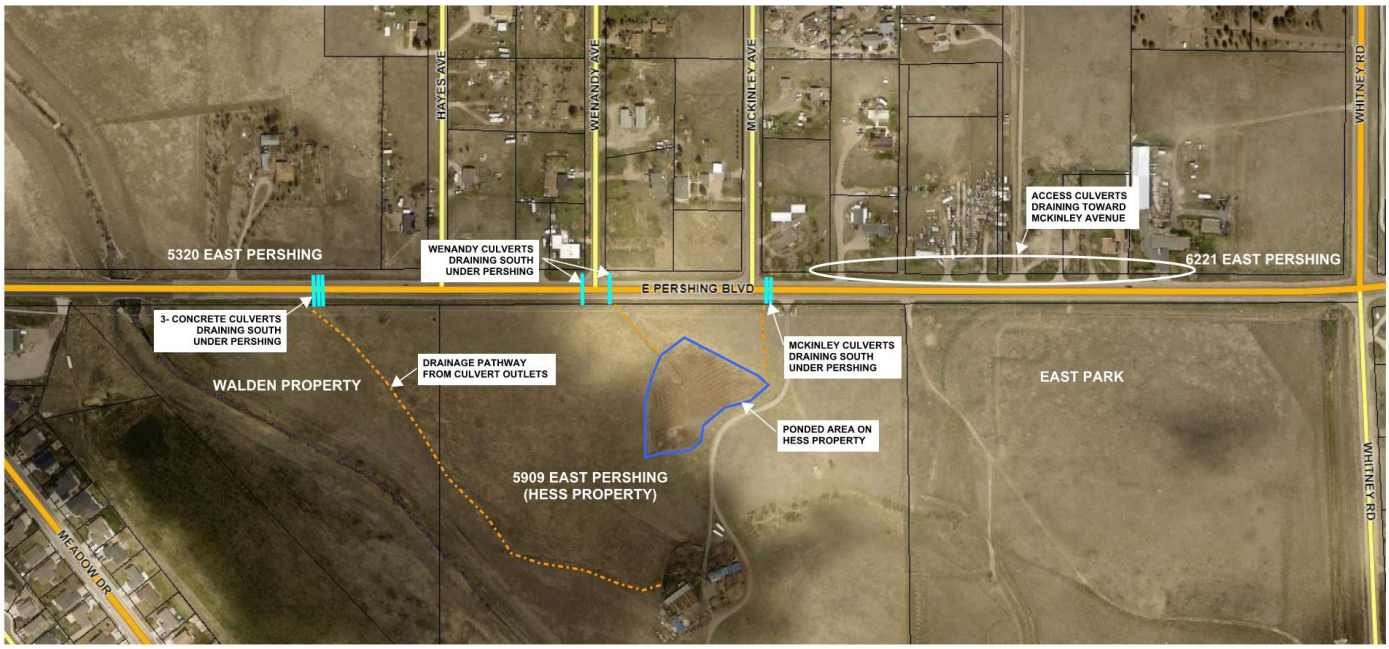


Figure 3: Major Drainage Features from Dry Creek TO 6221 East Pershing Boulevard

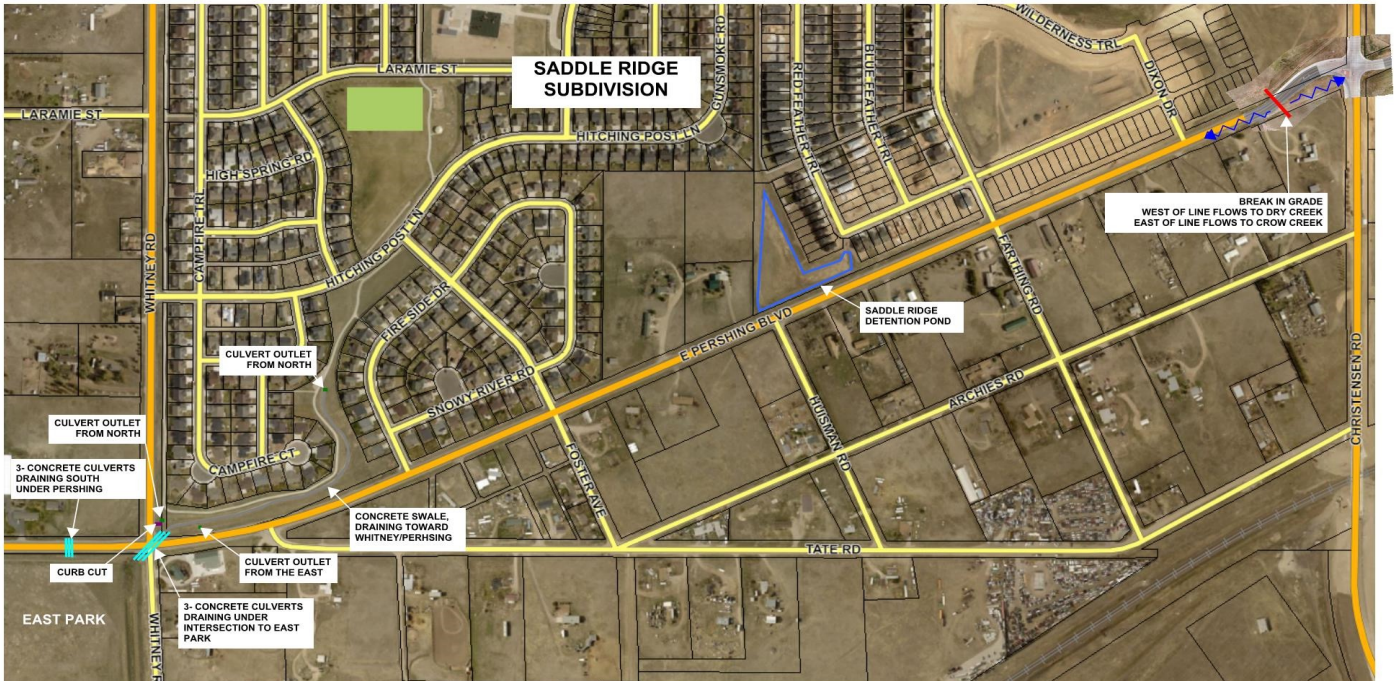


Figure 4: Major Drainage Features from 6221 East Pershing Boulevard to 400 ft west of Christensen Road

PROPOSED DRAINAGE DESIGN

Due to the sensitivity of the Dry Creek Drainage Basin, the design emphasis was to avoid increasing downstream impacts. The city engineering department did not see the need for extensive stormwater infrastructure to convey stormwater runoff for the new corridor design. The design approach was to keep it simple. Where existing ditches exist as major conveyance and detention, that geometry was maintained as much as possible, while accommodating the new detached sidewalks. Curb cuts were used where feasible (instead of inlets) to reduce costs and maintenance. Stormwater was diverted away from private property and to city property. The stormwater system at Saddle Ridge was left alone and the design was careful to not convey any water towards the neighborhood south of East Pershing Boulevard east of the Whitney Road intersection.

The proposed drainage design is conveyed in the 35% plan set.

CHANGES TO THE IMPERVIOUSNESS OF THE CORRIDOR

The existing and proposed impervious areas were tabulated to determine the net effect of the proposed typical for the East Pershing Boulevard Corridor. The results of that tabulation are shown below:

The existing pavement areas add up to 16.9 acres. The improvements proposed to the corridor will increase the impervious area by 1.4 acres, or approximately 8%. This increase in imperviousness is primarily a result of added detached sidewalks on the north and south side of the corridor. The additional runoff from the walkways will be dealt with using localized swales and detention in the actual space between the road and the sidewalks. This will allow for localized control of the runoff and allow for the best use of the water for street landscaping, which will need water.

Corridor Section - US 30 to Taft/Polk							
East Pershing New Design Square Footage of Pavement				East Pershing Existing Square Footage of Pavement			
South Sidewalk (8')	North Sidewalk (6')	Roadway	Total	South Sidewalk	North Sidewalk	Roadway	Total
13712	10680	126110	150502	7987	424	129340	137751
Grasslands Parkway New Design Square Footage of Pavement				Grasslands Parkway Existing Square Footage of Pavement			
East Sidewalk (4')	West Sidewalk (4')	Roadway	Total	East Sidewalk	West Sidewalk	Roadway	Total
696	684	Included	1380	851	975	Included	1826
Taft/Polk Intersection New Design Square Footage of Pavement				Taft/Polk Existing Square Footage of Pavement			
Greenway	Sidewalk	Roadway	Total	East Sidewalk	West Sidewalk	Roadway	Total
4770	1340	Included	6110	4499	2938	Included	7437

Corridor Section - Taft/Polk to Dry Creek Crossing							
Pershing New Design Square Footage of Pavement				Pershing Existing Square Footage of Pavement			
South Sidewalk (10'	North Sidewalk (6')	Roadway	Total	South Sidewalk	North Sidewalk	Roadway	Total
10100	5940	38468	54508	4080	None	52935	57015

Corridor Section - Dry Creek Crossing to Whitney Road							
Pershing New Design Square Footage of Pavement				Pershing Existing Square Footage of Pavement			
South Sidewalk (8')	North Sidewalk (6')	Roadway & Roundabout	Total	South Sidewalk	North Sidewalk	Roadway	Total
27200	20526	183024	230750	None	None	202695	202695

Corridor Section - Whitney Road to Christensen Road							
Pershing New Design Square Footage of Pavement				Pershing Existing Square Footage of Pavement			
South Sidewalk (6')	North Sidewalk (8')	Roadway	Total	South Sidewalk	North Sidewalk	Roadway	Total
34230	44968	276750	355948	None	4860	324179	329039

Total New Design impervious area (acres)=	18.3	Total Existing Impervious Area (acres)=	16.9

Table 4: Pavement Tabulation for Existing Corridor and New Corridor

PROPOSED DRAINAGE APPROACH FROM US 30 TO DRY CREEK

In order to reduce the peak flow from the newly developed East Pershing Boulevard, the pre-development runoff volume of the corridor was calculated. Then the post-development runoff volume was calculated. The difference in volume is 0.28 acre-feet. An open storm drainage system will provide this amount of detention along the channels. This additional runoff will be allowed to infiltrate into the soil. The outlet into Dry Creek from the west chokes flow down to 10 CFS where upstream culverts have a capacity adding up to 455 CFS in the channel. Creating detention along the way will allow for this culvert to reduce this flowrate into Dry Creek. This is accomplished on the north side by allowing flow towards the existing double culvert location to flow unhindered. However, the double culvert is proposed to be replaced with one culvert to keep flow down to a maximum of 10 CFS. If the ditch on the south side has water in it, this will reduce flow from this culvert and prevent excess ponding on the south side.

The south side ditch, north of the Pershing Pointe townhouses currently provides a large ditch section for open flow and infiltration of stormwater. It is proposed that the south side ditch section continue to be used for this purpose, while allowing for a wider sidewalk on the berm on the north side of the Pershing Pointe detention pond. On the south side, east of the Taft/Polk Avenue intersection, there is an existing access that goes towards a back fence to a residential lot. This access does not appear to service anything. So it is proposed that this access be removed and the culvert replaced to meter flow. The berm is to stay to allow some detention in this ditch area, but not affect the access at 5219 East Pershing Boulevard.

Stormwater that is developed in the roadway itself will be diverted with curb cuts. The roads drainage capacity is never exceeded in this corridor, even during a 100-year storm. So, curb cuts are provided at geometric locations (intersection with Grasslands Parkway, intersection with Taft/Polk Avenue, and just west of the Dry Creek Bridge).

EAST OF DRY CREEK TO WHITNEY ROAD

This area drains directly into the Hess property under the current geometry. It is proposed that this flow be directed further east and into the East Park Property and be conveyed in this drainage system. This allows the flows from the Dakota Crossings Subdivision and properties along East Pershing Boulevard in this section to be directed away from private property.

A new underground storm conveyance system is proposed. Type A drainage inlets are provided where road capacity to convey the 10-year storm is exceeded. Type B inlets are provided to divert water that currently run under the road onto the Hess property. The grades in this section of road are flat and it is difficult to provide much slope. Therefore, a larger storm pipe size of 24" is to be utilized and some grading in the northeast corner of East Park, or the southwest corner of the roundabout at Whitney Road, will have to be graded down to allow for the storm pipe to outlet.

WHITNEY ROAD TO CHRISTENSEN ROAD

The drainage for this section of road is handled by Type A inlets and underground storm sewer. The piping network is designed to outlet on the northeast side of the intersection of East Pershing Boulevard and Whitney Road. The Saddle Ridge development handles stormwater flows coming from the north. The south side of the road has historic drainage issues, and the proposed design takes care to not direct any additional runoff flows into this area.

PUBLIC ENGAGEMENT

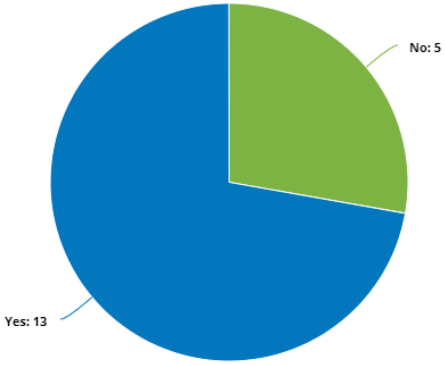
The second public engagement meeting was held at Baggs Elementary School on March 24th from 5:30 – 7:00 PM. During the public meeting the recommendations discussed in this chapter were presented to the public. The second meeting was kicked off with a short presentation to go over the recommendations being proposed, and followed by one-on-one interaction between attendees and the consultant team. Some members of the steering committee were also in attendance to speak with attendees and receive feedback first hand.

FEEDBACK

The general feedback received regarding the proposed concept was positive. Attendees were happy to see the implementation of sidewalks, and a widened pedestrian alternative provided throughout the length of the corridor. Feedback regarding the roadway design was mixed with some attendees expressing concern that a three-lane section and/or the single lane roundabout would not be enough to meet the increasing traffic demand on the corridor. Responses centered around the roundabout was mixed, as expected, however trended on the positive side. One attendee did express the need to clearly distinguish between the circulatory path, truck apron, and non-traversable center through coloring, patterning, and or vertical elements to assisted drivers in navigating the roundabout. The addition of auxiliary deceleration lanes were a widely accepted improvement to the corridor.

Survey feedback confirmed many of the in-person interactions at the meeting. This can be seen prominently from the results from question four. Only 15% of previously surveyed respondents felt safe bicycling along the corridor. Under the current concept, almost 75% of respondents would feel safe using the corridor with a bicycle. Another positive indicator can be seen in the word cloud produced from question seven, shown below.

Q4. Would you feel safe bicycling along East Pershing Boulevard with the enhancements provided?



Q7. What do you think will work well in the conceptual layout of East Pershing Boulevard?

PHASE III

IMPLEMENTATION

PHASING

The current three-lane section currently provides adequate capacity for traffic volumes out to the design year. As a result, roadway capacity will not be the driving factor implementing improvements for the corridor. Instead, large scale proposed improvements will likely be timed with other proposed elements, such as intersection improvements. However, many elements proposed within this corridor plan can be implemented as soon as funds are available.

Short-term

Many of the critical issues identified during the review can be partially or entirely addressed by the implementations of proposed improvements in the immediate future. These issues include multi-modal connectivity, traffic control and calming measures, and some intersection improvements.

MULTI-MODAL CONNECTIVITY

It is likely that the existing road section is left without major reconstruction for a number of years, however temporary, and permanent enhancements can be provided in the short-term. The existing pavement width currently has a 6' striped shoulder in both directions. With some additional pavement markings and the appropriate signage, shoulders can be inexpensively converted to bike lanes for the entire length of the corridor. It is recommended that travel lanes be narrowed to 11 ft through the dry creek bridge section to allow additional shy distance between bicyclists and bridge barriers.

Pedestrian connectivity is something the corridor is currently lacking. With careful planning and consideration, sidewalks can be constructed to fit the finished condition with some minimal adjustments during final buildout. Their separation from the roadway will allow them to be left unaffected by the future implementation of curb and gutter, except for areas directly adjacent to intersection identified for auxiliary deceleration lanes.

In addition to the implementation of sidewalks, additional safety enhancements should be provided on the west and north legs of the intersection with Whitney Road to alert drivers to the increased potential of pedestrian crossings. This should include the striping of crossings and crossing ahead warning signs in advance of the intersection and at the crossing itself. It is also recommended that lighting be implemented at the intersection in the short-term to illuminate the crossing.

TRAFFIC CONTROL & CALMING MEASURES

Many of the design recommendations proposed to specifically address traffic calming will unfortunately not be able to be immediately implementable due to the associated costs. Considering the frequency and severity of speeding along the corridor, a temporary solution is necessary to keep speeds in check. There were numerous comments at the initial public meeting of a lack of speed limit signage along the corridor. Speed limit signage should be posted following all major intersections, such as US 30, Taft/Polk Avenue, Whitney Road, and Christensen Road, to inform drivers to posted speed limits. In addition to posted speed signage, variable speed feedback signs should be strategically placed along the corridor to ensure drivers are paying attention. Our current recommendation is to provide a total of four variable speed feedback signs along the corridor. One in each direction between Hayes Avenue and Wenandy Drive, and the second pair installed approximately 500 ft prior the intersection of Huisman Road in either direction. These positions are approximately half of a mile after posted speed limits, and positioned in advance of key points of interest, including East Park, the pedestrian crossing at Whitney Road, and the proposed school in phase II of Saddle Ridge.

INTERSECTION IMPROVEMENTS

Intersection improvements, in the short and long-term will be mainly focused on the intersection of Whitney Road and East Pershing Boulevard. Proposed improvements to other intersections within the project

limits include signage enhancements for pedestrians and auxiliary deceleration lanes as needed. Signage enhancements have been addressed in the sections above. Auxiliary deceleration lanes for right and left turns should be implemented as required by traffic volumes, or in correspondence with improvements in the immediate vicinity.

To address the anticipated issues at the intersection with Whitney Road following the completion of Saddle Ridge, around the year 2026, we are recommending that a four-way stop be implemented. Putting a four-way stop at the intersection will easily and inexpensively provide a safer pedestrian crossing and alleviate capacity issues.

Long-term

Implementing larger infrastructure improvements along the corridor will require specific projects to be programmed into the Capital Improvemnet Plan (CIP) for funding, design, and construction. These projects will likely be segments of the corridor that are separated at logical termini, such as intersections. These large-scale projects can be combined, given the availability of funding, but have been split in this recommendation to allow for a phased approach:

- US 30 to east of Taft/Polk Avenue intersection
- East of Taft/Polk Avenue to west of Hayes Avenue
- West of Hayes Avenue to east of Fireside Drive
- East of Fireside Drive to Christensen Road

All long-term improvements recommended in this plan assume the implementation of a three-lane road section with bike lanes and curb and gutter. Design elements that deviate from the recommendation in the Conceptual Design section, or that require additional detail, will be identified in the following sections of this report. The final 35% design plans set can be found in the appendix for reference.

For ease of understanding, costs provided alongside each section are emblematic of the full build out condition, including the short-term improvements that are not temporary. Short-term improvement costs that are not included are improvements that would be considered temporary, such as the four-way stop or other signage.

US 30 TO TAFT/POLK AVENUE

ESTIMATED COST - $1.4 Million

The section was chosen to end on the east side of Taft/Polk Avenue for two reasons. First, due to its relative proximity to US 30, it could allow improvements to be combined with potential redevelopment on the intersection completed by WYDOT. The second is its ability to provide connectivity from the pathway along Taft/Polk Avenue to the high density developments along the south side of the corridor and beyond,

to US 30. Extending work east, beyond the intersection, would only be beneficial if the bridge widening were included.

The intersection of US 30 and East Pershing Boulevard is outside of this project scope. However, it needs to be considered in the design and implementation of this project and how the lane configuration and pedestrian connections interact. Pedestrian sidewalk connections have been designed to provide connection to current and future crossing locations. As this segment moves into final design, consistent coordination with WYDOT will be required.

The south side of the corridor through this section currently has an existing sidewalk and drainage ditch, which are inconsistent due to the nature of the development agreements. Sidewalks currently reside on a combination of public and private land without an easement. As a result, the proposed sidewalk and ditch alternate sides, depending on the best overall design. Coordination with the Cheyenne Ranch HOA and Pershing Point Development Group should be considered when redeveloping this section to find the best solution.

TAFT/POLK AVENUE TO HAYES AVENUE

ESTIMATED COST - $2.1 Million

Approximately 2,000 linear feet, this section of the corridor focuses largely on implementing the widening of the bridge over the Dry Creek Basin and connecting the projects identified on either side. Given the availability of funding, it would be beneficial to lump this section into either the preceding or succeeding projects to provide greater immediate connectivity. At the time that this section is evaluated for construction, the bridge should be reevaluated for any possible change in circumstance.

HAYES AVENUE TO FIRESIDE DRIVE

ESTIMATED COST - $4.2 Million

The segment from Hayes Avenue to Fireside Drive was identified to address the implementation of the roundabout and associated geometric realignments of East Pershing Boulevard. This section has numerous key items to consider when moving into final design, including the need for right of way acquisition within the project limits. Close coordination should be completed with land owners on both sides of the corridor for access management, stormwater management, and right of way acquisition.

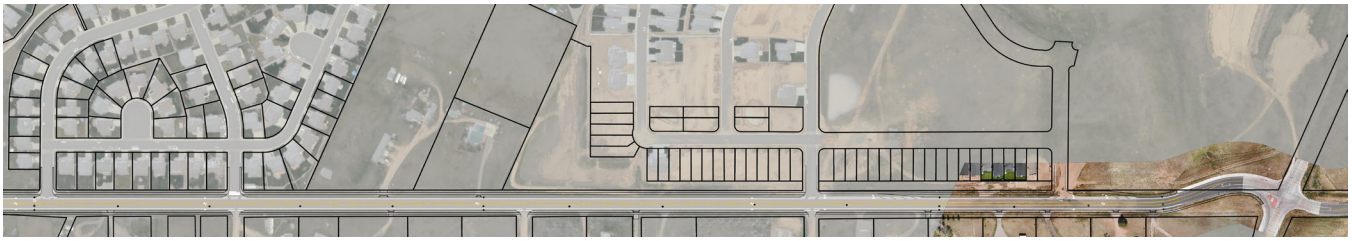
The north side of the corridor has a number of private accesses that serve both singular and multiple properties. We have provided a recommended approach to formalize and consolidate these driveways. However, further coordination with property owners should be conducted when moving forward with the design.

On the south side, the landowner of the property west of East Park should be consulted regarding the existing drainage pattern entering his property from the right of way. Our recommendation provides a solution to eliminate the runoff entering the property. However, it may continue to be used for agricultural purposes. These discussions can formalize whether the runoff is currently an issue or not.

The upcoming development of East Park will also be a critical item to contend with when planning for construction and the accesses of both East Pershing Boulevard and Whitney Road. Close coordination should be maintained with the City of Cheyenne to understand the possible changes in the development schedule for the park.

RIGHT OF WAY ACQUISITION

Realignment, addition of pedestrian accommodation, and implementation of the roundabout all impact different properties in this section of the corridor. These properties and estimated areas of impact can be found in the plan set provided in the appendix. Coordination with these landowners should be conducted as early as feasible in the planning process.



FIRESIDE DRIVE TO CHRISTENSEN

ESTIMATED COST $4.0 Million

The final segment extends from Fireside Drive to the newly reconstructed Christensen Road intersection. It is highly possible that the second phase of the Saddle Ridge Subdivision will be fully constructed before these long-term improvements can be implemented. It is recommended to lump this into the previous section's development if funding is available. The implementation for this section is fairly straight forward, other than to reaffirm the need for traffic calming and to provide continued observations.

RECOMMENDED PHASING

1. Hayes Avenue to Fireside Drive – Geometric Realignment and Whitney Roundabout
2. Taft/Polk Avenue to Hayes Avenue – Bridge Widening
3. Fireside Drive to Christensen Road
4. US 30 to Taft / Polk Avenue

APPENDIX