DRAFT WELLTON BICYCLE AND PEDESTRIAN PLAN









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TOWN OF WELLTON BICYCLE AND PEDESTRIAN PLAN

Acknowledgments

Wellton Town Staff

Town Manager Richard Watenpaugh

Public Works Director Joseph Grant

Permit and Grant Clerk Yolanda Galindo

Consultant Project Team

Kimley-Horn and Associates, Inc. Michael Grandy Amy Minowitz Jason Getz Brent Crowther



1. INTRODUCTION

The Town of Wellton Bicycle and Pedestrian Plan has been developed as a companion document to the Town's General Plan, which was completed in October 2013. It also corresponds with the Town's Transportation Long-Range Plan, which was completed in May 2011. Both of these previously completed documents identified the need for a bicycle and pedestrian plan to improve the bicycle and pedestrian network in the Wellton area.

A comprehensive bicycle and pedestrian network has many anticipated benefits:

- Provides a viable transportation option for those people who cannot drive or choose not to drive.
- Increases the number of bicycle and pedestrian trips, thereby reducing reliance on personal vehicles and the associated emissions, fuel consumption, and noise.
- Promotes physical exercise, recreation, and healthy lifestyles.

1.1. STUDY AREA

The study area encompasses the more developed portions of the Town of Wellton and is generally bound by County 10th Street on the north, County 12th Street on the south, Avenue 25E on the west, and Avenue 31E on the east (effectively the northeast quadrant of the Town's municipal planning area). A map of the study area can be found in **Figure 1**.

1.2. STUDY OBJECTIVES

The Town of Wellton Bicycle and Pedestrian Plan has been developed based on the following study objectives:

- Document the current bicycle and pedestrian network.
- Identify needs and opportunities associated with the current bicycle and pedestrian network (e.g., connectivity gaps, extensions, crossings, new bicycle lanes, sidewalks, or shared use paths).
- Develop recommendations associated with improvement projects, policies, and programs that will improve bicycle and pedestrian travel in Wellton.
- Develop planning-level costs estimates for the recommended improvements and identify a list and general description of potential funding sources.

1.3. SUPPORT FOR BICYCLING AND WALKING

The Federal Highway Administration (FHWA) has consistently expressed its support for bicycle and pedestrian accommodation. In a memorandum dated February 24, 1999, FHWA emphasized not only its position that non-motorized modes are an integral part of the mission of FHWA and a critical element of the local, regional, and national transportation system, but also its strong commitment to improving conditions for bicycling and walking. The memorandum (http://www.fhwa.dot.gov/environment/bikeped/memo.htm) states:

"We expect every transportation agency to make accommodation for bicycling and walking a routine part of their planning, design, construction, operations and maintenance activities....Increasing bicycling and walking offers the potential for cleaner air, healthier people, reduced congestion, more livable communities, and more efficient use of precious road space and resources."

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Figure 1 – Town of Wellton Bicycle and Pedestrian Plan Study Area



FHWA and the U.S. Department of Transportation (USDOT) reaffirmed their support for bicycle and pedestrian accommodation in a statement (http://www.fhwa.dot.gov/environment/bicycle_pedestrian/overview/policy_accom.cfm) issued on March 15, 2010 that directs transportation agencies to:

"Consider walking and bicycling as equals with other transportation modes: The primary goal of a transportation system is to safely and efficiently move people and goods. Walking and bicycling are efficient transportation modes for most short trips....Because of the benefits they provide, transportation agencies should give the same priority to walking and bicycling as is given to other transportation modes. Walking and bicycling should not be an afterthought in roadway design."

To provide further guidance on taking a flexible approach to bicycle and pedestrian facility design, FHWA and USDOT issued a memorandum on August 20, 2013 supporting the use of the following in developing bicycle and pedestrian networks (http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/design_flexibility.cfm):

- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Planning, Design, and Operation of Pedestrian Facilities, 2004.
- AASHTO Guide for the Development of Bicycle Facilities, 2012.
- National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide, 2010.
- Institute of Transportation Engineers (ITE) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, 2010.



2. ACTIVITY SITES AND CENTERS

Information on public activity sites and centers associated with current or potential pedestrian and bicycle travel was obtained from the General Plan, the Transportation Long-Range Plan, aerial imagery, field review observations, and input from Town staff. The locations of these public activity sites and centers can be found in the aforementioned **Figure 1**.

- **Butterfield Park and Golf Course** located south of County 10th Street on either side of Dome Street; 8.8-acre park that includes an 18-hole golf course with a driving range and putting green, playgrounds, sports courts, skate park, picnic areas and a walking path.
- **N.D. and Katie Kline Pool** located north of Bakersfield Avenue and east of Fresno Street; this public pool is open to residents from May to September.
- The Links at Coyote Wash Golf Course located north of County 12th Street and west of Avenue 29E/William Street; public course with 18 holes, a driving range, and a putting green.
- Wellton Community Center located next to Butterfield Park west of Dome Street; includes a meeting space for community events.
- Wellton Elementary School located south of Old Highway 80/Los Angeles Avenue and east of Avenue 29E/William Street; includes preschool through eighth grade.
- Wellton Learning Center, Arizona Western College Satellite Campus located south of County 12th Street and west of Avenue 29E/William Street; a satellite campus for Arizona Western College, a public community college with the main campus in Yuma, Arizona.
- Wellton Public Library located north of San Jose Avenue and west of Avenue 29E/William Street; a branch of the Yuma County Library District.
- Wellton Town Hall located north of Old Highway 80/Los Angeles Avenue and east of Center Street; houses Town departments and Town Council chambers.
- Westside Park located east of the intersection of Old Highway 80/Los Angeles Avenue and Arizona Avenue; 1.1-acre park that is often the gathering places before community events such as parades and the Christmas Tree lighting.
- Yuma County Justice Court Wellton located next to the Community Center west of Dome Street; includes a Justice of the Peace courtroom and a public meeting space.

Private activity sites primarily consist of residential neighborhoods throughout the study area and commercial, medical, and religious facilities along Old Highway 80/Los Angeles Avenue and Avenue 29E/William Street.



3. EXISTING BICYCLE AND PEDESTRIAN FACILITIES

This section describes existing bicycle and pedestrian facilities in the Town of Wellton. These facilities include:

Shared Use Path: A paved asphalt or concrete path physically separated from motorized vehicular traffic by an open space or barrier that is either within the roadway right-of-way or within an independent right-of-way. Shared use paths are typically at least ten feet wide and may be used by bicyclists, pedestrians, skaters, wheelchair users, joggers, and other non-motorized users.

Sidewalk: A paved concrete surface intended primarily for pedestrians but also open to other non-motorized users. Sidewalks are typically located within the roadway right-of-way and are either immediately adjacent to the roadway edge or curb or are separated by an open space or barrier from the roadway. Typical widths for sidewalks are four to six feet.

Paved Shoulder: A roadway open to both bicycle and motor vehicle travel with a shoulder that is paved, marked, and provides a continuous smooth surface at least four feet wide for bicyclists.

Unpaved Trail: A dirt or gravel surface usually intended primarily for hikers but that can also be open to recreational bicycle and equestrian users. The trail may or may not be maintained.

The locations of existing bicycle and pedestrian facilities are summarized in Table 1 and shown graphically in Figure 2.

Location	Description	Type of Facility
County 12 th Street (north side of street)	Avenue 27E to Avenue 28E	Shared use path
Old Highway 80 (north side of street)	Fresno Street to Avenue 30E except for gap at crossing of Coyote Wash	Shared use path
Old Highway 80 (south side of street)	Hindman Street to Fresno Street	Shared use path
Avenue 27E (both sides of street)	Ligurta Street to County 12 th Street	Sidewalk
Avenue 29E (both sides of street)	Old Highway 80 to Sunset Avenue	Sidewalk
Butterfield Park	Loop within park	Sidewalk
Commerce Way (east side of street)	Avenue 29E to end of street	Sidewalk
County 12 th Street (south side of street)	Along Wellton Learning Center property	Sidewalk
Helen Street (west side of street)	Along Wellton Public Library property	Sidewalk
Ligurta Street (south side of street)	Picacho Street to end of street	Sidewalk
Old Highway 80 (north side of street)	Center Street to Fresno Street	Sidewalk
Sage Avenue (south side of street)	Along and within condos east of Avenue 29E	Sidewalk
San Jose Avenue (both sides of street)	Avenue 29E to Victor Street	Sidewalk
San Jose Avenue (north side of street)	Along Wellton Public Library property	Sidewalk
Wellton Mohawk Drive	Loop within Irrigation District	Sidewalk
Avenue 29E (both sides of street)	North of County 11 th Street to Wellton Canal	Paved shoulders
Old Highway 80 (both sides of street)	Avenue 25E to east of Avenue 28E	Paved shoulders
Gila River (general alignment)	Juan Bautista de Anza National Historic Trail	Unpaved trail
Avenue 25E (general alignment)	El Camino del Diablo Trail – from I-8 south	Unpaved trail
Avenue 29E (west side)	Commerce Street to County 12 th Street	Unofficial unpaved trail

Table 1 – Existing Bicycle and Pedestrian Facilities in Study Area

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Figure 2 – Existing Bicycle and Pedestrian Facilities



4. BICYCLE AND PEDESTRIAN NEEDS AND DEFICIENCIES

Bicycle and pedestrian needs and deficiencies were identified from the General Plan, Transportation Long-Range Plan, Town staff input, and an evaluation of the gaps in the existing bicycle and pedestrian network. These identified needs and deficiencies serve as the basis for recommended improvements.

4.1. GENERAL NEEDS AND DEFICIENCIES

Policies, Practices, and Guidelines

Wellton currently does not have much in the way of locally approved policies, practices, and guidelines associated with bicycle and pedestrian travel besides what is included in the General Plan and Transportation Long-Range Plan.

Connectivity and Gaps

Overall, Wellton has a very limited network of bicycle and pedestrian infrastructure and lacks connectivity within the network. Gaps exist along Old Highway 80/Los Angeles Avenue and along Avenue 29E/William Street, as well as between activity centers, making it challenging for bicycle and pedestrian travel around town – particularly across Interstate 8 (I-8) and the railroad tracks.

Crossings of Facilities

Another identified need is the establishment of designated and high-visibility crossing areas for pedestrians and bicyclists along the busier roadways in town, such as Old Highway 80/Los Angeles Avenue and Avenue 29E/William Street. Of particular concern are crossing locations utilized by children traveling to and from school and other activity centers such as parks and the swimming pool.

ADA Compliance

The Americans with Disabilities Act (ADA) prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in mainstream activities, such as traveling on the transportation network as a pedestrian. There are a set of standards and regulations for transportation facilities and infrastructure, such as slopes, grades, and widths of sidewalks and ramps, to ensure compliance with this law. Some of the existing sidewalk ramps do not match the most up-to-date ADA design standards. All future construction of bicycle and pedestrian facilities needs to comply with ADA.

Canals

The large tracts of agricultural land within Wellton are irrigated with water from the Wellton-Mohawk Irrigation and Drainage District (WMIDD) canal network, which includes the Mohawk Canal, Wellton Canal, and Wellton-Mohawk Canal (see **Figure 2**). Across the nation, shared use paths or unpaved trails have often been installed within canal right-of-way adjacent to maintenance roads along canals. While no shared use paths or designated unpaved trails currently exist along the WMIDD canal network, public input received during the development of the General Plan and Transportation Long-Range Plan indicated a desire for bicycle and pedestrian facilities along canals. Preliminary discussions between WMIDD and Town staff suggest that WMIDD is open to exploring the possibility of shared use paths or unpaved trails along WMIDD canals.



4.2. SUMMARY OF SPECIFIC NEEDS AND DEFICIENCIES

Below is a summary of specific needs and deficiencies that were identified for the existing bicycle and pedestrian network.

Bicycle and Pedestrian Issues and Needs Identified in the General Plan

- Need to provide non-motorized transportation facilities to all areas of Wellton, particularly to access shopping, schools, and other activity centers.
- Need to eliminate the gap in the shared use path along Old Highway 80/Los Angeles Avenue at the crossing of Coyote Wash.
- Need non-motorized shared use pathways along canals.
- Need to develop a 'safe routes to school' plan in coordination with the Wellton Elementary School District.
- Need to provide pedestrians with access across I-8 along Avenue 29E/William Street.
- Need to comply with ADA.
- Seek funding to improve the accessibility of non-vehicular travel routes associated with ADA.
- Need to implement complete street cross-sections where feasible for all classifications of roads to accommodate bicycle and pedestrian travel.
- Need to pursue the development of a design concept for a grade-separated railroad crossing at Avenue 29E/William Street or Dome Street.

Bicycle and Pedestrian Issues and Needs Identified in the Transportation Long-Range Plan

- Need to consider grade-separated railroad crossings at Avenue 25E, Avenue 29E/William Street or Dome Street, and Avenue 31E.
- Need to provide bicycle and pedestrian access to shopping, schools, and other activity centers.
- Need to provide continuous bicycle and pedestrian facilities that meet ADA requirements.
- Bicycle and pedestrian trails are desirable along canals.
- Need to develop complete streets roadway cross-sections for all roadways to better accommodate bicycle and pedestrian travel.
- Need to coordinate with the Wellton Elementary School District to examine conditions in the vicinity of school facilities and submit applications for Safe Routes to School funding.

The following locations were identified as specific roadway segments within the study area that need bicycle or pedestrian facilities:

- Avenue 29E/Williams Street from Old Highway 80 to County 12th Street (short-term priority).
- County 12th Street from Avenue 27E to Avenue 29E (short-term priority).
- County 11th Street from Avenue 29E to Avenue 31E (mid-term priority).
- County 12th Street from Avenue 25E to Avenue 27E (mid-term priority).
- Avenue 25E from Old Highway 80 to County 12th Street (long-term priority).
- Avenue 31E from Old Highway 80 to County 12th Street (long-term priority).
- County 12th Street from Avenue 29E to Avenue 31E (long-term priority).
- Old Highway 80 from Avenue 25E to Avenue 31E (long-term priority).



Additional Issues and Needs Identified

- Need designated and high-visibility bicycle and pedestrian crossings of Avenue 29E and Old Highway 80.
- Need unpaved trails that connect to the existing trail network.
- Isolated segments of sidewalk need to be connected to other nearby segments of sidewalk. Examples of isolated sidewalk are the sidewalks located along or near the Wellton Public Library, Butterfield Park, Commerce Way, and Sage Avenue.
- Sidewalks are needed along and between activity centers like schools, parks, the public pool, and the library.
- There is an approximate 1,000-foot gap in bicycle facilities on Old Highway 80/Los Angeles Avenue between the paved shoulders that end east of Avenue 28E and the shared use path that begins at Hindman Street.



5. RECOMMENDED BICYCLE AND PEDESTRIAN IMPROVEMENTS

This section presents recommended bicycle and pedestrian improvements that will help the Town of Wellton to become a community that is friendlier to bicycle and pedestrian travel and to develop a well-connected bicycle and pedestrian network. The recommendations are presented in the form of:

- Policies, practices, and guidelines to improve conditions for bicyclists and pedestrians.
- Improvement projects that address the previously documented needs and deficiencies.

5.1. RECOMMENDED POLICIES, PRACTICES, AND GUIDELINES

The following policies, practices, and guidelines are proposed for consideration by the Town of Wellton to improve the safety, comfort, and accommodation of bicyclists and pedestrians.

1. Take advantage of opportunities to retrofit additional bicycle and pedestrian facilities as space, time, and funding allow.

Utilizing the principles in the aforementioned FHWA-approved documents, take advantage of opportunities to include bicycle and pedestrian facilities where they currently do not exist, particularly if doing so would eliminate existing gaps in the bicycle and pedestrian network. In retrofit conditions, the following parameters are recommended:

- For roadways with no curb and gutter, the minimum width of a paved shoulder or bike lane should be 4 feet.
- For roadways with curb and gutter, the minimum width of a paved shoulder or bike lane should be 5 feet.
- The minimum width of a multi-use lane for bicycles and golf carts should be 8 feet.
- The minimum width of a sidewalk should be 5 feet.
- Roadway travel lanes can be as narrow as 10 feet and still provide safe and efficient travel.
- On-street parking can have a traffic calming effect. If on-street parking is permitted and a bike lane or multi-use lane is also provided, the bike lane or multi-use lane should be placed between the parking area and the travel lane and have a minimum width of 9 feet.
- The minimum width of a shared use path should be 10 feet. In instances where there is not enough space for separate bicycle facilities and pedestrian facilities on each side of a roadway, a two-way shared use path on one side can provide for both bicycles and pedestrians in the same facility.
- When two-way shared use paths are located adjacent to a roadway, wide separation between a path and the adjacent roadway is desirable to demonstrate to both the bicyclist and the motorist that the path functions as an independent facility for bicyclists and others. When this is not possible and the distance between the edge of the road and the shared use path is less than 5 feet, a suitable physical barrier should be considered. Such barriers serve to prevent path users from making unwanted movements between the path and the roadway and to reinforce the concept that the path is an independent facility. A barrier between a shared use path and adjacent roadway should not impair sight distance at intersections, and should be designed not to be a hazard to errant motorists.

2. Develop and adopt a complete streets policy.

Developing and implementing a Complete Streets Policy ensures that planners and engineers consistently design and operate the entire roadway with all users in mind, including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities (www.completestreets.org). The adoption of a Complete Streets Policy also demonstrates political support for the complete streets concept of providing transportation choices and alternatives for all types of travelers.



3. Develop a Safe Routes to School Plan.

Developing a "safe routes to school" plan in coordination with the Wellton Elementary School District will allow Town staff in partnership with school district staff to examine conditions in the vicinity of school facilities and submit applications for Transportation Alternatives funding.

4. Develop an ADA Transition Plan.

An ADA Transition Plan will provide Town staff with a plan for identifying existing facilities that may not be ADAcompliant and a framework for how to implement any needed improvements to address non-compliance issues.

5. Improve driver awareness of potential presence of bicycles and pedestrians

Signage, pavement markings, and signals/beacons can help make drivers more aware of the potential presence of bicycles, pedestrians, and/or golf carts on, or crossing, the roadway. These features also help bicyclists, pedestrians, and/or golf cart drivers know where they are supposed to travel. The design and usage of these features is governed by the Manual on Uniform Traffic Control Devices (MUTCD).Signage can range from regulatory signs indicating turning vehicles should yield to pedestrians to warning signs about shared use path crossings to guide signs about numbered bicycle routes. Pavement markings can denote features such as multi-use lanes, high-visibility crosswalks, and bicycle routes. Signals and beacons are typically utilized at roadway crossings to alert drivers (e.g., a Rectangular Rapid Flashing Beacon (RRFB) or control who has the right-of-way (e.g., pedestrian hybrid beacon, also known as a HAWK). Examples of signage, pavement markings, and signals/beacons are shown in **Figure 3**.



Sources: Kimley-Horn, http://mutcd.fhwa.dot.gov, www.bikeleague.org

Figure 3 – Sample Features to Improve Driver Awareness of Bicycles and Pedestrians

6. Implement the roadway cross-sections included in the General Plan as part of new construction or major reconstruction of major roadways.

The General Plan includes roadway cross-sections for the different classifications of major roadways called for in the "build-out" roadway network (see **Figure 4**). Build-out refers to the condition when all developable land has been developed. These roadway cross-sections were developed with the intent of creating "complete streets" that allow all travelers (e.g., drivers, bicyclists, pedestrians) to safely and effectively move along and across the roadway network.

Elements of the roadway cross-sections include travel lanes, raised medians or two-way left-turn lanes, multi-use lanes intended for use by bicycles and golf carts (as long as the posted speed limit is no higher than 35 miles per hour per State statute), graded shoulders in rural areas, and sidewalks, curb, gutter, and landscaping in urban areas. The Town's roadway cross-sections are shown in **Figure 5** through **Figure 9**. The major roadways within the Bicycle and Pedestrian Plan study area are primarily classified as build-out Urban Minor Arterials, although there are a few Urban Collectors as well.



As new roads are constructed, such as in conjunction with new development, the appropriate aforementioned cross-section should be implemented to the degree feasible. The same applies to major reconstruction of existing roadways.

Specific year timeframes are not provided as implementation timeframes will be highly dependent on when funding is available, but relative priorities of High, Medium, and Low are identified to provide guidance on the recommended phasing of projects. These priorities are based on multiple factors that include how much effort and planning will be needed to initiate and complete a project, estimated project costs, and the urgency of the project as it relates to addressing identified gaps or potential safety issues. **Figure 10** shows the locations of the recommended bicycle and pedestrian network improvement projects.





Figure 4 – Build-out Roadway Network from Town of Wellton General Plan





Figure 5 – General Plan Rural Minor Collector Cross-Section



Figure 6 – General Plan Rural Major Collector Cross-Section





Figure 7 – General Plan Urban Collector Cross-Section



Figure 8 – General Plan Rural Minor Arterial Cross-Section





Figure 9 – General Plan Urban Minor Arterial Cross-Section

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Figure 10 – Recommended Improvements to the Bicycle and Pedestrian Network



5.2. RECOMMENDED IMPROVEMENT PROJECTS

The improvement projects that follow are recommended to improve the connectivity, extents, and safety of the bicycle and pedestrian network in the study area. These improvement projects are envisioned for implementation within a 20- to 30-year time horizon under the assumptions that funding is available and that the roadway network, traffic volumes, and land uses do not change significantly to warrant extensive build-out development. In the build-out condition, it is assumed the build-out roadway network shown previously (see **Figure 4**) will be in place. This build-out roadway network includes bicycle and pedestrian facilities on all major roadways, and it is anticipated that the recommended projects described in this Bicycle and Pedestrian Plan will either be replaced by, or incorporated into, the build-out improvements over time.

Pavement Markings and Signage

Extending the five-foot-wide paved and striped shoulder along Old Highway 80 will improve connectivity of the bicycle network and create a safer place for people to cycle. The installation of Shared Roadway signage along Old Highway 80/Los Angeles Avenue and Avenue 29E/William Street will help indicate to drivers that there may be bicyclists or pedestrians on, or crossing, the roadway. Recommended locations for pavement marking and signage improvements are listed in **Table 2**.

Improvement	Street	Segment	Priority
Extend 5-foot paved and striped shoulders	Old Highway 80	Avenue 28E to Hindman Street	High
Shared Roadway signage	Avenue 29E	Sunset Avenue to County 12 th Street	Medium
Shared Roadway signage	Old Highway 80	Avenue 25E to Avenue 28E	Medium

Table 2 – Recommended Locations for Pavement Markings and Signage

New/Improved Crosswalks

New/improved crosswalks should be installed along Old Highway 80/Los Angeles Avenue and Avenue 29E/William Street in areas of existing and anticipated bicycle and pedestrian activity. These locations are listed in **Table 3** and include activity centers/sites as well as where bicycle and pedestrian facilities cross roadways. New/improved crosswalks can have various features including ladder pavement markings (striping), crosswalk or crossing advance warning signs (signage), and RRFBs that flash a strobe light in the direction of oncoming drivers when activated by the bicyclist or pedestrian to indicate their presence to drivers. If the compliance rate with RRFBs turns out to regularly be below 80%, a more expensive but more effective addition to the high-visibility crosswalks would be pedestrian hybrid beacons (HAWKs) if there are at least 20 crossing bicyclists or pedestrians during peak hours per the MUTCD.



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Improvement	Street	Location	Priority
Striping, signage, RRFB	Avenue 29E	Across Ave 29E at the intersection with San	High
		Jose Avenue	
Striping, signage	Old Highway 80	Across Old Highway 80 and Avenue 29E at	High
		their intersection	
Striping, signage	Old Highway 80	Across Old Highway 80 at intersection with	High
		Fresno Street	
Striping, signage, RRFB	Old Highway 80	Across Old Highway 80 at intersection with	High
		Center Street	
Striping, signage, RRFB	Old Highway 80	Across Old Highway 80 at intersection with	High
		Dome Street	
Striping, signage	Avenue 29E	Across County 11 th Street at intersection with	Medium
		Avenue 29E	
Striping, signage	Avenue 29E	Across County 12 th Street at intersection with	Medium
		Avenue 29E	
Striping, signage	Old Highway 80	Across Old Highway 80 at intersection with	Medium
		Hindman Street	
Striping, signage	Avenue 29E	Across I-8 EB entrance ramp (west side) at	Medium
		intersection with Avenue 29E	
Striping, signage	Avenue 29E	Across I-8 WB exit-ramp (west side) at	Medium
		intersection with Avenue 29E	
Striping, signage, RRFB	Avenue 29E	Across Avenue 29E at intersection with	Medium
		Sunset Avenue	
Striping, signage	Commerce Way	Across Commerce Way at intersection with	Medium
		Wellton Canal	

Shared Use Paths

Shared use paths consist of a 10-foot wide path (concrete or asphalt) that is normally offset from the main road by landscaping or another buffer. If they are adjacent to the road, it is recommended that a vertical barrier be installed. This vertical barrier could range from a flexible delineator to a standard curb to a concrete barrier/wall. Shared use paths are an appropriate solution in many locations for Wellton because they provide a single facility that can accommodate bicycles and pedestrians, as well as golf carts. This single facility on one side of the roadway is more cost-effective in a retrofit situation than constructing sidewalks and paved shoulders or multi-use lanes on both sides of the roadway. A shared use path on one side is what already exists on Old Highway 80/Los Angeles Avenue and is currently under design on San Jose Avenue between Avenue 29E/William Street and Center Street. There should generally be a wide buffer between the shared use path and the roadway when not at intersections.

There are two locations where, due to grade separation and horizontal constraints, the recommended shared use path will need to be immediately adjacent to the roadway: these two locations are on Old Highway 80/Los Angeles Avenue at the Coyote Wash bridge and on Avenue 29E/William Street at the I-8 interchange bridge. At both of these locations, there is enough width between the outside roadway edges that by shifting and restriping the existing lanes, enough space can be created on the bridge to put an asphalt shared use path on one side without needing to widen the bridge.

For example, on Avenue 29E/William Street at the I-8 interchange bridge, the current cross-section of two 12-foot lanes with 7-foot paved shoulders on both sides could be reconfigured to have two 12-foot lanes with a 10-foot asphalt paved shoulder/shared use path on one side and a 4-foot paved shoulder on the other side. The existing 7-foot shoulders are not wide enough for shared use by bicyclists, pedestrians, and golf cart drivers, but a 10-foot shoulder would be wide enough. It should be noted that the interchange bridge is owned and maintained by the Arizona Department of Transportation (ADOT), and as such ADOT will need to agree to the proposed modifications before they can be implemented.



It should be noted that the Town of Wellton will soon be conducting a detailed evaluation of ways to provide a more permanent shared use path across Coyote Wash, either by widening the existing bridge or by constructing an adjacent separate bridge for the shared use path. Either of these solutions would be preferred over restriping the existing roadway to provide a retrofit shared use path, but they are anticipated to be very costly and as such likely will not be constructed for many years. The solution of restriping the existing roadway provides a retrofit solution that is much less expensive than these more permanent solutions.

Where the recommended shared use path will need to be immediately adjacent to the roadway, a vertical barrier such as a flexible delineator or curb should be provided to separate the shared use path from vehicles on the roadway, if feasible. It should be noted that any vertical barrier will need to accommodate oversize vehicles anticipated to occasionally travel through the area. Recommended locations for shared use paths are listed in **Table 4**.

Street	Segment	Priority
Center Street (east side)	San Jose Ave to Old Highway 80	High (in design phase now)
Old Highway 80 (north side)	Bridge over Coyote Wash	High
San Jose Avenue (north side)	Avenue 29E to Center Street	High (in design phase now)
Avenue 29E (east side)	Old Highway 80 to County 10 th Street	Medium
Avenue 29E (west side)	Sunset Avenue to Commerce Way	Medium
Avenue 29E (west side)	Commerce Way to County 12 th Street	Medium
County 10 th Street (south side)	Avenue 30E to Avenue 29E	Medium
County 12 th Street (north side)	Avenue 29E to Avenue 28E	Medium
Dome Street (west side)	San Jose Ave to County 10 th Street	Medium
San Jose Avenue (north side)	Fresno Street to Dome Street	Medium
Wellton Canal (north side)	Avenue 29E to Avenue 25E	Medium
Avenue 25E (east side)	County 12 th Street to Old Highway 80	Low
Avenue 30E (west side)	Old Highway 80 to County 10 th Street	Low
Old Highway 80 (north side)	West of Avenue 30E to Wellton Canal	Low
Wellton Canal (north side)	Avenue 31E to Old Highway 80	Low

Table 4 – Recommended Locations for Shared Use Paths

Unpaved Trails

Unpaved trails should be installed in areas that connect to the nearby regional trail system and do not have an adjacent roadway. Connections to these trails will provide opportunities for recreation for hikers, bicyclists, and equestrian riders. These unpaved trails should be at least 4 feet wide with a natural surface that is cleared and grubbed to clearly mark the trail path. Recommended locations for unpaved trails are listed in **Table 5**

Street	Segment	Priority
Avenue 25E	Old Highway 80 to Juan Bautista de Anza National Historic Trail	Low
Mohawk Boulevard/Avenue 30E	County 10 th Street to Juan Bautista de Anza National Historic Trail	Low

Table 5 – Recommended Locations for Unpaved Trails



Sidewalks

There are a few instances within Wellton where a sidewalk is recommended instead of a shared use path. These instances include areas where it is beneficial to try and prohibit the higher speeds from bicycles and golf carts or where infrastructure for those modes already exists. It is also important to extend the sidewalk network around Wellton Elementary School to give the students a safe place to walk to and from school. New sidewalks should be 6 feet wide and concrete; retrofitted sidewalks or sidewalk extensions may be 5feet wide. They may be separated from the road by street furniture or a landscaped area, or they may be adjacent to the road and include a curb and gutter. Recommended locations for sidewalks are listed in **Table 6**.

Street	Segment	Priority
San Jose Avenue (north side)	Victor Street to Fresno Street	High
Fresno Street (west side)	San Jose Avenue to Old Highway 80	Medium
Old Highway 80 (north side)	Center Street to Hindman Street	Medium
Sage Avenue (both sides)	Avenue 29E to Coyote Wash Condominiums	Medium

Table 6 – Recommended Locations for Sidewalks

5.3. COST ESTIMATES FOR RECOMMENDED IMPROVEMENTS

The estimated average construction costs for various bicycle and pedestrian facilities shown in **Table 7** were taken from a report compiled and updated by FHWA (see http://activelivingresearch.org and http://www.pedbikesafe.org) as well as from experiences as part of local projects that use similar infrastructure. The FHWA estimates are based on a collection of cost information for bicycle and pedestrian treatments from states and cities across the country and the various costs are averaged to get an average unit cost. The estimated costs do not account for soft costs such as planning, design, construction management, and right-of-way; the inclusion of these soft costs often increases the price by 60% to 70%. Total cost estimates include some rounding. It should be noted that costs vary from state to state and may be very context specific; thus, the below costs are relevant for planning-level estimating purposes only. **Table 8** through **Table 12** show the estimated costs for the various categories of bicycle and pedestrian recommended network improvements.

Improvement	Approximate Unit Cost
4-inch Shoulder Stripe	\$2 per linear foot
Widen Roadway to Add Shoulder	\$85 per linear foot
Shared Roadway Sign	\$160 each
Crossing Warning Sign	\$240 each
Striped Ladder Crosswalk	\$350 each
RRFB pair (one each direction)	\$15,000 each
Pedestrian Hybrid Beacon pair	\$57,680 each
10-foot Concrete Shared Use Path	\$50 per linear foot
2-foot Curb & Gutter	\$20 per linear foot
4-foot Unpaved Trail	\$5 per linear foot
6-foot Concrete Sidewalk with Curb	\$50 per linear foot
6-foot Concrete Sidewalk	\$30 per linear foot

 Table 7 – Estimated Costs for Bicycle and Pedestrian Network Improvements



Table 8 – Estimated Costs for Pavement Markings and Signage

Street	Segment	Improvement	Cost Estimate
Old Highway 80	Avenue 28E to Hindman Street	Remove existing striping and restripe entire roadway to reduce lane width and include a 4-inch edge stripe to make 5-foot shoulders on both sides of roadway for approximately 2,800 feet	\$55,000
Avenue 29E	Sunset Avenue to County 12 th Street	Install 3 Shared Roadway signs on each side of the street	\$1,000
Old Highway 80	Avenue 25E to Avenue 28E	Install 3 Shared Roadway signs on each side of the street	\$1,000

Table 9 – Estimated Costs for New/Improved Crosswalks

		Cost
Location	Improvement	Estimate
Across Avenue 29E at the intersection with San Jose	1 ladder crosswalk, 2 crossing warning	\$15,900
Avenue	signs, 1 RRFB pair	
Across Old Highway 80 and Avenue 29E at their	4 ladder crosswalks, 4 crossing warning	\$2,400
intersection	signs	
Across Old Highway 80 at intersection with Fresno Street	1 ladder crosswalk, 2 crossing warning signs	\$900
Across Old Highway 80 at intersection with Center Street	1 ladder crosswalk, 2 crossing warning	\$15,900
	signs, 1 RRFB pair	
Across Old Highway 80 at intersection with Dome Street	1 ladder crosswalk, 2 crossing warning	\$15,900
	signs, 1 RRFB pair	
Across County 11 th Street at intersection with Avenue 29E	1 ladder crosswalk, 2 crossing warning signs	\$900
Across County 12 th Street at intersection with Avenue 29E	1 ladder crosswalk, 2 crossing warning signs	\$900
Across Old Highway 80 at intersection with Hindman Street	1 ladder crosswalk, 2 crossing warning signs	\$900
Across I-8 EB entrance ramp (west side) at intersection with Avenue 29F	1 ladder crosswalk, 2 crossing warning signs	\$900
Across I-8 WB exit-ramp (west side) at intersection with	1 ladder crosswalk 1 crossing warning sign	\$600
Avenue 29E		<i>4000</i>
Across Ave 29E at intersection with Sunset Avenue	1 ladder crosswalk, 2 crossing warning signs	\$900
Across Commerce Way at intersection with Wellton Canal	1 ladder crosswalk, 2 crossing warning signs	\$900



Table 10 –	Estimated	Costs for	Shared	Use	Paths
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Street	Segment	Improvement	Cost Estimate
Center Street (east side)	San Jose Avenue to Old Highway 80	Install shared use path for 320 feet	\$16,000
Old Highway 80 (north side)	Bridge over Coyote Wash	Connect shared use paths for 210 feet by restriping to provide shared use path and install vertical delineators	\$10,000
San Jose Avenue (north side)	Avenue 29E to Center Street	Install shared use path for 2,000 feet	\$ 100,000
Avenue 29E (east side)	Old Highway 80 to County 10 th Street	Install shared use path for 1,480 feet	\$74,000
Avenue 29E (west side)	Sunset Avenue to Commerce Way	Install shared use path for 3,025 feet and restripe at I-8 interchange for 1,200 feet to provide shared use path and install vertical delineators	\$200,000
Avenue 29E (west side)	Commerce Way to County 12 th Street	Install shared use path for 3,170 feet	\$160,000
County 10 th Street (south side)	Avenue 30E to Avenue 29E	Install shared use path for 5,280 feet	\$264,000
County 12 th Street (north side)	Avenue 29E to Avenue 28E	Install shared use path for 5,280 feet	\$264,000
Dome Street (west side)	San Jose Avenue to County 10 th Street	Install shared use path for 2,400 feet	\$120,000
San Jose Avenue (north side)	Fresno Street to Dome Street	Install shared use path for 1,480 feet	\$74,000
Wellton Canal (north side)	Avenue 29E to Avenue 25E	Install shared use path for 22,440 feet	\$1,122,000
Avenue 25E (east side)	County 12 th Street to Old Highway 80	Install shared use path for 3,960 feet	\$198,000
Avenue 30E (west side)	Old Highway 80 to County 10 th Street	Install shared use path for 1,745 feet	\$87,500
Old Highway 80 (north side)	West of Avenue 30E to Wellton Canal	Install shared use path for 1,745 feet	\$87,500
Wellton Canal (north side)	Avenue 31E to Old Highway 80	Install shared use path for 6,000 feet	\$300,000

Table 11 – Estimated Costs for Unpaved Trails

Street	Segment	Improvement	Cost Estimate
Avenue 25E	Old Highway 80 to Juan Bautista de Anza National Historic Trail	Construct unpaved trail for 4,225 feet	\$21,500
Mohawk Boulevard/ Avenue 30E	County 10 th Street to Juan Bautista de Anza National Historic Trail	Construct unpaved trail for 7,400 feet	\$37,000



Table 12 – Estimated Costs for Sidewalks

Street	Segment	Improvement	Cost Estimate
San Jose Avenue (north side)	Victor Street to Fresno Street	Install a concrete sidewalk with curb for 525 feet	\$26,500
Fresno Street (west side)	San Jose Avenue to Old Highway 80	Install a concrete sidewalk with curb for 660 feet	\$33,000
Old Highway 80 (north side)	Center Street to Hindman Street	Install a concrete sidewalk for 740 feet	\$23,000
Sage Avenue (both sides)	Avenue 29E to the Coyote Wash Condominiums	Install a concrete sidewalk on both sides of street for a total of 1,110 feet	\$33,500



6. FUNDING OPPORTUNITIES

This section describes potential funding and assistance programs for improving the bicycle and pedestrian network. There are many potential funding sources for future improvements, some of which depend on the specifics of the improvements. These potential funding sources include the following:

- Bonds.
- General funds.
- Property tax.
- Sales or excise tax.
- Impact fees.
- Community facilities districts.
- Improvement districts.
- Community development block grant program (CDBG).

These potential revenue sources are described in more detail in Table 13.

Another potential revenue source is the programs under the Moving Ahead for Progress in the 21st Century Act (MAP-21), the federal transportation legislation. Federal programs authorized under MAP-21 include the National Highway Performance Program (NHPP), Surface Transportation Program (STP), Highway Safety Improvement Program (HSIP), Congestion Mitigation and Air Quality (CMAQ), Transportation Alternatives (TA) Program, and Federal Lands Transportation and Access Program, among others. The most relevant federal programs under MAP-21 are described in more detail in **Table 14**.

Federal funding for transportation improvements is available through these MAP-21 programs, subject to eligibility requirements and approval by ADOT and FHWA. Utilizing federal funds requires obtaining environmental, utility, and right-of-way clearances before proposed improvements can be implemented.

For some of these programs, the Town of Wellton is not currently eligible but may become eligible in the future as the Town grows and traffic volumes increase.



Table 13 – Potential Funding Sources

Funding Source	Description
Bonds	Municipal bonds are securities that are issued for the purpose of financing the infrastructure needs of the issuing municipality. These needs vary greatly but can include schools, streets and highways, bridges, hospitals, public housing, sewer and water systems, power utilities, and various public projects. Municipal bonds may be general obligations of the issuer or secured by specified revenue.
General Funds	In public sector accounting, the primary or catchall fund of a government is called the general fund. It records all assets and liabilities of the entity that are not assigned to a special purpose fund. It provides the resources necessary to sustain the day-to-day activities and thus pays for all administrative and operating expenses. General funds generally receive revenue from sources such as state-shared income and sales taxes, local sales tax, and licensing fees.
Property Tax	A municipality or county can levy a property tax for general purposes or for a specific purpose that has a time limit or can extend until rescinded or revised. The property tax amount is based on a percentage of the assessed value of the property.
Sales Tax	A municipality or county can levy a sales tax for general purposes or for a specific purpose such as transportation, and it can have a time limit or can extend until rescinded or revised. A sales tax is charged at the point of purchase for certain goods and services. The tax amount is usually calculated by applying a percentage rate to the taxable price of a sale and adding the tax to the price at the point of sale.
Impact Fees	A fee imposed on property developers by municipalities for the new infrastructure that must be built or increased due to new property development. These fees are designed to offset the impact of the additional development and residents on the municipality's infrastructure and services.
Community Facilities Districts	The Arizona Community Facilities District Act addresses a critical issue for developers: the financing of increasingly costly infrastructure requirements without unduly burdening the developer. The law authorizes bonds to be issued and repaid with a mechanism that taxes (or assesses) only the lands directly benefiting from the new infrastructure. This allows community development which would otherwise be unfeasible due to the prohibitive costs. All community facilities districts are required to be included within an incorporated city or town.
Improvement Districts	An improvement district allows a local government agency to levy and collect special assessments on property that is within the boundaries of the improvement district for the purpose of making infrastructure improvements within the improvement district.
Community Development Block Grant Program (CDBG)	The Arizona Department of Housing administers the federal CDBG program for non-entitlement areas (i.e., communities with a population below 50,000). Communities receiving CDBG funds from the State may use the funds for many kinds of community development activities including, but not limited to acquisition of property for public purposes; construction or reconstruction of streets, sidewalks, pathways, water and sewer facilities, neighborhood centers, recreation facilities, and other public works; public services; and planning activities. A local funding match is typically required. http://portal.hud.gov/hudportal/HUD?src=/program_offices/comm_planning/communitydevelopment/p rograms



Table 14 – MAP-21 Federal Programs

Program Name	Description
National Highway Performance Program (NHPP)	Under MAP-21, the enhanced National Highway System (NHS) is composed of approximately 220,000 miles of rural and urban roadways serving major population centers, international border crossings, intermodal transportation facilities, and major travel destinations. It includes the Interstate System, all principal arterials (including some not previously designated as part of the NHS) and border crossings on those routes, highways that provide motor vehicle access between the NHS and major intermodal transportation facilities, and the network of highways important to U.S. strategic defense (STRAHNET) and its connectors to major military installations. MAP-21 establishes a performance basis for maintaining and improving the NHS.
Surface Transportation Program (STP)	MAP-21 continues the STP, providing an annual average of \$10 billion in flexible funding that may be used by States and localities for projects to preserve or improve conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for nonmotorized transportation, transit capital projects and public bus terminals and facilities.
Highway Safety Improvement Program (HSIP)	Safety throughout all transportation programs remains the number one priority. MAP-21 continues HSIP, with average annual funding of \$2.4 billion, including \$220 million per year for the Rail-Highway Crossings program. HSIP emphasizes a data-driven, strategic approach to improving highway safety on all public roadways that focuses on performance. The foundation for this approach is a safety data system, which each State is required to have to identify key safety problems, establish their relative severity, and then adopt strategic and performance-based goals to maximize safety.
Congestion Mitigation and Air Quality (CMAQ)	The CMAQ program provides a flexible funding source to State and local governments within Transportation Management Areas (TMAs) for transportation projects and programs to help meet the requirements of the Clean Air Act.
Transportation Alternatives (TA)	 MAP-21 establishes a new program to provide for a variety of alternative transportation projects that were previously eligible activities under separately funded programs. Eligible activities include: Transportation alternatives (new definition incorporates many transportation enhancement activities and several new activities) Recreational trails program (program remains unchanged) Safe routes to schools program Planning, designing, or constructing roadways within the right-of way of former Interstate routes or other divided highways.
Federal Lands Transportation and Access	MAP-21 creates a unified program for Federal lands transportation facilities, Federal lands access transportation and tribal facilities. The Federal Lands Transportation Program provides funding annually for projects that improve access within the Federal estate, such as national forests and national recreation areas, on infrastructure owned by the Federal government. This program combines the former Park Roads and Refuge Roads programs, and adds three new Federal land management agency (FLMA) partners. The Federal Lands Access Program provides funding annually for projects that improve access to Federal lands on infrastructure owned by States and local governments.