



TRANSPORTATION PLAN



DECEMBER 2018

TRANSPORTATION PLAN

Town of Mead

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TRANSPORTATION PLAN

1. Introduction

A community of approximately 4,500 residents, the Town of Mead, officially incorporated in 1908, served as an agriculture and farming community for decades. Today, the community maintains smaller local agricultural, industrial, and commercial industries and functions as a bedroom community for larger nearby cities like Denver, Fort Collins, Loveland, and Longmont. While Mead’s population may be less than 5,000 (4,553 total residents in January 2018), more than 80,000 people drive through the town limits daily.

Mead is approximately 40 miles north of Denver along Interstate 25 (I-25). Two I-25 interchanges provide access into Mead: one at Welker Avenue (Weld County Road [WCR] 34) and one at State Highway (SH) 66. SH 66, a Colorado Department of Transportation (CDOT)-owned facility, serves as a primary route between I-25 and Rocky Mountain National Park. I-25, also a CDOT-owned facility, serves as a primary corridor along the Front Range. Mead’s arterial roadway network predominantly follows the section lines and is complemented by a network of local and collector streets that provide access within residential and commercial areas.

Purpose of Transportation Plan

Mead residents require transportation to get to work, school, medical facilities, recreational amenities, shopping, and community and social activities. Transportation is a critical component of community planning, and the Town recognizes the need to be proactive about transportation as the pace of growth and development increases. This Transportation Plan identifies transportation trends, challenges, and opportunities that either exist or will likely come about with anticipated future

growth and development. An integrated multimodal transportation system allows residents, employees, and visitors of Mead the freedom of personal mobility and the choice of how to travel—whether it’s walking, biking, driving, carpooling, or riding public or private transportation.

The plan addresses all transportation modes and is intended to accommodate projected growth through 2040. This plan contains guidance to assist staff and policymakers in reviewing development proposals and implementing transportation improvements. The plan also lists projects that would be necessary to realize Mead’s transportation goals. It is intended that this plan be flexible enough to accommodate future revisions and adjustments as development conditions dictate.

Relationship to Comprehensive Plan

This Transportation Plan serves as an update to the 2013 Transportation Plan and coordinates closely with the recently completed Comprehensive Plan. The Town’s Comprehensive Plan, adopted in March 2018, provides a roadmap for how the Town wishes to grow and develop over the next 20 years. It is the primary policy document for the Town.

What We Heard

The Comprehensive Plan was developed through a dynamic community-driven planning process in 2017, with final adoption in March 2018. Over 500 people were reached during the planning process, which is just over 10 percent of the Town’s total population. Transportation was one of the eight topics on which community members commented.

Community members expressed concerns about the following key topics pertaining to transportation:

- Poor road conditions
- Bikeability – including local and regional bicycling and bike share opportunities
- Impact of future growth on traffic congestion
- Mass transit and multimodal transportation
- Planning for transportation technology innovations
- Prioritization of key connections and roadway improvements
- Walkability – including the addition of sidewalks

Key ideas and opportunities discussed include:

- New trail and trail connections
- Transit and regional bus connections
- Bike paths
- Improved transportation infrastructure
- Safe trail network
- Improved wayfinding and signage
- Additional parking

Approach

This Transportation Plan began shortly after the Town adopted the Comprehensive Plan and is directly linked to that plan. The transportation goals, policies, and strategies established in the Comprehensive Plan under the Strong Connectivity theme were used as a starting point to develop this plan. The Strong Connectivity goals reflect the community values expressed during the comprehensive planning process and are foundational to this Transportation Plan. An inventory of the existing transportation system and areas of deficiencies were then documented so that

immediate needs could be identified. Current land use forecasts using Mead’s current zoning and future land use established in the Comprehensive Plan were used to update the regional travel demand model. The travel demand model was used to project future travel demand and patterns and as a tool to identify future needs. Lists of short-term, mid-term, and long-term needs were developed to serve as the basis for the Town’s Capital Improvement Plan (CIP).

Study Area

The Town of Mead currently includes approximately 12 square miles. A larger Planning Influence Area (PIA) identifies the total area over which the Town of Mead has the legal right to influence development. The PIA represents those areas beyond the Town limits that can reasonably be expected to annex into the Town as growth continues. The study area for this Plan, therefore, is the PIA limits.

The land uses within Mead’s PIA include agriculture, residential neighborhoods, lakes and reservoirs, oil and gas wells, industrial parks, and limited commercial and retail property. The boundaries of the PIA, shown on **Figure 1**, are generally WCR 1 to the west, WCR 40 to the north, and the St. Vrain Creek to the east and south.

The Town of Mead has an Intergovernmental Agreement (IGA) with Weld County in place to ensure development applications within the PIA are referred to the Town before processing. As development advances, a multimodal transportation network will be critical in helping Mead grow while maintaining the small-town character that residents highly value.

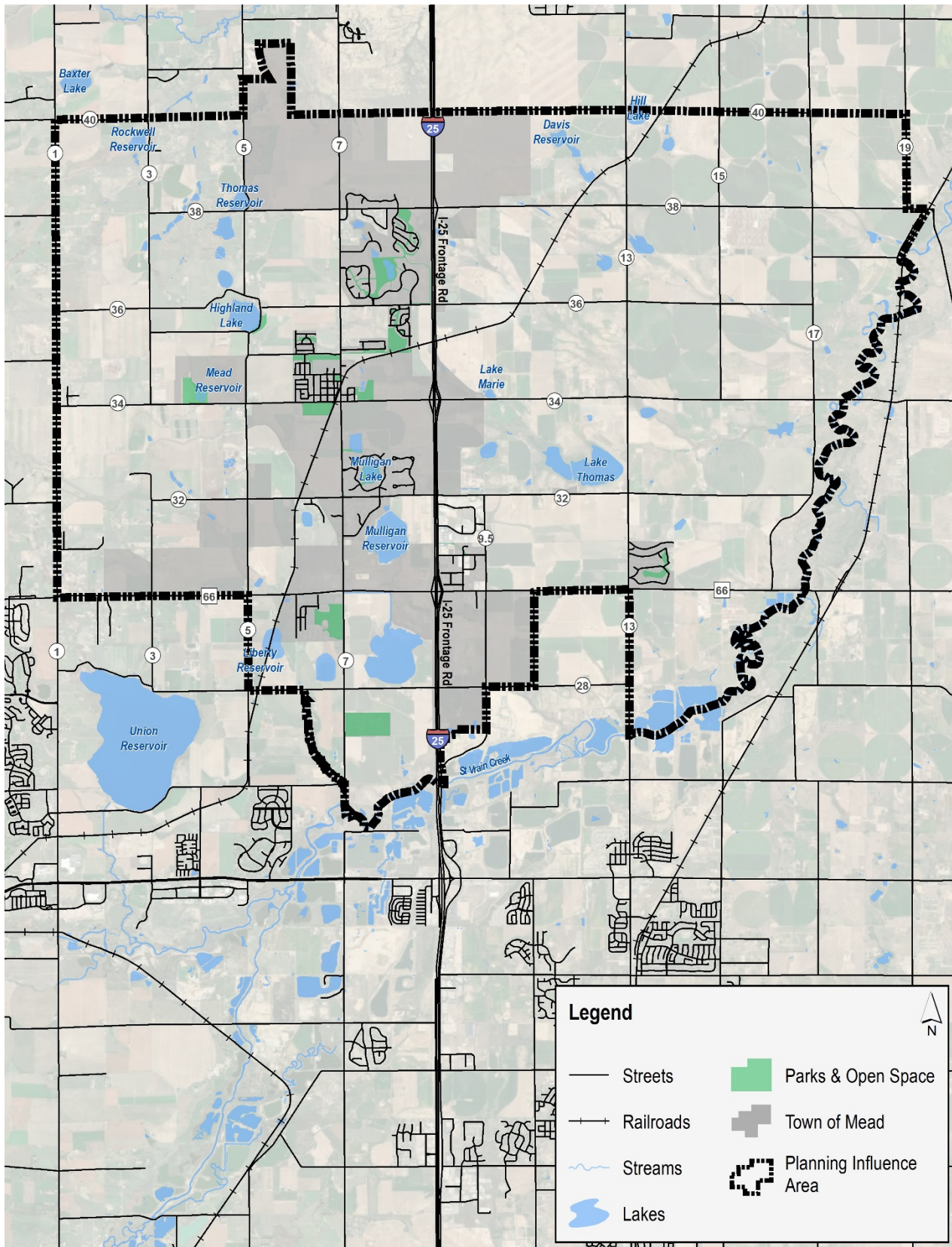


Figure 1. Planning Influence Area (PIA)

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2. Vision

Mead's Comprehensive Plan development process (in 2017/2018) involved the creation of a shared community vision. The process challenged residents and community members to think 20 years into the future in the face of change, revealing what they value most about their community and what they would like to see improve as the town continues to mature. The public feedback gathered during the planning process culminated in a shared community vision and seven themes that elaborate on specific aspects of that vision. Strong Connectivity is one of the seven themes relating specifically to transportation and mobility. The community's Strong Connectivity Vision Statement follows:

Strong connectivity through a safe and convenient transportation network that promotes alternative modes, regional linkages, independent mobility, active lifestyles and social interactions for people of all ages and abilities.

Goals, Policies, and Strategies

The three Strong Connectivity goals are the foundation for the supporting strategies and policies recommended to realize the stated goals. These goals, policies, and strategies are consistent with the 2018 Comprehensive Plan. This Transportation Plan addresses several of the strategies.

Goal 1: Mobility A safe, convenient, and efficient transportation network that meets the Town's mobility needs and is built and maintained through sustainable funding mechanisms.

Policy 1A: Funding Options Develop additional methods of funding capital improvements and on-going street maintenance.

Strategies:

- Pursue grant funding (e.g., Energy/Mineral Impact Assistance Fund grants, federal/state funding through the DRCOG TIP process) to supplement Town capital improvement projects.
- Identify candidate projects for various grant funds.
- Leverage the existing TIF district to fund transportation and other infrastructure improvements.
- Study the feasibility of fee-based funding mechanisms (e.g., road maintenance fees, impact fees with inflation adjustment, and bonding options).
- Study the feasibility of a sales tax increase to support the development of road infrastructure improvements based on the Strategic Action Plan and a subsequent detailed development plan.

Policy 1B: Project Priorities Identify and implement high priority transportation projects.

Strategies:

- Identify existing safety problems and corresponding mitigation measures through regular review of crash patterns.
- Identify existing mobility problems and corresponding mitigation measures through community input and traffic operational analysis.

Policy 1C: Support Land Uses Construct roadway improvements that complement the surrounding land uses and phase improvements over time.

Strategies:

- Identify the desired street cross-section (urban vs. rural) for specific roadways to complement the surrounding existing and future land uses.
- Construct roadway improvements to mitigate development impacts.
- Preserve right-of-way for future roadway widening as identified in the Transportation Master Plan, but consider implementation of interim solutions that could adequately serve the Town’s mobility needs in the short-term (e.g., a two-lane cross-section with bike lanes rather than the full four-lane ultimate cross-section).

Policy 1D: Emerging Technologies Position Mead to leverage emerging technologies in transportation.

Strategies:

- Identify location(s) for and implement electric vehicle charging station(s).
- Coordinate with adjacent communities, Weld County, and the Colorado Department of Transportation (CDOT) to ensure future traffic signals have communication compatibility.
- Identify priority corridor(s) for vehicle to infrastructure (V2I) communication (allowing vehicles to share information with the components that support the roadway system, which in turn can provide travelers with real-time information), such as I-25 and Highway 66 to leverage CDOT’s RoadX initiative to accelerate technology.
- Encourage adequate parking through the development review process.

Goal 2: Regional Coordination A

transportation system that is well integrated with the regional network and transportation services to enable convenient regional travel for Mead residents and visitors.

Policy 2A: Regional Engagement Engage in regional planning activities to support implementation of regional transportation improvement projects.

Strategies:

- Continue to actively engage in DRCOG committee and board meetings to ensure Mead’s interests are represented at the regional level.
- Work collaboratively with CDOT and regional partners to implement roadway improvements on I-25 and Highway 66.
- Preserve right-of-way for future interchange footprints at I-25/Highway 66, I-25/Welker Avenue, and I-25/CR 38.
- Develop new signage to enhance the scenic byway to Estes Park and Rocky Mountain National Park.
- Work with Longmont in the development of a connection to Union Reservoir.

Goal 3: Multimodal Network A connected and integrated transportation network that provides travel options (multi-modal) and enables mobility for people of all ages and abilities.

Policy 3A: Bicycle and Pedestrian Network Incorporate bicycle and pedestrian facilities on the Town’s streets where appropriate.

Strategies:

- Incorporate sidewalks and bike lanes on Town streets consistent with the Town’s typical urban street cross-sections (based on land use context).



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- Identify optional street cross-sections for enhanced bicycle and pedestrian facilities (e.g., protected bike lanes; wide sidewalks) to be used in mixed-use and higher density areas and where biking and walking activity is expected to be higher.
- Identify improvements to enhance the safety of bicyclists and pedestrians crossing major arterial streets like Highway 66.
- Connect the on-street bicycle and pedestrian facilities with the trail network to encourage bicycling and walking for recreational and travel purposes.
- Investigate opportunities for a bike share or bike library program.

Policy 3B: Transit Service Identify opportunities to leverage existing and future regional transit services to benefit Mead residents.

Strategies:

- Capitalize on the Park-n-Ride at I-25 and Highway 66. Encourage this location as a future regional transit stop.
- Coordinate with CDOT's Division of Transit and Rail to consider a Bustang stop.
- Develop a strategy for future service including working with RTD and nearby communities.

- Monitor the progress of the Front Range Passenger Rail Commission that is actively pursuing rail service from Trinidad to Fort Collins along the I-25 corridor.
- Identify a location(s) and option(s) for a future transit hub, which could also function as a mobility hub for inter-modal transfers, future drop-off/pick-up for ride-sourcing/ridesharing, and future bike sharing.

Policy 3C: Human Services Identify opportunities to improve human services transportation for individuals with disabilities, older adults, and people with low incomes.

Strategies:

- Investigate opportunities for connections to Longmont (especially for seniors).
- Investigate a possible shuttle/connections to the Carbon Valley Recreation Center.

Policy 3D: Downtown Connections Focus on multi-modal transportation connections to bring people Downtown.

Strategies:

- Plan for and develop a Downtown trailhead hub that links to and promotes the Town's existing and future trail systems and sidewalks.

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3. Existing Conditions

Mead’s transportation system was inventoried to assess the current state of transportation in the town. The inventory from the 2013 Transportation Plan formed the baseline, information from the Comprehensive Plan supplemented the inventory, and additional information was collected. Conducting this inventory was an important step toward identifying existing transportation-related issues and areas of need.

Transportation Trends

Transportation and Housing Costs

Transportation and housing costs in Mead are high; residents spend approximately 64 percent of their income on housing and transportation (45 percent is considered affordable). Annual average transportation costs in Mead are more than \$15,600 per household. On average, households in Mead own 2.11 automobiles and travel more than 30,000 miles per year.¹



ANNUAL AVERAGE TRANSPORTATION COSTS PER HOUSEHOLD IN MEAD

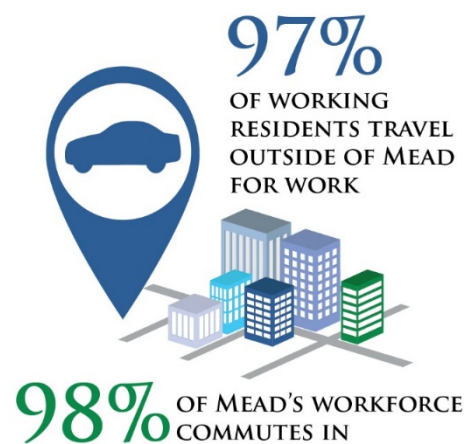
\$15,649

¹ Source: Center for Neighborhood Technology (CNT) H+T® Fact Sheet

² Source: Longitudinal Employer-Household Dynamics (U.S. Census Bureau)

Employee Inflow and Outflow

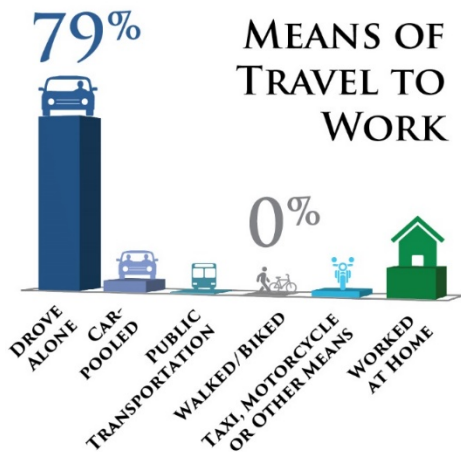
An estimated 97 percent of working residents commute out of Mead, while 98 percent of Mead’s workforce commutes in.² This trend reflects the need for jobs that better align with residents’ skills. This pattern is likely to continue because of strong job bases in Longmont, Denver, Boulder, and Fort Collins. The average travel time to work for Mead residents is just over 23 minutes.³



Means of Transportation to Work

The automobile remains the predominant means of travel to work for Mead residents; 79 percent drive alone to work and 5 percent carpool. Alternative travel modes account for only 1 percent of work trips. A relatively high percentage (13 percent) of Mead residents work from home.

³ Source: American Community Survey, U.S. Census Bureau (5-Year Estimate, 2011–2015)



Zero Vehicle Households

Approximately 3.3 percent of households in Mead do not have access to a vehicle.⁴ These households rely on family, neighbors, walking, biking, or public and private transit services to continue to meet their basic needs, to travel to medical appointments and shopping, and to attend social and recreational activities.

Transportation Facilities

Roadway data collected for the assessment included street characteristics such as the number of lanes, pavement type, posted speed limits, and traffic counts. A multimodal inventory including trails, freight, and transit facilities and services was also conducted.

Roadway Network

The roadway network is the primary component of Mead’s transportation system. **Figure 2, Figure 3,** and **Figure 4** show the surface types, number of

lanes and their widths, and shoulder widths of the streets within the Town’s PIA, respectively.

Primary roadways serving the Town of Mead include Welker Avenue (WCR 34), WCR 7, SH 66, and I-25. Commercial activity centers on the downtown area along 3rd Street and along SH 66 to the east of I-25. Other major streets generally run along section lines at 1- to 2-mile spacing.

Within Mead’s PIA, 48 miles of the roads (excluding I-25 and SH 66) are paved and the remaining 33 miles are gravel roads. Most streets within the Town limits are paved, while many of the low-volume rural roads (outside the Town but still in the PIA) are currently unpaved.

All streets in Mead have 12-foot lanes. All streets, except WCR 9.5 and portions of Welker Avenue (WCR 34) and WCR 7 near downtown, have two lanes. WCR 9.5 and portions of Welker Avenue (WCR 34) and WCR 7 have three lanes. Only state highway facilities and streets in the more recently developed southern portion of the town currently have shoulders.



⁴ Source: American Community Survey, U.S. Census Bureau (5-Year Estimate, 2011–2015)

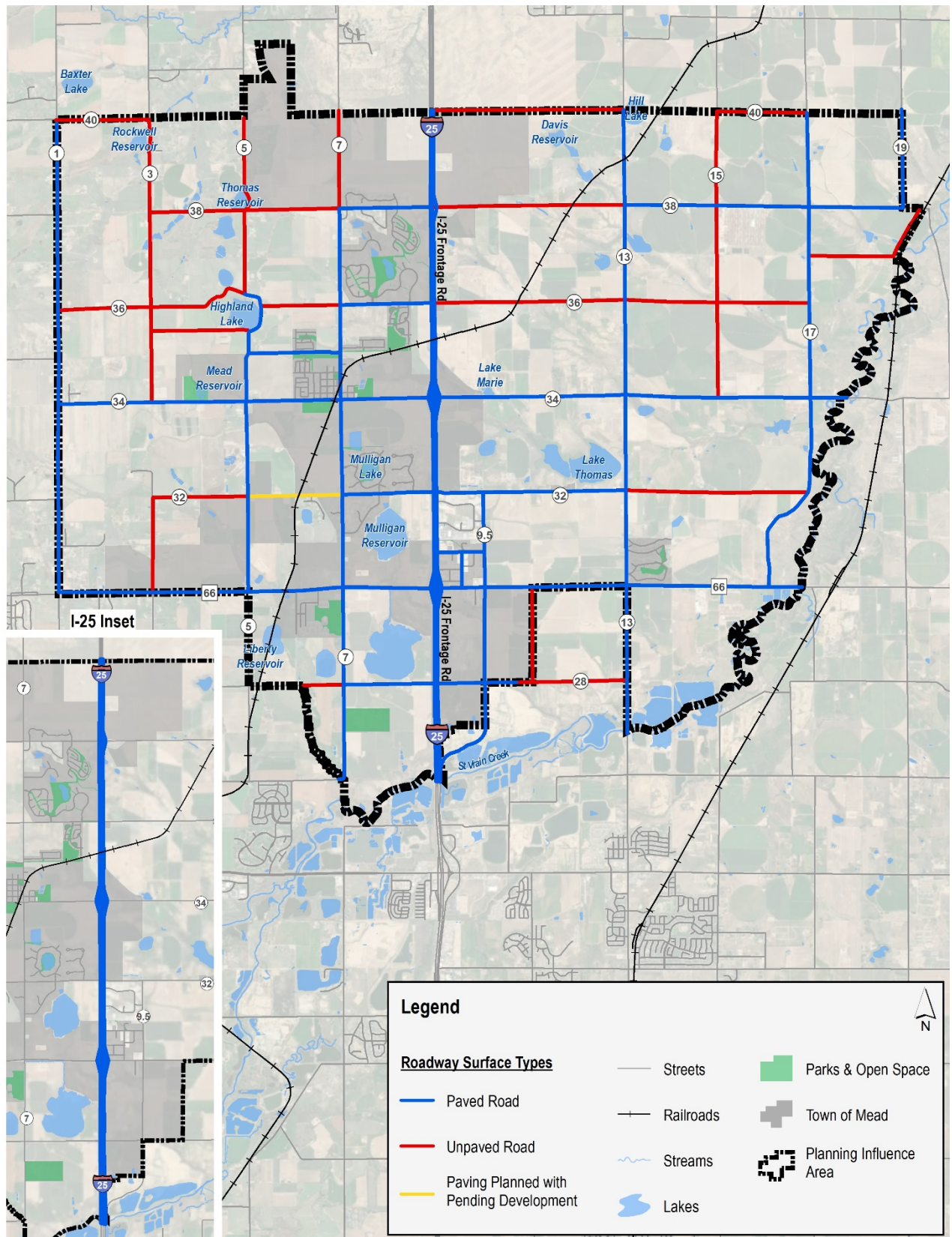


Figure 2. Existing Roadway Network

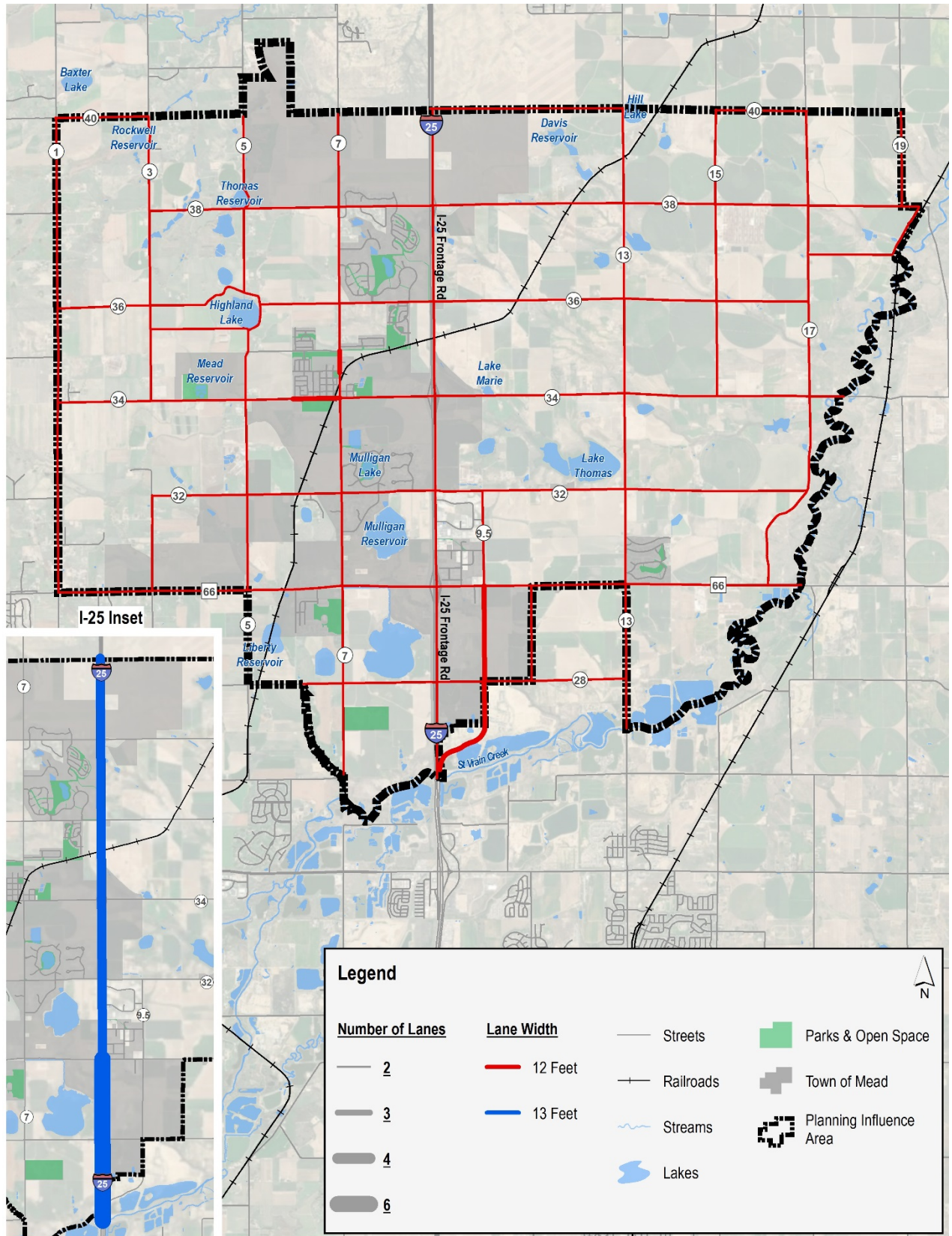


Figure 3. Existing Lanes and Lane Widths

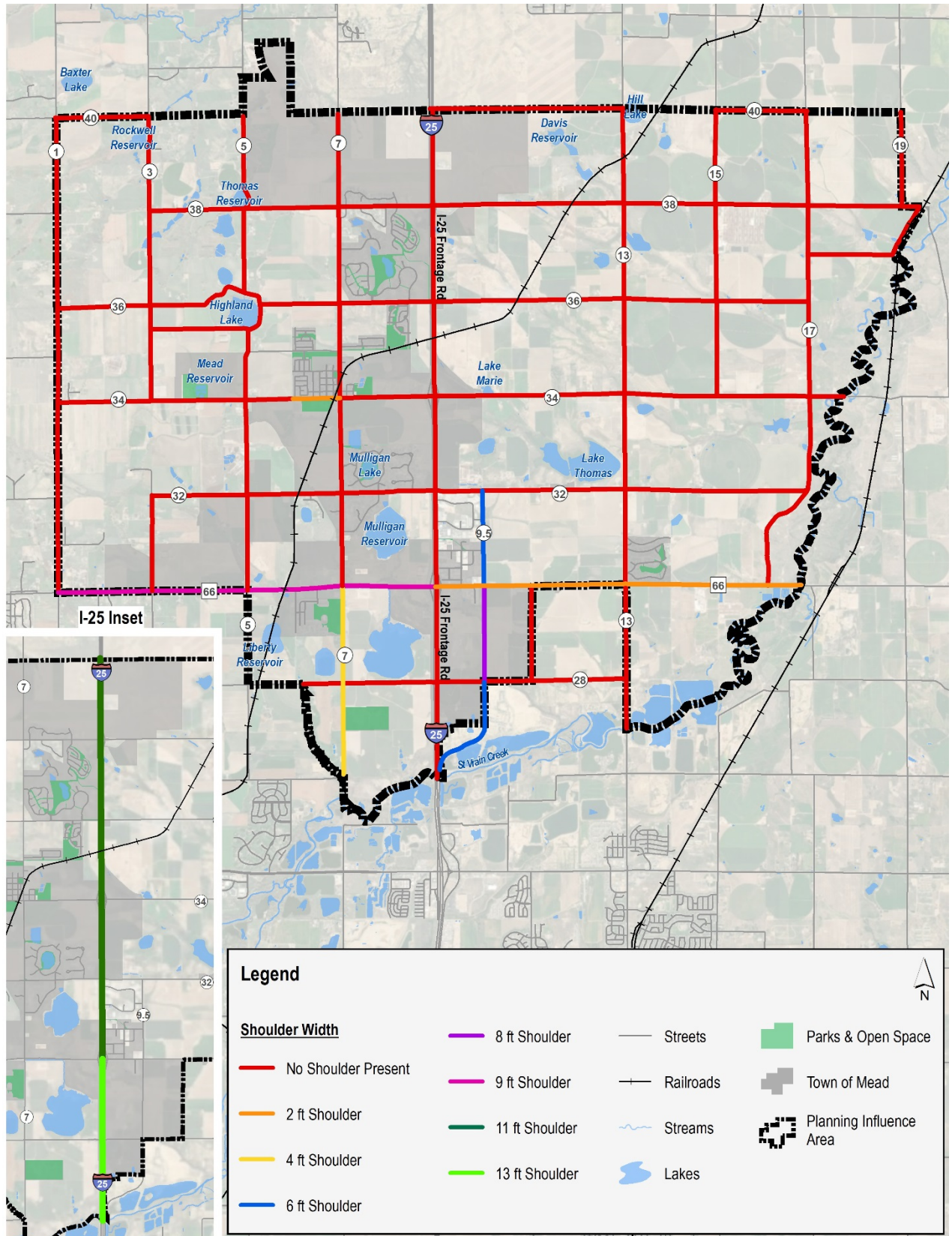


Figure 4. Existing Shoulder Widths

Traffic Control

Traffic control is used at intersections to assign right-of-way (ROW) to various movements, introducing more predictability that enhances safety for all roadway users. Most intersections in Mead have one- or two-way stop control on the minor approach, while two intersections have four-way stop control: WCR 5 & Welker Avenue (WCR 34) and WCR 7 & Welker Avenue (WCR 34). Mead's PIA contains six signalized intersections, all situated along SH 66. The signalized intersections include SH 66 and County Line Road, 3rd Street, I-25 southbound ramps, I-25 northbound ramps, WCR 9.5, and WCR 13/Colorado Boulevard.

Speed Limits

Speed limits vary in Mead. **Figure 5** illustrates posted speed limits on Mead's transportation network. Along paved roads within the town limits, posted speed limits are generally between 25 miles per hour (mph) and 45 mph depending on surrounding land use and roadway conditions. Residential streets are posted and assumed to be 25 mph. Speed limits are often not posted on gravel roads (when unposted, the speed limit is assumed to be 45 mph). Highways within the PIA have posted speed limits between 55 and 65 mph, and I-25 is posted at 75 mph.

Existing Traffic Volumes

Traffic counts were collected using available counts from CDOT and the Denver Regional Council of Governments (DRCOG) databases. These counts were supplemented with twenty 24-hour tube counts conducted throughout Mead's PIA on Tuesday, April 24, 2018. **Figure 6** maps the existing traffic volumes on Mead's roadway network.

Traffic volumes along I-25 through Mead have increased approximately 6 percent over the past five years. Along SH 66, traffic volumes have increased 20 to 25 percent in the same period. The increase in regional traffic along these corridors has resulted in

more congestion. The intersection of SH 66 and 3rd Street, for example, operates with high levels of delay, particularly during the morning peak hour.

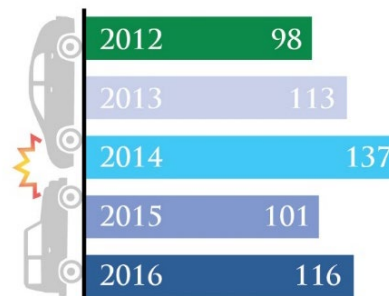
In addition to the 24-hour tube counts, morning (AM) and evening (PM) peak hour turning movement counts (TMCs) were conducted at the intersection of 3rd Street (WCR 7) and Welker Avenue (WCR 34), a four-way stop-controlled intersection of the two busiest streets off the state highway system within Mead's PIA. The level of service (LOS) was calculated for the AM and PM peak hours. To assess the intersection operations, a scale from A to F (based on the amount of vehicle delay experienced) was used.

For stop-sign controlled intersections, LOS is calculated for each movement that must yield the ROW. In urbanized areas, LOS D is typically considered to be acceptable for peak hour traffic operations. In the AM, all movements at the intersection of 3rd Street and Welker Avenue operate at LOS C or better, an acceptable condition. In the PM, all movements at this intersection operate at LOS B or better, an acceptable condition.

Crashes

Vehicle crash information from the Weld County Sheriff's Department identifies the location, frequency, and severity of crashes in Mead. Over the past five years, an average of 113 vehicle crashes have occurred, with most occurring on I-25 and SH 66. The two intersections along SH 66 within Mead's PIA with the highest crash frequency are County Line Road and 3rd Street.

CRASH HISTORY



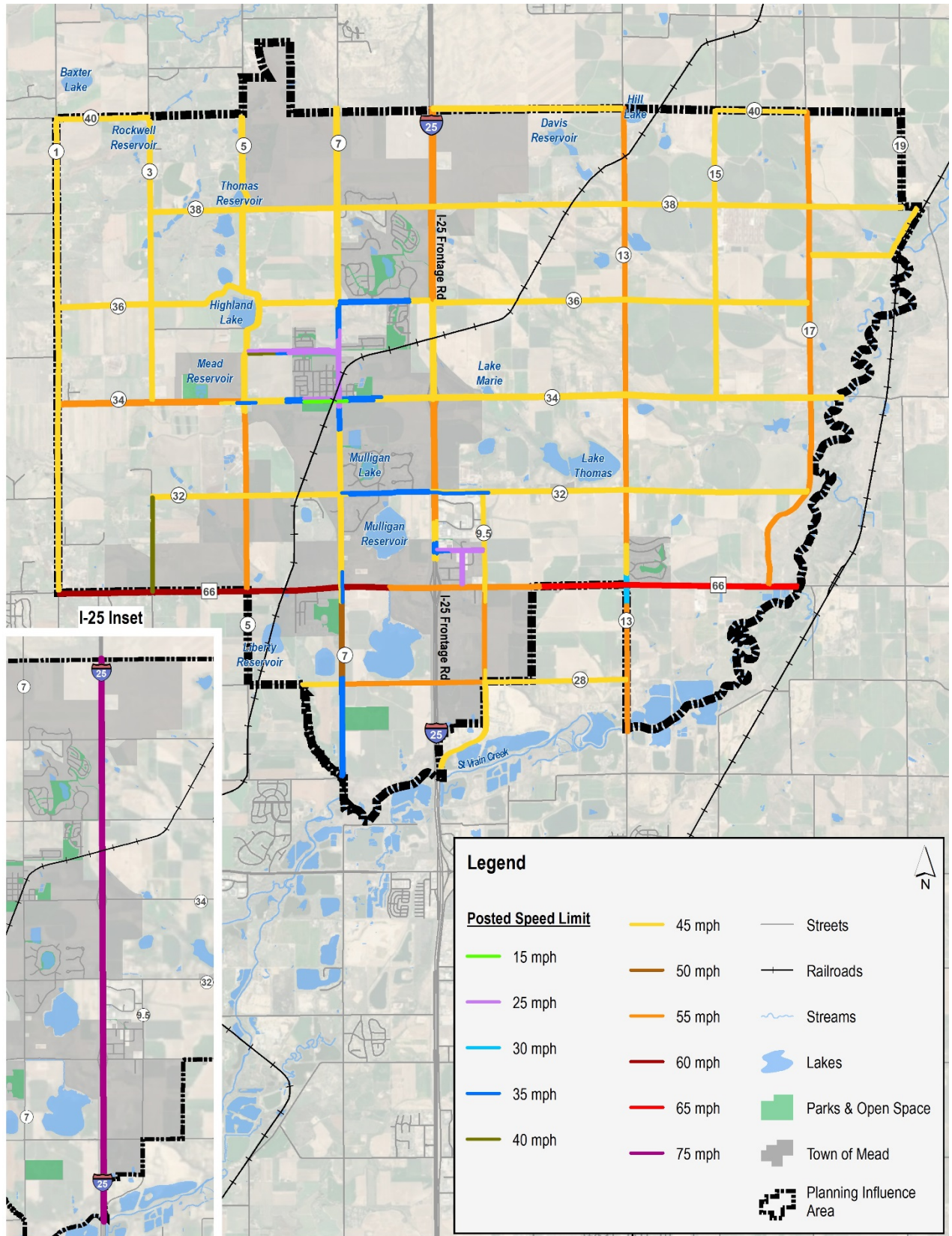


Figure 5. Posted Speed Limits

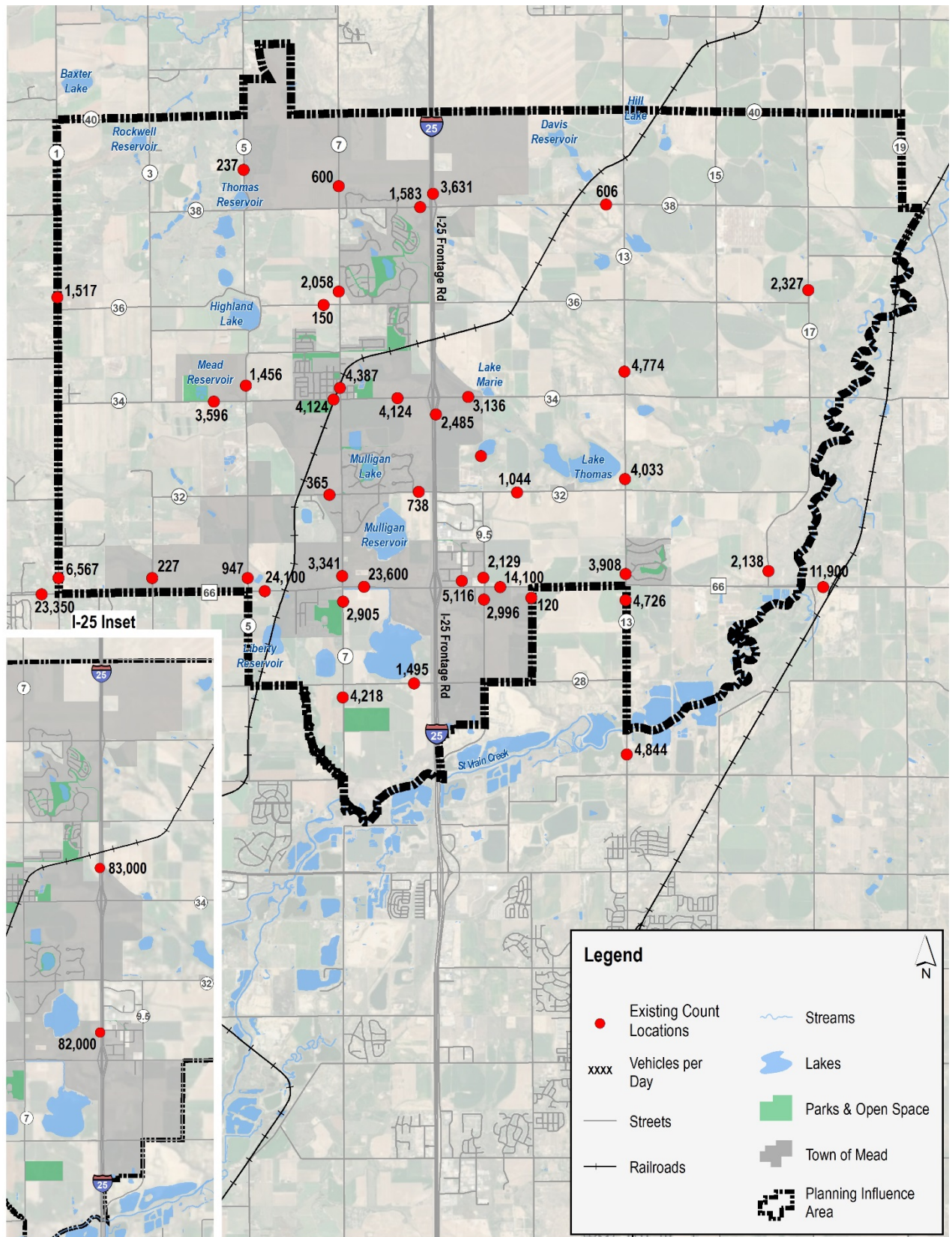


Figure 6. Existing Traffic Volumes



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Multimodal Transportation

Mead's transportation system also includes facilities for freight rail, transit, pedestrians, and bicyclists.

Freight Rail

A line of the Great Western Railway (GWR) running northeast to southwest between Greeley and Longmont serves Mead. Rail traffic through the town is minimal. The PIA includes eight railroad crossings, and all but the underpass of I-25 are at-grade. All crossings, including those at Welker Avenue (WCR 34) and 3rd Street (WCR 7) near downtown, are marked with only crossing signs. In addition to signs, the crossing at SH 66 has flashing lights, and the crossing at WCR 13 includes flashing lights and gate arms.

The 2013 Transportation Plan discussed the possibility of adding a rail depot at the I-25 rail underpass in the long-range future, which could ultimately function as a stop on a commuter rail line to Greeley. However, no advancements have been made since the 2013 plan.

Transit

Mead residents do not currently have direct access to public transportation. The Regional Transportation District (RTD) provides local and regional transit service in the Denver metro area, but Mead is not currently within RTD's service area. Several RTD bus routes serve Longmont, including the LX1 express route that passes through Mead along SH 66 to/from I-25.

CDOT's interregional express bus service, Bustang, runs along I-25 between Denver and Fort Collins; however, a stop does not currently exist in Mead. The closest stop is the Loveland-Greeley Park & Ride, located at US 34.

DRCOG's Way to Go helps facilitate carpooling and vanpooling throughout the Denver metro area, including Mead. Weld County provides on-demand van services for elderly and handicapped residents of Mead. On-demand services such as Uber and Lyft operate statewide and are accessible to Mead residents and employees. A CDOT park-and-ride facility exists in the southwest corner of the I-25 and SH 66 interchange to facilitate carpooling and vanpooling.

Several recent studies have proposed implementing high-capacity transit along the North I-25 corridor that could service Mead. The North I-25 Environmental Impact Statement (EIS), completed in 2011, proposes a bus rapid transit route through Mead. CDOT's Interregional Connectivity Study, completed in 2014, proposes commuter rail between Pueblo and Fort Collins with one of the alternate routes passing through Mead. The anticipated timeframe for the recommendations in these studies is 2035 or later.

Trails

Approximately 9 miles of trails within Mead's PIA accommodate cyclists and pedestrians, primarily located around the residential areas west of I-25 between Welker Avenue (WCR 34) and WCR 38. Most of the 5 miles of public access trails are paved with concrete, while the remaining 4 miles are private trails and are primarily gravel. The recently constructed trail along 3rd Street (from Welker Avenue to south of Adams Avenue) provides an example of a shared-use path that can be used for recreation and travel purposes.

Sidewalks

Sidewalks exist on the streets within the downtown area and on most of the newer residential neighborhoods, making them very walkable. However, some gaps in the sidewalks still exist in downtown. **Figure 7** shows the missing sidewalk connections. Sidewalks do not exist along any county roads or along state highways.

Walk Score

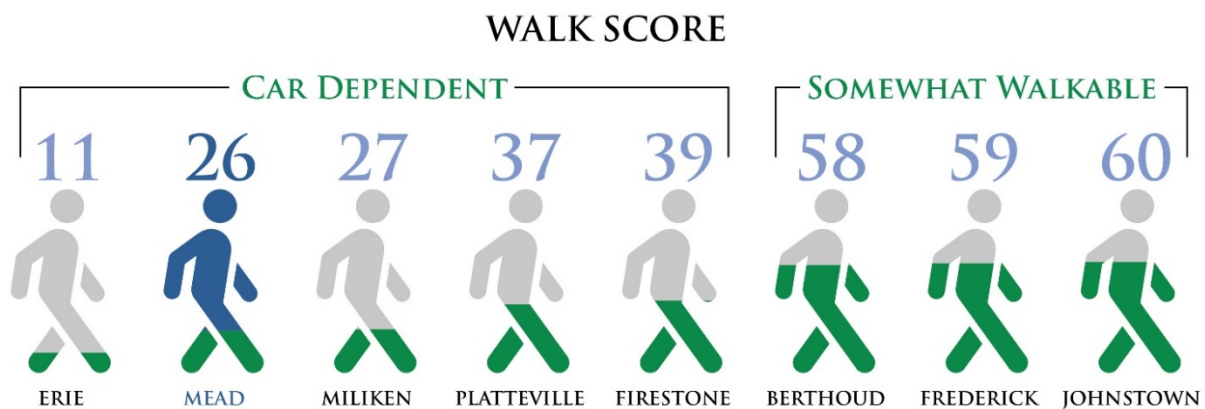
Walk Score is a measure of walkability. The higher the score, the easier it is to get around by foot. Originally created for real estate purposes, Walk Score can also be used to assess a community's overall walkability. The Walk Score calculation awards points based on the distance to the closest amenities, including businesses, parks, theaters, schools, and other common destinations. Mead has a Walk Score of 26, indicating car-dependence; that is, most errands require a car.⁵ While some nearby communities similar in size to Mead also have a low Walk Score, other communities like Berthoud, Frederick, and Johnstown are categorized as "Somewhat Walkable," meaning that some errands can be accomplished on foot.



Bicycle Facilities and Activity

Mead currently has no on-street bicycle facilities within the PIA, and most of Mead's roads are two lanes without shoulders to adequately accommodate bicyclists. However, some bicycle activity is still present in Mead.

A bicycle activity heat map from Strava (a leading exercise smartphone application) shows slight bicycle routing patterns in the Mead area. The highest bicycle activity is found on County Line Road, on 3rd Street south of SH 66 (near Mead High School), and along a loop in the eastern portion of the planning area along CR 17, SH 66, and CR 19.



⁵ Source: Walkscore.com

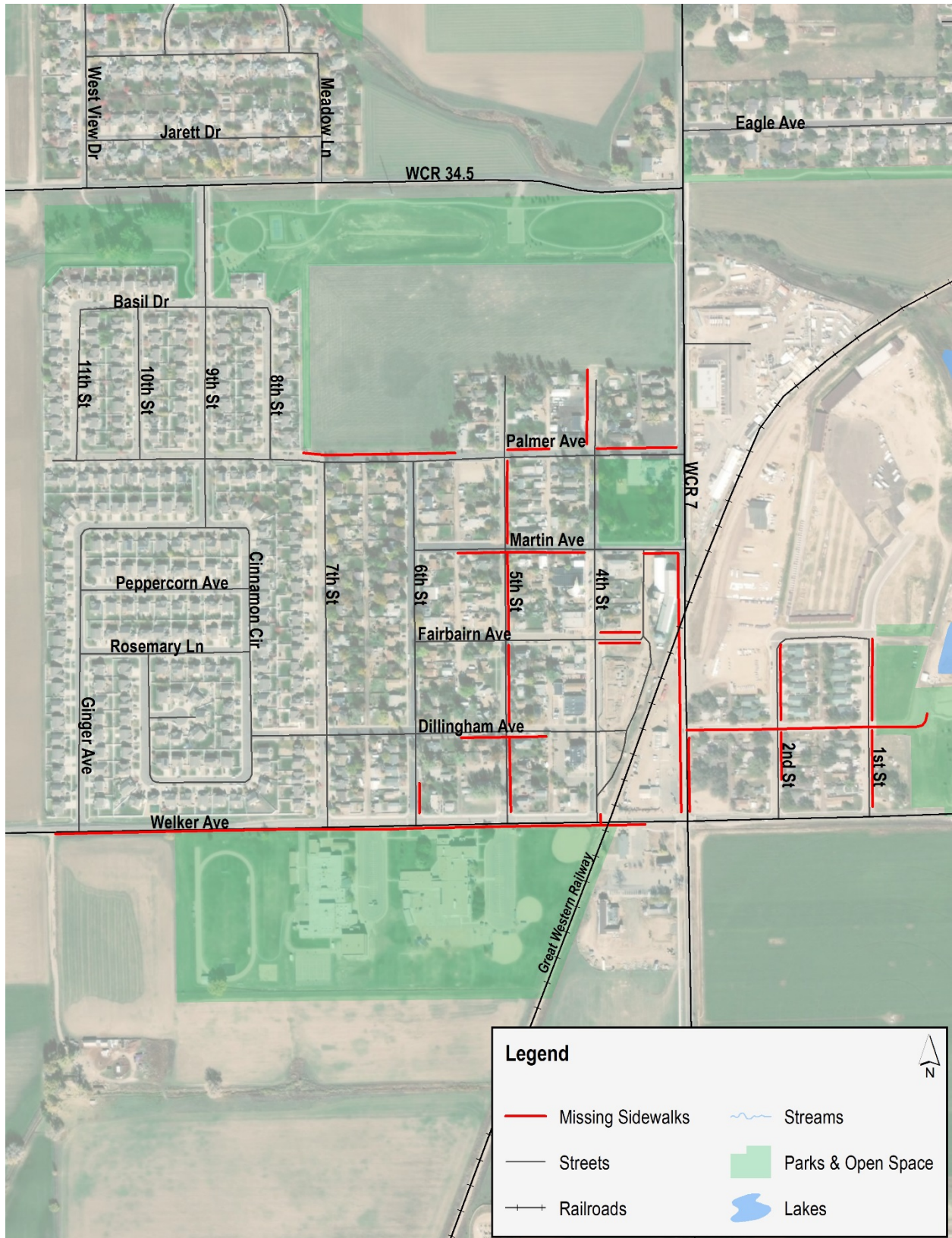


Figure 7. Old Town Missing Sidewalks

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4. Future Conditions

To properly identify potential improvement projects for Mead’s transportation system, it is important to first understand the nature and volume of future traffic in the PIA. It is also useful to understand existing traffic flow patterns, as presented in **Chapter 3**. To help facilitate these analyses, the DRCOG Fiscally Constrained travel demand model was used. The model not only gives the ability to analyze the transportation system within the PIA but also provides a regional context of travel patterns.



Land use estimates and the transportation network are two basic inputs to the DRCOG model. The amount of traffic that different types of land uses (residential, retail, office, industrial, etc.) generate has been measured for the DRCOG region and around the country. The amount of development (number of households or jobs) can then be used to determine the volume of traffic that will be generated from any specified area. To develop these specific allocations of residential and commercial development throughout the region, DRCOG has subdivided its planning area into traffic analysis zones (TAZs). **Figure 8** shows the nine DRCOG TAZs that cover Mead’s PIA. Because the DRCOG TAZs do not cover the full Mead PIA, TAZs from the North Front Range Metropolitan Planning Organization

(NFRMPO) Fiscally Constrained travel demand model covering the remaining portions of the Mead PIA (north of WCR 38) were incorporated. **Figure 8** also shows the six NFRMPO TAZs that were used.

Land Use Forecasts

The DRCOG and NFRMPO base year models include estimates of the number of households and employees within each TAZ for the year 2015. The land use estimates for Mead have been refined based on input from Town staff. Future land uses within the PIA were derived from land use types and boundaries set forth by the Mead Comprehensive Plan. Town staff provided estimates as to how much of this land use should be incorporated into the 2040 modeling horizon. The remaining land use was reserved as the “buildout” scenario, which has no associated date but assumes the complete development of the PIA according to land use designations and allowable densities defined within Mead’s Comprehensive Plan. **Table 1** summarizes the total estimated number of households and employment for the 15 TAZs covering the Mead PIA in 2015, 2040, and at buildout of the community.

Table 1. Land Use Growth Summary

Time Period	Households	Employment
2015	3,552	3,524
2040 (Average Annual Growth)	18,821 (611)	17,563 (521)
Buildout	32,849	21,992

NOTE: Land use forecasts cover approximately 52 square miles of the PIA. Some TAZs extend beyond the Mead PIA.

Table 2 provides a more detailed comparison of the 2015, 2040, and buildout household and employment forecasts by TAZ for the Mead PIA.

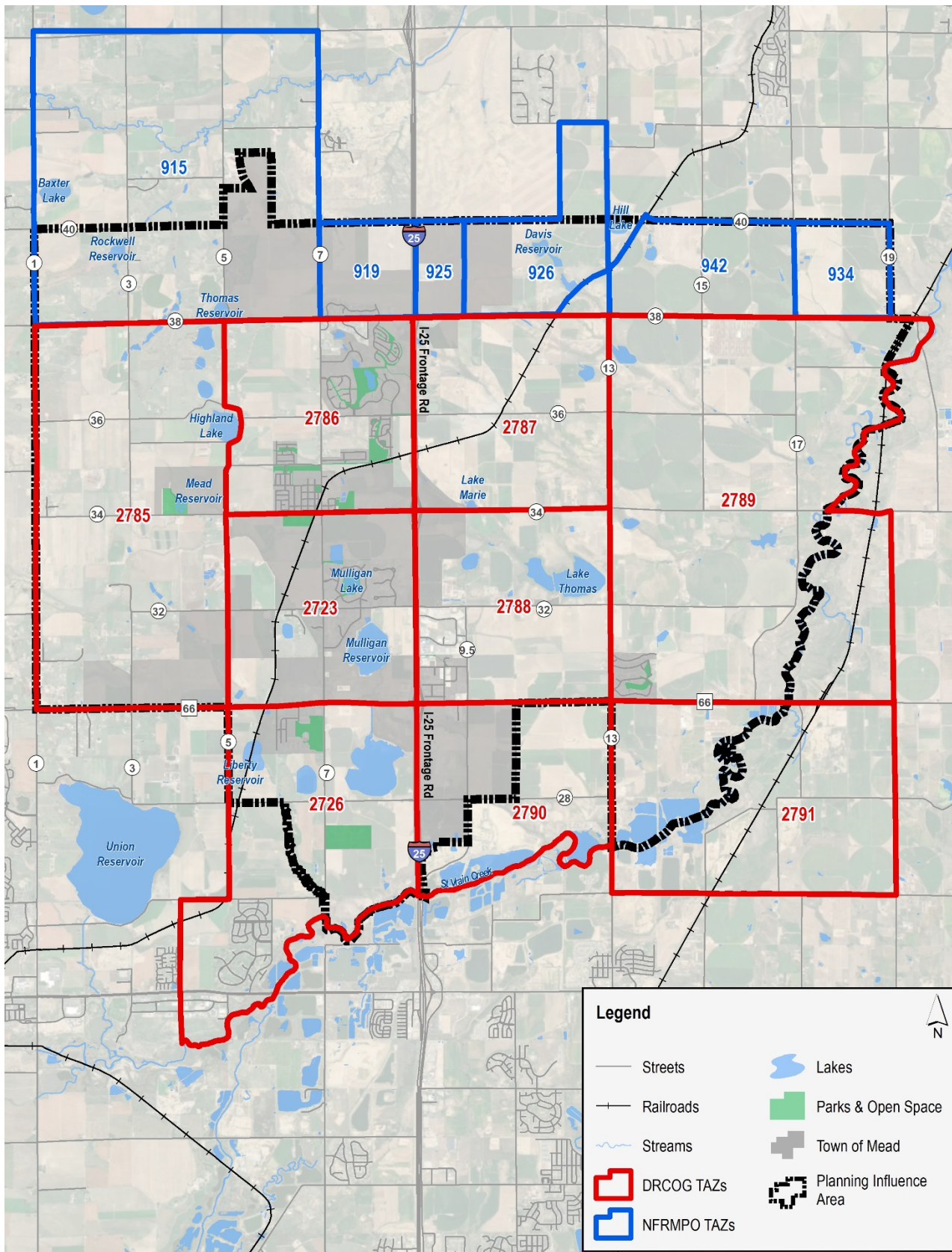


Figure 8. Traffic Analysis Zones

Table 2. 2040 Land Use Forecasts

TAZ	2015 Base Year		2040		Buildout	
	Households	Employment	Households	Employment	Households	Employment
<i>DRCOG TAZs</i>						
2723	215	280	2,102	1,892	3,175	2,607
2726	534	925	5,317	1,734	7,692	1,749
2785	227	162	1,380	760	2,148	1,184
2786	1,311	295	2,705	1,024	3,390	1,039
2787	112	30	642	2,768	1,865	3,965
2788	74	1,201	2,171	4,976	2,610	5,045
2789	768	166	1,023	1,403	2,022	2,670
2790	47	216	2,146	2,145	3,312	2,160
2791	63	91	247	261	1,443	261
<i>NFRMPO TAZs</i>						
915	134	84	391	115	2,231	797
919	35	5	314	254	1,216	269
925	0	0	143	214	694	229
926	16	6	224	6	1,035	6
934	5	0	5	0	5	0
942	11	63	11	11	11	11
TOTAL	3,552	3,524	18,821	17,563	32,849	21,992

NOTE: Land use forecasts cover approximately 52 square miles of the PIA. Some TAZs extend beyond the Mead PIA.

Travel Demand Modeling

To develop traffic forecasts, the project team used two versions of the DRCOG model to determine the amount of growth in traffic volumes expected on the area’s roadways. The base 2015 model represents existing roadway network characteristics (roadway alignments, number of lanes, and classifications) and land use conditions (households, employment, and area types). Existing locally significant roadways were added to the model to assist in this plan’s analysis.

The future conditions model takes the base 2015 model and applies the DRCOG 2040 Fiscally Constrained transportation network, along with the added locally significant roadways. This network includes those improvement projects committed over the next six years, plus the projects included in

the Fiscally Constrained list of DRCOG’s Metro Vision. The only fiscally constrained project within the Mead PIA is the widening of I-25 through the addition of a managed toll lane in both directions from north of SH 66 to SH 402 in Loveland.

As described previously, the DRCOG travel demand model does not cover the full Mead PIA. The roadway network of the existing model year (2015) and future models (2040 and buildout) was modified to add roadways representing the absent portions of the Mead PIA to the north, up to WCR 38. Future travel models also incorporated the realignment of WCR 9.5 and the removal of the I-25 frontage road north of Adams Avenue (WCR 32), both part of the widening of I-25.

Land use in the future models was updated as noted in **Table 2**. Land use forecasted for NFRMPO TAZs was folded into adjacent DRCOG TAZs to the south. How TAZs access the model road network was refined to reflect this merging of land use and to better represent how growth is forecasted to occur within the Mead PIA. Because Mead lies at the northern edge of the DRCOG travel demand model and due to the consolidation of north land uses, special model post-processing was required to distribute trips within the northernmost part of the study area. To help post-process the model results, regional trip characteristics were extracted from the Longitudinal Employer-Household Dynamics (LEHD) to determine the distribution north toward Loveland and Fort Collins and south toward Longmont and the greater Denver area.

The model TAZs representing the Mead PIA are large, limiting the ability of the model to distribute trips onto the local roadway network in a more refined manner. To ensure model forecasts reflect current travel behavior and provide reasonable future demand, a post-modeling adjustment process was completed using procedures documented in the *National Cooperative Research Highway Program Report 765*. Model post-processing recognizes that models are representations of the transportation network and, as a result, are unable to perfectly match travel behavior. To correct for these inherent inaccuracies, the base year model is compared to existing traffic counts to determine the volume difference and then that inaccuracy is transferred and adjusted for use in the raw future year model outputs. This plan presents the resulting traffic forecasts that have been used to identify future roadway needs.

Traffic Forecasts

The future travel demand patterns in Mead and the DRCOG region are primarily a function of the area’s population and employment opportunities. The household and employment data outlined in the previous sections were used as input to the DRCOG travel demand model. The model provided traffic forecasts on the street networks used to assess improvement needs. These forecasted volumes were used to identify capacity deficiencies in the roadway network. **Figure 9** shows the forecasted 2040 traffic volumes on Mead’s road network, while **Figure 10** shows forecasted buildout traffic volumes.

The project team compared traffic volumes versus planning level capacities to assess roadway capacity needs for the 2040 and buildout planning horizons. This analysis helps determine where critical widening projects are needed, while drawing attention to potential trouble areas to prioritize where ROW preservation should occur for widening projects beyond 2040. **Table 3** lists the planning level capacities assumed for each roadway classification.

Table 3. Planning Level Capacities

Classification	Capacity per Lane (vpd)
Major Arterial	8,000
Minor Arterial	6,000
Major Collector	5,000

The 2040 traffic volume forecasts were used to develop the recommended Master Streets Plan presented in **Chapter 5**. The buildout forecasts identified the appropriate ROW preservation to accommodate the potential travel demand beyond 2040.

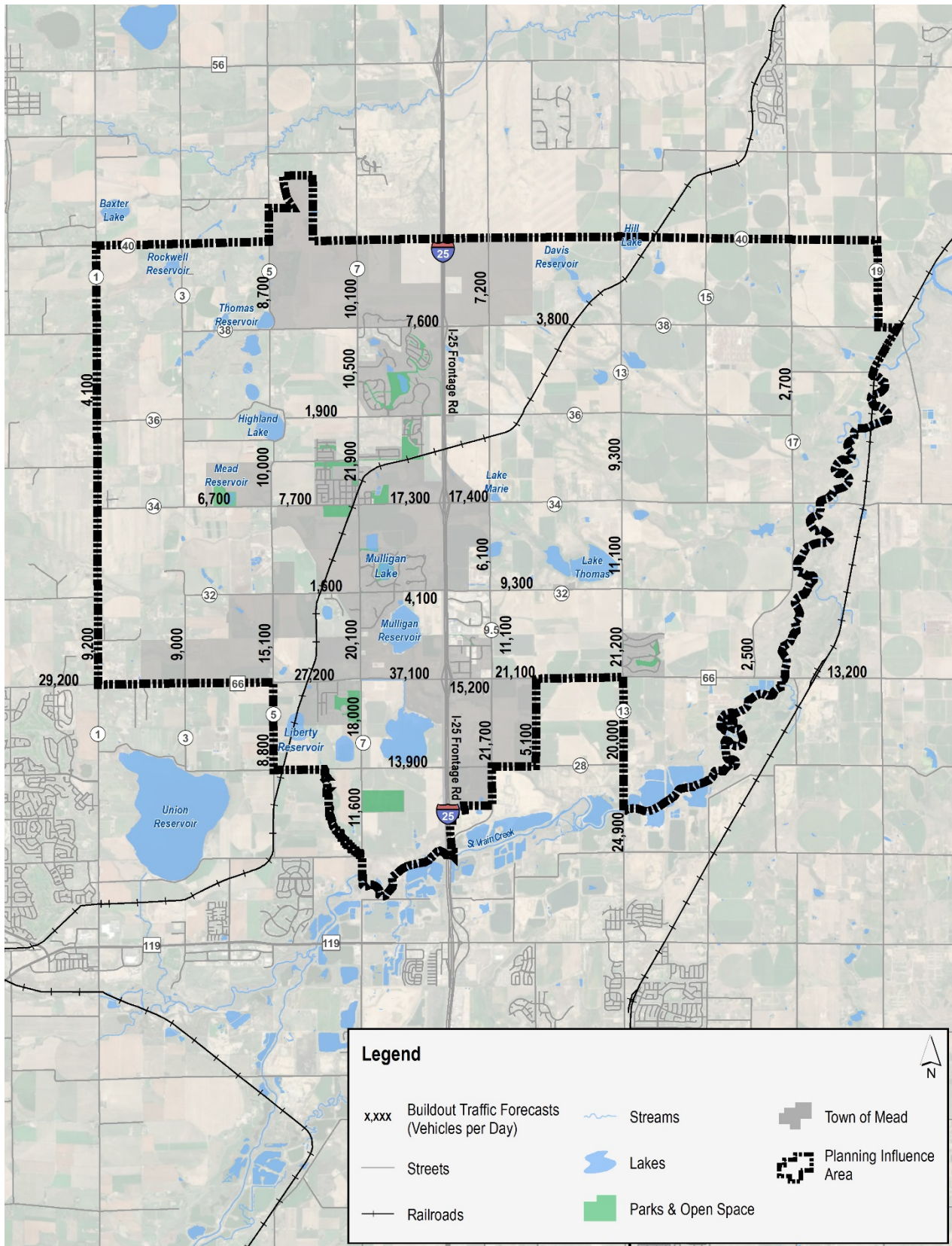


Figure 10. Buildout Traffic Forecasts



TRANSPORTATION PLAN

5. Long Range Plan

Mead's Long Range Plan provides a vision for the future multimodal transportation system. A well-planned multimodal street network will provide connectivity for all users, including automobiles, bicycles, and pedestrians within the town and between Mead and neighboring communities.



Master Streets Plan

Mead's roadway plan focuses on providing a well-planned system of streets to serve the Town's current and future multimodal travel needs. The Master Streets Plan, shown as **Figure 11**, was developed to accommodate future travel demands associated with the 2040 land use forecasts and illustrates the functional classification and future lane requirements for each street.

Roadway Classifications

Streets generally provide two important functions: access and mobility. These functions conflict with each other since more access to properties generally leads to reduced mobility, and vice versa. Each roadway type is specifically designed to operate with certain characteristics based on the adjacent land uses, level of continuity, and proximity and connections to other facilities.

The functional classification of a street reflects its role in the road network and forms the basis for access management, corridor preservation, and street design guidelines and standards. Existing streets may not meet all the desired characteristics described by their defined functional classification but can be upgraded as improvements are made and development occurs. The functional classification should be viewed as the desired future condition. While the amount of traffic is typically highest on higher level functional classifications (like freeways and principal arterials), the amount of traffic is a result of the street's function, not a defining feature.

A street's functional classification describes these characteristics, and the street design standards identify specific design parameters, ROW needs, and other measures for each classification. Mead's Master Streets Plan includes the functional classifications described below.

Interstates

Interstates have the highest level of mobility, providing unimpeded high-speed regional and interstate connections. Interstate highways are limited access divided highways that link major urban areas. I-25 is the only freeway in the Mead area, serving north-south travel through Colorado's Front Range. I-25 is under the jurisdiction of CDOT.

State Highways

State highways provide longer distance travel between communities. For the purpose of Mead's Transportation Plan, the State Highway in the area (SH 66) is categorized separately because it is under the jurisdiction of CDOT; Mead's design and access standards do not apply to these facilities.

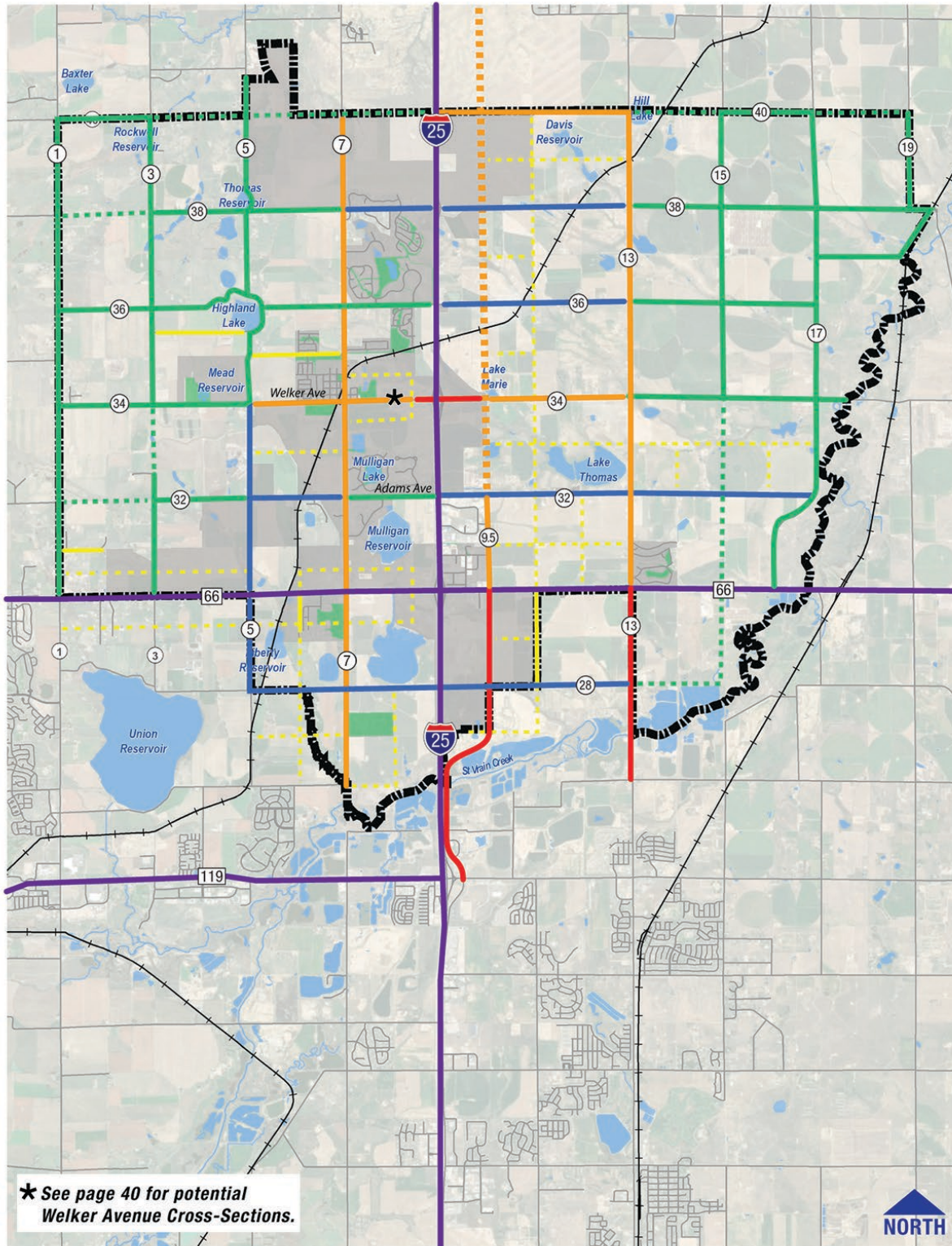


Figure 11. Master Streets Plan



TRANSPORTATION PLAN

Major Arterials

Major Arterials provide a high degree of mobility and serve corridor movements with longer trip lengths. While adjoining land uses can be served directly, access is limited to emphasize mobility. Mead's Master Streets Plan identifies 3rd Street (WCR 7), WCR 9.5, Colorado Boulevard (WCR 13), and Welker Avenue (WCR 34) as Major Arterials. Major Arterials require 120 feet of ROW per the Town's Design Standards and Construction Specifications. As shown on the Master Streets Plan, some of the Town's Major Arterials are anticipated to require four through lanes to accommodate the 2040 travel demand forecasts. These streets should be built to match the "4-Lane Major Arterial Street" cross-section in the Town's Design Standards.

The travel demand on other Major Arterials could be accommodated by two through lanes. Two-Lane Major Arterials should be built to match the "2-Lane Minor Arterial Street" cross-section in the Town's Design Standards; however, all other standards and specifications pertaining to Major Arterials shall apply (including the 120-foot ROW) and access spacing to allow for future expansion, if needed.

Minor Arterials

Minor Arterials provide for trips of moderate length and offer connectivity to streets of higher functional classification. Minor Arterials provide intra-community continuity and a higher degree of land access than Major Arterials. Mead's Minor Arterials are generally spaced 1 mile apart on the section line/county roads. Minor Arterials require 100 feet of ROW per the Town's Design Standards and Construction Specifications. All Minor Arterials within Mead's PIA are anticipated to function well with one travel lane in each direction and should be built to match the "2-Lane Minor Arterial Street" cross-section in the Town's Design Standards.

Rural Roads

Where the section line roads are adjacent to agricultural and rural residential land uses (existing and future), these streets are anticipated to retain a rural feel to complement the adjacent land uses. Rural roads require 70 feet of ROW per the Town's Design Standards and Construction Specifications.

Collectors

Collectors gather traffic from local streets and connect travelers to the arterial network. Collectors provide a balance between access and mobility and retain continuity through neighborhoods. Travel speeds are moderate, and travel distances are short to medium. The proposed collector network depicted on the Master Streets Plan is conceptual. The Town should work with developers to identify future collector street alignments and to encourage a system of collectors that enhance the grid network and minimize discontinuous, curvilinear alignments. Collectors should be located opposite each other at arterial intersections to avoid offset T-intersections along arterial corridors.

Local Streets

Local Streets serve the highest level of access, providing direct driveway access to adjacent properties and carrying traffic to collectors. Local Streets may be limited in continuity and may be designed to discourage through traffic. Local Streets are typically identified through the development process.

Roadway Cross-Sections

The Town of Mead's Design Standards and Construction Specifications were updated and adopted in March 2018. The typical street cross-sections included in the standards are intended to provide safe, attractive, and comfortable access

and travel for all modes within the public ROW. The Design Standards include details such as ROW width, bicycle and pedestrian facility details, access restrictions, and continuity. **Appendix A** includes cross-sections from the Roadway Design Criteria.

Access Spacing and Design Standards

To preserve the functional integrity, safety, and mobility of the street network in Mead, the Town has defined access control standards, as provided in the Design Standards and Construction Specifications. The access standards encourage, to the extent possible, the provision of direct access to the streets with lower functional classifications. The geometric design of Mead's streets shall follow the Design Standards and Construction Specifications based on the functional classification indicated in the Master Streets Plan.

The State Highway Access Code governs access onto the state highway system. Any access onto state highways (SH 66) requires an access permit from CDOT, and the access design must comply with the access code. Federal Highway Administration and CDOT govern I-25, and modifications to access onto I-25 require extensive study, including a System Level Feasibility Study, an Interstate Access Request, and applicable environmental clearances.

I-25 Corridor

Interstate 25 is the primary north-south highway serving northern Colorado and the Front Range. The North I-25 Final Environmental Impact Statement (FEIS), completed August 2011, provides a long-term vision for I-25 and multimodal transportation services in northern Colorado.

I-25 Mainline

The North I-25 FEIS Preferred Alternative recommends three general-purpose lanes and one tolled express lane in both directions from downtown Denver to SH 14 (Mulberry Street) in Fort Collins along mainline I-25. The Preferred Alternative also recommends express bus service

along mainline I-25 from Denver Union Station to Fort Collins. Mainline I-25 improvements are supported by commuter bus service along US 85 and commuter rail service along US 287.



I-25 Interchanges in Mead

The North I-25 FEIS Preferred Alternative also identifies interchange reconstructions needed to realize the Preferred Alternative along I-25. The FEIS includes the reconstruction of I-25 and Welker Avenue (WCR 34). No changes are recommended at the I-25 and SH 66 interchange.

While not in the FEIS, the Town would like to study the potential for a future interchange at I-25 and WCR 38 to serve the northern portion of the PIA. A new interchange would require an Interchange Access Request (IAR), EIS Update, and a 1601 process to justify the need for an additional interchange on I-25.

State Highway 66

SH 66 is a primary east-west corridor serving northern Colorado, extending from Lyons to Platteville. Improvements to SH 66 will be guided by the SH 66 Planning and Environmental Linkages (PEL) Study and the SH 66 Access Control Plan (ACP), both under development at the time of this Transportation Plan.



TRANSPORTATION PLAN

As of December 2018, SH 66 is envisioned to be:

- A 4-lane expressway from County Line Road (WCR 1) to 3rd Street (WCR 7)
- A 6-lane arterial from 3rd Street (WCR 7) to WCR 11
- A 4-lane expressway from WCR 11 to WCR 13
- A 2-lane rural/regional highway with a center left-turn lane from WCR 13 to WCR 19



The PEL also recommends improvements for bicycles and pedestrians, including the pedestrian underpass at 3rd Street (WCR 7). The Town of Mead supports the current recommendations of the SH 66 PEL as described above.

New Street Segments

WCR 9.5

To construct the Preferred Alternative included in the North I-25 FEIS, the I-25 Frontage Roads, which closely parallel I-25, must be removed. Agencies in northern Colorado, including the Town of Mead, envision WCR 9.5 serving as the new parallel route to I-25. This parallel facility would provide regional connectivity (extending from Firestone Boulevard/SH 119 to SH 402) and also function as an incident management route to I-25 should an incident, such as a severe crash, occur. The Town

should continue to participate in the WCR 9.5 Coalition to advance this new corridor.

WCR 7 Extension

WCR 7 (3rd Street) serves as a primary section line road in Mead. However, WCR 7 currently ends at WCR 26, requiring travelers to use WCR 26 and WCR 5.5 to access SH 119 (and I-25). Weld County completed a study in 2005 to evaluate the feasibility of extending WCR 7 to SH 119 through St. Vrain State Park. Colorado Parks and Wildlife indicated that this extension is not feasible due to the blue heron habitat and the extensive wetlands located within the State Park. The Town of Mead would be open to working with the City of Longmont and other stakeholders to study options to enhance regional connectivity, which could include improvements to WCR 26 and WCR 5.5.

Other Section Line Road Extensions

To achieve the roadway connectivity envisioned in the Master Streets Plan, the following section line road connections are recommended:

- WCR 3 from Adams Avenue (WCR 32) to Welker Avenue (WCR 34)
- WCR 9.5 from Welker Avenue (WCR 34) to WCR 40
- WCR 15 from WCR 28/PIA boundary to Welker Avenue (WCR 34)
- WCR 28 from WCR 13 to WCR 15
- Adams Avenue (WCR 32) from WCR 1 to WCR 3
- WCR 38 from WCR 1 to WCR 3
- WCR 40 from WCR 3 to I-25
- WCR 40 from WCR 13 to WCR 15
- WCR 40 from WCR 17 to WCR 19

Buildout Streets Plan

As discussed in the Emerging Technologies section of this chapter, transportation technologies are evolving at a rapid pace, and in the next 10 to 20 years, there will be considerable changes that affect the way people travel and the needs of the transportation network. Connected and automated vehicle technology, for example, has the potential to increase the capacity and safety of our streets.

Because of the uncertainty of how transportation technologies will transform the needs and demands on public ROW, this Transportation Plan focuses on the travel demands associated with 2040, while recognizing the potential demands beyond that timeframe.

Major Arterials

The Master Streets Plan is based on the forecasted travel demand 20+ years in the future (2040). As described in **Chapter 4**, the travel demand associated with buildout of Mead’s PIA was also modeled to understand potential long-range transportation needs. Depending on development intensity of Mead and the surrounding region and the emergence of transportation technologies,

some of Mead’s Major Arterials may need to be widened to four-lanes to accommodate the buildout travel demands, including:

- WCR 7 (3rd Street)
- WCR 9.5
- Welker Avenue (WCR 34) from WCR 9.5 and WCR 13

These streets could transition to the “4-Lane Major Arterial Street” cross-section in the future, which can be accommodated within the 120-foot ROW for Major Arterials.

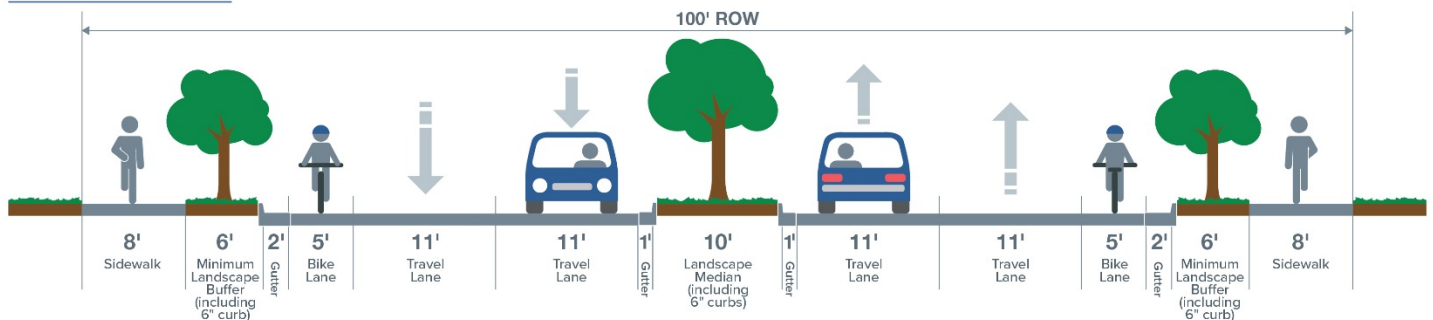
Minor Arterials

Likewise, some sections of Minor Arterials may experience travel demands that exceed the capacity of a two-lane street, including:

- WCR 5 from WCR 28 and Welker Avenue (WCR 34)
- WCR 28 from WCR 5 to WCR 13

If these streets require widening to four lanes in the long-range future, a modified 4-lane cross-section, as depicted below, could be constructed to fit within the 100-foot ROW for Minor Arterials.

4-Lane Minor Arterial

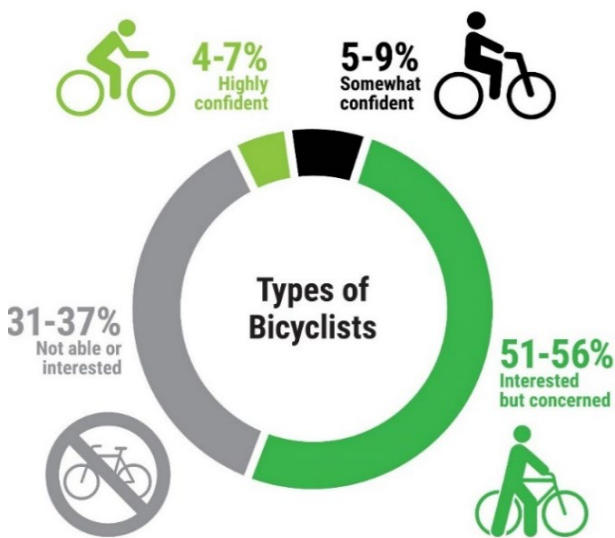




Bicycle and Pedestrian Network

Accommodating bicycle and pedestrian travel is essential for Mead’s future quality of life. The Town has an opportunity to expand the network of bicycle and pedestrian facilities, connect to community resources such as parks and open space, and increase the overall regional network in northern Colorado.

The general population can be classified into four types of bicyclists based on skill level and attitude toward cycling. Research initially conducted by the Portland Bureau of Transportation and later applied on a national scale by Portland State University identified the portions of the population that fall within each category. This information provides valuable insight into what accommodations are necessary to attract the most riders. The percentages of the population in each category represent national estimates but are likely reasonable representations of Mead’s attitudes toward bicycling.



These percentage values are typical ranges for most US communities.

“Highly Confident” Bicyclists

These bicycle enthusiasts will ride their bicycles for any trip type, with bicycling being their primary mode for commuting. Bicycling is part of their identity, and they will ride on nearly any roadway in any conditions.

“Somewhat Confident” Bicyclists

These bicyclists are encouraged to bicycle by the availability of bicycle facilities. They will occasionally ride in traffic when bicycle facilities are not present but prefer to ride within their own facility. These riders may not always choose to bicycle but are comfortable doing so in many cases. Investment in additional bicycling infrastructure to improve safety and connectivity will lead to these riders making more bike trips.

“Interested but Concerned” Bicyclists

These bicyclists are usually the largest group of a population. They are interested in biking but are concerned about their safety and exposure to traffic. They do not like using routes without bicycle facilities because they are nervous about mixing with motorized vehicles. They primarily ride their bicycle for short trips and for recreational reasons. Adding bicycle facilities that remove them from interacting with motorized vehicles would increase their likelihood of riding.

“Not Able or Interested”

These are people who have no interest in bicycling due to immense safety concerns, weather, topography, ability and/or a simple lack of interest.

Pedestrians

Pedestrians vary based on characteristics such as age (children, adults, and the elderly), speed, ability (ambulatory or visual impairments), and trip

purpose (recreational walking, running, commuting). These characteristics often dictate the type of facility a pedestrian is comfortable using. Wider, detached sidewalks generally serve the greatest number of pedestrians by providing a buffer between the pedestrian and vehicular traffic and adequate space to accommodate passing and wheeled uses such as strollers and wheelchairs. Shared-use trails primarily serve recreational pedestrians.

On-Street Bicycle Facilities

Mead’s typical cross-sections include on-street bike lanes for all arterial and collector streets. Major and Minor Arterials require a minimum 5-foot bike lane, and Collector streets require a minimum 5-foot bike lane. When fully built, the arterial street bike lanes will form a connected network of on-street bike facilities. Consideration should be given to enhanced bike lanes on higher volume streets (like 3rd Street and Welker Avenue) such as buffered bike lanes or separated bike lanes to enhance the level of comfort and appeal to a greater number of people. An example of how separated bike lanes could be incorporated on the Major Arterial 120-foot ROW is depicted below.

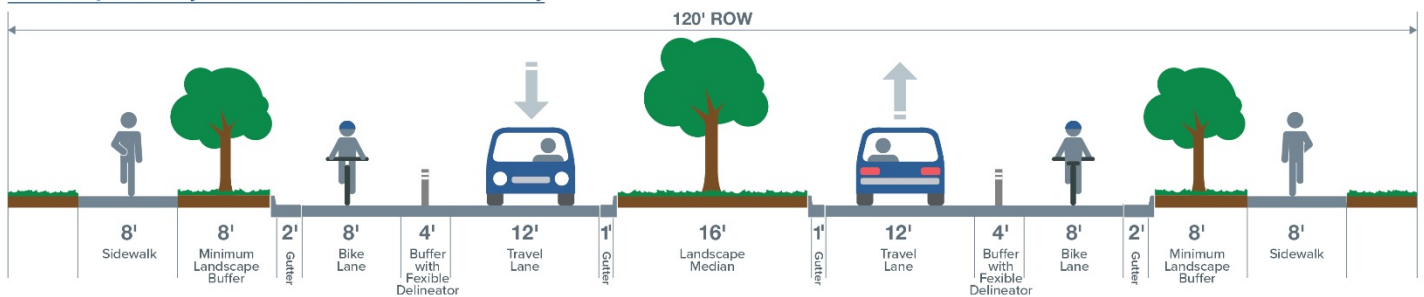
While the arterial street bike lanes will provide direct connections in and around town, the bike lanes as dictated by Mead’s Design Standards will predominantly serve the “highly confident” and

“somewhat confident” bicyclists; the “interested but concerned” population (which typically accounts for upwards of 60 percent of any population) may not be comfortable riding alongside the higher traffic volumes and higher speeds associated with the arterial street network. To better serve the “interested but concerned” population and to better accommodate bicyclists of all abilities, the Town should work with developers to include bicycle facilities on Collector streets (as required in the Design Standards) and to align Collector streets to provide direct connections for bicyclists that parallel the arterial streets. To better accommodate bicyclists of all abilities, this Transportation Plan also includes a lower stress trail network to complement the arterial street bike lanes.

Trails Plan

Mead’s Trails Plan is intended to provide a comprehensive, well-connected system of bicycle and pedestrian facilities that accommodate all abilities. The trail network is intended for both recreational and transportation purposes, and special consideration was made for connecting the on-street bike network with the trail network to enable bicycle connections between destinations.

Future Option: Major Arterial With Enhanced Bikeway





TRANSPORTATION PLAN

Mead's recently completed Comprehensive Plan identifies the existing and future regional, community, and some roadside trails (referred to as sidepaths). This system of trails will be built over time and as development occurs. At full buildout, the Town will have a well-connected system of trails that serves all types of non-motorized travel. This trail network will provide local access to neighborhoods and community resources such as schools and lakes, as well as regional access to adjacent communities.

Figure 12 shows Mead's Trails Plan. Depicted are future grade-separated crossings that will eliminate vehicle-bike and vehicle-pedestrian conflicts and allow uninterrupted bicycle and pedestrian movements across major highway facilities such as SH 66 and I-25. The trail network will be expanded over time and as development occurs.

Ultimately, Mead will have a well-connected system of trails, on-street bicycle facilities, sidewalks, and sidepaths along the rural roads, as shown on **Figure 13**. This network will provide local access to neighborhoods and community resources such as schools and parks, as well as regional access to adjacent communities, the St. Vrain State Park, and the regional trail system (St. Vrain Regional Trail).

Pedestrian Plan

Mead's typical cross-sections include a minimum 8-foot sidewalk detached from the curb with a landscaped buffer for Major and Minor Arterial streets. Collector streets include a 5-foot minimum detached sidewalk. Sidewalks connecting residential developments to the arterial and collector street system should be provided to ensure that pedestrians have quick and direct access between neighborhoods and to commercial areas. The pedestrian plan includes focusing on improving

sidewalk connections in the downtown area and on improving walking access to Mead's elementary and middle schools on Welker Avenue (WCR 34).

Transit Plan

Throughout the Comprehensive Plan process, residents expressed interest in adding public transportation to the community. The Town should consider several options when incorporating transit services into the community by coordinating with existing providers, developing the Town's own system, or using a combination of both.

Mead could explore the possibility of joining the RTD, as RTD currently passes through the town on SH 66 but does not service the town. Because many residents travel to and from Longmont and Denver for employment, medical appointments, entertainment, etc., developing a strategy for future RTD service could be a valuable service to the residents and employees of Mead. Joining RTD would require a vote of the residents to approve joining the District, which requires the addition of the base RTD sales tax.

The Town could also consider coordinating with CDOT on their regional Bustang service to stop at the park-n-ride at SH 66 and I-25. More analysis is needed to determine whether this is a feasible option for Mead. Mead should also monitor the progress of the Front Range Passenger Rail Commission, which is actively pursuing rail service from Trinidad to Fort Collins along the I-25 corridor.

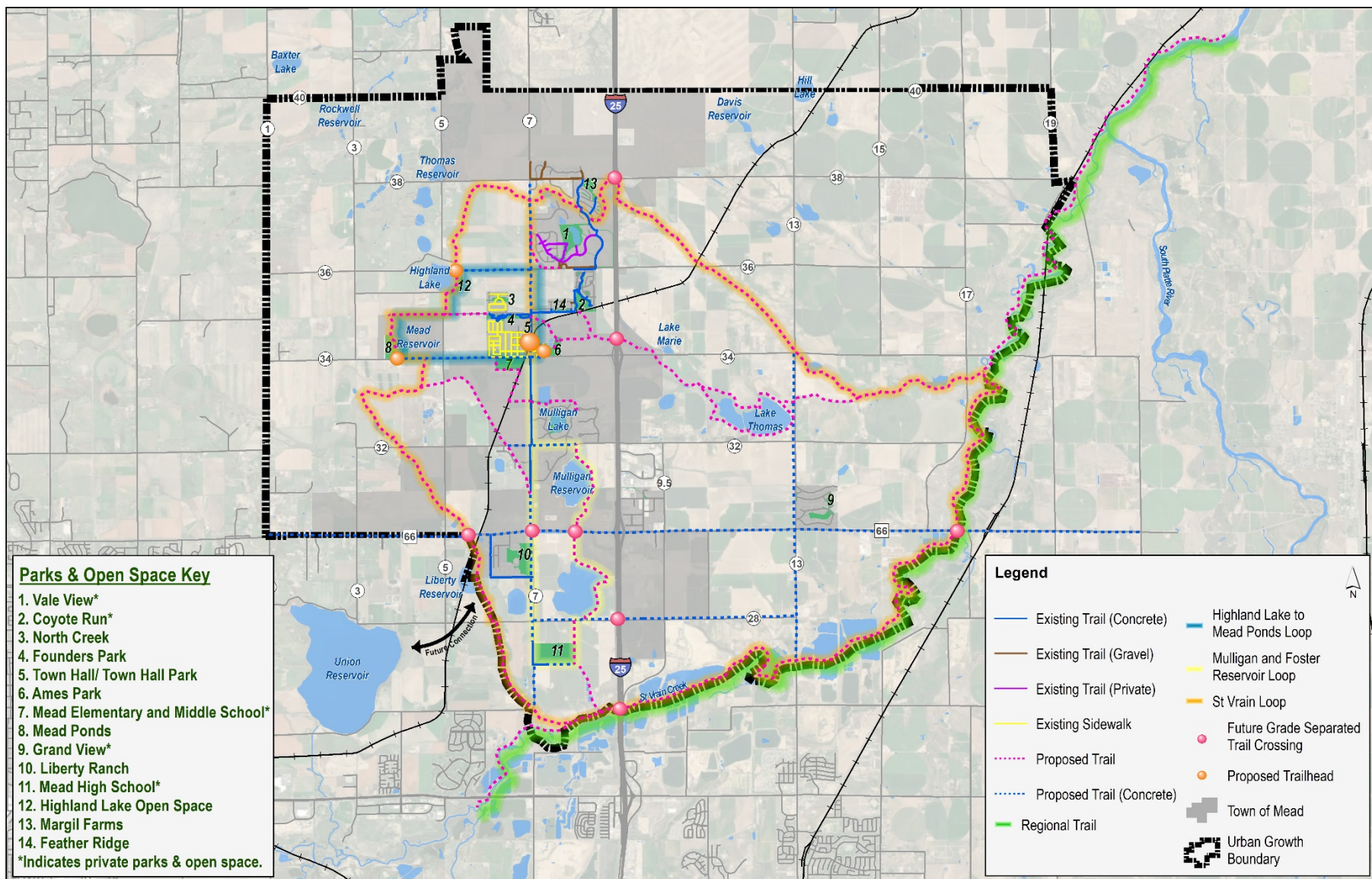
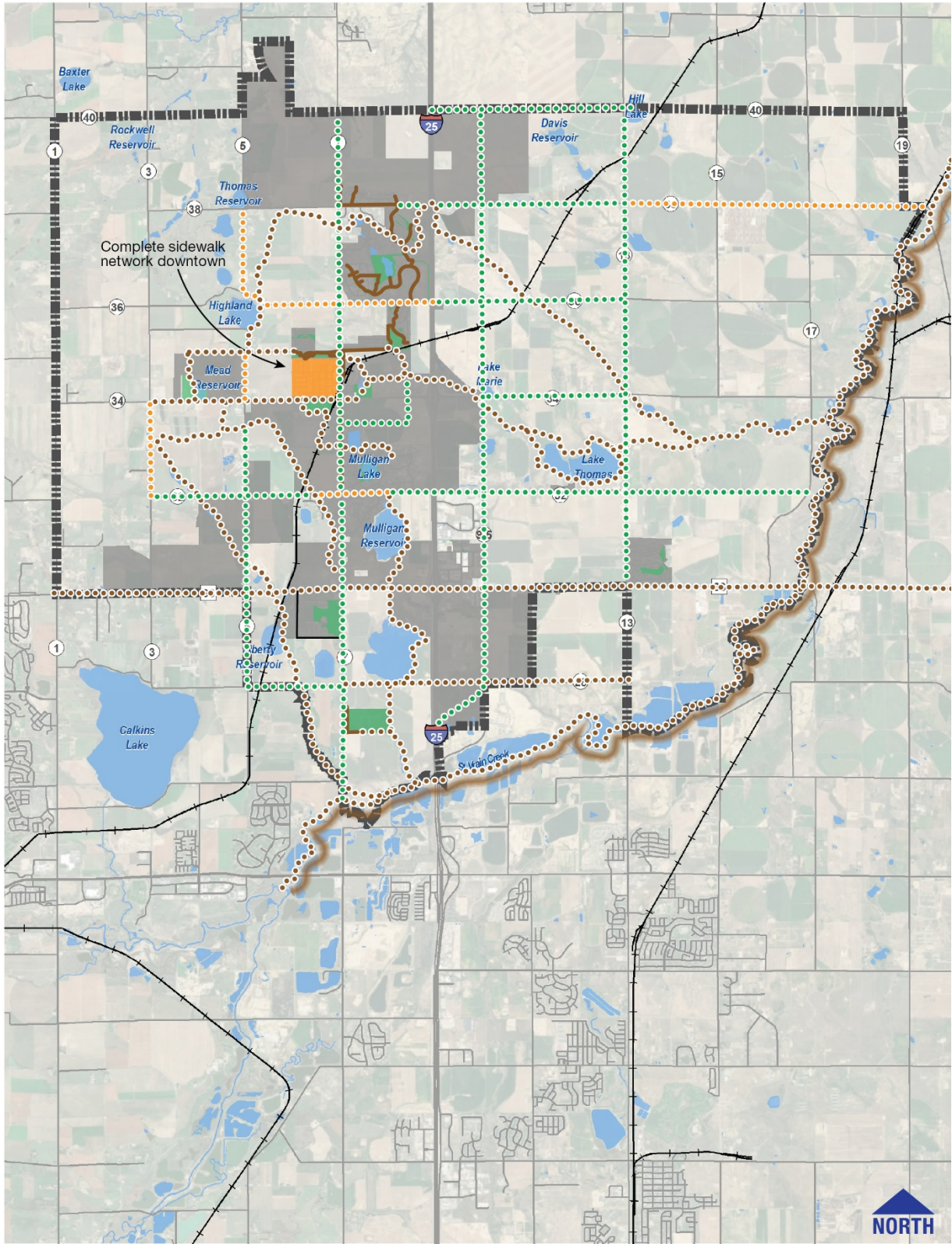


Figure 12. Trails Plan



- LEGEND**
- = Existing Trails
 - = Proposed Trails
 - = Proposed On-Street Bike Facility
 - = Proposed Sidepaths
 - = Regional Trail

Figure 13. On-Street Bike and Trails Plan

A future option could be for the Town to provide a circulator bus/shuttle around town. The circulator could connect major locations such as downtown, schools, and parks. A future mobility hub (a connection for intermodal transfers, future drop-off/pick-up for ride-sourcing/ridesharing, and future bike sharing) could be located downtown. More analysis is needed to determine whether this is a feasible option and which locations/options are best suited for a mobility hub.

The Town could also explore the possibility of providing a human service for individuals with disabilities, older adults, and people with low incomes. This service could connect to the Carbon Valley Recreation Center and to Longmont seeking access to services and medical facilities.

Emerging Technologies

Technology in transportation is advancing quickly, with technological innovations in vehicles, the transportation network, and interactions between the two. Some new technologies are already seeing widespread implementation to improve safety and traffic flow in Colorado. Although the specific forms and timing of emerging transportation technologies will vary and cannot be predicted with certainty, innovations with the potential to dramatically influence transportation are certainly on the horizon.

The question then becomes, how do communities plan for emerging technologies that will continue to fundamentally change the transportation landscape? This section focuses on emerging technologies most applicable to Mead. Like all communities, Mead should actively monitor these technologies because changes are rapidly occurring requiring communities to be nimble and open to potential changes.



Data and Connectivity

It is anticipated that data and connectivity will continue to shape our lives even beyond the progress made in recent years. Key trends are discussed in the following subsections.

Shared-Use Mobility

The ability to easily schedule and coordinate trips via carpooling, vanpooling, transit, taxi, ride sourcing, car share, bike share, and other modes is rapidly changing the way people travel, which may result in a decrease in dependency on single occupancy vehicles and auto ownership. Mead may have a lower tendency toward this trend than other more urban areas because of its bedroom community nature, but this technology could be applied for human service transportation providers.

Connected and Autonomous Vehicles

Connected vehicles (CVs) and autonomous vehicles (AVs) present an uncertain future for communities. These technologies include vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I) communications, and/or AV communications. It is unknown whether key indicators such as vehicle miles traveled, congestion, fuel consumption, and safety will increase or decrease with the onset of these technologies. Mead should assume that CVs and AVs will be a part of the future transportation network and continue to follow local, regional, and national policy trends as they relate to CV and AV use and policies.



Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) represent methods and techniques designed to inform the traveling public and influence behavior change among travelers. ITS can improve mobility by informing motorists about current travel conditions, optimize use of existing infrastructure by advising travelers about available capacity throughout the system, and increase safety by warning about upcoming conditions or through educational campaigns. This Plan supports implementation of ITS opportunities and coordination among the Town, local agencies, and state agencies such as CDOT on implementation.

Potential opportunities for ITS should be considered, including:

- **Dynamic Signal Coordination** – Dynamic signal coordination can help reduce congestion with a more efficient and interconnected traffic signalization network. This may help Mead reduce congestion at key intersections and along critical corridors by providing additional vehicle capacity on the same roadways without the need for roadway widening. SH 66 would be a candidate corridor for dynamic signal coordination. Mead should consider coordinating this improvement with CDOT.
- **Dynamic Signage** – Dynamic signage can help reduce congestion by alerting drivers to existing delays or crashes and provide information about using alternative routes. This may help Mead reduce delay experienced by increased peak hour congestion or incidents. Dynamic signage can also be used to alter lane usage during peak periods or to disseminate public information about road closures during events, temporary routing, or emergency messages.

Safety and Infrastructure

As mentioned previously, many impacts of emerging technologies are unknown. This section describes some of the possible impacts that these technology innovations may have on safety and infrastructure.

Safety Benefits

Safety of all road users, including bicyclists and pedestrians, may benefit from emerging technologies. This includes using hardware and sensors on vehicles that are intended to help reduce collisions by providing warnings for a range of circumstances, such as blind spot notification or automatic braking.

Parking and Curbside Uses

CVs, AVs, and ride sharing services could change the way street frontage is used. Mead should continue to monitor parking and curbside drop-off/pick-up needs as travel patterns change. It may be necessary to transition on-street parking to curbside drop-off locations as pick-up and drop-off behavior changes.

Electric and Other Alternative Fuels

Alternative fuel (especially electric) vehicles are becoming more common due to US Environmental Protection Agency (EPA) provisions designed to reduce US dependence on petroleum by accelerating the introduction of alternative fuel vehicles. Mead should continue to monitor EPA regulations as they consider expansion of Vehicle Charging Stations. The Town may consider using public-private partnerships to establish a network of Vehicle Charging Stations. Primary locations would include downtown and at park-n-ride locations (e.g., I-25 and SH 66).

Priority Subareas

The Town has identified three geographic areas (subareas) that require special attention in the coming years: (1) Downtown, (2) the Highway 66 Corridor, and (3) the East Side Neighborhood. These subareas were explored in the Comprehensive Plan, and the recommendations related to these subareas are intended to help Mead capitalize on its future growth, rather than being overrun by it. Deliberate and strategic planning efforts in these priority subareas help set the stage for the appropriate regulatory environment. The following sections describe the transportation-related recommendations for the three subareas.

Downtown Subarea

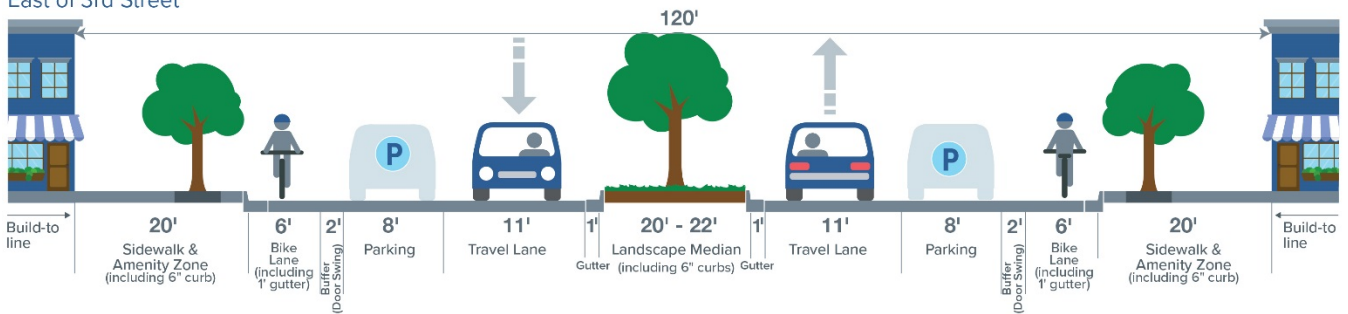
The Town desires downtown Mead to serve as the focal point of the community. The downtown core is located primarily on Main Street but encompasses other adjacent commercial areas of the original town site. The Downtown Subarea

refers to a larger area than what Mead residents consider downtown. It includes Old Town, as well as the areas to the east of the downtown core along the Welker Avenue corridor and west of the I-25 interchange.

As an extension of downtown, Welker Avenue is envisioned as a two-lane street with on-street parking for retail and commercial patrons. The flexible median width can accommodate a raised and landscaped median and a left turn lane at intersections with a pedestrian refuge and includes a width range for future consideration of angled parking within the median. The wide pedestrian zone also includes a width range for future consideration of patio seating and other amenities within the public ROW (anticipated to be 120 feet). The proposed cross-section for Welker Avenue east of 3rd Street is a variation of the Town's standard cross-section for a Major Arterial and is intended to support downtown land uses planned for this corridor.

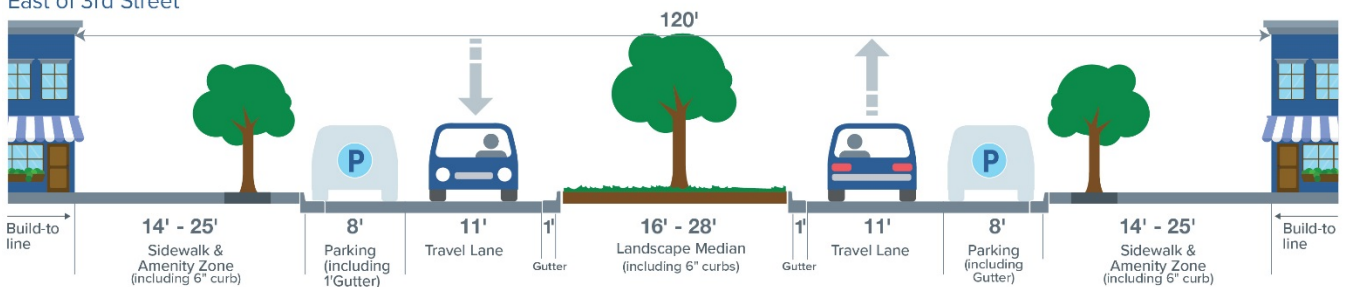
Welker Avenue - Option 1

East of 3rd Street



Welker Avenue - Option 2

East of 3rd Street





TRANSPORTATION PLAN

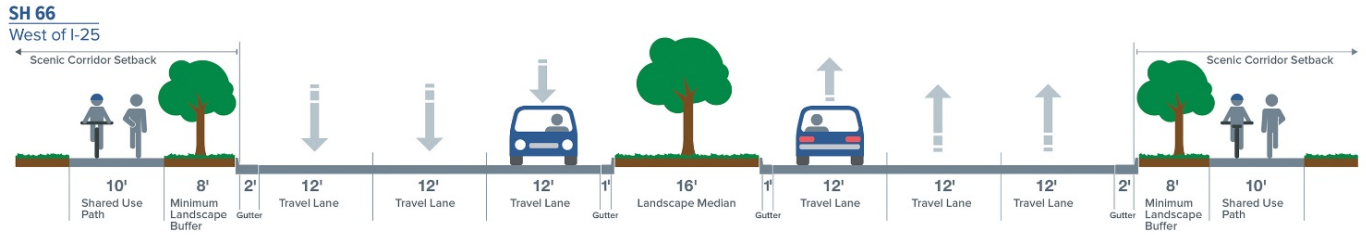
CDOT will reconstruct the I-25/Welker Avenue (WCR 34) interchange in the future to accommodate the future I-25 cross-section. A four-lane section on Welker Avenue through the interchange will transition to the two-lane cross-section at a roundabout located approximately 1,800 feet west of I-25. The roundabout will serve as a memorable landmark/gateway feature announcing entry into Mead's downtown core. As shown on **Figure 14**, the roundabout is anticipated to operate well (LOS A in the AM and PM peak hours) through 2040.

At the roundabout, people entering the downtown core will have options to travel west on Welker Avenue or to use the grid network north and south of Welker Avenue that will be an extension of downtown.

The intersection of Welker Avenue and 3rd Street will be signalized in the future with left and right turn lanes. As shown on **Figure 14**, this intersection is expected to operate reasonably well through 2040 (LOS D during the AM peak hour and LOS B during the PM peak hour).



Figure 14. Downtown Subarea Streets



Highway 66 Subarea

The Highway 66 Corridor is widely referred to as the southern scenic gateway to Rocky Mountain National Park, providing easy access to one of the country’s most sought after outdoor recreation destinations for Colorado residents and out-of-state tourists. The Highway 66 (SH 66) and I-25 interchange is a high-profile interchange that presents an opportunity on which the Town can capitalize.

The Town of Mead envisions a six-lane arterial cross-section for SH 66 from I-25 to 3rd Street/WCR 7. The Town’s desire is for lower speeds on SH 66 to create

a safer environment for all users. The desired cross-section includes a wide landscaped median and 10-foot shared use paths on both sides of the street for bicyclists and pedestrians. The shared use paths would be separated from the highway by a minimum 8-foot landscape buffer. The Town desires access spacing of ½ mile for full-movement access and ¼ mile for restricted access. As **Figure 15** shows, Mead envisions a gridded pattern of streets to support the anticipated land uses along SH 66, allowing circulation and local trip-making on the supporting street network (providing relief to SH 66).



SH 66 Subarea rendering from Comprehensive Plan

Figure 15. Highway 66 Subarea Streets



TRANSPORTATION PLAN

The Town of Mead is currently working with CDOT on the SH 66 PEL Study. The PEL Study will set a vision and recommendations for SH 66 from Lyons to WCR 19. As of the writing of this Transportation Plan, Mead's desires for the SH 66 corridor through the PIA are compatible with the alternatives being considered in the PEL Study. The Town will continue to be engaged in this process to ensure creation of a vision for SH 66 that is mutually beneficial for CDOT and the Town of Mead.

East Side Neighborhood Subarea

The East Side Neighborhood refers to the land within Mead's PIA situated east of WCR 9.5 between Welker Avenue (WCR 34) and WCR 28 and bounded on the east by the St. Vrain Creek. The area immediately adjacent to the interstate along the east side of I-25 has historically developed as an area for employment in light manufacturing and warehousing. The designation of WCR 9.5 as an eastern arterial roadway provides access to the area that would facilitate the continuation of industrial and business park employment activities that would parallel I-25 for much of the planning area.

Further east of WCR 9.5, the East Side Neighborhood is intended to become more residential in character with a combination of mixed-use residential, including various housing types and densities that will create cohesive neighborhood developments.

The Town of Mead envisions SH 66 east of WCR 9.5 transitioning from a six-lane arterial down to a four-lane expressway at WCR 11 and then to a two-lane rural/regional highway at WCR 13 to the east. This is compatible with the alternatives being considered in the SH 66 PEL Study. The Town of Mead desires a grid pattern of Collector and Local Streets within the East Side Neighborhood that will support future land uses and provide convenient connections between neighborhoods without requiring access onto SH 66. As depicted in the Master Streets Plan, Collector streets at ½ mile spacing are envisioned within the East Side Neighborhood.

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TRANSPORTATION PLAN

6. Implementation Plan

The Long-Range Plan recommendations provide strategies that will move Mead toward reaching the transportation goals and vision. While improving travel by bike, by foot, by car, and by transit are clear community priorities, implementation of these recommendations will occur over time as resources become available. This chapter provides guidance on the phasing and funding strategies for the Town to implement the Transportation Plan recommendations.

Identification of Projects

Regional Projects

Several transportation projects have been identified either through this planning effort or through previous and ongoing regional planning efforts that will require considerable regional coordination.

Table 4 identifies regional projects with scopes and costs beyond the means of the Town of Mead.

These projects are important to Mead's transportation system and to the region as a whole, but implementation of these projects will not be the primary responsibility of the Town. Rather, the Town will partner with the appropriate agencies, such as CDOT, to support implementation of these important regional projects.

Roadway Projects

The roadway projects needed to realize the 2040 Master Streets Plan fall in general categories:

- Reconstruction to bring an existing road to the standard paved cross-section
- Construction of new road connections
- Intersection control (signalization or roundabout)

Mead's typical cross-sections are multimodal and include the provision of bike lanes and sidewalks on all urban streets. Therefore, the roadway improvement projects described herein include the design and construction of the associated bicycle and pedestrian facilities.

The roadway projects have been divided into three time periods based on input from Town staff, anticipated development patterns, and projected travel demand:

- Near-term (2019 – 2025)
- Mid-term (2026 – 2035)
- Long-term (2036 – 2040 and beyond)

Table 5 lists the projects in terms of general time frames but does not prioritize projects within each period. Where two or more projects may be related (and could be constructed as a package), the appropriate Project ID #s are cross-referenced in the table.

Although funding sources for these projects will vary, **Table 5** also presents planning-level cost estimates for each project. Contributions to these projects may come from the Town, developers, adjacent jurisdictions, state or federal funding, or other funding sources. It is anticipated that much of the needed ROW will be obtained from adjacent future development.

Appendix B includes quantities and calculations used to develop the per-mile cost estimates. Cost estimates are high-level planning estimates and exclude the costs of ROW acquisitions. All costs are in 2018 dollars.

Table 4. Regional Projects

Location	Description	Primary Responsibility
I-25 (Interim Improvements)	Adds one tolled express lane in each direction from SH 66 to SH 14 (and US 36 to SH 7); incorporates intelligent transportation systems (ITS) per the North I-25 FEIS	CDOT
I-25 (Ultimate Improvements)	Adds one general-purpose lane in each direction from Denver Union Station to SH 14; removes frontage roads; adds carpool and transit facilities per the North I-25 FEIS	CDOT
I-25 and Welker Avenue (WCR 34)	Interchange reconstruction per the North I-25 FEIS	CDOT
I-25 and WCR 38 Interchange	Study the feasibility of adding an interchange to I-25 at WCR 38	CDOT, Town of Mead
SH 66, County Line Road (WCR 1) to 3rd Street (WCR 7)	Widen to 4-Lane Expressway per the SH 66 PEL Study and ACP	CDOT
SH 66, 3rd Street (WCR 7) to WCR 11	Widen to a 6-lane Arterial per the SH 66 PEL Study and ACP	CDOT
SH 66, WCR 11 to Colorado Boulevard (WCR 13)	Widen to 4-Lane Expressway per the SH 66 PEL Study and ACP	CDOT
SH 66, Colorado Boulevard (WCR 13) to WCR 19	Reconstruct to 2-Lane Rural/Regional Highway per the SH 66 PEL Study and ACP	CDOT
3rd Street (WCR 7) Southern Extension Study	Study the feasibility of extending 3rd Street (WCR 7) to SH 119 through St. Vrain State Park	Town of Mead
St. Vrain Trail (from Longmont to Greeley)	St. Vrain Trail	Town of Mead, regional agencies
Grade-separated trail crossing of SH 66 at WCR 5.5	Pedestrian underpass for the St. Vrain Loop Trail	Town of Mead, CDOT
Grade-separated trail crossing of SH 66 at 3rd Street (WCR 7)	Pedestrian underpass on the west side of 3rd Street	Town of Mead, CDOT
Grade-separated trail crossing of SH 66 just west of Foster Ridge Drive	Pedestrian underpass for the Mulligan and Foster Reservoir Loop Trail	Town of Mead, CDOT
Grade-separated trail crossing of I-25 at WCR 38	Pedestrian underpass for the St. Vrain Loop Trail	Town of Mead, CDOT
Grade-separated trail crossing of I-25 just north of Welker Avenue (WCR 34)	Pedestrian underpass	Town of Mead, CDOT
Grade-separated trail crossing of I-25 at WCR 28	Pedestrian underpass	Town of Mead, CDOT
Grade-separated trail crossing of I-25 at the St. Vrain Creek	Pedestrian underpass for the St. Vrain Loop Trail	Town of Mead, CDOT



TRANSPORTATION PLAN

Sidewalk and Trails Projects

Most of the trails, sidewalks, and low stress bike network identified in **Chapter 5** will be built when the adjacent land is developed. Likewise, the sidewalks, trails, and arterial street bike lanes will be constructed as a part of roadway improvement projects included in **Tables 5, 6, and 7**. However, some specific bicycle and pedestrian projects are unique and will require special attention from the Town to be constructed; these projects are listed in **Table 8**. The priority sidewalk and trails projects are those that provide connectivity and access to the schools and are located along Welker Avenue and 3rd Street (WCR 7). This includes projects 6, 10, 11, and 26. Three potential grade-separated pedestrian crossings are identified for the Long Term or Beyond 2040. At-grade crossing treatments should be considered at these locations as interim improvements.

Funding

Like most other municipalities along Colorado's Front Range, Mead faces the challenge of how to fund transportation improvements. New development in the Town will generate new vehicle trips and associated new demands on the Town's road system. The impacts of developments vary from a small number of trips for a single new home to a large number of trips for a major residential subdivision or commercial development. Major developments should submit a traffic impact study, estimate the number of trips expected to be generated, identify the expected distribution of those trips onto the surrounding road network, and identify major road improvements needed to accommodate the traffic.

The following summarizes financing options that the Town of Mead can consider, individually or in

combination, to fund improvements to the major road system to address existing deficiencies or needs created by new development.

Mead Capital Improvement Program

Much of the funding for transportation improvements currently uses general Town funds through a Capital Improvement Program (CIP). These funds are limited by the size of the anticipated Town revenues through the annual budgeting process.

Street Impact Fees

Impact fees are development exactions. Many local governments, including the Town of Mead, use these fees as devices to impose charges on new development to generate revenues for funding offsite road expansion necessitated by new development. These fees allow developer contributions to be pooled so that road improvements can be implemented community-wide. These fees cannot legally be applied to existing deficiencies or to improvements that would result from traffic passing through Mead. It is important to regularly update impact fees to keep pace with rising construction costs.

Street Maintenance Fees

A street maintenance fee is a way to recoup a portion of ongoing street maintenance costs via a fee paid through residents' utility bills.

Bond Programs

Mead could use long-term financing programs to advance capital improvements sooner than would be possible with a "pay-as-you-go" approach. This approach is most common for capital improvements in entities with an expanding tax base but would require voter approval.

Table 5. Near Term Roadway Projects (2019 – 2025)

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Cost Estimate	Primary Responsibility
1	3rd Street (WCR 7) and SH 66 Intersection	Intersection improvements	-	-	\$500,000	CDOT, Town of Mead
2	3rd Street (WCR 7) and Welker Avenue (WCR 34) Intersection	Intersection improvements (turn lanes, etc)	-	-	\$1,000,000	Town of Mead
3	WCR 5 and SH 66 Intersection	Signalize intersection	-	-	\$300,000	Town of Mead
4	3rd Street (WCR 7) from WCR 34 (Welker) to WCR 36	Reconstruct to 2-Lane Major Arterial cross section	1	\$7,650,000	\$7,650,000	Town of Mead
5	Welker Avenue (WCR 34) from WCR 5 to roundabout gateway	Reconstruct 2-Lane Major Arterial	1.67	\$7,335,000	\$12,250,000	Town of Mead
6	3rd Street (WCR 7) from Mead High School to SH 66	Reconstruct to 2-Lane Major Arterial cross section	1.38	\$7,650,000	\$10,550,000	Town of Mead
7	WCR 9.5 from SH 66 to Adams Avenue (WCR 32)	Reconstruct to 2-Lane Major Arterial cross section	1	\$7,650,000	\$7,650,000	Town of Mead, Weld County
8	Adams Avenue (WCR 32) from WCR 5 to 3rd Street (WCR 7)	Reconstruct 2-Lane Minor Arterial	1	\$7,335,000	\$7,335,000	Town of Mead

Table 6. Mid-Term Roadway Projects (2026 – 2035)

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Cost Estimate	Primary Responsibility
9	3rd Street (WCR 7) from SH 66 to WCR 34 (Welker)	Reconstruct to 2-Lane Major Arterial cross section	3	\$7,650,000	\$22,950,000	Town of Mead
10	WCR 9.5 from Firestone Boulevard to SH 66	Reconstruct to 4-Lane Major Arterial cross section	2.1	\$10,900,000	\$22,890,000	Town of Mead, Town of Firestone
11	WCR 9.5 from Adams Avenue (WCR 32) to WCR 40/PIA boundary	Construct new 2-Lane Major Arterial cross section	4	\$7,650,000	\$30,600,000	Town of Mead
12	Colorado Boulevard (WCR 13) from PIA boundary to SH 66	Reconstruct to 4-Lane Major Arterial cross section	2	\$10,900,000	\$21,800,000	Town of Mead, Town of Firestone
13	Colorado Boulevard (WCR 13) from SH 66 to Welker Avenue (WCR 34)	Reconstruct to 2-Lane Major Arterial cross section	2	\$7,335,000	\$14,670,000	Town of Mead
14	Adams Avenue (WCR 32) from 3rd Street (WCR 7) to I-25	Reconstruct 2-Lane Rural Road	1	\$2,405,000	\$2,405,000	Town of Mead
15	Adams Avenue (WCR 32) from I-25 to Colorado Boulevard (WCR 13)	Reconstruct 2-Lane Minor Arterial	2	\$7,335,000	\$14,670,000	Town of Mead
16	Welker Avenue (WCR 34) from roundabout gateway to WCR 9.5	Reconstruct 4-Lane Major Arterial	0.83	\$10,900,000	\$9,047,000	Town of Mead
17	WCR 5 from SH 66 to Welker Avenue (WCR 34)	Reconstruct to 2-Lane Minor Arterial cross section	2	\$7,650,000	\$15,300,000	Town of Mead

Table 7. Long-Term Roadway Projects (2036 – 2040 and Beyond)

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Cost Estimate	Primary Responsibility
18	WCR 28 from I-25 to Colorado Boulevard (WCR 13)	Reconstruct 2-Lane Minor Arterial cross section	2	\$7,650,000	\$15,300,000	Town of Mead, Town of Firestone
19	County Line Road (WCR 1) from SH 66 to Welker Avenue (WCR 34)	Reconstruct to Rural Road cross section	2	\$2,405,000	\$4,810,000	Town of Mead
20	County Line Road (WCR 1) from Welker Avenue (WCR 34) to WCR 40	Reconstruct to Rural Road cross section	3	\$2,405,000	\$7,215,000	Town of Mead
21	WCR 3 from SH 66 to just north of WCR 32	Pave 2-Lane Rural Road	1.25	\$1,250,000	\$1,562,500	Town of Mead
22	WCR 3 from just north of WCR 32 to Welker Avenue (WCR 34)	Construct New 2-Lane Rural Road	0.75	\$2,665,000	\$1,998,750	Town of Mead
23	WCR 3 from WCR 34 to WCR 40	Pave 2-Lane Rural Road	3	\$1,250,000	\$3,750,000	Town of Mead
24	WCR 5 from WCR 28 to SH 66	Pave 2-Lane Minor Arterial cross section	1	\$7,335,000	\$7,335,000	Town of Mead
25	WCR 5 from Welker Avenue (WCR 34) to WCR 36	Reconstruct to Rural Road cross section	1.6	\$2,405,000	\$3,848,000	Town of Mead
26	WCR 5 from WCR 36 to PIA boundary, approximately WCR 42.5	Pave 2-Lane Rural Road	2	\$1,250,000	\$2,500,000	Town of Mead
27	3rd Street (WCR 7) from WCR 36 to WCR 38	Reconstruct to 2-Lane Major Arterial cross section	1	\$7,650,000	\$7,650,000	Town of Mead
28	3rd Street (WCR 7) from WCR 38 to WCR 40	Pave 2-Lane Major Arterial cross section	1	\$7,335,000	\$7,335,000	Town of Mead

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Cost Estimate	Primary Responsibility
29	WCR 11 from WCR 28 to SH 66	Pave 2-Lane Rural Road	1	\$1,250,000	\$1,250,000	Town of Mead
30	Colorado Boulevard (WCR 13) from Welker Avenue (WCR 34) to WCR 40	Reconstruct to 2-Lane Major Arterial cross section	3	\$7,335,000	\$22,005,000	Town of Mead
31	WCR 15 from WCR 28 to Welker Avenue (WCR 34)	Construct New Rural Road cross section	3	\$2,665,000	\$7,995,000	Town of Mead
32	WCR 15 from Welker Avenue (WCR 34) to WCR 40	Pave 2-Lane Rural Road	3	\$1,250,000	\$3,750,000	Town of Mead
33	WCR 17 from SH 66 to Welker Avenue (WCR 34)	Pave, reconstruct 2-Lane Rural Road	2.1	\$2,405,000	\$5,050,500	Town of Mead
34	WCR 17 from Welker Avenue (WCR 34) to WCR 40/PIA boundary	Reconstruct 2-Lane Rural Road	3	\$2,405,000	\$7,215,000	Town of Mead
35	WCR 19 from WCR 36.5 to WCR 40/PIA boundary	Reconstruct 2-Lane Rural Road	1.5	\$2,405,000	\$3,607,500	Town of Mead
36	WCR 28 from WCR 5 to 3rd Street (WCR 7)	Pave 2-Lane Minor Arterial cross section	1	\$7,335,000	\$7,335,000	Town of Mead
37	WCR 28 from 3rd Street (WCR 7) to I-25	Reconstruct 2-Lane Minor Arterial cross section	1	\$7,650,000	\$7,650,000	Town of Mead
38	WCR 28 from Colorado Boulevard (WCR 13) to WCR 15	Construct New 2-Lane Rural Road	1	\$2,665,000	\$2,665,000	Town of Mead
39	Adams Avenue (WCR 32) from County Line Road (WCR 1) to WCR 3	Construct New 2-Lane Rural Road	1	\$2,665,000	\$2,665,000	Town of Mead
40	Adams Avenue (WCR 32) from WCR 3 to WCR 5	Pave 2-Lane Rural Road	1	\$1,250,000	\$1,250,000	Town of Mead

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Cost Estimate	Primary Responsibility
41	Adams Avenue (WCR 32) from Colorado Boulevard (WCR 13) to WCR 17	Pave 2-Lane Minor Arterial	2	\$7,335,000	\$14,670,000	Town of Mead
42	Welker Avenue (WCR 34) from County Line Road (WCR 1) to WCR 5	Reconstruct 2-Lane Rural Road	2	\$2,405,000	\$4,810,000	Town of Mead
43	Welker Avenue (WCR 34) from WCR 9.5 to Colorado Boulevard (WCR 13)	Reconstruct 2-Lane Major Arterial	1.5	\$7,335,000	\$11,002,500	Town of Mead
44	Welker Avenue (WCR 34) from Colorado Boulevard (WCR 13) to PIA boundary	Reconstruct 2-Lane Rural Road	2.4	\$2,405,000	\$5,772,000	Town of Mead
45	WCR 36 from County Line Road (WCR 1) to 3rd Street (WCR 7)	Pave 2-Lane Rural Road	3.15	\$1,250,000	\$3,937,500	Town of Mead
46	WCR 36 from to 3rd Street (WCR 7) to I-25	Reconstruct 2-Lane Rural Road	1	\$2,405,000	\$2,405,000	Town of Mead
47	WCR 36 from I-25 to Colorado Boulevard (WCR 13)	Pave 2-Lane Minor Arterial	2	\$7,335,000	\$14,670,000	Town of Mead
48	WCR 36 from Colorado Boulevard (WCR 13) to WCR 17	Pave 2-Lane Rural Road	2	\$1,250,000	\$2,500,000	Town of Mead
49	WCR 36.5/WCR 15 from WCR 17 to PIA	Pave 2-Lane Rural Road	1.6	\$1,250,000	\$2,000,000	Town of Mead
50	WCR 38 from County Line Road (WCR 1) to WCR 3	Construct New 2-Lane Rural Road	1	\$2,665,000	\$2,665,000	Town of Mead
51	WCR 38 from WCR 3 to 3rd Street (WCR 7)	Pave 2-Lane Rural Road	2	\$1,250,000	\$2,500,000	Town of Mead

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Cost Estimate	Primary Responsibility
52	WCR 38 from 3rd Street (WCR 7) to I-25	Reconstruct 2-Lane Minor Arterial	1	\$7,650,000	\$7,650,000	Town of Mead
53	WCR 38 from I-25 to Colorado Boulevard (WCR 13)	Pave 2-Lane Minor Arterial	2	\$7,335,000	\$14,670,000	Town of Mead
54	WCR 38 from Colorado Boulevard (WCR 13) to PIA (just east of WCR 19)	Reconstruct 2-Lane Rural Road	3.2	\$2,405,000	\$7,696,000	Town of Mead
55	WCR 40 from County Line Road (WCR 1) to WCR 3	Pave 2-Lane Rural Road	1	\$1,250,000	\$1,250,000	Town of Mead
56	WCR 40 from WCR 3 to I-25	Construct New 2-Lane Rural Road	3	\$2,665,000	\$7,995,000	Town of Mead
57	WCR 40 from I-25 to Colorado Boulevard (WCR 13)	Pave 2-Lane Rural Road	2	\$1,250,000	\$2,500,000	Town of Mead
58	WCR 40 from Colorado Boulevard (WCR 13) to WCR 15	Construct New 2-Lane Rural Road	1	\$2,665,000	\$2,665,000	Town of Mead
59	WCR 40 from WCR 15 to WCR 17	Pave 2-Lane Rural Road	1	\$1,250,000	\$1,250,000	Town of Mead
60	WCR 40 from WCR 17 to WCR 19	Construct New 2-Lane Rural Road	1	\$2,665,000	\$2,665,000	Town of Mead
61	3rd Street (WCR 7) from to WCR 26 Mead High School	Reconstruct to 2-Lane Major Arterial cross section	0.62	\$7,650,000	\$4,750,000	Town of Mead

Table 8. Sidewalk and Trails Projects

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Approximate Cost Estimate	Primary Responsibility
1	Palmer Avenue (between 8th Street and 3rd Street)	Complete missing 5' sidewalk segments on north side of street	0.21	\$630,000	\$132,000	Town of Mead
2	Martin Avenue (between 3rd Street and 6th Street)	Complete missing 5' sidewalk segments on south side of street	0.13	\$630,000	\$82,000	Town of Mead
3	Fairbairn Avenue (between railroad tracks and 4th Street)	Complete missing 5' sidewalk segments on both sides of street	0.06	\$630,000	\$38,000	Developer or Town of Mead
4	Dillingham Avenue (between 4th Street and 6th Street)	Complete 5' sidewalk on south side of street	0.07	\$630,000	\$44,000	Town of Mead
5	Dillingham Avenue (between 1st Street and 3rd Street)	Complete 5' sidewalk on south side of street	0.14	\$630,000	\$88,000	Town of Mead
6	Welker Avenue (between Ginger Avenue and 3rd Street)	Complete 8' sidewalk on south side of street	0.45	\$975,000	\$439,000	Developer or Town of Mead
7	6th Street (between Welker Avenue and Dillingham Avenue)	Complete 5' sidewalk on east side of street	0.03	\$630,000	\$19,000	Town of Mead
8	5th Street (between Welker Avenue and vacant land)	Complete 5' sidewalk on east side of street	0.35	\$630,000	\$221,000	Town of Mead
9	4th Street (between Palmer Avenue and vacant land)	Complete 5' sidewalk on west side of street	0.06	\$630,000	\$38,000	Town of Mead
10	3rd Street (between Welker Avenue and Martin Avenue)	Complete 5' sidewalk on west side of street	0.21	\$630,000	\$132,000	Developer or Town of Mead
11	3rd Street (between Welker Avenue and Dillingham Avenue)	Complete 5' sidewalk on east side of street	0.06	\$630,000	\$38,000	Town of Mead

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Approximate Cost Estimate	Primary Responsibility
12	2nd Street (between Welker Avenue and Fairburn Avenue)	Complete 5' sidewalk on east side of street	0.12	\$630,000	\$76,000	Town of Mead
13	1st Street (between Welker Avenue and Fairburn Avenue)	Complete 5' sidewalk on east side of street	0.13	\$630,000	\$82,000	Developer or Town of Mead
14	WCR 3 from just north of WCR 32 to WCR 34	Add sidepath on the east side; ensure connection to St. Vrain Loop Trail to the east	0.73	\$1,300,000	\$949,000	Town of Mead
15	WCR 5 from WCR 34 to WCR 34.5/St. Vrain Loop Trail	Add sidepath on the west side	0.5	\$1,300,000	\$650,000	Town of Mead
16	WCR 5 from WCR 36/St. Vrain Loop Trail to WCR 38	Add sidepath on east side	1.1	\$1,300,000	\$1,430,000	Town of Mead
17	WCR 32 from WCR 7 to Mulligan Reservoir	Proposed crusher fine trail	0.5	\$490,000	\$245,000	Town of Mead
18	WCR 36 from WCR 5 to I-25	Add sidepath	1.8	\$1,300,000	\$2,340,000	Town of Mead
19	WCR 38 from WCR 13 to PIA boundary	Add sidepath; connect to St. Vrain Creek Regional Trail	3.2	\$1,300,000	\$4,160,000	Town of Mead
20	St. Vrain Loop Trail from I-25/WCR 38 to the St. Vrain Creek Regional Trail	Crusher fines	5.3	\$490,000	\$2,592,000	Town of Mead
21	Proposed trails from downtown east (under I-25 at WCR 34) to the St. Vrain Loop Trail	Crusher fines, around Lake Thomas	5.2	\$490,000	\$2,528,000	Town of Mead
22	St. Vrain Loop Trail from I-25 to SH 66	Concrete	2.7	\$1,300,000	\$3,523,000	Town of Mead
23	St. Vrain Loop Trail from SH 66 to Mead Reservoir Trailhead	Concrete	2.8	\$1,300,000	\$3,679,000	Town of Mead

Project ID	Location	Description	Length (Miles)	Per-Mile Cost	Approximate Cost Estimate	Primary Responsibility
24	St. Vrain Loop Trail from Mead Reservoir Trailhead to Highland Lake Trailhead (with connection to downtown)	Concrete	2.8	\$1,300,000	\$3,679,000	Town of Mead
25	St. Vrain Loop Trail from Highland Lake Trailhead I-25 at WCR 38	Concrete	3.1	\$1,300,000	\$4,030,000	Town of Mead
26	Proposed trail from Mulligan Lake to downtown	Concrete	1.7	\$1,300,000	\$2,236,000	Town of Mead
27	Mulligan and Foster Reservoir Loop Trails	Concrete	6.7	\$1,300,000	\$8,697,000	Town of Mead
28	Proposed trail connection from 3rd Street (WCR 7) and SH 66 northwest to the St. Vrain Loop Trail	Concrete	2.4	\$1,300,000	\$3,055,000	Town of Mead
29	Proposed trail connections from downtown east to I-25 Trail Crossing	Concrete	1.7	\$1,300,000	\$2,236,000	Town of Mead



Federal and State Funding

State highways are the primary responsibility of CDOT, in coordination with local agencies and DRCOG. The decision to improve these facilities will be based on state and regional funding considerations. Mead should monitor this process closely and may need to be prepared to provide local matching funds to leverage money on regionally significant corridors such as SH 66. The availability of federal and state funding for transportation projects from DRCOG is currently very limited. Partnerships between communities and CDOT can be an effective way to pool resources to implement regionally important projects. Funding sources that might be applicable to some of Mead's projects include Safe Routes to School, Congestion Mitigation and Air Quality Improvement Program, and Surface Transportation Program. Federal and State funding programs typically require 20 to 50 percent local match.

Special Service Districts

Special districts link specific transportation improvements to funding generated from the development associated with the demand for, or benefitting from, the improvements. Colorado law allows several forms of special service districts. One form, a tax increment district, can be applicable for a commercial development. Incremental tax revenues generated by the development are dedicated to either fund public costs to serve the area or to rebate developer-incurred costs expended on public improvements for the project.

Colorado Department of Local Affairs Energy and Mineral Impact Assistance Fund

The Colorado Department of Local Affairs (DOLA) Energy and Mineral Impact Assistance Fund provides funds generated from the state's severance tax to assist local governments socially and/or economically impacted by the development, processing, or energy conversion of minerals and mineral fuels. The grant can fund various projects, including road improvements, construction/improvements to recreation centers, and local government planning. DOLA's Energy and Mineral Impact Assistance Fund requires a 50 percent match.

Great Outdoors Colorado (GOCO)

This state funding program applies a portion of lottery proceeds to projects that protect and enhance Colorado's trails and open space. GOCO offers competitive grant programs for outdoor recreation and land conservation projects such as planning and building trails. This funding source could be leveraged for regionally significant trail projects. GOCO typically requires applicants to provide at least 25 percent of the total project cost in matching funds, at least 10 percent of which must be a cash match.

Local Sales Tax

In November 2018, the Town proposed a ballot measure to increase the Town's sales tax by 1 percent (from 2 percent to 3 percent) to be used for public safety, which would include transportation improvements. The ballot issue failed, leaving Mead's sales tax at 2 percent. Increases in the sales tax may be a future option to fund transportation improvements.

Action Plan

The intent of this Transportation Plan is to ensure that the Town of Mead has a clear plan in place to effectively advance the transportation system. The Transportation Plan includes roadway and intersection improvement projects, shared use trails, sidewalk improvements, and on-street bike facilities.

The transportation improvement projects are divided into three time periods based on input from Town staff, anticipated development patterns, and projected travel demand:

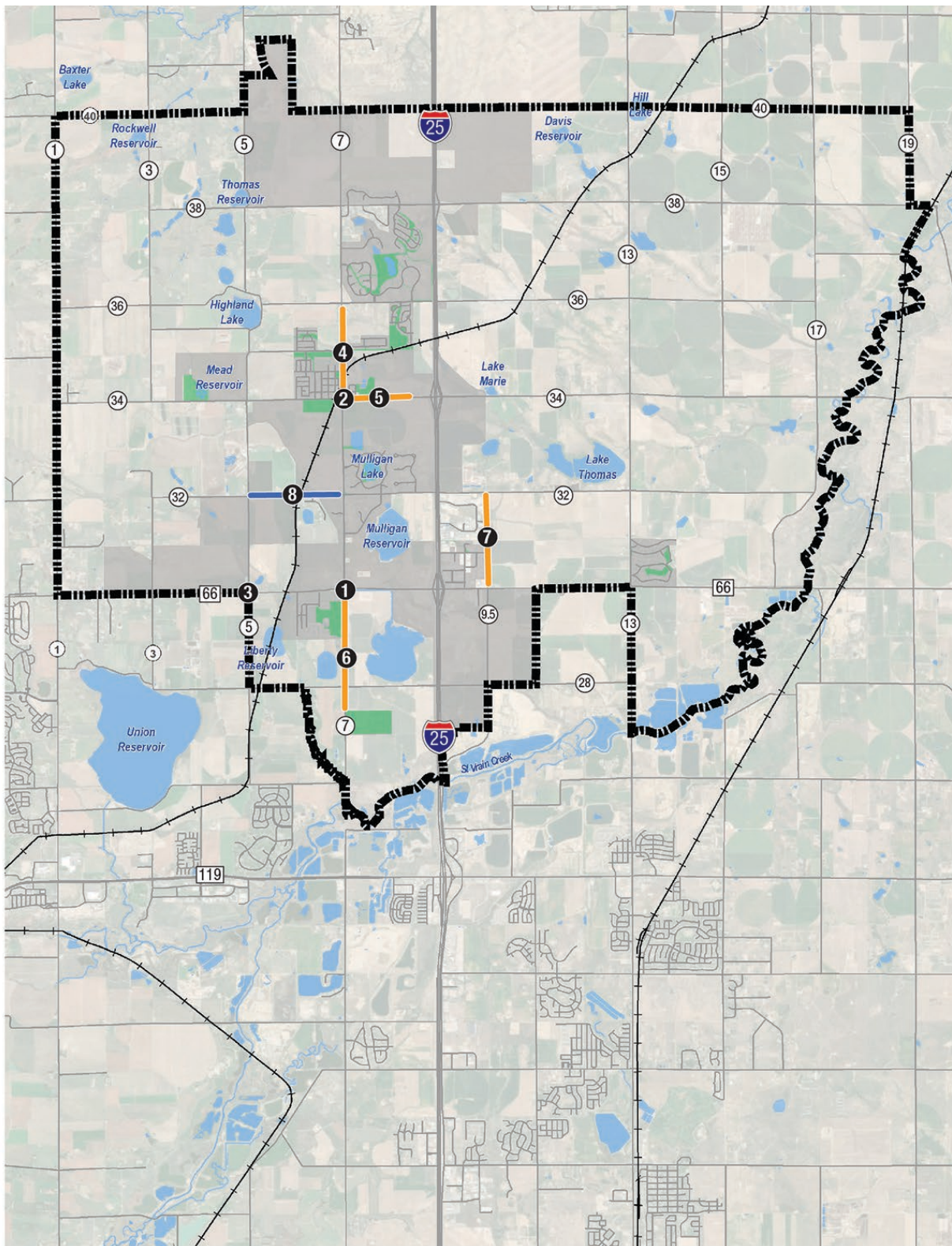
- Near-term (2019 – 2025)
- Mid-term (2026 – 2035)
- Long term (2036 – 2040 and beyond)

Figure 16 through **Figure 18** identify the projects associated with each time horizon.

Project ID #s correspond to **Table 5** and **Table 8**. These projects are primarily the responsibility of the Town, often in conjunction with private development. Mead also supports the regional transportation improvements listed in **Table 4**. The regional projects will require coordination with CDOT, DRCOG, Weld County, and/or surrounding jurisdictions.

The following list summarizes actions the Town of Mead should consider taking to ensure that the needed local and regional transportation improvements are funded:

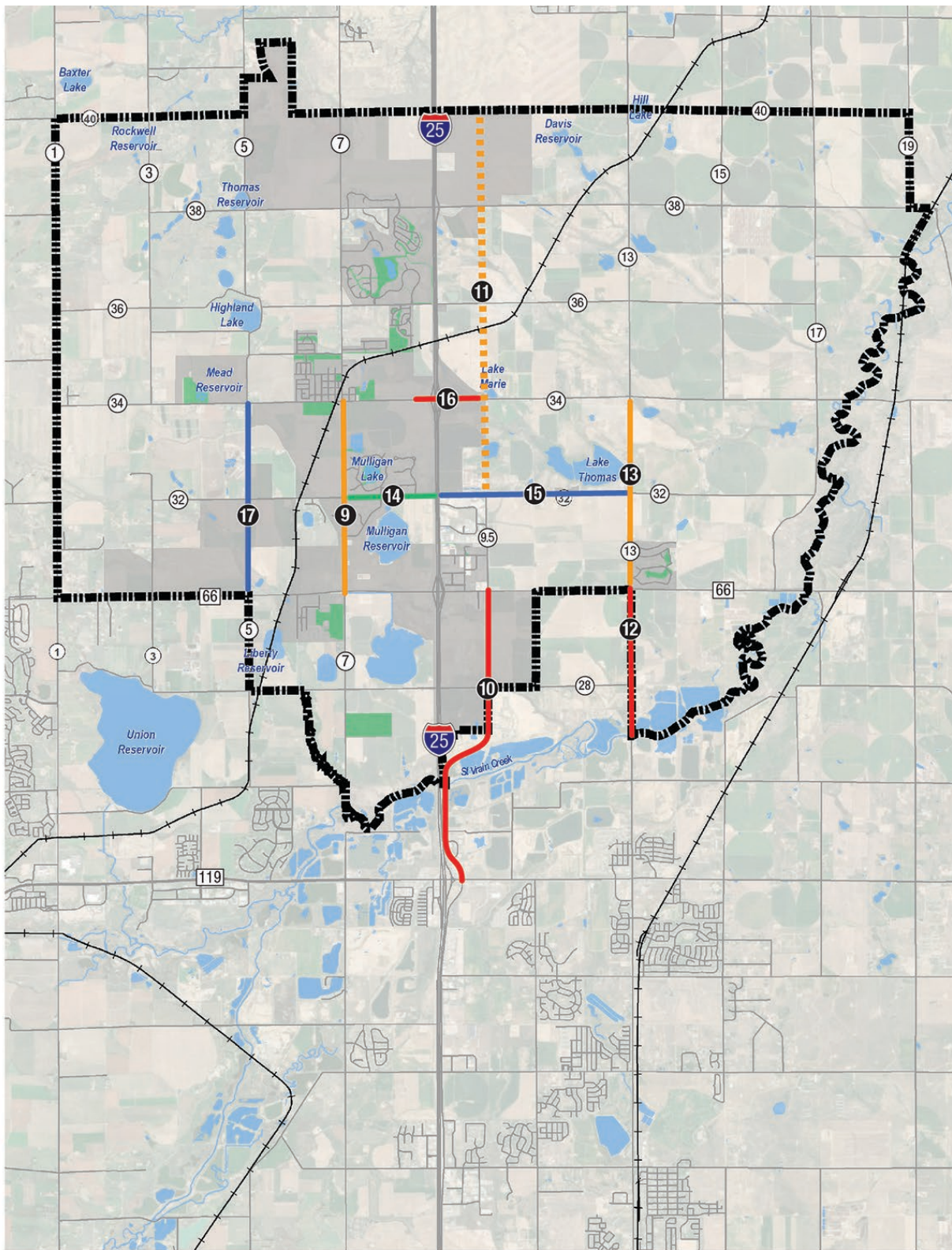
- Begin to plan and budget for completion of the improvements identified for the short term.
- Continue to participate in DRCOG’s regional transportation planning process and other regional planning initiatives to ensure the consideration of Mead’s vision for regional roads.
- Periodically monitor traffic volumes, safety concerns, and land use development to assess speed limits and conditions for recommended improvements.
- Continue to require transportation impact studies from all proposed developments so that the requirements for internal local and collector streets and impacts on the surrounding street network can be evaluated. Transportation impact studies should address traffic, bicycle, and pedestrian operations. If a proposed development will have an impact on a state highway, require a referral to CDOT for development review.



LEGEND

- | | | |
|---|---|--|
|  = Interstate/State Highway |  = 2-Lane Minor Arterial Street (100' ROW) |  = Existing |
|  = 4-Lane Major Arterial Street (120' ROW) |  = Rural Road (70' ROW) |  = Proposed |
|  = 2-Lane Major Arterial Street (120' ROW) |  = Collector (80' ROW) |  = Near Term Project ID |

Figure 16. Near Term Projects (2019-2025)



LEGEND









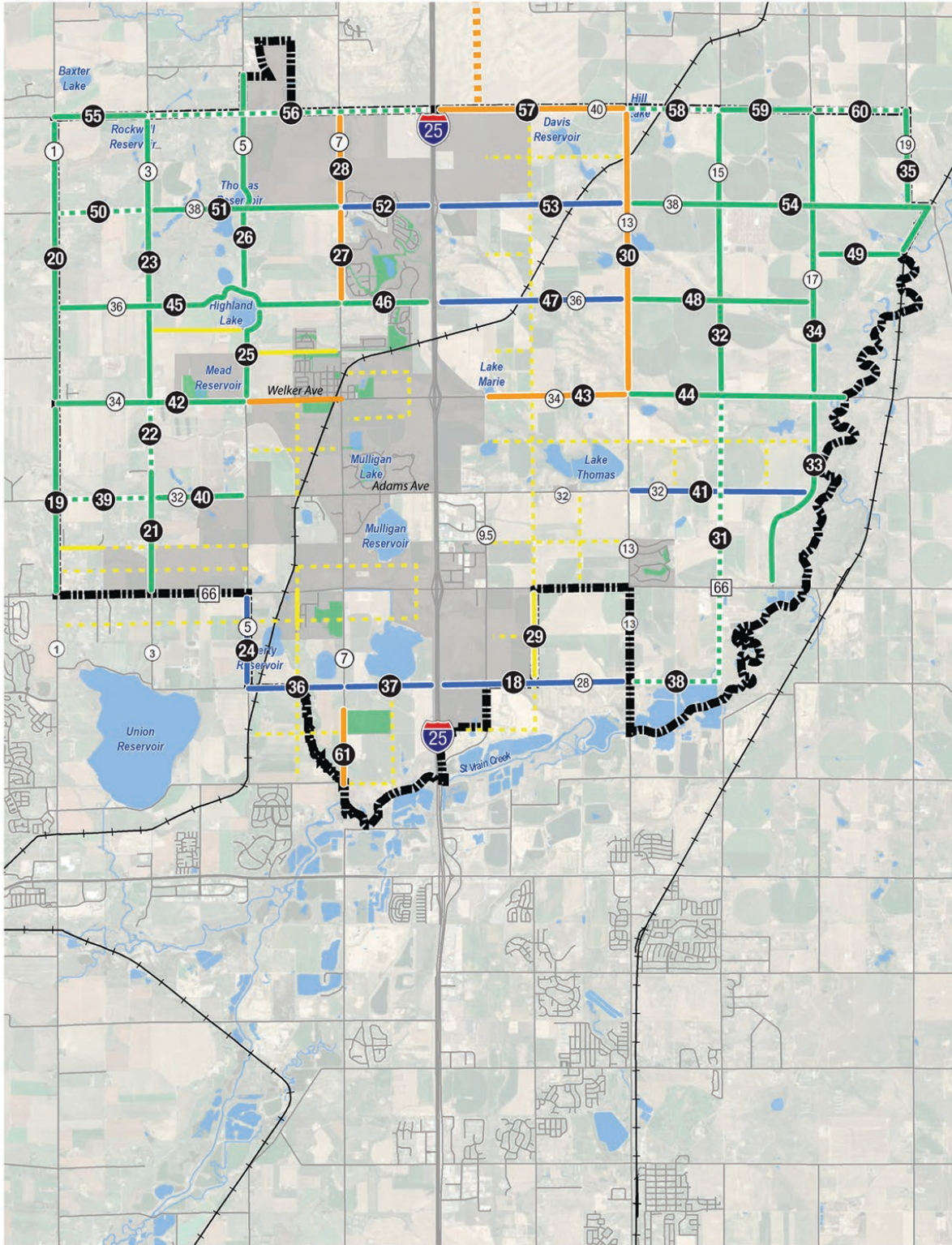
 = Interstate/State Highway	 = 2-Lane Minor Arterial Street (100' ROW)	 = Existing
 = 4-Lane Major Arterial Street (120' ROW)	 = Rural Road (70' ROW)	 = Proposed
 = 2-Lane Major Arterial Street (120' ROW)	 = Collector (80' ROW)	

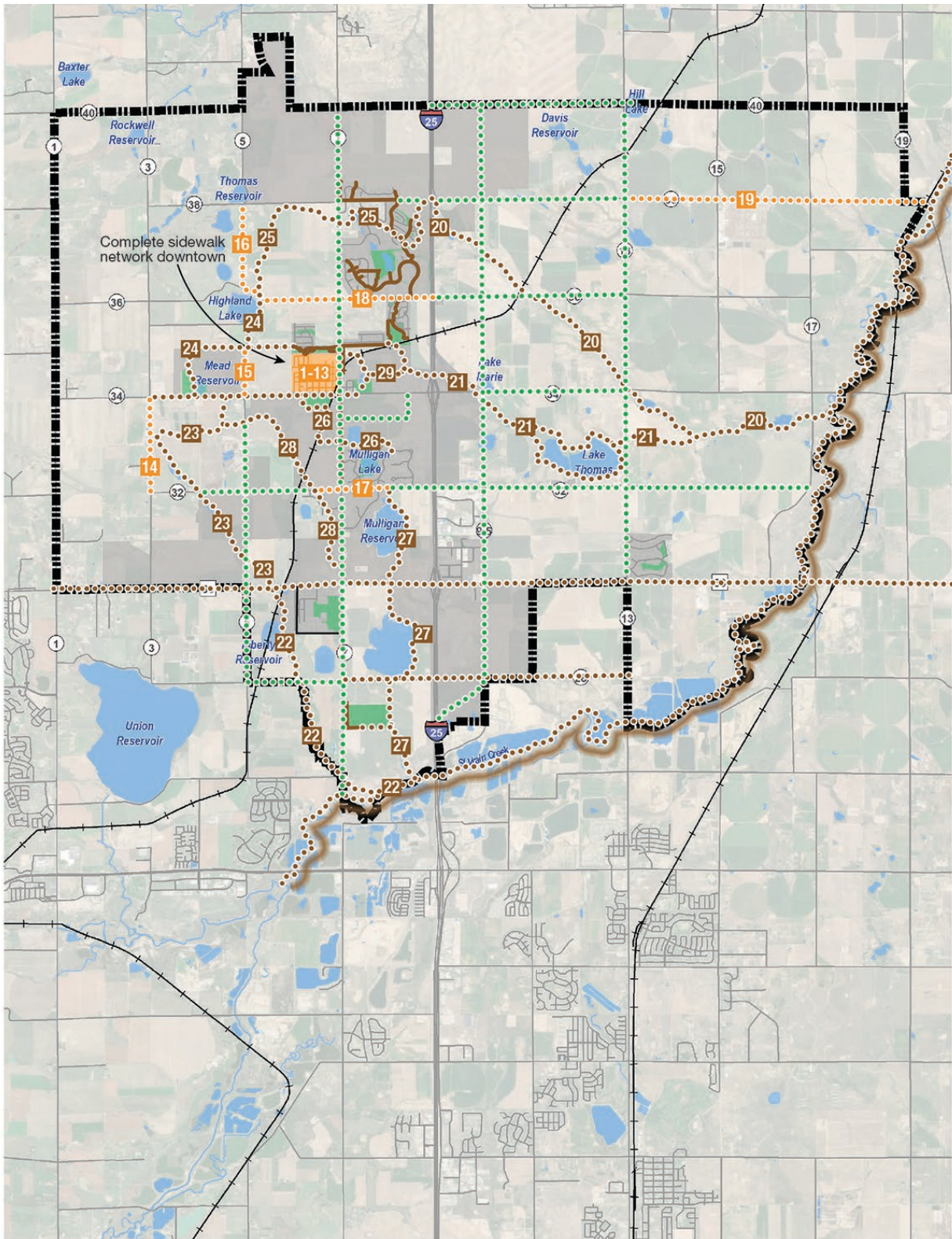
Figure 17. Mid-term Projects (2026 – 2035)



LEGEND

- = Interstate/State Highway
- = 4-Lane Major Arterial Street (120' ROW)
- = 2-Lane Major Arterial Street (120' ROW)
- = 2-Lane Minor Arterial Street (100' ROW)
- = Rural Road (70' ROW)
- = Collector (80' ROW)
- = Existing
- = Proposed

Figure 18. Long-term Projects (2036 – 2040 and Beyond)



LEGEND

- = Existing Trails
- = Proposed Trails
- = Proposed On-Street Bike Facility
- = Proposed Sidepaths
- = Regional Trail

Figure 19. Sidewalks and Trails

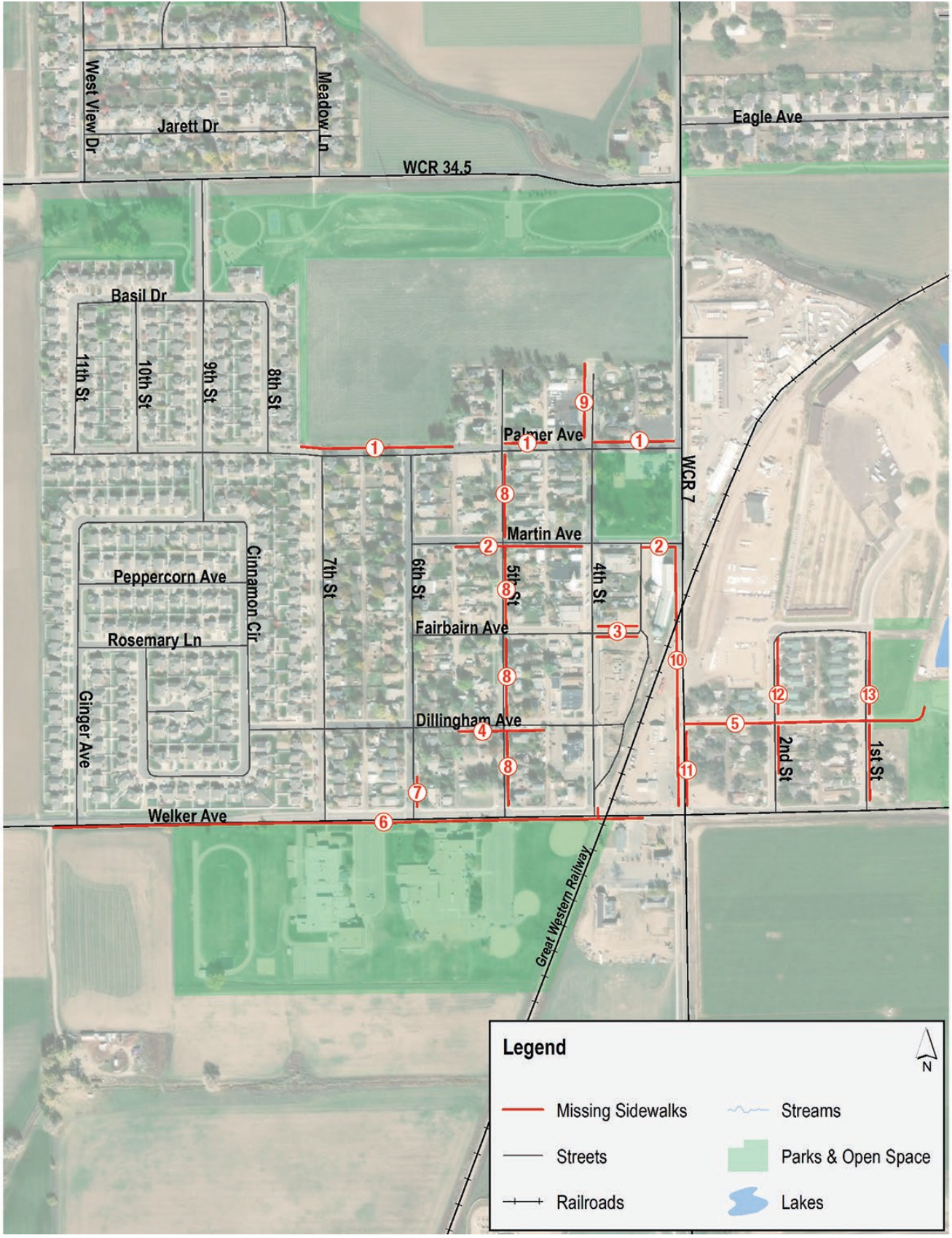


Figure 20. Old Town Sidewalk Projects

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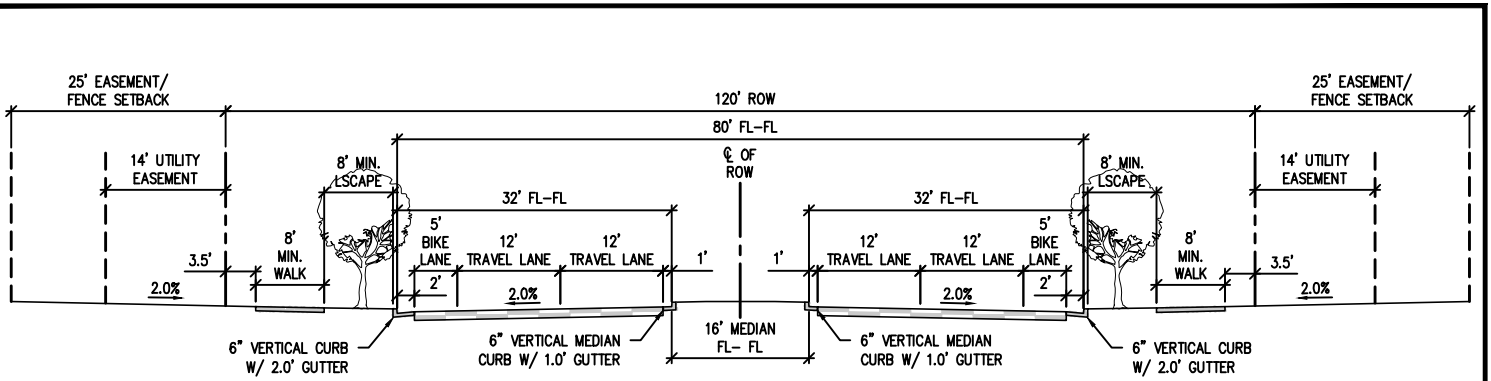
TRANSPORTATION PLAN

Appendix A. Cross Sections

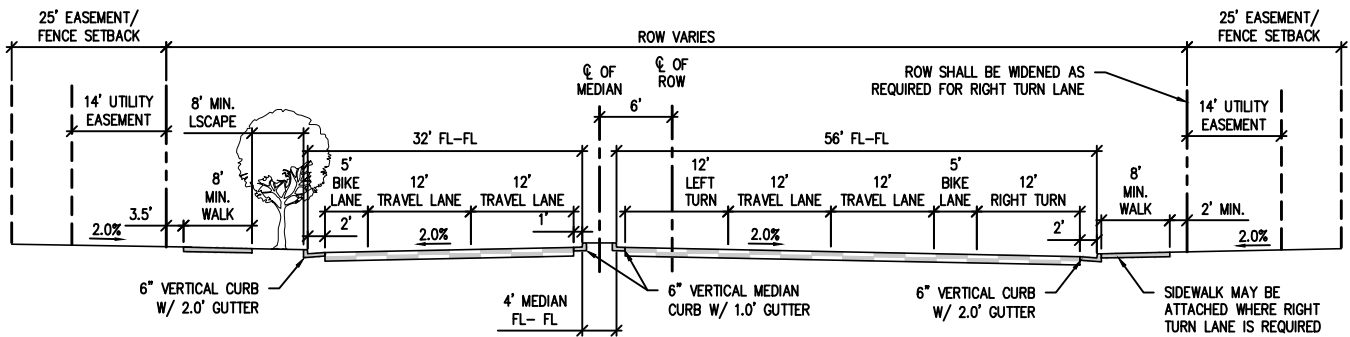


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LINK



INTERSECTION

ROADWAY WIDTH: 80' BETWEEN INTERSECTIONS; WIDEN AT INTERSECTION AS NEEDED.

RIGHT OF WAY WIDTH: 120' MIN. BETWEEN INTERSECTIONS; WIDEN AT INTERSECTIONS AS NEEDED.

TRAVEL LANES: 4 LANES AT 12' WIDE (EXCLUSIVE OF GUTTER OR MIN. 12' WHERE NO GUTTER).

LEFT TURN LANE: 12' WIDE, REQUIRED AT INTERSECTION.

BIKE LANES: 2 LANES, 5' WIDE MIN. (EXCLUSIVE OF GUTTER).

PARKING: NONE

SIDEWALK: 8' MIN. WIDE IF DETACHED BY AT LEAST 8'. ADDITIONAL WIDTH MAY BE REQUIRED FOR HIGHER PEDESTRIAN TRAFFIC IN AND LEADING TO ACTIVITY AREAS.

MEDIAN: 16' WIDE (FLOWLINE TO FLOWLINE), 4' IN LEFT TURN AREA. COLORED CONCRETE, PAINTED, OR LANDSCAPED.

DESIGN SPEED: 50 MPH

POSTED SPEED: 40 MPH

ACCESS: NO PRIMARY ACCESS TO INDIVIDUAL LOTS PERMITTED. 1/2 MILE SPACING TO SIGNALIZED INTERSECTIONS IS REQUIRED.

CONTINUITY: UNLIMITED.

FENCES: FENCES SHALL BE PLACED OUTSIDE OF THE LANDSCAPING AND PEDESTRIAN EASEMENT. (25' FROM ROW)

LANDSCAPING: TREE LAWN, MEDIAN, AND BUFFER AREA LANDSCAPING MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNER OR HOA.

CURB AND GUTTER: VERTICAL CURB AND GUTTER.

SCALE: NTS

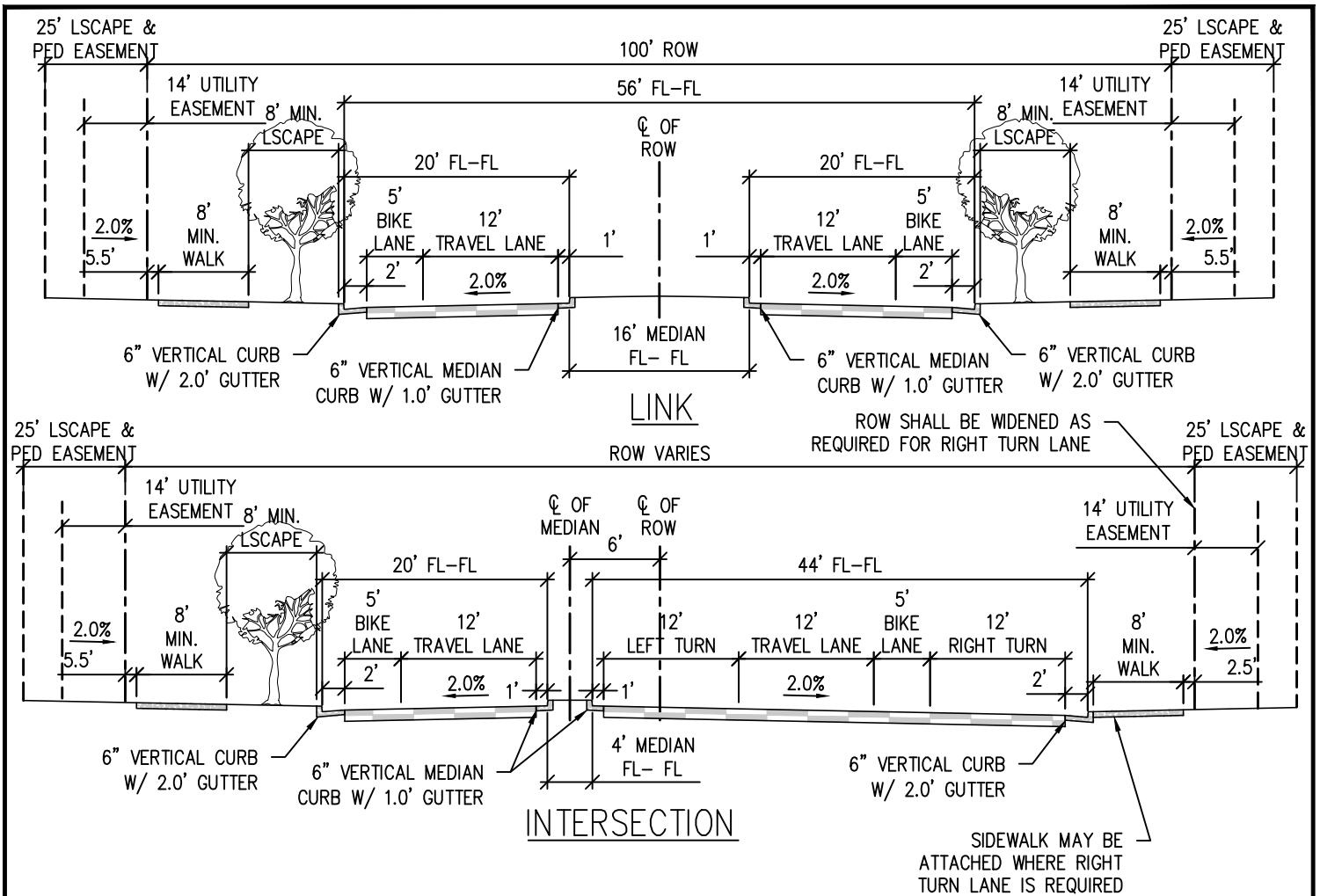


TOWN OF MEAD STANDARD DESIGN CRITERIA

4-LANE MAJOR ARTERIAL STREET

D3.01

DATE: 03/2018



ROADWAY WIDTH: 56' BETWEEN INTERSECTIONS; WIDEN AT INTERSECTIONS AS NEEDED.

RIGHT OF WAY WIDTH: 100' MIN. BETWEEN INTERSECTIONS; WIDEN AT INTERSECTIONS AS NEEDED.

TRAVEL LANES: 2 LANES AT 12' WIDE (EXCLUSIVE OF GUTTER).

LEFT TURN LANE: 12' WIDE, REQUIRED AT INTERSECTION.

BIKE LANES: 2 LANES, 5' WIDE MIN. (EXCLUSIVE OF GUTTER).

PARKING: NONE.

SIDEWALK: 8' MIN. WIDE IF DETACHED BY AT LEAST 8'. ADDITIONAL WIDTH MAY BE REQUIRED FOR HIGHER PEDESTRIAN TRAFFIC IN AND LEADING TO ACTIVITY AREAS. 8' MIN. WIDE DETACHED FOR REDEVELOPMENT.

MEDIAN: 16' WIDE (FLOWLINE TO FLOWLINE), 4' IN LEFT TURN AREA. COLORED CONCRETE, PAINTED, OR LANDSCAPED.

DESIGN SPEED: 45 MPH

POSTED SPEED: 40 MPH

ACCESS: NO PRIMARY ACCESS TO INDIVIDUAL LOTS PERMITTED. 1/4 MILE SPACING TO SIGNALIZED INTERSECTIONS IS REQUIRED.

CONTINUITY: UNLIMITED.

FENCES: FENCES SHALL BE PLACED OUTSIDE OF THE LANDSCAPING. (25' FROM ROW)

LANDSCAPING: TREE LAWN, MEDIAN, AND BUFFER AREA LANDSCAPING MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNER OR HOA.

CURB AND GUTTER: VERTICAL CURB AND GUTTER.

SIDEWALK MAY BE ATTACHED WHERE RIGHT TURN LANE IS REQUIRED

SCALE: NTS

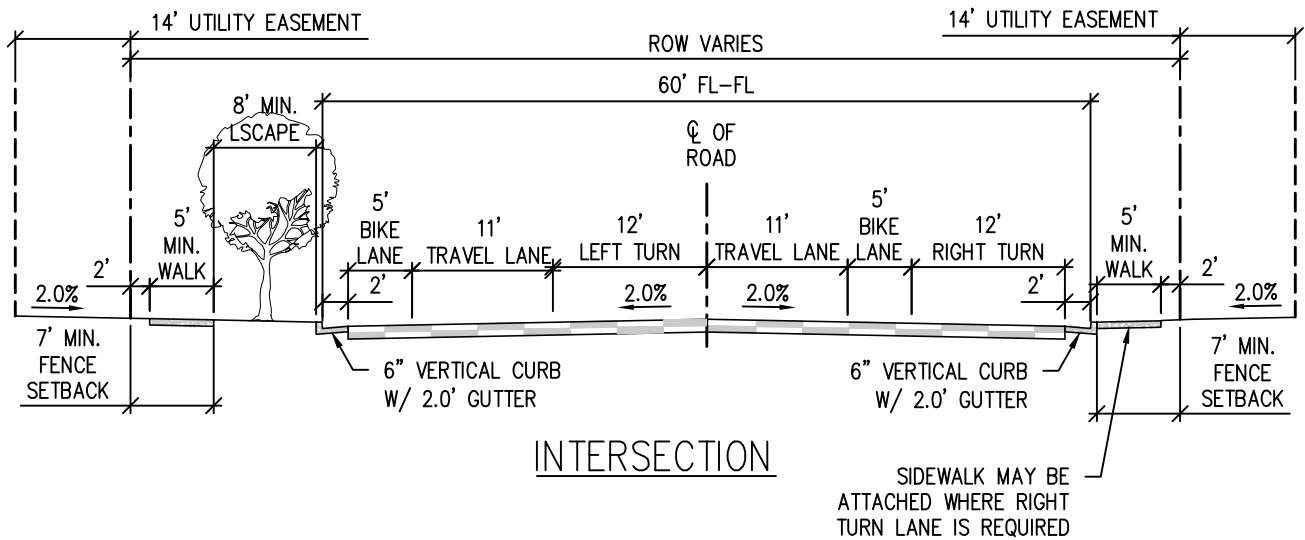
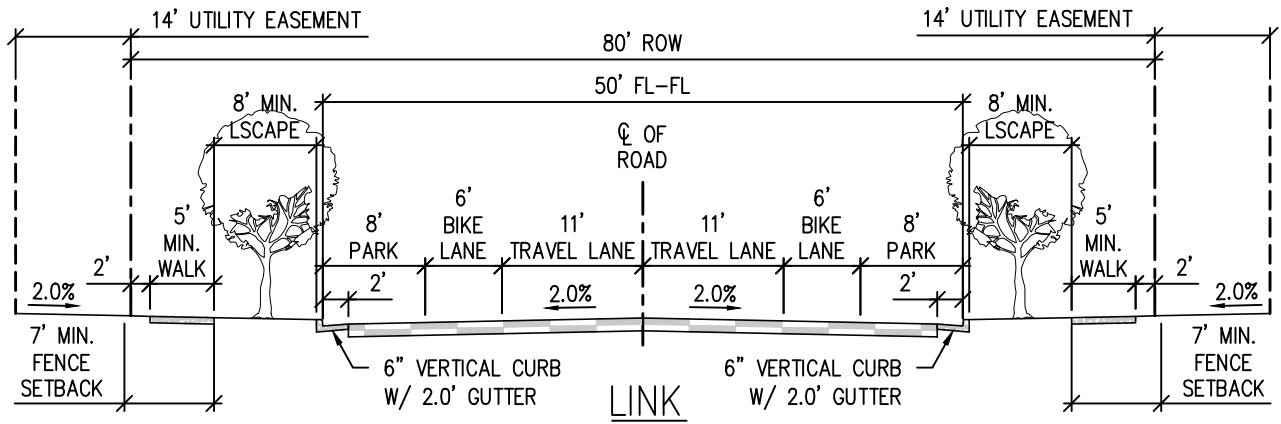


TOWN OF MEAD STANDARD DESIGN CRITERIA

2-LANE MINOR ARTERIAL STREET

D3.02

DATE: 03/2018



ROADWAY WIDTH: 50' BETWEEN INTERSECTIONS; WIDEN AT INTERSECTIONS AS NEEDED.

RIGHT OF WAY WIDTH: 80' MIN. BETWEEN INTERSECTIONS; WIDEN AT INTERSECTIONS AS NEEDED.

TRAVEL LANES: 2 LANES AT 11' WIDE (EXCLUSIVE OF GUTTER OR MIN. 12' WHERE NO GUTTER).

LEFT TURN LANE: 12' WIDE, AT INTERSECTION WHERE NEEDED.

BIKE LANES: 2 LANES, 6' WIDE MIN. (EXCLUSIVE OF GUTTER). 7' WIDE WHERE ADJACENT TO CURB.

PARKING: TWO LANES, 8' WIDE (MIN.); PARKING MAY BE REMOVED AT CERTAIN LOCATIONS TO PROVIDE A LEFT TURN LANE WHERE NEEDED.

SIDEWALK: 5' MIN. WIDE (MIN.) ADDITIONAL WIDTH MAY BE REQUIRED FOR HIGHER PEDESTRIAN TRAFFIC IN AND LEADING TO ACTIVITY AREAS.

MEDIAN: NOT REQUIRED, EXCEPT WHERE NECESSARY TO CONTROL ACCESS AND/OR TO PROVIDE PEDESTRIAN REFUGE. ADDITIONAL ROADWAY AND ROW WIDTH MAY BE REQUIRED.

DESIGN SPEED: 40 MPH

POSTED SPEED: 25-30 MPH

ACCESS: ACCESS WILL BE LIMITED. POINTS OF ACCESS MUST BE APPROVED BY THE LOCAL ENTITY.

CONTINUITY: THE STREET SHALL BE CONTINUOUS FOR NO MORE THAN 1,320 FT.

FENCES: FENCES SHALL BE PLACED OUTSIDE OF THE ROW.

LANDSCAPING: TREE LAWN, MEDIAN, AND BUFFER AREA LANDSCAPING MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNER OR HOA.

CURB AND GUTTER: VERTICAL CURB AND GUTTER.

SCALE: NTS

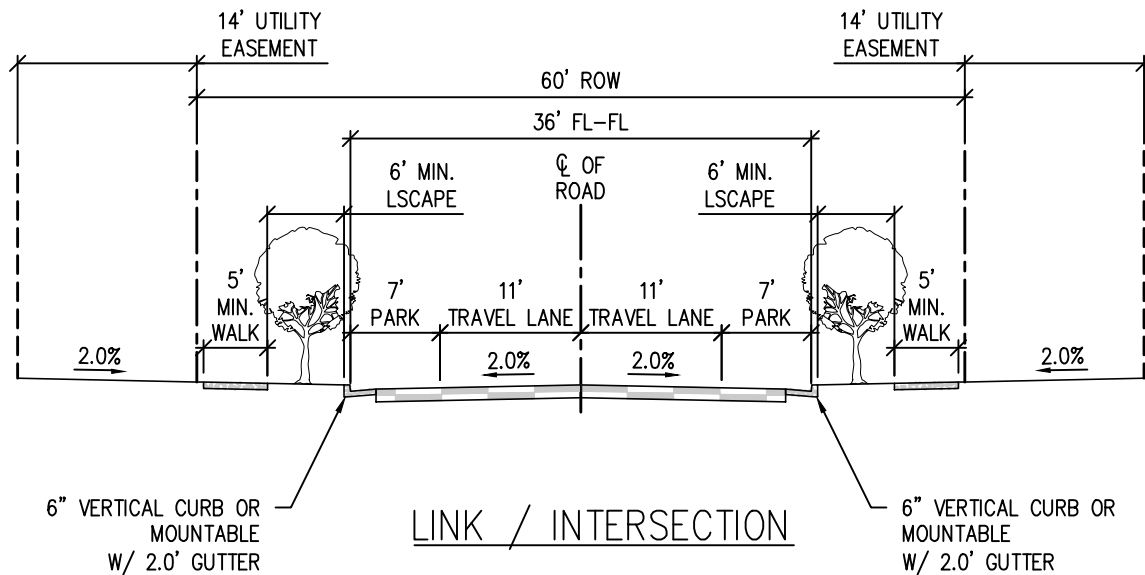


TOWN OF MEAD STANDARD DESIGN CRITERIA

MAJOR RESIDENTIAL COLLECTOR AND
BUSINESS COLLECTOR STREET

D3.03

DATE: 03/2018



LINK / INTERSECTION

ROADWAY WIDTH: 36' BETWEEN INTERSECTIONS; WIDEN AT INTERSECTIONS AS NEEDED.

RIGHT OF WAY WIDTH: 50' MIN.

TRAVEL LANES: 2 LANES AT 11' WIDE (EXCLUSIVE OF GUTTER OR MIN. 12' WHERE NO GUTTER).

LEFT TURN LANE: NONE.

BIKE LANES: SHARED STREET.

PARKING: TWO LANES, 7' WIDE SHARED WITH BIKE LANE.

SIDEWALK: 5' WIDE (MIN.) ADDITIONAL WIDTH MAY BE REQUIRED FOR HIGHER PEDESTRIAN TRAFFIC IN AND LEADING TO ACTIVITY AREAS.

MEDIAN: NOT REQUIRED, EXCEPT WHERE NECESSARY TO CONTROL ACCESS AND/OR TO PROVIDE PEDESTRIAN REFUGE. ADDITIONAL ROADWAY AND ROW WIDTH MAY BE REQUIRED.

DESIGN SPEED: 25 MPH

POSTED SPEED: 25 MPH

ACCESS: NO LIMIT.

CONTINUITY: THE STREET SHALL BE CONTINUOUS FOR NO MORE THAN 660 FT.

FENCES: FENCES SHALL BE PLACED OUTSIDE OF THE ROW.

LANDSCAPING: TREE LAWN, MEDIAN, AND BUFFER AREA LANDSCAPING MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNER OR HOA.

CURB AND GUTTER: VERTICAL OR MOUNTABLE CURB AND GUTTER.

SCALE: NTS

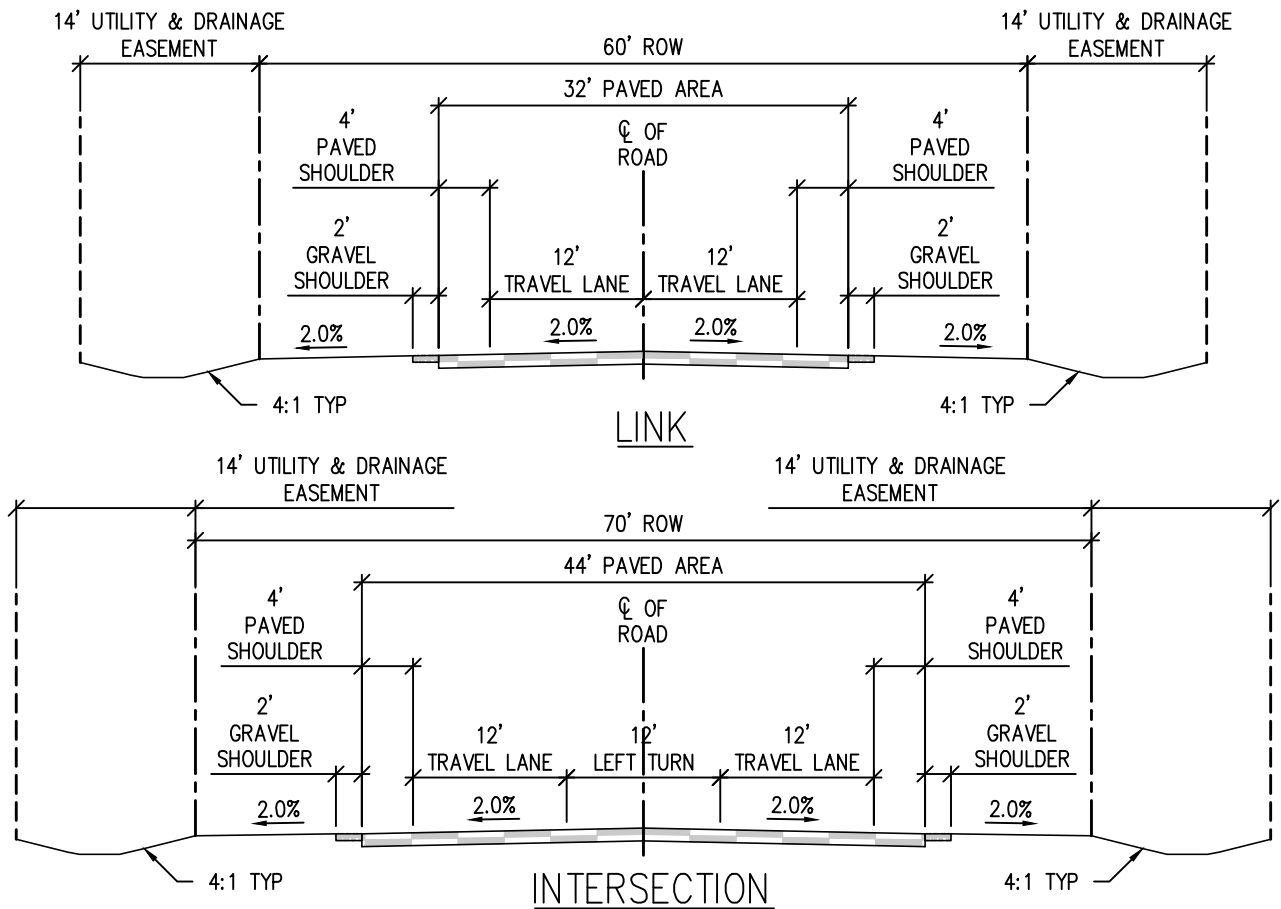


TOWN OF MEAD STANDARD DESIGN CRITERIA

RESIDENTIAL LOCAL STREET

D3.05

DATE: 03/2018



ROADWAY WIDTH: 32' BETWEEN INTERSECTIONS; 44' AT INTERSECTIONS WITH TURN LANE.

RIGHT OF WAY WIDTH: 60' MIN. BETWEEN INTERSECTIONS; WIDEN TO 70' AT INTERSECTIONS.

TRAVEL LANES: 2 LANES AT 12' WIDE.

LEFT TURN LANE: NONE.

BIKE LANES: SHARED STREET OR ON PAVED SHOULDER.

PARKING: NO PARKING PERMITTED ON ARTERIAL ROADS, SHOULDER MAY BE USED FOR OTHER ROADS.

SIDEWALK: NONE.

MEDIAN: NOT REQUIRED, EXCEPT WHERE NECESSARY TO CONTROL ACCESS AND/OR TO PROVIDE PEDESTRIAN REFUGE. ADDITIONAL ROADWAY AND ROW WIDTH MAY BE REQUIRED.

WHERE USED: THESE SPECIFICATIONS MAY BE USED FOR ESTATE TYPE DEVELOPMENTS GROSS DENSITY ≤ 2 DWELLING UNITS / ACRE OR WITHIN SEPARATOR OR TRANSITION AREAS AS RECOMMENDED IN OTHER STUDIES ADOPTED BY LOCAL ENTITIES.

DESIGN SPEED: ARTERIAL 45 MPH; COLLECTOR 40 MPH; LOCAL 30 MPH

POSTED SPEED: ARTERIAL 40 MPH; COLLECTOR 35 MPH; LOCAL 25 MPH

ACCESS: NO LIMIT.

CONTINUITY: UNLIMITED.

FENCES: NONE.

LANDSCAPING: NATIVE GRASS.

DRAINAGE MAINTENANCE: MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE ADJACENT PROPERTY OWNER OR HOA

CURB AND GUTTER: NONE.

SCALE: NTS



TOWN OF MEAD STANDARD DESIGN CRITERIA

RURAL ROAD

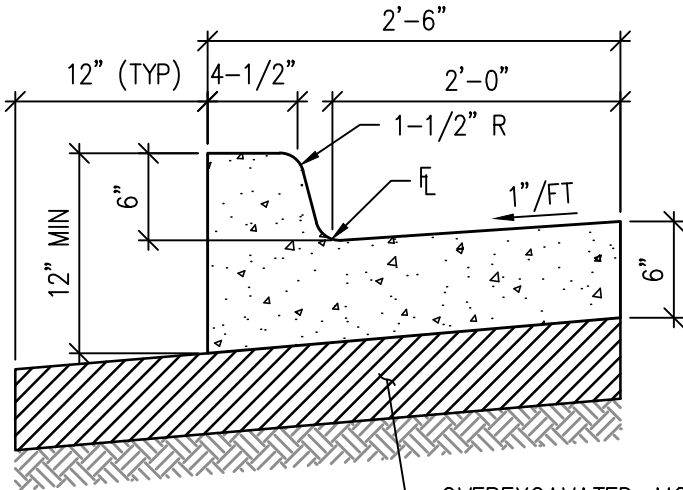
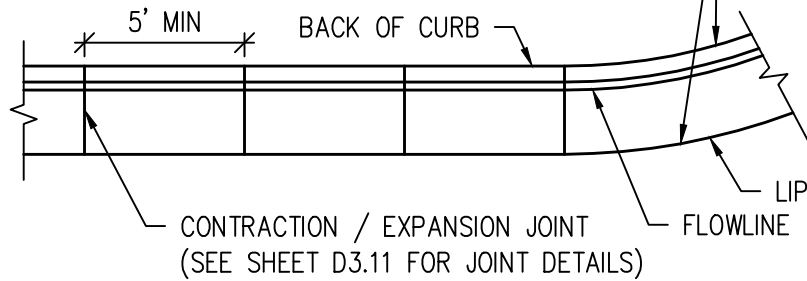
D3.06

DATE: 03/2018

EXPANSION JOINT FOR CONC PAVEMENT JOINTS
 NOT REQUIRED FOR LANDSCAPE OR ASPHALT
 (SEE SHEET D3.11 FOR JOINT DETAILS)

10' MAX
 5' MIN

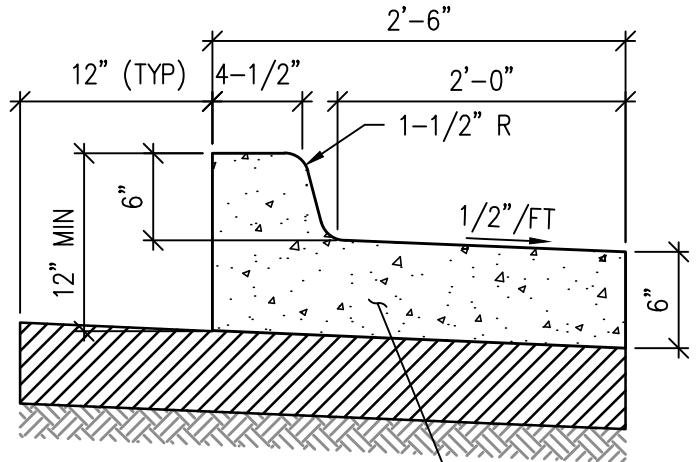
BACK OF CURB



CATCH

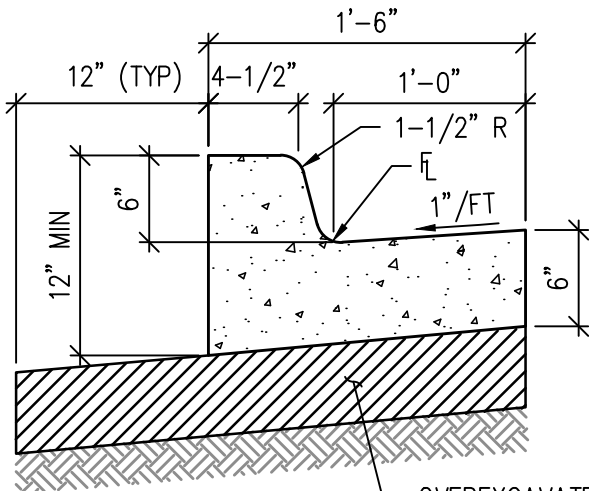
OVEREXCAVATED, MOISTURE-TREATED, AND
 RECOMPACTED SUBGRADE PER SPECIFICATIONS, (TYP)

2.0' CURB AND GUTTER



SPILL

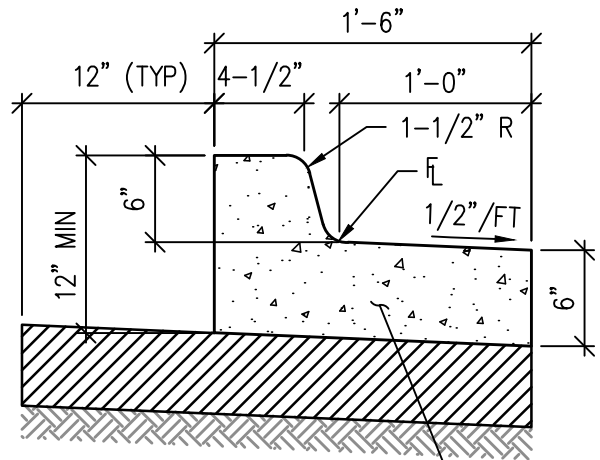
CONCRETE
 CURB AND
 GUTTER (TYP)



CATCH

OVEREXCAVATED, MOISTURE-TREATED, AND
 RECOMPACTED SUBGRADE PER SPECIFICATIONS, (TYP)

1' CURB AND GUTTER (MEDIAN)



SPILL

CONCRETE
 CURB AND
 GUTTER (TYP)

SCALE: NTS



TOWN OF MEAD STANDARD DESIGN CRITERIA

VERTICAL CURB AND GUTTER DETAIL

D3.07

DATE: 03/2018



TRANSPORTATION PLAN

Appendix B. Planning-Level Cost Estimates



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Mead Transportation Plan

Estimate of Conceptual Costs

4-Lane Urban Major Arterial (1.00 Mile)

Date Prepared: **October 12, 2018**

Item		Unit Cost	Quantity	Extended Cost	Notes
1	Earthwork	CY	32,853	\$821,333	
2	Aggregate Base Course (Class 6)	TON	20,365	\$1,018,248	12-inch depth
3	Hot Mix Asphalt (Grade S)(100)(PG 64-22)	TON	14,972	\$1,197,739	8-inch depth
4	Curb and Gutter	LF	21,120	\$739,200	C&G on both sides and along median
5	Concrete Sidewalk (6")	SY	9,387	\$750,933	8 foot (min) walk on each side
6	Median Cover Material	SF	84,480	\$844,800	16 foot median
7	Thermoplastic Pavement Markings (6")	SF	6,600	\$49,500	6-inch bike lane & skip line striping
8	Bike Lane Symbol	EA	42	\$11,616	
9	Landscaping	SF	84,480	\$168,960	8' zone btwn bike lane and walk
Total Major Items				\$5,603,000	
				% of Major Item Cost	
Total Major Items				\$5,603,000	A
Drainage / Utilities		% of A		8.0%	\$449,000 B-1
Environmental		% of A		5.0%	\$281,000 B-2
Miscellaneous		% of A		1.5%	\$85,000 B-3
Mobilization		% of A		9.3%	\$522,000 B-4
Removals / Resets		% of A		3.7%	\$208,000 B-5
Roadway		% of A		0.4%	\$23,000 B-6
Signing		% of A		1.0%	\$57,000 B-7
Traffic / Lighting / ITS		% of A		3.0%	\$169,000 B-8
Traffic Control / Detour		% of A		9.6%	\$538,000 B-9
Structural - Minor Structures / Walls		% of A		1.0%	\$57,000 B-10
Bid Force Accounts		% of A		1.4%	\$79,000 B-11
Total of Bid Construction Items				\$8,071,000	B
Force Account - Misc.		% of B		2.6%	\$210,000 C-1
Minor Contract Revisions		% of B		4.0%	\$323,000 C-2
Total of Bid Construction Items & Force Account Items				\$8,604,000	C
Design Engineering		% of C		8.0%	\$689,000 D-1
Construction Engineering		% of C		17.0%	\$1,463,000 D-2
Total Design & Construction Cost				\$10,756,000	D
Utilities		% of D		1.0%	\$108,000 E-1
Total Project, Design & Construction Cost				\$10,864,000	E
Contingency (Engineering & Utilities Only)		% of D1, D2, E1		2.0%	\$46,000 F
Total Project Cost Estimate				\$10,910,000	G

Mead Transportation Plan

Estimate of Conceptual Costs 2-Lane Urban Minor Arterial (Repaving) (1.00 Mile)

Date Prepared: **October 12, 2018**

Item		Unit Cost	Quantity	Extended Cost	Notes	
1	Earthwork	CY	\$25.00	9,387	\$234,667	
2	Removal of Asphalt Mat	SY	\$8.00	14,080	\$112,640	24-foot width
3	Aggregate Base Course (Class 6)	TON	\$50.00	11,236	\$561,792	12-inch depth
3	Hot Mix Asphalt (Grade S)(100)(PG 64-22)	TON	\$80.00	8,260	\$660,821	8-inch depth
4	Curb and Gutter	LF	\$35.00	21,120	\$739,200	C&G on both sides and along median
5	Concrete Sidewalk (6")	SY	\$80.00	9,387	\$750,933	8 foot (min) walk on each side
6	Median Cover Material	SF	\$10.00	52,800	\$528,000	16 foot median
7	Thermoplastic Pavement Markings (6")	SF	\$7.50	5,280	\$39,600	6-inch bike lane striping
8	Bike Lane Symbol	EA	\$275.00	42	\$11,616	
9	Landscaping	SF	\$2.00	63,360	\$126,720	6' zone btwn bike lane and walk
Total Major Items					\$3,766,000	
				% of Major Item Cost		
Total Major Items					\$3,766,000	A
Drainage / Utilities		% of A		8.0%	\$302,000	B-1
Environmental		% of A		5.0%	\$189,000	B-2
Miscellaneous		% of A		1.5%	\$57,000	B-3
Mobilization		% of A		9.3%	\$351,000	B-4
Removals / Resets		% of A		3.7%	\$140,000	B-5
Roadway		% of A		0.4%	\$16,000	B-6
Signing		% of A		1.0%	\$38,000	B-7
Traffic / Lighting / ITS		% of A		3.0%	\$113,000	B-8
Traffic Control / Detour		% of A		9.6%	\$362,000	B-9
Structural - Minor Structures / Walls		% of A		1.0%	\$38,000	B-10
Bid Force Accounts		% of A		1.4%	\$53,000	B-11
Total of Bid Construction Items					\$5,425,000	B
Force Account - Misc.		% of B		2.6%	\$142,000	C-1
Minor Contract Revisions		% of B		4.0%	\$217,000	C-2
Total of Bid Construction Items & Force Account Items					\$5,784,000	C
Design Engineering		% of C		8.0%	\$463,000	D-1
Construction Engineering		% of C		17.0%	\$984,000	D-2
Total Design & Construction Cost					\$7,231,000	D
Utilities		% of D		1.0%	\$73,000	E-1
Total Project, Design & Construction Cost					\$7,304,000	E
Contingency (Engineering & Utilities Only)		% of D1, D2, E1		2.0%	\$31,000	F
Total Project Cost Estimate					\$7,335,000	G

Mead Transportation Plan

Estimate of Conceptual Costs 2-Lane Urban Minor Arterial (New) (1.00 Mile)

Date Prepared: **October 12, 2018**

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	20,338	\$508,444	
2 Aggregate Base Course (Class 6)	TON	\$50.00	11,236	\$561,792	12-inch depth
3 Hot Mix Asphalt (Grade S)(100)(PG 64-22)	TON	\$80.00	8,260	\$660,821	8-inch depth
4 Curb and Gutter	LF	\$35.00	21,120	\$739,200	C&G on both sides and along median
5 Concrete Sidewalk (6")	SY	\$80.00	9,387	\$750,933	8 foot (min) walk on each side
6 Median Cover Material	SF	\$10.00	52,800	\$528,000	16 foot median
7 Thermoplastic Pavement Markings (6")	SF	\$7.50	5,280	\$39,600	6-inch bike lane striping
8 Bike Lane Symbol	EA	\$275.00	42	\$11,616	
9 Landscaping	SF	\$2.00	63,360	\$126,720	6' zone btwn bike lane and walk
Total Major Items				\$3,928,000	
				% of Major Item Cost	
Total Major Items				\$3,928,000	A
Drainage / Utilities	% of A		8.0%	\$315,000	B-1
Environmental	% of A		5.0%	\$197,000	B-2
Miscellaneous	% of A		1.5%	\$59,000	B-3
Mobilization	% of A		9.3%	\$366,000	B-4
Removals / Resets	% of A		3.7%	\$146,000	B-5
Roadway	% of A		0.4%	\$16,000	B-6
Signing	% of A		1.0%	\$40,000	B-7
Traffic / Lighting / ITS	% of A		3.0%	\$118,000	B-8
Traffic Control / Detour	% of A		9.6%	\$378,000	B-9
Structural - Minor Structures / Walls	% of A		1.0%	\$40,000	B-10
Bid Force Accounts	% of A		1.4%	\$55,000	B-11
Total of Bid Construction Items				\$5,658,000	B
Force Account - Misc.	% of B		2.6%	\$148,000	C-1
Minor Contract Revisions	% of B		4.0%	\$227,000	C-2
Total of Bid Construction Items & Force Account Items				\$6,033,000	C
Design Engineering	% of C		8.0%	\$483,000	D-1
Construction Engineering	% of C		17.0%	\$1,026,000	D-2
Total Design & Construction Cost				\$7,542,000	D
Utilities	% of D		1.0%	\$76,000	E-1
Total Project, Design & Construction Cost				\$7,618,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$32,000	F
Total Project Cost Estimate				\$7,650,000	G

Mead Transportation Plan

Estimate of Conceptual Costs

2-Lane Rural Road (Paving)
(1.00 Mile)

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	2,347	\$58,667	
3 Aggregate Base Course (Class 6)	TON	\$50.00	1,404	\$70,224	6-inch depth under shoulders
4 Hot Mix Asphalt (Grade S)(100)(PG 64-22)	TON	\$80.00	6,195	\$495,616	8-inch depth
5 Gravel Shoulder Material	CY	\$50.00	391	\$19,556	6-inch depth
Total Major Items				\$645,000	
				% of Major Item Cost	
Total Major Items				\$645,000	A
Drainage / Utilities	% of A		5.0%	\$33,000	B-1
Environmental	% of A		5.0%	\$33,000	B-2
Miscellaneous	% of A		1.5%	\$10,000	B-3
Mobilization	% of A		9.3%	\$60,000	B-4
Removals / Resets	% of A		3.7%	\$24,000	B-5
Roadway	% of A		0.4%	\$3,000	B-6
Signing & Striping	% of A		2.1%	\$14,000	B-7
Traffic / Lighting / ITS	% of A		3.0%	\$20,000	B-8
Traffic Control / Detour	% of A		9.6%	\$62,000	B-9
Structural - Minor Structures / Walls	% of A		1.0%	\$7,000	B-10
Bid Force Accounts	% of A		1.4%	\$10,000	B-11
Total of Bid Construction Items				\$921,000	B
Force Account - Misc.	% of B		2.6%	\$24,000	C-1
Minor Contract Revisions	% of B		4.0%	\$37,000	C-2
Total of Bid Construction Items & Force Account Items				\$982,000	C
Design Engineering	% of C		8.0%	\$79,000	D-1
Construction Engineering	% of C		17.0%	\$167,000	D-2
Total Design & Construction Cost				\$1,228,000	D
Utilities	% of D		1.0%	\$13,000	E-1
Total Project, Design & Construction Cost				\$1,241,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$6,000	F
Total Project Cost Estimate				\$1,247,000	G

Mead Transportation Plan

Estimate of Conceptual Costs

**2-Lane Rural Road (Repaving)
(1.00 Mile)**

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	7,040	\$176,000	
2 Removal of Asphalt Mat	SY	\$8.00	14,080	\$112,640	24-foot width
3 Aggregate Base Course (Class 6)	TON	\$50.00	5,618	\$280,896	6-inch depth
4 Hot Mix Asphalt (Grade S)(100)(PG 64-22)	TON	\$80.00	8,260	\$660,821	8-inch depth
5 Gravel Shoulder Material	CY	\$50.00	391	\$19,556	6-inch depth
Total Major Items				\$1,250,000	
				% of Major Item Cost	
Total Major Items				\$1,250,000	A
Drainage / Utilities	% of A		5.0%	\$63,000	B-1
Environmental	% of A		5.0%	\$63,000	B-2
Miscellaneous	% of A		1.5%	\$19,000	B-3
Mobilization	% of A		9.3%	\$117,000	B-4
Removals / Resets	% of A		3.7%	\$47,000	B-5
Roadway	% of A		0.4%	\$5,000	B-6
Signing & Striping	% of A		2.1%	\$27,000	B-7
Traffic / Lighting / ITS	% of A		3.0%	\$38,000	B-8
Traffic Control / Detour	% of A		9.6%	\$120,000	B-9
Structural - Minor Structures / Walls	% of A		1.0%	\$13,000	B-10
Bid Force Accounts	% of A		1.4%	\$18,000	B-11
Total of Bid Construction Items				\$1,780,000	B
Force Account - Misc.	% of B		2.6%	\$47,000	C-1
Minor Contract Revisions	% of B		4.0%	\$72,000	C-2
Total of Bid Construction Items & Force Account Items				\$1,899,000	C
Design Engineering	% of C		8.0%	\$152,000	D-1
Construction Engineering	% of C		17.0%	\$323,000	D-2
Total Design & Construction Cost				\$2,374,000	D
Utilities	% of D		1.0%	\$24,000	E-1
Total Project, Design & Construction Cost				\$2,398,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$10,000	F
Total Project Cost Estimate				\$2,408,000	G

Mead Transportation Plan

Estimate of Conceptual Costs

**2-Lane Rural Road (New)
(1.00 Mile)**

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	15,644	\$391,111	
2 Aggregate Base Course (Class 6)	TON	\$50.00	5,618	\$280,896	6-inch depth
3 Hot Mix Asphalt (Grade S)(100)(PG 64-22)	TON	\$80.00	8,260	\$660,821	8-inch depth
4 Gravel Shoulder Material	CY	\$50.00	391	\$19,556	6-inch depth
Total Major Items				\$1,353,000	
				% of Major Item Cost	
Total Major Items				\$1,353,000	A
Drainage / Utilities	% of A		8.0%	\$109,000	B-1
Environmental	% of A		5.0%	\$68,000	B-2
Miscellaneous	% of A		1.5%	\$21,000	B-3
Mobilization	% of A		9.3%	\$126,000	B-4
Removals / Resets	% of A		3.7%	\$51,000	B-5
Roadway	% of A		0.4%	\$6,000	B-6
Signing & Striping	% of A		2.1%	\$29,000	B-7
Traffic / Lighting / ITS	% of A		3.0%	\$41,000	B-8
Traffic Control / Detour	% of A		9.6%	\$130,000	B-9
Structural - Minor Structures / Walls	% of A		1.0%	\$14,000	B-10
Bid Force Accounts	% of A		1.4%	\$19,000	B-11
Total of Bid Construction Items				\$1,967,000	B
Force Account - Misc.	% of B		2.6%	\$52,000	C-1
Minor Contract Revisions	% of B		4.0%	\$79,000	C-2
Total of Bid Construction Items & Force Account Items				\$2,098,000	C
Design Engineering	% of C		8.0%	\$168,000	D-1
Construction Engineering	% of C		17.0%	\$357,000	D-2
Total Design & Construction Cost				\$2,623,000	D
Utilities	% of D		1.0%	\$27,000	E-1
Total Project, Design & Construction Cost				\$2,650,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$12,000	F
Total Project Cost Estimate				\$2,662,000	G

Mead Transportation Plan

Estimate of Conceptual Costs

**10' Concrete Trail
(1.00 Mile)**

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	2,738	\$68,444	
2 Aggregate Base Course (Class 6)	TON	\$50.00	3,511	\$175,560	12-inch depth
3 Concrete Sidewalk (6")	SY	\$80.00	5,867	\$469,333	10 foot trail
4 Mobilization	LS	\$1,000.00	1	\$1,000	
Total Major Items				\$715,000	
				% of Major Item Cost	
Total Major Items				\$715,000	A
Drainage / Utilities	% of A		8.0%	\$58,000	B-1
Environmental	% of A		5.0%	\$36,000	B-2
Miscellaneous	% of A		1.5%	\$11,000	B-3
Removals / Resets	% of A		3.7%	\$27,000	B-4
Roadway	% of A		0.4%	\$3,000	B-5
Signing and Striping	% of A		2.1%	\$16,000	B-6
Traffic Control / Detour	% of A		9.6%	\$69,000	B-7
Structural - Minor Structures / Walls	% of A		1.0%	\$8,000	B-8
Bid Force Accounts	% of A		1.4%	\$11,000	B-9
Total of Bid Construction Items				\$954,000	B
Force Account - Misc.	% of B		2.6%	\$25,000	C-1
Minor Contract Revisions	% of B		4.0%	\$39,000	C-2
Total of Bid Construction Items & Force Account Items				\$1,018,000	C
Design Engineering	% of C		8.0%	\$82,000	D-1
Construction Engineering	% of C		17.0%	\$174,000	D-2
Total Design & Construction Cost				\$1,274,000	D
Utilities	% of D		1.0%	\$13,000	E-1
Total Project, Design & Construction Cost				\$1,287,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$6,000	F
Total Project Cost Estimate				\$1,293,000	G

Mead Transportation Plan

Estimate of Conceptual Costs

**10' Crusher Fines Trail
(1.00 Mile)**

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	2,738	\$68,444	
2 Aggregate Base Course (Class 6)	TON	\$50.00	3,511	\$175,560	12-inch depth
3 Crusher Fines	CY	\$25.00	978	\$24,444	10 foot trail
4 Mobilization	LS	\$1,000.00	1	\$1,000	
Total Major Items				\$270,000	
				% of Major Item Cost	
Total Major Items				\$270,000	A
Drainage / Utilities		% of A		8.0%	\$22,000 B-1
Environmental		% of A		5.0%	\$14,000 B-2
Miscellaneous		% of A		1.5%	\$5,000 B-3
Removals / Resets		% of A		3.7%	\$10,000 B-4
Roadway		% of A		0.4%	\$2,000 B-5
Signing and Striping		% of A		2.1%	\$6,000 B-6
Traffic Control / Detour		% of A		9.6%	\$26,000 B-7
Structural - Minor Structures / Walls		% of A		1.0%	\$3,000 B-8
Bid Force Accounts		% of A		1.4%	\$4,000 B-9
Total of Bid Construction Items					\$362,000 B
Force Account - Misc.		% of B		2.6%	\$10,000 C-1
Minor Contract Revisions		% of B		4.0%	\$15,000 C-2
Total of Bid Construction Items & Force Account Items					\$387,000 C
Design Engineering		% of C		8.0%	\$31,000 D-1
Construction Engineering		% of C		17.0%	\$66,000 D-2
Total Design & Construction Cost					\$484,000 D
Utilities		% of D		1.0%	\$5,000 E-1
Total Project, Design & Construction Cost					\$489,000 E
Contingency (Engineering & Utilities Only)		% of D1, D2, E1		2.0%	\$3,000 F
Total Project Cost Estimate					\$492,000 G

Mead Transportation Plan

Estimate of Conceptual Costs

**8' Sidewalk
(1.00 Mile)**

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	2,347	\$58,667	
2 Aggregate Base Course (Class 6)	TON	\$50.00	2,809	\$140,448	12-inch depth
3 Concrete Sidewalk (6")	SY	\$80.00	4,693	\$375,467	8 foot sidewalk
4 Mobilization	LS	\$1,000.00	1	\$1,000	
Total Major Items				\$576,000	
				% of Major Item Cost	
Total Major Items					\$576,000
Drainage / Utilities	% of A		8.0%	\$47,000	B-1
Environmental	% of A		5.0%	\$29,000	B-2
Miscellaneous	% of A		1.5%	\$9,000	B-3
Removals / Resets	% of A		3.7%	\$22,000	B-4
Roadway	% of A		0.4%	\$3,000	B-5
Signing and Striping	% of A		1.0%	\$6,000	B-6
Traffic Control / Detour	% of A		2.0%	\$12,000	B-7
Structural - Minor Structures / Walls	% of A		1.0%	\$6,000	B-8
Bid Force Accounts	% of A		1.4%	\$9,000	B-9
Total of Bid Construction Items				\$719,000	B
Force Account - Misc.	% of B		2.6%	\$19,000	C-1
Minor Contract Revisions	% of B		4.0%	\$29,000	C-2
Total of Bid Construction Items & Force Account Items				\$767,000	C
Design Engineering	% of C		8.0%	\$62,000	D-1
Construction Engineering	% of C		17.0%	\$131,000	D-2
Total Design & Construction Cost				\$960,000	D
Utilities	% of D		1.0%	\$10,000	E-1
Total Project, Design & Construction Cost				\$970,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$5,000	F
Total Project Cost Estimate				\$975,000	G

Mead Transportation Plan

Estimate of Conceptual Costs

**5' Sidewalk
(1.00 Mile)**

Date Prepared: October 12, 2018

Item		Unit Cost	Quantity	Extended Cost	Notes
1 Earthwork	CY	\$25.00	1,760	\$44,000	
2 Aggregate Base Course (Class 6)	TON	\$50.00	1,756	\$87,780	12-inch depth
3 Concrete Sidewalk (6")	SY	\$80.00	2,933	\$234,667	5 foot sidewalk
4 Mobilization	LS	\$1,000.00	1	\$1,000	
Total Major Items				\$368,000	
				% of Major Item Cost	
Total Major Items				\$368,000	A
Drainage / Utilities	% of A		8.0%	\$30,000	B-1
Environmental	% of A		5.0%	\$19,000	B-2
Miscellaneous	% of A		1.5%	\$6,000	B-3
Removals / Resets	% of A		3.7%	\$14,000	B-4
Roadway	% of A		0.4%	\$2,000	B-5
Signing and Striping	% of A		1.0%	\$4,000	B-6
Traffic Control / Detour	% of A		2.0%	\$8,000	B-7
Structural - Minor Structures / Walls	% of A		1.0%	\$4,000	B-8
Bid Force Accounts	% of A		1.4%	\$6,000	B-9
Total of Bid Construction Items				\$461,000	B
Force Account - Misc.	% of B		2.6%	\$12,000	C-1
Minor Contract Revisions	% of B		4.0%	\$19,000	C-2
Total of Bid Construction Items & Force Account Items				\$492,000	C
Design Engineering	% of C		8.0%	\$40,000	D-1
Construction Engineering	% of C		17.0%	\$84,000	D-2
Total Design & Construction Cost				\$616,000	D
Utilities	% of D		1.0%	\$7,000	E-1
Total Project, Design & Construction Cost				\$623,000	E
Contingency (Engineering & Utilities Only)	% of D1, D2, E1		2.0%	\$3,000	F
Total Project Cost Estimate				\$626,000	G



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