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**GRAND JUNCTION CITY COUNCIL
MONDAY, APRIL 3, 2023
WORKSHOP, 5:30 PM
FIRE DEPARTMENT TRAINING ROOM AND [VIRTUAL](#)
625 UTE AVENUE**

1. Discussion Topics

- a. Pedestrian and Bicycle Plan
- b. Urban Forestry Management Plan
- c. Discussion on Regulations for Cannabis Product Manufacturers

2. City Council Communication

An unstructured time for Councilmembers to discuss current matters, share ideas for possible future consideration by Council, and provide information from board & commission participation.

3. Next Workshop Topics

4. Other Business

What is the purpose of a Workshop?

The purpose of the Workshop is to facilitate City Council discussion through analyzing information, studying issues, and clarifying problems. The less formal setting of the Workshop promotes conversation regarding items and topics that may be considered at a future City Council meeting.

How can I provide my input about a topic on tonight's Workshop agenda?

Individuals wishing to provide input about Workshop topics can:

- 1. Send an email (addresses found here <https://www.gjcity.org/313/City-Council>) or call one or more members of City Council (970-244-1504);
- 2. Provide information to the City Manager (citymanager@gjcity.org) for dissemination to the

City Council. If your information is submitted prior to 3 p.m. on the date of the Workshop, copies will be provided to Council that evening. Information provided after 3 p.m. will be disseminated the next business day.

3. Attend a Regular Council Meeting (generally held the 1st and 3rd Wednesdays of each month at 6 p.m. at City Hall) and provide comments during “Citizen Comments.”
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Grand Junction City Council

Workshop Session

Item #1.a.

Meeting Date: April 3, 2023

Presented By: David Thornton, Principal Planner, Patrick Picard

Department: Community Development

Submitted By: Dani Acosta, Senior Planner

Information

SUBJECT:

Pedestrian and Bicycle Plan

EXECUTIVE SUMMARY:

The City hired Fehr and Peers to work on developing the first ever Pedestrian and Bicycle Plan (Plan) for the Grand Junction community. This effort will work towards three primary goals:

- Establish a vision for the future pedestrian and bicycle network.
- Identify prioritized investments that the City will gradually implement over time.
- Create a more comfortable and welcoming place for people walking, rolling and biking across all ages and abilities.

The project team will present the recommendations in the consolidated draft for discussion.

BACKGROUND OR DETAILED INFORMATION:

This effort will address the City's active transportation (multi-modal) programs, policies and infrastructure in alignment with the City's 2020 Comprehensive Plan, Plan Principle 6; Efficient and Connected Transportation and the City Council's Strategic Priority Mobility and Infrastructure. Additionally, the focus of the Plan shall be to identify strategies, policies, and performance measures to guide the planning, funding, and implementation of future active transportation projects, and to encourage increased non-motorized trips across all ages and abilities.

The City launched the development of the Pedestrian and Bicycle Plan in August 2022 with the formation of a 17-member steering committee. Members of the Steering

Committee will play a critical role supporting the completion of the plan. In an effort to ensure the steering committee reflected the everyday user, the City put out a call for applications to the broader community to solicit candidates interested in serving on the Steering Committee. A total of 72 applications were received. Staff solicited a pool of applicants that were geographically diverse and inclusive of different age groups and professions who were part of a target demographic or who may, through their employment, represent vulnerable or underrepresented users, such as individuals with disabilities, youth, low-income populations, and service industry workers.

Following the formation of the steering committee, staff conducted extensive community outreach consisting of 12 intercept events throughout the community, a walk audit and bike audit with members of the steering committee, nine focus groups, an online survey and an interactive mapping exercise, and an open house to collect input on existing conditions and community needs. Approximately 80 community members attended the open house. Through the engagement process, staff made 300 individual points of contact with community members at the intercept events, solicited input from 65 focus group participants, and received 669 comments on the online survey and 1098 comments on the interactive online map.

In December 2022, the City released an Existing Conditions and Needs Assessment Report that synthesized all public input and findings during the first phase of the project. Additionally, the City released the draft network plans for pedestrian corridors and bicycle corridors, and additions to the Active Transportation Corridors map. Both documents are available for review on GJSpeaks.org. Staff workshopped the Existing Conditions and Needs Assessment Report with the City Council on December 19, 2022 and with the Planning Commission on January 5, 2023.

The City released the first draft of the Plan on February 2. The draft plan presents the identified level of traffic stress (LTS) for corridors in the City ranked for both pedestrians and bikes and recommended treatments. The consultants also prepared a prioritized projects list for infrastructure improvements. The plan also includes non-infrastructure policy and programmatic recommendations.

The City has entered into a second round of public outreach to gather input on the elements of the draft plan. Staff has conducted to date nine intercept events to encourage the public to read and provide comments on the draft plan:

- Mesa County Public Library, Feb 2 and Feb 16
- KAFM Radio Show, Mobile Mesa County, Feb 8
- Downtown Development Authority Board Meeting, Feb 9
- Winter Bike to Work Day, Feb 10
- Colorado E-Bikes, Feb 11
- Horizon Drive BID Board Meeting, Feb 15
- Colorado Mesa University Natural Resources Job Fair, Feb 15
- Virtual Open House, Feb 21.

The City also held a second in-person open house on February 22 at the Lincoln Park Barn as an additional venue to collect public comment. Additionally, there is an online survey available to fill out until February 26. The public comment portion for the draft plan will be open until February 26.

NEXT STEPS

Staff and the consultant team will take the second round of public comments and revise the draft plan accordingly. A final version of the draft plan will be presented to the Urban Trails Committee for recommendation in March. Staff plan to take the recommended final plan to Planning Commission for a hearing on March 28 and City Council hearing for final approval and adoption on April 19.

FISCAL IMPACT:

None.

SUGGESTED ACTION:

For discussion only.

Attachments

1. GJ Bike Ped Plan_Public Draft



PEDESTRIAN & BICYCLE PLAN

February 2023

DRAFT PLAN

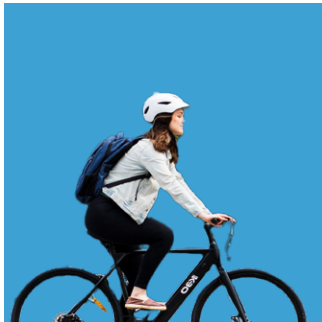
Prepared by:



Prepared by:

FEHR & PEERS

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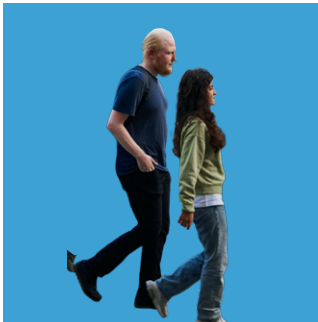
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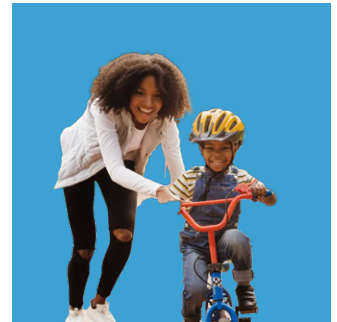
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CHAPTER 1.

INTRODUCTION

The Grand Junction Pedestrian & Bicycle Plan (PBP) is the city's first ever pedestrian and bicycle plan and provides a long-term vision for the future pedestrian and bicycle networks in Grand Junction. The vision, goals, and key elements of the PBP are based on best practice, national research, analysis, and input received through an extensive community engagement process that included over 2,000 touch points with community members.

Ultimately, this PBP identifies strategies and prioritized investments that the city will gradually implement over time to make Grand Junction a more comfortable and welcoming place for people walking, rolling, and biking.



Why Develop a Pedestrian and Bicycle Plan?

In 2021, the city of Grand Junction adopted the *One Grand Junction Comprehensive Plan*, as an update to the 2010 Comprehensive Plan. Community outreach conducted for the Comprehensive Plan revealed a strong desire to improve walking and biking in Grand Junction. A key directive of the *One Grand Junction Comprehensive Plan* was to develop a citywide Pedestrian and Bicycle Plan.

Prior to this PBP, the city developed an Active Transportation Corridor map as part of the 2018 *Grand Junction Circulation Plan* and adopted a complete streets policy in 2019. Both efforts set Grand Junction on a path to improve the pedestrian and bicycle network. In addition, the city has been gradually making infrastructure improvements over the past two decades, such as adding new sidewalks, widening sidewalks, improving pedestrian crossings, and adding bike lanes, guided in part by the Urban Trails Committee (UTC). However, many of these improvements are often done piecemeal without a cohesive larger vision. This PBP fills this gap, building off the Active Transportation Corridors and complete streets policy, and providing a vision and clear guidance based on community priorities.

Benefits of Investing in the Pedestrian and Bicycle Environment

The benefits to the community of improving the pedestrian and bicycle network in Grand Junction are far-reaching, including to public health, equity, economic access, private investment, and quality of life:

- **Public Health:** Improved physical and mental health outcomes for community members as well as reduced instances of fatal and injury crashes for people walking and biking.

- **Equity:** Increased equity by providing more transportation choices that are accessible and affordable, particularly to the most vulnerable populations, including youth, seniors, people with disabilities, and low-income households that often rely on walking and bicycling as primary modes of transportation.
- **Access to Transit:** Safe and comfortable routes to transit facilities for those who cannot drive or choose not to drive.
- **Quality of Life:** More opportunities for community members to interact and connect, building social capital in the city, while providing opportunities to be outside experiencing Grand Junction's abundant sunshine.
- **Environmental:** Strengthened environmental sustainability through improved air quality by providing better options for people to travel without a motorized vehicle.
- **Economic:** Improved access to jobs and services, benefiting both employees and employers, increasing economic productivity, as well as increasing the attractiveness of Grand Junction for economic investment.

Coordination with the Transportation Design and Engineering Standards (TEDS) Manual Update

The PBP was developed in coordination with the first update to Grand Junction's Transportation Design and Engineering Standards (TEDS) Manual in nearly 20 years. The TEDS Manual provides regulatory guidance on street design and other transportation related standards in the city. The TEDS Manual is used by city engineers and private developers whenever a new street is constructed or an existing street is reconstructed. The TEDS Manual dictates key active transportation infrastructure

design elements, such as the width and placement of sidewalks and bike lanes within different street contexts. Coordinating development of the PBP with the update to the TEDS Manual ensures that the vision for the future pedestrian and bicycle environment and amenities is reflected in the city's transportation design standards. The updated TEDS Manual will be a key component of implementing the PBP.

Implementing the City of Grand Junction Complete Streets Policy

The Complete Streets Vision is to develop a safe, efficient, and reliable travel network of streets, sidewalks, and urban trails throughout the city of Grand Junction to equitably serve all users and all modes of transportation. Complete Streets will provide residents improved access, safety, health and environment. The purpose of the policy is to commit to improvements that are planned, designed, constructed, operated, and maintained to support safe, efficient, and convenient mobility for all roadway users—pedestrians, bicyclists, people who use mobility devices, transit riders, freight traffic, emergency response vehicles, and motorists—regardless of age or ability. Complete streets are necessary to expand everyone's mobility choices for safe and convenient travel by different modes between destinations throughout Grand Junction and are designed, appropriate to the context, to balance safety and convenience for everyone using the road.

What's Included in this Plan?

This PBP includes the following key elements that will be used by the city to guide implementation:

- **Existing Conditions & Community Engagement Key Findings** – Based on the findings of the *Existing Conditions and Needs Assessment* report which is provided in Appendix A.
- **Vision, Goals, and Objectives** – Based on priorities identified by the community.
- **Bicycle Network Plan** – Includes a map illustrating the long-term vision for the future bicycle network, planned bicycle facility types, and infrastructure design guidance.
- **Pedestrian Network Plan** – Includes sidewalk and pedestrian crossing policy and design guidance to build out the pedestrian network.
- **Program & Policy Recommendations** – To support active transportation use and infrastructure implementation.
- **Implementation & Prioritization** – To guide systematic implementation of the long-term vision.



KEY THEMES

of Plan Development

Two important themes are important to acknowledge as they served as overarching principles in developing the PBP.

These include:

.....

1

An inclusive approach to community engagement.

.....

2

A conscientious effort to address the needs for both people walking and people biking.

Inclusive Community Engagement

The approach to community engagement in developing the PBP recognizes that Grand Junction does not have one voice or one perspective, but is a conglomeration of individuals and families that represent a diverse set of backgrounds, perspectives, and experiences. As such, engagement was conducted in a manner to be inclusive and representative of these diverse perspectives. This was achieved through three distinct strategies:

- Providing a variety of methods for the public to participate including through an online survey, an in-person public open house, via the project website, and interacting with the public at over a dozen in-person community events.
- Conducting nine focus groups with representatives of groups that are directly impacted by the walking and biking environment and can sometimes be difficult to reach through traditional engagement means, such as students (college and K-12), people experiencing homelessness, disabled persons, seniors, and the Spanish speaking community among others.
- Lastly, the PBP was guided by a 17-member Steering Committee selected from a pool of over 70 interested citizens that applied for that role. Selection of the Steering Committee was

based on criteria to ensure representation was geographically diverse, inclusive of different age groups and professions, and representative of vulnerable or underrepresented users, such as individuals with disabilities, youth, low-income populations, and service industry workers.

Altogether, the vision, goals, and recommendations included in the PBP reflect the input received through this broad and inclusive public engagement process.

Both a Pedestrian AND a Bicycle Plan

Pedestrians and bicyclists are often grouped together as they share some common attributes, including sometimes using the same infrastructure (such as multiuse trails) and are both vulnerable users that are more susceptible to severe injury in a crash and often do not have the option to drive. For these reasons, the PBP was developed to address the needs of both of these users. However, the needs of pedestrians and bicyclists are also often inherently different and the PBP provides guidance that addresses the unique needs of both active transportation user groups.

Best Practices in Pedestrian & Bicycle Design

The design recommendations included in this plan are based on best practices from local and national resources. A leading resource in urban bicycle design is the National Association of Transportation Officials (NACTO). Other resources for pedestrian and bicycle design include the American Association of State Highway Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and the Colorado Department of Transportation (CDOT).

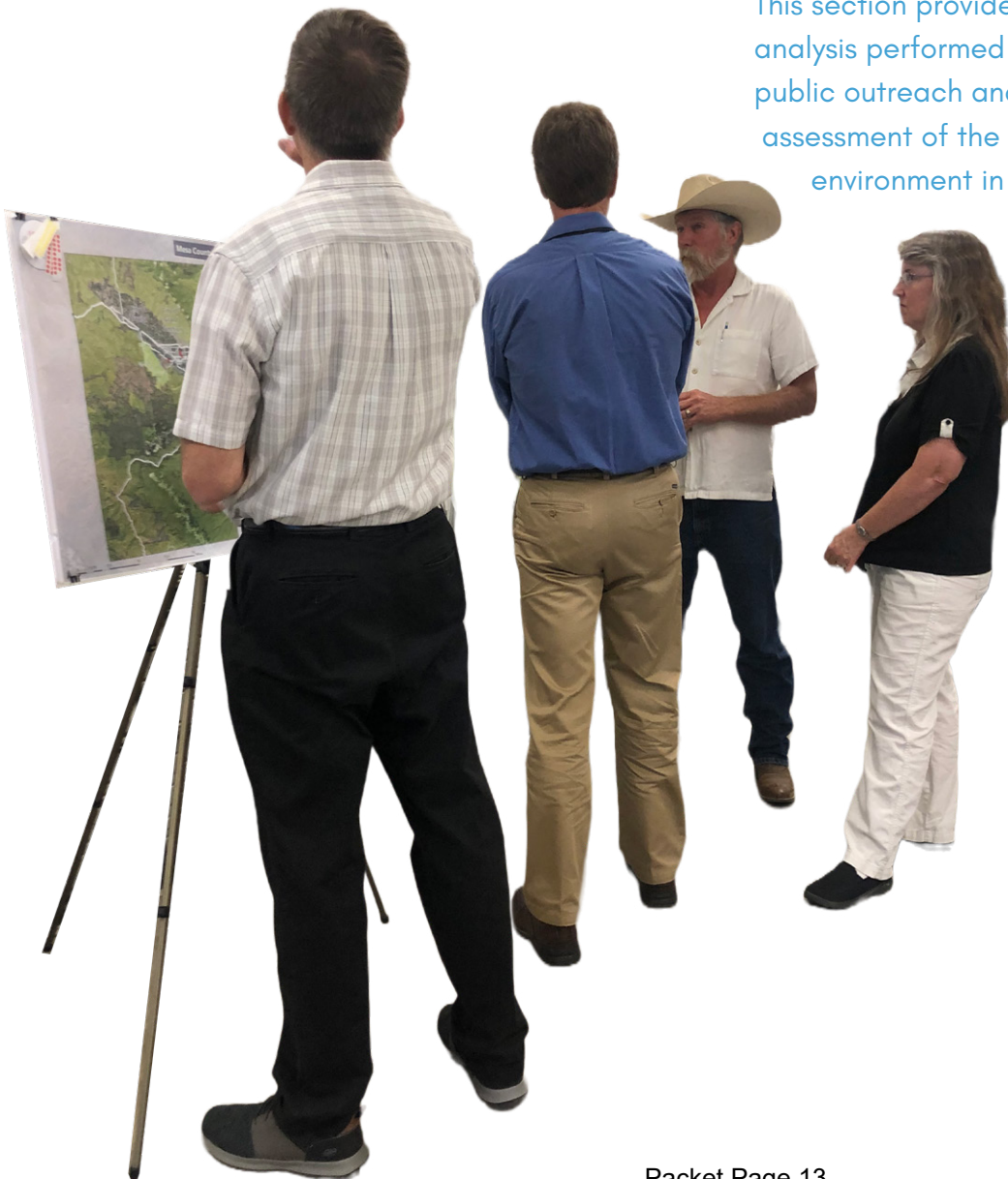
The following publications were used to inform design guidance in the PBP and will be useful resources for city planners and engineers to consult during implementation:

- NACTO *Urban Bikeway Design Guide*
- NACTO *Don't Give Up at the Intersection: Design All Ages and Abilities Bicycle Crossings*
- AASHTO *Guide for Development of Bicycle Facilities*
- FHWA *Guide for Improving Pedestrian Safety at Uncontrolled Intersections*
- CDOT *Roadway Design Guide: Chapter 14 Bicycle and Pedestrian Facilities*
- CDOT *Pedestrian Crossing Installation Guide*

CHAPTER 2.

EXISTING CONDITIONS & OUTREACH SUMMARY

This section provides a brief summary of analysis performed and key findings of the public outreach and existing conditions assessment of the pedestrian and bicycle environment in Grand Junction. Please refer to the Existing Conditions & Needs Assessment Report in Appendix A for a complete summary.



Key Outcomes of the Existing Conditions Analysis

The *Existing Conditions & Needs Assessment Report* included a review of existing relevant plans, mapping of the existing pedestrian and bicycle network, a level of traffic stress analysis for people walking and biking for every street in Grand Junction, development of an Active Transportation High Injury Network based on existing crash data, and summary of existing pedestrian and bicycle use in Grand Junction based on available data. Key outcomes of these analyses are provided below. Please consult Appendix A for more detail on these findings.

Relevant Plans

Key relevant plans and documents to the PBP include the *One Grand Junction Comprehensive Plan*, The *Grand Junction Circulation Plan*, The Mesa County *Regional Transportation Plan*, Grand Junction's Complete Streets Policy, the Fire Code, and the Zoning and Development Code. The Active Transportation Corridors that were developed as part of the *Grand Junction Circulation Plan* were reevaluated and updated as part of the PBP. These corridors serve as the backbone for the vision of the future bike network and key pedestrian corridors in Grand Junction.

Existing Pedestrian Network

Mapping walkways in Grand Junction revealed that the condition of the existing pedestrian network varies considerably by location in the city. **Figure 1** shows the three existing sidewalk types mapped. Many of the major streets in Grand Junction currently have a sidewalk, but there are notable gaps as well with missing or narrow sidewalks, including (but not limited to).

- North Avenue
- Patterson Road
- 24 Road (over US 50/US 6)
- 28 Road
- 9th Street (south of downtown)
- Several key connections in the Orchard Mesa Neighborhood, such as US 50, B ½ Road, 27 Road, and 28 ½ Road.

Of particular importance are streets with missing or inadequate sidewalks along the Active Transportation Corridors, collector and arterial streets, and at major crossings of the Colorado River, railroad tracks, and highways. Analysis revealed there are limited existing options that connect across the river and railroad tracks which separate key destinations in the city.

FIGURE 1: EXISTING SIDEWALK TYPES MAPPED IN GRAND JUNCTION



Existing Bicycle Network

Grand Junction currently has four general types of bicycle facilities as shown in **Figure 2**, including separated multi-use trails, on-street bike lanes, on-street buffered bike lanes, and signed bike routes. One of the city's most used facilities and a key asset for bicycle mobility across the city is the Riverfront Trail that parallels the Colorado River, generally running east-west. Most of the existing bike facilities overlap with the city's designated Active Transportation Corridors. However, the existing bike network is disconnected in many places. Most of the Active

Transportation Corridors currently lack bike facilities, and in many parts of the city multi-use trails, bike lanes and bike routes on low volume streets end abruptly. Key gaps in the bike network include, but are not limited to, sections of: 7th Street and 12th Street, North Avenue, Patterson Road, 24 Road, and Orchard Avenue. Similar to the pedestrian network, there are a limited number of crossings of the Colorado River, railroad tracks, and highways (notably US 50 and I-70B) that divide the city and serve as barriers for people walking and biking.

FIGURE 2: EXISTING BICYCLE FACILITY TYPES IN GRAND JUNCTION

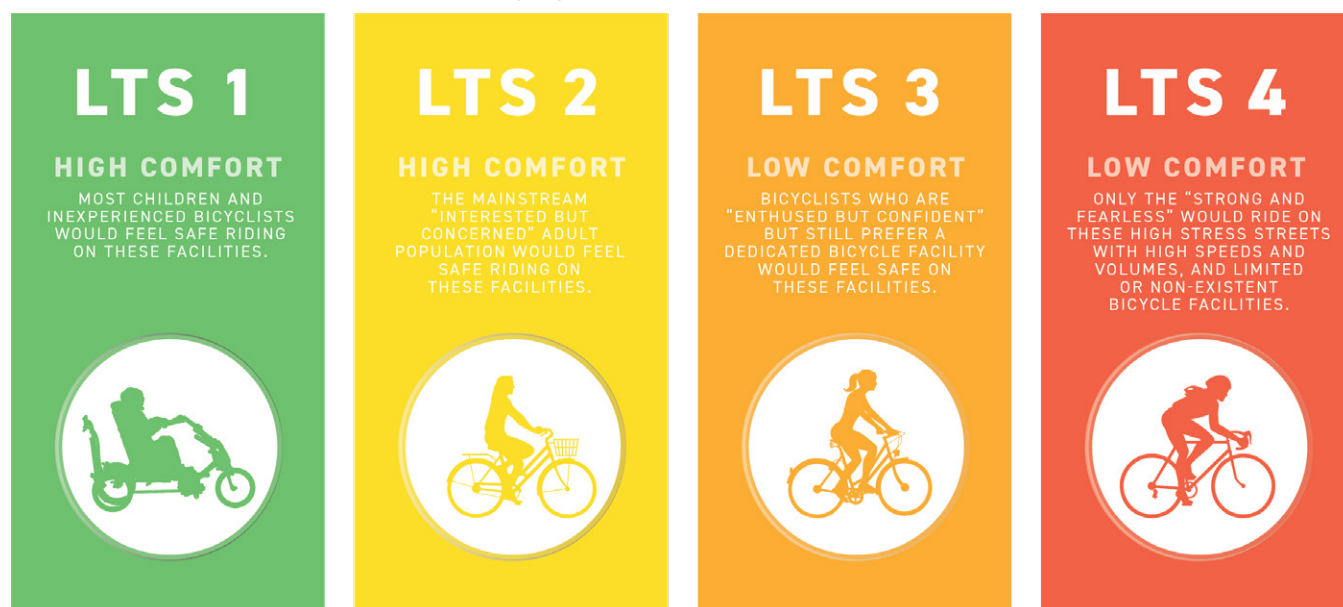


Level of Traffic Stress Maps

A methodology and maps of the Level of Traffic Stress (LTS) on a scale of 1 to 4 for both pedestrians and bicyclists on all streets in Grand Junction were developed (see Appendix A). Streets with LTS 1 and 2 are considered low stress, while streets with LTS 3 or 4 are considered higher stress for people walking and biking, see **Figure 3**. The LTS maps show critical gaps in the pedestrian and bicycle network where the existing facilities do not provide a sufficient level

of comfort for people walking and biking given key characteristics of the streets, including the volume and speed of traffic, and the number of travel lanes. In general, streets with more traffic, higher speeds, and/or more travel lanes require a higher degree of separation for people walking and bicycling to feel safe and comfortable. The LTS maps were a critical component in developing recommendations for the active transportation network and street design.

FIGURE 3: BICYCLE LEVEL OF TRAFFIC STRESS (LTS) MEASURES



Active Transportation High Injury Network

An Active Transportation High Injury Network (HIN) Map was developed representing the streets with the highest concentration of pedestrian and bicycle involved crashes in the city (see map in Appendix A). The HIN map shows that over 80% of pedestrian and bicycle crashes occur on just 5% of city streets. Focusing resources and investment on upgrading active transportation facilities and making safety improvements on these streets will have the greatest impact on improving bicycle and pedestrian safety in Grand Junction. The HIN is an important evaluation tool for project prioritization.

About 84% of all pedestrian and cyclist-involved crashes occurred on just 5% of city streets, which are identified as part of the Active Transportation High Injury Network.



PEDESTRIAN & CYCLIST SAFETY FINDINGS

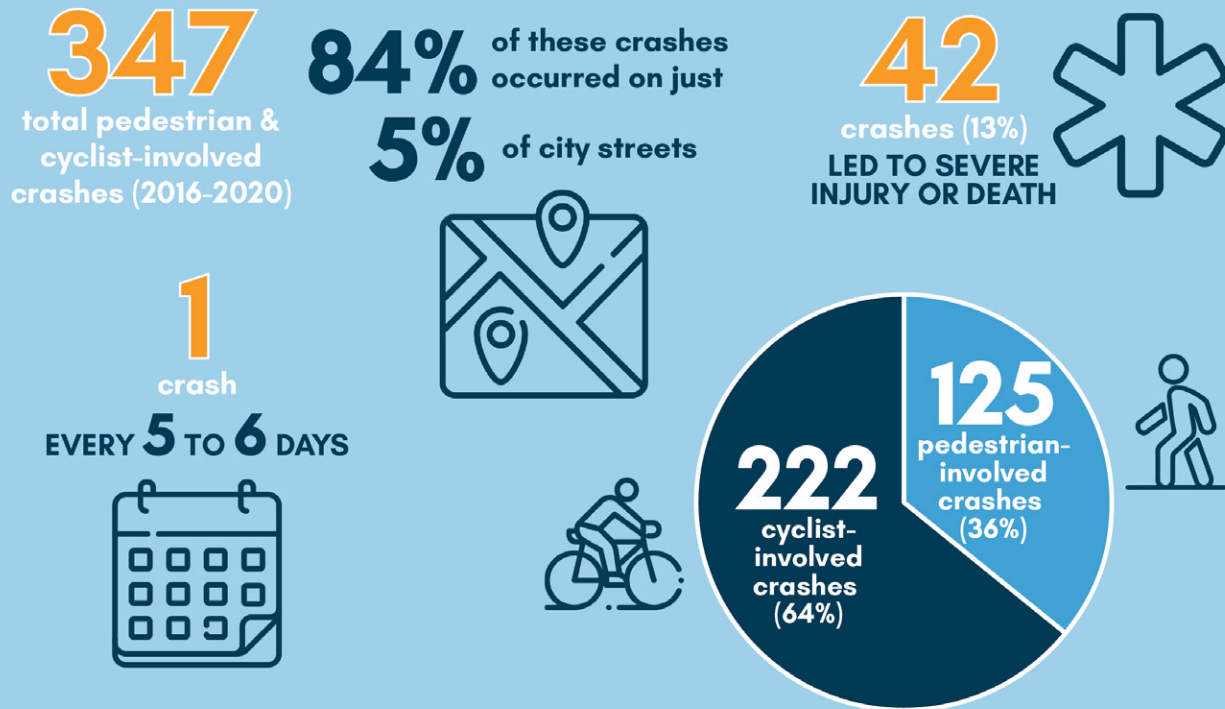


FIGURE 4: PEDESTRIAN & CYCLIST SAFETY FINDINGS

Pedestrian and Bicycle Demand

In addition to community input which helped reveal important corridors for people walking and biking, Strava Metro Data was used to identify important corridors in the city for people walking and biking. This showed key corridors through downtown as well as popular routes used to cross the Colorado River and railroad tracks.

Community Engagement

Community input was an important driver in identifying the vision and goals for the PBP, including understanding existing concerns from the community, informing recommendations, and

prioritizing improvements. With a goal of being inclusive and representative of these diverse perspectives across the city, including reaching those most impacted by pedestrian and bicycle infrastructure, the engagement process was multifaceted and comprehensive.

Engagement included an online survey with an interactive webmap, an in-person community open house, nine focus group meetings, a dozen intercept events across the city, and formation of a 17-person resident Steering Committee that guided plan development. In all, over 2,000 touch points were made with the community through this process including over 660 survey responses, and over 1,000 comments on the interactive webmap as shown in **Figure 6**.



FIGURE 5: OUTREACH EVENTS



COMMUNITY PARTICIPATION



FIGURE 6: SUMMARY OF COMMUNITY PARTICIPATION

Key Outcomes of Community Engagement

A detailed summary of outcomes of community engagement is provided in Appendix A. A brief summary of key highlights is provided below:

- **Improve Traffic Safety** – Safety emerged from the visioning process at the open house and online survey as a top theme. It was also a high priority identified in the focus groups and from the Steering Committee. A lot of people would like to walk and bike more and would like kids to be able to walk and bike more in Grand Junction, but don't feel safe doing so in many areas of the city.
- **Improve Active Transportation Infrastructure** – The community consistently reiterated their desire for more sidewalks, wider sidewalks, more bike trails, more bike lanes, wider bike lanes, and more facilities separated from traffic on busy, higher-speed streets.
- **Missing Connections** – The public acknowledged many great existing walk and bike facilities in Grand Junction, including the Riverfront Trail, but because there are missing connections in the network, and due to difficulty crossing major streets, many people are not able to or do not feel comfortable walking and biking places.
- **Key Destinations** – Several important destinations were reiterated by the community, including downtown, the Riverfront Trail, CMU, Mesa Mall, K-12 schools, and medical clinics and businesses, particularly along North Avenue and Patterson Road.
- **Key Connections Across Barriers** – A common theme emerged in discussion and feedback received by the community is that there are a limited number of ways to cross the Colorado River, railroad tracks, and highways (including US 50 and I-70B) and many of the existing corridors across these barriers do not adequately support people walking/rolling and biking. These connections are critical for people to connect from downtown, CMU, and the Mesa Mall on the north side of the city to the Riverfront Trail, the Redlands, and Orchard Mesa on the south side of the city.
- **Riverfront Trail** – The Riverfront Trail is a key east-west connection for both recreational and utilitarian active transportation in Grand Junction and connecting to/from the Riverfront Trail should be an important aspect of the future pedestrian and bicycle network.
- **Unmet Demand** – The community would like to be able to walk and bike more frequently and to more places in Grand Junction, but are not comfortable doing so due to inadequate infrastructure and key missing connections in the pedestrian and bicycle network.

95% of survey respondents said they would like to be able to walk and bike more in Grand Junction.

The biggest challenge(s) associated with walking/rolling in Grand Junction is/are... (select all that apply)

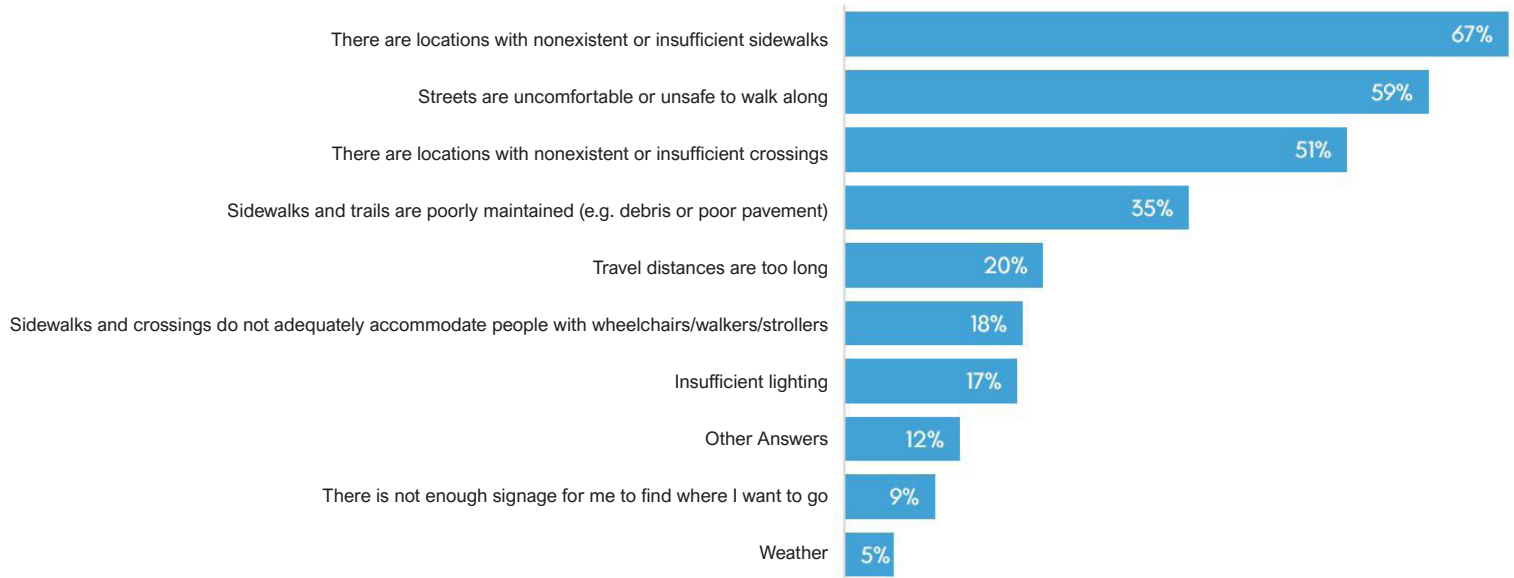
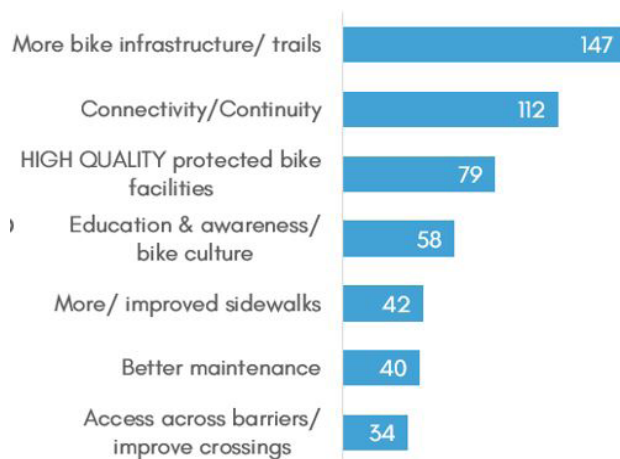


FIGURE 7: SURVEY RESPONSES ON CHALLENGES WALKING AND ROLLING

Most Frequent Theme



Repeated Comments

- ✓ Want to use the canals for trails
- ✓ Lots of people bike on sidewalk along busy streets
- ✓ Unfriendly bike culture/ aggressive drivers
- ✓ Bike lanes are too narrow
- ✓ Bike lanes end abruptly
- ✓ Extend Lunch Loops Trails
- ✓ Signs - wayfinding and Share-The-Road laws
- ✓ More shade trees and better lighting at night
- ✓ Car-free Main Street

FIGURE 8: COMMON THEMES OF 593 GENERAL COMMENTS RECEIVED



CHAPTER 3.

VISION & GOALS

The following general definitions provide the basis for how the vision, goals, and objectives were developed for the PBP:

Vision: Thinking about the future with wisdom and/or imagination. Something to be pursued. The end result.

Goals: The desired end result of any number of efforts. A goal defines the direction and destination, changes the direction of the city toward the end result.

Objectives: All about the tactics. Objectives are action items to get from where we are to where we want to be. A goal defines the direction and destination, but the road to get there is accomplished by a series of objectives.

The vision and goals were developed based on input received from the community engagement process, including the Steering Committee, public open house, and focus groups as well as the outcomes of the 669 visioning survey responses received from the online survey as shown in **Figure 9**.

FIGURE 9: COMMUNITY VISION FOR WALKING AND BIKING IN GRAND JUNCTION FROM 669 SURVEY RESPONSES

What are three words that describe your vision for the future of walking and biking in Grand Junction?



VISION

Grand Junction is a city where people of all ages and abilities can safely and conveniently walk, roll, and bike on a connected network of well-maintained facilities for transportation or recreation.

GOALS

The five goals identified to move the city towards its vision are: equitable, safe, connected, multimodal community, and quality. Each goal is further defined in this section.

Equitable

Design and operate the communities’ streets and right-of-way to reasonably enable convenient access and travel for people walking and biking of all ages, abilities, and income levels and prioritize improvements that benefit vulnerable users and underserved areas.

Safe

Improve perceived and real safety by reducing the level of traffic stress (LTS) and reducing bicycle and pedestrian involved crashes. Invest and implement countermeasures at and along segments of the Active Transportation High Injury Network where there are known safety challenges.

Connected

Provide convenient access to Community Attractions and reduce the need for out of direction travel. Increase the number of direct and low-stress connections to key destinations within the city.

Multimodal Community

Facilitate a pleasant experience that creates a sense of place, that increases separation of pedestrians/rollers/bicyclists from vehicular travel lanes and makes travel without a vehicle a viable option for more people.

Quality

Invest in high-quality facilities that minimize the level of traffic stress experienced by travelers using the corridor and are well-maintained.

Equitable

OBJECTIVES

- E1:** Design crossings with ADA accessible pedestrian ramps, detectable surfaces, and other universal design features.
- E2:** Prioritize locations for sidewalk gap completion or rehabilitation according to the strategy outlined in the Prioritized Pedestrian Network section.
- E3:** Prioritize bike project locations according to the tiers established in the Prioritized Bicycle Network Map.

Safe

OBJECTIVES

- S1:** When upgrading bike facilities on a corridor, incorporate suggested intersection treatments to reduce stress of bicycle crossings, and ensure continuity of high-comfort facilities.
- S2:** When upgrading pedestrian facilities on a corridor, incorporate suggested intersection treatments to reduce stress of crossings, and ensure continuity of high-comfort facilities.
- S3:** Bolster the existing Safe Routes to School program by incorporating new elements of the six Es.
- S4:** Work with local driving schools to expand the curriculum on laws governing interactions with people walking, rolling, and biking.
- S5:** Partner with law enforcement to increase enforcement of speeding and reckless driving in areas with high pedestrian volumes and/or safety issues and consider automated enforcement. Consider expanding the police bike patrol unit.
- S6:** Improve the North Avenue access management policy in alignment with national best practices and expand to all the Active Transportation Corridors.
- S7:** Join the statewide program – Moving Towards Zero Deaths – as a first step in solidifying a citywide commitment to supporting multimodal travel through ensuring all trips in the community are as safe as possible.

Connected

OBJECTIVES

- C1:** Complete bike facilities on the Active Transportation Corridors as shown in the Future Bicycle Network Map.
- C2:** Consider adopting a construction zones policy that requires developers/construction companies to provide pedestrian pathways and bicycle facilities during construction.
- C3:** Require new developments to provide or set aside space for pedestrian and bicycle connections within the local street network of new developments and to adjacent streets in situations where there is a lack of connectivity in the roadway network.
- C4:** Develop an ordinance mandating a minimum level of street connectivity. A more densely connected or gridded network makes for a more walkable and bikeable area by increasing route options and reducing out of direction travel. Connectivity can be defined by a “connectivity index” which is the ratio of roadway links (or block) to intersections. An ordinance on maximum block length can also increase connectivity. A connectivity index or maximum block length can help reduce the number of cul-de-sacs and guide new development to a more walk and bike-friendly street network.

Multimodal Community

OBJECTIVES

- M1:** Grand Junction’s streets shall be designed as public amenities and include aesthetic elements such as street trees, landscaping, pedestrian lighting, street furniture, and wayfinding signage wherever possible.
- M2:** Prioritize installation of bike and micromobility parking and secure storage in key destinations downtown, outside of city properties, and near major transit hubs, parks, schools, employment centers, and shopping areas.
- M3:** Encourage new and existing developments to provide secure bike parking and amenities through requirements and incentives.
- M4:** When upgrading bicycle and/or pedestrian facilities on a corridor, design high-quality landscaped or hardscaped buffers with street furniture and pedestrian amenities.
- M5:** When upgrading bicycle and/or pedestrian facilities on a corridor, concurrently plan for the upgrade of lighting in the project area.
- M6:** Initiate a comprehensive wayfinding and signage study to create a consistent strategy for connecting people walking, biking, and driving to downtown and other key destinations.
- M7:** As the city continues to build out bike facilities and new trails over time, incorporate additional signs with the same wayfinding standards at decision points.
- M8:** Improve signage on the Riverfront Trail.
- M9:** Close the gaps on first-and-last mile connections through the deployment of shared micromobility devices (e-scooters, e-bikes, etc.) and utilize geofencing and parking corrals to accommodate device parking in high-traffic areas.

Multimodal Community

OBJECTIVES CONTINUED

M10: Develop a community-wide incentive program and work with large employers to implement a Guaranteed Ride Home program to encourage and support bike commuters. Incentives can include e-bike rebates, bike-themed events such as bike rodeos and Bike to Work Day, shwag such as bike lights and helmets, and gift certificates for those who bike to City events. Guaranteed Ride Home provides commuters who did not drive to work with alternative means home in case of an emergency.

M11: Establish a more positive culture around walking and biking in Grand Junction by creating Bicycle & Pedestrian Coordinator position, educating city staff, promoting the Bicycle Friendly Business program, and/or hosting an LCI seminar.

M12: Update the Transportation Impact Study guidelines (Chapter 29.08.200 of the Municipal Code) to encourage Transportation Demand Management (TDM) measures that major developments should provide specifically to support walking and biking. These could include bike racks, showers, car share, or support for bike commuters.

M13: Revise the parking minimum standards for different land uses in the city's Municipal Code (21.06.050) to serve as parking maximums for development and/or reduce parking requirements to better align parking with the community's goals.

Quality

OBJECTIVES

Q1: Install high-comfort bike facilities on the Active Transportation Corridors as recommended in the Future Bicycle Network Map and according to the design guidance in the Bicycle Facility Types section.

Q2: Install high-comfort sidewalks and trails according to the design guidance in the Pedestrian Facility Types section.

Q3: Develop a set of maintenance standards and a maintenance plan to prioritize upkeep of the active transportation network.

Q4: Explore and pursue new funding sources to support maintenance of the expanded system.

Q5: Consider expanding the SRTS program by diversifying funding sources to include CDOT funding in addition to dedicated CDBG funding.

Q6: Continue to enforce the current policy where planned Active Transportation Corridors that run through a site or along the edge of a site be constructed by the developer.

Q7: Explore and pursue funding opportunities to support continual capital construction and maintenance of the projects listed in this plan.

Q8: To the greatest extent practicable given budget constraints include pedestrian and bicycle facilities in all street projects and phases, including new construction, reconstruction, resurfacing, and maintenance.

Q9: Approach every transportation project and program as an opportunity to improve streets and the transportation network for all users, and work in coordination with other departments, agencies and jurisdictions.

Q10: Implement bicycle and pedestrian improvement projects by integrating with other city standard procedures.



CHAPTER 4.

BICYCLE NETWORK PLAN

The bicycle network plan in this section includes the following:

- **Active Transportation Corridors map update.** Includes updates since the original map developed in the 2018 Grand Junction Circulation Plan. This map represents the vision for the ultimate backbone network once completely built out.
- **Bicycle facility design.** Includes a description of the preferred design user that bike facilities will be designed to support.
- **Bicycle facilities by type.** Includes a description of each type of bicycle facility and provides general design guidelines for each.
- **Bicycle network map.** As supported by the Plan's vision, the future bicycle network map shows the alignment and recommended facility types of future bike corridors across the city.
- **Street/intersection crossings.** Includes bicycle crossing guidance to improve comfort and convenience for bicyclists at intersections.



Updated Active Transportation Corridors

The 2018 *Grand Junction Circulation Plan* identified a network of Active Transportation Corridors across the city. The corridors were identified as those that provide continuous and convenient connections for bicyclists and pedestrians and may be on the road network or separate trail. The Active Transportation Corridors are the vision for the backbone of the future bicycle network in Grand Junction and also represent key pedestrian corridors in the city.

As part of the planning process for the PBP, the Active Transportation Corridors developed as part of the 2018 *Grand Junction Circulation Plan*, were reevaluated and numerous additions and modifications were made based on input from the community (particularly from the 1,098 comments received from the online interactive map), the Steering Committee, and city staff. This process resulted in approximately 32 additions to the Active Transportation Corridors from the previous plan, listed in **Table 1**. The additions reflect planned developments, provide additional redundancy in the system (particularly in the core of the city), and provide more direct east-west and north-south connections for people walking and biking. These modifications also improve the feasibility, comfort, convenience, connectivity, and access to key destinations of the bike network. Note: **Table 1** includes a list of additions to the planned Active Transportation Corridors. For a list of planned bicycle projects see the tables by neighborhood starting on page 34 or Appendix B.

TABLE 1: ACTIVE TRANSPORTATION CORRIDOR ADDITIONS

Segment	Miles
5th Street (Orchard to Downtown) & 4th Street (North to Downtown) with Belford Avenue connection	2.0
7th Street (missing segment)	0.4
9th Street (Main to Riverside Parkway)	0.8
Cannell Avenue / 9th Street / Little Bookcliff Drive	1.1
12th Street south of Main (new crossing of railroad)	0.8
28 Road (Riverside Parkway to Riverfront Trail)	0.6
Ridge Road (28 1/4 Rd to 27 1/2 Rd) / 28 1/4 Road	1.0
F 1/2 Road (29 Rd to 30 1/2 Rd)	1.5
Patterson Road (7th St to Independence Ranchman's Ditch)	0.3
Elm Street (3rd Street to 12th Street)	0.9
Gunnison Ave (24th St to 29 Rd)	1.2
Grand Ave (1st Street to 12th Street)	1.0
Main Street (missing segment)	0.5
West Main / Crosby / Base Rock Street	1.1
D Road (9th to Riverside & 29 Rd to 30 Rd)	1.5
Dos Rios Bridge (2nd Street to Riverfront Trail)	0.2
Redlands 360	4.7
C 1/2 Road (27 1/2 Rd to 29 Rd)	1.5
Cheyenne Drive / Hopi Avenue (Unaweep to Eagle Rim Park)	0.7
Indian Wash Trail (Matchett Park to 29 Road / I-70 Commercial Area)	1.3
D Road (Monument Road to Rosedale Road)	0.3
S Redlands Road (Monument Road to Rosedale Road)	1.1
30 Road (B Road to US-50 and C Road to B 1/2 Road)	1.2
I-70 Business Loop south side (12th Street to Warrior Way)	4.5
C Road (30 Road to 31 Road)	1.0
Chestnut Drive / G 1/2 Road (26 Road to 27 Road)	1.1
Hill Court / Gunnison Avenue / Ol' Sun Drive (30 Road to E Road)	1.1
30 1/2 Road / Wedgewood Avenue (D1/2 Road to D Road)	0.5
15th Street (Elm Avenue to Gunnison Avenue)	0.5
Pear Park Corridor (Trail / Sandpiper Avenue / Colorado Avenue from 30 Road to 31 Road)	1.2
B 3/4 Road (Durant Street to 30 Road)	0.6
29 3/4 Road (B 3/4 Road to B 1/2 Road)	0.2

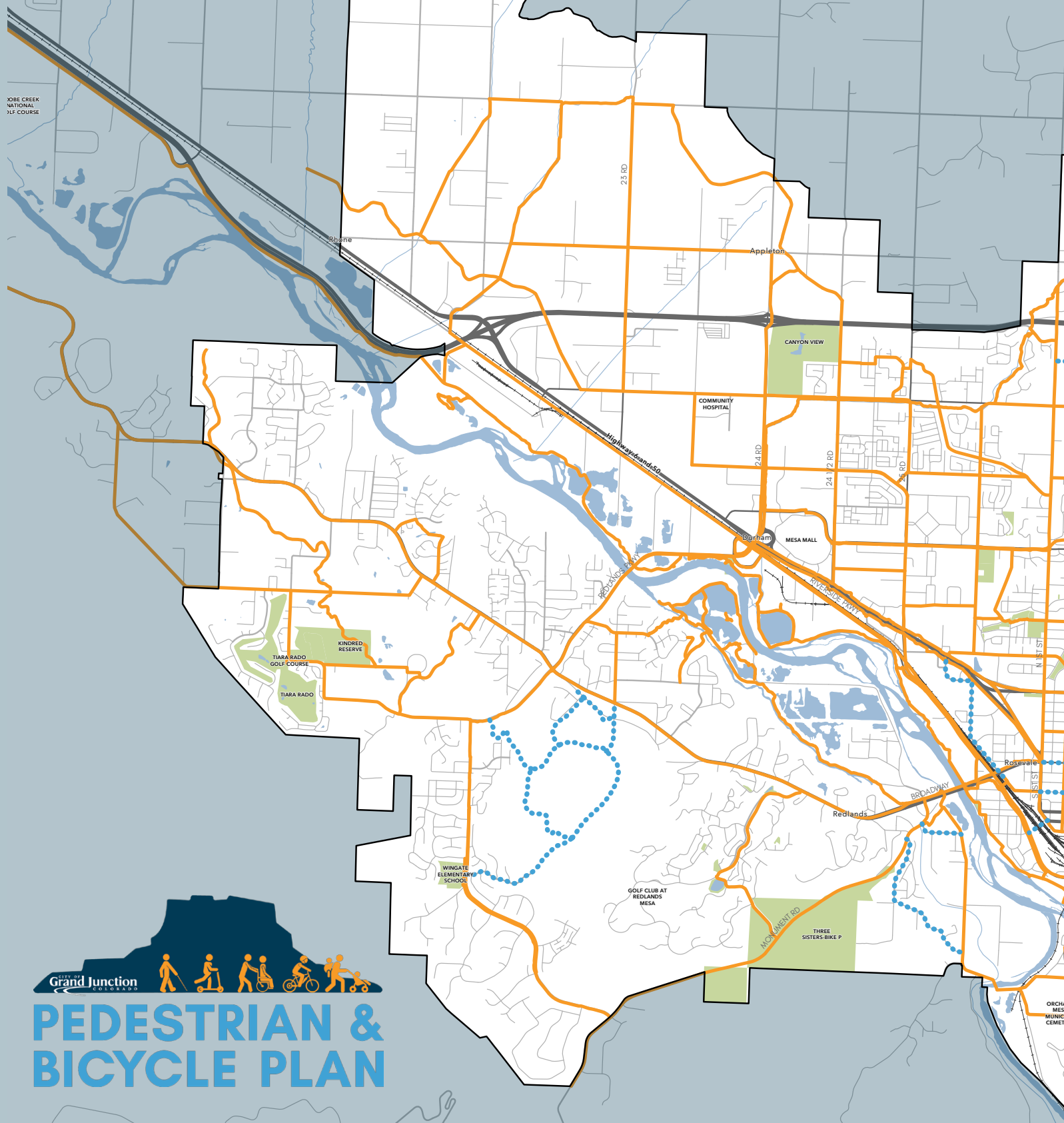
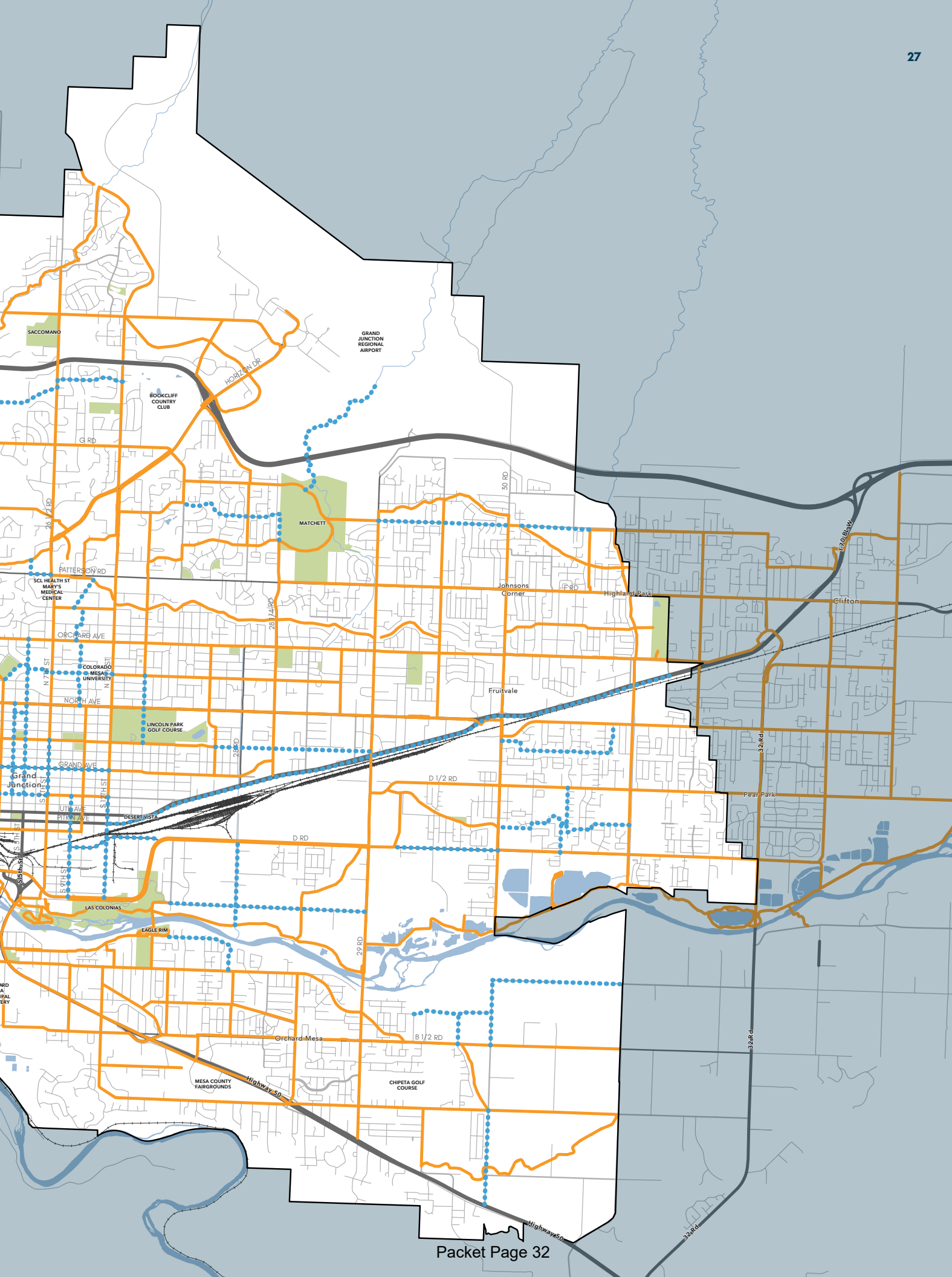


FIGURE 10: UPDATED ACTIVE TRANSPORTATION CORRIDORS MAP



Preferred Design User

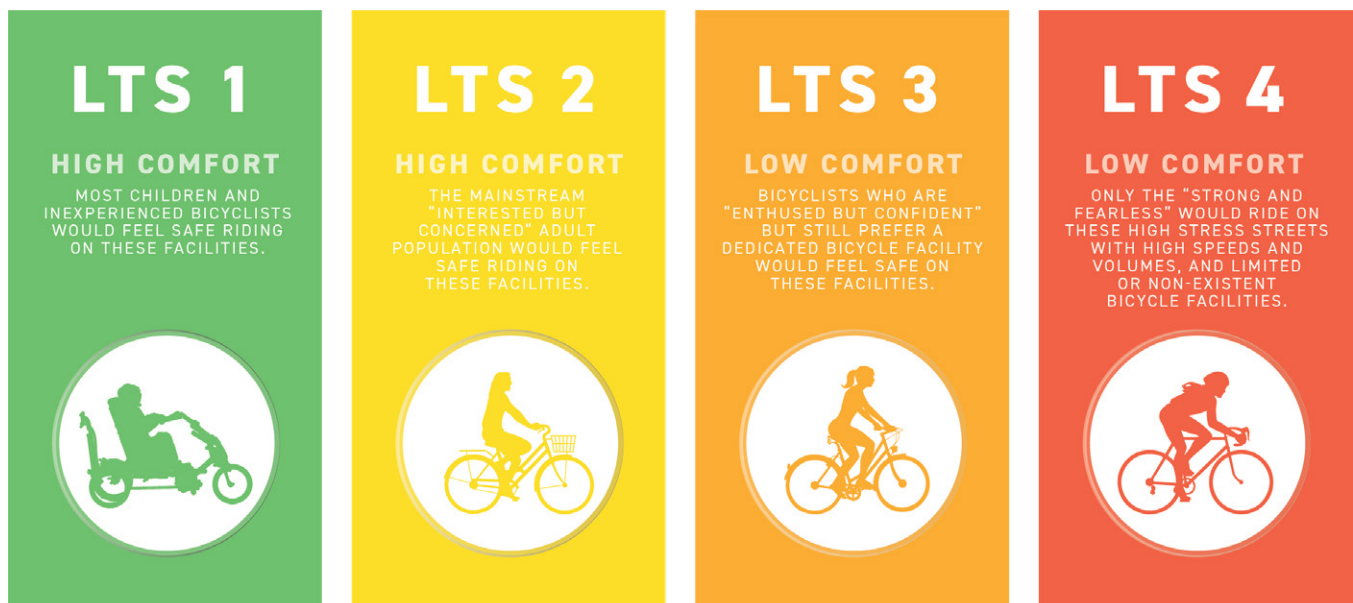
Based on input from the community, Steering Committee, and city staff, this plan sets forth a goal to have low-stress, high-comfort bike facilities on all Active Transportation Corridors shown in **Figure 10**. Low-stress facilities are defined as those that score an LTS 1 or LTS 2 on the LTS 1-4 rating system as shown in **Figure 11**, meaning they cater to all ages and abilities. Future bicycle facilities in Grand Junction will cater to the most cautious design user, ranging from children, older adults, and people with mobility challenges to the most “strong and fearless” bicyclist. Designing bike facilities to support the “interested but concerned” riders, which represent roughly 60% of the population, will ensure all residents and visitors of Grand Junction can feel comfortable choosing to bike.¹

¹ Geller R. (2006). Four Types of Cyclists. Portland Bureau of Transportation. Retrieved from <http://www.portlandoregon.gov/transportation/article/264746>.

Bicycle Facility Types

Bicycle facility types recommended in the Future Bicycle Network map in **Figure 19** are those needed to achieve an LTS 1 or 2 on Active Transportation Corridors based on the roadway speed, number of lanes, and traffic volumes. This section describes the toolbox of bicycle facility types (summarized in **Figure 12**) and basic design guidance for each type, with more specific guidance found in the updated TEDS Manual. Design guidance is based primarily on NACTO recommendations.

FIGURE 3: BICYCLE LEVEL OF TRAFFIC STRESS (LTS) MEASURES





BICYCLE FACILITY GUIDE

NOTE: Recommendations shown are the minimum facilities needed to create a high-comfort environment for biking, given street characteristics. Facilities with greater separation and protection than the minimum option are desirable and sometimes warranted.



BIKE BOULEVARD

May include sharrow markings & bike route signage, traffic calming elements like curb extensions, mini roundabouts, traffic diverters

Recommended on streets with:

Low speeds (25 mph or lower), low traffic volumes (1,000 cars per day or fewer), few travel lanes (up to two), parallel routes to major arterials



BIKE LANE

Painted stripe, usually 6' or wider

Recommended on streets with:

Few travel lanes and/or low speeds (two lanes up to 35 mph or three to four lanes up to 25 mph)



BUFFERED BIKE LANE

Painted stripe, usually 5' or wider with 1.5' or wider buffer

Recommended on streets with:

Three to four travel lanes and speeds of 30 or 35 mph



PROTECTED BIKE LANE

Bike lane 5' or wider, protected by 3' or wider buffer such as flex posts, planters, rigid bollards, parking strip, or concrete barriers

Recommended on streets with:

High speeds (40 mph or greater), many travel lanes (more than four)



RAISED CYCLE TRACK

Bike lane 6.5' or wider, elevated from street level to curb height or mid-curb height, separated from sidewalk and roadway

Recommended on streets with:

High speeds (40 mph or greater), many travel lanes (more than four)



TRAIL

Multi-use path 10' feet or wider, separated from the roadway by a high-quality buffer

Recommended on streets with:

High speeds (40 mph or greater), many travel lanes (more than four)

FIGURE 12: BICYCLE FACILITY GUIDE

Table 2 summarizes the minimum bike facility to achieve an LTS 2 or better given the street characteristics of speed, number of travel lanes, and volume. In some cases, a higher comfort facility is recommended than what is shown in Table 2 given other context-sensitive characteristics, such as volume of motor vehicles, volume of bicyclists, frequency of large trucks. The city may also elect to provide a higher comfort facility than what is listed on Table 2 to achieve an LTS 1. Notably, if the city chooses to reduce the

speed and/or number of lanes on a street as part of a corridor project, the recommended minimum bike facility may change. It is recommended that changes to posted speed are accompanied by geometric design changes and traffic calming interventions to be effective. While using the posted speed is acceptable when identifying the best bicycle facility for a given street it is preferred to use the 85th percentile operating speed when possible.

TABLE 2: MINIMUM BIKE FACILITY RECOMMENDED TO ACHIEVE LTS 2 OR BETTER GIVEN STREET CHARACTERISTICS

			Lanes		
			1-2	3-4	5+
Speed	<25 mph	≤ 1,000 ADT	Bike Boulevard	Bike Lane	Trail, Cycletrack, or Protected Bike Lane
		> 1,000 ADT	Bike Lane		
	25-30 mph		Bike Lane	Bike Lane	Trail, Cycletrack, or Protected Bike Lane
	30-35 mph		Bike Lane	Buffered Bike Lane	Trail, Cycletrack, or Protected Bike Lane
	40+		Trail, Cycletrack, or Protected Bike Lane	Trail, Cycletrack, or Protected Bike Lane	Trail, Cycletrack, or Protected Bike Lane

Streets with more than four through lanes, and streets with speeds greater than or equal to 40 mph will require a trail, cycletrack, or protected bike lane.



Trail

To achieve at least an LTS 2, trails should be at least 10 feet wide and preferably 12 feet, with a 5-foot buffer on local streets, 8-foot buffer on collector streets, and 12-foot buffer on arterials. Striping on major trails can help separate opposing traffic where needed, especially in areas where visibility is limited due to trail curvature. In locations with high concentrations of both pedestrians and bicyclists that may increase frequency of conflict the city may consider widening the trail to 12 feet or 14 feet, or providing separate facilities for pedestrians and bicyclists, such as a 6-foot sidewalk and a raised cycle track (see Raised Cycle Track description).

In a constrained environment with limited right-of-way behind the curb, trails should be as wide as possible, with an absolute minimum width of 8 feet and a minimum buffer width of 2 feet.

Raised Cycle Track

To achieve an LTS 1, raised cycle tracks must be 6.5 feet or wider, with 8 feet or 10 feet suggested for streets with higher volumes of bicyclists. They should be raised from street level between 2 and 6 inches and have horizontal and/or vertical separation from the sidewalk. Buffers should be at least a one-foot mountable curb when adjacent to travel lanes, or 3-foot raised curb buffers when adjacent to parking lanes. Refer to the [Raised Cycle Track](#) section of the NACTO *Urban Bikeway Design Guide* for additional design guidance for raised cycle tracks.

Streets with three to four lanes and speeds of 30 or 35 mph will require a buffered bike lane.

Buffered Bike Lane

Buffered bike lanes (with horizontal buffer) must be 5 feet or wider, and 7 feet is recommended along streets with high volumes of bicyclists or uphill sections to allow passing or side-by-side riding. Buffers should be at least 1.5 feet, and buffers 3 feet or wider should include diagonal hatching. Separation may also be provided between bike lane striping and the parking lane to reduce door conflicts. Refer to the [Buffered Bike Lanes](#) section of the NACTO *Urban Bikeway Design Guide* for additional design guidance.

FIGURE 13: TRAIL ELEMENTS

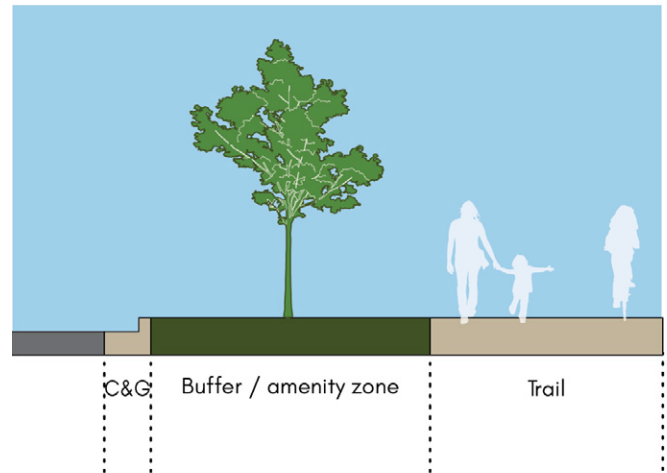


FIGURE 14: RAISED CYCLE TRACK ELEMENTS

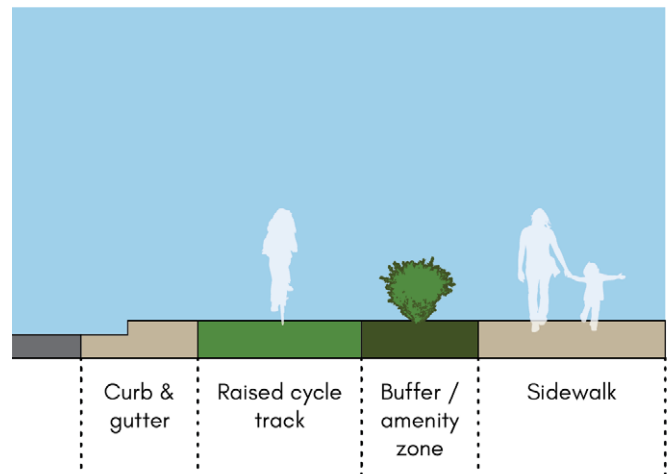
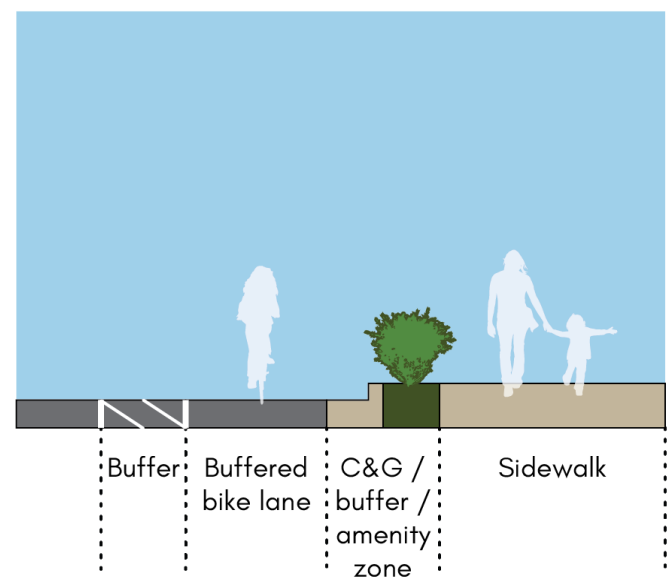


FIGURE 15: PROTECTED BIKE LANE ELEMENTS



Protected Bike Lane

To achieve an LTS 1, protected bike lanes (with vertical buffers) must be 5 feet or wider, with 7 feet or wider suggested for streets with higher volumes of bicyclists or uphill sections to allow passing. They should have buffers of 3 feet or wider, even when parking protected. Possible barriers include flex posts, planters, rigid bollards, parking strips, and/or concrete barriers. Refer to the [One-Way Protected Cycle Track](#) section or [Two-Way Cycle Track](#) section of the NACTO *Urban Bikeway Design Guide* for additional design guidance for protected bike lanes.

Streets with three to four lanes and speeds less than 30 mph and streets with two or fewer lanes will require a striped bike lane.

Striped Bike Lane

Striped bike lanes adjacent to a curb face should be 6 feet, with 4 feet of width from the longitudinal joint (such as a gutter pan) preferred and an absolute minimum of 3 feet of width from the gutter pan. When placed adjacent to a parking lane, bike lanes without a buffer must be 5 feet or wider, and the width from the curb face to the edge of the bike lane should be at least 14 feet and in constrained environments the width should be not less than 12 feet from the curb when adjacent to parking. Refer to the [Conventional Bike Lanes](#) section of the NACTO *Urban Bikeway Design Guide* for additional design guidance.

Major arterials on the active transportation network are all eligible for bicycle boulevards on adjacent local streets, if there is a parallel and relatively direct connection. This treatment is also appropriate on low speed (25 mph or less), low volume (1,000 ADT or less), and narrow streets (1 or 2 lanes).

FIGURE 16: BUFFERED BIKE LANE ELEMENTS

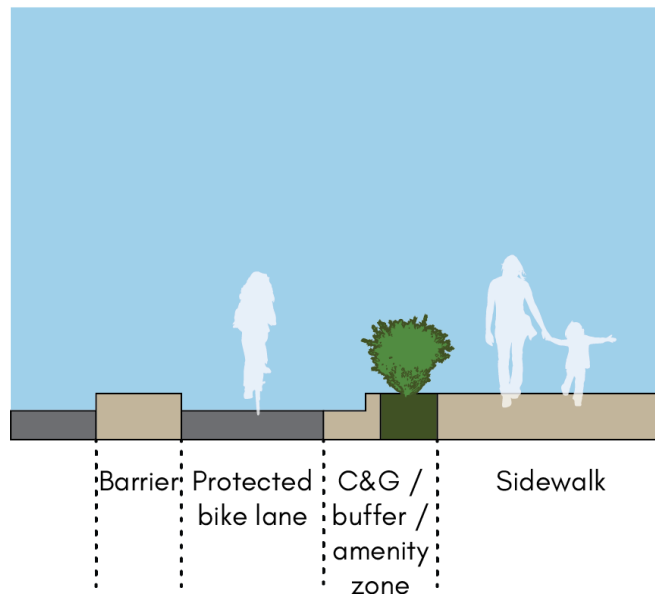
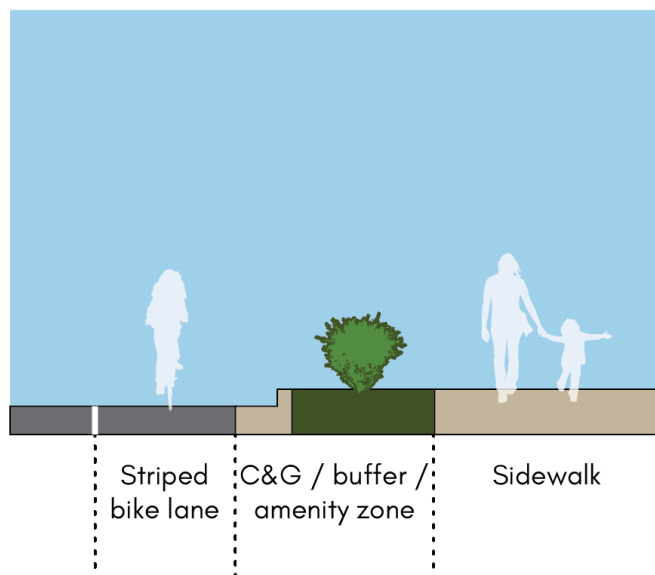


FIGURE 17: STRIPED BIKE LANE ELEMENTS



Bike Boulevards

Bike boulevards are more than just a “shared street” with cars and bicycle traffic sharing the same space. These boulevards often incorporate traffic diversion and/or traffic calming to limit vehicle traffic to local residents on the street and to reduce speeds to no more than 15 to 20 mph to create a more comfortable environment for people biking. Of particular importance along bike boulevards are providing treatments at major street crossings to allow for a comfortable means for bicyclists to cross (see the Bicycle Crossing Guidance section). According to the NACTO *Urban Bikeway Design Guide*, bicycle boulevards incorporate some or all of the following elements, with examples shown in **Figure 18**:

1. **Route Planning:** Direct access to destinations
2. **Signs and Pavement Markings:** Easy to find and to follow
3. **Speed Management:** Slow motor vehicle speeds
4. **Volume Management:** Low or reduced motor vehicle volumes
5. **Minor Street Crossings:** Minimal bicyclist delay
6. **Major Street Crossings:** Safe and convenient crossings
7. **Offset Crossings:** Clear and safe navigation
8. **Green Infrastructure:** Enhancing environments

FIGURE 18: EXAMPLE CHARACTERISTICS OF BICYCLE BOULEVARDS

Speed Management



Minor Street Crossing



Volume Management



Major Street Crossing



Future Bicycle Network Map

Figure 19 shows the existing bike facilities and recommended future bike facility types in Grand Junction. This map illustrates the long-term vision for the bicycle network in Grand Junction. These recommendations are the minimum type of bike facility needed to achieve an LTS 1 or 2 (or provide a high-comfort facility that caters to all ages and abilities) on each Active Transportation Corridor, based on posted speed limits, existing traffic volume, and existing number of lanes on the roadway.

Neighborhood Maps

Maps and tables of projects by priority for each neighborhood are also provided. Refer to the Implementation & Prioritization chapter for how projects were prioritized.

Abbreviations for Minimum Recommended Facility Type

- BB – Bike Boulevard
- BL – Bike Lane
- BBL – Buffered Bike Lane
- T or CT or PBL – Multiuse Trail or Cycle Track or Protected Bike Lane
- T – Multiuse Trail

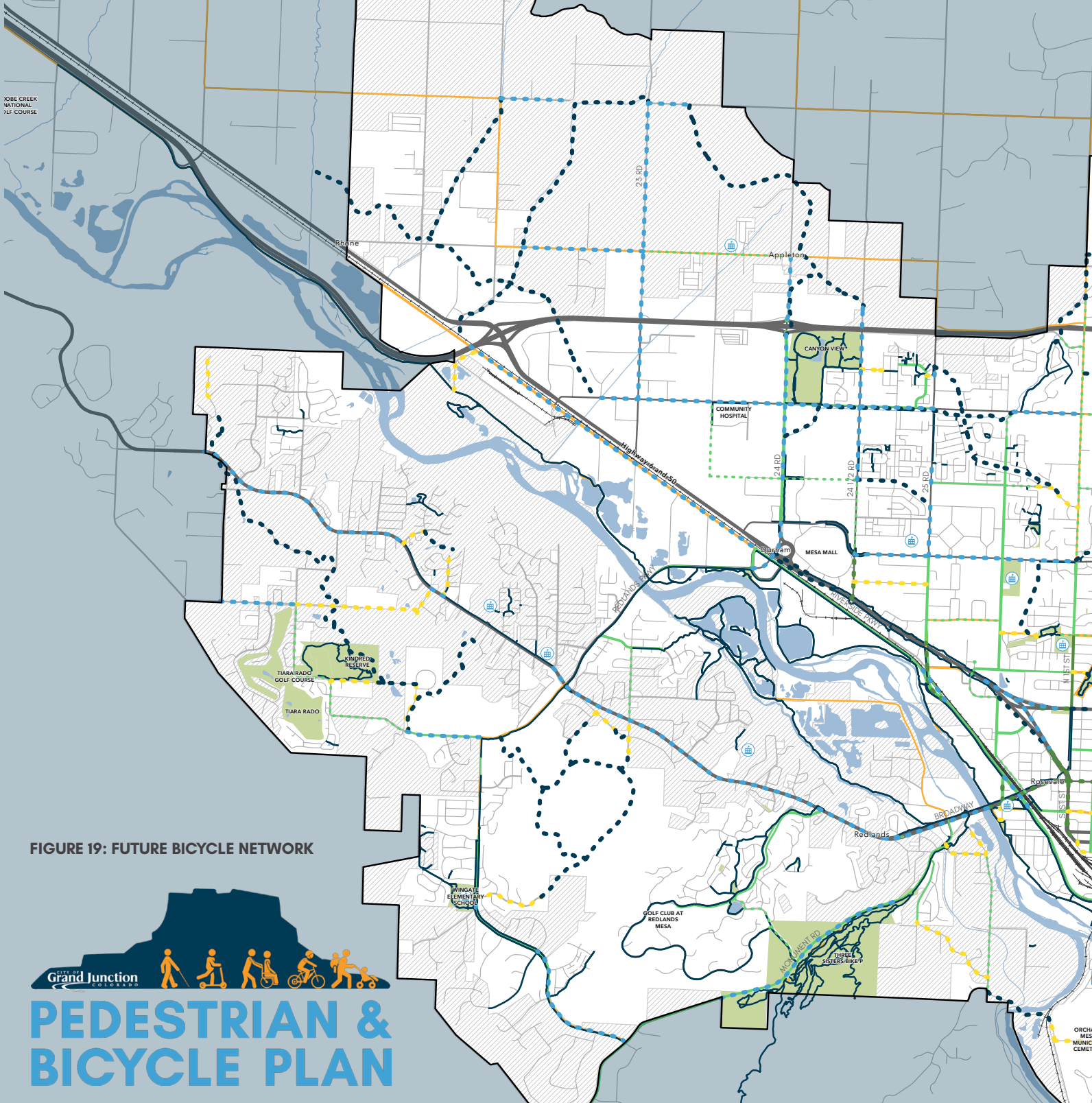


FIGURE 19: FUTURE BICYCLE NETWORK



LEGEND

- Unincorporated Mesa County
- Urban Development Boundary
- Parks
- Railroads
- Schools

Street Classification

- Local
- Collector
- Arterial
- Highway

Existing Bicycle Facilities

- Signed Bike Route
- Striped Bike Lane
- Buffered Bike Lane
- Trail

Bicycle Facility Recommendation

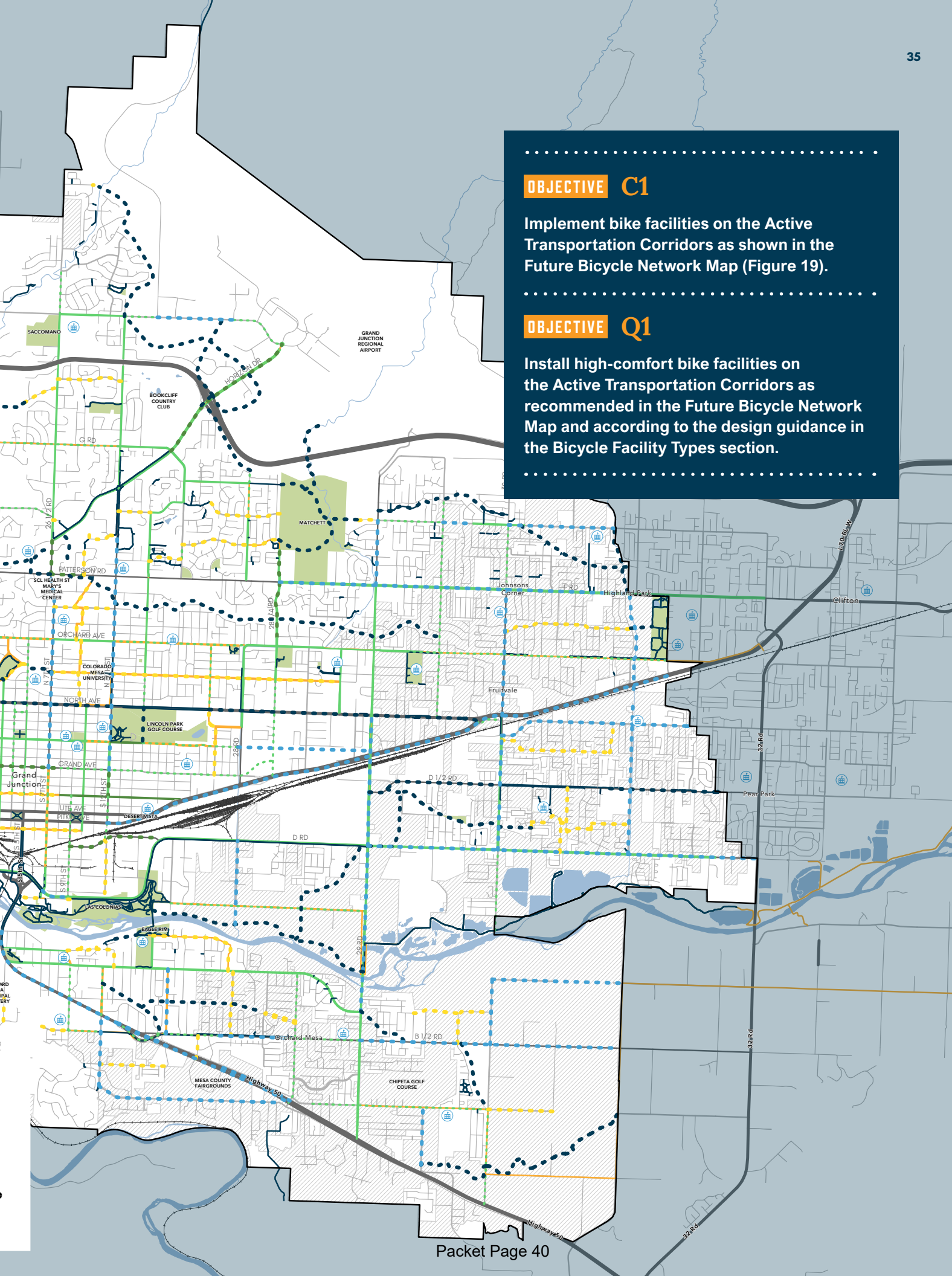
- Bike Boulevard
- Bike Lane
- Buffered Bike Lane
- Trail, Cycletrack, or Protected Bike Lane
- Trail

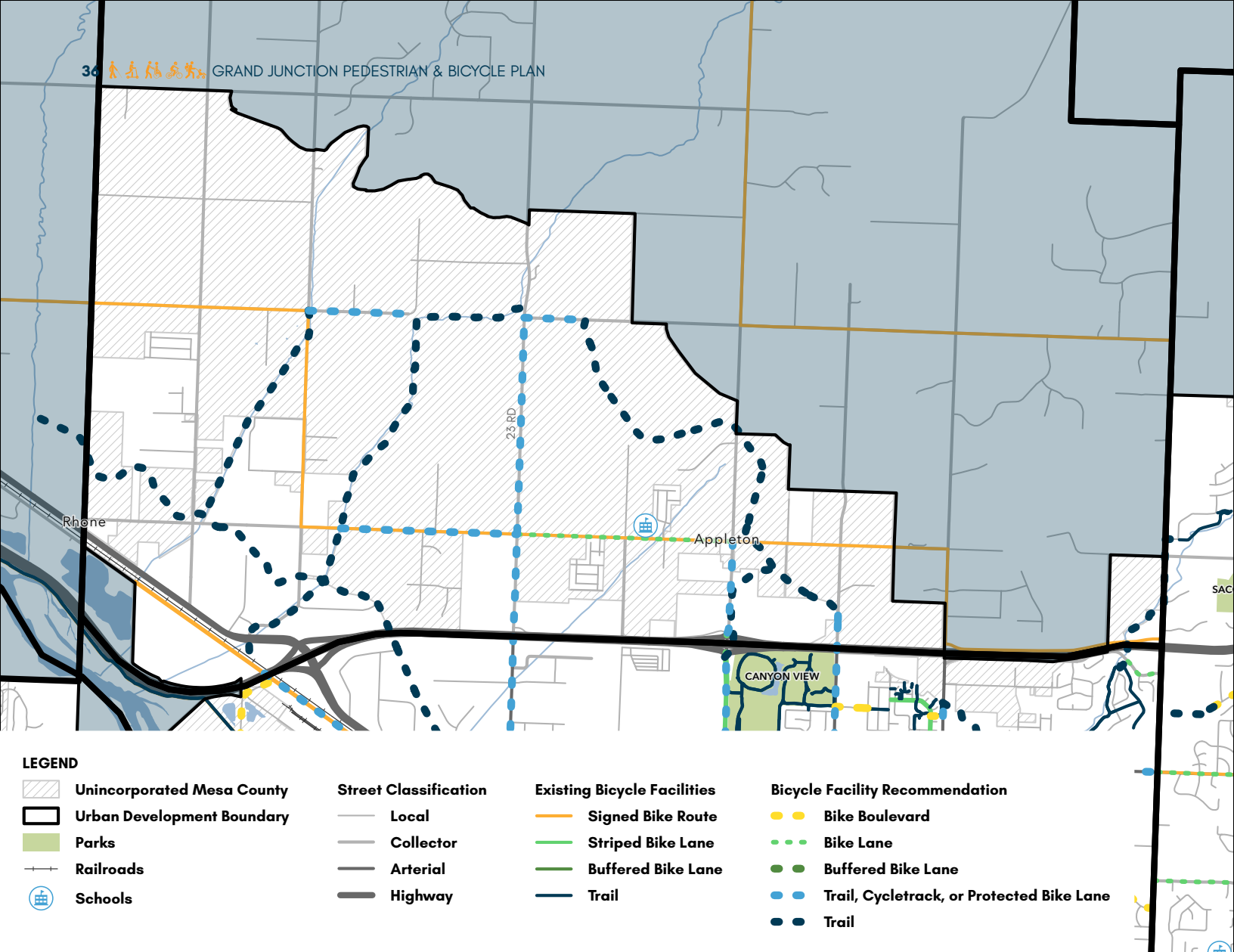
OBJECTIVE C1

Implement bike facilities on the Active Transportation Corridors as shown in the Future Bicycle Network Map (Figure 19).

OBJECTIVE Q1

Install high-comfort bike facilities on the Active Transportation Corridors as recommended in the Future Bicycle Network Map and according to the design guidance in the Bicycle Facility Types section.





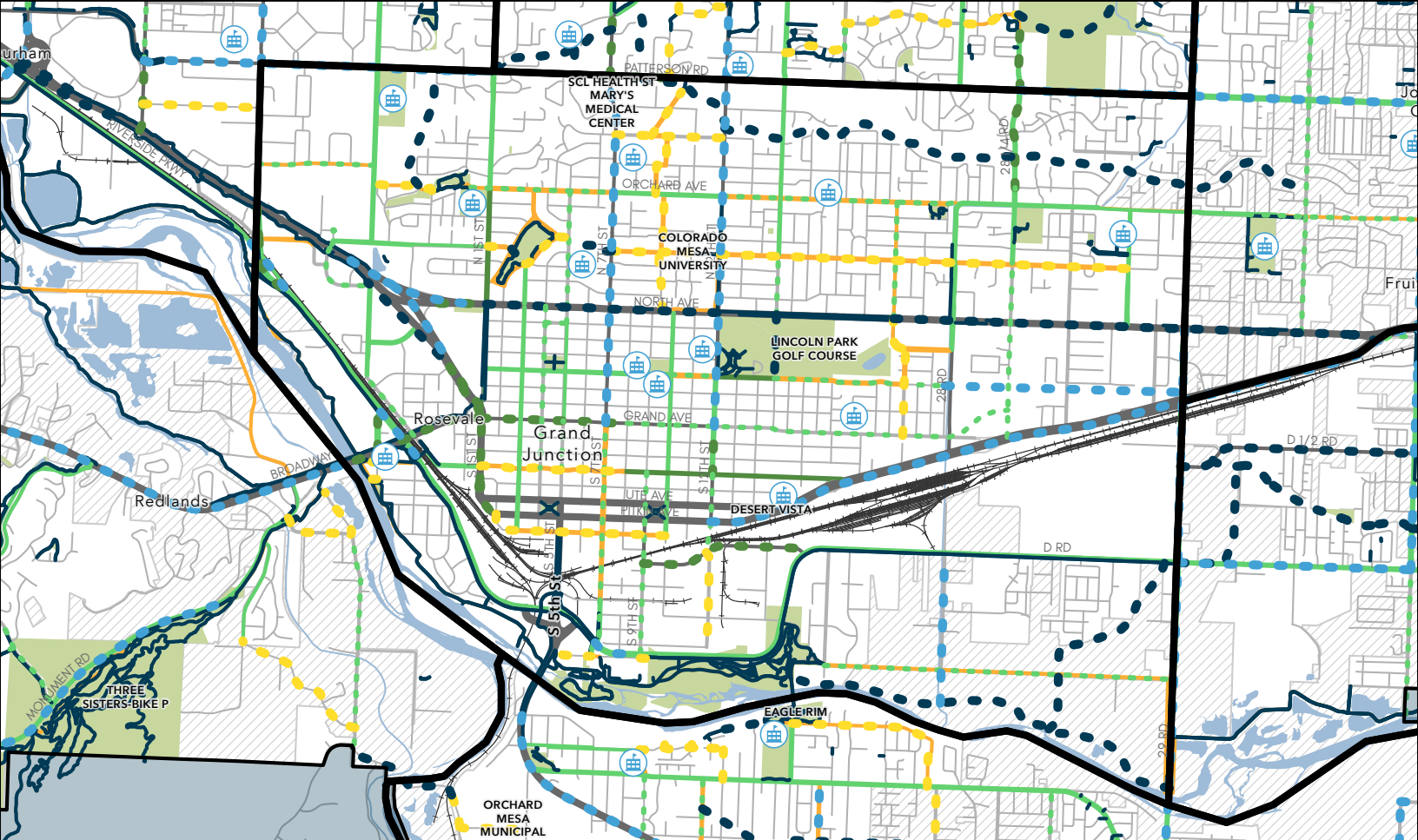
Appleton

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
23 RD	I RD	G RD	2.00	T or CT or PBL
24 1/2 RD	S OF KELLEY DR	S OF AJAY AVE	1.19	T or CT or PBL
FUTURE ATC TRAIL	HUNTER WASH N OF HWY 6 AND 50	G RD W OF ARROWEST RD	2.80	T
FUTURE ATC TRAIL	W OF 24 1/2 RD S OF H RD	24 RD S OF I70 FRONTAGE ROAD	0.55	T

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
24 RD	H RD	I70 FRONTAGE RD	0.42	T or CT or PBL
26 RD	FREEDOM DR	KELLY DR	0.29	T
FREEDOM DR	26 RD	FREEDOM WAY	0.06	T
FUTURE ATC TRAIL	I RD	HWY 6 AND 50	2.41	T
FUTURE ATC TRAIL	KELLEY DR / 26 RD	BEAVER LDG N OF EGRET CIR	0.40	T
FUTURE ATC TRAIL	I RD E OF 23 RD	24 1/2 RD S OF KELLEY DR	2.19	T
FUTURE ATC TRAIL	23 RD / I RD	NE OF 21 1/2 RD / H RD	1.09	T
H RD	23 RD	24 RD	1.00	BL
H RD	NEW TRAIL E OF 22 RD	23 RD	0.82	T or CT or PBL
I RD	22 RD	22 1/2 RD	0.46	T or CT or PBL
I RD	23 RD	NEW TRAIL E OF 23 RD	0.29	T or CT or PBL
RIVER RD	I70 FRONTAGE RD	PARKWAY RAMP	2.37	T or CT or PBL



LEGEND

- Unincorporated Mesa County
- Urban Development Boundary
- Parks
- Railroads
- Schools

Street Classification

- Local
- Collector
- Arterial
- Highway

Existing Bicycle Facilities

- Signed Bike Route
- Striped Bike Lane
- Buffered Bike Lane
- Trail

Bicycle Facility Recommendation

- Bike Boulevard
- Bike Lane
- Buffered Bike Lane
- Trail, Cycletrack, or Protected Bike Lane
- Trail

City Center

High Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
26 1/2 RD	HORIZON DR	PATTERSON RD	0.26	BBL
26 RD	KELLY DR	PATTERSON RD	1.78	BL
28 1/4 RD	ELM AVE	I70 BUSINESS LOOP	0.74	BL
29 RD	E NORTH AVE	RIVER BEND LN	2.16	T or CT or PBL
BELFORD AVE	N 4TH ST	N 5TH ST	0.09	BL
BROADWAY	RIVERSIDE TRAIL	SPRUCE ST	0.51	BBL
BROADWAY	22 1/2 RD	RIVERSIDE TRAIL	3.39	T or CT or PBL
CANNELL AVE	ELM AVE	E NORTH AVE	0.26	BB
CANNELL AVE	ORCHARD AVE	TEXAS AVE	0.18	BB
D RD	S 9TH ST	RIVERSIDE PKWY	0.72	BBL
ELM AVE	N 7TH ST	COLLEGE PL	0.33	BB

ELM AVE	N 12TH ST	28 3/4 RD	1.75	BB
FUTURE ATC TRAIL	N 5TH ST N OF ELM CT	ELM AVE / N 7TH ST	0.21	T
FUTURE ATC TRAIL	PATTERSON RD W OF W PARK DR	W ORCHARD AVE / LAKESHORE DR	0.53	T
FUTURE ATC TRAIL	N 12TH ST N OF BOOKCLIFF AVE	29 RD N OF PINYON AVE	2.10	T
FUTURE ATC TRAIL	PATTERSON RD W OF VIEWPOINT DR	N 12TH ST S OF WELLINGTON AVE	0.43	T
FUTURE ATC TRAIL	W OF WILLOWBROOK RD AND E OF HORIZON PL	PATTERSON RD / N 7TH ST	0.26	T
FUTURE ATC TRAIL	N 27TH ST / GUNNISON AVE	29 RD N OF I70 BL	1.02	T or CT or PBL
GRAND AVE	N 1ST AVE	N 8TH ST	0.62	BBL
GRAND AVE	N 8TH ST	28 1/4 RD	1.67	BL
GUNNISON AVE	N 10TH ST	N 12TH ST	0.19	BL
GUNNISON AVE	N 15TH ST	N 27TH ST	0.73	BL
HWY 6	I70 FRONTAGE RD	N 1ST ST	0.20	BBL
HWY 6	NORTH AVE W OF MOTOR ST	NORTH AVE E OF N 1ST ST	0.34	T or CT or PBL
HWY 6 AND 50	W GUNNISON AVE	GRAND AVE	0.53	BBL
HWY 6 AND 50	NORTH AVE	SE OF MULBERRY ST	0.64	T or CT or PBL
I70B	DESERT VISTA / PITKIN AVE	WARRIOR WAY	4.10	T or CT or PBL
INDEPENDENT AVE	INDEPENDENT AVE	HWY 6 AND 50	0.03	BL
INDUSTRIAL BLVD	24 1/2 RD	25 RD	0.50	BB
LINCOLN PARK TRAIL/15TH ST	NORTH AVE	GUNNISON AVE	0.27	T
LITTLE BOOKCLIFF DR	BOOKCLIFF AVE	DEAD END	0.23	BB
MAIN ST	S 1ST ST	S 8TH ST	0.62	BB
N 12TH ST	LAKESIDE DR	GRAND AVE	1.80	T or CT or PBL
N 15TH ST	ELM AVE	E NORTH AVE	0.25	BL
N 23RD ST	ORCHARD AVE	E NORTH AVE	0.50	BL
N 4TH AVE	NORTH AVE	MAIN ST	0.69	BL
N 5TH ST	GRAND AVE	MAIN ST	0.21	BL
N 5TH ST	ORCHARD AVE	BELFORD AVE	0.57	BL
N 7TH ST	GRAND AVE	MAIN ST	0.21	BL
N 7TH ST	PATTERSON RD	GRAND AVE	1.49	T or CT or PBL
N 9TH ST	BOOKCLIFF AVE	ORCHARD AVE	0.29	BB
NORTH AVE	N 1ST AVE	N 12TH ST	1.00	T
NORTH AVE	N 23RD ST	I70 BL	2.14	T
ORCHARD AVE	WEST MIDDLE SCHOOL	N 7TH ST	0.61	BL
ORCHARD AVE	N 12TH ST	CINDY ANN RD	1.06	BL
PATTERSON RD	26 1/2 RD	26 3/4 RD	0.25	BBL
PATTERSON RD	24 1/2 RD	26 RD	1.50	T or CT or PBL
PATTERSON RD	28 1/4 RD	E OF 31 RD	2.68	T or CT or PBL
S 12TH ST	MAIN ST	D RD	0.34	BL
S 1ST ST	W GRAND AVE	PITKIN AVE	0.50	BBL
S 7TH ST	MAIN ST	STRUTHERS AVE	0.80	BL
S 9TH ST	MAIN ST	STRUTHERS AVE	0.80	BL
W ORCHARD AVE	25 1/2 RD	POPLAR DR	0.26	BB
W PINYON AVE	25 RD	25 1/2 RD	0.50	BL

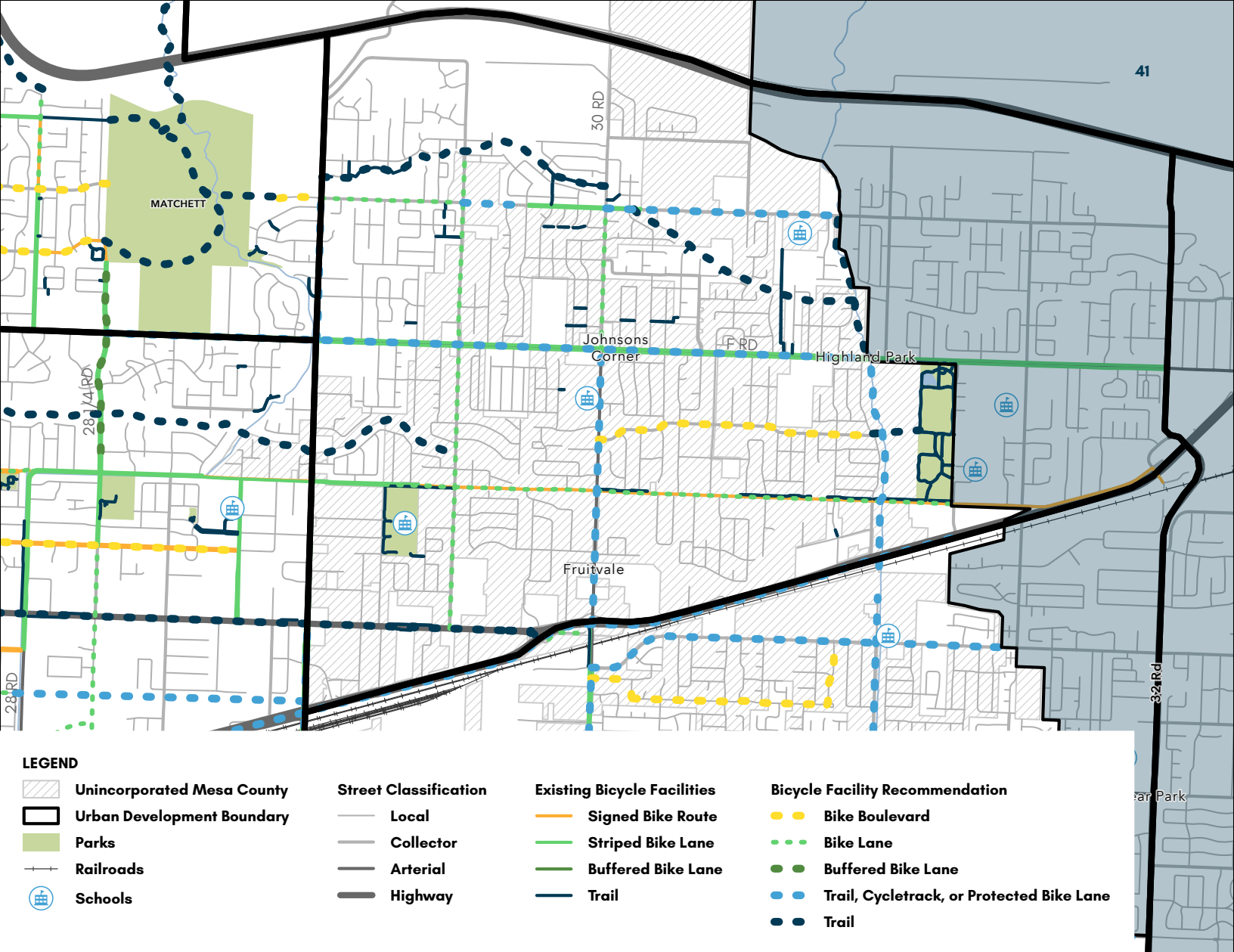
City Center

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
25 RD	BLICHMANN AVE	PATTERSON RD	0.34	T or CT or PBL
26 3/4 RD	CAPRA WAY	PATTERSON RD	0.19	BB
28 1/4 RD	VILLAGE PARK DR	BRITTANY DR	0.67	BBL
28 1/4 RD	BRITTANY DR	ORCHARD AVE	0.07	BL
BELFORD AVE	DIRT ROAD	N 24TH ST	0.04	BB
BOOKCLIFF AVE	N 7TH ST	N 12TH ST	0.47	BB
C 1/2 RD	27 1/2 RD	29 RD	1.50	BL
CROSBY AVE	BASE ROCK ST	W GRAND AVE	0.32	BL
D 1/2 RD	29 RD	30 RD	1.03	T
E SHERWOOD DR	N 3RD ST	N SHERWOOD DR	0.19	BB
ELM AVE	N 1ST ST	W SHERWOOD DR	0.10	BB
FUTURE ATC TRAIL	LAS COLONIAS TRAIL	29 RD N OF COLORADO RIVER	1.78	T
FUTURE ATC TRAIL	ELM AVE / W SHERWOOD DR	E SHERWOOD DR / N 3RD ST	0.09	T
N 12TH ST	GRAND AVE	MAIN ST	0.21	BBL
N 23RD ST	E NORTH AVE	BELFORD AVE	0.12	BB
N 24TH ST	BELFORD AVE	GRAND AVE	0.37	BB
N SHERWOOD DR	E SHERWOOD DR	N 5TH ST	0.04	BB
PITKIN AVE	S 12TH ST	DESERT VISTA E OF S 15TH ST	0.39	T or CT or PBL
S 12TH ST	D RD	KIMBALL AVE	0.41	BB
SOUTH AVE/S 2ND ST	PITKIN AVE	S 10TH ST	0.78	BB
W GRAND AVE	SPRUCE ST	N 1ST ST	0.07	BBL

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
25 RD	TROLLEY ST	INDEPENDENT AVE	0.17	BBL
28 RD	RIVERSIDE PKWY	NEW TRAIL S OF C 1/2 ROAD	0.64	T or CT or PBL
FUTURE ATC TRAIL	RIVERSIDE PKWY W OF 29 RD	N OF COLORADO RIVER	0.99	T
FUTURE ATC TRAIL	N OF BASE ROCK ST S OF HWY 6 AND 50	NW OF MULBERRY ST S OF HWY 6 AND 50	0.44	T
RIMROCK AVE	HWY 6 AND 50	BASE ROCK ST	0.32	BL
RIVERSIDE PKWY	INDEPENDENT AVE	RIVERSIDE PKWY	0.31	BBL
RIVERSIDE PKWY	S 7TH ST	S 9TH ST	0.21	T or CT or PBL
RIVERSIDE PKWY	WEST AVE	N OF LAWRENCE AVE	0.32	T or CT or PBL
RIVERSIDE PKWY	RIVER RD	25 RD	0.29	T or CT or PBL
STRUTHERS AVE	DEAD END	S 7TH ST	0.12	BB
STRUTHERS AVE	S 9TH ST	DEAD END	0.03	BB
W COLORADO AVE	RIVERSIDE PARK DR	WEST AVE	0.02	BB
W MAIN ST	DEAD END	WEST AVE	0.05	BB
WEST AVE	RIVERSIDE PKWY	W GRAND AVE	0.16	BBL
WEST AVE	W GRAND AVE	W MAIN ST	0.05	BB



Fruitvale

High Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
29 1/2 RD	BRET DR	E NORTH AVE	1.67	BL
29 RD	E NORTH AVE	RIVER BEND LN	2.16	T or CT or PBL
30 RD	F RD	I70 BL	0.97	T or CT or PBL
BOOKCLIFF AVE	30 RD	31 RD	0.99	BB
FUTURE ATC TRAIL	GRAND VALLEY CANAL N OF PINYON AVE	29 1/2 RD S OF SUNSET DR	0.52	T
FUTURE ATC TRAIL	F RD E OF 31 RD	RAIL ROAD S OF I70 FRONTAGE RD	0.75	T or CT or PBL
I70B	DESERT VISTA / PITKIN AVE	WARRIOR WAY	4.10	T or CT or PBL
NORTH AVE	N 23RD ST	I70 BL	2.14	T
ORCHARD AVE	29 1/4 RD	30 RD	0.75	BL
PATTERSON RD	28 1/4 RD	E OF 31 RD	2.68	T or CT or PBL

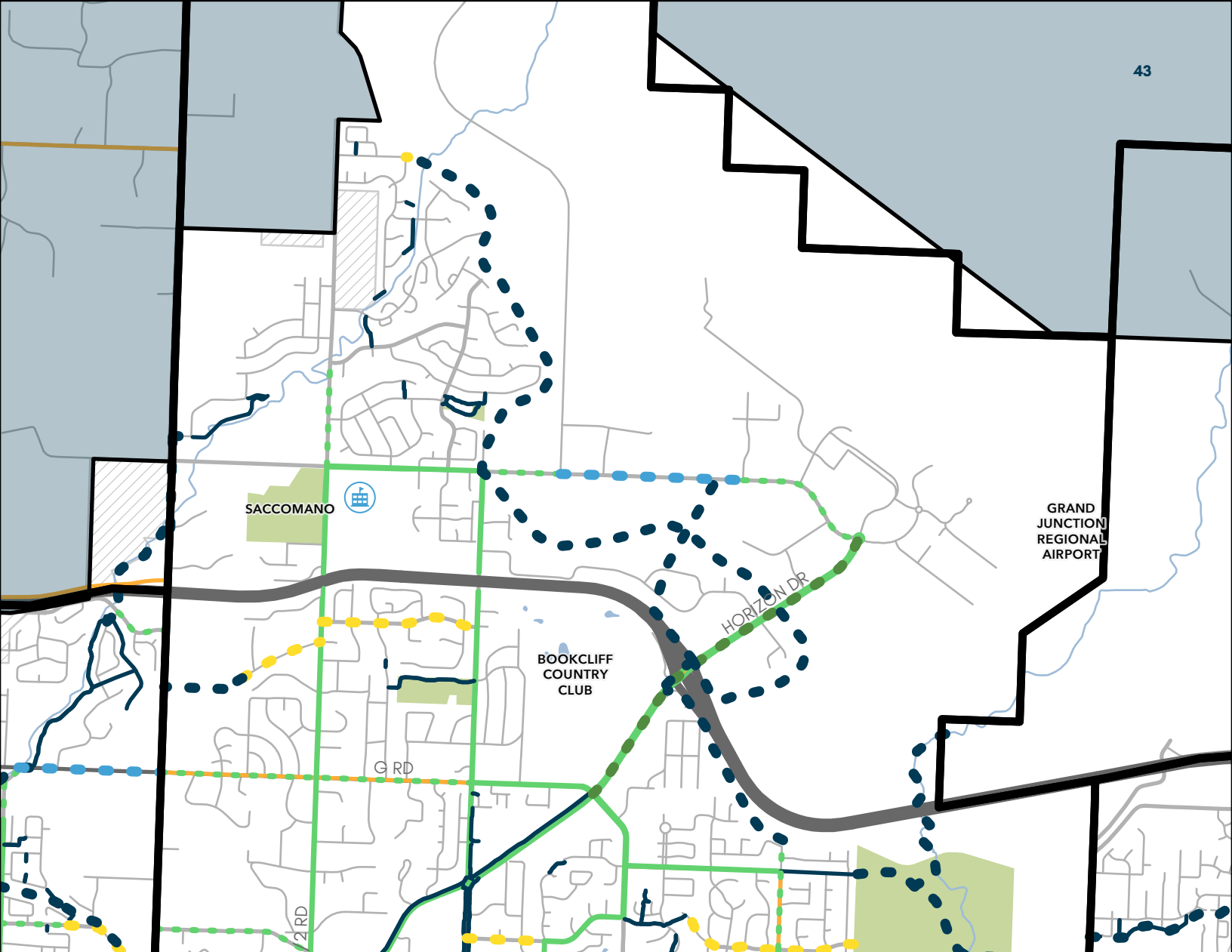
Fruitvale

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
E 1/2 RD	30 RD	WARRIOR WAY	1.24	BL
FUTURE ATC TRAIL	F 1/2 RD / CITY BOUNDARY	F RD / CITY BOUNDARY	0.50	T
FUTURE ATC TRAIL	F 1/2 RD E OF STARLIGHT DR	CITY BOUNDARY S OF PRICE DITCH CT	0.91	T
NORTH AVE	I70 BL W	JERRY'S OUTDOOR SPORTS	0.19	BL
TRAIL CONNECTION	31 RD / BOOKCLIFF AVE	LONG FAMILY MEMORIAL PARK	0.17	T

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
29 RD	F 1/2 RD	PATTERSON RD	0.50	T or CT or PBL
30 RD	F 1/2 RD	F RD	0.50	BL
BRODICK WAY/ HERON DRIVE	29 RD	30 RD	1.09	T
F 1/2 RD	29 RD	29 1/2 RD	0.50	BL
F 1/2 RD	29 1/2 RD	OX-BOW RD	0.22	T or CT or PBL
F 1/2 RD	30 RD	E OF THUNDER RIDGE DR	0.82	T or CT or PBL



Horizon

High Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
26 1/2 RD	HORIZON DR	PATTERSON RD	0.26	BBL
26 RD	KELLY DR	PATTERSON RD	1.78	BL
FUTURE ATC TRAIL	W OF WILLOWBROOK RD AND E OF HORIZON PL	PATTERSON RD / N 7TH ST	0.26	T
N 12TH ST	LAKESIDE DR	GRAND AVE	1.80	T or CT or PBL
PATTERSON RD	28 1/4 RD	E OF 31 RD	2.68	T or CT or PBL

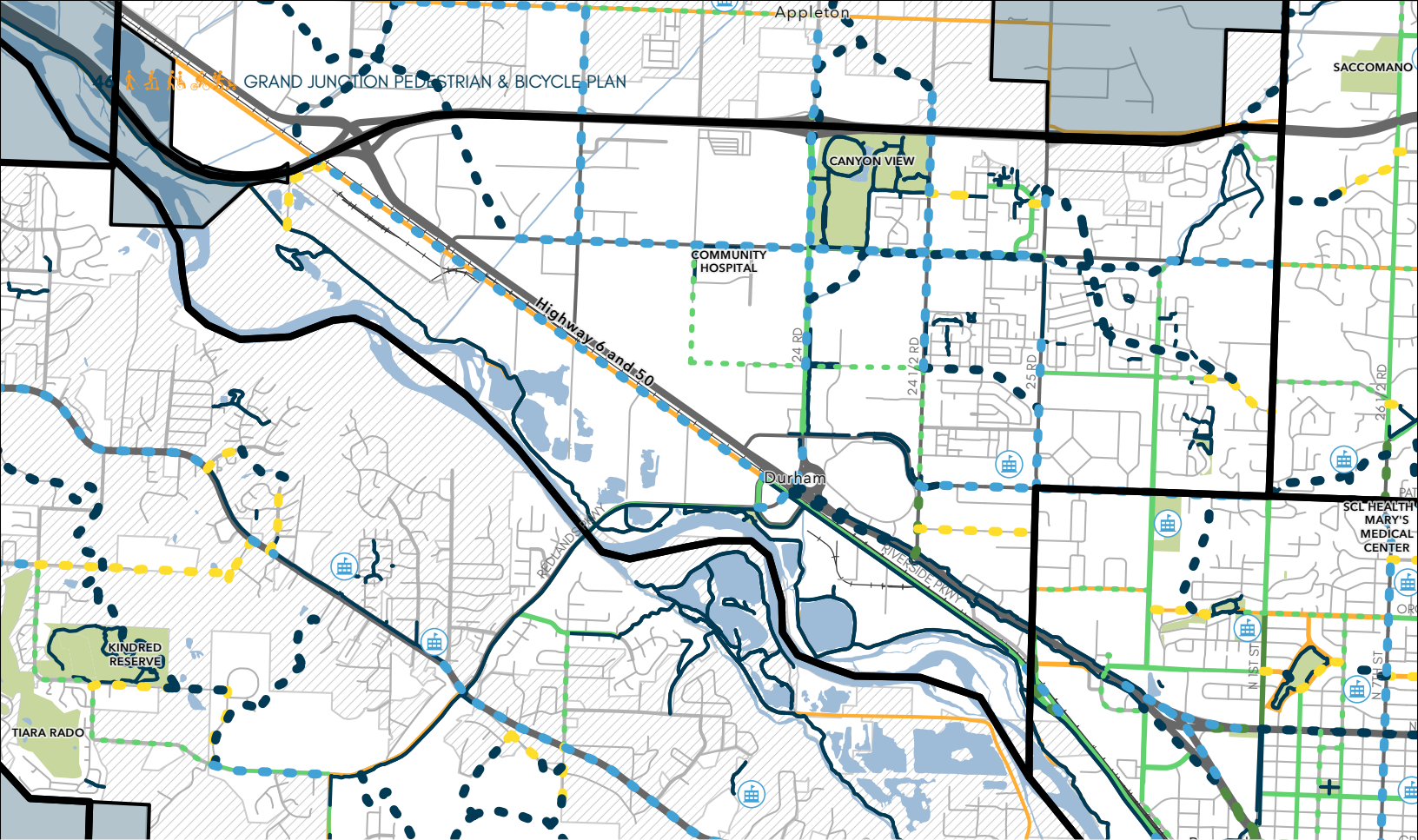
Horizon

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
26 3/4 RD	CAPRA WAY	PATTERSON RD	0.19	BB
28 1/4 RD	VILLAGE PARK DR	BRITTANY DR	0.67	BBL
FUTURE ATC TRAIL	26 RD / F RD	26 1/2 RD / GLEN CT	0.56	T
FUTURE ATC TRAIL	HORIZON DR E OF 26 1/2 RD	NE OF 8TH CT / NW OF VIEWPOINT DR	0.19	T
FUTURE ATC TRAIL	HORIZON DR E OF HORIZON 70 CT	HORIZON DR NE OF I70	0.12	T
FUTURE ATC TRAIL	E OF I RD / OVERVIEW RD	HORIZON DR NE OF I70	3.11	T
HAWTHORNE AVE	27 1/2 RD	DEAD END	0.76	BB
HORIZON DR	G RD	H RD	1.20	BBL
INDIAN WASH TRAIL FROM MATCHETT PARK	STREAM S OF AIRPORT	E OF CORTLAND AVE / TAMARRON DR	0.68	T
MATCHETT PARK ATC	E OF CORTLAND AVE / TAMARRON DR TO F 1/2 RD	TAMARRON DR / HAWTHORNE AVE	1.37	T

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
26 1/2 RD	CATALINA DR	H RD	0.33	BL
26 RD	FREEDOM DR	KELLY DR	0.29	T
27 1/2 RD	HAWTHORNE AVE	HERMOSA AVE	0.22	BL
28 RD	APPLEWOOD PL	RIDGE DR	0.33	BL
29 RD	F 1/2 RD	PATTERSON RD	0.50	T or CT or PBL
BRODICK WAY/ HERON DRIVE	29 RD	30 RD	1.09	T
CHESTNUT DR	DEAD END	26 1/2 RD	0.28	BB
F 1/2 RD	26 RD	26 1/2 RD	0.51	BL
F 1/2 RD	29 RD	29 1/2 RD	0.50	BL
F 1/2 RD	TRAILS END CT	26 RD	0.33	BB
F 1/2 RD	DEAD END	29 RD	0.15	BB
FREEDOM DR	26 RD	FREEDOM WAY	0.06	T
FUTURE ATC TRAIL	HORIZON DR / VISITORS WAY	N OF 28 RD / APPLEWOOD PL	0.64	T
FUTURE ATC TRAIL	H RD W OF N CREST DR	HORIZON DR NE OF I70	0.67	T
FUTURE ATC TRAIL	KELLEY DR / 26 RD	BEAVER LDG N OF EGRET CIR	0.40	T
G 1/2 RD	BEAVER LDG	26 RD	0.18	BL
G 1/2 RD	26 1/2 RD	27 RD	0.51	BB
G RD	26 RD	N 12TH ST	1.00	BL
H RD	27 RD	27 1/4 RD	0.25	BL
H RD	N CREST DR	WALKER FIELD DR	0.45	BL
H RD	27 1/4 RD	N CREST DR	0.59	T or CT or PBL
HERMOSA AVE	N 15TH ST	27 1/2 RD	0.26	BB
I RD	OVERVIEW RD	DEAD END	0.01	BB
LAKESIDE CT	DEAD END	LAKESIDE DR	0.20	BB
LAKESIDE DR	LAKESIDE CT	N 12TH ST	0.05	BB
LEVI CT	26 1/2 RD	DEAD END	0.06	BB
NEIGHBORHOOD CONNECTION TO 26 RD	E OF 26 RD N OF G RD	CHESTNUT DR	0.07	T
RIDGE DR	N 12TH ST	N 15TH ST	0.25	BB
RIDGE DR	CUL DE SAC	MATCHETT	0.60	BB
TRAIL CONNECTION	26 RD S OF G 1/2 RD	SW OF ASH DR / CHESTNUT DR	0.19	T



LEGEND

	Unincorporated Mesa County	Street Classification	Existing Bicycle Facilities	Bicycle Facility Recommendation
	Urban Development Boundary	Local	Signed Bike Route	Bike Boulevard
	Parks	Collector	Striped Bike Lane	Bike Lane
	Railroads	Arterial	Buffered Bike Lane	Buffered Bike Lane
	Schools	Highway	Trail	Trail, Cycletrack, or Protected Bike Lane
				Trail

North West

High Priority

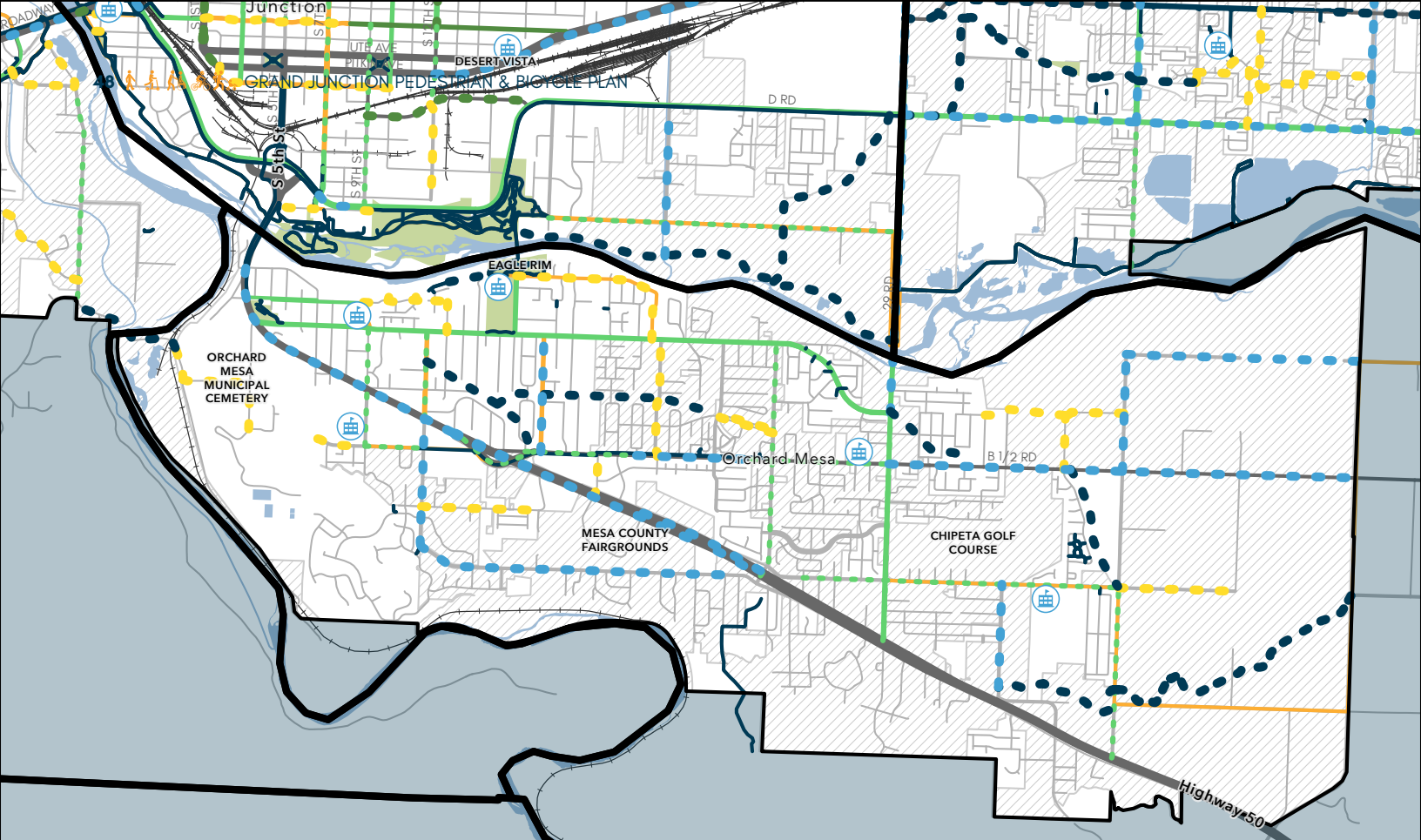
Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
26 RD	KELLY DR	PATTERSON RD	1.78	BL
INDUSTRIAL BLVD	24 1/2 RD	25 RD	0.50	BB
PATTERSON RD	24 1/2 RD	26 RD	1.50	T or CT or PBL
W PINYON AVE	25 RD	25 1/2 RD	0.50	BL

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
23 RD	I RD	G RD	2.00	T or CT or PBL
24 1/2 RD	S OF KELLEY DR	S OF AJAY AVE	1.19	T or CT or PBL
25 RD	BLICHMANN AVE	PATTERSON RD	0.34	T or CT or PBL
FUTURE ATC TRAIL	REDLANDS PKWY S OF I70 BL	I70 BL E / HWY 6 AND 50	0.47	T
FUTURE ATC TRAIL	26 RD / F RD	26 1/2 RD / GLEN CT	0.56	T
FUTURE ATC TRAIL	24 RD S OF G RD	G RD E OF 25 1/2 RD	1.75	T
FUTURE ATC TRAIL	HUNTER WASH N OF HWY 6 AND 50	G RD W OF ARROWEST RD	2.80	T
FUTURE ATC TRAIL	W OF 24 1/2 RD S OF H RD	24 RD S OF I70 FRONTAGE ROAD	0.55	T
HANNAH LN	24 1/2 RD S OF HANNAH LN	25 RD / BLICHMANN AVE	0.55	T

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
23 1/2 RD	G RD	E 1/2 RD	0.50	BL
24 1/2 RD	PATTERSON RD	HWY 6 AND 50	0.30	BBL
24 1/2 RD	HANNAH LN	PATTERSON RD	0.50	BL
24 RD	I70 FRONTAGE RD	F 1/2 RD	0.99	T OR CT OR PBL
24 RD/REDLANDS PKWY	PATTERSON RD	PARKWAY RAMP	0.41	T OR CT OR PBL
25 1/2 RD	G RD	MOONRIDGE DR	0.20	BL
25 RD	TROLLEY ST	INDEPENDENT AVE	0.17	BBL
25 RD	WAITE AVE	F 1/2 RD	0.14	T OR CT OR PBL
25 RD	NEW TRAIL S OF G 3/8 RD	FOUNTAIN GREENS PL	0.05	T OR CT OR PBL
F 1/2 RD	23 3/4 RD	24 1/2 RD	1.00	BL
F 1/2 RD	25 1/2 RD	TRAILS END CT	0.22	BL
F 1/2 RD	TRAILS END CT	26 RD	0.33	BB
FOUNTAIN GREENS PL	FOUNTAINHEAD BLVD	25 RD	0.06	BB
FUTURE ATC TRAIL	REDLANDS PKWY N OF I70 BL	1ST MESA MALL E OF 24 RD	0.25	T
FUTURE ATC TRAIL	25 1/2 RD N OF FOUNTAIN GREENS PL	F 1/2 RD E OF YOUNG ST	1.37	T
FUTURE ATC TRAIL	KELLEY DR / 26 RD	BEAVER LDG N OF EGRET CIR	0.40	T
G 1/2 RD	BEAVER LDG	26 RD	0.18	BL
G 1/4 RD	DEAD END	MOUNTAIN VIEW DR	0.02	BB
G RD	26 RD	N 12TH ST	1.00	BL
G RD	ARROWEST RD	25 RD	2.25	T OR CT OR PBL
G RD	25 1/2 RD	26 RD	0.46	T OR CT OR PBL
GARDEN RD	24 1/2 RD	DEAD END	0.12	BB
RAILHEAD CIR	MONUMENT VIEW TRAIL	RIVER RD	0.35	BB
RIVER RD	I70 FRONTAGE RD	PARKWAY RAMP	2.37	T OR CT OR PBL
RIVERSIDE PKWY	RIVER RD	25 RD	0.29	T OR CT OR PBL
TRAIL CONNECTION	26 RD S OF G 1/2 RD	SW OF ASH DR / CHESTNUT DR	0.19	T



LEGEND

	Unincorporated Mesa County	Street Classification	Existing Bicycle Facilities	Bicycle Facility Recommendation
	Urban Development Boundary	Local	Signed Bike Route	Bike Boulevard
	Parks	Collector	Striped Bike Lane	Bike Lane
	Railroads	Arterial	Buffered Bike Lane	Buffered Bike Lane
	Schools	Highway	Trail	Trail, Cycletrack, or Protected Bike Lane
				Trail

Orchard Mesa

High Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
27 1/2 RD	C RD	B 1/2 RD	0.50	T OR CT OR PBL
27 RD	C RD	HWY 50	0.37	BL
27 RD	HWY 50	B RD	0.54	T OR CT OR PBL
28 1/2 RD	C RD	HWY 50	1.01	BL
28 RD	C RD	B 1/2 RD	0.50	BB
29 RD	E NORTH AVE	RIVER BEND LN	2.16	T OR CT OR PBL
B 1/2 RD	GLOUCESTER AVE	W OF 28 1/2 RD	0.49	T OR CT OR PBL
B 1/4 RD	27 RD	27 1/2 RD	0.50	BB
FUTURE ATC TRAIL	27 RD N OF B 3/4 RD	B 1/2 RD E OF 27 1/2 RD	0.61	T
FUTURE ATC TRAIL	NE OF SHERMAN DR	NW OF ARLINGTON DR	0.95	T
FUTURE ATC TRAIL	N OF CHRISTOPHER WAY	N OF OM MIDDLE SCHOOL	0.17	T

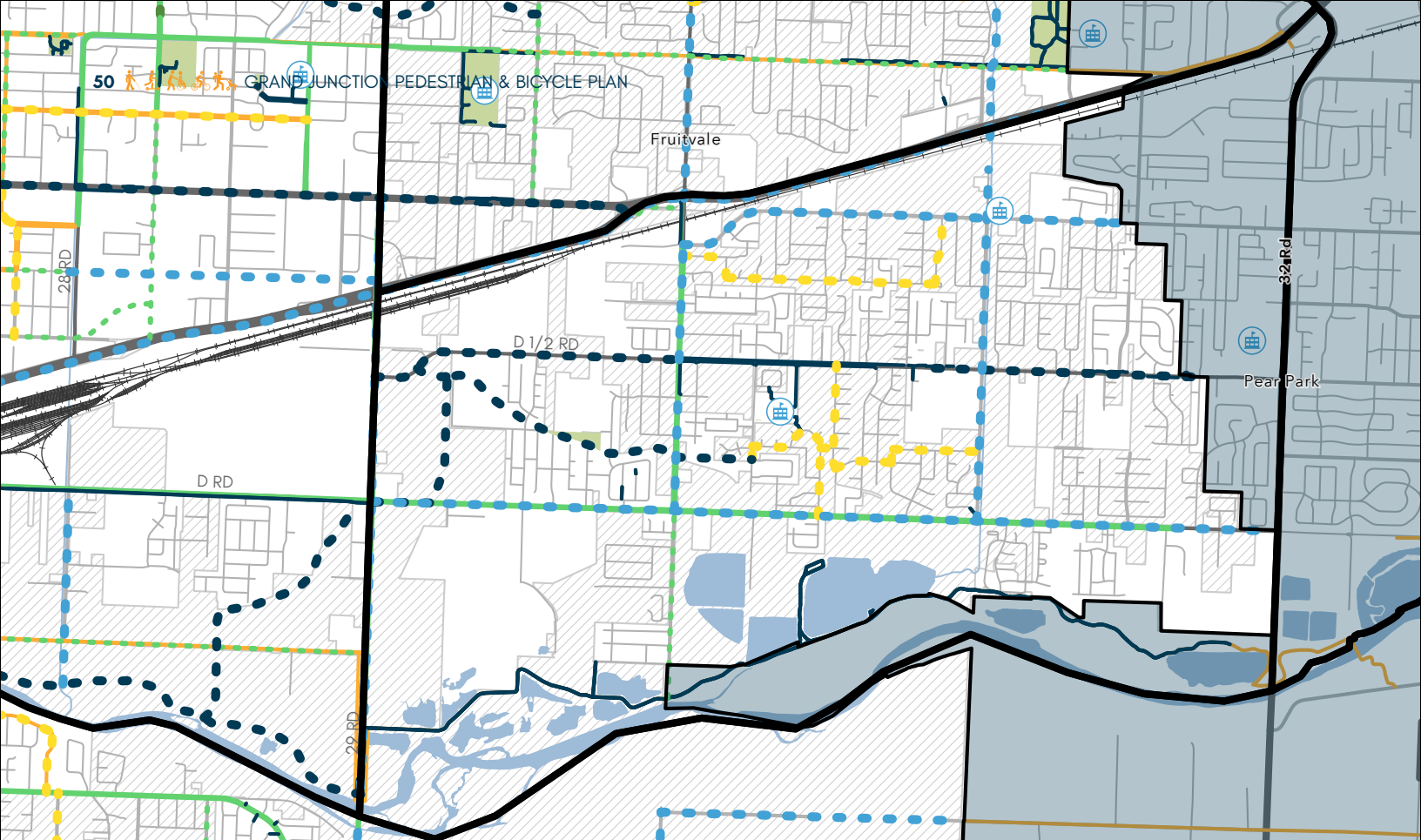
HWY 50	GRAND MESA AVE	28 1/2 RD	3.50	T or CT or PBL
HWY 50 RAMP	HWY 50	B 1/2 RD	0.35	BL
LINDEN AVE	C RD	B 1/2 RD	0.50	BL
OXFORD AVE	ARLINGTON DR	28 1/2 RD	0.49	BB
PINON ST	SANTA CLARA AVE	C RD	0.13	BB
S REDLANDS RD/26 3/8 RD	LITTLE PARK RD	26 3/8 RD	0.52	T

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
26 1/4 RD	LEGACY WAY	GETTYSBURG ST	0.21	BB
26 3/8 RD	RAILROAD	LEGACY WAY	0.14	BB
27 3/4 RD	B 1/2 RD	HWY 50	0.18	BB
29 1/2 RD	B RD	NEW TRAIL N OF A 1/2 RD	0.44	T or CT or PBL
29 RD	COLORADO RIVER	HWY 50	1.09	BL
B 1/2 RD	LINDEN AVE	27 RD	0.25	BL
B 1/2 RD	W PARKVIEW DR	GLOUCESTER AVE	0.48	BL
B 1/2 RD	LIVING HOPE CHURCH	29 RD	0.59	BL
B 1/2 RD	DEAD END	LINDEN AVE	0.21	BB
B 1/2 RD	29 RD	W OF 31 RD	1.98	T or CT or PBL
B RD	TENNESSEE ST	30 RD	1.35	BL
B RD	27 RD	GLORY VIEW DR	1.39	T or CT or PBL
CHEYENNE DR	27 3/8 RD	HOPI DR	0.62	BB
FUTURE ATC TRAIL	29 RD / UNWEEP AVE	B 1/2 RD W OF DURANT ST	0.42	T
LEGACY WAY	26 3/8 RD	26 1/4 RD	0.29	BB
OLSON AVE	DEAD END	SANTA CLARA AVE	0.01	BB
RIVER CIR	DEAD END	SANTA CLARA AVE	0.01	BB
SANTA CLARA AVE	ROUBIDEAU ST	DEAD END	0.25	BB
SANTA CLARA AVE	CHRISTOPHER CT	PINON ST	0.06	BB

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
29 3/4 RD	B 3/4 RD	B 1/2 RD	0.23	BB
30 RD	B RD	HWY 50	0.73	BL
30 RD	C RD	B 1/2 RD	0.50	T or CT or PBL
ATHENA ST	DURANT ST	B 3/4 RD	0.37	BB
B 3/4 RD	29 3/4 RD	30 RD	0.24	BB
B RD	30 RD	30 1/2 RD	0.50	BB
C RD	30 RD	W OF 31 RD	0.99	T or CT or PBL
FUTURE ATC TRAIL	29 1/2 RD N OF HWY 50	CITY BOUNDARY / B RD	1.95	T
FUTURE ATC TRAIL	B 1/2 RD E OF FRONTIER ST	B RD / 30 RD	0.55	T
HOPI DR	CHEYENNE DR	C RD	0.20	BB



LEGEND

- Unincorporated Mesa County
- Urban Development Boundary
- Parks
- Railroads
- Schools

Street Classification

- Local
- Collector
- Arterial
- Highway

Existing Bicycle Facilities

- Signed Bike Route
- Striped Bike Lane
- Buffered Bike Lane
- Trail

Bicycle Facility Recommendation

- Bike Boulevard
- Bike Lane
- Buffered Bike Lane
- Trail, Cycletrack, or Protected Bike Lane
- Trail

Pear Park

High Priority

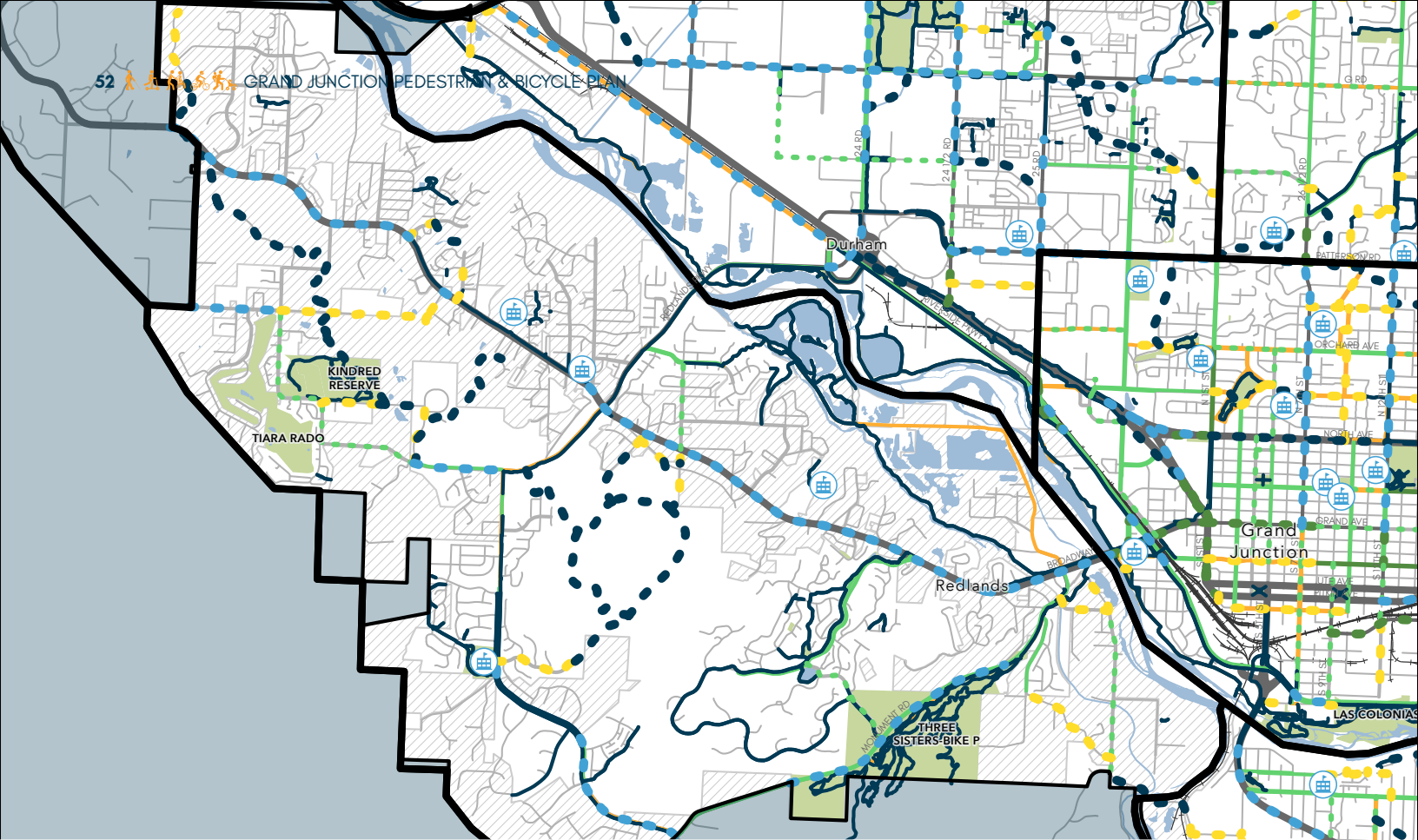
Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
29 RD	E NORTH AVE	RIVER BEND LN	2.16	T or CT or PBL
30 RD	F RD	I70 BL	0.97	T or CT or PBL
FUTURE ATC TRAIL	F RD E OF 31 RD	RAIL ROAD S OF I70 FRONTAGE RD	0.75	T or CT or PBL
I70B	DESERT VISTA / PITKIN AVE	WARRIOR WAY	4.10	T or CT or PBL

Medium Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
30 1/2 RD	D 1/2 RD	SANDPIPER AVE	0.34	BB
30 1/4 RD	COLORADO AVE	RED PEAR DR	0.04	BB
30 RD	E RD	D 1/2 RD	0.38	T or CT or PBL
31 RD	S OF I70 BL E	D RD	1.16	T or CT or PBL
C 1/2 RD	27 1/2 RD	29 RD	1.50	BL
CHATFIELD DR	CITY BOUNDARY	D 1/2 RD	0.01	T
COLORADO AVE	30 1/4 RD	WEDGEWOOD AVE	0.13	BB
COLORADO AVE	MEADOWVALE WAY	31 RD	0.28	BB
COLOROW DR	HILL CT	GUNNISON AVE	0.07	BB
D 1/2 RD	29 RD	30 RD	1.03	T
D 1/2 RD	W OF BISMARCK ST	FOX MEADOWS ST	0.87	T
D RD	29 RD	W OF 32 RD	2.98	T or CT or PBL
E RD	30 RD	W OF 31 1/2 RD	1.47	T or CT or PBL
FUTURE ATC TRAIL	LAS COLONIAS TRAIL	29 RD N OF COLORADO RIVER	1.78	T
FUTURE ATC TRAIL	D 1/2 RD S OF D 1/2 CT	30 1/4 RD / RED PEAR DR	1.19	T
GUNNISON AVE	COLOROW DR	OL SUN DR	0.69	BB
HILL CT	30 RD	COLOROW DR	0.14	BB
NORTH AVE	I70 BL W	JERRY'S OUTDOOR SPORTS	0.19	BL
SANDPIPER AVE	30 1/2 RD	MEADOWVALE WAY	0.19	BB

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
30 RD	D RD	COLORADO RIVER	0.62	BL
30 RD	ROOD AVE	D RD	0.38	T or CT or PBL
COLORADO AVE	WEDGEWOOD AVE	30 1/2 RD	0.04	BB
FUTURE ATC TRAIL	S OF D 1/2 RD AND W OF 29 1/4 RD	29 RD / D RD	0.61	T
MEADOWVALE WAY	COLORADO AVE	SANDPIPER AVE	0.05	BB
OL SUN DR	E RD	GUNNISON AVE	0.23	BB
WEDGEWOOD AVE	COLORADO AVE	D RD	0.39	BB



LEGEND
 Unincorporated Mesa County
 Urban Development Boundary
 Parks
 Railroads
 Schools

Street Classification
 Local
 Collector
 Arterial
 Highway

Existing Bicycle Facilities
 Signed Bike Route
 Striped Bike Lane
 Buffered Bike Lane
 Trail

Bicycle Facility Recommendation
 Bike Boulevard
 Bike Lane
 Buffered Bike Lane
 Trail, Cycletrack, or Protected Bike Lane
 Trail

Redlands

High Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
BROADWAY	22 1/2 RD	RIVERSIDE TRAIL	3.39	T or CT or PBL
S REDLANDS RD/26 3/8 RD	LITTLE PARK RD	26 3/8 RD	0.52	T

Low Priority

Corridor Name	Extent (From)	Extent (To)	Length (Miles)	Recommended Facility Type
23 RD	S RIM DR	BROADWAY	0.49	BL
23 RD	BROADWAY	DEAD END	0.22	BB
BROADWAY	W GREENWOOD DR	GREENWOOD DR	0.11	T or CT or PBL
BROADWAY	W OF CANYON CREEK DR	COLONIAL DR	1.57	T or CT or PBL
CANYON CREEK DR	DEAD END	BASELINE DR	0.30	BB
CANYON RIM DR	S CAMP RD	DEAD END	0.49	BB
COLONIAL DR	BROADWAY	CARLSBAD DR	0.18	BB
D RD	S BROADWAY	ROSEVALE RD	0.30	BB
DESERT HILLS RD	S BROADWAY	DEAD END	0.33	BB
DESERT HILLS RD	DEAD END	ESCONDIDO CIR	0.26	T
E 1/2 RD	20 1/2 RD	W GREENWOD CT	0.82	BB
E MAYFIELD DR	BROADWAY WB	BROADWAY EB	0.04	BL
EASTER HILL DR	N EASTER HILL DR	S BROADWAY	0.05	BB
ESCONDIDO CIR	DESERT HILLS RD	S BROADWAY	0.34	BB
FUTURE ATC TRAIL	MOCKINGBIRD LN S OF BROADWAY	ESCONDIDO CIR / S BROADWAY	0.95	T
FUTURE ATC TRAIL	2292 S BROADWAY TO S OF S BROADWAY	23 RD N OF S BROADWAY	0.14	T
FUTURE ATC TRAIL	E OF CANYON CREEK DR NE OF BROADVIEW CT	DESERT HILLS RD E OF KINDERED RESERVE	2.83	T
FUTURE ATC TRAIL	COLONIAL DR / CARLSBAD DR	NE OF VILLAGE VIEW CT / RIO HONDO RD	0.24	T
MARIPOSA DR	W RIDGES BLVD	MONUMENT RD	0.66	BL
MONUMENT RD	CITY BOUNDARY / LUTCH LOOPS CONNECTOR TRAIL	GLADE PARK RD	1.42	T or CT or PBL
MONUMENT VILLAGE DR	DEAD END	BROADWAY	0.28	BB
REDLANDS 360 TRAIL	S OF REDLAND PKWY AND BROADWAY	CANYON RIM DR	3.61	T
RIDGES BLVD	TURNING LANE	BROADWAY	0.02	BL
ROSEVALE RD	D RD	LITTLE PARK RD	0.91	BL
ROSEVALE RD	DEAD END	D RD	0.22	BB
S BROADWAY	E HALF RD	ESCONDIDO CIR	1.50	BL
S BROADWAY	EASTER HILL DR	2292 S BROADWAY	0.18	BB
S BROADWAY	ESCONDIDO CIR	S CAMP RD	0.51	T or CT or PBL
S BROADWAY	W OF 20 RD	20 1/2 RD	0.51	T or CT or PBL
S CAMP RD	E DAKOTA DR	MONUMENT RD	0.96	T or CT or PBL
S CAMP RD	CANYON RIM RD	BUFFALO DR	0.07	T or CT or PBL
S REDLANDS RD	MIRA MONTE RD	ROSEVALE RD	0.65	BB
S RIM DR	GREENBELT CT	23 RD	0.04	BL
W GREENWOOD CT	W GREENWOOD DR	DEAD END	0.06	BB
W GREENWOOD DR	BROADWAY	W GREENWOOD CT	0.13	BB
W RIDGES BLVD	TURNING LANE	MARIPOSA DR	0.02	BL

Bicycle Crossing Guidance

When creating a low-stress bike network, it is paramount to consider where bicycle facilities cross at intersections or at midblock designated crossings. The weakest link approach acknowledges that a low-stress bicycle facility is only as comfortable as the lowest comfort component; this component is often the intersection.

The NACTO [Urban Bikeway Design Guide](#) provides guidance on best practices for intersection design treatments for urban bikeway crossings. Additionally, NACTO also published a supplemental design guide for effectively designing low-stress bikeways through intersections for all ages and abilities titled [Don't Give Up at the Intersection](#). Refer to these publications for supplemental design guidance on bicycle crossing treatments at intersections. Low-stress bicycle facility crossing applies design strategies and tools at the intersection to reduce the conflict between vehicles and people on bikes by targeting three key elements:

1. Reduce vehicle turning speeds
2. Increase the visibility of bicyclists
3. Give priority to bicyclists

The characteristics of the roadway being crossed and the bicycle facility type influence what crossing treatment is necessary. NACTO defines three main types of low-stress bicycle crossing types. These three, plus a fourth - roundabouts (which are present in Grand Junction), are applied to any permutation of bike facility type and street classification:

1. Protected intersections
2. Dedicated intersections
3. Minor street crossings
4. Roundabouts

Table 3 shows what category of crossing treatment is most appropriate for each facility type and street type.

Intersection Types

A brief summary of contextual applications and design considerations of each bicycle crossing intersection type is provided below. Refer to NACTO's *Don't Give Up at the Intersection* for guidance on the specific intersection treatments and considerations for designing protected intersections, dedicated intersections, and minor street crossings. Refer to Chapter 14 of CDOT's *Roadway Design Guide* for design guidance for carrying bikeways through roundabouts.

Protected Intersections

Protected intersections are recommended where protected bike lanes meet collectors and arterials, as shown in **Figure 20**.

According to NACTO: "Protected intersections can be applied on any street where enhanced bike comfort is desirable. They are most commonly found on streets with parking-protected bike lanes or buffered bike lanes. Protected intersections can also be implemented using interim materials. Where no parking lane exists, a setback can be created by shifting the bikeway or motor vehicle lanes away from one another as they approach the intersection."

TABLE 3: BICYCLE CROSSING INTERSECTION TYPE IDENTIFICATION

BICYCLE FACILITY TYPE	LOCAL	COLLECTOR	ARTERIAL	DRIVEWAY	ROUNDBOUT
Bike Boulevard	Minor Street Crossing	Dedicated Intersection	Dedicated Intersection	Minor Street Crossing	Merge with traffic
Bike Lane	Minor Street Crossing	Dedicated Intersection	Dedicated Intersection	Minor Street Crossing	Merge with traffic and/or provide ramps to multiuse trail
Protected Bike Lane/Cycle Track	Dedicated Intersection	Protected Intersection	Protected Intersection	Minor Street Crossing	Provide ramps to multiuse trail
Multiuse Trail	Minor Street Crossing	Dedicated Intersection	Dedicated Intersection	Minor Street Crossing	



FIGURE 20 PROTECTED INTERSECTION

SOURCE: NHRP

Dedicated Intersections

Dedicated intersections are recommended when bike boulevards, bike lanes, and trails meet collectors and arterials and where protected bike lanes meet local streets. An example of a dedicated intersection is shown in **Figure 21**.

According to NACTO: “Dedicated intersection geometry should be considered where there is not enough space to set back the bikeway from mixed traffic at the intersection. This condition often arises when a protected bike lane runs close to mixed traffic lanes without a parking or loading lane between them.”

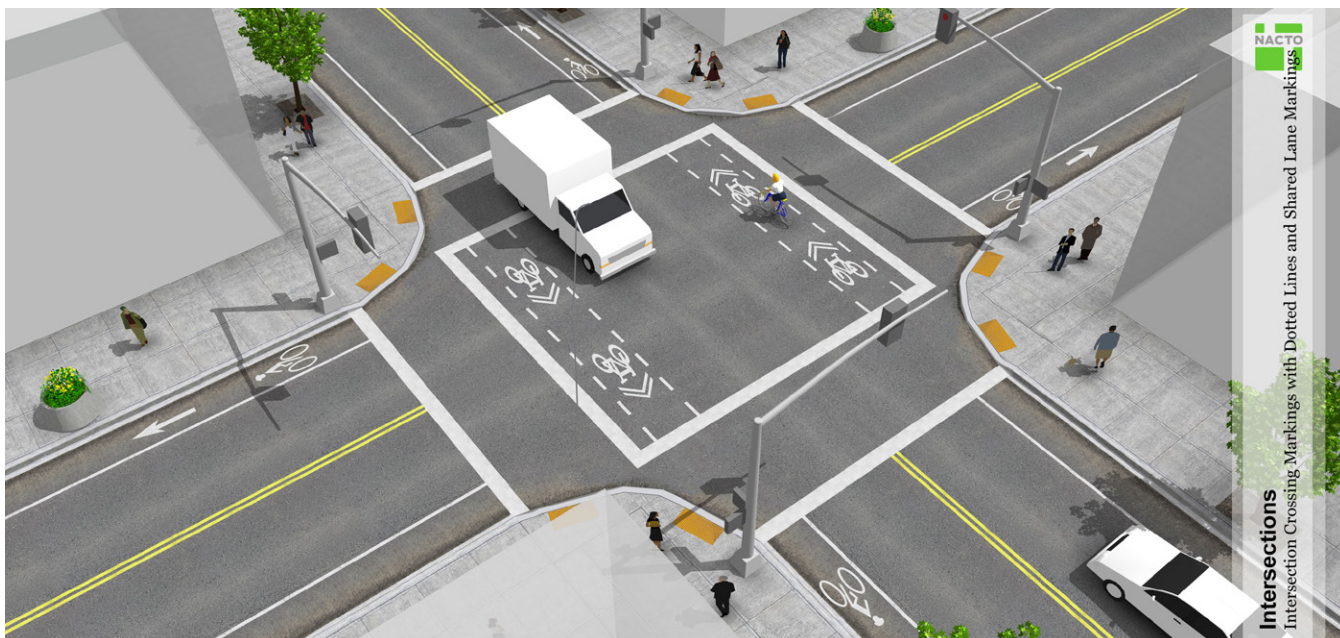


FIGURE 21 DEDICATED INTERSECTION

SOURCE: NACTO

Minor Street Crossings

Minor street crossings are recommended when bike boulevards, bike lanes, or trails cross local roads or driveways (with the exception of protected intersection treatments for some protected bike lanes). An example of a minor street crossing is shown in **Figure 22**.

According to NACTO: “Minor street crossings use compact corners and raised elements to keep turn speeds low. The raised crosswalk and bikeway indicate to drivers that they are entering a low-speed environment, and must prepare to yield to other

users. Traffic control devices, such as signals, are uncommon. Ensuring a clear approach sightline is essential to encourage drivers to yield to people in the bikeway or the crosswalk. Raised bikeway crossings should be considered where bikeways cross minor streets, neighborhood streets, driveways, and other small streets. Where the bikeway is not signalized, such as at uncontrolled or stop controlled on-minor intersections, the raised crossing provides unambiguous priority to bikes in the intersection.”

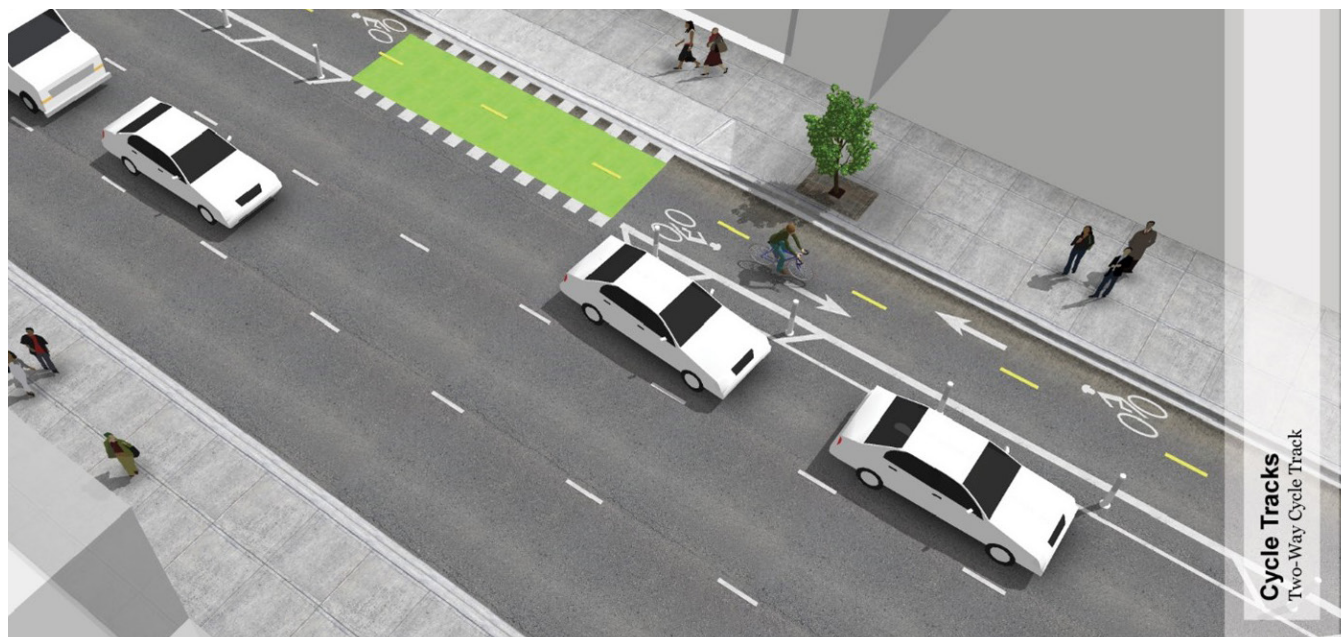


FIGURE 22 MINOR BICYCLE CROSSING

SOURCE: NACTO

Roundabouts

When bike facilities meet a single lane roundabout with a designated speed of <15 mph bike boulevards and bike lanes can merge with traffic. Additional signage should also be provided, as well as on-street painted arrows.

When a protected bike lane or trail meets a roundabout, or when any bicycle facility meets a two-lane roundabout, separated facilities for bicyclists (perhaps shared with pedestrian infrastructure and with pedestrian crossings) should be clearly marked. Separated facilities can also be included when a standard bike lane meets a one-lane roundabout. This infrastructure should have ramps and clear crossing markings for where bikes are to cross the legs of the roundabout. An example is

shown in **Figure 23** and at the existing roundabout at 12th Street and Horizon Drive in **Figure 24**.

Intersection Treatments at Bicycle Crossings

Refer to NACTO's [Urban Bikeway Design Guide](#) for treatment strategies for different bicycle crossing contexts, including specific design guidance. Several bicycle crossing treatment options, including specific recommendations most relevant to Grand Junction are provided below.

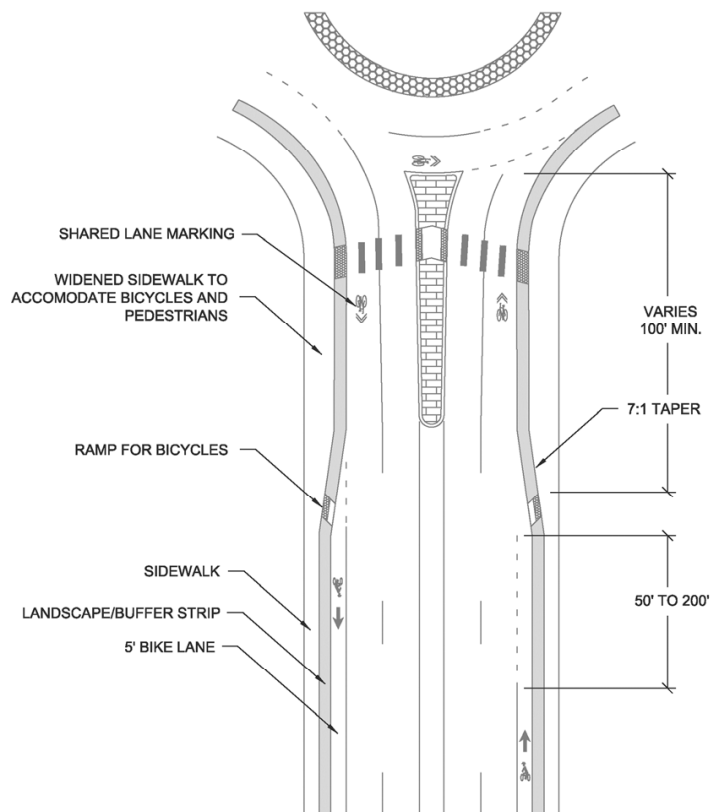


Figure 14-28 Multi-lane Roundabout

14-45

FIGURE 23 BIKE CROSSING AT ROUNDABOUT

SOURCE: CDOT



FIGURE 24 BIKE LANE RAMPS AT 12TH STREET AND HORIZON DRIVE ROUNDABOUT

Bike Boulevards Crossings

Since bike boulevards will most commonly occur on local streets, special consideration should be given to intersection treatments along these streets. NACTO provides treatment guidance for two basic types of intersections: minor street crossings and major street crossings.

- **Minor Street Crossings** - At minor street crossings on Bike Boulevards, the primary consideration is mitigating frequent stops, which can be a significant inconvenience for bicycle mobility. Frequent placement of stop signs along low-volume, low-speed streets is a common strategy to mitigate speeding and cut-through vehicle traffic, especially in residential areas where most Bike Boulevards will occur. NACTO recommends that “bicycle boulevards should have right-of-way priority and reduce or minimize delay by limiting the number of stop signs along the route.” Therefore, it is recommended to consider flipping the stop sign to be directed to the non-bike priority street, creating a two-way stop-controlled intersection, which could be paired with a neighborhood traffic circle to limit vehicle speeds. Other speed and volume control treatments should be used on the bike boulevard in lieu of frequent stop signs, such as speed humps, chicanes, bulb-outs, neighborhood traffic circles, and diverters (see **Figure 18**).
- **Major Street Crossings** – Because Bike Boulevards are typically along local streets that have two-way stop control at major cross streets, the primary consideration at these locations is providing a safe and convenient way for bicyclists to cross. Effective treatments at major crossings will be essential to implementing effective bike boulevards in Grand Junction. In fact, many of the streets designated as future bike boulevards on the Future Bicycle Network Map (see **Figure 19**) are already low-volume and low-speed and the primary treatment that will be needed along these corridors will be crossing improvements particularly at major crossing. NACTO provides guidance on potential treatments where Bike Boulevards cross major streets, including curb extensions, flashing beacons, median refuge islands, and signals (see **Figure 18**).

Through Bike Lanes

Carrying bike lanes through the intersection approach is important so bicyclists have the opportunity to correctly position themselves to avoid conflicting with turning traffic. This typically includes positioning bike lanes to the left of right turn lanes and providing a dotted transition lane for bikes of the appropriate width and distance in advance of the intersection (see **Figure 25**). Green skip paint can be used for intersections with high right turn volumes.



FIGURE 25 THROUGH BIKE LANE



FIGURE 26 COMBINED BIKE LANE/TURN LANE

SOURCE: NACTO

In addition, ending the bike lane prior to the intersection should be avoided as much as possible. This was a common barrier to bicycling identified by the community during the public engagement process. In constrained environments where there may not be enough space to accommodate a bike lane through the intersection under the existing lane configuration, the city should evaluate removing a turn lane, providing a combined bike/turn lane (see example in **Figure 26**), widening the intersection, or providing a ramp to/from a shared multiuse trail similar to a roundabout configuration (see **Figure 23**).

Signal Phasing

At signalized intersections, there are several strategies related to signal phasing to enhance bicycle safety, visibility, and prioritization. They are:

1. **Protected Left Turn Phasing** – Vehicles making a left turn on streets with a bikeway may not be looking for crossing bicyclists. Permitted-protected and protected-only signal phasing are proven safety countermeasures that can mitigate crashes with left turning vehicles.
2. **Lagging Left Turn** - A lagging left turn provides the vehicle with a left turn green arrow after the through movement, to allow bicyclists to pass through the intersection first.
3. **Bike Signal** - A bike signal provides the bicyclist with a separate phasing from vehicles which can be useful at intersections with high volumes of right turning vehicles and where the bikeway is to the right of the turn lane. Phasing may be in the form of protected or protected-permissive right turns.
4. **Leading Bike Interval (LBI)** - An LBI is where the bicyclist receives a green bike signal a few seconds in advance of vehicles, allowing the bikes to get a head start into the intersection to become visible, especially if there is not a dedicated right turn lane. This phasing requires a separate bike signal head.
5. **Signal Progression** - Setting signal progressions to bike-friendly speeds (around 12 mph) on streets prioritized for bike movements can reduce bicycle delay and improve bicycle compliance, while supporting bus transit reliability and disincentivizing vehicular speeding.

Prohibit Right-turn-on-Red – In addition to situations outlined in [Section 2B.54 of the Manual for Uniform Traffic Control Devices \(MUTCD\)](#) for when a No Turn on Red sign should be considered, prohibiting right-on-red should also be considered at intersections with streets where a multiuse trail is present in order to mitigate conflicts caused by drivers looking left for gap in traffic and failing to see a bicyclist on a multiuse trail approaching from the right.

According to NACTO: “A LBI can be provided if a shared through/turn lane is next to the bikeway. If a dedicated right or left turn lane is next to the bikeway, protected-permissive bike signal phasing should be considered. Protected signal phases should be considered if turn volumes from the adjacent lane exceed 120 to 150 vehicles per hour (vph). Protected signal phases should also be considered if conflicting left turn volumes (on two-way streets) across the bikeway exceed 60 to 90 vph, or if these turns cross multiple traffic lanes.”

Signal Detection & Actuation

At all signalized intersections in Grand Junction where an existing or planned bikeway crosses the intersection the following should be considered in the signal design so a bicyclist can reliably actuate a green signal. There are several options to achieve this:

- **Automatic Bike Detection** – The most effective bike detection use video or radar to detect the presence of a bicyclist and actuate the signal. This should be paired with pavement markings and/or signage directing bicyclists where to position to actuate the signal (see **Figure 27**).
- **Push-Button** – A user activated button (similar to a pedestrian push button) mounted on a pole adjacent to the bikeway and at a level that a bicyclist can activate without dismounting or leaving the bikeway.
- **Automatic Recall** – The simplest way to ensure bicyclists can call a green signal is to set the signal phasing to automatic recall so that a green phase is actuated every signal cycle.



FIGURE 27 BIKE DETECTION AT SIGNAL

Providing a reliable and convenient way for bicyclists to actuate a signal is important to bicycle comfort, convenience, and safety when crossing busy streets, and will deter red light running.

Recessed Stop Bar or Bike Box

Installing recessed stop bars for vehicles at intersections increases the visibility of bicyclists and can be applied across all controlled intersection treatment strategies. **Figure 28** shows a recessed vehicle stop bar. This can also take the form of a bicycle box, which is a designated area in front of the travel lane at a signalized intersection that is safe and visible for bicyclists to wait. This allows cyclists to get ahead of queueing traffic during the red signal phase which helps to mitigate conflicts with right turning vehicles. It is recommended that this be paired with prohibiting right turns on red. An example of a bike box is shown in **Figure 29**.



FIGURE 28 RECESSED STOP BAR



FIGURE 29 BIKE BOX AT INTERSECTION

Intersection Crossing Markings

NACTO recommends the implementation of crossbike across the intersection; a crossbike is similar to a crosswalk but for bikes—intersection crossing markings for bikes. This can consist of bike lane line extensions with broken white lines and/or dashed green bars. An example of a crossbike is shown in **Figure 30**.



FIGURE 30 CROSSBIKE

Bridges and Underpasses

Grand Junction is bisected by the Colorado River, Union Pacific railroad, and several major urban highways, including US-50 and I-70B, all of which were identified by the community as significant barriers for bicycle and pedestrian movement between important destinations in the city. To mitigate the impact of these barriers additional pedestrian and bicycle crossings are recommended in the updated Active Transportation Corridor map. All future bridge and underpass crossings along Active Transportation Corridors should be designed to accommodate pedestrians and bicyclists via a low-stress facility generally following the pedestrian and bicycle facility design guidance in the PBP.

Design Considerations

Given the unique nature of bridge and underpass crossings, possibly including narrower cross-sections, higher vehicle speeds, and walls or railings, special consideration should be given to pedestrian and bicycle accommodations in these contexts. Traffic volume, speed, number of travel lanes, and length of the bridge will determine the facility most appropriate

for bicycles. The AASHTO *Guide for Development of Bicycle Facilities* provides recommendations for special considerations of bicycle facilities on bridges including the height and spacing of railings, and additional clear zone spacing. AASHTO also recommends on longer bridges (a half mile or more) with a design speed of over 45 mph that bicyclist be provided a separate shared-use path with a concrete barrier. In these instance merge ramps may be needed to allow bicyclist to transition from on-street to off-street facilities on either end of the bridge similar to roundabouts. AASHTO also recommends in these cases that multiuse trails be implemented on both sides to support bicycle mobility and prevent wrong-way riders. Connections to adjacent bicycle and pedestrian corridors on either side of the bridge or underpass should also be made to ensure adequate access and connectivity to the bridge or underpass. Lastly, bridges and underpasses should also be well-lit.

Bridge and Tunnel Retrofits

Bridges and tunnels are expensive to replace and are often designed to last 50 years or more. Thus, in cases where there is an existing bridge or tunnel not slated for replacement in the near future, the city may need to retrofit the crossing to adequately accommodate pedestrian and bicycle movement. Refer to AASHTO on guidance for best practices in bridge and tunnel retrofits. Potential strategies in situations where there is not enough width to accommodate bicycle facilities may include widening the sidewalk, by narrowing or reducing travel lanes, or adding a cantilever structure.

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OBJECTIVE S1

When upgrading bike facilities on a corridor, incorporate suggested intersection treatments to reduce stress of bicycle crossings, and ensure continuity of high-comfort facilities.

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CHAPTER 5.

PEDESTRIAN NETWORK PLAN

The pedestrian network plan in this section includes the following:

- A description of the preferred design user that pedestrian facilities will be designed to support.
- A description of pedestrian facility types and their design guidelines.
- Pedestrian crossing guidance on how to improve safety for pedestrians at street crossings.

This plan sets the goal for all streets in Grand Junction to provide high comfort locations for people to walk. Given there are hundreds of miles of streets in Grand Junction, the initial focus should be on completing sidewalks and trails on the Active Transportation Corridors, many of which are arterial streets with high traffic speeds and volumes.

The prioritization strategy described in the Implementation section of this plan identifies the most critical pedestrian infrastructure using criteria sourced from the community, prioritizing the locations with both the greatest need and that will have the greatest impact to pedestrian circulation.

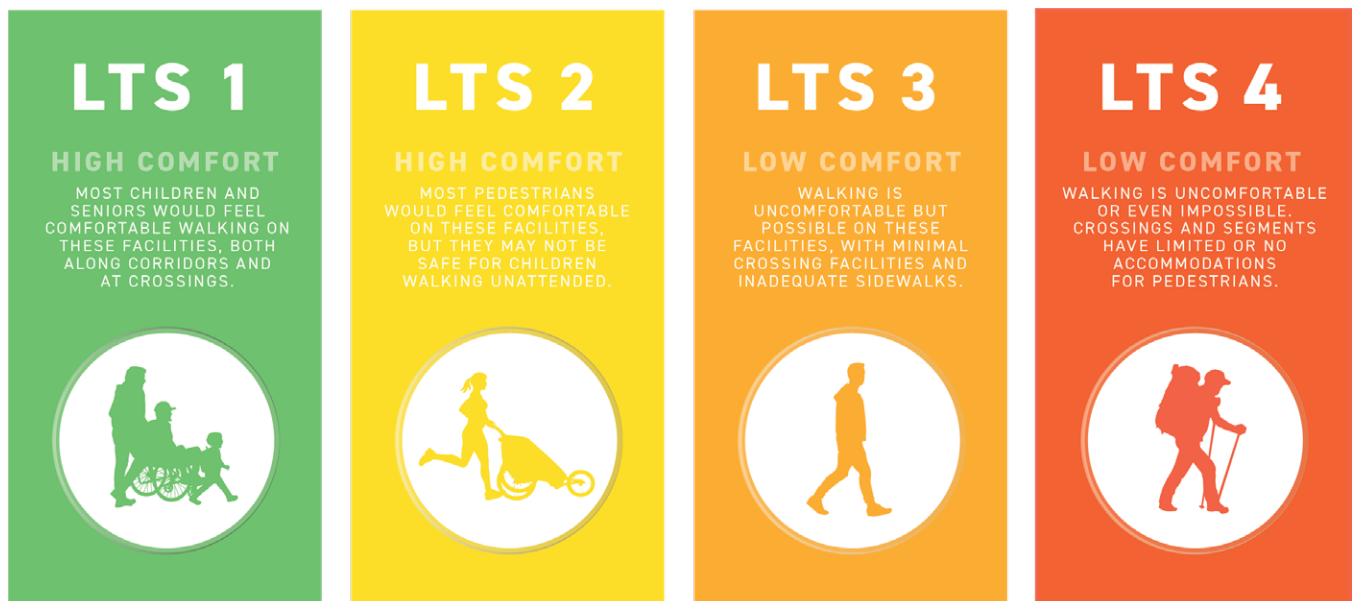


Preferred Design User

Based on input from the community, Steering Committee, and city staff, this plan sets forth a goal to have low-stress, high-comfort places to walk or roll on all streets in Grand Junction. Low-stress facilities are defined as those that score an LTS 1 or LTS 2 on the LTS 1-4 rating system as shown in **Figure 31**, meaning

they cater to all ages and abilities. Future sidewalks and trails in Grand Junction will cater to the most cautious design user, including children, older adults, and people with mobility challenges, to the most confident pedestrian. Designing sidewalks to this standard will ensure all residents, employees, and visitors of Grand Junction can feel comfortable choosing to walk or roll.

FIGURE 31: PEDESTRIAN LEVEL OF TRAFFIC STRESS



Pedestrian Facility Types

Pedestrian facility types recommended in this plan, consisting of sidewalks and crossings, are those needed to achieve an LTS 1 or 2 on streets based on the roadway speed, number of lanes, and traffic volumes. Unlike the bicycle network plan, where specific streets will have bicycle facilities (primarily on the Active Transportation Corridors), it is assumed that the majority of, if not all, streets in the city will be a part of the future pedestrian network.¹

However, this plan prioritizes where upgrades in the pedestrian network should be made first. The Prioritized Pedestrian Network map in **Figure 44** shows all sidewalks in the city prioritized in order of importance to complete or upgrade based on the prioritization criteria. This section describes design guidance for sidewalks and trails, with additional design specifications found in the updated TEDS Manual. Guidance is based on best practices from NACTO, FHWA, and from best practices established in other municipalities.

¹ Note: While certain streets are planned as part of the bike network that will have specific design treatments to provide high comfort for bicyclists, it is expected that bicyclist will also use all streets in Grand Junction.

Sidewalks

To achieve at least an LTS 2, streets with three travel lanes or fewer and speeds of 30 mph or less (generally local and collector streets) require a 6-foot sidewalk with an 8-foot buffer. Streets with four travel lanes or more and/or speeds of 35 mph or more require an 8-foot sidewalk with 12-foot buffer. These recommendations follow a “weakest link approach,” meaning that a street with two travel lanes but a posted speed limit of 35 mph will require an 8-foot sidewalk with 12-foot buffer. Notably, if the city chooses to reduce the speed and/or number of lanes on a street as part of a corridor project, the recommended width of sidewalk and buffer may be reduced. It is recommended that changes to posted speed are accompanied by geometric design changes and traffic calming interventions to be effective.

FIGURE 32: SIDEWALK ELEMENTS

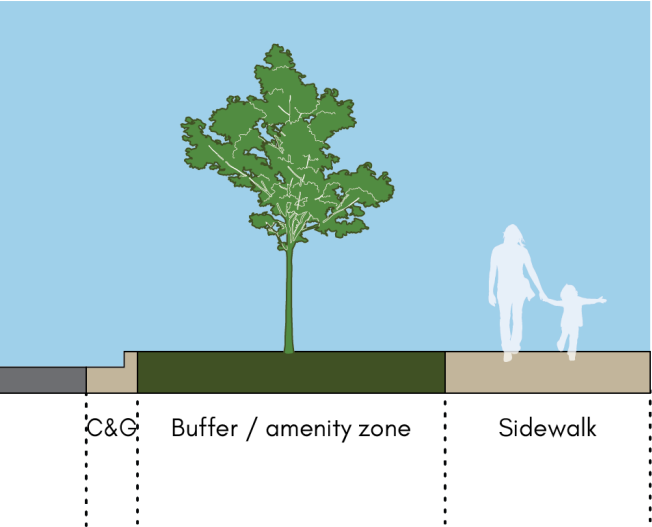


TABLE 4: SIDEWALK FACILITY RECOMMENDATIONS TO ACHIEVE LTS 2 OR BETTER GIVEN STREET CHARACTERISTICS

LANES			
		3 or fewer	4 or more
Speed	30 mph or less	6 ft sidewalk, 8 ft buffer	8 ft sidewalk, 12 ft buffer
	35 mph or more	8 ft sidewalk, 12 ft buffer	8 ft sidewalk, 12 ft buffer

In constrained environments with limited right of way behind the curb, the sidewalk should be as wide as possible, with a minimum width of 5 feet and a minimum buffer width of 2 feet. Note: bike lanes and on-street parking can count as part of the buffer width as explained in the Buffer/Amenity Zone section.

On local streets in existing residential neighborhoods where there is no sidewalk, an LTS 2 has been

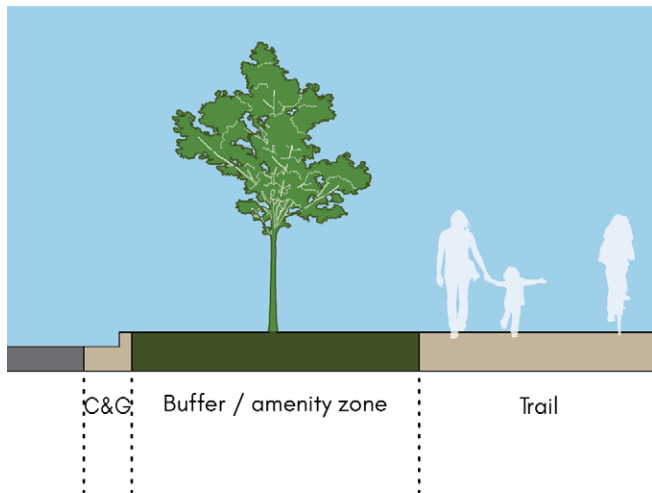
assigned when speed limits are 25 mph or less and volumes average less than 1,000 vehicles per day. These streets are the lowest priority to improve with sidewalk facilities unless they are part of a Safe Routes to School corridor. Neighborhood residents typically utilize the street surface to walk and roll with the motorized traffic. Generally, this sharing of the roadway has been found to be an acceptable level of comfort on these low-volume, low-speed streets.

Trails

To achieve at least an LTS 2, trails should be 10 feet or wider (with 12-foot as the desired width) with a 5-foot buffer on local streets, 8-foot buffer on collector streets, and 12-foot buffer on arterials. Striping on major trails can help separate bi-directional traffic for people walking/rolling and people biking where needed, especially in areas where visibility is limited due to trail curvature or topography.

In constrained environments with limited right-of-way behind the curb, trails should be as wide as possible, with a minimum width of 8 feet, and minimum buffer width of 2 feet.

FIGURE 33: TRAIL ELEMENTS



Buffer/Amenity Zone

The buffer/amenity zone is an area that separates trails and sidewalks from travel lanes. The highest-quality buffers include both horizontal and vertical separation, for additional protection for those walking, rolling, and biking. Wider buffers better accommodate shared dockless micromobility (such as scooter- and bike-share), by allowing users of bike- and scooter-share to park devices safely outside of the sidewalk, and in the amenity zone. This maintains a clear path of travel for people using wheelchairs and other mobility devices, while also reducing visual clutter.

While **Figure 32** and **Figure 33** show tree lawns in the zone, this is for illustrative purposes. This zone should provide a high-quality buffer with landscaping and street trees or a hardscaped surface with street furniture including streetlamps, benches, planters, and bike racks. Parked cars, bike lanes, or painted shoulders (such as painted edge lines) can also be included in the overall buffer width.

OBJECTIVE Q2

Install high-comfort sidewalks and trails according to the design guidance in the Pedestrian Facility Types section.

Pedestrian Crossing Guidance

There are two main types of marked roadway crossings for pedestrians: controlled crossings and uncontrolled crossings.

- A **controlled crosswalk** is a legal crossing across a roadway approach controlled by a stop sign or traffic signal.
- An **uncontrolled crosswalk** is a legal crosswalk across a roadway approach without any control, such as a stop sign or traffic signal. Note: while a pedestrian can legally cross at uncontrolled crossings, the Colorado Revised Statutes Section 42-4-803 states: (1)....*Every pedestrian crossing a roadway at any point other than within a marked crosswalk or within an unmarked crosswalk at an intersection shall yield the right-of-way to all vehicles upon the roadway.*

Crosswalks may also be marked or unmarked:

- A **marked crosswalk** is a legal crosswalk that features traffic control markings.
- An **unmarked crosswalk** is a legal crosswalk that does not feature any traffic control markings.

An example of different crosswalk types in Grand Junction is shown in **Figure 34**.

FIGURE 34 PEDESTRIAN CROSSING EXAMPLES IN GRAND JUNCTION

Controlled Crossing



Uncontrolled Crossing



The specific treatment (marked crosswalk, signage, beacon, etc.) for a specific crossing can be determined using the *Grand Junction Pedestrian Crossing Installation Guidelines* (2016), including when and where to place different types of crossings. Additional guidance on uncontrolled pedestrian crossings can be found in the FHWA *Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations*, and the CDOT *Pedestrian Crossing Installation Guide*.

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OBJECTIVE S2

When upgrading pedestrian facilities on a corridor, incorporate suggested intersection treatments to reduce stress of crossings, and ensure continuity of high-comfort facilities.

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The city should pay special attention to the universal accessibility of crossings for all ages and abilities. Crossings should be designed with ADA accessible pedestrian ramps, detectable surfaces, and other universal design features.

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OBJECTIVE E1

Design crossings with ADA accessible pedestrian ramps, detectable surfaces, and other universal design features.

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The TEDS Manual provides design standards for each of the treatments identified. Existing crossings should be evaluated regularly to help ensure the current standards are being met. In addition to these local standards, the city can reference Federal guidance.

CHAPTER 6.

PROGRAM & POLICY RECOMMENDATIONS



Programs

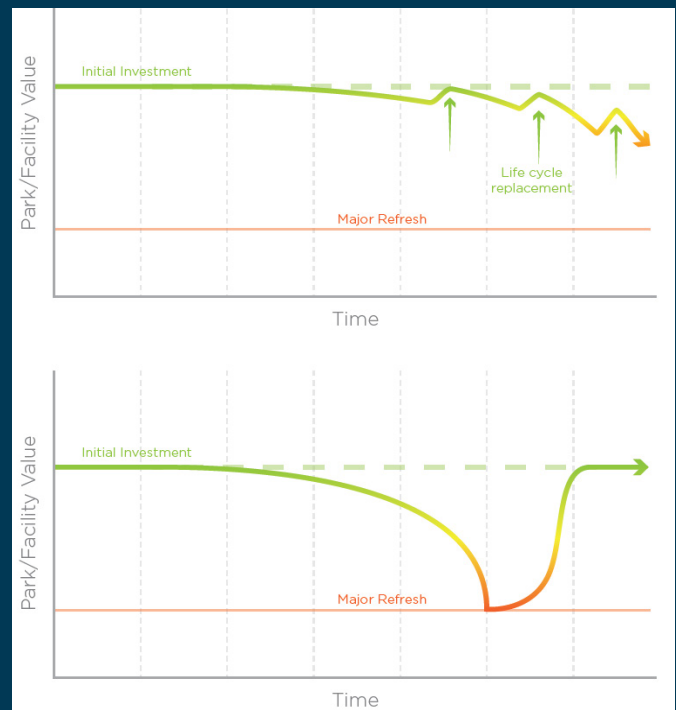
Programs will work in tandem with the build-out of the pedestrian and bicycle networks in Grand Junction to further support people walking, rolling, and biking. Programs to maintain new facilities, provide pedestrian and bicycle amenities, create Safe Routes to School, reduce commute trips, and improve education and awareness will each establish a culture friendly to walking and biking. Based on the existing conditions analysis, feedback from the community and in collaboration with the project Steering Committee, the following set of programs are recommended to support buildout and use of the future bicycle and pedestrian network.

Maintenance

As the city of Grand Junction bike, sidewalk, and trail networks expand during implementation of the PBP, a set of maintenance standards and a maintenance plan can help city staff assess and prioritize maintenance needs to keep infrastructure in a state of good repair. This will ensure the bike and pedestrian network is a reliable and comfortable transportation resource for all community members.

Planning and budgeting for maintenance needs can be overlooked during planning, design, and construction of new facilities. Funding for capital construction tends to be more readily available than funding for routine upkeep. While initial construction costs far outsize those of maintenance and improvement of existing facilities, funding for routine upkeep is more difficult to secure. Deferring routine upkeep can result in facilities degrading faster and requiring more expensive maintenance interventions later. Early, frequent maintenance can reduce overall costs over time, as seen in **Figure 35**.

FIGURE 35: EXTENDED LIFE SPAN OF FACILITIES WITH CONSISTENT REINVESTMENT VERSUS LIFE SPAN OF FACILITIES WITHOUT MAINTENANCE (SOURCE: FORT COLLINS 2021 PARKS & RECREATION MASTER PLAN)



RESPONSIBLE PARTIES

The Parks Operations Division of the Parks and Recreation Department is responsible for maintaining 21 miles of the urban trail system and over 500 acres of open space. The Street Systems Division of the Public Works Department is responsible for maintenance of all on-street bikeways, as well as street sweeping, drainage maintenance, leaf

removal, pavement maintenance, and sidewalk maintenance. As the system expands, maintenance work completed by volunteers can supplement work performed by local maintenance entities. Volunteers can assist with routine upkeep responsibilities and can reduce overall maintenance costs. Volunteers can perform a variety of tasks, including trash removal, vegetation management, and physical infrastructure maintenance, as shown in **Table 5**.

TABLE 5: COMMON MAINTENANCE TASKS FOR VOLUNTEERS

Volunteers can most likely:	Volunteers may not be able to:	To get help with this task:
Keep the trail clear of trash and debris.	Haul material to a disposal facility.	Contact your local government or waste hauler.
Clear brush and trees.	Dispose of the material.	Borrow or rent a chipper.
Plant and maintain trees, shrubs, and flowers and do most gardening and landscaping tasks.	Provide the items to be planted.	Get donated or discounted plant materials from a local nursery or home center. Establish an inventory of donated hand tools.
Operate mowers, trimmers, and chain saws.	Supply their own tools.	Establish an inventory of donated power tools.
Operate a tractor, loader, or bobcat.	Operate specialized heavy equipment like a dozer, grader, or roller.	
Make minor repairs to non-asphalt trails.	Lay asphalt or operate a paving machine.	Ask your local road crew or hire a paid contractor.
Keep drainage structures clear.	Dig a trench and install pipes or culverts.	
Perform surface cleaning of restrooms.	Remove waste from portable toilets or restrooms.	Hire a paid contractor.
Install signs, gates, bollards, and fences.	Manufacture same.	Purchase using donated funds or get donated or discounted materials from a lumber yard or home center.
Build and install picnic tables, benches, kiosks, and other wood structures.	Provide materials.	
Bridge decking and minor bridge and tunnel maintenance.	Structural inspection and maintenance of bridges and tunnels.	Hire a professional engineer and paid contractor.

RECOMMENDED MAINTENANCE ACTIVITIES

This section identifies recommended maintenance activities including trash removal, surface cleaning, vegetation maintenance, snow removal and drainage, pavement maintenance, amenity maintenance, physical infrastructure maintenance, and trailhead maintenance.

Trash Removal: Trash removal is important not only for upholding the aesthetic character of trails, but also for protecting public health and safety and respecting natural habitat, wildlife, air, water, and soil quality. Frequency of trash removal can vary based on trail use and location. For more remote or less trafficked trails, the city could reduce maintenance costs related to trash removal by placing bins at

select locations and requesting that the public hold on to trash generated along the trail. Locations at trail entry points, in parking areas, and near street crossings are more easily accessed and serviced by maintenance staff. Additionally, on trails where dogs are permitted, there should be signage and stations with disposable bags placed next to trash containers. These stations make it convenient for pet owners to pick up pet waste and can reduce the frequency of users dropping bags along the trail.

Surface Cleaning: Surface cleaning of trails is necessary for removing obstacles that could cause injury or impede universal access. Staff may blow or sweep the surface clear of leaves and other debris.

Vegetation Management: Vegetation management is another maintenance activity that is necessary to remove obstacles that could cause injury or impede universal access. Best practices for trail clearance generally state that the edges of paved trails should have 2-3 feet of horizontal clearance from vertical obstructions, and trails should have a minimum vertical clearance of 8-12 feet. Clearing includes the removal of downed or leaning trees, protruding roots, loose limbs, or large pieces of bark from the trail and buffer zone.

Snow Removal and Drainage: The goal of snow removal and drainage is to avoid weather-related blockages to trail access. In general, snow removal should occur as soon as possible after a snowfall on hard surface trails. Drainage maintenance is important for preventing damage to trails from storms and water erosion and for keeping trails open for use. Common drainage activities include clearing ditches and culverts. Ditches must be deep and wide enough to carry water volumes during heavy storms. Vegetation or trash that may block water flow must be removed from ditches, and slumping banks should be rectified. Drainage culverts should also be checked and cleared prior to major storms to ensure functionality during and after a weather event.

Pavement Maintenance: Asphalt pavement generally requires more maintenance than concrete and has fallen out of favor in many Colorado communities. Asphalt trails more frequently crack due to intruding vegetation, and a smooth trail surface is needed to better serve users of all abilities. Well-maintained concrete trails can last 25 years. However, concrete surfaces can still be damaged by water and erosion, tree roots, and frost and freeze cycles. Other trail design characteristics with an impact on maintenance should be considered when constructing new facilities. New trails should be 10-12 feet to have adequate passing width and space for users to pause to the side, but also to allow access by maintenance and emergency vehicles. Trails should also be wider at intersections with other trails, at smaller radius curves, and at underpasses to allow for safe travel by users and to facilitate maintenance activities.

Amenity Maintenance: Trailside elements such as benches, picnic tables and shelters, drinking fountains, bicycle parking, bicycle repair stations, fencing, gates, bollards, and workout equipment may experience

damage and require maintenance. Striping on major trails can help separate opposing traffic where needed, especially in areas where visibility is limited due to trail curvature. Striping and markings should be replaced where needed citywide on an annual basis. Maintenance activities include cleaning, painting, repair, and replacement. During the construction of new trails, consideration should be given to whether these amenities should be installed (contingent on whether sufficient resources for maintenance are available), and if so, consideration should also be given to material types, durability, and placement for ease of maintenance and repair.

Physical Infrastructure Maintenance: Preventative maintenance can ensure pedestrian bridges remain in a state of good repair. Wooden bridges require checking for damage or deterioration of wooden decking. General bridge maintenance includes replacing boards or screws, bridge washing, debris clearing, deck sealing, steel bearings lubrication, and painting load-carrying steel members. More intensive maintenance includes replacement of bridge elements such as joints, bearings, pedestals, bridge seat/pier cap, or columns/stems. The city may also apply products that enhance bridge grip and reduce slipperiness to improve safety for users in all weather conditions.

Trailhead Specific Maintenance: As the trail system expands, new trailheads and amenities may be installed. According to Rails-to-Trails, the most common trailhead elements are information kiosks, parking lots, tables and benches, trash receptacles, and toilets. As these facilities are planned, the city should consider material types, durability, and placement with regard to the ease of maintenance and repair.

OBJECTIVE Q3

Develop a set of maintenance standards and a maintenance plan to prioritize upkeep of the active transportation network.

ANTICIPATED COSTS AND FUNDING SOURCES

Total annual maintenance cost estimates per mile vary greatly across communities based on trail characteristics such as the types of vegetation, amenities included, and the number of annual users. Soft surface trails cost between \$1,000 and \$2,600 per mile and paved trails cost anywhere from \$2,000-\$12,000 per mile, according to Rails-to-Trails, the Ohio River Greenway, and the city of Billings. In Colorado, the city of Windsor estimates trail maintenance costs \$5,000-\$6,000 per mile annually. The city of Fort Collins estimates a cost of \$9,144 per mile annually, but states that the best practice would be to spend \$12,000. The city of Grand Junction should plan for increases in the budget of the Parks and Recreation Department and Public Works Department commensurate with additional assets and capital facilities that the Parks Operations Division and Street Systems Division must operate and maintain.

In communities nationwide, usually more funding exists for capital construction than for maintenance. According to Rails-to-Trails, trail system managers nationally report receiving funding primarily from municipal budget allocations (49%), then from local fundraising activities (39%), in-kind donations (29%), the state budget (24%), community fees or taxes (9%), and federal funding (7%).

Possible funding sources and opportunities for the city to explore include:

- Department of Local Affairs/Great Outdoors Colorado/Conservation Trust Fund (Colorado Lottery)
- Land and Water Conservation Fund
- Colorado Parks and Wildlife
- Conservation, trail advocacy groups, local organizations, non-profits
- Federal Highway Administration BUILD Grants, Recreational Trails Program Funding, Transportation Alternatives Program (TAP)
- Highway Safety Improvement Program, National Highway Performance Program, FASTER Safety Grants

- Grand Valley Metropolitan Planning Organization
- Rails to Trails
- Property taxes
- Development impact fees on new construction
- Open space sales tax
- Sales tax
- Public utility bill donations

OBJECTIVE Q4

Explore and pursue new funding sources to support maintenance of the expanded system.

Pedestrian & Bicycle Amenities

The following section outlines guidance for pedestrian and bicycle amenities for the city to incorporate alongside installation of new sidewalks, trails, and bikeways. With any corridor upgrade, the city should consider how to improve the overall streetscape to create a more pleasant environment for those walking and biking.

OBJECTIVE M1

Grand Junction's streets shall be designed as public amenities and include aesthetic elements such as street trees, landscaping, pedestrian lighting, street furniture, and wayfinding signage wherever possible.

BICYCLE STORAGE & PARKING

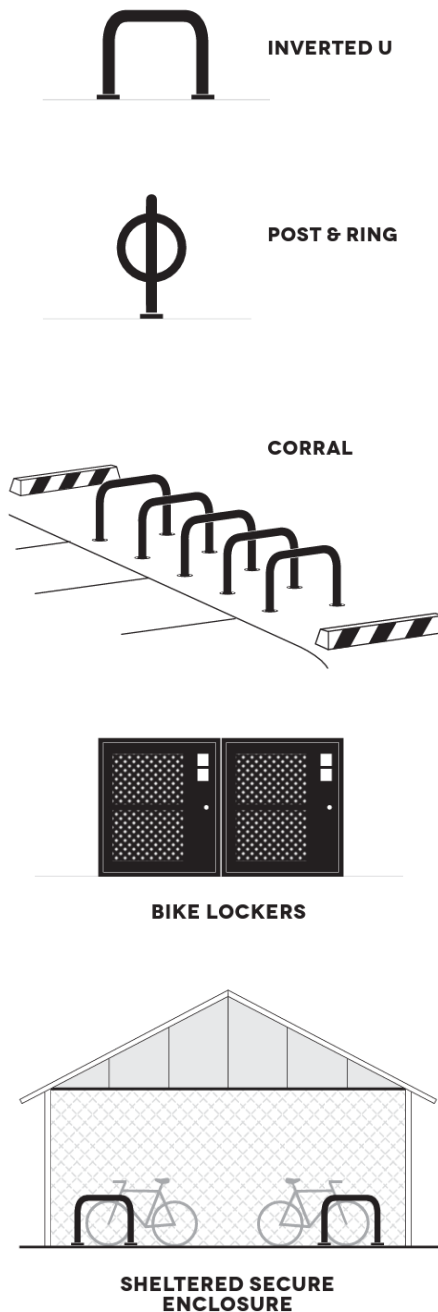
Alongside bike lanes and trails, a key component of the bicycle network is secure bicycle storage and parking. Without ample and safe bike parking, people may be more reluctant to choose to bike. Installing and maintaining end-of-trip facilities such as bike racks/parking, bike lockers/secure bike storage, showers, and personal locker encourages commuting by bicycle by making it more convenient.

FIGURE 36: BIKE PARKING IN GRAND JUNCTION



The city should refer to the [Association of Professional Bicycle Professionals \(APBP\) resource, Essentials of Bike Parking](#), which outlines design and installation guidelines for short-term and long-term bike parking (**Figure 36**). Placement and selection of these facilities should consider not just traditional bikes but cargo, e-bikes and adaptive devices. Grided bike racks, loop bike racks, and other similar bike racks that do not allow the user to easily lock the frame and wheel of the bike to a post should be avoided. These racks are typically inefficiently used, harder to secure one's bike, and less compatible with larger e-bikes and cargo bikes. The inverted U or other similar bike racks as shown in **Figure 36** are preferred.

FIGURE 37: TYPES OF APBP-COMPLIANT PARKING



OBJECTIVE M1

Prioritize installation of bike and micromobility parking and secure storage in key destinations downtown, outside of city properties, and near major transit hubs, parks, schools, employment centers, and shopping areas.

The city should prioritize installation of bike parking and secure bike storage in key destinations such as downtown, outside of city properties, and near major transit hubs, parks, schools, employment centers, and shopping areas. Secure bicycle parking incorporates a “post” or “rack” where the front tire and the frame of the bicycle can be easily locked. The city should also accommodate alternative micromobility devices such as e-bikes and scooters by constructing dedicated micromobility parking in high-demand areas. Bike parking could take the form of bike racks, micromobility corrals, bike lockers, and bike shelters.

Regardless of the type of bike parking used, it is important that it holds the number of bikes as they are designed to hold and it stores them securely. For example, on many traditional “bike racks” a bicycle can only be secured on each end of the rack where one can lock both the front wheel and the frame of the bicycle to the rack. The spots between are difficult to use with limited distance between bike slots to lock up to and not as secure due to only a single tire being secured to the rack. This results in the total number of bicycle parking spaces the rack was designed for not being met and those bikes locked up not as secure. These concerns are magnified for e-bike users due to the larger size of the bike.

OBJECTIVE M2

Encourage new and existing developments to provide secure bike parking and amenities through requirements and incentives.

The city should also encourage new and existing developments to provide secure bike parking and amenities. The Development Code should require bike parking with new construction and a requirement or create an incentive such as vehicular parking amenity credit for covered, secure, easily accessible bike rooms in multifamily developments and office buildings. Additionally, the city should explore options for incentivizing existing developments to add secure bike parking, such as a grant program. The city could work with existing businesses to provide bike parking by sharing the cost and promoting the League of American Cyclists Bicycle Friendly Business program.



FIGURE 38: BICYCLE PARKING OUTSIDE OF SCHOOLS CAN BE ESPECIALLY IMPORTANT

STREET FURNITURE

The buffer/amenity zone described alongside the Bicycle and Pedestrian Facility Types is an area that separates trails and sidewalks from travel lanes. These buffers should include both horizontal and vertical separation. Wider buffers provide distance from moving traffic, but also create a valuable space to park micromobility devices like scooters and bikes, to rest, to wait for the bus, and more.

Some buffer/amenity zones may be landscaped with native grasses, shrubs, and trees. Hardscaped buffers however, offer the opportunity to install street furniture like benches, streetlamps, bus stops, bike parking, waste receptacles, fountains, public art, and more. Each of these present amenities to people walking, of all ages and abilities. Benches cater to people waiting for the bus, as well as older adults and small children, who may need to take more breaks. Pedestrian lighting, discussed below, create a sense of safety on a street at night. Each amenity listed creates a more pleasant and comfortable environment, making it more attractive to walk.

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OBJECTIVE **M2**

When upgrading bicycle and/or pedestrian facilities on a corridor, design high-quality landscaped or hardscaped buffers with street furniture and pedestrian amenities.

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FIGURE 39: BENCHES, BIKE RACKS, WASTE RECEPTACLES, AND SIGNAGE CREATE A PLEASANT SPOT

PEDESTRIAN-SCALE LIGHTING

Lighting plays an important role in establishing a safe and inviting environment for people to walk and bike. Many are likely familiar with Main Street environments that create an appealing place to walk at all times of day, with lampposts and cheerful string lights that continue to draw visitors to shops and restaurants throughout the evening. The opposite is also true. Dark, unlit corridors, regardless of whether they are a local street or a major arterial, feel uninviting and unsafe to the average person.

For those already unsure about walking or biking, especially vulnerable users like mothers with children or older adults, knowing that they will have to return

home at night in the dark is likely to discourage choosing to walk or bike. Installing lighting of the appropriate scale and spacing can improve ambiance dramatically and increase one's sense of safety and "being seen" at night.

When updating pedestrian and bike facilities on a corridor, the city should concurrently plan for the upgrade of lighting in the project area. Lighting considerations include:

Scale and Aesthetics: The dimensions of streetlights should be scaled to the width and characteristics of the street. Smaller lampposts between 25 and 30 feet should be chosen for local and collector roads to support street character and walkability of



FIGURE 40: EXAMPLES OF PEDESTRIAN LIGHTING IN GRAND JUNCTION

neighborhoods and local commercial districts. Taller poles of 30 feet or more are appropriate for wider arterial streets and highways. Other attractive types of lighting beyond lampposts can support illumination of the public realm, such as string lights, storefront lighting, lit signs, etc.

Spacing: Spacing between streetlights should be roughly 2.5 to 3 times the height of the pole. Density along a corridor and traffic speeds also affect ideal spacing. Lighting will be less frequent in rural areas, but alongside new development, lighting frequency should increase. Light cones are roughly the same diameter as the height of the fixture, which will influence the maximum distance between streetlights to avoid dark areas.

Light Pollution and Energy Efficiency: “Dark sky friendly” lighting fixtures focus lighting directly downward onto the street to minimize flare and light pollution, while maximizing useful light. Shielded and cut-off fixtures with energy-efficient LED light bulbs are more cost-effective and reduce light pollution by directing light toward the ground. Solar powered fixtures should be installed when possible to take advantage of Grand Junction’s climate.

For more information, the city can refer to lighting design guidance in the Global Designing Cities Initiative’s *Global Street Design Guide*.

OBJECTIVE M2

When upgrading bicycle and/or pedestrian facilities on a corridor, concurrently plan for the upgrade of lighting in the project area.

WAYFINDING & SIGNAGE

Signage is a practical component of a community’s transportation system, directing users to key destinations. However, it also offers an opportunity for the city to create a sense of place and cohesive, artistic system for orienting visitors and bringing people into the downtown core and commercial districts to explore shops and restaurants. In this way, wayfinding can simultaneously act as an economic development driver and unite transportation and land use.

Signage should indicate where to find key destinations, such as shopping and dining, the town hall and post office, trailheads, the nearest bus stop, and more. Thoughtful design and placement of this signage can help visitors and residents orient themselves downtown and easily locate key destinations. **Figure 40** shows how simple this kind of signage can be, while remaining aesthetically pleasing. The pedestrian scale of this signage caters to people walking downtown and in commercial districts, but it can also be read by those on a bike or in a car. Signage at range of scales, including gateways, directional signs, street banners, pavement markings, map kiosks, and bikeway signage can assist all types of travelers with navigation.



FIGURE 41: EXAMPLE OF WAYFINDING SIGNAGE

Wayfinding systems should also include estimated walking time to each destination listed to further highlight ease of pedestrian access.

As recommended in the *Vibrant Together* downtown plan, Grand Junction should initiate a comprehensive wayfinding and signage study to create a consistent strategy for connecting people walking, biking, and driving to downtown and other key destinations.

OBJECTIVE M5

Initiate a comprehensive wayfinding and signage study to create a consistent strategy for connecting people walking, biking, and driving to downtown and other key destinations.

Bikeway and trail signage is especially important to help people walking, rolling and biking reach major destinations and landmarks. In partnership with the Urban Trails Committee, in 2020 the city installed 300 wayfinding signs to guide cyclists throughout the community. As the city continues to build out bike facilities and new trails over time, they should incorporate additional signs with the same wayfinding standards at decision points – typically at the intersection of two or more bicycle facilities and at other key locations along bicycle routes. Signage should be regularly refreshed or replaced as it becomes damaged, faded, or out of date. Over time, outdated signage should also be replaced with new, updated information. Signs may be directional and related to routing users to key destinations, mile markers to help users self-locate, or pertaining to trail etiquette.

OBJECTIVE M6

As the city continues to build out bike facilities and new trails over time, incorporate additional signs with the same wayfinding standards at decision points.

The Steering Committee was particularly concerned with signage on the Riverfront Trail and suggested two major changes in that specific area – first, striping a centerline on the trail starting on the east end of Las Colonias Park and continuing to the west through the high use area of the trail; and second, installing signage on trail etiquette along the Riverfront Trail. The centerline is recommended to highlight two-way traffic on the trail, maintain space for passing, and reduce safety conflicts. Trail etiquette signage is intended to communicate responsibilities of trail users to keep to the right, leash dogs, respect proper cycling speeds, pay attention at high traffic intersections, etc.

OBJECTIVE M7

Improve signage on the Riverfront Trail.

BIKE/SCOOTER SHARE

In 2022, the City released a Referral for Proposals to solicit bike and scooter share services from two micromobility companies and to evaluate the effectiveness of this mode of transportation on first and last-mile connections and modal shifts. The 18-month pilot study was slated to start during the month of April 2023. More information on this pilot can be found at <https://www.gjcity.org/1228/Shared-Micromobility-Pilot-Study>

Scooters and bike share have been successfully deployed in several Front Range communities including Fort Collins, Boulder, Colorado Springs, Denver, and Longmont. However, sharing services are most successful and financially sustainable where there is a higher density of land uses, since people can travel shorter distances to reach destinations, the ideal trip type for micromobility to support.

Shared micromobility has numerous benefits, including flexible travel options, better first-and-last-mile connections to transit, and replacement of vehicle trips. A key concern for the city of Grand Junction is maintaining sidewalk access and reducing visual clutter in the streetscape. Dockless shared micromobility will be explored initially, which could be expanded or converted to a city-run docked model once enough data is available to show trip patterns. –

The city will use geofencing and micromobility corrals and eventually explore a docked system to mitigate disorderly micromobility parking. To achieve this, the city will build and leverage new development to provide additional bike parking and micromobility corrals. The street standards or development overlays will be updated to include a buffer/amenity zone in new sidewalks in core areas of the city that can be used for micromobility parking safely outside of the sidewalk. This will maintain a clear path of travel for people using wheelchairs and other mobility devices, while also reducing visual clutter along the sidewalk.

OBJECTIVE M9

Close the gaps on first-and-last mile connections through the deployment of shared micromobility devices (e-scooters, e-bikes, etc.) and utilize geofencing and parking corrals to accommodate device parking in high-traffic areas.

Safe Routes to School (SRTS)

Safe Routes to School (SRTS) programs are designed to make it safer for students to walk and bike to school, and thus encourage more walking and biking. Beyond supporting safety, SRTS programs can reduce traffic congestion, provide environmental benefits, and improve health outcomes by promoting habits of walking and biking that may influence travel decisions later in life.

The city of Grand Junction dedicates a portion of the federal Community Development Block Grant (CDBG) distribution it receives each year to the city's Safe Routes to School Program. Since 2016, the city has invested more than \$700,000 in walking and biking infrastructure improvements around schools, including new sidewalks, crosswalks, traffic calming, and accessibility projects. The Mesa County Regional Transportation Planning Office (RTPO) has a separate program that conducted STRS assessments of 12 elementary schools and 8 middle schools in School District 51.

OBJECTIVE S3

Bolster the existing Safe Routes to School program by incorporating new elements of the six Es.

The city of Grand Junction can bolster their Safe Routes to School program by incorporating all elements of a successful SRTS program: the “six Es.” The six Es represent an integrated and comprehensive approach to making streets healthier and safer for everyone, regardless of their destination or travel mode. The following section describes each of the six Es and related initiatives.

Education – Providing students and the community with the skills to walk and bicycle safely, educating them about benefits of walking and bicycling, and teaching them about the broad range of transportation choices.

- Schools can launch advertising campaigns to promote travel to school by means other than driving.
- Public education can include information distributed to students about travel options, including safe walking and biking routes, transit services, and carpools.

Encouragement – Generating enthusiasm and increased walking and bicycling for students through events, activities, and programs.

- Walk Pools/Walking School Bus: Organized walking groups for children, chaperoned by an adult, that encourage students to walk together to school.
- Bike Bus: Organized bike rides to school chaperoned by an adult(s), that provide a fun morning experience and safety in numbers.
- Walk, Roll, and Bike to School Day: Event that encourages participation and educates students on the benefits and ways to walk and bike to school comfortably and safely.
- Partner with local organizations to lead/help with SRTS programs.
- Engage parents as volunteer crossing guards and walk/bike bus leaders.
- Create a yard sign program.

Engineering – Creating physical improvements to streets and neighborhoods that make walking and bicycling safer, more comfortable, and more convenient.

- High quality sidewalks and crosswalks near schools: Refer to the recommended facility types and alignments in this plan – proximity to schools and crash history were both factors used in project identification and prioritization, with projects close to schools and near crash hot spots considered higher priority.
- High visibility signage and markings in school zones.
- Designated curb space outside schools for pick-up and drop-off zones.

Traffic calming in neighborhoods around schools like curb extensions, pedestrian refuge islands, etc.

(Figure 41).

Enforcement – Deterring unsafe traffic behaviors and encouraging safe habits by people walking, bicycling and driving in school neighborhoods and along school routes.

- The city can work with schools to identify if there are particular behaviors that cause safety issues that could be alleviated through a form of enforcement of better practices, and how to generally enhance awareness of school zones where children may be present.

- Crossing guards/police enforcement during peak travel times.
- Reduce school zone speed limits.

Evaluation – Assessing which approaches are more or less successful, ensuring that programs and initiatives are supporting equitable outcomes, and identifying unintended consequences or opportunities to improve the effectiveness of each approach.

- Maintain an open forum to collect parent, teacher, staff, and student concerns.
- Conduct surveys on travel behavior to and from school and barriers to walking and biking.
- Evaluate barriers in the built environment to walking and biking near school properties.
- Conduct safety audits at pick-up and drop-off times to identify safety issues.
- Expand successful programs.

Equity – Ensuring that Safe Routes to School initiatives are benefiting all demographic groups, with particular attention to ensuring safe, healthy, and fair outcomes for low-income students, students of color, students of all genders, students with disabilities, and others.

- Ensure ADA access to school properties.
- Focus attention on schools in low-income neighborhoods/with many students of color.

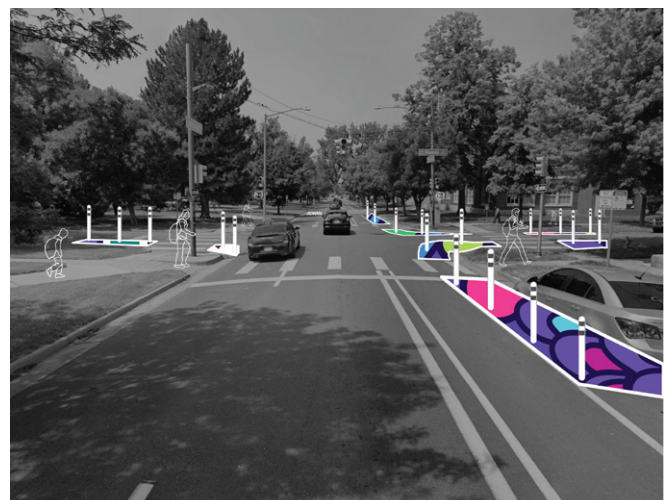
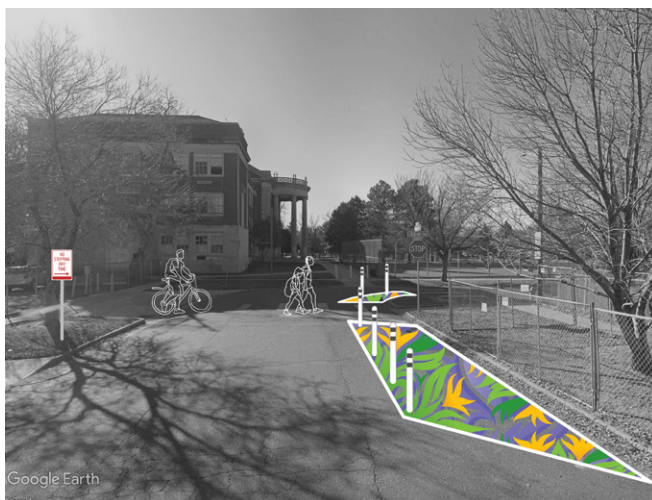


FIGURE 42: EXAMPLE OF TRAFFIC CALMING NEAR SCHOOLS

Grand Junction uses CDBG funding for its SRTS program, but has not pursued SRTS funding through CDOT's Transportation Block Grant due to "administrative challenges associated with the state program." Almost all funding for SRTS is federal but distributed at the state level. There are a range of project types eligible for SRTS funding, including campaigns, educational initiatives, sidewalk and crossing repairs, and equipment pilot programs. It is recommended that the city consider expanding its SRTS program by diversifying funding sources to include CDOT funding in addition to dedicated CDBG funding.

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OBJECTIVE Q5

Consider expanding the SRTS program by diversifying funding sources to include CDOT funding in addition to dedicated CDBG funding.

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The city is most likely to be successful for grants to implement infrastructure that improves bicycle and pedestrian safety by formalizing the SRTS program, including ongoing action items to collect data on travel behavior to and from schools. A well-organized and complete SRTS program will benefit transportation in Grand Junction by providing users with a range of transportation options and enhance the real and perceived safety of those options. When the focus of transportation planning and design is on the most vulnerable users, children walking and biking, the safety benefits reach everyone. Increased walking and biking provide environmental and health benefits to students, but also provides the transportation benefits of reduced traffic congestion and lower transportation costs for school districts and families. Safer streets, reduced congestion, and a greater share of trips occurring through walking and biking all support the vision of the plan.

More information and resources on Safe Routes to School can be found through the Safe Routes to School National Partnership: <https://www.saferoutespartnership.org/>.

Community-wide Incentive Program

Through their Bicycle Friendly Community Designation, the League of American Cyclists encourages municipalities to develop a community-wide commute trip reduction (CTR) ordinance, incentive program, and/or a Guaranteed Ride Home program to encourage and support bike commuters.

Through this program, the city would work with large employers to implement a voluntary incentive program to support walking and biking to work. Incentives can include e-bike rebates, bike-themed events such as bike rodeos and Bike to Work Day, shwag such as bike lights and helmets, and gift certificates for those who bike to City events. Guaranteed Ride Home provides commuters who did not drive to work with alternative means home in case of an emergency.

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OBJECTIVE M10

Develop a community-wide incentive program and work with large employers to implement a Guaranteed Ride Home program to encourage and support bike commuters. Incentives can include e-bike rebates, bike-themed events such as bike rodeos and Bike to Work Day, shwag such as bike lights and helmets, and gift certificates for those who bike to City events. Guaranteed Ride Home provides commuters who did not drive to work with alternative means home in case of an emergency.

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Education & Awareness

Numerous comments received during the public engagement process referred to the need for education and awareness to establish a more positive culture around walking and biking in Grand Junction. Residents noted that drivers are often unaware of cyclists in the roadway and don't expect them. Many residents also have had negative experiences with drivers, ranging from distracted and dangerous driving to verbal and physical harassment, hostility, and aggression.

OBJECTIVE S4

Work with local driving schools to expand the curriculum on laws governing interactions with people walking, rolling, and biking.

Better driver education is needed to establish respect for people walking and biking and create a more “peaceful coexistence,” as one commenter wrote. City law enforcement should work with local driving schools to expand the curriculum on laws governing interactions with people walking, rolling, and biking, such as three-foot passing distance, permission for cyclists to occupy a full travel lane, requirements to stop for people in the crosswalk, window tinting laws; as well as the danger of running red lights and turning right on red during a walk cycle.

In a similar vein, several comments highlighted negative cyclist interactions with law enforcement in Grand Junction and the need to improve relations with people walking and biking. City staff should partner with law enforcement to increase enforcement of speeding and reckless driving in areas with high pedestrian volumes and/or safety issues and consider automated enforcement. The police department may also consider expanding their bike patrol unit to improve bicyclist/officer relations, and ensure that all law enforcement officers have basic training or experience with bicycling.

OBJECTIVE S5

Partner with law enforcement to increase enforcement of speeding and reckless driving in areas with high pedestrian volumes and/or safety issues and consider automated enforcement. Consider expanding the police bike patrol unit.

OBJECTIVE M10

Establish a more positive culture around walking and biking in Grand Junction by creating Bicycle & Pedestrian Coordinator position, educating city staff, promoting the Bicycle Friendly Business program, and/or hosting an LCI seminar.

Beyond these measures, the city should pursue the following recommendations highlighted in the Bicycle Friendly Community Designation and the Walk Friendly Community Report Card:

- Educate staff on walking, walkability, and pedestrian safety.
- Encourage more local businesses, agencies, and organizations to promote cycling to their employees and customers and to seek recognition as a Bicycle Friendly Business.
- Host a League Cycling Instructor (LCI) seminar to increase the number of local LCIs.
- Expand the audience for educational programs to include high school students, college students, and new drivers.
- The city's new Bicycle & Pedestrian Coordinator can take the lead on these actions, along with many of the other programs and policies in this plan.

Policies

One of the most tangible and cost-effective ways to improve the bicycle and pedestrian environment in Grand Junction will be to implement effective policies. Policies can be used to guide the private sector in new development or redevelopment projects, as well as city departments as they perform major street construction projects and routine street maintenance. Adopting policy will ensure these projects incorporate the city’s goals for the bicycle and pedestrian environment and create a consistent experience for users.

Based on the existing conditions analysis and in collaboration with the Steering Committee, the following set of actionable policies are recommended to support buildout and use of the future bicycle and pedestrian network.

Access Management

Access management is an important strategy to mitigate curb cut frequency and conflicts between pedestrians, bicyclists, and turning vehicles. The TEDS Manual states that access should be provided on the lower street classification when a property is adjacent to multiple streets. Additionally, the North Avenue Zoning Overlay provides access management guidance to limit curb cuts specifically along North Avenue. The city should consider expanding this type of policy to all Active Transportation Corridors and corridors identified on the Active Transportation High Injury Network to mitigate conflict points between vehicles and pedestrians and bicyclists. Potential access management strategies include redirecting access to side-streets and alleys, consolidating driveways among single and adjacent property owners, adding medians, and adopting more overlay districts and/or amend existing codes and regulations to define and limit the frequency of driveways and access points.

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OBJECTIVE S6

Improve the North Avenue access management policy in alignment with national best practices and expand to all the Active Transportation Corridors.

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Vision Zero

Through their Bicycle Friendly Community designation, the League of American Bicyclists encourages municipalities to adopt a comprehensive road safety plan or a Vision Zero policy. It is increasingly common for municipalities around the country to adopt Vision Zero policies and programs. These Vision Zero policies and programs consist of communities committing to eliminating traffic crashes that result in fatalities or serious injuries by providing safety training, implementing engineering solutions that are proven to slow vehicle speeds while reducing conflicts with other roadway users, and forming multidisciplinary initiatives for implementing safety programming. Grand Junction can join Colorado’s statewide program – Moving Towards Zero Deaths – as a first step in solidifying a citywide commitment to supporting multimodal travel through ensuring all trips in the community are as safe as possible.

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OBJECTIVE S7

Join the statewide program – Moving Towards Zero Deaths – as a first step in solidifying a citywide commitment to supporting multimodal travel through ensuring all trips in the community are as safe as possible.

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Construction Zones

The city of Grand Junction should consider updating their construction zones policy that requires developers and construction companies to reroute sidewalks and bicycle facilities that are impacted by construction, similar to the way that they must currently continue to facilitate roadway access for people driving. This could mean accommodating people walking and biking with a temporary covered walkway and bikeway adjacent to the construction zone, or at minimum signing alternate detour routes on either end of the construction zone. The city could consider enforcing stricter requirements along the Active Transportation Corridors.

For example, in Denver, developers must obtain a street occupancy permit and submit a plan for accommodating people driving and walking. City staff reviews engineered drawings, traffic control plan(s), and street occupancy requests. Their [Pedestrian Walkway Entrance Requirements](#) stipulate that construction sites must provide covered walkways and less often, fenced pedestrian walkways to accommodate people walking and protect them from construction activity. The requirements include details on walkway dimensions and design features.

OBJECTIVE C2

Consider adopting a construction zones policy that requires developers/construction companies to provide sidewalks and bicycle facilities during construction.

Developer Requirements

IMPLEMENTING OR FUNDING BICYCLE FACILITIES

Through application of the street standards with new development, Grand Junction will continue to enforce the current policy where planned Active Transportation Corridors that run through a site or along the edge of a site be constructed by the developer (as identified in **Figure 44** and **Figure 46**). For example, if there is a missing or deficient sidewalk or planned trail adjacent to the development, the developer is responsible for implementing or upgrading the sidewalk or trail according to the widths and standards identified in this Plan. It is important that the city work with the developer and re-prioritize proposed projects to ensure that bicycle and pedestrian facilities are connected and



FIGURE 43: EXAMPLE OF COVERED WALKWAY AT CONSTRUCTION SITE

not inconsistently adjacent only to new developments. Additionally, commercial and multifamily residential developments should also be required to provide bike parking. The city could consider providing incentives or requiring larger developments to provide secured bike parking.

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OBJECTIVE Q6

Continue to enforce the current policy where planned Active Transportation Corridors that run through a site or along the edge of a site be constructed by the developer.

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BUILDING A CONNECTED NETWORK

Public input and an analysis of the existing transportation network highlighted the lack of connectivity between many neighborhoods in Grand Junction due to the curvilinear street network, especially for people walking or bicycling. Opportunities for new trail connections between neighborhoods should be considered. Creating a trail at the end of a cul-du-sac or between two unconnected streets can greatly decrease the trip lengths for people walking and bicycling, as conveyed in **Figure 42**. This can make taking trips by walking or bicycling easier and more feasible. In established neighborhoods, these connections can be created by finding existing easements or right-of-way or by acquiring new right-of-way or easements if none currently exists. For redevelopment projects, it is recommended that all new developments be required to provide pedestrian and bicycle connections or preserve right-of-way or easements for future connections where there is a lack of connectivity in the roadway network (e.g., cul-de-sac). For new developments, the city should develop an ordinance mandating a minimum level of street connectivity (defined by a “connectivity index”, which is the ratio of roadway links to intersections) or a maximum block length. A connectivity index or maximum block length can help reduce the number of cul-de-sacs and guide new development to a more walk and bike-friendly street network.

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OBJECTIVE C3

Require new developments to provide or set aside space for pedestrian and bicycle connections within the local street network of new developments and to adjacent streets in situations where there is a lack of connectivity in the roadway network.

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OBJECTIVE C4

Develop an ordinance mandating a minimum level of street connectivity. A more densely connected or gridded network makes for a more walkable and bikeable area by increasing route options and reducing out of direction travel. Connectivity can be defined by a “connectivity index” which is-- the ratio of roadway links (or block) to intersections. An ordinance on maximum block length can also increase connectivity. A connectivity index or maximum block length can help reduce the number of cul-de-sacs and guide new development to a more walk and bike-friendly street network.

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APPLYING TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) measures are strategies typically designed to facilitate the use of alternate transportation modes to decrease demand on the roadway system by single occupant vehicles. Grand Junction should update its Transportation Impact Study guidelines (Chapter 29.08.200 of the Municipal Code) to encourage TDM measures that major developments should provide specifically to support walking and biking. These could include bike racks, showers, car share, or support for bike commuters. This ordinance can give more weight to certain TDM measures over others.

OBJECTIVE M12

Update the Transportation Impact Study guidelines (Chapter 29.08.200 of the Municipal Code) to encourage Transportation Demand Management (TDM) measures that major developments should provide specifically to support walking and biking. These could include bike racks, showers, car share, or support for bike commuters.

PARKING POLICY

Encouraging developments to right-size off-street parking increases the walkability of an area by increasing density, activating the pedestrian experience, prioritizing pedestrian infrastructure, and reallocating space for people instead of vehicles. The city's Municipal Code (21.06.050) currently identified parking minimums for different land uses. These standards should be revised to serve as parking maximums for development. Parking requirements can also be reduced to better align parking with the community's goals. Other parking ordinances that promote walkability include:

- **Fee-in-lieu**-Fee-in-lieu allows landowners and developers to pay a fee into a municipal fund in lieu of providing on-site parking spaces required per the zoning code. This policy is especially effective for small parcels where redevelopment may be less viable due to parking requirements. This fee can finance public parking spaces or/and fund other transportation demand management and multimodal investments that will help to reduce single occupancy vehicle use.
- **Paid and time restricted parking**-Paid and time restricted parking is a management approach to shift behaviors and encourages more walking and biking.

OBJECTIVE M12

Revise the parking minimum standards for different land uses in the city's Municipal Code (21.06.050) to serve as parking maximums for development and/or reduce parking requirements to better align parking with the community's goals.

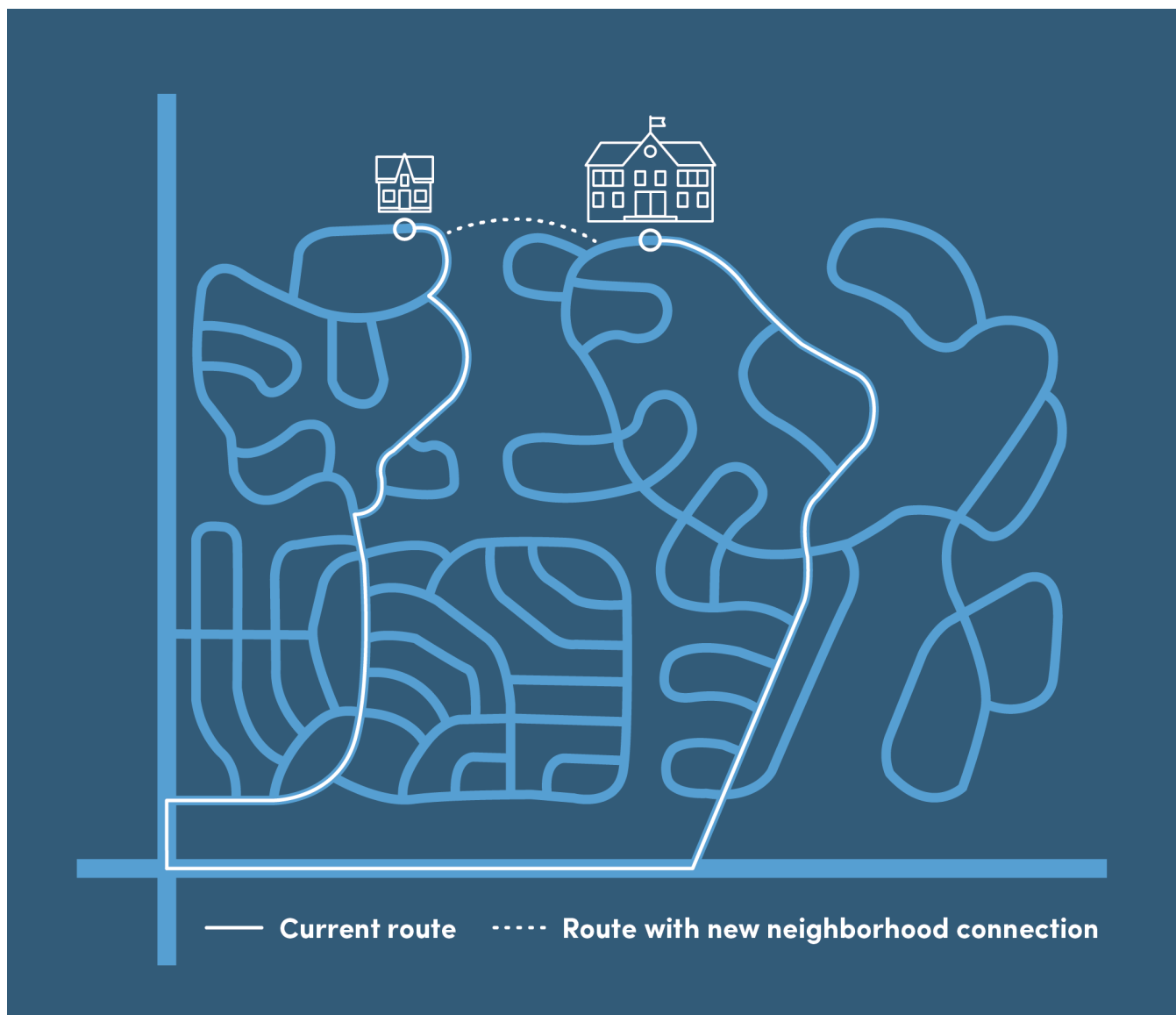


FIGURE 44: CONCEPTUAL DISPLAY OF INCREASE IN CONNECTIVITY WITH BICYCLE/PEDESTRIAN CUT-THRU

CHAPTER 7.

IMPLEMENTATION & PRIORITIZATION

This section will guide the city's buildout of the future pedestrian and bicycle network through the following five elements:

1. Implement the City's Complete Streets Policy to improvements that are planned, designed, constructed, operated, and maintained to support safe, efficient and convenient mobility to all road users.
2. Performance measures to allow the community to track the plan's progress toward achieving the vision and goals set out in this plan.
3. Project prioritization to define the highest priority bicycle and pedestrian projects.
4. Incorporating implementation into routine city procedures for data maintenance and implementation of projects.
5. Federal, state, regional, and local funding opportunities.



PERFORMANCE MEASURES

This section outlines specific performance measures to track progress over time toward and provide a quantitative way to ensure that the city moves towards its defined goals.

Tracking performance measures will provide accountability and transparency to the community and provide valuable information to the city as to whether the implementation strategy should be adjusted over time. It is recommended that city staff collect data annually and publish findings through a report, dashboard, and/or via the city website. The performance measures are organized by each goal.

Equitable

Design and operate the communities' streets and right-of-way to reasonably enable convenient access and travel for people walking and biking of all ages, abilities, and income levels and prioritize improvements that benefit vulnerable users and underserved areas.

- **Metric:** Miles of bike lanes and sidewalks installed or upgraded in low-income areas (those below the median household income in Grand Junction).
- **Metric:** Number of crossings implemented or upgraded to achieve ADA compliance.

Safe

Improve perceived and real safety by reducing the level of traffic stress (LTS) and reducing bicycle and pedestrian involved crashes. Invest and implement countermeasures at and along segments of the Active Transportation High Injury Network where there are known safety challenges.

- **Metric:** Number of miles of Active Transportation Corridors that score an LTS 1 or 2.
- **Metric:** Total bicycle and pedestrian crashes.

Connected

Provide convenient access to Community Attractions and reduce the need for out of direction travel. Increase the number of direct and low-stress connections to key destinations within the city.

- **Metric:** Number of key destinations (schools, childcare facilities, healthcare facilities, grocery stores, shopping centers, parks & recreation centers, libraries & public buildings, trailheads, and bus stops) within a quarter mile of a low-stress bike facility.
- **Metric:** Miles of missing sidewalks within a half mile of key destinations (schools, childcare facilities, healthcare facilities, grocery stores, shopping centers, parks & recreation centers, libraries & public buildings, trailheads, and bus stops).

Multimodal Community

Implement infrastructure and programs that make walking and biking accessible to people of all ages and abilities throughout the city, with a focus in areas of highest need, such as serving low-income areas.

- **Metric:** Miles of bike lanes and sidewalks installed or upgraded in low-income areas (those below the median household income in Grand Junction).
 - **Metric:** Number of crossings implemented or upgraded to achieve ADA compliance.
-

Quality

Invest in high-quality facilities that minimize the level of traffic stress experienced by travelers using the corridor and are well-maintained.

- **Metric:** Amount of funding dedicated annually for active transportation improvements that supports facility maintenance and the installation of new capital projects each year.

Project Prioritization

Prioritization Factors

The prioritization factors in **Table 6** were developed based on input from the public, Steering Committee, and city staff reflecting the community's priorities. These inputs were used to prioritize proposed bicycle and sidewalk projects into three tiers: low, medium, and high priority. For more information on the project prioritization methodology, refer to **Appendix B**.

TABLE 6: PRIORITIZATION FACTORS AND RELATED GOALS

Factor	Equitable	Safe	Connected	Multimodal Community	Quality
Located in low-income neighborhoods	✓				
Provides access for low-income residents	✓				
Provides access across barriers	✓		✓		
Access to bus stops	✓		✓	✓	
Frequent & severe crash locations		✓			
Has low lighting		✓			
Active Transportation Corridors			✓	✓	✓
Access to parks & recreation centers			✓		
Access to libraries & public buildings			✓		
Access to social services	✓		✓		
Access to schools			✓		
Access to childcare facilities			✓		
Access to healthcare facilities			✓		
Access to grocery stores & shopping centers			✓		
Access to trailheads			✓		

Prioritized Pedestrian Corridors

A pedestrian prioritization analysis was conducted for all roadways, regardless of whether sidewalks already exist, based on the criteria in **Table 6** and according to the methodology in **Appendix B**.

This prioritization resulted in two maps – first, of the highest priority missing sidewalks to complete (**Figure 44**), and second, of the highest priority existing sidewalks to upgrade or rehabilitate to meet ADA requirements and standards defined in this plan (**Figure 45**).

FIGURE 45: ORDER IN WHICH TO PRIORITIZE SIDEWALK PROJECTS

	High Priority	Medium Priority	Low Priority
Fill gaps in pedestrian network	1	2	3
Sidewalk, trail, or crossing rehabilitation	4	5	6

As shown in **Figure 43**, the City should first complete missing sidewalks shown in **Figure 44**, then perform priority sidewalk retrofits shown in **Figure 45** as needed. It should be noted that due to data availability, **Figure 45** shows all existing sidewalks, irrespective of sidewalk quality and buffer width. Following completion of sidewalk gaps, the city will need to determine which existing sidewalks are deficient. Within each of the six categories in **Figure 43**, the city should review and prioritize specific locations for gap completion or rehabilitation annually and on a case-by-case basis. It is also acknowledged that streets with higher speeds and volumes are in greater need of sidewalks to separate pedestrians from traffic. Thus, for each priority tier (high, medium, low), the city should additionally prioritize projects based on street classification starting with arterial streets, followed by collector streets, followed by local streets before moving on to streets in the next priority tier. Using this strategy, the city would first complete the sidewalk network on all arterial streets with missing sidewalks that are shown as high

priority in **Figure 44** followed by all collector streets with missing sidewalks that are high priority, and so on. In addition to the designated tier, decision makers should also consider the following factors that may shift when a sidewalk is completed, regardless of its tier:

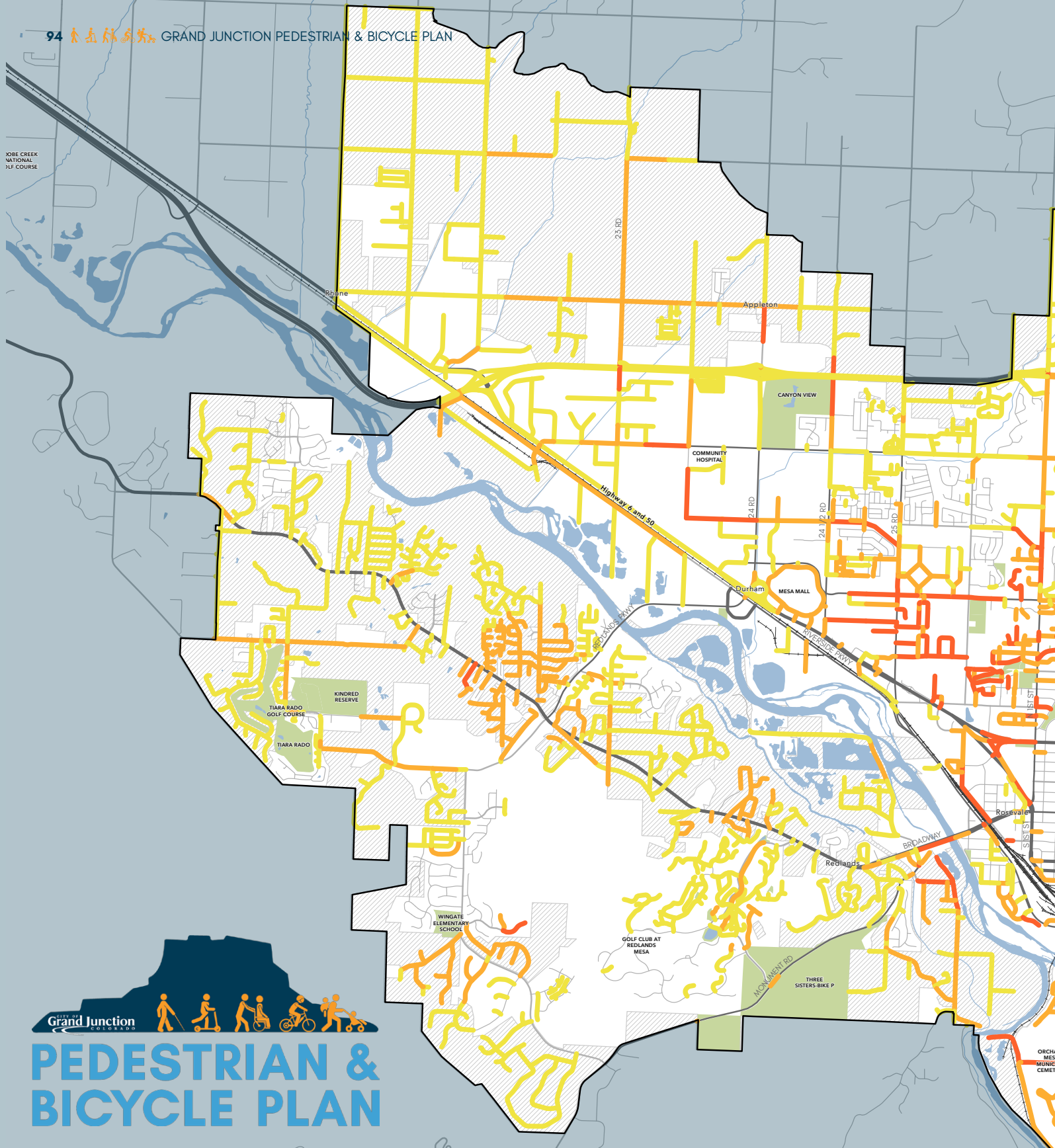
- Is it part of a city street reconstruction project and designed under the City's Complete Streets Policy?
- Is there new development and/or a property owner willing to fund sidewalk enhancements adjacent to the sidewalk location?
- How/when does this location tie into the street paving/rehabilitation schedule?
- Is there a funding source available such as a Safe Routes to School grant?
- Could partnerships be formed with local entities to perform upgrades?

OBJECTIVE E2

Prioritize locations for sidewalk gap completion or rehabilitation according to the strategy outlined in the Prioritized Pedestrian Network section.



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PEDESTRIAN & BICYCLE PLAN

LEGEND

-  **Unincorporated Mesa County**
 **Urban Development Boundary**
 **Railroads**
 **Parks**

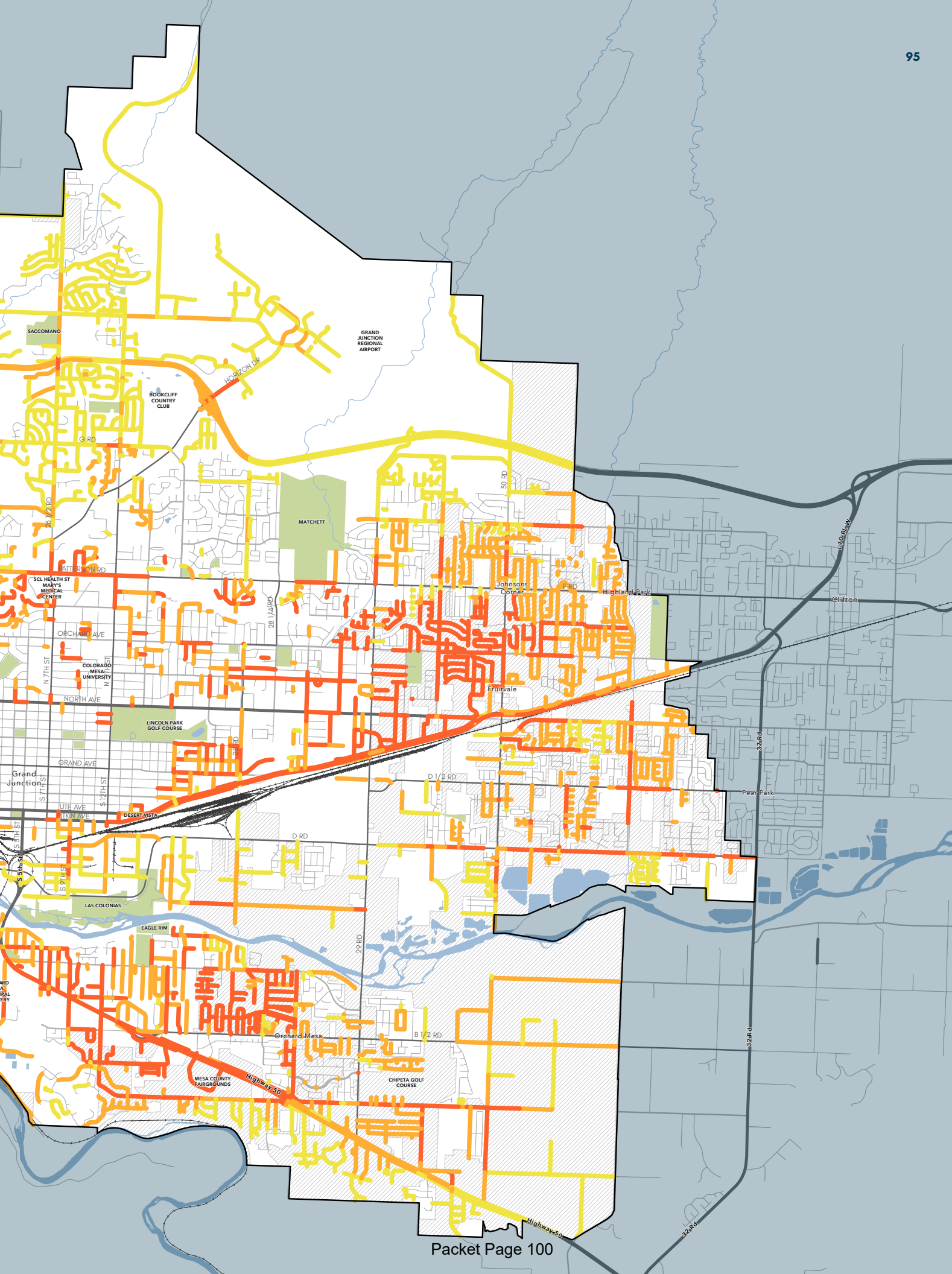
Street Classification

- Local
- Collector
- Arterial
- Highway

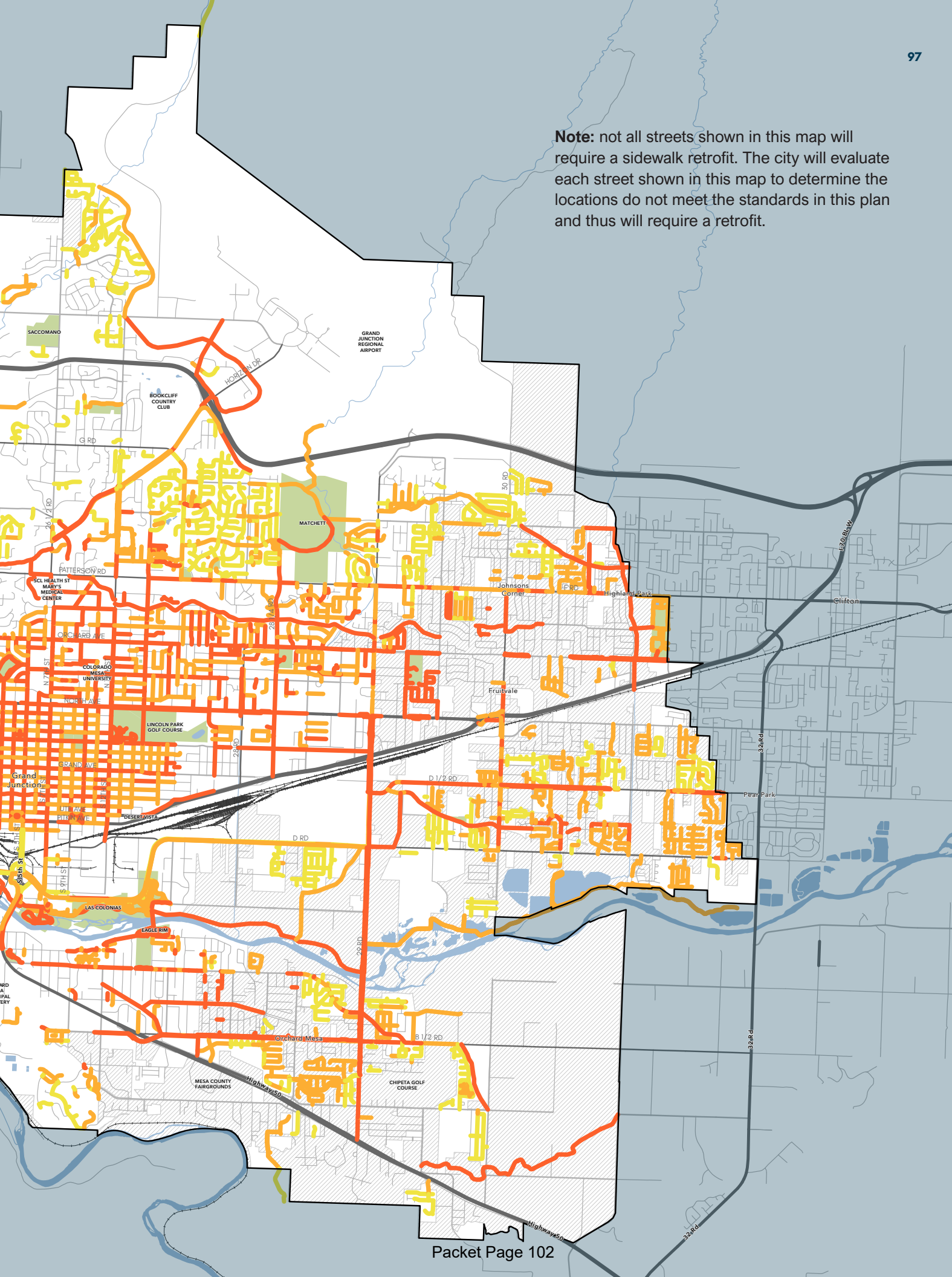
Missing Sidewalk Priority

- **Low Priority**
- **Medium Priority**
- **High Priority**

FIGURE 46: MISSING SIDEWALK PROJECT PRIORITIZATION

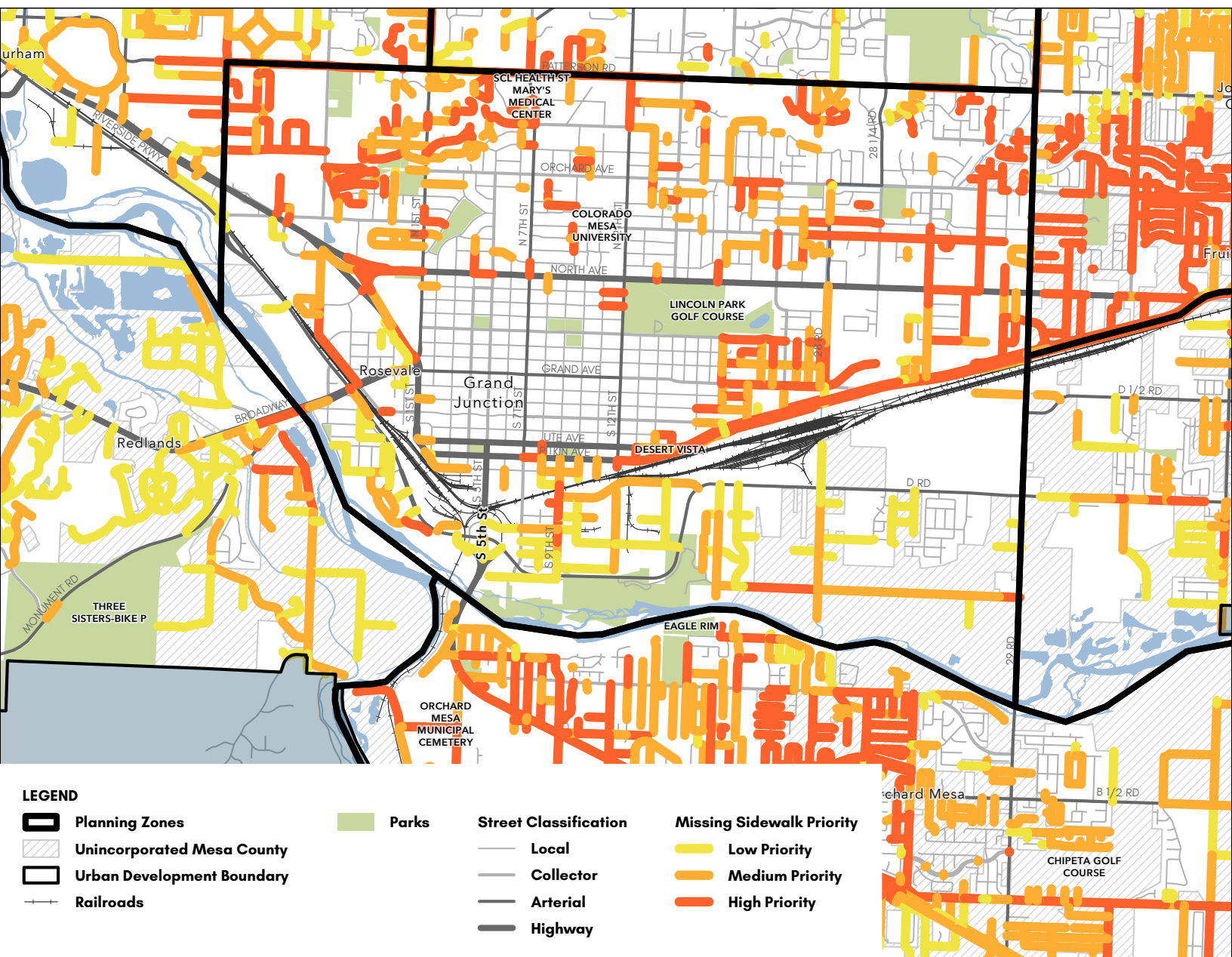


Note: not all streets shown in this map will require a sidewalk retrofit. The city will evaluate each street shown in this map to determine the locations do not meet the standards in this plan and thus will require a retrofit.

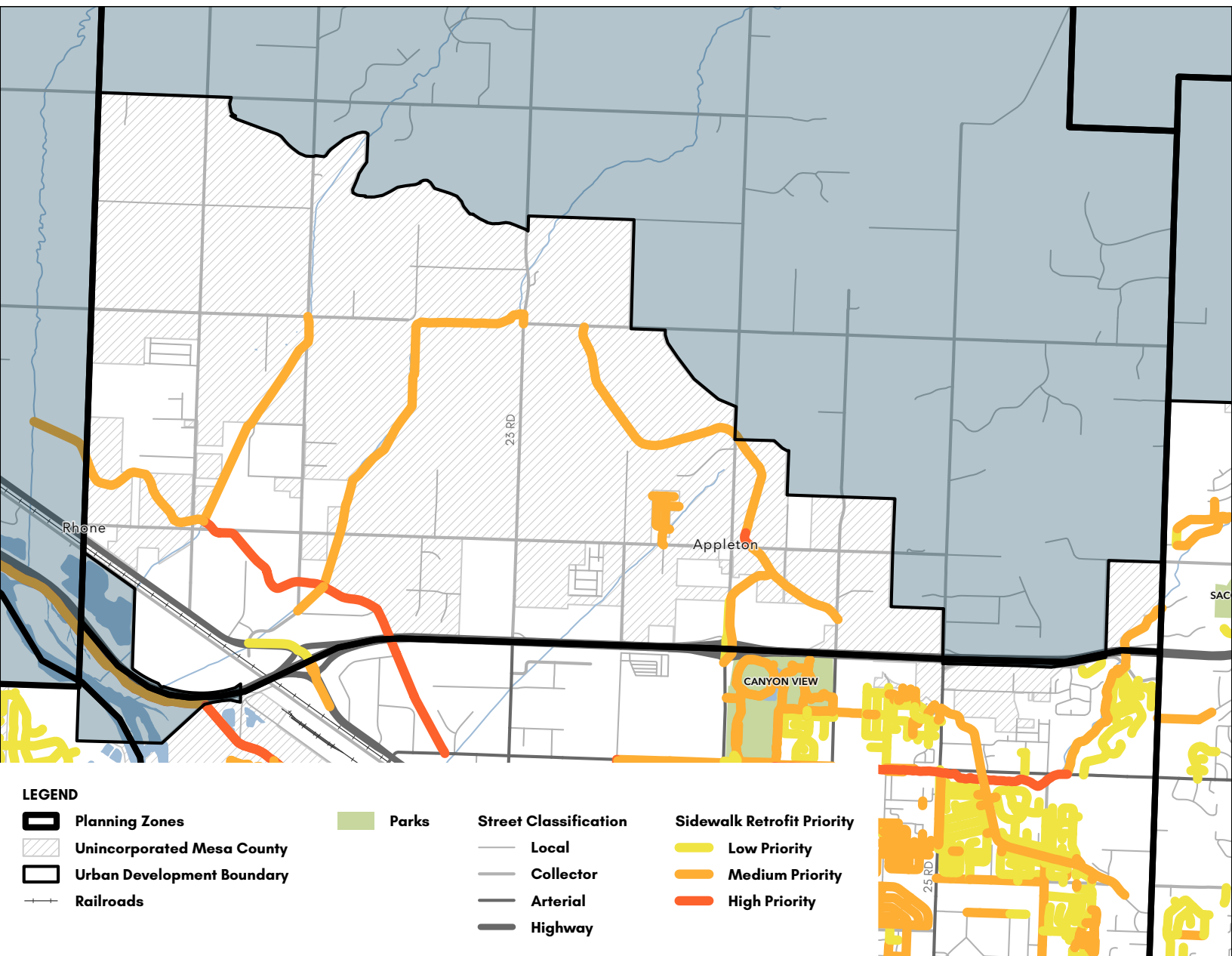


Appleton

Missing Sidewalk Prioritization

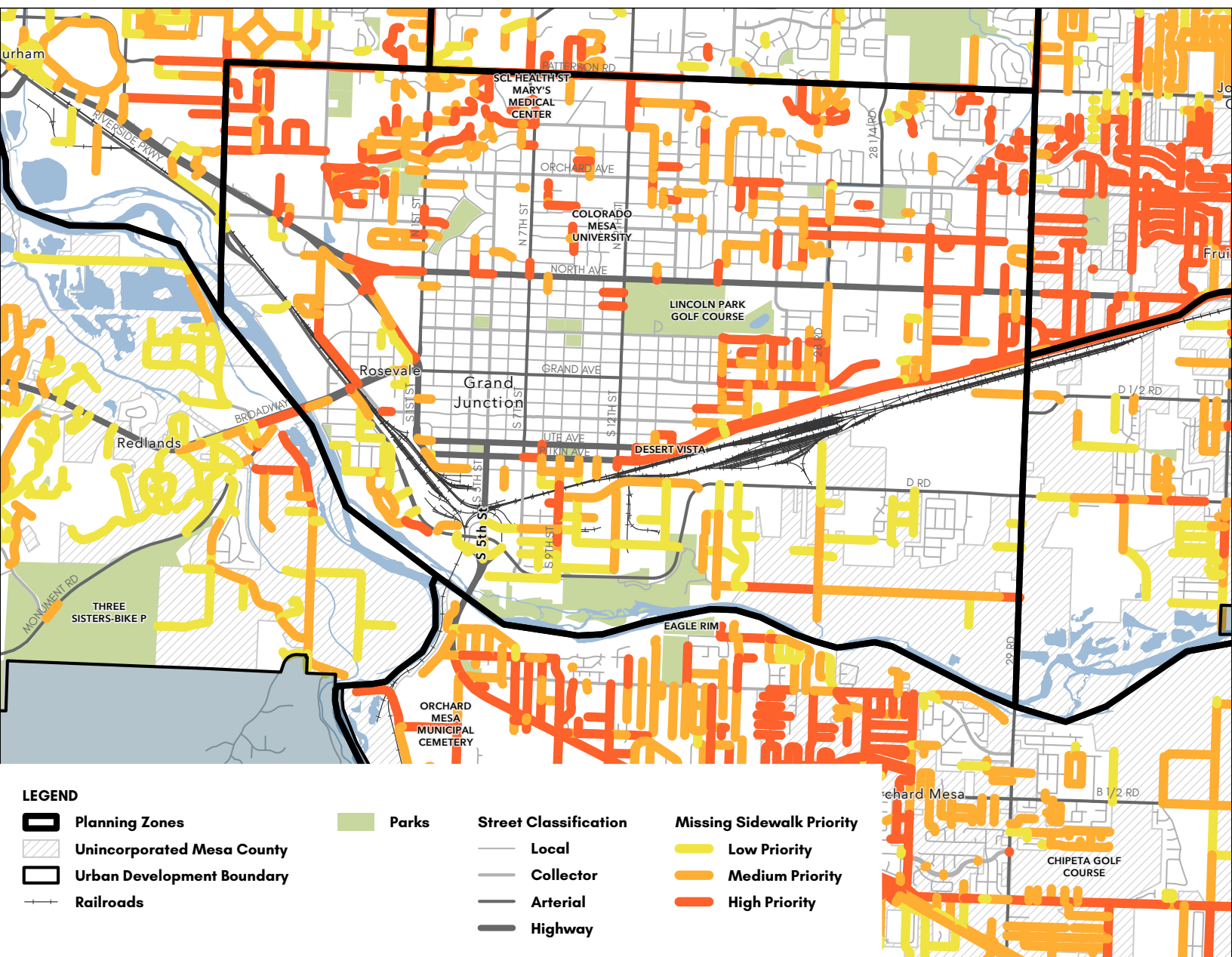


Sidewalk Retrofit Prioritization



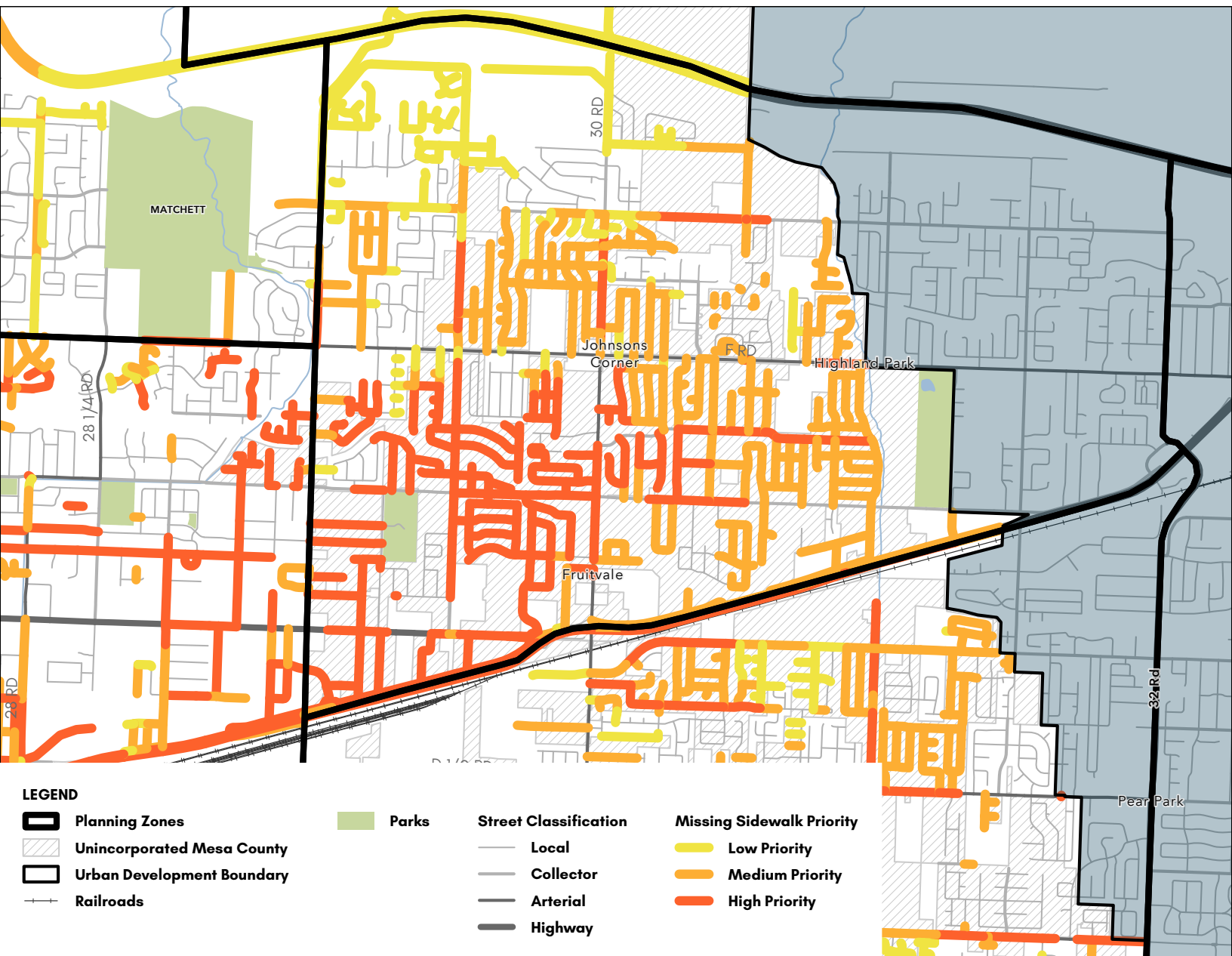
City Center

Missing Sidewalk Prioritization

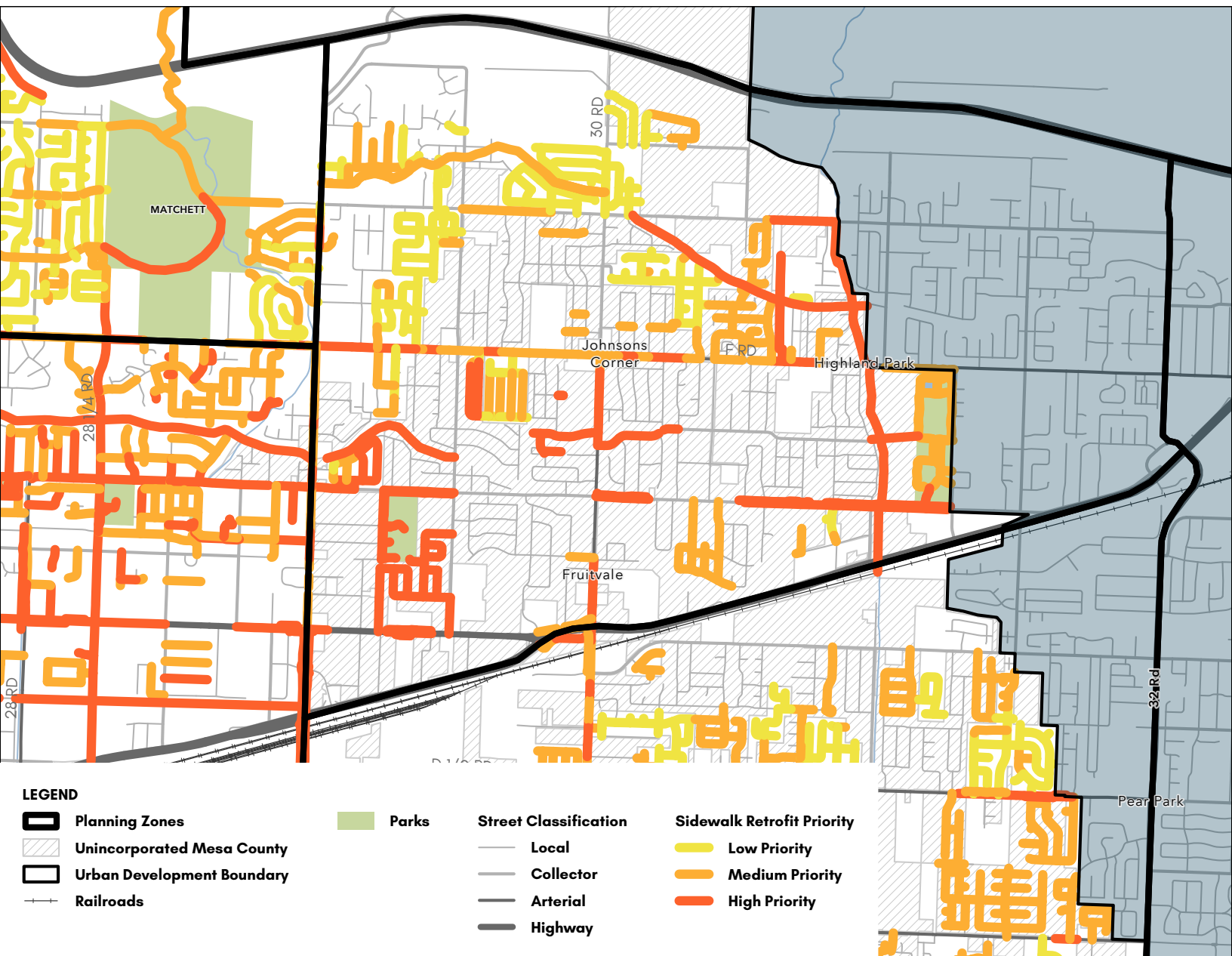


Fruitvale

Missing Sidewalk Prioritization

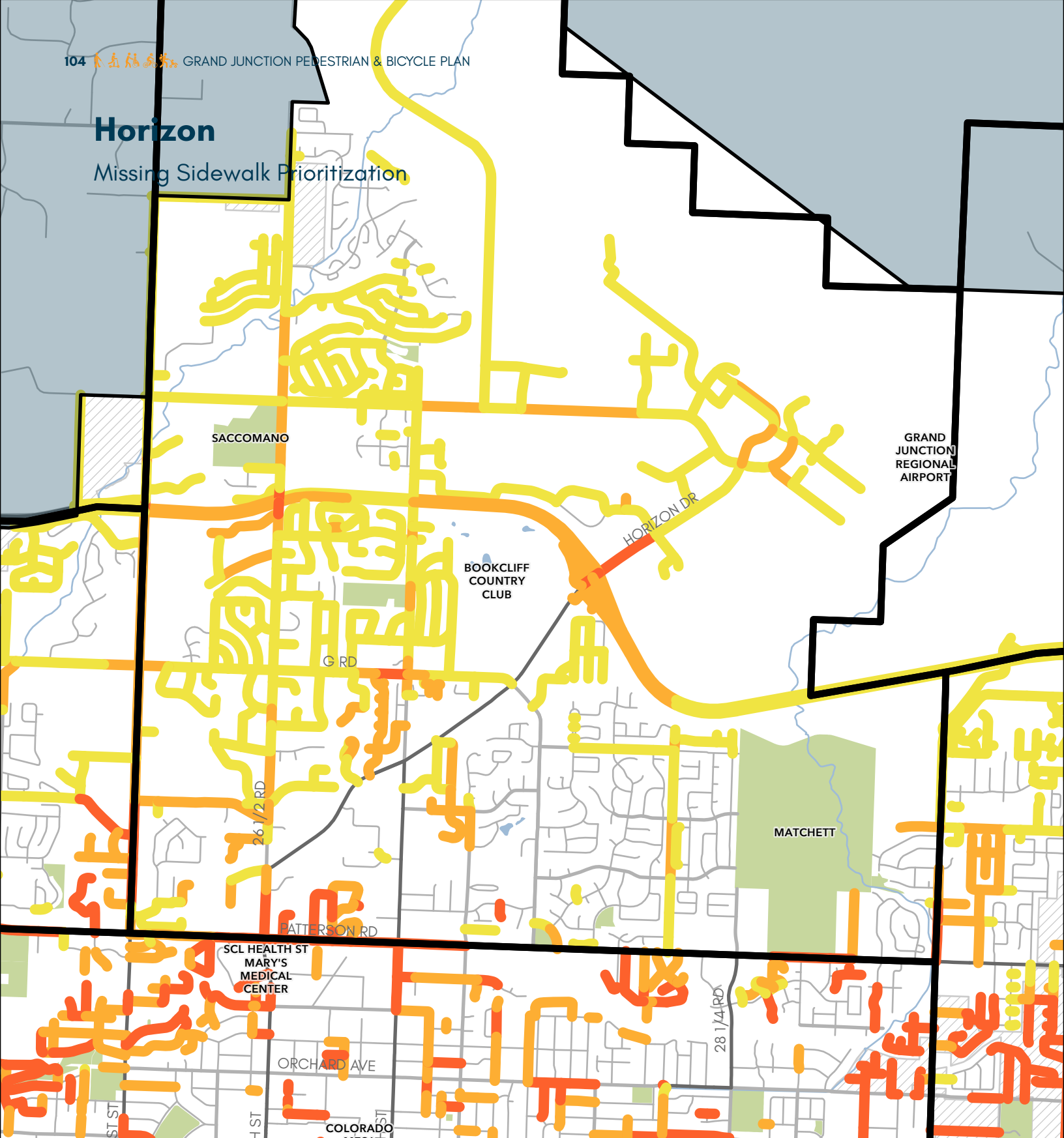


Sidewalk Retrofit Prioritization



Horizon

Missing Sidewalk Prioritization



LEGEND

-  Planning Zones
-  Unincorporated Mesa County
-  Urban Development Boundary
-  Railroads

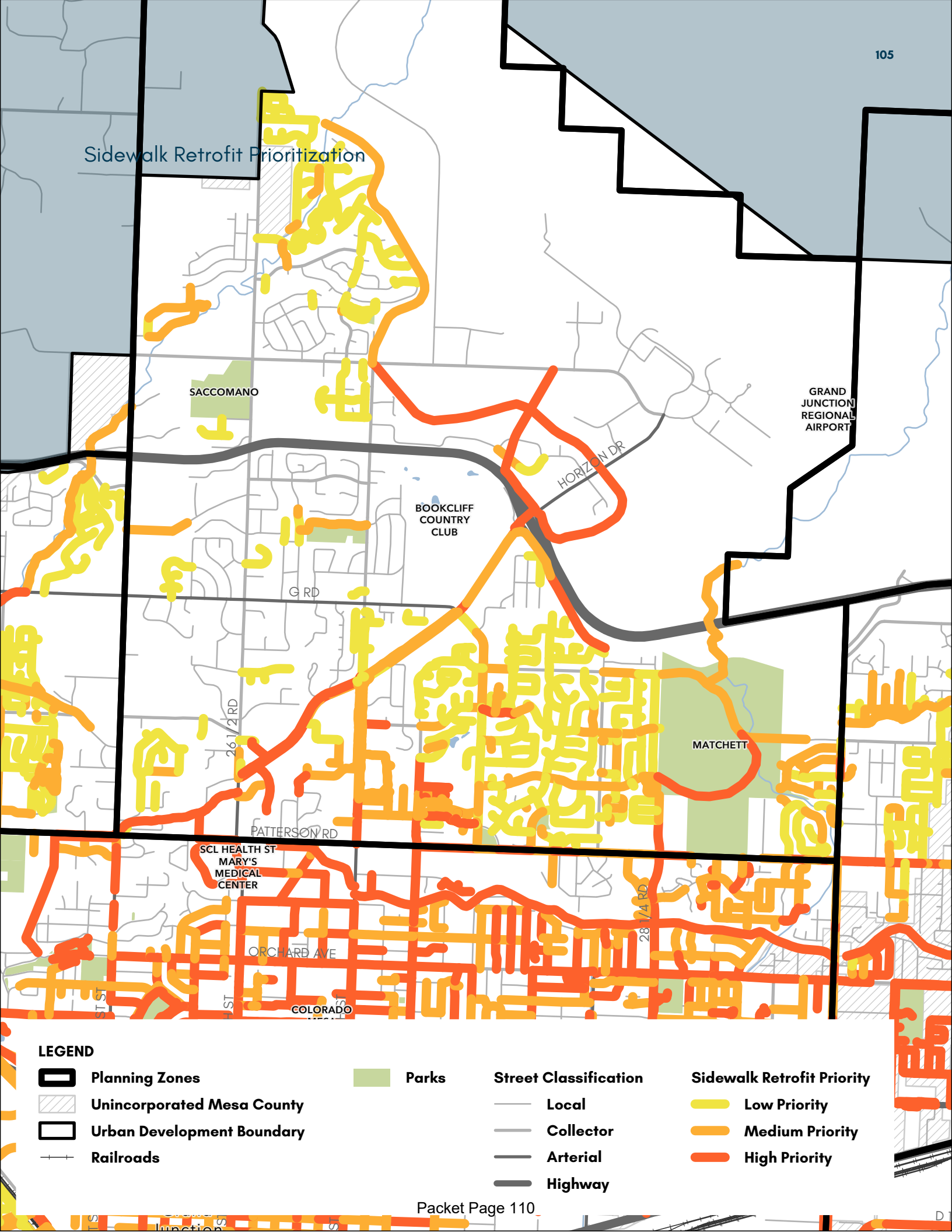
 Parks

Street Classification

-  Local
-  Collector
-  Arterial
-  Highway

Missing Sidewalk Priority

-  Low Priority
-  Medium Priority
-  High Priority



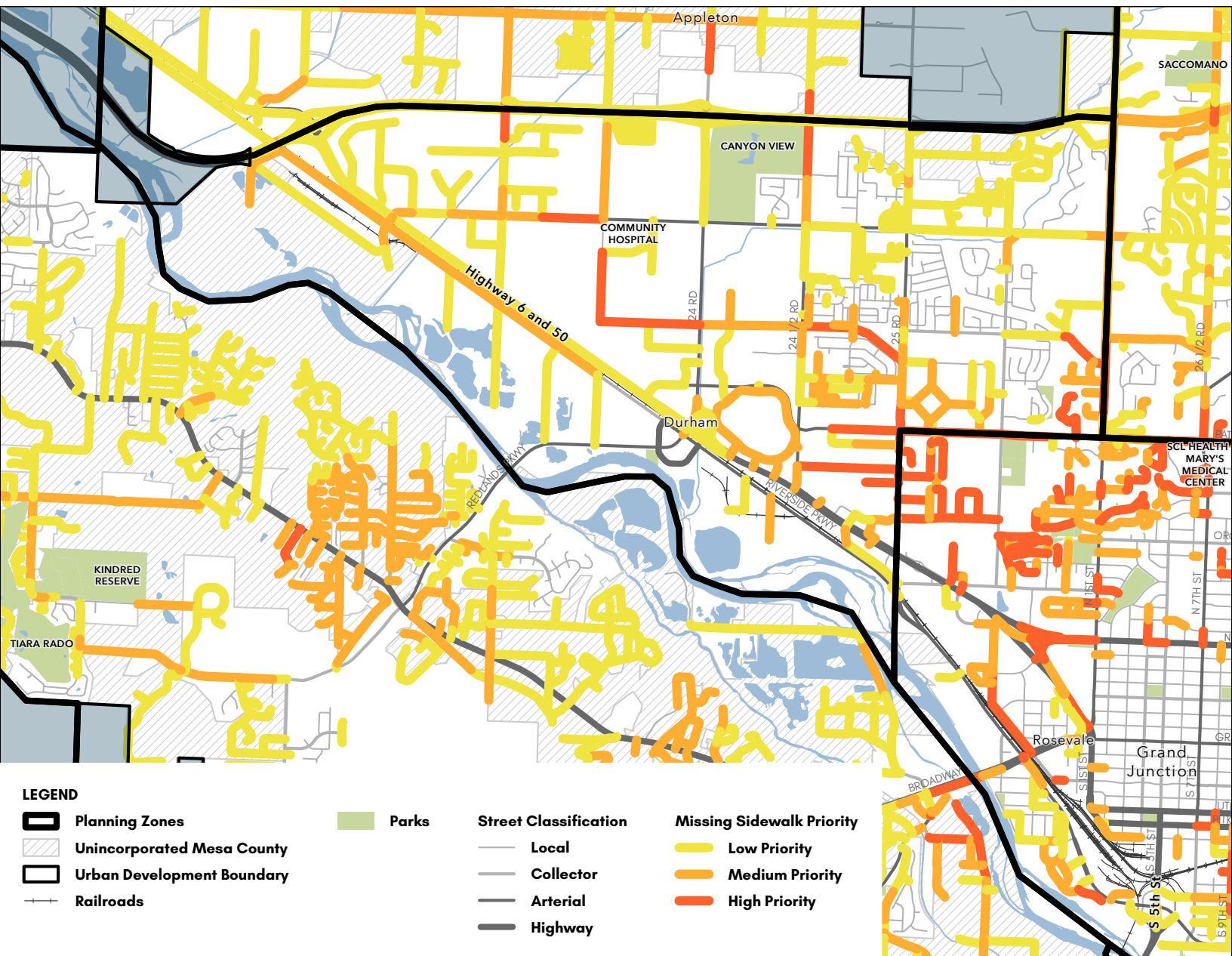
Sidewalk Retrofit Prioritization

LEGEND

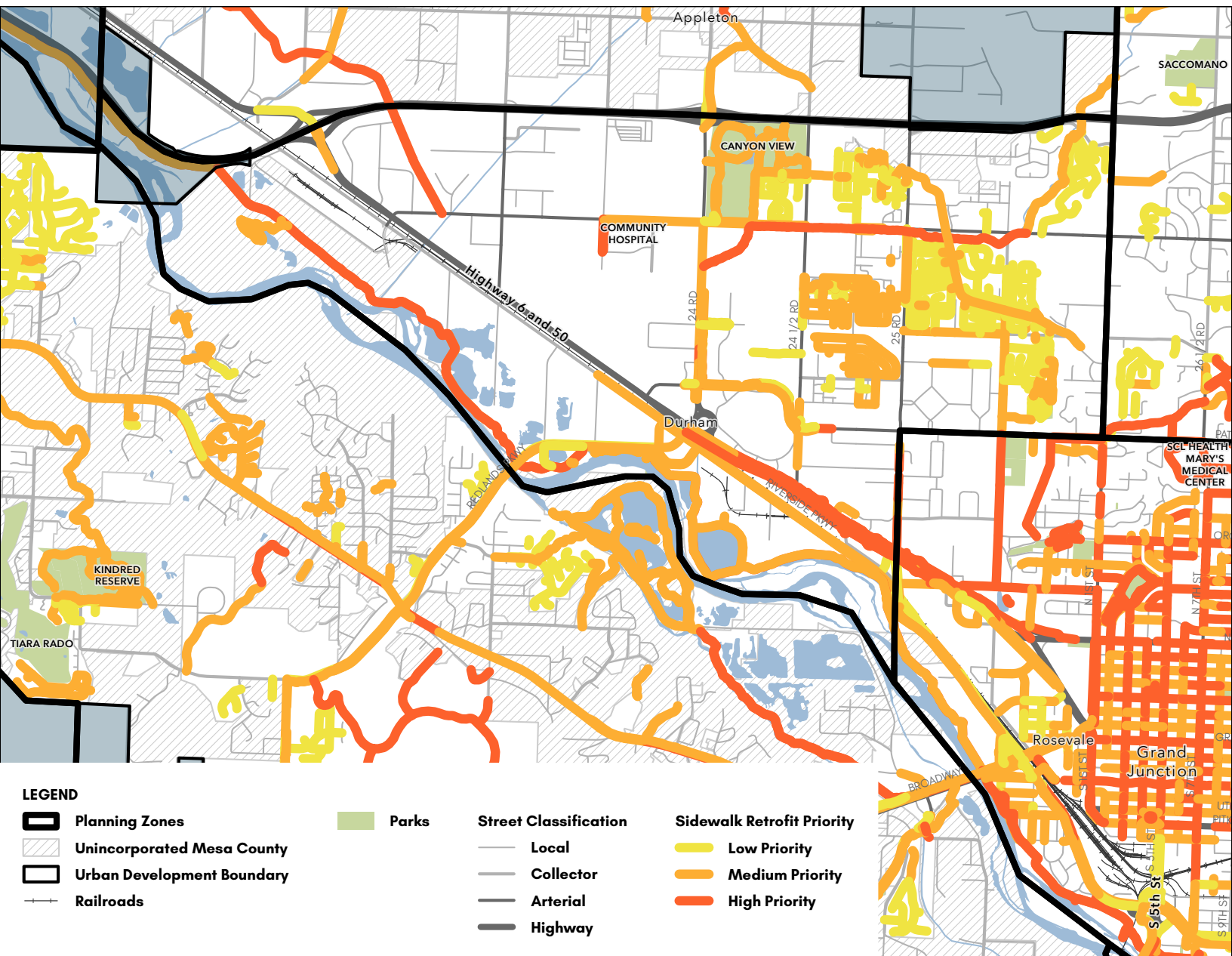
- | | | | |
|----------------------------|-------|------------------------------|-----------------------------------|
| Planning Zones | Parks | Street Classification | Sidewalk Retrofit Priority |
| Unincorporated Mesa County | | Local | Low Priority |
| Urban Development Boundary | | Collector | Medium Priority |
| Railroads | | Arterial | High Priority |
| | | Highway | |

North West

Missing Sidewalk Prioritization

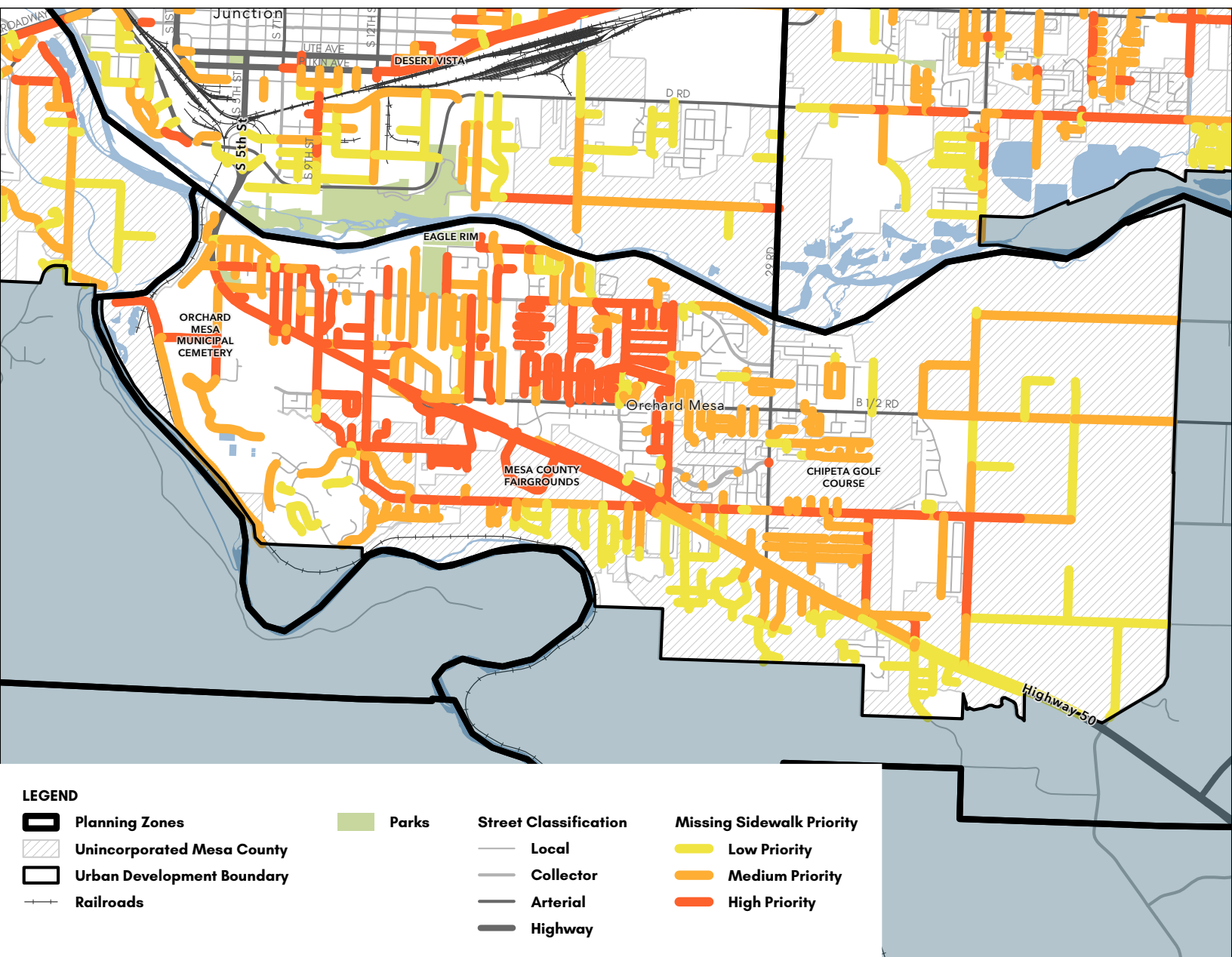


Sidewalk Retrofit Prioritization



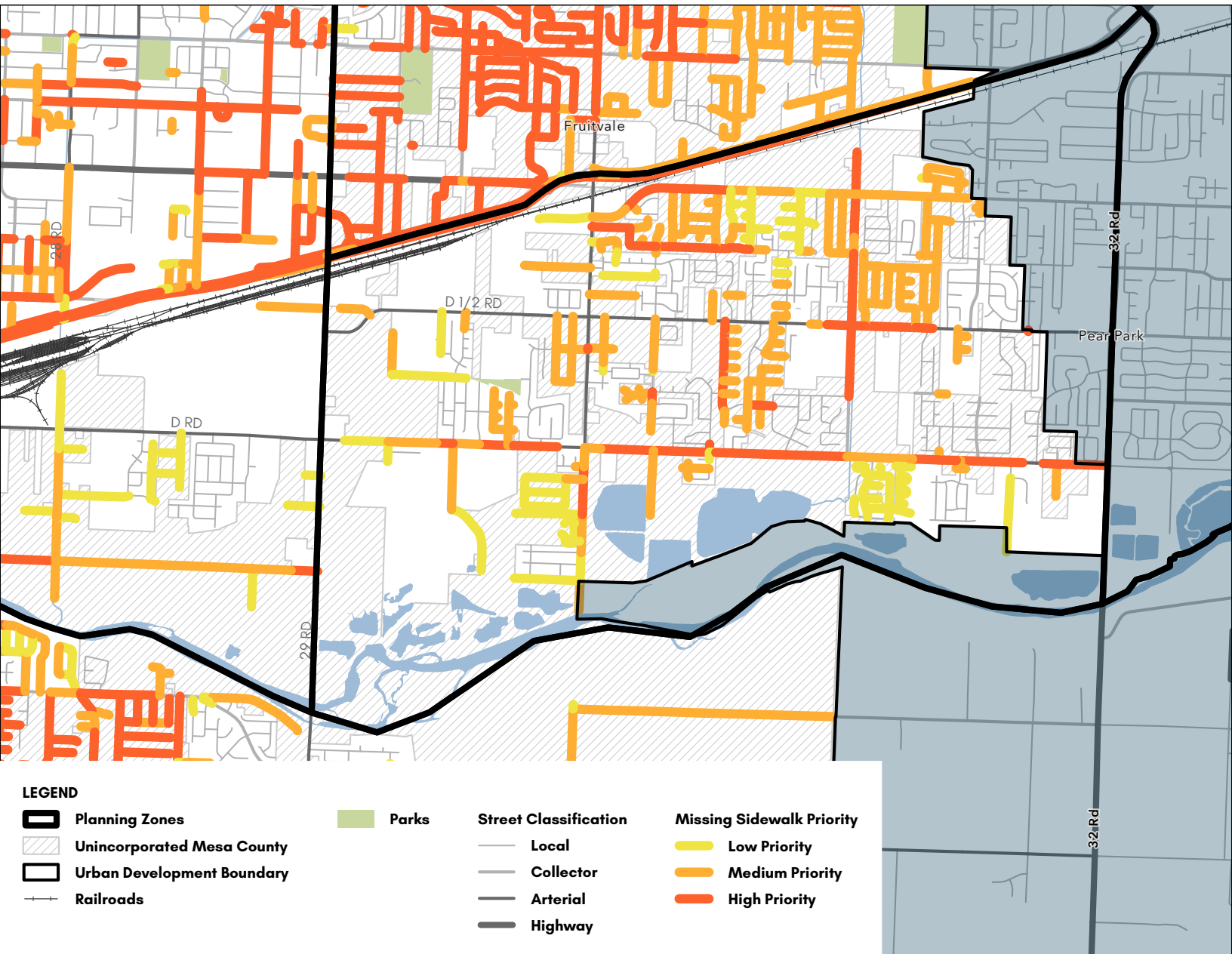
Orchard

Missing Sidewalk Prioritization

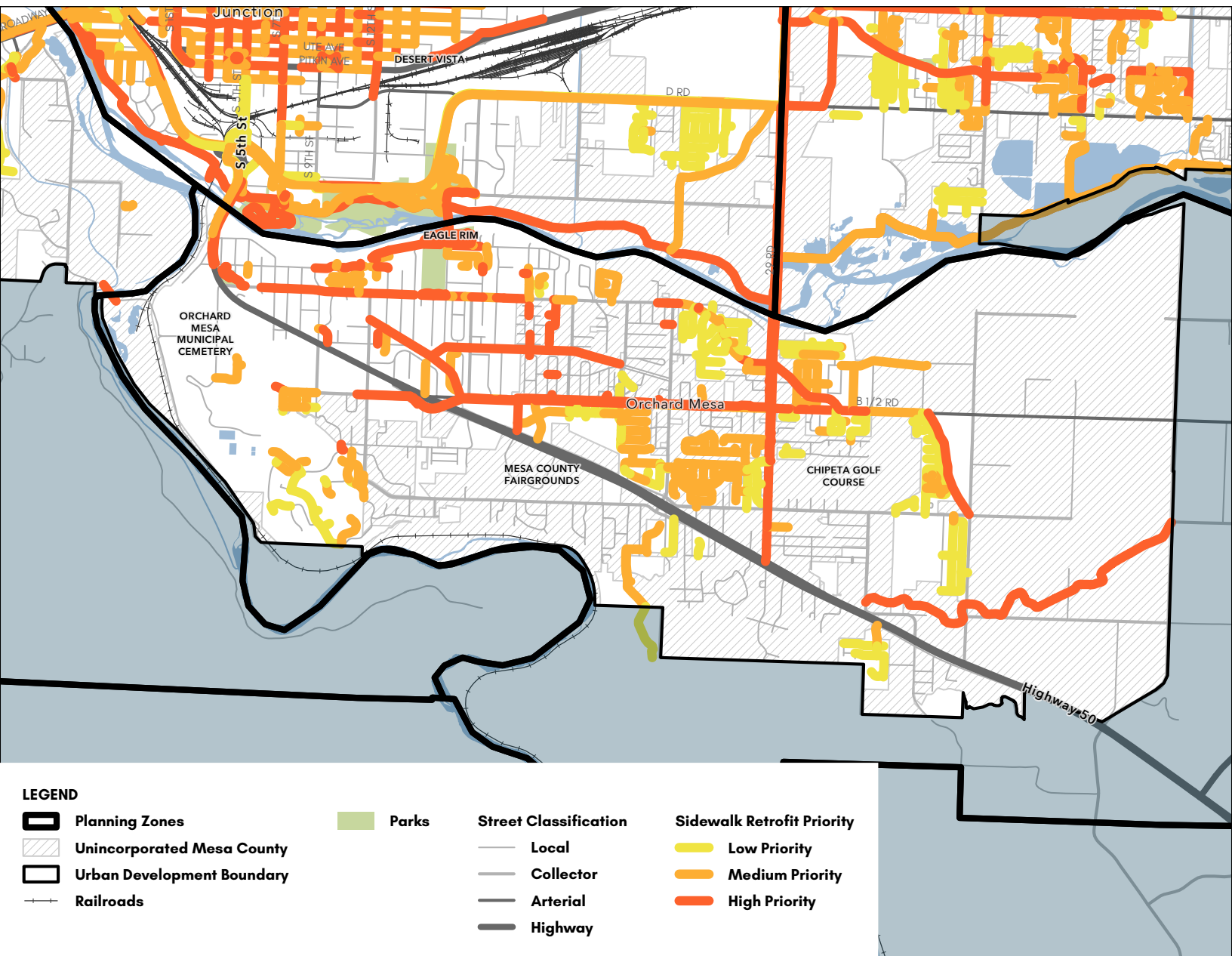


Pear Park Center

Missing Sidewalk Prioritization

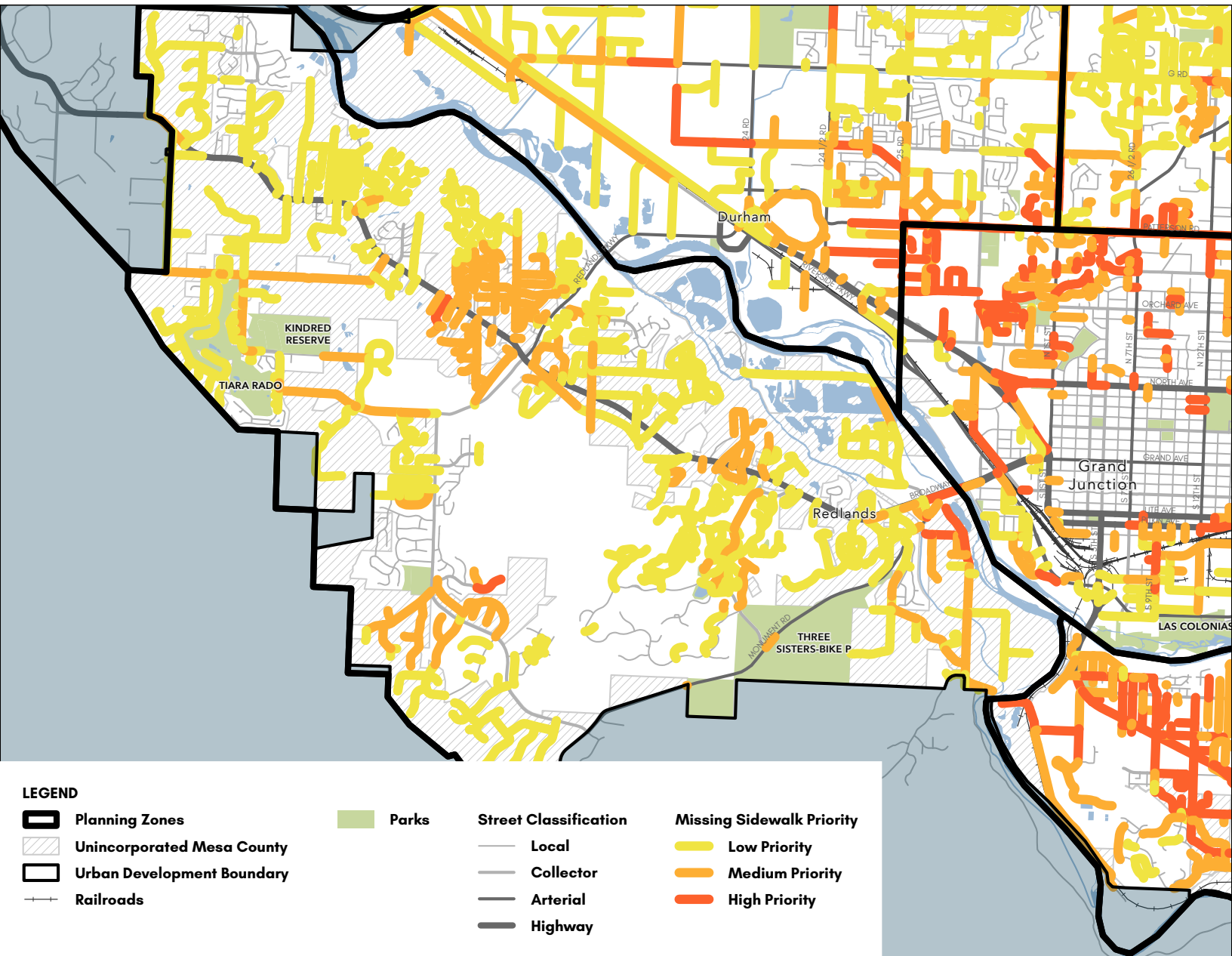


Sidewalk Retrofit Prioritization

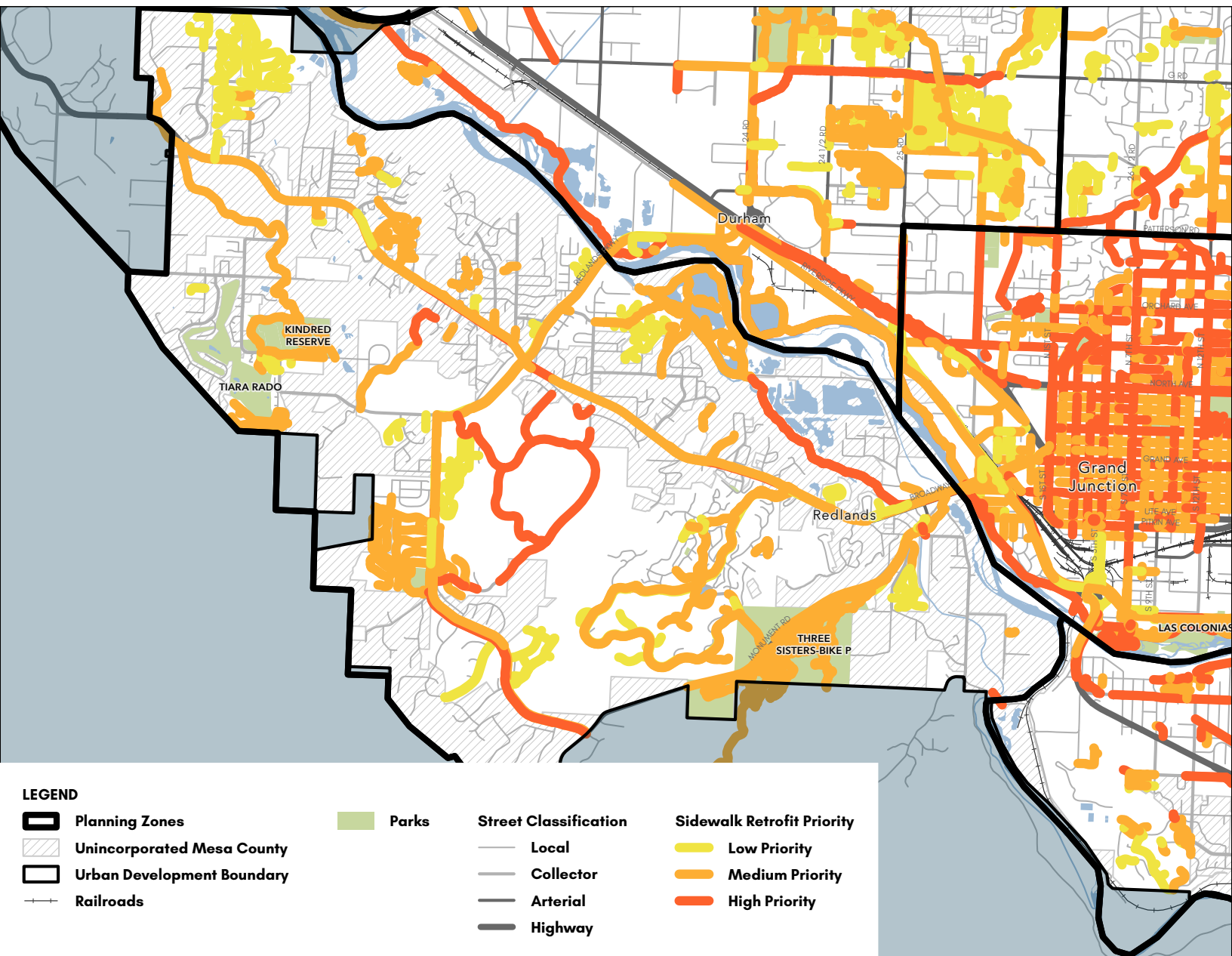


Redlands

Missing Sidewalk Prioritization



Sidewalk Retrofit Prioritization



Prioritized Bicycle Network Corridors

Figure 48 illustrates the prioritization of the planned bicycle corridors in Grand Junction based on the criteria in **Table 6** and methodology in **Appendix B**.

The maps and tables by neighborhood in the Bicycle Network Plan chapter detail High, Medium, and Low Priority bike projects shown in **Figure 19** and **Figure 48**. The city will prioritize implementing the highest priority bicycle corridors first. While the city will use this prioritization to allocate fundings specifically for bicycle improvements, it possible that opportunities will arise to implement low priority and medium priority projects sooner as part of new street construction or reconstructions projects or other opportunities. In these situations, bicycle facilities should be implemented on one these corridors as defined in the Bike Network Plan.

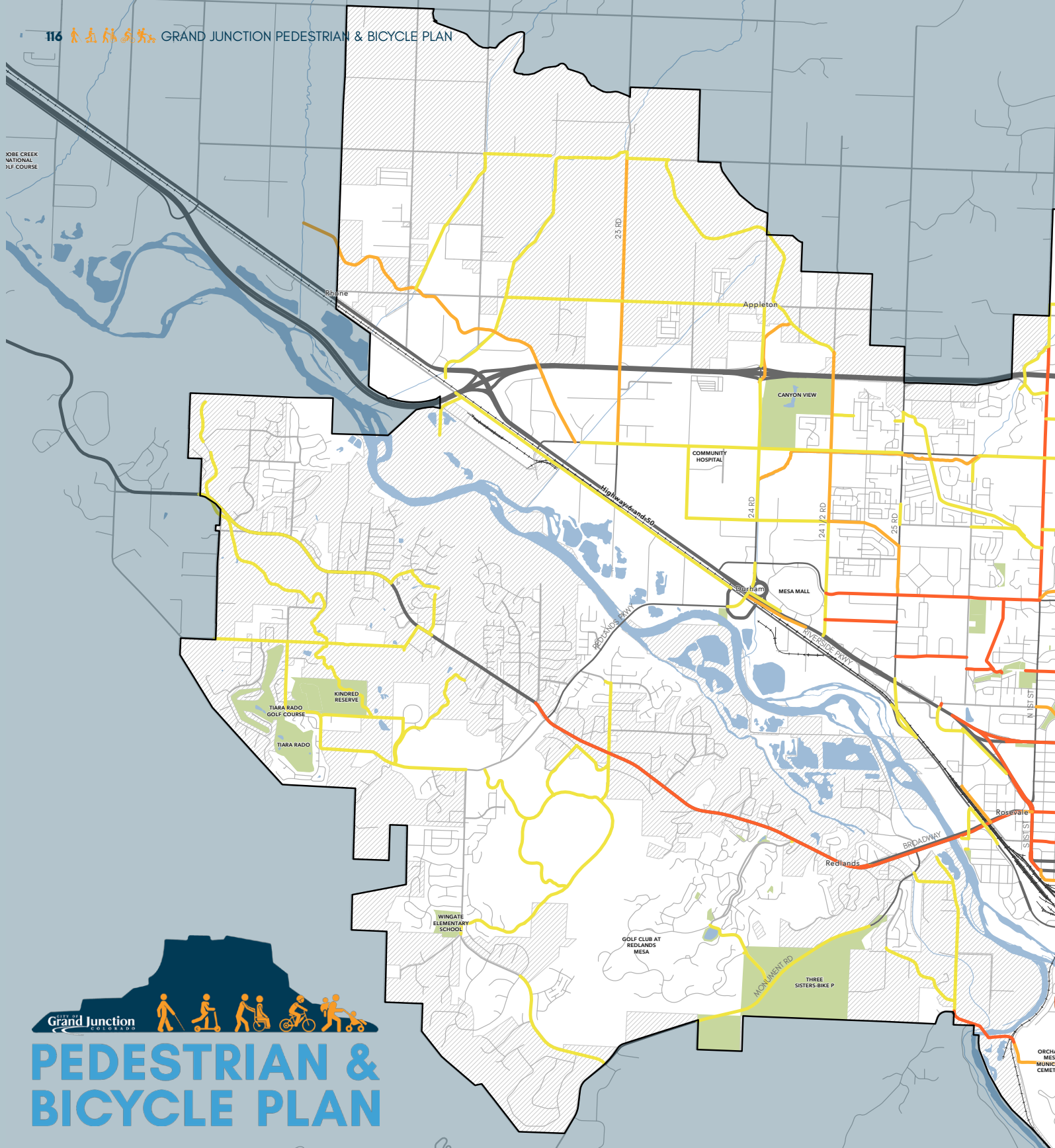
OBJECTIVE E3

Prioritize bike project locations according to the tiers established in the Prioritized Bicycle Network Map.





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PEDESTRIAN & BICYCLE PLAN

LEGEND

-  Unincorporated Mesa County
-  Urban Development Boundary
-  Railroads
-  Parks

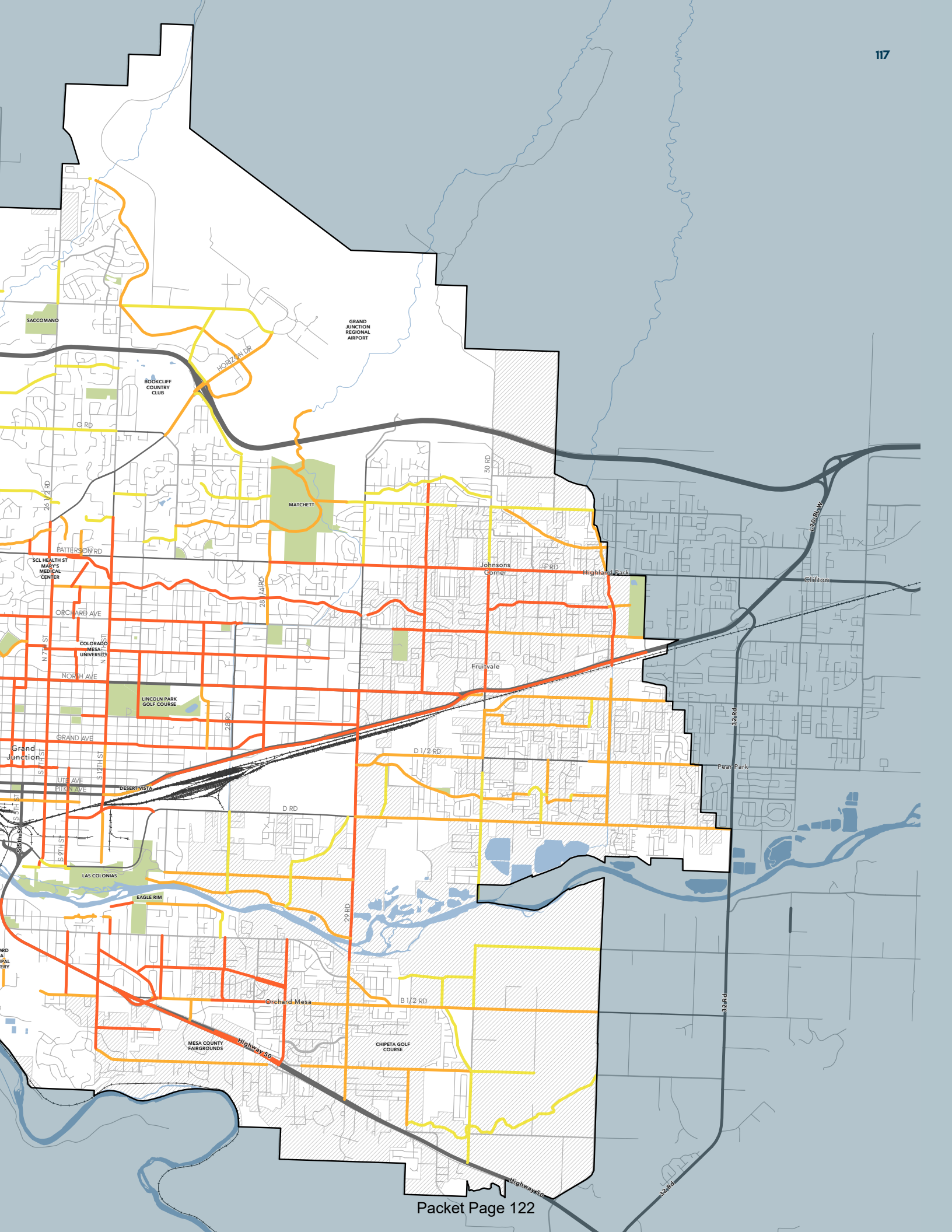
Street Classification

-  Local
-  Collector
-  Arterial
-  Highway

Bike Project Priority

-  Low Priority
-  Medium Priority
-  High Priority

FIGURE 48:
BIKE PROJECT
PRIORITIZATION



Funding Opportunities

As additional funding becomes available, the city 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 the project priorities identified in the adopted Pedestrian & Bicycle Plan. Many of the projects in this plan could be funded by grants. It will be critical to have the projects planned, designed and “shovel ready” so that the funding can be used for implementation. In most cases, the list of external funding sources requires local matching funds. Many grants will also require the city to report on safety, equity, and sustainability performance measures—another reason to implement the data collection effort described in the prioritization section. Funding sources will continue to change between 2023 and 2050, but this section identifies grant and funding streams available as of January 2023.

OBJECTIVE Q7

Explore and pursue funding opportunities to support continual capital construction and maintenance of the projects listed in this plan.

This section identifies potential funding sources that supplement existing funding streams in Grand Junction. The descriptions provided for grant opportunities come from federal, state, and regional sources.

Federal

Federal Highway Safety Improvement Program

(HSIP): Eligible projects in this category include improvements or corrections to safety issues on any local or regional public roads and trails or paths. Funded activities must be consistent with Colorado’s Strategic Highway Safety Plan. Projects are selected competitively through CDOT.

USDOT Rebuilding American Infrastructure with Sustainability and Equity (RAISE) (formerly BUILD and TIGER):

Since 2009, USDOT has distributed grants for planning and capital investments in surface transportation infrastructure. Grants are awarded on a competitive basis for projects that will have a significant local or regional impact. RAISE funding can support roads, bridges, transit, rail, ports, or intermodal transportation.

FTA (Federal Transit Administration) §5307

Urbanized Area Formula Program: This program makes federal resources available to urbanized areas for transit capital and operating assistance. Urbanized areas are those areas with a population of 50,000 or more as designated by the U.S. Census Bureau.

Infrastructure for Rebuilding America (INFRA):

The FAST (Fixing America’s Surface Transportation) Act established the Nationally Significant Freight and Highway Projects (NSFHP) program to provide financial assistance—competitive grants, known as INFRA grants, or credit assistance—to nationally and regionally significant freight and highway projects that align with the program goals to improve safety, efficiency and reliability of freight; improve global competitiveness; reduce highway congestion; improve connectivity; and address growing demand for freight.

State

CDOT Funding Advancements for Surface Transportation and Economic Recovery Act

(FASTER): This category includes safety-related projects, such as: asset management, transportation operations, intersection and interchange improvements, and shoulder and safety-related widening, and pedestrian and bicycle facilities. Projects

are advanced by local governments and selected based on priority and data within each CDOT Region.

Safe Routes to School (SRTS): This program was formed to: Enable and encourage children to walk and bike to school; make walking and biking safer and more appealing; facilitate planning, development, and implementation of projects that improve safety, and reduce traffic, fuel consumption, and air pollution around schools. There is no longer dedicated federal SRTS funding, but the Colorado SRTS program has been continued with state funding and a local agency match requirement. This is a competitive program where projects are screened by a statewide selection advisory committee.

Great Outdoors Colorado (GOCO): Funding from the Colorado Lottery is awarded to a variety of project types, including trail projects, across the state by the GOCO Board. GOCO Board members are appointed by the Governor and confirmed by the Colorado State Senate.

Regional Priorities Program (RPP): The goal of this program is to implement regionally significant projects identified through the transportation planning process. These funds are flexible in use and are allocated to the regions by the Colorado Transportation Commission on an annual basis. The allocations are based on regional population, CDOT on-system lane miles, and CDOT on-system truck VMT.

Highway Users Tax Fund (HUTF): Revenues generated from the Road Safety Surcharge, Oversize Overweight Surcharge, Rental Car Surcharges, and late vehicle registration fees are credited to the Highway Users Tax Fund (HUTF) and distributed per statute to the Colorado Department of Transportation, counties, and municipalities.

Revitalizing Main Streets: Revitalizing Main Streets grant program, run by CDOT as a part of Colorado's COVID-19 Recovery Plan, enhances active transportation safety and strengthens the connection of people to main streets and central economic hubs. The program encourages physical activity and enhances local economic vitality in towns and cities across Colorado through funding infrastructure improvements to make walking and biking easy, yielding long-term benefits that bolster community connections.

Regional

Metropolitan Planning: Federal funds are allocated to the GVMPO to provide for a continuing, comprehensive, and cooperative (3C) transportation planning process in the region. In addition, CDOT estimates that the Grand Valley Metropolitan Planning Organization (GVMPO) should expect to receive approximately \$168.7 million dollars in transportation funding between now and 2029 if CDOT continues to receive an additional \$500 million per year statewide for six years (\$3 billion total) above the base program amounts. These projects are identified in the Transportation Improvement Program (TIP).

Multimodal Options Fund (MMOF): The legislation states that the Multimodal Options Fund should promote a "complete and integrated multimodal system" through objectives such as benefiting seniors, providing enhanced mobility for the disabled population, or providing safe routes to school. Local recipients are required to provide a match of project funding equal to the amount of the grant, with exemptions allowed.

Local

Mill Levy: Since property taxes are a major funding source for all municipal services, a higher mill levy could translate to a meaningful source of funding for transportation improvements.

Vehicle registration: The number of registered vehicles in Mesa County continues to grow with population and jobs. Increasing license and ownership fees would help generate more funding.

Utility fees: Household utility fees are monthly or annual surcharges for transportation similar to annual assessments for local sewer or waste services could be levied in Mesa County. Peer communities in Colorado like Loveland and Fort Collins use this practice as a funding source.

Dedicated Sales Tax: Grand Junction currently has a \$.75 sales tax that funds transportation projects. Additional sales tax could be collected as the result of a city or citizen sponsored ballot initiative to collect sales tax for specific/dedicated transportation-related uses. This can include funding for sustainability and resilience. Funds generated by sales, use, specific ownership, and property taxes can be transferred to general funds or directed towards capital projects. These can either be permanent or a local option tax that is subject to voter approval.

Grand Junction's Downtown Partnership

(DP): The DP consists of two special districts, the Downtown Development Authority (DDA) and the Business Improvement District (BID). These two groups have the ability to fund bicycle and pedestrian amenities and facilities.

The Horizon Drive District (HDD): The HDD — Gateway to Grand Junction® — is just off I-70 at Exit 31 and adjacent to the Grand Junction Regional Airport. This beautiful and convenient entrance to the core businesses, services, and tourism resources of Grand Junction, Colorado, exemplifies the mission of the business improvement district — to build community, enhance beauty, and advocate the economic vitality of the Horizon Drive District (HDD).

Other funding options that could be considered with further analysis are parking fees or a parking benefit district, public-private partnerships, transportation impact fees, and special assessments. Parking benefit districts use the revenue from paid parking to fund transportation improvements, such as sidewalk/ bikeway maintenance, pedestrian/ bikeway/landscape/transit enhancements, free bus passes, etc. Public-private partnerships could be agreements with large employers, businesses, or services that can fund transportation projects.

Integrating Implementation with City Process

In addition to identifying a stable and reliable funding source to actively implement bicycle and pedestrian improvement processes the city can also integrate implementation with other standard procedures. This includes planning for pedestrian and bicycle facilities in all street projects and phases, including new construction, reconstruction, resurfacing, and maintenance. This means that the City approaches every transportation project and program as an opportunity to improve streets and the transportation network for all users, and work in coordination with other departments, agencies and jurisdictions.

A few recommended strategies for integrating implementation with other city procedures include:

Integrate Bicycle and Pedestrian Design in the TEDS Manual – The TEDS Manual provides standards for street design and was updated to reflect the bicycle and pedestrian design standards in this PBP. The TEDS Manual will be a key tool to implement pedestrian and bicycle improvements as part of future street construction projects.

Add Bike Detection During Signal Upgrades – The city periodically upgrades and replaces outdated traffic signals that have exceeded their useful life. When new actuated signals are installed (or upgraded) at locations where an existing or planned bicycle facility crosses the intersection bicycle detection should be added as standard practice.

Incorporate Active Transportation Improvements on Street Projects – Whenever a new street is constructed or an existing street is reconstructed sidewalk and bicycle facilities should be included as guided by this plan and in accordance with the standards in the TEDS Manual and supported by the City's Complete Streets Policy.

Maintain a Geodatabase of Active Transportation Infrastructure – Its recommended that the city maintain a geodatabase with all bicycle facilities and sidewalk locations, including widths, buffer widths, and hardscape versus softscape buffer that will be updated as improvements are made. This will make it easier for the city to track progress, evaluate conditions and network gaps, and identify and prioritize future projects.

OBJECTIVE Q8

To the greatest extent practicable given budget constraints include pedestrian and bicycle facilities in all street projects and phases, including new construction, reconstruction, resurfacing, and maintenance.

.....

OBJECTIVE Q9

Approach every transportation project and program as an opportunity to improve streets and the transportation network for all users, and work in coordination with other departments, agencies and jurisdictions.

.....

.....

OBJECTIVE Q10

Implement bicycle and pedestrian improvement projects by integrating with other city standard procedures.

.....



APPENDIX

Appendix A:
Existing Conditions
& Needs Assessment

Appendix B:
Project Prioritization Methodology



Grand Junction City Council

Workshop Session

Item #1.b.

Meeting Date: April 3, 2023
Presented By: Lance Gloss, Senior Planner
Department: Parks and Recreation
Submitted By: Allison Little

Information

SUBJECT:

Urban Forestry Management Plan

EXECUTIVE SUMMARY:

Prompted by the One Grand Junction Comprehensive Plan and the Parks, Recreation, and Open Space (PROS) Master Plan, a draft Urban Forestry Management Plan (UFMP) has been developed. The UFMP is rooted in best practices and guided by strong public engagement. It is designed to guide Forestry Division decisions and serve other City departments that influence the urban tree canopy.

BACKGROUND OR DETAILED INFORMATION:

The Urban Forestry Management Plan (UFMP) has been crafted using data and public process. Staff of the Forestry Division and Community Development Department have assembled canopy coverage and diversity data, interviewed forestry managers from other mid-size Rocky Mountain municipalities and interfaced with dozens of City staff and community stakeholders. The City also circulated a survey on forestry-related topics in January, receiving 529 responses. Although not statistically valid, the responses informed the planning process and helped in setting priorities and objectives. City staff hosted public workshops on February 23 (in-person) and February 27 (virtual), presenting details of the plan and soliciting feedback. The Parks and Recreation Advisory Board (PRAB) and the Forestry Board have both been involved in this planning process as well. The Forestry Board recommended adoption of the UFMP at their March 2 meeting and PRAB will consider recommending adoption at PRAB's April 6 meeting.

The UFMP provides educational resources on the value and services of the urban forest. The plan revealed that 75 percent of trees in the community exist on private property, that canopy growth since 2011 has generated more than \$6 million in property value, and that plantings can save households up to \$250 in annual energy bills. Some

goals and strategies address total canopy cover. This includes setting a target of 18 percent coverage citywide (compared to 13 percent at present). Other strategies address equity in coverage, reacting to survey responses calling for increased canopy in most neighborhoods, as well as disparities in census block level coverage. The coverage level is available for each different census block. Across the City, coverage ranges from 2 percent, in places such as industrial areas like north of Las Colonias and north of Riverside Parkway, to 40 percent in areas including along the Colorado River.

Responding to public concerns, the plan addresses threats from drought, pests and disease. Mismanagement of the forest during an extreme drought could possibly result in more than \$200 million of lost value in green infrastructure. The plan thus recommends strategies for maximizing returns on water resources such as tree retention, given that each gallon of water invested in a mature tree yields 10 times as much shade as the same gallon invested in a young tree. The UFMP also addresses management options for the Forestry Division as the City grows, taking on about 150 new public trees annually due to urban growth.

A draft of the UFMP was distributed to City Council in a memo on March 13, 2023. The current draft of the UFMP is attached.

FISCAL IMPACT:

This has no fiscal impact at this time.

SUGGESTED ACTION:

Provide staff direction regarding consideration of the plan for adoption, currently scheduled at the April 19 City Council meeting.

Attachments

1. Urban Forestry Management Plan _ DRAFT _ March 2023
2. UFMP Draft _ 27 March 23



Urban Forestry Management Plan



Acknowledgements

This plan owes its existence to many on the City of Grand Junction staff, residents, and professionals who contributed:

Members of the Grand Junction Forestry Board:

Brandon Kanwischer	Susan Carter
Mollie Higginbotham	Daniel Komlo
Joseph Chandler	William Cooper
Kamie Long	A. Vince Urbina

The following professionals outside Grand Junction provided expertise:

Kendra Boot, City of Fort Collins, CO	Nicole Gillett, City of Tucson, AZ
Alex Nordquest, City of Bozeman, MT	Randy Overstreet, City of Laramie, WY
Annie McVay, City of Moab, UT	Colin Stephens, City of Bend, OR
Andrew Garcia, City of Santa Fe, NM	Wendy Robison, City of Bend, OR

The Grand Junction City Council adopted this plan on _____, 2023:

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Introduction

This plan sets a path for the City of Grand Junction and residents in the community to maximize the health of the urban forest. It organizes this pathway around the value of the urban forest and the services it provides.

The plan elaborates on the challenges of tree management in the community, the wide range of people that care for these trees, and the seven goals that must be met to achieve the vision of a robust canopy.

Special attention is given to the Forestry Division, which has primary responsibility for trees on public property. The plan also includes a set of ongoing and new programs, as well as educational tools, to mobilize the community care for trees.



What is the Urban Forest?

All of the trees in Grand Junction make up the urban forest. This ecosystem depends on people for care and serves the public as infrastructure. Water and shade are just the beginning.

Grand Junction Tree History

Prior to US settlement of the Grand Valley, the area was largely treeless. Cottonwoods and willows lined the the rivers, and centuries-old junipers and bristle cone pines grew at Colorado National Monument, but most areas were sparsely vegetated. This changed in 1882, when settlers dug the first irrigation canals and created the first tree nursery. By 1900, hundreds of acres of peach, apple, and pear orchards sprang to life; these remain central to Grand Junction's identity. Settlers also planted trees around their homes and lining their streets, setting the stage for today's urban forest.

In Grand Junction's urban areas, many of the oldest trees are found downtown along streets and in Lincoln Park. Grand Junction is also home to some of Colorado's Champion Trees, or the largest tree of a given species in the state. The largest Dawn Redwood, Siberian Elm, Mimosa, and Desert Willow live here, and the state champion Weeping Mulberry is one of the 69 labeled trees at the Lincoln Park Arboretum.



The City of Grand Junction has also received a Tree City USA Award for 40 consecutive years and the National Arbor Foundation Growth Award for 26 years. These achievements reflect the City's commitment to growing and maintaining its canopy cover, amounting to more than 1% of the City's annual budget. The City's agricultural heritage, canals, and the Colorado and Gunnison Rivers have supported the growth of the community's urban forest. However, the community faces current and long-range constraints to water supply as well as an ongoing trend of warming and increasing climate variability.

Goals of the Plan



Canopy Conditions

Grand Junction's tree canopy shades nearly 13% of City limits and about 11% of the Urban Development Boundary. The canopy is densest in single-family neighborhoods and least in commercial areas. Trees density is also uneven across the city. Neighborhoods have distinct soils, climates, and water access. Over the last century, the City and property owners made different planting and management choices, with differing levels of resources. These factors created our impressive but unevenly distributed canopy.

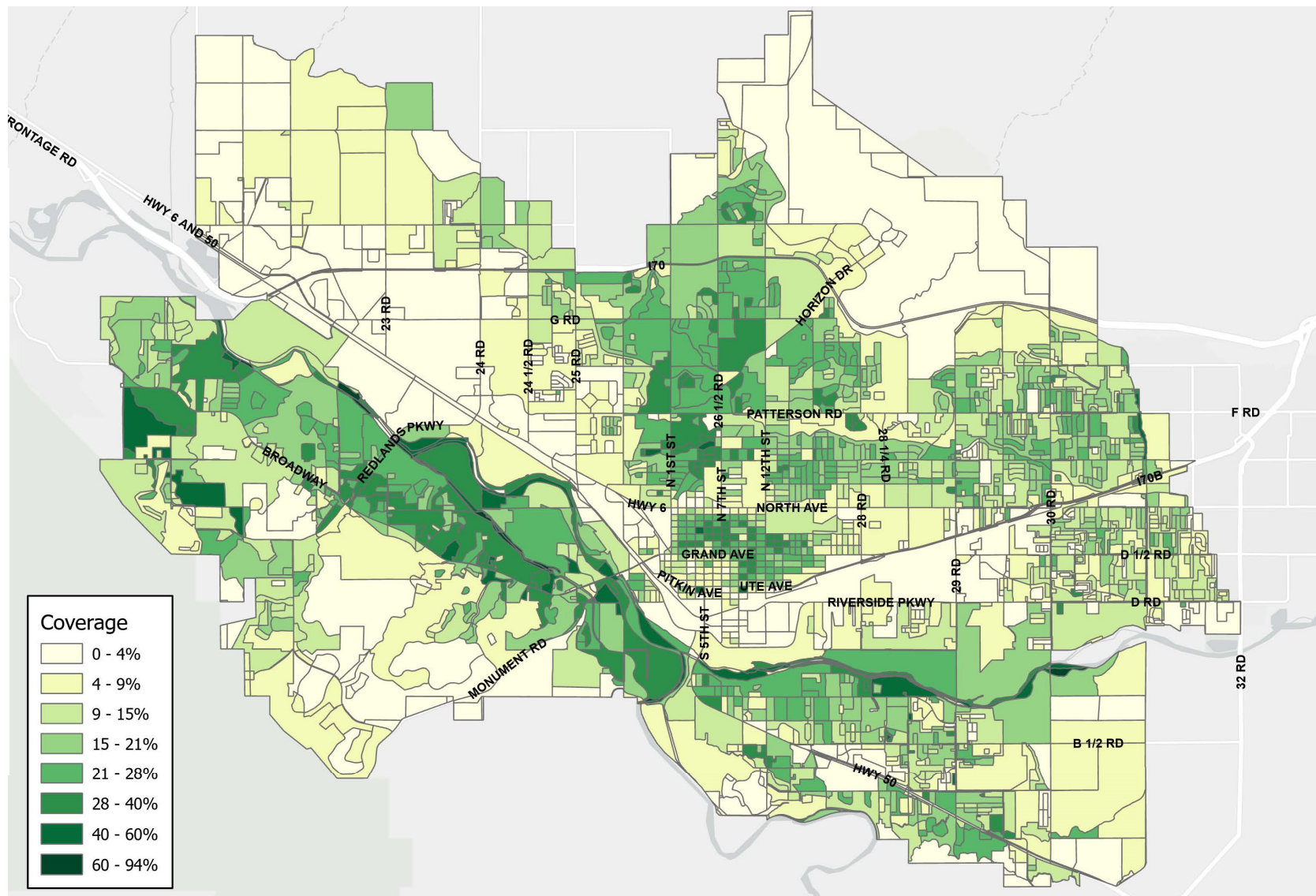
Growth of the canopy is positive nearly citywide. Within the urban development boundary, there was an increase in canopy of 4% from 2011 to 2019, and all City Council Districts saw canopy growth. Some blocks lost substantial numbers of trees, often associated with major redevelopment that removes fewer mature trees with larger numbers of young trees that will replace the loss over time.

Using the Land Use Categories from the Comprehensive Plan,

the best estimate of coverage for different areas of the city is shown in the table below. Cover is highest in residential districts and lowest in commercial and industrial areas, as well as at the Grand Junction Regional Airport.

Land Use Type	Estimated Coverage
Airport	3.5%
Commercial	7.5%
Industrial	4%
Mixed Use	6%
Parks and Open Space	14%
Residential High	12%
Residential Medium	14.5%
Residential Low	16%
Rural Residential	9%
Rights-of-Way (ROW)	9%
City Limits	13%
Urban Development Boundary (UDB)	11%

Current Canopy Cover

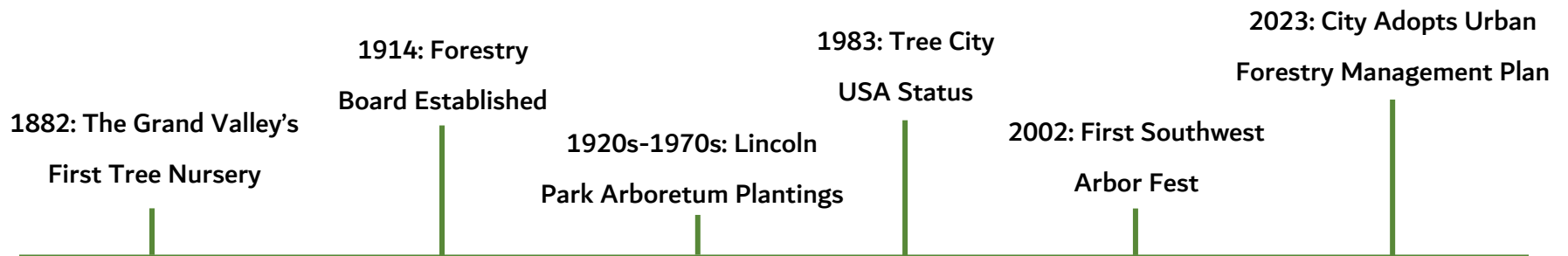


This map shows current canopy cover as of 2019 for all census blocks within the Urban Development Boundary (UDB).

Plans and Policies

All City of Grand Junction’s plans have implications for other plans. This is no exception. The creation of an Urban Forestry Management Plan was prompted by both the 2020 One Grand Junction Comprehensive Plan and the Parks, Recreation, and Open Space Master Plan, which emphasized the need to set a citywide goal for canopy coverage.

This plan should also influence the terms of future planning efforts. For example, future sub-area or neighborhood plans should consider the equitable coverage recommendations of this plan, future development plans can benefit from the resources on water conservation, and many overlaps are anticipated with the forthcoming Sustainability Plan.



Value and Services

Trees generate tremendous value for the community. These values include social, economic, and environmental services. Some of them—such as shade—are readily experienced. Others are harder to discern but equally important to the well-being of the community at large. The boxes below highlight some of the values that trees provide in dollar or more general terms.

People

The urban forest removes 65,000 lbs of particulate matter from the air each year, reducing respiratory illness.

Regular access to trees increases happiness, cognition, and lifespans, while reducing mental illness, asthma, stress, and heart disease.

Planet

Grand Junction's trees sequester 3,927 tons of carbon each year and store 166,000 tons of carbon long-term.

Trees save \$395,000 in annual stormwater infrastructure costs.

Planting strategically at home can save \$100-\$250 in annual energy costs.

Pocketbook

The total replacement value of the urban forest exceeds \$1 billion.

A mid-sized tree can increase the value of a single-family home by \$23,400.

Canopy growth increased residential property values in Grand Junction by \$60 million since 2011.

Shade



Wildlife
Habitat



Air
Quality



Water
Quality



Property
Value



Erosion
Control

Protecting Services From Hazards

The values that trees provide are tremendous, and some—like shade—are easily experienced. Most others are experienced as cost savings, so they may not appear on household or government budgets until the services are lost or reduced. Many cities across the country have experienced devastating losses. For example:

Dutch Elm Disease killed 70 million trees nationwide between 1930 and 1950. Many cities lost over half of their canopy. Existing and imminently arriving pests that affect ash trees present a similar risk today (see page 13).

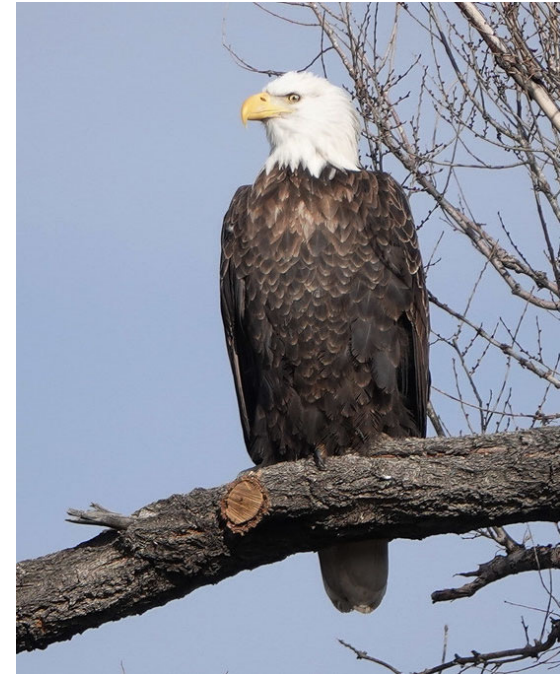
A major drought event can decimate an urban forest in a matter of weeks. The 2011 drought in Texas reduced canopy coverage by between 10% and 40% in major cities.

The derecho storm that struck Cedar Rapids, IA in 2021 eliminated 65% of the canopy, prompting a costly replanting effort.

A 20% canopy loss in Grand Junction—equivalent to all ash trees or one mismanaged extreme drought—could result in a \$200 million loss in structural value. While hazards are unpredictable, many steps can be taken to avoid catastrophic losses. Proactive care, increased diversity, and careful investments of water are the community's best means of protecting this valuable asset.

Green Infrastructure – Like roads and bridges, trees serve as infrastructure. They require investment and maintenance, and we maintain them for specific purposes. Unlike other infrastructure, trees appreciate in value over time, rather than depreciate.

Ecosystem Services – The benefits that trees provide are called ecosystem services. These are functions like shade and stormwater management. They can be totaled in dollar terms or compared to other ways of providing similar services.



A Fragile Oasis

From the top of the Mesa, Mt. Garfield, or the Monument, the Grand Valley appears as a cluster of green in the desert. Walking through any neighborhood, trees are as common as buildings. Drive in any direction and the trees disappear quickly. A century ago, Grand Junction was treeless, too. Early residents diverted water from the rivers to nourish the trees that make Grand Junction the oasis we recognize.

Keeping it that way requires care. In our climate, we cannot plant a tree and walk away. Our urban forest is an ongoing investment, and it must be managed to suit local conditions.

Forestry management in Grand Junction differs from any other city in Colorado or the country. Grand Junction has a unique planting zone. It has microclimates from winds that come out of the canyon. Sun exposure varies, and so do temperatures. At times the valley floor is colder than Orchard Mesa or the Redlands.

Having warmer winters and lots of microclimates means that many trees can succeed in Grand Junction that don't succeed elsewhere in the state. This allows the City and the public to plant a more diverse canopy. But we must also contend with storms, temperature swings, wildfires, and drought.

Grand Junction sits in USDA Hardiness Zone 7, but is separated from most other zone 7 areas in the region. This offers some protection from invasive species, pests, and diseases that might cross the Rocky Mountains or the Colorado Plateau. But they may travel with people, transported firewood or boat hulls. Of current concern, the Emerald Ash Borer and other ash tree pests put about 20% of the urban forest at risk.



Drought and Water Scarcity

Grand Junction contends with a rapidly changing climate and increasing water scarcity. Grand Junction has been in drought more often than not for the last two decades, experiencing three periods of exceptional drought with topsoil losses and increased wildfire risk. The drought from 2019-2022 was one of the most severe on record. Mesa County also warmed faster than 90% of US counties since 2000, at two times the global average rate.

Grand Junction's arid climate poses one of the greatest constraints to the long-term health of the urban forest. Water demand is predicted to rise with growing populations, with growth anticipated to exceed 30% by 2050. The City of Grand Junction's water utility provides water from the Kannah Creek watershed on the Grand Mesa, which is a relatively stable supply. Not all water supplies are equally secure. In 2021, low water conditions required the Ute Water Conservancy District to draw on its water rights from the Colorado River to supply its customers. These local challenges with drought and growth

mirror the challenges faced by communities throughout the Colorado River Basin.

This plan addresses many of the ways that Grand Junction can manage drought risk and invest water in trees to reduce health risks from extreme heat.



Pests and Disease

Trees in Grand Junction must withstand routine problems associated with pests and diseases. Most tree pests affect only certain genera or species of tree. This means that the forest can be protected as a whole by increasing planting diversity. However, for all tree species, the threat of serious damage or mortality from a pest or disease rises rapidly when a tree is stressed. Ensuring that trees have adequate light, water, and pruning at all times offers some of the best protection available.

The Emerald ash borer (*Agrilus planipennis*, or EAB) is a non-native beetle species with severe potential impacts for the urban forest. About 15% of trees in Colorado cities are ash trees, and the proportion of ash in Grand Junction is likely nearer 20%. Several other pests already threaten ash trees. EAB has been confirmed in the Front Range, having reached Boulder first in 2013. EAB will eventually be transmitted to Grand Junction. Delaying this transmission requires that firewood not be transported from areas with EAB exposure. Residents can also treat their ash trees using trunk injections and sprays. The City of Grand Junction has an active program to help residents with mature ash trees to protect their trees, but the planting of new ash trees should also be discouraged.

Pest and Diseases of Concern

- Ash Bark Beetle
- Lilac Ash Borer
- Emerald Ash Borer
- Elm Scale
- Pine Needle Scale
- Leucanium Scale
- Kermes Scale
- Anthracnose
- Ips Bark Beetle
- Spider Mites
- Japanese Beetle



The Emerald Ash Borer Beetle

Extreme Weather

Grand Junction typically experiences at least two extreme snow events in a given year, as well as occasional high winds and cloud-burst rainfall. These events tend to cause damage to trees, especially when snowfalls and winds are poorly timed with tree leaf-out in spring and leaf-drop in fall. When snows accumulate on leafy branches, trees may suffer limb losses or death.

Risk from these extreme weather events is likely to increase as storms become more intense and their timing more erratic. However, residents can prepare for storms and actively manage their trees during heavy snows to reduce risks. Clearing branches of snow when it can be safely done during a storm may be advisable to reduce weight on limbs. However, the best way to prevent winter storm damage is a regular and systematic pruning program that addresses at-risk limbs well in advance of storms.



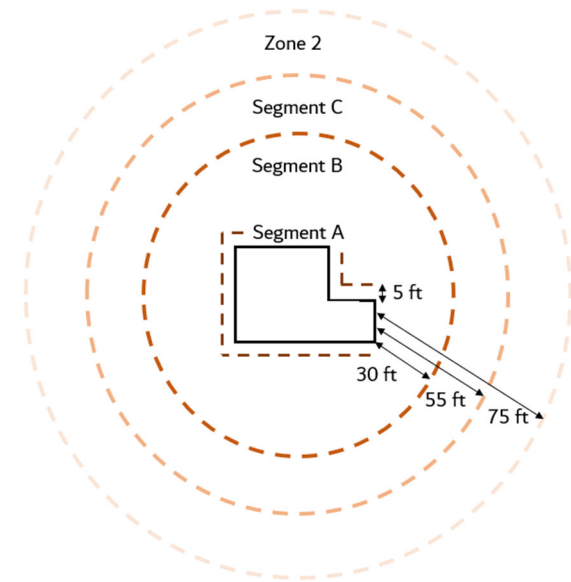
Frost events also pose a risk to local trees, especially fruit trees. A 2020 fall freeze caused devastating losses for peach growers, raising consciousness of this risk throughout the community. Fall and spring freezes pose particular threats for newly-planted trees and tree nurseries. One major mistimed frost threatens to offset the gains of an entire planting season. Thorough organic mulching and watering before a frost or freeze can help to reduce risk. Residents are also advised to arrange for pruning in the spring or early summer, and they should avoid pruning in early fall to minimize impacts to trees entering dormancy.

Wildfire Risk

The 2020 Pine Gulch Fire burned 139,000 acres and came within 18 miles of Grand Junction, reminding us of the threat wildfire poses. According to the Colorado State Forest Service, nearly 6,000 wildfires occur each year in the state. Just 12% of these occur because of lighting; the rest are human-caused. While these wildfires support ecosystem health and create habitat, they can be extremely costly to communities.

Reducing risk relies on good decision-making in wildlands and rural areas, and it requires actions to reduce the vulnerability of homes. This is especially important at the fringes of the city, or the “Wildland-Urban Interface” (WUI). Residents of the Redlands and Orchard Mesa must be extra vigilant, given their proximity to forested areas and open spaces.

The Grand Junction Field Office of the Forest Service provides a range of programs to assist landowners in preparing for wildfires and reducing risks to their property. These programs may be of particular interest to residents in areas of heightened risk. The City of Grand Junction also has regulations to guide residents in making their homes more defensible if threatened by a wildfire. If you live near the edge of the city or near a large, wooded area, consult the City’s regulation.



Protecting Your Home

The City provides guidance for reducing wildfire risks to homes near open spaces in the Municipal Code. As illustrated above, keep the five feet nearest the home free of vegetation and debris. The first 30 feet from the home should be kept clear of dead trees, firewood, and combustible material. In the first 55 feet, trees and groups of shrubs should be spaced by twice their height. Up to 75 feet from the home, all trees should be spaced 5 feet apart or further.

All Hands on Deck

Grand Junction's urban forest exists because generations of residents invested their time and resources into nurturing trees. This kind of infrastructure requires diffuse care, and no single group can perpetuate the canopy on their own. This chapter explores the roles of the many people and organizations that care for trees in Grand Junction. It also reflects the many perspectives of these groups. These needs and opportunities of these groups inform the goals and programs that follow.



The City

The City of Grand Junction—particularly the Forestry Division—takes a leading role in managing trees on public property. The City also galvanizes support for forestry and builds educational partnerships.

Residents and Landowners

Homeowners, renters, businesses, and institutional landowners maintain 75% of the trees in Grand Junction. They have valuable knowledge of the trees in their lives and critical roles in expanding the canopy.

Tree Professionals

Landscaping contractors, arborists, and tree nurseries have tremendous expertise and interact with tens of thousands of trees each year. The canopy depends on their ability to manage evolving tree care challenges.

Public Perspectives

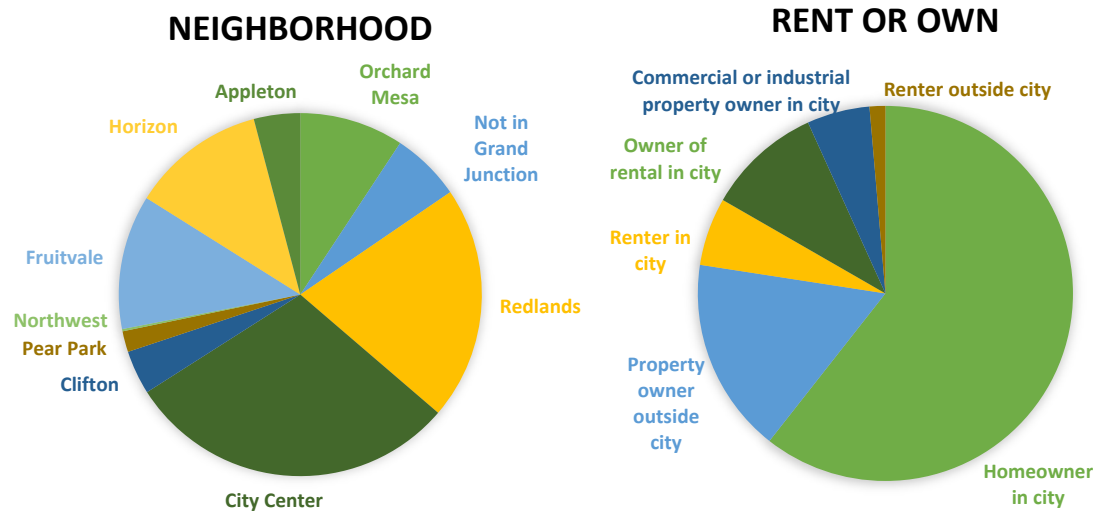
Urban forestry touches the lives of all residents, and each person has different relationships to trees. The City offered several avenues for the public to engage with this topic and to share community's perceptions, hopes, and concerns for the urban forest.

First, the City released a survey to explore public knowledge and views related to the trees in the community. The survey was available to the public online in English and Spanish from January 1st to 31st, 2023. More than 500 residents responded, making this one of the most successful forestry planning surveys in the US.

The City also hosted open houses to review forestry data goals of this plan, with an in-person workshop on February 23rd, 2023 and a virtual event on February 27th.

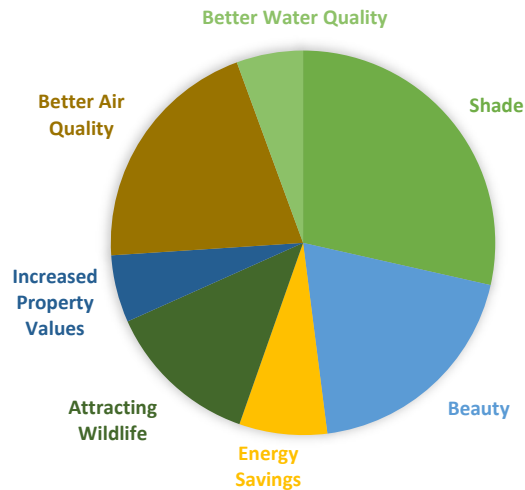
Who responded to the survey?

Residents from all neighborhoods took the survey, but the Redlands and City Center neighborhoods had the highest response rates.



Renters were underrepresented in the survey. Only 9% of respondents rented, whether inside of city limits or beyond. Meanwhile, about 40% of Grand Junction residents rent their homes. Renters likely face unique challenges related to tree care, yet this survey largely captures the experience of homeowners. However, many responding homeowners also own rental properties in the city.

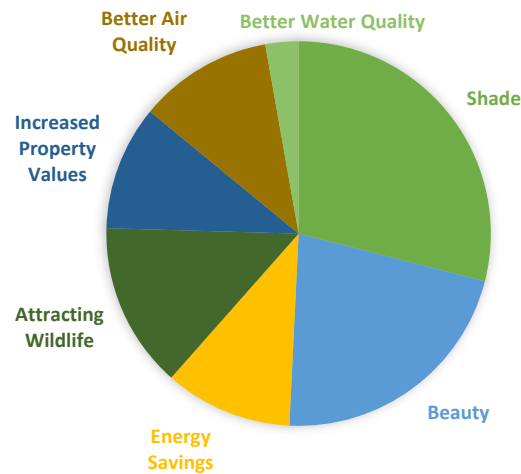
BENEFITS OF PUBLIC TREES



The survey sought to understand what benefits of trees residents value most. It asked about perceptions of trees' services on both public and private property, asking residents to choose three benefits each. The results show that residents value all of the services that trees provide, even if to different degrees. Notably, some services with high dollar values—such as water quality services—are perceived as less important by the public.

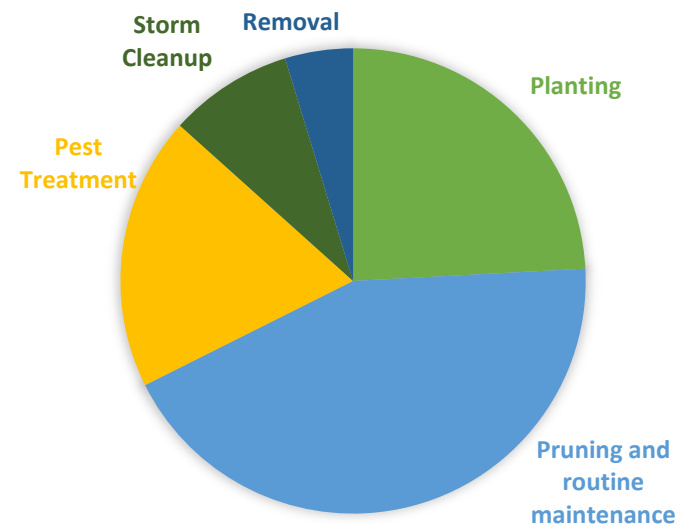
Whether for public or private trees, a large majority of respondents (87%) included shade as a primary benefit. This makes sense: shade is experienced on a daily basis, and it underlies many other benefits. Notably, air quality was of greater interest for public trees, while increased property values mattered more when considering private trees.

BENEFITS OF PRIVATE TREES



The survey explored which services of the Forestry Division residents appreciate most. The responses show that pruning and treatment matter to residents, suggesting that people want to see continued investment in existing trees. Notably, the survey found that only about half of respondents knew that the city regulates trees as well as cares for them.

VALUED CITY TREE SERVICES



Words on Water

Many workshop attendees and survey respondents shared thoughts on the complex relationship between trees and water. Comments included:

"We need to be developing different options on watering our street trees!"

Gray water systems specifically put in for street trees!"

"Plant only climate tolerant or acclimated varieties."

"Pay attention to our water, stop the uncontrolled growth in our valley."

"Many people on my block have replaced their lawns with rock, but this seems to lead to their trees dying right after."

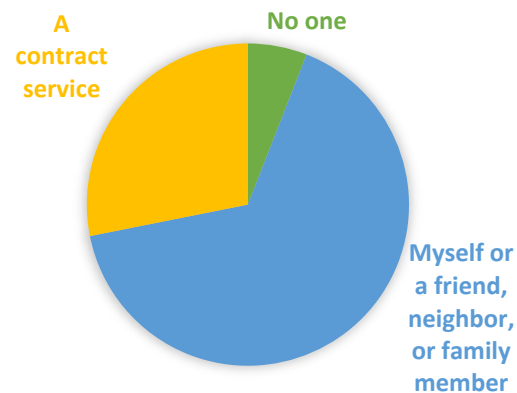
Perceptions of Canopy Extent

The survey asked residents whether they considered the canopy cover in their neighborhood to be adequate. Most residents were either satisfied with the level of forestation or wanted to see the canopy cover expand. This suggests broad support for devoting resources to urban forestry. Just 2% of respondents considered the canopy in their neighborhood to be too extensive.

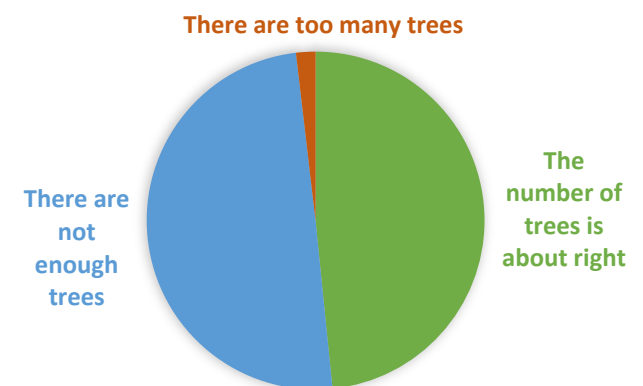
Who Cares for Trees?

Respondents shared information about who cares for the trees at their homes and businesses. The results show a diversity of approaches. Many residents rely on professional help, but most rely on professional help, but most rely on neighbors or their own handiwork. Importantly, many residents do not engage in tree care at all, placing trees at risk.

PRIVATE TREE MAINTENANCE RESPONSIBILITIES



NEIGHBORHOOD CANOPY COVER



Stewards and Stakeholders

Residents and Businesses

Residents are—and will be—the frontline caretakers of trees. The City manages about the same number of trees as businesses do. Homeowners and renters care for as much as the City and businesses combined. One of the City's best pathways to a strong forest involves setting up residents and businessowners for success.



Licensed Arborists

The City of Grand Junction licenses all arborists that maintain trees in City limits. In 2022, Grand Junction had just 15 certified Licensed Tree Care Providers and four approved Chemical Applicators. These businesses have an outsized impact on the health of the canopy. They are also well-trained professionals. All have passed the International Society of Arborists (ISA) exam. The Forestry Division should support these crews in sharing information, keeping arboriculture practices up to date, and educating the public.

Landscaping Contractors

Dozens of businesses install and care for landscape plants on commercial and residential properties. Some are small businesses with just one or two employees. Others are more established or are linked to nurseries. These professionals make critical choices about irrigation, plant selection, mulching, chemical use, and more. Providing these groups with information and building their support for optimal tree care will ensure that private property throughout the city serves the goals of this plan.

Real Estate

One of the best ways to ensure the viability of Grand Junction's trees is to set them up for success at the time of planting. Real estate developers have the opportunity to do this by perfecting landscape designs and investing in the right trees for the community. In a typical year, private development plants more than ten times as many trees as the City government plants in parks and on streets. Development must follow the City's landscaping rules and regulations, but many go above and beyond in order to create attractive environments.

Real estate agents also have opportunities to help homebuyers understand the value of trees and how to properly care for them. As these professionals interface with residents, they have profound impacts on public knowledge and choices.

CSU Tri-River Area Extension

The Colorado State University Extension office in Grand Junction serves communities in the four counties of Delta, Mesa, Montrose, and Ouray. Extension plays an instrumental role in supporting landowners in and beyond Grand Junction City limits. The office offers annual continuing education courses for licensed pesticide applicators, online land stewardship training, various other workshops for gardeners, and education on disasters and emergency preparedness. Extension also manages the local Master Gardener program. The Extension team routinely responds to resident's calls for expert advice on landscape and tree care, and in this way is a frontline organization for achieving widespread tree-friendly practices in the community.

Homeowners' Associations (HOAs)

Many Homeowners' Associations set requirements for landscaping styles and minimum plantings for the residential properties for which they are in place. Because the City does not regulate single-family residences, HOAs have the potential to expand canopy cover by increasing their tree requirements. HOAs can also influence water use for landscaping by encouraging effective water-wise design and watering frequency.

Forestry Division

Grand Junction's Forestry Division is responsible for the maintenance of public trees in the City of Grand Junction. This team of City staff is dedicated to the protection and resiliency of Grand Junction's urban forest through the planting and management of trees in parks, city facilities, and along street rights-of-ways within city limits. The Forestry Division also aims to help the community understand the importance of trees and the environmental services they provide while maintaining our community's canopy.

Parks and Recreation Department

Beyond the Forestry Division, the broader Parks and Recreation Department manages upkeep and expansion of all City parks, cemeteries, and community facilities. Parks and Recreation staff also manage a variety of recreational programs, in addition to a growing number of arts and culture programs. Guided by the adopted Parks, Recreation, and Open Spaces Master Plan, they aim to provide high quality services to all residents.

Public Works Department

Public Works takes primary responsibility for engineering, transportation, and stormwater, including for planning, design, and oversight of most capital improvements. As a custodian of the street network and stormwater systems, Public Works provides for—and benefits from—many of the services that the urban forest offers.

Community Development Department

Planning and development oversight by the City of Grand Junction is concentrated in the Community Development Department. As the primary interface between real estate development and the City organization, Community Development takes a lead role in promoting successful planting designs for new development. The Department balances objectives related to quality of life, including housing, resource stewardship and active transportation, all of which have consequences for the urban forest.

Colorado State Forest Service

The Colorado State Forest Service maintains a Field Office in Grand Junction. This Field Office has been instrumental in advancing the health and recognition of the urban forest. The Field Office provides technical assistance to residents and businesses, including a range of locally-crafted guides to pruning, planting, and disease monitoring. The Field Office is also closely involved with Grand Junction's Tree City USA redesignation process and Arbor Day celebrations.

Colorado Parks and Wildlife

Colorado Parks and Wildlife is the state agency charged with managing 42 state parks, over 300 state wildlife areas, and a range of recreational and wildlife programs. Within the City of Grand Junction, CPW manages three sections of the James M. Robb Colorado River State Park, including a large share of the community's riverine trees.

School District 51

As one of the largest property owners in City limits, the public school system cares for a large number of trees, all of which shade the daily lives of children in the community. It is also on the frontlines of childhood education, which includes environmental programming. District 51 has taken strides to increase watering efficiency in recent years.

Colorado Mesa University

As the major institution of higher education in Grand Junction, Colorado Mesa University (CMU) supports the community both by stewarding the large share of the urban forest that lives on its campus. CMU also generates talent and interest in forestry and ecology among its students. CMU has been designated as a Tree Campus USA for seven years, thanks to its thriving canopy and 300 annual hours of student volunteer time focused on trees. The CMU grounds maintenance team works with designers as the campus expands to support the diversity of trees on campus. They seek to maintain a vibrant and safe campus canopy through pruning, pest control, and proactive management.



Plant and Tree Nurseries

The four independent plant and tree nurseries in Grand Junction, several irrigation suppliers, and a range of hardware and specialty businesses provide most of the trees that residents and businesses plant in the community. This creates many opportunities to improve the type and diversity of species available, and to provide resources that help residents to make good tree choices.

Forestry Board

The Forestry Board has been active since 1914. Composed of seven board members, this entity is a resource for the community, hosting extensive knowledge about local forestry. The Board reviews qualifications of tree maintenance businesses and issues licenses to people and businesses that wish to perform tree-related services in the City of Grand Junction. The Board also makes recommendations to the City Council when the Council considers rules and regulations pertaining to tree service businesses.

In addition to this core function related to licensing, the Board routinely provides comments and guidance on tree-related decisions by the City. It may collaborate with the Parks and Recreation, Community Development, and Public Works Departments when these parts of the City organization take actions that would affect of public trees.

Mesa County

Mesa County plays an important role in tree management in and around the City of Grand Junction. The County is a landowner within City limits, owns and maintains public trees under their jurisdiction (including at the urban fringe), and is a partner in many contexts such as water conservation and wildfire management. Mesa County does not have staff with equivalent roles to the Grand Junction City Forester or the Forestry Division. Instead, the organization relies on its Public Works Divisions for tree removal.



Natural Areas Non-Profits

A variety of citizen groups, non-profits, and collaboratives engage in forestry-related activities in the community's natural areas. The non-profit Rivers Edge West restores riparian ecosystems through education, collaboration, and technical assistance across the Southwest from their base in Grand Junction. They have been instrumental in controlling invasive tamarisk on the banks of the Colorado and Gunnison Rivers. The organization launched the Desert Rivers Collaborative in 2012 to maintain native river habitats in Mesa and Delta Counties. Separately, the Two Rivers Wildfire Coalition connects local non-profits and governments to reduce wildfire risk. Such organizations play an essential role in ecosystem management.

Reaching Up

By 1900, Grand Junction had planted and irrigated the beginnings of our urban forest. Some of our cottonwoods may be that old, but most trees in the urban forest have been planted and replaced over the last century. This section establishes goals for the urban forest to continue on its trajectory of growth. These goals are not ranked in terms of priority, as all must be met to ensure that the urban forest reaches its potential. The goals are as follows:

- **Extend Trees' Benefits to All**
- **Invest Water in Shade**
- **Diversify the Canopy**
- **Care for Park and Street Trees**

Vision Statement

In 2030, Grand Junction's trees are a defining and valued feature of the city, recognized for their contributions to making Grand Junction a desirable place to live. Residents and the City of Grand Junction value trees for their power to promote well-being, support ecosystem health, and create economic value. The Forestry Division manages its trees as an integral form of infrastructure. Proactive approaches to tree care, planning, and education ensure that the City's canopy grows its benefits to extend equitably across the community.

- **Build Knowledge of Tree Care**
- **Plant and Retain Trees**
- **Integrate Trees into Decisions**

Extending Trees Benefits to All

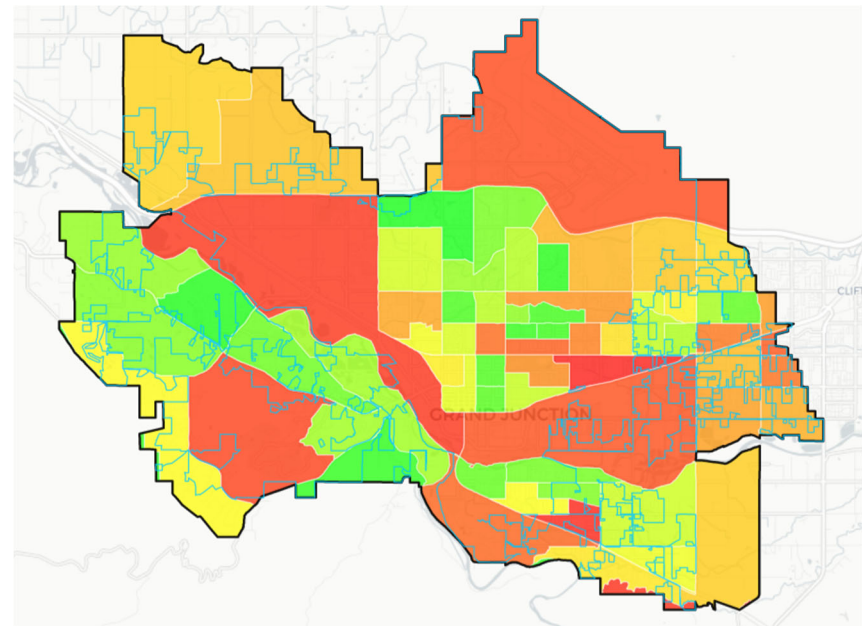
No city has a perfectly even canopy coverage, but seeking equity in planting and care is a goal for many cities. This is important, because tree canopy cover in US cities tends to be lesser in areas with lower income and more residents of color.

Cities use a statistic called the Tree Equity Score to track how well the benefits of trees are spread across the community. This tool was developed by the non-profit American Forests. To create a single equity score (out of 100), the tool uses eight statistics: existing tree canopy, population density, income, employment, temperature, race, age and health.

Within Grand Junction's City limits, neighborhood tree equity scores range from 100 to 37. Scores are lower along I-70B, with lowest scores for developed areas found in Fruitvale, the City Center, North West Grand Junction, and Orchard Mesa. These areas also had higher numbers of survey respondents that felt canopy coverage should be increased in—suggesting that residents notice the difference and want to address it.

The Forestry Division can raise these scores by focusing plantings and providing extra support in areas where trees are rare. Because trees create savings and value for adjacent properties, investing in trees for low-income areas will boost household wealth and help solve disparities sustainably.

Tree Equity Score by Census Block Group



Investing Water in Shade

Water constraints are changing the way that residents think about what kind of landscape can be sustained into the Grand Valley's future. Trees have a complex relationship to water. They require water, and in return, they lower temperatures and reduce the water demand of other plants. Many species of tree will remain an integral part of a water-wise landscapes in Grand Junction; these trees should be well-selected and cared for to use water efficiently.

Limited water resources have been a factor in Grand Junction's urban forest since the community was founded. Water conservation has become a priority issue for the City of Grand Junction over the course of several decades, especially in the face of growing population, falling precipitation levels, and the increasing frequency of drought.

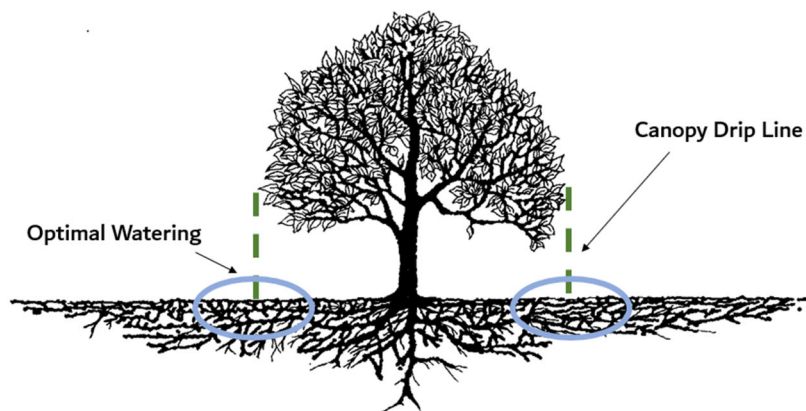
In Grand Junction, most trees that people plant require supplemental watering for their entire lifespans. Yet trees also cool the community and lessen water demand for other

plants through shade and evapotranspiration. Without trees, water consumption for other uses would rise. One goal of this plan is to facilitate a balanced approach to the relationship between trees and water, endeavoring to conserve precious water resources without compromising urban forest health.

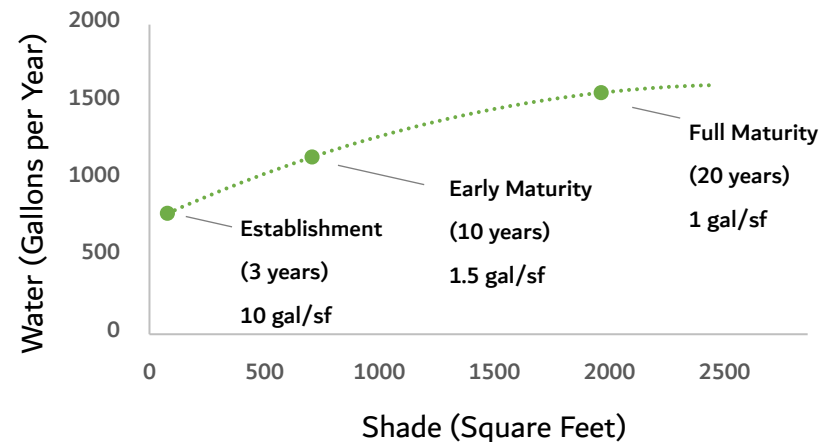
To understand the scope of the challenges facing Grand Junction's water resources, consider the overall conditions of the Colorado River Basin. This threatened river contributes up to \$846 billion to the GDP of the Colorado River Basin region and provides water to some 40 million Americans. The Colorado River Basin currently suffers from a prolonged drought—thought to be the worst in some 1,200 years. This drought raises the stakes on forestry management throughout the community and has created a challenging array of consequences for forest managers.

Many decisions can be made at home to invest water more efficiently in shade. For example, residents may consider:

- Installing a graywater collection system;
- Using permeable pavers for driveways and patios;
- Planting trees where water will naturally flow or collect, and grading property for trees before planting;
- Planting trees together with shrubs and water-wise groundcover to optimize shading and watering;
- Xeriscaping correctly to prevent mature tree loss;
- Selecting species with low water demand for planting sites with less access to stormwater; and,
- Watering trees deeply and less often at the dripline, instead of frequent shallow watering at the trunk.



Shade Provision and Water Demand



This chart shows how the shade of a tree increases over time relative to its water requirements. The specific numbers are for a tree species with moderate water demand and a 50-foot mature spread, but the trend is true of most shade trees.

Early in a tree's life, it returns one square foot of shade for every ten gallons of water it needs in a year. At full maturity, a typical tree returns 1 square foot of shade for every gallon of water it requires in a year. This means a mature tree is ten times more efficient at shading the city, in terms of water demand.

Diversifying the Canopy

Forest diversity provides visual interest. It also corresponds to the Right Tree, Right Place strategy. The many contexts for planting in the community mean that many trees will have their place.

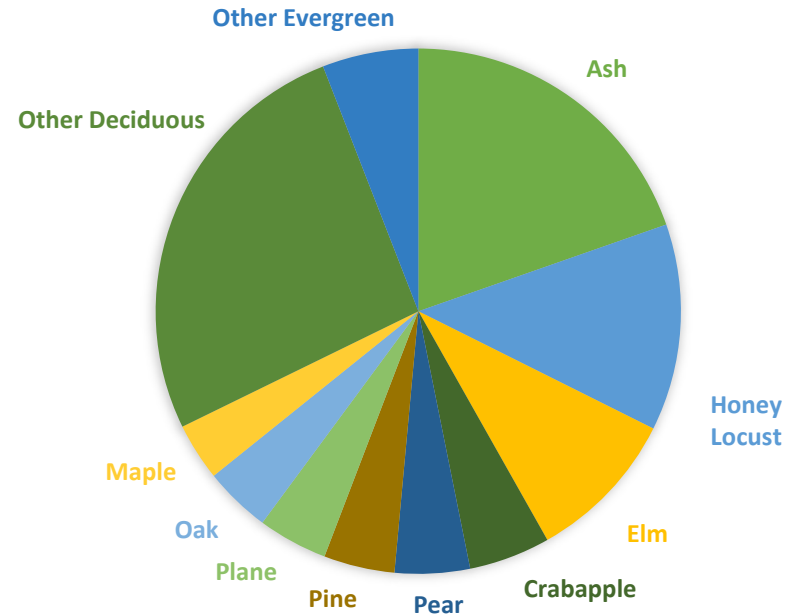
Tree diversity also promotes resilience to hazards. Species react differently to drought, storms, and changing weather patterns. They also suffer from distinct pests and diseases. Ash trees suffer from multiple pests and will be at high mortality risk when Emerald Ash Borer reaches the Grand Valley. Future pests and diseases may affect certain trees in unpredictable ways.

The best way to protect the canopy from future shocks is to plant a wide range of trees. To guide decisions, cities commonly adopt the 10-20-30 rule, planting:

- Up to 10% of any one species
- Up to 20% of any one genus
- Up to 30% of any one family

This rule is reflected in the City of Grand Junction's landscaping requirements and guides public tree planting. Rebalancing the forest will require slowing the planting of ash, honey locust, and elm.

PUBLIC TREE DIVERSITY



Current Diversity Levels

The City does not have an inventory of private trees, but tracks the trees under Forestry Division care. The makeup of park and street trees shown above reveals that ash comprises a large share, as do ornamental trees like pear and crabapple. About a quarter of species are relatively rare, which is a testament to progress on diversity.

Caring for Park and Street Trees

The Forestry Division cares directly for trees in parks, rights-of-way, cemeteries, and open spaces. The program actively manages 5,000 public space trees and 12,000 street trees. There are an estimated 40,000 additional trees within City natural areas along rivers and drainages and in open spaces.

The Forestry Division acts on limited resources—equipment, staff, and predictive power about risks—that must be allocated to support the City’s goals. The level of service can be increased—and public risks reduced by increasing the efficiency and amount of resources the City dedicates to trees.

The Forestry Division is well-funded, as reflected by the Tree City USA status that requires at least 1% of the budget to serve tree care. The City of Grand Junction adopted a budget of \$253.1 million for 2023, allocating \$16.9 million for Parks and Recreation. This includes over \$900,000 for Forestry Division staff and operations.

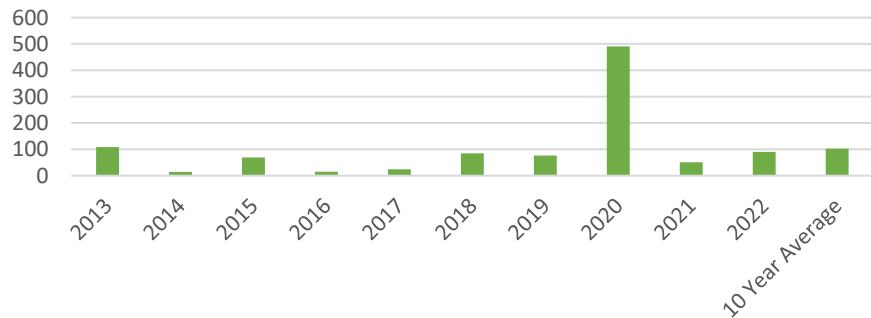
Protecting Grand Junction’s #1 Public Tree – Since 2020, the populations of two native insects—ash bark beetle and lilac ash borer—have grown exponentially, causing city-wide damage to ash trees. This existing pressure on Grand Junction's most common public tree, combined with the threat of emerald ash borer now present along the Front Range, puts this at the top of the list for insect threats.

The Forestry Division has begun a proactive trunk injection treatment program to protect the good health of all good condition ash with a trunk diameter of 13 inches and larger. The City has also launched a private ash treatment cost share program with private property owners to further protect the environmental services provided by this tree species. Continued support of these programs is proactively preparing the community for emerald ash borer response.

The City has also expanded its Forestry Division in recent years. The number of full-time arborists on staff increased from two in 2014 to four in 2019 and up to present. The Forestry Division has also established means of contracting with licensed providers for supplemental tree care, creating flexibility in response. This page addresses funding for contracted services, while the organizational chart and equipment are shown on the next page.

Growing Responsibilities – The City of Grand Junction also grows each year. As land annexes into the City limits, the maintenance needs rise with the number of public trees. Since 2013, the City grew by 100 acres per year. This adds about 150 public trees to the Forestry Division’s inventory annually—most of them recently planted.

Acreage of Annexations by Year

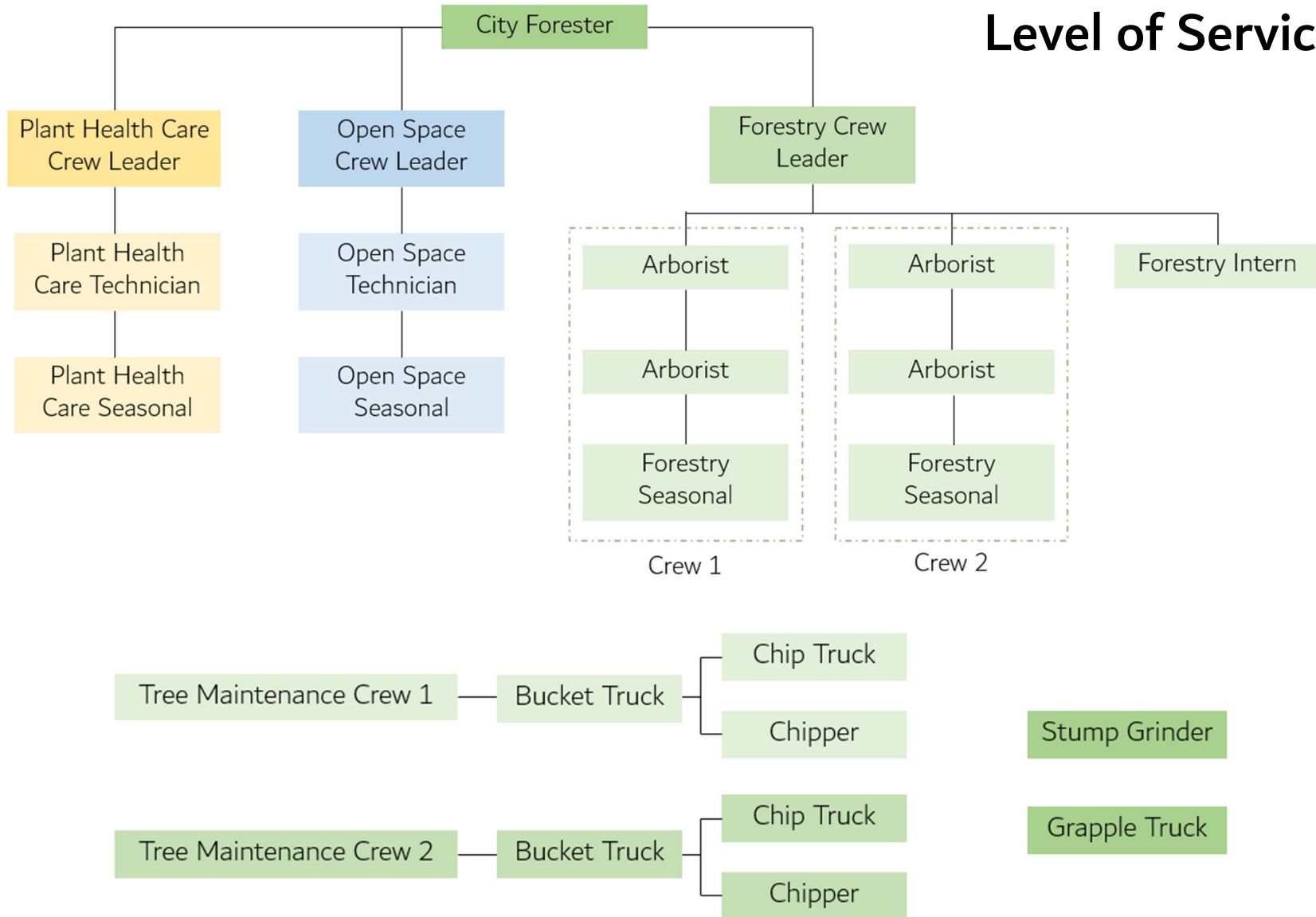


Level of Service

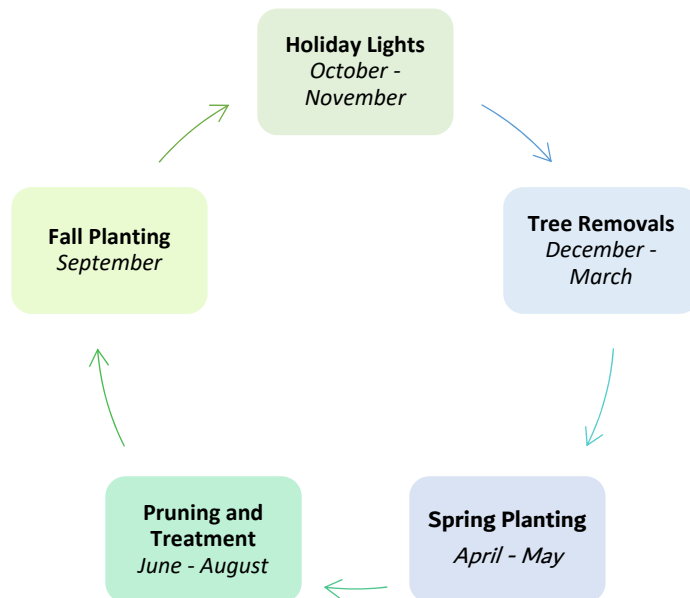
Contracted Services – Many urban forestry programs across the country find success by balancing between in-house staff and the strategic allocation of tree care to local tree services. This option allows cities to avoid significant costs from purchasing equipment and minimizes the number of new full-time staff employed. Contracted services funding has been used by the city of Grand Junction for several years to increase the number of trees maintained annually. Continuing funding and authorization for contracted services would allow for ongoing flexibility.

Information Technology – Effective canopy management requires dynamic, high-quality information. In 2020, the Forestry Division began using a software called Lucity that provides data on tree canopy cover and changes across the city. As technology improves, new software options should be evaluated to ensure the most efficient and cost-effective system is being utilized.

Level of Service



With recent increase in full time arborists, the Forestry Division now operates with two tree crews, allowing the program to better manage public work requests. During the pruning and maintenance cycle below, these crews focus their efforts on a series of demands that limit them for taking on a systematic pruning cycle for public trees. However, for best results, trees should be pruned once every five to seven years. As the Forestry Division takes on new staff, equipment, and resources, it may consider new options for proactive care.



Level of Service

Third Request Response Crew - While the City typically responds to all work requests within 12 months, shortening this timeline may be of value. A third work request response crew may continue tree care on a separate cycle, responding to requests while other crews follow the annual cycle.

Proactive Pruning Crew - Many communities establish a cycle of proactive maintenance that addresses each public trees' needs within a defined period (such as the three- and five-year cycles detailed here) on a neighborhood-based rotation. This ensures that trees under the watch of property owners that are unaware of the work request system still receive attention.

Young Tree Care Crew - Some cities focus resources on young trees. The return on investment for proactive pruning and care is much higher than for reactive care at a later stage or when a tree is under stress. This crew would attend to trees up to three years after planting, relying on data about City plantings and right-of-way plantings that accompany development.

The non-profit American Forests recommends that cities fund and staff for tree care at a rate of \$27.41 per tree and one staff per 10,000 trees. Grand Junction performs very well against this metric for staffing, but less well against budget targets. While no Colorado municipality has met these targets in full, they serve as a helpful guide.

	Recommended	Current
Public Trees per Forestry Staff	10,000	9,645
Budget per Public Tree	\$27.41	\$5.29

The difference in budget and staff relates to the potential for Grand Junction to increase its investments in programs to support private property owners in tree care, as well to equipment investments. Equipment is an essential element of forestry crew functionality, and the City would benefit from increased equipment redundancy. For example, the Forestry Division currently operates with two chippers, one

Level of Service

per crew, and frequently see capacity reductions when a chipper is out of service. Adding an additional crew in the future will compound the need for more equipment and training.

The following table provides insight into the investment that would be required to establish a proactive pruning and maintenance cycle as discussed on the previous page. It assumes—based on current costs—that the cost of labor and equipment for each removal is \$900, and the cost to plant a tree is \$700, and that the cost of pruning decreases from \$400 to \$300 as shorter cycles increase efficiencies of scale. Introducing a 3- or 5-year pruning cycle would increase the budgetary requirements of the Forestry Division and result in reduced risk of tree loss, improved canopy health, and increased public safety in parks and along streets.

	Prunings	Removals	Plantings	Pruning Costs	Removal Costs	Planting Costs	Total Cost
9 Year Cycle	2000	300	400	\$800,000	\$270,000	\$280,000	\$1,350,000
5-year Cycle	3400	300	500	\$1,190,000	\$270,000	\$350,000	\$1,810,000
3-year Cycle	5700	300	600	\$1,710,000	\$270,000	\$420,000	\$2,400,000

Chapter 8.32 of the Grand Junction Municipal Code sets laws and regulations for the protection and care of trees on public property. It provides the authority of the City Forester and Forestry Board, sets requirements for tree maintenance businesses, and assigns responsibilities for tree care. Most sections of Chapter 8.32 were last updated in 1994. The need for an update is evident after three decades, as noted as a goal of the Parks, Recreation and Open Space Master Plan.

Maintenance Responsibilities – The Code identifies the City’s responsibility to maintain all trees in parks and City-owned property. The City also takes responsibility for tree planting, trimming, pest control and removal in rights-of-way, but assigns watering responsibility for right-of-way trees to the adjacent property owner. However, the Code provides conflicting guidance as to the identity of right-of-way trees, suggesting that the City shall maintain only those street trees that exist between the street and a detached walk. This conflicts with the current approach of the City, which is to maintain all right-of-way trees, including where a detached walk does not exist. The Code should be clarified to align.

Municipal Code 8.32 - Trees

Tree Removal on Private Property – The Code requires that trees on private property only be removed by a licensed tree maintenance business. However, removals to clear sites new construction are often undertaken unlawfully by businesses without a license. A revision should balance the need to protect the public from unskilled tree work with reasonable accommodations for licensed general contractors. The City should clarify this requirement for development and fire mitigation, working with the Forestry Board to establish a special permitting process.

Enforcement on Failure to Maintain Trees – The Code does not provide an enforcement mechanism related to the loss of public trees due to the failure of an adjacent property owner to water trees. A fine or other mechanism should be established to discourage non-watering of public trees. A code update could provide a structure for transferring responsibility for watering trees located on rights-of-way to the City for qualified property owners based on hardships.

Building Knowledge of Tree Care

The general public stewards far more trees than the Forestry Division and are on the frontlines of forest management. The City and its partners should take action to educate the public about proper tree care. The City should also promote awareness of the values that trees create, because this is a step toward ensuring that these values increase.

Many of the programs recommended by this plan involve education. Building public understanding of trees is a long-term project. It requires early childhood exposure to the value of trees, knowledge of the urban forest's value and how to increase it, and a local workforce with expertise in tree care.

Building knowledge of tree care does not simply require access to existing information. Because all localities have unique climates, tree care knowledge in Grand Junction needs to be generated continually through experimentation and data sharing. Any time the community plants a tree, an opportunity arises to learn about that species and the conditions in which it is planted.

Helpful Resources

Many organizations in the Grand Valley provide resources for residents to improve tree care. Residents can access resources by clicking on the embedded link:

- [Extensive courses with the Tri River Area Master Gardener Program by CSU Extension](#)
- [The CSU Extension Tree and Shrub Guide](#)
- [Gardening guides from CSU Extension](#)
- [The current list tree care providers licensed by the City of Grand Junction](#)
- [The CSU Extension guide for xeriscaping with trees and shrubs in Colorado](#)
- [Resources from Utah State University on Water-Wise Plants for Utah Landscapes, suitable for USDA Zone 7](#)
- [Grand Junction All-Star Trees List](#)

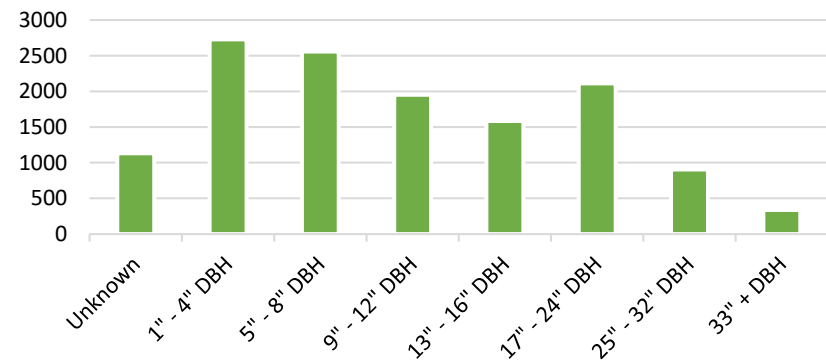
Planting and Retaining Trees

A strong canopy relates closely to urban development. This relationship is highly complex. On one hand, a vast majority of Grand Junction's existing trees were planted during or after sites were developed for housing or other urban purposes. In this sense, without development, the urban forest would not exist. When agricultural lands develop into urban areas, the tree canopy consistently increases.

However, development—especially redevelopment of existing urban areas—can also lead to the loss of mature trees and their replacement with new trees. This causes temporary decreases in canopy as those trees mature. This poses a challenge as the City and residents seek to maintain a robust canopy at all times. Tree protection during construction was widely supported by survey respondents. 77% of respondents considered sustaining trees during construction to be "Very Important" while only 6% of respondents considered this "Not Important."

Errors in managing trees such as under-watering or improper pruning (known as topping) can lead to the loss of new and mature trees. This phenomenon occurs in many areas of the City. It may stem from lack of education about proper tree care, a lack of resources on the part of those responsible for a tree, or miscommunication about who is responsible. For example, a tree may receive inadequate water because a property owner believes that, because the tree is mature, it will draw adequate water from the soil. This is generally not possible in Grand Junction. These problems must be addressed to limit losses from improper care.

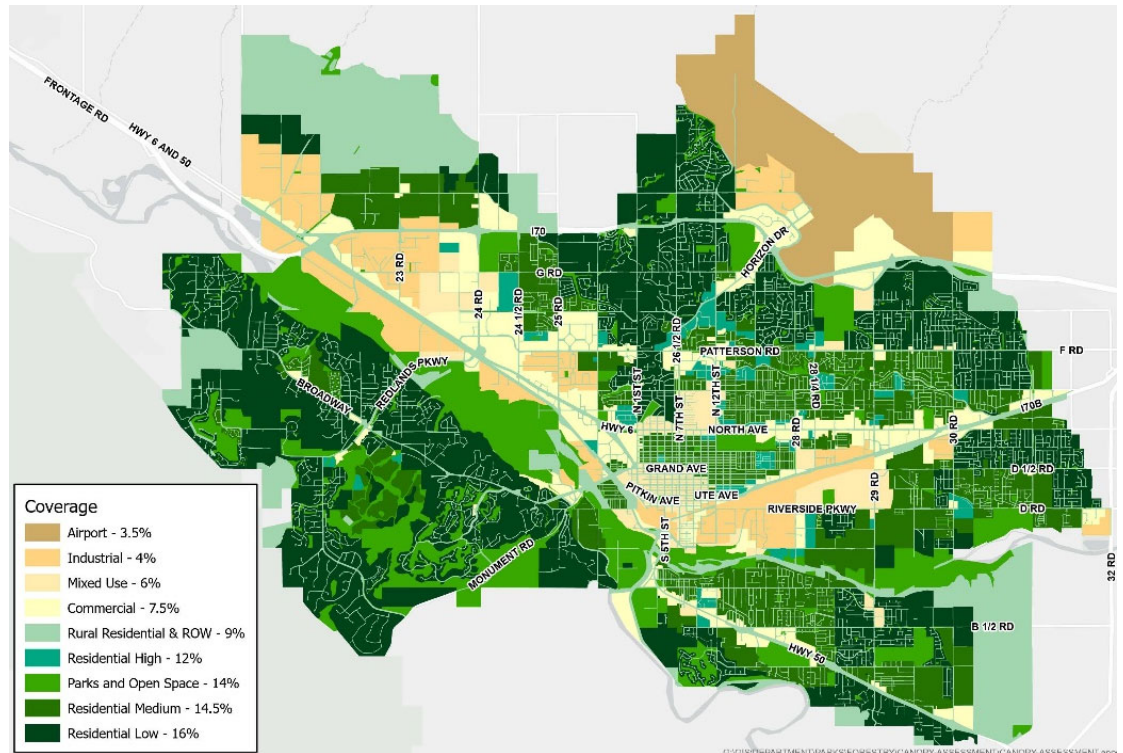
Diameter at Breast Height of Public Trees



Many communities set canopy coverage goals to guide efforts for planting and retaining trees. The non-profit American Forests guides cities to set the right goal for their context. In general, cities are advised to target a 40% canopy coverage, though arid communities like Grand Junction are advised to pursue a 30% goal. Most communities in the region (as shown below) have targeted a more modest increase, or are simply seeking to protect their canopy cover as they densify and manage hazards.

Community	Coverage	Goal
Austin, TX	38%	50%
Boulder, CO	16%	16%
Bozeman, MT	8%	33%
Colorado Springs, CO	17%	20%
Phoenix, AZ	12%	25%
Reno, NV	5%	10%
Tempe, AZ	13%	25%

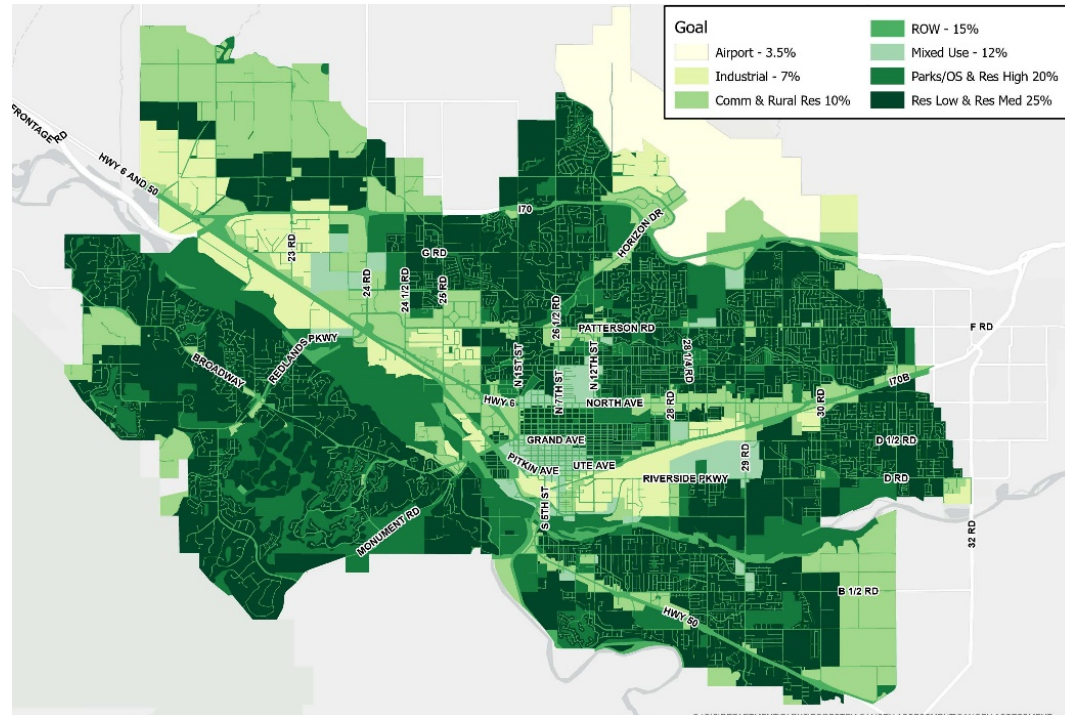
Current Canopy Cover by Land Use



This map translates the canopy coverage shown on page 7 to the Land Use designations of the Comprehensive Plan. This shows how the canopy would look if equitably distributed within each land use, and it can be easily compared to the map of goals on the next page.

Land Use Type	Current	Goal
Airport	3.5%	3.5%
Commercial	7.5%	7.5%
Industrial	4%	4%
Mixed Use	6%	6%
Parks and Open Space	14%	14%
Residential High	12%	12%
Residential Medium	14.5%	14.5%
Residential Low	16%	16%
Rural Residential	9%	9%
Rights-of-Way (ROW)	9%	9%
City Limits	13%	18%
UDB	11%	18%

Canopy Cover Goals by Land Use



This plan sets the target for the community to plant and retain trees with a goal of achieving a total canopy cover of 18%. This goal is made up of sub-targets for each Land Use type and corresponds to the different opportunities that each Land Use presents. Achieving this goal requires just a 34% increase within City limits. This would be equivalent of adding one new tree for every three that exist.

Current coverage for the area in the UDB not within City limits is lower, largely because much of this area is open space. Reaching the goal for the UDB as the City grows will require continuing the pattern of care and planting already established in developed areas of the community. Meeting this accessible goal will increase quality of life and infrastructure values of the urban forest.

Integrating Trees into Decisions

City staff and decision-makers should consider the value and health of trees when planning capital projects, development approvals, and more. This requires inter-departmental coordination and stakeholder involvement.

Increasing Internal Coordination on Trees

Public Works, Community Development, and Parks and Recreation have the closest relationships to the urban forest. These staff should coordinate wherever feasible to ensure trees are set up for success. The Forestry Division and Forestry Board were instrumental in developing the recent updates to the City's landscaping regulations for private development, and they should be involved in landscaping plan review where relevant. Similar pathways are available to coordinate on street design and other capital projects with the aim of creating optimal growing conditions. Crucially, the City Forester should be involved during the pre-application process for major development that may impact mature trees.



Decisions at Home

Every resident faces a range of choices about trees. Whether, where, and what trees to plant; how to water; and when to treat or remove a tree with pest or disease problems require forethought and create consequences that last for decades. Residents are encouraged to reach out to the Forestry Division, licensed tree care professionals, and other resources like CSU Extension for support in planning for trees on private property. Residents should also consider the value that trees create when weighing options.

Shovel-Ready Programs

Goals matter only so far as there are pathways to implementing change. This chapter lays out many of the programs that already exist to advance good forestry practices in Grand Junction, as well as programs to pilot and grow. Some are educational, some seek to improve the City's understanding of the urban forest, and others would directly impact the health of the forest in the short-term. Together, these programs will help the community to reach the 18% canopy cover goal without compromising on water resources or equitable access. To ensure accountability, the Forestry Division should report progress on programs biannually. A new canopy assessment should be performed by 2030 to measure progress against the canopy cover goal.

- Tree City & Tree Campus USA
- Code Enforcement
- Root For Your Ash
- Pest Monitor Network
- Tree Equity Irrigation Program
- Formal Opt-Out for Street Tree Care
- Memorial Tree Program
- Update Municipal Code Chapter 8.32
- Arbor Day
- Lincoln Park Arboretum
- Tree Work Request Response
- Tree-friendly Business Training & Certification
- Winter Storm Messaging
- Bike-Ped Route Forestation

- Track Effects of Significant Tree Regulations
- Drought Preparedness Messaging
- Water-Wise Landscaping Regulations
- Graywater Systems
- Wildfire Risk Education
- Aquaponic Tree Production
- Complete Tree Inventory
- Citizen Forester Program
- Water Conservation Month Messaging
- Early Childhood Education
- Wood Waste Recycling
- Update Hazard Mitigation Plan
- Support HOAs and Neighborhoods to Raise Canopy Standards
- Improved Inventory Management System

- Active Program
- Immediate Impact
- Long-Term Solution

TREE CITY & TREE CAMPUS USA •

Grand Junction became a Tree City USA under the Arbor Day Foundation more than four decades ago. This practice should continue, with annual updates and commitment to meeting the 1% minimum of City budget spent on forestry. Colorado Mesa University achieved its first Tree Campus USA designation in 2014, and continues with annual updates with participation from the Tree Campus Advisory Committee.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

ROOT FOR YOUR ASH •

The City launched the Root For Your Ash program in 2022 to provide preventative treatments for ash trees on private property. In collaboration with T4 Tree Service, a private company, the City signs up residents with qualifying trees for treatment. Costs are split evenly between the city and the resident, with a \$225 minimum fee for the resident and a maximum City contribution of \$500. To qualify for treatment, trees must be:

- on residentially zoned lots;
- 8" in diameter (at a minimum); and
- within the City limits of Grand Junction;
- with clear evidence of stewardship of the tree/surrounding landscape.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

CODE ENFORCEMENT •

Code Enforcement for proper tree care can be leveraged as a means of educating residents. City Code Enforcement officers should be supplied with resources and brochures to offer residents when tree care violations occur. Code Enforcement also serves as the best monitor of tree protection during construction, as required by City code.

Goals: Plant and Retain Trees
Build Knowledge of Tree Care

PEST MONITOR NETWORK •

In 2020, members of the Forestry Board established a monthly meeting with local tree care professionals to share information and experiences related to pests and diseases affecting Grand Junction's trees. This semi-formal convening may benefit from formalization or the institutionalized participation of the City Forester.

Long-term outcomes for the Roundtable may include an alert system for detection of new diseases, including EAB. The City may also support the Roundtable in developing a public map of known pest and disease occurrences. This program can serve as the basis for a broader Integrated Pest Management (IPM) Program in the future.

Goals: Diversify the Canopy
Plant and Retain Trees

TREE EQUITY IRRIGATION PROGRAM •

To support residents living in low-canopy areas, the City may launch a program to plant and establish drought-tolerant trees in the city-owned right of way and providing irrigation to these trees until they are established. This planting program would be carried out in neighborhoods with low tree equity scores and available street tree planting spaces.

The program would differ from the typical requirement that adjacent property owners water street trees, with the aim of foresting areas where residents have fewer financial resources to take on this role. By choosing only the most drought-tolerant trees, the program may reduce or eliminate the long-term watering responsibilities after establishment.

Goals: Extend Trees' Benefits to All
Care for Park and Street Trees

FORMAL OPT-OUT FOR STREET TREE CARE •

Per the Grand Junction Municipal Code, the property owners are responsible for providing water to street trees, while the Forestry Division provides standard maintenance services such as pruning and removal. Not all residents are aware of this requirement, and it is essential that the City communicate about this relationship.

If a homeowner is unable to water their tree, or if a renter finds that their landlord refuses to arrange for watering, the City may prefer that the resident notify the Forestry Division rather than simply neglect the tree. In the long-term, the City can develop a program to support residents that are unable to meet watering demands. This would help to protect the City's investment in its public trees.

Goals: Care for Park and Street Trees
Extend Trees' Benefits Equitably

MEMORIAL TREE PROGRAM •

The City plants trees as Living Tributes to memorialize loved ones. Residents contact the Forestry Division to select a species, location, and installation date. Residents purchase the tree through the City and receives a personalized wood engraved map with the location of the tree. The City plants the tree, outfits it with a memorial plaque, and maintains it.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

UPDATE MUNICIPAL CODE CHAPTER 8.32 •

Chapter 8.32 of the Grand Junction Municipal Code addresses the role of the City Forester and Forestry Board, as well as care for public trees. With Forestry Division collaboration, the City should continue to evaluate the effects of the Code and consider updates such as those on page 36 that would improve outcomes for public trees.

Goals: Integrate Trees into Decisions
Care for Park and Street Trees

ARBOR DAY •

The City and several partners host an annual Arbor Day celebration each spring, known as Southwest Arbor Fest. The popular event draws residents from throughout the city and beyond for games, food and drinks, and a range of educational and volunteer activities focused on trees. A central feature of the event involves a tree seedling giveaway and auction for high quality wood waste products. The event typically also includes a tree tour and advertising for Forestry Division programs. This is an essential opportunity for building public awareness of the value of urban forestry. It should be continued indefinitely.

Goals: Build Knowledge of Tree Care;
Plant and Retain Trees

LINCOLN PARK ARBORETUM •

The Arboretum at Lincoln Park serves as an outdoor tree museum. The City continually maintains the trees and incorporates their educational potential in many programs, including for local schools, child care facilities, and institutions of higher learning. The City may consider establishing a new exhibit at the Arboretum focused on drought-tolerant trees with educational programs centered on climate adaptation.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

TREE WORK REQUEST RESPONSE •

A critical function for the Forestry Division involves resident reporting of problems and needs for street and park trees. Residents can access a request form through the City website, leading to a response from the Forestry Division's crews. Based on the survey associated with this plan, as many as half of residents are unaware of this system. The City should leverage every opportunity to spread the word and grow participation.

Goals: Care for Park and Street Trees
Plant and Retain Trees

TREE FRIENDLY LANDSCAPE BUSINESS TRAINING & CERTIFICATION ●

Several large companies and many small companies provide lawn care, landscaping, and weed abatement services in the city. Many of these companies rely on seasonal employees, and the range of experience and education of landscaping professionals varies widely. This results in a wide range of outcomes for trees on public and private property.

To support tree-friendly operations and to minimize inadvertent harm to public and private trees during landscaping activities, the Forestry Division should develop and sponsor an annual training. This one-day training should address best practices in weed abatement, irrigation, xeric landscape care, and more. To encourage and recognize participation, companies that attend the training should receive a new certification as a City of Grand Junction Tree-Friendly Business. A curriculum, logo, and outreach should be developed for the program.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

TRACK EFFECTS OF SIGNIFICANT TREE REGULATIONS ●

In 2022, the City adopted clarified standards for the protection of significant trees during real estate development. This rule affects private property trees exceeding 15 inches in diameter and identified on the City's Suitable Plants List as eligible. Developments are now required to preserve 30% of significant trees during construction. If not, the developer must replace these trees at a higher-than-normal rate with new trees, or otherwise pay into a fund for tree planting.

The Community Development Department should retain notes on how many trees are protected under this regulation and how this has affected development, including whether this affects the number of dwelling units proposed for a residential project. This data will support review of the new landscaping rules in the next three to five years.

Goals: Plant and Retain Trees
Integrate Trees into Decisions

WINTER STORM MESSAGING •

The Forestry Division invests resources in storm cleanup, but these costs may be offset by proactive care by residents. Leveraging public safety communication channels, the City can develop and distribute messaging to residents that prompts them to take actions to reduce limb loss and tree mortality during major storms.

Goals: Plant and Retain Trees;
Build Knowledge of Tree Care

BIKE-PED ROUTE FORESTATION •

Pedestrians and cyclists are particularly vulnerable to heat stress in summer. To improve shade provision for these groups, the Forestry Division can concentrate plantings on designated Active Transportation Routes, especially where these routes have high rates of use and traverse neighborhoods with low tree equity scores.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

WATER-WISE LANDSCAPING REQUIREMENTS •

In 2022, the City adopted new regulations for landscaping of major development projects. These new regulations were designed to increase odds of young tree survival, lessening the number of required trees but promoting good practices like reduced weed barrier fabric and the use of organic mulch.

The new rules also reduced the required and permitted planting of turf-grass, which may lessen unused grass areas by about 50% for new non-residential development. New landscape installation must include high-quality irrigation design, climate-appropriate species selection, and greater planting diversity. Though these rules do not apply to single-family residences, they can serve as a guide for any property owner motivated to manage drought and water scarcity.

Goals: Build Knowledge of Tree Care
Invest Water in Shade

GRAYWATER SYSTEMS •

In 2022, the City adopted regulations to allow residents and businesses to install graywater systems, becoming just the fifth Colorado municipality to permit these systems under a new State law. Graywater systems capture safe sources of used household water, allowing this water to be used again to water landscapes. Use of graywater decreases a property's demand for irrigation water or unused potable water for landscaping.

The City is permitting its first graywater systems this year. By tracking registered graywater systems and following up with users about their experience, the City can determine whether this is part of the long-term solution to water constraints that affect landscaping and tree care.

Goals: Invest Water in Shade
Plant and Retain Trees

WILDFIRE RISK EDUCATION •

While residents understand the reality of wildfire, not everyone takes routine action to reduce risk. The local Two Rivers Wildfire Coalition recently launched a Wildfire Learning Network program that involves the Grand Valley Power, the Bureau of Land Management, the Grand Junction Fire Department and the Mesa County Sheriff's Office. The City Forestry Division may explore avenues for participation that focus on risk reduction at the Wildland-Urban Interface.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

AQUAPONIC TREE PRODUCTION •

In 2019, the Forestry Division established an aquaponic tree production bed, leveraging a grant from the Colorado Tree Coalition. This system allows the City to grow seedlings with minimal water waste and reduced cost for public plantings and giveaways. The City may expand this system to supply a majority of new public plantings.

Goals: Plant and Retain Trees

DROUGHT PREPAREDNESS MESSAGING •

The City cooperates with water providers and irrigators in the Drought Response Plan (DRIP) partnership. This entity reaches people by many means to remind them of the importance of water conservation. DRIP makes the public aware of drought conditions, offers guidance on water use decisions, and coordinates the actions of the partners. In cooperation with DRIP, nurseries, and other partners, the Forestry Division should develop special messaging on tree care during drought. By helping the public avoid excess watering while keeping trees healthy, the community will protect its long-term investment in the canopy.

Goals: Invest Water in Shade

Integrate Trees into Decisions

COMPLETE TREE INVENTORY •

While the Forestry Division maintains a near-complete inventory of trees under public care, it does not have a full tree inventory to account for the 75% of trees on private property. To develop this complete inventory will be a long-term effort, but it can begin by retaining records of trees planted with development. Many cities leverage grants or AmeriCorps positions for this purpose.

Goals: Integrate Trees into Decisions

Care for Park and Street Trees

CITIZEN FORESTER PROGRAM •

The PROS Master Plan calls for a Citizen Forester Program, a Native Plants Program, or other advocacy programs to develop tree advocacy and a better understanding of forestry-related policy issues. This effort can begin with a pilot cohort, and it may be most manageable if undertaken in cooperation with non-profits, CMU, or CSU Extension.

Goals: Extend Trees' Benefits to All

Care for Park and Street Trees

WATER CONSERVATION MONTH

MESSAGING •

April is officially Water Conservation Month in the Grand Junction. In this time period, DRIP expands its messaging, leveraging the focused support of the City Council to spread the word about conservation practices. The Forestry Division should actively participate in Water Conservation month and expand the connection between this period and the coinciding Arbor Day celebrations.

Goals: Invest Water in Shade

Build Knowledge of Tree Care

EARLY CHILDHOOD TREE EDUCATION •

Elementary and middle school education includes curriculum on local history and geography. The City and its partners can develop or adapt curriculum for teachers to promote interest and knowledge of trees at an early age.

Goals: Build Knowledge of Tree Care

Integrate Trees into Decisions

WOOD WASTE RECYCLING •

The Forestry Division currently manages a Tree Mulch and Firewood Program. This makes organic material from public tree removal available to the public at request, reducing waste and recycling nutrients into the urban forest. The City may have future opportunities to expand this recycling program for other uses, such as carpentry and furniture manufacturing. The Forestry Division should evaluate future partnerships and uses for wood waste.

Goals: Integrate Trees into Decisions

UPDATE HAZARD MITIGATION PLAN •

In cooperation with Mesa County and other local governments, the City of Grand Junction is party to a county-wide Hazard Mitigation Plan. This plan was updated in 2015, but should be updated every five years; thus, a revision should be considered to reflect new knowledge and concerns.

Goals: Invest Water in Shade

Plant and Retain Trees

SUPPORT HOA AND NEIGHBORHOODS TO RAISE CANOPY STANDARDS •

Because HOAs affect a large share of the homes in Grand Junction, they have opportunities to improve requirements for landscaping and disseminate tree care information that respond to microclimates in their areas. The latter is also true of neighborhood organizations and similar groups in a position to provide microclimate-specific guidelines and references documents to residents. The Forestry Division, CSU Tri-River Area Extension, and other partners with high knowledge of forestry issues can consult with HOAs and neighborhood organizations to review such guidelines and references, but the initiative must be taken by residents themselves to launch and carry forward such programs.

Goals: Plant and Retain Trees

Build Knowledge of Tree Care

IMPROVED INVENTORY MANAGEMENT SYSTEM •

The City currently relies on a software called Lucity for inventorying trees and tracking work requests. Many staff that use Lucity express dissatisfaction with the software's useability and reliability. The software is also poorly integrated into the city's public-facing GIS portal. The City should explore alternative software and solicit pilots from providers that would allow staff to test alternative systems for their useability in Grand Junction. Overall, the data from the inventory should be integrated into public facing dashboards to build public understanding about trees in the public realm.

Goals: Build Knowledge of Tree Care

Integrate Trees into Decisions



Urban Forestry Management Plan



Acknowledgements

This plan owes its existence to many on the City of Grand Junction staff, residents, and professionals who contributed:

Members of the Grand Junction Forestry Board:

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Mollie Higginbotham	Daniel Komlo
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The Grand Junction City Council adopted this plan on _____, 2023:

Anna Stout, Council President	Chuck McDaniel
Abe Herman, Council President <i>Pro Tem</i>	Phillip Pe'a
Randall Reitz	Dennis Simpson

Data for current canopy cover provided by PlanIt Geo LLC, 2019.

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Structure

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Introduction

This plan sets a path for the City of Grand Junction and residents in the community to maximize the health of the urban forest. It organizes this pathway around the value of the urban forest and the services it provides.

The plan elaborates on the challenges of tree management in the community, the wide range of people that care for these trees, and the seven goals that must be met to achieve the vision of a robust canopy.

Special attention is given to the Forestry Division, which has primary responsibility for trees on public property. The plan also includes a set of ongoing and new programs, as well as educational tools, to mobilize the community care for trees.



What is the Urban Forest?

All of the trees in Grand Junction make up the urban forest. This ecosystem depends on people for care and serves the public as infrastructure. Water and shade are just the beginning.

Grand Junction Tree History

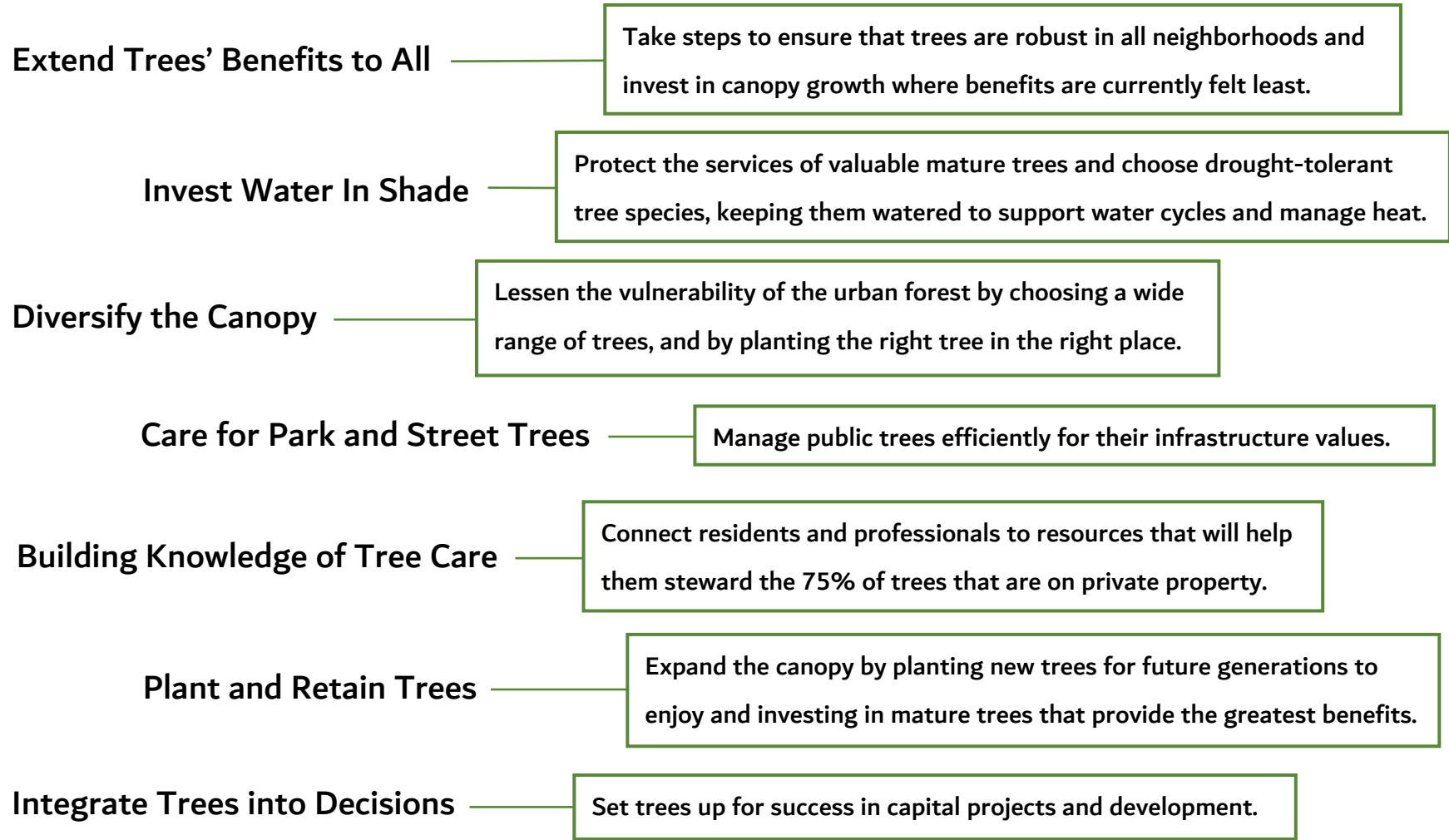
Prior to US settlement of the Grand Valley, the area was largely treeless. Cottonwoods and willows lined the the rivers, and centuries-old junipers and bristle cone pines grew at Colorado National Monument, but most areas were sparsely vegetated. This changed in 1882, when settlers dug the first irrigation canals and created the first tree nursery. By 1900, hundreds of acres of peach, apple, and pear orchards sprang to life; these remain central to Grand Junction's identity. Settlers also planted trees around their homes and lining their streets, setting the stage for today's urban forest.

In Grand Junction's urban areas, many of the oldest trees are found downtown along streets and in Lincoln Park. Grand Junction is also home to some of Colorado's Champion Trees, or the largest tree of a given species in the state. The largest Dawn Redwood, Siberian Elm, Mimosa, and Desert Willow live here, and the state champion Weeping Mulberry is one of the 69 labeled trees at the Lincoln Park Arboretum.



The City of Grand Junction has also received a Tree City USA Award for 40 consecutive years and the National Arbor Foundation Growth Award for 26 years. These achievements reflect the City's commitment to growing and maintaining its canopy cover, amounting to more than 1% of the City's annual budget. The City's agricultural heritage, canals, and the Colorado and Gunnison Rivers have supported the growth of the community's urban forest. However, the community faces current and long-range constraints to water supply as well as an ongoing trend of warming and increasing climate variability.

Goals of the Plan



Canopy Conditions

Grand Junction's tree canopy shades nearly 13% of City limits and about 11% of the Urban Development Boundary. The canopy is densest in single-family neighborhoods and least in commercial areas. Trees density is also uneven across the city. Neighborhoods have distinct soils, climates, and water access. Over the last century, the City and property owners made different planting and management choices, with differing levels of resources. These factors created our impressive but unevenly distributed canopy.

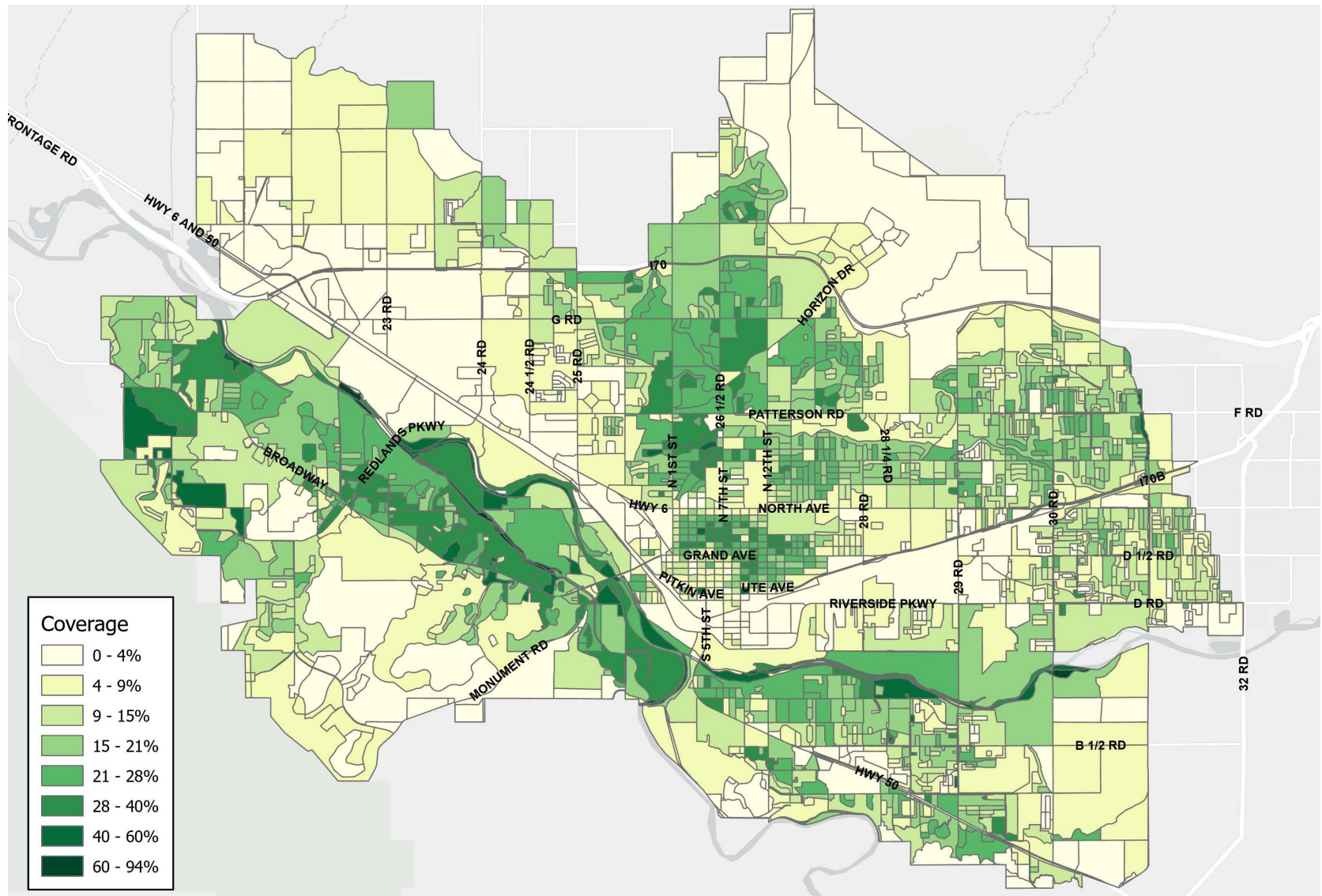
Growth of the canopy is positive nearly citywide. Within the urban development boundary, there was an increase in canopy of 4% from 2011 to 2019, and all City Council Districts saw canopy growth. Some blocks lost substantial numbers of trees, often associated with major redevelopment that removes fewer mature trees with larger numbers of young trees that will replace the loss over time.

Using the Land Use Categories from the Comprehensive Plan,

the best estimate of coverage for different areas of the city is shown in the table below. Cover is highest in residential districts and lowest in commercial and industrial areas, as well as at the Grand Junction Regional Airport.

Land Use Type	Estimated Coverage
Airport	3.5%
Commercial	7.5%
Industrial	4%
Mixed Use	6%
Parks and Open Space	14%
Residential High	12%
Residential Medium	14.5%
Residential Low	16%
Rural Residential	9%
Rights-of-Way (ROW)	9%
City Limits	13%
Urban Development Boundary (UDB)	11%

Current Canopy Cover

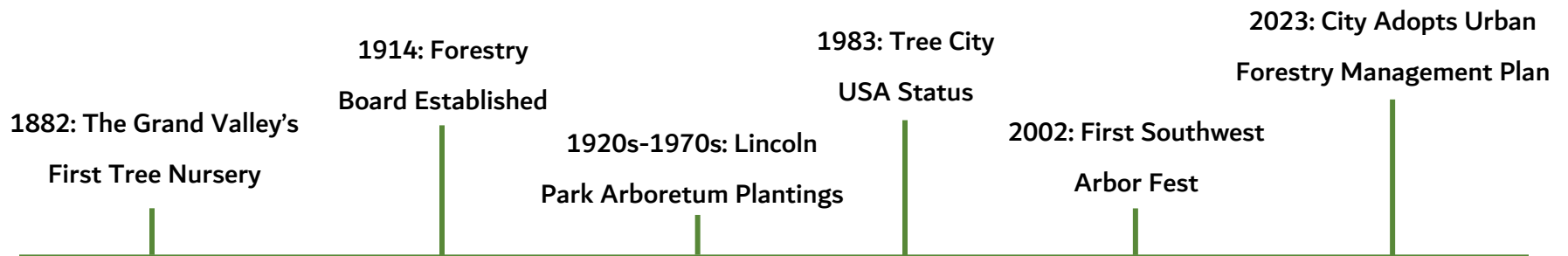


This map shows current canopy cover as of 2019 for all census blocks within the Urban Development Boundary (UDB).

Plans and Policies

All City of Grand Junction’s plans have implications for other plans. This is no exception. The creation of an Urban Forestry Management Plan was prompted by both the 2020 One Grand Junction Comprehensive Plan and the Parks, Recreation, and Open Space Master Plan, which emphasized the need to set a citywide goal for canopy coverage.

This plan should also influence the terms of future planning efforts. For example, future sub-area or neighborhood plans should consider the equitable coverage recommendations of this plan, future development plans can benefit from the resources on water conservation, and many overlaps are anticipated with the forthcoming Sustainability Plan.



Value and Services

Trees generate tremendous value for the community. These values include social, economic, and environmental services. Some of them—such as shade—are readily experienced. Others are harder to discern but equally important to the well-being of the community at large. The boxes below highlight some of the values that trees provide in dollar or more general terms.

People

The urban forest removes 65,000 lbs of particulate matter from the air each year, reducing respiratory illness.

Regular access to trees increases happiness, cognition, and lifespans, while reducing mental illness, asthma, stress, and heart disease.

Planet

Grand Junction's trees sequester 3,927 tons of carbon each year and store 166,000 tons of carbon long-term.

Trees save \$395,000 in annual stormwater infrastructure costs.

Planting strategically at home can save \$100-\$250 in annual energy costs.

Pocketbook

The total replacement value of the urban forest exceeds \$1 billion.

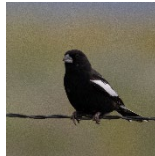
A mid-sized tree can increase the value of a single-family home by \$23,400.

Canopy growth increased residential property values in Grand Junction by \$60 million since 2011.

Shade



Wildlife
Habitat



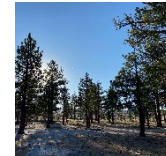
Air
Quality



Water
Quality



Property
Value



Erosion
Control

Protecting Services From Hazards

The values that trees provide are tremendous, and some—like shade—are easily experienced. Most others are experienced as cost savings, so they may not appear on household or government budgets until the services are lost or reduced. Many cities across the country have experienced devastating losses. For example:

Dutch Elm Disease killed 70 million trees nationwide between 1930 and 1950. Many cities lost over half of their canopy. Existing and imminently arriving pests that affect ash trees present a similar risk today (see page 13).

A major drought event can decimate an urban forest in a matter of weeks. The 2011 drought in Texas reduced canopy coverage by between 10% and 40% in major cities.

The derecho storm that struck Cedar Rapids, IA in 2021 eliminated 65% of the canopy, prompting a costly replanting effort.

A 20% canopy loss in Grand Junction—equivalent to all ash trees or one mismanaged extreme drought—could result in a \$200 million loss in structural value. While hazards are unpredictable, many steps can be taken to avoid catastrophic losses. Proactive care, increased diversity, and careful investments of water are the community's best means of protecting this valuable asset.



Green Infrastructure – Like roads and bridges, trees serve as infrastructure. They require investment and maintenance, and we maintain them for specific purposes. Unlike other infrastructure, trees appreciate in value over time, rather than depreciate.

Ecosystem Services – The benefits that trees provide are called ecosystem services. These are functions like shade and stormwater management. They can be totaled in dollar terms or compared to other ways of providing similar services.

A Fragile Oasis

From the top of the Mesa, Mt. Garfield, or the Monument, the Grand Valley appears as a cluster of green in the desert. Walking through any neighborhood, trees are as common as buildings. Drive in any direction and the trees disappear quickly. A century ago, Grand Junction was treeless, too. Early residents diverted water from the rivers to nourish the trees that make Grand Junction the oasis we recognize.

Keeping it that way requires care. In our climate, we cannot plant a tree and walk away. Our urban forest is an ongoing investment, and it must be managed to suit local conditions.

Forestry management in Grand Junction differs from any other city in Colorado or the country. Grand Junction has a unique planting zone. It has microclimates from winds that come out of the canyon. Sun exposure varies, and so do temperatures. At times the valley floor is colder than Orchard Mesa or the Redlands.

Having warmer winters and lots of microclimates means that many trees can succeed in Grand Junction that don't succeed elsewhere in the state. This allows the City and the public to plant a more diverse canopy. But we must also contend with storms, temperature swings, wildfires, and drought.

Grand Junction sits in USDA Hardiness Zone 7, but is separated from most other zone 7 areas in the region. This offers some protection from invasive species, pests, and diseases that might cross the Rocky Mountains or the Colorado Plateau. But they may travel with people, transported firewood or boat hulls. Of current concern, the Emerald Ash Borer and other ash tree pests put about 20% of the urban forest at risk.



Drought and Water Scarcity

Grand Junction contends with a rapidly changing climate and increasing water scarcity. Grand Junction has been in drought more often than not for the last two decades, experiencing three periods of exceptional drought with topsoil losses and increased wildfire risk. The drought from 2019-2022 was one of the most severe on record. Mesa County also warmed faster than 90% of US counties since 2000, at two times the global average rate.

Grand Junction's arid climate poses one of the greatest constraints to the long-term health of the urban forest. Water demand is predicted to rise with growing populations, with growth anticipated to exceed 30% by 2050. The City of Grand Junction's water utility provides water from the Kannah Creek watershed on the Grand Mesa, which is a relatively stable supply. Not all water supplies are equally secure. In 2021, low water conditions required the Ute Water Conservancy District to draw on its water rights from the Colorado River to supply its customers. These local challenges with drought and growth

mirror the challenges faced by communities throughout the Colorado River Basin.

This plan addresses many of the ways that Grand Junction can manage drought risk and invest water in trees to reduce health risks from extreme heat.



Pests and Disease

Trees in Grand Junction must withstand routine problems associated with pests and diseases. Most tree pests affect only certain genera or species of tree. This means that the forest can be protected as a whole by increasing planting diversity. However, for all tree species, the threat of serious damage or mortality from a pest or disease rises rapidly when a tree is stressed. Ensuring that trees have adequate light, water, and pruning at all times offers some of the best protection available.

The Emerald ash borer (*Agrilus planipennis*, or EAB) is a non-native beetle species with severe potential impacts for the urban forest. About 15% of trees in Colorado cities are ash trees, and the proportion of ash in Grand Junction is likely nearer 20%. Several other pests already threaten ash trees. EAB has been confirmed in the Front Range, having reached Boulder first in 2013. EAB will eventually be transmitted to Grand Junction. Delaying this transmission requires that firewood not be transported from areas with EAB exposure. Residents can also treat their ash trees using trunk injections and sprays. The City of Grand Junction has an active program to help residents with mature ash trees to protect their trees, but the planting of new ash trees should also be discouraged.

Pest and Diseases of Concern

- Ash Bark Beetle
- Lilac Ash Borer
- Emerald Ash Borer
- Elm Scale
- Pine Needle Scale
- Leucanium Scale
- Kermes Scale
- Anthracnose
- Ips Bark Beetle
- Spider Mites
- Japanese Beetle



The Emerald Ash Borer Beetle

Extreme Weather

Grand Junction typically experiences at least two extreme snow events in a given year, as well as occasional high winds and cloud-burst rainfall. These events tend to cause damage to trees, especially when snowfalls and winds are poorly timed with tree leaf-out in spring and leaf-drop in fall. When snows accumulate on leafy branches, trees may suffer limb losses or death.

Risk from these extreme weather events is likely to increase as storms become more intense and their timing more erratic. However, residents can prepare for storms and actively manage their trees during heavy snows to reduce risks. Clearing branches of snow when it can be safely done during a storm may be advisable to reduce weight on limbs. However, the best way to prevent winter storm damage is a regular and systematic pruning program that addresses at-risk limbs well in advance of storms.



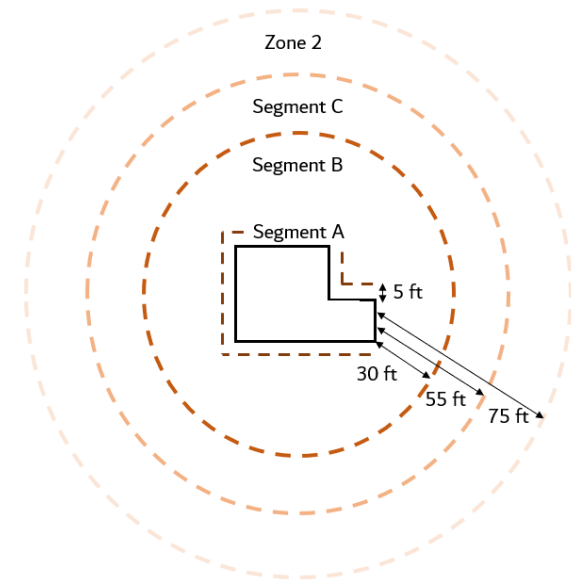
Frost events also pose a risk to local trees, especially fruit trees. A 2020 fall freeze caused devastating losses for peach growers, raising consciousness of this risk throughout the community. Fall and spring freezes pose particular threats for newly-planted trees and tree nurseries. One major mistimed frost threatens to offset the gains of an entire planting season. Thorough organic mulching and watering before a frost or freeze can help to reduce risk. Residents are also advised to arrange for pruning in the spring or early summer, and they should avoid pruning in early fall to minimize impacts to trees entering dormancy.

Wildfire Risk

The 2020 Pine Gulch Fire burned 139,000 acres and came within 18 miles of Grand Junction, reminding us of the threat wildfire poses. According to the Colorado State Forest Service, nearly 6,000 wildfires occur each year in the state. Just 12% of these occur because of lighting; the rest are human-caused. While these wildfires support ecosystem health and create habitat, they can be extremely costly to communities.

Reducing risk relies on good decision-making in wildlands and rural areas, and it requires actions to reduce the vulnerability of homes. This is especially important at the fringes of the city, or the “Wildland-Urban Interface” (WUI). Residents of the Redlands and Orchard Mesa must be extra vigilant, given their proximity to forested areas and open spaces.

The Grand Junction Field Office of the Forest Service provides a range of programs to assist landowners in preparing for wildfires and reducing risks to their property. These programs may be of particular interest to residents in areas of heightened risk. The City of Grand Junction also has regulations to guide residents in making their homes more defensible if threatened by a wildfire. If you live near the edge of the city or near a large, wooded area, consult the City’s regulation.



Protecting Your Home

The City provides guidance for reducing wildfire risks to homes near open spaces in the Municipal Code. As illustrated above, keep the five feet nearest the home free of vegetation and debris. The first 30 feet from the home should be kept clear of dead trees, firewood, and combustible material. In the first 55 feet, trees and groups of shrubs should be spaced by twice their height. Up to 75 feet from the home, all trees should be spaced 5 feet apart or further.

All Hands on Deck

Grand Junction's urban forest exists because generations of residents invested their time and resources into nurturing trees. This kind of infrastructure requires diffuse care, and no single group can perpetuate the canopy on their own. This chapter explores the roles of the many people and organizations that care for trees in Grand Junction. It also reflects the many perspectives of these groups. These needs and opportunities of these groups inform the goals and programs that follow.



The City

The City of Grand Junction—particularly the Forestry Division—takes a leading role in managing trees on public property. The City also galvanizes support for forestry and builds educational partnerships.

Residents and Landowners

Homeowners, renters, businesses, and institutional landowners maintain 75% of the trees in Grand Junction. They have valuable knowledge of the trees in their lives and critical roles in expanding the canopy.

Tree Professionals

Landscaping contractors, arborists, and tree nurseries have tremendous expertise and interact with tens of thousands of trees each year. The canopy depends on their ability to manage evolving tree care challenges.

Public Perspectives

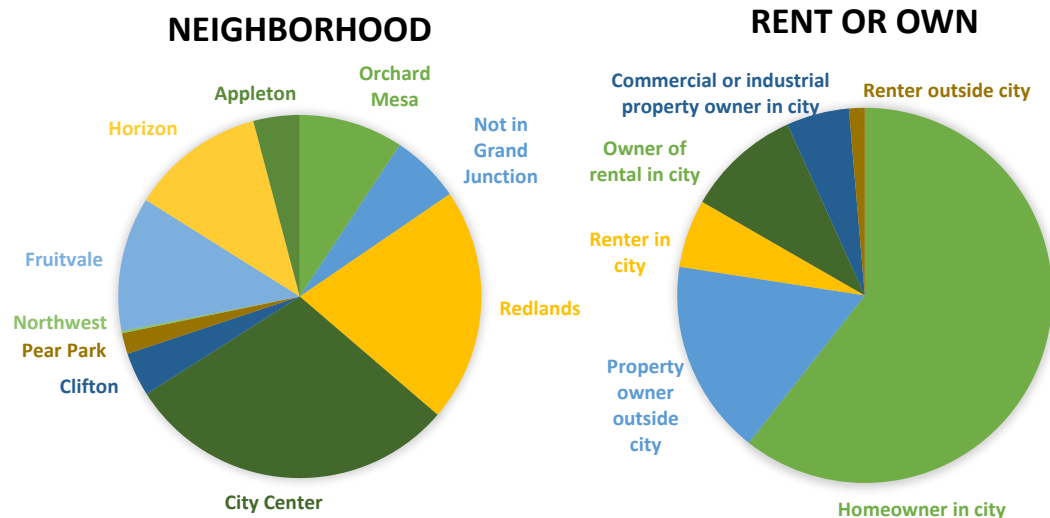
Urban forestry touches the lives of all residents, and each person has different relationships to trees. The City offered several avenues for the public to engage with this topic and to share community's perceptions, hopes, and concerns for the urban forest.

First, the City released a survey to explore public knowledge and views related to the trees in the community. The survey was available to the public online in English and Spanish from January 1st to 31st, 2023. More than 500 residents responded, making this one of the most successful forestry planning surveys in the US.

The City also hosted open houses to review forestry data goals of this plan, with an in-person workshop on February 23rd, 2023 and a virtual event on February 27th.

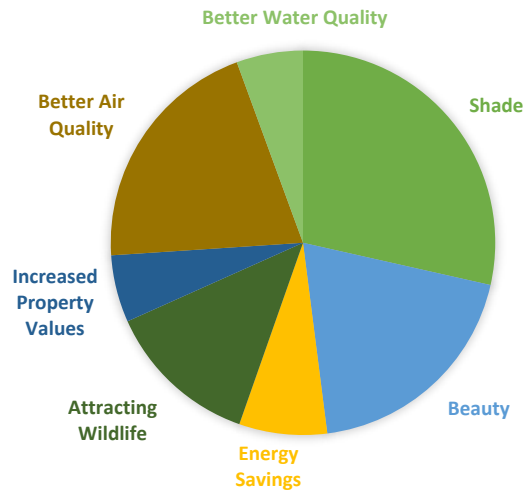
Who responded to the survey?

Residents from all neighborhoods took the survey, but the Redlands and City Center neighborhoods had the highest response rates.



Renters were underrepresented in the survey. Only 9% of respondents rented, whether inside of city limits or beyond. Meanwhile, about 40% of Grand Junction residents rent their homes. Renters likely face unique challenges related to tree care, yet this survey largely captures the experience of homeowners. However, many responding homeowners also own rental properties in the city.

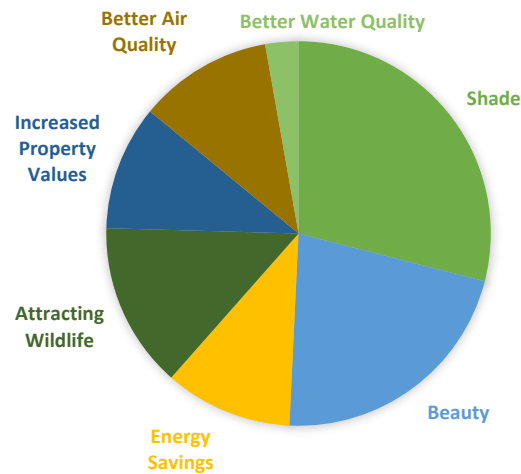
BENEFITS OF PUBLIC TREES



The survey sought to understand what benefits of trees residents value most. It asked about perceptions of trees' services on both public and private property, asking residents to choose three benefits each. The results show that residents value all of the services that trees provide, even if to different degrees. Notably, some services with high dollar values—such as water quality services—are perceived as less important by the public.

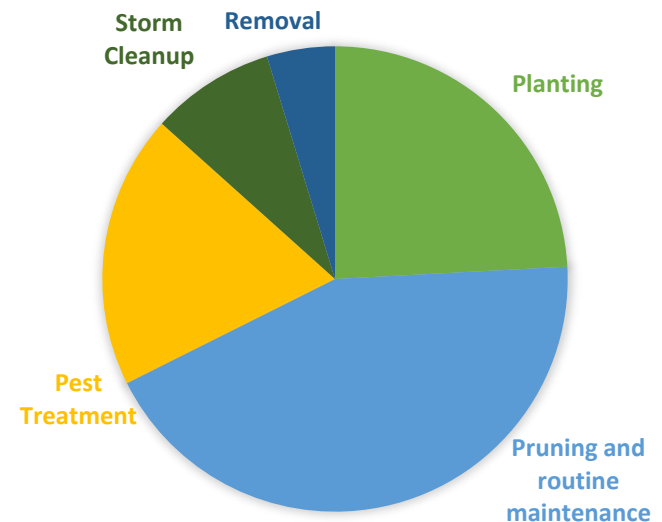
Whether for public or private trees, a large majority of respondents (87%) included shade as a primary benefit. This makes sense: shade is experienced on a daily basis, and it underlies many other benefits. Notably, air quality was of greater interest for public trees, while increased property values mattered more when considering private trees.

BENEFITS OF PRIVATE TREES



The survey explored which services of the Forestry Division residents appreciate most. The responses show that pruning and treatment matter to residents, suggesting that people want to see continued investment in existing trees. Notably, the survey found that only about half of respondents knew that the city regulates trees as well as cares for them.

VALUED CITY TREE SERVICES



Words on Water

Many workshop attendees and survey respondents shared thoughts on the complex relationship between trees and water. Comments included:

"We need to be developing different options on watering our street trees!"

Gray water systems specifically put in for street trees!"

"Plant only climate tolerant or acclimated varieties."

"Pay attention to our water, stop the uncontrolled growth in our valley."

"Many people on my block have replaced their lawns with rock, but this seems to lead to their trees dying right after."

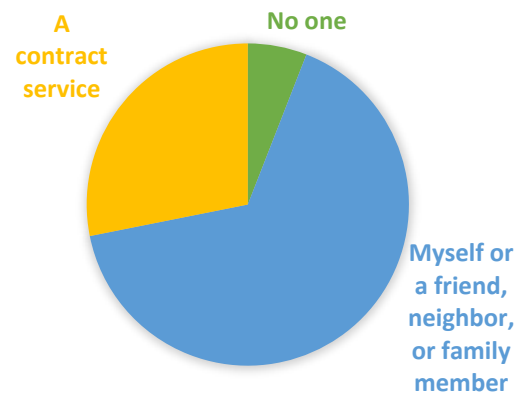
Perceptions of Canopy Extent

The survey asked residents whether they considered the canopy cover in their neighborhood to be adequate. Most residents were either satisfied with the level of forestation or wanted to see the canopy cover expand. This suggests broad support for devoting resources to urban forestry. Just 2% of respondents considered the canopy in their neighborhood to be too extensive.

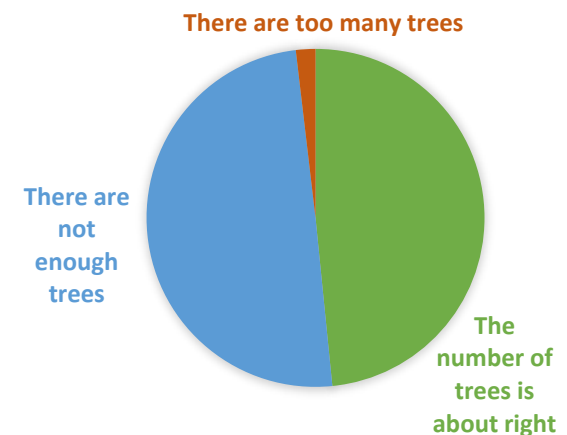
Who Cares for Trees?

Respondents shared information about who cares for the trees at their homes and businesses. The results show a diversity of approaches. Many residents rely on professional help, but most rely on professional help, but most rely on neighbors or their own handiwork. Importantly, many residents do not engage in tree care at all, placing trees at risk.

PRIVATE TREE MAINTENANCE RESPONSIBILITIES



NEIGHBORHOOD CANOPY COVER



Stewards and Stakeholders

Residents and Businesses

Residents are—and will be—the frontline caretakers of trees. The City manages about the same number of trees as businesses do. Homeowners and renters care for as much as the City and businesses combined. One of the City's best pathways to a strong forest involves setting up residents and businessowners for success.



Licensed Arborists

The City of Grand Junction licenses all arborists that maintain trees in City limits. In 2022, Grand Junction had just 15 certified Licensed Tree Care Providers and four approved Chemical Applicators. These businesses have an outsized impact on the health of the canopy. They are also well-trained professionals. All have passed the International Society of Arborists (ISA) exam. The Forestry Division should support these crews in sharing information, keeping arboriculture practices up to date, and educating the public.

Landscaping Contractors

Dozens of businesses install and care for landscape plants on commercial and residential properties. Some are small businesses with just one or two employees. Others are more established or are linked to nurseries. These professionals make critical choices about irrigation, plant selection, mulching, chemical use, and more. Providing these groups with information and building their support for optimal tree care will ensure that private property throughout the city serves the goals of this plan.

Real Estate

One of the best ways to ensure the viability of Grand Junction's trees is to set them up for success at the time of planting. Real estate developers have the opportunity to do this by perfecting landscape designs and investing in the right trees for the community. In a typical year, private development plants more than ten times as many trees as the City government plants in parks and on streets. Development must follow the City's landscaping rules and regulations, but many go above and beyond in order to create attractive environments.

Real estate agents also have opportunities to help homebuyers understand the value of trees and how to properly care for them. As these professionals interface with residents, they have profound impacts on public knowledge and choices.

CSU Tri-River Area Extension

The Colorado State University Extension office in Grand Junction serves communities in the four counties of Delta, Mesa, Montrose, and Ouray. Extension plays an instrumental role in supporting landowners in and beyond Grand Junction City limits. The office offers annual continuing education courses for licensed pesticide applicators, online land stewardship training, various other workshops for gardeners, and education on disasters and emergency preparedness. Extension also manages the local Master Gardener program. The Extension team routinely responds to resident's calls for expert advice on landscape and tree care, and in this way is a frontline organization for achieving widespread tree-friendly practices in the community.

Homeowners' Associations (HOAs)

Many Homeowners' Associations set requirements for landscaping styles and minimum plantings for the residential properties for which they are in place. Because the City does not regulate single-family residences, HOAs have the potential to expand canopy cover by increasing their tree requirements. HOAs can also influence water use for landscaping by encouraging effective water-wise design and watering frequency.

Forestry Division

Grand Junction's Forestry Division is responsible for the maintenance of public trees in the City of Grand Junction. This team of City staff is dedicated to the protection and resiliency of Grand Junction's urban forest through the planting and management of trees in parks, city facilities, and along street rights-of-ways within city limits. The Forestry Division also aims to help the community understand the importance of trees and the environmental services they provide while maintaining our community's canopy.

Parks and Recreation Department

Beyond the Forestry Division, the broader Parks and Recreation Department manages upkeep and expansion of all City parks, cemeteries, and community facilities. Parks and Recreation staff also manage a variety of recreational programs, in addition to a growing number of arts and culture programs. Guided by the adopted Parks, Recreation, and Open Spaces Master Plan, they aim to provide high quality services to all residents.

Public Works Department

Public Works takes primary responsibility for engineering, transportation, and stormwater, including for planning, design, and oversight of most capital improvements. As a custodian of the street network and stormwater systems, Public Works provides for—and benefits from—many of the services that the urban forest offers.

Community Development Department

Planning and development oversight by the City of Grand Junction is concentrated in the Community Development Department. As the primary interface between real estate development and the City organization, Community Development takes a lead role in promoting successful planting designs for new development. The Department balances objectives related to quality of life, including housing, resource stewardship and active transportation, all of which have consequences for the urban forest.

Colorado State Forest Service

The Colorado State Forest Service maintains a Field Office in Grand Junction. This Field Office has been instrumental in advancing the health and recognition of the urban forest. The Field Office provides technical assistance to residents and businesses, including a range of locally-crafted guides to pruning, planting, and disease monitoring. The Field Office is also closely involved with Grand Junction's Tree City USA redesignation process and Arbor Day celebrations.

Colorado Parks and Wildlife

Colorado Parks and Wildlife is the state agency charged with managing 42 state parks, over 300 state wildlife areas, and a range of recreational and wildlife programs. Within the City of Grand Junction, CPW manages three sections of the James M. Robb Colorado River State Park, including a large share of the community's riverine trees.

School District 51

As one of the largest property owners in City limits, the public school system cares for a large number of trees, all of which shade the daily lives of children in the community. It is also on the frontlines of childhood education, which includes environmental programming. District 51 has taken strides to increase watering efficiency in recent years.

Colorado Mesa University

As the major institution of higher education in Grand Junction, Colorado Mesa University (CMU) supports the community both by stewarding the large share of the urban forest that lives on its campus. CMU also generates talent and interest in forestry and ecology among its students. CMU has been designated as a Tree Campus USA for seven years, thanks to its thriving canopy and 300 annual hours of student volunteer time focused on trees. The CMU grounds maintenance team works with designers as the campus expands to support the diversity of trees on campus. They seek to maintain a vibrant and safe campus canopy through pruning, pest control, and proactive management.



Plant and Tree Nurseries

The four independent plant and tree nurseries in Grand Junction, several irrigation suppliers, and a range of hardware and specialty businesses provide most of the trees that residents and businesses plant in the community. This creates many opportunities to improve the type and diversity of species available, and to provide resources that help residents to make good tree choices.

Forestry Board

The Forestry Board has been active since 1914. Composed of seven board members, this entity is a resource for the community, hosting extensive knowledge about local forestry. The Board reviews qualifications of tree maintenance businesses and issues licenses to people and businesses that wish to perform tree-related services in the City of Grand Junction. The Board also makes recommendations to the City Council when the Council considers rules and regulations pertaining to tree service businesses.

In addition to this core function related to licensing, the Board routinely provides comments and guidance on tree-related decisions by the City. It may collaborate with the Parks and Recreation, Community Development, and Public Works Departments when these parts of the City organization take actions that would affect of public trees.

Mesa County

Mesa County plays an important role in tree management in and around the City of Grand Junction. The County is a landowner within City limits, owns and maintains public trees under their jurisdiction (including at the urban fringe), and is a partner in many contexts such as water conservation and wildfire management. Mesa County does not have staff with equivalent roles to the Grand Junction City Forester or the Forestry Division. Instead, the organization relies on its Public Works Divisions for tree removal.



Natural Areas Non-Profits

A variety of citizen groups, non-profits, and collaboratives engage in forestry-related activities in the community's natural areas. The non-profit Rivers Edge West restores riparian ecosystems through education, collaboration, and technical assistance across the Southwest from their base in Grand Junction. They have been instrumental in controlling invasive tamarisk on the banks of the Colorado and Gunnison Rivers. The organization launched the Desert Rivers Collaborative in 2012 to maintain native river habitats in Mesa and Delta Counties. Separately, the Two Rivers Wildfire Coalition connects local non-profits and governments to reduce wildfire risk. Such organizations play an essential role in ecosystem management.

Reaching Up

By 1900, Grand Junction had planted and irrigated the beginnings of our urban forest. Some of our cottonwoods may be that old, but most trees in the urban forest have been planted and replaced over the last century. This section establishes goals for the urban forest to continue on its trajectory of growth. These goals are not ranked in terms of priority, as all must be met to ensure that the urban forest reaches its potential. The goals are as follows:

- **Extend Trees' Benefits to All**
- **Invest Water in Shade**
- **Diversify the Canopy**
- **Care for Park and Street Trees**

Vision Statement

In 2030, Grand Junction's trees are a defining and valued feature of the city, recognized for their contributions to making Grand Junction a desirable place to live. Residents and the City of Grand Junction value trees for their power to promote well-being, support ecosystem health, and create economic value. The Forestry Division manages its trees as an integral form of infrastructure. Proactive approaches to tree care, planning, and education ensure that the City's canopy grows its benefits to extend equitably across the community.

- **Build Knowledge of Tree Care**
- **Plant and Retain Trees**
- **Integrate Trees into Decisions**

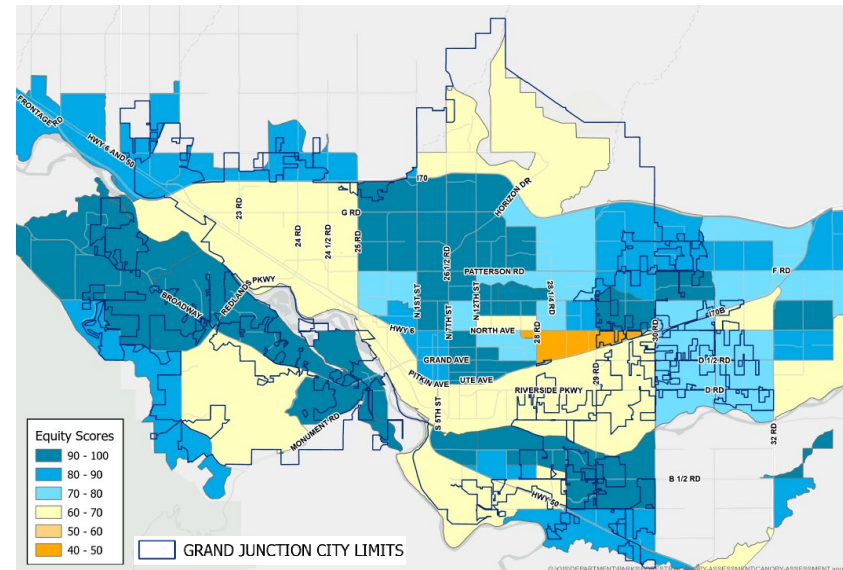
Extending Trees Benefits to All

No city has a perfectly even canopy coverage, but seeking equity in planting and care is a goal for many cities. This is important, because tree canopy cover in US cities tends to be lesser in areas with lower income and more residents of color.

Cities use a statistic called the Tree Equity Score to track how well the benefits of trees are spread across the community. This tool was developed by the non-profit American Forests. To create a single equity score (out of 100), the tool uses eight statistics: existing tree canopy, population density, income, employment, temperature, race, age and health.

Within Grand Junction's City limits, neighborhood tree equity scores range from 100 to 37. Scores are lower along I-70B, with lowest scores for developed areas found in Fruitvale, the City Center, North West Grand Junction, and Orchard Mesa. These areas also had higher numbers of survey respondents that felt canopy coverage should be increased in—suggesting that residents notice the difference and want to address it.

Tree Equity Score by Census Block Group



The Forestry Division can raise these scores by focusing plantings and providing extra support in areas where trees are rare. Because trees create savings and value for adjacent properties, investing in trees for low-income areas will boost household wealth and help solve disparities sustainably.

Investing Water in Shade

Water constraints are changing the way that residents think about what kind of landscape can be sustained into the Grand Valley's future. Trees have a complex relationship to water. They require water, and in return, they lower temperatures and reduce the water demand of other plants. Many species of tree will remain an integral part of a water-wise landscapes in Grand Junction; these trees should be well-selected and cared for to use water efficiently.

Limited water resources have been a factor in Grand Junction's urban forest since the community was founded. Water conservation has become a priority issue for the City of Grand Junction over the course of several decades, especially in the face of growing population, falling precipitation levels, and the increasing frequency of drought.

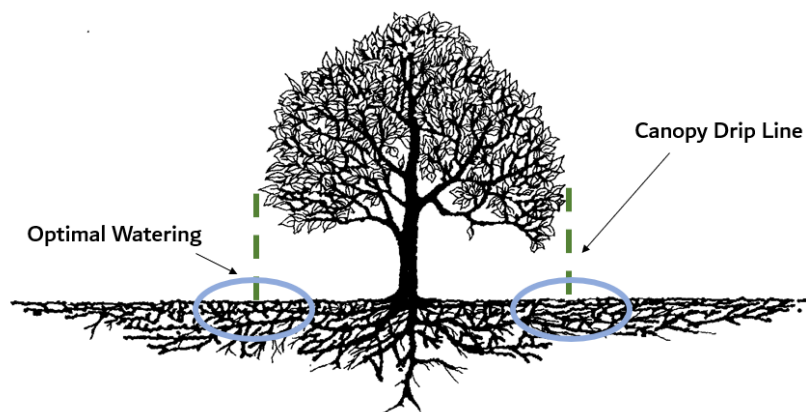
In Grand Junction, most trees that people plant require supplemental watering for their entire lifespans. Yet trees also cool the community and lessen water demand for other

plants through shade and evapotranspiration. Without trees, water consumption for other uses would rise. One goal of this plan is to facilitate a balanced approach to the relationship between trees and water, endeavoring to conserve precious water resources without compromising urban forest health.

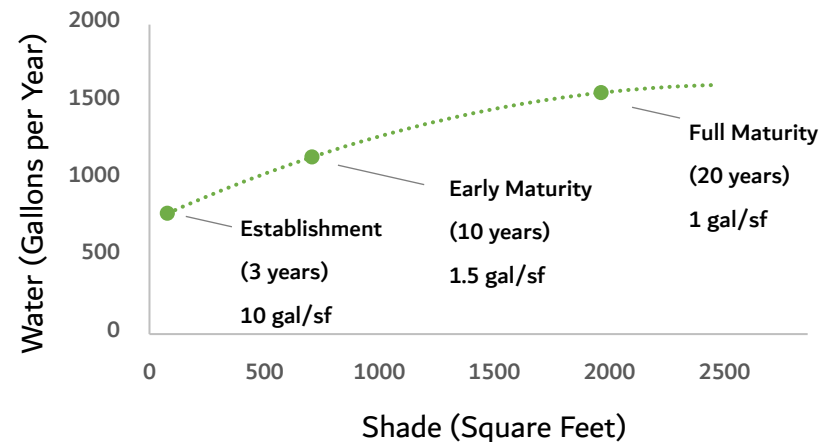
To understand the scope of the challenges facing Grand Junction's water resources, consider the overall conditions of the Colorado River Basin. This threatened river contributes up to \$846 billion to the GDP of the Colorado River Basin region and provides water to some 40 million Americans. The Colorado River Basin currently suffers from a prolonged drought—thought to be the worst in some 1,200 years. This drought raises the stakes on forestry management throughout the community and has created a challenging array of consequences for forest managers.

Many decisions can be made at home to invest water more efficiently in shade. For example, residents may consider:

- Installing a graywater collection system;
- Using permeable pavers for driveways and patios;
- Planting trees where water will naturally flow or collect, and grading property for trees before planting;
- Planting trees together with shrubs and water-wise groundcover to optimize shading and watering;
- Xeriscaping correctly to prevent mature tree loss;
- Selecting species with low water demand for planting sites with less access to stormwater; and,
- Watering trees deeply and less often at the dripline, instead of frequent shallow watering at the trunk.



Shade Provision and Water Demand



This chart shows how the shade of a tree increases over time relative to its water requirements. The specific numbers are for a tree species with moderate water demand and a 50-foot mature spread, but the trend is true of most shade trees.

Early in a tree's life, it returns one square foot of shade for every ten gallons of water it needs in a year. At full maturity, a typical tree returns 1 square foot of shade for every gallon of water it requires in a year. This means a mature tree is ten times more efficient at shading the city, in terms of water demand.

Diversifying the Canopy

Forest diversity provides visual interest. It also corresponds to the Right Tree, Right Place strategy. The many contexts for planting in the community mean that many trees will have their place.

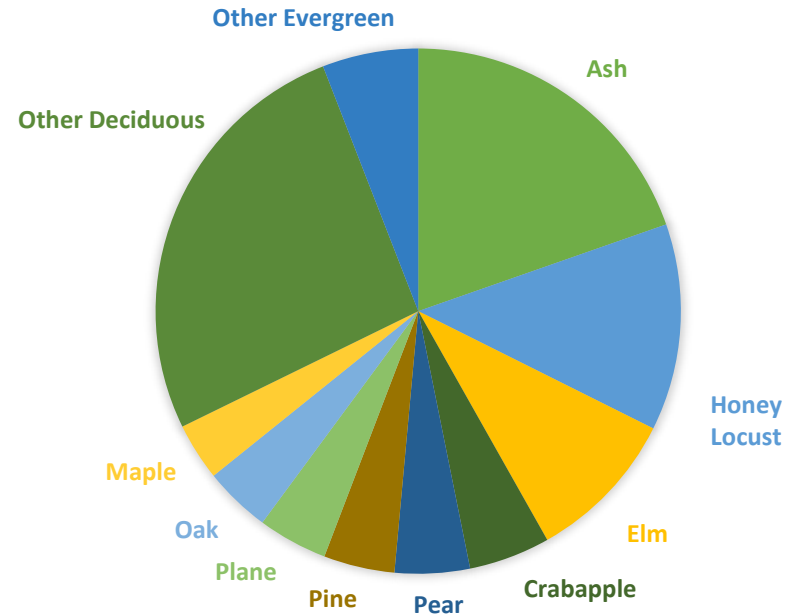
Tree diversity also promotes resilience to hazards. Species react differently to drought, storms, and changing weather patterns. They also suffer from distinct pests and diseases. Ash trees suffer from multiple pests and will be at high mortality risk when Emerald Ash Borer reaches the Grand Valley. Future pests and diseases may affect certain trees in unpredictable ways.

The best way to protect the canopy from future shocks is to plant a wide range of trees. To guide decisions, cities commonly adopt the 10-20-30 rule, planting:

- Up to 10% of any one species
- Up to 20% of any one genus
- Up to 30% of any one family

This rule is reflected in the City of Grand Junction's landscaping requirements and guides public tree planting. Rebalancing the forest will require slowing the planting of ash, honey locust, and elm.

PUBLIC TREE DIVERSITY



Current Diversity Levels

The City does not have an inventory of private trees, but tracks the trees under Forestry Division care. The makeup of park and street trees shown above reveals that ash comprises a large share, as do ornamental trees like pear and crabapple. About a quarter of species are relatively rare, which is a testament to progress on diversity.

Caring for Park and Street Trees

The Forestry Division cares directly for trees in parks, rights-of-way, cemeteries, and open spaces. The program actively manages 5,000 public space trees and 12,000 street trees. There are an estimated 40,000 additional trees within City natural areas along rivers and drainages and in open spaces.

The Forestry Division acts on limited resources—equipment, staff, and predictive power about risks—that must be allocated to support the City’s goals. The level of service can be increased—and public risks reduced by increasing the efficiency and amount of resources the City dedicates to trees.

The Forestry Division is well-funded, as reflected by the Tree City USA status that requires at least 1% of the budget to serve tree care. The City of Grand Junction adopted a budget of \$253.1 million for 2023, allocating \$16.9 million for Parks and Recreation. This includes over \$900,000 for Forestry Division staff and operations.

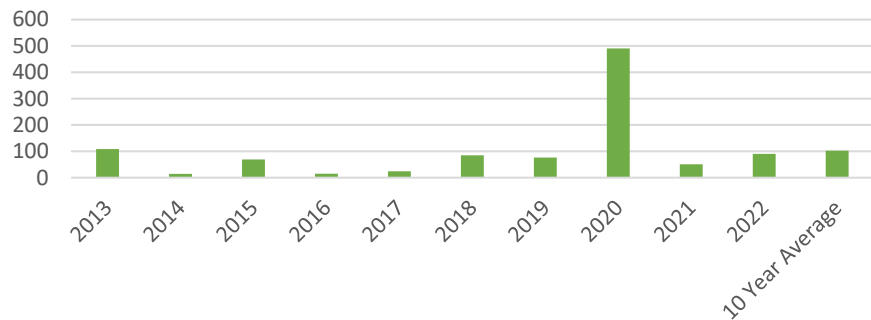
Protecting Grand Junction’s #1 Public Tree – Since 2020, the populations of two native insects—ash bark beetle and lilac ash borer—have grown exponentially, causing city-wide damage to ash trees. This existing pressure on Grand Junction's most common public tree, combined with the threat of emerald ash borer now present along the Front Range, puts this at the top of the list for insect threats.

The Forestry Division has begun a proactive trunk injection treatment program to protect the good health of all good condition ash with a trunk diameter of 13 inches and larger. The City has also launched a private ash treatment cost share program with private property owners to further protect the environmental services provided by this tree species. Continued support of these programs is proactively preparing the community for emerald ash borer response.

The City has also expanded its Forestry Division in recent years. The number of full-time arborists on staff increased from two in 2014 to four in 2019 and up to present. The Forestry Division has also established means of contracting with licensed providers for supplemental tree care, creating flexibility in response. This page addresses funding for contracted services, while the organizational chart and equipment are shown on the next page.

Growing Responsibilities – The City of Grand Junction also grows each year. As land annexes into the City limits, the maintenance needs rise with the number of public trees. Since 2013, the City grew by 100 acres per year. This adds about 150 public trees to the Forestry Division’s inventory annually—most of them recently planted.

Acreage of Annexations by Year

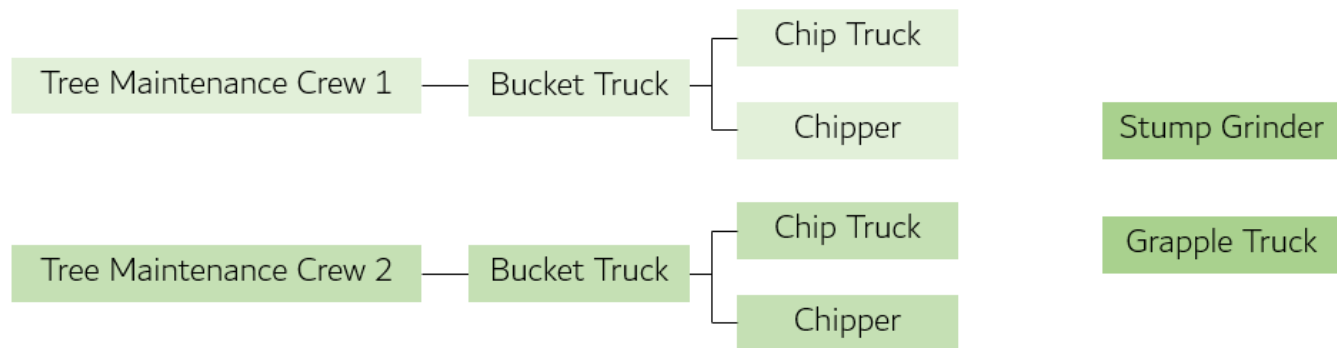
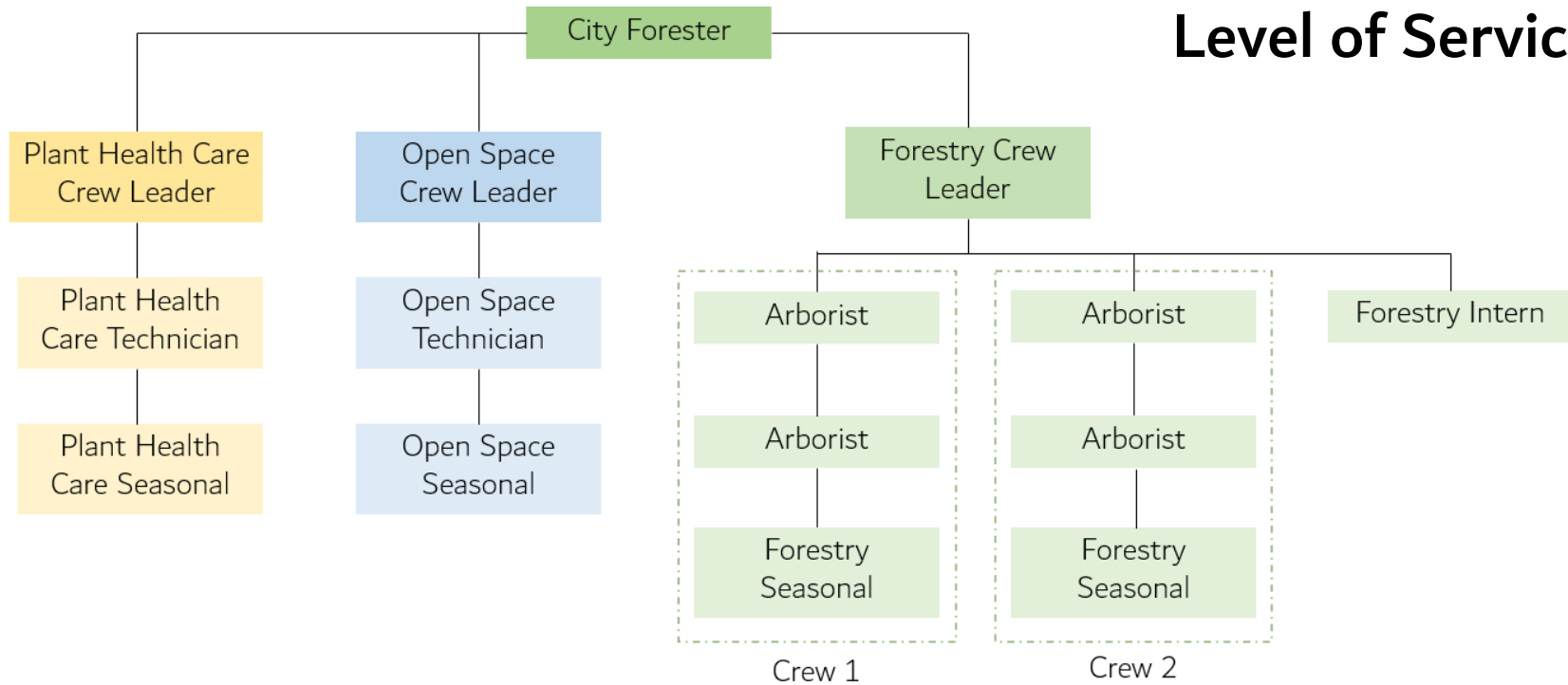


Level of Service

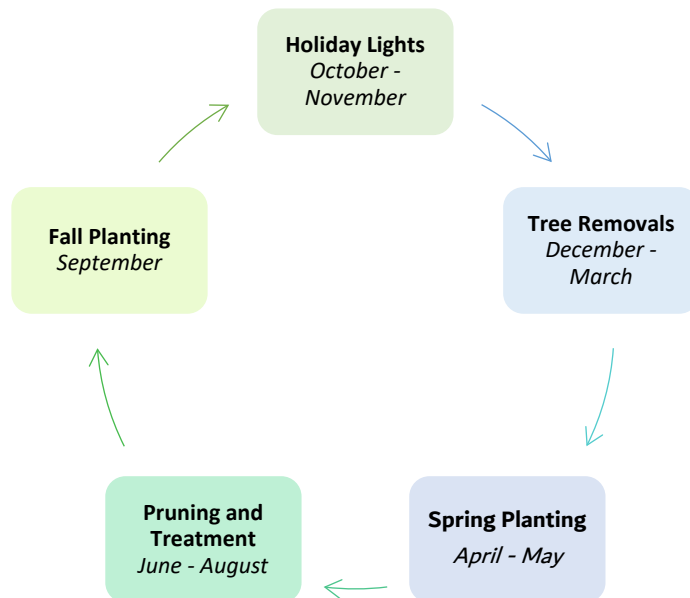
Contracted Services – Many urban forestry programs across the country find success by balancing between in-house staff and the strategic allocation of tree care to local tree services. This option allows cities to avoid significant costs from purchasing equipment and minimizes the number of new full-time staff employed. Contracted services funding has been used by the city of Grand Junction for several years to increase the number of trees maintained annually. Continuing funding and authorization for contracted services would allow for ongoing flexibility.

Information Technology – Effective canopy management requires dynamic, high-quality information. In 2020, the Forestry Division began using a software called Lucity that provides data on tree canopy cover and changes across the city. As technology improves, new software options should be evaluated to ensure the most efficient and cost-effective system is being utilized.

Level of Service



With recent increase in full time arborists, the Forestry Division now operates with two tree crews, allowing the program to better manage public work requests. During the pruning and maintenance cycle below, these crews focus their efforts on a series of demands that limit them for taking on a systematic pruning cycle for public trees. However, for best results, trees should be pruned once every five to seven years. As the Forestry Division takes on new staff, equipment, and resources, it may consider new options for proactive care.



Level of Service

Third Request Response Crew - While the City typically responds to all work requests within 12 months, shortening this timeline may be of value. A third work request response crew may continue tree care on a separate cycle, responding to requests while other crews follow the annual cycle.

Proactive Pruning Crew - Many communities establish a cycle of proactive maintenance that addresses each public trees' needs within a defined period (such as the three- and five-year cycles detailed here) on a neighborhood-based rotation. This ensures that trees under the watch of property owners that are unaware of the work request system still receive attention.

Young Tree Care Crew - Some cities focus resources on young trees. The return on investment for proactive pruning and care is much higher than for reactive care at a later stage or when a tree is under stress. This crew would attend to trees up to three years after planting, relying on data about City plantings and right-of-way plantings that accompany development.

The non-profit American Forests recommends that cities fund and staff for tree care at a rate of \$27.41 per tree and one staff per 10,000 trees. Grand Junction performs very well against this metric for staffing, but less well against budget targets. While no Colorado municipality has met these targets in full, they serve as a helpful guide.

	Recommended	Current
Public Trees per Forestry Staff	10,000	9,645
Budget per Public Tree	\$27.41	\$5.29

The difference in budget and staff relates to the potential for Grand Junction to increase its investments in programs to support private property owners in tree care, as well to equipment investments. Equipment is an essential element of forestry crew functionality, and the City would benefit from increased equipment redundancy. For example, the Forestry Division currently operates with two chippers, one

Level of Service

per crew, and frequently see capacity reductions when a chipper is out of service. Adding an additional crew in the future will compound the need for more equipment and training.

The following table provides insight into the investment that would be required to establish a proactive pruning and maintenance cycle as discussed on the previous page. It assumes—based on current costs—that the cost of labor and equipment for each removal is \$900, and the cost to plant a tree is \$700, and that the cost of pruning decreases from \$400 to \$300 as shorter cycles increase efficiencies of scale. Introducing a 3- or 5-year pruning cycle would increase the budgetary requirements of the Forestry Division and result in reduced risk of tree loss, improved canopy health, and increased public safety in parks and along streets.

	Prunings	Removals	Plantings	Pruning Costs	Removal Costs	Planting Costs	Total Cost
9 Year Cycle	2000	300	400	\$800,000	\$270,000	\$280,000	\$1,350,000
5-year Cycle	3400	300	500	\$1,190,000	\$270,000	\$350,000	\$1,810,000
3-year Cycle	5700	300	600	\$1,710,000	\$270,000	\$420,000	\$2,400,000

Chapter 8.32 of the Grand Junction Municipal Code sets laws and regulations for the protection and care of trees on public property. It provides the authority of the City Forester and Forestry Board, sets requirements for tree maintenance businesses, and assigns responsibilities for tree care. Most sections of Chapter 8.32 were last updated in 1994. The need for an update is evident after three decades, as noted as a goal of the Parks, Recreation and Open Space Master Plan.

Maintenance Responsibilities – The Code identifies the City’s responsibility to maintain all trees in parks and City-owned property. The City also takes responsibility for tree planting, trimming, pest control and removal in rights-of-way, but assigns watering responsibility for right-of-way trees to the adjacent property owner. However, the Code provides conflicting guidance as to the identity of right-of-way trees, suggesting that the City shall maintain only those street trees that exist between the street and a detached walk. This conflicts with the current approach of the City, which is to maintain all right-of-way trees, including where a detached walk does not exist. The Code should be clarified to align.

Municipal Code 8.32 - Trees

Tree Removal on Private Property – The Code requires that trees on private property only be removed by a licensed tree maintenance business. However, removals to clear sites new construction are often undertaken unlawfully by businesses without a license. A revision should balance the need to protect the public from unskilled tree work with reasonable accommodations for licensed general contractors. The City should clarify this requirement for development and fire mitigation, working with the Forestry Board to establish a special permitting process.

Enforcement on Failure to Maintain Trees – The Code does not provide an enforcement mechanism related to the loss of public trees due to the failure of an adjacent property owner to water trees. A fine or other mechanism should be established to discourage non-watering of public trees. A code update could provide a structure for transferring responsibility for watering trees located on rights-of-way to the City for qualified property owners based on hardships.

Building Knowledge of Tree Care

The general public stewards far more trees than the Forestry Division and are on the frontlines of forest management. The City and its partners should take action to educate the public about proper tree care. The City should also promote awareness of the values that trees create, because this is a step toward ensuring that these values increase.

Many of the programs recommended by this plan involve education. Building public understanding of trees is a long-term project. It requires early childhood exposure to the value of trees, knowledge of the urban forest's value and how to increase it, and a local workforce with expertise in tree care.

Building knowledge of tree care does not simply require access to existing information. Because all localities have unique climates, tree care knowledge in Grand Junction needs to be generated continually through experimentation and data sharing. Any time the community plants a tree, an opportunity arises to learn about that species and the conditions in which it is planted.

Helpful Resources

Many organizations in the Grand Valley provide resources for residents to improve tree care. Residents can access resources by clicking on the embedded link:

- [Extensive courses with the Tri River Area Master Gardener Program by CSU Extension](#)
- [The CSU Extension Tree and Shrub Guide](#)
- [Gardening guides from CSU Extension](#)
- [The current list tree care providers licensed by the City of Grand Junction](#)
- [The CSU Extension guide for xeriscaping with trees and shrubs in Colorado](#)
- [Resources from Utah State University on Water-Wise Plants for Utah Landscapes, suitable for USDA Zone 7](#)
- [Grand Junction All-Star Trees List](#)

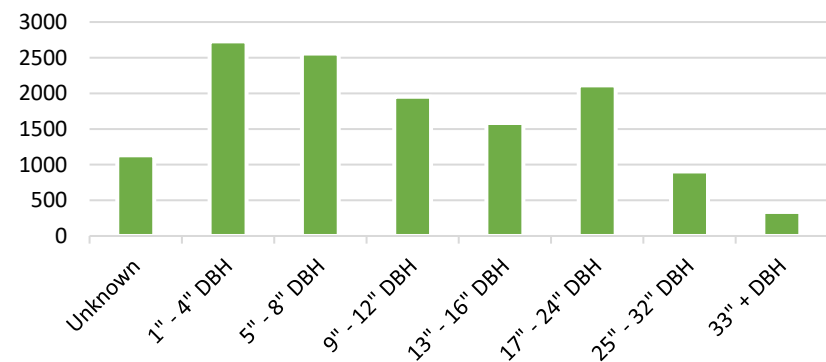
Planting and Retaining Trees

A strong canopy relates closely to urban development. This relationship is highly complex. On one hand, a vast majority of Grand Junction's existing trees were planted during or after sites were developed for housing or other urban purposes. In this sense, without development, the urban forest would not exist. When agricultural lands develop into urban areas, the tree canopy consistently increases.

However, development—especially redevelopment of existing urban areas—can also lead to the loss of mature trees and their replacement with new trees. This causes temporary decreases in canopy as those trees mature. This poses a challenge as the City and residents seek to maintain a robust canopy at all times. Tree protection during construction was widely supported by survey respondents. 77% of respondents considered sustaining trees during construction to be "Very Important" while only 6% of respondents considered this "Not Important."

Errors in managing trees such as under-watering or improper pruning (known as topping) can lead to the loss of new and mature trees. This phenomenon occurs in many areas of the City. It may stem from lack of education about proper tree care, a lack of resources on the part of those responsible for a tree, or miscommunication about who is responsible. For example, a tree may receive inadequate water because a property owner believes that, because the tree is mature, it will draw adequate water from the soil. This is generally not possible in Grand Junction. These problems must be addressed to limit losses from improper care.

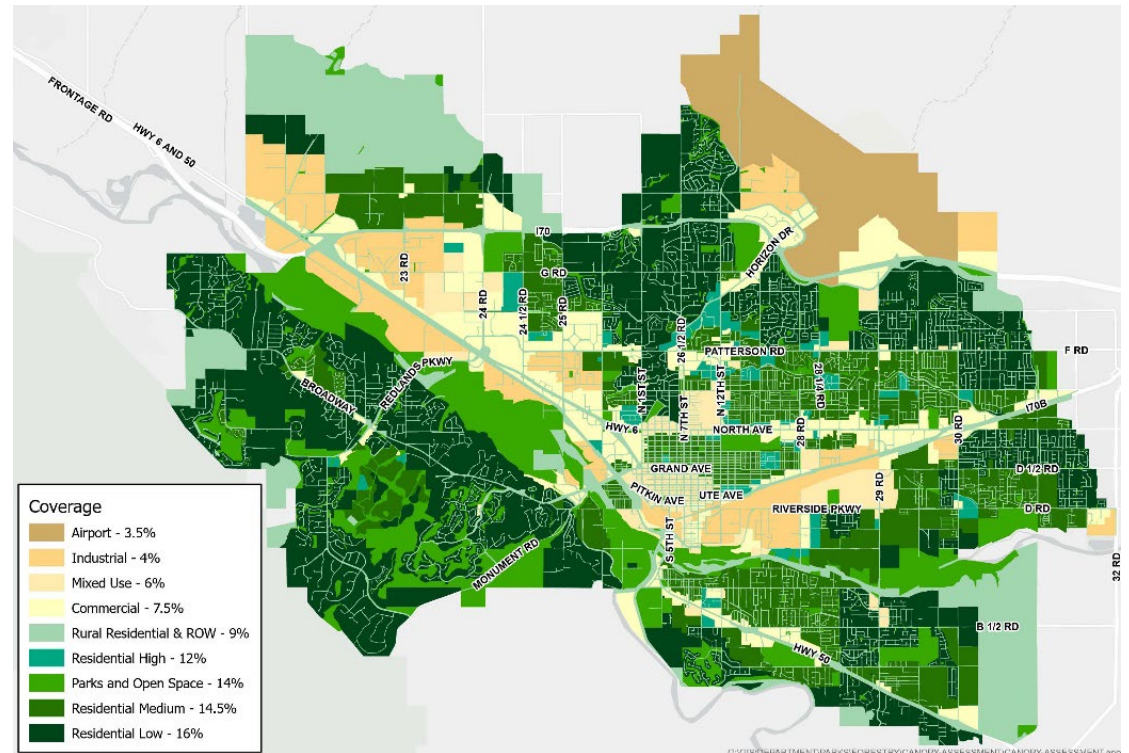
Diameter at Breast Height of Public Trees



Many communities set canopy coverage goals to guide efforts for planting and retaining trees. The non-profit American Forests guides cities to set the right goal for their context. In general, cities are advised to target a 40% canopy coverage, though arid communities like Grand Junction are advised to pursue a 30% goal. Most communities in the region (as shown below) have targeted a more modest increase, or are simply seeking to protect their canopy cover as they densify and manage hazards.

Community	Coverage	Goal
Austin, TX	38%	50%
Boulder, CO	16%	16%
Bozeman, MT	8%	33%
Colorado Springs, CO	17%	20%
Phoenix, AZ	12%	25%
Reno, NV	5%	10%
Tempe, AZ	13%	25%

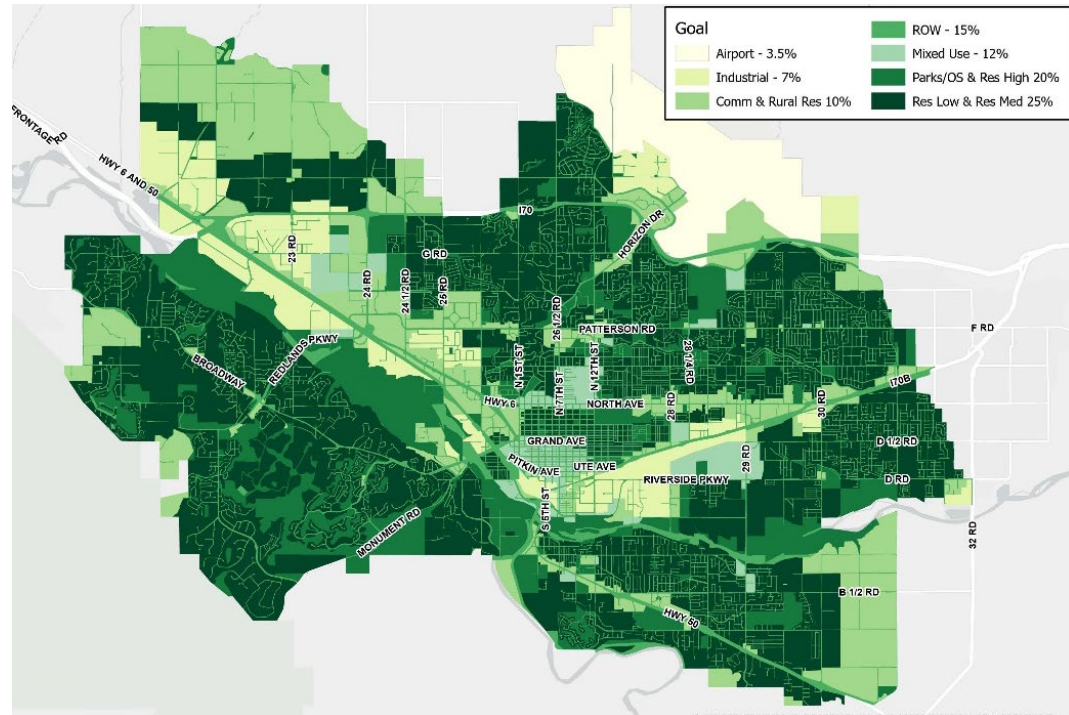
Current Canopy Cover by Land Use



This map translates the canopy coverage shown on page 7 to the Land Use designations of the Comprehensive Plan. This shows how the canopy would look if equitably distributed within each land use, and it can be easily compared to the map of goals on the next page.

Land Use Type	Current	Goal
Airport	3.5%	3.5%
Commercial	7.5%	10%
Industrial	4%	7%
Mixed Use	6%	12%
Parks and Open Space	14%	20%
Residential High	12%	20%
Residential Medium	14.5%	25%
Residential Low	16%	25%
Rural Residential	9%	10%
Rights-of-Way (ROW)	9%	15%
City Limits	13%	18%
UDB	11%	18%

Canopy Cover Goals by Land Use



This plan sets the target for the community to plant and retain trees with a goal of achieving a total canopy cover of 18%. This goal is made up of sub-targets for each Land Use type and corresponds to the different opportunities that each Land Use presents. Achieving this goal requires just a 34% increase within City limits. This would be equivalent of adding one new tree for every three that exist.

Current coverage for the area in the UDB not within City limits is lower, largely because much of this area is open space. Reaching the goal for the UDB as the City grows will require continuing the pattern of care and planting already established in developed areas of the community. Meeting this accessible goal will increase quality of life and infrastructure values of the urban forest.

Integrating Trees into Decisions

City staff and decision-makers should consider the value and health of trees when planning capital projects, development approvals, and more. This requires inter-departmental coordination and stakeholder involvement.

Increasing Internal Coordination on Trees

Public Works, Community Development, and Parks and Recreation have the closest relationships to the urban forest. These staff should coordinate wherever feasible to ensure trees are set up for success. The Forestry Division and Forestry Board were instrumental in developing the recent updates to the City's landscaping regulations for private development, and they should be involved in landscaping plan review where relevant. Similar pathways are available to coordinate on street design and other capital projects with the aim of creating optimal growing conditions. Crucially, the City Forester should be involved during the pre-application process for major development that may impact mature trees.



Decisions at Home

Every resident faces a range of choices about trees. Whether, where, and what trees to plant; how to water; and when to treat or remove a tree with pest or disease problems require forethought and create consequences that last for decades. Residents are encouraged to reach out to the Forestry Division, licensed tree care professionals, and other resources like CSU Extension for support in planning for trees on private property. Residents should also consider the value that trees create when weighing options.

Shovel-Ready Programs

Goals matter only so far as there are pathways to implementing change. This chapter lays out many of the programs that already exist to advance good forestry practices in Grand Junction, as well as programs to pilot and grow. Some are educational, some seek to improve the City's understanding of the urban forest, and others would directly impact the health of the forest in the short-term. Together, these programs will help the community to reach the 18% canopy cover goal without compromising on water resources or equitable access. To ensure accountability, the Forestry Division should report progress on programs biannually. A new canopy assessment should be performed by 2030 to measure progress against the canopy cover goal.

- Tree City & Tree Campus USA
- Code Enforcement
- Root For Your Ash
- Pest Monitor Network
- Tree Equity Irrigation Program
- Formal Opt-Out for Street Tree Care
- Memorial Tree Program
- Update Municipal Code Chapter 8.32
- Arbor Day
- Lincoln Park Arboretum
- Tree Work Request Response
- Tree-friendly Business Training & Certification
- Winter Storm Messaging
- Bike-Ped Route Forestation

- Track Effects of Significant Tree Regulations
- Drought Preparedness Messaging
- Water-Wise Landscaping Regulations
- Graywater Systems
- Wildfire Risk Education
- Aquaponic Tree Production
- Complete Tree Inventory
- Citizen Forester Program
- Water Conservation Month Messaging
- Early Childhood Education
- Wood Waste Recycling
- Update Hazard Mitigation Plan
- Support HOAs and Neighborhoods to Raise Canopy Standards
- Improved Inventory Management System

- Active Program
- Immediate Impact
- Long-Term Solution

TREE CITY & TREE CAMPUS USA •

Grand Junction became a Tree City USA under the Arbor Day Foundation more than four decades ago. This practice should continue, with annual updates and commitment to meeting the 1% minimum of City budget spent on forestry. Colorado Mesa University achieved its first Tree Campus USA designation in 2014, and continues with annual updates with participation from the Tree Campus Advisory Committee.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

ROOT FOR YOUR ASH •

The City launched the Root For Your Ash program in 2022 to provide preventative treatments for ash trees on private property. In collaboration with T4 Tree Service, a private company, the City signs up residents with qualifying trees for treatment. Costs are split evenly between the city and the resident, with a \$225 minimum fee for the resident and a maximum City contribution of \$500. To qualify for treatment, trees must be:

- on residentially zoned lots;
- 8" in diameter (at a minimum); and
- within the City limits of Grand Junction;
- with clear evidence of stewardship of the tree/surrounding landscape.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

CODE ENFORCEMENT •

Code Enforcement for proper tree care can be leveraged as a means of educating residents. City Code Enforcement officers should be supplied with resources and brochures to offer residents when tree care violations occur. Code Enforcement also serves as the best monitor of tree protection during construction, as required by City code.

Goals: Plant and Retain Trees
Build Knowledge of Tree Care

PEST MONITOR NETWORK •

In 2020, members of the Forestry Board established a monthly meeting with local tree care professionals to share information and experiences related to pests and diseases affecting Grand Junction's trees. This semi-formal convening may benefit from formalization or the institutionalized participation of the City Forester.

Long-term outcomes for the Roundtable may include an alert system for detection of new diseases, including EAB. The City may also support the Roundtable in developing a public map of known pest and disease occurrences. This program can serve as the basis for a broader Integrated Pest Management (IPM) Program in the future.

Goals: Diversify the Canopy
Plant and Retain Trees

TREE EQUITY IRRIGATION PROGRAM •

To support residents living in low-canopy areas, the City may launch a program to plant and establish drought-tolerant trees in the city-owned right of way and providing irrigation to these trees until they are established. This planting program would be carried out in neighborhoods with low tree equity scores and available street tree planting spaces.

The program would differ from the typical requirement that adjacent property owners water street trees, with the aim of foresting areas where residents have fewer financial resources to take on this role. By choosing only the most drought-tolerant trees, the program may reduce or eliminate the long-term watering responsibilities after establishment.

Goals: Extend Trees' Benefits to All
Care for Park and Street Trees

FORMAL OPT-OUT FOR STREET TREE CARE •

Per the Grand Junction Municipal Code, the property owners are responsible for providing water to street trees, while the Forestry Division provides standard maintenance services such as pruning and removal. Not all residents are aware of this requirement, and it is essential that the City communicate about this relationship.

If a homeowner is unable to water their tree, or if a renter finds that their landlord refuses to arrange for watering, the City may prefer that the resident notify the Forestry Division rather than simply neglect the tree. In the long-term, the City can develop a program to support residents that are unable to meet watering demands. This would help to protect the City's investment in its public trees.

Goals: Care for Park and Street Trees
Extend Trees' Benefits Equitably

MEMORIAL TREE PROGRAM •

The City plants trees as Living Tributes to memorialize loved ones. Residents contact the Forestry Division to select a species, location, and installation date. Residents purchase the tree through the City and receives a personalized wood engraved map with the location of the tree. The City plants the tree, outfits it with a memorial plaque, and maintains it.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

UPDATE MUNICIPAL CODE CHAPTER 8.32 •

Chapter 8.32 of the Grand Junction Municipal Code addresses the role of the City Forester and Forestry Board, as well as care for public trees. With Forestry Division collaboration, the City should continue to evaluate the effects of the Code and consider updates such as those on page 36 that would improve outcomes for public trees.

Goals: Integrate Trees into Decisions
Care for Park and Street Trees

ARBOR DAY •

The City and several partners host an annual Arbor Day celebration each spring, known as Southwest Arbor Fest. The popular event draws residents from throughout the city and beyond for games, food and drinks, and a range of educational and volunteer activities focused on trees. A central feature of the event involves a tree seedling giveaway and auction for high quality wood waste products. The event typically also includes a tree tour and advertising for Forestry Division programs. This is an essential opportunity for building public awareness of the value of urban forestry. It should be continued indefinitely.

Goals: Build Knowledge of Tree Care;
Plant and Retain Trees

LINCOLN PARK ARBORETUM •

The Arboretum at Lincoln Park serves as an outdoor tree museum. The City continually maintains the trees and incorporates their educational potential in many programs, including for local schools, child care facilities, and institutions of higher learning. The City may consider establishing a new exhibit at the Arboretum focused on drought-tolerant trees with educational programs centered on climate adaptation.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

TREE WORK REQUEST RESPONSE •

A critical function for the Forestry Division involves resident reporting of problems and needs for street and park trees. Residents can access a request form through the City website, leading to a response from the Forestry Division's crews. Based on the survey associated with this plan, as many as half of residents are unaware of this system. The City should leverage every opportunity to spread the word and grow participation.

Goals: Care for Park and Street Trees
Plant and Retain Trees

TREE FRIENDLY LANDSCAPE BUSINESS TRAINING & CERTIFICATION ●

Several large companies and many small companies provide lawn care, landscaping, and weed abatement services in the city. Many of these companies rely on seasonal employees, and the range of experience and education of landscaping professionals varies widely. This results in a wide range of outcomes for trees on public and private property.

To support tree-friendly operations and to minimize inadvertent harm to public and private trees during landscaping activities, the Forestry Division should develop and sponsor an annual training. This one-day training should address best practices in weed abatement, irrigation, xeric landscape care, and more. To encourage and recognize participation, companies that attend the training should receive a new certification as a City of Grand Junction Tree-Friendly Business. A curriculum, logo, and outreach should be developed for the program.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

TRACK EFFECTS OF SIGNIFICANT TREE REGULATIONS ●

In 2022, the City adopted clarified standards for the protection of significant trees during real estate development. This rule affects private property trees exceeding 15 inches in diameter and identified on the City's Suitable Plants List as eligible. Developments are now required to preserve 30% of significant trees during construction. If not, the developer must replace these trees at a higher-than-normal rate with new trees, or otherwise pay into a fund for tree planting.

The Community Development Department should retain notes on how many trees are protected under this regulation and how this has affected development, including whether this affects the number of dwelling units proposed for a residential project. This data will support review of the new landscaping rules in the next three to five years.

Goals: Plant and Retain Trees
Integrate Trees into Decisions

WINTER STORM MESSAGING •

The Forestry Division invests resources in storm cleanup, but these costs may be offset by proactive care by residents. Leveraging public safety communication channels, the City can develop and distribute messaging to residents that prompts them to take actions to reduce limb loss and tree mortality during major storms.

Goals: Plant and Retain Trees;
Build Knowledge of Tree Care

BIKE-PED ROUTE FORESTATION •

Pedestrians and cyclists are particularly vulnerable to heat stress in summer. To improve shade provision for these groups, the Forestry Division can concentrate plantings on designated Active Transportation Routes, especially where these routes have high rates of use and traverse neighborhoods with low tree equity scores.

Goals: Build Knowledge of Tree Care
Care for Park and Street Trees

WATER-WISE LANDSCAPING

REQUIREMENTS •

In 2022, the City adopted new regulations for landscaping of major development projects. These new regulations were designed to increase odds of young tree survival, lessening the number of required trees but promoting good practices like reduced weed barrier fabric and the use of organic mulch.

The new rules also reduced the required and permitted planting of turf-grass, which may lessen unused grass areas by about 50% for new non-residential development. New landscape installation must include high-quality irrigation design, climate-appropriate species selection, and greater planting diversity. Though these rules do not apply to single-family residences, they can serve as a guide for any property owner motivated to manage drought and water scarcity.

Goals: Build Knowledge of Tree Care
Invest Water in Shade

GRAYWATER SYSTEMS •

In 2022, the City adopted regulations to allow residents and businesses to install graywater systems, becoming just the fifth Colorado municipality to permit these systems under a new State law. Graywater systems capture safe sources of used household water, allowing this water to be used again to water landscapes. Use of graywater decreases a property's demand for irrigation water or unused potable water for landscaping.

The City is permitting its first graywater systems this year. By tracking registered graywater systems and following up with users about their experience, the City can determine whether this is part of the long-term solution to water constraints that affect landscaping and tree care.

Goals: Invest Water in Shade
Plant and Retain Trees

WILDFIRE RISK EDUCATION •

While residents understand the reality of wildfire, not everyone takes routine action to reduce risk. The local Two Rivers Wildfire Coalition recently launched a Wildfire Learning Network program that involves the Grand Valley Power, the Bureau of Land Management, the Grand Junction Fire Department and the Mesa County Sheriff's Office. The City Forestry Division may explore avenues for participation that focus on risk reduction at the Wildland-Urban Interface.

Goals: Build Knowledge of Tree Care
Integrate Trees into Decisions

AQUAPONIC TREE PRODUCTION •

In 2019, the Forestry Division established an aquaponic tree production bed, leveraging a grant from the Colorado Tree Coalition. This system allows the City to grow seedlings with minimal water waste and reduced cost for public plantings and giveaways. The City may expand this system to supply a majority of new public plantings.

Goals: Plant and Retain Trees

DROUGHT PREPAREDNESS MESSAGING •

The City cooperates with water providers and irrigators in the Drought Response Plan (DRIP) partnership. This entity reaches people by many means to remind them of the importance of water conservation. DRIP makes the public aware of drought conditions, offers guidance on water use decisions, and coordinates the actions of the partners. In cooperation with DRIP, nurseries, and other partners, the Forestry Division should develop special messaging on tree care during drought. By helping the public avoid excess watering while keeping trees healthy, the community will protect its long-term investment in the canopy.

Goals: Invest Water in Shade

Integrate Trees into Decisions

COMPLETE TREE INVENTORY •

While the Forestry Division maintains a near-complete inventory of trees under public care, it does not have a full tree inventory to account for the 75% of trees on private property. To develop this complete inventory will be a long-term effort, but it can begin by retaining records of trees planted with development. Many cities leverage grants or AmeriCorps positions for this purpose.

Goals: Integrate Trees into Decisions

Care for Park and Street Trees

CITIZEN FORESTER PROGRAM •

The PROS Master Plan calls for a Citizen Forester Program, a Native Plants Program, or other advocacy programs to develop tree advocacy and a better understanding of forestry-related policy issues. This effort can begin with a pilot cohort, and it may be most manageable if undertaken in cooperation with non-profits, CMU, or CSU Extension.

Goals: Extend Trees' Benefits to All

Care for Park and Street Trees

WATER CONSERVATION MONTH

MESSAGING •

April is officially Water Conservation Month in the Grand Junction. In this time period, DRIP expands its messaging, leveraging the focused support of the City Council to spread the word about conservation practices. The Forestry Division should actively participate in Water Conservation month and expand the connection between this period and the coinciding Arbor Day celebrations.

Goals: Invest Water in Shade

Build Knowledge of Tree Care

EARLY CHILDHOOD TREE EDUCATION •

Elementary and middle school education includes curriculum on local history and geography. The City and its partners can develop or adapt curriculum for teachers to promote interest and knowledge of trees at an early age.

Goals: Build Knowledge of Tree Care

Integrate Trees into Decisions

WOOD WASTE RECYCLING •

The Forestry Division currently manages a Tree Mulch and Firewood Program. This makes organic material from public tree removal available to the public at request, reducing waste and recycling nutrients into the urban forest. The City may have future opportunities to expand this recycling program for other uses, such as carpentry and furniture manufacturing. The Forestry Division should evaluate future partnerships and uses for wood waste.

Goals: Integrate Trees into Decisions

UPDATE HAZARD MITIGATION PLAN •

In cooperation with Mesa County and other local governments, the City of Grand Junction is party to a county-wide Hazard Mitigation Plan. This plan was updated in 2015, but should be updated every five years; thus, a revision should be considered to reflect new knowledge and concerns.

Goals: Invest Water in Shade

Plant and Retain Trees

SUPPORT HOA AND NEIGHBORHOODS TO RAISE CANOPY STANDARDS •

Because HOAs affect a large share of the homes in Grand Junction, they have opportunities to improve requirements for landscaping and disseminate tree care information that respond to microclimates in their areas. The latter is also true of neighborhood organizations and similar groups in a position to provide microclimate-specific guidelines and references documents to residents. The Forestry Division, CSU Tri-River Area Extension, and other partners with high knowledge of forestry issues can consult with HOAs and neighborhood organizations to review such guidelines and references, but the initiative must be taken by residents themselves to launch and carry forward such programs.

Goals: Plant and Retain Trees

Build Knowledge of Tree Care

IMPROVED INVENTORY MANAGEMENT SYSTEM •

The City currently relies on a software called Lucity for inventorying trees and tracking work requests. Many staff that use Lucity express dissatisfaction with the software's useability and reliability. The software is also poorly integrated into the city's public-facing GIS portal. The City should explore alternative software and solicit pilots from providers that would allow staff to test alternative systems for their useability in Grand Junction. Overall, the data from the inventory should be integrated into public facing dashboards to build public understanding about trees in the public realm.

Goals: Build Knowledge of Tree Care

Integrate Trees into Decisions



Grand Junction City Council

Workshop Session

Item #1.c.

Meeting Date: April 3, 2023

Presented By: Nicole Galehouse, Principal Planner

Department: Community Development

Submitted By: Nicole Galehouse, Principal Planner

Information

SUBJECT:

Discussion on Regulations for Cannabis Product Manufacturers

EXECUTIVE SUMMARY:

Referred measures 2A and 2B were passed on April 6, 2021, in the municipal election, providing the Council with an opportunity to consider establishing tax rates and regulations for cannabis businesses. Since that time, City Council and staff have focused on regulation and licensing of retail and co-located retail and medical cannabis businesses. As that process comes closer to licensing 10 stores, the City is now interested in evaluating the regulation of extraction and processing of cannabis.

BACKGROUND OR DETAILED INFORMATION:

Background Information

The City has engaged in the topic of regulating retail cannabis businesses since September of 2020. This effort included an in-depth issue identification exercise with a working group of approximately 20 community and industry members in November and December of 2020. At the City Council's public hearing on January 20, 2021, Council referred measures 2A and 2B to the ballot. Subsequently, the Planning Commission discussed zoning and other land use concerns at a series of five workshops from January 21, 2021 to February 18, 2021.

A staff update to City Council on March 1, 2021, included an overview of research and the outreach processes, as well as a summary of policy tools and a draft timeline for regulatory processes, pending the result of the April 6, 2021 election. Subsequently, the results of the election lifted the moratorium on cannabis businesses and established the City's authority to tax those businesses. City Council approved regulations for retail cannabis businesses, including zoning, licensing, and taxation in April and May 2022. A selection process for retail cannabis licenses is currently underway.

A public listening session was held at the City Council meeting on March 15, 2023. Two public comments were heard, which brought up questions and concerns regarding the cost and implementation of inspections, whether the cannabis-infused product manufacturer should be a use by-right, and the order of application process as it relates to state versus local.

Cannabis Product Manufacturers – These businesses manufacture cannabis products intended for consumption in concentrated form for smoking, or for consumption other than by smoking, such as edible products, ointments, and tinctures and are required to have both a state license and a local license to be a “Product Manufacturer”. These businesses may vary widely in terms of their products and processes and may include hazardous uses which in Grand Junction currently requires a Conditional Use Permit. Medical product manufacturers may transact only with medical cannabis cultivation and sales licenses, and likewise for retail. These businesses may generate jobs for their processing and packaging activities, depending on the type of product manufactured, scale of operation, and the degree of automation. There is no sales or excise tax on manufactured products (excise tax is to be collected on the first sale or transfer of unprocessed retail marijuana by a retail cultivation facility within the City).

Regulation Examples

In evaluating reasonable guidelines for the operation of businesses which extract, process, and infuse cannabis products, the first step was to review approaches taken by other jurisdictions.

Palisade

- “Retail Marijuana Free Zone” – no establishments permitted in this area, which is the core downtown
- Distance requirement (1,000 feet from school or preschool)
- Hours of Operation – shipping and receiving of products and supplies must take place from 4 a.m - 10 p.m.

Mesa County

- Cannot locate in a building with a residential occupancy (all or in-part)
- Distance requirement (1,000 feet from schools serving 6th grade level and up)

Carbondale

- Distance requirements (500 feet for school or daycare; 500 feet for alcohol treatment facility)
- Zone Districts – Commercial/Retail/Wholesale or General Industrial
- Local residency – agent who is a point of contact with primary home in the town

Denver

- No medical or retail marijuana products manufacturer license shall be issued within any zone district where, at the time of application, "food preparation and sales, commercial," "manufacturing, fabrication and assembly, general," or "manufacturing, fabrication and assembly, heavy" is not permitted

Boulder

- May only locate where "manufacturing ≤ 15,000 square feet" is a permitted use. Use is limited to 15,000 square feet.
- Not allowed in a building with residential units or in residential zones
- Does not allow retail sales in the same building
- Distance requirement (1,000 feet from any public or private elementary, vocational, or secondary school, or a college, university, or a state licensed day care center, or an addiction recovery facility)
- Separation requirement (500 feet from 3 other cannabis businesses)
- No use of pesticides
- Ventilation required
- Required to offset 100 percent of energy consumption through renewable energy
- Cultivation and manufacturing not permitted on the same premises, except for cold-water extraction facilities
- Minimum of one-hour fire wall separation between any other business

Land Use

As a component of licensure, as well as a process pertinent to any business operation in the City, land use and its related impacts (e.g. noise, odor, traffic, etc) is a primary consideration related to cannabis Product Manufacturer businesses. Unlike retail cannabis businesses, cannabis Product Manufacturers are primarily industrial in function. When discussed with Planning Commission at a series of five workshops from January 21, 2021 to February 18, 2021, recommendations for regulating this land use reflect that distinction. Previous workshops led the Planning Commission to recommend such businesses be limited to areas where general manufacturing and food product manufacturing are allowed, depending on the nature of the specific business, to include I-O (Industrial – Office), I-1 (Light Industrial), I-2 (General Industrial), and C-2 (General Commercial) zone districts. Though the current code requires hazardous uses (H Occupancy) per Fire Code to seek a Conditional Use Permit (CUP) to operate in I-O, I-1, and I-2 zone districts, this requirement has been removed in the current draft of the Zoning and Development Code.

After further consideration and research, staff recommends further refinement to the areas in which cannabis Product Manufacturers are allowed. Within the broad Product Manufacturer category, there are two distinct types of operation – those who extract and

process raw material and those who produce a cannabis-infused product. The extraction and processing of raw material presents greater risk factors due largely to the use of volatile materials as well as nuisance issues such as odor. Because of the difference in potential risk and impact, staff recommends that Product Manufacturers be split into two uses as follows:

Cannabis product manufacturing facility shall mean a business licensed as a Product Manufacturer to purchase cannabis; manufacture, prepare and package cannabis products; and wholesale cannabis and cannabis products to other licensed cannabis businesses for wholesale.

Cannabis-infused product manufacturer means a business licensed as a Product Manufacturer that utilizes cannabis previously extracted and/or manufactured off-site to infuse into products, prepare and package products intended for wholesale.

The zone districts originally recommended by Planning Commission remain consistent with zone districts contemplated to allow Products Manufacturing Facilities; however, staff recommends that certain areas of the City that have these zone districts are removed from allowing this use due to potential safety and nuisance issues. The general areas proposed to be removed include the Greater Downtown area (Rail District), areas in the vicinity of the Dos Rios and Las Colonias Improvement Districts, and specific areas that are nearby or adjacent to residential development and/or residential land use areas., which are proposed by staff to be excluded as allowable parts of the City for the Cannabis Product Manufacturing Facility uses. This will be accomplished with a zoning overlay; the proposed zoning overlay boundaries are shown in Exhibit A.

This approach would streamline verification of allowable sites for the use.

The Cannabis-Infused Product Manufacturer, as defined above, does not have the same concerns regarding hazardous materials. As such, staff recommends defining a separate Use Category for businesses that exclusively infuse instead of extract. The use is proposed to be allowed in all zone districts previously recommended by the Planning Commission and include the C-1 (Light Commercial), B-1 (Neighborhood Business), B-2 (Downtown Business), M-U (Mixed-Use), and BP (Business Park Mixed Use) zone districts.

Use Category	Principal Use	R R	R E	R 1	R 2	R 4	R 5	R 8	R 1 2	R 1 6	R 2 4	R O	B 1	B 2	C 1	C 2	C S R	M U	B P	I O	I 1	I 2
Manufacturing and Production – firms involved in the manufacturing, processing, fabrication, packaging, or assembly of goods	<i>Cannabis products manufacturing facility</i>															<u>A</u> *				<u>A</u> *	<u>A</u> *	<u>A</u> *
	<i>Cannabis-infused product manufacturer</i>													<u>A</u>	<u>A</u>	<u>A</u>		<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>

* Subject to the zone district being located within the adopted zoning overlay.

Operational Requirements

In addition to land use regulations, it is also important that aspects of the operation of cannabis product manufacturers be managed to mitigate potential impacts and ensure quality operators. The following are components of operations frequently regulated in other jurisdictions and/or are recommended by staff:

- Retail sales are not permitted by a cannabis product manufacturer unless the premises is already licensed as a regulated cannabis store. Only the 10 licensees under GJMC Chapter 5.13 may be permitted to co-locate with a cannabis Product Manufacturer.
- Cannabis Product Manufacturer Facilities must be located in standalone buildings. While the risks of many extraction methods can be mitigated through building design and requirements of the fire code in multi-tenant buildings, a standalone building requirement will further reduce risks to nearby businesses and buildings. Additionally, standalone facilities will help reduce the potential nuisance of odors coming from the use that may negatively impact neighboring tenants/owners. This would not apply to Cannabis-Infused Product Manufacturers.
- A Compliance Report detailing all means to be used for extraction, heating, washing, or otherwise changing the form of the marijuana plant, or testing any marijuana, accompanied by a third-party report, prepared by a Certified Industrial Hygienist, certifying that the plan adequately protects the business and adjacent properties and persons and comply with all applicable laws must be provided for each business location.
- Odor management controls, similar to retail cannabis stores, will be required to ensure that compatibility with neighbors is kept high.
- There are several local amendments to the International Fire Code (IFC) that are being contemplated by the Fire Department. These amendments are intended to clarify regulations, including but not limited to how equipment used in extraction

and processing of cannabis can be modified and what inspections may be required.

- Subject to annual, and as needed, inspections.

Licensing Process

It is anticipated that the licensing process will be similar to that of liquor licensing. There is no cap proposed for cannabis product manufacturers, so the licensing process and application review would occur on an as-needed basis once an application is submitted to the City Clerk's office. A brief outline of the proposed licensing process is as follows:

1. Zoning Verification completed by Community Development
2. Application submitted to State Marijuana Enforcement Division
3. Pre-Application meeting with City Clerk's office: Hand-deliver and review State application and additional local licensing requirements, such as fingerprints, an operation plan, and a compliance report prepared by an industrial hygienist.
4. Application submitted and distributed to City departments for review of local requirements
5. Recommendation, based on review, for licensing (not licensing) provided to Cannabis Licensing Authority
6. Public hearing scheduled with 14-day notice and held with the Cannabis Licensing Authority

Next Steps

Following direction from City Council, this item will be brought forward as three separate ordinances:

1. Ordinance Amending Title 5, Section 5.15.010 et. seq. pertaining to: Allowed Cannabis Uses
2. Amending Title 5, creating Chapter 10 pertaining to: Cannabis Product Manufacturing Facilities & Cannabis-Infused Product Manufacturer Business Licensing & Regulations
3. Amending Title 21, Chapters 4 and 10 pertaining to: Zoning, Use Standards, Buffering, and Definition

These ordinances are tentatively scheduled for 1st reading on April 5, 2023 and 2nd reading on April 19, 2023.

FISCAL IMPACT:

This item is for discussion purposes only.

SUGGESTED ACTION:

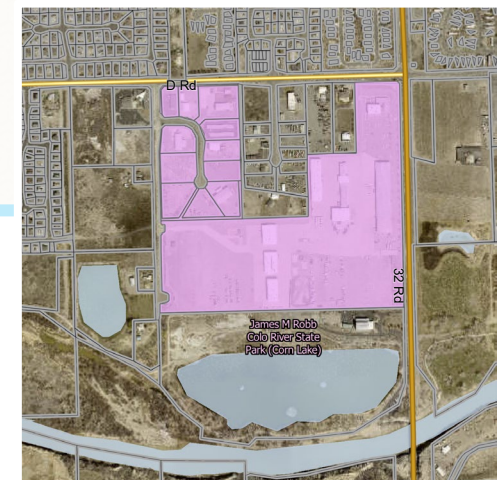
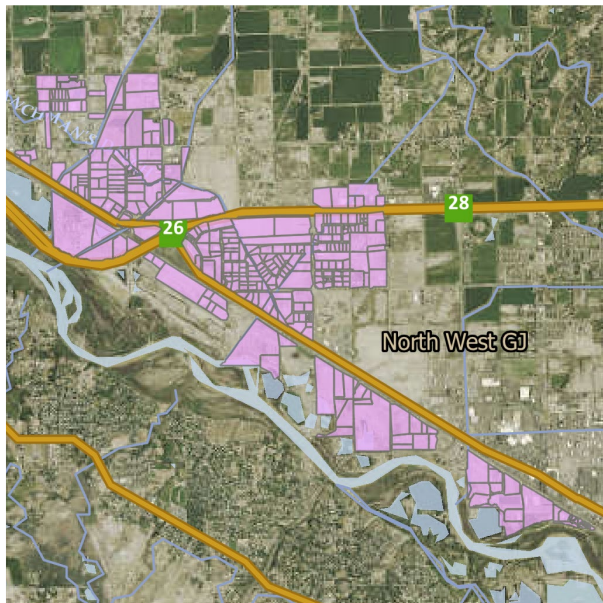
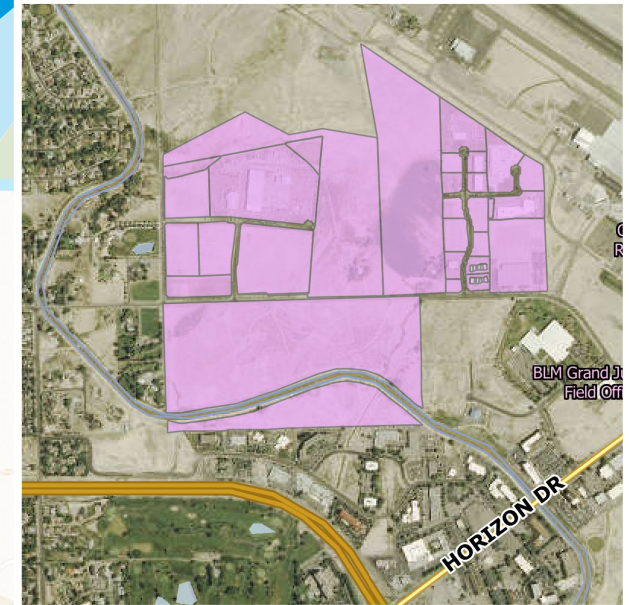
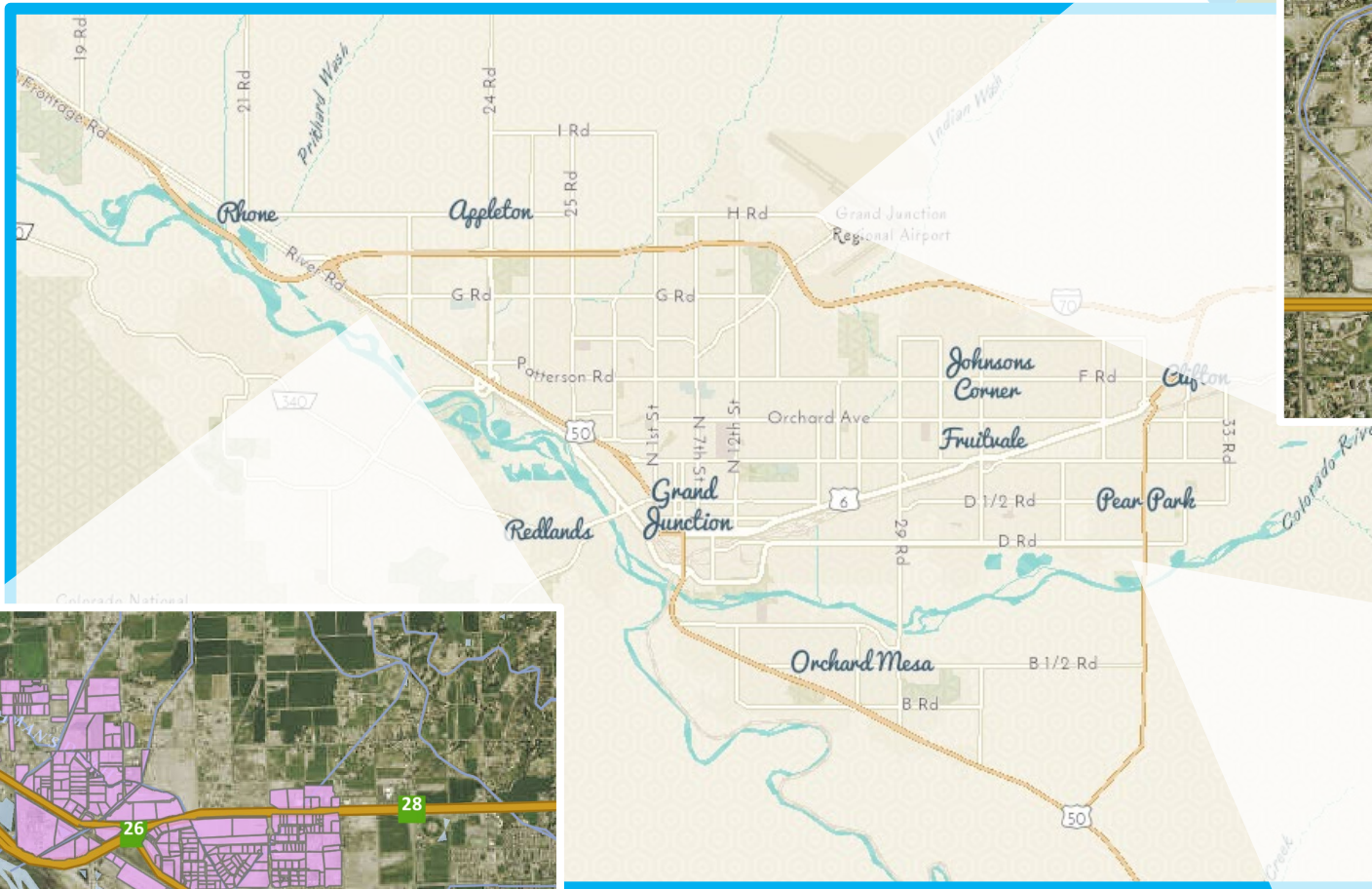
Staff recommends City Council review the information and related recommendations, discuss and provide direction to staff.

Attachments

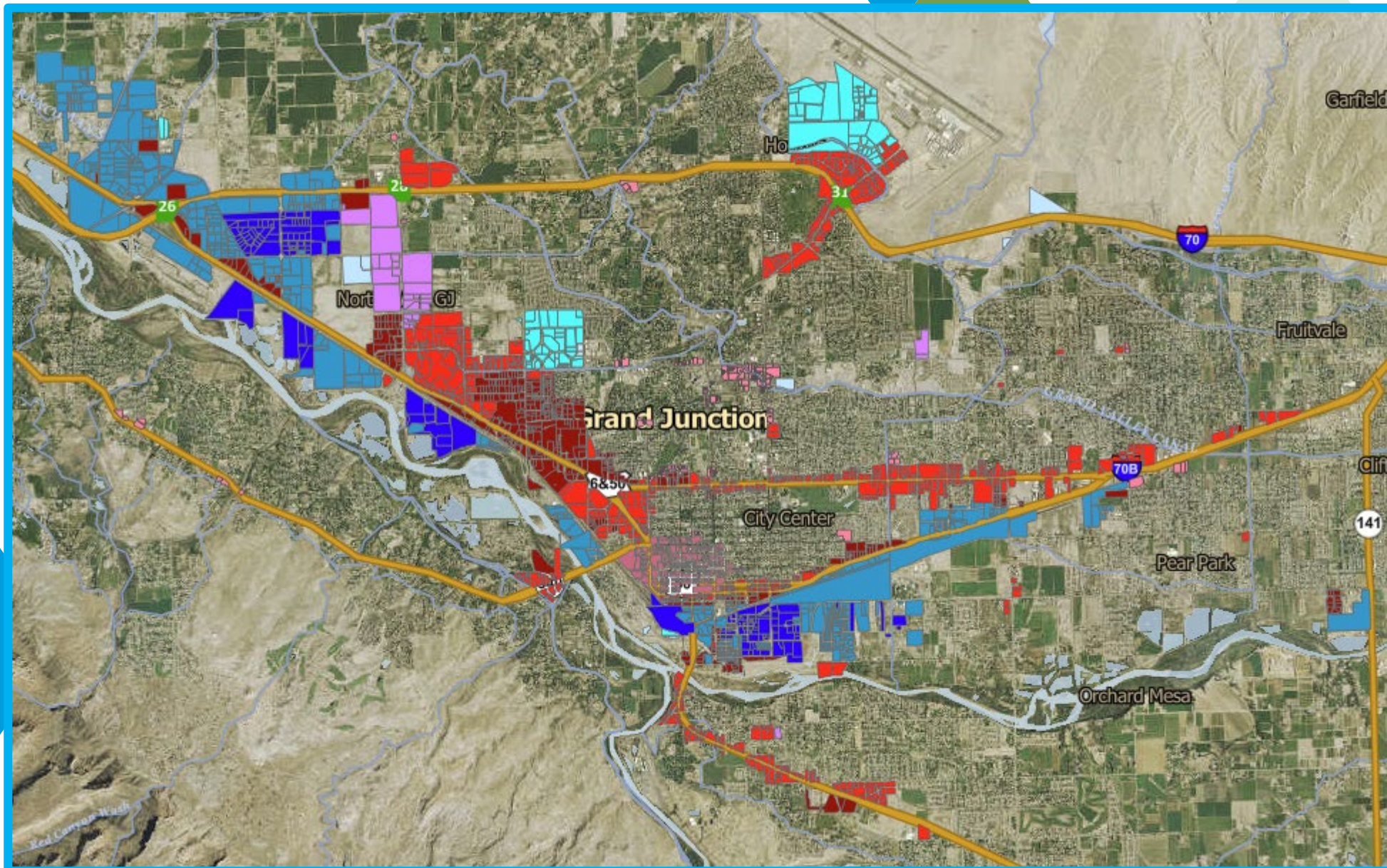
1. Exhibit A - Draft Cannabis Product Manufacturer Maps
2. Zoning Analysis Maps
3. DRAFT Removal of Prohibition Ordinance
4. DRAFT Cannabis Manufacturing Business Licensing Ordinance
5. State Application Checklist
6. DRAFT Zoning Ordinance

Proposed Cannabis Product Manufacturing Facility Overlay

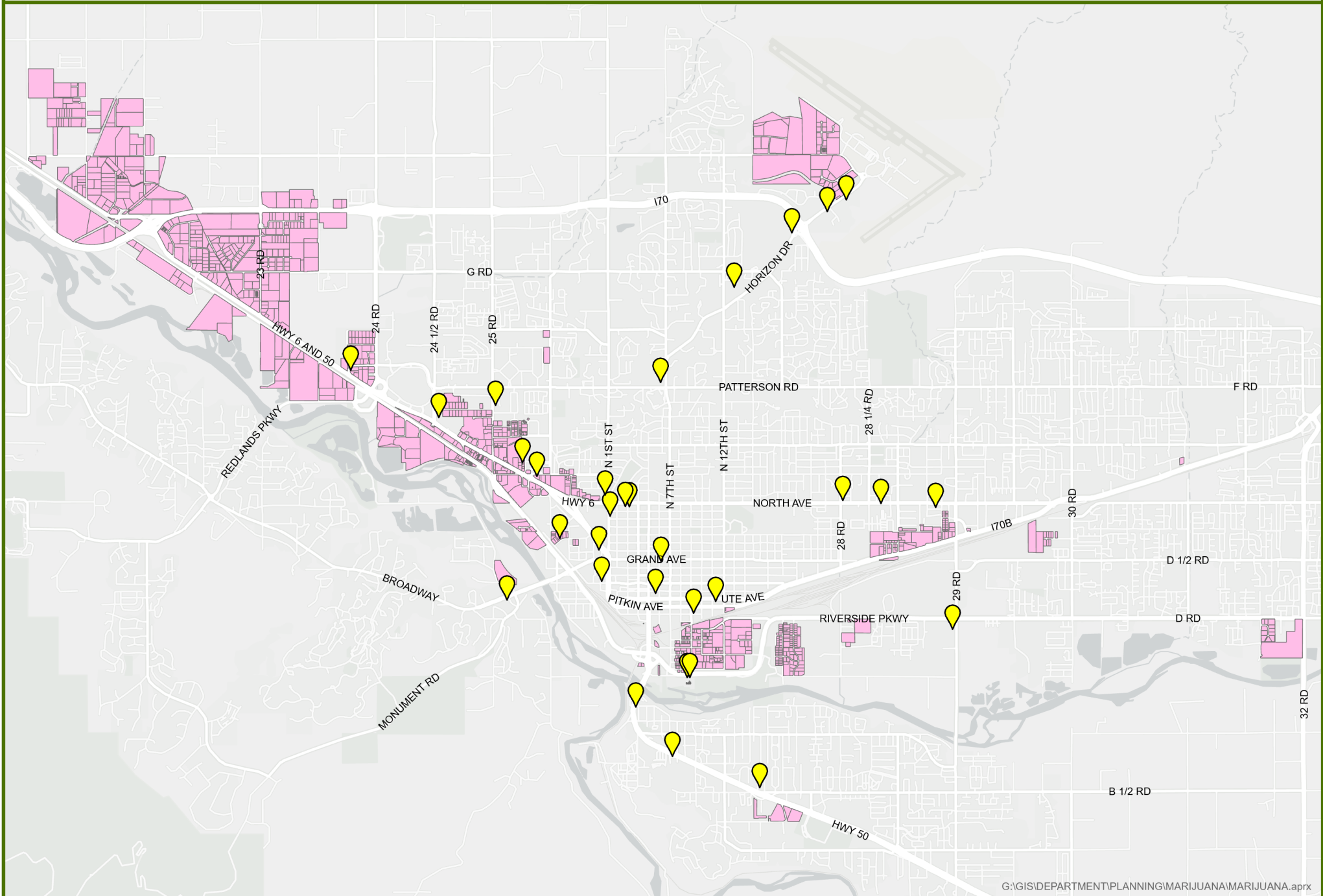
EXHIBIT A



Proposed Cannabis-Infused Product Manufacturer Zone Districts



Applicant Locations - Permitted Zones



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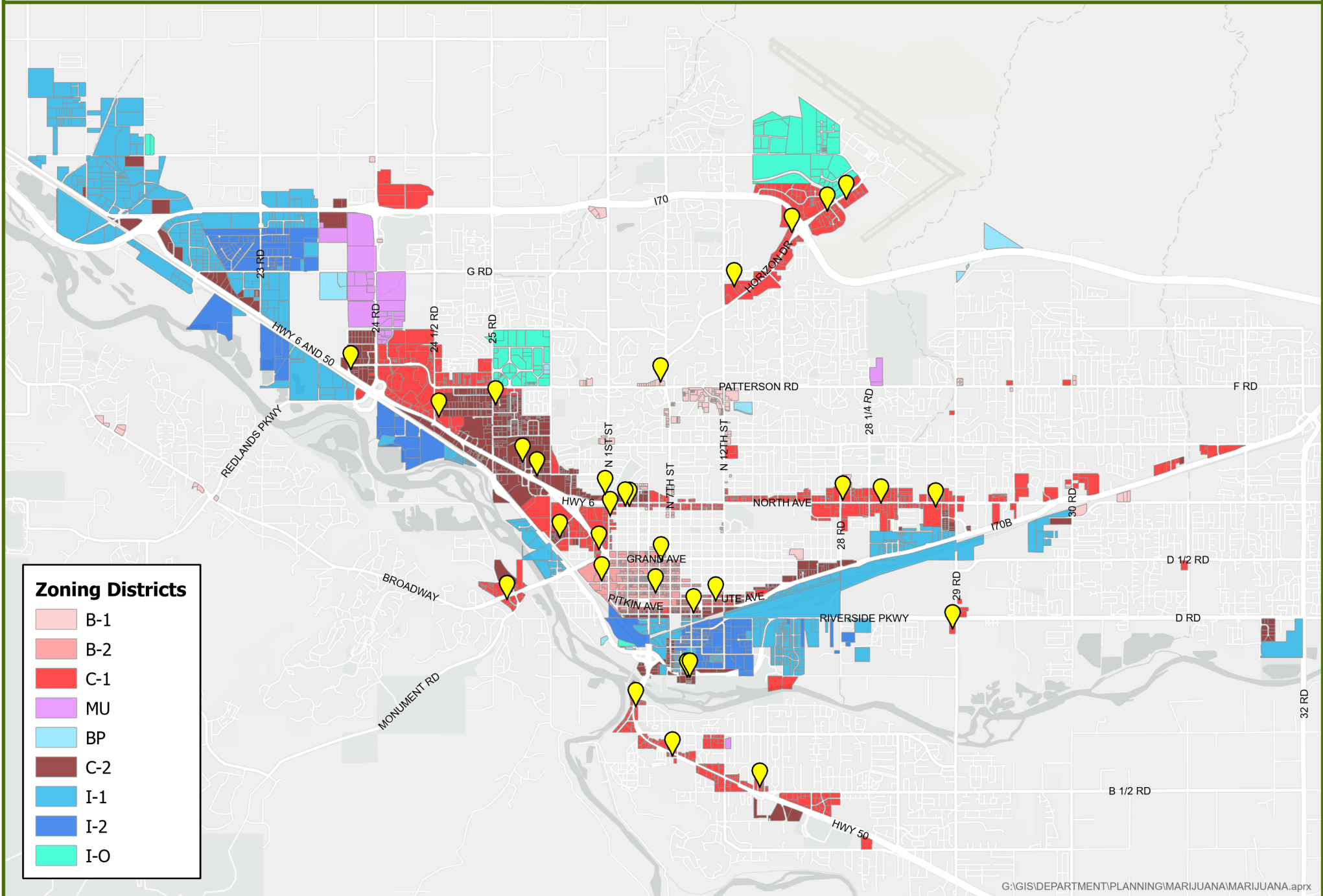


Applicant Locations



Permitted Zones

Applicant Locations - Zoning Districts



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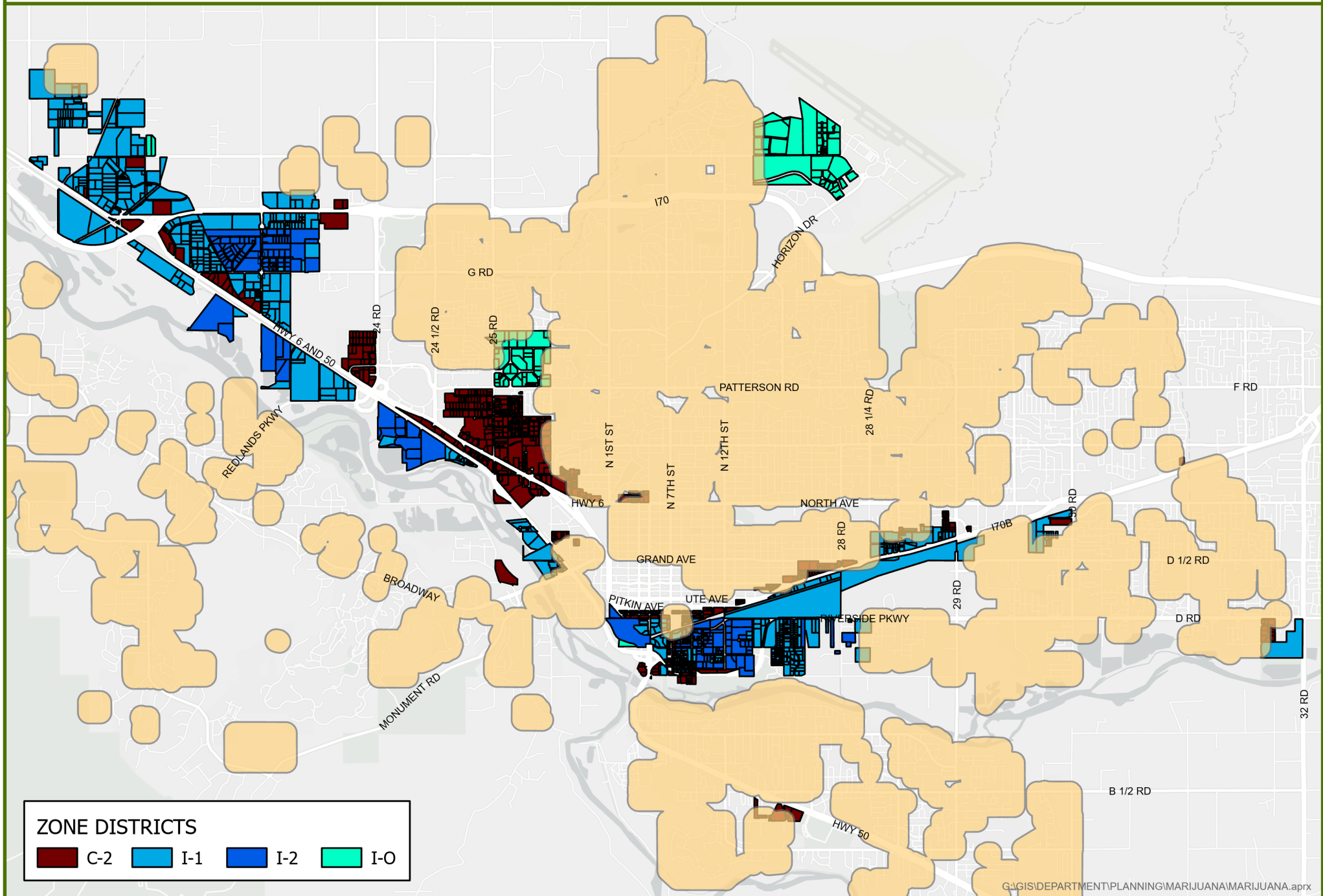
Applicant Locations

Packet Page 246

Date Created: 2/14/2023



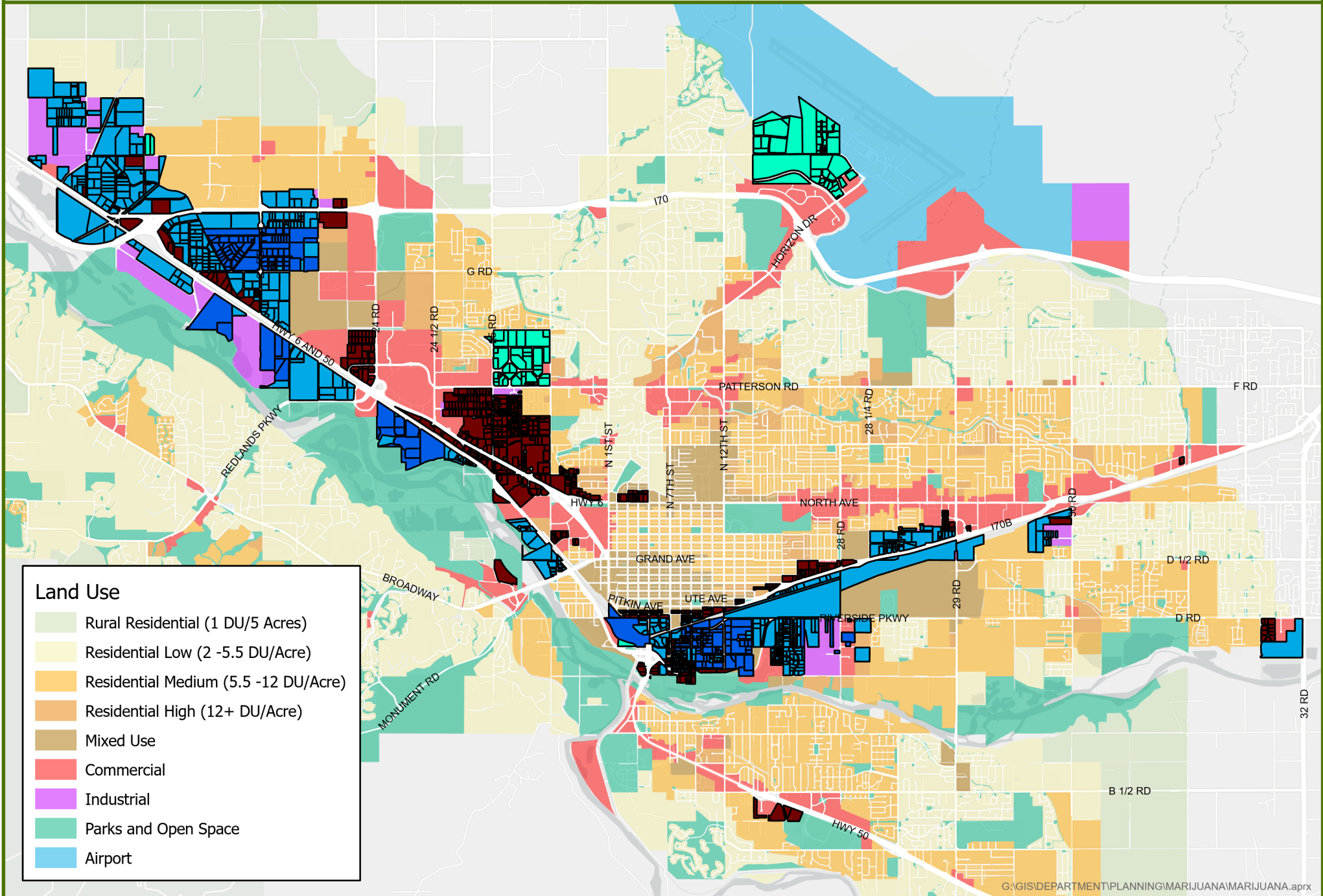
RESIDENTIAL ZONE BUFFER



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500ft Buffer Residential Zoning

COMP PLAN DESIGNATIONS



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RECITALS:

On November 6, 2012, Amendment 64 was passed by the voters, amending Article 18 of the Colorado Constitution by adding Section 16 which allowed retail marijuana stores and made it legal for anyone 21 years or older to buy cannabis at such stores. In addition, Amendment 64 allowed anyone over 21 years of age to legally possess and consume up to one ounce of marijuana. Amendment 64 did not change the Federal law; it remains illegal under Federal law to produce and/or distribute marijuana.

On February 6, 2013, City Council approved Resolution 07-13 adopting marijuana policies for the City and restrictions for persons or entities from applying to function, do business, or hold itself out as a marijuana facility, business, or operation of any sort in the City limits. Later that same year, City Council adopted Ordinance No. 4599 which prohibited the operation of marijuana cultivation facilities, marijuana product manufacturing facilities, marijuana testing facilities, and retail marijuana stores. Ordinance No. 4599 also amended Sections in Title 5, Article 15 of the Grand Junction Municipal Code that prohibited certain uses relating to marijuana.

On January 20, 2021, the City Council approved Resolution 09-21, the adoption of which referred a ballot question to the regular municipal election on April 6, 2021, to repeal Measure A contingent on and subject to voter approval of taxation of marijuana businesses. A majority of the votes cast at the election were in favor of repealing the moratorium on marijuana businesses and in favor of taxation of marijuana businesses.

On April 6, 2022, the City Council approved Ordinance No. 5064 which among other things allowed for certain cannabis businesses, subject to regulations adopted by the City, to operate within the City. Pursuant to Ordinance No. 5064 the City has been reviewing applications for the licensing and operation of regulated cannabis businesses. Because of the adoption of Ordinance No. 5064, Ordinance No. 4599 needs to be amended to allow the location and regulation of certain marijuana businesses in a manner that is consistent with Ordinance No. 5064 and other applicable statutory and constitutional standards.

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regulated cannabis businesses in the City. Regulated cannabis businesses may include retail and/or co-located retail and medical cannabis businesses.

This ordinance amends Ordinance No. 4599, and its codification GJMC 5.15.010 *et. seq.*, to operate cannabis product manufacturing facilities and cannabis-infused product manufacturing facilities in the City. Cannabis product manufacturing facilities are businesses licensed as a products manufacturer,

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION, COLORADO:

Title 5 of the Grand Junction Municipal Code, in relevant part, is amended as follows. Additions are shown in **bold** typeface. Deletions are shown in ~~striketrough~~ typeface. All other provisions of Title 5 of the Grand Junction Municipal Code shall remain in full force and effect.

5.15.010 Marijuana

Under the authority granted in Article XVIII, Section 16 of the Colorado Constitution (Amendment 64) and the Charter of the City of Grand Junction, this chapter is adopted by the City Council to prohibit the operation of marijuana cultivation facilities, marijuana product manufacturing facilities, and all business and land uses that are not authorized by Ordinance No. 5064 codified as GJMC 5.13.010 et. seq., and in furtherance of its stated intent, the City Council makes the following findings:

...

5.15.012 Applicability and effective date

This Article shall apply to all property and persons within the City of Grand Junction.

It shall be unlawful and a violation under this Chapter for a person to establish, operate, cause or permit to be operated, or continue to operate within the City and within any area annexed to the City after the effective date of this ordinance, a marijuana cultivation facility, ~~a marijuana product manufacturing facility~~, and/or to conduct any marijuana cultivation ~~and/or manufacturing~~ business as either a primary, incidental or occasional activity or any other similar operation and/or the establishment of a land use, home occupation, business or commercial activity concerning marijuana cultivation ~~and/or manufacturing~~.

A regulated cannabis businesses may be established, operate, cause or be permitted to be operated, or continue to operate within the City and within any area annexed to the City so long as the business has fully and faithfully complied with GJMC 5.13.010 et. seq. and all other applicable law. A regulated cannabis business includes retail and/or co-located retail and medical cannabis businesses.

A cannabis product manufacturer may be established, operate, cause or be permitted to be operated, or continue to operate within the City and within any area annexed to the City so long as the business has fully and faithfully complied with GJMC 5.10.010 et. seq. and all other applicable law. A cannabis product manufacturer includes cannabis-infused product manufacturers.

...

This ordinance is necessary to protect the public health, safety, and welfare of the residents of the City. If any provision of this ordinance is found to be unconstitutional or illegal, such finding shall only invalidate that part or portion found to violate the law. All other provisions shall be deemed severed or severable and shall continue in full force and effect.

INTRODUCED ON FIRST READING AND ORDERED PUBLISHED in pamphlet form this 5th day of April 2023.

PASSED, ADOPTED, and ordered published in pamphlet form this 19th day of April 2023.

Anna M. Stout

President of the City Council

ATTEST:

Amy Phillips

City Clerk

ORDINANCE NO. _____

AN ORDINANCE TO AMEND TITLE 5 ADDING CHAPTER 10 TO THE GRAND
JUNCTION MUNICIPAL CODE CONCERNING CANNABIS PRODUCT
MANUFACTURING FACILITY AND CANNABIS INFUSED-PRODUCT
MANUFACTURER BUSINESS LICENSING AND REGULATIONS.

RECITALS:

With Ordinance No. 5064 (“Ordinance”) the City Council adopted *inter alia* cannabis business licensing regulations. The Ordinance amended the Grand Junction Municipal Code (“GJMC”) to include time, place, and manner restrictions for operating regulated cannabis businesses in the City while protecting the public health and safety through reasonable limitations on business operations. Regulated cannabis businesses include retail and/or co-located retail and medical cannabis businesses.

On December 21, 2022, City Council adopted Ordinance No. 5117 which amended Ordinance 4599 and its codification in the Grand Junction Municipal Code (GJMC) at 5.15.010 *et. seq.*, subject to the provisions of Ordinance No. 5064, allowing regulated cannabis businesses to be operated in the City. Regulated cannabis businesses may include retail and/or co-located retail and medical cannabis businesses.

The Council has broadened its discussion of cannabis businesses/business operations and has considered the allowance for cannabis product manufacturing facilities and the regulation of the same. In general, those businesses manufacture cannabis products intended for consumption in concentrated form for smoking, or for consumption other than by smoking, such as edible products, ointments, and tinctures and are required to have both a state and local license to be a “product manufacturer”.

Medical product manufacturers may transact only with medical cannabis cultivation and sales licenses, and likewise for retail. Those businesses may generate jobs for their processing and packaging activities, depending on the type of product manufactured, scale of operation, and the degree of automation. There is no sales or excise tax on manufactured products (excise tax is to be collected on the first sale or transfer of unprocessed retail cannabis by a retail cultivation facility within the City).

This ordinance proposes amendments to the GJMC to include cannabis product manufacturing facilities and cannabis infused-product manufacturers to be licensed and regulated by the City. The City’s licensing and operational restrictions are generally those provided by the *Colorado Marijuana Code* and the various provisions of the *Colorado Rules and Regulations* promulgated thereunder, as amended. However, with the Ordinance the City does also establish and provide additional restrictions, including but not limited to:

- 40 A) Disallowing retail sales by a Manufacturing Business unless the premises is
41 already licensed as a Regulated Cannabis Store; and,
42
43 B) Requiring each Cannabis product manufacturing facility and Cannabis infused-
44 product manufacturer business to provide no less than an annual compliance
45 report detailing the means and methods used for extraction, heating, washing
46 or otherwise changing the form of the Cannabis plant, which report shall be
47 accompanied by a third-party report prepared by a Registered Design
48 Professional, as defined by the International Fire Code, or other professional
49 approved by the fire code official, confirming safety requirements are met; and,
50
51 C) Require an annual inspection(s) by law enforcement and/or building and fire
52 officials; and,
53
54 D) Require all Manufacturing to occur indoors together with the storage and
55 processing of Cannabis, Cannabis products, Cannabis accessories and
56 paraphernalia all of which shall not be visible from the exterior of the building;
57 and,
58
59 E) All manufacturing facilities shall be closed to the public; and,
60
61 F) All persons, including employees, entering, and exiting, manufacturing facilities
62 shall always be documented by the facility manager or owner.

63 Zoning and land use regulations, requirements, standards, or restrictions shall be
64 separately determined by the City Council with amendments to GJMC Title 21 and the
65 *Use Table* therein, together with the adoption and implementation of a zoning overlay to
66 regarding use by right, conditional use or prohibition of Cannabis product manufacturing
67 facilities and Cannabis infused-product manufacturer businesses in specific zone
68 districts.

69 Amendments to the International Fire Code and/or International Building Code shall be
70 separately determined by the City Council. Certain amendments may be necessary or
71 required to address equipment that may be necessary to control the safety and odor of
72 Cannabis product manufacturing businesses. These Codes, together with amendments,
73 shall be incorporated herein by reference.

74 NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF
75 GRAND JUNCTION THAT:

76 In accordance with the Recitals and as provided herein, Title 5, Chapter 10 of the Grand
77 Junction Municipal Code is established as follows (deletions, of which there are none, are
78 shown in ~~strike-through~~; additions are shown as underlined):

79 5.10.00 CANNABIS PRODUCT MANUFACTURING

80 5.10.010 Purpose and Legislative Intent; Incorporation of Law by Reference.

81
82 On January 20, 2021, the City Council approved Resolution 09-21, the adoption of which
83 referred a ballot question to the regular municipal election on April 6, 2021, to repeal
84 Referred Measure A contingent on and subject to voter approval of taxation of Cannabis
85 businesses. The voters approved the April 2021 ballot measures and by and with such
86 authority, City Council intends to regulate the use, possession, and distribution of
87 Cannabis in a manner that is consistent with Article XVIII, Sections 14 and 16 of the
88 Colorado Constitution and the Colorado Marijuana Code, C.R.S. § 44-10-101, et seq.
89 With the adoption of this Chapter, any provisions of the City's Code that conflict with this
90 Chapter shall be superseded.

91 Article XVIII, Section 16(5)(g) of the Colorado Constitution authorizes a system of state
92 licensing for businesses engaging in the regulated sale of marijuana, collectively referred
93 to as "regulated marijuana establishments". This provision allows a municipality within its
94 jurisdiction to prohibit licensing of regulated marijuana establishments; regulate the time,
95 place, and manner in which regulated marijuana establishments may operate; and limit
96 the total number of regulated marijuana establishments.

97
98 The authority of localities to prohibit or regulate regulated marijuana establishments within
99 their respective jurisdictions, including the authority to engage in local licensing of
100 marijuana establishments is also provided in various provisions of the Colorado Marijuana
101 Code. The Colorado Marijuana Code, among other things, affords municipalities the
102 option to determine whether to license certain regulated marijuana establishments within
103 their respective jurisdictions. Consistent with its lawful authority, this Chapter affirmatively
104 authorizes licensing and regulating Cannabis related businesses in the City of Grand
105 Junction and designates a local licensing authority to issue and process applications
106 submitted for such license(s) within the City.

107
108 This Chapter is adopted pursuant to the constitutional and statutory authority referenced
109 above, as well as the City's Charter and home rule authority to adopt and enforce
110 ordinances under its police powers all to preserve the public health, safety and general
111 welfare. By adopting this Chapter, the City intends to implement provisions of the
112 Colorado Marijuana Code and any rules and regulations thereunder except to the extent
113 that more restrictive or additional regulations may be set forth herein.

114
115 The purposes of this Chapter are to:

- 116
117 (1) provide time, place, and manner restrictions for operating Cannabis product
118 manufacturing facilities and Cannabis infused-product manufacturing businesses
119 (Manufacturing Businesses) in the City;
120

- (2) protect public health and safety through reasonable limitations on Manufacturing Business operations as they relate to air quality, security for the business and its personnel, and other health and safety concerns;
- (3) impose fees to defray some of the costs to the City of licensing Manufacturing Businesses;
- (4) adopt a mechanism for monitoring compliance with the provisions of this Chapter;
- (5) create regulations that address the needs of the residents, the Manufacturing Businesses, and the City and to coordinate with laws enacted by the State of Colorado regarding Cannabis; and,
- (6) issue Cannabis product manufacturing facility and Cannabis infused-product manufacturer business licenses only to Applicants that demonstrate the intent and capability to comply with the law.

This Chapter is to be construed to protect the interests of the public over the interests of the Manufacturing Businesses. Operation of a Manufacturing Business(es) is a revocable privilege and not a right in the City. There is no property right for any person and/or business entity to have a Cannabis product manufacturing facility or Cannabis infused-product manufacturer business license in the City.

Nothing in this Chapter is intended to promote or condone the production, distribution, or possession of Cannabis in violation of any applicable law.

5.10.011 Applicability.

This Chapter, together with all other titles and chapters of the Grand Junction Municipal Code (GJMC), and any resolution(s) and/or administrative regulation(s) of the City shall govern all Applications submitted for Manufacturing Business licensing and/or zoning submitted on and after the effective date.

5.10.012 Applicability of State and other Laws.

- (a) Except as otherwise specifically provided herein, this Chapter incorporates and adopts the requirements and procedures set forth in the Colorado Marijuana Code and the provisions of the Colorado Rules and Regulations promulgated thereunder, as amended, and the provisions of GJMC Title 5 Chapter 13 relating to the definition of terms, licensing, sales, hours of sale, records, security requirements, inspection, prohibited acts, reporting requirements, duty to supplement, renewals, modifications of premises, compliance monitoring, and violations and penalties as set out in full therein and herein. In the event of any

164 conflict between the provisions of this Chapter and the provisions of the Colorado
165 Marijuana Code or any other applicable state or local law, the more restrictive
166 provision shall control. Manufacturing Business licensees shall comply with and
167 conduct their business in compliance with all applicable state and local law(s),
168 rule(s) and regulation(s), and the terms and conditions of licensure.
169 Noncompliance with any applicable state or local laws, rules or regulations shall
170 be grounds for suspension, revocation or non-renewal of any license issued
171 hereunder and/or imposition of fine(s), and/or fine(s) in lieu of suspension, and
172 other allowable sanction(s).

173
174 (b) Compliance with any applicable state law or regulation shall be deemed additional
175 requirements for issuance of any license and conduct of any business under this
176 Chapter, and noncompliance with any applicable law or regulation shall be grounds
177 for suspension, revocation or non-renewal of any license issued hereunder and/or
178 imposition of fines and other allowable sanctions.

179
180 (c) If the state prohibits the sale or other distribution of Cannabis through a regulated
181 business(es), any license issued hereunder shall be deemed immediately revoked
182 by operation of law.

183 184 5.10.013 Definitions.

185
186 The definitions set forth in Article XVIII, Subsections 14(2) and 16(2) of the Colorado
187 Constitution, as well as the definitions found in the Colorado Marijuana Code, the
188 Colorado Code of Regulations, the Department of Revenue Regulated Marijuana
189 Enforcement Division Rules, and regulations as amended, and GJMC Title 5 Chapter 13
190 are adopted herein unless by reference specifically amended hereby.

191
192 “Cannabis product manufacturing facility” means a business licensed as a product
193 manufacturer to purchase Cannabis; manufacture, prepare and package Cannabis
194 products; and wholesale Cannabis and Cannabis products to other licensed Cannabis
195 businesses for wholesale.

196
197 “Cannabis-infused product manufacturer” means a business licensed as a product
198 manufacturer that utilizes Cannabis previously extracted and/or manufactured off-site to
199 infuse into products, prepare and package products intended wholesale. No on-site
200 extraction is permitted in this use category.

201
202 A “Manufacturing Business” is a Cannabis product manufacturing facility or a Cannabis-
203 infused product manufacturer.

204 205 5.10.014 License Required.

- (a) It shall be unlawful for any person to engage in any form of Cannabis product manufacturing facility or Cannabis-infused product manufacturer business in the City without a license to operate issued pursuant to the requirements of this Chapter while concurrently holding a license in good standing from the State and in compliance with any and all applicable laws.
- (b) No Manufacturing Business shall operate without obtaining any other license(s) or permit(s) required by any federal, state, or local law, by way of example, retail food business license, or any applicable zoning, or building occupancy permit.
- (c) No two or more Manufacturing Businesses may be treated as one premise unless approved as Co-located businesses.
- (d) The license(s) required to lawfully conduct business must be always in full force and effect, all applicable fees and taxes must be paid in full, and all conditions of the license Application be satisfied in order to lawfully conduct a Manufacturing Business. Every license applies to the person/entity named thereon and the activity(ies) authorized by the license and the location where the sale and/or possession occurs. Failure to maintain a current, valid license shall constitute a violation of this Chapter.
- (e) It shall be unlawful for any person to exercise any of the privileges granted by a license other than the person(s) issued the license.
- (f) It shall be unlawful for any person(s) granted a license to allow any other person to exercise any privilege granted under the license.
- (g) It shall be unlawful for any person to operate any Manufacturing Business in the City without a license issued by the City and the State licensing authorities pursuant to the Colorado Marijuana Code, this Chapter, and other applicable provisions of the GJMC and applicable law.
- (h) The issuance of a City license pursuant to this Chapter does not create an exception, defense, or immunity to any person in regard to any potential criminal liability the person may have for the production, distribution, storage, transportation or possession of Cannabis.
- (i) All persons who are engaged in or who are attempting to engage in the distribution, and/or sale of Regulated Cannabis in any form shall do so only in strict compliance with the terms, conditions, limitations, and restrictions in Section 14 and 16 of Article XVIII of the Colorado Constitution, state law, the Colorado Marijuana Rules, the GJMC, and all other laws, rules, and regulations.

247 5.10.015 Cannabis Licensing Authority.

248
249 For the purpose of regulating and controlling the licensing and the sale of regulated
250 Cannabis in the City, the Cannabis Licensing Authority (hereinafter referred to as
251 Authority) as established in GJMC 5.13.015 shall oversee all licensing matters pertaining
252 to Manufacturing Business.

253
254 5.10.016 Application process/requirements.

255 (a) Applications. All Applications for a Manufacturing Business license authorized
256 by this Chapter shall be submitted to the City Manager upon forms provided by
257 the Authority and shall include supplemental materials as required by this
258 Chapter, the Colorado Marijuana Code, GJMC 5.13 and any rules and
259 regulations adopted pursuant thereto. To the extent any of the foregoing
260 materials have been included with the Applicant's State license Application and
261 forwarded to the City by the State, the Authority may rely upon the information
262 forwarded by an Applicant without requiring resubmittal of the same material(s)
263 in conjunction with the City Manufacturing Business License Application.

264 (b) The Authority may, at the Authority's discretion, require additional information
265 and/or documentation for the consideration of an application for a
266 Manufacturing Business license as the Authority may deem necessary to
267 enforce the requirements of the Colorado Marijuana Code and this Chapter.

268 (c) The general procedures and requirements for licenses, as more fully set forth
269 in Chapter 5.04 of the Grand Junction Municipal Code, shall apply to
270 Manufacturing Business. To the extent of conflict between the provisions of this
271 Chapter and Chapter 5.04, the provisions of this Chapter shall control for
272 Cannabis product manufacturing and Cannabis infused-products manufacturer
273 businesses.

274 (d) The City Manager will provide public notice of any open Application period.

275 (e) Initial Application.

- 276 1. The Applicant for a Manufacturing Business license shall provide a written
277 zoning verification from City Community Development Department Director
278 that states the location proposed for licensing complies with any and all
279 zoning laws of the City, and any restrictions on location set forth in this
280 Code. If the Director makes a determination that the proposed license
281 location would be in violation of any zoning law or other restriction on
282 location set forth in the GJMC and/or any Administrative Regulation(s)
283 construing the same, then the Director shall, no later than ten (10) working
284 days from the date the Applicant requested the zoning verification, notify
285 the Applicant in writing that the proposed license location cannot be verified

286 to be in compliance. As provided by the GJMC, the Applicant may appeal
287 the Directors decision.

288
289 2. The Applicant shall submit to the State Marijuana Enforcement Division
290 an Application for a Manufacturing Business.

291
292 3. After submitting the State application, the Applicant shall schedule a pre-
293 application meeting with the City Clerk's office to hand deliver a copy of
294 their State application and to receive any additional local licensing
295 requirements.

296
297 4. The Applicant shall submit the State application, City's Application, and
298 any additional forms or documents supporting documentation to the City
299 Clerk's Office.

300
301 5. The Application/process requirements of GJMC 5.13.016(e) shall apply to
302 Cannabis product manufacturing facility and Cannabis infused-products
303 manufacturing businesses.

304
305 (f) Incomplete Application. Upon review of an Application, the City Manager shall
306 provide a notice of initial determination to the Applicant in writing as to whether
307 the Applicant's Application is complete and if found to be incomplete that the
308 Applicant may supplement its Application so long as the Application is made
309 complete within the Application period.

310 (g) Denial of Initial Application. The City Manager may deny any Application that
311 does not meet the requirements of this Chapter, the Colorado Marijuana Code,
312 or any other applicable state or City law or regulation. In addition to
313 prohibition(s) on persons as licensees found in the Colorado Marijuana Code,
314 should the Applicant fail to affirm any information or representation(s) as
315 required by GJMC 5.13.016, or the City discovers evidence that any affirmation
316 was contrary, false, misleading or incomplete, such shall constitute full and
317 adequate grounds for denial of any Application.

318 1. Notice of denial. If, after investigation and discovery, the City Manager
319 determines that the Application will be denied, the City Manager shall:

320 a. Provide notice in writing to the Applicant that the Application is
321 denied and reasons for the denial;

322
323 b. Notify the State in writing of the City Manager's decision to deny
324 the Application.

325
326 2. Appeal of Denial. An Applicant may appeal the City Manager's decision of
327 denial by submitting a written request on a form provided by the City,

received by the City Manager within 10 days of the date on the written notice of denial. The appeal request shall include any legal and factual support for the appeal. An appeal hearing will be set before the Hearing Officer for a written appeal. The Hearing Officer shall only review and consider those issues specifically addressed in the written appeal.

5.10.017 Classes of licenses authorized.

The Authority, in its sole discretion, may issue and grant to the Applicant a local license from any of the following classes, and the City hereby authorizes issuance of the licenses of the following classes by the state licensing authority in locations in the City, subject to the provisions of this Chapter:

(a) Cannabis product manufacturing facility

(b) Cannabis infused product manufacturer.

5.10.018 Requirements for Issuance of a Manufacturing Business License.

The Authority shall not issue a Manufacturing Business license except when each of the following requirements have been met:

(a) The City Manager approved the Applicant's initial Application; and,

(b) The Hearing Officer finds in writing the Application to be complete, and after a public hearing confirms licensure;

(d) The Applicant submitted all documents to the Authority that it provided to the State for marijuana business licensure; and,

(e) At the time of issuance of a Manufacturing Business license, the Applicant has paid all fees; and,

(f) The Applicant and the Applicant's owner(s) are in compliance with all federal, state, and local laws.

5.10.019 Fees.

(a) A nonrefundable Application Fee shall be paid to the State upon Application to the State for a Cannabis Manufacturing Business license.

(b) The Applicant shall pay the required Application and License Fees to the City at the time of Application for a City Manufacturing Business license. The license fee may be refunded if an Application is withdrawn by the Applicant or denied by the City Manager or Hearing Officer. The City Manager will refund to the license fee within 30 days of the date of the withdrawal, denial of the Application. The Application Fee is nonrefundable.

362 (c) Renewal, change of location, inspection and all other fees may be imposed as
363 necessary for the administration, regulation and implementation of this Code,
364 and those fees shall be set by City Council resolution.

365 (d) License and Application Fees shall be set City Council resolution, and as
366 deemed necessary, adjusted to reflect the direct and indirect costs incurred by
367 the City in connection with the adoption, administration, and enforcement of
368 this Code.

369 (e) In addition to fees and any other monetary remedy provided by this Code, the
370 City shall have the right to recover all sums due and owing hereunder by any
371 civil remedy available at law.

372 5.10.020 No vested rights; commencement of operations.
373

374 (a) Notwithstanding anything contained in this Chapter, an Application initially
375 approved for consideration of licensure and found to be complete by the
376 Hearing Officer, or in the event a license is issued, creates no vested right(s)
377 to the license or the renewal of a license, and no property right in the license
378 or the renewal of a license is created.
379

380 (b) If a Manufacturing Business license does not commence operations within 12
381 months of licensure, the license shall be deemed forfeited and the business
382 may not commence operation, unless the Authority has granted an extension
383 pursuant to section §5.13.022(e).
384

385 (c) It shall be unlawful for the owner of a building to allow the use of any portion
386 of the building by a Manufacturing Business unless the tenant has a valid
387 Manufacturing Business license or has applied for one and been awarded
388 such license. No Cannabis may be located on any premises until a
389 Manufacturing Business license has been issued by the City and the State. If
390 the City has an articulable reason to believe that a Manufacturing Business is
391 being operated unlawfully on any premises, it shall be unlawful for the owner
392 of the premises to refuse to allow the City access to the portion of the premises
393 in which the Manufacturing Business is suspected to be located.
394

395 5.10.021 Public Hearing and Notice Requirements.
396

397 (a) The public hearing procedure shall apply to any Application that has been first
398 approved by the City Manager for any Manufacturing Business and to any
399 Application for license renewal if the renewal Application is referred to the
400 Authority by the City Manager pursuant to GJMC 5.13.035.

401 (b) Public notice of the Application shall be given as follows or as more particularly
402 required by C.R.S. 44-10-303 as applicable.

403 1. Posting a sign by the Applicant on the premises for which an Application has
404 been made, not less than 14 days prior to the public hearing, stating the date
405 of the Application, the date of the hearing, the name and address of the
406 Applicant and such information as may be required to fully apprise the public
407 of the nature of the Application. The City Clerk shall provide the sign to the
408 Applicant for posting. If the building in which the Cannabis product
409 manufacturing business is to be located is in existence at the time of the
410 Application, any sign posted shall be placed to be conspicuous and plainly
411 visible to the public.

412
413 2. Publication of notice by the City Manager not less than 14 days prior to the
414 public hearing, in the same manner as the City posts notice of other public
415 hearing matters.

416
417 (c) Any decision of the Authority, acting by and through the Hearing Officer, approving
418 or denying an Application for a Manufacturing Business license shall be in writing
419 stating the reasons therefor and a copy of such decision shall be mailed by
420 certified mail to the Applicant at the address shown in the Application and to the
421 State licensing authority.

422 5.10.022 Insurance.

423 (a) All Applicants must provide at time of application a binder for worker's
424 compensation insurance as required by state law and general liability insurance
425 with minimum limits of \$1,000,000 per occurrence and a \$2,000,000 aggregate
426 limit.

427 (b) Licensee shall always maintain in force and effect worker's compensation
428 insurance as required by state law and general liability insurance with minimum
429 limits of \$1,000,000 per occurrence and a \$2,000,000 aggregate limit.

430 (c) Insurance shall:

431 1. Provide primary coverage;

432 2. Carry limits as provided in this Chapter;

433 3. Issue from a company licensed to do business in Colorado having an AM Best
434 rating of at least A-VI; and,

435 4. Be procured and maintained in full force and effect for duration of the license.

(d) Licensee shall be required to maintain insurance under this section and shall annually provide the City a certificate of insurance evidencing the existence of a valid and effective policy. The certificate shall show the following:

1. The limits of each policy, the name of the insurer, the effective date and expiration date of each policy, the policy number, and the names of the additional insureds; and,
2. A statement that licensee shall notify the City of any cancellation or reduction in coverage within seven days of receipt of insurer's notification to that effect. The licensee shall forthwith obtain and submit proof of substitute insurance in the event of expiration or cancellation of coverage within 30 days.

5.10.023 Public health and labeling requirements.

(a) All Cannabis and Cannabis products sold or otherwise distributed by a Manufacturing Business licensee shall be labeled in a manner that complies with the requirements of the Colorado Marijuana Code and all applicable rules and regulations promulgated thereunder.

(b) All Cannabis and Cannabis products sold or otherwise distributed by a Manufacturing Business licensee shall be accompanied by a warning that advises the purchaser that it contains Cannabis and specifies the amount of Cannabis in the product, that the Cannabis is intended for regulated use solely by the person to whom it is sold, and that any resale or redistribution of the Cannabis or Cannabis products to a third person is prohibited. In addition, the label shall comply with all applicable requirements of the State of Colorado and any other applicable law.

5.10.024 Operational Standards.

All Manufacturing Businesses shall comply with the applicable state and local laws, rules, and regulations, as now in effect or as may be amended. In addition, a Manufacturing Business licensee shall comply with the operational standards in GJMC 5.13, as applicable, as well as any other additional requirements. Failure to comply with any State or local law, rule or regulation or any operational standard(s) may be grounds to suspend or revoke any license and impose civil penalties as applicable.

(a) Retail sales are not permitted from the Manufacturing Business premises unless the premises is already licensed as a Regulated Cannabis Store. Only the ten licenses issued under GJMC Chapter 5.13 may be permitted to co-locate with a Manufacturing Business; and,

(b) Each Manufacturing Business shall provide no less than an annual compliance letter or report by a Registered Design Professional (RDP), as defined in the City's adopted International Fire Code, or other professional approved by the fire code official. A letter is acceptable if the person providing the letter states that the person

473 has knowledge of the means and methods used for the extraction, heating, washing
474 and/or otherwise changing the form of the Cannabis plant, Cannabis oil, or testing
475 of any Cannabis and confirming that no change has occurred since the last
476 permit(s) were issued by the Grand Junction Fire Department for such use. The
477 compliance report is required if there has been any changes since the last permit(s)
478 and it shall detail the changes and the means and methods for the extraction,
479 heating, washing and/or otherwise changing the form of the Cannabis plant,
480 Cannabis oil, or testing of any Cannabis certifying that the operation complies with
481 applicable laws and adequately protects the business and adjacent properties and
482 persons.

483 (c) Each Manufacturing Business is required to have an annual inspection(s) by law
484 enforcement and fire department personnel. The building official may inspect the
485 Manufacturing Business at such intervals as deemed appropriate by the City
486 Manager.

487 (d) Each Manufacturing Business is required to conduct all production, manufacturing,
488 and sales indoors shall not be visible from the exterior of the building. Similarly, all
489 Cannabis and Cannabis products shall be kept indoors and shall not be visible
490 from the exterior of the building. All Cannabis or Cannabis products ready for sale
491 and/or distribution shall be in a sealed or locked cabinet or refrigerator except when
492 being accessed for distribution; and

493 (e) All Manufacturing Business facilities shall be closed to the public; and,

494 (f) All persons, including employees, entering, and exiting, Manufacturing Business
495 facilities shall be documented by the facility manager or owner at all times. All
496 visitors must be tracked in an entry log identifying the visitor's name, entry and
497 departure times, and purpose of the visit. Visitors must be always escorted by a
498 manager or owner.

499 5.10.025 Inspections.

500 (a) In addition to the periodic inspection requirements of GJMC 5.13.024, Cannabis
501 product manufacturing facility and Cannabis infused-product manufacturer
502 businesses must allow unannounced inspection of the licensed premises,
503 including any places of storage where Cannabis or Cannabis products are stored,
504 sold, dispensed, or tested are subject to inspection by the City (including but not
505 limited to the Grand Junction Police Department and Grand Junction Fire
506 Department) and Mesa County Building Department, during all business hours and
507 other times of apparent activity, for the purpose of inspection or investigation.
508 When any part of the licensed premises consists of a locked area, upon demand
509 to the licensee, such area must be available for inspection without delay, and upon
510 request by the City, the licensee shall open the area for inspection.

(b) For purposes of Rule 241 of the Colorado Rules of Municipal Procedure, inspections of Cannabis product manufacturing facility and Cannabis infused-product manufacturer businesses and recordings from security cameras in such businesses are part of the routine policy of inspection and enforcement of this chapter for the purposes of protecting the public safety, individuals operating and using the services of Cannabis product manufacturing facility and Cannabis infused-product manufacturer businesses, and the adjoining properties and neighborhood. This section shall not limit any inspection authorized under any other provision of law or regulation, including those of police, fire, building, and code enforcement officials. Application for a Cannabis product manufacturing facility and Cannabis infused-product manufacturer business constitutes consent of the business as public premises without a search warrant, and consent to seizure of any surveillance records, camera recordings, reports, or other materials required as a condition of such business license without a search warrant.

Introduced on first reading the _____ day of _____, 2023 and ordered published in pamphlet form.

Adopted on second reading this _____ day of _____ 2023 and ordered published in pamphlet form.

ATTEST:

Anna M. Stout
President of City Council

Amy Phillips
City Clerk

Colorado Marijuana Enforcement Division**Regulated Marijuana Business License Application Instructions****APPLICATION CHECKLIST**☐ **1 Application Fully Completed**

Type or clearly print, in English, an answer to every question. If a question does not apply, indicate with an N/A. If the available space is insufficient, continue on a separate sheet and precede each answer with the appropriate title. An applicant is prohibited from operating a Regulated Marijuana Business prior to obtaining all necessary approvals or licenses from both the State Licensing Authority and the local jurisdiction. **A separate application is required for EACH license type.**

☐ **2 Application Contents**

- ☐ Disclosure Requirements
- ☐ Main Application
- ☐ Authorization Forms
- ☐ Affirmation of Reasonable Care
- ☐ Publicly Traded Company (PTC) Addendum A
- ☐ Qualified Private Fund (QPF) Addendum B
- ☐ Qualified Institutional Investor (QII) Addendum C
- ☐ Research & Development (Medical only) Addendum D

The disclosure requirements and the main application must be completed in full by all applicants. If this is for a PTC, QPF, QII or R&D, the appropriate addendum must also be completed.

☐ **3 All Forms Signed & Attached**

The following accompanying forms must be completed, signed and returned by each individual CBO and a representative for each CBO entity with the application:

- ☐ Affirmation & Consent
- ☐ Tax Check Authorization
- ☐ Investigation Authorization / Authorization to Release Information
- ☐ Applicant's Request to Release Information
- ☐ Affirmation of Reasonable Care

☐ **4 Required Disclosures**

- ☐ **See Application Required Disclosures (page 1 of application)**
- ☐ Upon request by the Division, an Applicant must provide additional information or documents required to process and investigate the application, within seven (7) days of the request.
Please note: This deadline may be extended for a period of time commensurate with the scope of the request.

☐ **5 Application and License Fees**

All applications and documentation submitted must be single-sided and on 8.5x11 inch paper.

See fee table on website: SBG.Colorado.gov/MarijuanaEnforcement

Application fees remitted to the State Licensing Authority and/or the Department of Revenue, are non-refundable.

- ☐ Submit complete original or scanned application packet. All **Retail** businesses must provide one complete copy along with the applicable fee (see fee schedule). **Additional fees may be required by the local jurisdiction.**
- ☐ Checks (in the name of the applicant or applicants attorney's trust account), money orders and major credit cards (subject to service charge), are acceptable forms of payment.
- ☐ Mail-in applications can only be paid by check or money order.

You are responsible for knowing who your Local Licensing Authority is. **NO Transfers/Changes of Ownership applications will be accepted until after the state license is issued.**

☐ **6 Application Submittal**

Applications can be submitted in person or by mail with all attachments and requisite fees:

Marijuana Enforcement Division
1697 Cole Blvd., Suite 200, Lakewood, CO 80401
ATTN: Business Licensing

Note: Incomplete applications will not be processed. Applicants must collect the incomplete application and fees (including those mailed in or delivered via courier), from the Lakewood Office prior to the end of the next business day.

New Business Application Required Disclosures

- ☐ Consolidated Financial Statements (Must provide Balance Sheet, Income Statement & Cash Flow Statement for the previous calendar year), including auditors reports and footnotes, if applicable. (See separate PTC requirements on PTC Addendum)
☐ Audited (PTC only) ☐ Not Audited
- ☐ Copy of the Local license application, if required for a Regulated Marijuana Business.
- ☐ Organizational Chart, including the identity and ownership percentage of all CBO's.
- ☐ Certificate of Good Standing from jurisdiction where Entity was formed. (Must be U.S. or country that authorizes the sale of marijuana).
- ☐ Organizational documents including identity and physical address of the registered agent in Colorado.
 Organizational Documents (Indicate which document is being provided)
☐ Articles of Incorporation ☐ By-Laws ☐ Shareholder agreement ☐ Operating Agreement for LLC ☐ Partnership Agreement for partnership
- Corporate Governance Documents
☐ Required for Publicly Traded Companies ☐ Permitted, but not required for Privately held companies
- ☐ Proof of Possession of Licensed Property (Indicate which document is being provided)
☐ Deed ☐ Lease ☐ Sublease ☐ Rental Agreement ☐ Contract
- ☐ Facility Diagrams – Provide a Legible and Accurate diagram for the facility. The diagram must include a plan for the Licensed Premises and a separate plan for the Security/Surveillance, including camera location, number and direction of coverage. If the diagram is larger than 8.5x11 inches, the Applicant must also provide a PDF copy of the diagram.
☐ Licensed Premises ☐ Security and Surveillance
- ☐ A copy of any contracts, agreements, royalty agreements, equipment leases, financing agreement, security contract or any other IFIH required to be disclosed by Rule 2-230(A)(3).
- ☐ A copy of any management agreement(s).
- ☐ Provide a list of any sanctions, penalties, assessments or cease and desist orders.

Addendums:

☐ PTC ☐ QPF ☐ QII ☐ R&D

Glossary of Terms:

RMB - Regulated Marijuana Business
 PBO - Passive Beneficial Owner
 QII - Qualified Institutional Investor
 PTC - Publicly Traded Company

CBO - Controlling Beneficial Owner
 IFIH - Indirect Financial Interest Holder
 QPF - Qualified Private Fund
 R&D - Research and Development

Affirmation of complete application

Signature	THIS FORM MUST BE SIGNED IN ACROBAT PRO OR READER	REQUIRED	Printed Name	Date (MM/DD/YY)
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ORDINANCE NO. _____

**AN ORDINANCE TO AMEND TITLE 21 CHAPTER 4 AND CHAPTER 10 OF THE
GRAND JUNCTION MUNICIPAL CODE REGARDING USE STANDARDS AND FOR
SPECIFIC LOCATION OF CANNABIS PRODUCT MANUFACTURING FACILITIES,
AND DEFINITIONS FOR SUCH BUSINESSES**

RECITALS:

The City desires to maintain effective regulations in its Zoning and Development Code (Title 21 of the Grand Junction Municipal Code ("GJMC")); regulations that encourage and require appropriate use of land throughout the City while taking into consideration the needs and desires of the citizens of Grand Junction.

Although Federal law criminalizes the use and possession of marijuana as a Schedule 1 controlled substance under the Controlled Substance Act, on June 7, 2010, former Governor Ritter signed into law House Bill 10-1284 and Senate Bill 10-108 which, among other things, authorized the City to adopt an ordinance to license, regulate or prohibit the cultivation and/or sale of marijuana (C.R.S. 12-43.3-103(2)). The law also allowed a city to vote, either by a majority of the registered electors or a majority of the City Council, to prohibit the operation of medical marijuana centers, optional premises cultivation operations and medical marijuana infused products manufacturers.

At the time of House Bill 10-1284 and Senate Bill 10-108's passing, a moratorium was in effect in the City for the licensing, permitting and operation of marijuana businesses. The moratorium, which was initially declared on November 16, 2009 (through Ordinance 4437), was for a period of twelve months and applied to any person or entity applying to function, do business or hold itself out as a medical marijuana dispensary in the City of Grand Junction, regardless of the person, entity, or zoning. On October 13, 2010, City Council adopted Ordinance 4446 which extended the moratorium to July 1, 2011.

At the April 5, 2011 election, the electorate voted in favor of prohibiting the operation of medical marijuana businesses and the amendment of the GJMC by prohibiting certain uses of marijuana (Measure A).

On November 6, 2012, Colorado Amendment 64 was passed by the voters, amending Article 18 of the Colorado Constitution adding Section 16 which allows retail marijuana stores and made it legal for anyone 21 years or older to buy marijuana at such stores. In addition, Amendment 64 allows anyone 21 years or older to legally possess and consume up to one ounce of marijuana. Amendment 64 does not change the Federal law; it still remains illegal under Federal law to produce and/or distribute marijuana also known as cannabis.

On February 6, 2013, City Council approved Resolution 07-13 adopting marijuana policies for the City and restrictions for persons or entities from applying to function, do

business, or hold itself out as a marijuana facility, business, or operation of any sort in the City limits. Later that same year, City Council adopted Ordinance 4599 which prohibited the operation of marijuana cultivation facilities, marijuana product manufacturing facilities, marijuana testing facilities, and retail marijuana stores. Ordinance 4599 also amended Sections in Title 5, Article 15 of the GJMC that prohibit certain uses relating to marijuana.

In late 2015, the City, Mesa County and Colorado Mesa University, by and through the efforts of the Grand Junction Economic Partnership (GJEP), were successful in establishing the *Colorado Jumpstart* business development program. One business which was awarded the first *Jumpstart* incentive planned to develop a laboratory and deploy its advanced analytical processes for genetic research and its ability to mark/trace chemical properties of agricultural products, one of which was cannabis. In October 2016, City Council passed Ordinance 4722 which amended Ordinance 4599 and Section 21.04.010 of the GJMC to allow marijuana testing facilities in the City.

On January 20, 2021, the City Council approved Resolution 09-21, the adoption of which referred a ballot question to the regular municipal election on April 6, 2021 to repeal Referred Measure A contingent on and subject to voter approval of taxation of marijuana businesses. A majority of the votes cast at the election were in favor of repealing the moratorium on marijuana businesses and in favor of taxation of cannabis businesses.

City Council has decided to allow certain regulated cannabis businesses within the City. On April 6, 2022, the City Council approved Ordinance No. 5064, the adoption of which included certain cannabis use licenses and regulations in the GJMC. On May 4, 2022, the City Council adopted Ordinance No. 5070 related to cannabis business licensing land use regulations, including use standards, buffering, and signage requirements.

City staff and community members, including the Cannabis Working Group, have researched, reviewed, and discussed various approaches to manufacturing of cannabis products within the City. Regulations have been established at the state level with the adoption and implementation of the Colorado Marijuana Code in the Colorado Revised Statutes (C.R.S. 44-10-101, *et. seq.*); however, regulation of regulated marijuana uses at the state level alone are inadequate to address the impacts on the City of regulated cannabis, making it appropriate for the City to regulate the impacts of regulated cannabis uses.

The City has a valid interest in regulating zoning and other impacts of cannabis businesses in a manner that is consistent with constitutional and statutory standards. The City Council desires to facilitate the provision of quality regulated cannabis in a safe manner while protecting existing uses within the City. Regulation of the manner of operation and location of regulated cannabis uses is necessary to protect the health, safety and welfare of both the public and the customers. The proposed ordinance is intended to allow manufacturing of cannabis products that will have a minimal impact and where potential negative impacts are minimized.

This proposed ordinance amends the City's Code to permit cannabis product manufacturing facilities in the specific zone districts where like uses are permitted through an overlay informed by specific land uses including, certain schools and specific rehabilitation facilities, as well as residential districts. This ordinance also includes definitions for cannabis product manufacturing facilities.

After public notice and public hearing as required by the Grand Junction Zoning and Development Code, the Grand Junction Planning Commission recommended approval of the proposed amendments.

After public notice and public hearing, the Grand Junction City Council finds that the amendments to allow cannabis product manufacturing facilities by and through the uses and the Use Table, are responsive to the community's desires and otherwise advance and protect the public health, safety and welfare of the City and its residents.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT THE FOLLOWING SECTIONS OF THE GRAND JUNCTION MUNICIPAL CODE INCLUDING TITLE 21: ZONING AND DEVELOPMENT CODE ARE AMENDED AS FOLLOWS (new text additions underlined and deletions marked with strike-through notations):

21.04.010 Use Table.

Key: A = Allowed, C = Conditional, Blank Cell = Not Permitted

Use Category	Principal Use	R-R	R-E	R-1	R-2	R-4	R-5	R-8	R-12	R-16	R-24	R-O	B-1	B-2	C-1	C-2	CSR	M-U	BP	I-O	I-1	I-2	M X-	Std.
Manufacturing and Production – firms involved in the processing, fabrication, packaging, or assembly of goods	<u>Cannabis product manufacturing facility</u>															A*				A*	A*	A*		
Retail Sales and Service	<u>Cannabis-infused product manufacturer</u>													A	A	A		A	A	A	A	A	A	

*Subject to the zone district being located within the adopted zoning overlay.

21.04.030 Use-specific standards.

(x) Cannabis Product Manufacturing Facilities.

(1) Applicability. These regulations apply to all Cannabis Product Manufacturing Facilities in the City in addition to the other provisions in the GJMC pertaining

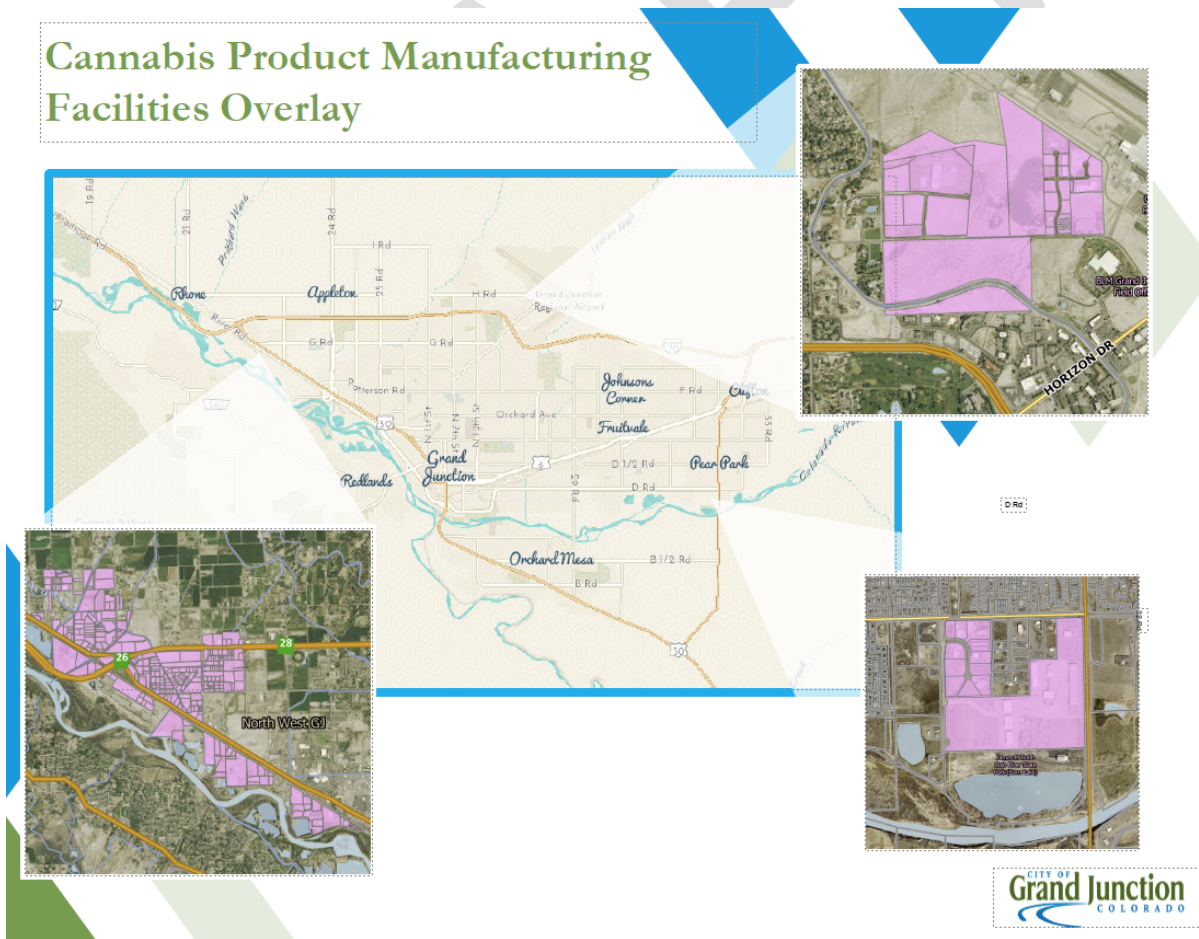
to cannabis businesses, including but not limited to, GJMC Chapters 5.10, 5.13, and 5.15.

(2) Zoning.

(i) Overlay established.

(A) The purpose of the Cannabis Product Manufacturing Facilities Overlay is to provide appropriate locations for extraction and processing of cannabis to occur within City limits while considering proximity to schools, rehabilitation facilities, and residential land uses.

(B) The Cannabis Product Manufacturing Facilities Overlay includes properties within the General Commercial (C-2) and Industrial (I-O, I-1, and I-2) zone districts as identified on the map.



(ii) Cannabis Product Manufacturing Facilities, excluding Cannabis-Infused Product Manufacturers, shall only be located in standalone buildings.

21.10.020 Terms defined.

Cannabis product manufacturing facility shall mean a business licensed as a Product Manufacturer to purchase cannabis; manufacture, prepare, and package cannabis products; and wholesale cannabis and cannabis products to other licensed cannabis businesses for wholesale.

Cannabis-infused product manufacturer shall mean a business licensed as a Product Manufacturer that utilizes cannabis previously extracted and/or manufactured off-site to infuse into products, prepare, and package products intended for wholesale. No on-site extraction is permitted in this use category.

All other provisions of Title 21 Chapter 4 and Chapter 10 shall remain in full force and effect.

Introduced on first reading the _____ day of _____, 2023 and ordered published in pamphlet form.

Adopted on second reading this _____ day of _____ 2023 and ordered published in pamphlet form.

ATTEST:

Anna Stout
President of City Council

Amy Phillips
City Clerk