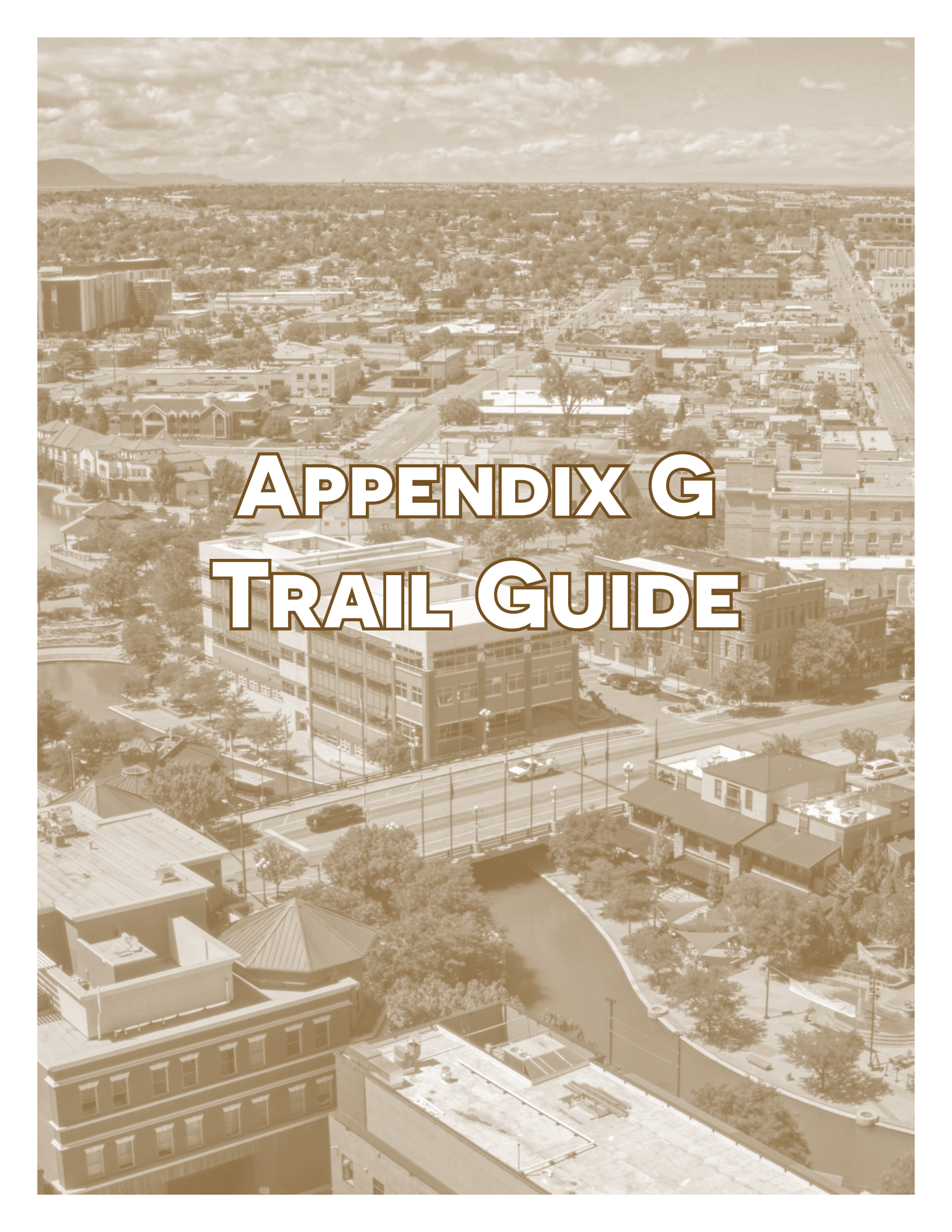


An aerial, sepia-toned photograph of a city. A river flows through the lower half of the image, with a bridge crossing it. The city is densely packed with buildings of various sizes, including a large modern building with a flat roof in the center. Trees are scattered throughout the urban landscape. In the far distance, a range of mountains is visible under a sky with scattered clouds.

APPENDIX G

TRAIL GUIDE

TRAIL GUIDELINES



Specific Trail Guidelines

These trail guidelines were developed to provide the City of Pueblo with a toolbox of details to build both soft and hard surface trails, access areas and special crossings to extend and improve an interconnected network of parks, trails, open spaces, recreation opportunities, as well as connecting to schools and other places of businesses. These guidelines can be provided to developers so additional trail related facilities are consistently developed.

This section provides basic information necessary for four types of trail or path standards, trailheads, access points and crossings with specific materials, widths and clearances specified based on the type of trail or path and level of service expected. Refer to City of Pueblo Bicycle Master Plan for connecting routes for bicycles utilizing roadways with bike lanes or other designated bike routes.

Trails in this document refer to non-motorized, paved and unpaved routes physically separated from motor vehicle traffic intended for recreation and bicycle/pedestrian commuter connectivity including open space areas, in parks, along drainage features and adjacent to vehicular routes. They do not include specific guidelines for on-street bicycle routes and bicycle lanes, which should follow national standards found in the American Association of State Highway and Transportation Officials (AASHTO) intended for bicycle commuters and outlined in more detail in the 2010 Bicycle Master Plan.

The intent of these trail standards is to provide consistency and more affordable options to the city and developers in advancing the non-motorized transportation network using trails and sidewalks. Critical linkages can be made between neighborhoods and key destinations such as schools, parks, business areas, the existing Arkansas River trail, Fountain Creek trail, Wildhorse Creek trail, the University trail and wide sidewalk trails parallel-



Lake Minnequa Trail

ing Northern Blvd, Pueblo Blvd and Highway 50 through the city limits and any future developments that have non-motorized trails planned in the 2030 Long Term Transportation Master Plan.



Pueblo West Powerline Easement Trail

This section of the plan is organized by:

- Paths and Trails
- Road Crossings
- Access points and Trailheads
- Corridors

American Disability Act trail considerations

TYPES OF TRAILS AND STANDARDS (see Table 1)

The trail and path concept provides a combination of facilities that accommodate a

variety of non-motorized shared uses in different settings. Shared-use is defined as non-motorized use accommodating such activities as hiking, bicycling, equestrians, jogging, wheelchairs and roller blading. Trail surface material is self-selecting for some uses (e.g., roller bladders on paved surfaces and equestrians on unpaved surfaces).

The complete description of these facilities is listed in Table 1. The following is a general summary of the system of the types of trail standards allowed:

Urban Trail:

The highest standard of trail requires 10-foot hard surface of concrete or pavement alongside a 3-foot soft surface on one side. Inclusion of a soft surface trail alongside a hard surface trail is to protect the joints of walkers and runners and provide additional safety for trail users. Due to volume of potential traffic and safety, the highest standards for crossings, clearance and design features are included here unless prohibitively expensive or lack of right of way exists for the highest standards.

- **Regional trail:** These trails provide major connectivity across the

city and adjacent open space areas to other trail systems. Existing examples: Arkansas River Trail, Fountain Creek Trail

Community Trail: these trails provide connectivity within city limits connecting neighborhoods, schools and business areas. Existing examples: wide sidewalk trails adjacent to Pueblo Blvd, Northern Blvd and Highway 50

Rural Trail:

The mid-level standard of trail requires a minimum of 8-foot width of hard or soft surface material. If adjacent to a roadway, a 10-foot concrete sidewalk is required. This trail standard is currently only at Lake Minnequa. This trail standard could be used to extend Fountain Creek trail north toward Colorado Springs, around parks for runners and walkers needing softer surface for their joints. This trail standard is less costly to construct and maintain while serving multiple types of users.

- **Regional trail:** These trails provide connectivity to adjacent open space areas and other trail systems. No existing examples but future expansion of the Fountain Creek Trail north to Colorado Springs or Wildhorse Creek northwest to the YMCA campus until funding available to upgrade the trail to an urban standard.

Community Trail: these trails in more natural, rural areas allow community members a soft surface option to walk, ride, run within city limits and provide much needed connectivity in areas with lower expected traffic volumes between smaller neighborhoods or parks. Existing examples: Lake Minnequa trail and potential loops of trail through existing parks.

Neighborhood Trail:

The lowest standard trail has varied widths depending on the entity maintaining the trail, potential traffic volumes and may include a combination of sidewalks, compacted soft surface and hard surface trails connecting through open space, park, garden or greenbelt or minor drainage areas.



Single Track Trail for Mountain Bike and Hiking:

Unimproved open space areas may have existing or future single track trails enjoyed by hikers and mountain bikers. Access to recreational hiking and biking trails such as this are appreciated in urban areas as much as rural and mountain areas. Trail standards are included for any future development of mountain bike parks or hiking areas within city limits for sustainability and maintenance purposes.

TYPE MILES USE

TRAIL

ROAD CROSSING TRAIL STANDARDS (see Table 2)

Standardization of how trails safely cross or intersect with a roadway in terms of signage, lighting, clearance are detailed.

ACCESS POINTS (see Table 3)

Improved access points will greatly enhance safety and user experience. Most importantly, the overall success of a trail/path system largely depends on the ease with which people can access the facilities, either by walking, riding or biking from home or from driving to convenient, safe and well-equipped trailheads. Three types of access points are summarized below.

- Level One Trailhead: the largest trailhead to accommodate all user types. It is fully ADA accessible, has ample parking, security lighting, restroom facilities and signage regarding the trail system.
- Level Two Trailhead: a smaller trailhead providing minimal parking and amenities.
- Level One Access connection: short trail segment, ramp or stairway providing access to trail system between a neighborhood, park, school or business that fully meets ADA guidelines
- Level Two Access connection: short trail segment, ramp or stairway providing access to trail system between a neighborhood, park, school or business that does not fully meet ADA guidelines

At grade road crossing connection meets ADA guidelines



RIGHT OF WAY CORRIDORS (see Table 1)

Trail and path corridors generally occur along streets and roadways, between properties or within open space areas. Trail corridors can be either dedicated public property, city owned property or a trail/ pedestrian easement. Trail and path corridor widths should be maintained within these situations to promote safety, a respect for the environment and respect for neighbors. For safety and prevention of vandalism, fencing adjacent to a trail shall have a maximum opaque height of four feet except for trails adjacent to a roadway.



Table 1: Types of Trails and Bicycle Lane Standards

	Urban Trail Regional or Community	Rural Trail Regional or Community	Neighborhood Trail	Single Track Trail
Right-of-way minimum width	20 feet	20 feet	20 feet if shared with maintenance road	
Set back from adjacent roadway if applicable	8 feet minimum	8 feet	10 feet for distances of 150 LF or less	
			Narrow trail-fence setback	
			15 feet for distances over 150 LF	
Trail width	10 feet hard surface + 3 feet soft surface	10 feet if shared maintenance road	10 feet if shared with maintenance road	18 inches
		8 feet all other locations	5 feet if City maintained	
			4 feet if HOA maintained	
Allowable surface material	Concrete	Crusher fines Road base (class 6) Asphalt Concrete	Crusher fines Road base (class 6) Asphalt Concrete	Natural
Design speed	15 mph	10 mph	NA	NA
Minimum turning radius	55 feet centerline ADA ramps should include minimum 12' turning radius for bicycles or provide alt. route for safe bicycle use	38 feet centerline ADA ramps should include minimum 12' turning radius for bicycles or provide alt. route for safe bicycle use	NA	Sustainable designs!
Maximum longitudinal slope	ADA 5% or less unlimited length or grade of adjacent roadway ADA ramp guidelines over 5%	ADA 5% or less unlimited length or grade of adjacent roadway Forest Service guidelines over 5%	ADA 5% or less unlimited length or grade of adjacent roadway. Forest Service guidelines if over 5% grade	NA
Vertical clearance	10 feet	10 feet if shared maintenance road	8 feet	8 feet
		8 feet all other locations		
Lateral clearance	3 feet	2 feet	NA	NA
Stopping Sighting Dist. (2% grade)	65 feet	32 feet	NA	NA
ADA accessibility	Fully accessible	Meets Forest Service guidelines (Table 4)	Meets Forest Service guidelines (Tbl. 4)	Not ADA compliant
Existing examples	Arkansas River Fountain Creek	Runyon Lake Pueblo Blvd.	Settler's Village trail Lake Minnequa	Honor Farm Big Hill open
Proposed trails	Extending Hwy 50 trail west to Park-west campus	Fountain Creek Extension north to CO Springs Wildhorse Creek Extension to YMCA campus		

Table 2: Road Crossing Trail Standards

Crossing Type	Width	Height/ Clearance	Lighting	Signage	Miscellaneous
Grade separated-Bridge Underpass	12 feet	10 feet minimum	Continuous, all day	Both ends	Trail above low-flow/continuous flow of channel, All ADA requirements
Grade separated-Shared Bridge	10 feet	10 feet minimum	Along roadway	Both ends	Vertical barrier from traffic All ADA requirements
Grade separated-Pedestrian Bridge overpass	12 feet Regional 10 feet Community	10 feet minimum	Optional	Both ends	All ADA requirements
At-grade crossing	Same as path/trail	10 feet minimum	Along roadway	Along trail and roadway	All ADA, signage and signal requirements shall meet City of Pueblo Standard Construction details
Mid-Block at-grade crossing (will require limited width crossing or additional traffic calming designs for safety)	Same as path/trail	10 feet minimum	Along roadway	Along trail and roadway	All ADA, signage and signal requirements shall meet City of Pueblo Standard Construction details and additional MTCUD advanced warning signal/signage
Low-Flow/Dip crossing	Same as path/trail	10 feet minimum	Optional	Both ends	Portion of trail in flow limits shall be concrete with thickened edges and heavy broom finish perpendicular to travel direction

Table 3: Access Points and Trailhead Standards

Access Type	Parking Spaces	Restrooms Picnic/Shade structures	Lighting	Signage	ADA
Level One Trailhead	10-12	Restroom, 2 picnic areas, water bib	Yes	Trail sign map with rules	Fully ADA accessible
Level Two Trailhead	5-11	Optional	Yes	Trail sign map with rules	Fully ADA accessible
Level One Access connection	NA	No	Yes	Trail sign map with rules	Fully ADA accessible
Level Two Access connection	NA	No	Optional	Optional sign	May not meet full ADA requirements with stairs or steeper grades
At-grade road crossings (detailed in Table 2)	NA	No	Roadway	Required crossing signs	Fully ADA accessible

**Table 4: American Disability Act Trail Standards
(based on U.S. Forest Service guidelines)**

Consideration	Permitted	Allowance for exception
Trail Grade	Grade of trail segments shall comply with the following. No more than 30% of total trail may exceed a trail grade of 1:12 (8.33%) Trail grade of up to 1:20 (5%) is permitted for any distance Trail grade up to 1:12 (8.33%) permitted up to 200 feet. Resting intervals shall be provided at no greater than 200 feet apart Trail grade up to 1:10 (10%) is permitted for up to 30 feet. Resting intervals provided at no greater than 30 feet apart. Trail grade up to 1:8 (12.4%) permitted up to 10 feet with resting intervals no greater than 10 feet apart At drain dips, a trail grade of 1:7 (14%) is permitted up to 5 feet when the cross slope does not exceed 1:20 (5%)	
Cross Slope	Shall not exceed 1:20 (5%)	At drain dips, cross slop up to 1:10 (10%) permitted at bottom of the dip where the clear tread width is at least 42 inches
Resting Intervals	Where trail grade exceeds 5%, resting intervals shall be provided as above. Resting intervals shall be at least 60 inches long and twice as wide as the widest portion of the trail segment leading to the resting intervals. Slope shall not exceed 5% in any direction *Note the minimum safe bicycle turning radius design is 12 ft so ramp/resting interval turns should accommodate multiple users or provide alternate, more direct route.	
Passing Spaces	Trails with clear tread width less than 60 inches shall provide passing spaces at 1000 foot intervals maximum and more often if trail is heavily used, a boardwalk, or not at the same level as the ground adjoining the trail. Passing space shall be a minimum of 60 inches by 60 inches or may include the intersection of two trails providing an additional 48 inch segment including the T-shaped space of the intersecting trails.	
Trail surface	Trail tread shall be both firm (resists deformation by indentations) and stable (remains unchanged by applied force so that when the force is removed, the surface returns to its original condition)	
Tread obstacles	The vertical alignment of joints in concrete, asphalt, or board surfaces can be tread obstacles. Natural features such as tree roots, rocks, and water bars within the trail tread can also be tread obstacles.	Where possible, tread obstacles should be separated by a distance of 48 inches minimum so persons using wheelchairs can maneuver around the obstacles.
Openings	Openings in trail tread surfaces shall be small enough to prevent passage of a ½ inch diameter sphere. Elongated openings shall be placed so the long dimension is perpendicular or diagonal to the dominate direction of travel.	Elongated openings may run parallel to direction of travel if opening does not allow passage of ¼ inch diameter sphere. Perpendicular openings to direction of travel may allow up to ¾ inch sphere to pass.
Gates and Barriers	Gate openings and barriers to control access to trails must be 36 inches wide	

EXISTING PLANS, CODES, & POLICIES

THE 2010 BICYCLE PLAN (2010)

The 2010 Bicycle and Pedestrian plan was completed in 2010 by the Pueblo Area Council of Governments and Pueblo Active Communities (PACE). This plan is intended to give an overview of the of Pueblo's regional bike and pedestrian infrastructure as well as a roadmap for future connections and development. Outstanding projects phases from this plan have been included as projects in the Regional Bike & Pedestrian Master Plan.

2040 LONG RANGE TRANSPORTATION PLAN (2015)

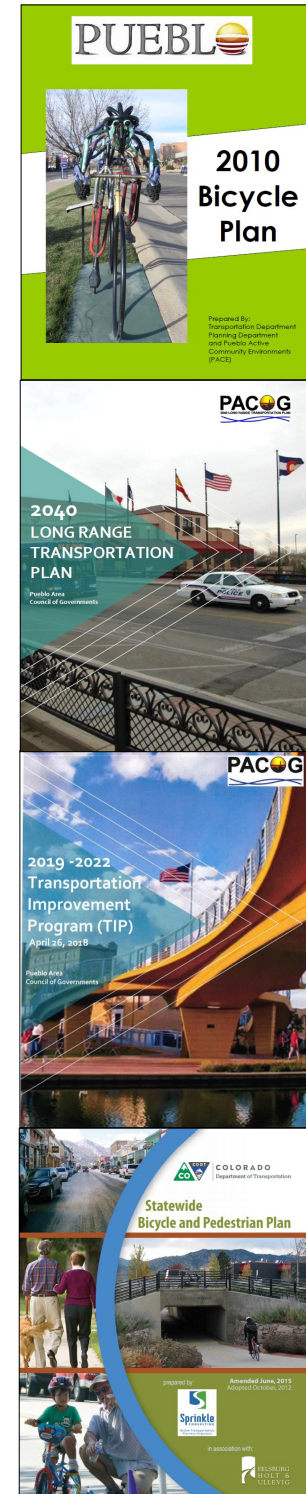
The 2040 Long Range Transportation Plan was completed in 2015 by the Pueblo Area Council of Governments. This document contains information about the current system as well as projections of what to expect in future. Based of a 20-year planning horizon, it contains both a fiscally constrained planned based on dedicated funds as well as vision plan which consist of projects that have not been funded yet. While this plan includes all forms of transportation, the bike, pedestrian, and transit elements have been extrapolated and included in the Regional Bike & Pedestrian Master Plan.

2019-2022 TRANSPORTATION IMPROVEMENT PROGRAM (2018)

The 2019-2022 Transportation Improvement Program plan by the Pueblo Area Council of Governments is a planning document used to show funded short-term projects (1-4 years). Projects with Transportation Alternative Program funding can also be found here, and those projects have been included in the Regional Bike & Pedestrian Master Plan

THE STATEWIDE BICYCLE AND PEDESTRIAN PLAN

The Statewide Bicycle and Pedestrian Plan was completed in 2015 by the Colorado Department of Transportation (CDOT). This plan includes the goals of increasing safety for bicyclists and pedestrians and increasing the use of these modes of travel. It also addresses other benefits of biking and walking including reducing emissions, improving health, improving local economy and ultimately enhancing our quality of life.



EXISTING PLANS, CODES, & POLICIES

2018-2022 CAPITAL IMPROVEMENTS PLAN (CIP)

2018-2022 Capital Improvements Plan (CIP) was completed in 2018 by The City of Pueblo. This plan includes short-term constrained and unconstrained projects. All capital improvement projects, not just bike and pedestrian, should be found in this document

PUEBLO TRAFFIC CODE

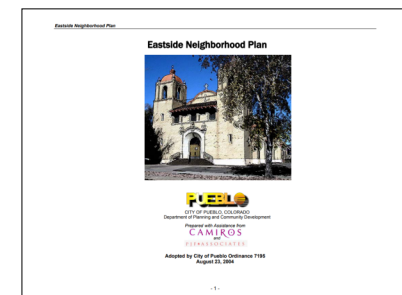
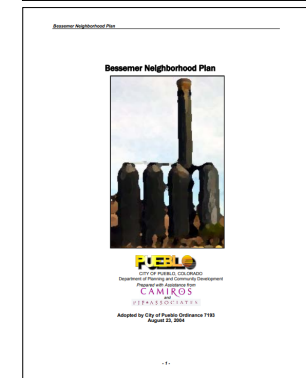
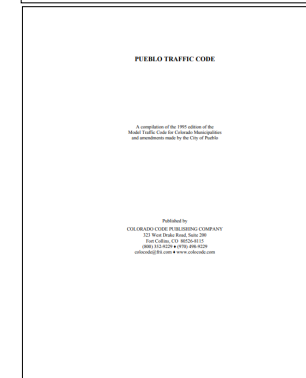
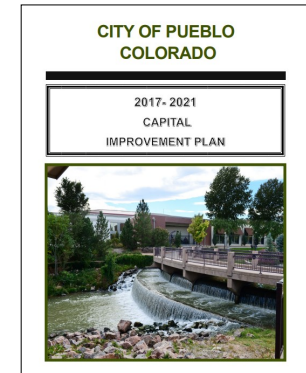
The Pueblo Traffic Code was completed in 1995 by The City of Pueblo. This based of Model Traffic Code for Colorado Municipalities. It includes both the rules for cars and trucks, as well as bike, pedestrian, and all other forms of surface-based transportation.

THE BESSEMER NEIGHBORHOOD PLAN

The Bessemer Neighborhood Plan was completed in 2004 by the City of Pueblo. This vision and plan for the Bessemer Neighborhood can be achieved through actions in several strategic initiative areas: quality of life, park and open spaces, neighborhood identity, housing, historic preservation, commercial/industrial and economic opportunity.

THE EASTSIDE NEIGHBORHOOD PLAN

The Eastside Neighborhood Plan was completed in 2004 by the City of Pueblo. This vision and plan for the East Side Neighborhood can be achieved through actions in several strategic initiative areas: quality of life, park and open spaces, neighborhood identity, housing, historic preservation, commercial/industrial and economic opportunity.



EXISTING PLANS, CODES, & POLICIES

THE WESTSIDE NEIGHBORHOOD PLAN

The Westside Neighborhood Plan was completed in 2004 by the City of Pueblo. This vision and plan for the East Side Neighborhood can be achieved through actions in several strategic initiative areas: quality of life, park and open spaces, neighborhood identity, housing, historic preservation, commercial/industrial and economic opportunity.

PUEBLO HISTORIC TROLLEY PLAN

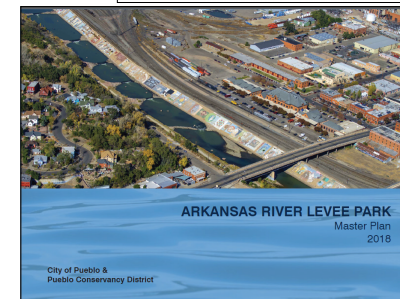
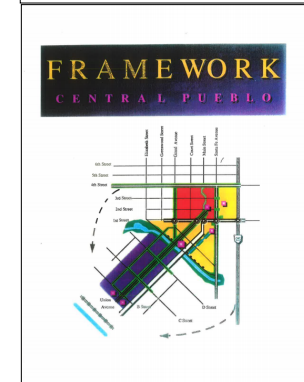
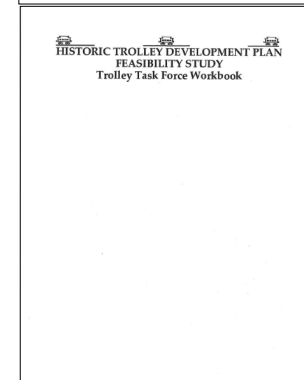
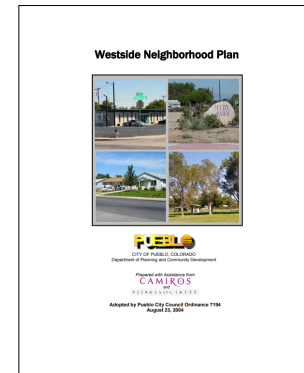
The Historic Trolley Development Feasibility Plan was completed in 1995 by the City of Pueblo. This historic trolley feasibility study was undertaken under the auspices of the Pueblo Renaissance, Inc. to render preliminary feasibility study, consulting and planning services with respect to the feasibility of establishing a historic street railway/ trolley system in the central business district of pueblo

FRAMEWORK: CENTRAL PUEBLO

The Framework: Central Pueblo Plan was completed in 1993 by the City of Pueblo. The mission of the central framework is to develop an economically sound, strong, and vibrant community business district with a sense of history, purpose, and vision.

ARKANSAS LEVEE TRAIL

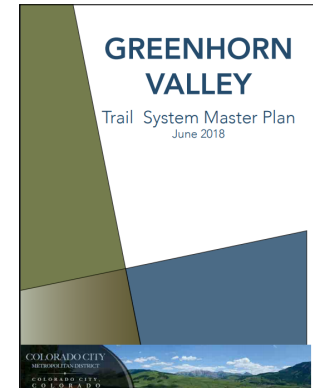
The Arkansas Levee Trail Plan was completed in 2018. The City of Pueblo and the Pueblo Conservancy District commenced a master planning process to determine a vision and master plan for the Arkansas River Levee. The City invested in a comprehensive planning process that assessed the opportunities and challenges of this urban river park. The result is a valuable guide for developing this area over time based on input from the general public, city agencies, specific user groups and other stakeholders.



EXISTING PLANS, CODES, & POLICIES

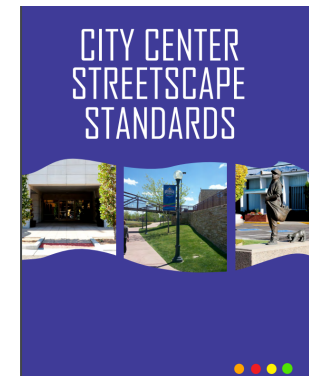
GREENHORN VALLEY TRAIL SYSTEM MASTER PLAN

Greenhorn Valley Trail System Master Plan was completed in 2018 by the Colorado City Metro District. The purpose of this report is to guide the community Colorado City towards a connected trail system supporting Community livability, cohesion, recreation, education and environmental health.



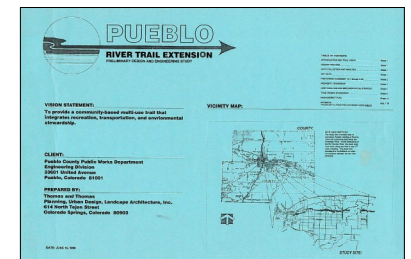
CITY CENTER STREETScape STANDARDS

The City Center Streetscape Standards were completed in 2009 by the City of Pueblo. Within the overarching goal of creating a City Center or Downtown that is pedestrian friendly, the Streetscape Design Standards provide the direction to achieve specific objectives



PUEBLO RIVER TRAIL EXTENSION PLAN

Pueblo River Trail Extension Plan was completed in 1998 by the Pueblo County Public Works Department. This plan was conducted to explore the opportunities and constraints associated with the development of multi-use trail system east of downtown Pueblo.



DOWNTOWN PEDESTRIAN ALLEYWAYS PLAN

The Downtown Pedestrian Alleyways Plan was completed in 2013 by the Pueblo Urban Renewal Authority. The goal of the Downtown Pedestrian Alleyways Plan is to create pedestrian friendly spaces that promote increased foot traffic circulating in and between the Riverwalk and Union Depot Areas.

