



WALK & BIKE PLAN



TOWN OF PARADISE VALLEY

DRAFT January 31st, 2018

ACKNOWLEDGEMENTS

This Plan would not have been possible without the participation of Town residents, resort representatives, and area bicycle and pedestrian advocates and professionals. The Town of Paradise Valley and the consultant team would like to thank them and the following groups for their thoughtful contributions and support in preparing the Paradise Valley Walk & Bike Plan; a long-range vision for making Paradise Valley a bicycle and pedestrian accessible Town.

Town Council

Mayor Michael Collins
Vice Mayor Jerry Bien-Willner
Council Member Paul Dembow
Council Member Scott Moore
Council Member Julie Pace
Council Member Mark Stanton
Council Member David Sherf

Planning Commission

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James Anton
Thomas G. Campbell
Charles Covington
Dolf Strom
Jonathan Wainwright
Richard K. Mahrle [until december 2017]

Staff and the Technical Advisory Committee

Kevin Burke, Town Manager
Eva Cutro, Community Development Director
Paul Michaud, Project Manager/Senior Planner
Dawn-Marie Buckland, Deputy Town Manager
Freeman Carney, Lieutenant – Police Department
Richard Edwards, Senior Engineering Technician
Rick Mahrle, Planning Commissioner
Andrew Miller, Town Attorney
Natalie Montenegrino, Executive Assistant
Jay Ozer, Advisory Committee on Public Safety
Deborah Robberson, Deputy Town Attorney
Chief Wingert, Police Chief

Consultant Team

Jim Coffman, Coffman Studio
Justin Azevedo, Coffman Studio
Dean Chambers, J2 Engineering and Environmental Design
Jamie Blakemen PE, J2 Engineering and Environmental Design
Jamie Cowgill, JRC
Leslie Dornfeld FAICP, Planet Communities



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Why this Plan

This Plan completes a 2012 General Plan Implementation Measure and a Quality of Life Initiative of the Town Council. It moves the Town closer to being a “pedestrian and bicycle friendly town”, as envisioned in the General Plan. Funding for this project was part of the Council approved Capital Improvement Program (CIP). The pedestrian and bicycle network of Paradise Valley can be uniquely responsive to the varied people, landscape and character of the Town. Pedestrian and bicycle facilities can help to create great experiences for all users, while sensitively complimenting neighborhoods. Streetscapes and corridors can enhance the look, feel and functionality of the streets and washes while making them safer and more enjoyable for everyone who walks, drives, or rides a bike in Paradise Valley. This Plan provides the means by which these things can happen.

Guiding Principles






-  **PRIORITIZE SAFETY AND ENFORCEMENT**
for the friendly co-existence of pedestrians and bicyclists, along with policies, and enforcement measures that foster a safe and non-confrontational environment.
-  **IMPLEMENT A RESORT LOOP**
to provide a safe and shared-use pedestrian and bicycle facility along the identified resort loop area.
-  **FOCUS PEDESTRIAN FACILITIES**
on primarily non-local streets in areas that serve resort destination areas, provide access to nearby trailheads, and/or complete missing gaps.
-  **FOCUS BICYCLE FACILITIES**
on a few select non-local streets that provide connectivity across Town.
-  **SUPPORT EXISTING RURAL DESIGN ELEMENTS**
to avoid overly urban design elements. Facilities should be compatible to not only the individual street classifications, but each road’s individual neighborhood character. Avoid more urban elements such as concrete, pavement, signage, etc and favor more rural less intense facilities.
-  **ADDRESS MITIGATION OF CONFLICTS**
through the discouragement of cut-through travel, corridor design that eases unsafe conditions between different modes of travel, abatement of unintended nuisances, accommodation of storm water passage, and involvement of Town-sponsored committees in supporting user group education..



Figure 1-1

* **LIMIT SIGNAGE**

to avoid new signage, and include only where necessary to ensure public safety and usability. Where used, signage should blend into the environment and be consistent and of a high quality.

* **COORDINATE WITH TOWN PLANNING EFFORTS**

by complimenting the ongoing Visually Significant Corridor Plan and the 2012 General Plan.

* **IDENTIFY COSTS & PHASING**

by including a proposed phasing methodology and a breakdown of costs associated with the complete build out of this Plan.

* **ENSURE DOCUMENT READABILITY AND CLARITY**

so that it can be easily read and understood.

* **PRIORITIZE PROJECTS**

such that, where practicable, prioritization of non-motorized facility projects should first address existing deficiencies with motorized facilities, such as traffic congestion and roadway repairs.

Mission



Make the Town of Paradise Valley a pedestrian and bicycle-friendly town focused foremost on its residents. The non-motorized circulation system will offer safe, walkable and bikeable environments that are compatible with the low-density, natural desert environment and design excellence for which the Town is known. This system will be supported by rule enforcement and education to best mitigate conflicts between different travel modes. It will provide a well-maintained, and interconnected

pedestrian network of recreational paths, sidewalks, and trails that are enjoyable places to walk, run, and hike. Residents will have access to a designated bicycle circulation system located primarily on non-local roadways that provide access to local destinations such as resorts, schools, and nearby hiking spots. Bicyclists will be buffered from motor vehicles on more heavily traveled roads. Wayfinding for this bicycle circulation system will provide the least impactful signage that is both designed and in character to its location. Residents

will be encouraged to integrate walking and bicycling into their daily activities to promote a healthier lifestyle and improve energy resource conservation. By making the town's non-motorized circulation system safe and enjoyable for its residents, this will additionally benefit the needs of employees within the town, resort guests, and people of all ages and abilities.



Background

PLAN'S RELATIONSHIP TO THE 2012 GENERAL PLAN

The Town's Walk & Bike Plan builds off and seeks to implement the Town's resident-ratified 2012 General Plan as it relates to non-motorized means of travel within Paradise Valley. This Plan aims to complement the vision for the Town described in the General Plan. Also, it seeks to develop a more detailed implementation of the non-motorized goals and policies of the General Plan through expanded implementation measures. The Walk & Bike Plan is a stand-alone document that provides additional detail while supporting the General Plan.



Figure 1-2

DIRECTION OF WALK & BIKE PLAN

Paradise Valley's beautiful setting and low-density desert lifestyle - a 'Premier Residential Community', in the center of a 4.5 million population metropolis, is both its greatest asset and challenge. Residents, tourists, and local visitors are drawn here and to the many attractions within and surrounding Paradise Valley. The people that use these facilities can be broken into two major categories and multiple sub-categories:

- Pedestrians
 - * Casual/ Recreation
 - * Avid individuals/ pairs
 - * Avid Groups
- Bicyclists
 - * Family recreational small groups
 - * Avid recreation individuals/ pairs
 - * Avid recreational groups (Pelotons)
 - * Individual commuting

The Town has invested in a multi-modal circulation system through policies and physical improvements including bike lanes, recreational paths, sidewalks, and trails. The improvements at this time are incomplete and present a patchwork of facilities, some disconnected from each other and thereby hampering opportunities to provide non-motorized connections and loops to the many desired destinations. The greatest challenge of this Plan is to strike a balance; between the needs of residents and visitors, between facility improvements and respect for the low-density desert character, and between guiding people to destinations without distracting from the visual quality from which the Town derives its proud name.

The public input process occurring over two years included thirteen separate events that are in addition to Planning Commission and Town Council meetings. These events

included seven gatherings geared to present information and solicit resident input through group activities: three open houses and four stakeholder meetings. In total, excluding staff/consultants, 95 persons attended these seven events. Two other gatherings were done in conjunction with two Town gatherings, the Car Show and the Safety Fair. At least 50 people came through the booth at the car show and the safety fair. There were three online surveys conducted. In total, 383 persons took the surveys of which 286 reside in Paradise Valley's zip code: 85253. The consultant also interviewed or received completed surveys from seven local resort concierges.

The input received in the aforementioned public input process, Planning Commission, and Town Council meetings helped to provide the direction for the Walk & Bike Plan.

See the appendix for additional background information

81% of people in paradise valley walk or bike regularly

* Self-selecting survey results for 213 responses in zip code 85253

people who walk in paradise valley




 Yes 79.81% (166)

 No 20.19% (42)

Figure 1-3

facilities people use for walking



 Walk along the Street - 145
 Sidewalks - 142



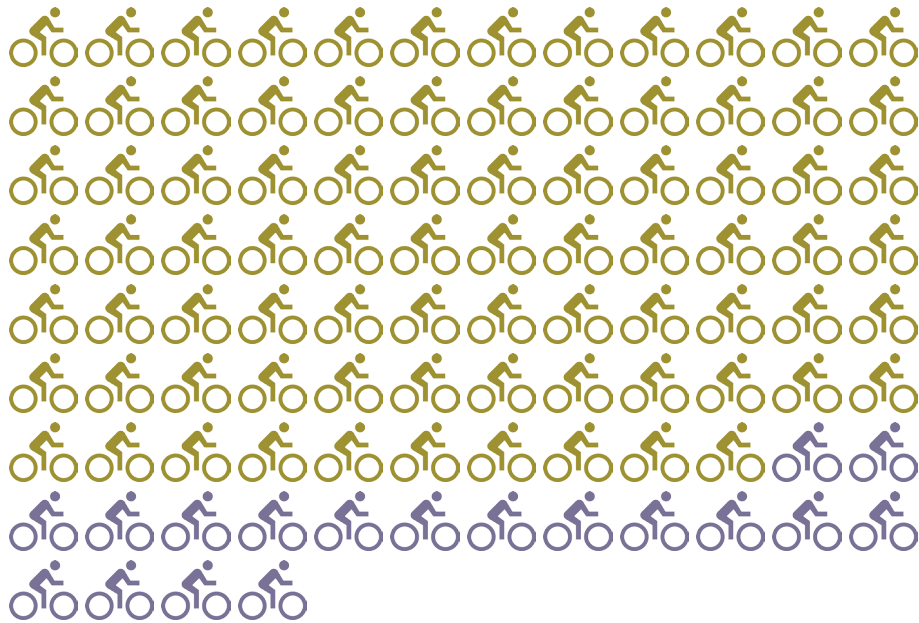
 Unpaved Trails/Surfaces - 71
 Recreational Paths - 63

Figure 1-4

people who bike in paradise valley



 Yes 82.08% (174)


 No 17.92% (38)

Figure 1-5

facilities people use for biking

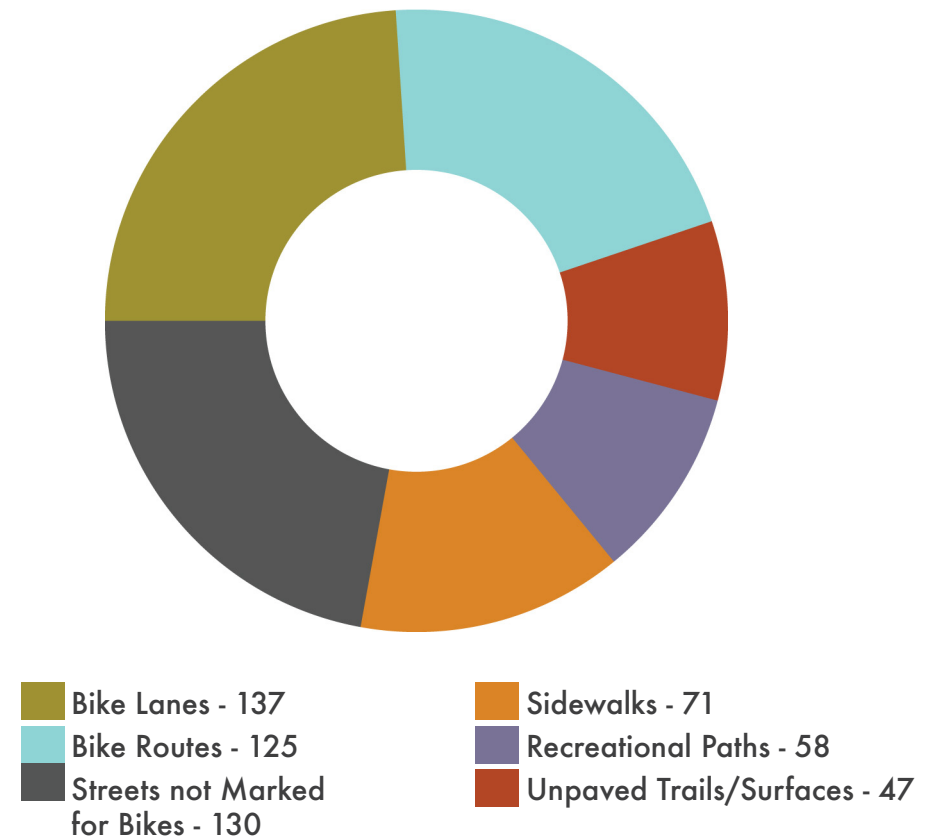


Figure 1-6

Benefits



SAFETY.

Comparing 10 U.S. cities between 2000 and 2015 where recent implementation of improved cycling infrastructure has occurred, there have been significant improvements to cycling safety. Paradise Valley could expect to see similar results.



QUALITY OF LIFE.

Accommodating pedestrians and cyclists lessens noise and congestion, increases opportunities for social interaction, affords opportunities for residents to recreate, and aids in tourism to the Town's local resorts.



HEALTH.

The health benefits of regular physical activity are far-reaching: reduced risk of coronary heart disease, stroke, diabetes, and other chronic diseases; lower health care costs; and improved quality of life for people of all ages.



ACCESSIBILITY.

An improved pedestrian network leads to greater access to more destinations by people without access to a vehicle such as persons with disabilities, older residents, youth, and visitors.



TRANSPORTATION SYSTEM.

Walking and biking is a low cost, healthy alternative to driving in single occupancy vehicles.



ENVIRONMENTAL.

Walking and biking help reduce air pollution by reducing the amount of emissions produced by motor vehicles.



ECONOMIC.

When safe facilities are provided to pedestrians and bicyclists, people can walk and ride more and spend less on transportation. Furthermore, an increasing number of studies show that bicycle and pedestrian facilities increase home values, drive spending at local businesses, and spur economic development in communities.

Safety Tips

PEDESTRIANS

- OBEY TRAFFIC LAWS
- WALK ON THE SIDEWALK WHENEVER ONE IS AVAILABLE
- WHEN POSSIBLE, WALK ON THE LEFT SIDE FACING THE TRAFFIC
- BE CAUTIOUS ON STEEP INCLINES AND AROUND BLIND CURVES
- WEAR CLOTHING AND USE LIGHTS THAT INCREASE YOUR VISIBILITY

BICYCLISTS

- OBEY STOP SIGNS AND OTHER TRAFFIC LAWS
- NEVER RIDE MORE THAN TWO ABREAST
- RIDE WITH TRAFFIC
- BE CAUTIOUS ON STEEP INCLINES AND AROUND BLIND CURVES
- WEAR CLOTHING AND USE LIGHTS THAT INCREASES YOUR VISIBILITY

MOTORISTS

- OBEY STOP SIGNS AND OTHER TRAFFIC LAWS
- BE AWARE & DRIVE SLOWLY AROUND BICYCLISTS AND PEDESTRIANS
- BE CAUTIOUS ON STEEP INCLINES AND AROUND BLIND CURVES
- KEEP A DISTANCE OF AT LEAST THREE (3) FEET OF SEPARATION WHEN PASSING BICYCLISTS

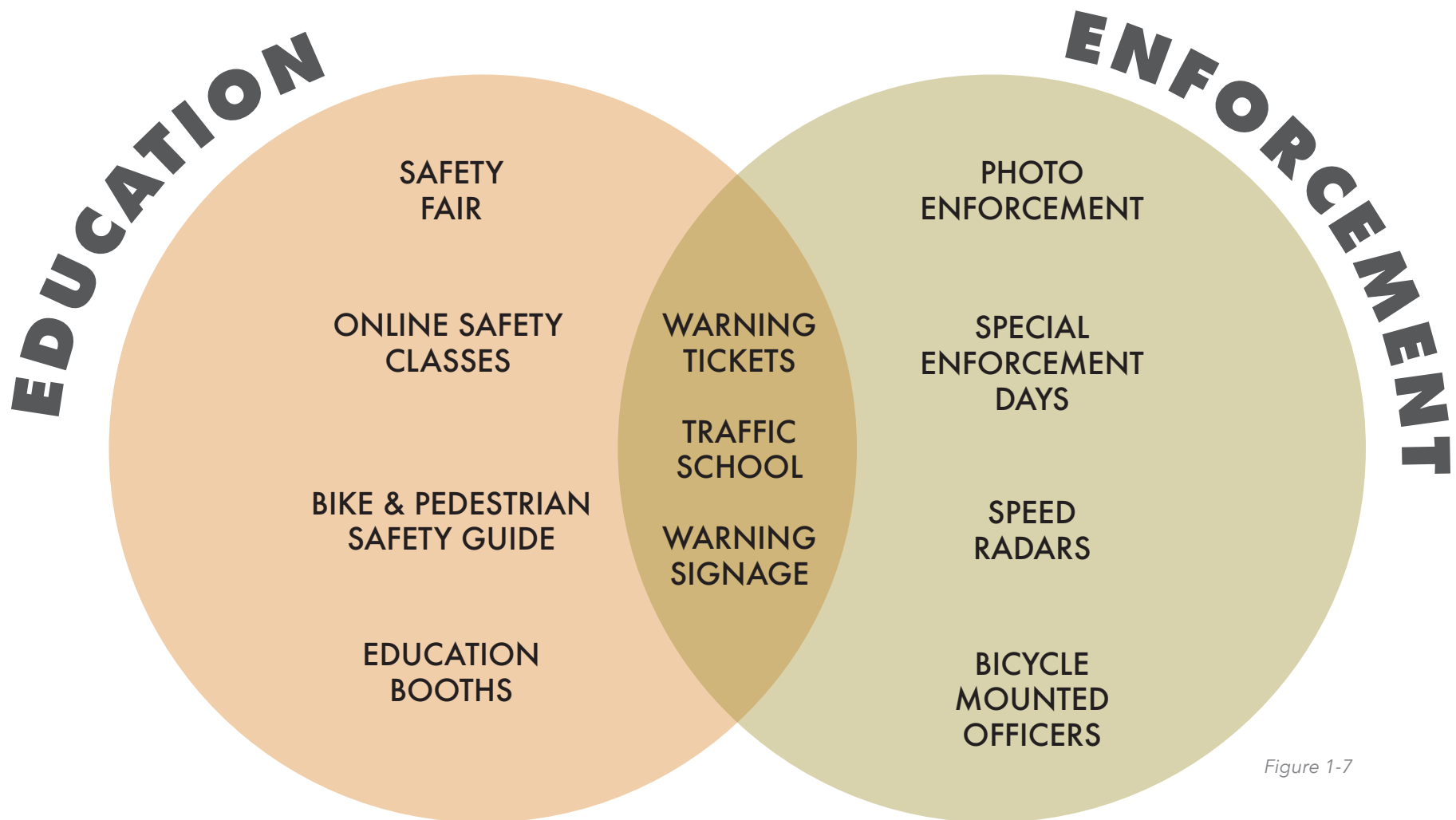


Figure 1-7

See appendix and use the Pedestrian and Bicycle Information Center (PBIC) for more information regarding bicycle and pedestrian education and enforcement

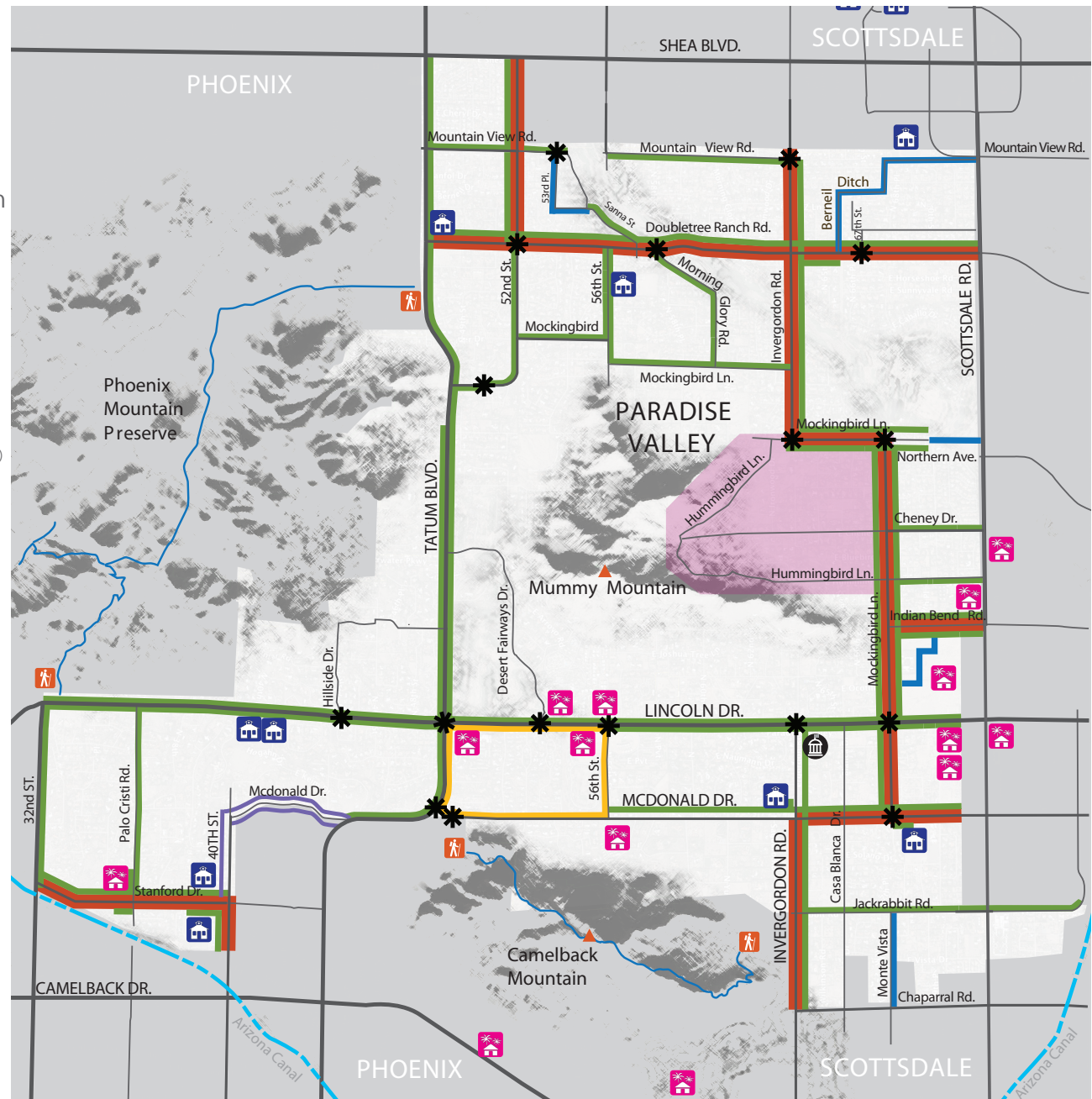
Proposed Pedestrian and Bicycle Map

The following map is the proposed built-out bicycle and pedestrian system for the Town of Paradise Valley. The exact location and need for individual facilities may change based on future growth.

LEGEND

- RECREATIONAL PATH (RESORT LOOP)
- SIDEWALK
- TRAIL
- BIKE LANE
- PAVED SHOULDER

- RESORT
- SCHOOL
- TRAILHEAD
- TOWN HALL
- ENHANCED CROSSING
- TRAFFIC STUDY AREA
- CANAL



Pedestrian Map

The following map is the proposed built-out pedestrian system for the Town of Paradise Valley, showing the existing facilities, existing Capital Improvement Project (CIP) facilities, and proposed facilities. The exact location and need for individual facilities may change based on future growth.

EXISTING

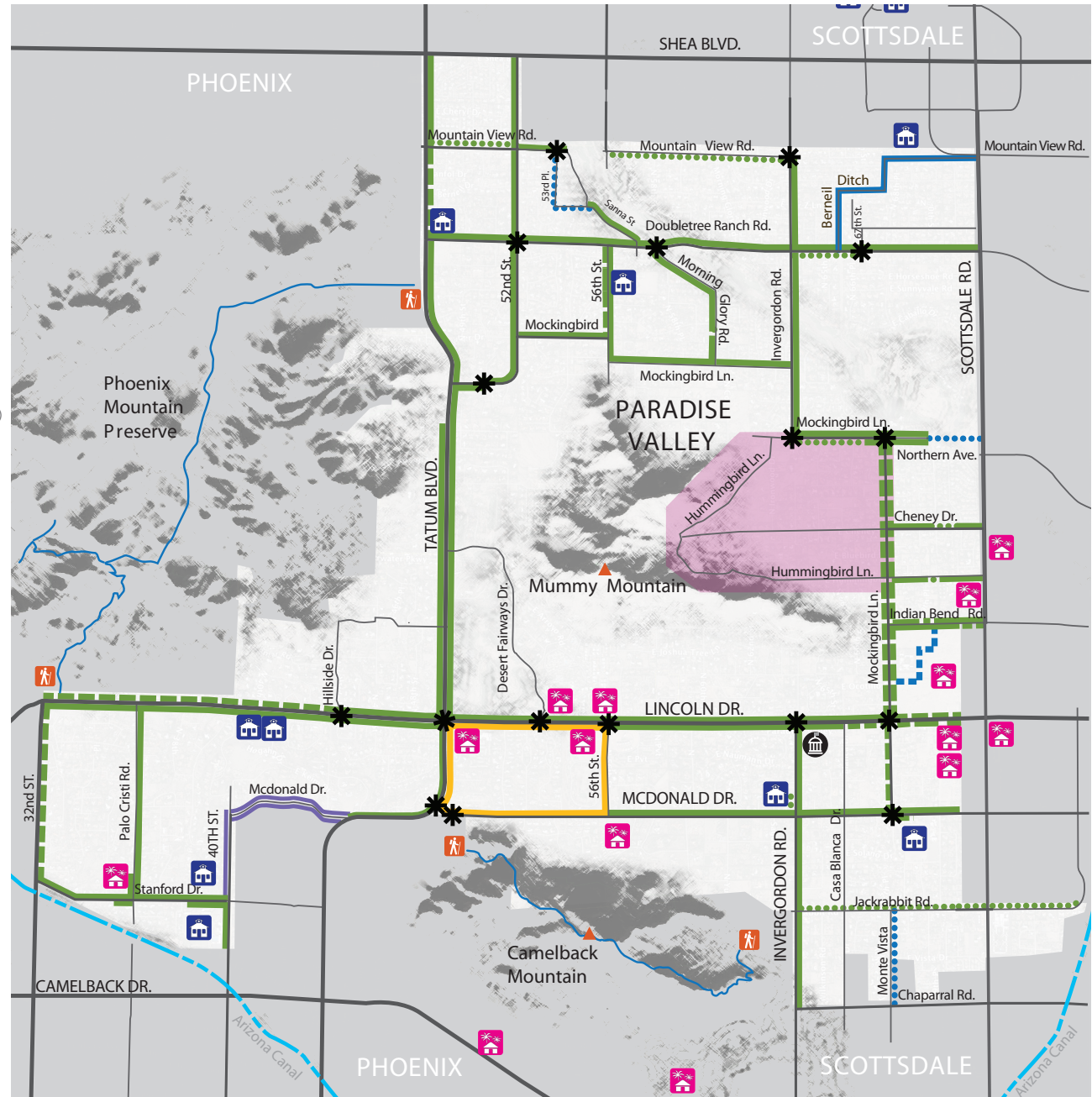
- RECREATIONAL PATH (RESORT LOOP)
- SIDEWALK
- TRAIL
- PAVED SHOULDER

EXISTING CIP

- SIDEWALK
- TRAIL

PROPOSED

- SIDEWALK
- TRAIL
- RESORT
- SCHOOL
- TRAILHEAD
- TOWN HALL
- ENHANCED CROSSING
- TRAFFIC STUDY AREA
- CANAL



Bicycle Map

Bicycle Map

The following map is the proposed built-out bicycle system for the Town of Paradise Valley, showing the existing facilities, existing Capital Improvement Project (CIP) facilities, and proposed facilities. The exact location and need for individual facilities may change based on future growth.

EXISTING

- RECREATIONAL PATH (RESORT LOOP)
- BIKE LANE

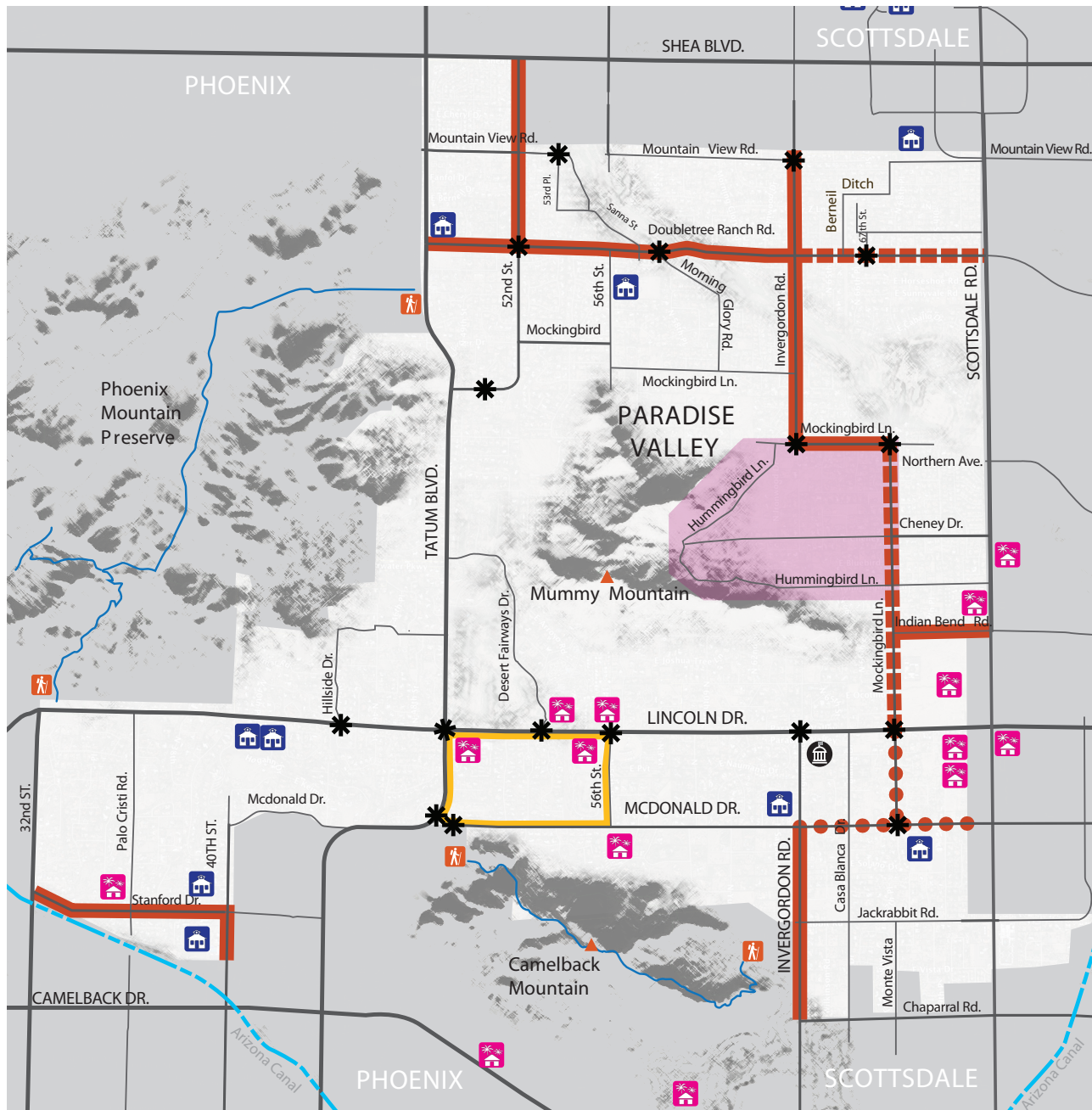
EXISTING CIP

- BIKE LANE

PROPOSED

- BIKE LANE

- RESORT
- SCHOOL
- TRAILHEAD
- TOWN HALL
- ENHANCED CROSSING
- TRAFFIC STUDY AREA
- CANAL



Street Classification Map

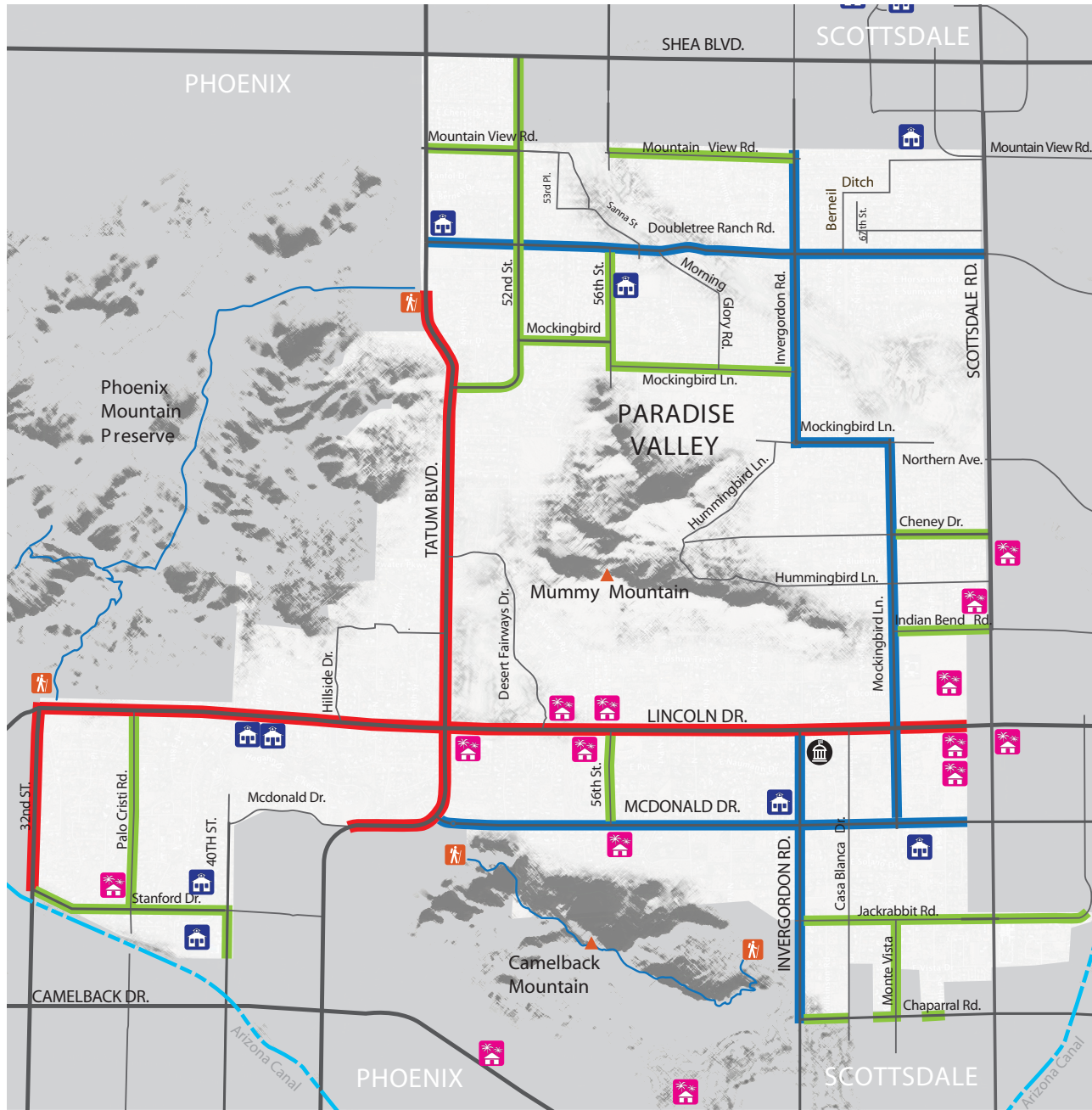
Street Classification Map

The following map shows the existing street classification for the Town of Paradise Valley and is directly from the 2012 General Plan. This map only depicts major arterials, minor arterials, and collectors; the remaining roads are considered local roads.

LEGEND

- MAJOR ARTERIAL
- MINOR ARTERIAL
- COLLECTOR

-  RESORT
-  SCHOOL
-  TRAILHEAD
-  TOWN HALL
- CANAL



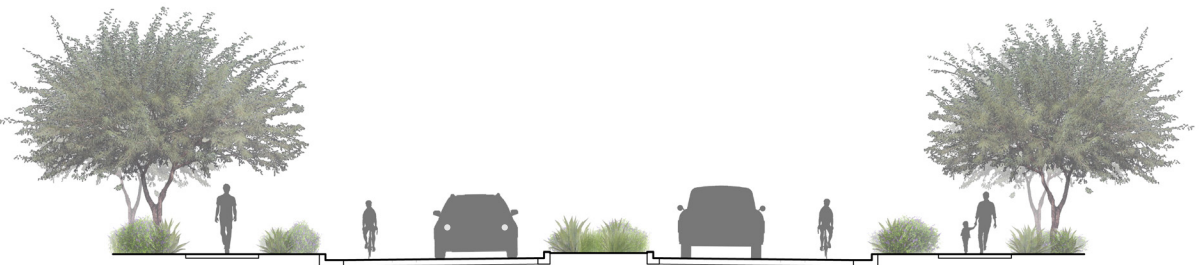
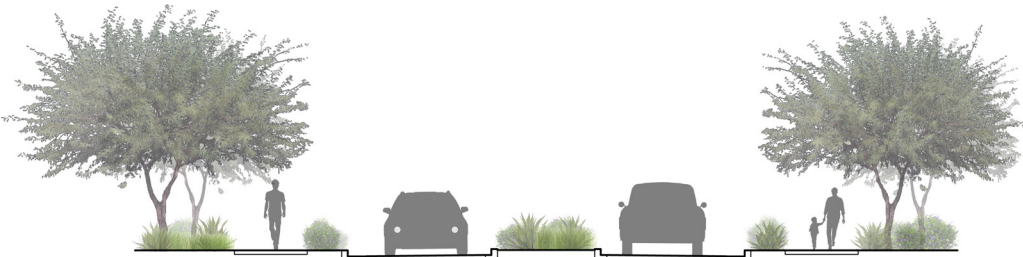
CROSS SECTIONS

The following cross sections depict typical motorist, pedestrian and bicycle facilities relating to the different road types and correlate directly with the street classifications map (Fig. 2-4.) The sections are to be used in conjunction with the maps in the Plan chapter to better understand the uses of each road type, and their relationships to each other.

There are eight street cross sections and three facility cross sections illustrated. Each classification is associated with a variety of functional and physical characteristics and are derived from the 2012 General Plan.

While these cross sections provide general guidance, the exact solution for any particular roadway will be determined by Federal Highway Administration (F.H.W.A.) and American Association of State Highway and Transportation Officials (A.A.S.H.T.O.) standards with direction from the Town Engineer, Planning Department, Public Works Department, Planning Commission and Town Council, as appropriate. These standards will also apply for the Town's consideration of private roadways proposed in conjunction with conditional use permit applications.

The following cross sections are organized by the street/ corridor type, illustrating and defining the function, recreational path, sidewalk, trail, bike lanes, curb & gutter, right-of-way (R.O.W.), travel lanes, and other unique characteristics.



Major Arterial

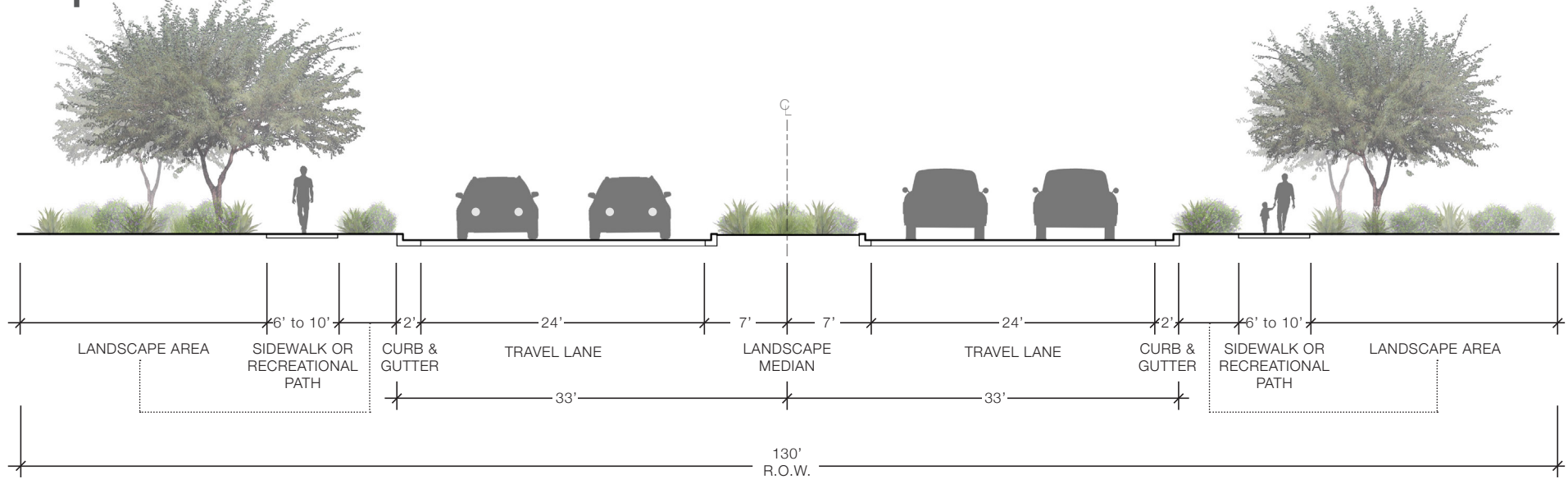


Figure 2-5

FUNCTION: Serves in regional unity and continuity.

RECREATIONAL PATH : Use a Recreational Path when within Resort Loop.

SIDEWALK : Construct a meandering Sidewalk, at a preferred set back a minimum of 5 feet from vehicle travel lanes, on both sides, except when within Resort Loop.

TRAIL : Has no trail.

BIKE LANES : Has no bike lanes.

CURB & GUTTER : Require full curb & gutter, as appropriate for accessibility, drainage and safety standards.

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 4 through-lanes, except for necessary turn lanes.

OTHER : Include channelized intersections, limited access, crossings, and stops. Parking on right-of-way prohibited.

Minor Arterial

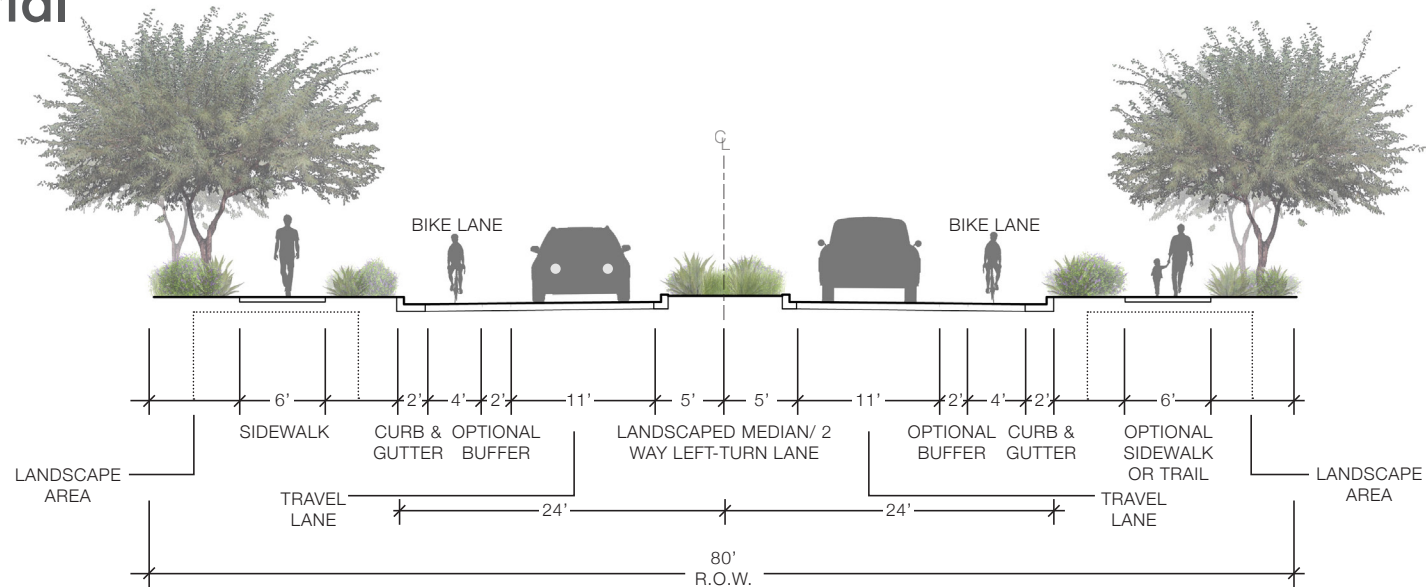


Figure 2-6

FUNCTION: Serves as a main feeder street and provide linkages between major arterials.

RECREATIONAL PATH : Has no Recreational Path.

SIDEWALK : Construct a meandering Sidewalk on one side of the street, at a preferred set back a minimum of 5 feet from vehicle travel lanes. Optional on opposite side on street.

TRAIL : Consider optional 4 to 6 foot wide Trail in lieu of optional Sidewalk.

BIKE LANES : **Require** bike lanes required, include buffers when possible.

CURB & GUTTER : Require full curb & gutter, as appropriate for accessibility, drainage and safety standards.

RIGHT-OF-WAY (R.O.W) : Require acquisition as needed. 66 foot right-of-way allowable in certain areas.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Include roundabouts encouraged for traffic control, as needed. Stop signs, if necessary, posted on intersecting side streets. Parking discouraged. Medians/ center turn lanes required.

Minor Arterial - McDonald Dr. [Tatum Blvd to Invergordon Rd]

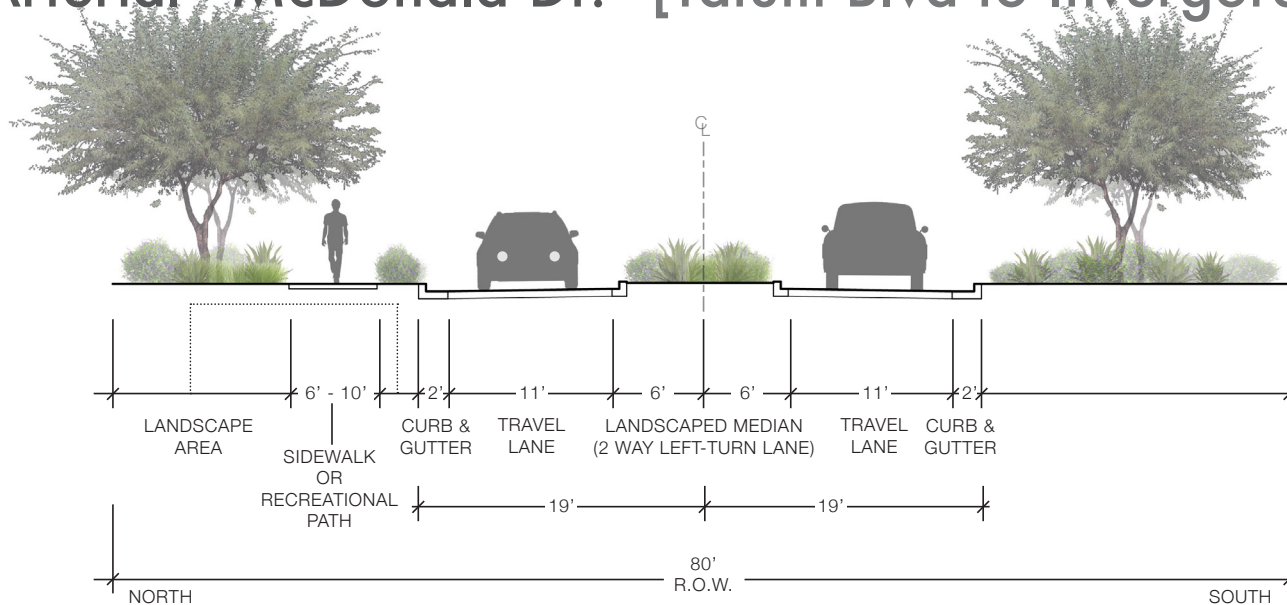


Figure 2-7

FUNCTION: Serves as a main feeder street and provide linkages between major arterials.

RECREATIONAL PATH : Has Recreational Path when within Resort Loop.

SIDEWALK : Construct a meandering Sidewalk on the north side of the street, at a preferred set back a minimum of 5 feet from vehicle travel lanes, on north side except when within the Resort Loop. No sidewalk on south side.

TRAIL : Has no trail.

BIKE LANES : Has no bike lanes, consider bike sharrows with speed limits below 25 mph.

CURB & GUTTER : Require full curb & gutter, as appropriate for accessibility, drainage and safety standards.

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Include roundabouts encouraged for traffic control, as needed. Stop signs, if necessary, posted on intersecting side streets. Parking discouraged. Medians/ center turn lanes required.

Minor Arterial - McDonald Dr. [Invergordon Rd to East Limits]

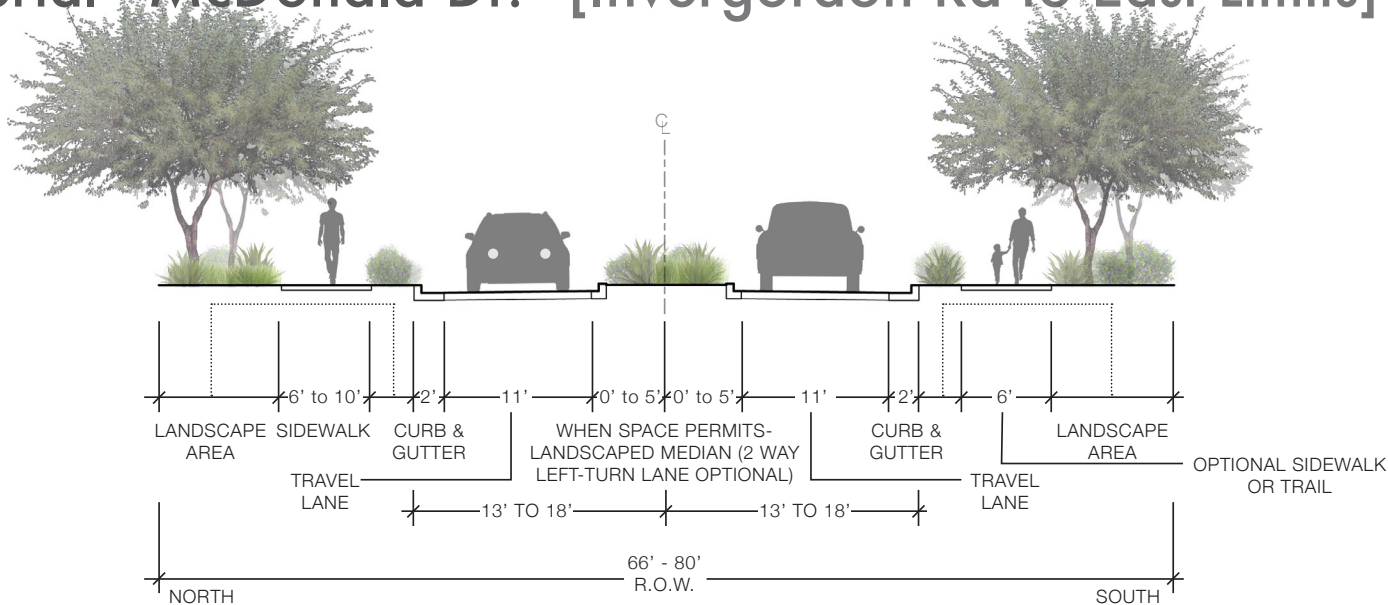


Figure 2-8

FUNCTION: Serve as a main feeder street and provide linkages between major arterials.

RECREATIONAL PATH : Has no recreational path.

SIDEWALK : Construct a meandering Sidewalk on the north side of the street, at a preferred set back a minimum of 5 feet from vehicle travel lanes, with optional Sidewalk on south side. South side Sidewalk is required in connection to Kiva Elementary.

TRAIL : Consider optional 4 to 6 foot wide Trail in lieu of optional Sidewalk.

BIKE LANES : Has no bike lanes, consider bike sharrows with speed limits under 25 mph.

CURB & GUTTER : Require full curb & gutter, as appropriate for accessibility, drainage and safety standards.

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Include roundabouts encouraged for traffic control, as needed. Stop signs, if necessary, posted on intersecting side streets. Parking discouraged. Medians/ center turn lanes required.

Collector

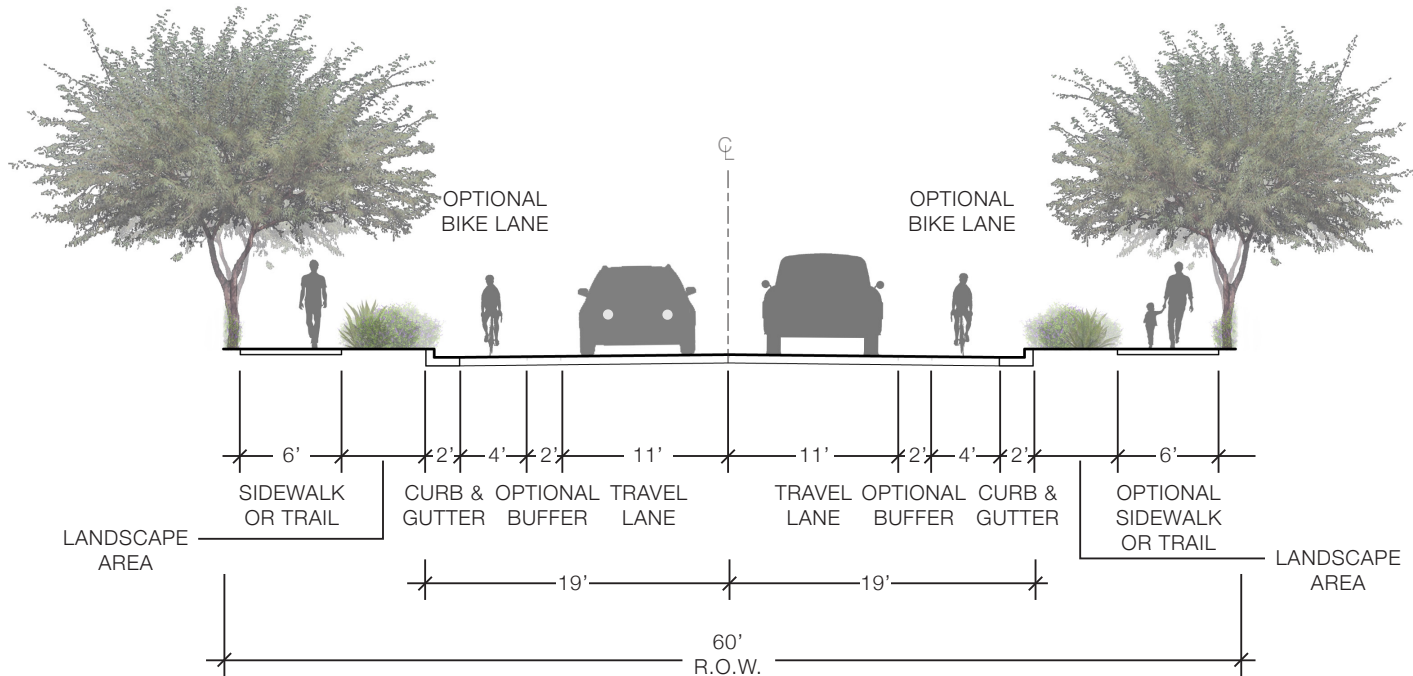


Figure 2-9

FUNCTION: Serves as the main interior street with limited through traffic, and provides linkages into and out of local streets.

RECREATIONAL PATH : Has no recreational path.

SIDEWALK : Construct a meandering Sidewalk or Trail on one side of the street, at a preferred set back a minimum of 5 feet from vehicle travel lanes. Optional Sidewalk on opposite side of street.

TRAIL : Consider optional 4 to 6 foot wide Trail in lieu of optional Sidewalk, except as shown in the Pedestrian map.

BIKE LANES : **Require** optional bike lanes where shown on Bicycle Map. Consider sharrows with speed limits below 25 mph.

CURB & GUTTER : Require full curb & gutter, as appropriate for accessibility, drainage and safety standards.

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Include stop signs, if necessary, posted on intersecting side streets. Limited on-street parking. Lighted signals not desirable.

Local - Option A

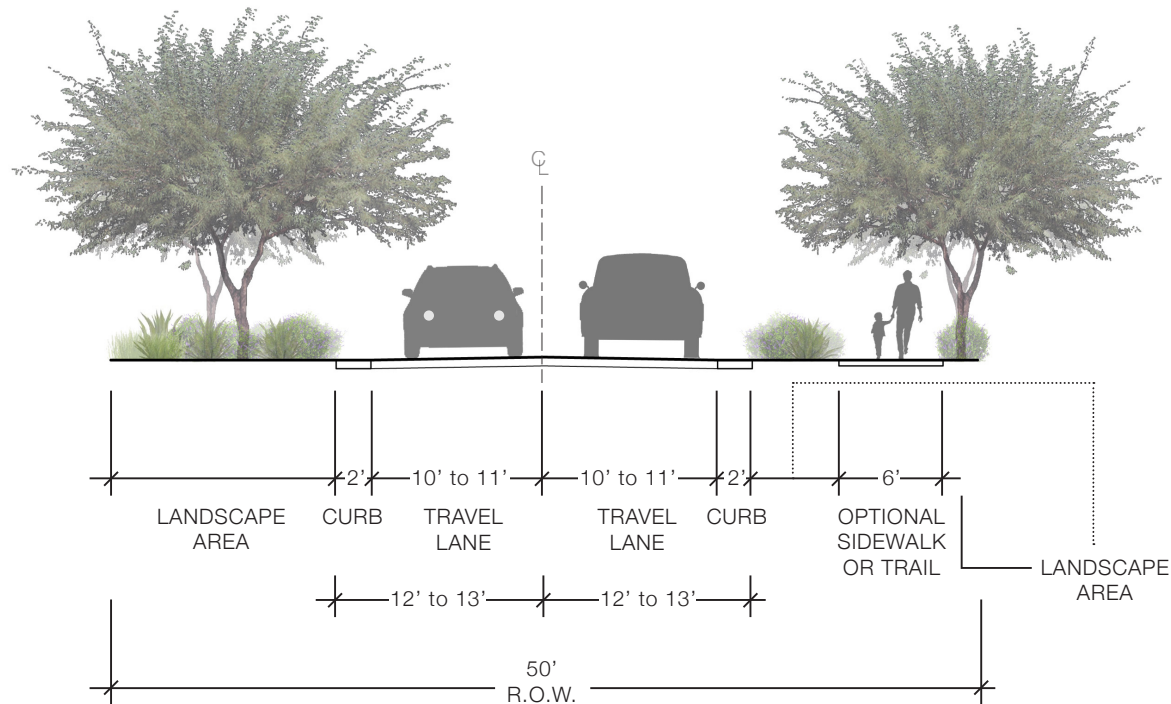


Figure 2-10

FUNCTION: Serves as an interior street, intended to limit through traffic and provides access to immediate residence and other properties.

RECREATIONAL PATH : Has no recreational path.

SIDEWALK : Consider optional Sidewalk or Trail on one side of street, except as shown on Pedestrian Map.

TRAIL : Consider optional Sidewalk or Trail on one side of street, except as shown on Pedestrian Map.

BIKE LANES : Has no bike lanes.

CURB & GUTTER : Has Curbs

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Allow alternative designs on residential streets on the slopes of Mummy Mountain, Phoenix Mountain Preserve, and Camelback Mountain to minimize cuts and fills.

Local - Option B

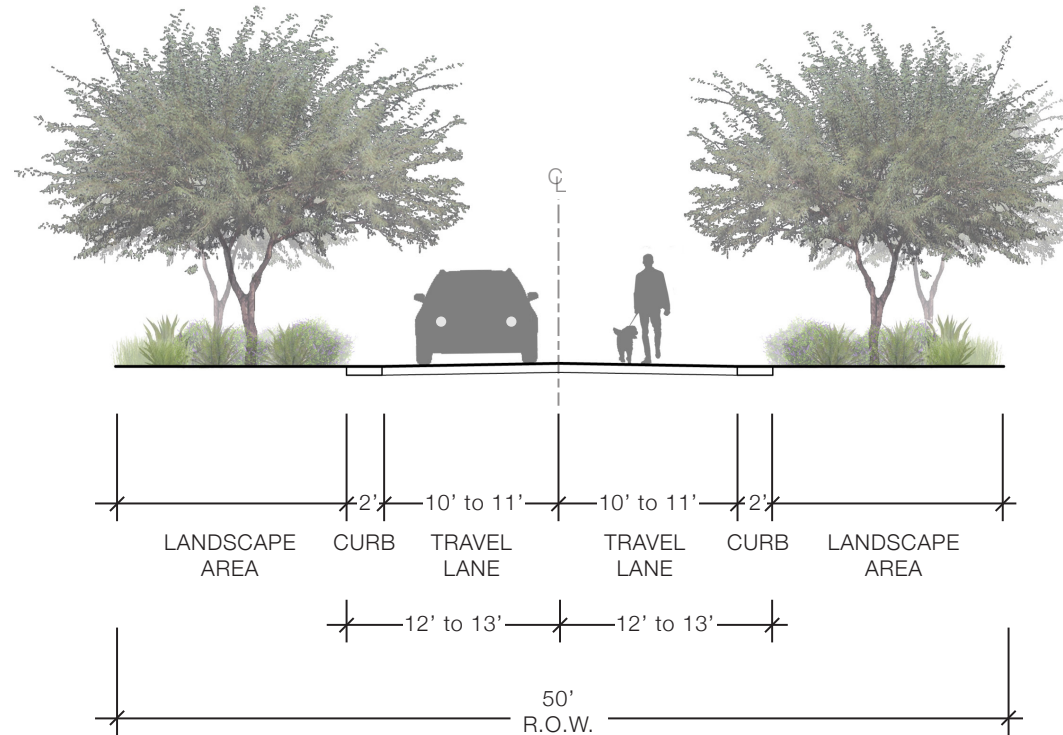


Figure 2-11

FUNCTION: Serves as an interior street, intended to limit through traffic and provides access to immediate residence and other properties.

RECREATIONAL PATH : Has no recreational path.

SIDEWALK : Has no sidewalk.

TRAIL : Has no trail.

BIKE LANES : Has no bike lanes.

CURB & GUTTER : Has Curb.

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Allow alternative designs on residential streets on the slopes of Mummy Mountain, Phoenix Mountain Preserve, and Camelback Mountain to minimize cuts and fills.

Local - Option C

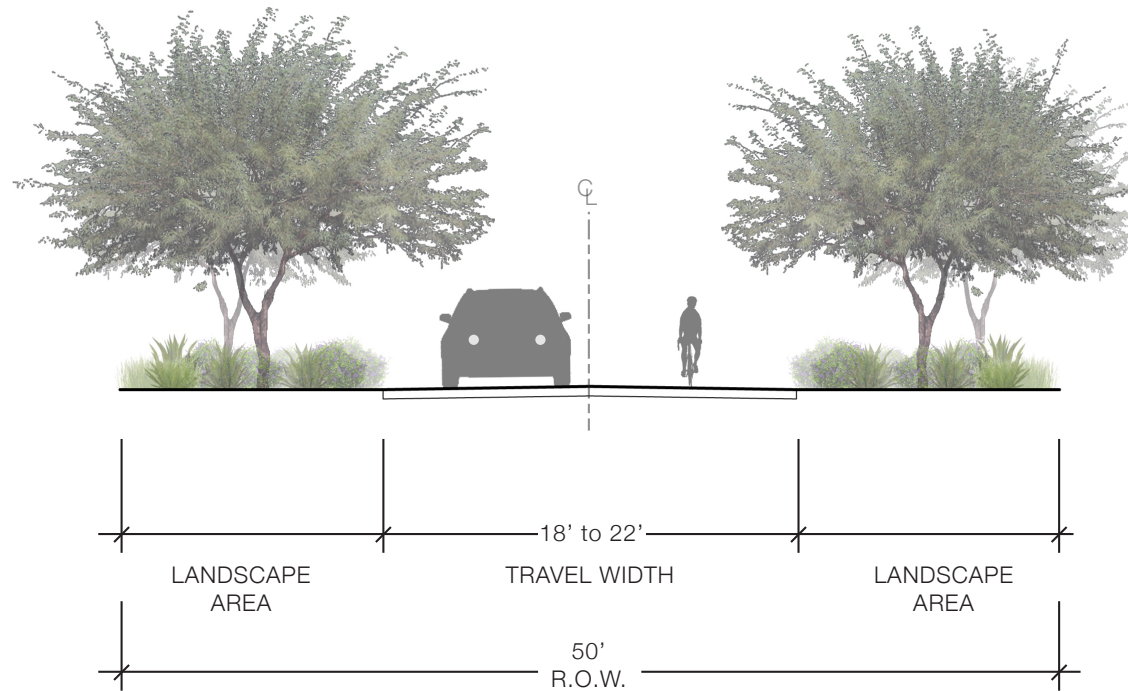


Figure 2-12

FUNCTION: Serves as an interior street, intended to limit through traffic and provides access to immediate residence and other properties.

RECREATIONAL PATH : Has no recreational path.

SIDEWALK : Has no sidewalk.

TRAIL : Has no trail.

BIKE LANES : Has no bike lanes.

CURB & GUTTER : Has no Curb or Gutter.

RIGHT-OF-WAY (R.O.W) : Require additional acquisition, as needed.

TRAVEL LANES : Retain 2 through-lanes, except for necessary turn lanes.

OTHER : Allow alternative designs on residential streets on the slopes of Mummy Mountain, Phoenix Mountain Preserve, and Camelback Mountain to minimize cuts and fills.

Typical Recreational Pathway

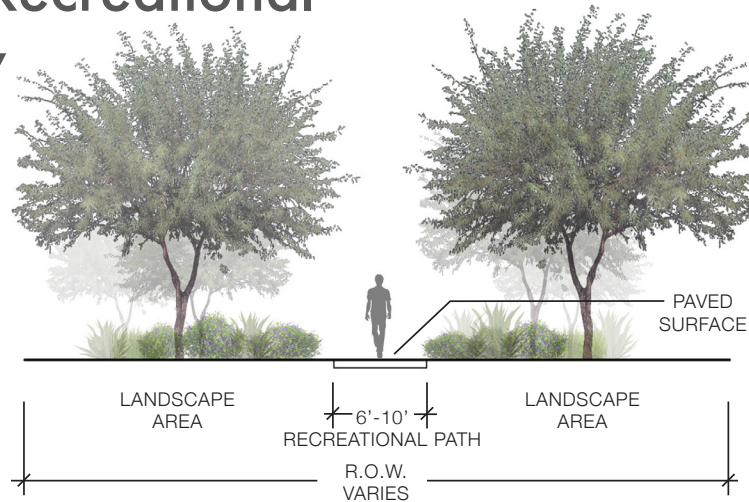


Figure 2-13

Typical Sidewalk

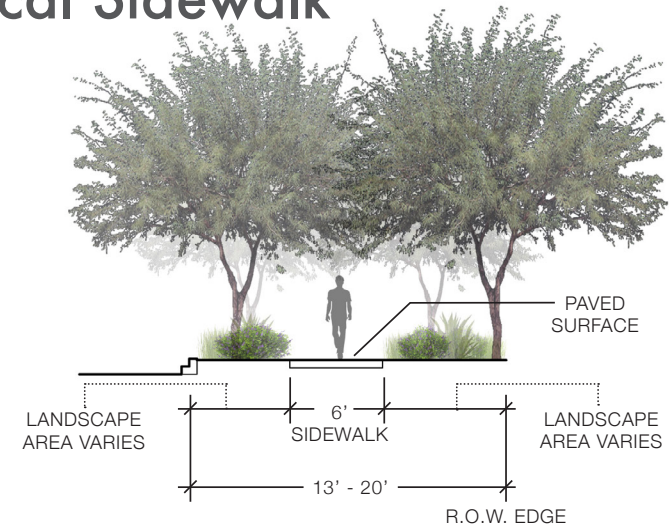


Figure 2-14

Typical Trail

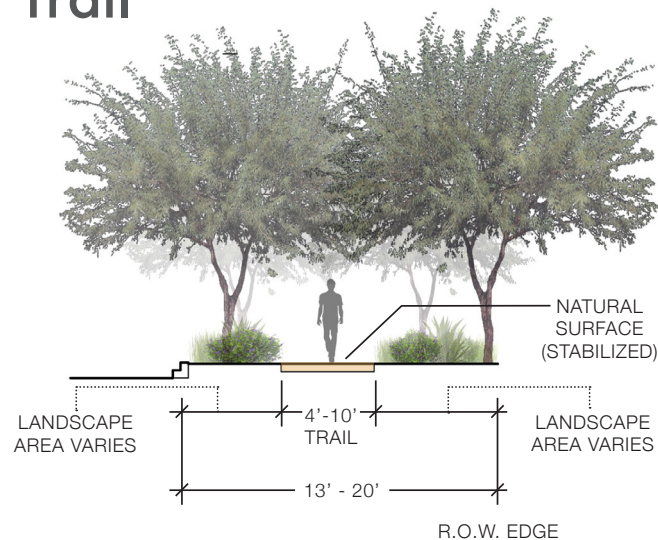


Figure 2-15

TOOLBOX

The toolbox provides a wide array of facilities and supporting elements to safely traverse the town via bicycle or on foot. The toolbox is broken down into two major groups, Facilities and Supporting Elements. Facilities consists of the dedicated spaces that bicyclists and pedestrians use as they travel, such as bike lanes and sidewalks. The Supporting Elements are amenities and features that make the network safer, more visible, more navigable and more enjoyable. Both the Facilities and the Supporting Elements service a wide variety of bicyclists and pedestrians in Paradise Valley from casual to serious riders, walkers, joggers, dog walkers, people with strollers and/or people using assistive devices.



Facilities

The Facilities provide dedicated spaces for non-motorized use removed from motorized vehicle travel lanes, thereby creating a safer and more comfortable experience for pedestrians and bicyclists. They will exist in a variety of settings in or along streets, washes and in open space areas. The Facilities break down into two major categories, Bicycle and Pedestrian, and are as follows:

PEDESTRIAN FACILITIES

Recreational Path



Figure 2-17

A designated access way open to any non-motorized user that prefers a paved surface. A recreational path is a 10 foot wide off-street paved connection (may be narrowed to 6 feet where necessary) with colored 'San Diego Buff' concrete. Typically, it covers short distances between popular destinations and neighborhoods. May be striped to separate directional traffic.

Sidewalk



Figure 2-18

A designated access way open to any non-motorized user that prefers a paved surface. A sidewalk is 6 foot wide and gently meandering where possible (attached to roadway where necessary) with colored 'San Diego Buff' concrete. Sidewalk should be set back 5 feet from motorized traffic lane where possible to create a landscape buffer. Do not have to be associated with a street.

Trail



Figure 2-19

A designated natural surface access way open to any non-motorized user that prefers a natural surface rather than a paved surface. A trail is 4 to 10 foot wide, gently meandering and unpaved (i.e. compacted natural surface or compacted decomposed granite is considered ADA accessible). Trails should be set back 5 feet from traffic lane where possible to create a landscape buffer. Do not have to be associated with a street. May be attached to roadway or sidewalk as a shoulder. Examples: along Arizona Canal and the Berniel Ditch.

PEDESTRIAN FACILITIES (Cont'd)

Paved Shoulder



Figure 2-20

A paved shoulder is typically a 2 to 4 foot wide concrete paved area on the edge of a roadway. Paved shoulders can serve as a functional space for bicyclists and pedestrians to travel in the absence of other facilities with more separation (i.e. recreational paths, sidewalks, and trails).



Figure 2-21

BICYCLE FACILITIES

Bike Lane



Figure 2-22

A designated area on a street for use by bicyclists to provide more predictable and controlled movements by bicyclists and motorists. This area is a minimum 4 foot wide bike lane delineated by a white stripe. This width is exclusive of curb & gutter, unless the gutter is a fully integrated pan the full width of the bike lane. Distinguished by signage and/or pavement markings. A bike lane may include a 2 foot wide buffer to provide a more visible barrier between the travel lane and bike lane. This buffer may be a white stripe, specialty paving, or landscape.

Bike Routes



Figure 2-23

A street that is specifically designated for bike use through signage. There are no special lane markings. Bicycle traffic shares the roadway with motor vehicles. Pavement width should be greater on these roads. Special regulation may be enacted and posted along such facilities to control motor vehicle speeds or restrict parking to enhance bicycling safety. Bicyclists must accommodate motorist and pedestrian crossflows at driveways and intersections. No bike routes are formally identified in this plan. Although, the preferred option for McDonald Drive east of Invergordon Road is to use bike sharrows instead of Bike Lanes.

Recreational Path



Figure 2-24

A designated access way open to any non-motorized user that prefers a paved surface. A recreational path is a 10 foot wide off-street paved connection (may be narrowed to 6 feet where necessary) with colored 'San Diego Buff' concrete. Typically, it covers short distances between popular destinations and neighborhoods. May be striped to separate directional traffic.

Trails: see pedestrian

Supporting Elements

Supporting Elements complement the Facilities and help to make the bicycle and pedestrian network safer, more visible, more navigable and more enjoyable. The Supporting Elements break down into these main categories: Traffic Calming, Enhanced Intersections, and Wayfinding. Supporting Elements should be considered wherever conflicts exist between vehicles, bicyclists, and pedestrians. Other standards such as American Association of State Highway and Transportation Officials, National Association of City Transportation Officials, Manual on Uniform Traffic Control Devices, Federal Highway Administration and others may be used in coordination with this plan.

PEDESTRIAN FACILITIES

Chicanes



Figure 2-25

Chicanes are an effective means of reducing speed and traffic volumes at specific locations under certain circumstances. Chicanes are barriers placed in the street that require drivers and/or cyclists to slow down and drive around them. Bicycle bypasses and signs to indicate directional priority are suggested. Barriers may take the form of landscaping, street furniture, parking bays, curb extensions, or other devices. They may also provide rainwater catchment, reducing water runoff.

Speed Humps



Figure 2-26

Speed humps are domed vertical traffic calming devices intended to slow traffic speeds on low volume, low speed roads. Speed humps are typically 3 to 6 inches high and 3 to 10 feet deep with a gentle slope, spanning the length of the road with raised pavement markers across gutter to prevent circumvention (size may vary depending upon speed). Speed humps reduce speeds to 10 to 25 mph and are often referred to as “bumps” on signage and by the general public. May include additional texturing to discourage cyclists from avoiding the traffic calming measure, including rumble strips.

Roundabout/ Traffic Circles



Figure 2-27

Roundabouts/Traffic Circles lower speeds at intersections and are an ideal treatment for currently uncontrolled intersections. Traffic Circles may be installed using simple markings or raised islands, but are best applied in conjunction with plantings that beautify the street and the surrounding neighborhood. Careful attention should be paid to the available lane width and turning radius. They provide the opportunity for neighborhood related public art and can provide rainwater catchment that reduces water runoff.

ENHANCED CROSSINGS

These tools are proposed to heighten driver awareness of crosswalks and pedestrian areas. In addition, enhanced aesthetics and town branding can be achieved through the Towns Visually Significant Corridor Study. The Bicycle and Pedestrian Maps show possible locations of enhanced crossings in Paradise Valley. This section first discusses intersection enhancement techniques already in use in the Town as well as mid-block crossings. The Crossings shown in the facility maps in the plan chapter only show crossings within Paradise Valley, a complete list of all crossings, including their prescribed enhancements, can be found in the appendix.

Textured Crosswalk



Figure 2-28

Textured Crosswalks can consist of 3 different material groups; stamped asphalt, textured thermoplastic, or mortared pavers, with each having benefits and risks. The primary reason for the textured crosswalk is to provide a visual and physical change in the environment where bicyclist and pedestrians are crossing to increase their health, safety and welfare within an automobile driven environment. Crosswalks must meet all Americans with Disabilities Act (ADA) requirements.

Mid-block Crossing



Figure 2-29

Mid-block crossings are locations between intersections where a marked crosswalk has been provided. Mid-block crossings are often installed in areas with heavy pedestrian traffic to provide more frequent crossing opportunities. They may also be added near major pedestrian destinations, such as schools, where people might otherwise cross at unmarked locations. Mid-block crossings may or may not be regulated. In many situations, mid-block crossings are easier for pedestrians to use because traffic is flowing in no more than two directions. These may include pedestrian hybrid beacons, z-crossings, lighted pedestrian crossing, standard stop sign, rapid flashing beacons, and others.

Crossing Pedestrian Buttons/Bike Sensors



Figure 2-30

Crossing pedestrian buttons/ bike sensors are installed at traffic lights with a dedicated pedestrian crossing and/or bike lanes or routes, and are used to bring up the pedestrian "walk" indication and turn the signal green in locations where pedestrian and bicycle facilities meet a lighted intersection. In the majority of locations where buttons/sensors are installed, pushing the button does not immediately light up the pedestrian walk sign or change the traffic light. Rather, it informs the signal that a pedestrian/ bicyclist is attempting to cross and to change the light in sequence.

WAYFINDING

Implementing a well-designed, attractive, and functional wayfinding network of signage, graphics and landmark components greatly enhances pedestrian and bicycle facilities by promoting their presence to both potential and existing users. It helps overcome a “barrier to entry” for infrequent or beginning bicyclists and walkers, and can control the uses of avid users by guiding them along a direct pathway, directing away from “off-limit” areas, and establishing or regulating behavior and etiquette.

Informational Signs



Figure 2-31

PURPOSE: Provide network rules and regulations and cognitive information and orientation.

INFORMATION: Network identity (brand), route(s), map, symbols and text for desired path behavior, destinations, rules and regulations.

PLACEMENT: Pedestrian-concentrated spots such as the Town Hall Complex and resorts.

Wayside Signs



Figure 2-32

PURPOSE: To provide supplemental information about the Town.

INFORMATION: Interpretive in nature for plants, historical sites, view shed, famous people, etc., that are unique to Paradise Valley.

PLACEMENT: Only within or beside sidewalks, trails or shared use paths that can be accessed and read from a pedestrian or bicyclist level in a stationery position.

Informational Signs

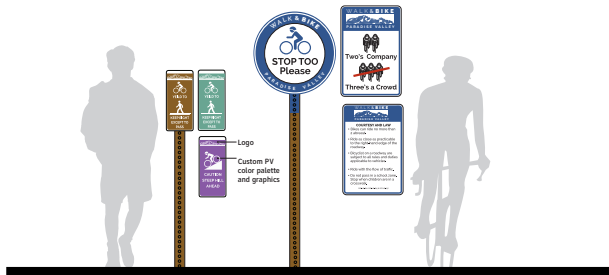


Figure 2-33

PURPOSE: To meet unique circumstances and aesthetics of the community, presenting regulatory or warning information in a softer language, and/or carry out the identity of the network when appropriate.

INFORMATION: Regulatory and rules of the road, rules of the bicycle or pedestrian facility

PLACEMENT: Regulatory – entry into the Town where positive/legal behavior is informed. Along off-street corridors as needed along path of travel. Warning - Near-side of intersections or along path of travel, where users are required to take or cease action or be informed of an existing condition.

RECOMMENDATIONS: For such signage to command the necessary authority and visibility, they should follow Manual on Uniform Traffic Control Devices guidelines: use approved fonts, symbols, sizes, installation placement, fabrication methods and colors as appropriate.

Wayside Signs



Figure 2-34

PURPOSE: To indicate locations, distances, directions, routes, and similar information.

INFORMATION: Route identification with arrow. Supplemental arrow plaques may be placed under existing route sign. Distances to destinations are not required, but are recommended.

PLACEMENT: Route Guides should be placed at decision points that indicate where a path turns from one street or direction to another, often at street intersections. Arrowed pavement markings may be used in lieu of freestanding signage. Signs are typically placed at the intersection of two or more route-ways and at other key locations along the route or those that provide passage or entry to the route.

DESTINATION HIERARCHY: If the Town chooses to implement Route Guide Signs to destinations within, adjacent or nearby Paradise Valley, it is important to pre-determine a list of destinations to be shown.

Pavement Markings



Figure 2-35



Figure 2-35



Figure 2-36



Figure 2-36

PURPOSE: Help reinforce routes, provide direction and enhance branding.

INFORMATION: Route identification with arrows or sharrows based on location to show direction of travel.

PLACEMENT: Pavement markings should be placed to identify routes and loops (i.e. resort loop.) May be placed on sidewalks, paths, roadways, and bike lanes. Lateral placement is critical to encourage riders to avoid the 'door zone' in roadways and bike lanes. May be placed in the center of the lane between wheel treads to minimize wear.

Should be customized to match Town design aesthetic. The design should be incorporated into bike lane markings, sharrows, route identification, etc.

Project Prioritization

This Plan strives to create a safe and cohesive network of bicycle and pedestrian facilities. Much of the network is in place, yet many other corridors need to be completed and/or improved. All potential projects however do not have the same level of importance in completing the system. The following criteria, derived from the General Plan’s goals and policies and refined to reflect citizen, Planning Commission and Town Council comments, will help to evaluate potential projects and determine the implementation sequence. Since not all criteria have the same level of importance, the public was asked at public meetings and through an on-line survey to rank order the criteria. The responses created the weight. For instance, three

times as many people ranked ‘Improve Safety’ as the highest priority criteria than those that ranked ‘Address Multiple Modes’ as the highest priority criteria, giving Safety a weight of three. Each potential project can be scored using this prioritization process.

Cost was not used as an evaluation criteria based upon the idea that a project should first be evaluated on its merits. It will ultimately be a Council decision to decide if the project expenditure is worth the benefits it will provide. For instance, the Council could decide to fund one more expensive project rather than two less expensive projects because of the overall benefit to the Town.

HOW TO USE

To score a project, multiply the weight by the category improvement score (0-2) to find the value. Once each category has been assigned a value, combine all category values to find the total score for the individual project.
(ex: sample below; 3 {weight} x 2 {category improvement score} = 6 {value})

Sample

Weight × Improvement Categories & criteria		Range = Value
3 ×	Improve safety	
	0. Project involves no existing or potential safety problem.	
	1. Project prevents a potential problem.	
	2. Project corrects an existing problem.	(0-6) = 6

Table 3-1

Project Prioritization

Weight	×	Improvement Categories & criteria	Range	=	Value
3	×	Improve safety 0. Project involves no existing or potential safety problem. 1. Project prevents a potential problem. 2. Project corrects an existing problem.	(0-6)	=	<input type="text"/>
3	×	Piggy Back With Other Already Planned Projects (roadway repair, traffic congestion, drainage, utilities and other public infrastructure improvements) 0. No nearby planned projects could be included. 1. At least one nearby planned private project could be included. 2. At least one nearby public project could be included.	(0-6)	=	<input type="text"/>
2	×	Address Disruptive and Aggressive Behavior 0. Project does not attempt to lessen disruptive and aggressive behavior by bicyclists or drivers. 1. Project attempts to lessen disruptive and aggressive behavior by bicyclists or drivers. 2. Project attempts to lessen disruptive and aggressive behavior by both bicyclists and drivers.	(0-4)	=	<input type="text"/>
2	×	Close a Gap 0. Project does not close a gap. 1. Project closes a gap providing up to 1 mile of usable and continuous bike or pedestrian corridor. 2. Project closes a gap providing greater than 1 mile of usable and continuous bike or pedestrian corridor.	(0-4)	=	<input type="text"/>
2	×	Link to Destinations 0. Project provides little to no improved access to destinations (e.g. Town Hall, schools, parks, resorts, trails) 1. Project somewhat or indirectly improves access to at least one destination. 2. Project provides direct access to one or more destinations.	(0-4)	=	<input type="text"/>
1	×	Focus on Heavy Use Corridors 0. Project along a corridor with low existing or potential use. 1. Project is along a corridor with moderate existing or potential use. 2. Project is along a corridor with heavy existing or potential use.	(0-2)	=	<input type="text"/>
1	×	Address Multiple Modes 0. Project improves one mode: bicycle or pedestrian facility. 1. Project improves two modes: bicycle or pedestrian facility with vehicular or transit. 2. Project improves 3 modes: bicycle and pedestrian facility with vehicular or transit.	(0-2)	=	<input type="text"/>
Total Score					<input type="text"/>

Table 3-2

Estimated cost of a complete system

To assist with capital improvement program project budgets, the following table has been prepared to outline the estimated costs to implement the active transportation system as outlined in this plan at the base level. Costs assume existing lights and traffic signals remain in place. These costs include in addition to hard costs: a 20% contingency, a 10% design fee and a 14% construction administration fee.

The projects in Table 3-3 are generally categorized by street corridor(s). The estimated costs for each project includes different components, such as the cost to construct a specific facility (e.g. sidewalk, crosswalk), demolition of existing improvements, and landscaping. Exact costs would be determined once the project(s), in whole or part, are budgeted and designed. Figure 2-2, Pedestrian Map, and Figure 2-3, Bicycle Map, with this Plan provide a visual of the enhanced crossing locations and proposed facility improvements. Below is a summary of the major components for each 17 identified projects in Table 3-3.

PROJECT	DESCRIPTION	STREET CLASSIFICATION	ESTIMATED COST	2018 2020	2021 2025	2026 2030
Traffic Study Area	The Traffic Study focuses on Hummingbird Ln at the intersections with Quartz Mountain Rd. and 61st Pl. Improvements relate to adding stop signs, improved striping, and possible use of bicycle-tolerant milled rumble strips.	Local	\$20,000.00	X		
Northern Ave.	Consists of a trail from Golf Dr to Scottsdale Rd	Local	\$30,000.00	X		
Doubletree Ranch Rd.	Constructs sidewalk on the south side of the street between Invergordon Road and 67th St. and additional crosswalks at 52nd Pl., Via Los Caballos, and 67th St.	Minor Arterial	\$300,000.00	X		
Invergordon Rd.	Constructs sidewalk on the west side of Invergordon Rd. north of McDonald Dr. to connect to the Montessori school and completes the west crosswalk at the Lincoln Dr. intersection.	Minor Arterial	\$90,000.00	X	X	

PROJECT	DESCRIPTION	STREET CLASSIFICATION	ESTIMATED COST	2018 2020	2021 2025	2026 2030
Invergordon Rd./ Mockingbird Ln.	Completes the sidewalk on the south side of Mockingbird Ln. from Calle Caballeros to the roundabout at Invergordon Rd., reconstructs sidewalks and adds bike lanes on both sides of Mockingbird Ln between Northern Ave and Lincoln Dr., and reconstructs sidewalk on the west side of Mockingbird Ln. between Lincoln Dr. and McDonald Dr. Also, it includes adding or restriping crosswalks at the Invergordon Rd roundabout, and at Mockingbird Ln. and 68th St., Indian Bend Rd., Lincoln Dr., and McDonald Dr. Where there are existing signals, it adds bicycle crossing/button sensors.	Minor Arterial	\$400,000.00	X	X	
Cheney Dr.	Completes the missing sidewalk on the north side of the street, east of 70th St.	Collector	\$50,000.00		X	
Hummingbird Ln.	Completes the missing sidewalk on the south side of the street, east of 69th Pl.	Local	\$30,000.00		X	
Lincoln Dr.	Includes an existing funded project to complete sidewalks on both sides the entire length of this street within Town limits. Also, it proposes a new crossing at or near Hillside Dr. and coordination with the City of Phoenix for a new crosswalk on the east side of the intersection at 32nd St. The Visually Significant Corridor Plan will separately include enhancement projects.	Major Arterial	\$170,000.00		X	
McDonald Dr.	Adds bike sharrow symbols to the existing travel lanes and a new landscape median at the existing crosswalk to Kiva Elementary school east of Invergordon Rd.	Minor Arterial	\$10,000.00		X	
Jackrabbit Rd.	Adds a sidewalk on the north side of the street east of Invergordon Rd.	Collector	\$400,000.00		X	X
Mountain View Rd.	Adds sidewalk on the south side of the street west of 52nd St. and east of 56th St. and adds a crosswalk on Invergordon Rd at Mountain View Rd.	Collector	\$1,080,000.00		X	X
Resort Loop	Reconstruction of existing sidewalks for a 10-foot wide recreational path adjoining the Montelucia Resort, Mountain Shadows Resort, McDonald Dr. from 51st St. to 54th St., Tatum Blvd. from McDonald Dr. to Rovey Ave. and near Arroyo Verde Dr. to Lincoln Dr. It includes adding several improvements at intersections such as a crosswalk/median to the east of roundabout at Echo Canyon Trail, the missing crosswalk at McDonald Dr. and Tatum Blvd., and the missing crosswalk at Lincoln Dr. and 56th St. The Visually Significant Corridor Plan will separately include enhancement projects.	Major, Minor, Collector	\$1,830,000.00		X	X

PROJECT	DESCRIPTION	STREET CLASSIFICATION	ESTIMATED COST	2018 2020	2021 2025	2026 2030
Berniel Ditch	Improves the existing trail with landscaping north of Doubletree Ranch Rd.	Trail	\$450,000.00		X	X
53rd Pl./Sanna St.	Completes the pedestrian route to Mountain View Road with a Trail or Sidewalk on the east side of 53rd Pl. and the north side of Sanna St. It also includes a crosswalk across Mountain View Rd. at 53rd Pl.	Local	\$170,000.00			X
Mockingbird Ln./52nd St.	Adds a crosswalk at 50th St.	Collector/Local	\$20,000.00			X
Monte Vista Dr./68th St.	Completes the pedestrian route between Jackrabbit Rd. and Chaparral Rd. with a trail or sidewalk on the east side of the street.	Collector	\$100,000.00			X
Tatum Boulevard	Constructs sidewalk on the east side of this street between Doubletree Ranch Rd. and Mountain View Rd. Other improvements may be warranted as part of the Visually Significant Corridor Plan or in coordination with the City of Phoenix.	Major Arterial	\$0.00			
TOTAL			\$5,150,000			

Goals & Policies

The following Goals and policies were completed in collaboration with town residents, the Town Council, Planning Commission and town staff and are to supplement those in the Town's General Plan. For ease, existing General Plan goals and policies have been referenced where appropriate.



**Non-Motorized
Circulation
System**



**Traffic
Calming**



**Integrated
Bicycle System**



**Integrated
Pedestrian
System**



**Operations +
Management**



Wayfinding



Non-Motorized Circulation System

To provide a unique high-quality non-motorized circulation system throughout the Town to meet the needs of residents, employees, and resort guests. (Goal M 4.2.1 Town's General Plan)

WB 4.1.1 Safe and Convenient Access to Destinations. The Town shall implement a non-motorized circulation system for predominantly recreational and social purposes. This network shall provide safe, convenient, and enjoyable access to destinations that are open to the public along designated bicycle and pedestrian routes identified in this Plan. Facilities providing this access may be one or more of the facility types identified in this Plan. (Policy M 4.2.1.1, Town's General Plan)

WB 4.1.2 Linkage. The Town shall plan for and provide the development of non-motorized system linkages to neighborhood community non-motorized networks. (Policy M 4.2.1.3, Town's General Plan)

WB 4.1.1 Safe and Convenient Access to Destinations. The Town shall implement a non-motorized circulation system for predominantly recreational and social purposes. This network

shall provide safe, convenient, and enjoyable access to destinations that are open to the public along designated bicycle and pedestrian routes identified in this Plan. Facilities providing this access may be one or more of the facility types identified in this Plan. (Policy M 4.2.1.1, Town's General Plan)

WB 4.1.3 Right-of-Way. The Town shall design existing and future roadway rights-of-way to provide safety for pedestrian and users of non-motorized modes of transportation. (Policy M 4.2.1.4, Town's General Plan)

WB 4.1.4 Conflicts. The Town shall develop safe and convenient bicycle and pedestrian facilities that reduce potential conflicts between bicyclists and motor vehicles and bicyclists and pedestrians. Design of the non-motorized system shall consider ways to avoid such conflicts along routes with particular attention at roadway intersections and within hillside areas of Town. (Policy M 4.2.3.2, Town's General Plan)

WB 4.1.5 Transfer Points. Where feasible, the Town shall plan for and provide the development of a non-motorized system that allows for persons to transfer easily between such places as local transit stops, seasonal trolley stops, and ride-share [taxi, uber, lyft, etc] locations. (New)

WB 4.1.6 Connection to Schools and Community Facilities. The Town shall ensure that its network of bicycle and pedestrian facilities include safe access and convenient connections to schools and other community facilities throughout the Town. (Policy M 4.2.3.8, Town's General Plan)



Operations + Management

To provide a comprehensive management and operations program for the Non-Motorized Circulation System, from project inception to budget development and on-going maintenance, education, promotion and rule enforcement. (New Goal)

WB 4.2.1 Maintenance. The Town shall maintain bicycle and pedestrian facilities and its corresponding signage/wayfinding. (Policies M 4.2.1.2 and M 4.2.1.5, Town's General Plan)

WB 4.2.1 Maintenance. The Town shall maintain bicycle and pedestrian facilities and its corresponding signage/wayfinding. (Policies M 4.2.1.2 and M 4.2.1.5, Town's General Plan)

WB 4.2.2 Funding & Implementation. The Town shall continue its long-range program for planning and constructing non-motorized circulation facilities and seek ways through transfer, gift, grants, easement, or Capital Improvement Program funds to complete the system and to fund studies, programs and policies. (Policy M 4.2.1.2 and M 4.2.1.5, Town's General Plan)

WB 4.2.3 Regional Coordination. The Town shall participate in regional bicycle and pedestrian planning efforts in order to coordinate facility development, ensure that regional bikeway system designations are consistent with this Walk + Bike Plan, and be kept aware of potential funding sources. (Policy M 4.2.3.7, Town's General Plan)

WB 4.2.4 Education. The Town shall use a variety of means to educate persons regarding laws and safe use practices of non-motorized and shared facilities that may include public outreach events, such as the Town-sponsored Safety Fair, and volunteer efforts from Town-sponsored groups, such as the Advisory Committee on Public Safety. (New)

WB 4.2.5 Enforcement. The Town shall enforce existing and consider new state and local statutes related to bicycles and pedestrians. (New)

WB 4.2.6 Internal Planning Process. The Town shall implement internal policies that ensure proper communication and coordination among the various Town departments working to improve biking and walking in Paradise Valley. (New)

WB 4.2.7 Resort Coordination. In order to stay aware of resort visitor needs and the programs resorts develop to serve their clientele, the Town shall coordinate regularly with resort representatives. (New)



Integrated Pedestrian System

To provide a universally accessible, safe, experientially rewarding, convenient, and integrated pedestrian system throughout the Town that promotes walking, running and hiking. (Goal M 4.2.2, Town's General Plan)

WB 4.3.1 Interconnected and Continuous System. The Town shall design, build and maintain an interconnected and continuous pedestrian system of public trails, sidewalks, recreation paths, and appropriately enhanced street crossings for convenient and safe walking free of major impediments and obstacles. (Policy M 4.2.2.1, Town's General Plan)

WB 4.3.2 Pedestrian-Friendly Streetscapes. The Town shall ensure that streets include the appropriate level of pedestrian-friendly accommodation by providing such elements as detached sidewalks, frequent and safe pedestrian crossings, large medians to reduce pedestrian crossing distances, shade trees, plantings, and where appropriate seating, wayfinding signage, and other amenities. (Policy 4.2.2.2, Town's General Plan)

WB 4.3.3 Safe and Accessible Facilities. The Town shall develop safe and convenient pedestrian facilities that are universally accessible, properly designed and maintained for the safety of pedestrians. (Policy M 4.2.2.3, Town's General Plan)

WB 4.3.4 Low Impact Approach. As a low impact approach to providing pedestrian facilities, the street shall serve as a shared use route for all modes on roads classified as local, unless otherwise identified by this Plan or approved with pedestrian facilities by Town Council. In approving pedestrian facilities on local roads, the Town shall consider how the facility will improve safety, the number of persons using the route based on factors such as lot size/density, and impact to the scale and character of the neighborhood. (New)

WB 4.3.5 Low Maintenance Design. As a low maintenance approach to providing connectivity between other bicycle and pedestrian facilities in select destinations, the Town shall consider a paved recreation path along only one side of the roadway instead of both, or other similar methods. (New)

WB 4.3.6 On-site Connectivity. The Town shall encourage a continuous pedestrian route connecting to public pedestrian facilities and destinations. (New)



Integrated Bicycle System

To provide a safe, comprehensive, and integrated bicycle system throughout the Town that is accessible and compatible with traffic patterns, land uses, and neighborhoods. (Goal 4.2.3, Town's General Plan)

WB 4.4.1 **Bicycle Circulation.** The Town shall design, build, and maintain a system of bike lanes and recreation paths through the Town in accordance with the Street Classifications and Maps of this Plan. (Policy M 4.2.2.3, Town's General Plan)

WB 4.4.2 **Safe Facilities.** The Town shall develop safe and convenient bicycle facilities that are compatible with other regional bicycle facilities. (Policy M 4.2.3.2, Town's General Plan)

WB 4.4.3 **Bicycle-Friendly Streetscapes.** The Town shall ensure that streets include the appropriate level of bicycle-friendly accommodation by providing appropriate facility design, way-finding, and crossing in accordance with the Street Classifications and Maps of this Plan. (New)

WB 4.4.4 **Bicycle Signals.** Where bike lanes and routes encounter traffic signals, the Town should explore intersection modifications that would make crossing intersections safer for bicyclists. (New)



Traffic Calming

To provide traffic calming opportunities that would reduce through traffic, traffic speed and bicycle speed in order to provide safer conditions for motorists, pedestrians, and bicyclists. (New Goal)

WB 4.5.1 **Speed Management.** The Town shall develop and implement speed management policies that support safe and appropriate driving speeds on all public streets that are also designated for use by bicyclists and pedestrians. (Policy M 4.2.3.6, Town's General Plan)

WB 4.5.2 **Roundabouts.** The Town shall utilize roundabouts instead of stop signs for intersection traffic control along designated bikeways to improve safety and traffic flow, where deemed appropriate from a traffic engineering perspective. (Policy M 4.2.3.5, Town's General Plan)

WB 4.5.3 **Intersections.** The Town shall incorporate intersection redesign techniques that slow traffic, improve bicycle and pedestrian visibility and direct or redirect users to more suitable routes where deemed appropriate from a traffic engineering perspective using such techniques as curb extensions, tighter turning radii, raised intersections, mini roundabouts, etc. (New)



Wayfinding

To develop and implement a comprehensive wayfinding system that helps to improve safety along bicycle and pedestrian routes, is respectful to the privacy of residents, reflects community character, is sparingly used while aesthetically appealing, and incorporates technology. (New Goal)

WB 4.6.1 **Safe Facilities.** The Town shall create safer bicycle and pedestrian facilities through the appropriate use of signage and wayfinding that provides accessibility to a wide range of users and educates about the rules of the road. (New)

WB 4.6.2 **Resident Privacy.** The Town shall only publicize routes that are identified in this Plan. (New)

WB 4.6.3 **Community Character.** The Town shall incorporate materials and the neutral color palette already established on existing Town signs to ensure continuity throughout Town. (New)

WB 4.6.4 **Maintenance.** The Town shall establish a maintenance and replacement schedule to ensure signs are not faded or damaged. (New)

WB 4.6.5 **Aesthetic Appeal.** The Town desires to minimize visual clutter through allowing the minimum signs needed/required, a preference for ground plane signs over vertical signs, and the selection of materials, colors, sign spacing, or other aspects that best fits into the context and character of the area. (New)

WB 4.6.6 **Minimize Quantities.** When deemed necessary by the Town Engineer, the Town shall locate signs primarily at intersections and junctions/entry points with other facilities. (New)

WB 4.6.7 **Technology.** The Town shall incorporate the latest wayfinding technologies to complement physical wayfinding to be accessible with Global Positioning System[GPS] and coordinate with existing online map tools and digital applications for hiking and biking. (New)

Implementation Measures

The Mobility Element of the 2012 General Plan sets forth broad goals and policies related to the transportation system within the Town. Implementation requires translating these broad statements to specific actions, systematically evaluating progress, and ensuring active community participation. The following implementation measures have been identified for non-motorized circulation and serve as a basis for evaluating progress by Town staff, leadership and other Town volunteers in the execution of the Walk & Bike Plan

Non-Motorized Mobility Implementation Program		2018-2020	2021-2025	2026-2030	ANNUAL	ONGOING
1. Maintain and update an inventory and map of the Town's non-motorized transportation network. (Table 4.5-1, Measure #6 in Town's General Plan)						
Implements Which Policy(ies)	WB 4.1.1 thru WB 4.1.3, WB 4.1.6, WB 4.2.1 thru WB 4.2.3, WB 4.4.1, WB 4.4.2					X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Public Works, Community Development					
2. Use asset management techniques to implement the construction and maintenance of the Town's non-motorized circulation facilities for the benefit of the residents.						
Implements Which Policy(ies)	WB 4.1.1, WB 4.2.2, WB 4.2.6, WB 4.4.1, WB 4.6.4				X	X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Public Works, Community Development					

Table 4-1 a

Non-Motorized Mobility Implementation Program		2018-2020	2021-2025	2026-2030	ANNUAL	ONGOING
3. Develop and maintain a high-quality design of the roadway, bicycle and pedestrian network that promotes the character and image of the Town, reduces negative environmental impacts including noise and minimizes adverse impacts to the neighborhood through the use of roadway cross sections, traffic calming and control techniques, intersection enhancements, traffic counts, and high-quality hardscaping and landscaping.						
Implements Which Policy(ies)	WB 4.1.4, WB 4.3.2, WB 4.4.3, WB 4.5.1 thru WB 4.5.3, WB 4.6.3, WB 4.6.5, M 4.4.1.3, M 4.4.1.4, M 4.4.2.1, M 4.4.2.2, M 4.4.2.3, M 4.4.2.4, M 4.4.2.5, M 4.4.2.6					X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Public Works, Community Development					
4. Preserve existing right-of-way, except when necessary to implement the maps and standards adopted by the Town (e.g. Walk + Bike Plan, Visually Significant Corridors Master Plan, and General Plan), or when necessary to allow for innovative alignments, abandonments, or shared-use by different travel modes as appropriate. (Table 4.5-1, Measure #12 in Town's General Plan)						
Implements Which Policy(ies)	M 4.4.2.7, M 4.4.2.8, M 4.4.2.9				X	X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Public Works, Community Development					
5. Complete high priority projects that best meet the project prioritization criteria of this Plan. (New)						
Implements Which Policy(ies)	WB 4.1.1 thru WB 4.1.6, WB 4.2.3, WB 4.2.4, WB 4.3.1, WB 4.3.3 thru WB 4.3.6, WB 4.4.2 thru WB 4.4.4, WB 4.5.1 thru WB 4.5.3, WB 4.6.1 thru WB 4.6.7	X	X			X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Public Works, Community Development					

Non-Motorized Mobility Implementation Program		2018-2020	2021-2025	2026-2030	ANNUAL	ONGOING
6. Evaluate the need, application, and cost sharing for the institution of traffic calming measures for both motorized vehicles and bicyclists on a neighborhood basis as requested by individual neighborhoods. This should include an assessment of various techniques, design guidelines, cost sharing, administrative process for the potential installation of individual techniques and maintain a list of various traffic calming measures. Consider priority traffic/bicycle calming projects at Camelback Manor Drive/Lincoln and Hummingbird Lane near Mummy Mountain. (Table 4.5-1, Measure #2 of Town's General Plan)		X				
Implements Which Policy(ies)	WB 4.5.1 thru WB 4.5.3, M 4.1.1.6, M 4.1.2.1, M 4.1.2.2, M 4.4.1.5					X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Community Development					
7. Develop education programs, activities, and/or web based and print materials related to aiding enforcement and guidance to persons about the Town's transportation network (e.g. maps, special education events and activities, traffic enforcement days/weeks, school visits, walk and bike days, wayfinding technology). (New)		X				
Implements Which Policy(ies)	WB 4.2.4, WB 4.2.5, WB 4.2.7WB 4.6.2, WB 4.6.7					X
Primary Responsible Party	Police Department					
Other Responsible Party(ies)	Community Development					
8. Install appropriate bicycle and/or pedestrian signage as identified in this Plan concurrent with specific projects. (New)						
Implements Which Policy(ies)	WB 4.3.2, WB 4.4.3, WB 4.6.3, WB 4.6.5, WB 4.6.6					
Primary Responsible Party	Public Works					X
Other Responsible Party(ies)	Engineering, Community Development					

Non-Motorized Mobility Implementation Program		2018-2020	2021-2025	2026-2030	ANNUAL	ONGOING
9. Coordinate with local resorts on the Town's desired bicycle and pedestrian routes for guests, potential shared parking and seasonal trolleys. (New)						
Implements Which Policy(ies)	WB 4.2.7, M 4.3.2.1, M 4.3.2.2					
Primary Responsible Party	Community Development	X				X
Other Responsible Party(ies)	Public Works, Engineering					
10. Designate a Town staff person to represent the Town of Paradise Valley on the Maricopa Association of Governments [MAG] Pedestrian and Bicycle Committee to coordinate facility development, ensure that regional bikeway system designations are consistent with the Town's Bicycle Facilities Plan, and to be kept aware of potential funding sources. (New)						
Implements Which Policy(ies)	WB 4.2.2, WB 4.2.3, WB 4.3.1, WB 4.4.1	X				X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Community Development					
11. Coordinate with adjacent municipalities on mutually beneficial projects, potential project cost sharing, mapping, shared parking, and trolley/transit routes/stops to ensure safe and efficient linkages. (Table 4.5-1, Measure #1 in the Town's General Plan)						
Implements Which Policy(ies)	WB 4.2.2, WB 4.2.3, WB 4.3.1, WB 4.4.1, M 4.1.1.1, M 4.1.1.3, M 4.1.1.5	X				X
Primary Responsible Party	Engineering					
Other Responsible Party(ies)	Community Development					

Table 4-1 d

Non-Motorized Mobility Implementation Program		2018-2020	2021-2025	2026-2030	ANNUAL	ONGOING
12. Promote local transit services for the Town and Special Event transit services for resort visitors; and ensure that public transit and trolley stops in the Town are functional and attractive. Cooperate with transit agencies, neighboring jurisdictions and local resorts for improving transit, trolley, and ride share pick up points and produce route maps that are shared with residents, resorts and adjacent communities. (Table 4.5-1, Measure #5 in the Town's General Plan)						
Implements Which Policy(ies)	WB 4.2.7, M 4.3.2.1, M 4.3.2.2					X
Primary Responsible Party	Town Manager					
Other Responsible Party(ies)	Community Development, Public Works, Engineering					
13. Implement internal policies that ensure proper communication and coordination among the various departments and sections working to improve bicycling and walking in Paradise Valley. (New)						
Implements Which Policy(ies)	WB 4.2.6					
Primary Responsible Party	Town Manager	X	X			X
Other Responsible Party(ies)	Police Department, Community Development, Public Works/ Engineering					
14. Institute a pavement reduction plan on local streets where appropriate to lessen long term maintenance costs and to provide unpaved pedestrian space within the public right of way. (New)						
Implements Which Policy(ies)	WB 4.3.4, WB 4.3.5					
Primary Responsible Party	Engineering					X
Other Responsible Party(ies)	Public Works					

Non-Motorized Mobility Implementation Program		2018-2020	2021-2025	2026-2030	ANNUAL	ONGOING
15. Review Town codes, standards, policies and procedures to ensure they include guidelines for providing a continuous pedestrian route between public pedestrian facilities and main entrances of public or semi-public buildings. (New)						
Implements Which Policy(ies)	WB 4.3.6		X			X
Primary Responsible Party	Community Development					
Other Responsible Party(ies)	Engineering					
16. Develop capital improvement, operations and management budgets to properly develop, maintain and improve the bicycle and pedestrian network and the related wayfinding system in the Town. (New)						
Implements Which Policy(ies)	WB 4.2.2, WB 4.2.6	X				X
Primary Responsible Party	Town Manager					
Other Responsible Party(ies)	Community Development, Public Works, Engineering					

Table 4-1 f

Performance Measures

Different from Implementation Measures, Performance Measures promote informed decision-making by relating community goals to measuring and evaluating the effects of bicycle and pedestrian investments whether they are projects or policies. The following measures were selected for their appropriateness for Paradise Valley from an exhaustive list of measures developed by the Federal Highway Administration in their 'Guidebook for Developing Pedestrian and Bicycle Performance Measures'. They have been edited and refined to reflect the specific characteristics and needs of Paradise Valley. Implementing these measures will take staff and financial resources that may currently be limited. *(See appendix for additional information)*

ACCESSIBILITY LAWS

The U.S. Department of Justice (USDOJ) adopted regulations (28 CFR Part 35) that require public entities to evaluate their current services and progress toward achieving compliance with accessibility standards for the public right-of-way.

Some common measures may include:

- Percent of total street crossings that meet accessibility standards (e.g. curb ramps, crosswalk grade and cross slope, and no median barriers).
- Percent of total sidewalk miles that meet accessibility standards (e.g. slopes, obstructions, protruding objects, changes in levels, etc.).
- Percent of total pedestrian signals that have Accessible Pedestrian Signal (APS) technology.
- Percent of total bus stops that are connected to streets, sidewalks or pedestrian paths by an accessible route and that have accessible boarding and alighting areas.
- Percent of total shared use paths that are accessible.

TRAFFIC LAWS

Enforcement may be one of the most important elements in getting drivers, pedestrians and bicyclists to behave safely. Transportation agencies should work closely with law enforcement to identify dangerous behaviors and locations that may require enforcement efforts to improve safety. Evaluating the behavior of all transportation system users can be measured by:

- Number of observed violations.
- Number and types of citations issued, including written warnings. (See examples above.) Citations and formal activity is only a small measure of actual motorists, pedestrian and bicyclist behavior at any one location.
- Number of observed violations.
- Number and types of citations issued, including written warnings. (See examples above.) Citations and formal activity is only a small measure of actual motorists, pedestrian and bicyclist behavior at any one location.
- Tracking trend data, including observations and enforcement efforts over months and years. Use consistent methodologies for observations (i.e. time of day, locations, weather, etc.). For citations, consider comparing formal operations to one another versus everyday enforcement efforts.



Figure 4-1

FACILITY MAINTENANCE

To develop and maintain a complete pedestrian and bicycle network, an up-to-date facility inventory with the presence and condition of sidewalks and bicycle facilities is necessary. Typically, this inventory will be stored in a geospatial database which can be updated and tracked over time.

Agencies that have a detailed database will be able to prioritize facility improvements based on need. "Maintenance" of facilities can be subjective depending on local, regional, and State codes and requirements; however, FHWA does maintain several guidebooks that provide additional information including 'A Guide for Maintaining Pedestrian Facilities for Enhanced Safety' and 'Designing Sidewalks and Trails for Access.'

Emerging Technologies and Trends include mobile crowd sourcing applications documenting maintenance issues; remote surveying technology such

MILES/NUMBER OF PEDESTRIAN AND BICYCLE FACILITIES

"Miles of bicycle or pedestrian facilities" is a simple measure describing the total mileage of the network within a jurisdiction, such as tracking progress over time. The 'existing facilities' maps and corresponding table within this plan provides the Town with a starting baseline. Miles of bicycle or pedestrian facilities can be reported as:

- Total miles of bicycle/pedestrian facilities
- Miles of bicycle/pedestrian facilities



Figure 4-2



Figure 4-3

BICYCLE/PEDESTRIAN COUNTS

Set a schedule for collecting pedestrian and bicycle counts throughout the town, at a variety of intersections. Depending on data goals, pedestrian and bicyclist volumes can be collected in a number of ways, from short duration counts that are collected by a person over a few hours or the course of a day, to longer duration counts collected by automated equipment.

Emerging Technologies and Trends include mobile crowd sourcing applications collecting data on pedestrian and bicycle volume such as the Strava Global Heatmaps recently made available by the Maricopa Association of Governments for the entire Phoenix region.



Town of Paradise Valley
Walk and Bike Plan

Figure 4-4

CRASHES

Crash data is useful for identifying the number and severity of crashes, where crashes occur, the circumstances surrounding each crash, who is involved in crashes, and the conditions and time of day that crashes occur. By understanding common crash types and locations, agencies can determine the appropriate countermeasures and prioritize projects to improve safety. Additionally, the number of crashes can be tracked over time to track progress towards meeting safety goals. Crash data is often used along with volume data and facility type data to determine crash rates and identify crash hotspots. Some of the common measures used to evaluate the safety of the transportation system based on crash history are:

- Number of bicycle-involved and/or pedestrian-involved crashes over 5 years.
- Number of fatal or serious injuries of bicyclists and/or pedestrians over 5 years.
- Crashes per volume of bicyclists and/or



Figure 4-5

Funding

Significant funding can come from a variety of sources. These sources include the Town's general fund, developers, and funds and grants from various entities.

The Town's general fund is historically a primary source of funding of bicycle and pedestrian improvements within the Town. For example, the existing bike lanes along Stanford Drive were constructed as part of a Town-funded street improvement project. The Town's general fund is the operating revenue for the Town. It is used to account for all activities done by the Town, not accounted for in some other fund. Proposed improvements to be funded from the general fund are identified and prioritized through the Town's Capital Improvement Program as funds become available.

Developers are another source of completing bicycle and pedestrian improvements within the Town. State Statute and Town Code provisions afford the Town the ability to require improvements that benefit the public in certain instances. Commonly, these

instances are when the Town approves an intermediate or major rezoning amendment of a non-residential property zoned Special Use Permit. For example, the public trail through the designated wash of the Ritz Carlton development located at the northeast corner of Lincoln Drive and Mockingbird Lane is one condition of the Major Special Use Permit amendment to develop this site. Approval of a final plat is another common instance the Town may stipulate a developer make a public improvement. For example, the residential development at the northwest corner of Scottsdale Road and the Northern Avenue alignment includes a provision to provide a bicycle and/or pedestrian route within the Northern Avenue alignment adjoining the property subject to provisions. Depending on the circumstances, different provisions may be required for the site. This may include, and is not limited to, requiring that the developer construct the improvement, the developer provide funds for the Town to make the improvement, or the improvement be made at a future date when adjoining improvements are made. The Town's General Plan and specific plans, such as this

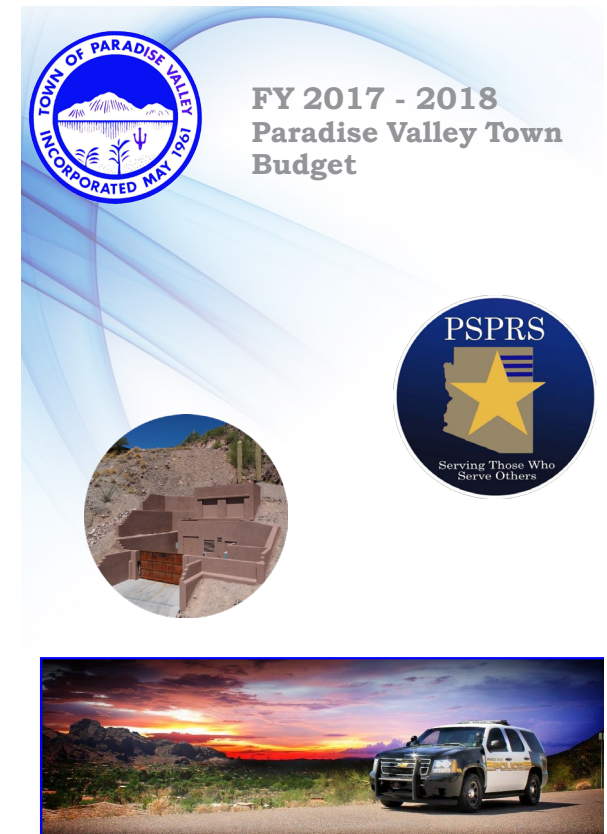


Figure 4-6

Walk & Bike Plan, are important tools to justify requiring a developer to provide a public improvement.

The Town has historically not pursued many

funds and grants as they require certain eligibility provisions or performance provisions not ideal to the Town. Although, in recent years, the Town has pursued this type of funding. Various entities offer funds and grants. These entities include federal, state, and county governments, along with private organizations that focus on promoting walking and biking. The federal government is a major source of funds and grants. For example, 70-percent of the project for the completion of the sidewalks along the full length of Lincoln Drive is through a grant by the Congestion Mitigation and Air Quality Improvement (CMAQ) Program via the U.S. Department of Transportation's (DOT) Safer People, Safer Streets Initiative. Other possible future DOT funding sources include the Transportation Alternative Program (TAP) and the Federal Highway Administration (FHWA). These funds are administered through the Arizona Department of Transportation and locally through the Maricopa Association of Governments (MAG). Future grants sources could also come from private organizations. Some present examples of private sources include a coalition of bicycling suppliers and retailers, as well as a charitable

foundation, called the "People for Bikes Community Grant" and private companies such as the outdoor recreation gear and apparel retailer Recreational Equipment, Inc.

See appendix for additional information

WORDS TO KNOW

WALK & BIKE PLAN:

This plan is a comprehensive guide for the Town of Paradise Valley to potentially implement a bicycle and pedestrian accessible Town for its residents and resorts.

AASHTO:

American Association of State Highway and Transportation Officials

ADA:

Americans with Disabilities Act

BICYCLIST:

one who rides a bicycle, particularly one who does so regularly

BICYCLE FACILITY:

any place, amenity, or piece of equipment provided for the use of anyone who rides a bicycle

CAPITAL IMPROVEMENTS PROGRAM (CIP):

is a short-range plan, usually 5 years, which identifies capital projects and equipment purchases

CORRIDOR:

an area or stretch of land identified by a specific common characteristic or purpose

CROSS SECTION:

a section made by cutting the right-of-way cross-wise at right angles to show the facilities of the roadways

FWHA:

Federal Highway Administration

MAG:

Maricopa Association of Governments

PEDESTRIAN:

a person walking along a road or in a developed area

PEDESTRIAN FACILITY:

any place, amenity, or piece of equipment provided for the use of anyone who walks

RIGHT OF WAY (ROW):

An easement, a privilege to pass over the land of another, whereby the holder of the easement acquires only a reasonable and usual enjoyment of the property, and the owner of the land retains the benefits and privileges of ownership consistent with the easement

RESORT LOOP:

A recreational path consisting of Lincoln Drive, 56th Street, McDonald Drive, and Tatum Boulevard

STREET CLASSIFICATION:

Relating to the different scales of roads, such as Major Arterials, Minor Arterials, Collectors, and Locals

TOOLBOX:

The Toolbox associated with this plan is meant to give the Town options for implementations of a complete and safe bicycle and pedestrian system

TRAFFIC STUDY:

a detailed examination and analysis of a transportation system supported by data collection. A study starts with the identification and definition of a transportation problem, followed by data collection and analysis of any issues the system may have

WAYFINDING:

signs, maps, and other graphic or audible methods used to convey location and directions to system users

Individual facility types are described in depth in The Plan section of this plan (i.e. bike lanes, sidewalks, trails, etc.)