



# Town of Gilbert

## Transportation Master Plan

### Draft Final Report-Chapter 7



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## Table of Contents

## Page

|   |     |
|---|-----|
| 7. BICYCLE ELEMENT                        | 133 |
| A. Trends in Travel Behavior              | 133 |
| B. Goals                                  | 134 |
| C. Types of Bicyclists                    | 135 |
| D. Bicycle Travel Toolbox                 | 136 |
| E. 2013-2018 CIP Bicycle-related Projects | 151 |
| F. Recommendations                        | 158 |

## List of Figures

## Page

|            |                                |     |
|------------|--------------------------------|-----|
| Figure 7-1 | Bicycle-related CIP Projects   | 154 |
| Figure 7-2 | Remaining Bicycle Network Gaps | 165 |

## List of Tables

## Page

|           |  |     |
|-----------|--|-----|
| Table 7-1 | Recommended Bicycle Travel Tools                       | 151 |
| Table 7-2 | Bicycle-related CIP Projects: 2013-2014 to 2017-2018   | 152 |
| Table 7-3 | Bicycle-related CIP Projects: 2018-2019 to 2022-2023   | 155 |
| Table 7-4 | Bicycle-related CIP Projects Beyond 2022-2023          | 157 |
| Table 7-5 | Remaining Bicycle Gaps: Bike Lanes in Improved Areas   | 160 |
| Table 7-6 | Remaining Bicycle Gaps: Bike Lanes in Unimproved Areas | 162 |
| Table 7-7 | Remaining Bicycle Gaps: Shared Use Paved Paths         | 164 |

## 7. BICYCLE ELEMENT

The Bicycle Element summarizes bicycle-related goals, presents a toolbox of options for improving bicycling conditions, and makes recommendations for the expansion of the Town's on-street and off-street bicycle network based on a bicycle network gap analysis in order to promote bicycle travel as a safe, comfortable, and convenient travel option.

### A. Trends in Travel Behavior

Recent trends in demographics and a change in travel behavior suggest that a more diverse transportation system for the future is warranted. These shifts can be attributed to several factors:

- **Aging Baby Boomers.** Baby Boomers, the generation born between 1946 and 1964, are reaching retirement age and are healthier and living longer than previous generations. Today, about one in eight people in the United States is over 65; by 2030, this age group will include one in five people. According to the American Association of Retired Persons (AARP), nearly 90% of seniors today want to live in their own homes and communities for as long as possible. In most cases, that will mean remaining in low-density, suburban locations that are not well-served by transit. The bulk of Baby Boomers in Arizona will not retire to dense cities and will require different transportation options in their own communities when they are no longer driving personal vehicles.
- **Rise of the Millennial Generation.** Recent data indicate that the generation of Americans born between the early 1980s and the early 2000s (referred to as "Millennials") are now the largest group of Americans. They tend toward city living and less driving, as compared to other age groups. In 2009, Millennials drove 23% fewer miles on average than the same age group did in 2001. This was a greater decline than any other age group. While economic recession was partially responsible for the decline, evidence also points to a declining interest in driving among this age group: the percentage of 16-to-24-year-olds with driver's licenses has been declining for much longer than per capita vehicle-miles traveled (VMT). Millennials live in cities in greater numbers than previous generations and have a stronger preference for urban living.
- **Declining vehicle travel.** Vehicle-miles traveled (VMT), both per capita and in absolute terms, have historically risen steadily for decades in Arizona and in the United States as a whole. States have responded by steadily expanding the

vehicle capacity of roadway systems. However, the rise of the Millennials and the aging of Baby Boomers have corresponded with a recent unprecedented national dip in driving. Over the past decade, nationwide VMT has crested and declined for the first time. On a per capita basis, nationwide VMT has declined sharply since the mid-2000s, and has yet to increase again as the economy has recovered. Despite a growing population, total VMT in Arizona fell 0.4% between 2005 and 2011. VMT per capita fell 8% over the same period, compared to 6.5% nationally.

These societal trends result in the need for a diverse, multimodal, transportation system. The Bicycle Element recognizes these societal shifts.

## B. Goals

The Vision and Goals of the TMP identify several over-arching goals. The recommendations contained in the Bicycle Element directly support the vision and the following goals:

**Vision: A comprehensive, integrated multimodal transportation system that promotes and enhances safety, mobility, efficiency, quality of life, and sustainability.**

**Goal 3:** *Establish a safe, continuous network of arterial streets that accommodates all modes, minimizes congestion, and connects to street networks of neighboring communities.*

**Goal 4:** *Develop a safe, continuous network of collector and local streets that connects neighborhoods to the arterial street network, encourages bicycling and walking, and incorporates traffic calming strategies.*

**Goal 5:** *Promote bicycling as a viable transportation option through a safe, comprehensive network of bicycle facilities with access to employment, shopping, schools, parks, and neighborhoods.*

The Bicycle Element builds upon and supports the goal established in the 2005 *Gilbert Bicycle and Pedestrian Plan*:

*The primary goal of the Gilbert Bicycle and Pedestrian Plan is to provide bicycle and pedestrian facilities that efficiently connect the places to which people want to go.*

The Bicycle Element also directly supports the *Gilbert Parks, Recreation, and Trails Master Plan* vision:

*Exemplary parks, trails, open spaces, natural areas, arts and culture, leisure programs and facilities are safe and integral to Gilbert's unique identity, our quality of life and our economy.*

### C. Types of Bicyclists

The Town of Gilbert recognizes that bicyclists vary widely in terms of their skill, physical ability, comfort level, and trip purpose. While people do not fit into a single category, and a bicyclist's profile may change even within a single day, a comprehensive bicycle network seeks to provide facilities that meet the needs of a wide variety of bicyclists.

Bicyclists can be profiled by their trip type. Utilitarian bicyclists, those who bicycle for everyday activities such as commuting to work or running errands, are typically better served by direct routes that are flat, well connected, and have access to facilities such as bicycle parking. A recreational bicyclist tends to be attracted to routes with visual interest and varied topography.

Similarly, bicyclists can be profiled based on their level of experience and skill. Experienced and confident bicyclists may be comfortable riding in on-street bike lanes next to vehicles on arterial and collector streets, travel at higher speeds for longer distances, and prefer more direct routes. In contrast, casual and less confident riders typically prefer to use off-street bicycle facilities such as shared use paths or to ride on neighborhood streets with low traffic volumes, travel at slower speeds for shorter distances, and take routes that may not be as direct.

### League of American Bicyclists Designation<sup>5</sup>

In 2013, the League of American Bicyclists (LAB), a non-profit membership organization that promotes cycling for fun, fitness and transportation, formally recognized 291 communities across 48 states as bicycle-friendly communities for "providing safe accommodation and facilities for bicyclists and encouraging residents to bike for transportation and recreation". The LAB bicycle-friendly designation,

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<sup>5</sup> ([www.bikeleague.org](http://www.bikeleague.org))



awarded from Honorable Mention (lowest designation) to Bronze, Silver, Gold, and Platinum (highest designation), is given to applicant communities that have demonstrated a commitment to improving and sustaining bicycling and bicycle safety through comprehensive programs, plans and policies. To reach the highest levels of award, entities must demonstrate commitment and progress toward the “5 E’s”. As defined by the LAB, these are:

- Engineering: Creating safe and convenient places to ride and park
- Education: Giving people of all ages and abilities the skills and confidence to ride
- Encouragement: Creating a strong bike culture that welcomes and celebrates bicycling
- Enforcement: Ensuring safe roads for all users
- Evaluation and Planning: Planning for bicycling as a safe and viable transportation option

Per LAB, Arizona is ranked 10<sup>th</sup> as a bicycle-friendly state and has 9 bicycle-friendly communities, 11 bicycle-friendly businesses and 2 bicycle-friendly universities. Scottsdale and Tucson are among the 18 communities awarded Gold status. Flagstaff and Tempe are among the 61 communities awarded Silver status. Gilbert, Chandler, Cottonwood, Mesa and Sedona are among the 206 communities awarded Bronze status. Phoenix and Glendale are among the 25 communities awarded Honorable Mention status.

## D. Bicycle Travel Toolbox

This section provides a “toolbox” of potential treatments and strategies for the “5 E’s” to improve the accommodation, comfort, and safety of bicyclists in Gilbert.

The physical environment is a key determinant whether people will ride their bicycles. A well-connected bicycle network consisting of neighborhood streets, bike lanes, shared use paths/trails, and crossings of roadways, along with policies to ensure connectivity and maintenance of these facilities, are critical to promoting bicycle travel.

### Narrowing Vehicle Lanes to Accommodate Bike Lanes

A cost-effective way to add bike lanes to existing streets is to narrow the vehicle lanes, thereby freeing up space for bike lanes. Several older segments of the Town’s

streets were built to earlier versions of the Town's standard cross-sections that did not include bike lanes. Some of these vehicle lane widths are 12 feet or greater.

Historically, there has been a perception that roadway travel lanes narrower than 12 feet are less safe and provide less capacity than 12-foot lanes. Recent research, however, has determined this perception is not accurate. Nationally recognized sources and manuals indicate travel lane widths as narrow as 10 feet are acceptable on arterial and collector streets, as evidenced by the following:

- Per the AASHTO A Policy on Geometric Design of Highways and Streets<sup>6</sup>, lane widths as narrow as 10 feet are acceptable on low-speed (45 miles per hour (mph) or lower) facilities.
- The NACTO Urban Street Design Guide indicates that 10-foot lanes are appropriate in urban areas and have a positive impact on a street's safety without adversely impacting traffic operations.
- The AASHTO Guide for the Development of Bicycle Facilities states that research has found no general indication that 10-foot lanes increase crash rates compared to 11-foot or 12-foot lanes on urban arterials.
- The Pedestrian Bicycle Information Center (PBIC)<sup>7</sup> notes that safety evaluations of travel lane widths between 10 feet and 12 feet on arterial streets have found no statistical difference in crash rates or capacity within this range of lane widths.

Phoenix and Tempe are examples of Phoenix-area municipalities that have several arterial street segments with 10-foot through lanes, with no reported safety or operational issues associated with the narrower lanes. In Gilbert, portions of Gilbert Road through the Heritage District have 10-foot through lanes for short distances.

An example of how travel lanes could be narrowed in Gilbert to allow for the addition of bike lanes is Warner Road between McQueen Road and Cooper Road. Warner Road currently has two 13.5-foot lanes in each direction (including the gutter pans) separated by a raised median, or 27 feet between the curb faces in both directions. By moving the lane stripe over 3 feet, a 5.5-foot bike lane could be added, which would still leave enough space for one 11-foot travel lane and one 10.5-foot travel lane in each direction.

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<sup>6</sup> 6<sup>th</sup> Edition, page 4-7

<sup>7</sup> <http://www.walkinginfo.org/library/details.cfm?id=4348>

## Widening Bike Lanes

The 2012 AASHTO *Guide for the Development of Bicycle Facilities*, 4<sup>th</sup> Edition provides the following guidance on bike lane widths:

- The recommended minimum width for bike lanes is 5 feet with adjacent vertical obstructions like curbs or guardrail and 4 feet with no adjacent vertical obstructions.
- When a bike lane is between a through lane and a right-turn lane, the minimum bike lane width is 4 feet while the preferred bike lane width is 5 feet.
- Bike lanes of 6-8 feet may be desirable adjacent to on-street parking, in areas with high bicycle use to allow for bikes passing each other, on high-speed (greater than 45 mph) and high-volume roads, and on roads with a high number of trucks and buses.



Source: [www.bikeleague.org](http://www.bikeleague.org)

The Town's standard details for arterial and collector streets include bike lanes that are 5.5 feet wide (inclusive of the 1.5-foot gutter pan). The Town's 5.5-foot width exceeds the minimum recommended AASHTO bike lane width of 5 feet, but to further promote bicyclist safety and comfort, the Town could consider wider bike lanes. If wider bike lanes are desired as a future

Town standard, the Town could potentially reduce the width of some of the travel lanes or medians by a corresponding amount to maintain the same total cross-section width

The Town's standard details for a major arterial street intersection and a minor arterial street intersection with dual lefts show a bike lane width of 4.5 feet between the through lane and right-turn lane. It is recommended that these details be updated to include a minimum bike lane width of 5 feet between the through lane and right-turn lane to match the preferred AASHTO width for this condition. This additional width for the bike lane could be obtained by reducing the width of the adjacent travel lane or right-turn lane.

## Reducing the Number of Travel Lanes through a Road Diet

Road diets refer to reducing the number of travel lanes to improve safety and provide space to accommodate other modes of transportation. The reallocated space can be



used for bike lanes, turn lanes, pedestrian crossing islands, intersection bulb-outs, bus stops, and/or parking.

Road diets have multiple safety and operational benefits for vehicles, bicycles, and pedestrians. These benefits can include reducing vehicle speeds, providing additional turn lanes, decreasing the pedestrian's crossing distance and exposure, providing pedestrian refuge for two-stage crossings, or improving safety and convenience for bicyclists by providing a buffer space from vehicles. Mill Avenue in downtown Tempe, Grand Avenue in downtown Phoenix, and Arizona Avenue in downtown Chandler are examples of Phoenix-area streets that have had lanes reduced through a road diet to improve bicycle and pedestrian travel.

Reducing the number of travel lanes does reduce the vehicular capacity, so an understanding of traffic volumes and impacts on traffic operations of eliminating a travel lane is important. Most of the existing arterial streets in Gilbert without bike lanes are already at or near capacity so reducing the number of travel lanes could have adverse impacts on traffic operations. There are a few street segments without bike lanes currently operating under capacity such as McQueen Road south of Elliot Road where there are three through lanes in each direction.

### Shared Lane Markings

Shared lane markings, or 'sharrows', can be used on streets where the addition of bike lanes is not feasible and where speed limits are no greater than 35 mph. Shared lane markings indicate a shared lane for bicycles and vehicles.



Source: [www.bikeleague.org](http://www.bikeleague.org)

The benefits of shared lane markings are that they reinforce the legitimacy of bicycle traffic on the street, provide a visual cue to drivers to be on the look-out for and yield to bicyclists, recommend proper bicyclist positioning within a lane, don't require additional street space, and can be configured to offer wayfinding guidance. The FHWA *Manual on Uniform Traffic Control Devices* (MUTCD) outlines guidance for shared lane markings in Section 9C.07.

An example of a potential candidate street segment for shared lane markings is

Gilbert Road through the Heritage District, where there are two lanes in each direction with a 25 mph speed limit. The two lanes have a total width of 23-24 feet, which is not wide enough for the recommended minimum width of two 10-foot travel lanes and a 5-foot bike lane.

### Green Colored Pavement

In 2011, FHWA issued an Interim Approval allowing for the optional use of green colored pavement in bike lanes and in extensions of bike lanes through intersections and other traffic conflict areas. Since that time, many communities across the country – including Phoenix and Tucson in Arizona – have utilized green colored pavement to make bike lanes or potential bicycle/motor vehicle crossing points more visible. Per the Interim Approval letter, research has found the green colored pavement gives drivers an increased awareness that bicyclists might be present and where they are likely to be positioned, thereby promoting bicycle safety.



The Town of Gilbert could consider applying the green colored pavement to select locations to improve the visibility of bike lanes. The green colored pavement could be applied to entire segments of bike lanes or only to potential conflict areas such as intersections or the beginning of right-turn lanes. Initial candidate segments for consideration of green colored pavement would include high bicycle/motor vehicle crash areas (e.g., Guadalupe Road from west of Recker Road to Power Road), high

bicycle activity areas, and locations where shared lane markings are simultaneously being installed.

### Roadway Widening to Accommodate Bike Lanes

On most Gilbert arterials and collectors, the space between the roadway curb and the edge of the roadway right-of-way typically contains sidewalk, a landscaped buffer, streetlights, and utilities. If bike lanes cannot be provided within the existing roadway width, the roadway can be widened to provide space for a bike lane. Roadway widening could require narrowing or eliminating the landscaped buffer, or relocating the sidewalk. Such actions should minimize adverse impacts to pedestrians and avoid costly utility relocations where possible. If there is not enough space within the existing right-of-way to widen the road, additional right-of-way would need to be

acquired.

In developed parts of Gilbert where streets have been improved to provide four or six travel lanes but not bike lanes, there is typically enough space between the roadway curb and the edge of the roadway right-of-way that a bike lane could be added if the roadway were widened. Roadway widening for the sole purpose of adding bike lanes is relatively expensive compared to many of the other options for how to add bike lanes and as such would likely not be the preferred way to add bike lanes if other less expensive options are viable.

## Separated Bike Lanes

Separated bike lanes, also known as cycle tracks or buffered bike lanes, can be considered in areas with few controlled driveway openings and sufficient right-of-way to separate bike lanes from vehicles. The minimum desired bicycle-vehicle separation is 3 feet with a minimum bike lane width of 5-7 feet. Separated bike lanes can be one-way or two-way and can be at street level, sidewalk level, or at an intermediate level. Common separators are curbs, medians, pavement color/texture markings, on-street parking and flexible bollards. Maintenance of the bike lane and separator needs to be considered when selecting what type of separator to use. Separated bike lanes have been successfully implemented in cities such as Boulder, Colorado, Long Beach, California, and Portland, Oregon. The NACTO Urban Street Design Guide provides guidance and schematics on separated bike lanes.



Sources: [www.bikeportland.org](http://www.bikeportland.org), <http://livininthebikelane.blogspot>, [www.vimeo.com](http://www.vimeo.com)

## Connectivity of Local and Collector Streets

Arterial streets accommodate higher-speed, higher-volume motor vehicle traffic and can be uncomfortable for some bicyclists. In addition, discontinuities in the bike lane network on some arterial streets may be difficult to eliminate due to cost or right-of-way constraints.



Local and collector streets serve an important role in the bicycle network because they provide more comfortable bicycle routes than arterial streets for casual and less confident riders, particularly for short trips from neighborhoods to local services and destinations. They are characterized by slower vehicle speeds and have lower traffic volumes than arterial streets.

As the Town continues to develop and evolve, the local and collector street network should be developed to provide sufficient connectivity through and to adjacent neighborhoods and destinations. Direct connections from local/collector streets to the off-street shared use network can provide safer bicycle access by bypassing arterial streets. Connectivity enables people to take shorter routes and travel on quieter streets, which are more conducive to bicycling. A well-connected street network can increase the number of people bicycling, which helps reduce vehicle miles traveled.



Because there are not many continuous collector and local streets that run parallel to the arterial street network in Gilbert, bike route signage and pavement markings can help bicyclists know where the designated bike routes are to minimize travel on arterial streets. Wayfinding is only effective if implemented systematically on key bicycle routes or pathways.

## Off-Street Shared Use Paths and Trails

Off-street shared use paved paths and unpaved trails are considered a significant part of the Town's transportation circulation system that also provides recreational opportunities. Shared use facilities – particularly paved paths – provide opportunities for riding among user groups who are not comfortable using on-street bike lanes.



These may include casual cyclists, children, families, and the elderly. The Town should continue to develop its network of off-street shared use paths and trails, consistent with the *Gilbert Parks, Recreation, and Trails Master Plan*. It is recommended that the Town focus first on addressing gaps and deficiencies in the paved paths that are part of the Western Canal Powerline Trail, Heritage Trail, Santan Vista Trail, and Santan Freeway Trail and then focus on developing new shared use facilities such as the Rittenhouse Trail, Marathon Trail, Queen Creek Trail, and Sonoqui Wash Trail.

## Shared Use Path and Trail Crossings

A critical component of the shared use path/trail network is where shared use facilities cross other transportation and utility facilities, particularly the arterial and collector street network and railroad tracks. These crossings represent potential



conflict zones and as such need to be carefully planned and designed.

Potential crossing infrastructure treatments at arterial and collector streets include Pedestrian Hybrid Beacons (PHBs – also known as HAWKs), Bike HAWKs (similar to HAWKs but with additional

features for bicyclists), rectangular rapid flashing beacons (RRFBs), mid-block bicycle/pedestrian traffic signals, and median refuge islands. Design of median refuge islands should include provisions for canal and utility maintenance vehicle access where applicable. The Town should determine which existing signalized shared use path crossings would operate more effectively as HAWK crossings and convert them to HAWK or Bike HAWK crossings. High-priority locations are the Western Canal Powerline Trail, Heritage Trail, Santan Vista Trail, and Santan Freeway Trail crossings of arterial streets where actuated crossings are not currently provided.

Potential crossing infrastructure treatments at railroad tracks consist of at-grade solutions (e.g., sidewalk, railroad gate arms and lights) and grade-separated solutions (e.g., bridges or tunnels). At-grade solutions are much less expensive than grade-separated solutions but grade-separated solutions provide for complete separation between the shared use facilities and the railroad tracks. The MAG Regional Bicycle and Pedestrian Pathway/Railroad Crossing Recommendation Final Report should be referenced in developing shared use/railroad crossing treatments. A high-priority for



shared use/railroad crossing treatment is where the Western Powerline Trail intersects the railroad.

## Bicycle Sharing Program

The Cities of Mesa, Tempe, and Phoenix will launch a bicycle sharing program (branded as Grid Bike Share) in 2014 that will provide access to approximately 1,000 bicycles for short-term rental. The bicycle sharing program allows a bicyclist to pick up a bicycle at one hub station or public bike rack and drop it off at another for a small fee. The objective of the program is to provide an affordable and convenient alternative to the motor vehicle for short trips, thereby reducing congestion, noise, and air pollution. The bicycle sharing program in Mesa, Tempe, and Phoenix will be focused on the area within three miles of the Light Rail transit line. With the pending extension of the Light Rail line in Mesa along Main Street to Gilbert Road, portions of northern Gilbert will soon be within the focus area of the bicycle sharing program. There may also be opportunities to expand the bicycle sharing program throughout Gilbert, particularly around major activity centers.

## Regional Connectivity and Coordination

The Town of Gilbert's bike lanes and shared use paths should connect to the adjacent facilities of Chandler, Queen Creek, and Mesa shown previously on the existing bicycle network graphic (Figure 4-7).

- The City of Chandler's trail system includes the Western Canal Powerline Trail, Santan Vista Trail, and Heritage Trail and there are three large Chandler parks near the Gilbert border.
- The Town of Queen Creek's trail system connects to regional parks, the Santan Mountains, and adjacent communities. Trails along Sonoqui Wash and Queen Creek are major equestrian, bicycle, and pedestrian trails through the Town of Queen Creek.
- The Santan Vista Trail and Heritage Trail extend into the City of Mesa and the Western Canal Powerline Trail and Santan Freeway Trail currently end at the Mesa/Gilbert border.

Portions of the Town's Western Canal Powerline Trail, Heritage Trail, and planned Marathon Trail are also part of Maricopa County's larger regional Maricopa Trail and Sun Circle Trail. The Maricopa Trail generally goes around the perimeter of the Phoenix metropolitan area while the Sun Circle Trail goes through many of the

communities within the area.

MAG has taken an active role in promoting improvements for bicycle and pedestrian travel opportunities throughout the Phoenix metropolitan area, including development of flexible region-wide performance guidelines to promote “complete streets”. The agency has developed a series of regional bicycle, pedestrian and multimodal corridor plans outlining design guidelines and design assistance programs for items such as signage, lighting, and materials.

### Education and Encouragement Countermeasures

Improving education and awareness of all roadway users and proper travel behavior can lead to fewer bicycle crashes with motor vehicles. The Town of Gilbert can partner with regional agencies such as MAG and Valley Metro to develop and implement safety awareness campaigns. Public safety awareness campaigns can include fliers, hangtags, rack cards (in English and Spanish), and radio and television announcements. Public safety awareness campaigns could focus on the following messages:

- Explain the danger of wrong-way bicycling riding
- Show potential issues and hazards of bicyclists riding on the sidewalk
- Emphasize use of lights while riding at night and low-light conditions
- Encourage helmet use among all riders
- Emphasize motorist awareness of bicyclists, particularly for turning vehicles at intersections, driveways, trail crossings, and near bus stops
- Educate motorists on the three-foot safe passing distance law
- Health, environmental, and social benefits of bicycling

The campaign should include outreach efforts to engage children, teenagers, and young adults. These outreach efforts could include poster contests, coloring books, and messages on elementary, middle school, and high school marquees. Online campaigns and smartphone applications could also be developed.



The Town of Gilbert can partner with, and capitalize on, national resources. The League of American Bicyclists (LAB) “Smart Cycling” program is a set of curricula for adults and children taught by certified instructors. The Town of Gilbert can encourage

and partner with local agencies and bicycle advocacy organizations to offer the LAB courses to as many bicyclists as possible, including children in elementary and middle schools. The MAG *Strategic Transportation Safety Plan*<sup>8</sup> includes a goal to reduce the number of crashes that involve bicyclists or pedestrians through utilizing LAB materials. Stated goals of the *Strategic Transportation Safety Plan* include the following:

- Promote bicyclist training programs for youth and adults. Utilize programs such as those provided by the LAB to offer on-bike training opportunities.
- Co-sponsor safety and training programs with the Coalition of Arizona Bicyclists and/or other agencies for adults looking to improve their biking skills.

The Town of Gilbert can educate and encourage people to ride by providing them a variety of opportunities to get on their bikes. Examples include:

- celebrating National Bike Month and Bike to Work Day
- working with the school districts to promote bicycling
- producing community bike maps
- implementing route finding signage
- conducting other bicycle-themed celebrations and rides and commuter challenges. develop a free bike program similar to other communities where bikes are available to use for free
- providing a QR symbol along the shared use paths/trails to provide information on the path/trail, a cultural destination, or a map.

## Enforcement Countermeasures

As a supplement to education of bicyclists, enforcement plays a critical role to improve bicyclist safety. The following behaviors should be targeted for enforcement:

- Bicyclists who are riding against traffic on the roadway can be warned of the dangers of this practice and that riding in the same direction as adjacent vehicle traffic is the law



<sup>8</sup> [www.azmag.gov](http://www.azmag.gov)

- Bicyclists can be stopped to educate them about the potentially unsafe practices of riding at night without lights or violating traffic signals
- Motorists can be warned or cited for driving too close to bicyclists. Arizona law<sup>9</sup> requires a safe passing distance of three feet.

Formal training of police officers with respect to bicycle laws and safe practices is limited within the Arizona Peace Officer Standards and Training Board (POST). Town of Gilbert Public Works and Engineering Services staff should collaborate with the Town's Police Department to offer training to police officers of bicycle laws and safe practices so that they are better prepared to enforce them.

Bicycle safety training for public safety officers would raise awareness and lead to better enforcement of traffic laws, which can have a trickle-down effect of educating the general public. Examples of training resources<sup>10</sup> are provided at the website.

- Bicycle Traffic Enforcement Video<sup>11</sup> - This is an internal training video for the Portland Police Bureau available through the PBIC Video Library
- Traffic Enforcement for Bicyclist Safety - A training video for Chicago Police Officers created in partnership between the Chicago Police Department and The Chicago Department of Transportation available through the PBIC Video Library
- Law Enforcement's Roll Call Video: "Enforcing Law for Bicyclists" - This short video was developed by the National Highway Traffic Safety Administration (NHTSA)
- Enhancing Bicycle Safety: Law Enforcement's Role - This two-hour self-paced training for law enforcement officers was developed by the United States Department of Transportation and NHTSA
- NHTSA Community Oriented Bicycle Safety for Law Enforcement (2002)
- Law Officers Guide to Bicycle Safety (2002)
- NHTSA Resource Guide on Laws Related to Pedestrian and Bicycle Safety
- Florida Bicycle Law Enforcement Guide (2003)

The Town of Gilbert can continue to build relationships between the bicycle community and the Town Police Department. A Bicycle and Pedestrian Advisory Committee (BPAC) can be established to foster awareness on both sides. A BPAC

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<sup>9</sup> [www.azleg.gov](http://www.azleg.gov)

<sup>10</sup> [www.bicyclinginfo.org](http://www.bicyclinginfo.org)

<sup>11</sup> [www.bicyclinginfo.org](http://www.bicyclinginfo.org)

typically consists of citizens who advise engineering, planning, and public safety staff on bicycle and pedestrian issues within the community. Examples include the Tucson-Pima County Bicycle Advisory Committee <sup>12</sup>(TPCBAC), which has an informative website that lists the committee's vision, goals, and membership information, and the City of Flagstaff Pedestrian Advisory Committee <sup>13</sup>(PAC), which reports directly to the City's Transportation commission on issues related to planning and accommodation of pedestrians. Bicycle advocates can also be identified to advise Town staff when shared use facilities or crossings need maintenance.

### Bicycle Data Collection Program

The Town should develop a bicycle data collection program to collect and analyze the number and locations of bicyclists utilizing the Town's infrastructure. A bicycle data collection program can provide meaningful data to the Town and be used to track trends and prioritize investments. The program could utilize automatic counters to provide counts of bicyclists in high crash segment locations, supporting expenditures on new bicycle facilities and bicycle policies and should be developed with the following objectives:

- Develop annual goals and performance metrics to assess progress toward improving conditions for bicyclists. Recommended performance measures include:
  - Reduction in bicycle/motor vehicle crashes – particularly fatal and injury crashes; this data is available from the ADOT SafetyDataMart.
  - Increase in the number of miles of bike lanes; this data is available from Town GIS staff.
  - Reduction in the number of miles of bicycle network gaps; gaps can be documented through GIS mapping.
  - Increase in the number of miles of shared use facilities; this data is available from Town GIS staff.
  - Increase in the number of signalized/HAWK shared use facility crossings on arterials and collectors; this information can be obtained from engineering staff.
  - Increase in the number of official railroad/shared use facility crossings; this information can be obtained from engineering staff.

<sup>12</sup> [www.biketucson.pima.gov](http://www.biketucson.pima.gov)

<sup>13</sup> [www.flagstaff.az.gov](http://www.flagstaff.az.gov)



- Increase in bicycle travel education and enforcement campaigns.
- Establish an on-going data collection schedule and prioritization of locations to conduct bicycle counts or surveys that allow for long-term trend analysis of bicycle activity.
- Utilize the Pedestrian and Bicyclist Intersection Safety Indices <sup>14</sup> to identify intersection crossings and intersection approach legs that should be the greatest priority for undergoing pedestrian and bicycle safety improvements.

Advocacy organizations can contribute labor resources to a data collection effort. There are many bicycle advocacy organizations that work to further bicycle activities within the community, such as the Coalition of Arizona Bicyclists and LAB.

New technologies also provide opportunities to collect bicycle travel data. The San Francisco County Transportation Authority developed a Smartphone application, Cycle Tracks, which tracks routes used by volunteer bicyclists. CycleTracks uses the smartphone GPS support to record users' bicycle trip routes and times, and display maps of their rides. At the end of each trip, anonymous data representing the trip purpose, route, and the date and time are sent to the San Francisco County Transportation Authority for analysis. All personally identifiable data are kept confidential.

Austin, Texas also used the Cycle Tracks application to track the routes of 300 volunteer bicyclists to determine their preferred routes. These creative applications of smartphones allowed for a relatively inexpensive data collection effort. The amount of information provided by the use of smartphones exceeded what has typically been available using other data collection methods (<http://tinyurl.com/avuvmbm>).

The Town may consider developing a similar program for bicyclists to submit this data to the Town to use in a bicycle data collection program. Such data would help to identify popular bicycle corridors and prioritize where improvements are needed.

It is proposed that the Town of Gilbert develop a bicycle data collection program and participate in the National Bicycle and Pedestrian Documentation Project<sup>15</sup>. The

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<sup>14</sup> [www.fhwa.dot.gov](http://www.fhwa.dot.gov)

<sup>15</sup> <http://bikepeddocumentation.org>

National Bicycle & Pedestrian Documentation Project is sponsored by Alta Planning and Design and the Institute of Transportation Engineers (ITE) Pedestrian and Bicycle Council and is a website that retains, maintains and provides consistent models of data collection techniques and data for use by planners, governments, and bicycle and pedestrian professionals. The website provides a variety of documentation such as forms and materials for counts, surveys, and training materials.

### Other Bicycle Strategies

Secure, convenient and readily available bike parking at locations such as parks, community centers, libraries, shopping centers, bus stops, and schools is also a key component of promoting bicycle travel. The Town Development Code requires new development to provide bike racks. Building codes could be modified to require showers and locker facilities to promote bicycling both in the workplace and the wider community.

To further promote bicycle-transit travel, bike racks or lockers could be installed at bus stops with high bicycle-transit usage and the Town of Gilbert could coordinate with Valley Metro to see if it is possible to expand the number of bike racks on buses to better accommodate bicycle-transit travel.

The Town of Gilbert could dedicate a portion of the Transportation Coordinator position to addressing issues and concerns related to bicycling in the Town, and improving their accommodation in the Town's transportation network.

The Town of Gilbert could develop and adopt a Complete Street ordinance or policy that indicates what defines a complete street and where complete streets will be provided.



### Summary

Table 7-1 summarizes the tools within the aforementioned toolbox of treatments and strategies that are available to the Town of Gilbert. These tools are considered most feasible for the Town's implementation to improve the comfort, safety, and convenience of bicycling in Gilbert.

**TABLE 7-1: RECOMMENDED BICYCLE TRAVEL TOOLS**

| Category                | Tool   |
|-------------------------|--|
| Engineering             | Include bike lanes in new construction or major reconstruction of roadways                             |
|                         | Narrow vehicle lanes to accommodate bike lanes   |
|                         | Widen bike lanes where there is enough roadway width to do so  |
|                         | Conduct detailed crash analysis of higher-density bicycle crash locations                              |
|                         | Install shared lane markings where there is not enough width to add bike lanes                         |
|                         | Install green colored pavement in bike lanes, particularly at potential bicycle-vehicle conflict areas |
|                         | Provide separated bike lanes   |
|                         | Designate local and collector streets as alternate bike routes and develop a bike route map            |
|                         | Construct new shared use paved paths or pave existing shared use unpaved trails                        |
|                         | Install signals, HAWKs, or RRFBs where shared use paths cross major streets                            |
|                         | Construct at-grade or grade-separated shared use/railroad crossings                                    |
|                         | Coordinate with regional partners to expand the regional bike network                                  |
|                         | Modify development codes to require bike racks, showers, and lockers                                   |
|                         |  |
| Education               | Implement a bicycle education and safety awareness campaign  |
|                         | Conduct safe bicycling courses   |
| Encouragement           | Celebrate National Bike Month and Walk to Work Day   |
|                         | Seek higher level LAB bicycle-friendly community status  |
|                         | Participate in regional bicycle sharing program  |
|                         | Distribute community bike maps   |
|                         | Implement bike route signage, particularly on local and collector streets                              |
|                         | Develop a Complete Street ordinance or policy  |
|                         | Conduct other bicycle-themed celebrations, rides, and commuter challenges                              |
| Enforcement             | Conduct police department bicycle-oriented training  |
|                         | Establish a Bicycle and Pedestrian Advisory Committee in the Town                                      |
| Evaluation and Planning | Develop annual goals and performance metrics related to bicycles                                       |
|                         | Implement a bicycle data collection program  |
|                         | Dedicate a portion of the Transportation Coordinator position to bicycle travel                        |

## E. 2013-2018 CIP Bicycle-related Projects

The Town has plans to continue to expand and enhance the bicycle network. There are several programmed roadway improvement projects that include the addition of bike lanes as well as several shared use path projects in the Town's *2013-2018 Capital Improvement Plan* (CIP). Some of these projects are multi-jurisdictional – the Town of Gilbert is the lead agency on some of them and a contributing agency on others. Where there are joint projects, the Town of Gilbert will need to coordinate with the partnering jurisdiction.

Table 7-2 identifies the programmed bicycle-related projects in Gilbert that are not yet under construction, sorted by fiscal year and then project number. Proposed actions are included in the table where modifications to the project are recommended. The programmed projects are mapped in Figure 7-1.

The Town's CIP also contains several roadway improvement projects that include the addition of bike lanes and shared use paths beyond the 2018 timeframe for which funding has not yet been allocated. Table 7-3 identifies the 2018-2019 to 2022-2023 bicycle-related CIP projects in Gilbert that are not yet funded, sorted by project number. Table 7-4 similarly identifies the bicycle-related CIP projects scheduled beyond 2022-2023 that are not yet funded. Proposed actions are included in these tables where modifications to a project are recommended. The planned but unfunded CIP projects are also mapped in Figure 7-1.

**TABLE 7-2: BICYCLE-RELATED CIP PROJECTS: 2013-2014 TO 2017-2018**

| Project # | Project Description  | Project Details   | Fiscal Year | Amount      | Proposed Action       |
|-----------|--|---|-------------|-------------|-----------------------|
| PR006     | Heritage Trail Middle Segment – Western Canal to Warner Road           | Construct paved concrete shared use path and associated amenities for approximately 1.5 miles along the Consolidated Canal.   | 2014        | \$1,616,000 | Construct as planned. |
| PR011     | Western Canal Powerline Trail – Chandler-Gilbert border to Cooper Road | Construct paved concrete shared use path and associated amenities for approximately 1.5 miles along the Western Canal.  | 2014        | \$1,173,000 | Construct as planned. |
| PR095     | Trail Crossing Signals – Phase II Initial Groups                       | Install HAWK pedestrian hybrid beacons at ten trail arterial street crossings, two of which are shared with Mesa. One crossing has been constructed, three crossings are under design with construction scheduled for 2016, and six crossings are to be designed and constructed later. | 2014        | \$582,000   | Construct as planned. |

**TABLE 7-2: BICYCLE-RELATED CIP PROJECTS: 2013-2014 TO 2017-2018 (CONTINUED)**

| Project # | Project Description  | Project Details   | Fiscal Year | Amount       | Proposed Action       |
|-----------|--|---|-------------|--------------|-----------------------|
| ST058     | Germann Road – Val Vista Drive to Higley Road                          | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 2.0 miles.  | 2014        | \$10,504,000 | Construct as planned. |
| ST129     | Gilbert Road / Guadalupe Road Intersection Improvements                | Improve to full major arterial intersection cross-section, including space for a bike lane in each direction at the intersection, although the bike lane will only be designated on the west and east legs. Bike lanes on the north and south legs will be provided if and when adjacent roadway segments are improved to include bike lanes.   | 2014        | \$8,050,000  | Construct as planned. |
| ST152     | Higley Road / Warner Road Intersection Improvements                    | Improve to full major arterial intersection cross-section, including space for a bike lane in each direction at the intersection, although the bike lane will only be designated on the west leg as part of this project. Roadway segments away from the intersection will be constructed to an interim four-lane condition with no bike lane – bike lanes on the other legs will be provided when adjacent roadway segments are ultimately widened to full arterial width. | 2014        | \$5,876,000  | Construct as planned. |
| PR101     | Santan Freeway Trail – Val Vista Drive to Discovery Park               | Construct paved concrete shared use path for approximately 0.8 miles along the Santan Freeway.  | 2015        | \$500,000    | Construct as planned. |
| PR062     | Western Canal Powerline Trail – SRP Powerline Trail to Greenfield Road | Construct paved concrete shared use path and associated amenities for approximately 0.5 miles along the Western Canal.  | 2016        | \$1,936,000  | Construct as planned. |
| PR056     | Parks and Trails Sign Program  | Develop standards, themes, and details for directional, information, and interpretive signage and install signs as needed.  | 2018        | \$508,000    | Construct as planned. |



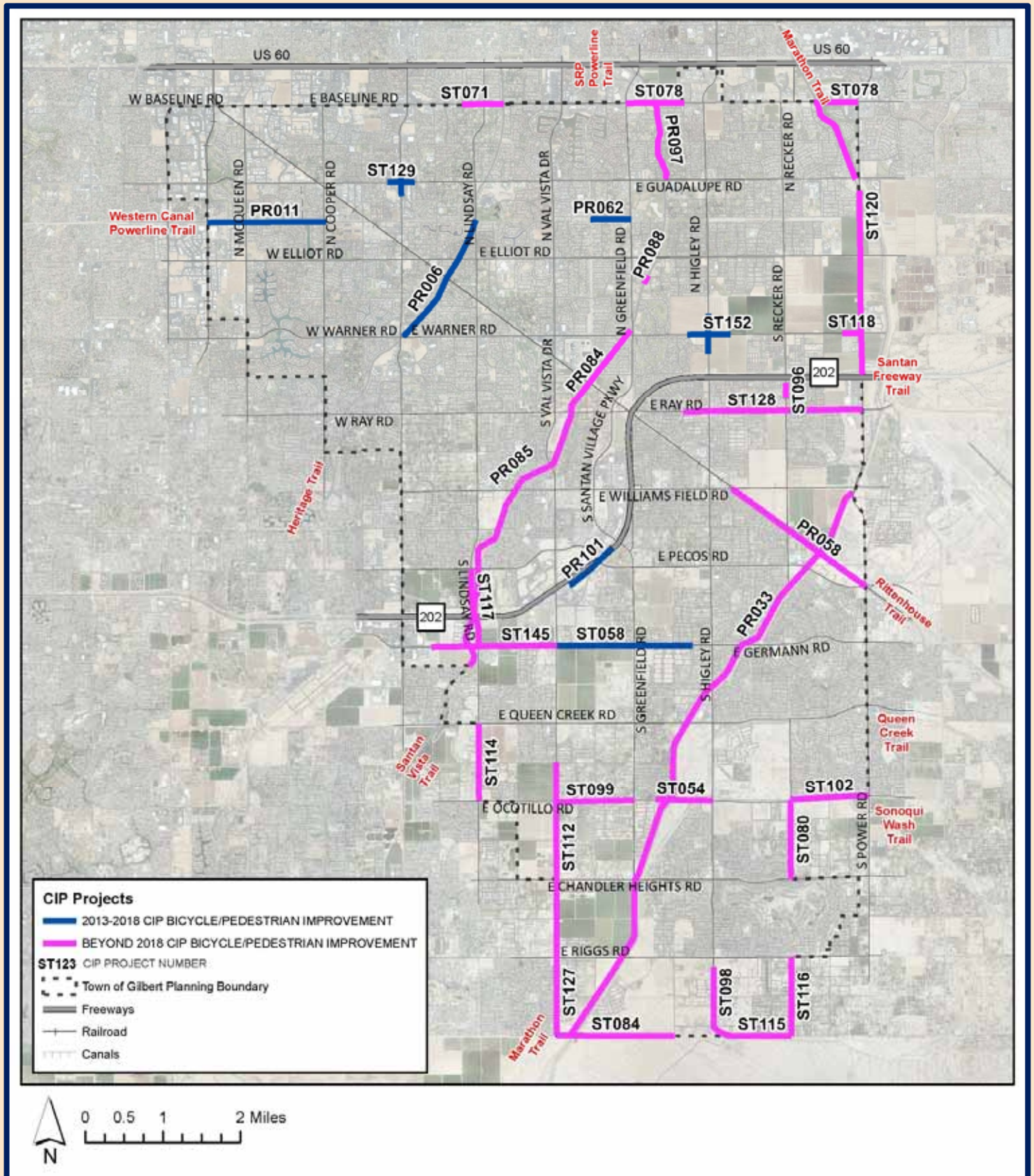


FIGURE 7-1: BICYCLE-RELATED CIP PROJECTS

**TABLE 7-3: BICYCLE-RELATED CIP PROJECTS: 2018-2019 TO 2022-2023**

| Project # | Project Description  | Project Details  | Amount      | Proposed Action   |
|-----------|--|--|-------------|---|
| PR033     | Marathon Trail - Williams Field Road to Hunt Highway             | Construct paved concrete shared use path and associated amenities for approximately 8.0 miles along the East Maricopa Floodway. Partner with the Flood Control District of Maricopa County.        | \$8,409,000 | Construct as planned.   |
| PR058     | Rittenhouse Trail - Williams Field Road to Power Road            | Construct paved concrete shared use path and associated amenities for approximately 1.4 miles along the old Rittenhouse Road alignment.  | \$5,048,000 | Construct as planned.   |
| PR084     | Santan Vista Trail - Phase II - Warner Road to Ray Road          | Construct paved concrete shared use path and associated amenities for approximately 1.1 miles along the Eastern Canal. Coordinate with Union Pacific Railroad (UPRR) where trail crosses railroad. | \$1,810,000 | Construct as planned.   |
| PR085     | Santan Vista Trail - Phase II - Ray Road to Germann Road         | Construct paved concrete shared use path and associated amenities for approximately 3.2 miles along the Eastern Canal.   | \$4,523,000 | Construct as planned.   |
| PR088     | Roosevelt Water Conservation District (RWCD) Pedestrian Crossing | Construct crossing of the RWCD tail-water ditch adjacent to the existing Eastern Canal.  | \$110,000   | Construct as planned.   |
| PR095     | Trail Crossing Signals - Phase II Later Groups                   | Install HAWK pedestrian hybrid beacons or traffic signals at various trail arterial street crossings. Refer to PR095 in Table 7-2  | \$2,355,000 | Utilize recommended locations from the finalized <i>Parks, Recreation, and Trails Master Plan</i> . |
| PR097     | Santan Vista Trail - Phase IV - Baseline Road to Guadalupe Road  | Construct paved concrete shared use path and associated amenities for approximately 1.1 miles along the Eastern Canal.   | \$1,341,000 | Construct as planned.   |
| ST098     | Higley Road - Riggs Road to Hunt Highway                         | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 1.0 mile.  | \$6,444,000 | Construct as planned.   |

**TABLE 7-3: BICYCLE-RELATED CIP PROJECTS: 2018-2019 TO 2022-2023 (CONTINUED)**

| Project # | Project Description                                       | Project Details  | Amount       | Proposed Action   |
|-----------|---|--|--------------|---|
| ST112     | Val Vista Drive – Appleby Road to Riggs Road              | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 2.2 miles. Joint project with Chandler – Gilbert is the lead agency.                 | \$15,618,000 | Construct as planned.   |
| ST114     | Lindsay Road – Queen Creek Road to Ocotillo Road          | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 1.0 mile.  | \$5,991,000  | Construct as planned.   |
| ST117     | Lindsay Road – Pecos Road to Germann Road                 | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 1.0 mile.  | \$2,204,000  | Change southern limit in project title to Santan Freeway to better reflect actual project limits. Construct as planned. |
| ST118     | Warner Road – Power Road to 0.25 miles west of Power Road | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 0.25 miles.  | \$1,844,000  | Construct as planned.   |
| ST120     | Power Road – Guadalupe Road to Santan Freeway             | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 2.3 miles. Joint project with Mesa and Maricopa County – Gilbert is the lead agency. | \$7,427,000  | Construct as planned.   |



**TABLE 7-4: BICYCLE-RELATED CIP PROJECTS BEYOND 2022-2023**

| Project # | Project Description  | Project Details  | Amount       | Proposed Action       |
|-----------|--|--|--------------|-----------------------|
| ST054     | Ocotillo Road – Greenfield Road to Higley Road                             | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 0.8 miles.   | \$20,711,000 | Construct as planned. |
| ST071     | Baseline Road – Burk Street to Consolidated Canal                          | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 0.9 miles. Joint project with Mesa – Mesa is the lead agency.              | \$2,373,000  | Construct as planned. |
| ST078     | Baseline Road – Greenfield Road to Power Road                              | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 1.7 miles. Joint project with Mesa – Gilbert is the lead agency.           | \$16,907,000 | Construct as planned. |
| ST080     | Recker Road – Ocotillo Road to Chandler Heights Road                       | Improve to full minor collector roadway cross-section, including bike lanes, for approximately 1.0 mile. Joint project with Queen Creek – Gilbert is the lead agency.    | \$5,308,000  | Construct as planned. |
| ST084     | Hunt Highway – Val Vista Drive to 164 <sup>th</sup> Street                 | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 1.5 miles.   | \$12,801,000 | Construct as planned. |
| ST096     | Recker Road – 0.13 miles north of Ray Road to 0.25 miles north of Ray Road | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 0.12 miles.  | \$1,832,000  | Construct as planned. |
| ST099     | Ocotillo Road – Val Vista Drive to Greenfield Road                         | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 1.0 mile.  | \$10,506,000 | Construct as planned. |
| ST102     | Ocotillo Road – Recker Road to Power Road                                  | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 1.0 mile. Joint project with Queen Creek – Queen Creek is the lead agency. | \$1,543,000  | Construct as planned. |

**TABLE 7-4: BICYCLE-RELATED CIP PROJECTS BEYOND 2022-2023  
(CONTINUED)**

| Project # | Project Description                            | Project Details   | Amount       | Proposed Action  |
|-----------|--|---|--------------|--|
| ST115     | Hunt Highway – Higley Road to Recker Road      | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 1.1 miles.  | \$14,681,000 | Construct as planned.  |
| ST116     | Recker Road – Riggs Road to Hunt Highway       | Improve to full major collector roadway cross-section, including bike lanes, for approximately 1.0 mile.  | \$7,951,000  | Construct as planned.  |
| ST127     | Val Vista Drive – Riggs Road to Hunt Highway   | Improve to full minor arterial roadway cross-section, including bike lanes, for approximately 1.0 mile.   | \$5,375,000  | Construct as planned.  |
| ST128     | Ray Road - Val Vista Drive to Power Road       | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 4.0 miles.  | \$15,187,000 | Change western project limit to Banning Street and adjust budget as needed to account for segments already constructed.    |
| ST145     | Germann Road – Gilbert Road to Val Vista Drive | Improve to full major arterial roadway cross-section, including bike lanes, for approximately 2.0 miles. Also includes improving Lindsay Road to full minor arterial roadway cross-section, including bike lanes, from Germann Road to 0.13 miles north of Germann Road | \$12,386,000 | Consider advancing this project if funding becomes available due to traffic and development demands. Construct as planned. |

## F. Recommendations

A comparison of the aforementioned CIP projects to the existing bicycle network identified the remaining gaps in the bicycle network once all the CIP projects are implemented. Remaining bicycle network gaps consist primarily of:



- Missing bike lane segments on arterial streets in older developed parts of town
- Missing bike lane segments on arterial streets where the adjacent land is undeveloped
- Missing shared use path segments along the existing Western Canal Powerline Trail and Santan Freeway Trail
- Missing shared use path segments along the proposed Queen Creek Trail and Sonoqui Wash Trail

It is recommended that the Town of Gilbert put highest priority on eliminating any relatively inexpensive gaps in the on-street bike lane network, gaps in the shared use paved paths of the existing trail network, and gaps in areas of high bicycle activity such as the Heritage District. The elimination of multiple gaps could potentially be combined into a single project for cost-effectiveness.

Tables 7-5, 7-6 and 7-7 describe the remaining bicycle network gaps based on the nature of the gap. The gaps are sorted by the suggested priority for eliminating the gap and then alphabetically by gap location. Priorities are classified as high (ideally within the next 5 years), medium (ideally within the next 10 years), and low (ideally within the next 20 years). Proposed tools/comments regarding how to address the bicycle network gaps are provided. The bicycle network gaps are also shown graphically in Figure 7-2.

Table 7-5 describes the bike lane gaps in areas that are improved, meaning the adjacent land is generally developed already with infrastructure improvements in place, although there may be isolated vacant parcels. The Town of Gilbert will likely need to develop projects to address the gaps in Table 7-5. Table 7-6 describes the bike lane gaps in areas that are currently unimproved, meaning the areas where adjacent land is undeveloped with few infrastructure improvements in place but will likely be developed in the future. The gaps in Table 7-6 will likely be addressed as new development improves the adjacent street network per Town development requirements. Table 7-7 describes the gaps in the shared use path network. The Town of Gilbert will likely need to develop projects to address the gaps in Table 7-7.

**TABLE 7-5 – REMAINING BICYCLE NETWORK GAPS: BIKE LANES  
IN IMPROVED AREAS**

| Gap Location   | From           | To                              | Proposed Tool/Comments   | Implementation Priority |
|----------------|----------------|---------------------------------|--|-------------------------|
| Elliot Road    | Neely Street   | Gilbert Road                    | Install bike lanes by narrowing vehicle lanes and restriping street.   | High                    |
| Gilbert Road   | Baseline Road  | 0.15 miles south of Elliot Road | Install bike lanes by narrowing vehicle lanes and restriping street where feasible; space for bike lanes will be created on the north and south legs of the Gilbert Road/ Guadalupe Road intersection as part of ST129. Install shared lane markings in conjunction with green colored pavement in the Heritage District where there is not enough space for bike lanes. Conduct a Heritage District Bicycle and Pedestrian Plan to determine appropriate bicycle and pedestrian facilities on all streets in the Heritage District; may include designating local streets as alternate bike routes and developing a bike route map. Consider converting flush median to raised median to better control access and promote safety | High                    |
| Arizona Avenue | Baseline Road  | Guadalupe Road                  | Install bike lanes by narrowing vehicle lanes and restriping street; joint project with Mesa – Mesa is the lead agency.  | Medium                  |
| Baseline Road  | Arizona Avenue | Horne Street                    | Install bike lanes by narrowing vehicle lanes and restriping street; existing paved striped shoulder is too narrow; joint project with Mesa – Mesa is the lead agency.   | Medium                  |
| Cooper Road    | Sherri Drive   | Ray Road                        | Install bike lane on west side by narrowing vehicle lanes and restriping street; existing bike lane already on east side; joint project with Chandler – Chandler is the lead agency.   | Medium                  |

**TABLE 7-5 – REMAINING BICYCLE NETWORK GAPS: BIKE LANES  
IN IMPROVED AREAS (CONTINUED)**

| Gap Location                 | From                     | To            | Proposed Tool/Comments  | Implementation Priority |
|------------------------------|--------------------------|---------------|---|-------------------------|
| McQueen Road                 | Elliot Road              | Knox Road     | Install bike lanes by narrowing vehicle lanes and restriping street; existing bike lane already on west side between Elliot Road and Mesquite High South Drive; joint project with Chandler – Gilbert is the lead agency north of Warner Road and Chandler is the lead agency south of Warner Road. | Medium                  |
| Val Vista Road               | Guadalupe Road           | Baseline Road | Install bike lanes by narrowing vehicle lanes and restriping street.  | Medium                  |
| Warner Road                  | McQueen Road             | Cooper Road   | Install bike lanes by narrowing vehicle lanes and restriping street.  | Medium                  |
| Chandler Heights Road        | Recker Road              | Power Road    | Install bike lanes if and when street is widened and improved to add vehicle lanes; joint project with Queen Creek – Queen Creek is the lead agency.  | Low                     |
| Hunt Highway/<br>Stacey Road | 164 <sup>th</sup> Street | Higley Road   | Install bike lanes by narrowing vehicle lanes and restriping street if and when street is improved to provide continuity between adjacent Hunt Highway segments.  | Low                     |

**TABLE 7-6 – REMAINING BICYCLE NETWORK GAPS: BIKE LANES  
IN UNIMPROVED AREAS**

| Gap Location | From                             | To                                 | Proposed Tool/Comments   | Implementation Priority |
|--------------|----------------------------------|------------------------------------|--|-------------------------|
| Gilbert Road | Pecos Road                       | 0.13 miles south of Santan Freeway | Install bike lane on east side when street is widened and improved as the adjacent land develops, which is imminent; existing bike lane already on west side; joint project with Chandler – Chandler is the lead agency. | High                    |
| Higley Road  | 0.13 miles north of Pecos Road   | 0.13 miles south of Pecos Road     | Install bike lane on west side when street is widened and improved as the adjacent land develops, which is imminent; existing bike lane already on east side.  | High                    |
| Pecos Road   | Gilbert Road                     | Lindsay Road                       | Install bike lane on south side when street is widened and improved as the adjacent land develops, which is imminent; existing bike lane already on north side.  | High                    |
| Elliot Road  | 0.25 miles east of Recker Road   | Power Road                         | Install bike lanes when street is widened and improved as the adjacent land develops; existing bike lane already on north side for part of segment.  | Medium                  |
| Higley Road  | Mesquite Street                  | Santan Freeway                     | Install bike lanes when street is widened and improved as the adjacent land develops; space for bike lanes will be created on the north and south legs of the Higley Road/ Warner Road intersection as part of ST152.    | Medium                  |
| Lindsay Road | 0.13 miles south of Germann Road | Ryan Road                          | Install bike lanes when street is widened and improved as the adjacent land develops; existing bike lane already on west side for part of segment.   | Medium                  |
| Recker Road  | Mesquite Street                  | Warner Road                        | Install bike lanes when street is widened and improved as the adjacent land develops.  | Medium                  |
| Recker Road  | Ray Road                         | Vest Avenue                        | Install bike lanes when street is widened and improved as the adjacent land develops.  | Medium                  |

**TABLE 7-6 – REMAINING BICYCLE NETWORK GAPS: BIKE LANES  
IN UNIMPROVED AREAS (CONTINUED)**

| Gap Location          | From                     | To                            | Proposed Tool/Comments  | Implementation Priority |
|-----------------------|--------------------------|-------------------------------|---|-------------------------|
| Warner Road           | Higley Road              | 0.25 miles west of Power Road | Install bike lanes when street is widened and improved as the adjacent land develops; space for bike lanes will be created on the east leg of the Higley Road/Warner Road intersection as part of ST152.      | Medium                  |
| Chandler Heights Road | 148 <sup>th</sup> Street | Val Vista Drive               | Install bike lanes when street is widened and improved as the adjacent land develops; joint project with Chandler – Chandler is the lead agency.  | Low                     |
| Ocotillo Road         | Lindsay Road             | Val Vista Drive               | Install bike lanes when street is widened and improved as the adjacent land develops; existing bike lane already on north side for part of segment; joint project with Chandler – Gilbert is the lead agency. | Low                     |



**TABLE 7-7 – REMAINING BICYCLE NETWORK GAPS: SHARED USE  
PAVED PATHS**

| Gap Location                  | From   | To   | Proposed Tool/Comments   | Implementation Priority |
|-------------------------------|--|--|--|-------------------------|
| Western Canal Powerline Trail | Lindsay Road                                 | SRP Powerline Trail  | Pave existing shared use unpaved trail and widen existing sidewalk to create a shared use paved path.  | High                    |
| Western Canal Powerline Trail | Neely Street                                 | 0.1 miles east of UPRR railroad tracks                           | Install shared use paved path; consider grade separation over railroad.  | High                    |
| Queen Creek Trail             | Power Road                                   | East Maricopa Floodway (EMF) (0.13 miles east of Greenfield Road | Install shared use paved path; connect to existing shared use paved path east of Power Road; consider locating path underneath Power Road and Higley Road or providing HAWK/signalized crossings.  | Medium                  |
| Santan Freeway Trail          | Gilbert Road                                 | Lindsay Road   | Install shared use paved path; should include bridge across Eastern Canal.   | Medium                  |
| Santan Freeway Trail          | Santan Village Parkway                       | 0.25 miles east of Greenfield Road                               | Install shared use paved path; consider grade separating the path underneath UPRR railroad track and Ray Road bridges with a connection to Ray Road.   | Medium                  |
| Western Canal Powerline Trail | 0.25 miles west of Power Road                | Power Road   | Install shared use paved path; will require new right-of-way or easement; may be able to be incorporated into a development agreement if land develops; coordinate with Mesa to encourage extension of path between Power Road and EMF to connect to Marathon Trail. | Medium                  |
| Sonoqui Wash Trail            | Queen Creek (0.13 miles west of Higley Road) | Power Road   | Install shared use paved path; consider locating path underneath Higley Road and Ocotillo Road or providing HAWK/signalized crossings.   | Low                     |

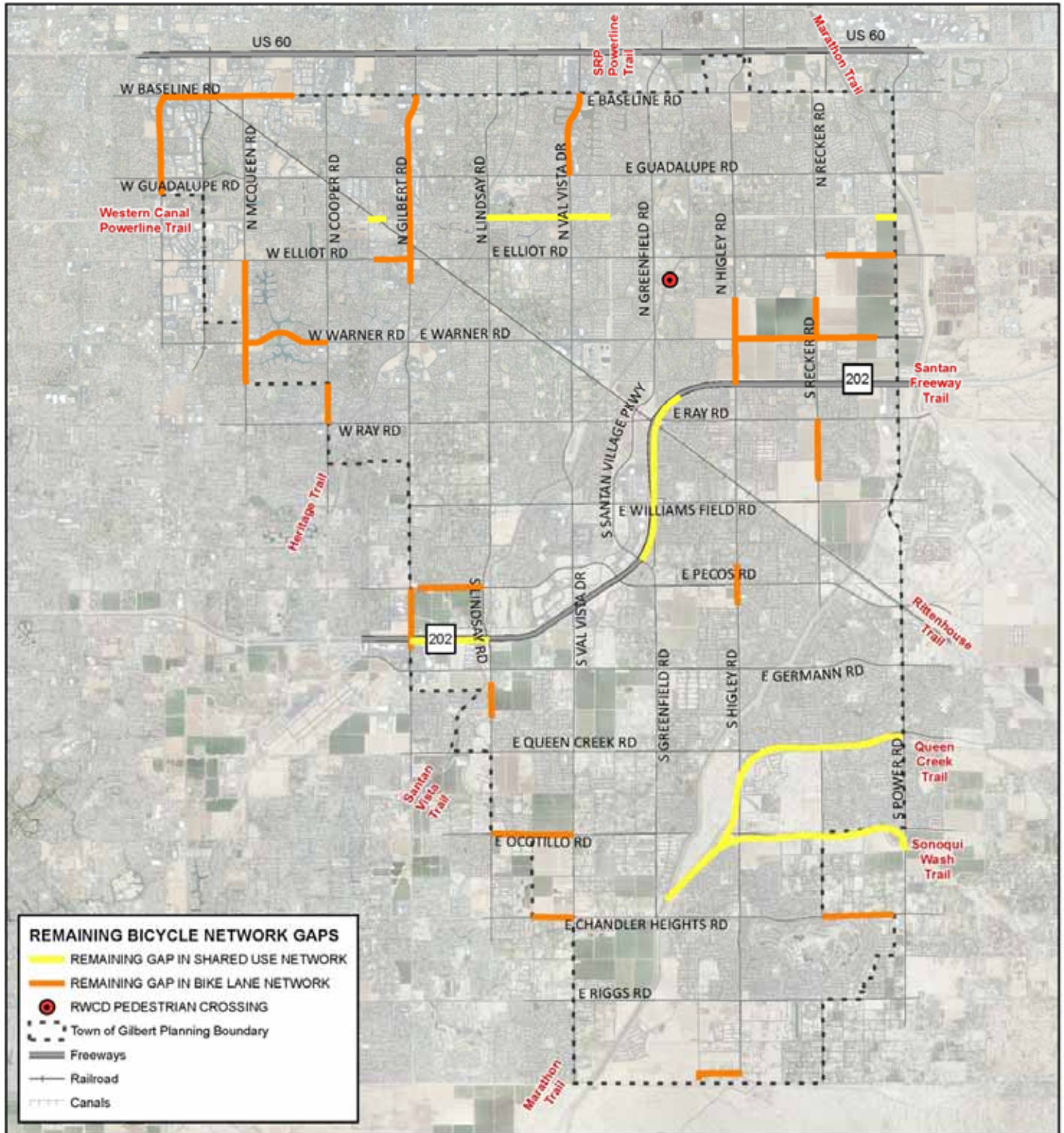


FIGURE 7-2 – REMAINING BICYCLE NETWORK GAPS