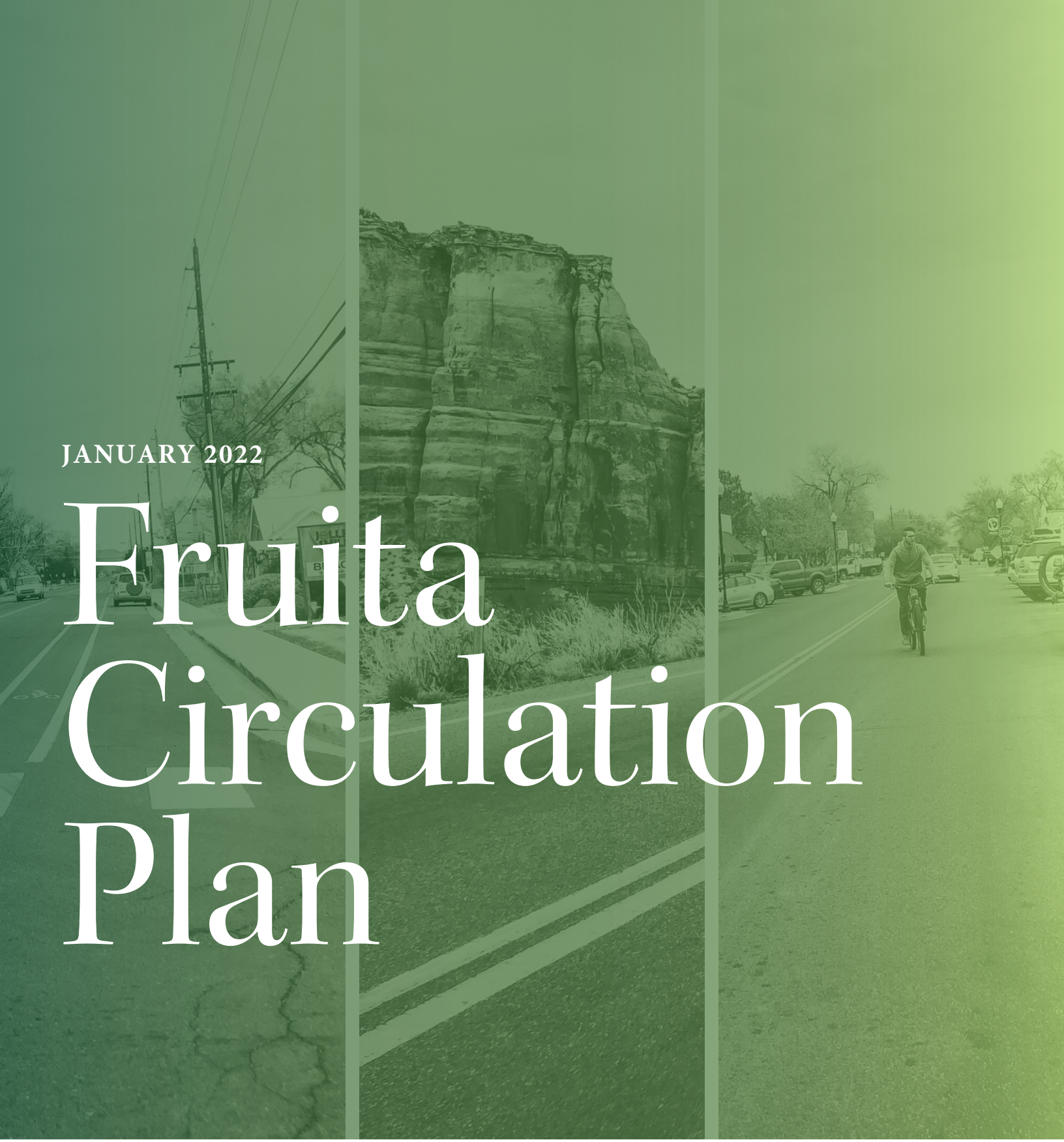

JANUARY 2022

Fruita Circulation Plan

PREPARED FOR

City of Fruita

PREPARED BY

Fehr & Peers

JUB

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Executive Summary

The Fruita Circulation Plan provides a path to move the City of Fruita towards the following vision, established as a part of this planning process:

The City of Fruita has a safe, convenient, and well-maintained multimodal street network that equitably serves all users traveling within or through the City. It has a transportation system that balances access and mobility through multimodal improvements on existing roads as well as coordinated planning with new development. Transportation facilities contribute to the character of the community by providing inviting streetscapes, off-street connections, and attractive gateways to the community.

The Circulation Plan was created through a community-based, data driven process between November 2021 and October 2022. Comprehensive public and stakeholder engagement, both virtual and in-person, was essential in informing existing challenges and proposed solutions. The outcomes from community engagement were considered in tandem with an existing conditions analysis, data collection, and field observations. The recommendations span four primary categories:

- Pedestrian enhancements
- Bicycle enhancements
- Multimodal and street enhancements
- Policies and programs

All infrastructure projects were prioritized based on how well they met the City's goals and are supported by the community. Planning level costs were also determined in order to develop a fiscally constrained plan for the short, medium, and long-term. This phasing provides guidance for the City to continue to enhance and expand the multimodal transportation system as funding becomes available in order to create a comfortable transportation experience for all ages and abilities.

Maps of recommendations as a part of this plan are shown in 11 x 17 in **Appendix I**.

Fruita's Transportation Vision

The following vision was established by building off of previous planning efforts and a comprehensive community engagement process. This vision serves as a guidepost for the City for both short-term implementation and long-term planning.

The City of Fruita has a safe, convenient, and well-maintained multimodal street network that equitably serves all users traveling within or through the City. It has a transportation system that balances access and mobility through multimodal improvements on existing roads as well as coordinated planning with new development. Transportation facilities contribute to the character of the community by providing inviting streetscapes, off-street connections, and attractive gateways to the community.

Planning Process

The Fruita Circulation Plan was informed by a comprehensive outreach process that gathered input from many residents, employees, and stakeholders from across the City. The goals of the engagement process are to empower the broader community, create public awareness and interest, provide decision-makers with guidance and continued involvement, and maintain communication through multiple channels. The project took a multi-pronged approach to seeking feedback to ensure there was a method and available time for all community members to provide meaningful input. Public outreach occurred through online surveys, an interactive mapping tool, an in-person community meeting, an intercept event, print and media relations, and detailed information provided on the Plan website. Outreach related to transportation from the recent Comprehensive Plan was also used to inform the Circulation Plan. Outreach was collected in two phases, as described further in this section.

Phase I

The first phase of outreach was completed in February-March 2021 in order to supplement the existing conditions analysis and better understand the current challenges and barriers to travel within and through Fruita. This included an online survey and webmap, which received almost 300 responses. This information was critical in informing the plan's recommendations and priorities.

Phase II

The second phase of outreach was completed in July-August 2021. This phase of outreach presented draft recommendations to community members, seeking input on tweaks or additions to this set of multimodal recommendations. Summer outreach also sought feedback on priorities, to inform the short, medium and long-term project lists presented in this Plan. Outreach in Phase II included a virtual component (online survey) and in-person component (open house and tabling at the Farmers Market).

Key Themes

The key themes that emerged from the outreach process are as follows:

- Improved connection across the railroad on the east side of the City
- Appreciation for the current trail network but desire to have improved access and signage to navigate to trails
- More wayfinding and information signage
- Awareness and education for all users on sharing the road between people driving and people biking and increase compliance of traffic laws
- Confusion at the roundabouts on SH 340
- Confusion of the roundabout around Circle Park
- Accommodating growth in travel demand as Fruita expands and densifies

- Unsafe and inefficient conditions for all modes near the schools
- Unsafe and inefficient conditions for all modes near the City Market
- Completion of missing sidewalk gaps
- Improved sidewalk maintenance

Existing Conditions

The Circulation Plan must be underpinned by a thorough understanding of the current transportation network and how it serves Fruita and the surrounding region. See **Appendix A** for the complete Existing Conditions Memorandum.

The *Circulation Plan* updates and builds off the recommendations, goals, objectives, and vision set by recent plans for all transportation modes. It considers and is consistent with the community's priorities and values identified in these planning efforts while also performing its own comprehensive outreach effort acknowledging that these values evolve over time. With that, this plan reviewed the following previous planning efforts:

- Land Use Code Update (current)
- Parks, Health, Recreation, Open Space and Trails Plan (2020)
- Fruita in Motion Comprehensive Plan (2020)
- Grand Valley Regional Transportation Plan (2019)
- Pedestrian and Bicycle Circulation Study (2011)

In addition to the previous plans review, an overview of existing conditions by category is included in Appendix A. This section includes a summary of the City of Fruita's roadway network, bicycle and pedestrian networks, and transit network.

The City of Fruita has just over 110 total miles of roadway. I-70, Highway 340, and Highway 6 provide regional connections to nearby communities while a network of arterials and collector streets serve local mobility needs.

The City's bicycle network consists of off-street facilities (trails) and on-street facilities (bike lanes and wide shoulders). The City of Fruita currently has strong backbones of a bicycle network with almost 30 miles of City trails, just under 9 miles of wide shoulders, and two miles of bike lanes. This network is missing key connections, which will be addressed as a part of the *Circulation Plan*.

The City of Fruita currently has a robust sidewalk network. The City has 110 miles of existing sidewalk; however, only 400 feet of that sidewalk is wider than four feet. There are 21 miles of missing sidewalks within City limits. Areas with sidewalk gaps are primarily on the outer edge of the City where pedestrian demand is lower.

Grand Valley Transit (GVT) operates one route within Fruita, Route 8. Route 8 operates at an hourly frequency from 5:00 am to 8:30 pm and travels between Grand Junction's West Transfer Facility and Fruita.

Big Moves

Fruita's Active Circulation Plan leads with three Big Moves. These Big Moves represent areas of broad importance to the Fruita community that require complex solutions. In some cases, short-term improvements or projects can help address the problems associated with these Big Moves. In other cases, long-term investments are necessary.

Additional Crossings of Major Barriers

The Problem

Multiple major barriers bisect Fruita and create connectivity challenges. Interstate 70 (I-70) and the Union Pacific Railroad (UPRR) are the most significant barriers, although the US Highway 6 (US-6) and the Colorado River are also barriers. Currently, there is one multimodal overcrossing of I-70 and the UPRR at State Highway 340 (SH 340), and an additional trail crossing west of SH 340 along Little Salt Wash.

For people driving, these barriers require out-of-direction travel and concentrate inter-City traffic on a limited number of streets. For people walking and biking, the out-of-direction travel distance that these barriers create makes walking and biking inconvenient. Additionally, people walking and biking crossing at SH 340 must use a multi-use path with little horizontal separation from moving traffic and navigate turning conflicts at intersections on either side. City staff indicated that they have received concerns from community members in the past regarding south Fruita residents, and students, crossing I-70 and the UPRR at-grade to avoid walking out-of-direction to SH 340. Community members also identified these concerns in the Active Circulation Plan survey.

Recommendations

Fruita should pursue additional crossings of major barriers. In the near-term, raising the fence on the east side of the SH 340 overcrossing can improve the perceived safety of the multi-use path. Additionally, fencing along the UPRR and I-70 near Fruita Monument High School would discourage at-grade pedestrian crossings. In the long-term, Fruita should pursue new grade separated crossings of these barriers. The highest priority for a new grade separated crossing is near Fruita Monument High School. A later priority is for a separate multi-use trail crossing parallel to SH 340.

Figure 1: Additional crossing opportunities

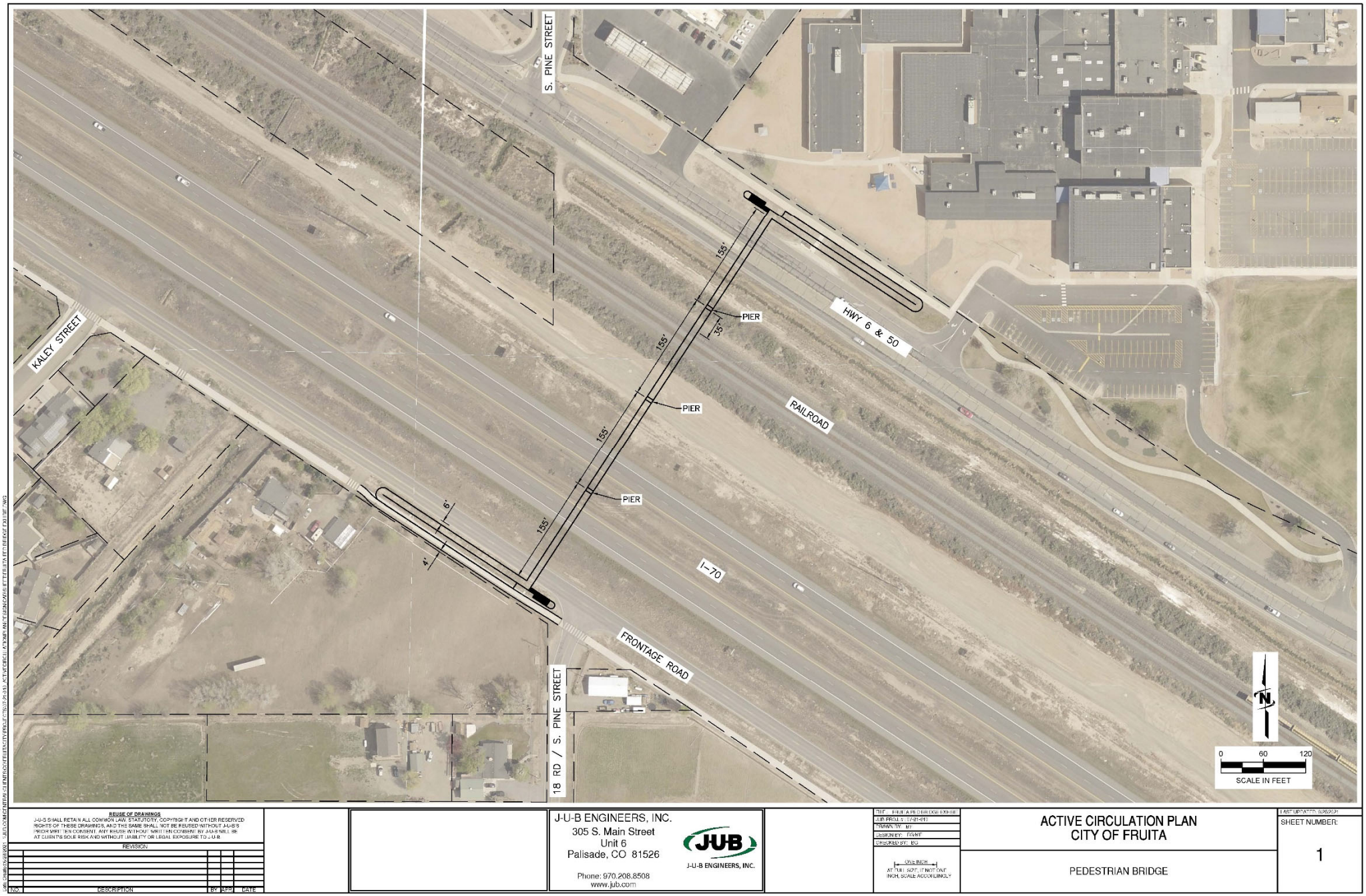
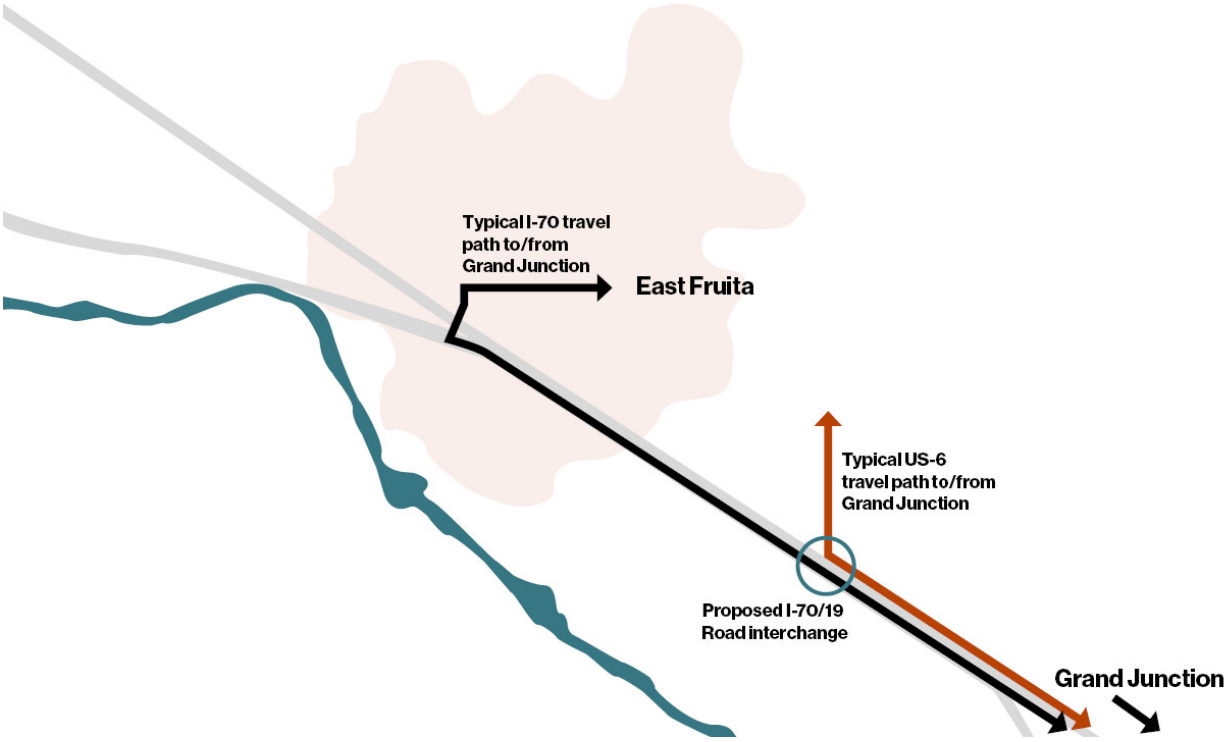


Figure 2: Conceptual design of Fruita Monument High School crossing

Connections from East Fruita to Grand Junction

The Problem

Fruita residents, workers, and visitors frequently travel between Fruita, Grand Junction, and other points east of Fruita. Additionally, most of Fruita's future land use growth will occur on the east side of the City. Currently, I-70 and U-6 accommodate most regional travel between Fruita and other parts of the region. However, there is only one I-70 interchange in Fruita at SH 340, generally towards the west side of the City. This limited I-70 connectivity creates out-of-direction travel and contributes to high through traffic volumes through downtown Fruita on Aspen Avenue. This lack of connectivity also increases the number of regional through trips on US-6 that I-70 would better serve.



Recommendations

The *Grand Valley 2045 Regional Transportation Plan Update* includes two projects that will help address this problem. Fruita should support these projects and collaborate with regional partners on their implementation.

US-6 corridor and intersection improvements: this is a CDOT 1–4-year project between 15 Road and 22 Road that will add a center turn lane and other intersection turn lane improvements.

I-70 and 19 Road interchange: this is a long-term project to add a new, full-access interchange to I-70 at 19 Road.

Encourage East-West Connectivity other than Aspen Avenue

The Problem

Many people headed from I-70 to east Fruita use Aspen Avenue as a through street. Multiple characteristics of the built environment contribute to this: limited connectivity from I-70 to east Fruita, limited crossings of the Independent Ranchmens Ditch, and the design and operation of intersections that encourage this through traffic. East of Plum Street and Mesa Street, downtown Fruita is pedestrian-oriented with high numbers of people walking and biking along and across streets. Community members identified concerns walking and biking along and across Aspen Avenue in downtown Fruita in the Active Circulation Plan survey.

Recommendations

Over time, Fruita should design and operate the street network to discourage through traffic on Aspen Avenue. Decisions to support this recommendation may include expensive, long-term solutions such as the I-70 and 19 Road interchange to create alternate routes between I-70 and east Fruita or additional crossings of the Independent Ranchmens Ditch. However, the City can also use shorter-term solutions such as the orientation of STOP signs in the area and the signal operations/timing at the SH 340/Aspen Avenue intersection to discourage through traffic on Aspen Avenue. Pabor Avenue, McCune Avenue, and US-6 are the primary alternate through routes from SH 340 to destinations east of downtown.

Street Functional Classification

Figure 9 shows Fruita's proposed Street Functional Classification Map. This map and other maps of recommendations as a part of this plan are shown in 11 x 17 in **Appendix I**. Fruita uses five functional classifications: Major Arterial, Minor Arterial, Major Collector, Minor Collector, and Residential. **Appendix B** includes full standard drawings for each functional classification. Snapshots of each cross-section are shown in **Figure 3** through **Figure 8.**

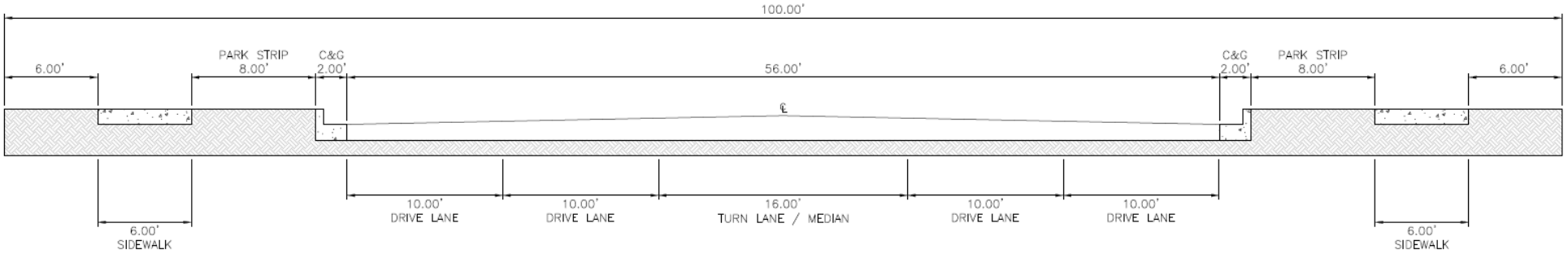


Figure 3: Major Arterial cross-section

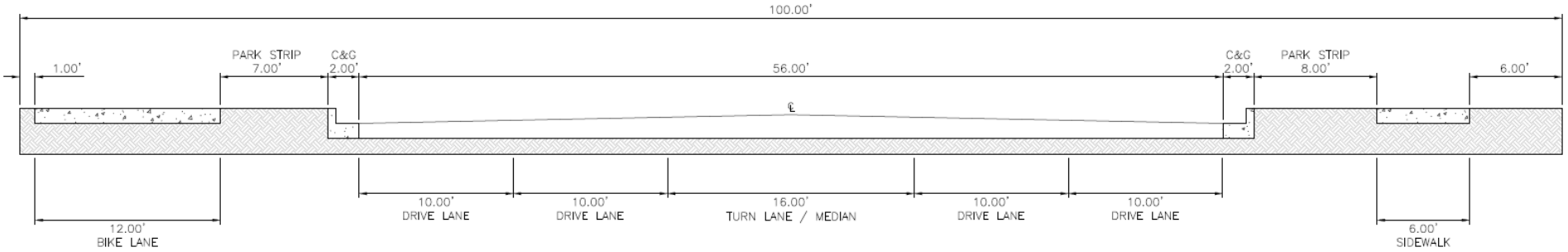


Figure 4: Major Arterial (enhanced travel corridor) cross-section

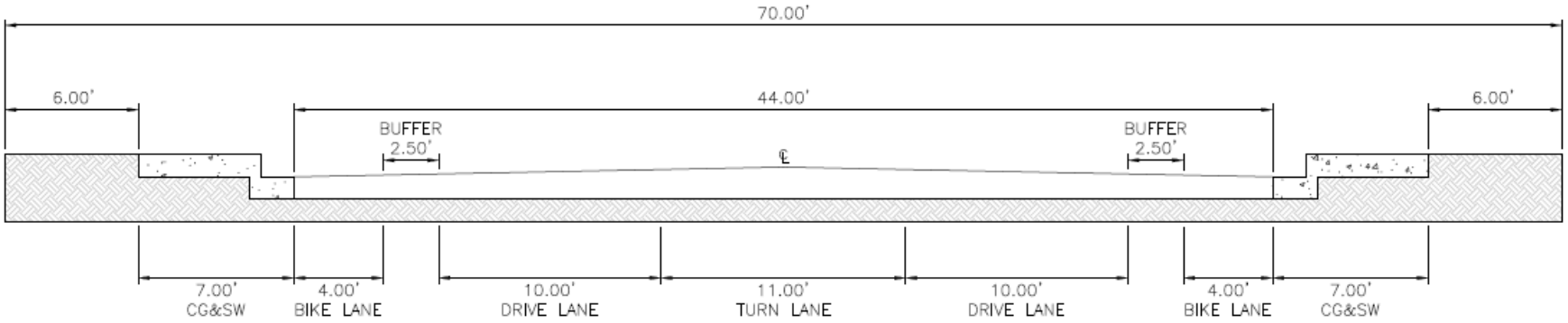
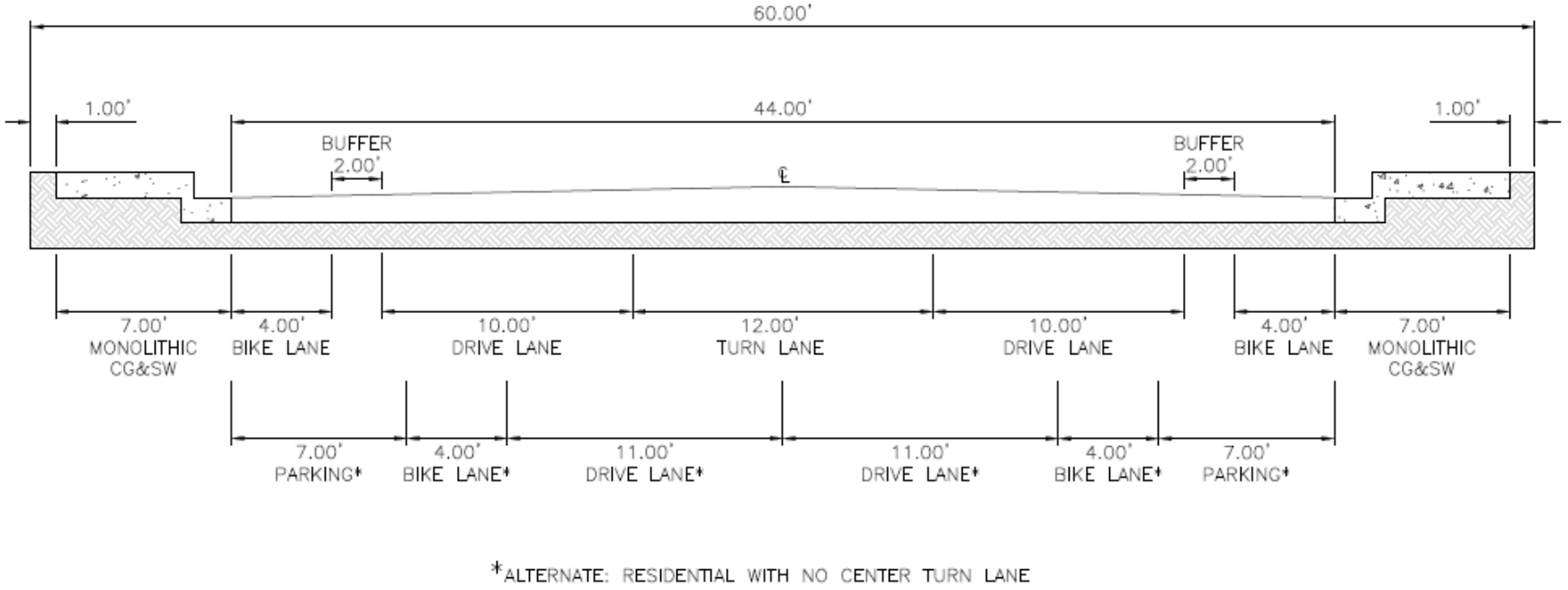


Figure 5: Major Collector cross-section



*ALTERNATE: RESIDENTIAL WITH NO CENTER TURN LANE

Figure 6: Minor Collector (Residential and Commercial) cross-section

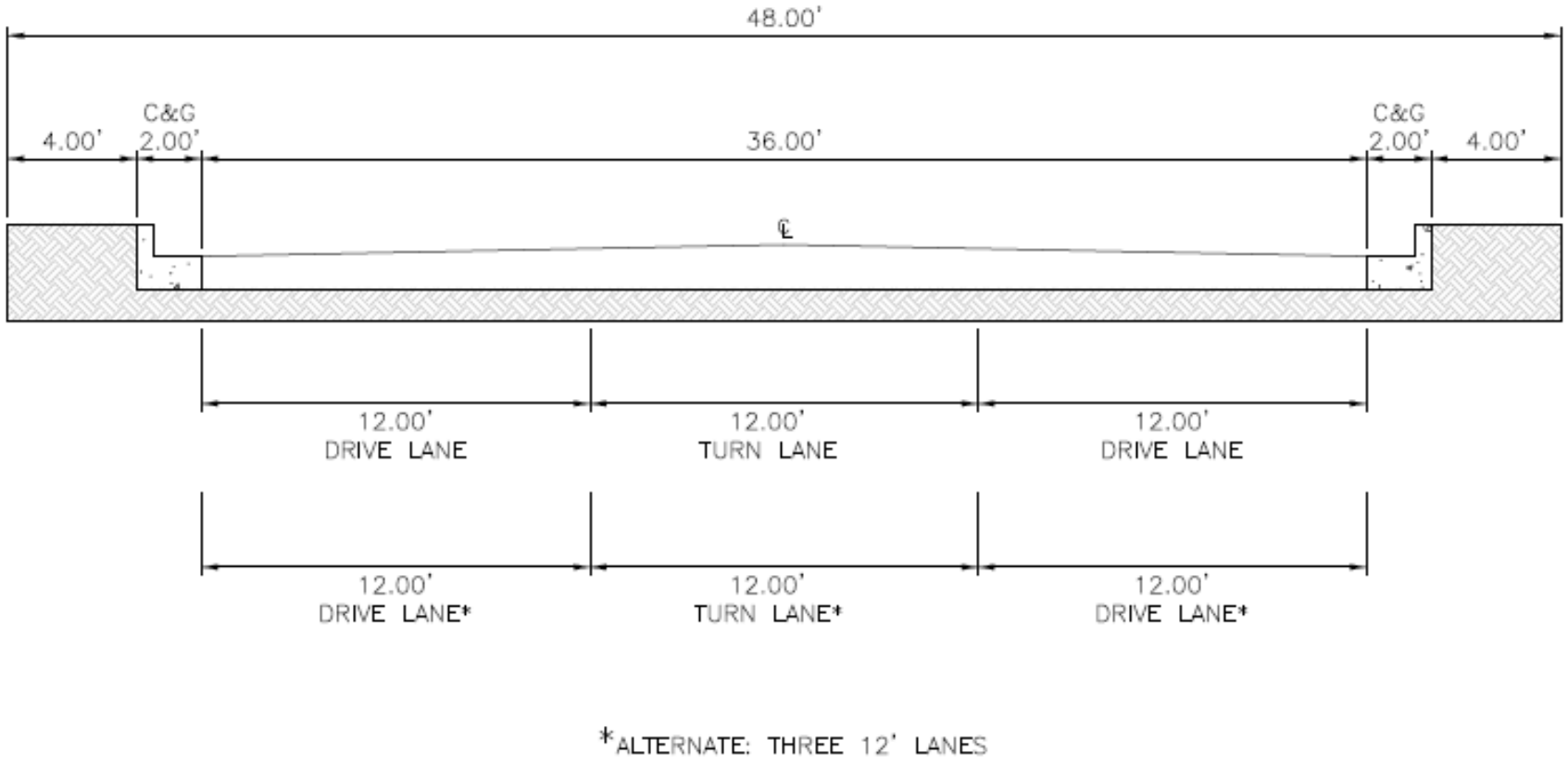


Figure 7: Minor Collector (Industrial) cross-section

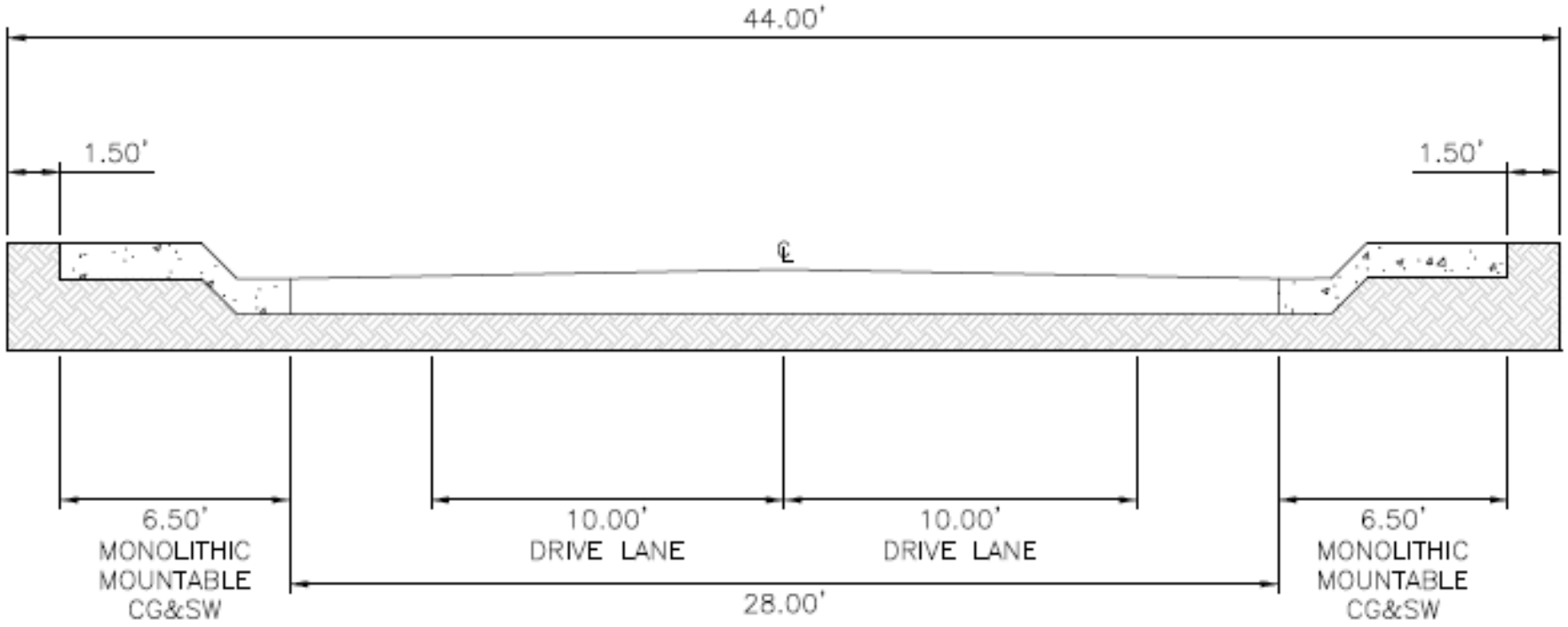


Figure 8: Residential cross-section

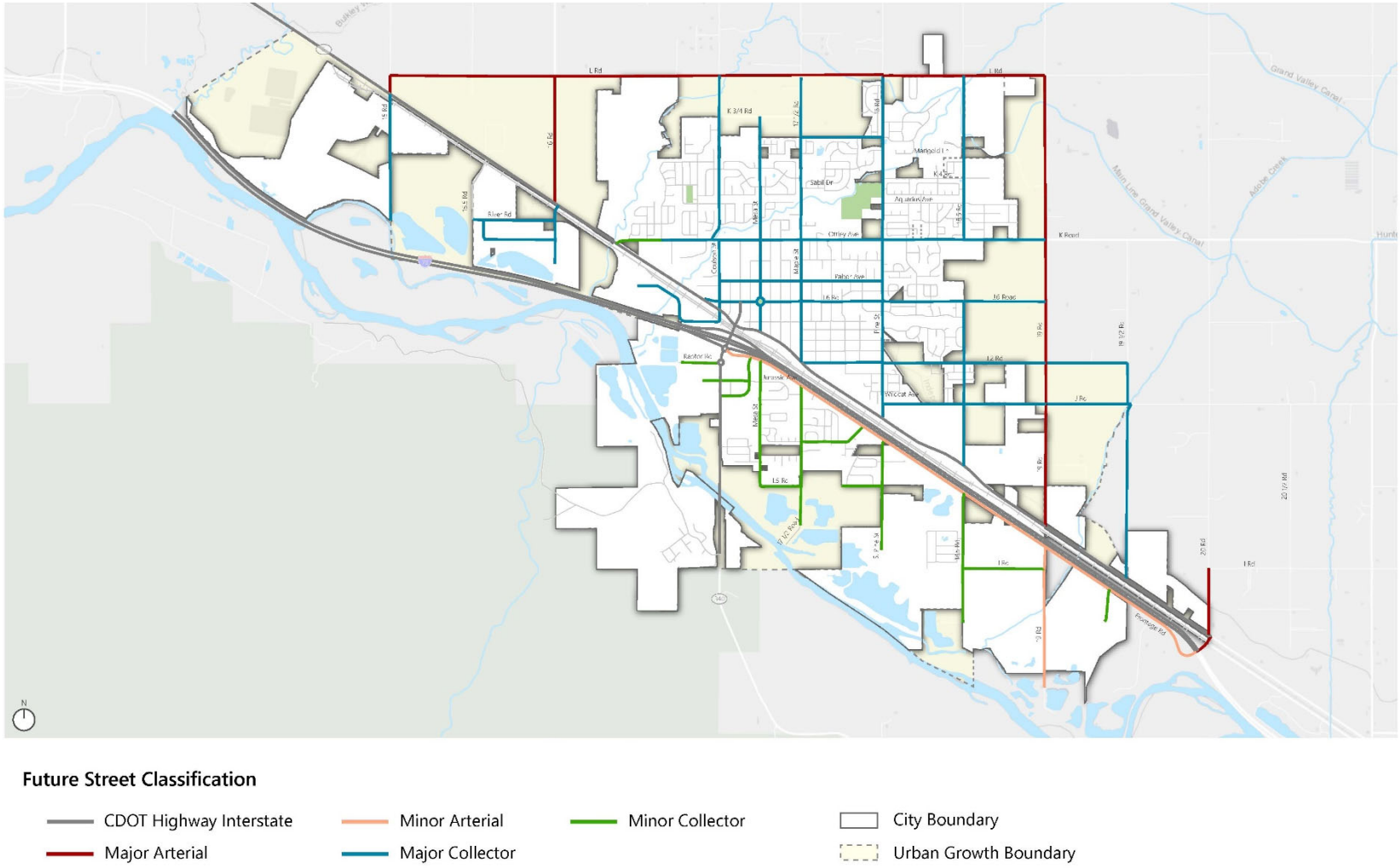


Figure 9: Street functional classification

Walking, Biking, and Transit Networks

Fruita's transportation system will provide robust networks for people driving, walking, biking, or riding transit. Whereas a street's functional classification addresses the mobility function of a street for people driving, separate proposed networks for walking, biking, and transit address the multimodal function of a street.

Walking Network

Walking is a common way for people in Fruita to get around. Downtown Fruita and its surrounding neighborhoods are relatively dense so that trip lengths are short. Additionally, special destinations such as schools and places of worship generate regular walking trips.

Fruita has sidewalks along many of its existing streets. In general, sidewalks on residential or low-volume streets are often four feet or less in width (according to the *[Proposed] Public Rights-of-Way Accessibility Guidelines*, the minimum continuous clear width of pedestrian access routes is four feet). Sidewalks on arterial or collector streets are often wider than four feet. Fruita's sidewalks are typically attached to the back of curb, rather than detached with a landscape buffer. Community members identified sidewalk gap completions and sidewalk widenings as a priority through the Active Circulation Plan survey.

Through application of the street standards with new development, Fruita will work with the development community to build sidewalks on developing parcels. Within the already built-up part of Fruita and adjacent to developed parcels, Fruita will continue to prioritize sidewalk gap projects over widening of existing sidewalks. Sidewalk gaps along arterial and collector streets will take priority over sidewalk gaps along residential streets, though Fruita's intent is to eventually complete sidewalk gaps on all streets. Within Fruita's existing City limits there are approximately 16 to 19 miles of missing sidewalks along arterial and collector streets, a reduction over recent years as the City has completed many sidewalk gap projects. At $170-$270 per linear foot, these sidewalk gaps will cost $14 million to $27 million (2021 dollars) to complete. **Figure 10** shows a map of Fruita's priority sidewalk gap projects.

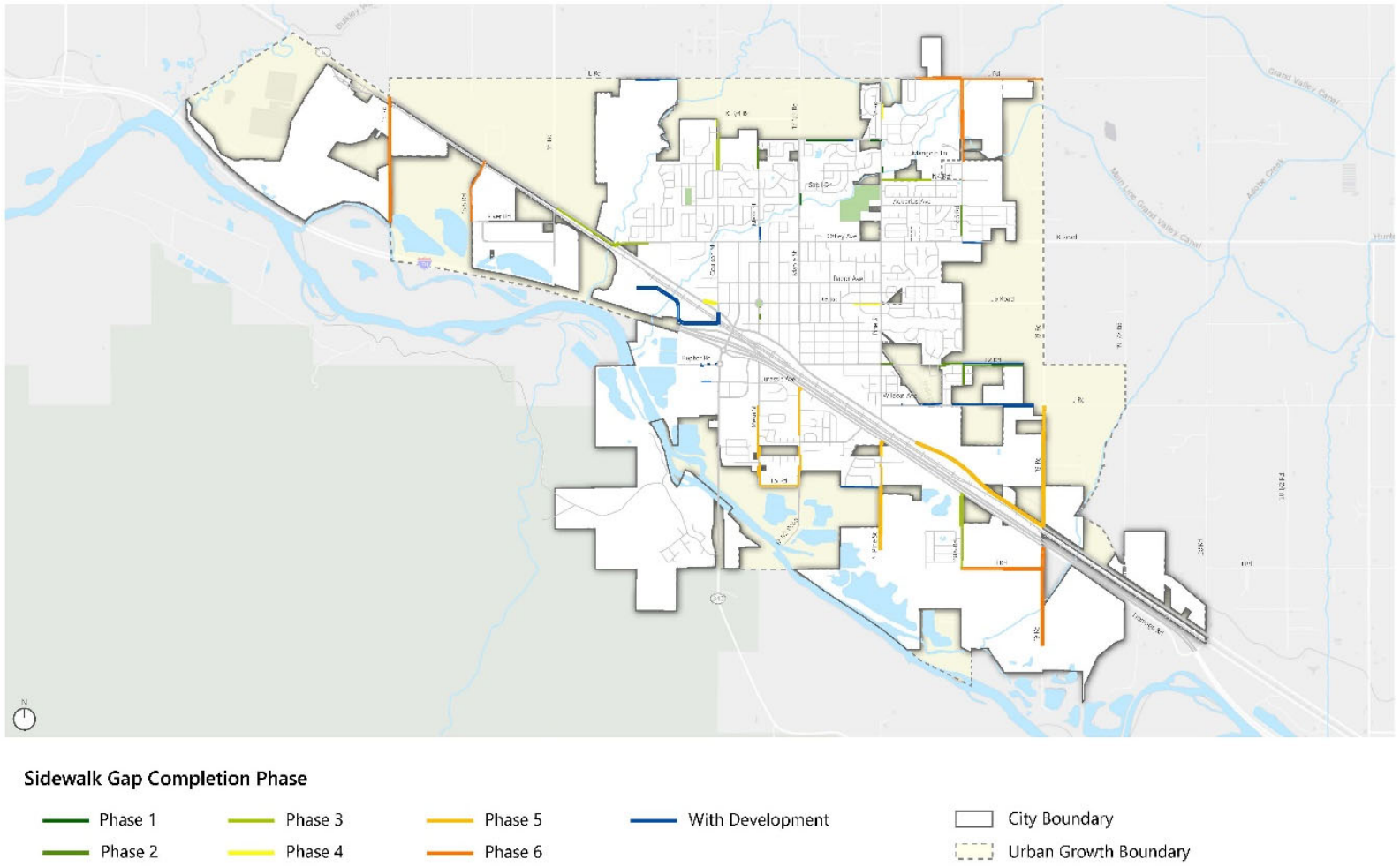


Figure 10: Priority sidewalk projects

Biking Network

As a national destination for mountain biking and road biking, many Fruita residents, workers, and visitors enjoy biking both recreationally throughout the region and for transportation in Fruita. Fruita's *Parks, Health, Recreation, Open Space, and Trails Master Plan* (PHROST) identifies several proposed trail segments including along Little Salt Wash and the Independent Ranchmens Ditch. Additionally, Fruita has successfully coordinated with many recent developments to incorporate trails or connections to the trails system. The on-street bikeways system of bike lanes and bike routes can further compliment the trails system to provide both connectivity to the regional trails system and comfortable connectivity for biking within Fruita.

Currently, many of Fruita's arterial and collector streets have shared parking/bike lanes. Demand for on-street parking is low in many areas where residences have dedicated, off-street parking. Additionally, even a limited numbers of parked cars can cause a significant decrease in user comfort. Community members identified a lack of on-street bike lanes and parking in existing shared parking/bike lanes as a barrier to traveling by bike in the Active Circulation Plan survey.

Through application of the street standards with new development, Fruita will work with the development community to build protected bike lanes (bike lanes separated from travel lanes by a vertical buffer) and buffered bike lanes (bike lanes separated from travel lanes by a painted buffer) on new streets or adjacent to developing parcels. Within the already built-up part of Fruita, Fruita will formalize bike lanes or buffered bike lanes (eliminating shared parking/bike lanes) on streets to provide inter-City connectivity. **Figure 11** shows a map of Fruita's proposed biking network and **Table 1** shows the complete list of proposed projects. To achieve these bikeways on existing streets, Fruita will accept the following minimum dimensions for cross-section elements on already built-out streets:

- On-street parking: 7-feet (including gutter)
- Bike lanes: 5-feet
- Travel lanes: 11-feet

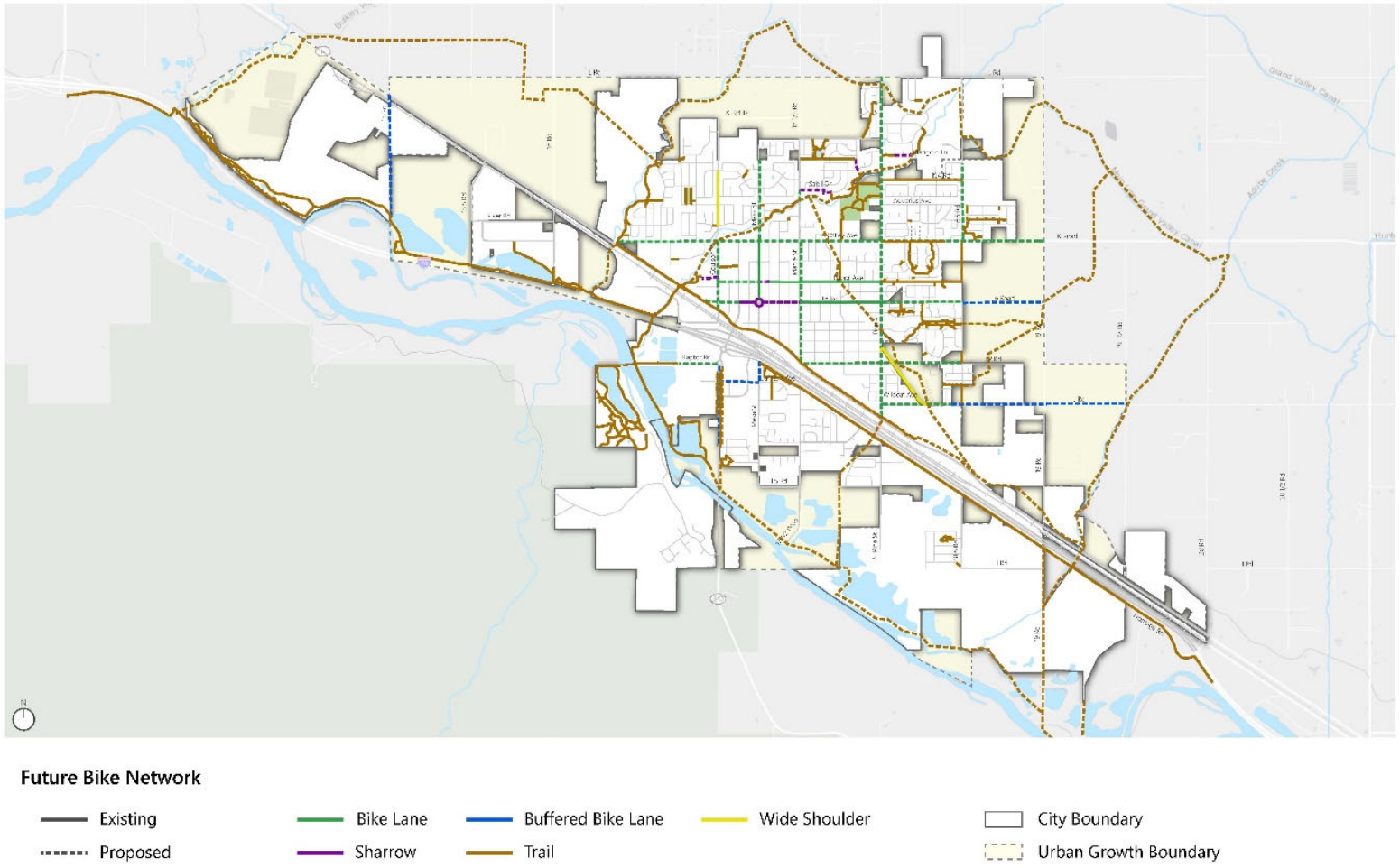


Figure 11: Proposed bikeways & trails network

Table 1: Proposed bicycle projects

Facility Type	Corridor	Extent	Extent	Description
Bike Lane	18.5 Road	Ottley Avenue	Castle Court	Could also consider multiuse path adjacent to roadway; to provide access to Monument Ridge Elementary School
Bike Lane	Aspen Avenue	Hwy 6	Hwy 340/Cherry Street	Will need to restripe and potentially widen face of curb to face of curb to fit or remove turn lane
Bike Lane	Coulson Street	Ottley Avenue	Pabor Avenue	
Bike Lane	Coulson Street	Pabor Avenue	Hwy 6	Will need to remove parking on one side
Bike Lane	Grand Avenue	Hwy 6	Pine Street	Will need to remove parking on one side west of Pine; east of Pine formalize existing shoulder
Bike Lane	J.6 Road	Pine Street	Fremont Street	Formalize existing shoulder
Bike Lane	Maple Street	Hwy 6	Ottley Avenue	44’ cross-section: 7’ parking, 5’ bike lanes, 10’ travel lanes (versus 11’ combined parking/bike lane and 11’ travel lanes)
Bike Lane	Maple Street	Trail Access	Sabil Drive	Will transition to sidewalk before narrows for bridge
Bike Lane	Mesa Street	Ottley Avenue	W Meadow Avenue	
Bike Lane	Mesa Street	W Meadow Avenue	City limit	Upgrade from wide shoulders to bike lane
Bike Lane	Ottley Avenue	Hwy 6	19 Road	Upgrade existing shoulder, discontinuous bike lane; prohibit parking for buffered bike lane; if on-street parking use 10' travel lane, 7' parking lane, and bike lane
Bike Lane	Pabor Avenue	Coulson Street	Mesa Street	
Bike Lane	Pine Street	Hwy 6	L Road	Formalize wide shoulder for part; 44' north of wash, can maintain parking
Bike Lane	Raptor Road	Hwy 340	Trail	
Bike Lane	Wildcat Avenue	Pine Street	East City limit	Formalize wide shoulder to bike lane

Facility Type	Corridor	Extent	Extent	Description
Buffered Bike Lane	15 Road	Trail	Hwy 6	Major collector cross-section
Buffered Bike Lane	Hwy 340	Roundabouts	South City limits	6' bike lane, 3' Buffer, 12' travel lane, 11' travel lane, 12' TWLTL, 11' travel lane, 12' travel lane, 3' buffer, 6' bike lane
Buffered Bike Lane	J Road	East City limit	20 Road	Major Arterial cross-section; need to widen roadway
Buffered Bike Lane	J.6 Road	18.5 Road	19 Road	Major Collector cross-section
Buffered Bike Lane	Jurassic Avenue	Hwy 340	Mesa Street	
Buffered Bike Lane	Mesa Street	Riverfront Trail	Jurassic Avenue	
Sharrow	Aspen Avenue	Mesa Street	Maple Street	
Sharrow	Aspen Avenue	Hwy 340	Mesa Street	
Sharrow	Doug Drive	Little Salt Wash Park Path	Trail	To connect two trails
Sharrow	Gewont Lane	Coulson Street	Little Salt Wash Trail	
Sharrow	Marigold Lane	Trail access	Trail access	Add signage to connect trails
Sharrow	Pabor Avenue	Mesa Street	Mulberry Street	Sharrows EB and bike lane WB
Sharrow	Sabil Drive	Maple Street	Little Salt Wash Path	To connect trails
Trail	19 Road	City boundary	Hwy 6	Minor arterial cross-section
Trail	New alignment	Pine Street	Riverfront Trail	Grade separated crossing
Trail upgrades	Hwy 340	Roundabouts	South City limits	Upgrade existing trail to establish 10’ preferred (8’ min) trail on both sides

Source: Fehr & Peers.

Transit Network

Grand Valley Transit's (GVT) Route 8 delivers a circulator pattern within Fruita generally on Pine Street, Ottley Avenue, Coulson Avenue, SH 340, McCune Avenue, and Aspen Avenue. Outside of Fruita, Route 8 connects to GVT's West Transfer Facility via US-6.

Fruita does not propose modifying transit routes, span, or frequency serving Fruita. However, **Figure 12** includes a map of the existing transit network so that the City can coordinate other circulation investments with the transit network to improve transit access for Fruita residents, workers, and visitors. As development patterns shift and affordable housing projects are approved, modifications to Route 8 should be considered to provide transit access to high-density, transit-dependent residents.

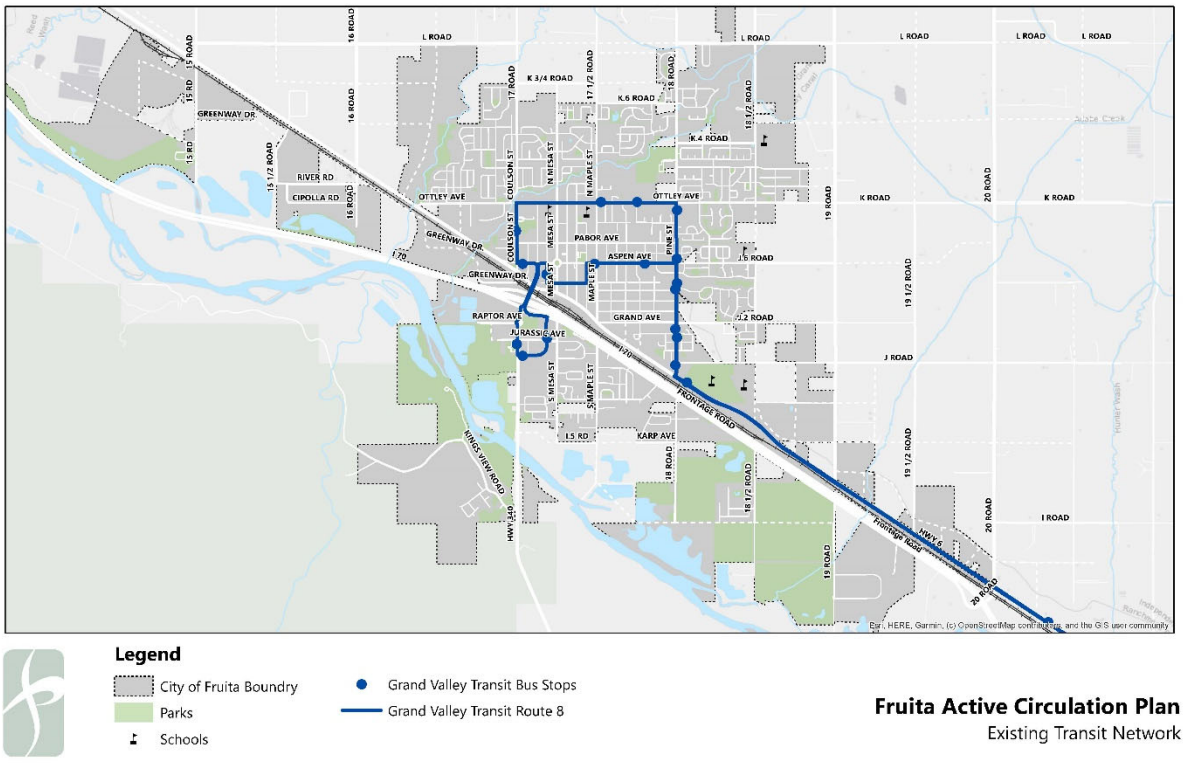


Figure 12: Existing transit network

Multimodal Intersection & Street Investments

This plan identifies multimodal intersection and street investments at locations where community members identified concerns related to safety or mobility through the Active Circulation Plan survey. **Figure 5** shows the locations of multimodal intersection and street investments, and **Table 2** and **Table 3** includes a description for each intersection and corridor project, respectively. These projects may require a feasibility analysis prior to implementation consistent with or in addition to the studies/analyses identified in the table.

A signal warrant and/or all-way stop warrant was performed at three locations to confirm recommendations. The calculations for the warrants are shown in **Appendix C.** None of the three locations met the warrants to transition to a signal or all-way stop, however, it is recommended (and captured in the project list) that the intersections continue to be evaluated as development patterns shift.

- SH 340 & Jurassic Avenue
- W Aspen Avenue & Plum Street
- Pabor Avenue & N Mesa Street

Table 2: Multimodal intersection investments

ID	North-South corridor	East-West corridor	Description
1	16 Road	L Road	Consider intersection ahead warning signs on 16 Road and intersection lighting
2	17 Road	L Road	Convert from side street stop control to all-way stop
3	17.5 Road	L Road	Consider a roundabout or traffic signal
4	18 Road	L Road	Consider a roundabout or traffic signal
5	18.5 Road	L Road	Convert from side street stop control to all-way stop control
6	Cherry Street/Hwy 340	Aspen Avenue	Long: right-turn lanes as 30-60-90, add speed tables to right-turn lanes; Short: add 2nd yield to NB approach and add flex delineators at striping
7	Coulson Street	Ottley Avenue	On SW corner: Remove tree (if within ROW); relocate utility pole; shift centerline; narrow crossing east leg, stripe bike lane through intersection
8	Fremont Street	Hwy 6	Implement traffic signal
9	Hwy 340	Midblock south of roundabout	Implement Rapid Rectangular Flashing Beacon (RRFB)
10	Hwy 340	Jurassic Avenue	Complete signal warrant study
11	I-70 Frontage Road	East of roundabout	Enhance existing marked crosswalks at I-70 Frontage Road and SH-340 with Rectangular Rapid Flashing Beacons
12	J.3 Road	Wildcat Avenue	Evaluate single-lane mini roundabouts: 100' diameter; Shift crosswalk to be in front of the STOP bar if not roundabout
13	Maple Street	Hwy 6	Complete signal warrant study
14	Maple Street	Columbine Street	Consider a Pedestrian Signal to provide access to Fruita Middle School
15	Maple Street	Ottley Avenue	Consider a roundabout or traffic signal
16	Mesa Street	Aspen Avenue	Evaluate converting each approach to stop control
17	Mesa Street	Pabor Avenue	Complete all-way stop warrant study; consider mini roundabout; If keep existing, split up/reduce crossing distance with ped refuge island/median
18	Mesa Street	Ottley Avenue	Consider a roundabout or traffic signal
19	Midblock	Wildcat Avenue	Add median to existing crossing
20	Midblock	Wildcat Avenue	Add median refuge between Fruita Monument High School and LDS Seminary
21	Mulberry Street	Aspen Avenue	Complete all-way stop warrant study
22	Pine Street	Aspen Avenue	Evaluate traffic signal or single-lane mini roundabouts: Pine Street & Aspen Avenue (80' diameter)
23	Pine Street	Wildcat Avenue	Shift crosswalk to be in front of the STOP bar

ID	North-South corridor	East-West corridor	Description
24	Pine Street	Hwy 6	Relocate utility box to improve visibility for right-turning vehicles; Reduce radius of NE corner to slow speeds of westbound right-turning vehicles
25	Pine Street	Ottley Avenue	Consider a traffic signal
26	Plum Street	Aspen Avenue	Evaluate intersection for all-way STOP or traffic signal

Table 3: Multimodal street investments

ID	Corridor	Extent	Extent	Description
27	Aspen Avenue	Hwy 340	Plum Street	Evaluate removing right-turn lanes (EBRT approaching Plum Street, SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes
28	Aspen Avenue	Plum Street	Mesa Street	Long-term: Pursue Downtown Streetscape Improvements; Short-term Mark crosswalks in addition to colored pavement
29	Fremont Street	J Road	Hwy 6	Complete new multimodal corridor
30	Hwy 340	Roundabouts	Hwy 340	Raise railing height
31	Hwy 6	Pine Street	Coulson Street	Restripe to provide wider shoulder on north side (8') to improve sight lines
32	Circle Park			Long-term: Pursue Downtown Streetscape Improvements; Short-term: reinforce existing striping patterns with flexible delineators
33	Plum Street	Aspen Avenue	McCune Avenue	Evaluate removing right-turn lanes (SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes
34	19 Road	J Road	Hwy 6	Widen from a 2-lane cross-section to a 3-lane cross-section. Sidewalk to be implemented with future development.

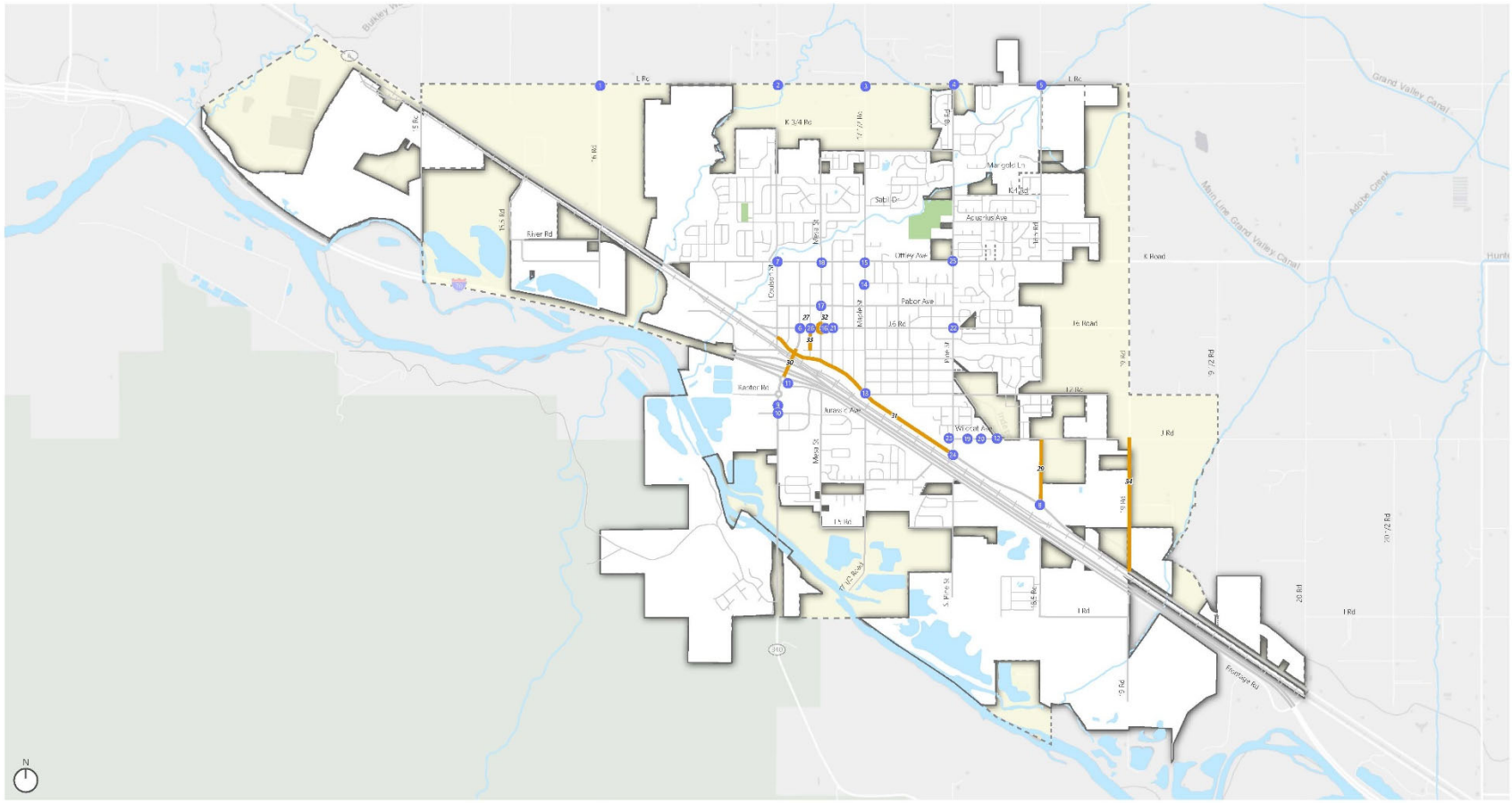


Figure 13: Multimodal intersection and street investments

Fremont Street

Appendix D provides a conceptual design for Fremont Street between K 4/10 Road and Skiff Avenue. These recommendations build off of the concurrent work being performed on Fremont Street from Skiff Avenue to Hwy 6. These drawing show a varying cross-section between 60'-65', ADA ramp locations, and locations where additional ROW is needed. Recommendations are broken out into five phases.

Opinion of probable construction costs are identified by phase in **Appendix E** and summarized in **Table 4**. Cost estimates for the proposed Fremont Street Improvements were developed using publicly available bid summaries from the City of Grand Junction. These bid summaries, ranging from 2017 to 2021, include items similar to those proposed that were then averaged and adjusted for inflation. Costs for dissimilar proposed items were interpolated and adjusted from the most similar available costs. A 15% design factor and 20% contingency were used.

Although Fremont Street is not identified in the short, medium, or long-term projects lists further in this report, the importance of this project has been identified and external funding should be pursued to plan, design, and implement the proposed Fremont Street per the phased approach in **Appendix D**.

Table 4: Fremont Street planning level cost estimate

Phase	Extents	Cost
1	Skiff Avenue to J Road	$1,291,297
2	J Road to J 2/10 Road	$633,062
3	J 2/10 Road to Aspen Avenue	$1,143,300
4	Aspen Avenue to Ottley Avenue	$1,790,429
5	Ottley Avenue to K 4/10 Road	$474,172
Total	**Skiff Avenue to K 4/10 Road**	**$5,332,260**

Programs and Policies

This section highlights opportunities to meet the City's vision using programs and policies that incentivize alternative travel modes to the private vehicle, implement bicycle and pedestrian infrastructure, and support health and safety outcomes. Beyond simply maintaining and building physical infrastructure, programs and policies ensure that roadways, active transportation facilities, and transit services are efficient, effective, and intuitive. These programs and policies also align the City's transportation system with broader community values and move the City toward its vision for transportation. The key policy and program recommendations are:

- Wayfinding and informational signage
- Sidewalk maintenance and rehabilitation
- Amenities
- Education and enforcement.

Wayfinding and Informational Signage

The Circulation Plan recommends that Fruita develops a bicycle wayfinding and signage plan to help people better navigate the existing bicycle network and feel more comfortable riding somewhere new**.** Wayfinding signage should be prioritized anywhere an off-street trail terminates or when two bicycle corridors intersect. Signage in these locations should indicate where to go to continue on another low stress bicycle facility or give directions to major destinations nearby. An effective wayfinding system, especially one that is branded and includes distances or times, can encourage more people to bike because they can feel more confident navigating the system and staying on designated bicycle facilities. Wayfinding is especially important to guide visitors who may not be as familiar with Fruita's transportation network and key destinations.

Sidewalk Maintenance and Rehabilitation

Fruita's current sidewalk repair program (outlined in Section 12.04.030 of the Fruita Municipal Code) states that the repair of any portion of a sidewalk "…be done by the owner of the lots or land adjacent to or abutting the improvement or repair". This program is intended to repair and/or replace sidewalks that are broken, spalling (presenting surface cracks and deterioration), or uneven. Property Owners within the Fruita City Limits may be eligible to participate in a cost-sharing sidewalk replacement program whereas the City will pay for a percentage of eligible sidewalk replacements and/or repairs. For 2021, the Sidewalk Replacement Program was funded at $30,000 and the City will pay for up to 80% of the sidewalk repairs, which requires the Property Owner to only pay for 20% of the improvements.

Feedback from community members and stakeholders through this process noted that the current sidewalk repair ordinance that puts the responsibility on the property owner is not effective. The City of Fruita should evaluate funding and leading the sidewalk maintenance and rehabilitation program, to ensure that sidewalks are accessible and navigable to all ages and abilities.

Amenities

Providing amenities alongside trails and priority multimodal corridors helps improve the comfort of people traveling. The Parks, Health, Recreation, Open Space and Trails (PHROST) Plan identifies guidance on implementing amenities such as pedestrian-scale lighting, bike parking, seating, and trash receptacles. Lighting in particular should be prioritized along not just trails, but all multimodal transportation facilities.

Education and Enforcement

Education and enforcement of the rules of the road for both people biking and people driving is important to ensure a comfortable and safe transportation system. As Fruita implements new transportation patterns and facility types, education will be especially important for compliance of traffic laws. Education should be conducted year-round, with a focus during peak tourism season, when users of all modes are navigating Fruita for the first time.

Prioritization & Implementation

Fruita will implement the Circulation Plan over time. The Circulation Plan is fiscally unconstrained and represents a long-term vision for transportation infrastructure in Fruita. As such, the City needs to prioritize projects to maximize benefits in the near-term. This section describes the prioritization process, cost estimates for projects, and project lists in the short, medium, and long-term (0-3 years, 4-6 years, and 7-10 years).

Prioritization Criteria

All recommended projects from the Circulation Plan were prioritized and grouped into a short, medium, long-term or beyond phases as shown in **Table 5**. This process assumes that Fruita's annual budget for transportation investments continues to be about $500,000/year. These four phases provide a fiscally constrained approach for the City of Fruita moving forward and provide guidance on what projects to implement first. The specific rank of each project is shown in the tables in this chapter. The rank is the same for a number of projects when they are tied with the same score.

Table 5: Project implementation phases

Phase	Years	Budget
Short	0-3	$1,500,000
Medium	4-6	$1,500,000
Long	7-10	$2,000,000
Beyond	10+	No limit

Prioritization Within Modes

The City applied three criteria to prioritize projects: Destination Access, Systemic Safety, and Community Support. These three criteria were applied in the prioritization of the bicycle project list and the multimodal intersection and street investments project list. Sidewalk projects were prioritized based on City staff judgment.

Destination Access describes how a particular project improves access for people using all travel modes to key destinations including commercial areas/parcels, schools, civic destinations (e.g., the library), parks, trailheads, and places of worship. Projects that access more destinations are a higher priority than projects that access few or no destinations.

Systemic Safety describes a project's potential for eliminating future fatal or severe injury crashes. Because people walking and biking are vulnerable to fatal or severe injury crashes even in low-speed environments, all walking and biking projects receive some level of Systemic Safety priority. Projects for

people driving on high speed streets (30 miles per hour or greater) also receive priority as high-speed crashes are more likely to result in fatalities or severe injuries.

Community Support describes how much support a project location received through the Active Circulation Plan survey.

Prioritization Between Modes

In order to prioritize projects between each mode, input from the community was applied. **Figure 14** shows the results from a survey at the Plan's community meeting, asking attendees to demonstrate how they would like the City to distribute its budget amongst the three project types—sidewalk projects, bicycle projects, and multimodal and street projects. This proportional distribution was applied to the budget for the short, medium, and long-term phases.

Appendix F includes a detailed prioritization matrix that shows each project's score for each prioritization criterion.

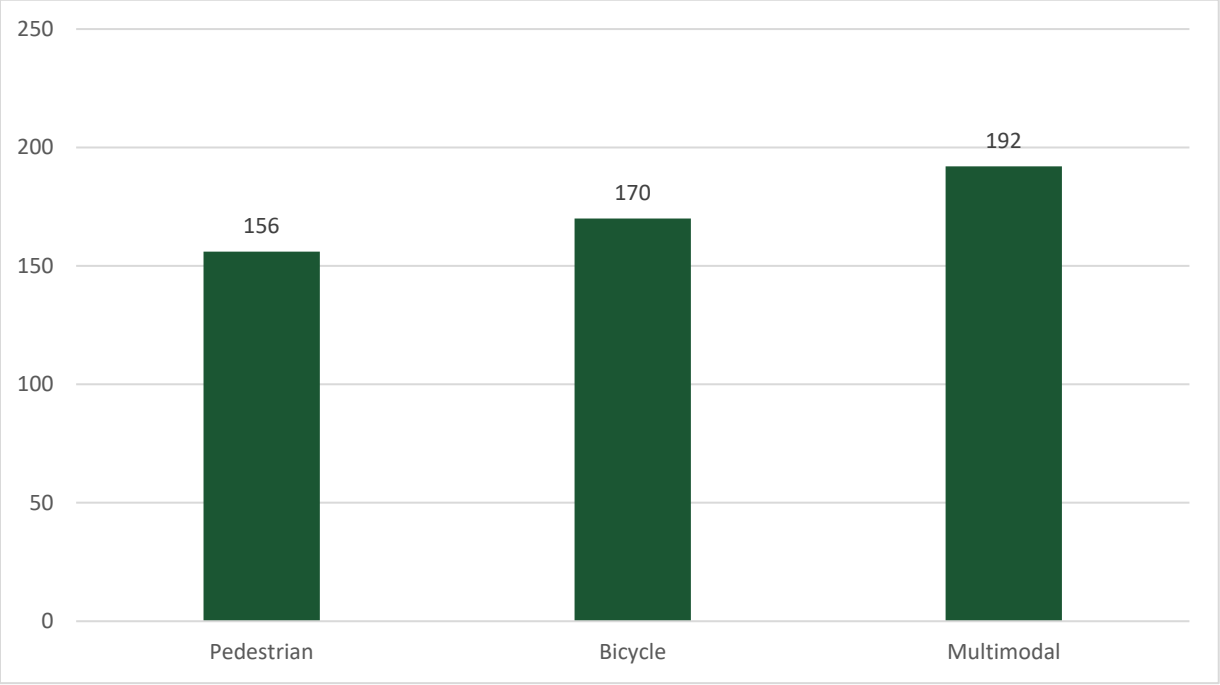


Figure 14: Community support for various project types

Cost Estimates

Planning level per unit cost estimates were provided based on a synthesis of local bid summaries. These per unit costs were applied to the proposed project list in order to develop planning level cost estimates for each proposed project. A breakdown of assumptions and per unit costs is shown in **Appendix G**.

Prioritized Projects

Projects were prioritized and grouped into phases based on the criteria described in the previous section **Table 6** through **Table 14** show the project list for each mode (sidewalk, bicycle, and multimodal/street) under each phase (short, medium, and long-term). **Figure 15**, **Figure 16**, and **Figure 17** show project phasing on the sidewalk gap, bicycle network, and multimodal and street enhancement maps respectively. The cost for roadway and multimodal projects that are categorized as an 'evaluation' or 'consideration' of a treatment assumes the cost of implementation in addition to the cost of the study.

Short-term (0-3 Years) Projects

Table 6: Short-term (0-3 Years) projects: sidewalk projects

Corridor	Length (feet)	Cost
K.6 Road	1,322	$101,822
K.6 Road	320	$24,610
N Maple Street	56	$4,302
N Maple Street	313	$24,133
Pine Street	195	$15,043
17 1/4 Road	434	$33,395
Fremont Street	300	$23,093
Fremont Street	241	$18,554
Fremont Street	119	$9,199
Fremont Street	479	$36,901
Fremont Street	501	$38,611
J.2 Road	143	$11,013
J.2 Road	113	$8,715
J.2 Road	326	$25,128
J.2 Road	137	$10,517
J.2 Road	179	$13,758
J.2 Road	357	$27,507
Mesa Street	167	$12,885
N Mesa Street	278	$21,407
Sum	**5,982**	**$460,593**

Table 7: Short-term (0-3 Years) projects: bicycle projects

Rank	Facility Type	Corridor	Extent	Extent	Length (miles)	Cost
1	Bike Lane	Ottley Avenue	Hwy 6	19 Road	2.6	$17,052
1	Bike Lane	Pine Street	Hwy 6	L Road	2.1	$13,535
1	Buffered Bike Lane	Hwy 340	Roundabouts	South City limits	0.5	$29,466
4	Bike Lane	Coulson Street	Ottley Avenue	Pabor Avenue	0.3	$1,626
4	Bike Lane	Wildcat Avenue	Pine Street	East City limit	0.4	$2,813
4	Buffered Bike Lane	Jurassic Avenue	Hwy 340	Mesa Street	0.2	$14,788
4	Trail upgrades	Hwy 340	Roundabouts	South City limits	0.5	$244,770
8	Bike Lane	18.5 Road	Ottley Avenue	Castle Court	0.5	$3,074
8	Bike Lane	Aspen Avenue	Hwy 6	Hwy 340/Cherry Street	0.2	$1,417
8	Bike Lane	Coulson Street	Pabor Avenue	Hwy 6	0.2	$1,116
8	Bike Lane	Maple Street	Hwy 6	Ottley Avenue	0.7	$4,772
8	Bike Lane	Raptor Road	Hwy 340	Trail	0.2	$1,526
8	Buffered Bike Lane	J Road	East City limit	20 Road	1.1	$64,900
8	Sharrow	Aspen Avenue	Mesa Street	Maple Street	0.2	$997
16	Bike Lane	Grand Avenue	Hwy 6	Pine Street	1.0	$6,311
16	Bike Lane	Maple Street	Trail Access	Sabil Drive	0.1	$434
16	Bike Lane	Pabor Avenue	Coulson Street	Mesa Street	0.3	$1,633
16	Buffered Bike Lane	J.6 Road/ Aspen Avenue	18.5 Road/ Fremont Street	19 Road	0.5	$29,410
16	Buffered Bike Lane	Mesa Street	Riverfront Trail	Jurassic Avenue	0.1	$7,958
16	Sharrow	Aspen Avenue	Hwy 340	Mesa Street	0.3	$1,264
16	Sharrow	Gewont Lane	Coulson Street	Little Salt Wash Trail	0.1	$448
	Sum				**12.1**	**$449,310**

Table 8: Short-term (0-3 Years) projects: multimodal intersection and street projects

Rank	ID	Location	Description	Cost
NA	NA	Multiple	Perform studies to hone recommendations list. Studies are identified in the following project lists.	$50,000
1	27	Aspen Avenue from Hwy 340 to Plum Street	Evaluate removing right-turn lanes (EBRT approaching Plum Street, SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes.	$3,500
1	6	Cherry Street/Hwy 340 & Aspen Avenue	Long: right-turn lanes as 30-60-90, Add speed tables to right-turn lanes; Short: add 2nd yield to NB approach and add flex delineators at striping.	$9,000
1	11	I-70 Frontage Road east of roundabout	Enhance existing marked crosswalks at I-70 Frontage Road and SH-340 with Rectangular Rapid Flashing Beacons.	$70,000
4	8	Fremont Street & Hwy 6	Implement traffic signal.	$283,000
4	19	Midblock at Wildcat Avenue	Add median to existing crossing.	$7,000
4	28 & 32	Circle Park and Aspen Avenue	Phasing of Downtown Streetscape Improvements. The full set of recommendations should be completed in the 'beyond 10-year timeframe'. In the short-term, crosswalks should be marked in addition to colored pavement and existing striping should be reinforced with flexible delineators.	$100,000
	Sum			**$522,500**

Medium-term (4-6 Years) Projects

Table 9: Medium-term (4-6 Years) projects: sidewalk projects

Corridor	Length (feet)	Cost
17 Road	269	$20,678
17 Road	643	$49,495
17 Road	335	$25,807
17 Road	883	$67,979
17 Road	336	$25,895
18 1/2 Road	467	$35,959

Hwy 6	142	$10,951
Hwy 6	142	$10,951
J.2 Road	1,976	$152,189
Ottley Avenue	99	$7,612
Ottley Avenue	414	$31,876
Ottley Avenue	571	$43,989
Ottley Avenue	147	$11,285
Sum	**6,424**	**$494,666**

Table 10: Medium-term (4-6 Years) projects: bicycle projects

Rank	Facility Type	Corridor	Extent	Extent	Length (miles)	Cost
8	Trail	19 Road	City boundary	Hwy 6	0.8	$384,068
16	Trail	New alignment	Pine Street	Riverfront Trail	0.2	$83,459
24	Buffered Bike Lane	15 Road	Trail	Hwy 6	0.7	$44,541
24	Bike Lane	J.6 Road/ Aspen Avenue	Pine Street	Fremont Street	0.5	$3,249
24	Bike Lane	Mesa Street	Ottley Avenue	W Meadow Avenue	0.2	$1,549
24	Bike Lane	Mesa Street	W Meadow Avenue	City limit	0.3	$1,685
24	Sharrow	Pabor Avenue	Mesa Street	Mulberry Street	0.1	$280
24	Sharrow	Sabil Drive	Maple Street	Little Salt Wash Path	0.2	$934
	Sum				**3.0**	**$519,765**

Table 11: Medium-term (4-6 Years) projects: multimodal intersection and street projects

Rank	ID	Location	Description	Cost
4	7	Coulson Street & Ottley Avenue	On SW corner: Remove tree (if within ROW) Relocate utility pole; shift centerline; narrow crossing east leg, stripe bike lane through intersection.	$53,000

4	9	Hwy 340 midblock south of roundabouts	Implement Rapid Rectangular Flashing Beacon (RRFB).	$70,000
4	30	Hwy 340 at roundabouts	Raise railing height.	$146,000
4	12	J.3 Road & Wildcat Avenue	Evaluate single-lane mini roundabouts: 100' diameter; Shift crosswalk to be in front of the STOP bar if not roundabout.	$20,000
4	17	Mesa Street & Pabor Avenue	Complete all-way stop warrant study; consider mini roundabout; If keep existing, split up/reduce crossing distance with ped refuge island/median.	$2,000
4	20	Midblock at Wildcat Avenue	Add median refuge between Fruita Monument High School and LDS Seminary.	$7,000
4	22	Pine Street & Aspen Avenue	Evaluate traffic signal or single-lane mini roundabouts: Pine Avenue & Aspen Street (80' diameter) (Cost includes evaluation plus implementation).	$283,000
4	25	Pine Street & Ottley Avenue	Evaluate a traffic signal (Cost includes evaluation plus implementation).	$283,000
NA[1]	34	19 Road from J Road to Hwy 6	Widen from a 2-lane cross-section to a 3-lane cross-section. Sidewalk to be implemented with future development.	$1,124,000 (additional funding necessary in the mid-term necessary to complete this project)
	Sum			**$1,988,000**

1. *This project does not have a rank as it was not scored, but it was identified by City staff as a mid-term project.*

Long-term (7-10 Years) Projects

Table 12: Long-term (7-10 Years) projects: sidewalk projects

Corridor	Length (feet)	Cost
18 1/2 Road	1,086	$83,611
18 1/2 Road	1,944	$149,689
Aspen Avenue	442	$34,010
Aspen Avenue	448	$34,464

Aspen Avenue	195	$14,979
Hwy 6	2,116	$162,969
K.4 Road	1,631	$125,565
Sum	**7,861**	**$685,287**

Table 13: Long-term (7-10 Years) projects: bicycle projects

Rank	Facility Type	Corridor	Extent	Extent	Length (miles)	Cost
30	Sharrow	Doug Drive	Little Salt Wash Park Path	Trail	0.1	$364
30	Sharrow	Marigold Lane	Trail access	Trail access	0.1	$455
	Sum				**.2**	**$819**

Table 14: Long-term (7-10 Years) projects: multimodal intersection and street projects

Rank	ID	Location	Description	Cost
4	10	Hwy 340 & Jurassic Avenue	Evaluate a traffic signal (Cost includes evaluation plus implementation).	$283,000
4	33	Plum Street from Aspen Avenue to McCune Avenue	Evaluate removing right-turn lanes (SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes	$3,500
26	31	Hwy 6 & Pine Street	Restripe to provide wider shoulder on north side (8') to improve sight lines.	$31,700
26	13	Maple Street & Hwy 6	Evaluate a traffic signal (Cost includes evaluation plus implementation).	$283,000
26	15	Maple Street & Ottley Avenue	Consider a roundabout or traffic signal (Cost includes evaluation plus implementation of a traffic signal).	$283,000
26	16	Mesa Street & Aspen Avenue	Evaluate converting each approach to stop control.	$8,000
	Sum			**$892,200**

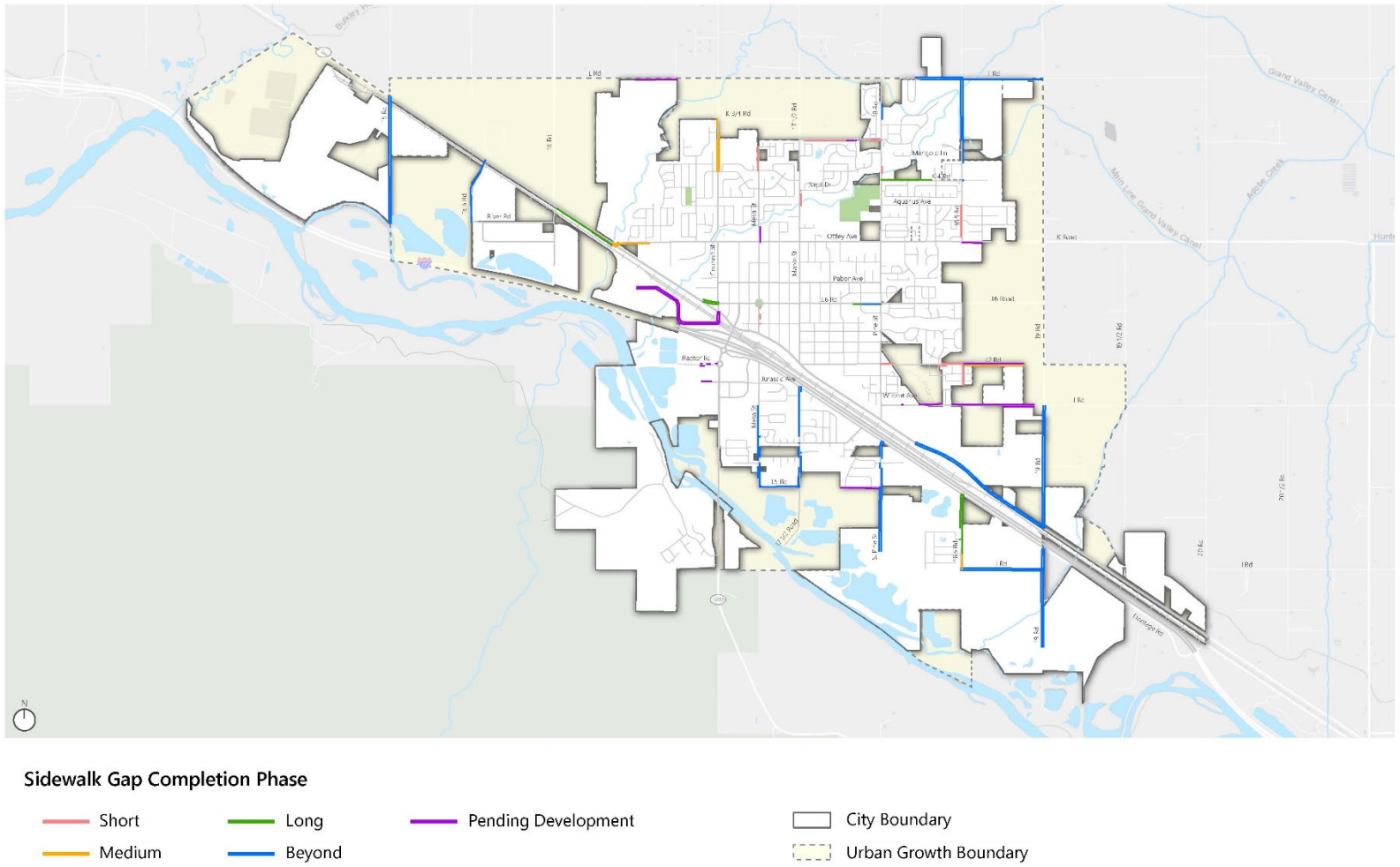


Figure 15: Phased sidewalk projects

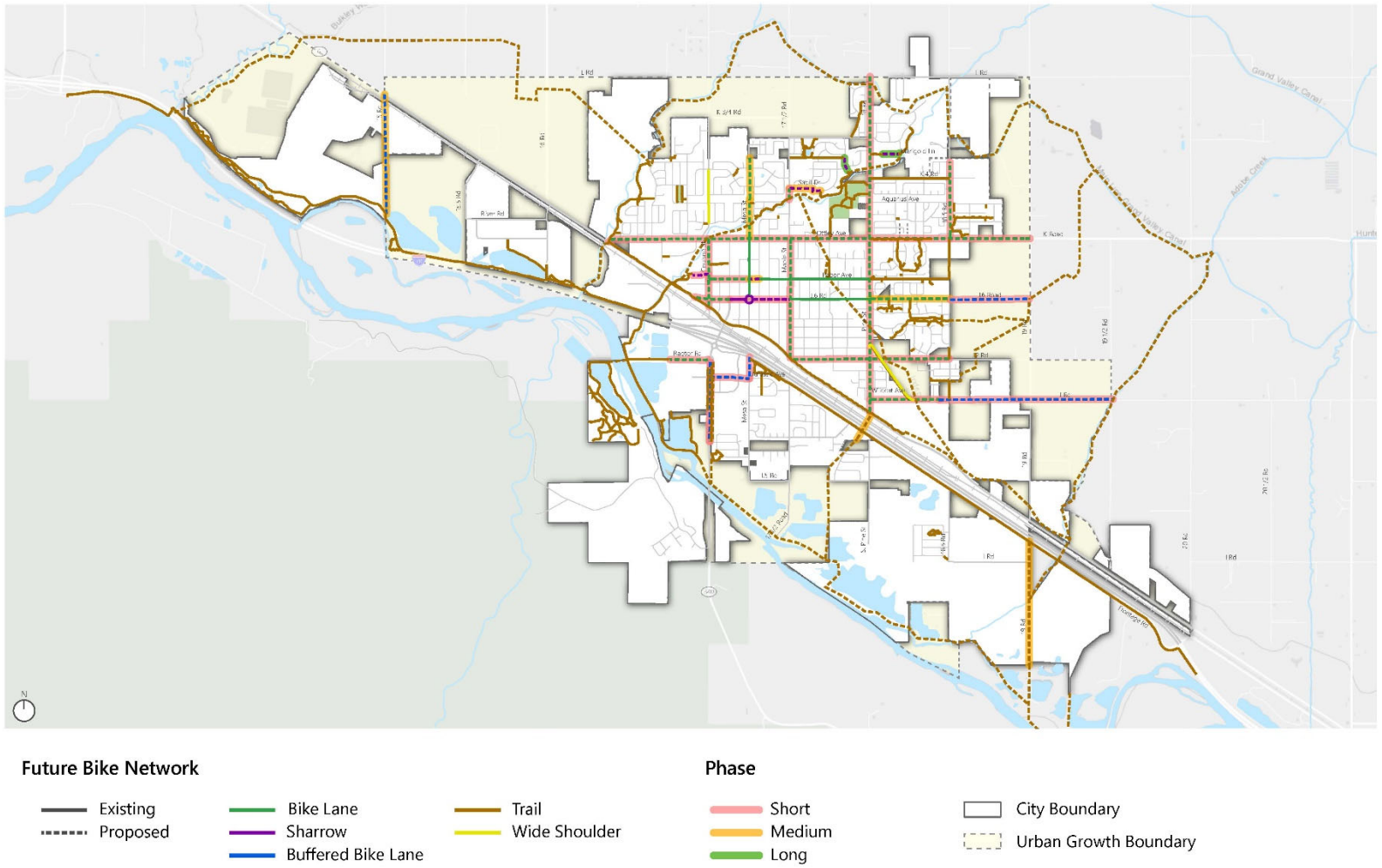


Figure 16: Phased bicycle projects

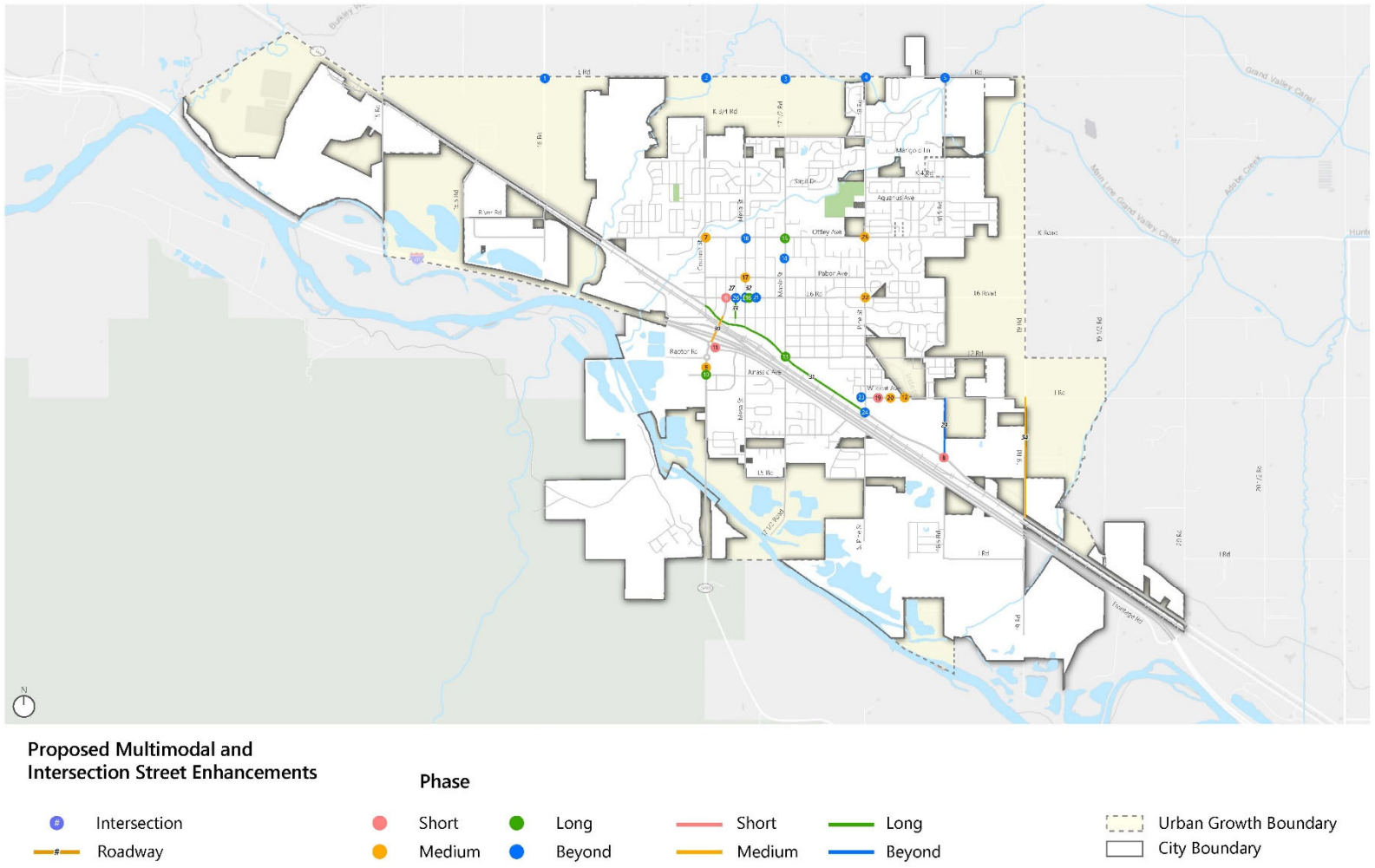


Figure 17: Phased multimodal and intersection projects

Implementation Considerations

As proposed high-priority projects approach implementation, there are a number of factors to consider to help guide the construction of projects to ensure they are completed in a streamlined, cost-effective, and sustainable way.

Funding Sources

As additional funding becomes available, the City of Fruita can allocate new funding resources towards implementing currently unfunded projects. The funding landscape is competitive and often requires City departments to enter the planning phase thinking about grant requirements that will set the City up for success in being awarded grants. A critical step in obtaining external grants is having project priorities identified in a transportation plan that are supported by the community and elected officials. Many of the projects in this plan could be a grant funded project. It will be critical to have the projects "shovel ready" so that the funding can be used for implementation. In most cases, the list of external funding sources requires local matching funds.

Funding sources will continue to change between 2021 and 2050, but this section identifies grant and funding streams available as of September 2021. This section identifies the funding sources that supplement existing funding streams in Fruita.

Federal

- Federal Highway Safety Improvement Program (HSIP)
- USDOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (formerly BUILD and TIGER)
- Infrastructure for Rebuilding American (INFRA)

State

- CDOT Funding Advancements for Surface Transportation and Economic Recovery Act (FASTER)
- Safe Routes to School (SRTS)
- Great Outdoors Colorado (GOCO)

Regional

- Regional Priority Program
- Multimodal Options Fund
- GVMPO Metropolitan Planning
- Transportation Alternatives

Local

Local funding sources can include vehicle registration and title fees, impact fees, other development impact fees, tax-increment financing, household utility fees, voter-approved bond, lodging tax, document stamp taxes, employment-based fees, and property, sales and use taxes.

Implementing Agencies

The City of Fruita should coordinate both internally and externally to implement proposed projects in a manner that ensures efficiency, potential cost savings, and the most effective long-term solutions. The Engineering Department should coordinate with Parks & Recreation, Planning and Development, and Public Works will be important to make sure there is a seamless connection between transportation facilities and trails, new development, and other investment in the right of way. The City should also coordinate with external partners including Grand Junction, Public Lands, Mesa County, Grand Valley Regional Transportation Planning Organization, and Grand Valley Transit. This collaboration will allow for a seamless travel experience for users across the region, opportunities to leverage funding sources, and consistency with future planning efforts.

Phasing

Although most projects are listed in this plan as a single project, Fruita and relevant municipalities should consider the phasing of projects, as appropriate. This means that projects can be completed for part of the defined limits or only including part of project description, if deemed appropriate. This desire to implement projects in a phased approach may arise if there are opportunities through partnerships, funding sources, repaving schedules, or changes in project needs. For example, a grant specific for active transportation may fund the bicycle and pedestrian components of a multimodal project but not the roadway components.

Conclusion

The Fruita Circulation Plan is a long-term transportation and mobility plan that will serve as a guide for the City as growth continues to occur. Many projects, programs, policies, and studies are recommended for all modes of transportation (vehicle, transit, bikes, and walking) to help maintain or improve the quality of life for the City's residents and visitors.

Creating a plan far in advance provides the City with a blueprint for funding requests to implement any recommendations as well as to work on the preservation of the right-of-way to either provide additional roadway capacity, enough curb space for transit stops and stations, and/or safe pedestrians and bicycle facilities.

In the future, new forces and emerging technologies will impact Fruita and most communities around the globe. Examples of these include telecommuting, microtransit, electric vehicles, autonomous vehicles, and many others that will present challenges but also opportunities to better serve the communities. As these continue to appear, growth continues to occur, and projects implemented, the City should continue to track the success of the plan or make adjustments and modifications if not achieving the desired goals.

Appendix A: Existing Conditions Memorandum

FEHR PEERS

Memorandum

Date: March 24, 2021

To: Sam Atkins, City of Fruita

From: Charlie Alexander and Carly Sieff, Fehr & Peers

Subject: Fruita Circulation Plan: Existing Conditions

DN20-0673

Introduction

Fruita's *Circulation Plan* is a multifaceted effort to update the City's street network and bicycle and pedestrian facilities through infrastructure, policies, and programs. The Plan must be underpinned by a thorough understanding of the current transportation network and how it serves Fruita and the surrounding region. The *Circulation Plan* addresses all modes operating within the City—people driving, walking, biking, and taking transit. This existing conditions memo provides a review of previous plans as well as a snapshot of the multimodal infrastructure and services.

Previous Plan Review

The *Circulation Plan* will update and build off the recommendations, goals, objectives, and vision set by recent plans for all transportation modes. The *Circulation Plan* will identify accomplishments from previous planning efforts, highlight any actions not yet taken, and provide new opportunities for improving local and regional transportation options in Fruita. These previously completed plans also included extensive public outreach and stakeholder engagement efforts to establish visions for the community, policies, and goals. It is important that the *Circulation Plan* considers and is consistent with the community's priorities and values identified in these planning efforts while also performing its own comprehensive outreach effort acknowledging that these values evolve over time. The City has also grown and implemented a number of

recommendations since the adoption of these plans; the *Circulation Plan* will provide updates that reflect these changes and progression. The *Circulation Plan* will build off of the analyses and recommendations in these planning efforts. Reviewed plans consist of:

- Parks, Health, Recreation, Open Space and Trails Plan
- Fruita in Motion Comprehensive Plan
- Land Use Code Update
- Grand Valley Regional Transportation Plan
- Pedestrian and Bicycle Circulation Study

Land Use Code Update (Current)

The goal of the Land Use Code Update is to draft a Code that is adaptable, flexible, yet effective as Fruita continues to expand and change. What is paramount is to ensure that the Code is succinct, well-organized, and easily understandable. The update will carry forward the goals of the *Comprehensive Plan* and make them actionable through the land use code. The process of updating the Code will include looking at comparable communities, both in Colorado and in different parts of the U.S. to learn best practices and to incorporate the most effective strategies. The team will also analyze different types of code, from form-based to performance-based, to help Fruita find what works best, and tailor it to Fruita's specific needs. The outcomes from the land use code update will inform the Circulation Plan by identifying locations of increased density and transportation demand that will need enhanced transportation facilities. The process to update the code is anticipated to last through mid-2021.

Fruita Parks, Health, Recreation, Open Space and Trails (PHROST) Plan (2020)

The vision of the *Parks, Health, Recreation, Open Space, and Trails (PHROST)* Master Plan is to act as a long-range planning and implementation document which will guide future development of parks, health, recreation, open space, and trails within the City. The key outcomes of the Plan are to:

- Evaluate, inventory, collect and compile data on existing parks, open space, trails, and recreation facilities;
- Develop a profile of existing and projected PHROST-related community needs;
- Establish guiding principles for the management of parks and recreation services in Fruita;

- Define park and facility standards, levels of service, and definitions for each type of park and facility;
- Define program standards which include a list of policy criteria;
- Develop a master plan for Council adoption that has implementation strategies along with an action plan.

Table 1 and **Table 2** shows the recommendations for parks/facilities and trails, respectively, per the PHROST Plan. **Figure 1** and **Figure 2** show these recommendations spatially.

Table 1: PHROST Park and Facilities Recommendations

Site	Improvements	Trigger	Capital Estimate	Estimated O&M Impact
High Priority				
Reed Park	Gathering space, open turf, skatepark, basketball courts, parking	Community need and LOS gap reduction; grant funding approval	$900,000 to $1,000,000	Reduction in O&M
Little Salt Wash Park Expansion (Wills Property)	Parking, pickleball courts, edible garden, pathway, restrooms, storage facilities, irrigation pump station	Easement requires action	$1,000,000 to $1,200,000	$40,000 per year
Medium Priority				
Lagoon Development Area (planning phase)	Plan for pavilion, parking, fieldhouse, with courts, infrastructure, off-leash dog park, synthetic turf fields	Community need, economic development, and public-private partnership opportunity	In-house	-
Circle Park	Park Square pedestrian and landscape improvements	Safety is prioritized	$2,600,000 to $2,700,000	None
Civic Center Memorial Park	Infrastructure and landscape improvements (CCMP and Downtown Fruita MP)	Community and maintenance needs	$550,000 to $600,000	Reductions in O&M
Fruita Community	Further determine specific needs and	Service area of FCC between 25,000-	$50,000	-

Center Expansion & Orr Park Renovation Feasibility Study	possibilities for expansion of FCC to accommodate capacity needs	30,000; annual visitor use consistently exceeds 125,000		
Fruita Community Center Expansion & Orr Park Renovation Design & Construction	Expand for chemical & supply storage and pump room; add outdoor spray park, parking expansion	Feasibility study demonstrates need		Dependent upon improvements
Wastewater Treatment Site	Signage and wayfinding	Capital budget	$10,000	$2,000-3,000
Parkland acquisition in the City's southeast	Acreage for a large neighborhood or community park	Population growth exceeds 200 people in southeast area of the UDB	TBD	$140,000 to $286,000 per year, depending on acreage
Mountain Properties	Community-informed vision	Staff time and budget	$25,000 to $35,000	-
Low Priority				
Lagoon Development Area (design and construction phase)	Infrastructure, off-leash dog park, synthetic turf/open turf, fieldhouse with courts, pavilion, parking	Community need and public-private partnership opportunity	$6,156,000	$180,000 per year but dependent upon partnership arrangement
16 Rd and L Rd (Etchart Park)	Sports complex; additional land *may* also be required	Growth in the northwest UDB and in the county's URR area	TBD	$290,000 per year

Table 2: PHROST Trail Recommendations

Location	**Approximate Length (Miles)**	**Cost Estimate (paved trail construction only; $508,200 per linear mile)**
High Priority		
Little Salt Wash Trail: Fruita Community Center to Sierra Drive	0.50	$254,100

Little Salt Wash Trail: Maple Street to Little Salt Wash Park	0.20	$101,640
Little Salt Wash Trail: N Coulson Street to trail off Gewont Lane, across from Fruita Community Center	0.20	$101,640
Little Salt Wash Trail: Wildwood Trail to Village at Country Creek Trail	0.50	$254,100
Raptor Road to Colorado Riverfront Trail	0.50	$254,100
CRSP Trail: Trail extension from Fruita State Park to Red Cliffs Drive	0.50	$254,100
Medium Priority		
High School to Riverfront Trail (I-70 Pedestrian Bridge)	0.25	$800,000-$1,200,000
Fruita Riverfront Area Trail Loops	2-3	$2,600,000 - $3,100,000
Snooks Bottom to Lagoon Property (Colorado River Pedestrian Bridge)	0.50	$1,200,000-$1,900,000
Lower Big Salt Wash Trail	0.25	$1,270,500
Upper Big Salt Wash Trail	2.50	$1,270,500
Upper Big Salt Wash Trail Connector to Etchart Park	1.00	$508,200
Ranchman's Ditch Canal Trail	2.75	$1,397,550
18 Road – North Fruita Desert/SRMA Segment	20.0	TBD with Mesa County to secure easements
Low Priority		
Grand Valley Canal Trail	4.00	$2,032,800
Railroad Commuter Trail	2.5	$1,270,500
GV Canal to Ranchman's Ditch Alignment	5.00	$2,541,000
Adobe Creek Trail	2.50	$1,270,500
Horsethief Canyon Road to Kokopelli Trail	5.00	$900,000 (soft surface)

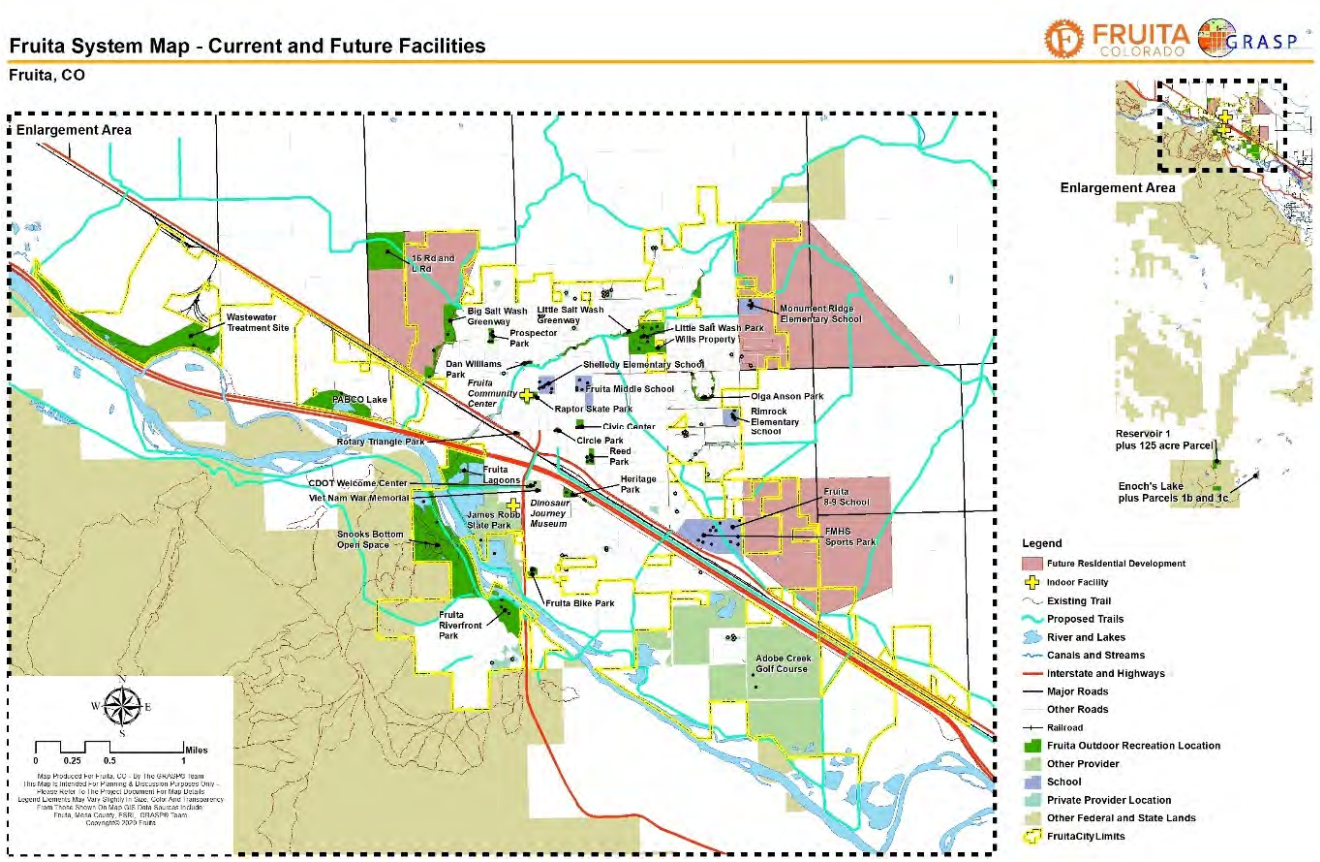


Figure 1: Current and Future Recreational Facilities

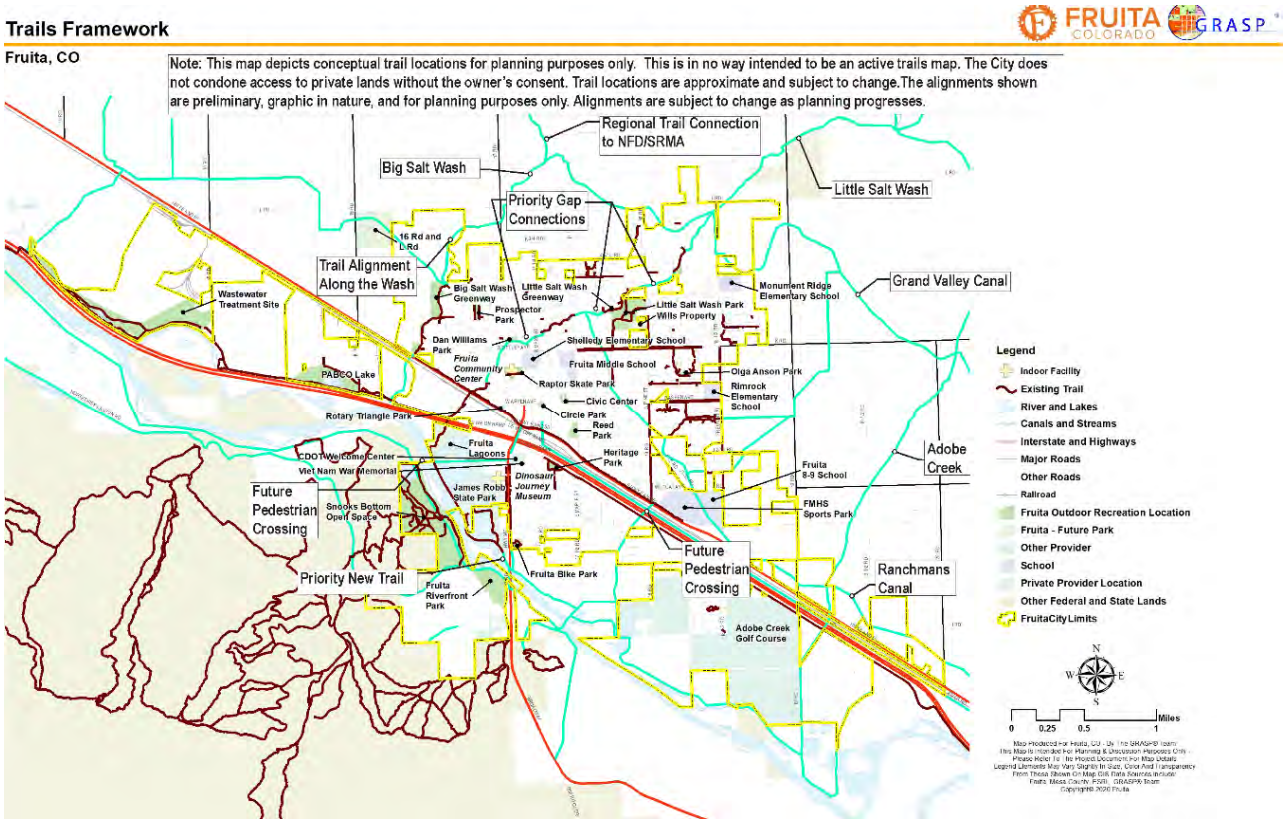


Figure 2: Trails framework

The PHROST Plan identifies pedestrian barriers in Fruita, such as major streets, highways, and rivers. Zones created by identified barriers, displayed as dark red lines in **Figure 3**, serve as discrete areas that are accessible without crossing a major street or another obstacle.

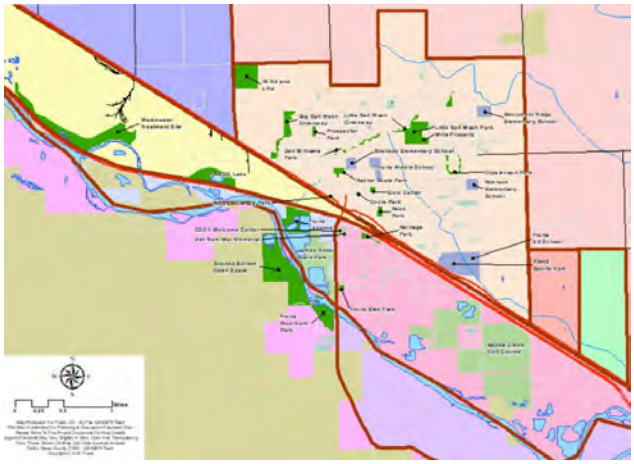


Figure 3: Barriers to walkability (shown as red lines)

New Trails

This sections describes new trails, as proposed by the PHROST Plan.

Little Salt Wash Trail

Segments of trail exist along Little Salt Wash, north of Ottley Avenue between 17 Road (Coulson) and 18½ Road (Freemont), at I-70 along the wash, and through Little Salt Wash Park. These trail segments should be connected to complete the system and extended through the community, from the Grand Valley Canal Trail to the Colorado Riverfront Trail. Near the Fruita Community Center, the trail will likely need to be accommodated by a widened sidewalk along Coulson. Road crossings should be clearly delineated, with special paving at crosswalks and warning flashers with signs. Drainage culverts exist under US6/50 and the railroad which can accommodate the trail connection to the Colorado River. Extension of the Little Salt Wash to the north to connect to BLM lands should be coordinated with Mesa County. A pedestrian bridge is also needed across Little Salt Wash from the park to the existing portion of the Little Salt Wash trail. This would provide access to the park for the neighborhoods to the north, which are currently underserved.

Big Salt Wash Trail

A segment of the Big Salt Wash Trail has already been constructed, from a trailhead near US6/50 on Ottley Avenue to Celestite Drive. A connection from this trailhead south to the Riverfront Trail should be constructed (Lower Big Salt Wash Trail). The Upper Big Salt Wash Trail should also be constructed north along Big Salt Wash to a point where it would connect with a proposed trail along the Grand Valley Canal near 17½ Road, north of L Road. A trail could also eventually be extended north along the wash with the intent of connecting to the North Fruita Desert BLM lands, a popular mountain biking destination. Extension of the trail past the Grand Valley Canal should be coordinated with Mesa County, as it would be outside the city's urban growth area. The most feasible connection at this time to the BLM lands may be via widened shoulders on the county roads to the north.

Ranchman's Ditch Canal Trail

This canal runs diagonally southeast through Fruita, from Little Salt Wash to Adobe Creek and further east to Grand Junction. The canal corridor provides an opportunity for a trail that would connect to the 8/9 school, high school, and proposed trail along Adobe

Creek. This trail would be approximately 2.75 miles in length along the north side of the canal. Maintenance requirements and water delivery issues associated with canal operations must not be negatively affected, and safety features installed if required. Although a significant capital expense, there should be consideration of piping Ranchman's Ditch to create an effective, safe, corridor.

Many other communities in Colorado have successfully partnered with irrigation companies to provide trails nearby irrigation canals in a safe and mutually beneficial manner. Currently, the City of Fruita requires a 50-foot buffer from all canals for new development.

Grand Valley Canal Trail
This canal runs across the northern portion of Fruita, from Big Salt Wash, through Little Salt Wash to Adobe Creek. The corridor around to this canal provides a great opportunity for a 4-mile trail that would connect to a proposed Neighborhood Park and the proposed trail along Adobe Creek. Maintenance requirements associated with canal operations must be maintained, and safety features installed if required. Many other communities in Colorado have successfully partnered with irrigation companies to provide trails along irrigation canals in a safe and mutually beneficial manner. Currently, the City of Fruita requires a 50-foot buffer from all canals for new development.

High School to Riverfront Trail
An overpass across I-70 near the high school is a high priority for the community. This bridge would allow students on the south side of I-70 to have direct access to the schools, as well as allow for a recreational trail connection to the Colorado River for residents in the northeastern portion of the community. A large drainage channel exists south of the frontage road to the river, providing a logical route for this trail. Design and construction of the I-70 pedestrian overpass should include provisions for bicyclists, and would require detailed design studies for its placement. Fruita will need to coordinate with CDOT for design, construction, maintenance, and funding for this bridge. An example of a similar bridge is located in Colorado Springs, across I-25 near the downtown.

Adobe Creek Trail
This 2.5-mile trail is proposed to follow Adobe Creek, a major drainage in the eastern planning area of Fruita. Near-term trail development would start upstream at the Grand Valley Canal, follow Adobe Creek southwest, pass under US6/50, the railroad and I-70, and join the Riverfront Trail near Adobe Creek Golf Course. It is recommended that Mesa

County consider extending this trail from the Grand Valley Canal further to the northeast (beyond the Fruita planning area) to provide additional trail opportunities for Mesa County residents and visitors to the region.

Horsethief Road to Kokopelli Trail
A county road exists from the entrance to Snooks Bottom Open Space, approximately 5 miles to the west where it ends across the river from the Loma boat launch. This road could be used as an unpaved trail because vehicular traffic is very low. To connect to the Kokopelli Trail, a bridge would need to be constructed across the Colorado River at its west end.

Railroad Commuter Trail
An abandoned county road runs between the railroad and I-70 from the Co-Op Grain Elevator to 20 Road. This 2.5-mile old road bed can be regraded and paved fairly easily for use as a commuter or higher speed recreational trail; however, some minor bridges and culvert crossings may be required. It would provide faster access for bicyclists towards Grand Junction than the Riverfront Trail, and could be extended by Mesa County beyond 20 Road.

Fruita in Motion Comprehensive Plan (2020)

Adopted by City Council in February 2020, *Fruita in Motion: Plan Like a Local* is the City's guiding document for land use development while also serving as departments' framework for budgeting, capital planning, partnering, and future planning. Fruita in Motion, Chapter 6, provided policies and actions which aim to positively impact the transportation options of the Fruita community. It is intended for this Circulation Plan to further these policies and actions by identifying the initiatives, partnerships, and infrastructure needed by the community to create the grounds for success. The vision for transportation as defined by Fruita in Motion is:

The City of Fruita has well-maintained and safe roadways, intersections, sidewalks, and trails. It has a transportation system that balances access and mobility through multimodal improvements on existing roads as well as coordinated planning with new development. Transportation facilities contribute to the character of the community by providing inviting streetscapes, off-street connections, and attractive gateways to the community.

The goals include:

- Designing streets based on land use and context

- Provide safe bicycle and pedestrian facilities to allow comfortable travel by foot or bike
- Make downtown pedestrian-oriented
- Support safe and efficient circulation through the city from I-70 and along State Highway 6&50
- Maintain existing infrastructure

Figure 4 and **Figure 5** show maps of the transportation facilities recommended as a part of *Fruita in Motion*. Potential cross sections from the Plan are also shown.

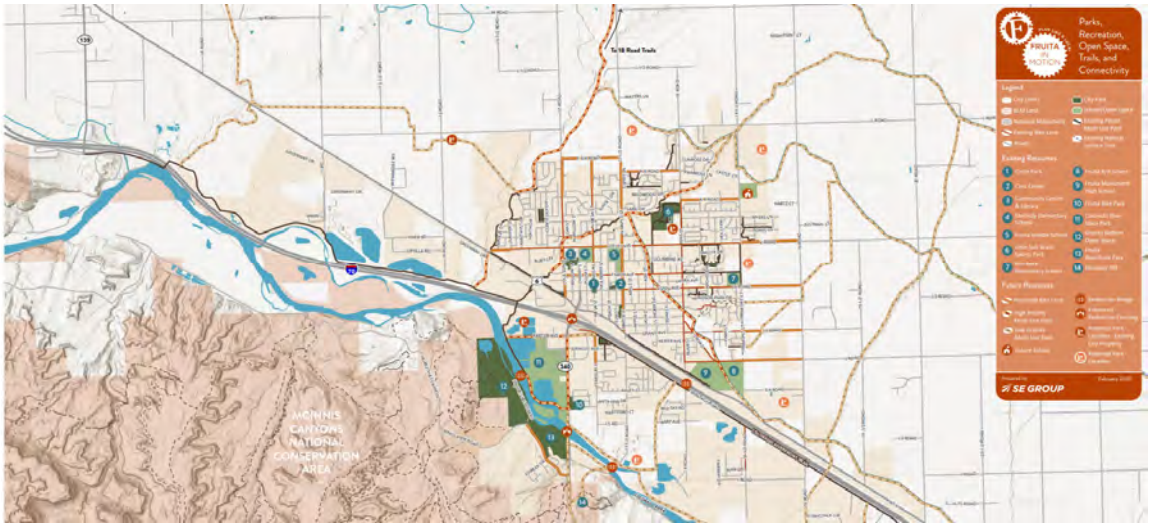


Figure 4: Parks, Recreations, Trails and Connectivity

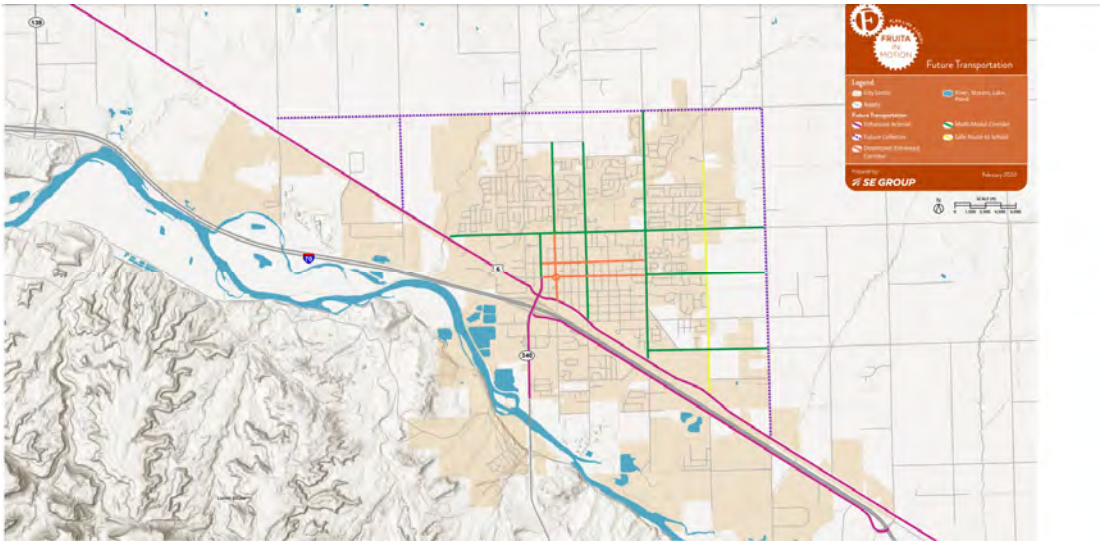
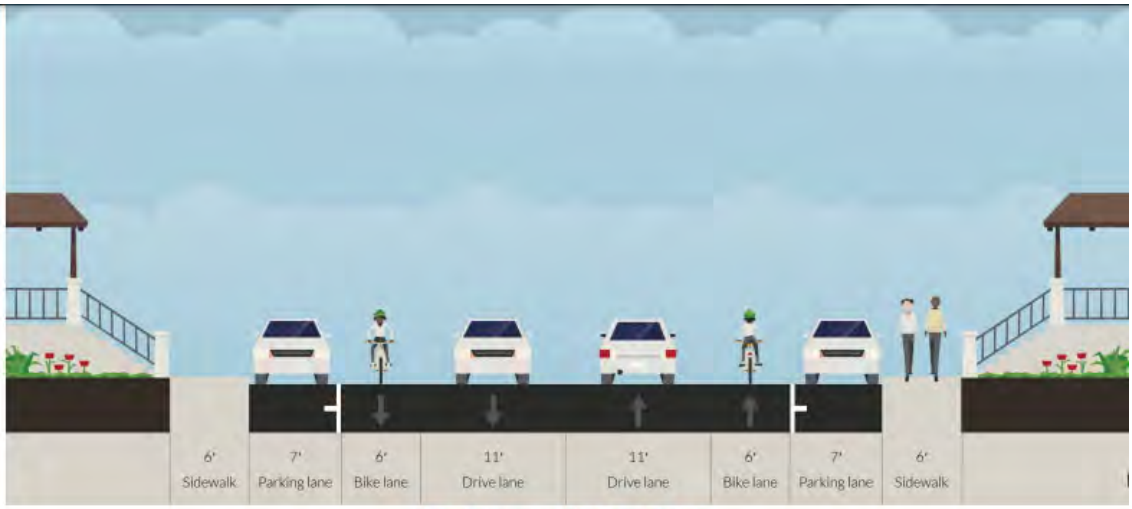


Figure 5: Future Transportation Facilities

Downtown Enhanced Corridor
Angled parking may vary depending on street segment

Safe Route to School Corridor
Safe crossing every two blocks; two-way turn lane would alternate with median; left-hand sidewalk is a multi-use path



Multi-modal Corridor
Parking may be eliminated from one side as ROW width varies

Future Collector Corridor
Many of these roads are currently two-lane roads with no shoulder. Ensure turning lanes and pedestrian/bike facilities are built as development occurs.

Grand Valley Regional Transportation Plan (RTP) (2019)

The Regional Transportation Plan (RTP) was recently completed by the Grand Valley Metropolitan Planning Organization (GVMPO). The RTP is required under federal regulations and is critical for the region to assess, prioritize, and fund future transportation improvements. This Plan is required to be updated every five years, in order to capture demographic, land use, technology and economic changes in the region and broader transportation industry. This planning process examines current transportation issues and needs for travelers, workers, visitors, and residents of the region. The regional plan covers all of the Grand Valley, including the communities of Clifton, Collbran, DeBeque, Fruita, Gateway, Glade Park, Grand Junction, Loma, Mesa, Mack, Palisade, Whitewater and the rest of Mesa County.

The Grand Valley 2045 RTP, an update to the 2040 RTP, is the most recent update to the region's overall vision for future transportation infrastructure and investment. The 2045 RTP looks out 25 years into the future and identifies the types of investments and strategies needed to address transportation needs in the region. The RTP includes a list of critical regional priority projects anticipated to be implemented between now and 2045. Important but unfunded transportation needs are also described and may be implemented should additional funding become available. The long-term guidance developed in the Regional Transportation Plan (RTP) informs a short-term capital improvement plan, or the Transportation Improvement Program (TIP). The GVMPO works with the GVRTC and TAC to maintain the TIP which is used to designate funds for projects selected by local governments and the Colorado Department of Transportation. This Plan guides future investments in the region's transportation system to reduce congestion, improve safety, promote alternatives to the private automobile, enhance connectivity and comfort for those biking and walking, increase reliability and frequency of the transit system and maintain an efficient and effective transportation system that supports the regional economy. The 2045 RTP applies a performance-based approach to planning in order to quantify the prioritization of projects based on federally-determined and locally-informed performance measures. Regional investments are tied to newly established national and state goals for performance, condition, safety and mobility of the transportation system. This plan also provides GVMPO with the resources necessary to continue to measure the success of regional investments in delivering results and will communicate progress to the public and elected officials.

Figure 6 and **Figure 7** show the recommended projects in Fruita from the RTP. The *Circulation Plan* will build off of these previously recommended projects.

Roadway Project Code	Project	Extent	Extent	Timeline	Cost
130	K.4 Road	Pine St	Fremont St	2 years	$2,000,000
122	19 Road	US 6	Ottley Ave	5 years	$14,110,000
124	Coulson Street	Sunset Dr	K 3/4 Road	5 years	$996,000
125	Fremont Street	US 6	L Road	5 years	$11,686,400
126	Grand Avenue	Cottonwoods subdivision (just east of Pine Street)	19 Road	5 years	$1,992,000
128	I 3/4 Road	Fremont Street	19 Road	5 years	$3,320,000
139	S. Fremont Street	Frontage Road	Adobe Falls Sub	5 years	$665,000
141	S. Pine Street	Frontage Road	Adobe View North	5 years	$149,400
143	Wildcat Ave.	J.3 Road	Fremont St	5 years	$2,075,000

Figure 6: RTP Proposed Roadway Projects in Fruita

Active Transportation Project Code	Facility Type	Project	Extent	Extent	Timeline	Cost	Other Implementing agencies
34	Bike Lanes and Bike Route	K Road, Fruita/Mesa County	US 6	20 Road	20 years	$2,085,000	Mesa County
51	Bike Overpass	Adjacent to the I-70 SH-340 interchange			20 years	$2,000,000	CDOT
53	Bike Path	Colorado Riverfront Trail	Monument View	Kokopelli Drive	20 years	$5,000,000	
10	Bike Lanes and Bridge	18 Road	Riverfront Trail	J Road	20 years	$428,000	
32	Shared Use Path	Riverfront Trail	SH-340	20 Road Overpass	20 years	$3,991,000	
20	Shared Use Path	17¼ Road	SH-340	River Bridge	20 years	$5,000,000	
29	Shared Use Path	Fruita Colorado River Bridge	Kingsview Road	Colorado River State Park, Fruita Section	20 years	$5,654,000	
48	Shared Use Path	Big Salt Wash - Fruita	Riverfront Trail	L Road	20 years	$1,500,000	
52	Bike Overpass	18.5 Road over I-70			20 years	$2,000,000	
72	Wayfinding	Grand Valley Wayfinding Project	Palisade	Fruita	Years 1-4	$300,000	Grand Junction, Mesa County

Figure 7: RTP Proposed Active Transportation Projects in Fruita

Pedestrian and Bicycle Circulation Study (2011)

This study examines the existing on-street pedestrian and bicycle network and makes recommendations for improvements to problem areas identified through resident input. It also provides the City with a toolkit of potential solutions that could be applied as needed. Creating safe routes to schools is a primary outcome of the study but signing improvements and 40 capital improvement projects (CIP) are also identified. Interstate 70, the Colorado River, the railroad, and drainages are recognized as barriers to mobility.

Maps and Analysis

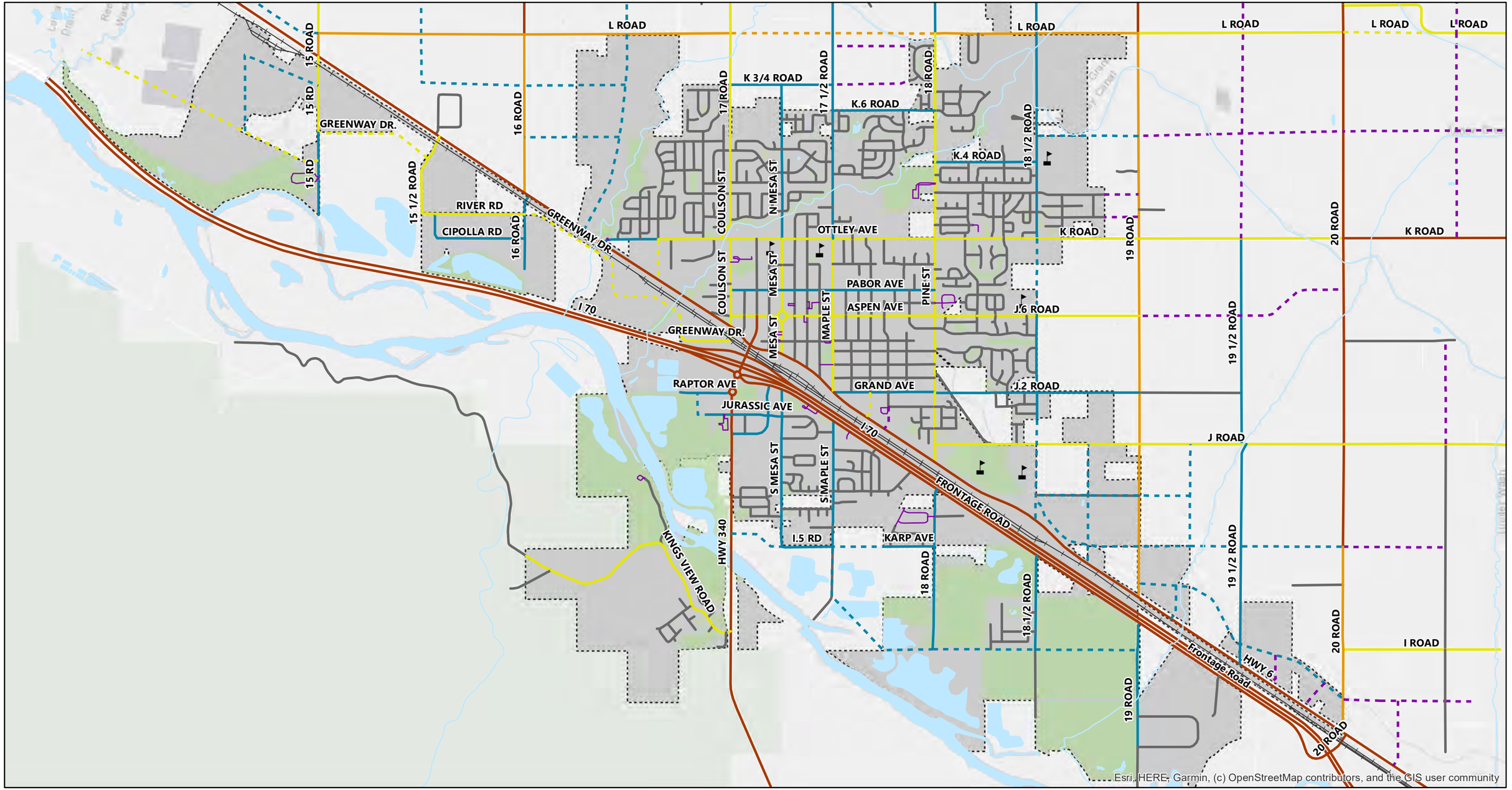
In addition to the previous plans review, an overview of existing conditions by category is included in this document. This section includes a summary of the City of Fruita's roadway network, bicycle and pedestrian networks, and transit network.

Roadway Network

The City of Fruita has just over 110 total miles of roadway. I-70, Highway 50, and Highway 6 provide regional connections to nearby communities while a network of arterials and collector streets serve local mobility needs. The major north-south roadways are 19 Road, Pine Street, Maple Street, Highway 340, and Highway 30/Cherry Street. I-70, the railroad, and the Colorado River along the southern border of the city create challenges for continuous connectivity between the northern and southern segments of the City.

Over 60% of the total roadways within the City of Fruita are residential streets. Residential streets function as access points within neighborhoods to individual dwelling units and other neighborhood amenities such as parks. In addition to residential streets, other street classifications include arterial, major collector, and minor collector, as shown in **Figure 8.**

Traffic volumes provide a snapshot of existing (2018) vehicular volumes at specific locations, as shown in **Figure 9**. The travel demand model produced forecasted volumes for 2045, as shown in **Figure 10**. Many roadways that serve as the primary accesses through Fruita are forecasted to almost double in volume, including Highway 340, J Road, Aspen Avenue, and 19 Road. The Grand Valley is growing, with Fruita only taking up a small share of that growth. Fruita's population growth represents about 9% of the county's growth between 2010 and 2018. The population is expected to continue to grow, resulting in an increased demand for travel and driving.



Legend

- City of Fruita Boundry
- Parks
- Schools

Roadway Classification

- Arterial
- Enhanced Travel Corridor
- Major Collector
- Minor Collector
- Other Road Type
- Unclassified
- Future Arterial
- Future ETC
- Future Major Collector
- Future Minor Collector
- Future Unclassified

Figure 8

Previously Proposed Roadway Network

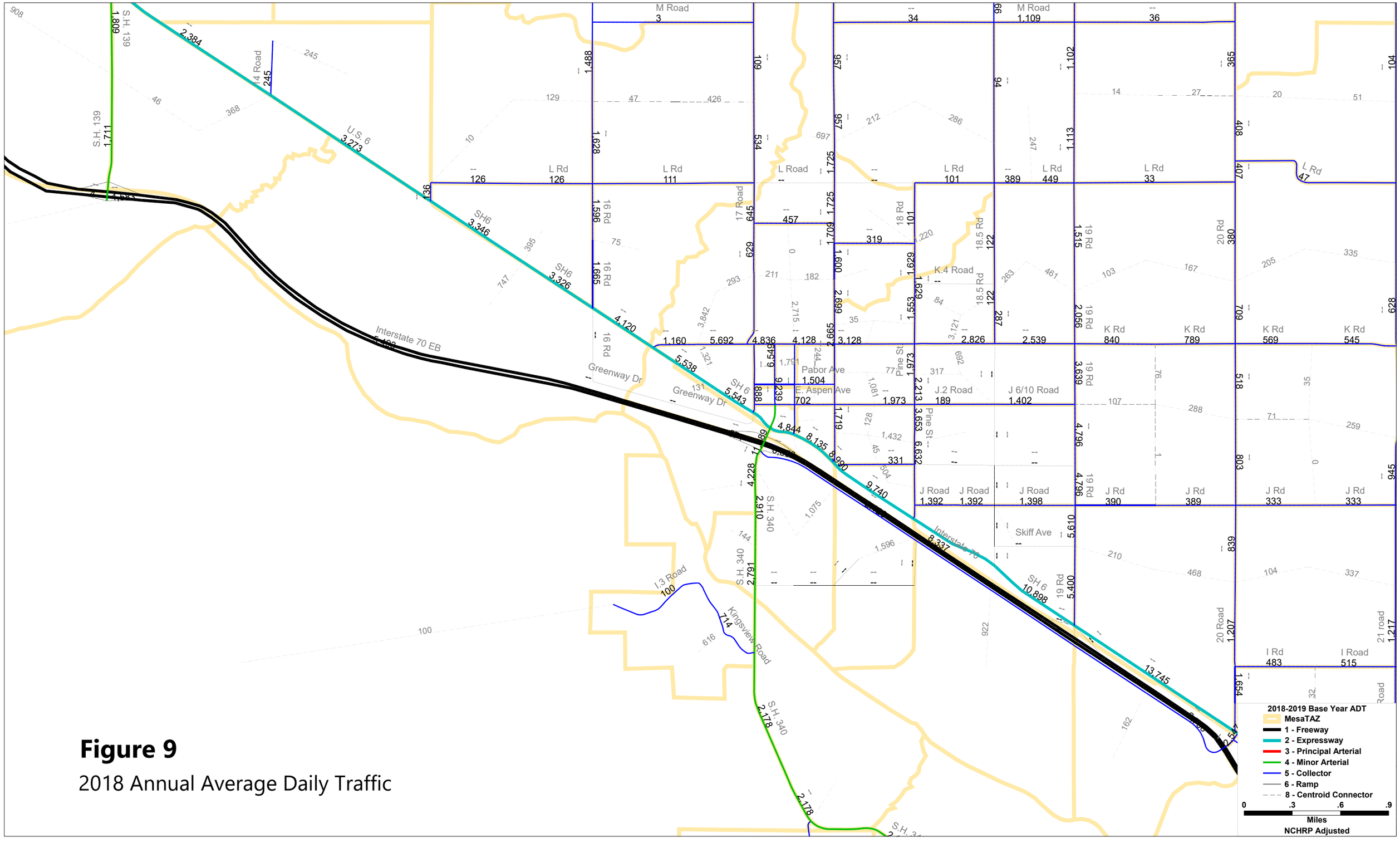


Figure 9

2018 Annual Average Daily Traffic

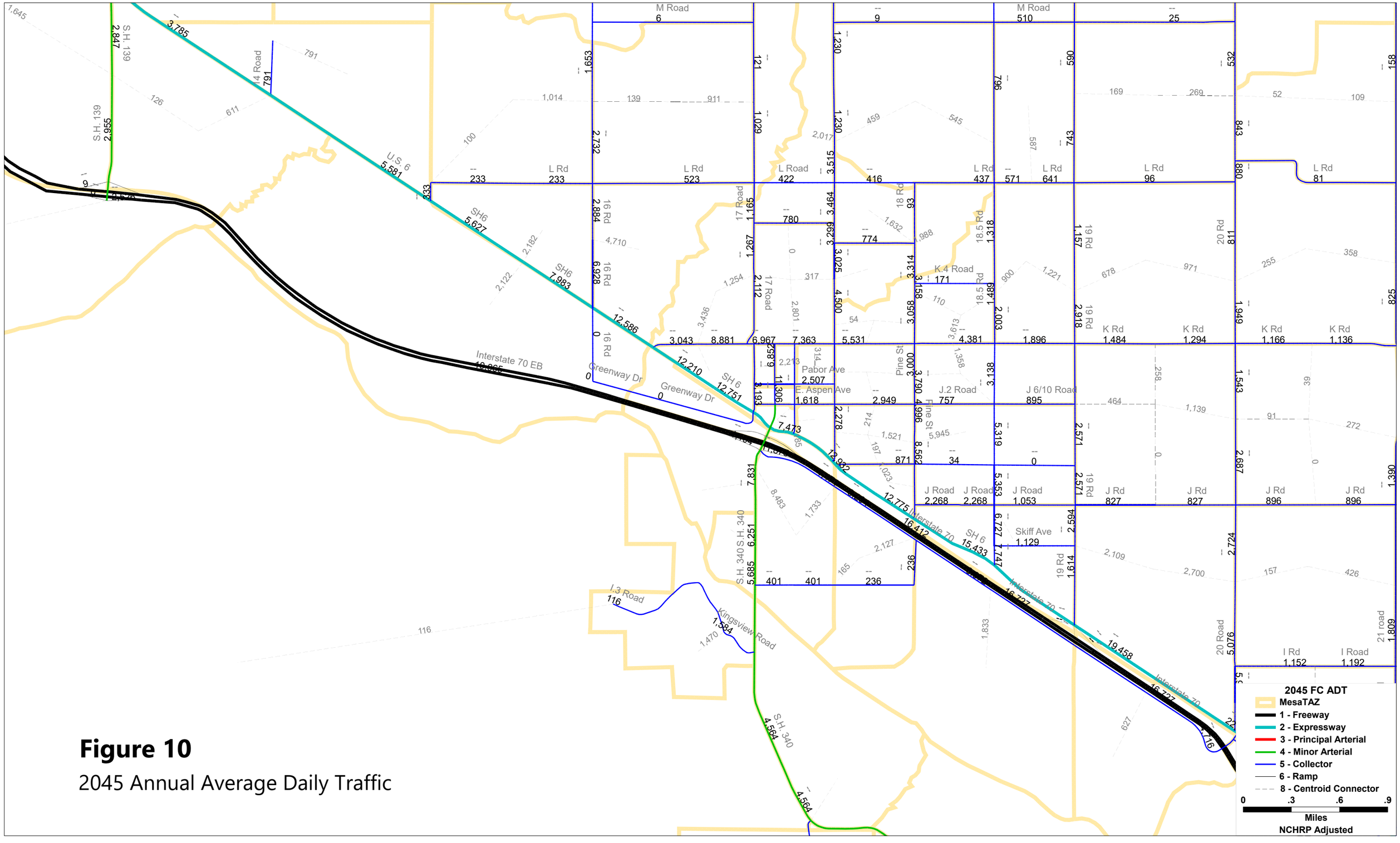


Figure 10

2045 Annual Average Daily Traffic

Bicycle Network

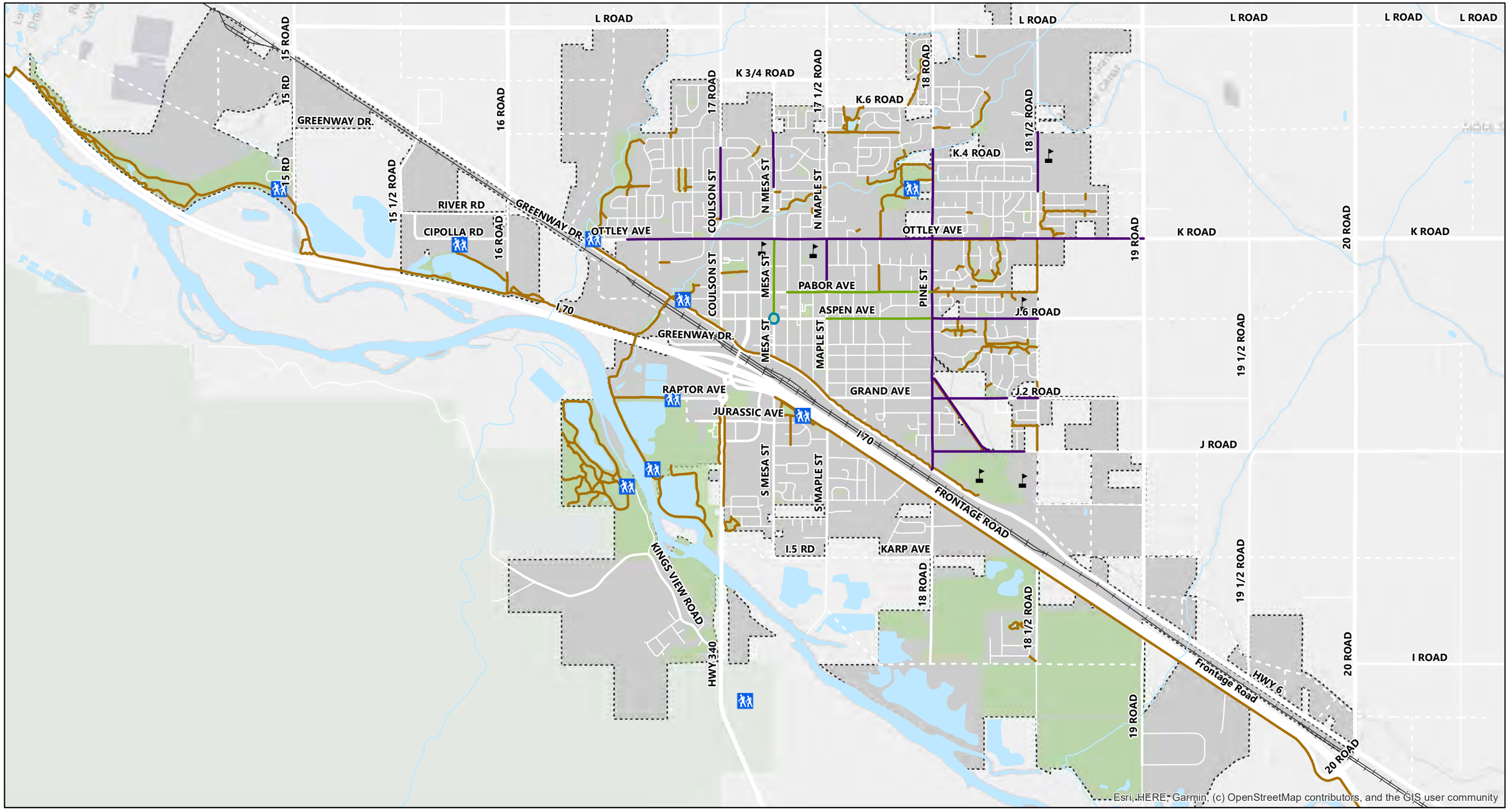
Figure 11 shows the existing bicycle network in Fruita, which consists of off-street facilities (trails) and on-street facilities (bike lanes and wide shoulders). The City of Fruita currently has strong backbones of a bicycle network with almost 30 miles of city trails, just under 9 miles of wide shoulders, and two miles of bike lanes. This network is missing key connections, which will be addressed as a part of the *Circulation Plan*. In addition to proposed connections, upgrading existing high-stress bike lanes to more comfortable facilities and creating bike lane standards will ensure new bike lanes are low stress and improve bicycle access across Fruita for all ages and abilities.

Pedestrian Network

The City of Fruita currently has a robust sidewalk network as shown in **Figure 12**. The City has 110 miles of existing sidewalk; however, only 400 feet of that sidewalk is wider than four feet. There are 21 miles of missing sidewalks within City limits. Areas with sidewalk gaps are primarily on the outer edge of the City where pedestrian demand is lower.

Transit Network

Grand Valley Transit (GVT) operates one route within Fruita, Route 8, as shown in **Figure 13**. Route 8 operates at an hourly frequency from 5:00 am to 8:30 pm and travels between Grand Junction's West Transfer Facility and Fruita.



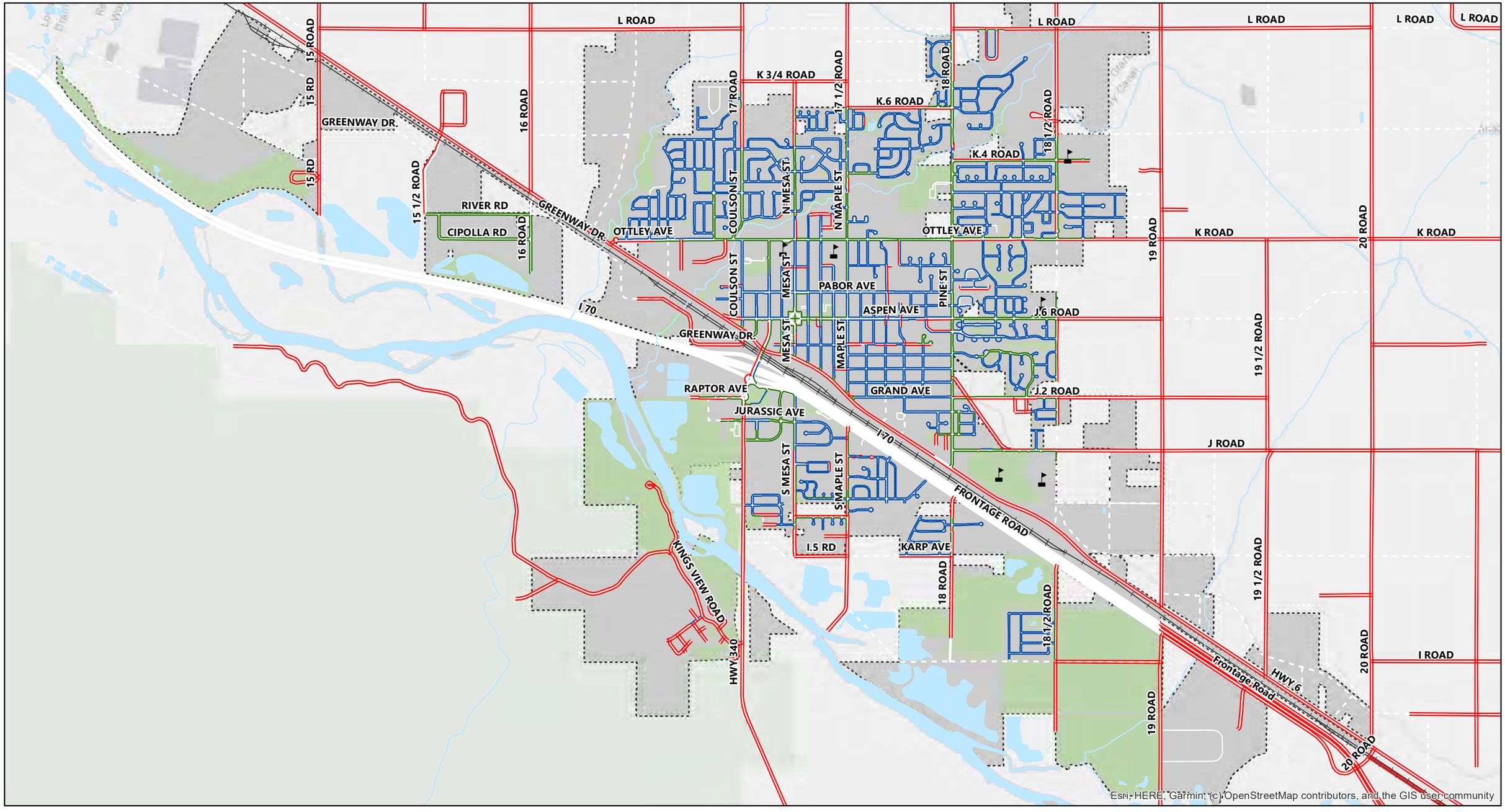
Legend

- City of Fruita Boundry
- Parks
- Schools
- Trailhead

Bike Facility Type

- Bike Lane
- Sharrow
- Wide Shoulder
- Trail

Figure 11
Existing Bicycle Facilities



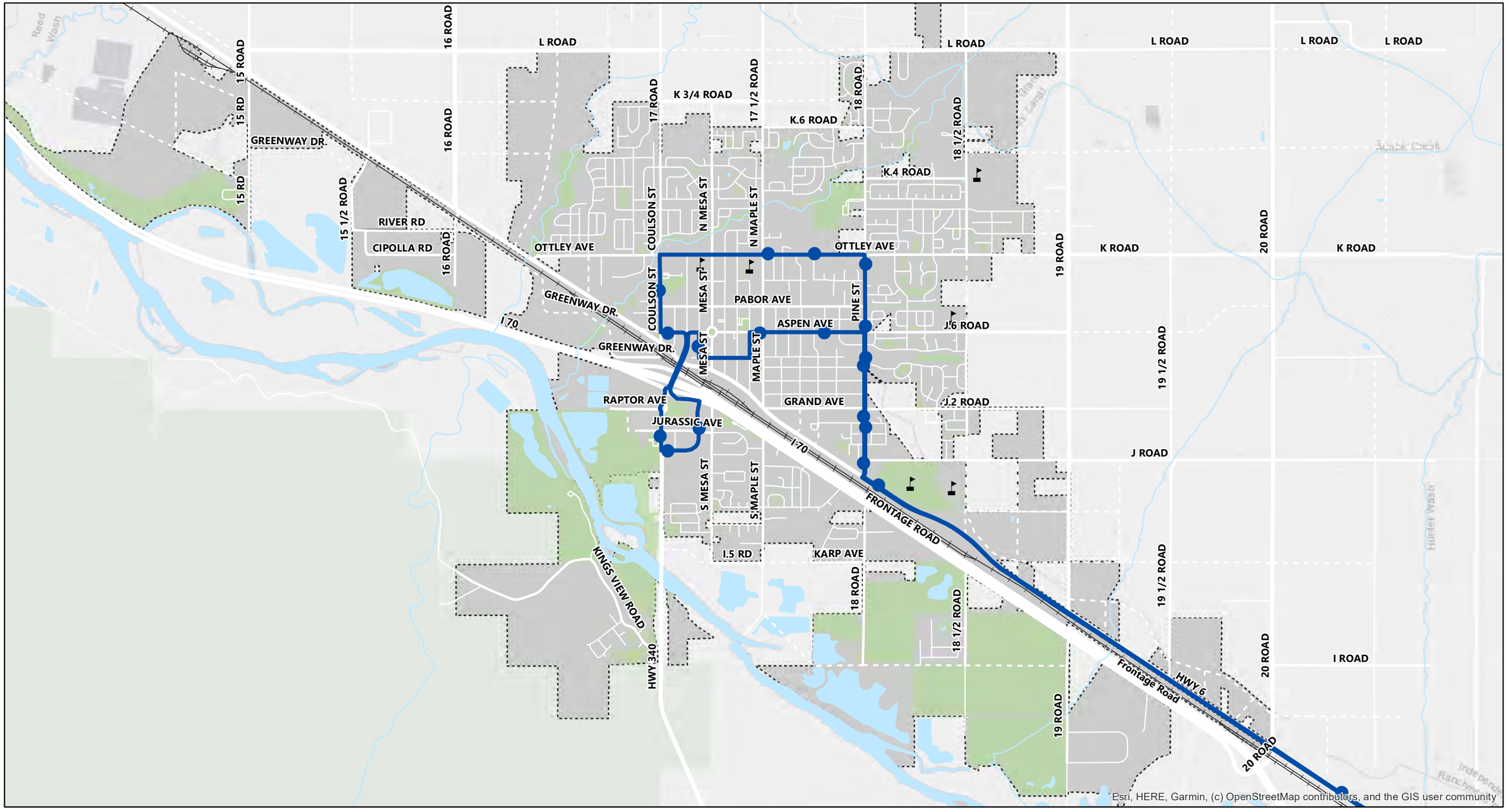
Legend

- City of Fruita Boundry
- Parks
- Schools

Sidewalk Width

- Less than or equal to 4 feet
- Greater than 4 feet
- Missing Sidewalk

Figure 12
Existing Sidewalks



Legend

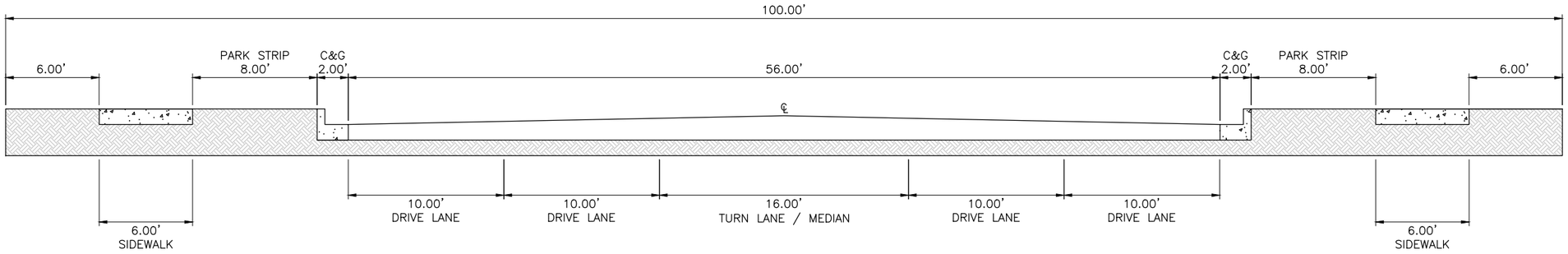
- City of Fruita Boundry
- Parks
- Schools
- Grand Valley Transit Bus Stops
- Grand Valley Transit Route 8

Figure 13
Existing Transit Network

Appendix B: Standard Drawings

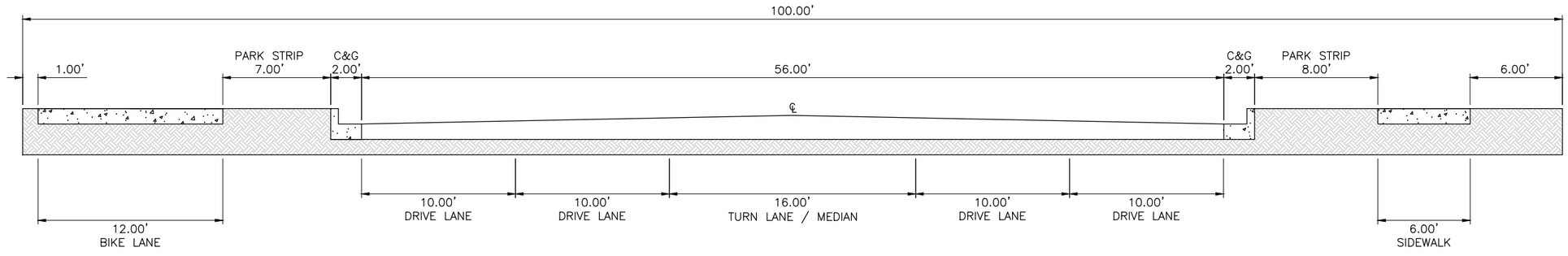
MAJOR ARTERIAL CORRIDOR

–SCALE: NTS
–ONE 16' CENTER TURN LANE / MEDIAN
–FOUR 10' DRIVE LANES
–NO PARKING



MAJOR ARTERIAL (ENHANCED TRAVEL) CORRIDOR

–SCALE: NTS
–ONE 16' CENTER TURN LANE / MEDIAN
–FOUR 10' DRIVE LANES
–NO PARKING
–DETACHED BIKE LANE ON ONE SIDE



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J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com

NO.	DESCRIPTION	BY	APP'L	DATE
	REVISION			

CORRIDORS - CITY OF FRUITA

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JUB PROJ. # :	07-21-010
DRAWN BY:	MF
DESIGN BY:	BG/MF
CHECKED BY:	BG

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AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 9/28/2021

SHEET NUMBER:

1

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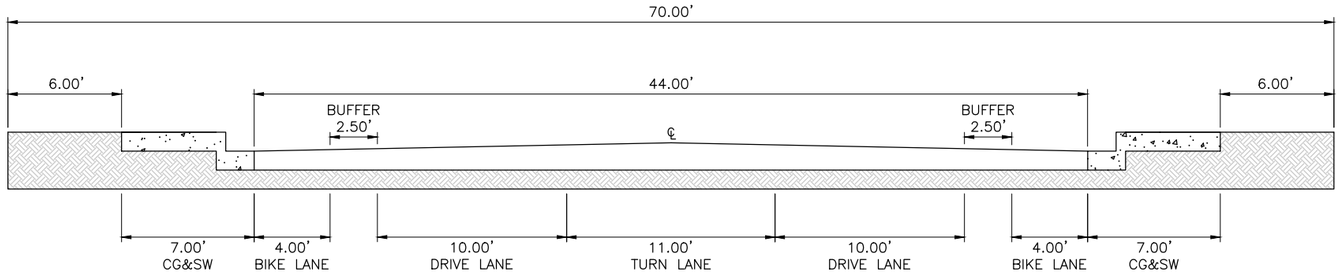
MAJOR COLLECTOR (25–30 MPH)

–SCALE: NTS
–TWO 10' TRAVEL LANES
–ONE 11' TURN LANE
–NO PARKING
–BUFFERED BIKE LANES
–MONOLITHIC CG&SW
–ALTERNATE: 6' DETACHED SIDEWALK W/ PARK STRIP



GREENWAY DRIVE COLLECTOR (INDUSTRIAL)

–SCALE: NTS
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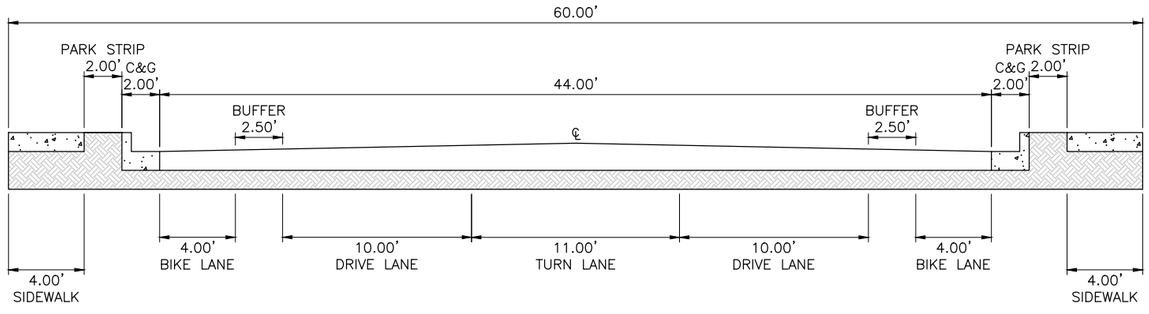
–ONE 11' TURN LANE
–NO PARKING
–BUFFERED BIKE LANES
–DETACHED SIDEWALKS WITH PARK STRIPS



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SHEET NUMBER:
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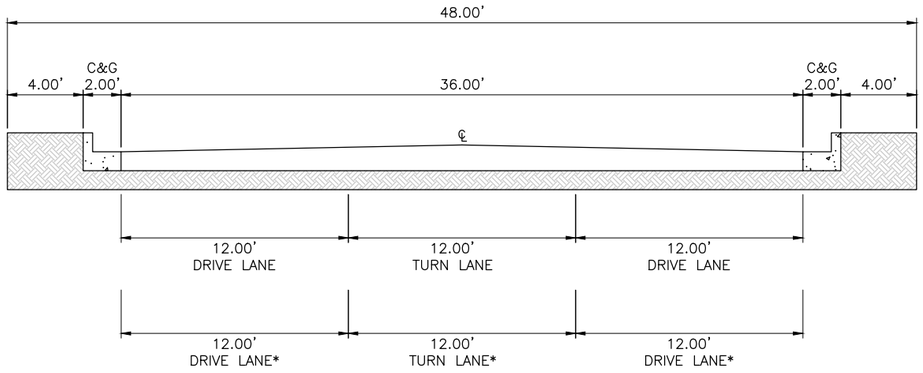
MINOR COLLECTOR (INDUSTRIAL)

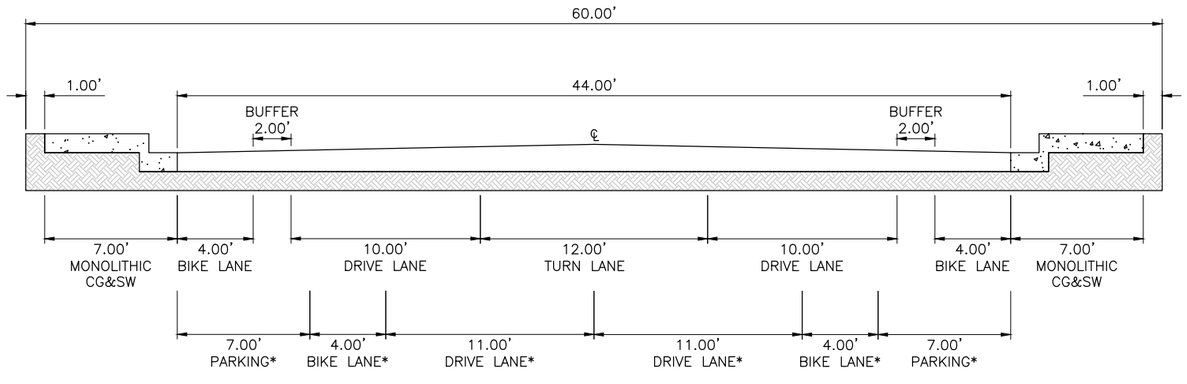
- –SCALE: NTS
- –TWO 10' TRAVEL LANES AND ONE 11' CENTER TURN LANE
- –NO SIDEWALKS
- –NO PARKING
- –5' V–PAN GUTTER WHERE APPROVED
- –ALTERNATE: THREE 12' LANES



*ALTERNATE: THREE 12' LANES

MINOR COLLECTOR (RESIDENTIAL & COMMERCIAL)

- –SCALE: NTS
- –TWO 10' TRAVEL LANES AND ONE 12' CENTER TURN LANE
- –ALTERNATE: RESIDENTIAL WITH NO CENTER TURN LANE
- –ALLOW PARKING IF NO CENTER TURN LANE



*ALTERNATE: RESIDENTIAL WITH NO CENTER TURN LANE

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NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

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DESIGN BY: BG/MF
CHECKED BY: BG
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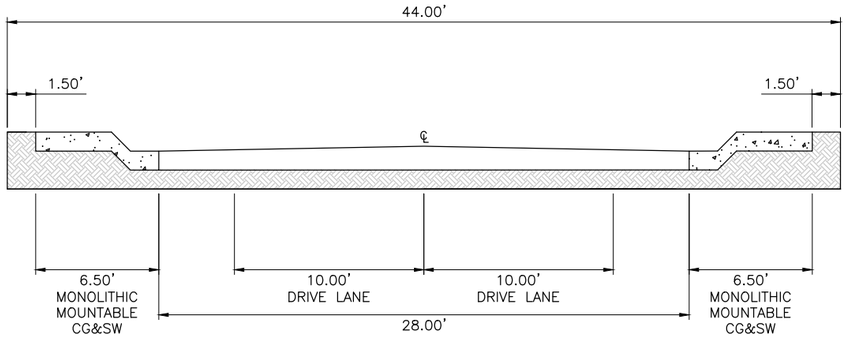
RESIDENTIAL

- SCALE: NTS
- TWO 10' TRAVEL LANES
- ATTACHED SIDEWALK
- MOUNTABLE CURB & GUTTER



J-U-B ENGINEERS, INC.

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305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
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NO.	DESCRIPTION	BY	APP'D	DATE
	REVISION			

CORRIDORS - CITY OF FRUITA

FILE : FRUITA CROSS SECTIONS
JUB PROJ. # : 07-21-010
DRAWN BY: MF
DESIGN BY: BG/MF
CHECKED BY: MF

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

LAST UPDATED: 9/28/2021

SHEET NUMBER:
4

Plot Date:9/28/2021 11:33 AM Plotted By: Matthew Filia
Date Created:9/28/2021 \\JUB.COM\CENTRAL\CLIENTS\CO\FRUITACITYPROJECTS\07-21-010_ACTIVECIRCULATIONPLAN\DESIGN\CAD\SHEET\FRUITA CROSS SECTIONS.DWG

Appendix C: Signal and All-way Stop Warrant

TRAFFIC SIGNAL WARRANT - SH 340 AND JURASSIC AVENUE

	SH 340	Jurassic Ave
	Major	Minor
	NB/SB	WB
Number of Lanes	2	1
12:00:00 AM	20	3
1:00:00 AM	17	4
2:00:00 AM	10	2
3:00:00 AM	6	0
4:00:00 AM	16	5
5:00:00 AM	57	6
6:00:00 AM	190	34
7:00:00 AM	416	80
8:00:00 AM	460	96
9:00:00 AM	490	113
10:00:00 AM	556	107
11:00:00 AM	648	126
12:00:00 PM	765	189
1:00:00 PM	695	181
2:00:00 PM	575	132
3:00:00 PM	573	113
4:00:00 PM	591	112
5:00:00 PM	635	96
6:00:00 PM	564	117
7:00:00 PM	433	88
8:00:00 PM	347	65
9:00:00 PM	233	59
10:00:00 PM	114	27
11:00:00 PM	59	18
TOTAL	8470	1773

Warrant Type	Condition A		Condition B		Condition AB			
Street Designation	Major	Minor	Major	Minor	Major_A	Minor_A	Major_B	Minor_B
Vehicles per Hour Needed to Meet Warrant	600	150	900	75	480	120	720	60
Warrant is Met (No)	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	yes	no	no	no	yes
	no	no	no	yes	no	no	no	yes
	no	no	no	yes	yes	no	no	yes
	no	no	no	yes	yes	no	no	yes
	yes	no	no	yes	yes	yes	no	yes
	yes	yes	no	yes	yes	yes	yes	yes
	yes	yes	no	yes	yes	yes	no	yes
	no	no	no	yes	yes	yes	no	yes
	no	no	no	yes	yes	no	no	yes
	no	no	no	yes	yes	no	no	yes
	yes	no	no	yes	yes	no	no	yes
	no	no	no	yes	yes	no	no	yes
	no	no	no	yes	no	no	no	yes
	no	no	no	no	no	no	no	yes
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no
	no	no	no	no	no	no	no	no

Note: Warrant is not met for the minimum 8 hours.

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

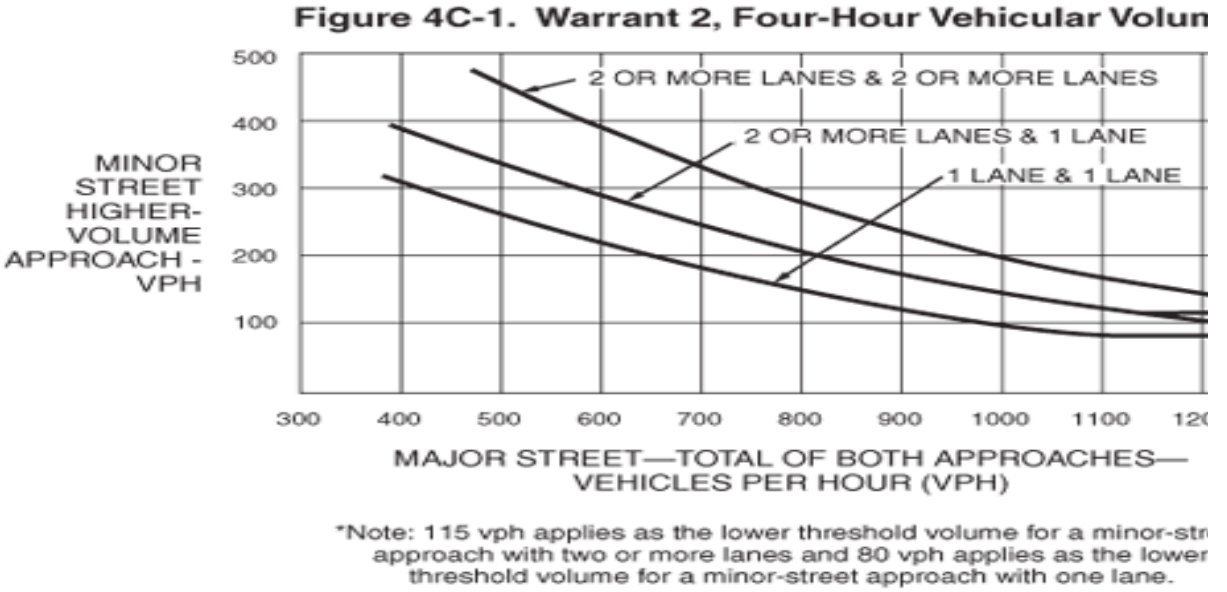
Condition B—Interruption of Continuous Traffic

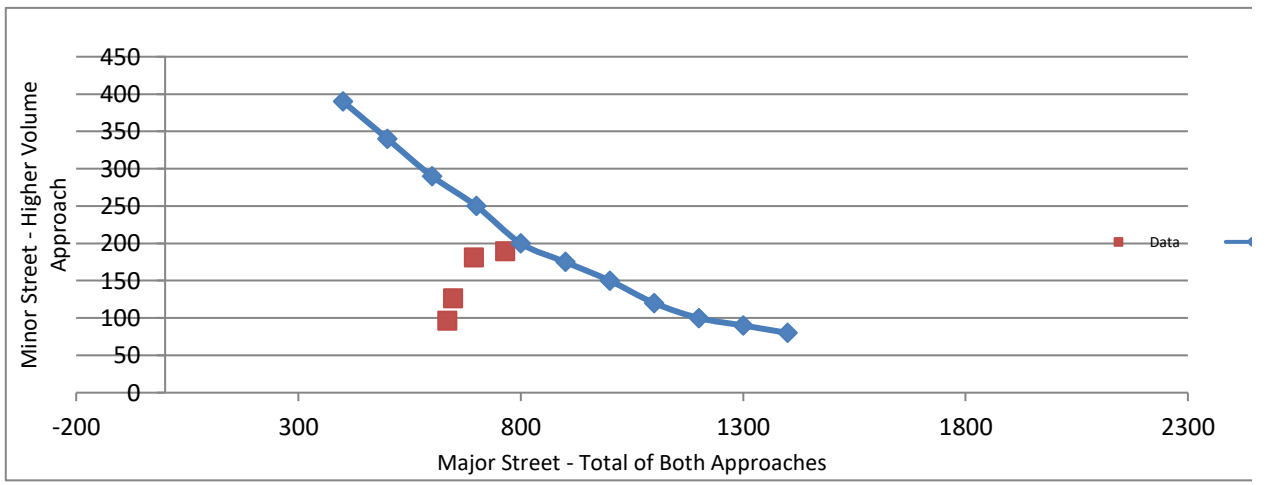
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

	SH 340	Jurassic Ave		
	Major	Minor		Warrant 2
	NB/SB	WB		
Number of Lanes	2	1		
			Warrant is Met (No)	no
				no
				no
				no
				no
				no
				no
				no
				no
				no
				no
				no
11:00	648	126		no
12:00	765	189		no
13:00	695	181		no
				no
				no
				no
17:00	635	96		no
				no
				no
				no
				no
				no
				no
TOTAL	2743	592		

4 Hour Warrant Analysis - Existing conditions

Note: Warrant is not met for the minimum 4 hours under Warrant 2.





FEHR PEERS

Sheet No 1 of 2

Project Fruita project
Scenario
Peak Hour AM

Major Street SH 340
Minor Street Jurassic Ave

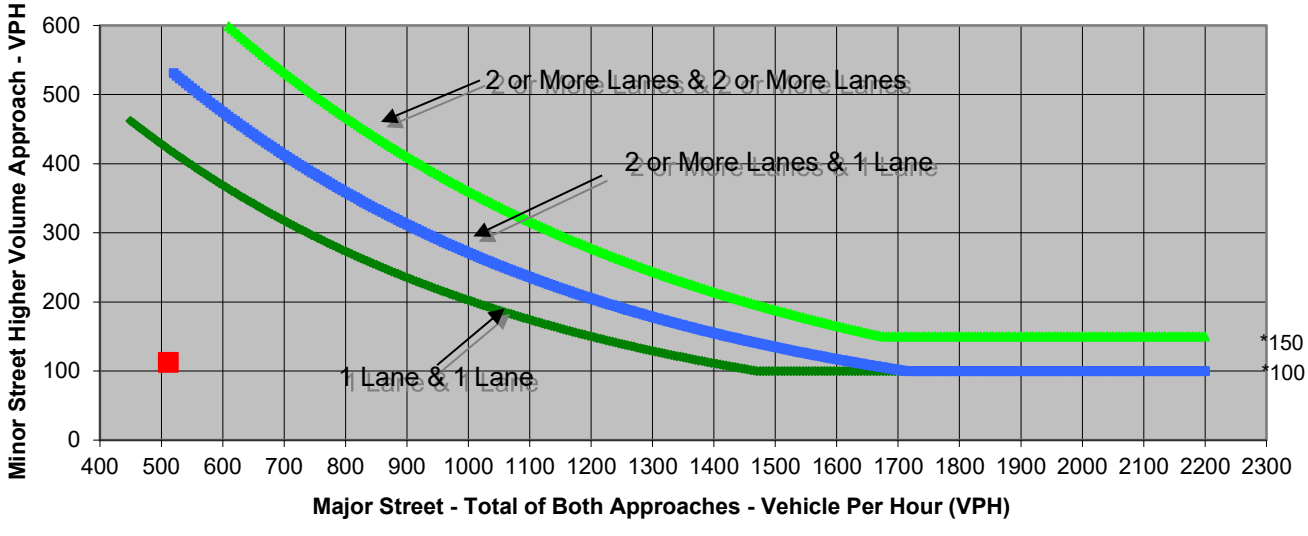
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	0
Through	228	283	90	113
Right	0	0	0	0
Total	228	283	90	113

Major Street Direction

x North/South
East/West

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street SH 340	Minor Street Jurassic Ave	Warrant Met
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	511	113	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 2 of 2

Project Fruita Network project
Scenario
Peak Hour PM

Major Street SH 340
Minor Street Jurassic Ave

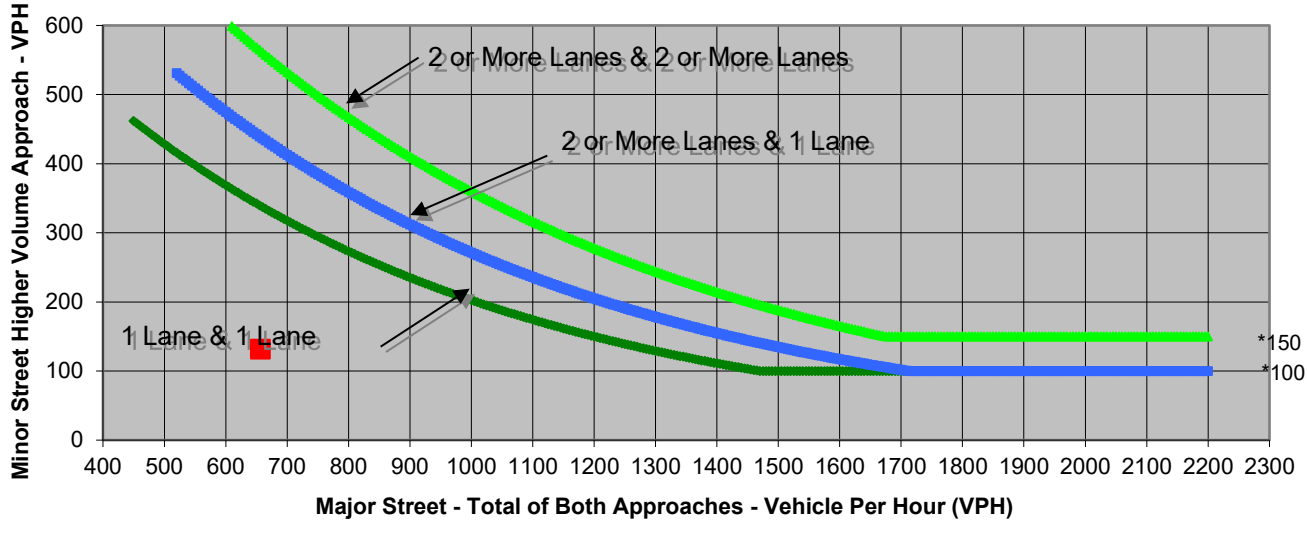
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	0
Through	265	391	72	132
Right	0	0	0	0
Total	265	391	72	132

Major Street Direction

x North/South
East/West

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street SH 340	Minor Street Jurassic Ave	Warrant Met
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	656	132	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

TRAFFIC SIGNAL WARRANT - ASPEN AVE AND W PLUM ST

	Aspen Ave	Plum Street
	Major	Minor
	WB/EB	NB
Number of Lanes	1	1
12:00:00 AM	22	3
1:00:00 AM	5	1
2:00:00 AM	5	3
3:00:00 AM	7	0
4:00:00 AM	19	1
5:00:00 AM	38	6
6:00:00 AM	134	28
7:00:00 AM	300	41
8:00:00 AM	399	80
9:00:00 AM	499	120
10:00:00 AM	531	140
11:00:00 AM	666	165
12:00:00 PM	735	196
1:00:00 PM	586	139
2:00:00 PM	562	98
3:00:00 PM	517	119
4:00:00 PM	591	109
5:00:00 PM	645	119
6:00:00 PM	545	97
7:00:00 PM	332	71
8:00:00 PM	292	50
9:00:00 PM	191	51
10:00:00 PM	72	28
11:00:00 PM	35	6
TOTAL	7728	1671

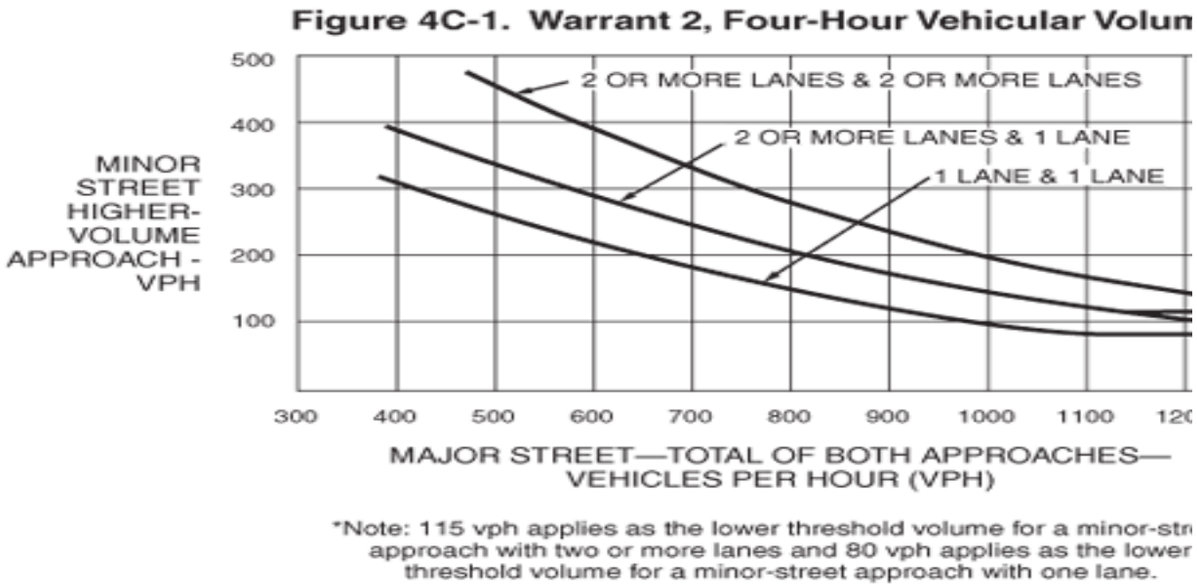
Warrant Type	Condition A		Condition B		Condition AB			
Street Designation	**Major**	**Minor**	**Major**	**Minor**	**Major_A**	**Minor_A**	**Major_B**	**Minor_B**
Vehicles per Hour Needed to Meet Warrant	**500**	**150**	**900**	**75**	**480**	**120**	**720**	**60**
Warrant is Met (No)								
12:00:00 AM	no	no	no	no	no	no	no	no
1:00:00 AM	no	no	no	no	no	no	no	no
2:00:00 AM	no	no	no	no	no	no	no	no
3:00:00 AM	no	no	no	no	no	no	no	no
4:00:00 AM	no	no	no	no	no	no	no	no
5:00:00 AM	no	no	no	no	no	no	no	no
6:00:00 AM	no	no	no	no	no	no	no	no
7:00:00 AM	no	no	no	no	no	no	no	no
8:00:00 AM	no	no	no	yes	no	no	no	yes
9:00:00 AM	no	no	no	yes	yes	yes	no	yes
10:00:00 AM	yes	no	no	yes	yes	yes	no	yes
11:00:00 AM	yes	yes	no	yes	yes	yes	no	yes
12:00:00 PM	yes	yes	no	yes	yes	yes	yes	yes
1:00:00 PM	yes	no	no	yes	yes	yes	no	yes
2:00:00 PM	yes	no	no	yes	yes	no	no	yes
3:00:00 PM	yes	no	no	yes	yes	no	no	yes
4:00:00 PM	yes	no	no	yes	yes	no	no	yes
5:00:00 PM	yes	no	no	yes	yes	no	no	yes
6:00:00 PM	yes	no	no	yes	yes	no	no	yes
7:00:00 PM	no	no	no	no	no	no	no	yes
8:00:00 PM	no	no	no	no	no	no	no	no
9:00:00 PM	no	no	no	no	no	no	no	no
10:00:00 PM	no	no	no	no	no	no	no	no
11:00:00 PM	no	no	no	no	no	no	no	no

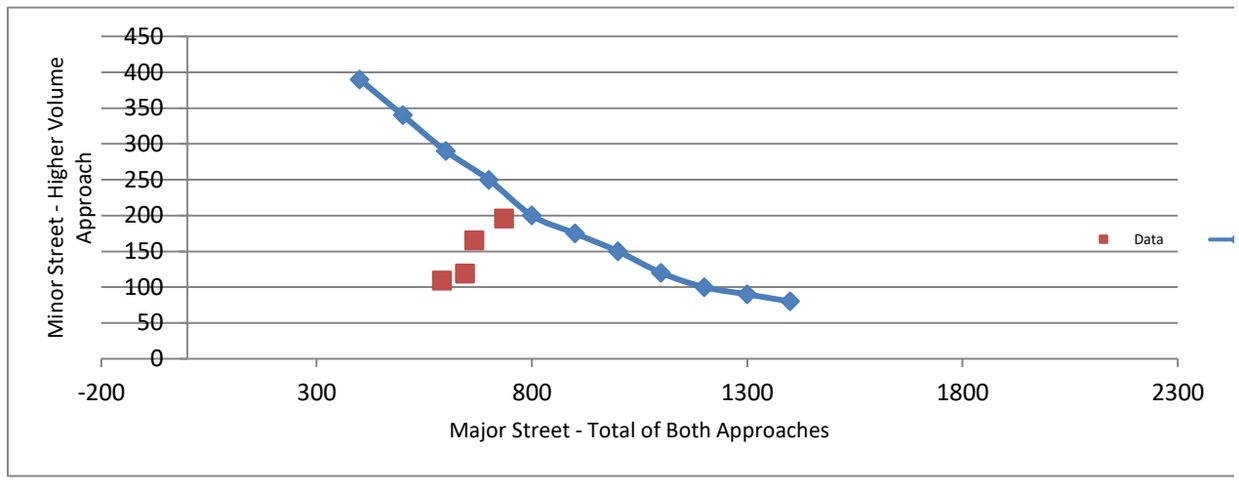
8 Hour Warrant Analysis - Existing conditions

	Aspen Ave	Plum Street		
	Major	Minor		**Warrant 2**
	WB/EB	NB		
Number of Lanes	1	1		
			Warrant is Met (No)	no
				no
				no
				no
				no
				no
				no
				no
				no
				no
				no
11:00:00 AM	666	165		no
12:00:00 PM	735	196		no
				no
				no
				no
4:00:00 PM	591	109		no
5:00:00 PM	645	119		no
				no
				no
				no
				no
				no
				no
TOTAL	2637	589		

4 Hour Warrant Analysis - Existing conditions

Note: Warrant is not met for the minimum 4 hours under Warrant 2.





FEHR PEERS

Sheet No 1 of 2

Project Fruita project
Scenario
Peak Hour AM

Major Street **Aspen Ave**
Minor Street **Plum St**

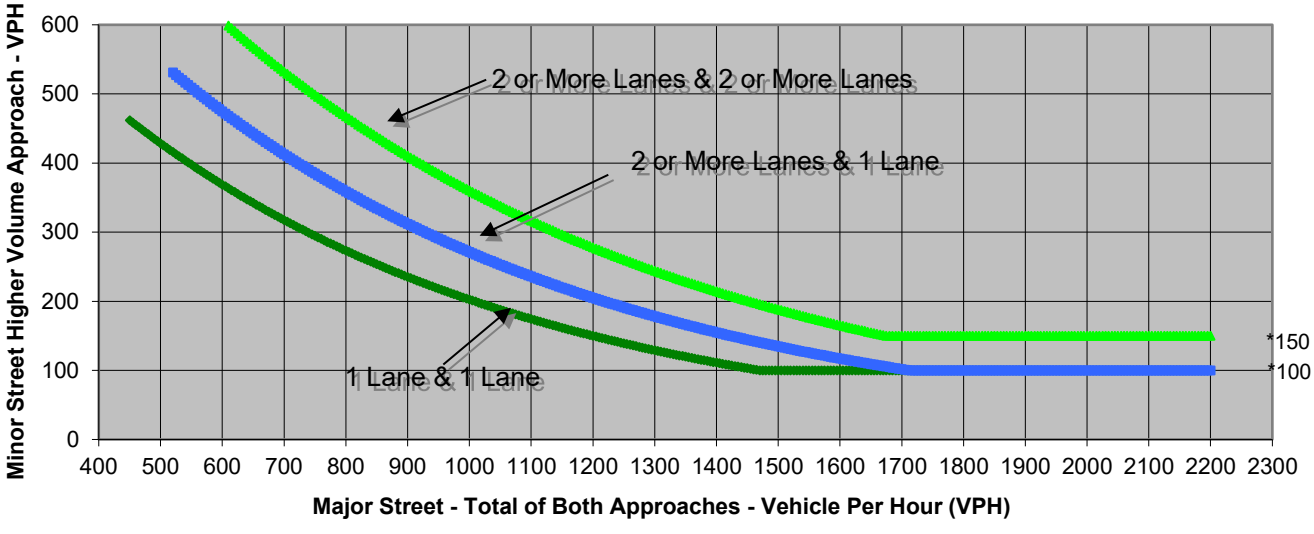
Turn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	0
Through	121	30	298	227
Right	0	0	0	0
Total	121	30	298	227

Major Street Direction

x North/South
East/West

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Aspen Ave	Minor Street Plum Ave	Warrant Met
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	151	298	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Sheet No 2 of 2

Project Fruita project
Scenario
Peak Hour PM

Major Street **Aspen Ave**
Minor Street **Plum St**

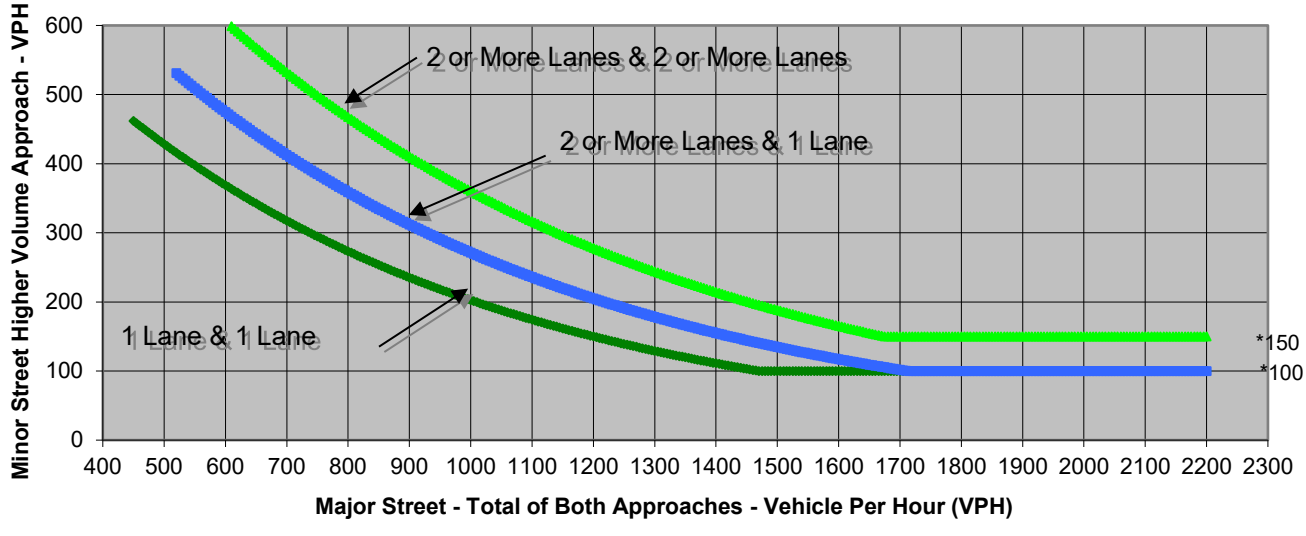
urn Movement Volumes

	NB	SB	EB	WB
Left	0	0	0	0
Through	124	39	449	216
Right	0	0	0	0
Total	124	39	449	216

Major Street Direction

x North/South
East/West

Figure 4C-3
Warrant 3, Peak Hour



* Note: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2006

	Major Street Aspen Ave	**Minor Street** Plum Ave	**Warrant Met**
Number of Approach Lanes	2	1	NO
Traffic Volume (VPH) *	163	449	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

ALL WAY STOP CONTROL - ASPEN AVE AND W PLUM ST

Start Time	Hourly Volume(Major street- Aspen Avenue)	Hourly volume(Minor street-Plum Street)
12:00:00 AM	22	3
1:00:00 AM	5	1
2:00:00 AM	5	3
3:00:00 AM	7	0
4:00:00 AM	19	2
5:00:00 AM	38	8
6:00:00 AM	134	33
7:00:00 AM	300	57
8:00:00 AM	399	101
9:00:00 AM	499	150
10:00:00 AM	531	173
11:00:00 AM	666	196
12:00:00 PM	735	224
1:00:00 PM	586	173
2:00:00 PM	562	127
3:00:00 PM	517	144
4:00:00 PM	591	144
5:00:00 PM	645	148
6:00:00 PM	545	111
7:00:00 PM	332	76
8:00:00 PM	292	56
9:00:00 PM	191	55
10:00:00 PM	72	33
11:00:00 PM	35	6

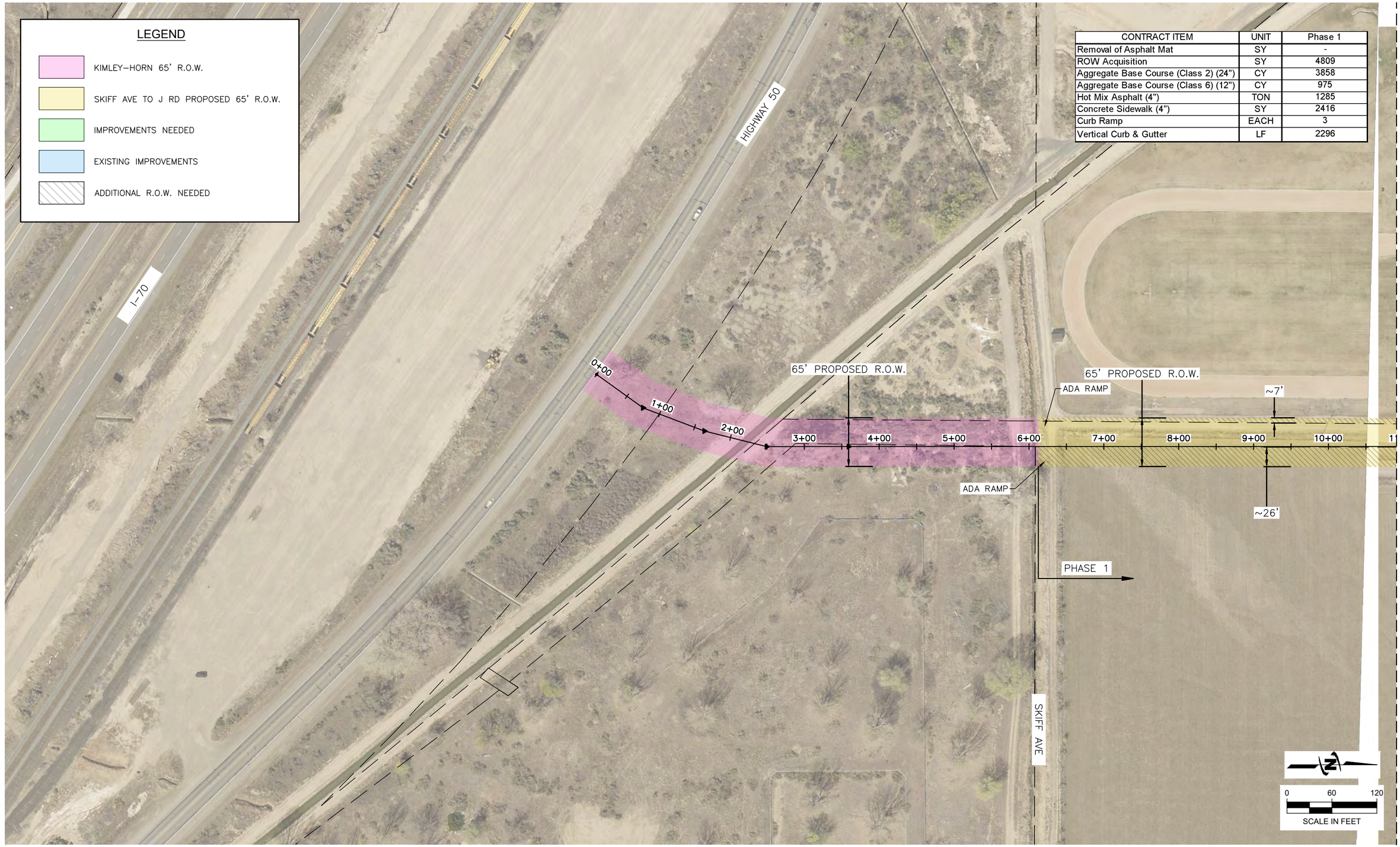
Based on the minimum volume criteria suggested in the MUTCD, this intersection fails to meet the minimum (>300) on the major approach and the minor approach (>200). Not meeting both minimums, it is not advisable to implement a 4-way stop based on vehicle volumes.

ALL WAY STOP CONTROL - PABOR AVE AND MESA ST

	Hourly volume(Minor street-Pabor Avenue)	Hourly Volume(Major street-Mesa Street)
12:00:00 AM	3	8
1:00:00 AM	2	1
2:00:00 AM	4	6
3:00:00 AM	2	2
4:00:00 AM	1	11
5:00:00 AM	20	28
6:00:00 AM	48	79
7:00:00 AM	110	168
8:00:00 AM	112	182
9:00:00 AM	120	217
10:00:00 AM	119	256
11:00:00 AM	126	298
12:00:00 PM	164	325
1:00:00 PM	133	269
2:00:00 PM	131	239
3:00:00 PM	135	261
4:00:00 PM	163	279
5:00:00 PM	185	316
6:00:00 PM	124	257
7:00:00 PM	82	148
8:00:00 PM	57	141
9:00:00 PM	37	85
10:00:00 PM	13	37
11:00:00 PM	1	14

Based on the minimum volume criteria suggested in the MUTCD, this intersection fails to meet the minimum (>300) on the major approach and the minor approach (>200). Not meeting both minimums, it is not advisable to implement a 4-way stop based on vehicle volumes.

Appendix D: Fremont Street Conceptual Designs



CONTRACT ITEM	UNIT	Phase 1
Removal of Asphalt Mat	SY	-
ROW Acquisition	SY	4809
Aggregate Base Course (Class 2) (24")	CY	3858
Aggregate Base Course (Class 6) (12")	CY	975
Hot Mix Asphalt (4")	TON	1285
Concrete Sidewalk (4")	SY	2416
Curb Ramp	EACH	3
Vertical Curb & Gutter	LF	2296

REVISION

NO.	DESCRIPTION	BY	APP.	DATE

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526

Phone: 970.208.8508
www.jub.com

J-U-B ENGINEERS, INC.

FILE : FRUITA FREMONT ST EXHIBIT
JUB PROJ. # : 07-21-010
DRAWN BY: MF
DESIGN BY: BG/MF
CHECKED BY: BG

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

ACTIVE CIRCULATION PLAN CITY OF FRUITA

FREMONT STREET IMPROVEMENTS

LAST UPDATED: 9/28/2021

SHEET NUMBER:

1

Plot Date:9/28/2021 11:40 AM Plotted By: Matthew Filla
Date Created:4/12/2021 \\JUB.COM\CENTRAL\CLIENTS\CO\FRUITACITY\PROJECTS\07-21-010_ACTIVECIRCULATIONPLANDESIGN\CAD\SHEET\FRUITA FREMONT ST EXHIBIT.DWG

LEGEND

- KIMLEY–HORN 65' R.O.W.
- SKIFF AVE TO J RD PROPOSED 65' R.O.W.
- IMPROVEMENTS NEEDED
- EXISTING IMPROVEMENTS
- ADDITIONAL R.O.W. NEEDED

CONTRACT ITEM	UNIT	Phase 1	Phase 2
Removal of Asphalt Mat	SY	-	1050
ROW Acquisition	SY	4809	1955
Aggregate Base Course (Class 2) (24")	CY	3858	1994
Aggregate Base Course (Class 6) (12")	CY	975	344
Hot Mix Asphalt (4")	TON	1285	664
Concrete Sidewalk (4")	SY	2416	757
Curb Ramp	EACH	3	2
Vertical Curb & Gutter	LF	2296	1238

MATCHLINE
SEE SHEET 1

65' PROPOSED R.O.W.

~7'

J RD

ADA RAMP

60' PROPOSED R.O.W.

SATTERFIELD AVE

60' EXISTING R.O.W.

+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00

~26'

ADA RAMP

ADA RAMP

~27'

PHASE 1

PHASE 2

SATTERFIELD AVE

0 60

SCALE IN

REVISION

NO.	DESCRIPTION	BY	APR.	DATE

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
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J-U-B ENGINEERS, INC.

FILE :	FRUITA FREMONT ST EXHIBIT
JUB PROJ. # :	07-21-010
DRAWN BY:	MF
DESIGN BY:	BG/MF
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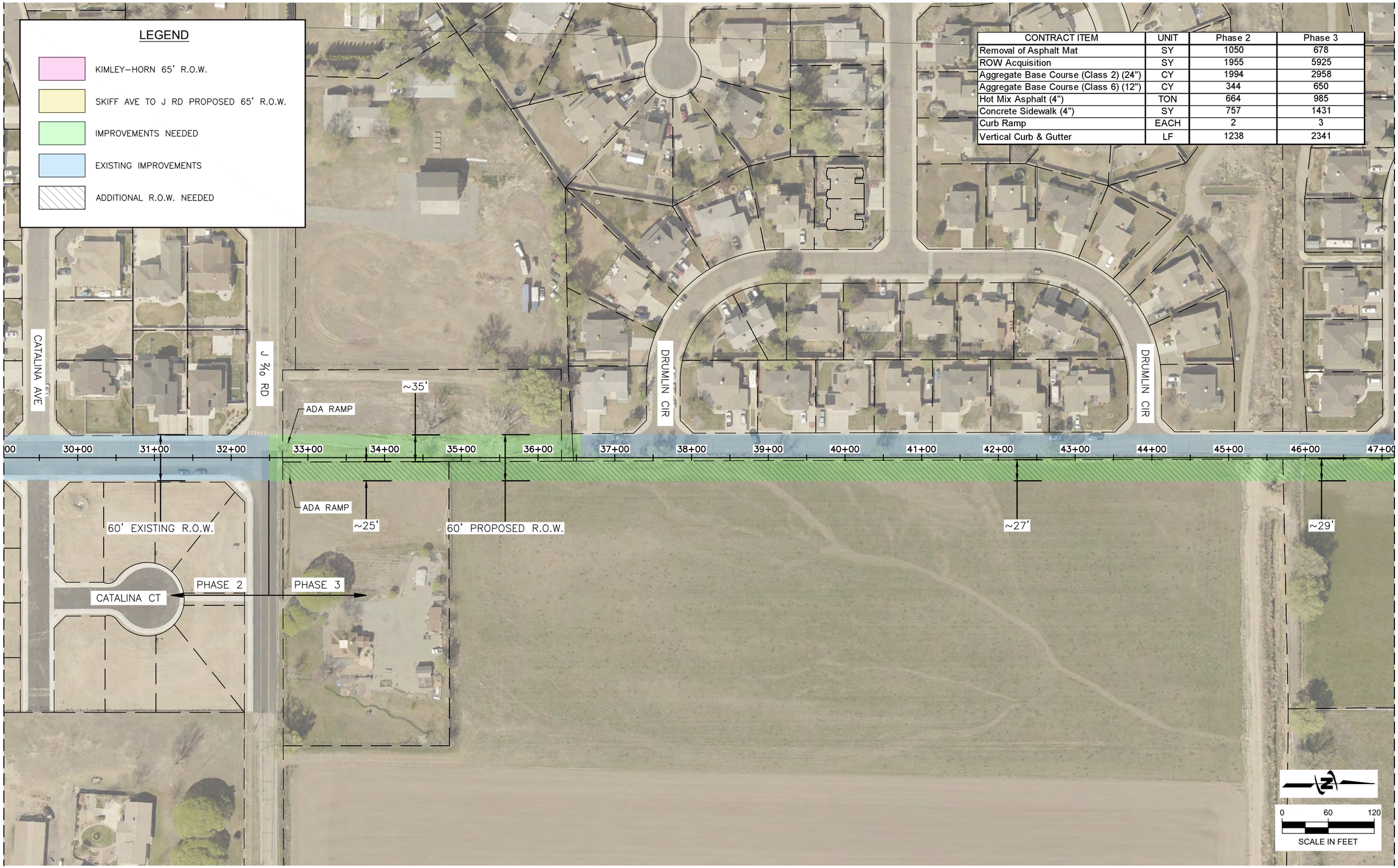
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

ACTIVE CIRCULATION PLAN
CITY OF FRUITA

FREMONT STREET IMPROVEMENTS

Plot Date:9/28/2021 11:40 AM Plotted By: Matthew Filla
Date Created:4/12/2021 \\JUB.COM\CENTRAL\CLIENTS\GO\FRUITACITYPROJECTS\07-21-010\ ACTIVECIRCULATIONPLANDESIGN\CADSHEET\FRUITA FREMONT ST EXHIBIT.DWG



REVISION

NO.	DESCRIPTION	BY	APR.	DATE

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com
J-U-B ENGINEERS, INC.

FILE: FRUITA FREMONT ST EXHIBIT
JUB PROJ. #: 07-21-010
DRAWN BY: MF
DESIGN BY: BG/MF
CHECKED BY: BG

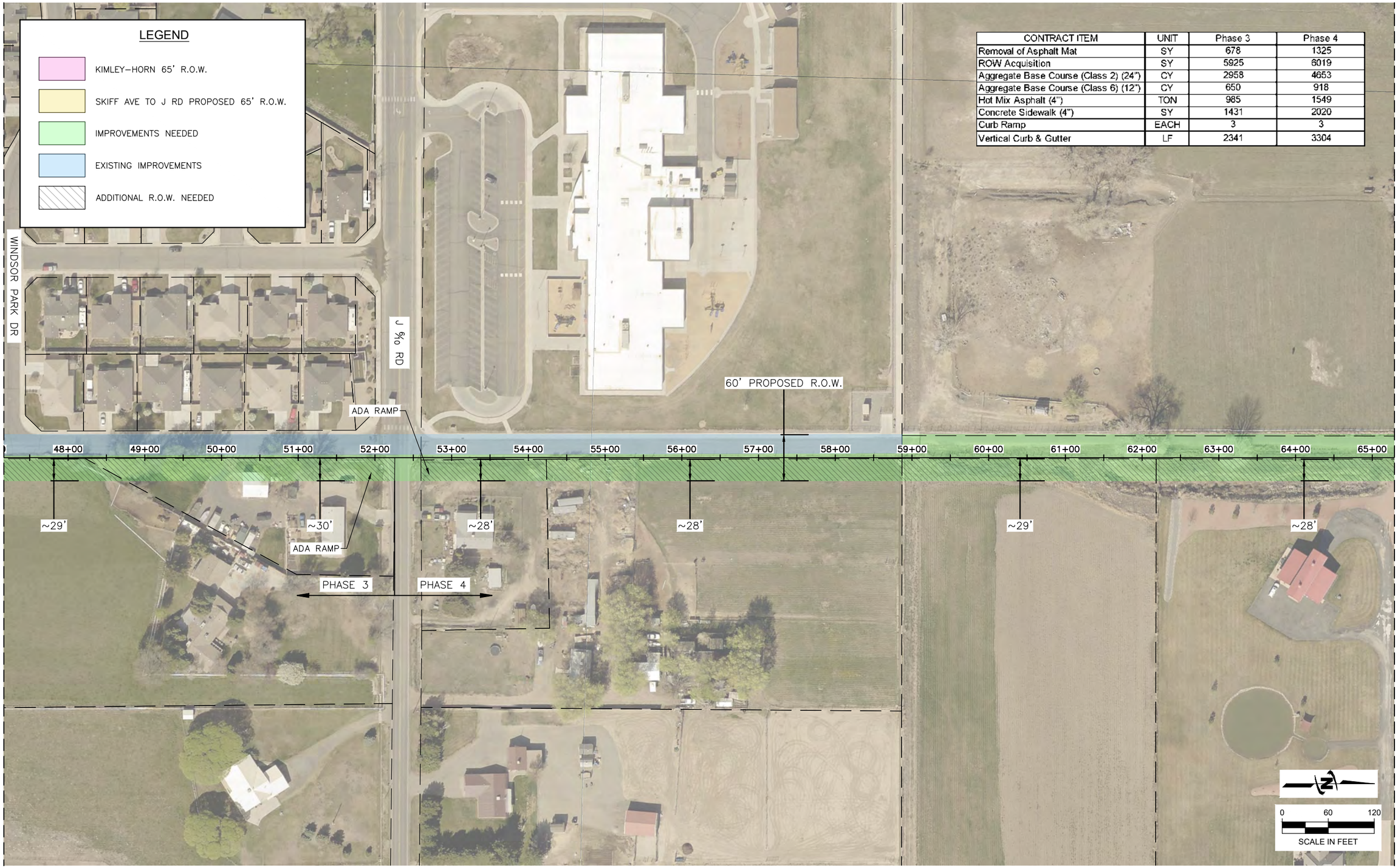
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

ACTIVE CIRCULATION PLAN
CITY OF FRUITA

FREMONT STREET IMPROVEMENTS

LAST UPDATED: 9/28/2021
SHEET NUMBER: 3

Plot Date:9/28/2021 11:40 AM Plotted By: Matthew Filia
Date Created:4/12/2021 \\JUB.COM\CENTRAL\CLIENTS\CO\FRUITACITY\PROJECTS\07-21-010_ACTIVECIRCULATIONPLAN\DESIGN\CAD\SHEET\FRUITA FREMONT ST EXHIBIT.DWG



CONTRACT ITEM	UNIT	Phase 3	Phase 4
Removal of Asphalt Mat	SY	678	1325
ROW Acquisition	SY	5925	6019
Aggregate Base Course (Class 2) (24")	CY	2958	4653
Aggregate Base Course (Class 6) (12")	CY	650	918
Hot Mix Asphalt (4")	TON	985	1549
Concrete Sidewalk (4")	SY	1431	2020
Curb Ramp	EACH	3	3
Vertical Curb & Gutter	LF	2341	3304

REVISION

NO.	DESCRIPTION	BY	APR	DATE

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526
Phone: 970.208.8508
www.jub.com
J-U-B ENGINEERS, INC.

FILE: FRUITA FREMONT ST EXHIBIT
JUB PROJ. # : 07-21-010
DRAWN BY: MF
DESIGN BY: BG/MF
CHECKED BY: BG

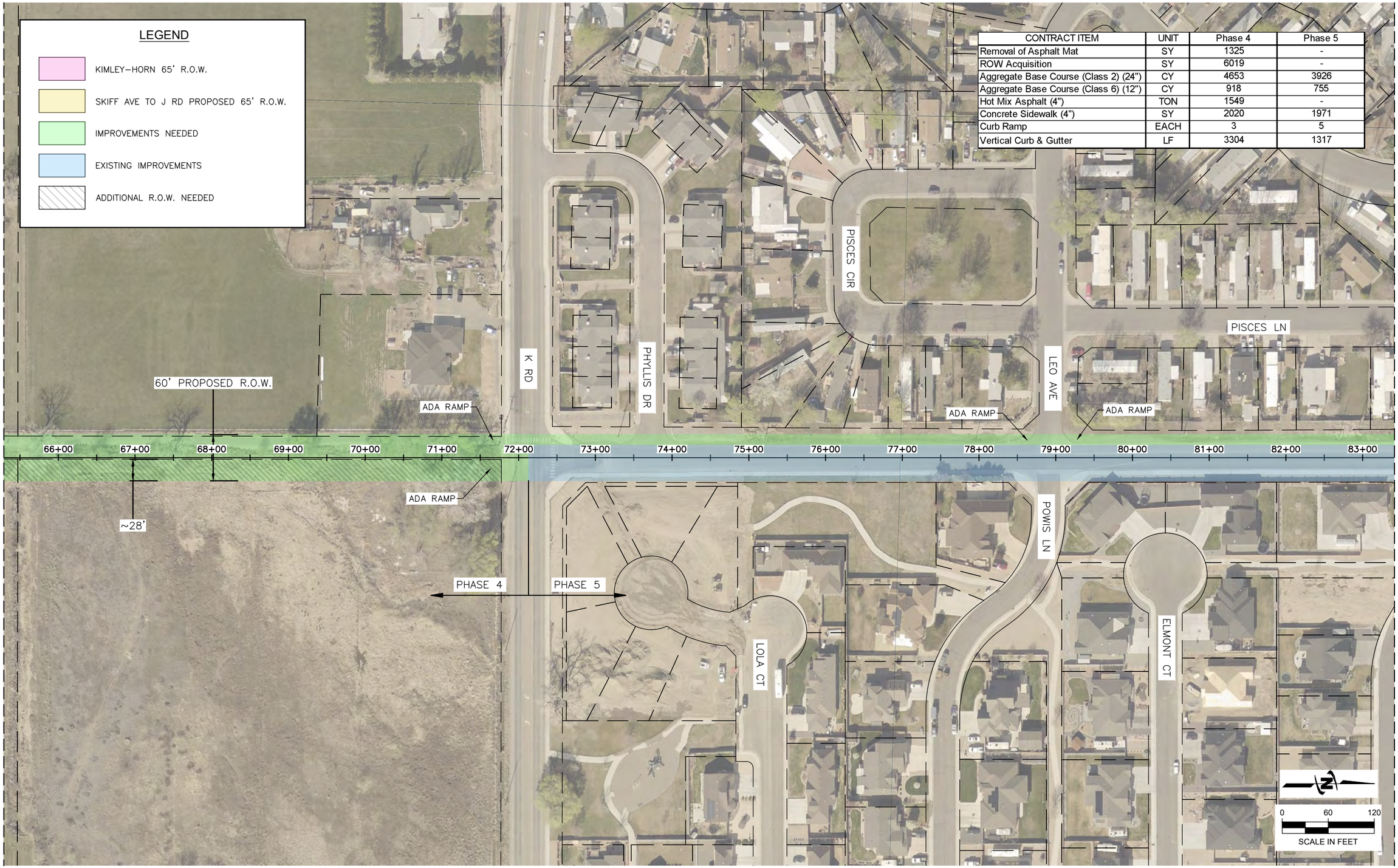
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

ACTIVE CIRCULATION PLAN
CITY OF FRUITA

FREMONT STREET IMPROVEMENTS

LAST UPDATED: 9/28/2021
SHEET NUMBER: 4

Plot Date:9/28/2021 11:40 AM Plotted By: Matthew Filla
Date Created:4/12/2021 \\JUB.COM\CENTRAL\CLIENTS\CO\FRUITACITY\PROJECTS\07-21-010_ACTIVECIRCULATIONPLAN\DESIGN\CAD\SHEET\FRUITA FREMONT ST EXHIBIT.DWG



REVISION

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ONE INCH
AT FULL SIZE. IF NOT ONE INCH, SCALE ACCORDINGLY

ACTIVE CIRCULATION PLAN
CITY OF FRUITA

FREMONT STREET IMPROVEMENTS

LAST UPDATED: 9/28/2021
SHEET NUMBER: 5

Plot Date:9/28/2021 11:40 AM Plotted By: Matthew Filla
Date Created:4/12/2021 \\JUB.COM\CENTRAL\CLIENTS\CO-FRUITACITY\PROJECTS\07-21-010_ACTIVECIRCULATIONPLAN\DESIGN\CAD\SHEET\FRUITA FREMONT ST EXHIBIT.DWG

LEGEND

- KIMLEY–HORN 65' R.O.W.
- SKIFF AVE TO J RD PROPOSED 65' R.O.W.
- IMPROVEMENTS NEEDED
- EXISTING IMPROVEMENTS
- ADDITIONAL R.O.W. NEEDED

CONTRACT ITEM	UNIT	Phase 5
Removal of Asphalt Mat	SY	-
ROW Acquisition	SY	-
Aggregate Base Course (Class 2) (24")	CY	3926
Aggregate Base Course (Class 6) (12")	CY	755
Hot Mix Asphalt (4")	TON	-
Concrete Sidewalk (4")	SY	1971
Curb Ramp	EACH	5
Vertical Curb & Gutter	LF	1317

AQUARIUS AVE

ANDROMEDA WAY

LYRA DR

K ⅘ RD

ADA RAMP

ADA RAMP

MATCHLINE SEE SHEET 5

84+00 85+00 86+00 87+00 88+00 89+00 90+00 91+00 92+05

ADA RAMP

60' PROPOSED R.O.W.

PHASE 5

MYERS LN

N

0 60 120

SCALE IN FEET

REVISION

NO.	DESCRIPTION	BY	APR	DATE

J-U-B ENGINEERS, INC.
305 S. Main Street
Unit 6
Palisade, CO 81526

Phone: 970.208.8508
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J-U-B ENGINEERS, INC.

FILE: FRUITA FREMONT ST EXHIBIT
JUB PROJ. #: 07-21-010
DRAWN BY: MF
DESIGN BY: BG/MF
CHECKED BY: BG

ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY

ACTIVE CIRCULATION PLAN
CITY OF FRUITA

FREMONT STREET IMPROVEMENTS

LAST UPDATED: 9/28/2021

SHEET NUMBER: 6

Plot Date: 9/28/2021 11:40 AM Plotted By: Matthew Filla
Date Created: 4/12/2021 \\JUB.COM\CENTRAL\CLIENTS\CO\FRUITACITY\PROJECTS\07-21-010_ACTIVECIRCULATIONPLAN\DESIGN\CAD\SHEET\FRUITA FREMONT ST EXHIBIT.DWG

Appendix E: Fremont Street Cost Estimates

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

PROJECT: City of Fruita Active Circulation Plan — **Common Categories**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 — **Date: 10-1-2021**

Bike Sharrow (1 mile)

Item No.	Item	Description	Unit	Unit Cost	Quantity	Total
1	sharrow	Bicycle with chevrons	Ea	$ 90.00	13	$ 1,755
2	share the road sign	Share the lane sign	Ea	$ 300.00	2	$ 600
	sub-total					$ 2,355
		Mobilization contingency	LS	$ 2,000.00	1	$ 2,000
	Total					$ 4,355

Bike Lane Sharrow (1 mile)

Item No.	Item	Description	Unit	Unit Cost	Quantity	Total
1	sharrow	Bicycle with chevrons	Ea	$ 90.00	13	$ 1,755
2	share the road sign	Share the lane sign	Ea	$ 300.00	2	$ 600
3	Striping (single)	single delineator stripe	Ea	$ 0.40	5,280	$ 2,112
	sub-total					$ 4,467
		Mobilization contingency	LS	$ 2,000.00	1	$ 2,000
	Total					$ 6,467

Bike Lane Buffered (1 mile)

Item No.	Item	Description	Unit	Unit Cost	Quantity	Total
1	Concrete Curb	Vertical curb seperator. Two back to back vertical concrete curbs (catch/spill)	LF	$ 37	10,560	$ 390,720
2	Asphalt patching	Two foot longitudinal patch adjacent to new curb. 4" depth.	SY	$ 48	2,347	$ 123,904
	sub-total					$ 514,624
		Contingency (15%)				$ 77,193.60
	Total					$ 591,818

Median (1 mile)

Item No.	Item	Description	Unit	Unit Cost	Quantity	Total
1	**Median (rock mulch)**	Vertical curbing with 4 foot width median	LF	$ 37	10,568	$ 391,016
2		Hardscape median fill (4" thick rock multch)	SY	$ 6	2,350	$ 14,100
3	Asphalt patching	Two foot longitudinal patch adjacent to new curb. 4" depth.	SY	$ 65	2,348	$ 167,914
	sub-total					$ 573,030
		Contingency (15%)				$ 85,954
	Total					$ 658,984

1	**Median (concrete)**	Vertical curbing with 4 foot width median	LF	$ 74	5,288	$ 391,312
2		Concrete median fill (4" thick)	SY	$ 65	2,350	$ 152,750
3	Asphalt patching	Two foot longitudinal patch adjacent to new curb. 4" depth.	SY	$ 65	1,175	$ 84,020
	sub-total					$ 628,082
		Contingency (15%)				$ 94,212
	Total					$ 722,295

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

Fremont Street Improvements Phase 1 (Skiff Ave to J Rd)

PROJECT: City of Fruita Active Circulation Plan **Anticipated Start of Construction: 2023-2026**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST	Quantity	Cost
1		ROW Acquisition	SY	$10.25	4,809	$49,292
2		14' Easement	SY	$7.96	3,987	$31,727
3	304-02005	Aggregate Base Course (Class 6) (24")	CY	$56.00	3,858	$216,048
4	304-06007	Aggregate Base Course (Class 6) (12")	CY	$56.00	975	$54,600
5	403-00720	Hot Mix Asphalt (4")	TON	$133.00	1,285	$170,905
6	608-00000	Concrete Sidewalk (4")	SY	$65.00	2,416	$157,040
7	608-00010	Curb Ramp	EACH	$800.00	3	$2,400
8	609-21020	Curb and Gutter Type 2 (Section IIB)	LF	$37.00	2,296	$84,952
9	201-00001	Clearing & Grubbing	LS	15% Subtotal of Above Items	-	$115,045
10	208-00207	Erosion Control Management	DAY			
11	250-00010	Environmental Health and Safety Management	LS			
12	250-00200	Material Handling (Stockpile)	CY			
13	250-00210	Solid Waste Disposal	CY			
14	625-00000	Construction Surveying	LS			
15	626-00000	Mobilization	LS			
16	630-00000	Flagging	HOUR			
17	630-00007	Traffic Control Inspection	DAY			
18	630-00012	Traffic Control Management	DAY			
19	630-80341	Construction Traffic Sign (Panel Size A)	EACH			
20	630-80355	Portable Message Sign Panel	DAY			
21	630-80360	Drum Channelizing Device	EACH			
22	630-80380	Traffic Cone	EACH			
23	700-70010	F/A Minor Contract Revisions	FA			
24	700-70016	F/A Fuel Cost Adjustment	FA			
25	700-70310	F/A Landscaping	FA			
26	700-70380	F/A Erosion Control	FA			

CONSTRUCTION SUBTOTAL:	$882,008
20% Contingency:	$176,402
TOTAL:	**$1,058,410**
15% Design:	**$158,762**
TOTAL (w/ 3% Inflation to 2023):	**$1,291,297**

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

Fremont Street Improvements Phase 2 (J Rd to J 2/10 Rd)

PROJECT: City of Fruita Active Circulation Plan **Anticipated Start of Construction: 2024-2029**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST	Quantity	Cost
1	202-00220	Removal of Asphalt Mat	SY	$10.00	1,050	$10,500
2		ROW Acquisition	SY	$14.40	1,955	$28,152
3		14' Easement	SY	$10.80	977	$10,552
4	304-02005	Aggregate Base Course (Class 6) (24")	CY	$56.00	1,994	$111,664
5	304-06007	Aggregate Base Course (Class 6) (12")	CY	$56.00	344	$19,264
6	403-00720	Hot Mix Asphalt (4")	TON	$133.00	664	$88,312
7	608-00000	Concrete Sidewalk (4")	SY	$65.00	757	$49,205
8	608-00010	Curb Ramp	EACH	$800.00	2	$1,600
9	609-21020	Curb and Gutter Type 2 (Section IIB)	LF	$37.00	1,238	$45,806
10	201-00001	Clearing & Grubbing	LS	15% Subtotal of Above Items	-	$54,758
11	208-00207	Erosion Control Management	DAY			
12	250-00010	Environmental Health and Safety Management	LS			
13	250-00200	Material Handling (Stockpile)	CY			
14	250-00210	Solid Waste Disposal	CY			
15	625-00000	Construction Surveying	LS			
16	626-00000	Mobilization	LS			
17	630-00000	Flagging	HOUR			
18	630-00007	Traffic Control Inspection	DAY			
19	630-00012	Traffic Control Management	DAY			
20	630-80341	Construction Traffic Sign (Panel Size A)	EACH			
21	630-80355	Portable Message Sign Panel	DAY			
22	630-80360	Drum Channelizing Device	EACH			
23	630-80380	Traffic Cone	EACH			
24	700-70010	F/A Minor Contract Revisions	FA			
25	700-70016	F/A Fuel Cost Adjustment	FA			
26	700-70310	F/A Landscaping	FA			
27	700-70380	F/A Erosion Control	FA			

CONSTRUCTION SUBTOTAL:	$419,813
20% Contingency:	$83,963
TOTAL:	$503,775
15% Design:	$75,566
TOTAL (w/ 3% Inflation to 2024):	**$633,062**

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

Fremont Street Improvements Phase 3 (J 2/10 Rd to Aspen Ave)

PROJECT: City of Fruita Active Circulation Plan **Anticipated Start of Construction: 2026-2031**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST	Quantity	Cost
1	202-00220	Removal of Asphalt Mat	SY	$10.00	678	$6,780
2		ROW Acquisition	SY	$12.15	5,925	$71,989
3		14' Easement	SY	$9.11	3,027	$27,584
4	304-02005	Aggregate Base Course (Class 6) (24")	CY	$56.00	2,958	$165,648
5	304-06007	Aggregate Base Course (Class 6) (12")	CY	$56.00	650	$36,400
6	403-00720	Hot Mix Asphalt (4")	TON	$133.00	985	$131,005
7	608-00000	Concrete Sidewalk (4")	SY	$65.00	1,431	$93,015
8	608-00010	Curb Ramp	EACH	$800.00	3	$2,400
9	609-21020	Curb and Gutter Type 2 (Section IIB)	LF	$37.00	2,341	$86,617
10	201-00001	Clearing & Grubbing	LS	15% Subtotal of Above Items	-	$93,216
11	208-00207	Erosion Control Management	DAY			
12	250-00010	Environmental Health and Safety Management	LS			
13	250-00200	Material Handling (Stockpile)	CY			
14	250-00210	Solid Waste Disposal	CY			
15	625-00000	Construction Surveying	LS			
16	626-00000	Mobilization	LS			
17	630-00000	Flagging	HOUR			
18	630-00007	Traffic Control Inspection	DAY			
19	630-00012	Traffic Control Management	DAY			
20	630-80341	Construction Traffic Sign (Panel Size A)	EACH			
21	630-80355	Portable Message Sign Panel	DAY			
22	630-80360	Drum Channelizing Device	EACH			
23	630-80380	Traffic Cone	EACH			
24	700-70010	F/A Minor Contract Revisions	FA			
25	700-70016	F/A Fuel Cost Adjustment	FA			
26	700-70310	F/A Landscaping	FA			
27	700-70380	F/A Erosion Control	FA			

CONSTRUCTION SUBTOTAL:	$714,653
20% Contingency:	$142,931
TOTAL:	$857,583
15% Design:	$128,638
TOTAL (w/ 3% Inflation to 2026):	**$1,143,300**

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

Fremont Street Improvements Phase 4 (Aspen Ave to Ottley Ave)

PROJECT: City of Fruita Active Circulation Plan **Anticipated Start of Construction: 2029-2033**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST	Quantity	Cost
1	202-00220	Removal of Aspalt Mat	SY	$10.00	1,325	$13,250
2		ROW Acquisition	SY	$12.40	6,019	$74,636
3		14' Easement	SY	$9.43	3,052	$28,773
4	304-02005	Aggregate Base Course (Class 6) (24")	CY	$56.00	4,653	$260,568
5	304-06007	Aggregate Base Course (Class 6) (12")	CY	$56.00	918	$51,408
6	403-00720	Hot Mix Asphalt (4")	TON	$133.00	1,549	$206,017
7	608-00000	Concrete Sidewalk (4")	SY	$65.00	2,020	$131,300
8	608-00010	Curb Ramp	EACH	$800.00	3	$2,400
9	609-21020	Curb and Gutter Type 2 (Section IIB)	LF	$37.00	3,304	$122,248
10	201-00001	Clearing & Grubbing	LS	15% Subtotal of Above Items	-	$133,590
11	208-00207	Erosion Control Management	DAY			
12	250-00010	Environmental Health and Safety Management	LS			
13	250-00200	Material Handling (Stockpile)	CY			
14	250-00210	Solid Waste Disposal	CY			
15	625-00000	Construction Surveying	LS			
16	626-00000	Mobilization	LS			
17	630-00000	Flagging	HOUR			
18	630-00007	Traffic Control Inspection	DAY			
19	630-00012	Traffic Control Management	DAY			
20	630-80341	Construction Traffic Sign (Panel Size A)	EACH			
21	630-80355	Portable Message Sign Panel	DAY			
22	630-80360	Drum Channelizing Device	EACH			
23	630-80380	Traffic Cone	EACH			
24	700-70010	F/A Minor Contract Revisions	FA			
25	700-70016	F/A Fuel Cost Adjustment	FA			
26	700-70310	F/A Landscaping	FA			
27	700-70380	F/A Erosion Control	FA			

CONSTRUCTION SUBTOTAL:	$1,024,189
20% Contingency:	$204,838
SUBTOTAL:	$1,229,027
15% Design:	$184,354
TOTAL (w/ 3% Inflation to 2029):	**$1,790,429**

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

Fremont Street Improvements Phase 5 (Ottley Ave to K 4/10 Rd)

PROJECT: City of Fruita Active Circulation Plan **Anticipated Start of Construction: 2031-2036**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST	Quantity	Cost
1	304-06007	Aggregate Base Course (Class 6) (12")	CY	$56.00	755	$42,280
2	608-00000	Concrete Sidewalk (4")	SY	$65.00	1,971	$128,115
3	608-00010	Curb Ramp	EACH	$800.00	4	$3,200
4	609-21020	Curb and Gutter Type 2 (Section IIB)	LF	$37.00	1,317	$48,729
5	201-00001	Clearing & Grubbing	LS	15% Subtotal of Above Items	-	$33,349
6	208-00207	Erosion Control Management	DAY			
7	250-00010	Environmental Health and Safety Management	LS			
8	250-00200	Material Handling (Stockpile)	CY			
9	250-00210	Solid Waste Disposal	CY			
10	625-00000	Construction Surveying	LS			
11	626-00000	Mobilization	LS			
12	630-00000	Flagging	HOUR			
13	630-00007	Traffic Control Inspection	DAY			
14	630-00012	Traffic Control Management	DAY			
15	630-80341	Construction Traffic Sign (Panel Size A)	EACH			
16	630-80355	Portable Message Sign Panel	DAY			
17	630-80360	Drum Channelizing Device	EACH			
18	630-80380	Traffic Cone	EACH			
19	700-70010	F/A Minor Contract Revisions	FA			
20	700-70016	F/A Fuel Cost Adjustment	FA			
21	700-70310	F/A Landscaping	FA			
22	700-70380	F/A Erosion Control	FA			

CONSTRUCTION SUBTOTAL:	$255,673
20% Contingency:	$51,135
SUBTOTAL:	$306,807
15% Design	$46,021
TOTAL (w/ 3% Inflation to 2031):	**$474,172**

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

PROJECT: City of Fruita Active Circulation Plan **Signalized Intersection**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST RANGE	Quantity	Cost Range
1		Standard Intersection (Complete 2-3 Lane Facility) (To Include Engineering, Removals, Installation, and Contingency)	EACH	$283,000	1	$283,000
					TOTAL:	**$283,000**

J-U-B ENGINEERS, INC.

OPINION OF PROBABLE CONSTRUCTION COST

FRUITA COLORADO

PROJECT: City of Fruita Active Circulation Plan **Roundabout Intersection**

CLIENT: City of Fruita J-U-B PROJ. NO.: 07-21-010 **Date: 10-1-2021**

ITEM NO.	SECTION NUMBER	CONTRACT ITEM	UNIT	UNIT COST RANGE	Quantity	Cost Range
1		Roundabout Intersection (Complete 2-3 Lane Facility) (To Include Engineering, Removals, Installation, and Contingency)	EACH	$800,000 - $1,200,000	1	$800,000 - $1,200,000
					TOTAL:	**$800,000 - $1,200,000**

Appendix F: Prioritization Matrix

Bicycle Project Prioritization

Facility Type	Corridor	Extent	Extent2	Description	Length	per_unit_1	total_cost	Bus buffer	Park Buffer	School buffer	Trail buffer	Commercial Zoning	Destination Sum	Destination Score	Safety points	Safety score	Community Input votes	Community input score	Total Score	Tier
Bike Lane	Mesa Street	Ottley Avenue	W Meadow Avenue		0.2	6500	$ 1,549	0	0	0	0	0	0	0	2	2	3	1	3	Medium
Bike Lane	Ottley Avenue	Hwy 6	19 Road	Upgrade existing shoulder, discontinuous bike lane; prohibit parking for BBL; if on-street parking use 10' TL, 7' PL, and BL	2.6	6500	$ 17,052	2	2	2	1	1	8	4	2	2	11	5	11	Short
Buffered Bike Lane	Hwy 340	Roundabouts	South City limits	6' BL, 3' Buffer, 12' TL, 11' TL, 12' TWLTL, 11' TL, 12' TL, 3' buffer, 6' BL	0.5	60000	$ 29,466	2	2	0	0	2	6	4	2	2	10	5	11	Short
Bike Lane	Coulson Street	Ottley Avenue	Pabor Avenue		0.3	6500	$ 1,626	2	1	2	0	0	5	4	2	2	6	3	9	Short
Bike Lane	Maple Street	Hwy 6	Ottley Avenue	44’ cross section: 7’ parking, 5’ bike lanes, 10’ travel lanes (versus 11’ combined parking/bike lane and 11’ travel lanes)	0.7	6500	$ 4,772	2	1	0	0	2	5	4	2	2	3	1	7	Short
Bike Lane	Pine Street	Hwy 6	L Road	Formalize wide shoulder for part; 44' north of wash, can maintain parking	2.1	6500	$ 13,535	2	1	0	1	1	5	4	2	2	11	5	11	Short
Buffered Bike Lane	Jurassic Avenue	Hwy 340	Mesa Street		0.2	60000	$ 14,788	2	2	0	1	2	7	4	0	0	19	5	9	Short
Bike Lane	Aspen Avenue	Hwy 6	Hwy 340/Cherry Street	Will need to restripe and potentially widen FC to FC to fit or remove turn lane	0.2	6500	$ 1,417	2	1	0	1	2	6	4	0	0	5	3	7	Short
Bike Lane	Coulson Street	Pabor Avenue	Hwy 6	Will need to remove parking on one side	0.2	6500	$ 1,116	2	0	0	0	2	4	2	2	2	8	3	7	Short
Sharrow	Aspen Avenue	Mesa Street	Maple Street		0.2	4400	$ 997	2	2	0	0	2	6	4	0	0	5	3	7	Short
Trail upgrades	Hwy 340	Roundabouts	South City limits	Upgrade existing trail to establish 10’ preferred (8’ min) trail on both sides	0.5	500000	$ 244,770	2	2	0	0	2	6	4	0	0	12	5	9	Short
Bike Lane	Wildcat Avenue	Pine Street	East City limit	Formalize wide shoulder to bike lane	0.4	6500	$ 2,813	0	1	0	0	2	3	2	2	2	12	5	9	Short
Sharrow	Aspen Avenue	Hwy 340	Mesa Street		0.3	4400	$ 1,264	2	1	0	0	2	5	4	0	0	2	1	5	Short
Bike Lane	Grand Avenue	Hwy 6	Pine Street	Tradeoff: would need to remove parking on one side west of Pine; east of Pine formalize existing shoulder	1.0	6500	$ 6,311	0	0	0	0	2	2	2	2	2	2	1	5	Short
Bike Lane	Raptor Road	Hwy 340	Trail		0.2	6500	$ 1,526	0	1	0	1	2	4	2	0	0	9	5	7	Short
Buffered Bike Lane	Mesa Street	Riverfront Trail	Jurassic Avenue		0.1	60000	$ 7,958	0	1	0	1	2	4	2	0	0	8	3	5	Short
Bike Lane	18.5 Road	Ottley Avenue	Castle Court	Could also consider multiuse path adjacent to roadway; to provide access to Monument Ridge Elementary School	0.5	6500	$ 3,074	0	0	1	0	0	1	2	2	2	7	3	7	Short
Buffered Bike Lane	J Road	East City limit	20 Road	Major Arterial cross section; need to widen roadway	1.1	60000	$ 64,900	0	1	0	0	0	1	2	2	2	5	3	7	Short
Bike Lane	J.6 Road	Pine Street	Fremont Street	Formalize existing shoulder	0.5	6500	$ 3,249	0	0	0	0	0	0	0	2	2	3	1	3	Medium
Bike Lane	Maple Street	Trail Access	Sabil Drive	Will transition to sidewalk before narrows for bridge	0.1	6500	$ 434	0	0	0	0	0	0	0	2	2	5	3	5	Short
Bike Lane	Mesa Street	W Meadow Avenue	City limit	Upgrade from wide shoulders to bike lane	0.3	6500	$ 1,685	0	0	0	0	0	0	0	2	2	0	1	3	Medium
Buffered Bike Lane	15 Road	Trail	Hwy 6	Major collector cross section	0.7	60000	$ 44,541	0	1	0	1	0	2	2	0	0	2	1	3	Medium
Buffered Bike Lane	J.6 Road	18.5 Road	19 Road	Major Collector cross section	0.5	60000	$ 29,410	0	0	0	0	0	0	0	2	2	4	3	5	Short
Sharrow	Gewont Lane	Coulson Street	Little Salt Wash Trail		0.1	4400	$ 448	0	1	0	1	0	2	2	0	0	5	3	5	Short
Sharrow	Sabil Drive	Maple Street	Little Salt Wash Path	To connect trails	0.2	4400	$ 934	0	0	0	0	0	0	0	2	2	3	1	3	Medium
Trail	19 Road	City boundary	Hwy 6	Minor arterial cross section	0.8	500000	$ 384,068	0	0	0	0	0	0	0	2	2	9	5	7	Medium
Trail	New alignment	Pine Street	Riverfront Trail	Grade separated crossing	0.2	500000	$ 83,459	2	0	1	0	1	4	2	0	0	5	3	5	Medium
Bike Lane	Pabor Avenue	Coulson Street	Mesa Street		0.3	6500	$ 1,633	0	1	0	0	0	1	2	0	0	4	3	5	Short
Sharrow	Pabor Avenue	Mesa Street	Mulberry Street	Sharrows EB and Bike lane WB	0.1	4400	$ 280	0	1	0	0	0	1	2	0	0	1	1	3	Medium
Sharrow	Doug Drive	Little Salt Wash Park P	Trail	To connect two trails	0.1	4400	$ 364	0	0	0	0	0	0	0	0	0	2	1	1	Long
Sharrow	Marigold Lane	Trail access	Trail access	with signage to connect trails	0.1	4400	$ 455	0	0	0	0	0	0	0	0	0	0	1	1	Long

Multimodal and Street Enhancement Project Prioritization

FID	Shape *	Id	N_S	E_W	Column1	Descriptio	Length	Bus buffer	Park Buffer	School buffer	Trail buffer	Commercial Zoning	Destination Sum	Destination Score	Safety points	Safety score	Community Input votes	Community input score	Total Score	Tier	Tot_cost
1	Polyline	27	Aspen Avenue	Hwy 340	Plum Street	Evaluate removing right-turn lanes (EBRT approaching Plum Street, SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes	329	2	1	0	0	2	5	4	2	2	9	5	11	Short	$ 3,500
3	Point	6	Cherry Street/Hwy 340	Aspen Avenue		Long: right-turn lanes as 30-60-90, Add speed tables to right-turn lanes; Short: add 2nd yield to NB approach and add flex delineators at striping		2	1	0	0	2	5	4	2	2	10	5	11	Short	$ 9,000
7	Point	11	I-70 Frontage Road	East of roundabout		Enhance existing marked crosswalks at I-70 Frontage Road and SH-340 with Rectangular Rapid Flashing Beacons		2	1	0	0	1	4	4	2	2	8	5	11	Short	$ 70,000
4	Polyline	28	Aspen Avenue	Plum Street	Mesa Street	Long-term: Pursue Downtown Streetscape Improvements; Short-term Mark crosswalks in addition to colored pavement	215.662687	2	1	0	0	2	5	4	0	0	7	5	9	Beyond	739000
5	Point	7	Coulson Street	Ottley Avenue		On SW corner: Remove tree (if within ROW) Relocate utility poll; shift centerline; narrow crossing east leg, stripe bike lane through intersection		2	1	2	0	0	5	4	2	2	6	3	9	Medium	$53,000
25	Point	8	Fremont Street	Hwy 6		Implement traffic signal		0	0	0	0	1	1	2	2	2	7	5	9	Short	$ 283,000
6	Polyline	29	Fremont Street	J Road	Hwy 6	Complete new multimodal corridor	0	0	0	0	0	1	1	2	2	2	7	5	9	Beyond	4442000
6	Point	9	Hwy 340	Midblock south of roundabout		Implement RRFB		2	1	0	0	2	5	4	2	2	4	3	9	Medium	$7,000
8	Point	10	Hwy 340	Jurassic Avenue		Complete signal warrant study		2	1	0	0	2	5	4	2	2	5	3	9	Long	$283,000
5	Polyline	30	Hwy 340	Roundabouts	Hwy 340	Raise railing height	890.812826	2	0	0	0	2	4	4	2	2	4	3	9	Medium	$146,000
10	Point	12	J.3 Road	Wildcat Avenue		Evaluate single-lane mini roundabouts: 100' diameter; Shift crosswalk to be in front of the STOP bar if not roundabout		2	1	0	0	1	4	4	2	2	6	3	9	Medium	$100,000
4	Point	17	Mesa Street	Pabor Avenue		Complete all-way stop warrant study; consider mini roundabout; If keep existing, split up/reduce crossing distance with ped refuge island/median		2	1	0	0	1	4	4	0	0	11	5	9	Medium	$2,000
12	Point	19	Midblock	Wildcat Avenue		Add median to existing crossing		2	1	0	0	1	4	4	2	2	3	3	9	Short	$ 7,000
13	Point	20	Midblock	Wildcat Avenue		Add median refuge between Fruita Monument High School and LDS Seminary		2	1	0	0	1	4	4	2	2	3	3	9	Medium	$7,000
3	Polyline	32	Park Circle			Long-term: Pursue Downtown Streetscape Improvements; Short-term: reinforce existing striping patterns with flexible delineators	818.76044	2	1	0	0	2	5	4	0	0	9	5	9	Beyond	2572000
11	Point	22	Pine Street	Aspen Avenue		Evaluate traffic signal or single-lane mini roundabouts: Pine Avenue & Aspen Street (80' diameter)		2	0	0	0	0	2	2	2	2	14	5	9	Medium	$283,000
24	Point	25	Pine Street	Ottley Avenue		Consider a traffic signal		2	0	0	0	0	2	2	2	2	8	5	9	Medium	$283,000
2	Polyline	33	Plum Street	Aspen Avenue	McCune Avenue	Evaluate removing right-turn lanes (SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes	682.059316	2	1	0	0	2	5	4	0	0	7	5	9	Long	$3,500
0	Polyline	31	Hwy 6	Pine Street	Coulson Street	Restripe to provide wider shoulder on north side (8') to improve sight lines	6397.684052	2	0	0	0	2	4	4	2	2	0	1	7	Long	$31,700
9	Point	13	Maple Street	Hwy 6		Complete signal warrant study		0	0	0	0	1	1	2	2	2	4	3	7	Long	$283,000
22	Point	15	Maple Street	Ottley Avenue		Consider a roundabout or traffic signal		2	0	0	0	0	2	2	2	2	3	3	7	Long	$283,000
0	Point	16	Mesa Street	Aspen Avenue		Evaluate converting each approach to stop control		2	1	0	0	2	5	4	0	0	3	3	7	Long	$8,000
16	Point	14	Maple Street	Columbine Street		Consider a Pedestrian Signal to provide access to Fruita Middle School		2	0	0	0	0	2	2	0	0	5	3	5	Beyond	6000
23	Point	18	Mesa Street	Ottley Avenue		Consider a roundabout or traffic signal		0	0	0	0	0	0	0	0	0	7	5	5	Beyond	283000
1	Point	21	Mulberry Street	Aspen Avenue		Complete all-way stop warrant study		2	1	0	0	2	5	4	0	0	1	1	5	Beyond	2000
15	Point	24	Pine Street	Hwy 6		Relocate utility box to improve visibility for right-turning vehicles; Reduce radius of NE corner to slow speeds of westbound right-turning vehicles		2	0	0	0	1	3	2	2	2	2	1	5	Beyond	27000
2	Point	26	Plum Street	Aspen Avenue		Evaluate intersection for all-way STOP or traffic signal		2	1	0	0	2	5	4	0	0	0	1	5	Beyond	2000
18	Point	2	17 Road	L Road		Convert from side street stop control to all-way stop		0	0	1	0	0	1	2	0	0	0	1	3	Beyond	2000
19	Point	3	17.5 Road	L Road		Consider a roundabout or traffic signal		0	0	0	0	0	0	0	2	2	0	1	3	Beyond	283000
20	Point	4	18 Road	L Road		Consider a roundabout or traffic signal		0	0	0	0	0	0	0	2	2	0	1	3	Beyond	283000
21	Point	5	18.5 Road	L Road		Convert from side street stop control to all-way stop control		0	0	0	0	0	0	0	2	2	1	1	3	Beyond	2000
14	Point	23	Pine Street	Wildcat Avenue		Shift crosswalk to be in front of the STOP bar		2	0	0	0	1	3	2	0	0	2	1	3	Beyond	15000
17	Point	1	16 Road	L Road		Consider intersection ahead warning signs on 16 Road and intersection lighting		0	0	0	0	0	0	0	0	0	1	1	1	Beyond	3000

Appendix G: Cost Estimates

MEMORANDUM

Date: October 1, 2021
To: Charles Alexander
From: Bret Guillory, PE
Matt Filla, EIT
Subject: Fruita Active Circulation Plan – Cost Estimates

This memo is intended to accompany cost estimates for the Fruita Active Circulation Plan and to help inform all parties of the basis of certain items' unit costs. This memo will provide cost information sources and methodology as to how unit costs were developed.

Fremont Street Improvements
Cost estimates for the proposed Fremont Street Improvements were developed using publicly available bid summaries from the City of Grand Junction. These bid summaries, ranging from 2017 to 2021, include items similar to those proposed that were then averaged and adjusted for inflation. Costs for dissimilar proposed items were interpolated and adjusted from the most similar available costs. A 15% design factor and 20% contingency were used. Right-of-way and easement acquisition costs were based on current property values, with the easements estimated at 75% of fee simple values.

Signalized Intersection and Roundabout Intersection
Cost estimates for the signalized and roundabout intersections were developed using recent (2021) J-U-B cost estimates for similar projects in Pleasant Grove City, Utah and Post Falls and Coeur d'Alene, Idaho. The signalized intersection cost was developed by including costs for engineering, signal components, and construction. The roundabout intersection cost includes engineering, removals, and construction. The extent of removals may vary greatly depending upon location.

Corridors
The standard corridors (roadway cross sections) were developed from the costs of the individual corridor components, which were derived from the publicly available City of Grand Junction bid summaries. Costs are based on lineal footage and include 15% design and 15% contingency.

Pedestrian Crossing
The I-70/UPRR pedestrian crossing was derived from the City of Grand Junction's Riverside Parkway pedestrian crossing and estimates from several bridge engineering/manufacturing firms.

Signalized & Roundabout Intersections

Item	Unit	Unit Cost	Basis

Signalized Intersection	EACH	$283,000 (Approx. Average)	• Pleasant Grove City (Utah) Engineering OPCCs (2021)
			  ○ Signal component
			  ▪ Includes signal hardware (structural support, mast arms, power, conduit, junction box, signs/signals, lighting, controller, detection, etc.)
			  ▪ $143,000 to $185,000
			  ▪ Average: $165,000
			  ○ Engineering/design component
			  ▪ $30,000 to $50,000
			  ▪ Average: $40,000
			  ○ Construction component
			  ▪ Includes mobilization, traffic control, removals, boring/trenching, and surfacing
			  ▪ $40,000 to $54,000
			  ▪ Average: $46,000
			• Assumptions: 2-3 lane intersection, 15% contingency

Roundabout Intersection	EACH	$800,000 – $1,200,000	• Salt Lake City (Utah) Engineering OPCCs (2021)
			  ○ Construction component
			  ▪ $525,000 to $1,200,000
			  ○ Engineering/design component
			  ▪ $110,000 to $775,000
			• Post Falls and Coeur d'Alene (Idaho) Engineering OPCCs (2021)
			  ○ Construction component
			  ▪ $845,000 to $1,015,000
			  ○ Engineering/design component
			  ▪ $100,000 to $193,000

Corridor Components

Item	Unit	Unit Cost	Basis

Curb Ramp
(To Include 6" of Class 6 Aggregate Base Course and 2'x4' Detectable Warning)
	EACH	$800	• City of Grand Junction Bid Summaries (2017-2020)
			  ○ Curb Ramp (Including 6" of Class 6 Aggregate Base Course)
			  ○ Detectable Warning (2'x4')
			• Adjusted for 5% inflation

Curb and Gutter Type 2 (Section IIB) (To Include 6" of Class 6 Aggregate Base Course)	LF	$37	• City of Grand Junction Bid Summaries (2017-2020) ○ Concrete Curb and Gutter (2' Wide)(Including 6" of Class 6 Aggregate Base Course) • Adjusted for 5% inflation

Curb, Gutter and Sidewalk Type 2 (Section IIB)
(To Include 6" of Class 6 Aggregate Base Course)
	LF	$77	• City of Grand Junction Bid Summaries (2017-2020)
			  ○ Curb, Gutter, and Sidewalk Type 2 (Section IIB)
			  ○ Concrete Curb and Gutter (2' Wide)
			  ○ Concrete Sidewalk (6" Thick)(To Include 6" of Class 6 Aggregate Base Course)
			• Assumptions: 5.5' sidewalk width
			• Adjusted for 5% inflation

Detached Walk Path
(To Include 6" of Class 6 Aggregate Base Course)
	LF	$55	• City of Grand Junction Bid Summaries (2017-2020)
			  ○ Concrete Sidewalk (Various Thicknesses)(To Include 6" of Class 6 Aggregate Base Course)
			  ○ Concrete Sidewalk (4" Thick)
			• Assumptions: 4" thickness, 6' Width
			• Adjusted for 5% inflation

Asphalt Paving (Two 2" Mats)(To Include 24" of Class 6 Aggregate Base Course)	SY	$65	• City of Grand Junction Bid Summaries (2017-2020)
			  ○ Hot Mix Asphalt (Various Thicknesses)(Grading SX, Various Binder Grades)
			  ○ Class 6 Aggregate Base Course (Various Thicknesses)
			• City of Gunnison (2020)
			  ○ HMA
			• Adjusted for 5% inflation

Aggregate Base Course	TON	$35	• City of Grand Junction Bid Summaries (2017-2020) ○ Class 6 Aggregate Base Course (Various Thicknesses) • Adjusted for 5% inflation

Corridor Components (Continued)

Item	Unit	Unit Cost	Basis

Lane Striping	LF	$1	• City of Grand Junction Bid Summaries (2017-2020)
			  ○ Pavement Marking Paint (Water Based)(Single White Line)
			• RS Means Data
			  ○ Painted Pavement Markings (Acrylic Waterborne)(White or Yellow)(4" Wide)
			• Pleasant Grove City (Utah) Engineering OPCCs (2021)
			  ○ Pavement Marking (Various, including White or Yellow, Double, and 8" Wide)

Bike Lane Sharrow	Mile	$4,355	• Phone conversation with striping contractor (2021) • Assumes sharrow every 400 feet (13/mile) • Assumes "Share the Road" signs at 2/mile. ○ Mobilization is also assumed as $2,000.
Bike Lane Sharrow with Lane Stripe	Mile	$6,467	• Phone conversation with striping contractor (2021) • Assumes sharrow every 400 feet (13/mile) • Assumes "Share the Road" signs at 2/mile. • Includes one lane delineator stripe. ○ Mobilization is also assumed as $2,000.
Bike Lane Buffered	Mile	$591,818	• City of Grand Junction Bid Summaries (2017-2020)
Median with rock mulch hardscape	Mile	$658,984	• City of Grand Junction Bid Summaries (2017-2020)
Median with concrete hardscape	Mile	$722,295	• City of Grand Junction Bid Summaries (2017-2020)

Corridors

Item	Unit	Unit Cost	Total Cost (Including Design/Contingency)	Basis
Major Arterial Corridor	LF	$595	$774	• Corridor unit costs derived from applicable corridor components • Proposed new construction (removals not included) • Assumptions: 15% design and 15% contingency added
Major Arterial (Enhanced Travel) Corridor	LF	$645	$839	
Major Collector (25-30 MPH)	LF	$475	$618	
Greenway Drive Collector (Industrial)	LF	$470	$611	
Minor Collector (Industrial)	LF	$340	$442	
Minor Collector (Residential & Commercial)	LF	$470	$611	
Residential	LF	$340	$442	

Pedestrian Crossing

Item	Unit	Unit Cost	Basis

I-70/UPRR Grade Separated Pedestrian Crossing	LS	$4,800,000	• City of Grand Junction
			  ○ Riverside Parkway/UPRR Grade Separated Pedestrian Crossing (2007)
			• Excel Bridge Manufacturing Co.
			  ○ Pre-fabricated bridge
			• Roseke Engineering
			  ○ Steel girder pedestrian bridge
			• Assumptions: 15% design and 15% contingency added

Multimodal and Street Enhancements Cost Summary

	Construction Cost Summary	Mobilization/Traffic Control (25%)	Construction Subtotal
Relocate Utility Pole	$5,000.00 - $50,000.00	$1,250.00 $12,500.00	$7,000.00 $70,000.00
Median Refuge Island	$5,000.00	$1,250.00	$7,000.00
RRFB	$50,000.00	$12,500.00	$70,000.00
Convert from Side Street Stop to All-Way Stop	$1,100.00	$275.00	$2,000.00
Stop	$450.00	$112.50	$600.00
Pedestrian Signal	$4,500.00	$1,125.00	$6,000.00
Tighten Curb Radii	$5,000.00	$1,250.00	$7,000.00
Shift Crosswalk Location	$10,000 + $50/LF of crosswalk	$2,500.00	$13,000 + $50/LF of crosswalk
Lighting at an Intersection	$1,000.00 - $4,000.00	$250.00	$1,250.00 $4,000.00

- Assuming roughly 8x20
- Assume two RRFBs plus conduit, controller, etc
- Assumes 2 new stop bars and sign posts
- Assuming stop sign and post
- Assuming traffic signal pole with two pedestrian heads and two ped push buttons
- Not assuming new curb ramps or relocation of drainage
- Assuming 12' wide crosswalk and needing two new curb ramps
- Assuming anywhere from 1-4 lights

Mobilization 25%

Median Refuge Island

	Unit	Qty	Cost	Total Cost
Install Curb and Gutter	LF	56	25	1400
Install concrete sidewalk	SF	160	15	2400
Truncated Domes	EA	2	500	1000
				4800

Convert from Side Street Stop to All-Way Stop

	Unit	Qty	Cost	Total Cost
Install sign & post	EA	2	450	900
Stop Bar	SF	24	5	120
				1020

Pedestrian Signal

	Unit	Qty	Cost	Total Cost
2 ped push buttons	EA	2	400	800
2 ped heads	EA	2	700	1400
1 traffic signal pole	EA	1	2300	2300
				4500

Tighten Curb Radii

	Unit	Qty	Cost	Total Cost
Remove Curb & Gutter	LF	40	9	360
Remove concrete sidewalk	SF	50	15	750
Install Curb and Gutter	LF	45	25	1125
Install concrete sidewalk	SF	100	15	1500
				3735

Shift Crosswalk Location

	Unit	Qty	Cost	Total Cost
Curb Ramps	EA	2	5000	$ 10,000.00
Grind out exisitng crosswalk	SF	240	3	$ 720.00
Add new Crosswalk Bars	SF	240	5	$ 1,200.00
				$ 1,920.00
Per LF cost (12' wide crosswalk)				$ 48.00

Assume 40 ft for calculation and 12' wide and using thermoplastic paint

Appendix H: April 26, 2021 Recommendations Presentation

Fruita Active Circulation Plan

April 26-27, 2021 Site Visit & Recommendations

Positive Practices

- 20 MPH “when flashing” school zone signs
- New crosswalks with W11-2 warning signs, pedestrian refuge islands
- Bicycle/pedestrian cut throughs in new development
- Recent investments in trail infrastructure
- Aspen Avenue streetscape

Positive Practices

General Recommendations

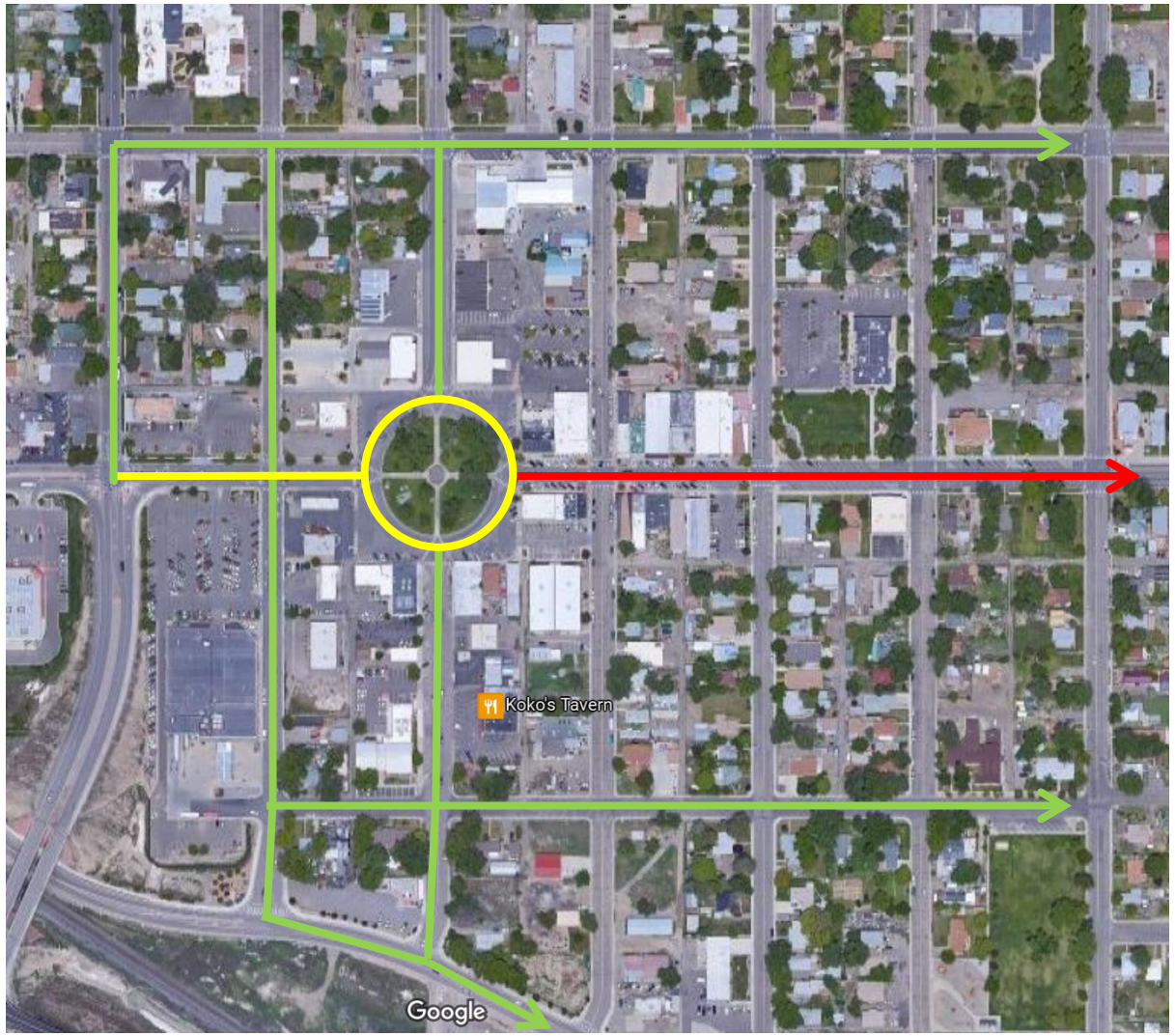
- Implement branded wayfinding for trails and bikeways system
- 44’ cross section: 7’ parking, 5’ bike lanes, 10’ travel lanes (versus 11’ combined parking/bike lane and 11’ travel lanes)
  - Maple Street
  - Mesa Street
- Move away from combined parking/bike lanes
- Consistency in marked crosswalks at uncontrolled locations:
  - Warning signs (W11-2 or S1-1) to accompany high-visibility markings
  - Pedestrian refuge islands generally preferred over bulbouts
  - RRFBs where operating speeds ≥ 40 mph or ADT ≥ 15,000 vpd
- Intersection control evaluation: evaluate new locations for all-way STOPs, signals, and roundabouts (including mini-roundabouts)
- Network development to follow

Circle Park

- Long-term
  - Pursue Downtown Streetscape Improvements
  - Evaluate converting to STOP on entry
- Short-term: reinforce existing striping patterns with flexible delineators

Aspen Avenue

- Support CDOT plans for I-70 access improvements to east Fruita
- Long-term
  - Pursue Downtown Streetscape Improvements
  - Establish parallel streets as alternatives
- Short-term:
  - Complete all-way STOP warrant study at Aspen Avenue & Mulberry Street
  - Mark crosswalks in addition to colored pavement
  - Designate as a bike route with sharrows

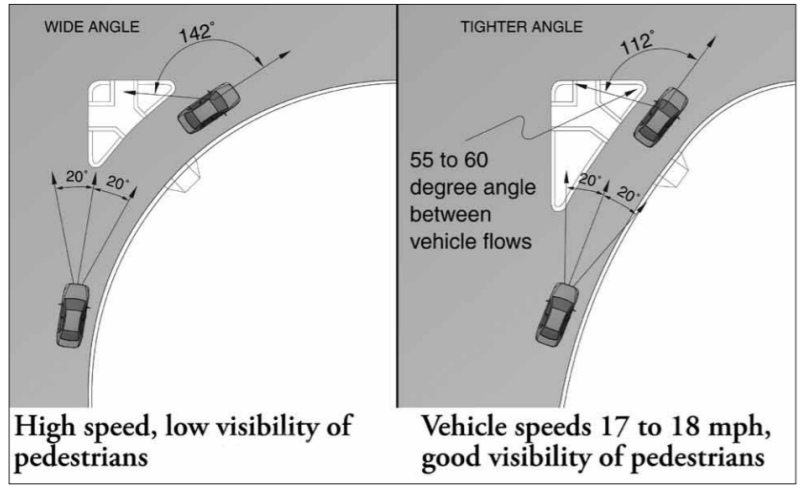


Aspen Avenue & Plum Street

- Evaluate intersection for all-way STOP or traffic signal
- Evaluate removing right-turn lanes (EBRT approaching Plum Street, SBRT approaching City Market driveway) and adding continuous two-way left-turn lanes

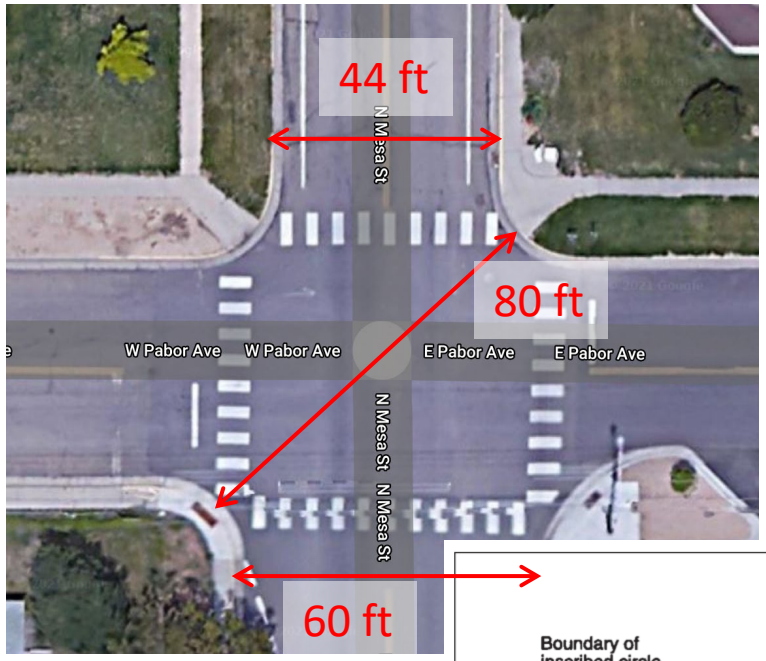
Aspen Avenue & Cherry Street

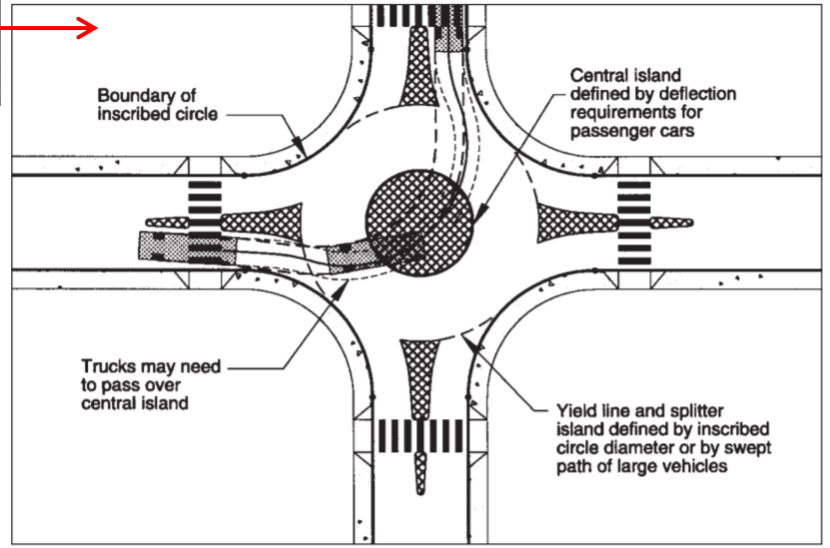
- Long-term
  - Reconfigure right-turn lanes as 30-60-90 degree, or
  - Add speed tables to right-turn lanes
- Short-term:
  - Add second yield sign to NB approach
  - Add flexible delineators to reinforce existing striping pattern



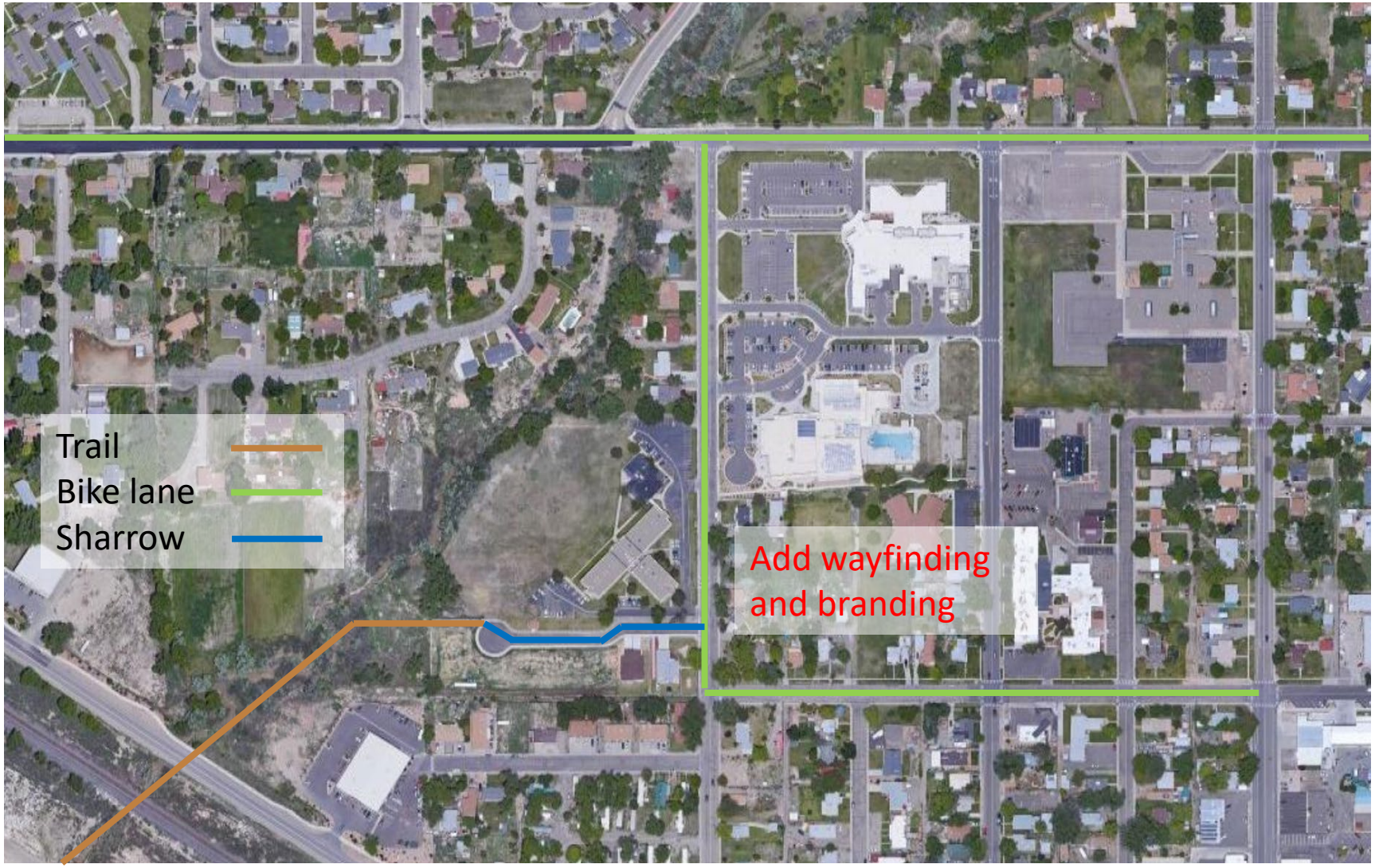
Pabor Avenue & Mesa Street

- Complete all-way STOP warrant study
- Consider mini-roundabout as an alternative to existing control or all-way STOP
- If retaining existing control, split up or reduce crossing distance with pedestrian refuge islands or medians





Little Salt Wash Trail Connectivity

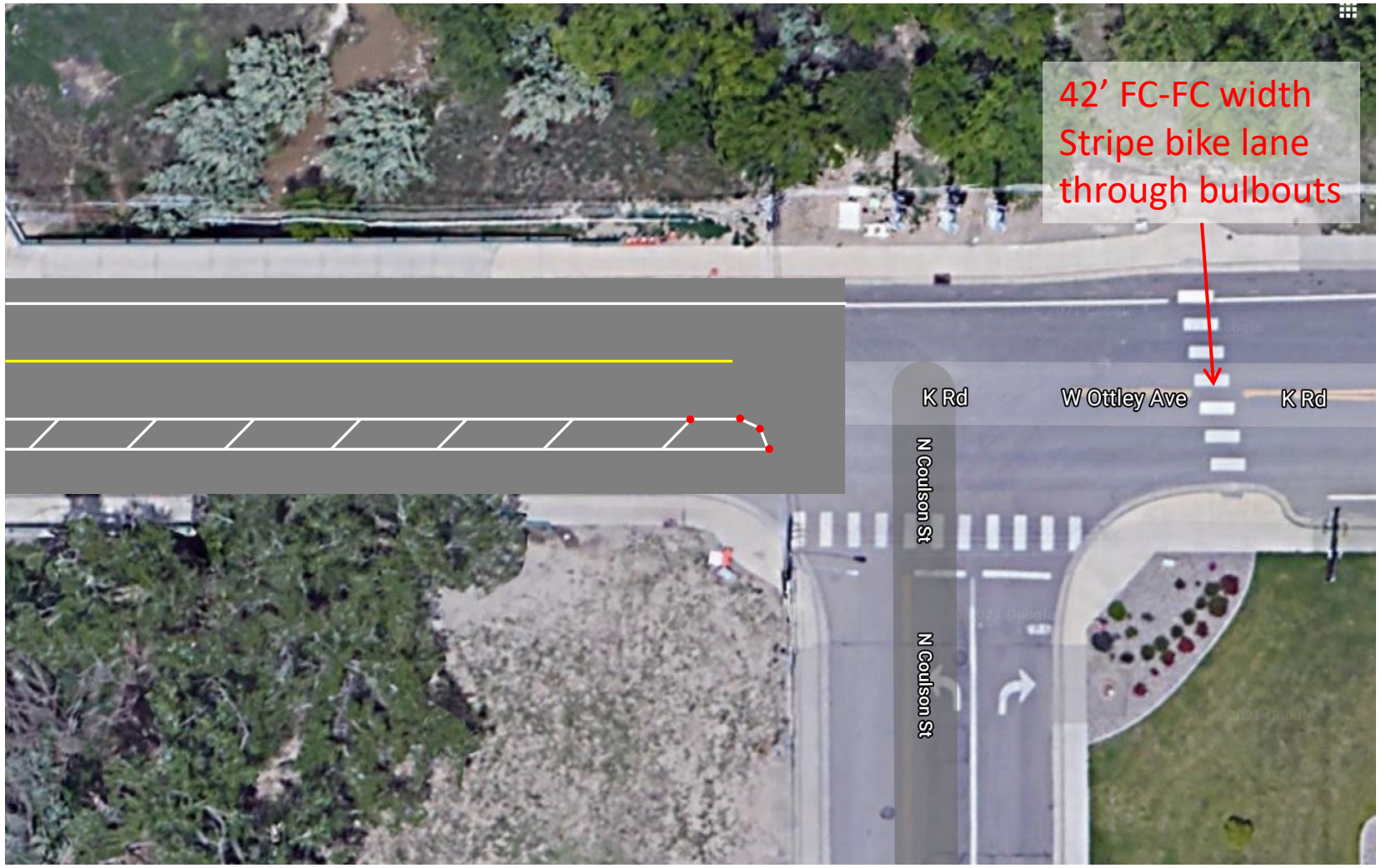


Ottley Avenue

- Establish continuous bike lane
  - Prohibit parking to establish buffered bike lane (35 mph)
  - If on-street parking must remain, use 10’ travel lanes and 7’ parking lanes to maximize bike lane width

Ottley Avenue & Coulson Street

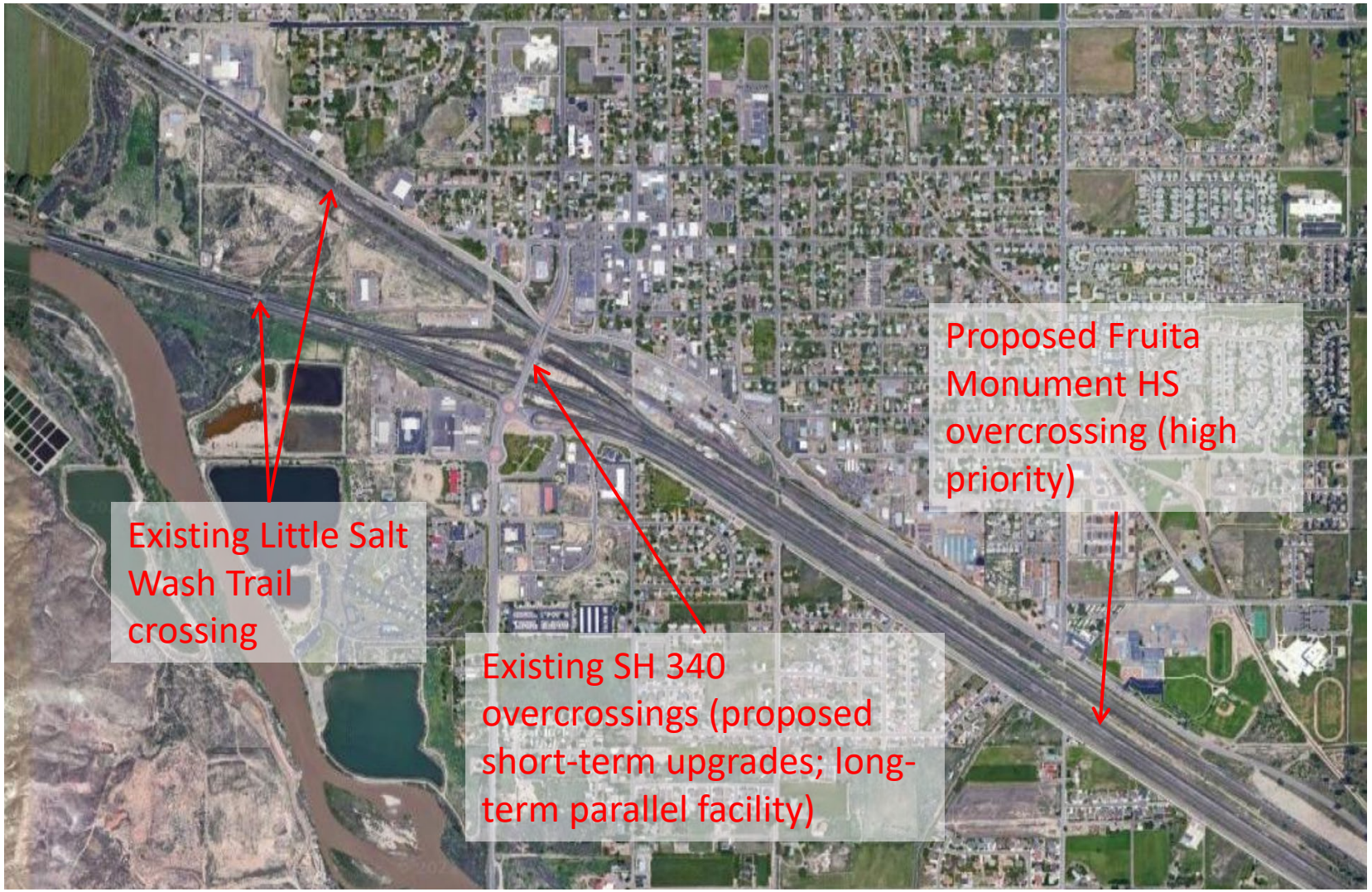
- On southwest corner:
  - Remove tree (if within ROW)
  - Relocate utility poll
- Shift centerline north to increase sight line
- Narrow crossing across east leg; stripe bike lanes through intersection



SH-340 at I-70 and Raptor Road

- Long-term: pursue crossings separated from vehicle traffic
  - Little Salt Wash (existing)
  - Parallel to SH-340
  - Near Fruita Monument High School
- Short-term:
  - Raise fence/barrier on I-70 overpass and railroad overpass
  - Enhance existing marked crosswalks at I-70 Frontage Road and SH-340 with Rectangular Rapid Flashing Beacons

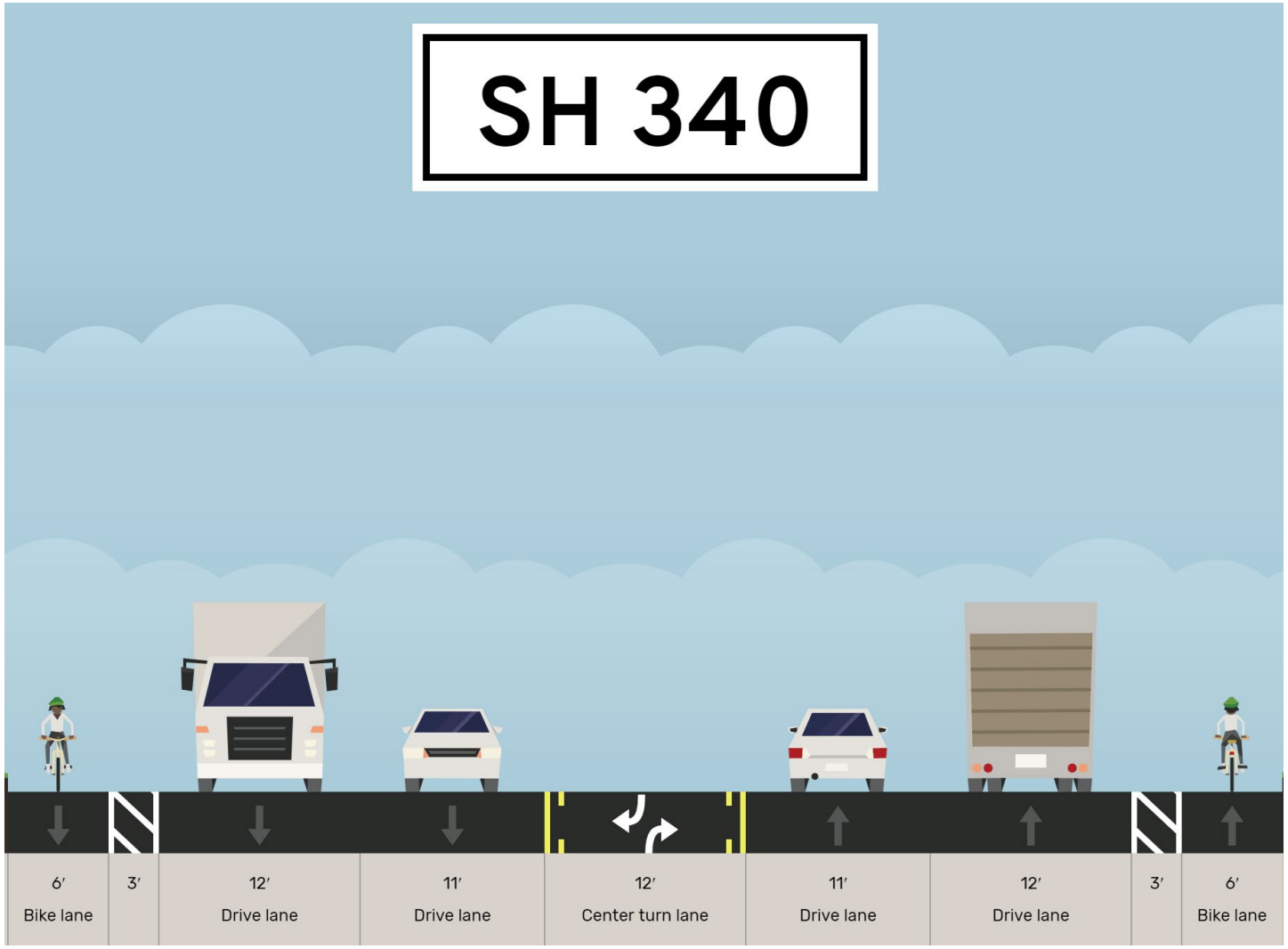
Connectivity across I-70 & Railroad



Colorado Riverfront Trail Connectivity

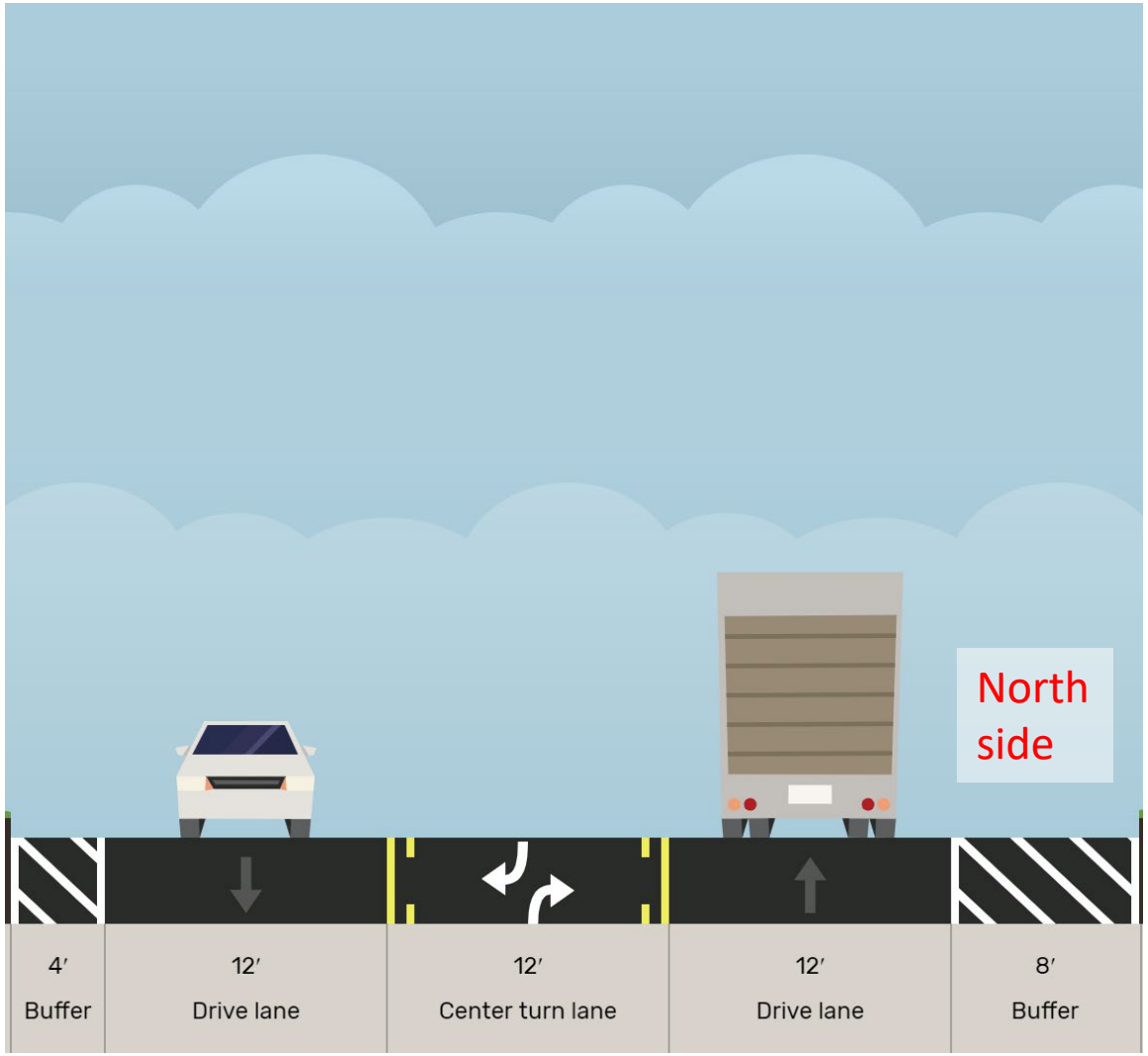
SH-340

- Establish 10’ preferred (8’ min) trail on both sides from roundabouts to south City limits
- Restripe existing FC-FC to provide buffered bike lanes



US-6

- Restripe to provide wider shoulder on north side to improve sight lines
- Signal warrant studies as necessary (e.g. Maple Street)



8/9 School and High School

- Add median to pedestrian crossing (and midblock) between Fruita Monument High School and LDS Seminary
- Evaluate single-lane mini roundabouts: J 3/10 Road and Wildcat Boulevard (100’ diameter), Pine Avenue & Aspen Street (80’ diameter)


The Church of
Jesus Christ of Latter...
Wildcat Blvd
Wildcat Blvd

Crosswalks at Intersections

- Shift crosswalk to be in front of the STOP bar: Pine Street and Wildcat Boulevard, J 3/10 Road and Wildcat Boulevard (if roundabout is not pursued)

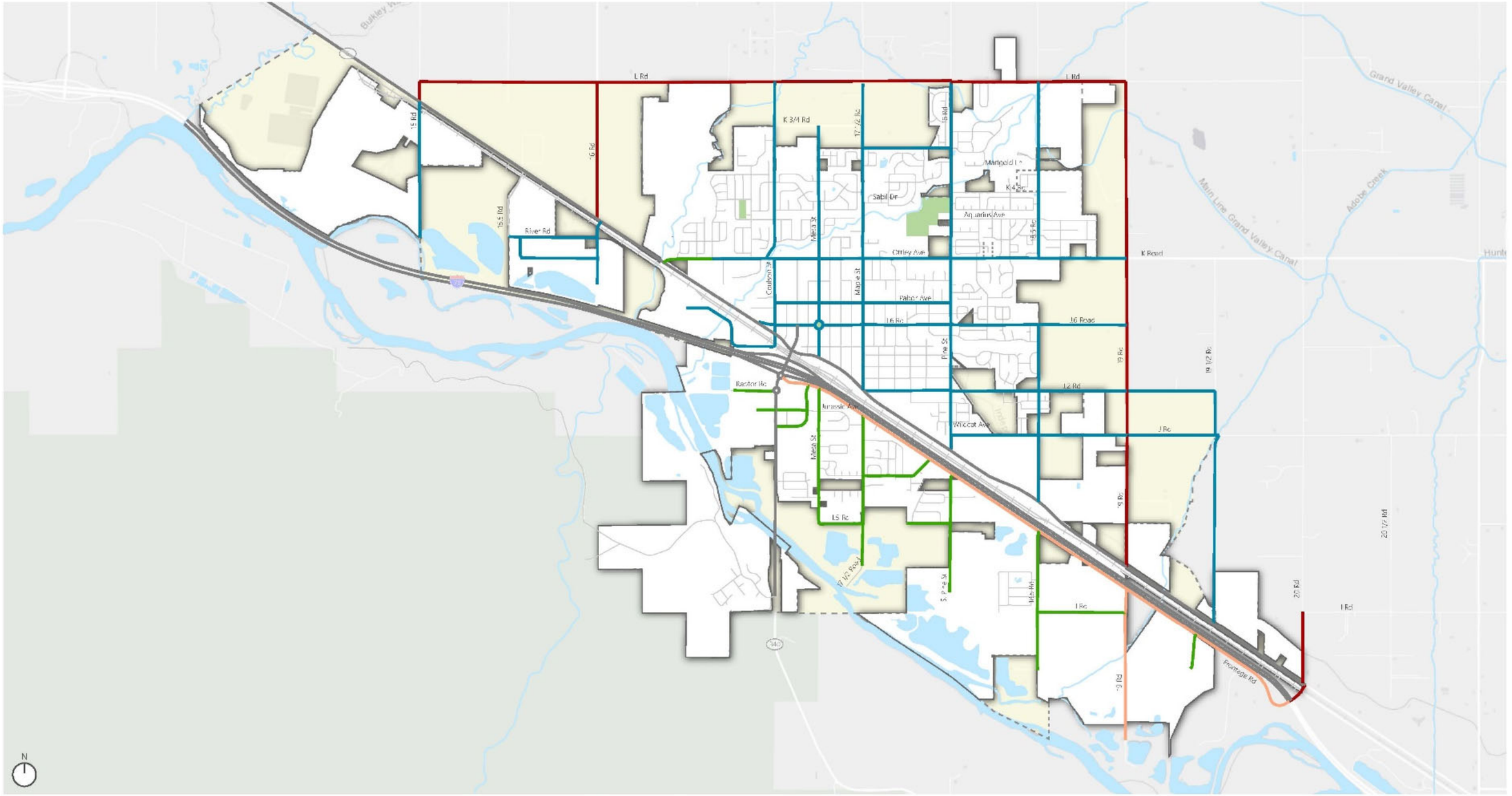
Pine Street and US-6

- Relocate utility box to improve visibility for right-turning vehicles
- Reduce radius of northeast corner to slow speeds of westbound right-turning vehicles

Sidewalk Gaps and Widening

- Current practices?
- Potential approach?

Appendix I: Maps in 11 x 17



Future Street Classification

- CDOT Highway Interstate
- Major Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- City Boundary
- Urban Growth Boundary

Figure 9: Street functional classification

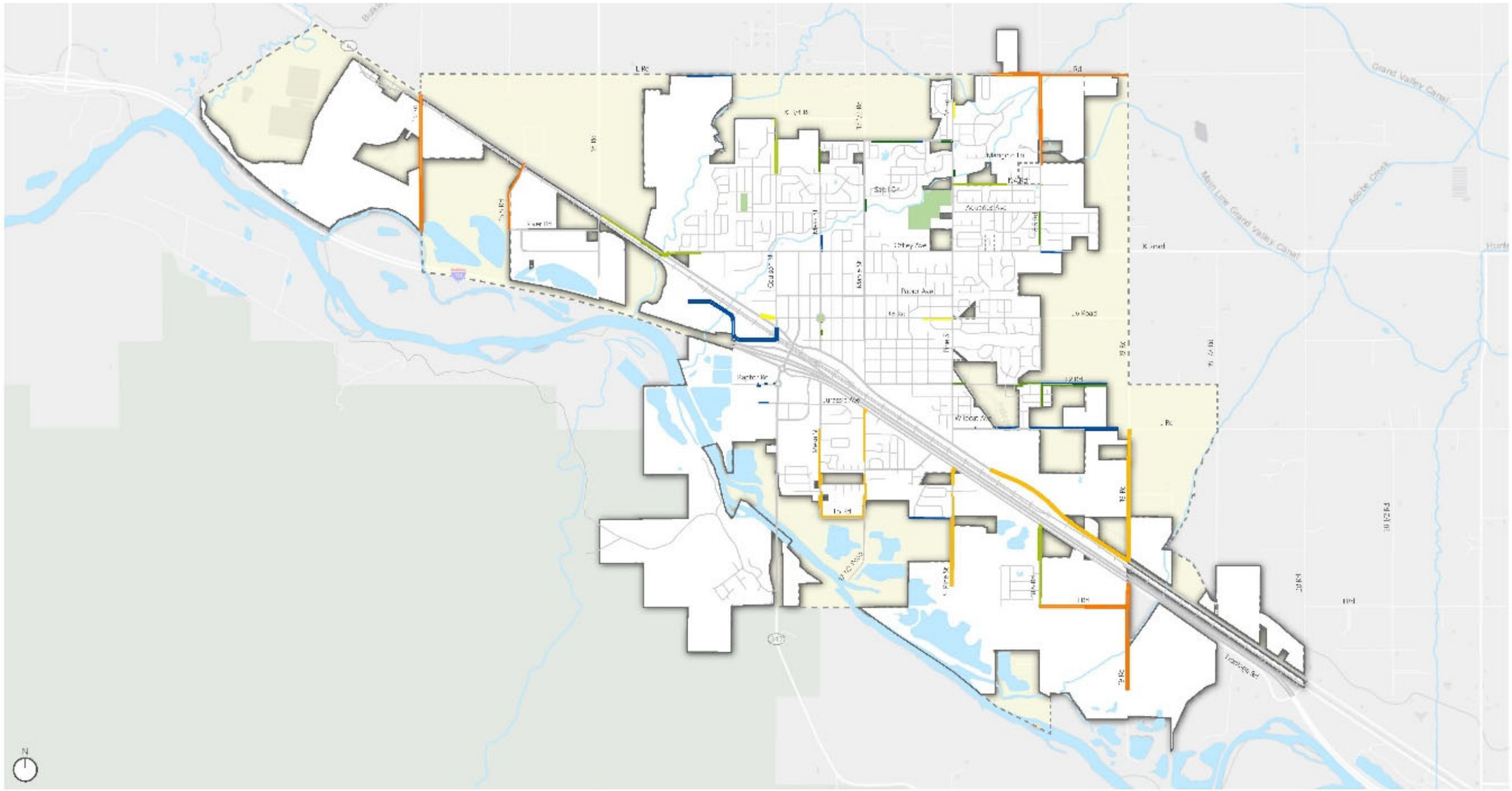


Figure 10: Priority sidewalk projects

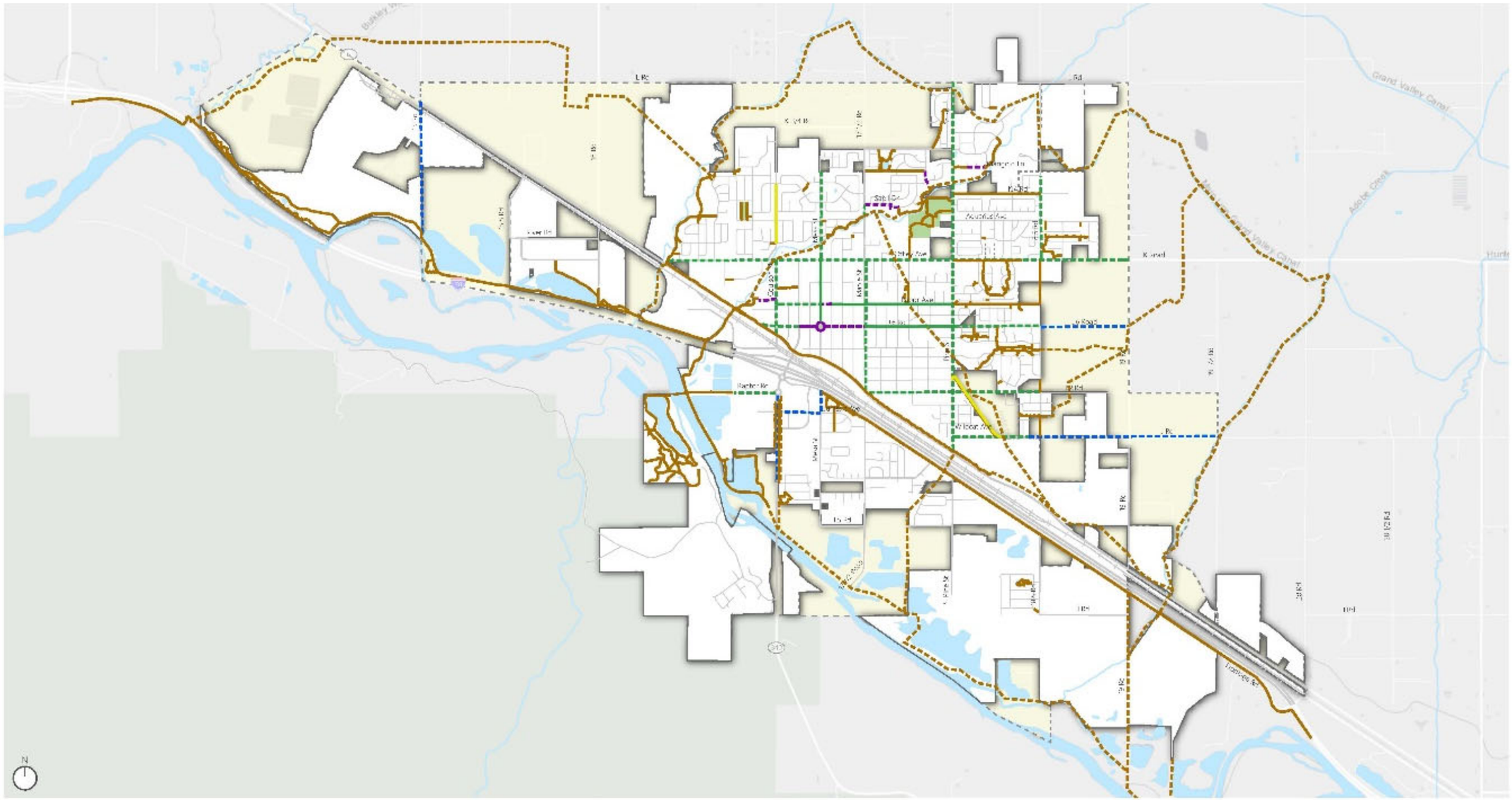


Figure 11: Proposed bikeways & trails network

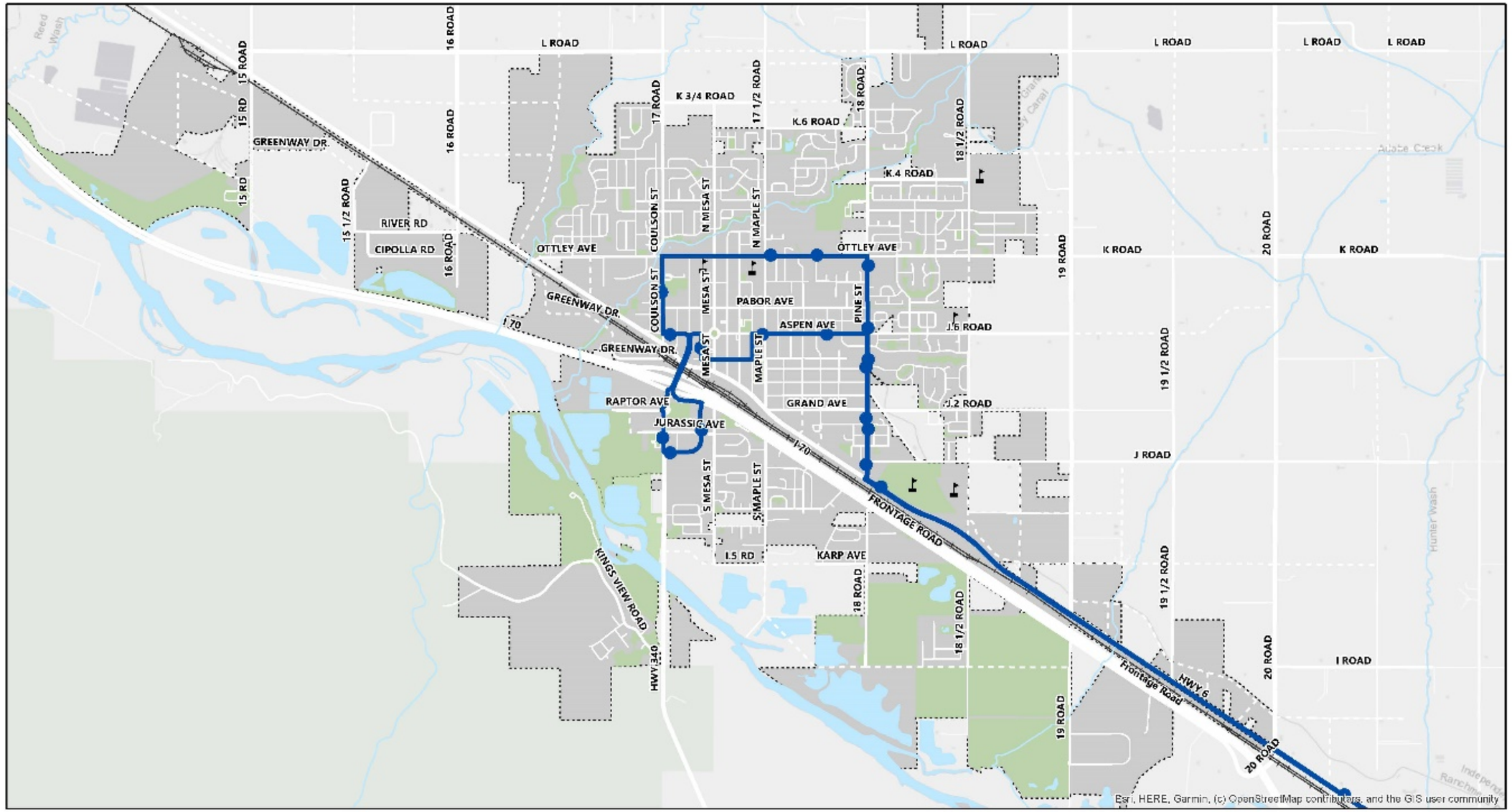


Figure 12: Existing transit network

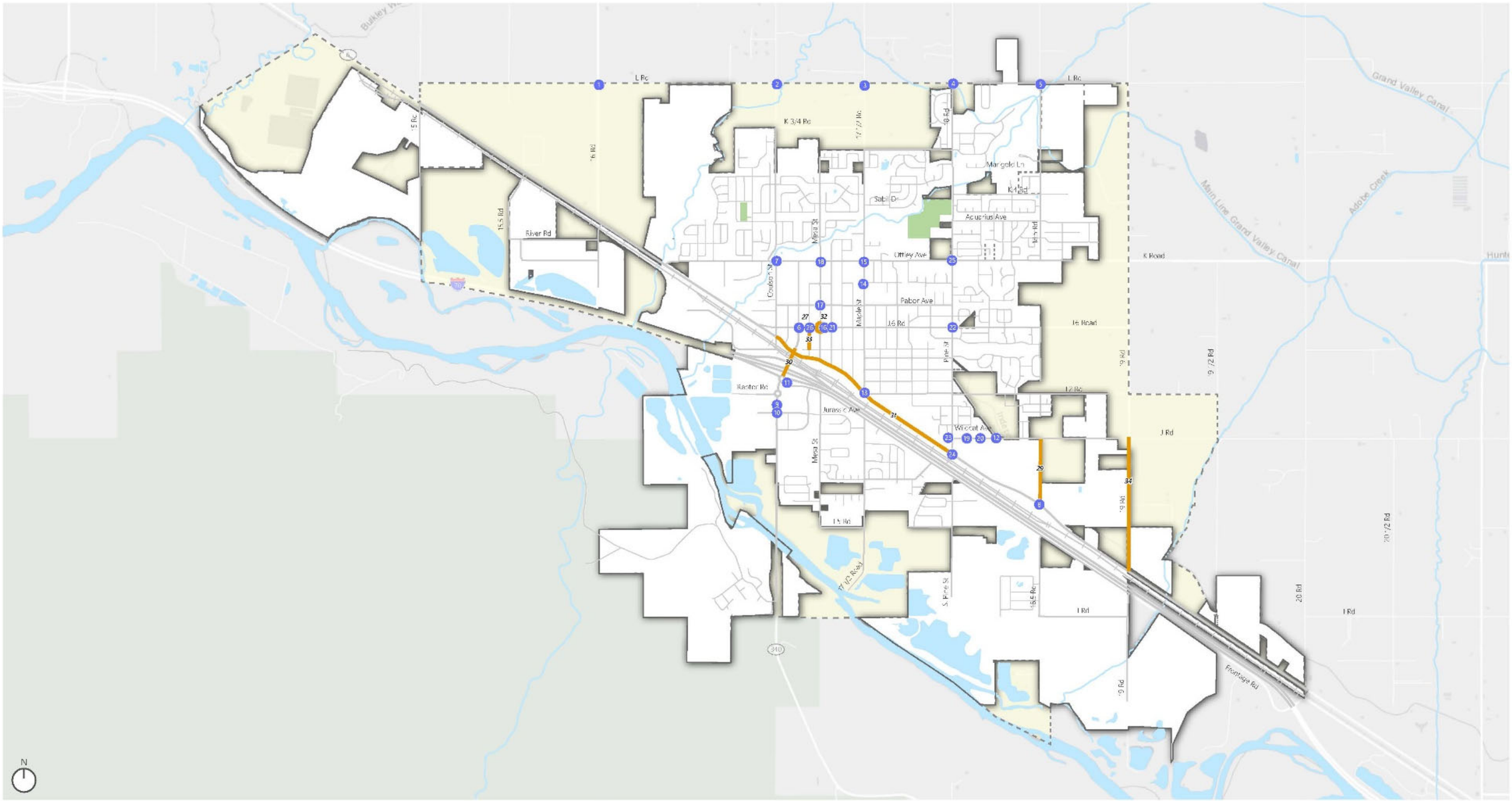


Figure 13: Multimodal intersection and street investments

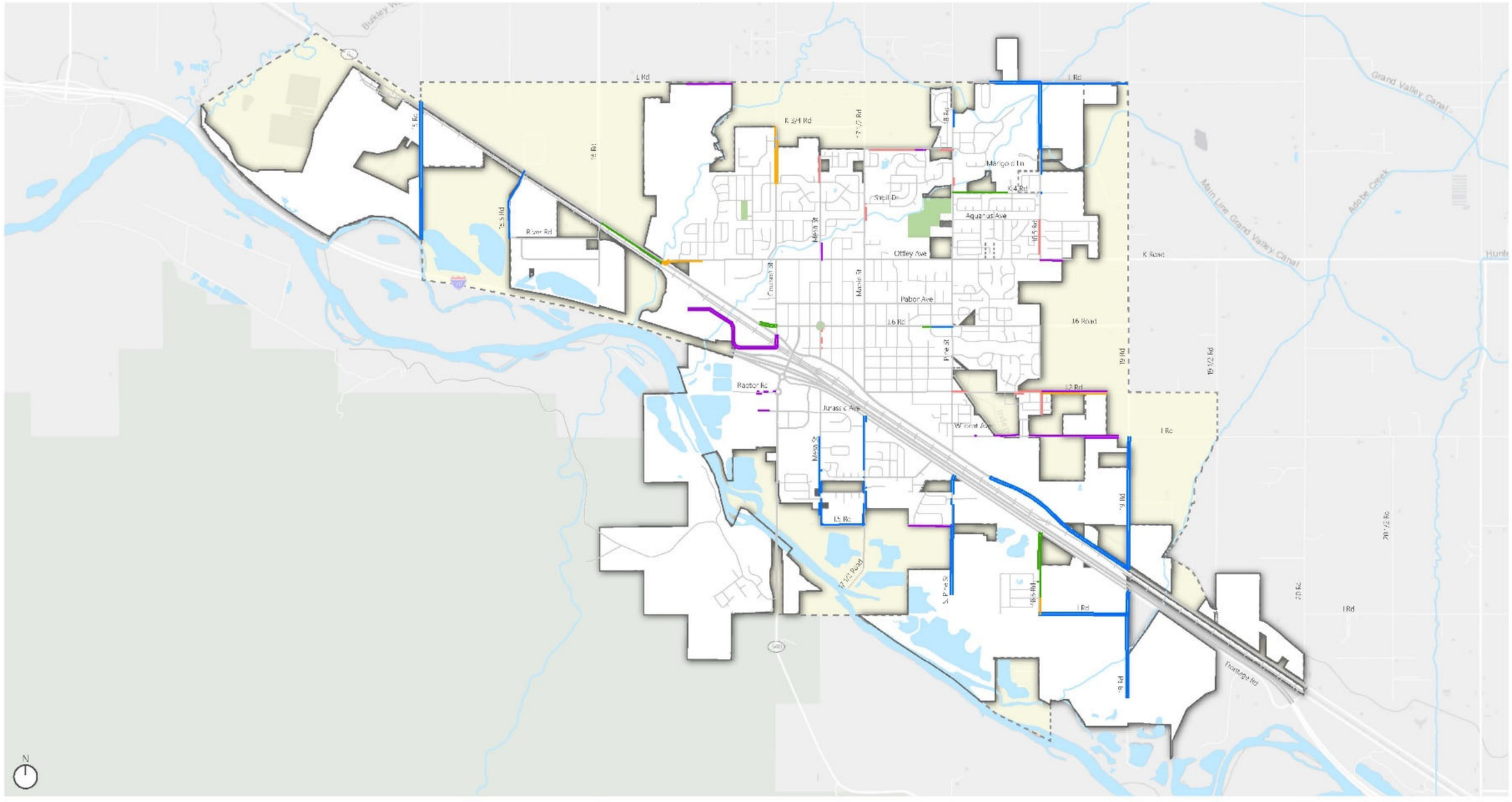


Figure 15: Phased sidewalk projects

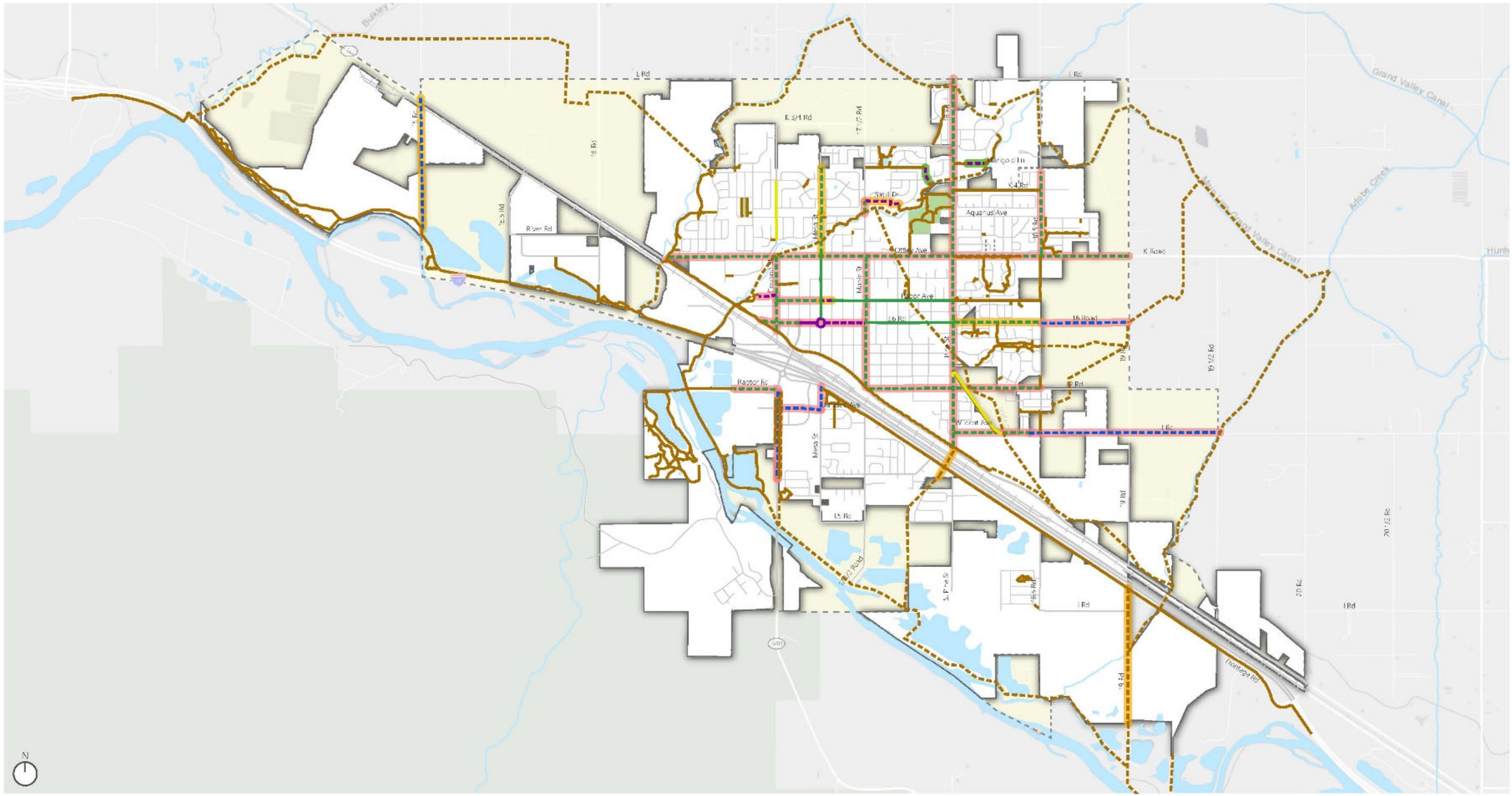


Figure 16: Phased bicycle projects

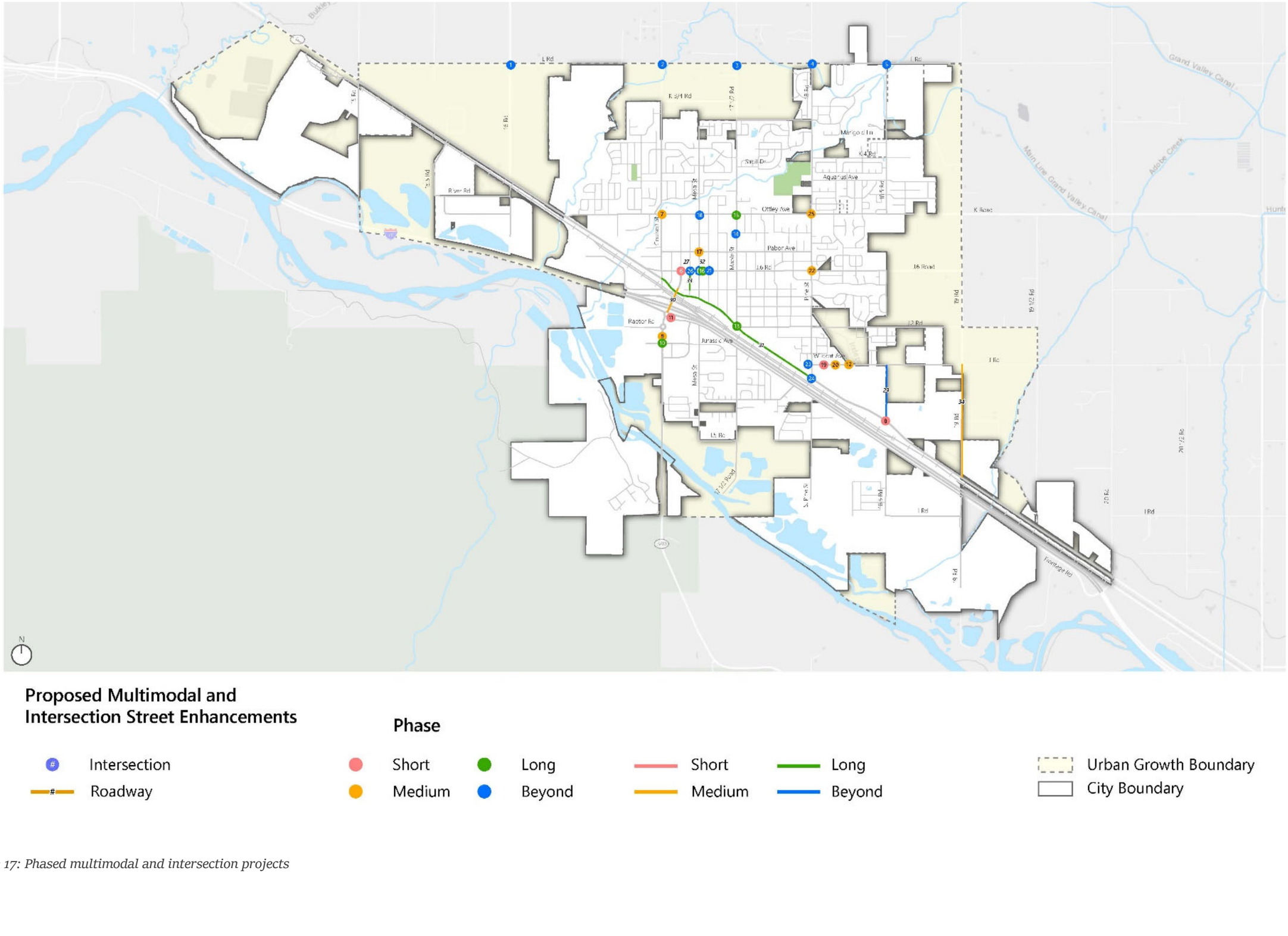


Figure 17: Phased multimodal and intersection projects