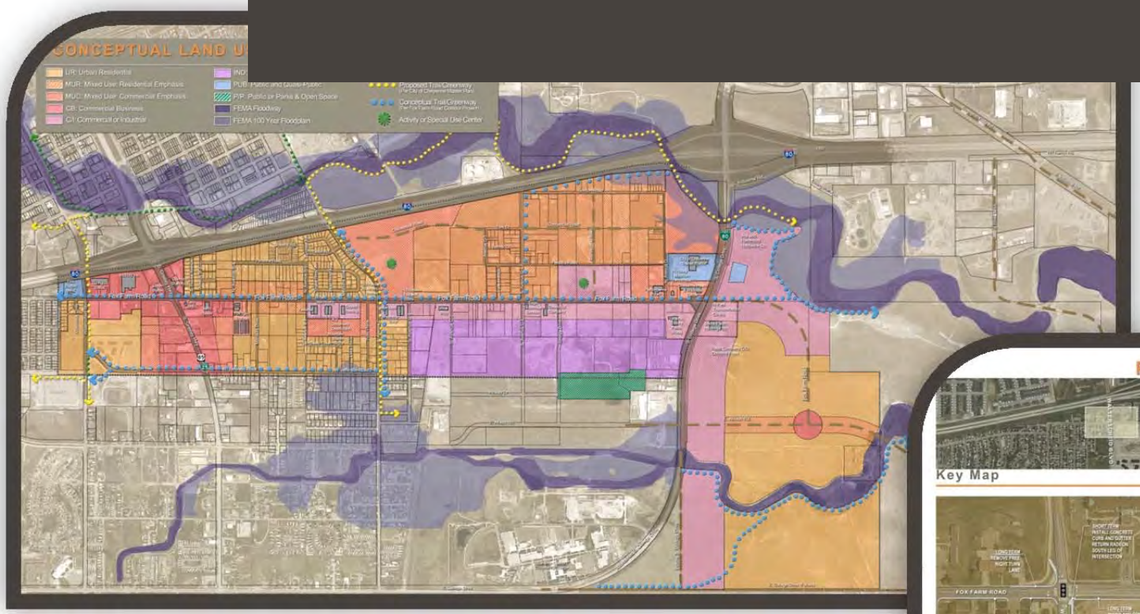
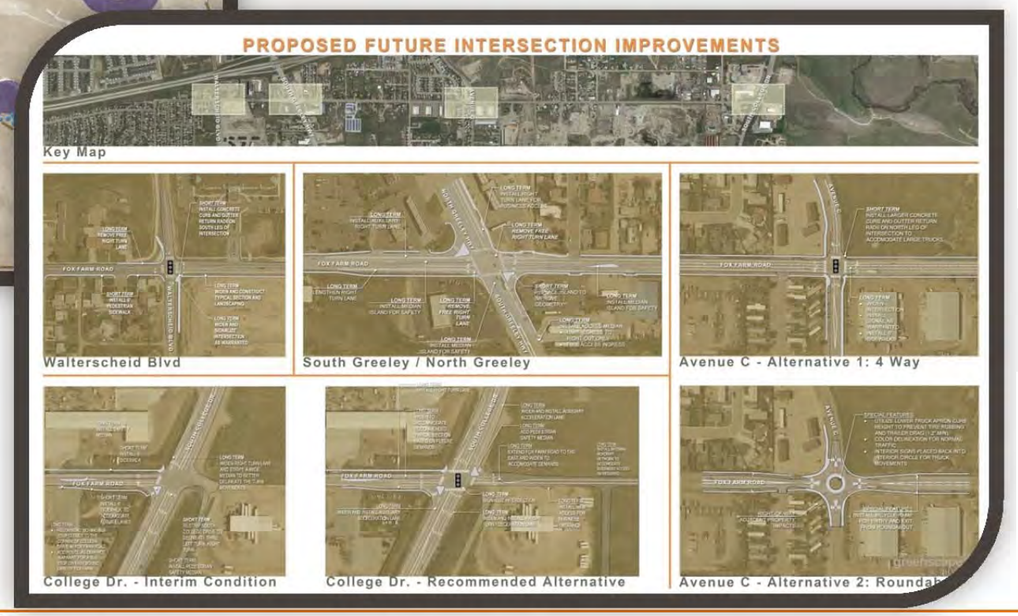
Fox Farm Road Corridor Plan

DRAFT August 2013





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Acknowledgements

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Numerous agencies, local associations and individuals devoted their time to the development of this document, including but not limited to:

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Technical Advisory Committee
Citizens Advisory Committee
Fox Farm Road Steering Committee

City of Cheyenne
City Council
Engineering Services
Long Range Planning Commission
Public Works Department
Urban Planning Office

Laramie County
County Commissioners
Planning Commission

South Cheyenne Community Development Association

U.S. Department of Transportation
Federal Highway Administration

Introduction

Fox Farm Road between Walterscheid Blvd. and College Drive is classified as a collector. Over the past couple of decades new businesses and developments in and around the area have resulted in an increase of traffic volumes along the Fox Farm corridor. The Fox Farm Road Corridor Study was initiated by Cheyenne Metropolitan Planning Organization (MPO) to develop transportation recommendations to assist the community in preparing for anticipated growth and redevelopment, as well as, to better serve the needs of the Fox Farm Road's pedestrians, vehicle, bicycle, transit users, and redevelopment within the area.

The MPO tasked AVI, Professional Corporation to conduct the study. The key objectives included:

- The establishment of a conceptual multi-modal transportation and streetscape plan for the corridor with a greater detail up to 35% design for the major intersections of Walterscheid Blvd., South Greeley Highway, Morrie/ Avenue C, and College Drive.
- Identify short and long term recommendations to provide increased safety for vehicles, freight traffic, transit users, bicyclists, and pedestrians with consideration of construction costs and facility maintenance.
- Develop a conceptual land use plan for the corridor area.

The boundaries of the Fox Farm Road project are from Derr Avenue to College Drive (east and west), and I-80 to E. Jefferson Road (north to south). Additionally, the plan includes possible future alignments for the extension of Fox Farm Rod, Allision Road, and College Drive into the unplatted land east of College Drive. **Figure 1** depicts the study area and vicinity.

The basic or primary purpose of this project is to create a planning document which promotes revitalization, safety, and complete streets, while being sensitive to current function, property owners, maintenance and construction costs. After discussion with the key members of the County, City, and MPO staff, the goals of the project were the following:

- Create a realistic guide document for the future development of the corridor and surrounding area.
- Develop a priority list of future roadway and infrastructure improvement projects.
- Develop intersection alternatives and improvements along Fox Farm Road at Avenue C, Walterscheid Blvd., College Drive, and the intersection of South Industrial Road at College Drive.
- Review options for bicycle, pedestrian, bus, industrial freight, and passenger vehicle use on Fox Farm Road.

The project was reviewed with oversight by a steering committee comprised of the following agencies or representative organizations:

- The Cheyenne Metropolitan Planning Organization
- Cheyenne Urban Planning
- City Engineering
- Laramie County Public Works
- South Cheyenne Community Development Association/ Holly Frontier
- South Cheyenne Water and Sewer District
- Cheyenne Light, Fuel, and Power
- Cheyenne Transit
- Cheyenne Trails and Bicycle Specialist
- Cheyenne Health Clinic
- WYDOT District
- WYDOT Planning.

Figure 1 Fox Farm Road Corridor Vicinity Map

Snapshot

The Snapshot section of the Fox Farm Corridor Plan provides a summary of the existing roadway and planning area.

History

The last major roadway improvement project along the Fox Farm corridor was begun on December 1, 1971 and accepted on September 8, 1972 under Wyoming Project No. SU-S-1109(2) developed by the Wyoming Transportation Department formerly known as the Wyoming Highway Department. It was 1.788 miles long beginning at the intersection of South Greeley Highway and extending the east to the intersection of Outer Belt Road (College Drive). The constructed roadway was comprised of 2-12' drive lanes, 2-8' shoulders with roadway ditches approximately 12' on the south and 26' on the north. A short section of pavement located approximately 268' west of the intersection of centerlines College Drive and Fox Farm was constructed with an additionally of 2' curb and gutter along with the 8' shoulders and the 12' drive lanes.

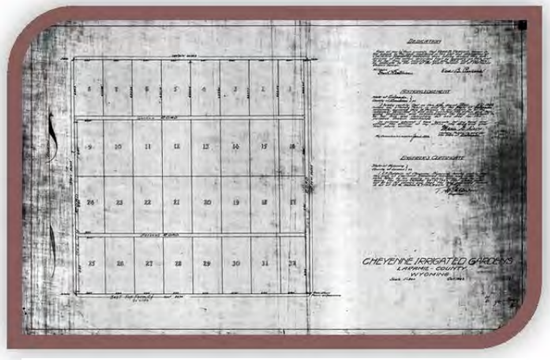


Figure 2 1923 Cheyenne Irrigated Gardens Plat

Figure 3 Fox Farm Road (Derr Avenue to Walterscheid Blvd.)

Based on the Cheyenne - Laramie County Cooperative GIS Database Search / Interactive Mapping Site, the first recorded plat of the area was the Cheyenne Irrigated Gardens in October of 1923 (**See Figure 2**). Other platting continued with the Prosser and Allison Tracts in 1930, Clear View Tracts in 1931, and Rose Ella Addition in 1955. For the most part, the early plats divided the land surrounding Fox Farm into approximately 330' x 640' (4 acre±) tracts.

The Fox Farm Road Corridor plan area is not known to be a part of any historic districts at the present time. Additionally, the Wyoming State Historic Preservation Office (SHPO) website was reviewed for all the National Register listings in the area of the study and none were found.

Figure 4 Fox Farm Road (North side of road at Walterscheid Blvd. looking east along the south property line of SpringHill Suites)

However, if federal funds are used on any future projects or if a federal agency is part of the planning and implementation a Section 106 Study will be required to determine potential impacts to any historic properties. Properties in the area of any construction impacts will be identified and evaluated based on the Secretary of Interior's Standards and Guidelines for identification. Several determination can be made in the evaluation including the following:

- No historic properties affected
- Historic property adversely affected
- Historic property not adversely affected.

Existing Corridor

Today the Fox Farm corridor has a very unique character with a variety of adjacent property uses, form, function, and look. Land use varies along the corridor but, is comprised of a combination of urban residential, urban commercial, rural

It corridor is comprised of a mainly two types of segments. The first is the west segment (Derr Avenue to South Greeley Highway) which is urban in character and the second is the east segment (South Greeley Highway to College Drive) rural. The urban segment contains curb and gutter with some sidewalk, while the rural section contains roadside ditches only. Fox Farm Road's current roadway section is comprised mainly of asphalt surfacing with two driving lanes and paved shoulders. The only exceptions are areas east and west of the South Greeley corridor and Avenue C/ Morrie Avenue where concrete pavement has been installed. Pedestrian facilities cover a range of conditions throughout the corridor from attached sidewalks of varying widths to no sidewalk.

The pavement width varies along the corridor. On the western section of Fox Farm Road from Derr Avenue to Walterscheid Blvd, the pavement width from top back of curb to top back of curb is typically 43' with a 3.5' and 4' attached sidewalk on the south and north side of the roadway, respectively. The one exception is the south side Fox Farm between Derr Ave. and Walterscheid where there are no sidewalks **(See photo Figure 3).**

Figure 5 Fox Farm Road (West side of Fox Farm Road looking East toward South/ North Greeley Highway

Figure 6 Fox Farm Road (East side of South/ North Greeley Highway looking West.

To the east of Walterscheid Blvd., the pavement narrows to 36' and there are generally 6' attached sidewalks on the north and south side of the roadway with the exception of the property frontage at SpringHill Suites where the sidewalk is detached using a 8' tree lawn **(See Photo Figure 4)**. The pavement begins to widen on the south side of road as you head east on the corridor at the main entrance to the Holiday Inn. The width transitions to approximately to 58' from top back of curb to back of curb with 6' attached sidewalks on each side of the roadway

(See Photo Figure 5).

The section of Fox Farm Road east of South Greeley Highway has been widened to approximately 63' from top back of curb to top back of curb with 4.5' and 5.5' attached sidewalks extended approximately 250' east of the intersection of North/ South Greeley

The majority of the remainder of the corridor extending east to College Drive has a pavement width of 40' with no sidewalk or curb and gutter. A representative photo is shown in **Figure 6.**

The current east of Fox Farm Road extends the east to the intersection of College Drive.

Transit

The South Route for the Cheyenne Transit Program covers Fox Farm Road. The program runs from 6:00 am - 7:00 pm, Monday thru Friday and 10 am – 5 pm on Saturday. Based on the current route map and on-site observation there are six transit stops within the project study area. Five are located directly on Fox Farm. However, the route does not run the entire length of the corridor. It is broken into two segments; the eastern half runs south on Morrie Avenue with a stop at Teton and continues east on Fox Farm Road with stops on the south between Avenue C and College Drive at Avenue C-1, Avenue C-4, and Avenue D. The western side of the route runs westerly with stops on the north side of Fox Farm Road with stops between South/ North Greeley Highway and Walterscheid at 300 West Fox Farm between the Holliday Inn and Comfort Inn Suites and Derr Avenue. This leaves a section of Fox Farm between Morrie/ Avenue C to South/ North Greeley without transit service. The distance between the two stop is approximately one mile. The main constraint of the Transit System in this area is related to continuity of pedestrian access. First, the only sidewalks on the corridor are near the intersection of South/ North Greeley and the west segment of Fox Farm. The East segment of Fox Farm relegates pedestrians to use the ditches along the roadway or the paved shoulder with the exception of a new north south path at Avenue C and Morrie Avenue. Second, the furthest east bus stop at Avenue D is primarily used for the Cheyenne Health Clinic on the north side of street while the bus stop is located on the south.

Bicycle Transportation

The August 2011 Cheyenne On-street Bicycle Plan and Greenway Plan Update identifies the Fox Farm Corridor as a part of the proposed bikeway network. The recommendation is for bike lanes to be installed subject to future roadway paving or construction. The west segment of the corridor from South/ North Greeley is identified for standard bike lanes while the east has been identified for buffered bike lanes.

Currently, no formal bike facilities are designated or delineated on the corridor. Based on observation nor

Utilities

Based on observed surface and underground locates at (4) four intersections on Fox Farm Road identified the following utilities:

- Cheyenne Light, Fuel and Power: Overhead electric, underground gas
- Bresnan Communications: Overhead cable/ phone
- Century Link: Underground phone, fiber optic
- BOPU: Underground water, sewer, and storm
- South Cheyenne Water and Sewer District: Underground water and sewer.

Given the proximity of utilities to the existing roadway, as well as, the limited right-of-way width of 80 feet, any modification to the intersections or roadway will affect the utilities within the corridor. Future coordination will be paramount to the success of any implementation.

One of the many unique characteristics of the this corridor is the fact the water and sewer infrastructure are under two jurisdictional entities, City of Cheyenne Board of Public Utilities and the South Cheyenne Water and Sewer District.

The majority of the corridor is served by the district and is comprised of water lines on the corridor ranging size from 6" to 12". The sanitary interceptor system is comprised of 8" lines throughout the area. The entity if funded by Laramie County mill levies. In the last three years (2010 – 2012) the district received 5.28, 5.13, and 5.76 mills (Laramie County, Wyoming).

The City of Cheyenne Board of Public Utilities provides services to a limited number of areas within the corridor. The water system has an 8" line extending and looping onto itself at Morrie Avenue and South House Avenue. Additional a 12" line has been installed in Walterscheid Blvd and loops back to the north at Parsely Blvd. Sewer capacity appears to be limited to 8" line east of Walterscheid Blvd. and on South House, and a 10" line on Morrie Avenue. The approximate boundary of the district and areas served by the BOPU are illustrated in **Figure 7** (Program).

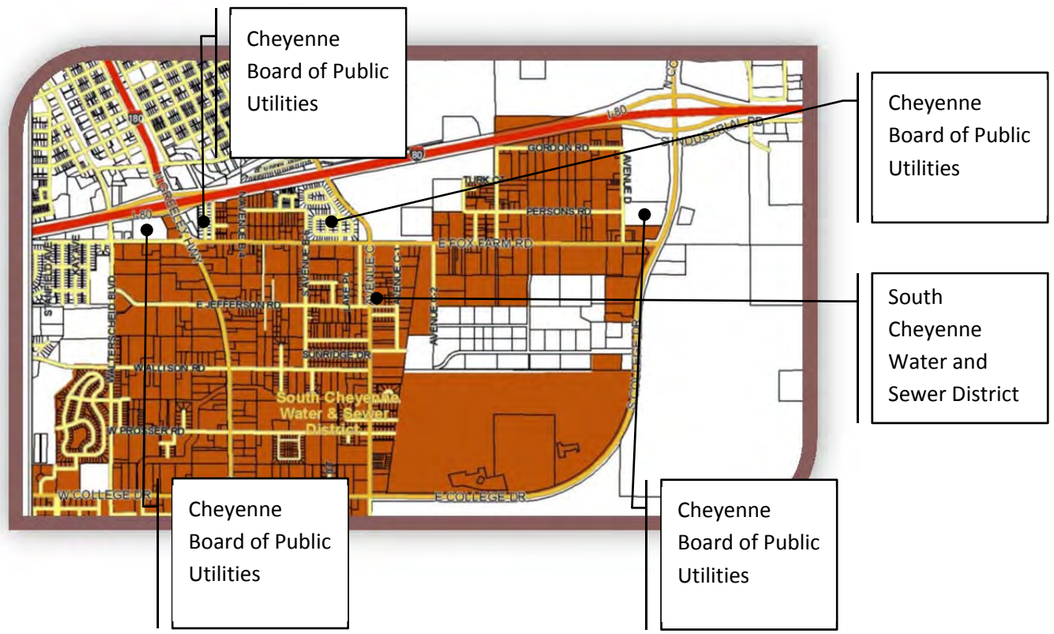


Figure 7 BOPU and South Cheyenne Water and Sewer District

Uniquely the SCWSD acquires water from the BOPU and wastewater treatment is gravity feed to the Dry Creek Water Reclamation Facility owned and operated by the BOPU. Obviously, future development available to the area will be dependent on the capacity of the water and sewer infrastructure. Two areas of concern from a development standpoint are related to two segments of 6" Ductile Iron constructed in 1960. The first is a five-hundred (500) foot section on Fox Farm Road between Avenue C-4 and Energy Drive north of the new Niobrara Energy Park recently constructed. The second is a seven-hundred eighty (780) foot section beginning at North Avenue D and extending west.

Freight/ Truck Routes

Based on interpretation of observed existing traffic volumes and assuming the definition of a truck is defined as a minimum of three axles, the percentage of trucks along the corridor is generally about 2% - 6%. The east segment of Fox Farm Road from South/ North Greeley Highway to College Drive is the primary truck route used for multiple industrial businesses and the Holly Frontier Refinery via Morrie Avenue. Based on conversations with representatives of Holly Frontier, drivers are encouraged to use routes other than Fox Farm Road by designation two truck routes. The first utilizes Morrie Avenue, East 1st Street, Warren Avenue, 5th Street to the signalized intersection of North Greeley/ US85, then to off/ on ramp of I-80 east/ west. The second route utilizes Morrie Avenue, East 5th Street, Campstool Road, Campstool Way, College Drive, I-80 Westbound/ Eastbound on/ off ramp.

Drainage

The site is located north and south of two primary drainage conveyances (Crow Creek and Allison Draw) and one tributary drainage area (Henderson and East Lincolnway Basin). The entire Crow Creek contributory drainage area of approximately 336 square miles, Allison Draw has an area about 28 square miles, and the Henderson/ East Lincolnway Basin is about 4.7 square miles (CH2M Hill, November 1988). Although the current Fox Farm Corridor is outside the floodplain or floodway, future extensions of Fox Farm and Allison Road to the east will abut and cross portions of the designated floodplain. Furthermore, Burlington Trail Road is within the Special Flood Hazard Area of the City/ County 100 Year Floodplain. The applicable current Flood Insurance Rate Maps (FIRM) published by the Federal Emergency Management Agency (FEMA) are 56021C1357F, 56021C1376F, and 56021C1094F. Both Crow Creek and Allison Draw are essentially rural basins but are continuing the process of urbanization while the Henderson Basin is heavily urbanized with much of the basin fully developed. The topography in and around the study area generally slopes east to west and north to south. The drainage basin and floodplain map **(Figure 8)** (Program)shows the corridor, basic basin drainage basins, floodplain, special flood hazard area, and points of discharge into the drainage way from the corridor area.

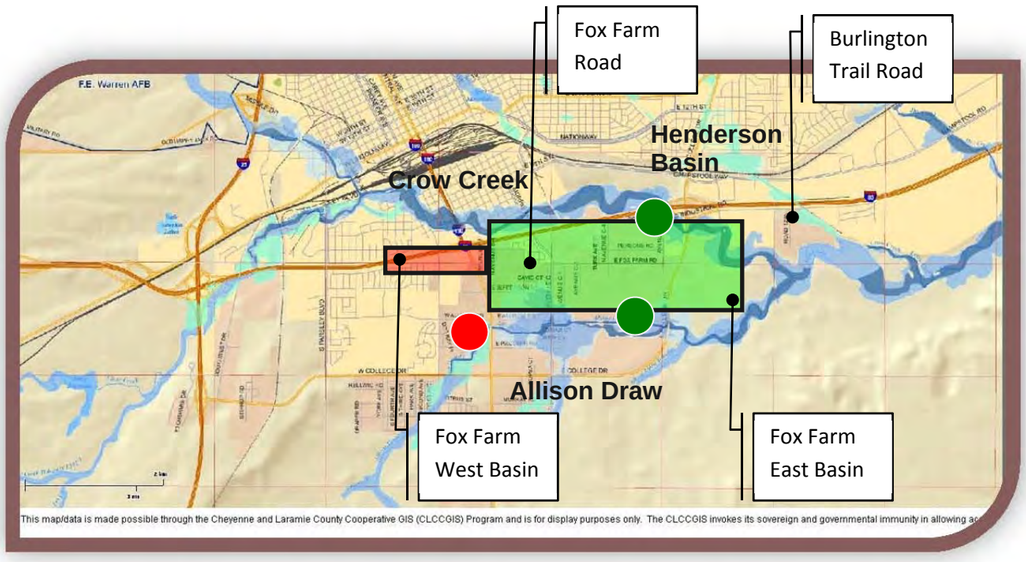


Figure 8 Drainage Bain and Floodplain Map

Storm water tributary to the roadway corridor are conveyed by two primary methods. The first on the west segment is by way of curb and gutter and storm sewer and the second on the east segment by way of swales, ditches, and corrugated metal culverts (CMP). The operational condition of these existing storm water conveyance elements vary dramatically along the corridor from good to poor. Observations taken during several site visits found the west segment in good operational condition while the east segment of the corridor appears to operating in an average to poor condition. Observations along the east corridor included the following **(See Figure 9, 10)**.

- Near to full blockage of culverts (> 50%)
- Minor blockage of culverts (< 50%)
- Culverts without flared end sections
- Smashed or bent culverts and flared end sections
- Shallow culverts
- Shallow, small, or nonexistent ditches
- Channel erosion
- Overgrown vegetation within ditches
- Steep side slopes within ditch sections
- Roadway storm water runoff entering private property
- Private property storm water runoff discharged into the Fox Farm Corridor

Drainage sub-basins have been delineated along the Fox Farm Road and are illustrated in the appendix A and Figure 8 and 9 of this report. Preliminary runoff values were calculated using AutoCAD 2013, Hydraflow Hydrographs software and Intensity versus duration precipitation curves from the City of Cheyenne. The table below summarizes the runoff values for each of the drainage basins for the full range of storm events (5, 25, and 100 year storms).

Basin Designation	Q (Cubic Feet/ Second)		
	5 Year Storm Event	25 Year Storm Event	100 Year Storm Event
F1	74.3	119.1	157.7
F2	37.4	60.1	79.5
F3	96.1	154.4	204.4
Right-of-way (North)	5.0	8.0	10.6
Right-of-way (South)	3.6	5.8	7.7

Typical culvert and ditch capacities were calculated to compare to the basin run-off values above. Culvert capacities were based on 18" CMP culverts using a slope of 0.5% and 0.5' of upstream head with normal tail water conditions. Ditch capacities were calculated based on a "V" ditch section, 4:1 side slopes, 1' of depth, grass lined conditions. The typical capacity of the culverts is 7.3 cfs while the ditches have a capacity of 8.0 cfs. Based on those conveyances, it is clear the culverts can carry the run-off generated from most of the the existing roadway and right-of-way storm events but, will not convey the offsite run-off.

Figure 9 Fox Farm Existing Drainage Constraints (West)

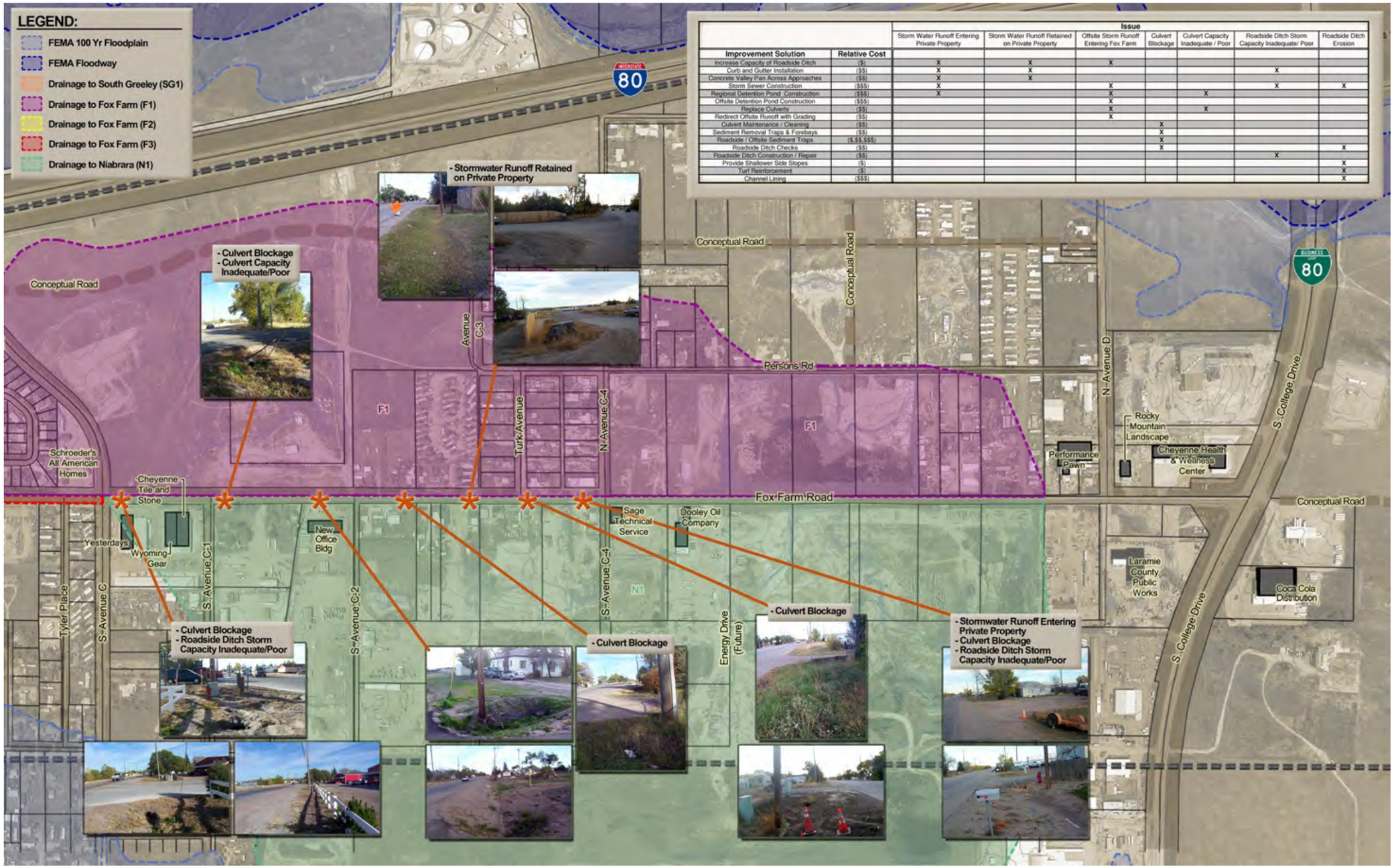


Figure 10 Fox Farm Drainage Constraints (East)

Environmental

Potential environmental considerations were reviewed for possible impacts to future improvement within the corridor. A cursory review and consultation with staff of the Wyoming Department of Environmental Quality (WYDEQ) and available documentation revealed one historic landfill and seven construction/ demolition landfills in the area which could potentially impact future construction and redevelopment in the area (Inberg-Miller Engineers, 2005).

The historic landfill was known as the Wilson Pit Landfill and operated by the City of Cheyenne Public Works Department from October 1944 to May 1946. It is a mined out, 4 acre gravel pit, located at the southeast corner of the intersection of Fox Farm Road and Avenue C-1 (Prosser Tract 1, Tract 16 and 17).

The seven other construction/ demolition landfills found in the area are all backfilled gravel pits which carry some degree of risk of contamination or impact to future redevelopment. They are listed below and shown in **Figure 11** along with the Wilson Pit Landfill mentioned above:

1. Wilson Pit Landfill
2. Allison Pit (East of Avenue C: WYDEQ/SHWD #20.525)
3. McCard Construction (217 South Avenue C-2: WYDEQ/SHWD #30.060)
4. Clearview Tract (1507 East Fox Farm Road: WYDEQ/SHWD #30.050)
5. Cheyenne South Pit (500' north of the intersection of Avenue C-2, and Fox Farm Road: WYDEQ/SHWD #30.010)
6. Will Krukenberg (212 Avenue C-4: WYDEQ/SHWD #na)
7. Louis A. Gehrig (Tract 30, Cheyenne Irrigated Gardens: WYDEQ/SHWD #30.025)
8. Cook-McCann Concrete (northwest corner of Avenue C-2 and Fox Farm Road: WYDEQ/SHWD #30.025)

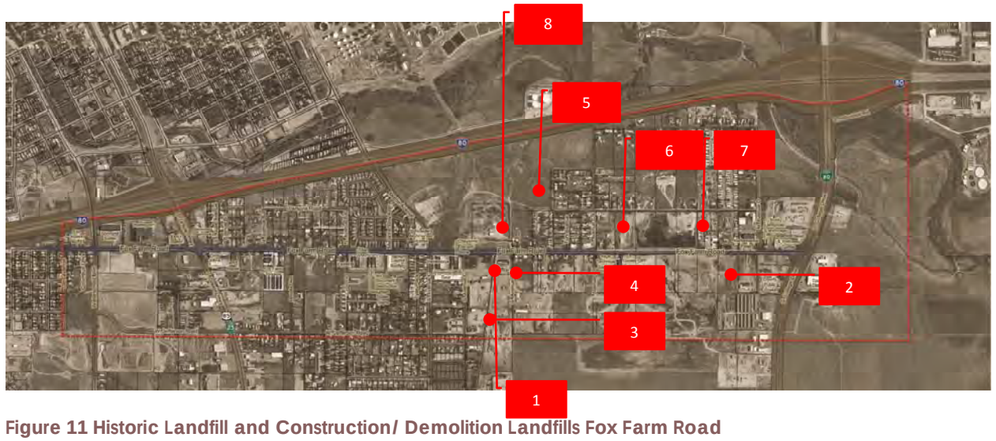


Figure 11 Historic Landfill and Construction/ Demolition Landfills Fox Farm Road

Current Traffic Conditions

Traffic volume, speed, and classification data were collected for this project on average weekdays at various times during 2011, 2012, and 2013. Peak hour counts were collected at the key intersections along Fox Farm Road and College Drive during the morning and evening peak hours. Noon peak hour counts were evaluated when they were available. Peak hour and daily traffic volumes, speeds, laneage, and traffic control are contained in Figure 1. Regarding vehicle classification, a truck was defined as a vehicle having three or more axels. The percentage of trucks varies along the corridors between 2% and 6%.

To evaluate the performance of the intersections within the study area, the Level of Service (LOS) was calculated using Synchro software. This software package utilizes criteria described in the Highway Capacity Manual (Board, 2010). LOS is a measure used to describe operational conditions at an intersection with categories ranging from A to F based on the predicted delay in seconds per vehicle for the intersection as a whole, as well as for individual turning movements. LOS A indicates very good operations, and LOS F indicates poor, congested operations. Acceptable intersection operation based on the City standards (Cheyenne, 2012) is LOS C or better. All of the intersections are currently operating at LOS C or better during the weekday peak hours. Please see **Figure 12** for additional information.

Traffic Safety

Crash data were obtained for key intersections along the corridors for the most recent three-year period. The data and crash rates are summarized in Table 1. The highest number of crashes over the three-year period (25) occurred at Fox Farm Road / South Greeley Highway. Crash rates ranged from 0.1 at College Drive / Industrial Lane to 0.87 at Fox Farm Road / Avenue C. Based on the 2011 Annual Crash Report for the Cheyenne Urban Area (Organization, 2012), crash rates ranged from 1.78 to 1.17 for the top 10 crash locations in the Cheyenne Urban Area during the years 2002 through 2011. South Greeley Highway and Fox Farm Road ranked number ten for total signalized intersection crashes in 2011at thirteen (13) total. The number one ranked intersection was Dell Range Blvd. and Converse at twenty-nine (29).

The following observations were made about the crash data.

- Fox Farm Road / Walterscheid Boulevard. There are no significant crash patterns at this intersection.
- Fox Farm Road / South Greeley Highway. Based on the crash data from 2005 to 2010 a total of fifty-one (51) total crashes were reported at the intersection. Of the fifty-one (51), sixteen (16) were injury related and thirty-five (35) were property damage only (PDO) crashes.
- Fox Farm Road / Avenue C. The crashes at this intersection are a function of the intersection geometry. All four approaches have a single lane and the intersection is

controlled by stop signs on each approach. The intersection geometry combined with the number of large trucks which causes confusion for motorists. Some motorists stop in unusual locations to accommodate the turning trucks which contribute to the crashes. (Board, 2010)

- Fox Farm Road / College Drive. The significant crashes were the angle type involving eastbound versus southbound vehicles. Based on the crash reports and discussions with citizens at the open houses, motorists on the eastbound approach have difficulty distinguishing between the southbound through and right turning vehicles when the right turning vehicle is a large truck. The right turning truck can hide the southbound through vehicle causing crashes and near misses. Another issue was discovered through discussions with citizens at the open houses involving eastbound and northbound vehicles that have caused near misses, but no crashes. Based on discussions with citizens at the open houses, the combination of the skewed eastbound approach causes motorists to look more than 90° to the right and the two northbound through lanes makes it difficult for the eastbound motorist to judge the gaps in the northbound traffic.
- College Drive / Industrial Road. There are no significant crash patterns at this intersection.
- College Drive / Campstool Way. All of the crashes at this intersection are rear end which is a function of the intersection being signalized.

A summary of the crash data is shown in Table 1.

Table 1 (3) Three Year Crash Summary for Key Intersections

Fox Farm Road / Walterscheid Boulevard	
Type	Number
Approach Turn	1
Angle	2
Rear End	2
Other	2
Total	**7**
Rate	**0.51**

Fox Farm Road / Avenue C	
Type	Number
Approach Turn	0
Angle	1
Rear End	4
Head-on	2
Other	3
Total	**10**
Rate	**0.87**

Fox Farm Road / South Greeley Highway	
Type	Number
Approach Turn	4
Angle	4
Rear End	11
Pedestrian	1
Other	5
Total	**25**
Rate	**0.75**

Fox Farm Road / College Drive	
Type	Number
Angle	5
Rear End	3
Total	**8**
Rate	**0.52**

College Drive / Industrial Road	
Type	Number
Rear End	1
Other	1
Total	**2**
Rate	**0.10**

College Drive / Campstool Way	
Type	Number
Rear End	9
Total	**9**
Rate	**0.35**

Existing Land Use and Zoning

The Fox Farm corridor has been in existence for many years and started as a WYDOT controlled roadway. As access to public infrastructure in the area has increased over time the ability to have denser commercial and residential developments have providing a mix of lot sizes and development types. This has led to many grandfathered uses and a variety of lot sizes and scattered zoning. The land use types found within the corridor are civic uses, residential uses, service business, retail businesses, child care, automobile service, moderate industrial recycling and agricultural.

The following zoning uses are currently within the corridor:

City Zoning:
- Public
- MR-2
- HR-2
- CB
- PUD

County Zoning:
- CB
- MR
- PUD
- MU
- LI
- A-2

See **Figure 13** for the current zoning and land use configuration in the area.

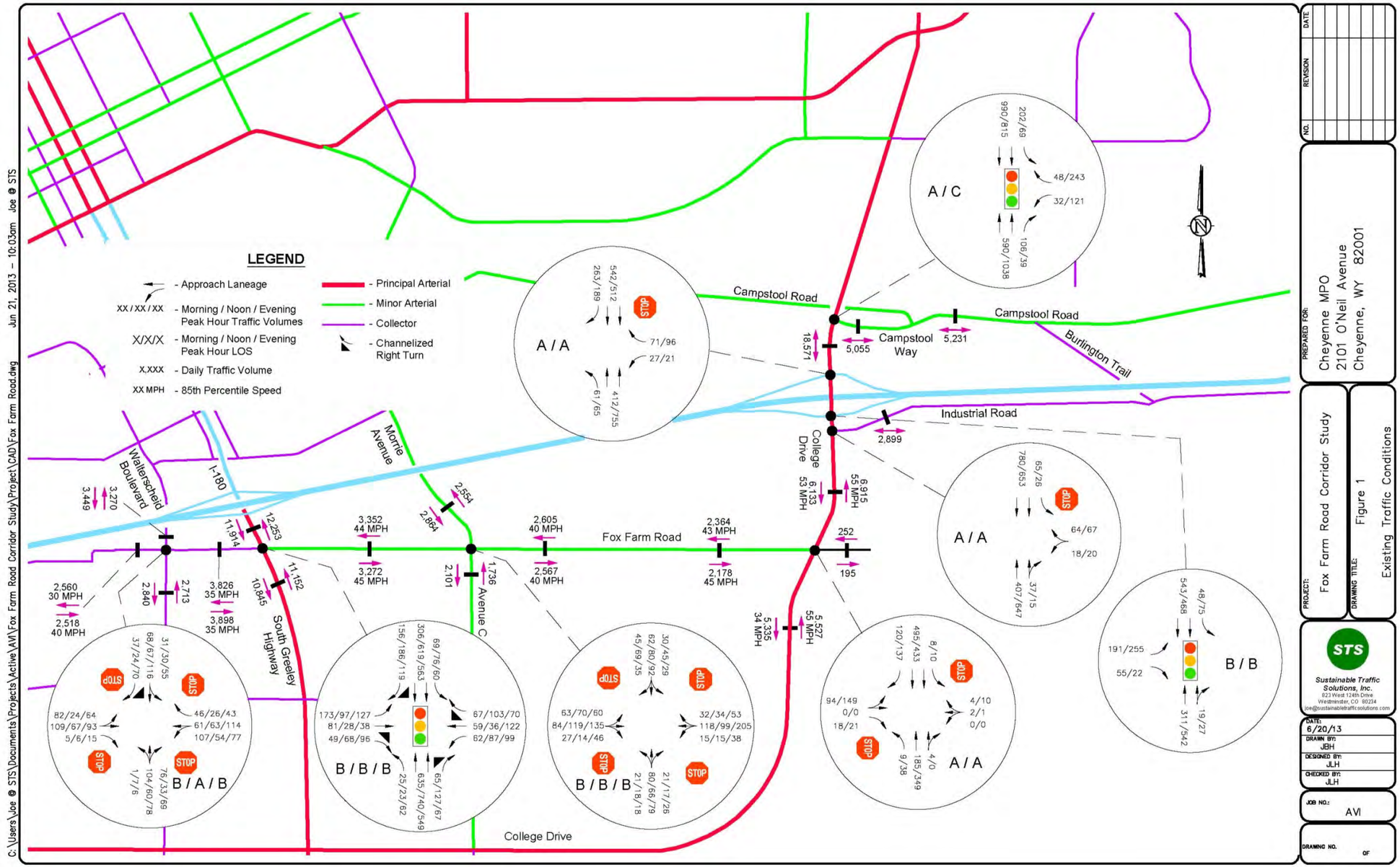


Figure 12 Exiting Traffic Conditions

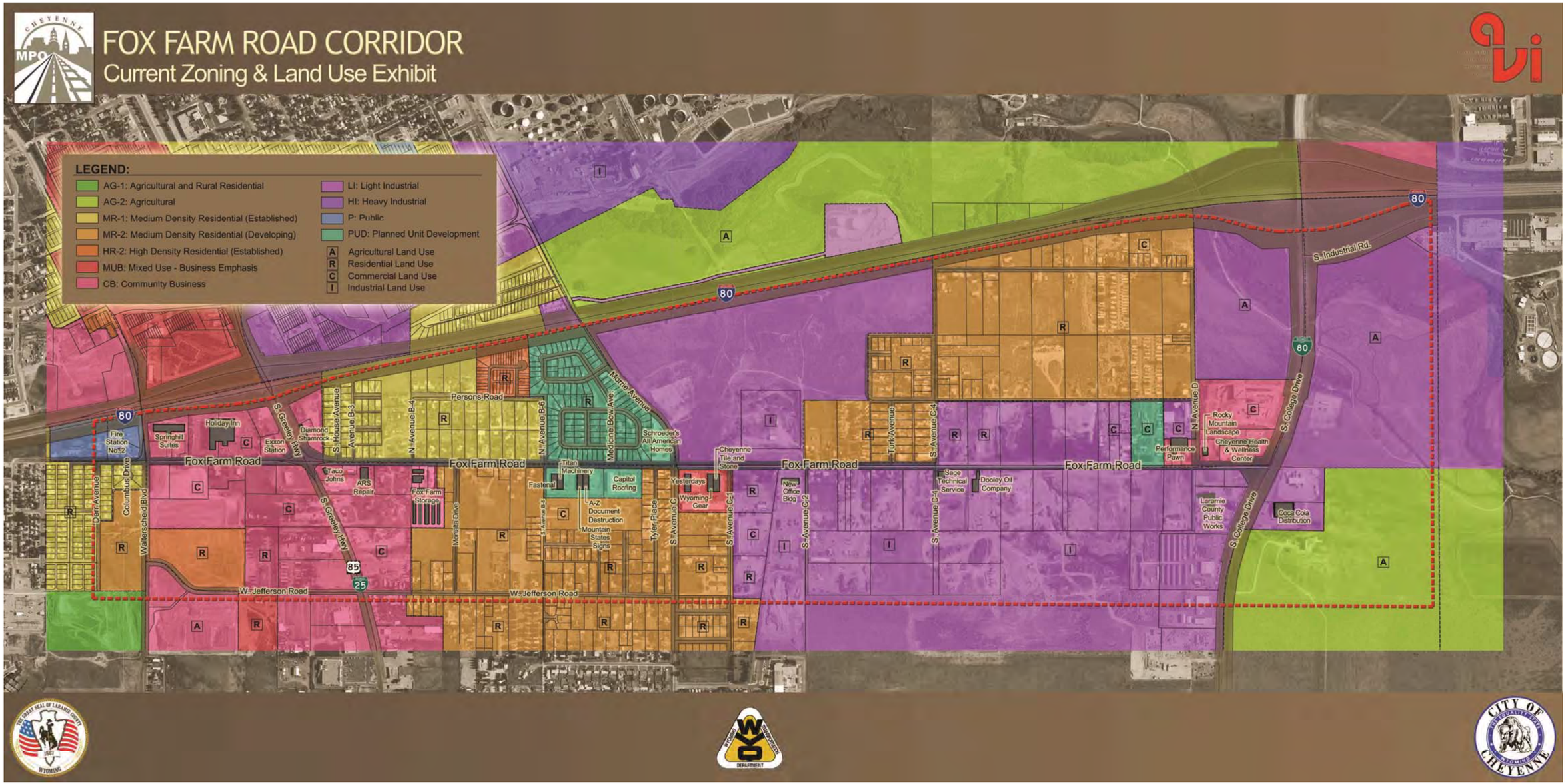


Figure 13 Existing Land Use and Zoning

Structure

The structure is the process and planning context phase of the project. It provided an avenue for a collaborative effort to define the opportunities and constraints of the corridor, as well as, frame the key planning considerations which shaped the plan.

The Fox Farm Road Corridor Plan relied heavily upon extensive public and stakeholder participation. The process involved open house format meetings with residents, business owners, developers, land owners, as well as, project Steering Committee, Planning Commission, Cheyenne Metropolitan Planning Organization Technical Advisory Committee, Cheyenne Metropolitan Planning Organization Citizen Advisory Committee, Individual Landowner/ Business meetings, and a Holly Frontier Freight/ Truck Route Survey. **Table 2** shows a matrix of all the avenues used and dates in the structure process of the project.

Table 2 Public Outreach Matrix

ACTIVITY	DATE(S)
South Cheyenne Community Showcase	February 26, 2011
Public Open House (3)	March 29, 2011; November 16, 2011; and May 28, 2013
Steering Committee (5)	March 9, 2011, July 6, 2011, February 22, 2012, November 1, 2012, and April 10, 2013
Laramie County Planning Commission Work Session (Land Use)	August 25, 2011
Individual One-on-one Meetings w/ Land and Business Owners	June 21, 2012 (Ms. Read) April 13, 2012, June 22, 2012 (Mr. Lummis) October 24, 2012 (Mr. Hales) May 22, 2012 (Diamond Shamrock) June 25, 2013 (Taco Johns International)
MPO Technical Advisory Committee (2)	August 15, 2012 and May 15, 2013
MPO Citizen Advisory Committee	May 16, 2013
Federal Highway Administration and WYDOT	June 26, 2013
Holly Frontier Freight/ Truck Route Survey	July 17-19, 2013

South Cheyenne Community Showcase

The project structure began at the South Cheyenne Community Showcase conducted at Laramie County Community College on February 26, 2011. The project was introduced to the public at a booth which displayed an overall aerial photograph with project limits and was manned by AVI and the MPO. Both paper and an electronic comment card were available for attendees.

Public Open Houses

The next structure component involved open house style forums for stakeholder and public comment and input. Three open house style public meetings were conducted during the project. AVI lead the public involvement process with assistance and contributions from all the team members. The meetings were advertised through various medium including newspaper, web, elementary school flyers, mail flyers, and variable message board signs placed on Fox Farm Road.

First Open House

The first public meeting was conducted on March 29, 2011 from 4:00 p.m. to 7:00 p.m. in the gymnasium at Arp Elementary School. The site was selected due to its proximity to the corridor study. Seventy-two (72) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Obtain and listen to initial feedback from the public on problems, concerns, and desires of for the future development and transportation components of the area.
- Identify and begin involvement of interested stakeholders.
- Provide a platform to begin work with the Steering Committee.

Planning and Engineering consultants from AVI, Jovi Plans and Sustainable Traffic Solutions were present to receive public comment. The MPO and Laramie County Planning staff members were an asset in fielding questions, gathering comments, and directing citizens to the different areas within the open house.

The open house was organized into three different stations to prompt input for the corridor and planning components. Those stations were Traffic, Site Issues, and Zoning/ Land Use. Information and input from the public at those stations was collected by way of three different avenues. Those were direct communication with a team member (i.e. consultant, MPO staff member, and Laramie County Planning staff member), the second was by having the public write comments on Post-it® notes and placing them on large planning area maps, and the third was by written survey. The primary purpose of the three different communication avenues was to create the most comfortable environment for individuals to convey information. "Something to think about" prompts were listed at each of the individual station tables to also prompt input. The questions from the Zoning and Land Use Table were as follows:

What are your thoughts in regard to Land Use and Zoning?

- What type of development or land uses would you like to see in the area and corridor?
- Do you prefer industrial, residential, retail, office, manufacturing, or other?
- Do the zoning areas surprise you?

The overview of the station results were as follows:

Traffic Station

The Fox Farm Traffic station received three primary concerns. The first was over the inadequate width of the Fox Farm Road for turning movements on and off the corridor and at key intersections. The secondary area of concern was the lack of pedestrian facilities and connections with surrounding neighborhoods and greenway paths. Finally the last comments were directed a speeding and lack of landscaping and lighting along the corridor.

Site Issues and Concerns

At the Site Issue station it was there were many of the same comments about traffic along the corridor, but there was much more concern with the overall look of the corridor, as well as, lack of maintenance of the roadways within the area. There was also discussion about drainage concerns in the area.

Current Zoning and Land Use Station

The Current Zoning and Land Use station brought a lot of attention to the need for a location for people to gather in the area. The suggestions included a larger school site, parks, tennis courts, swimming pool, skating park, and connecting trails and greenways. Another interesting idea that resulted from the meeting was that there was a positive response overall to commercial activities and increased density if this helps bring in more commercial/office type uses. Respondents also made it clear that they would like to see industrial use stay south of Fox Farm Road. There are many large lot areas that are vacant or underutilized at this time for an area that has water and sewer.

Of the Seventy-two (72) persons signed in as attending the public open house Fifty-five (55) written comments were returned or approximately Seventy-six point four (76.4%) return. Of the survey respondents, seventy four point five percent (74.5%) of them either owned or rented property within the area of the study and sixteen point four percent (25.5%) classified themselves as route users. A complete summary of comments, exhibits, sign in sheets, and comment cards are enclosed in Appendix B.

Second Open House

The second public meeting was conducted on November 16, 2011 from 4:00 p.m. to 7:00 p.m. in the gymnasium at Arp Elementary School. The site was selected due to its proximity to the corridor study and the excellent turnout we had received at the previous open house. Advertisement of the meeting was accomplished through various media including newspaper, City of Cheyenne Metropolitan Planning Organization (i.e. MPO)/ City of Cheyenne Website, and Variable Message Signs placed on Fox Farm Road. Fifty-five (55) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Have the public review the new land use plan for the corridor. The Study team wanted to verify what it had heard at the initial meeting so that future traffic volumes could be represented correctly on design drawings.
- The consultants presented different road options based on the direction of public comment from the first meeting and provided visual diagrams of what could be done along the corridor.
- Four key intersection design options were also presented for public discussion and responses.
- A master drainage conception was presented to show possible ways to help with drainage concerns within the study.

Planning and Engineering consultants from AVI, Jovi Plans, and Sustainable Traffic Solutions were present to receive public comment from the citizens that participated in the open house style meeting. MPO and Laramie County Planning staff members assisted in fielding questions, gathering comments, and directing citizens to the different areas of the open house.
The open house was organized into three different stations each one with its own design component and consultant to gather input from the attendees. It was set up to allow the public to review the Conceptual Land Use Plan, move to the Transportation and Roadway Station (i.e. road corridor options and intersection conceptual alternatives), and finally Drainage Component Station (i.e. existing conditions and conceptual alternative plans). Breaking the public into smaller groups allowed the more one on one conversation/ interaction with people. This was an attempt to ensure the public in attendance were allowed to speak freely and get to know the people working on the corridor plan. A separate place was provided for the public to write comments and to answer a written survey.

Results for the written survey information were entered into the computer system by the consultants after the open house or the public had the option of entering the survey electronically through the Survey Monkey® web link. The link was provided on the bottom of the comment card and Cheyenne Metropolitan Planning Organization website. The overview of the station results were as follows:

Land Use Station

The Land Use station was primarily a review of the input the consultants received and applied from the first public meeting, meetings with the steering committee and the Laramie County/ City of Cheyenne Planning Commissions. The Land Use Plan was very well received with only one person asking for their parcel to be changed.

In order to coordinate the Laramie County Land Use Regulations and City of Cheyenne UDC zones, an overlay district might make sense. This would synchronize the different regulations and help distinguish the mixed-use residential and mixed-use business land use types since Laramie County only has a single Mixed Use Zone.

Transportation and Roadway

The Transportation and Roadway Station encompassed the introduction of roadway design components, intersection conceptual alternatives, and truck turning movements of standard intersection versus a roundabout.

Most of the discussion in this area entailed accommodating large trucks, which utilize the intersection of Avenue C/ Morrie Avenue with Fox Farm Road. It was indicated that a majority of the truck movements was from southbound Morrie Avenue to eastbound on Fox Farm Road and from westbound Fox Farm Road to northbound Morrie. It was indicated that the traffic was due to the interstate traffic accessing the Holly Frontier Corporation site formerly known as Frontier Refinery. The truck traffic discussion prompted the demonstration of the large width required to turn a semi-truck at a standard four-way intersection and that properly sized roundabout can facilitate a safer and more convenient movement.

Particular comments were received regarding the importance of the placement of signal at College Drive and Fox Farm Road. It was reiterated that the intersection was unsafe for vehicles entering College Drive from westbound to northbound. Although the traffic accident data shows this intersection to be the second lowest in accidents out of the four primary intersection on the corridor (i.e. South Greeley (24), Avenue C (10), College Drive (8), and Walterscheid Blvd. (7)).

Reviewing the reported crash data from 1/2007 to 12/2009, it appears that only one accident was related to a movement from westbound Fox Farm to northbound College. The primary unsafe perception appears to stem from ghosting issues related to turning movements from Fox Farm to northbound College. Due the skew of the intersection and the transition from two travel lanes to a single lane on southbound College and one travel lane to two travel lanes in on northbound College, cars are either hidden behind each other or imperceptible as to whether they are turning onto Fox Farm or proceeding on College through the intersection.

Some discussion was spent on the intersection at South Greeley Highway related to the possible incorporation of access control medians being placed on the west and east side of Fox Farm Road. Proponents expressed that it would make the turning movements more defined and safer. For instance, it was indicated that it is very common for traffic proceeding northbound South Greeley to eastbound on Fox Farm Road to directly cross into the south approach of the Diamond Shamrock instead of using the west approach off of South Greeley. Opponents to the use of the access control median expressed concern of preventing traffic existing from the south approach of the Diamond Shamrock from entering eastbound Fox Farm Road. Additionally, a resident of South House Avenue the concern that we should provide a left turn bay for the eastbound to northbound movement off of Fox Farm Road.

Finally, general comments were received regarding the importance of street lighting, curb and gutter, and sidewalks to be incorporated into future roadway improvements on the corridor.

Drainage Station

In the first public meeting drainage was one of the topics of concern therefore, for the second public meeting the AVI developed a Drainage Constraints map and Conceptual Potential Drainage Opportunities Map. The map summarized existing drainage-related issues along the Fox Farm Road Corridor. Site photographs were provided at an approximately location within an overall aerial layout. This provided a visual referenced to the location and type of drainage constraint. Drainage areas, which contribute storm water runoff onto the Fox Farm Road Corridor, were also outlined on the exhibit for reference and scale of the amount of storm runoff contributing to the area. A summary table of the typical constraints and potential solution types were shown with relative costs **(See Figure 9 and 10)**.

The second exhibit developed was the Conceptual Potential Drainage Opportunities. The layout outlined long-range broad type master planning opportunities for improving the drainage along corridor. The exhibit summarized five (5) separate conceptual drainage conveyance paths to modify and improve conveyance runoff off of Fox Farm Road and into Allison Draw and/or Crow Creek drainages. The master plan level solutions looked at different routing of storm water and regional storm water detention areas **(See Figure 14).**

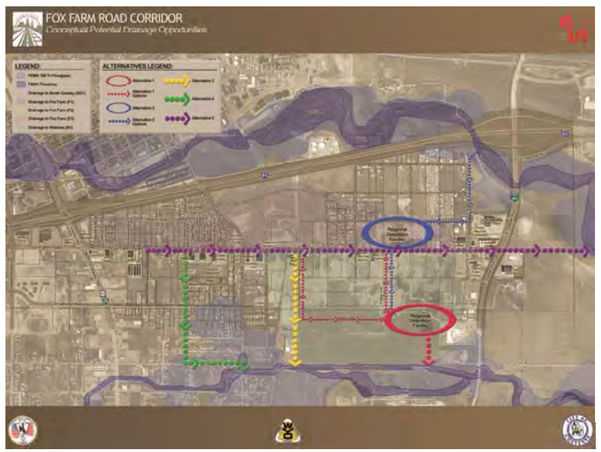


Figure 14 Conceptual Drainage Opportunities

Public discussion and concerns were expressed regarding offsite discharge and conveyance problems, as a result of, the Deerhaven subdivision placed off of Montalto Drive. Several attendees cited standing water, inadequate to poor drainage ditches, and a perception that runoff volume from the subdivision has increased on East Jefferson Road since the completion of the this stage of development. Other comments included that some drainage from Fox Farm Road is being conveyed to private property. Specifically, it was noted that an existing culvert at the intersection of Avenue D and Fox Farm Road appears to convey storm water runoff from the north side of Fox Farm Road directly onto private property.

Thirty-one (31) participants provided written survey comments or a 56.3% response rate. Of the survey respondents, eighty three point nine percent (83.9%) of them either owned or rented property within the area of the study while sixteen point one percent (16.1%) were route users. A complete summary of comments, exhibits, sign in sheets, and comment cards are enclosed in Appendix B.

Third Open House

The third public meeting was conducted on May 28, 2013 from 4:00 p.m. to 6:00 p.m. in the gymnasium at Arp Elementary School. Advertisement of the meeting was accomplished through various media including newspaper, City of Cheyenne Metropolitan Planning Organization (i.e. MPO)/ City of Cheyenne Website, and Variable Message Signs placed on Fox Farm Road. Fifty-two (52) people were listed on the Sign-In-Sheet as attending the meeting. The objectives of the open house were as follows:

- Have the public review and comment on the conceptual land use plan for the corridor. This included a revised conceptual land use map of portions east of College Drive.
- Review and comment on a proposed rural and urban cross section (i.e. with and without curb and gutter, respectively).
- Three key intersections with preferred designs and one intersection with two options were presented for public discussion and responses.
- A proposed conceptual plan, intersection modifications, and greenway extension were visually presented for public input and consideration.
- Three alternatives for modifications to the intersection of South Industrial Road at College Drive were presented for public comment.

Planning and Engineering consultants from AVI and Sustainable Traffic Solutions were present to receive public comment from the citizens that participated in the open house style meeting. MPO and Laramie County Planning staff members fielded questions, gathered comments, and directed citizens to the different areas of the open house.

The open house was organized into two duplicate stations with three different design components as follows: Land Use, Conceptual Typical Sections and Intersection Options, Burlington Trail Road, and South Industrial Road. A separate tabled area was also used for the public to write comments and to answer the written survey.

Results for the written survey information were entered into the computer system by the consultants after the open house or the public had the option of entering the survey electronically through the Survey Monkey® web link. The link was provided on the Cheyenne Metropolitan Planning Organization website.

Twenty-seven (27) participants of the fifty-two (52) listed on the sign-in sheet provided written survey comments or a 51.9% response rate. The written survey responses were entered and the results are included in the following charts by the category that they relate. Of the survey respondents, fifty-five point five percent (55.5%) of them either owned or rented property within the area of the study and twenty-nine point six percent (29.6%) were route users. A complete summary of comments, exhibits, sign in sheets, and comment cards are enclosed in Appendix B.

Steering Committee

The second structure component of the project involved enlisting the use of Steering Committee. The committee was comprised of the following staff and key stakeholders from the MPO/City/County/WYDOT and other agencies:

- Tom Mason, Cheyenne Metropolitan Planning Organization
- Nancy Olson, Cheyenne Metropolitan Planning Organization
- James Sims, Cheyenne Metropolitan Planning Organization
- Matt Ashby, City of Cheyenne
- Brandon Cammarata, City of Cheyenne
- Doug Vetter, City of Cheyenne
- Nathan Beauheim, City of Cheyenne
- Mark Escobedo, City of Cheyenne
- Gary Kranse, Laramie County Planning
- Abby Yenco, Laramie County Planning
- John Shepard, Laramie County Planning
- Barbara Kloth, Laramie County Planning
- Don Beard, Laramie County
- Dennis Auker, Laramie County School District #1
- Mel Wilkenfield, South Cheyenne Community Development Association/ Holly Frontier
- Jim Rish, South Cheyenne Water and Sewer District
- Jef McMann, Cheyenne Light, Fuel, and Power
- Joe Dougherty, Cheyenne Transit
- Jeff Wiggins, Cheyenne Trails and Bicycle Specialist
- Amanda Brinkman, Cheyenne Health Clinic
- Randy Griesbach, WYDOT District
- Kevin McCoy, WYDOT Planning
- Jeff Purdy, Federal Highway Administration

The Steering Committee met five (5) times throughout the course of the project to guide the work efforts of the consultant team, review project information, provide insight, discuss public and stakeholder involvement, and collaborate to make decisions about the plan direction and recommendations. Meeting minutes and agenda of the meetings can be found in Appendix B.

Planning Commission

The third structure component of the project involved utilizing a working secession of the Laramie County Planning Commission and a joint public forum meeting of the City of Cheyenne and Laramie County Planning Commissions.

The primary purpose of the working secession of the Laramie County Planning Commission was to covey the comments received from the first open house and collaborate on the development of the Conceptual Land Use plan for the corridor. The efforts of the group yielded the development of a commercial/ industrial zoning overlay to be used on some of the frontage properties along Fox Farm Road.

The joint meeting of the commissions allowed both jurisdictional entities to work in partnership for the development of the vision of the corridor. The latest recommended intersections and typical cross sections were presented to the group with interaction in the formal framework of the meeting.

One-on-one Meetings

The fourth type of structure component for the project involved one-on-one individual meetings. Two types of one-on-one meetings were required for the project. The first were the landowners east of College Drive. Their purpose was to discuss the future land use and alignment options east of College Drive for Fox Farm Road. They took place individually via phone or person to person with Mr. Del Lummis, Mr. Sloan Hales, and Ms. Christine Read. The primary developments from those meetings were which roadway became the primary connection to the east (Fox Farm Road, Allison Road, or College) and the alignment path. Several options were explored including: Fox Farm Road as the primary east west and Allison Road teeing into Fox Farm **(Figure 15),** Allison Road as the primary east west route and Fox Farm road extending east and south teeing back to Allison Road **(Figure 16)**, East College Drive as the primary east west route with Fox Farm Road and Allison Road teeing into College Drive **(Figure 17)**.

The second type of one-on-one meetings was with some of the local businesses along the corridor. Big “D” Oil Company located at 100 North Greeley Highway; Diamond Shamrock located at 115 North Greely Highway; Taco Johns at 101 South Greeley Highway; and Leighton Enterprises, LLC at 100 South Greeley Highway were specifically solicited for input on the project.

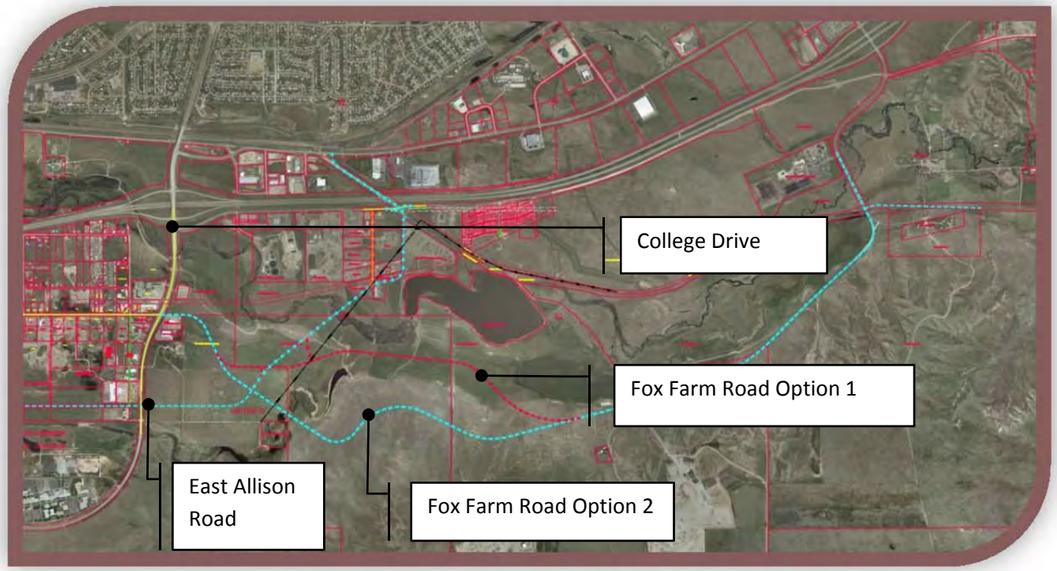


Figure 15 Conceptual Roadway Alignments East of College Drive (Fox Farm Road Primary Route)

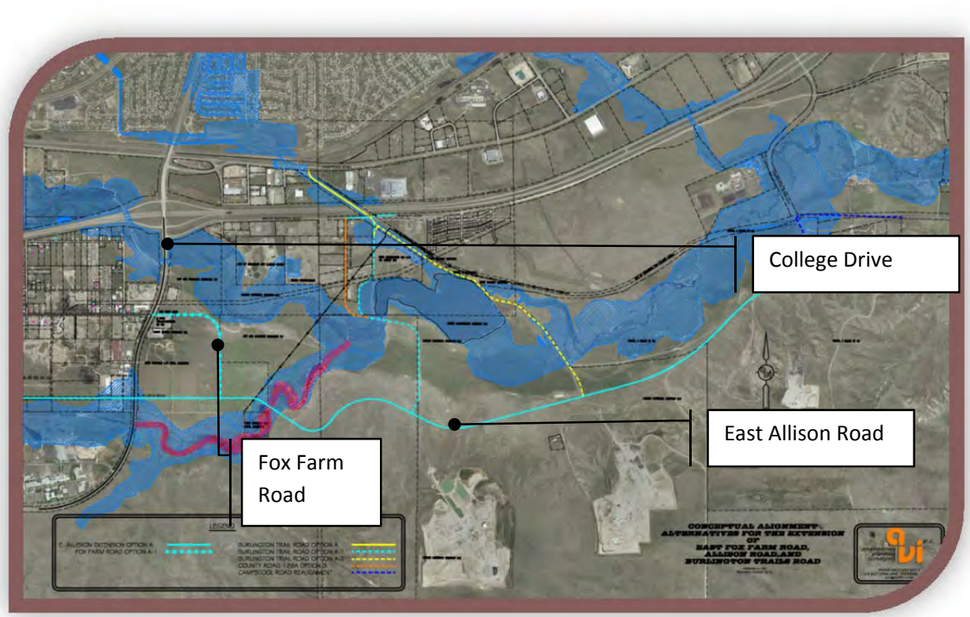


Figure 16 Conceptual Roadway Alignments East of College Drive (East Allison Primary Route)

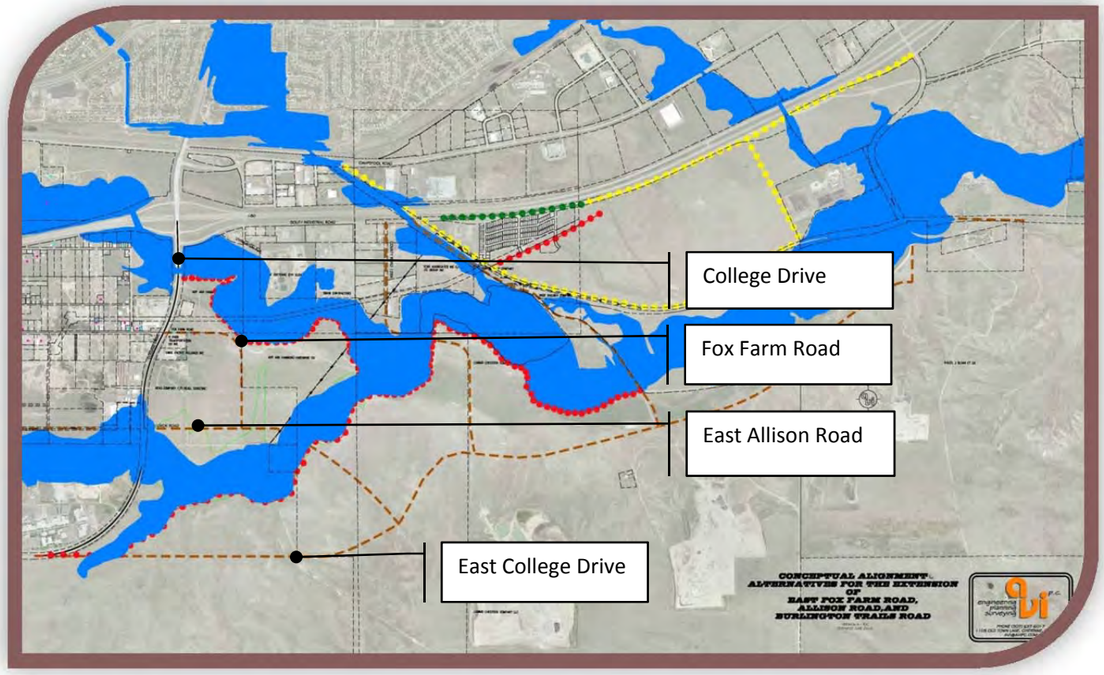


Figure 17 Conceptual Roadway Alignments East of College Drive (East College Drive Primary Route)

AVI conveyed that one type of improvement being looked was the use of access control or safety medians at key locations which are prone to weaving or unsafe turning movements. The local businesses expressed concerns over removing any existing access approaches but, were understanding as to the need of using some type safety measures at key locations. The majority of these safety concerns are at the high turning volume intersection of Fox Farm Road with North and South Greeley Highway (U.S-85). This areas geometric configuration and topography (i.e. angle, steep vertical grades, and close access proximity to the roadways intersection point) is inherently more prone to accidents. For example, some of the traffic traveling on northbound South Greeley Highway turning east onto Fox Farm actual cross three lane of traffic to access the Diamond Shamrock station approach on the north side street. Another type of common traffic movement occurring at this intersection location is unsafe left turning movements. Traffic which are exiting businesses near the intersection maneuver out into traffic attempting to avoid multiple conflicting traffic movements (**See Figure 18**, looking east on Fox Farm Road toward South/ North Greeley). At the time this photo was taken three (3) consecutive cars exited within a few minutes of each other making the movement avoiding near miss accidents with opposing traffic. One of the primary concerns of Taco John's International representatives at this location was not to remove the westbound Fox Farm Road left turn movement into the Taco John's location. They expressed that approximately a majority of the peak hour business traffic at this location originates from westbound Fox Farm Road entering from the Fox Farm approach.

Figure 18 Fox Farm Road Looking East towards South/ North Greeley Highway

Cheyenne Metropolitan Planning Organization (Committee Meetings)

The fifth type of structure component involved presenting developmental increments and soliciting input form the established Cheyenne Metropolitan Planning Organization Technical Committee and Citizen's Advisory Committee.

Holly Frontier Truck Route Survey

Once the public involvement process began for Fox Farm Road, it became very apparent that truck traffic/ freight traffic was a large part of the users of the corridor. The corridor's location adjacent to the Holly Energy Partners refinery, industrial parcels along the corridor, and access to both I-80 and US-85 all contribute to increased freight use.

Due to its size and proximity to the corridor, Holly Energy Partners became a logical choice to obtain valuable data for the size of truck, frequency of use, and verification of the truck routes used. AVI contacted Holly Energy Partners about the proposal to collect data for the truck routes and found the staff very helpful and without their support the collection would have not been possible. AVI would like to directly thank Dan Foster and Stu Fishbeck of Holly Energy Partners for all their assistance. After contacting Holly Energy Partners early in the corridor study, it was conveyed by Stu Fishbeck that Holly Energy Partners do not directly hire drivers nor have control over ingress and egress routes. Mr. Fishbeck indicated that in fact drivers were encouraged not to use Fox Farm Road for freight/ truck routes. The refinery designates or encourages independent drivers to use the following truck routes:

- Morrie Avenue to East 1st to Warren Avenue or Central Avenue then North Greeley/ I-180 (North or South) via East 5th Avenue.
- Campstool Road to Campstool Way to North College Drive to I-80 East or West.

Truck Survey comment cards were collected and distributed at two location at the refinery from July 17 to July 19, 2013. The first was at the unmanned loading docks off of Morrie Avenue and the second was the manned Gate 7 off of Campstool Road. Results for the written survey information were entered electronically through the Survey Monkey® web link for analysis.

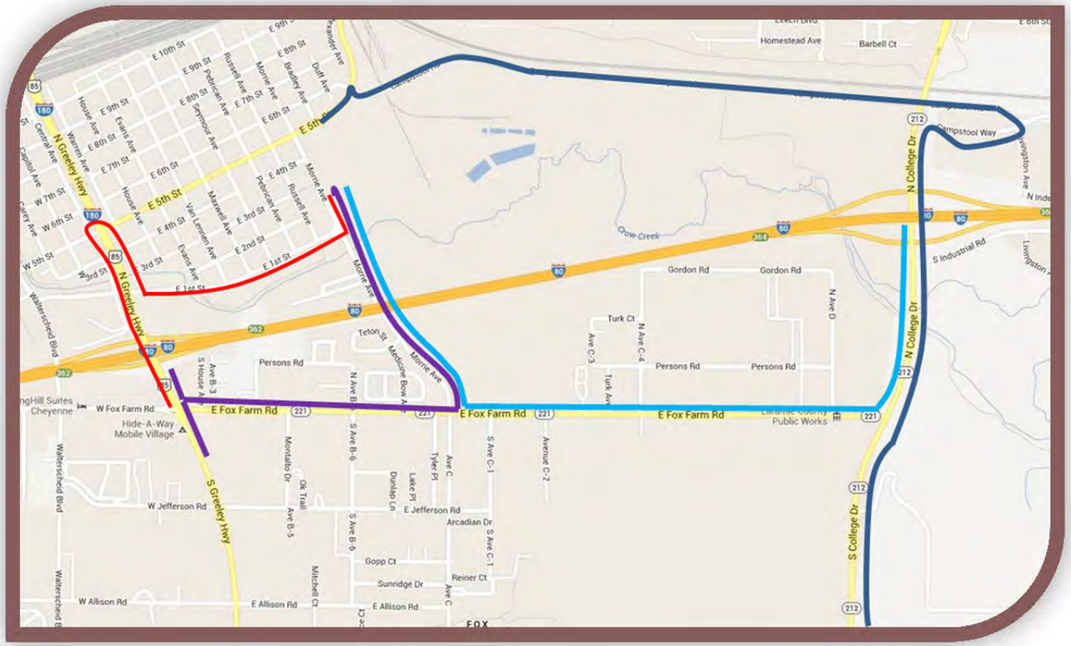
The truck route provided valuable data from a primary user's group which did not get well represented in the public meeting forum process. Three primary conclusions can be drawn from the data.

First, despite the existing roadway typical section and width constraints for trucks due to inadequate width for turning on and off the corridor, sixty-two percent (62.9%) of all the refinery freight traffic uses Fox Farm Road for access to or from the refinery. This likely due to the fact drivers perceive the travel time and ease of access to either U.S. 85 or I-80 are less than the other routes available to the freight traffic. However, using Map data generated using Map

data ©2013 Google the East 1st Avenue route is actually less than or equal in distance to I-80 and U.S. 85 while the travel times are only 1 to 5 minutes more. See the following table:

Table 3 Truck Route Distance and Travel Times Map

Route	I-80		U.S. 85	
	Distance (miles)	Travel Time (minutes)	Distance (miles)	Travel Time (minutes)
R2: West Fox Farm	1.6	4	1.4	3
R4: East Fox Farm	2.3	6	-	-
R1: East 1st Avenue	1.3	5	1.4	8
R3: Campstool Road	5.5	12	2.3	6



Second, it can be inferred that the lack of width on Fox Farm (limited turning ability of freight truck turning) discourages larger freight traffic from using the corridor. Based on survey seventy-two point nine (72.9%) of all the freight trucks are conventional combination (i.e. 5 to 6 axle) tractor semi-trailer and twenty-seven point one (27.1%) of the freight trucks are larger combination (i.e. 6 -7 axles) w/ tractor and pup. Furthermore, sixty-two point nine percent (62.9%) of all the refinery freight traffic uses the Fox Farm Corridor for access. Increasing the width of the primary intersections and roadway will likely increase the truck freight traffic on the corridor which would include both conventional semi-tractor trailer and larger tractor and pup combinations.

Third, based on the additional written comments, a significant number of freight truck users (29/70) or forty one point four percent (41.4%) perceive the intersection of Fox Farm Road at Morrie Avenue/ Avenue C as unsafe, operational impaired or generally inadequate for them to use.

Shape

The Shape section contains a set of foundations which forms the perimeter or boundary of the plan. The Four Foundations are listed below and detailed in the following chapter:

Foundation 1 Conceptual Land Use
Foundation 2 Overlay District
Foundation 3 Redevelopment Plan
Foundation 4 Market Analysis.

Foundation 1 Conceptual Land Use

AVI and Orion Planning Group collaborated to develop a Proposed Conceptual Land Use Plan with the purpose to guide future development and provide a basis for generating trip generation rates and future volumes for traffic analysis of proposed intersection and lane configurations. The final version of the Conceptual Land Use Plan was developed through all the elements of the Structure process previously discussed. **See Figure 19**, Conceptual Land Use.

Foundation 2 Overlay District

During the public open house process there was a lot of interest in increasing densities in the certain corridor areas to help bring additional commercial retail and office to the area. One idea that came out of the plan was to create an overlay district that would you use the existing Plan Cheyenne document and give developers incentives in the way of increased residential density or commercial square footage based upon the development pattern called out in Plan Cheyenne.

A version of a possible overlay is incorporated in the existing County MU zone below. If this is something the County wants to pursue it should be vetted out with current developers of projects to see if this would be a stimulant to additional growth along the corridor.

4-2-111 DISTRICT MU - MIXED USE

Mixed use developing areas are to be used for a mix of residential and commercial uses. This district is intended to encourage rehabilitation and reuse of existing buildings in the established areas of the community.

a. Uses by Right

i. Medium density residential
ii. Mixed use residential developments
iii. Family child care homes
iv. Home occupations
v. Churches, temples or other places of worship
vi. Offices
vii. High density residential
viii. The retail sale of goods when the use is proposed in a building and the sale and storage of equipment and supplies are conducted within the building.
ix. Child care facilities
x. Assisted living facilities

b. Uses Requiring Board Approval

The following uses may be permitted by the Board:

i. Food service facilities
ii. Bars, cocktail lounges and liquor stores
iii. Other uses similar to those permitted in this district
iv. Entertainment facilities

c. Minimum Property Area

i. Single-family: 7,000 square feet per unit Down to 5,000 if in Fox Farm Corridor Study as MUR
ii. Townhouse/duplex: 3,500 square feet per unit Down to 2,500 if in Fox Farm Corridor Study as MUR
iii. Multi-family: 1,860 square feet per unit Down to 1,500 if in Fox Farm Corridor Study as MUR

d. Maximum Building Coverage

i. Single-family: 60 percent of property area
ii. Townhouse and duplexes: 50 percent of property area
iii. Multi-family: 50 percent of property area 75% for Fox Farm MUR
iv. Total building and parking areas shall not exceed 60 percent of the total property area for nonresidential uses. This should be adjusted to 90% for areas in the Fox Farm Corridor Study that are described as MUC.

Best Management Practices for storm water management and open space design are encouraged. Characteristics such as community open space, pocket parks and connectivity to regional trails, including the Greater Cheyenne Greenway, are encouraged.

e. Setbacks

i. The minimum setback from all front property lines shall be twenty-five (25) feet for all principal structures. (20' for residential for MUR and 10' for commercial for MUC)
ii. The minimum distance from a side property line shall be five (5) feet for all principal structures.
iii. The minimum rear yard setback shall be twenty (25) feet for all principal structures. (20' for residential for MUR and 10' for commercial for MUC)
iv. Accessory structures shall conform to section 2-2-118 of this regulation.

f. Height

i. The maximum building height shall be thirty-five (35) feet.
ii. Board approval is required for buildings over thirty-five (35) feet in height.

g. Site Design

All areas, including areas from right-of-way line to property line that are not covered by buildings, sidewalks, and parking area, shall be landscaped.

h. Parking

Parking requirements shall be in conformance with these regulations.

i. Site Plan

A County-approved site plan shall be required in accordance with section 2-2-133 of these regulations. Screening is required in conformance with site plan requirements for outdoor storage areas of items and equipment which are not for immediate use, sale or lease. Screening for outdoor storage areas shall be located behind the setback line.

Foundation 3 Redevelopment Plan

The boundary of the redevelopment area was South Greeley Highway, College Drive, Interstate 80, Jefferson Road, and College Drive. The focus of this foundation is the overall assessment of the study area based on the following parameters:

- Natural Hazards
- Environmental Contamination Properties
- Public Infrastructure
- Survey and Assessments of Properties, Buildings, and Structures

Natural Hazards

The survey showed discernible properties that would be susceptible to the effects of natural hazards within the study area and are listed in Appendix C.

Environmental Contamination Properties

The only properties potential susceptible to contamination were identified in the Snapshot portion of the report. A cursory review and consultation with staff of the Wyoming Department of Environmental Quality (WYDEQ) and available documentation revealed one historic landfill and seven construction/ demolition landfills in the area which could potentially impact future construction and redevelopment in the area (Inberg-Miller Engineers, 2005).

Figure 20 Potential Property Contamination Areas, Wilson Pit Landfill

The historic landfill was known as the Wilson Pit Landfill and operated by the City of Cheyenne Public Works Department from October 1944 to May 1946. It is a mined out, 4 acre gravel pit, located at the southeast and southwest corner of the intersection of Fox Farm Road and Avenue C-1 (Prosser Tract 1, Tract 16 and 17: **See Figure 20**).

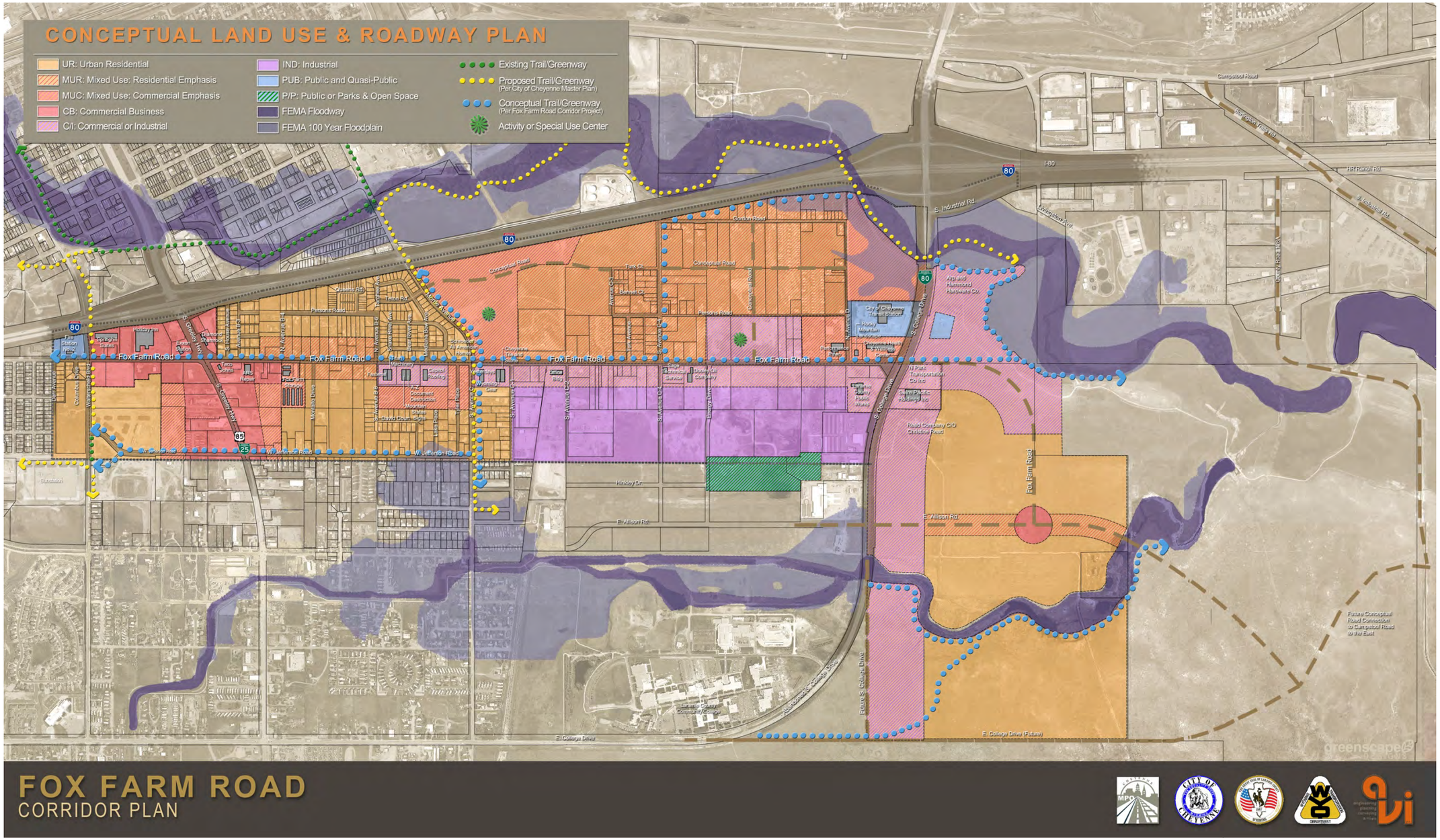


Figure 21, Proposed Conceptual Land Use Plan

Public Infrastructure Assessment

Roadway infrastructures in the redevelopment area were inventory by on-site observation and evaluated based on the following rating scale:

- Asphalt Roads
  - A level for a new road;
  - B level for needing crack seal;
  - C level needing mill/overlay;
  - D level reconstruction.
- Gravel Roads
  - 3 good gravel road with drainage;
  - 2 road needing additional gravel with drainage;
  - 1 needed gravel and no drainage.

Table 4 Roadway Intersection Assessment

Street Name	Surfacing Type	Urban/Rural Section	City/County Jurisdiction	ROW Width	Roadway Width	Rating
Walterscheid Blvd N of Fox Farm Road	Asphalt	Urban	City	90’	34’	A
Walterscheid Blvd S of Fox Farm Road	Asphalt	Urban	City	75’	30’	A
N Greeley Highway	Asphalt	Urban	County	195’	90’	A
W Jefferson Road	Asphalt	Urban	City		32’	A
Fox Farm Road between Walterscheid Blvd and Greeley Highway	Asphalt	Urban	City	80’	Avg. 44’	A
S Greeley Highway between Fox Farm Road and Jefferson Road	Asphalt	Urban	County	90’	75’	A
S House Ave	Asphalt	Urban	City	60’	36’	B
Avenue B-3	Gravel	Rural	City	30’	16’	2
Vaughn Ct	Gravel	Rural	County	52’	Avg. 28’	1
N Avenue B-4	Gravel	Rural	County	30’	20’	2
Persons Road	Asphalt/Gravel	Urban	City/County	75’	36’	A/2
Borough St	Asphalt	Urban	City	50’	28’	A
Queens Rd	Asphalt	Urban	City	50’	28’	A
Southern View Dr	Asphalt	Urban	City	50’	28’	A
N Avenue B-6	Asphalt	Urban	City	80’	36’	A
Montalto Drive	Asphalt	Urban	County	52’	Avg. 29’	A
OK Trail	Gravel	Rural	County	40’	12’	1
S Avenue B-6	Gravel	Rural	County	40’	Avg. 25’	3
David Ct	Gravel	Rural	County	50’	30’	2
Dunlap Lane	Gravel	Rural	County	30’	16’	1
Lake Place	Gravel	Rural	County	60’	24’	2
Tyler Place	Asphalt	Urban	County	42’	30’	B
S Avenue C	Asphalt	Urban	County	75’	36’	A
Sierra Madre St	Asphalt	Urban	City	60’	36’	A
Snake River Ave	Asphalt	Urban	City	65’	36’	A
Absaroka St	Asphalt	Urban	City	60’	36’	A
Bear River Ave	Asphalt	Urban	City	60’	36’	A
Owl Creek Ave	Asphalt	Urban	City	60’	36’	B
Medicine Bow Ave	Asphalt	Urban	City	65’	36’	A
Teton St	Asphalt	Urban	City	60’	36’	A
Targhee Ave	Asphalt	Urban	City	60’	36’	A
Wasatch St	Asphalt	Urban	City	60’	36’	A
Morrie Ave	Asphalt	Rural	City	95’	36’	A
Fox Farm Road from Greeley Hwy to Morrie	Asphalt	Rural	County/City	80’	42’	A
S Avenue C-1	Asphalt	Rural	County	50’	36’	A
Avenue C-2	Gravel	Rural	County	30’	30’	3
Energy Drive	Under Construction	-	County	-	-	-
Turk Ave	Asphalt	Rural	County	62’	40’	B
Turk Ct.	Gravel	Rural	County	30’	20’	2
N Avenue C-4	Gravel	Rural	County	50’	20’	3
Persons Rd	Gravel	Rural	County	60’	25’	3
Avenue C-3	Gravel	Rural	County	65’	Avg. 22.5’	2
Bennet Ct	Gravel	Rural	County	60’	30’	2
Gordon Rd	Gravel	Rural	County	50’	20’	3
Avenue D	Gravel	Rural	County	60’	25’	3
Fox Farm Rd from Morrie to College Dr	Asphalt	Rural	County	60’	42’	B
S College Dr N of Fox Farm to S Industrial Rd	Asphalt	Rural	County	190’	90’	A
S College Dr S of Fox Farm to State Labs Building	Asphalt	Rural	County	210’	90’	A

Survey of Condition Assessment for Properties, Buildings and Structures.

Walterscheid Boulevard to South Greeley Highway

This section of Fox Farm Road is not a key area for redevelopment. Most of the property is developed with newer businesses or vacant property. There are a couple of parcels off of South Greeley Highway that could be easily developed due to the fact that the existing parcels are underutilized or to bring the property back to a vacant state would be fairly inexpensive. The

area surrounding the vacant and underutilized parcels is primarily community business in nature or multifamily both of which could continue with redevelopment in the area.

South Greeley Highway to Morrie/Avenue C
Development in this along this section of Fox Farm Road has been primarily in the area of Multi-Family Residential and Apartments. Additional redevelopment could occur along this stretch of Fox Farm Road with the land uses of office, specialty retail, storage and additional residential units. The large lots residential lots with a single family home north of Fox Farm Road between N Avenue B-4 and N Avenue B-6 lead themselves to redevelopment into neighborhood type offices. They have enough space at about a half an acre to have standalone medical/dental/insurance offices that can meet the building, parking and landscaping requirements of the City or County. In general the lots to the south of Fox Farm that can be redeveloped are much larger in nature than those to the north this would allow for more specialty and industrial retail that we see in other areas along the corridor. Their size also allows for the opportunity for multi-family residential units.

Morrie/Avenue C to College Drive
The redevelopment of the south side of this section of the corridor is occurring simultaneously with this study. The extension of Energy Drive to Allison Road has opened up additional lands for Industrial/Commercial Lots. The lots are generally two and half plus (2.5+) acres which allow companies with large equipment of storage needs to site along the corridor. The area to the north of this section is primarily residential in nature and areas not adjacent to Fox Farm Road would be excellent opportunities for additional residential type uses. The size of most of the lots also will allow for redevelopment to be creative in its uses of infrastructure to create additional residential units. As additional residential units populate this area there will be more demand for neighborhood business and on the north side adjacent to Fox Farm Road would be an ideal place for parcel to redevelop to serve all the residents in the area.

Foundation 4 Market Analysis

Purpose of Market Analysis

- Provides a "reality check" for the planning process
- Ensures that land use programming is grounded in market and economic reality (thereby increasing the likelihood of success)
- Provides an accurate and independent "story" to tell potential private sector audiences

Trade Area Identification

- Based on influence of: physical barriers; location of possible competition; proximity to population and/or employment concentrations; zoning; market factors; drive times; spending and commuting patterns, etc.
- For purposes of market demand parameters, the trade area was estimated to be Laramie County.
- As the planning process moves forward, expanded trade areas may exist for certain land uses, e.g., regional retail, employment centers.

Potential Market Demand

Residential

- Demand for residential units in Laramie County is a function of projected household growth, estimated at approximately 1.5% annually over the next 20 years.
- Based on this level of growth, Laramie County could accommodate approximately **13,300 new housing units** over the next 20 years – **9,000 ownership units** and **4,300 rental units**. This gross unit demand is further allocated into approximate income-qualified rent and home price groups. **(See Table 5).**

Table 5
Residential Unit Demand by Income, Rent and Price Range
Fox Farm Road Corridor Trade Area (Laramie County)

Residential Demand Analysis	Households	2010	37,576			
Laramie County Trade Area		2020	43,608	Annual Growth Rate	1.5%	
2010-2030 Demand Estimates		2030	50,609			
	Household Growth (2010-30)		13,033	Adjust for 2nd homes, demolition, vacancy	2.0%	
	Adjusted Unit Requirement		13,294	% Rental	32%	

					Trade Area Demand from New Households (10-yr)			
Household Income Range (2010 dollars)	Approximate Rent Range	Supportable Home Price Range	Current Households in Income Bracket	New Households by Income Bracket	Total Units	Estimated % Rental	Total Rental Units	Total Ownership Units
up to $15K	up to $375	up to $75K	16%	15%	**1,994**	90%	1,795	199
$15-25K	$375 - $625	$75 to $100K	10%	9%	**1,196**	70%	838	359
$25-35K	$625 - $875	$100 to $150K	10%	9%	**1,196**	50%	598	598
$35-50K	$875 - $1,000	$150 to $200K	16%	15%	**1,994**	25%	499	1,496
$50-75K	$1,000+	$200 to $250K	18%	19%	**2,526**	10%	253	2,273
$75-100K	$1,000+	$250 to $350K	12%	13%	**1,728**	10%	173	1,555
$100-150K	$1,000+	$350 to $500K	12%	13%	**1,728**	5%	86	1,642
$150K and up	$1,000+	$500K and up	6%	7%	**931**	5%	47	884
Totals			**100%**	**100%**	**13,294**	**32%**	**4,287**	**9,007**

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker|Cunningham.

- **Table 6** shows a reasonable attainable capture rate for single family detached units in the Fox Farm Corridor (the Corridor) for households earning at least $15,000 per year. This analysis assumes that detached homes will account for approximately 70 percent of all ownership demand, with the balance coming in the form of attached products (condominiums, townhomes, rowhouses, lofts, etc.). As shown, over the next 20 years, approximately **185 new single family detached units** could be accommodated in the Corridor, assuming a relatively modest 3% capture rate.

Table 6
Single Family Detached Demand by Price Point
Fox Farm Road Corridor

Annual Household Income Range	Approximate Home Price Range	Trade Area For-Sale Demand (Incomes $15K+)	Estimated % Single Family Detached	Single Family Detached Demand	Fox Farm Road Corridor Attainable Capture Rate	Fox Farm Road Corridor Attainable Capture (units)
$15-25K	$75 to $100K	359	70%	251	3%	8
$25-35K	$100 to $150K	598	70%	419	3%	13
$35-50K	$150 to $200K	1,496	70%	1,047	3%	31
$50-75K	$200 to $250K	2,273	70%	1,591	3%	48
$75-100K	$250 to $350K	1,555	70%	1,089	3%	33
$100-150K	$350 to $500K	1,642	70%	1,149	3%	34
$150K and up	$500K and up	884	70%	619	3%	19
Totals		**8,807**	**70%**	**6,165**	**3%**	**185**

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker|Cunningham.

- **Table 7** shows a reasonable attainable capture rate for single family attached units (condominiums, townhomes, rowhouses, lofts, etc.) in the Corridor for households earning at least $15,000 per year. This analysis assumes that attached homes will account for approximately 30 percent of all ownership demand. As shown, over the next 20 years, approximately **528 new single family attached units** could be accommodated in the Corridor, assuming a 20% capture rate.

Table 7
Single Family Attached Demand by Price Point
Fox Farm Road Corridor

Annual Household Income Range	Approximate Home Price Range	Trade Area For-Sale Demand (Incomes $15K+)	Estimated % Single Family Attached	Single Family Attached	Fox Farm Road Corridor Attainable Capture Rate	Fox Farm Road Corridor Attainable Capture (units)
$15-25K	$75 to $100K	359	30%	108	20%	22
$25-35K	$100 to $150K	598	30%	179	20%	36
$35-50K	$150 to $200K	1,496	30%	449	20%	90
$50-75K	$200 to $250K	2,273	30%	682	20%	136
$75-100K	$250 to $350K	1,555	30%	467	20%	93
$100-150K	$350 to $500K	1,642	30%	493	20%	99
$150K and up	$500K and up	884	30%	265	20%	53
Totals		**8,807**	**30%**	**2,642**	**20%**	**528**

Note: Assumes Townhome/Condo development stabilizes at 25% of all ownership demand
Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker|Cunningham.

- While condominium-type construction has been adversely impacted nationally by the mortgage lending crisis and over-building, the low-maintenance and potentially pedestrian-friendly aspects of attached housing should grow in share as it finds appeal among an aging Baby Boomer population as well as young professionals. This absorption could take the form of loft condominiums within upper floor commercial buildings, as well as in new townhome or rowhouse construction on underutilized parcels scattered throughout the Corridor.
- **Table 8** shows a reasonable attainable capture rate for rental apartments in the Corridor for households earning at least $15,000 per year. As shown, over the next 20 years, approximately **499 new rental apartment units** could be accommodated in the Corridor, assuming a 20% capture rate.

Table 8
Rental Apartment Demand by Price Point
Fox Farm Road Corridor

Annual Household Income Range	Approximate Rent Range	Trade Area Rental Demand (Incomes $15K+)	Fox Farm Road Corridor Attainable Capture Rate	Fox Farm Road Corridor Attainable Capture (units)
$15-25K	$375 - $625	838	20%	168
$25-35K	$625 - $875	598	20%	120
$35-50K	$875 - $1,000	499	20%	100
$50-75K	$1,000+	253	20%	51
$75-100K	$1,000+	173	20%	35
$100-150K	$1,000+	86	20%	17
$150K and up	$1,000+	47	20%	9
Totals		**2,493**	**20%**	**499**

Source: U.S. Census; Wyoming Dept. of Administration -- Economic Analysis Division; and Ricker|Cunningham.

- As with single family attached ownership housing, new apartments could be created from rehabbing existing commercial space, built on smaller scattered-site underutilized lots, or developed on larger underutilized tracts as part of a residential mix.

Retail

- Demand for new retail space is determined by future retail spending potential of projected new households, as well as by some recapturing of retail spending that is currently lost to nearby communities or areas (referred to as “leakage” or “retail void”).
- Based on these factors, Laramie County could accommodate approximately **1.4 million square feet of new retail space** over the next 20 years **(See Table 9).**

Table 9
Retail Demand
Fox Farm Road Corridor Trade Area (Laramie County)

Retail Category	Estimated 2012 Household Retail Demand	Estimated 2012 Retail Sales (Supply)	Estimated 2012 Retail Void (Leakage)	Estimated Retail Sales/s.f.	New Retail Space Needed to Recapture Void/Leakage	Annual Household Growth Rate (2012-2032)	Net New Household Retail Demand	New Retail Space Needed for Household Growth	Total 20-Year New Trade Area Retail Demand (s.f.)
Furniture & Home Furnishings	$27,145,456	$28,542,248	$0	$200	0	1.5%	$9,415,537	47,078	47,078
Electronics & Appliance	$30,928,601	$23,521,896	$7,406,705	$250	29,627	1.5%	$10,727,740	42,911	72,538
Bldg Materials, Garden Equipment	$127,578,451	$155,183,857	$0	$300	0	1.5%	$44,251,224	147,504	147,504
Food & Beverage (Grocery)	$181,751,159	$141,259,956	$40,491,203	$375	107,977	1.5%	$63,041,299	168,110	276,087
Health & Personal Care	$74,533,509	$39,732,294	$34,801,215	$350	99,432	1.5%	$25,852,321	73,864	173,296
Clothing and Accessories	$61,089,473	$33,089,476	$27,999,997	$225	124,444	1.5%	$21,189,190	94,174	218,619
Sporting Goods,Hobby, Book, Music	$28,968,732	$25,044,375	$3,924,357	$225	17,442	1.5%	$10,047,950	44,658	62,099
General Merchandise	$179,498,547	$277,402,985	$0	$300	0	1.5%	$62,259,970	207,533	207,533
Miscellaneous Stores	$36,601,558	$151,444,743	$0	$200	0	1.5%	$12,695,434	63,477	63,477
Foodservice & Drinking Places	$134,509,517	$169,487,763	$0	$350	0	1.5%	$46,655,299	133,301	133,301
Total	$882,605,003	$1,044,709,593	$114,623,477		378,921		$306,135,964	1,022,610	1,401,531

Source: Claritas, Inc.; Urban Land Institute; and Ricker|Cunningham.

- Assuming a market capture rate of 15%, the Corridor could accommodate approximately **210,000 square feet of new retail space** over the next 20 years.

Employment

- Demand for new employment space is derived from two primary sources: expansion of existing industry; and the relocation of new companies into the market. Laramie County employment growth is estimated at 1.5% annually over the next 20 years.
- Based on these factors, Laramie County could accommodate approximately **3.9 million square feet of new employment (office, industrial, flex) space** over the next 20 years **(See Table 10)**.

Table 10
Employment Demand
Fox Farm Road Corridor Trade Area (Laramie County)

Industry Category	Estimated 2012 Employees	Estimated Growth Rate 2012-2032	Estimated 2032 Employees	Estimated Net New Employees	Estimated % in Office and Industrial Space	Estimated Net New Employees	Sq Ft per Employee	Estimated 20 Yr New Employment Demand
Agriculture/Forestry/Fishing/Extraction	923	1.5%	1,243	320	60%	192	300	57,626
Utilities and Construction	4,204	1.5%	5,662	1,458	60%	875	300	262,472
Manufacturing	1,656	1.5%	2,230	574	60%	345	300	103,391
Wholesale Trade, Transportation and Warehousing	4,571	1.5%	6,156	1,585	60%	951	300	285,385
Retail Trade	6,935	1.5%	9,340	2,405	60%	1,443	300	432,979
Finance/Insurance/Real Estate	6,421	1.5%	8,648	2,227	60%	1,336	300	400,888
Professional/Scientific/Education Services	2,743	1.5%	3,694	951	60%	571	300	171,256
Accommodations and Food Service	4,429	1.5%	5,965	1,536	60%	922	300	276,520
Health Care and Social Assistance	4,910	1.5%	6,613	1,703	60%	1,022	300	306,550
Administration, Support, Waste Management, Remediation	2,591	1.5%	3,490	899	60%	539	300	161,766
Educational Services	536	1.5%	722	186	60%	112	300	33,465
Arts, Entertainment, Recreation	831	1.5%	1,119	288	60%	173	300	51,883
Public Administration	17,633	1.5%	23,749	6,116	60%	3,670	300	1,100,897
Other	4,673	1.5%	6,294	1,621	60%	973	300	291,754
Totals	63,056	3.0%	84,927	21,871	60%	13,123	300	3,936,832

- Assuming a market capture rate of 20%, the Corridor could accommodate approximately **787,000 square feet of new employment space** over the next 20 years.

Market Demand Summary

Table 11 summarizes potential Corridor land use absorption over the next 20 years.

Table 11
Summary of Market Demand
Fox Farm Road Corridor

		Fox Farm Road Corridor					
	Trade Area Demand	Market Share		20-Year Absorption (Units/SF)		20-Year Absorption (Acres)*	
Land Use Type	(20 Year)	Low	High	Low	High	Low	High
Residential (Units):							
Single Family Detached (Ownership)	6,165	2%	4%	123	247	31	62
Single Family Attached (Ownership)	2,642	18%	22%	476	581	59	73
Multi-Family (Rental)	2,493	18%	22%	449	548	37	46
Residential Total	**11,300**			**1,048**	**1,376**	**128**	**180**
Non-Residential (SF):							
Retail	1,401,500	13%	17%	182,195	238,255	17	22
Employment (Office/Industrial)	3,936,800	18%	22%	708,624	866,096	65	80
Non-Residential Total	**5,338,300**			**890,819**	**1,104,351**	**82**	**101**

Source: Ricker|Cunningham.
* Absorption of Acres based on following densities and floor area ratios (FARs):
Single Family Detached: 4 units/acre
Single Family Attached: 8 units/acre
Multi-Family: 12 units/acre
Retail: 25%
Employment (Office/Industrial): 25%

- Based on the expected 20-year housing and employment growth rates shown herein, the Corridor could expect to reach build-out in approximately 30 to 35 years.

Implications for Fox Farm Corridor Land Use Plan

- The current anticipated land use mix appears to have a good balance of residential and non-residential uses. It will be critical to maintain this balance over the long-term.
- A unified vision for the Corridor will help to encourage potential market niche opportunities that might arise in the short-term.
- Near-term opportunities are more likely for higher-density housing (apartments) and small-scale service employment uses.
- Flexibility in land use categories will be necessary to accommodate unanticipated market opportunities. A greater emphasis on quality of development/redevelopment, rather than type and quantity of development/redevelopment, will ensure that the Corridor vision is protected and enhanced over time.

Foundation 5 Potential Funding Mechanisms

Keys to successful development/redevelopment in a revitalizing area such as the Fox Farm Corridor will be:

- A clear vision, tempered with market and economic reality
- A proactive strategy for reinvestment (public and private)
- Educated citizenry and implementers
- Calculated strategy to attract investment and remove barriers
- Quantifiable leveraged public investment
- Fiscally and economically responsible phasing plan
- Equalization of economic risk vs. reward
- On-going project support (political)

- The public sector (City of Cheyenne, Laramie County, Cheyenne MPO, etc.) will primarily play an important role in "readying the area for private investment" through infrastructure improvements, public planning and policy initiatives. From these initiatives and/or investments, private sector development and redevelopment can be leveraged.
- Funding mechanisms for public infrastructure could include loans and grants (e.g., Wyoming Business Council's Business Ready Community Program and Community Facilities Grant and Loan Program); Community Development Block Grant (CDBG) funds; revenue bonds; and general obligation bonds.
- One of the "truths" in corridor revitalization is that private investment will typically follow public investment. The types of public infrastructure recommended in the Corridor Plan will not only encourage new development on vacant and/or underutilized parcels, but redevelopment of existing sites and buildings. This new private investment represents the "leveraged" return to the public sector from their initial investments.
- Should the public sector decide to invest in upfront infrastructure to "ready the area for investment", then the private sector should be expected to assist in maintaining that infrastructure over the long term. This revenue stream for funding maintenance can be generated through impact fees or special districts in which private property owners are proportionately assessed for maintenance costs associated with the overall district.
- A public-private partnership for revitalization of the Fox Farm Corridor will likely take many forms and have many partners, responsibilities and funding alternatives. In the end, a successful partnership will ensure that both the public and private sectors will realize reasonable returns on their investments and the community will realize their long-term vision for this important transportation corridor.

Key Planning Considerations

The Snapshot, Structure, and Shape phase of the project provided a solid foundation for development of the complete corridor vision of the various stakeholders. The Fox Farm Corridor area has a mix of different land uses and potential growth areas overlaid with various industry types. This diversity makes this area unique and primed for growth over the next couple of decades. The following structure considerations shape the corridor:

Transit and Non-motorized Transportation

- Provide a safe, accessible and continuous pedestrian connection along the entire corridor of Fox Farm Road
- Provide street lighting at intersections and non-motorized crossings where appropriate
- Provide for expanding transit stops along the corridor
- Provide buffered or bike lanes as recommended by the Cheyenne Area On-Street Bicycle Plan and Greenway Plan Update by Alta Planning + Design in 2012.
- Review options to expand the greenway along crow creek

Traffic Safety and Operation

- Build a roadway cross section that enhances travel efficiency and accommodates all modes of transportation
- Provide peak hour intersection operations a LOS C as minimum level of service through horizon year 2035
- The ability to mix pedestrian traffic with a high number of larger vehicles
- The ability for industrial/retail type business to be adjacent to or near residential development
- Attempt to maintain commercial, industrial, and residential access approaches
- Where appropriate, provide for proper turning widths at intersection (i.e. Industrial Area accommodate conventional combination (i.e. 5 to 6 axle) tractor semi-trailer and or larger combination (i.e. 6 -7 axles) w/ tractor and pup

Roadway Connectivity

- Review options to promote development in undeveloped open space
- Review existing roadways and provide additional or enhanced street connectivity

Dry and Wet Utilities

- Consult with wet and dry utility companies to provide enhanced or improved facilities to facilitate redevelopment
- Attempt to provide a dry utility corridor within the current road right-of-way

Cooperation

- Multiple public agencies or wet utilities that have areas of jurisdiction in the area: Laramie County Government, City of Cheyenne, WYDOT, Board of Public Utilities, South Cheyenne Water and Sewer District

Build

The Snapshot, Structure, and Shape phase of the project provided a solid foundation for development of the Build portion of the plan. The build section of the plan encompasses the culmination of the foundation components and rational behind the particular recommendations set forth in the plan.

The overall recommendations are specifically designed to address the all modes of transportation, landscaping, and safety needs of the Fox Farm Road Corridor. All recommendations have been examined carefully to ensure practicality, functionality, and aesthetic appeal, sustainability, and successful implementation. The physical layout of the improvements are detailed in the following pages and can be found on the corridor plan and profile sheet in Appendix A. Detailed cost estimates are shown in Appendix C.

General Corridor Recommendations

Short Term

- Pedestrian and Sidewalk Improvements (i.e. Specific Locations)
- When Practical, Improve/ Increase Capacity of Existing Drainage Conveyance,
- Explore Opportunities as Area Develops to Provide Roadway Storm water Detention/ Retention Features/ Facilities.
- Develop, Implement, and Fund a Drainage Master Plan for Corridor.
- Update/ Install Strategic Street Lighting at Key Intersections (Walterscheid Blvd., South Greeley, Avenue C/ Morrie Avenue, and College Drive)
- Replace or upsize undersized and old portions of the water transmission main (i.e. 6" ductile iron pipe) on Fox Farm Road as funding resources become available.
- Implement Priority Projects as funding resources become available or development becomes the catalyst

Long Term

- Implement Reconstruction Phased Strategies along Corridor.
- Storm Sewer Installation
- Replace or rehabilitate existing wet utility infrastructure as development occurs along the corridor
- Implement Typical Section(s)
- Install Uniform Roadway and Pedestrian Street Lighting throughout corridor
- Post Speed Reduction
  Avenue "C" West to 30 mph
- Encourage Holly Frontier Drivers to use Alternate Routes (Education, Policy, etc.)
- Investigate and Develop Possible Funding Mechanisms for the County for Reimbursement, "Impact Fees", etc.

Roadway Concept Alternatives

The methodology employed to develop the conceptual roadway "typical" alternatives were evaluated using a multi-modal evaluation framework as a base. At intersections and other locations with unique design challenges (e.g. driveways, areas with limited sightline, etc), special designs and modifications may be needed to address issues of road geometry, adjacent land uses, traffic volumes and other characteristics. The Fox Farm Road Corridor Study evaluated conceptual improvement alternatives for the roadway segments and streetscape with the following governing parameters:

- What are the existing and future adjacent conditions and uses?
- How does the edge affect the streetscape?
- What variations can be made to create a more user friendly corridor?
- What movements and interactions will take place on the corridor?
- What is the corridor vision of the stakeholders?
- What can we do to add low maintenance streetscape to "soften" the corridor for non-motorized modes of transportation?
- Provide bike lanes west of South Greeley and buffered bike lanes east of South Greeley to align with the recommendation of the Cheyenne On-street Bicycle Plan and Greenway Plan Update (Group, 2012)
- Required minimum City of Cheyenne Unified Development Code (UDC) typical section for roadway classification (Cheyenne, City of Cheyenne Unified Development Code, 2013)
- Required minimum Laramie County Land Use Regulations (LCLUR) typical section for roadway classification.

Design Criteria

Roadway Classification:	Collector (West of South Greeley Highway), Minor Arterial (East of South Greeley Highway.
Minimum Design Speed:	40 mph (Posted Speed)
Lane Width:	11' - 12 ft
Clear Zone Width:	16 ft (ADT 2010=6037, *AASHTO Roadside Design Guide* (Officials, Roadside Design Guide, 2011))
Stopping Sight Distance	305 ft
Crest Vertical Curve	K = 44 (Stopping Sight Distance)
Sag Vertical Curve	K = 64

Table 12 Ultimate Typical Section Jurisdictional Comparison

Description	Laramie County (Minor Arterial)	City of Cheyenne (Minor Arterial)	Laramie County (Collector)	City of Cheyenne (Collector)	2011 AASHTO (1)	
Travel Lane	2 – 12’	2 – 4, 12’	2 – 12’	2 – 12’	10-12’	2-12’
Turn Lanes	12’(2)	12’	12 (3)			
Parking/ Shoulder	none	none	none	1 – 8’	6’	8’
Roadway Width	36’ 44’ Turn Lane	48’ – 72’	36’	32’		-
Sidewalk/ Pedestrian Area	6’	6’	6’	6’	-	-
Parkway/ Tree Lawn	8’	8’	8’	8’	-	-
Bike Lane	2-6’	2-6’	2 – 6’	n/a	-	-
Volume Capacity (ADT)	3,500 – 15,000	7,500–18,000	3,500 – 5,000	2,000 – 5,000	1,500-2,000	Over 2,000

Footnotes:

(1) (Officials, A Policy on Geometric Design of Highways and Streets, 2011)
(2) Continuous as approved by the County
(3) At Intersections locations only
(4) (Cheyenne, City of Cheyenne Unified Development Code, 2013)
(5) (County, 2011)

Cross Sectional Elements

Lane Widths

As shown in the **Table 12** lane width requirements vary between the jurisdictional entities from ten to twelve (10 to 12) feet. According to AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) and our experience, smaller lane widths may be used in more constrained areas where truck and bus volumes are relatively low and where speeds are less than 45 mph. Lane widths of eleven (11) feet are extensively used in urban arterial street designs while twelve (12) foot lanes are desirable on high speed, free flowing principal arterials.

After extensive discussion between the design team and Steering Committee, we recommend the use of an eleven (11) foot wide travel lanes on Fox Farm Road. This width still accommodates larger design vehicles and increases the available tree lawn width which can be used for snow storage, pedestrian separation, and drainage.

Curbs

The type and location of curbs affect driver behavior and safety. Curbs serve many purposes including: drainage control, roadway edge delineation, delineation of pedestrian walkways, and access control. Although curbs are not considered fixed objects in the context of a clear zone obviously, they will have an effect on an impacting or overriding car.

After discussion within the design team and Steering Committee, we recommend the use of curb and gutter on Fox Farm Road from Avenue C to Walterscheid Blvd. and no curb and gutter from Avenue C to College Drive. The adjacent land comprised of mainly residential and commercial, as well as, its urban character make Avenue C to Waltersheid Blvd. the logical choice to incorporate curb and gutter. Curb and gutter will provide better access control and pedestrian delineation in the more urbanized area of the corridor. The area east of Avenue C is more industrial and based on the conceptual land plan and character of the area will likely remain that style of development. The non-curb section will appear wider due to the removal of the vertical element of the curb and accommodate easier access construction. However, both section types will likely require storm sewer conveyance due to the shallow capacity and shallow longitudinal profile.

Bicycle and Pedestrian Facilities

Based on observation, bicycle usage has become a larger part of the culture in Cheyenne. Furthermore, as a part of providing a more continuous, safe, and efficient bicycle system, the *Cheyenne Area On-Street Bicycle Plan and Greenway Plan Update* (Group, 2012) *have recommended bicycle lanes west of South Greeley Highway and buffered bike lanes east of South Greeley Highway.*

The plan recommends that a bike lane width be a minimum of four (4) foot when no curb and gutter is present, five (5) foot when adjacent to curb and gutter, and six (6) feet where right-of-way allows. The buffered bike lane recommended design is illustrated in **Figure 22** contains a 2-3’ buffered area adjacent to the traveled way with a 7’ bike lane.

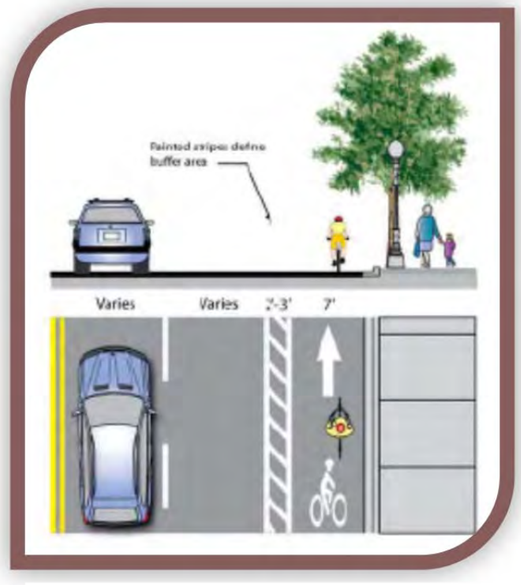


Figure 22, Buffered Bike Lane (Group, 2012)

However, due to the constrained right-of-width in the corridor, we recommend the use of 5' bike lane and 2' buffered area be incorporated into the typical section on Fox Farm Road.

Parking Lane
Providing parking is very important to accommodate in adjacent land use areas where adequate off-street parking facilities are not available or practical. Stakeholders in the area did not provide input to the design team that parking was a concern on the corridor and current industrial business appear to have adequate parking at the present time. If specific future businesses require off-street parking, the jurisdiction having authority will likely need to request additional right-of-way to accommodate such a request or have the business request a parking variance with their development.

Medians
The primary function of medians is safety. They separate traffic streams, guide turning movements at intersections, and provide access control to/ from minor access drives and intersections. It is very important that medians be delineated in a way that makes them visible and distinguishes them from the adjacent driving lanes. Curbed medians and traffic islands provide an added benefit by "softening" the urban roadway edge and subjectively enhance the aesthetic quality when utilizing a combination of the material types. Three types of medians are most common in the urban roadway environment: raised, flush, and two-way left-turn lanes.

Raised Medians
A raised median is used in urban streets where it is desirable to control or restrict mid-block left turns and cross maneuvers. Installing a raised median can result in the following benefits:

- Improve traffic safety
- Restrict left-turn and crossing maneuvers to specific locations or certain movements
- Increase capacity and reduce delays
- Provide a pedestrian refuge area (minimum of six (6) feet wide).

AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) recommends that intersection median turn lanes have a minimum medial separator of four (4) feet between turning lane and opposing traffic. Additionally, they recommend that with wider medians, consideration should be given to off-setting the left-turn lanes to provide maximum visibility between opposing traffic volumes.

Flush Medians
Flush medians are medians that can be traversed. Although they do not permit left-turn and crossing maneuvers by their striping configuration, they do not prevent them because the median can be easily crossed.

Two-way Left-turn Lanes
Two-way left-turn lanes (TWLTL) are flush medians that may be used for left turns by traffic from opposing directions on the street. AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) recommends the use of a TWLTL on arterials with numerous cross streets, commercial, residential drives, or where it is impractical to limit left turn movements.

The Fox Farm Corridor plan recommends the use of all three types of medians however, the only cross sectional element shown on the typical section is a continuous two-way left-turn lane. Throughout the course of the project all attempts were made to minimize the cross sectional width of the roadway but, it became impractical due to the numerous cross streets, commercial and residential approaches adjacent to the corridor which forced the use of the continuous left-turn lane.

Auxiliary Lanes (Speed-change Lanes)

City of Cheyenne Criteria (Cheyenne, City of Cheyenne Unified Development Code, 2013)
Laramie County (County, 2011)

Left Turn Lane
A left-turn deceleration lane and taper are required for any access with a projected peak-hour ingress turning volume greater than 10 vehicles per hour (vph). The taper length shall be included with the required deceleration length.

Right Turn Lane
A right-turn deceleration lane and taper is required for any access with a projected peak hour ingress turning volume greater than 25 vph. The taper length should be included within the deceleration length.

Table 13 Jurisdictional Deceleration Length Requirements

Design Speed	Stop Condition Decel	15 MPH Turns Decel	Minimum Decel Lane Taper Ratio
City of Cheyenne and Laramie County			
35	275	235	10:1
40	315	295	11.5:1
City of Cheyenne			
50	435	350	13:1
Laramie County			
30	235	185	8:1
50	435	405	15:1
AASHTO			
30	160	-	8:1 to 15:1
40	275	-	8:1 to 15:1
50	435	405	15:1

Careful consideration was given to the proposed conceptual alternatives to use the safest and most practical deceleration length on the corridor. Therefore, due to the proximity of access approaches, expected relatively lower speeds approaching intersections, a one-

hundred sixty (160) foot deceleration length was applied to the auxiliary lane development. If specific site conditions did not allow development of full deceleration lane, it was omitted and so noted. Additionally, for the identical reasons as previously noted, a 100' minimum taper was utilized for all the auxiliary lanes with the corridor. For a twelve (12) foot lane this equates to approximately an 8.33:1 and for an eleven (11) foot lane it equates to approximately a 9.1:1.

The deceleration and taper lengths directly on College Drive were derived based on the AASHTO (Officials, A Policy on Geometric Design of Highways and Streets, 2011) and WYDOT criteria using a 50 mph design speed. The deceleration length utilized was four hundred (400) foot with a 100' taper length.

Storage Lengths

All intersection storage lengths in the study were calculated based on future signalization, traffic volume, signal cycle length, and signal phasing assumptions developed by Sustainable Traffic Solutions, Inc.. The length in **Table 14 Storage Lengths Summary** below was used for the development of the intersection layouts.

Table 14 Storage Lengths Summary

Walterscheid Boulevard Storage Lengths

Movement	Minimum Turn Bay Length (ft)		Recommended Length
	AM	PM	
Eastbound Left	72	65	70
Westbound Left	87	75	90
Northbound Left	15	26	60
Southbound Left	59	67	70

South Greeley Storage Lengths

Movement	Minimum Turn Bay Length (ft)		Recommended Length
	AM	PM	
Eastbound Left	242	171	240
Eastbound Right	129	123	130
Westbound Left	143	136	140
Westbound Right	111	102	110
Northbound Left	43	45	60
Northbound Right	217	204	220
Southbound Left	229	246	250
Southbound Right	89	79	90

Avenue C Storage Lengths

Movement	Minimum Turn Bay Length (ft)		Recommended Length
	AM	PM	
Eastbound Left	76	86	90
Westbound Left	59	65	70
Northbound Left	56	56	60
Southbound Left	90	94	100

College Drive – Storage Lengths

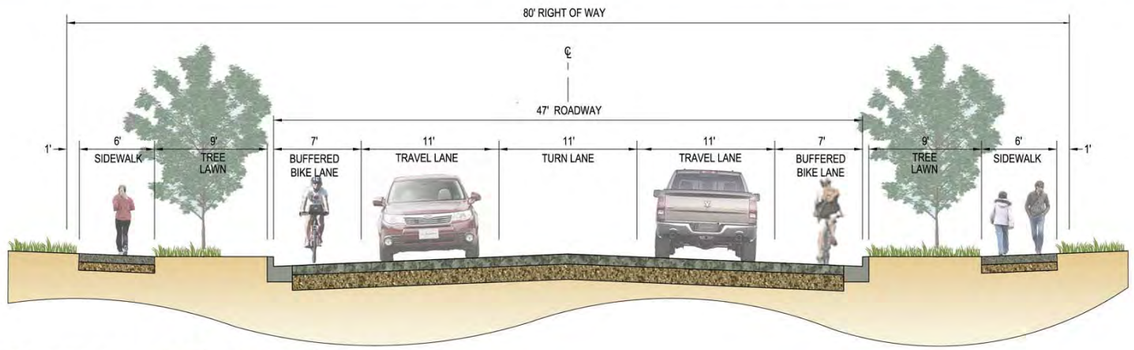
Movement	Minimum Turn Bay Length (ft)		Recommended Length
	AM	PM	
Eastbound Left	141	214	220
Eastbound Right	62	83	90
Westbound Left	56	69	70
Westbound Right	79	86	90
Northbound Left	101	113	113
Northbound Right	72	142	142
Southbound Left	62	111	111
Southbound Right	168	174	174

Provision for Utilities

As previously described in the study, numerous utilities are interlaced in the corridor area and are both underground and overhead. Obviously, utilities should desirably be located underground or at the edge of the right-of-way, when practical.

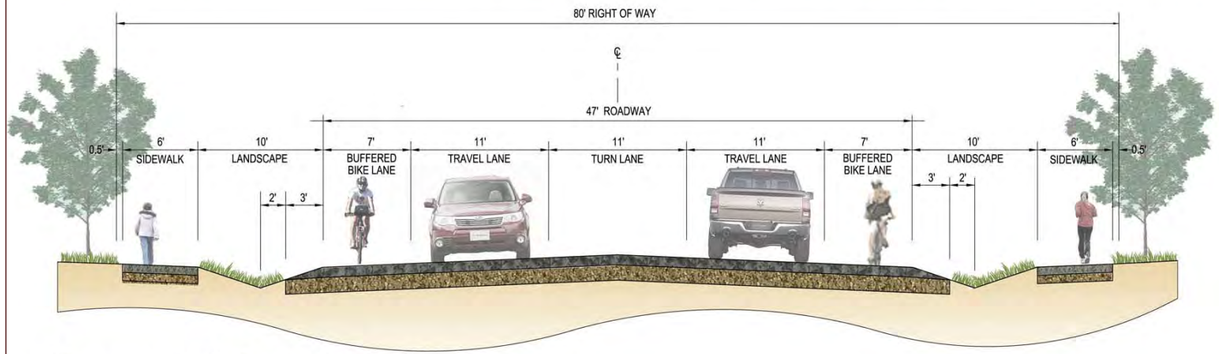
Based the limited right-of-way width of 80 feet, we would recommend that new developments have dry utility facilities relocate within a new 8' utility easement adjacent to the corridor or be placed underground within the tree lawn area to be provided in the future typical section.

The following typical sections are recommended typical sections. Two types were developed for the Fox Farm Corridor, Proposed Urban without Parking and Proposed Rural without Parking (**See Figure 23 and Figure 24**). Additionally, a proposed typical section was developed for Burlington Trails Road and is illustrated in **Figure 25**.



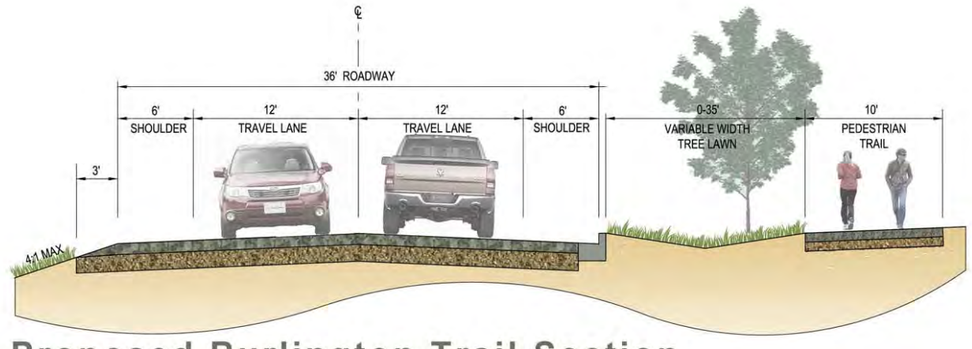
Proposed Urban Section
Without Parking

Figure 23



Proposed Rural Section
Without Parking

Figure 24



Proposed Burlington Trail Section
Looking North

Figure 25

Future Traffic Volume Conditions

Traffic volume projections were developed for Year 2035 by Sustainable Traffic Solutions, Inc. to estimate the impacts of the traffic growth on the corridors. For the purposes of projecting volumes, the study area was divided into the Fox Farm Road corridor and the College Drive corridor.

Projected traffic volumes for the Fox Farm Road corridor were developed based on the land use plan prepared by AVI (**See Figure 21, Conceptual Land Use**) and refined by the 20 year buildout projection that was prepared by Ricker | Cunningham (Shape, **Table 11 Summary of Market Demand**). This buildout plan contains projections for residential and non-residential development for 20 years. Considering that the horizon year is 2035, the 20 year projected buildout was multiplied by 1.25 to represent a 25 year buildout. The following table summarizes the expected level of development on the corridor in 25 years.

Table 15 Expected Level of Development 25 Year Horizon

Land Use	Units/ SF
Residential (Units)	
Single Family Detached (Ownership)	154
Single Family Attached (Ownership)	595
Multi-family (Rental)	561
Total	1,310
Non-residential (SF*1000)	
Retail	228
Employment (Office/ Industrial)	886
Total	1,114

The land use plan contained in **Figure 21** was divided into planning areas to estimate the trip generation (**See Figure 26, Planning Areas**). The planning areas were aggregated into zones that are separated by major roadways along the corridor so that the projected traffic could be distributed and assigned to the network.

A trip generation estimate was developed for each of the planning areas using rates contained in the Institute of Transportation Engineers (ITE) manual ((ITE), 2008). The estimates, contained in **Table 16** and **Table 17** include morning and evening peak hour volumes as well as daily volumes. Land uses contained in the table included the following:

- **Residential.** The residential land use was assumed to be single family detached (4 units / acre), single family attached (6 units / acre), and multi-family (6 units / acre).
- **Restaurant.** A 5,000 square foot restaurant was assumed in Planning Area C.
- **Commercial / Retail.** The commercial areas were divided into office, specialty retail, and storage. A FAR of 0.2 was assumed for each commercial use.
- **Industrial.** A general light industrial land use was assumed.

Projected peak hour volumes were developed for the key intersections along the Fox Farm Road and College Drive corridors as well as daily volumes for the links along the corridors using the following process.

- **Background Traffic.** The existing peak hour and daily volumes were inflated by 1.25% annually to estimate the growth in background traffic along the corridor. This rate is used by the MPO to estimate traffic growth in the Cheyenne metro area. To represent the regional nature of South Greeley Highway, the existing volumes were inflated by 2% annually on this corridor.
- **Development Traffic.** The Year 2035 estimated trips that are expected to be generated by new development / redevelopment along the corridors were distributed and assigned to the intersections based on projected volumes contained in PlanCheyenne (Clarion, 2006). A separate distribution was prepared for groups of zones that are separated by major roadways. The distribution is contained in **Figure 27**.
- **Total Traffic.** The background traffic was combined with the development traffic to estimate the Year 2035 total traffic. The Year 2035 peak hour and daily volumes are summarized in **Figure 23**. Traffic control and laneage recommendations are also shown in the drawing.

Realignment of South Industrial Road

The impact of conceptual realigning of Industrial Road so that it intersects the I-80 eastbound on-ramp was explored and is shown in **Figure 24**. The ramp would become two-way between College Drive and Industrial Road, and Industrial Road would be stop controlled at the ramp intersection.

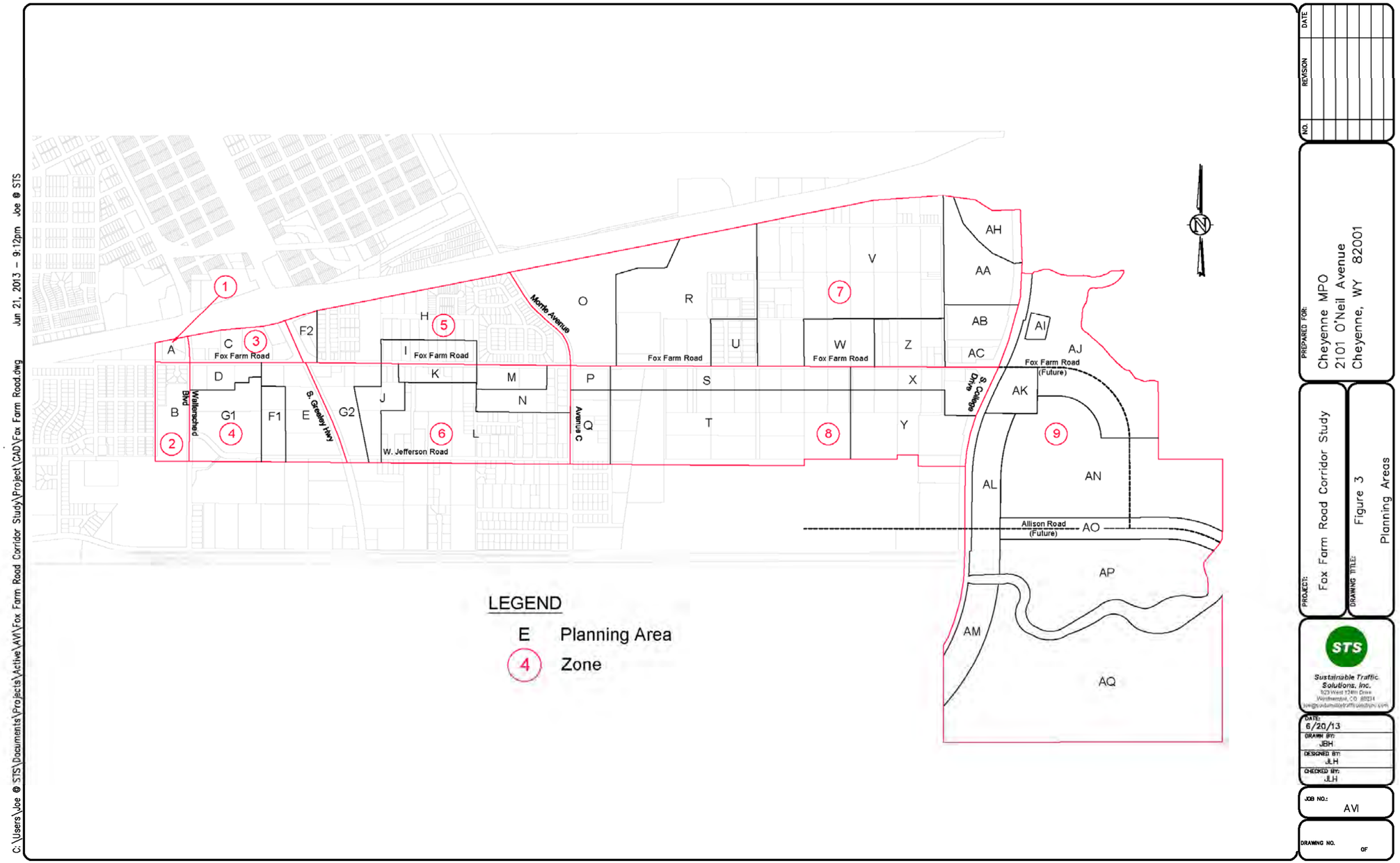


Figure 26, Trip Generation Planning Areas

Table 16 Planning Area Development Assumptions For Fox Farm Corridor

Zone	Planning Area	Size (Acres)	Land Uses							Average Daily Trips				Morning Peak Hour Trips				Evening Peak Hour Trips			
			Description	ITE Code	Reduction	% of Total	Acres	Size	Unit	Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
1	A	3.66	No New Development or Redevelopment																		
2	B	16.54	SFDU - 4	210	1	0.75	1.49	10	DU	9.57	95	48	48	0.75	7	2	6	1.01	10	6	4
			Condo - 6	230			5.58	39	DU	5.81	225	112	112	0.44	17	3	14	0.52	20	13	7
			Apartment - 6	220			5.33	41	DU	6.65	274	137	137	0.51	21	4	17	0.62	26	17	9
3	C	16.32	Restaurant		1			5	1000 Ft^2	127.15	636	318	318	11.52	58	30	28	11.15	56	33	23
4 [1]	D	7.75	Office	710	0.25	1.00	7.75	41.07	1000 Ft^2	11.01	113	57	57	1.55	16	14	2	1.49	15	3	13
	E	21.50	Office	710	0.25	1	21.50	114	1000 Ft^2	11.01	313	157	157	1.55	44	39	5	1.49	42	7	35
	F1	8.25	Specialty Retail	814	0.80	0.15	1.24	3.30	1000 Ft^2	44.32	117	58	58	0.8943	2	1	1	2.71	7	3	4
			SFDU - 4	210	0.80	0.85	0.84	5.62	DU	9.57	43	22	22	0.75	3	1	3	1.01	5	3	2
			Condo - 6	230			3.16	21.87	DU	5.81	102	51	51	0.44	8	1	6	0.52	9	6	3
			Apartment - 6	220			3.02	23.31	DU	6.65	124	62	62	0.51	10	2	8	0.62	12	8	4
	G1	24.71	SFDU - 4	210	0.80	0.85	2.52	16.84	DU	9.57	129	64	64	0.75	10	3	8	1.01	14	9	5
			Condo - 6	230			9.45	65.50	DU	5.81	304	152	152	0.44	23	4	19	0.52	27	18	9
			Apartment - 6	220			9.03	69.82	DU	6.65	371	186	186	0.51	28	6	23	0.62	35	23	12
5 [1]	F2	5.00	Office	710	0	1	5.00	26	1000 Ft^2	11.01	0	0	0	1.55	0	0	0	1.49	0	0	0
	H	65.14	No New Development or Redevelopment																		
	I	12.45	SFDU - 4	210	0.8	0.85	1.27	8	DU	9.57	65	32	32	0.75	5	1	4	1.01	7	4	3
			Condo - 6	230			4.76	33	DU	5.81	153	77	77	0.44	12	2	10	0.52	14	9	5
			Apartment - 6	220			4.55	35	DU	6.65	187	94	94	0.51	14	3	11	0.62	17	11	6
			Specialty Retail	814	0.8	0.15	1.87	5	1000 Ft^2	44.32	177	88	88	0.8943	4	2	2	2.71	11	5	6
6 [1]	G2	17.54	Office	710	0.25	0.3	5.26	28	1000 Ft^2	11.01	77	38	38	1.55	11	10	1	1.49	10	2	9
	J	11.77	Office	710	1	0.1	1.18	6	1000 Ft^2	11.01	69	34	34	1.55	10	9	1	1.49	9	2	8
	K	6.48	Office	710	0.8	0.225	1.46	8	1000 Ft^2	11.01	68	34	34	1.55	10	8	1	1.49	9	2	8
			SFDU - 4	210	0.8	0.775	0.60	4	DU	9.57	31	15	15	0.75	2	1	2	1.01	3	2	1
			Condo - 6	230			2.26	16	DU	5.81	73	36	36	0.44	6	1	5	0.52	7	4	2
			Apartment - 6	220			2.16	17	DU	6.65	89	44	44	0.51	7	1	5	0.62	8	5	3
	L	53.87	SFDU - 4	210	0.8	0.4	2.59	17	DU	9.57	132	66	66	0.75	10	3	8	1.01	14	9	5
			Condo - 6	230			9.70	67	DU	5.81	312	156	156	0.44	24	4	20	0.52	28	19	9
			Apartment - 6	220			9.27	8	DU	6.65	41	21	21	0.51	3	1	3	0.62	4	2	1
	M	7.81	No New Development or Redevelopment																		
	N	12.30	Office	710	0.5	0.25	3.07	16	1000 Ft^2	11.01	90	45	45	1.55	13	11	2	1.49	12	2	10
			SFDU - 4	210	0.8	0.75	1.11	7	DU	9.57	57	28	28	0.75	4	1	3	1.01	6	4	2
			Condo - 6	230			4.15	29	DU	5.81	134	67	67	0.44	10	2	8	0.52	12	8	4
			Apartment - 6	220			3.97	31	DU	6.65	163	82	82	0.51	13	3	10	0.62	15	10	5
7 [1, 4]	O [2]	41.49	SFDU - 4	210	0.525	0.25	1.24	8	DU	9.57	42	21	21	0.75	3	1	2	1.01	4	3	2
			Condo - 6	230			4.67	32	DU	5.81	99	49	49	0.44	7	1	6	0.52	9	6	3
			Apartment - 6	220			4.46	34	DU	6.65	120	60	60	0.51	9	2	7	0.62	11	7	4
			Office	710	0.35	0.5	20.75	110	1000 Ft^2	11.01	423	212	212	1.55	60	52	7	1.49	57	10	48
			Specialty Retail	814	0.35	0.25	10.37	28	1000 Ft^2	42.94	416	208	208	1	10	6	4	3.73	36	18	18
	R	66.49	SFDU - 4	210	0.7	0.5	3.99	27	DU	9.57	179	89	89	0.75	14	3	10	1.01	19	12	7
			Condo - 6	230			14.96	104	DU	5.81	422	211	211	0.44	32	5	27	0.52	38	25	12
			Apartment - 6	220			14.30	111	DU	6.65	514	257	257	0.51	39	8	32	0.62	48	31	17
			Office	710	0.7	0.5	33.25	176	1000 Ft^2	11.01	1357	679	679	1.55	191	168	23	1.49	184	31	152
	U	10.07	No New Development or Redevelopment																		
	V	105.00	SFDU - 4	210	0.7	0.25	3.15	21	DU	9.57	141	70	70	0.75	11	3	8	1.01	15	9	6
			Condo - 6	230			11.81	82	DU	5.81	333	166	166	0.44	25	4	21	0.52	30	20	10
			Apartment - 6	220			11.29	87	DU	6.65	406	203	203	0.51	31	6	25	0.62	38	25	13
			Office	710	0.7	0.25	26.25	139	1000 Ft^2	11.01	1072	536	536	1.55	151	133	18	1.49	145	25	120
	W	15.50	Industrial	110	0.7	1	15.50	21	1000 Ft^2	6.97	100	50	50	0.92	13	12	2	0.97	14	2	12
	Z	15.36	SFDU - 4	210	0.7	0.1	0.18	1	DU	9.57	8	4	4	0.75	1	0	0	1.01	1	1	0
			Condo - 6	230			0.69	5	DU	5.81	19	10	10	0.44	1	0	1	0.52	2	1	1
			Apartment - 6	220			0.66	5	DU	6.65	24	12	12	0.51	2	0	1	0.62	2	1	1
			Office	710	0.7	0.9	13.83	73	1000 Ft^2	11.01	565	282	282	1.55	79	70	10	1.49	76	13	63
	AA [3]	24.52	SFDU - 4	210	0.35	0.25	0.74	5	DU	9.57	16	8	8	0.75	1	0	1	1.01	2	1	1
			Condo - 6	230			2.76	19	DU	5.81	39	19	19	0.44	3	1	2	0.52	3	2	1
			Apartment - 6	220			2.64	20	DU	6.65	47	24	24	0.51	4	1	3	0.62	4	3	2
			Office	710	0.35	0.5	12.26	16	1000 Ft^2	11.01	63	31	31	1.55	9	8	1	1.49	8	1	7
			Specialty Retail	814	0.35	0.25	6.13	16	1000 Ft^2	44.32	254	127	127	0.8943	5	2	3	2.71	16	7	9
	AB	11.39	No New Development or Redevelopment																		
	AC	7.25	No New Development or Redevelopment																		
	AH	8.74	No New Development or Redevelopment																		
8 [1, 4]	P	4.36	No New Development or Redevelopment																		
	Q	13.54	SFDU - 4	210	0.7	0.6	0.98	7	DU	9.57	44	22	22	0.75	3	1	3	1.01	5	3	2
			Condo - 6	230			3.66	24	DU	5.81	99	50	50	0.44	8	1	6	0.52	9	6	3
			Apartment - 6	220			3.49	23	DU	6.65	109	54	54	0.51	8	2	7	0.62	10	7	4
	S	25.24	No New Development or Redevelopment																		
	T	80.80	Industrial	110	0.7	1	80.80	107	1000 Ft^2	6.97	522	261	261	0.92	69	61	8	0.97	73	9	64
	X	15.36	Office	710	0.7	1	15.36	20	1000 Ft^2	11.01	157	78	78	1.55	22	19	3	1.49	21	4	18
	Y	35.91	Industrial	110	0.7	1	35.91	48	Acre	51.8	1724	862	862	7.51	250	207	42	7.26	242	53	189

Land Use Densities

Specialty Retail - Development covers 20% of the land (0.2 FAR)

Office - Development covers 20% of the land (0.2 FAR)

Industrial - General light industrial with building covering 5% of the area

SFDH - 4 - Single family detached housing at 4 units/acre

Condo - 6 - Condos at 6 units/acre

Apartment - 6 - Apartments at 6 units/acre

Trip Reductions

1. 20% - internal trip making
2. 25% - traffic accessing planning area via Avenue C
3. 50% - traffic accessing planning area via College Drive
4. 10% - redevelopment

Table 17 Planning Area Development Assumptions for the Area East of College Drive

Zone	Planning Area	Size (Acres)	Land Uses						Average Daily Trips				Morning Peak Hour Trips				Evening Peak Hour Trips			
			Description	ITE Code	% of Total	Acres	Units	Unit	Rate	Total	In	Out	Rate	Total	In	Out	Rate	Total	In	Out
9	AI	2.25	No New Development or Redevelopment																	
	AJ	57.04	Specialty Retail [1]	814	0.50	28.52	248	1000 Ft^2 GLA	44.32	8,810	4,405	4,405	0.89	178	78	100	2.71	539	237	302
			Industrial	110	0.50	28.52	62	1000 Ft^2 GFA	6.97	433	216	216	0.92	57	50	7	0.97	60	7	53
	AK	8.75	No New Development or Redevelopment																	
	AL	21.71	Specialty Retail [1]	814	0.50	10.85	95	1000 Ft^2 GLA	44.32	3,352	1,676	1,676	0.89	68	30	38	2.71	205	90	115
			Industrial	110	0.50	10.85	24	1000 Ft^2 GFA	6.97	165	82	82	0.92	22	19	3	0.97	23	3	20
	AM	13.98	Specialty Retail [1]	814	0.50	6.99	61	1000 Ft^2 GLA	44.32	2,159	1,079	1,079	0.89	44	19	24	2.71	132	58	74
			Industrial	110	0.50	6.99	15	1000 Ft^2 GFA	6.97	106	53	53	0.92	14	12	2	0.97	15	2	13
	AN	86.39	SFDH - 6	210	0.85	73.43	441	DU	9.57	4,216	2,108	2,108	0.75	330	83	248	1.01	445	280	165
			Apartment - 17	220	0.15	12.96	220	DU	6.65	1,465	732	732	0.51	112	22	90	0.62	137	89	48
	AO	21.46	Office [1]	710	0.50	10.73	93	1000 Ft^2 GLA	11.01	823	412	412	1.55	116	102	14	1.49	111	19	92
			Apartment - 17	220	0.50	10.73	182	DU	6.65	1,213	606	606	0.51	93	19	74	0.62	113	74	40
	AP	61.82	SFDH - 6	210	0.85	52.55	315	DU	9.57	3,017	1,509	1,509	0.75	236	59	177	1.01	318	201	118
			Apartment - 17	220	0.15	9.27	158	DU	6.65	1,048	524	524	0.51	80	16	64	0.62	98	64	34
	AQ	143.42	SFDH - 6	210	1.00	143.42	861	DU	9.57	8,235	4,118	4,118	0.75	645	161	484	1.01	869	548	322

Land Use Densities

Specialty Retail - Development covers 20% of the land (0.2 FAR)

Office - Development covers 20% of the land (0.2 FAR)

Industrial - Buildings cover 5% of the area

SFDH - 6 - Single family detached housing at 6 units/acre

Apartment 17 - Apartments at 17 units/acre

Trip Reductions

1. 20% - internal trip making

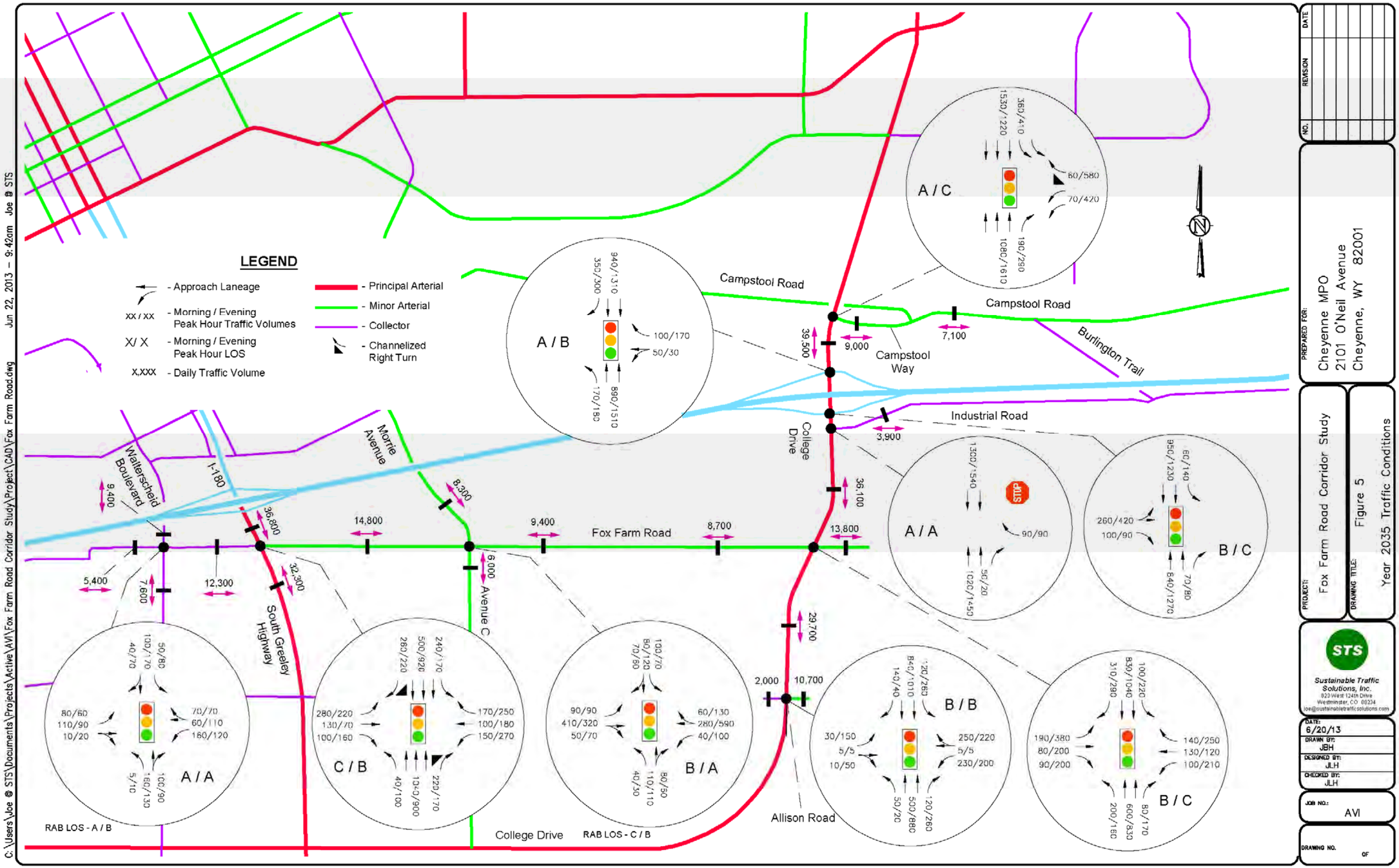


Figure 27, 2035 Traffic Projections and Level of Service Analysis

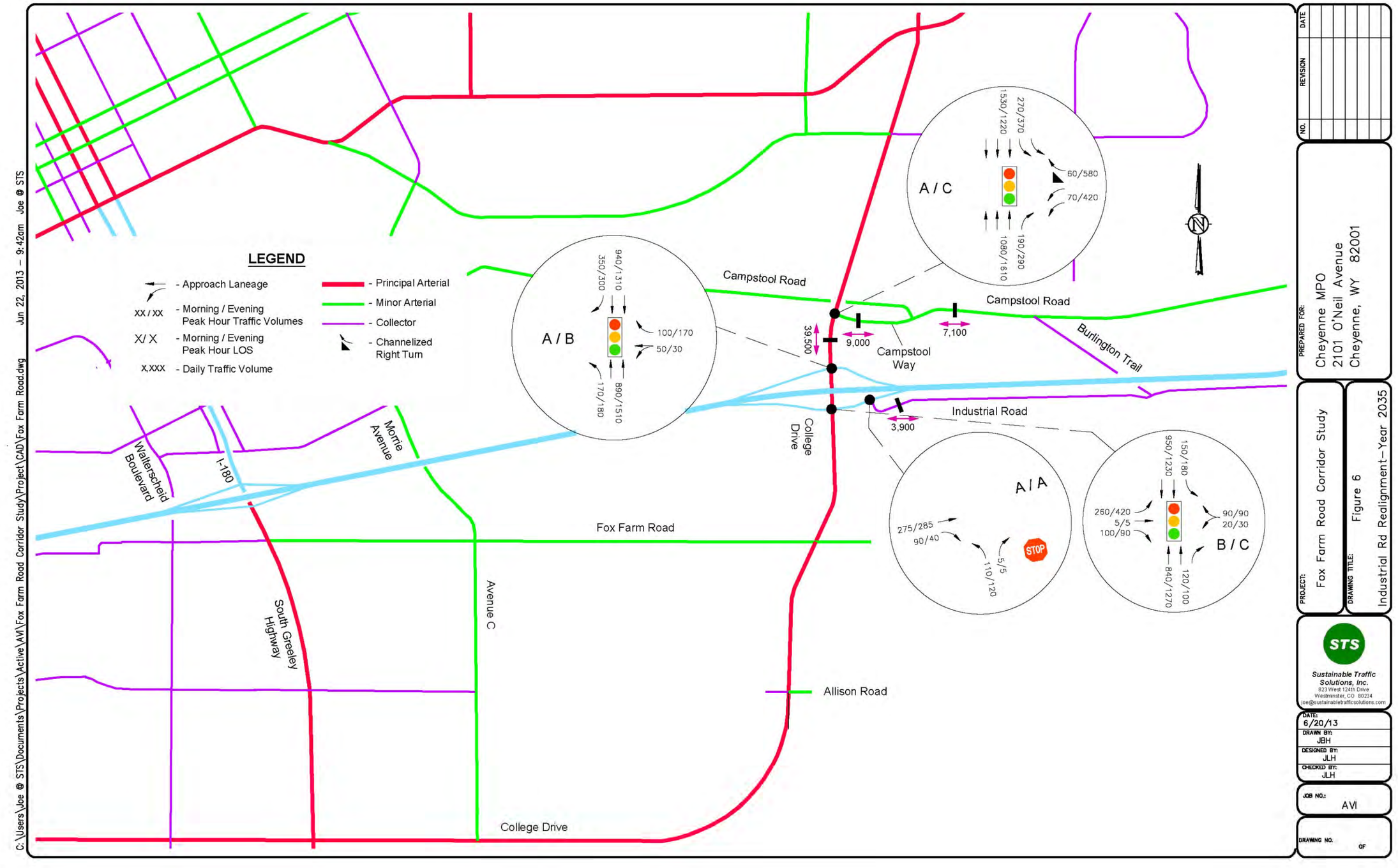


Figure 28, Traffic Projections and Level of Service Analysis for Conceptual Realignment of South Industrial Road

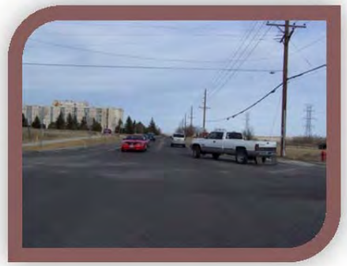
Proposed Short and Long Term Intersection Improvements

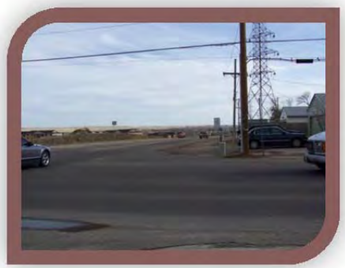
The following conceptual intersection improvements are recommended for the corridor based on various input from all stakeholders and the design team. The four primary intersections on corridor reviewed included Fox Farm Road at Walterscheid Blvd., South/ North Greeley Highway, Avenue C/ Morrie Avenue, and College Drive.

Walterscheid Blvd.

Upon review of the existing intersection and proposed traffic volume projections the following observations were noted as significant:

- Sidewalk missing from Derr Avenue to Walterscheid
- Intersection offset north and south for east and west bound traffic.
- All-way stop controlled with dedicated eastbound left turn lane and southbound right turn lane and channelizing island
- Dry utility conflicts at southwest corner of the intersection will be impacted by any improvement
- Width, lack of pedestrian facilities, and configuration make the intersection unfriendly to pedestrians.
- Secondary access drive to the Fire Station at northwest corner is very close to the north leg of the intersection.





Conceptual Options and Recommended Alternative

Several different options were evaluated at this intersection including a single lane roundabout, standard intersection with channelizing island, standard intersection without channelizing island, and do nothing.

Anticipated traffic volumes eliminated the do nothing alternative option. Challenges due to the proximity of the resident driveways and garage accesses to the south of the intersection made the roundabout option require either a significant shift to the east or a reduced circulatory radius. The shift would require significant realignment of the south and north intersection legs, as well as, right-of-way acquisition. The reduced circulatory radius would likely impact the functionality and level of service of the intersection. Finally, the southbound channelizing free right-turn island was eliminated for traffic and pedestrian safety, and was not required to accommodate future traffic volumes. The recommended intersection is illustrated in **Figure 30/** Appendix A and has the following added features not shown:

- Install signal when either warranted by level of service or accident history
- Install roadway lighting at intersection.

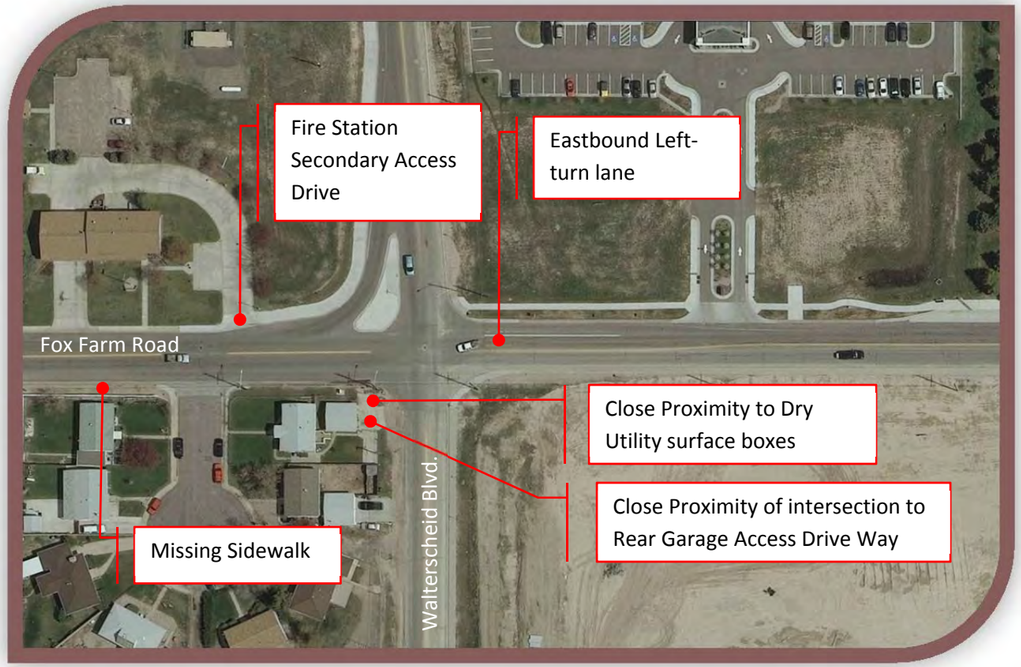


Figure 29, Existing Waltercheid Blvd Intersection at Fox Farm Road

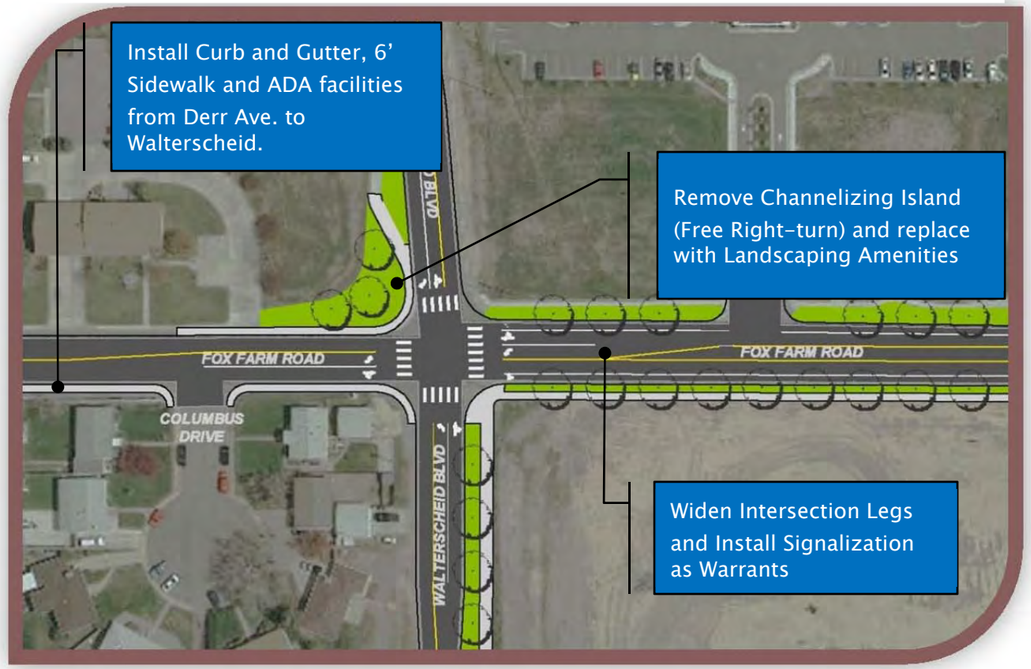


Figure 30, Recommended Intersection Alternative

South/ North Greeley Highway

Upon review of the existing intersection the following observations were noted as significant:

- Complex Signalized Intersection
- Four channelized right-turn lanes
- Approach access are very close to the existing intersection on all four legs
- High commercial land use
- Under direct jurisdiction of the State of Wyoming Department of Transportation
- Steep vertical profiles
- Large intersection and difficult to traverse as a pedestrian due to its size and complexity of traffic movements
- Observed opposing left turn cross maneuvers at approaches near the intersection and
- Observed unsafe cross maneuvers from traffic exiting the channelizing free-right turn.

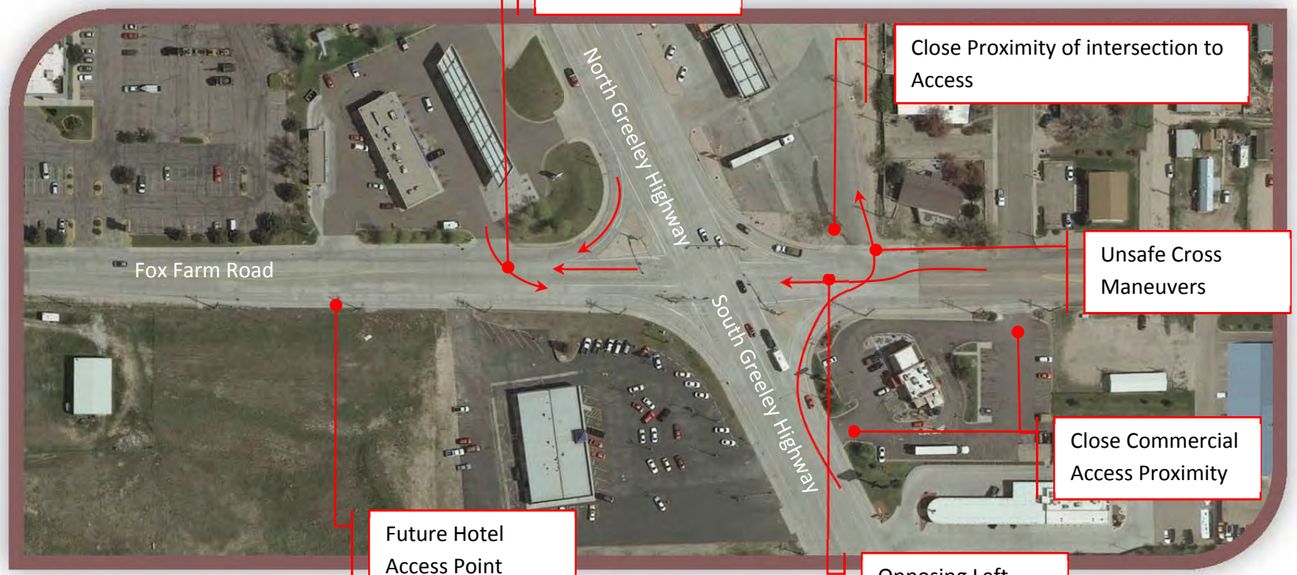


Figure 31, Existing South/ North Greeley Intersection at Fox Farm Road

Conceptual Options and Recommended Alternative

The goal of any proposed modification to this intersection was to improve operation and safety.

Current and anticipated traffic volumes present challenges with level of service and introduce added safety risk due to the proximity of commercial driveway accesses on all legs of the intersection. A multi-lane roundabout was considered at some point in the conceptual process but, would impose significant drainage, access, operational challenges. This option could possibly be reevaluated in the future when drivers in the area become more accustomed to traversing multi-lane roundabouts. The recommendations are as follows:

- Remove channelizing free right-turn islands to the northeast and southwest for traffic and pedestrian safety
- Add raised safety medians to prevent opposing traffic cross maneuvers on the east and west side of the intersection
- Install added deceleration/ business access auxiliary lane on northbound North Greeley Highway
- Install added acceleration/ deceleration access auxiliary lane on the eastbound lane.

The recommended alternative is illustrated in **Figure 32** and Appendix A.

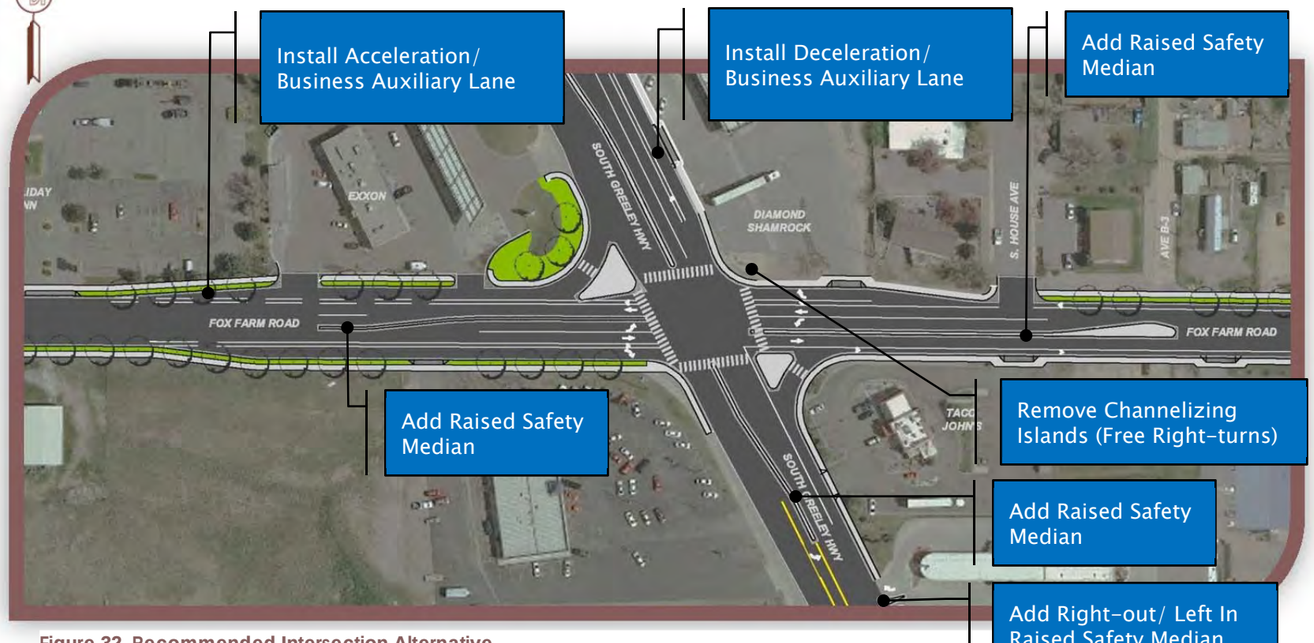


Figure 32, Recommended Intersection Alternative

Avenue C/ Morrie Avenue

Upon review of the existing intersection and proposed traffic volume projections the following observations were noted as significant:

- All-way stop controlled with dedicated eastbound left turn lane and southbound right turn lane and channelizing island
- Dry utility conflicts at southwest corner of the intersection will be impacted by any improvement
- Lack of pedestrian facilities other than north south greenway connection
- Access drive and Tyler Place on the east side of the intersection is very close to the north and south legs of the intersection
- Mobile home(s) access driveways
- Freight and large truck traffic is generated from Holly Energy Partners refinery directly north of the intersection.
- Existing concrete intersection with inadequate width and radii to accommodate large truck/ freight vehicles.

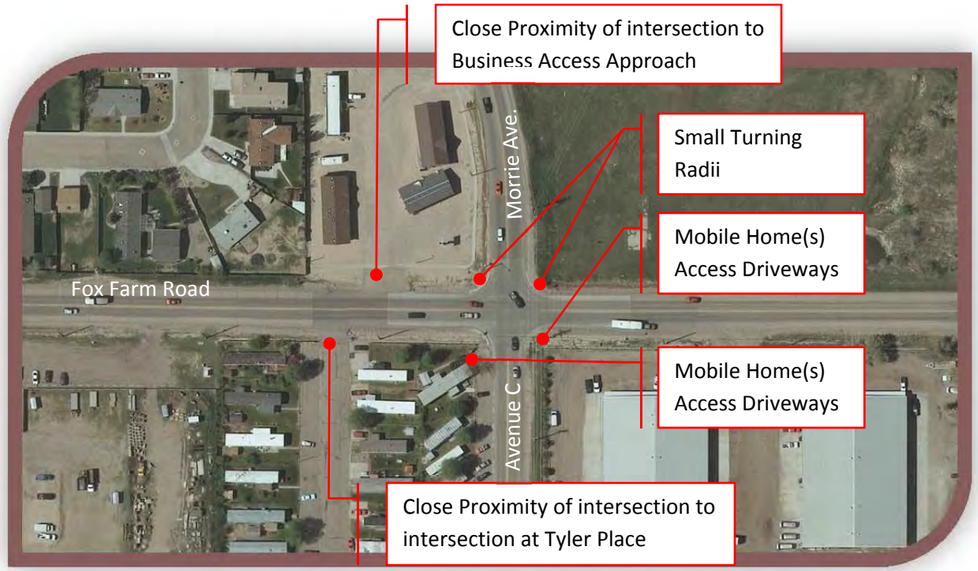


Figure 33, Existing Avenue C/ Morrie Avenue Intersection at Fox Farm Road

Conceptual Options and Recommended Alternative

Several different options were evaluated at this intersection including a single lane roundabout, standard intersection with all way stop, standard intersection with a two-way stop (north and south), a standard intersection with signalization, and do nothing.

The current traffic use and anticipated future volume removed the do nothing alternative from consideration. Based on truck route survey conducted in conjunction with the study, seventy-two point nine (72.9%) of all the freight trucks using the Holly Energy Partners refinery are conventional combination (i.e. 5 to 6 axle) tractor semi-trailer and twenty-seven point one (27.1%) of the freight trucks are larger combination (i.e. 6 -7 axles) w/ tractor and pup. Furthermore, sixty-two point nine percent (62.9%) of all the refinery freight traffic uses the Fox Farm Corridor for access. Of those trucks which use the corridor, a significant number of freight truck users (29/70) or forty one point four percent (41.4%), perceive the intersection of Fox Farm Road at Morrie Avenue/ Avenue C as unsafe, operational impaired or generally inadequate for them to use. The possible conceptual alternatives were narrowed to two and discussed below.

Standard Intersection Alternative. The premise for a standard intersection should be prefaced by the fact according to the projections of Sustainable Traffic Solutions, Inc., this intersection will likely be warranted for a traffic signal in 5 years or less. This of course is predicated on development occurring within and adjacent to the corridor. With new developments like the Montalto Drive (e.g. residential), Niobrara Energy Park (e.g. light industrial), and general property redevelopment potential with the corridor study area this does not seem unrealistic.

Based on responses from the Holly Energy Partner truck route survey, increasing the width of the intersections legs and roadway will likely increase the truck freight traffic on the corridor which would include both conventional semi-tractor trailer and larger tractor and pup combinations.

A major objective of traffic signal design is to maintain the free flow of traffic. This design requires that important decisions be made regarding assigning green time to vehicle movements (e.g. signal phasing). Exclusive phases such as left-turn arrows generally increase cycle lengths and add delay. In this particular case, the recommended future lanage has dedicated left turns on all intersection legs (**See Figure 27**). Factors such as progression efficiency, pedestrian times, and clearance intervals also need to be incorporated into the design. These additional factors also lead to increased delays. Additionally, good design practice dictates that we minimize conflict points, reduce turning movements, eliminate or curtail driveway access near the intersection. A standard four way intersection conceptual layout is shown in **Figure 34**.

In a typical two lane roadway (i.e. two lanes in each direction contains thirty-two vehicle conflict points (32). This is illustrated in **Figure 35** where sixteen are crossing, eight (8) are diverging, and eight (8) are merging. The conceptual intersection proposed is a Two-way left turn lane or three lane roadway option theoretically eliminates the same direction to left turn rear-end (diverging) conflict which reduces the conflict t thirty (30). See **Figure 35**.

Figure 34, Conceptual Standard Intersection Alternative w/ Traffic Signal

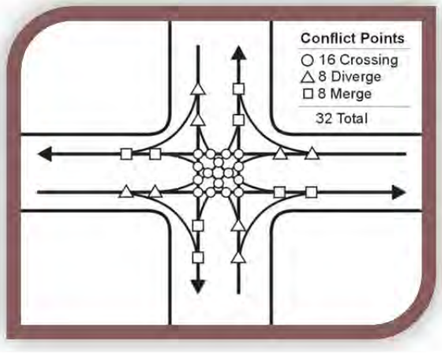


Figure 34, Standard Two-lane Intersection Conflict Points

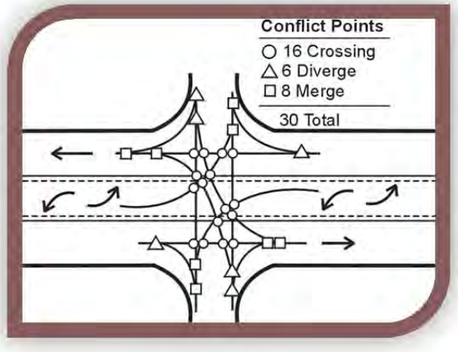


Figure 35, Three- land Roadway (Two-way Left Turn Lanes)

This concept alternative illustrated in **Figure 34 h**as the following added features not shown:

- Install roadway lighting at intersection.

The level of service (LOS) analysis shows a LOS B (am) and LOS A (pm) based on future traffic projections completed by Sustainable Traffic Solutions. **See Figure 27**. Cost estimates for this alternative including signalization in present value dollars is equal to approximately $330,000. See Appendix D for additional information.

Roundabout Alternative. Design Challenges due to the proximity of the residential driveways to the southwest require either a significant shift to the east and right-of-way acquisition. During the Structure strong beliefs with stakeholders believed trucks and emergency vehicles would have trouble traversing a roundabout. The major concern related to the larger vehicles negotiating too small of central radius and too high of interior island curb height. Some of the surrounding area roundabouts have such large height curbs that the trailer portion is dragged around the roundabout and the tires of the truck rub due to the height of the curb. Through proper design, roundabouts can easily accommodate emergency and large sized vehicles.

Other special design considerations for roundabouts include overall size, entry angles, entry widths, flare lengths, speed constraints, truck movements, pedestrian and bike accommodation, signing and striping issues. Because the only movement allowed from entry and exit of a roundabout is a right turn, the vehicle conflict points are reduced to eight (8). See **Figure 36**. Thus occurrences of crashes that result in injury and property damage are significantly reduced and are typically less severe than other types of collisions. Studies conducted by the U.S. Department of Transportation have shown that standard intersection converted to small/ moderate roundabouts have reduced total accidents by fifty-one (-51) percent, injury accidents by seventy-three (-73) percent, and property damage accidents by thirty-two (-32) percent (Robinson, 2000).

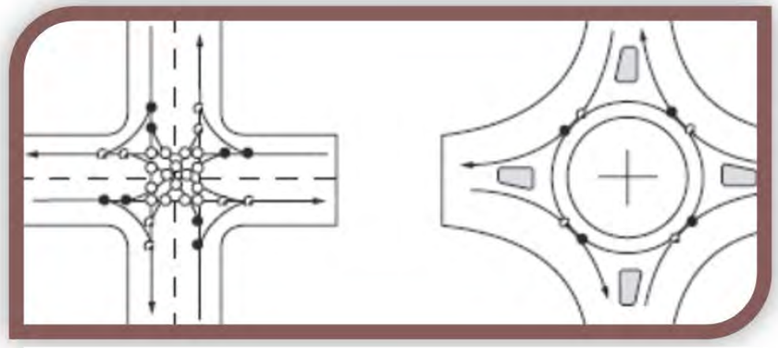


Figure 36, Vehicle Conflict Points Standard Two Lane Intersection and Roundabout

Added benefits of for the roundabout option include:

- No signal equipment to install and repair (i.e. savings on electrical and maintenance costs).
- Improved traffic flow and efficiency for intersections that handle left turns
- Eliminate the need for auxiliary storage lanes
- Slower traffic speeds.

The level of service (LOS) analysis shows a LOS C (am) and LOS B (pm) based on future traffic projections and analysis completed by Sustainable Traffic Solutions. **See Figure 27**. Cost estimates for this alternative including signalization in present value dollars is equal to

approximately $333,000 excluding right-of-acquisition. See Appendix D for additional information. The alternative is shown in **Figure 37**.

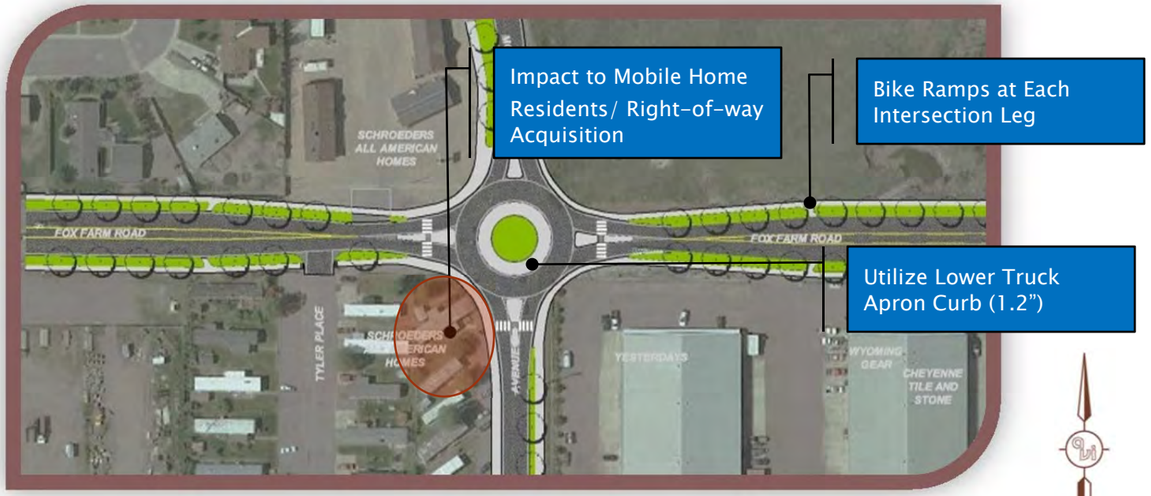


Figure 37, Conceptual Roundabout Alternative

Additional features recommended in the alternative not illustrated in **Figure 37** include the following:

- Install a 5' landscape buffer strip from the circulatory roadway to discourage pedestrians from crossing the central island
- Install roadway lighting at intersection.

Table 18 Conceptual Intersection Alternative Evaluation

Alternative	Construction Cost	Maintenance Cost	Reduced Injury and Property Damage Accidents	Reduced Right-of-Way Impact(s)	Level of Service*	Slower Traffic Speeds
Standard	$$$	$$		✓	B/A✓	
Roundabout	$$$	$ ✓	✓		C/B	✓

The roundabout options provide the most benefit based on the categories above. Although the standard intersection appears to provide a better level of service LOS as analyzed by Sustainable Traffic Solutions, Inc., roundabout analysis is greatly affected by the percentage of trucks. The software utilized assumes the trucks will have a negative impact in level of service.

However, with the added special truck features (i.e. lower curb and increased radii) incorporated into the roundabout, the negative impact of trucks to level of service would logically be reduced. Additionally, it highly unlikely that the peak am and pm traffic will coincide with the peak larger truck/ freight movements on the corridor.

Consequently, we recommend the roundabout option for this intersection due to the following:

- Safety (e.g. Reduce injury accidents). It should be noted that property damage accidents will likely increase until users become accustomed to traversing the roundabout but, serious accidents will be virtually eliminated compared the signalized option.
- Projected need for signalization within five (5) years
- Possible reduction truck volume in commercial/ residential area west of Avenue C (Other more industrial routes are better suited and available). Please reference Table 3 Truck Route Distance and Travel Times Map
- Reduced long term maintenance cost
- Improved Traffic flow and efficiency
- Compatible with a recommended speed reduction west of Avenue C
- Accommodates multi-modal transportation

Please see **Figure 37** and Appendix A for additional information and reference.

College Drive

Upon review of the existing intersection the following observations were noted as significant (**See Figure 38**):

- Un-signalized Intersection Fox Farm Stop
- Posted Speed Limit on College Drive 50 mph
- Under direct jurisdiction of the State of Wyoming Department of Transportation
- Cheyenne Transit Stop near intersection create pedestrian movement to mid-block cross due to lack of sidewalks and location of bus stop adjacent to Cheyenne Health and Wellness facility
- Southbound and Northbound traffic hidden in “train” due to vertical and horizontal configuration and dual to single lane and single to double lane transitions, respectively
- Intersection skewed in excess of 10° (e.g. 25.24°)
- Eastbound to Southbound Acceleration lane would be required for peak hour volumes in excess of 50 (City of Cheyenne and Laramie County) and Posted Speed on adjacent street is greater than forty (40) mph.

Conceptual Options and Recommended Alternative

The goal of any proposed modification to this intersection was to improve operation and safety. An attempt was made early on the study to reconfigure the alignment however; three factors overrode the practicality of the alternative:

- Property alignment East of College Drive
- Proposed alignment of Future Fox Farm is in alignment with adjacent property owners plan
- Intersection appears to meets warrants for signalization.

The reconfiguration alternatives can be seen in detail in Appendix C (MPO Technical Committee Meeting 05-15-2013). Current accident history and operation problems put this intersection into a two tiered improvement recommendation (e.g. Short Term and Long Term). The short term recommendations (Prior to signalization) are as follows and shown in **Figure 39**:

- Widen the existing right-turn lane on southbound College Drive to Fox Farm Road to eliminate or improve the ghosting effect
- Restripe College Drive to move the single lane to two land transition for both northbound and southbound traffic north of the intersection of Fox Farm Rood
- Add pedestrian sidewalk from the Cheyenne Transit bus stop to the intersection of College Drive and Fox Farm Road (i.e. south side of Fox Farm Road)
- Add pedestrian sidewalk from College Drive to the Cheyenne Health and Wellness Clinic
- Add raised safety median to serve as a pedestrian refuge
- Add acceleration lane to eastbound Fox Farm Road to southbound College Drive
- Add channelizing median as a pedestrian refuge for the acceleration lane on southbound College Drive

The recommended interim alternative is illustrated in **Figure 39**.

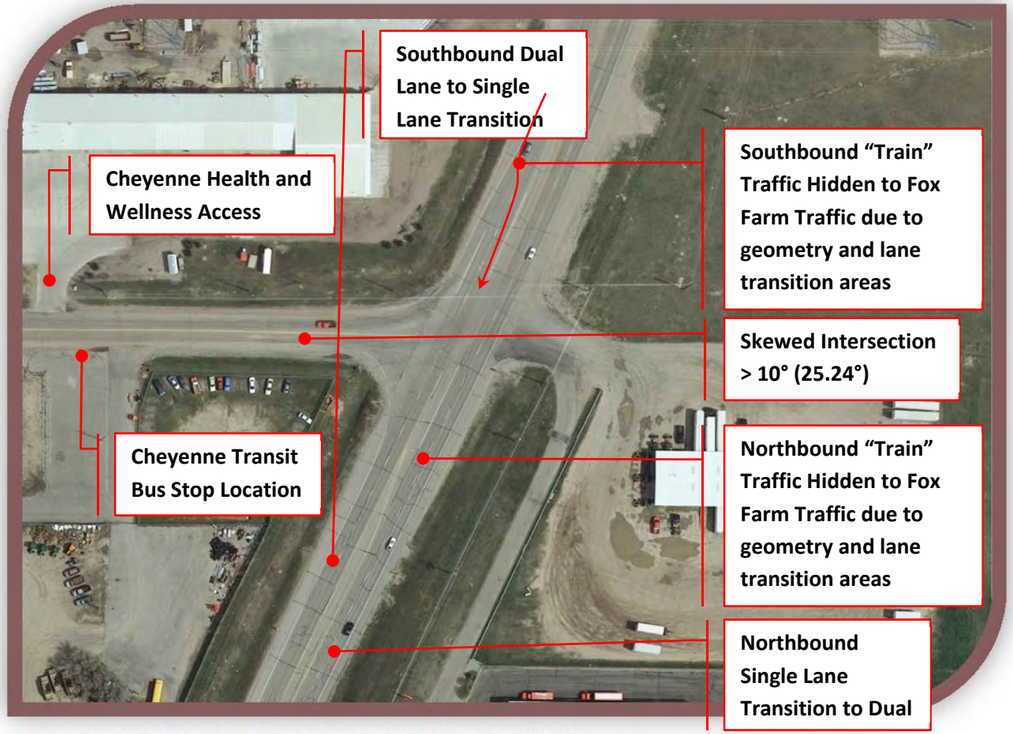


Figure 38, Existing College Drive Intersection at Fox Farm Road

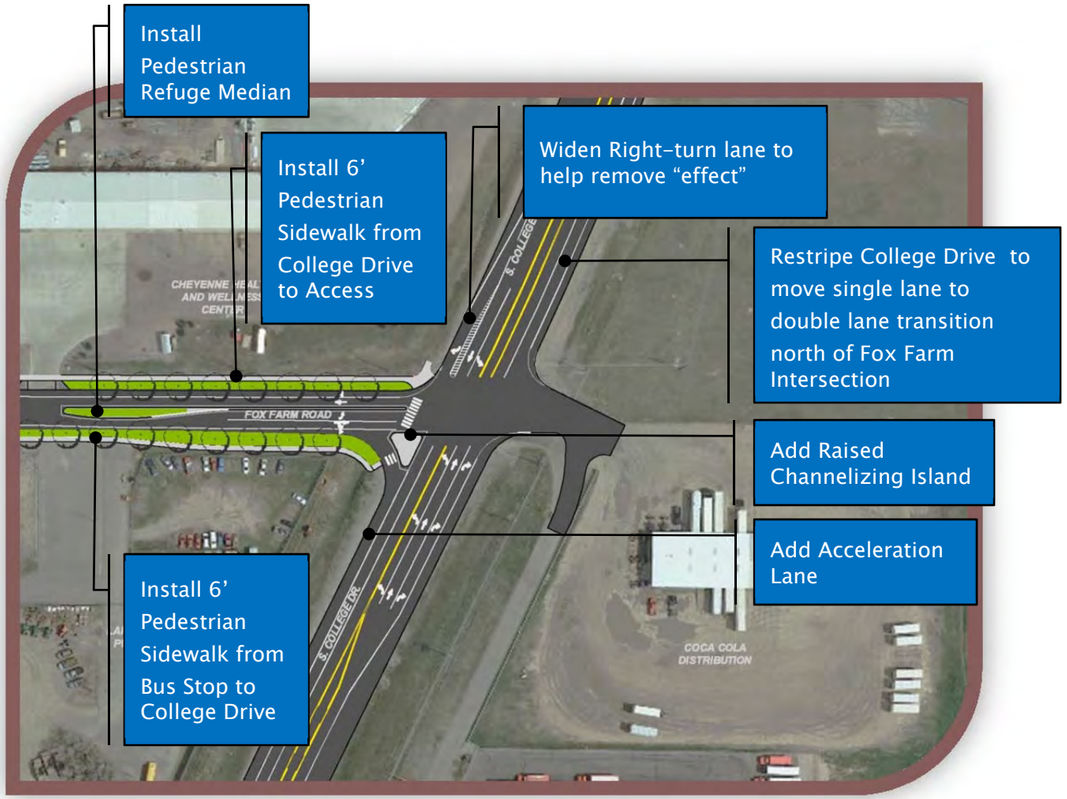


Figure 39, Recommended Interim Intersection Improvements

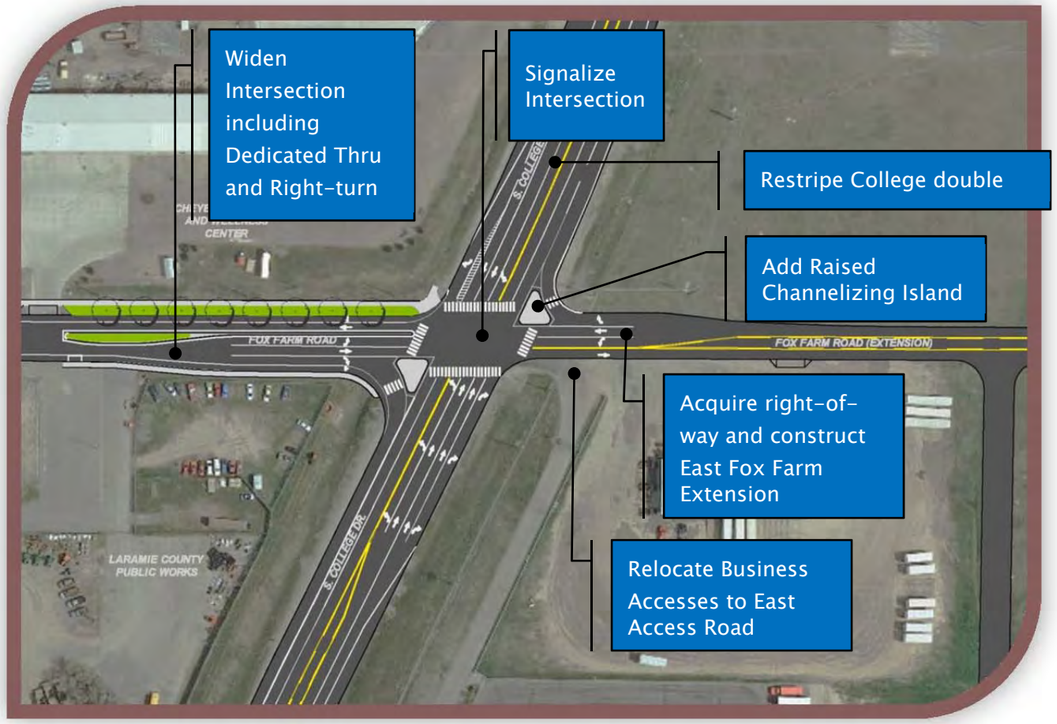


Figure 40, Recommended Long Term Intersection Improvements

The long term recommendations (post signalization) are as follows and shown in **Figure 40**:

- Signalize Intersection
- Restripe College Drive to accommodate future demands
- Widen Fox Farm Road to include lane recommendations of eastbound dedicated thru lane, eastbound left turn lane, eastbound right turn lane, westbound lane, and buffered bike lanes
- Acquire right-of-way and construct East Fox Farm Extension and portion of roadway network
- Remove and relocate east business access to the east
- Add raised channelizing island on the East Fox Farm Road Extension as needed for pedestrian/ traffic.

Burlington Trail Road

Upon review of the existing intersection the following observations were noted as significant (**See Figure 41**):

- Close proximity access to on north east side of Burlington Trails on Campstool Road
- Major drainage way west of roadway
- I-80 bridge piers and structure dictate angle of skew of Burlington Trails Road
- Campstool Road posted speed limit at 45 mph
- Intersection of north Burlington Trail Road with Campstool road should be realigned to divide the Sierra Trading Post access and Cleveland Place Roadway
- Skew angle of intersection of Burlington Trails Road and South Industrial Road exceeds ten (10°) at forty four point thirty seven (44.37°).
- Observed heavy industrial/ freight truck traffic.

Figure 41, Existing Burlington Trails Road

Conceptual Options and Recommended Alternative

The goal of any proposed modification to this intersection was to improve operation, safety, and add Greenway connection.

Current heavy industrial/ freight traffic guided the recommendation along with future development of the Greenway. The recommendations are as follows:

- Install added deceleration access auxiliary lane on the eastbound lane of Campstool Road
- Realign Burlington Trail Road to improve access on north and skew angle south
- Add drainage improvements to accommodate intersection realignment of Burlington Trail Road with South Industrial Road
- Add 10' concrete Greenway path on east side of Burlington Trail Road
- Add raised channelizing island and free right-turn onto South Industrial Road to accommodate WB-67 design vehicle.

The recommended alternative is illustrated in **Figure 42** and Appendix A.

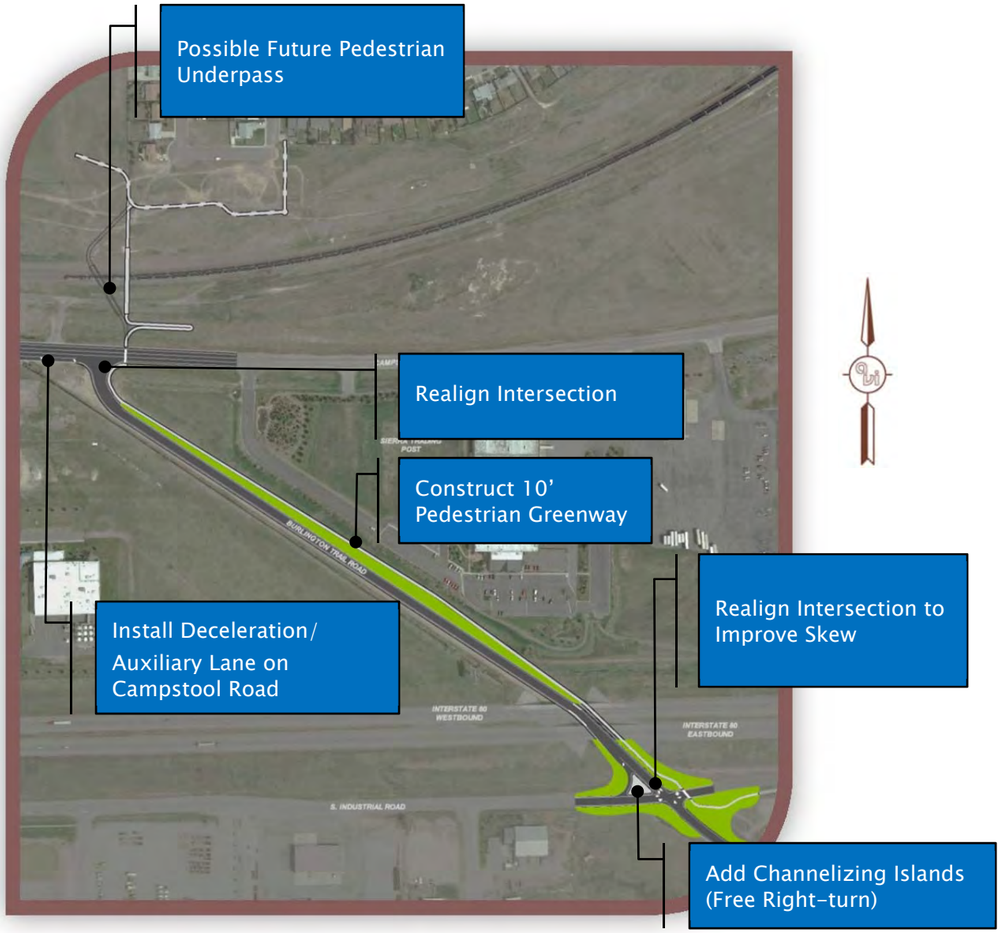


Figure 42, Recommended Intersection Alternative

South Industrial Road

As a part of the scope of this study the design team was asked to investigate options to improve the operation of South Industrial Road on College Drive. Currently southbound traffic on College Drive turning left onto South Industrial Road stacks beyond the signalized off and on ramps of Eastbound I-80.

Several alternatives were evaluated including the following:

- Do nothing
- Realign South Industrial Road south to separate the intersection with the on and off ramps of I-80
- Add access control median to prevent southbound traffic from turning left onto South Industrial Road (See Figure 43)
- Realign South Industrial Road and I-80 Eastbound On Ramp to utilize South Industrial Road and the primary access to the on ramp (Standard Intersection: **See Figure 44**)
- Realign South Industrial Road and I-80 Eastbound On Ramp to utilize South Industrial Road and the primary access to a flyover or underpass ramp (**See Figure 45**).

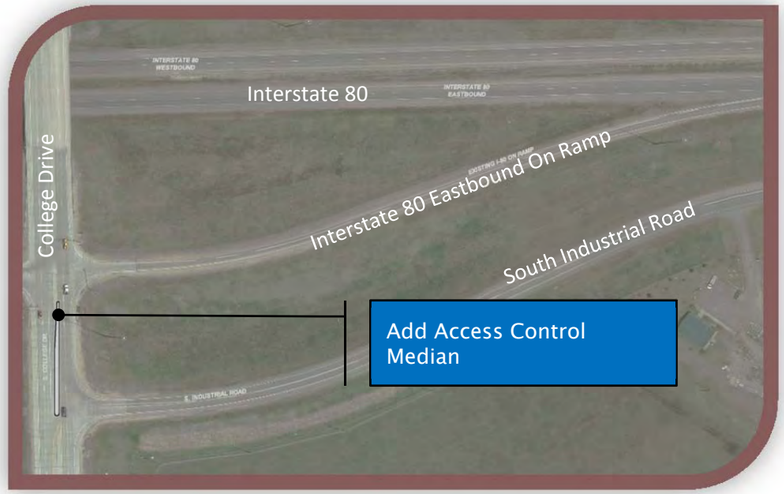


Figure 43, Access Control Median Installation Option

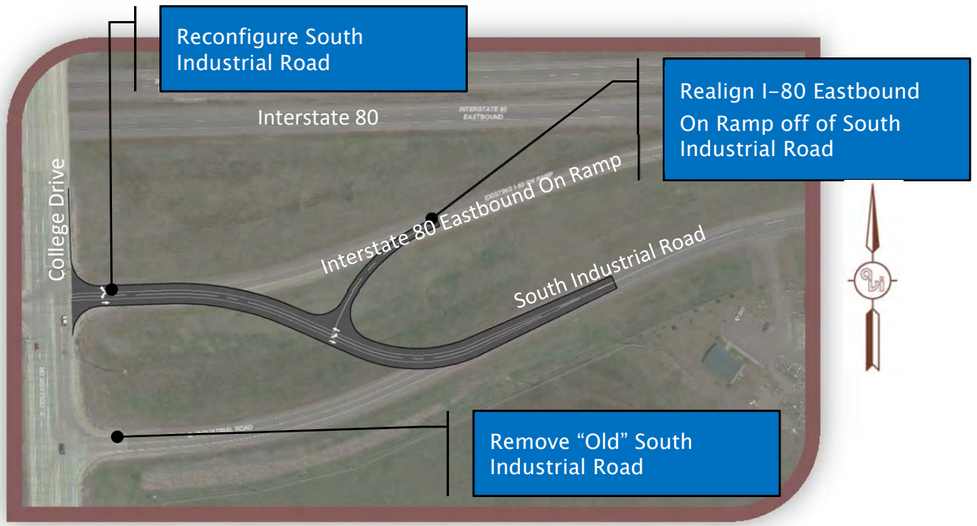


Figure 44, Realign Interstate I-80 Eastbound On Ramp and South Industrial Road

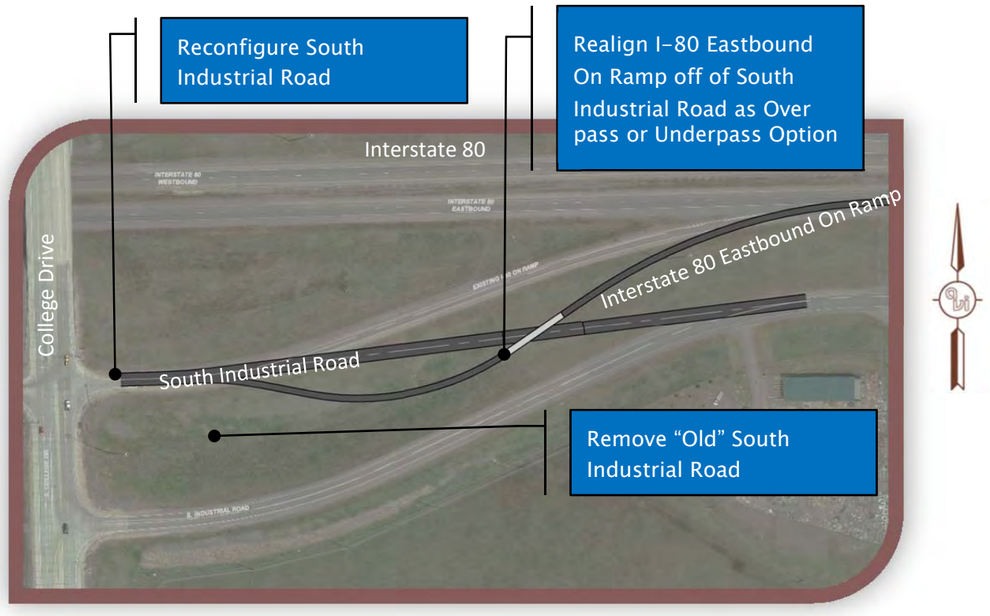
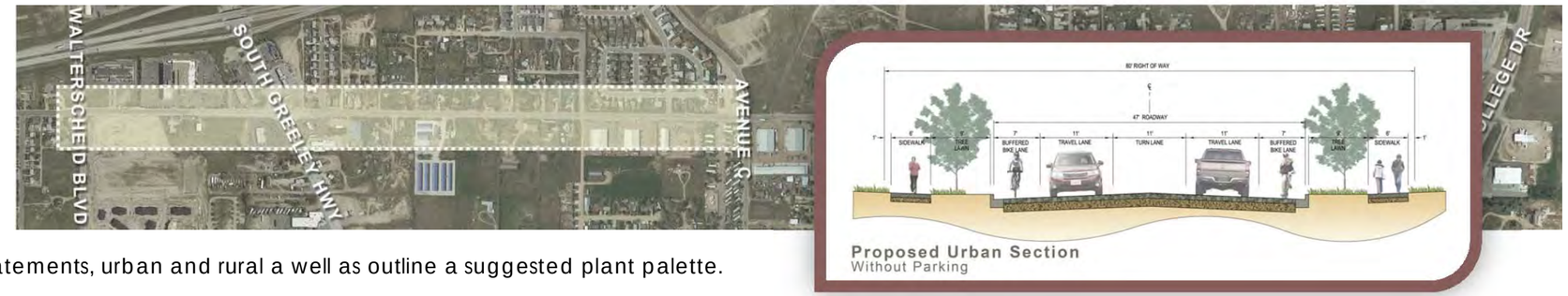


Figure 45, Realign Interstate I-80 Eastbound On Ramp and South Industrial Road (Bridge/Underpass Option)

After meeting directly with the local Federal Highway Administration representatives, WYDOT, and the MPO, and the surrounding property owner, no alternative satisfies the constraints of the group. Consequently, no recommendation can be given at this time. Further investigation will be required if operational or accidents occur at this location.

Landscape Concept

Using a simple, xeric palette of plants tolerant to the salts used in winter street maintenance, the landscape concept is design for easy maintenance and an overall aesthetic that will enhance the Fox Farm Road corridor as a whole.



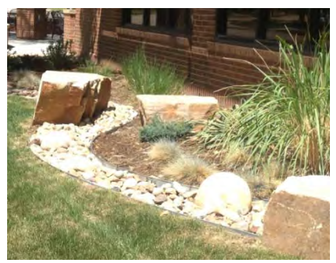
The pages herein decribe two general landsacpe treatements, urban and rural a well as outline a suggested plant palette.

Urban Street Section

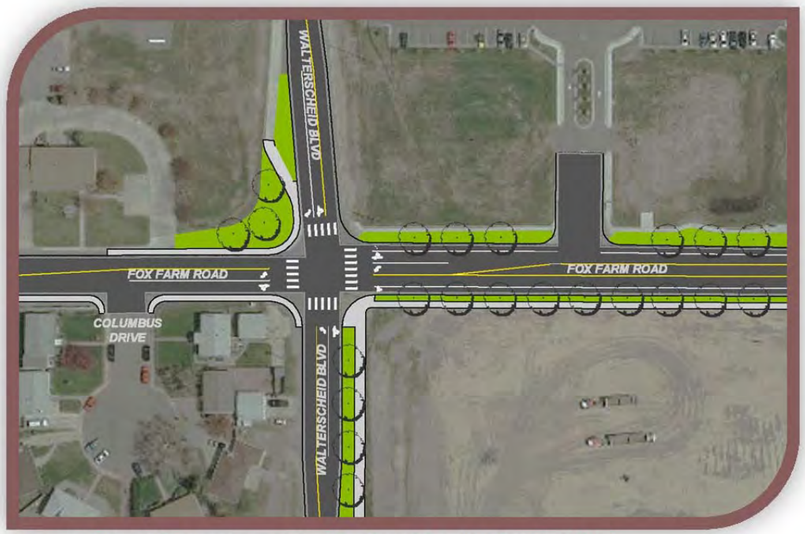
Proposed improvements between Walterscheid Blvd. and Avenue C include an “urban” street section comprised of a detached concrete sidewalks with a manicured tree lawn varying in width from 5’ to 12’. Additional potential for planting exists in the enlarged portion of the median east of S. Greeley Hwy.

Tree lawns planted with drought and salt tolerant grass plus canopy trees

Large landscape rocks and cobble mulch used in tandem with native to semi-native plants



Colored concrete, cobble mulch, ornamental grasses and stone columns in medians



Proposed Intersection Improvements at Fox Farm Rd and Walterscheid Blvd

Proposed Intersection Improvements at Fox Farm Rd and South Greeley Highway

Rural Street Section

The area between Avenu C and S. College Drive is intended for the rural street section which will have a paved shoulder and vegetated swale adjacent to the roadway instead of curb and gutter. The swale will consist of a mix of grasses tolerant of drought and the salts typically used in snow removal.

Suggested Dryland Seed Mix:

40% Western Wheat Grass	20% Green Needle Grass
20% Blue Grama	10% Buffalo Grass
5% Little Bluestem	5% Sideoats Grama

Proposed Improvements to Burlington Trail Road Between Campstool Road and S. Industrial Road

Proposed Future Intersection Improvements at Fox Farm Rd and S. College Drive

Suggested Plant Palette

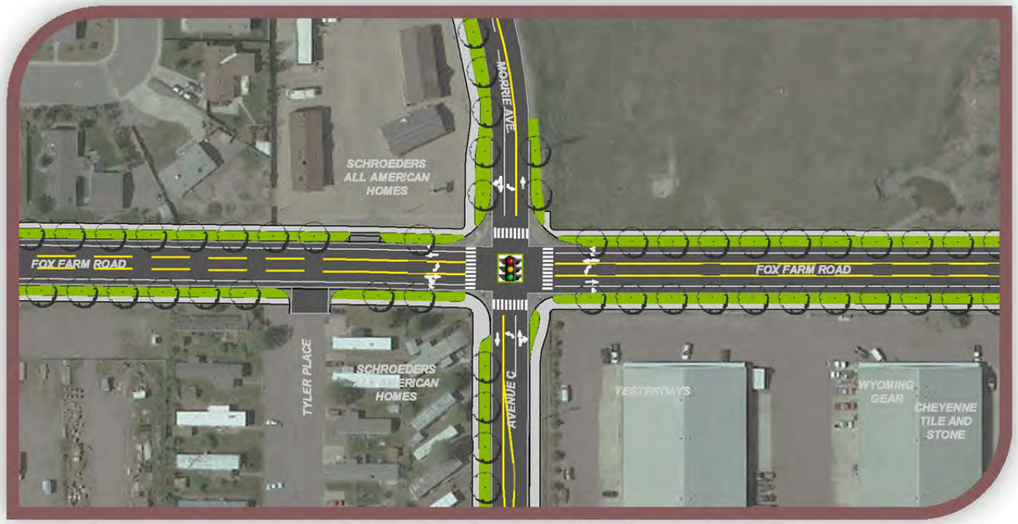
Ornamental Grasses and Perennials

Trees

Shrubs

Avenue C with Optional Roundabout

Avenue C has been designed with a standard intersection containing planted tree lawns to match the concept images on the previous page with an alternate for a roundabout. The center of the roundabout could be treated one of several ways as illustrated in herein.



Proposed Intersection Improvements at Fox Farm Rd and Avenue C / Morrie Avenue – Standard Intersection

Proposed Intersection Improvements at Fox Farm Rd and Avenue C / Morrie Avenue – Roundabout

Mix of very xeric evergreens, grasses, and shrubs with different sized rock mulch and a colored concrete apron

Asymmetrical Planting with Native Grass

Native Planting and Large Boulders with Large Sculpture

Hardscape and Sculpture, Very Minimal Planting

Artistic Use of Hardscape and Minimal Planting

Summary of Corridor Recommendations

The overall recommendations are specifically designed to address the all modes of transportation, landscaping, and safety needs of the Fox Farm Road Corridor. All recommendations have been examined carefully to ensure practicality, functionality, and aesthetic appeal, sustainability, and successful implementation. The physical layout of the improvements are detailed in the following pages and can be found on the corridor plan and profile sheet in Appendix A. Detailed cost estimates are shown in Appendix C.

General Recommendations

Short Term

- Pedestrian and Sidewalk Improvements (i.e. Specific Locations)
- When Practical, Improve/ Increase Capacity of Existing Drainage Conveyance,
- Explore Opportunities as Area Develops to Provide Roadway Storm water Detention/ Retention Features/ Facilities.
- Develop, Implement, and Fund a Drainage Master Plan for Corridor.
- Update/ Install Strategic Street Lighting at Key Intersections (Walterscheid Blvd., South Greeley, Avenue C/ Morrie Avenue, and College Drive)
- Replace or upsize undersized and old portions of the water transmission main (i.e. 6" ductile iron pipe) on Fox Farm Road as funding resources become available.
- Implement Priority Projects as funding resources become available or development becomes the catalyst

Long Term

- Implement Reconstruction Phased Strategies along Corridor.
- Storm Sewer Installation
- Replace or rehabilitate existing wet utility infrastructure as development occurs along the corridor
- Implement Typical Section(s)
- Install Uniform Roadway and Pedestrian Street Lighting throughout corridor
- Post Speed Reduction
  Avenue "C" West to 30 mph
- Encourage Holly Frontier Drivers to use Alternate Routes (Education, Policy, etc.)
- Investigate and Develop Possible Funding Mechanisms for the County for Reimbursement, "Impact Fees", etc.

Priority Projects

Traffic Safety Improvement Projects

- Restripe College Drive to remove the single lane to double lane transitions north of Fox Farm Road.
- Widen College Drive Southbound dedicated right turn-lane onto Fox Farm Raod
- Install roadway lighting intersection improvements
- Install raised safety median on Fox Farm Road east of South Greeley Highway

Pedestrian Improvement Projects

- Install 6' sidewalk and curb return radii on South side of Fox Farm Road from Derr Avenue to Walterscheid Blvd.
- Install sidewalk from East Cheyenne Transit Bus stop to College Drive on the south side and north side from College to the Cheyenne Health Clinic
- Install Pedestrian Refuge medians at College Drive and Mid-block at the Cheyenne Health Clinic

Freight/ Large Truck Improvements

- Widen intersection and enlarge turning radii on the north side of Avenue C/ Morrie Avneu on Fox Farm Road.
- Implement the reconstruction of Burlington Trail Road or temporary or phase as funding becomes available

Transit Improvements

- Relocate the College Drive/ Fox Farm Bus Stop to the east (i.e. Closer to the intersection of College Drive)
- As bus demand warrants, add additional westbound bus route onto Fox Farm Road

Drainage Improvements

- Fund a master drainage improvement plan

Appendix A – Corridor Plan and Profile Sheets

Appendix B – Public Meetings

Appendix C – Presentations

Appendix D – Cost Estimates

Appendix E – Natural Hazard Properties