

# TOWN OF PARADISE VALLEY

## WALK & BIKE PARADISE VALLEY

The Paradise Valley Bicycle & Pedestrian Master Plan



Planning Commission  
August 15, 2017

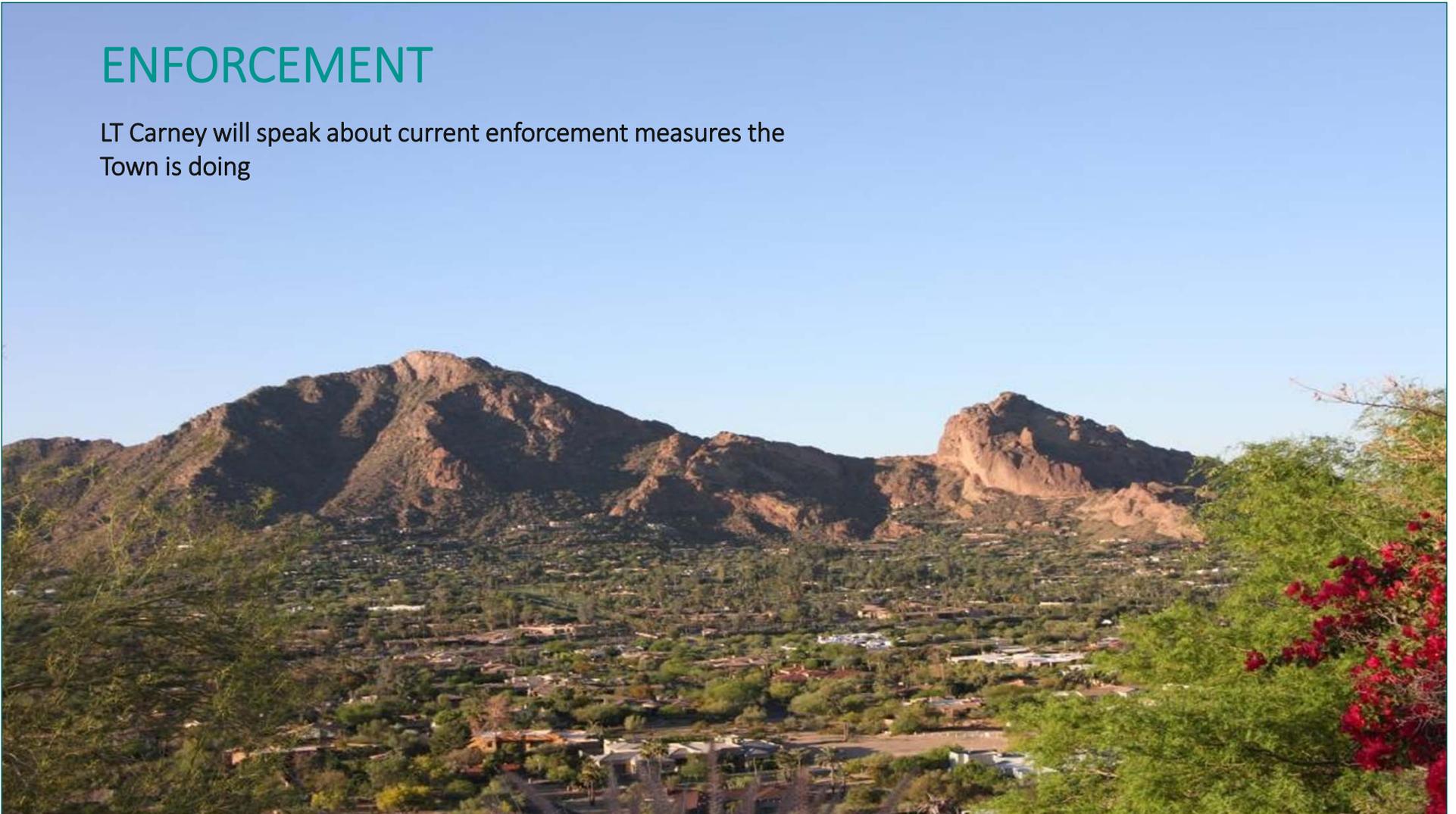


## Purpose of Today's Meeting

1. Hear enforcement measures Town is doing
2. Review routes maps
3. Discuss illustrative enhanced intersections for Hummingbird Lane neighborhood
4. Discuss supporting standards toolbox
  - Street cross-sections
  - Traffic calming
  - Enhanced intersections
  - Wayfinding

# ENFORCEMENT

LT Carney will speak about current enforcement measures the Town is doing



## ENFORCEMENT



- Lieutenant Freeman Carney  
480-348-3516
- Dispatch – Non-Emergency  
480-348-3509

# PEDESTRIAN FACILITIES



# PEDESTRIANS in Paradise Valley

## 3 Types

- **Casual/Recreational** (Walking/Jogging/Dog Walking)
- **Avid Individuals/Pairs** (Walking, Jogging, Running)
- **Avid Groups** (Walking, Jogging, Running)

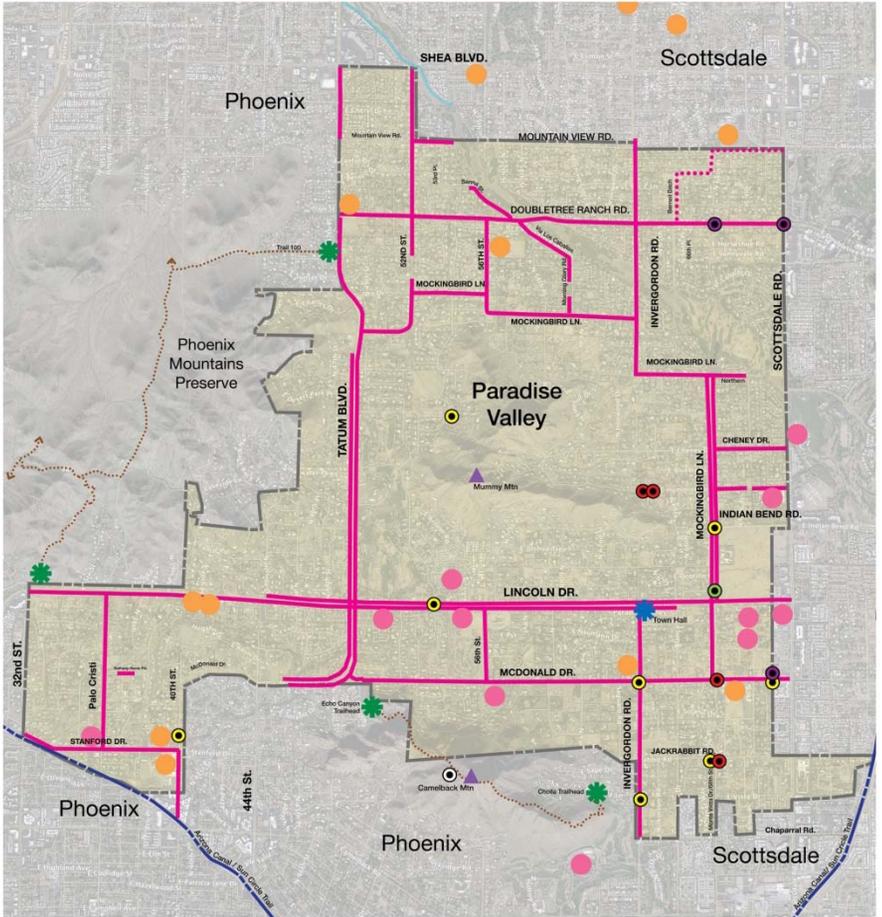


## PEDESTRIAN FACILITY SUMMARY Proposed Plan

<p><b>In-Street</b></p>	<ul style="list-style-type: none"> <li>• Areas of asphalt road striped to separate from vehicular traffic with variable width, minimum 4'</li> </ul>
<p><b>Trail</b></p>	<ul style="list-style-type: none"> <li>• 4'-6' gently meandering unpaved (i.e. compacted natural surface or decomposed granite is considered ADA accessible)</li> <li>• Set back 5' from traffic lane where possible to create a landscape buffer</li> <li>• Does not have to be associated with a street</li> <li>• May be attached to roadway as a shoulder</li> <li>• Open to any non-motorized user that prefers a natural surface rather than a paved surface</li> <li>• Examples: along Arizona Canal and in Phoenix Mountains Preserve</li> </ul>
<p><b>Sidewalk</b></p>	<ul style="list-style-type: none"> <li>• 6' gently meandering (or attached to roadway where necessary, asphalt or colored concrete)</li> <li>• Set back 5' from vehicle travel lane where possible to create a landscape buffer</li> <li>• Can be independent of a street</li> </ul>
<p><b>Recreational Path</b></p>	<ul style="list-style-type: none"> <li>• 10' wide off-street paved (asphalt or colored concrete)</li> <li>• May be striped to separate directional traffic</li> <li>• For all non-motorized users</li> </ul>

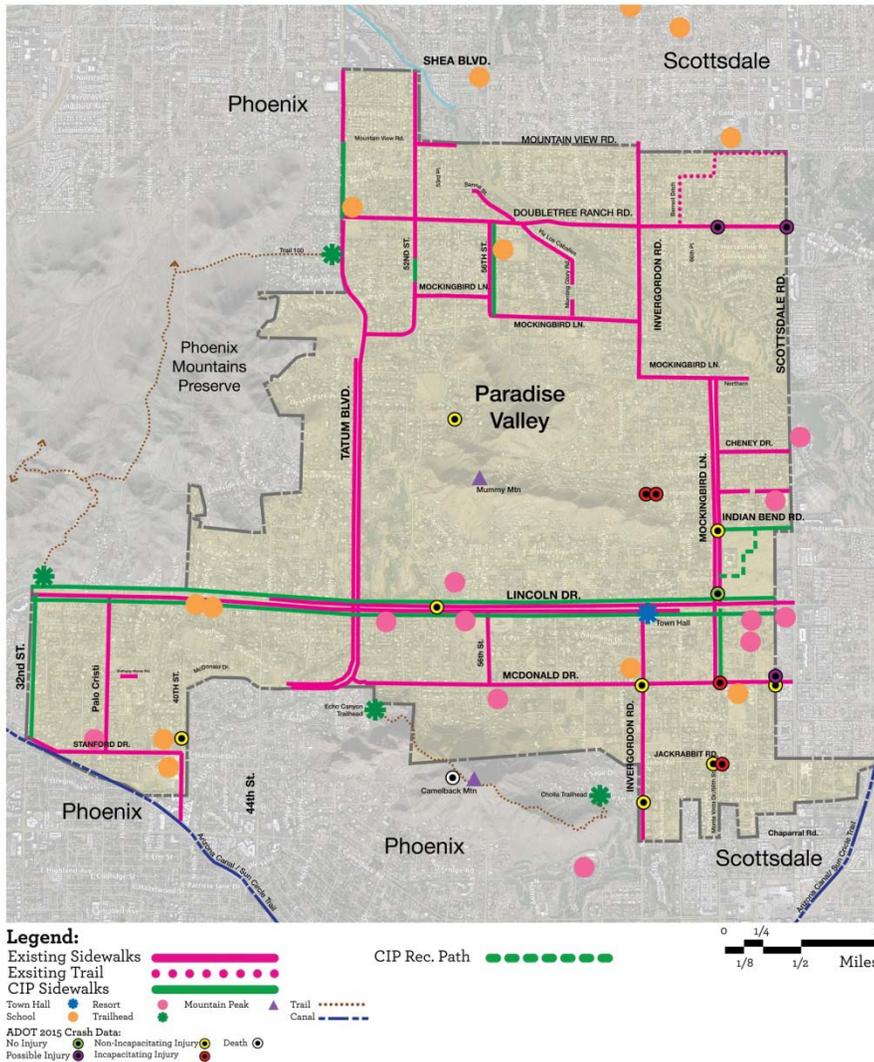
# PEDESTRIAN |

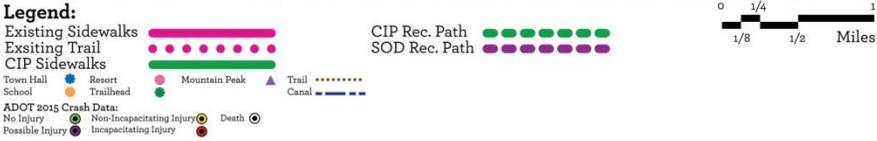
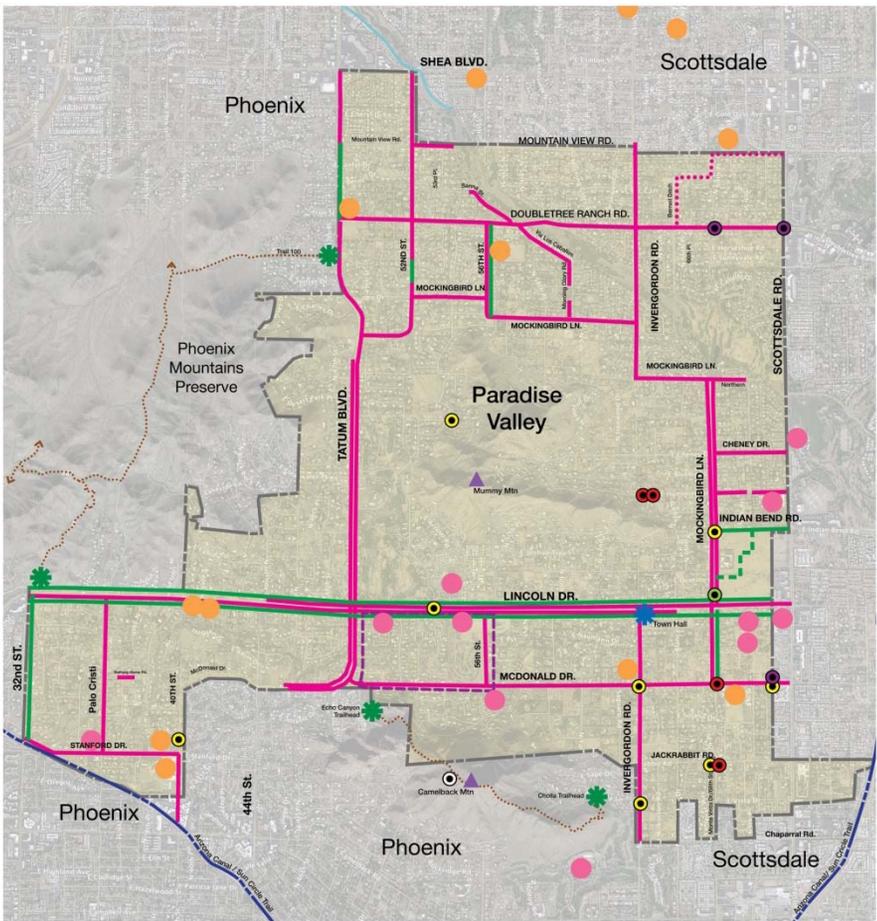
## Existing Facilities



# PEDESTRIAN |

## Existing Facilities + Existing Capital Improvement Program (CIP)



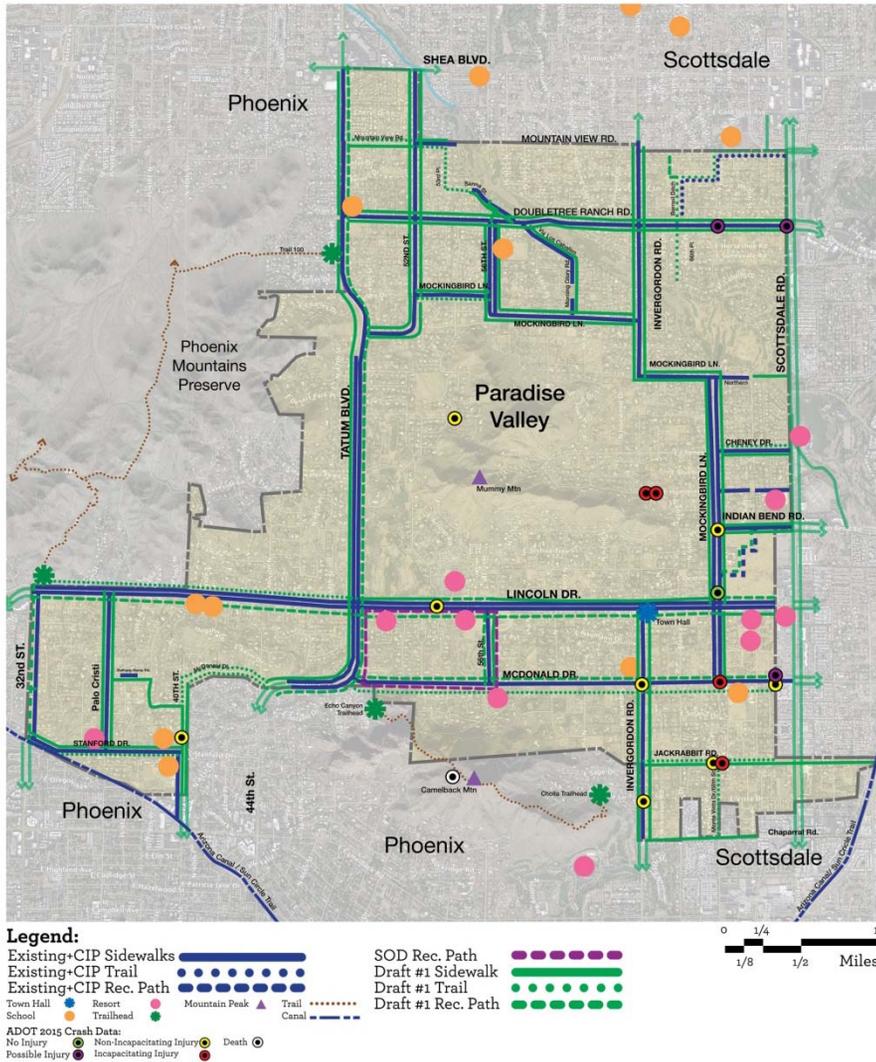


# PEDESTRIAN |

## Existing Facilities + Existing CIP + Statement of Direction (SOD)

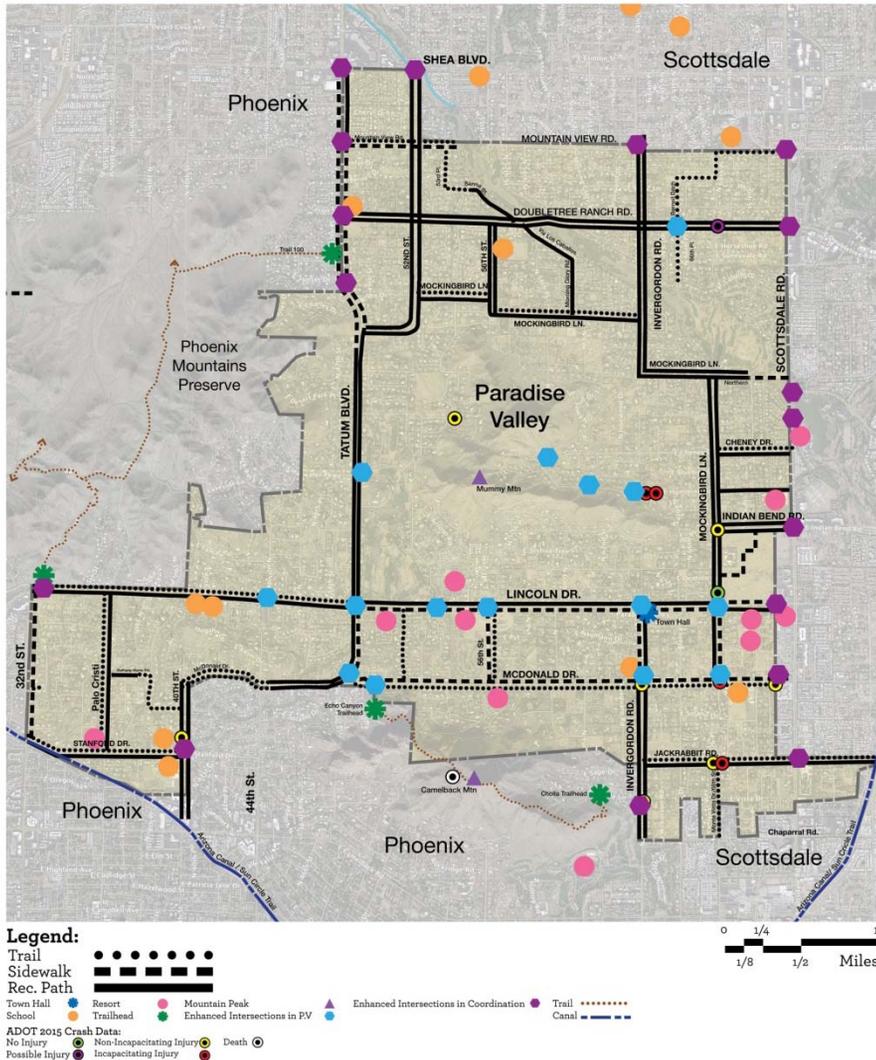
# PEDESTRIAN |

## Existing Facilities + Existing CIP + SOD + Draft Master Plan #1



# PEDESTRIAN |

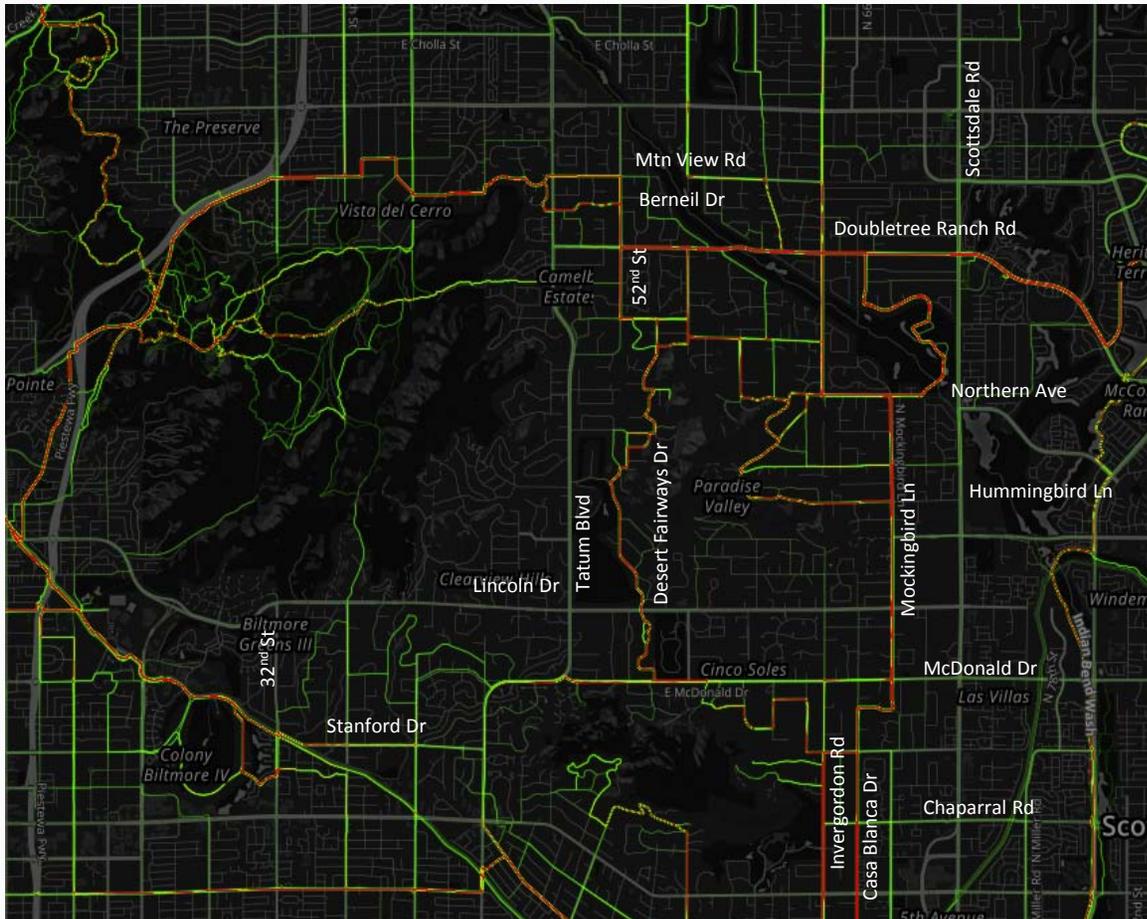
## Proposed Routes + Proposed CIP



# BICYCLE FACILITIES



# BICYCLISTS in Paradise Valley



## STRAVA Heat Map

- Social network for athletes
- Maps show use
- This map 2015 bike use
  - Red = heavier use

**STRAVA**

Contact Strava

Press: [press@strava.com](mailto:press@strava.com)

Partnerships: [partner@strava.com](mailto:partner@strava.com)

Support [Strava Help Center](#)

# BICYCLISTS in Paradise Valley

## 4 Types

- **Family Recreational Small Groups**
- **Avid Recreational Individuals/Pairs**
- **Avid Recreational Groups** (Pelotons: 3- 15 riders)
- **Individual Commuting**

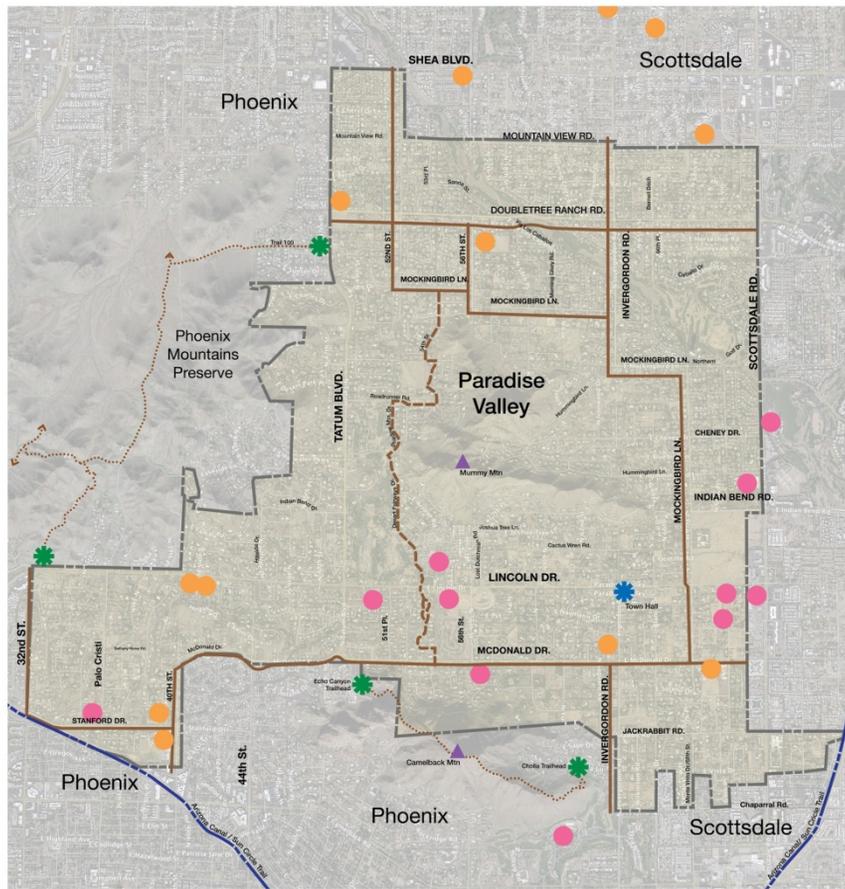


# BICYCLE FACILITY SUMMARY Proposed Plan

<p><b>In-Street</b></p>	<ul style="list-style-type: none"> <li>• Bicycle traffic shares the roadway with motor vehicles</li> <li>• No designation/signage for bikes</li> </ul>
<p><b>Bike Route</b></p>	<ul style="list-style-type: none"> <li>• Bicycle traffic shares the roadway with motor vehicles</li> <li>• No bike lanes provided</li> <li>• Route may be distinguished by vertical 'bike route' signage AND/OR by lane markings such as custom sharrows at major intersections</li> <li>• Motorized vehicle speed limit below 35mph</li> <li>• Special regulations may be enacted and posted along such facilities to control motor vehicle speeds or restrict parking to enhance bicycling safety</li> </ul>
<p><b>Shared-Use Path</b></p>	<ul style="list-style-type: none"> <li>• 10 ' wide off-street paved (asphalt or colored concrete)</li> <li>• May be striped to separate directional traffic</li> <li>• For all non-motorized users</li> </ul>
<p><b>Buffered/Separated Bike Lane</b></p>	<ul style="list-style-type: none"> <li>• Pavement markings or specialty paving creating a horizontal buffer delineating a minimum 4' width lane, exclusive of curb &amp; gutter, unless the gutter is a fully integrated pan the full width of the bike lane</li> <li>• Distinguished by signage and/or pavement markings</li> <li>• Designed to delineate the right-of-way assigned to bicyclists and motorists with a larger more visible barrier, to provide more predictable and controlled movements by both, creating a safer environment</li> </ul>

# BICYCLE |

## 2012 General Plan (GP) Facilities



**Legend:**  
 GP Bike Lanes   
 GP Bike Routes 

Town Hall  Resort   
 School  Trailhead   
 Mountain Peak    
 Trail   
 Canal 

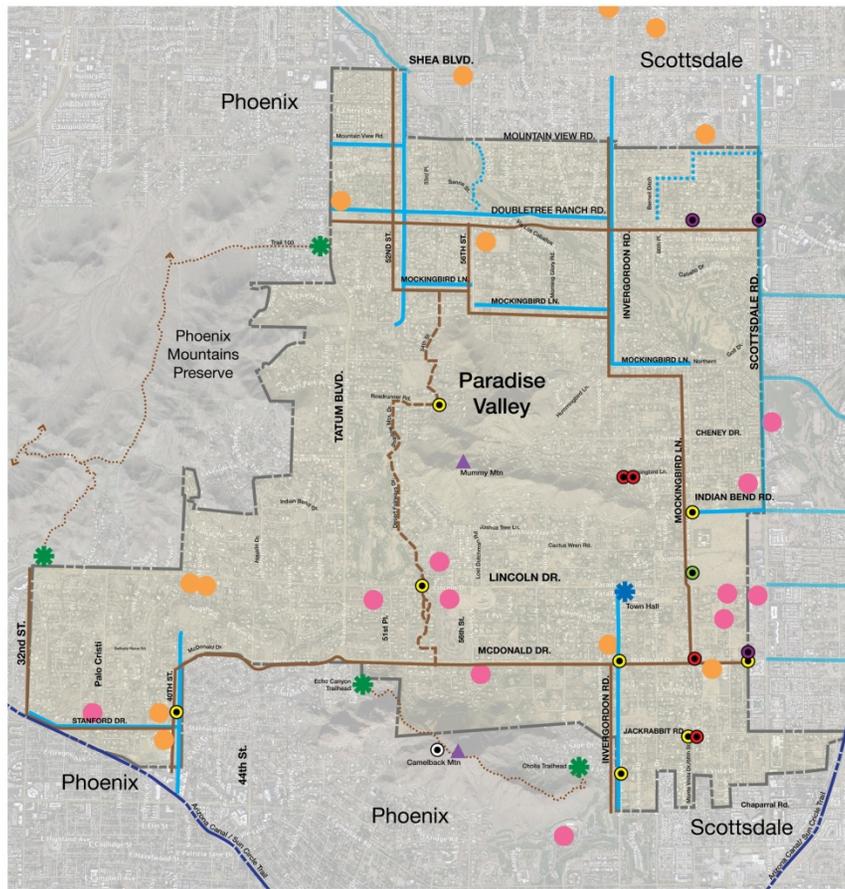
0 1/4 1  
 1/8 1/2 Miles

WALK & BIKE PARADISE VALLEY

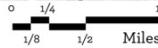
The Paradise Valley Bicycle and Pedestrian Master Plan

# BICYCLE |

## 2012 GP Facilities + Existing Facilities



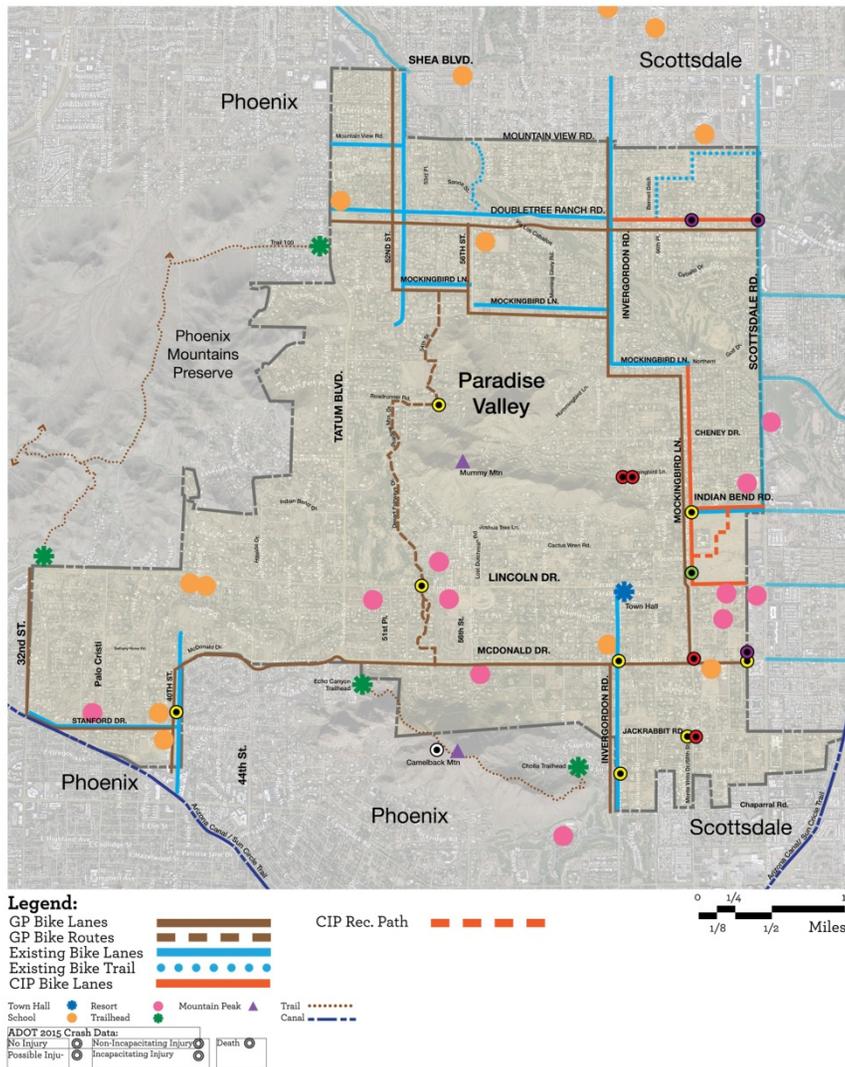
**Legend:**  
 GP Bike Lanes  
 GP Bike Routes  
 Existing Bike Lanes  
 Existing Bike Trail

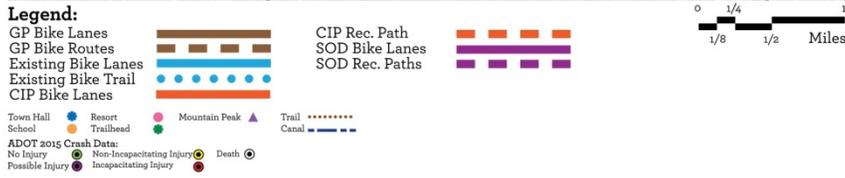
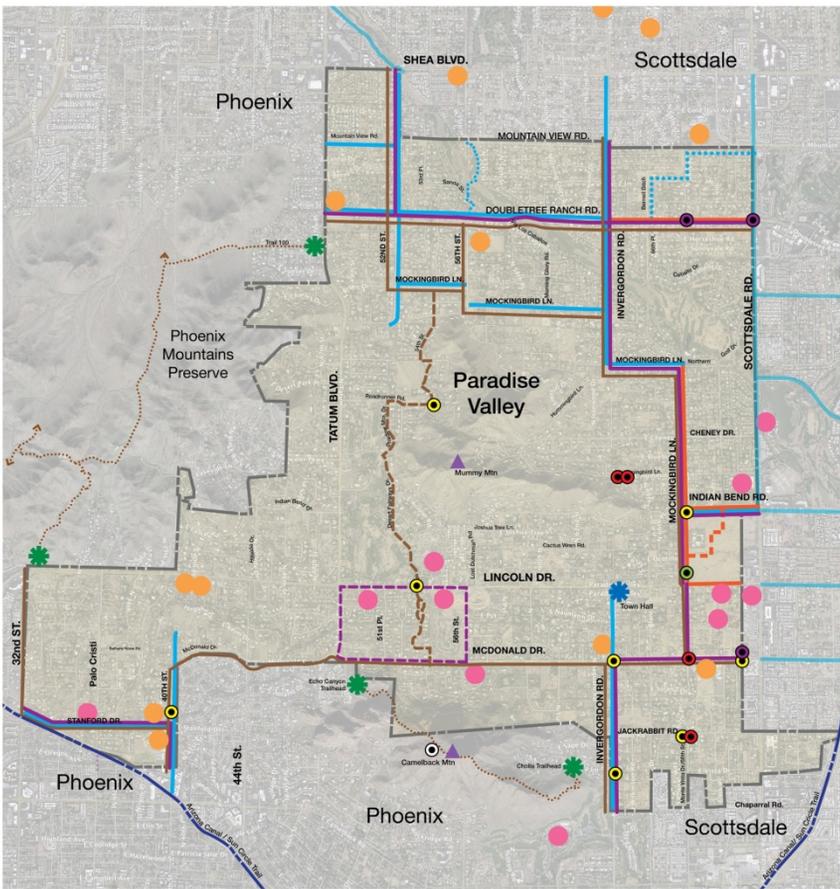


Town Hall  
 School  
 ADOT 2015 Crash Data:  
 No Injury  
 Possible Injury  
 Resort  
 Trailhead  
 Mountain Peak  
 Trail  
 Canal

# BICYCLE |

## 2012 GP Facilities + Existing Facilities + Existing Capital Improvement Program (CIP)



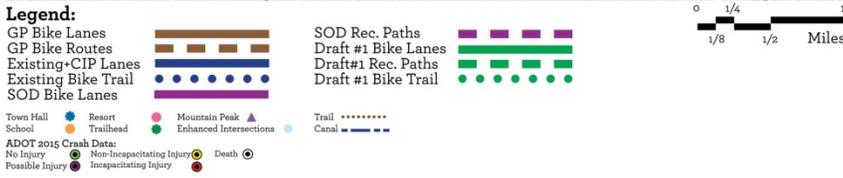
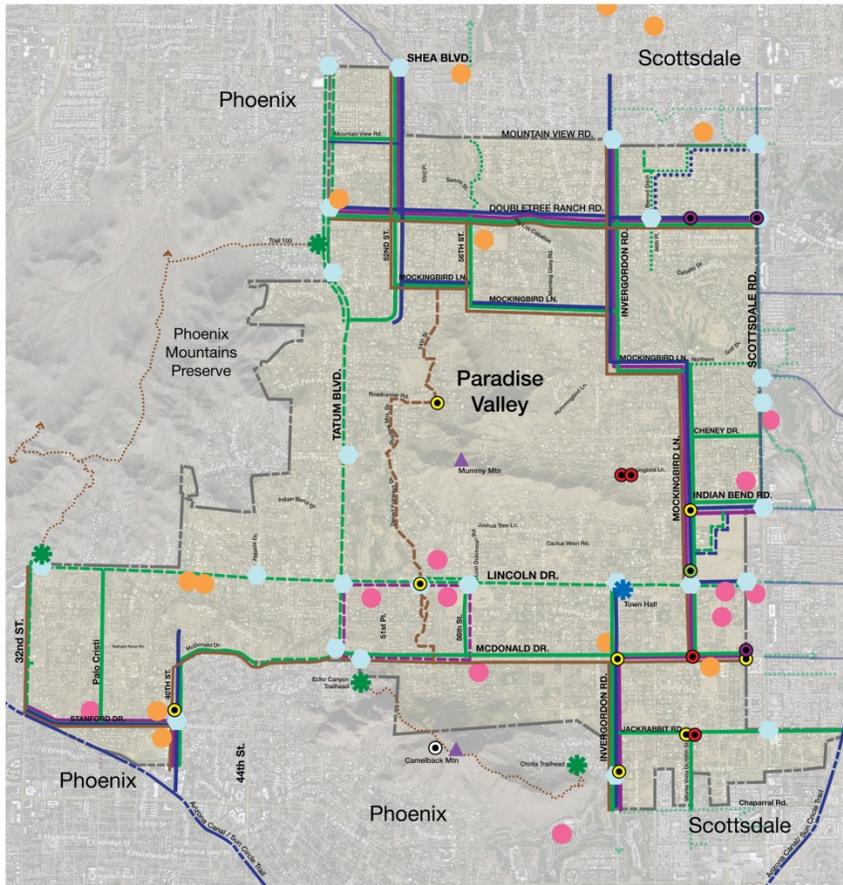


# BICYCLE |

## 2012 GP Facilities + Existing Facilities + Existing (CIP) + Statement of Direction (SOD)

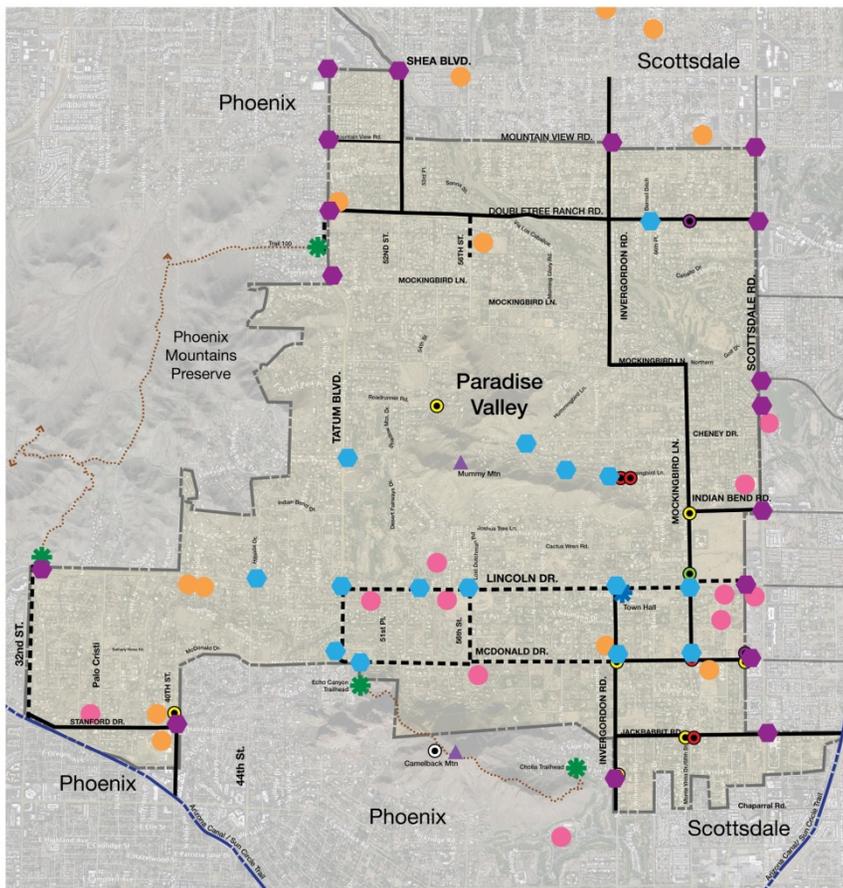
# BICYCLE |

## 2012 GP Facilities + Existing Facilities + Existing (CIP) + (SOD) + Draft Master Plan #1



# BICYCLE |

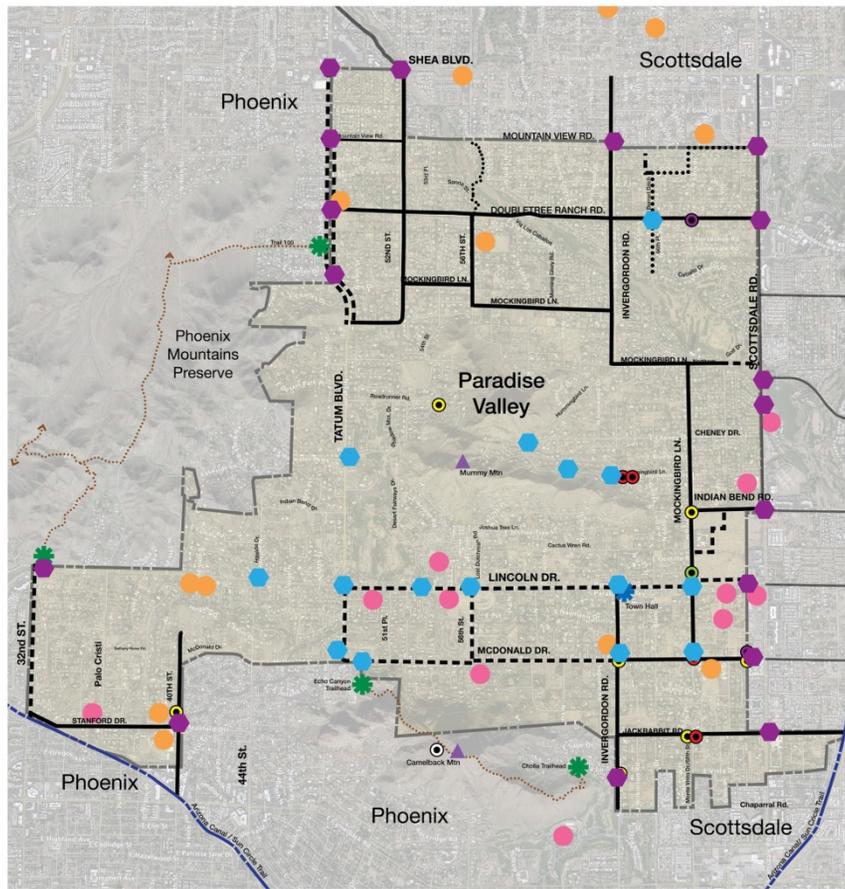
## Proposed Routes



- Town Hall
  - School
  - Resort
  - Trailhead
  - Mountain Peak
  - Enhanced Intersections in PV
  - Enhanced Intersections w/ Outside Coordination
  - Trail
  - Canal
- ADOT 2015 Crash Data:
- No Injury
  - Possible Injury
  - Non-Incapacitating Injury
  - Incapacitating Injury
  - Death

# BICYCLE |

## Proposed Routes + CIP



**Legend:**  
 Bike Lanes: [Thick black line]  
 Rec. Paths: [Dashed black line]  
 Bike Trail: [Thin black line]

Town Hall: [Blue square]    Resort: [Blue circle]    Mountain Peak: [Purple triangle]    Enhanced Intersections w/ Outside Coordination: [Purple circle]  
 School: [Yellow circle]    Trailhead: [Green circle]    Enhanced Intersections in PV: [Blue circle]    Trail: [Purple circle]  
 ADOT 2015 Crash Data: [Red circle]    Non-Incapacitating Injury: [Yellow circle]    Death: [Black circle]  
 Possible Injury: [Red circle]    Incapacitating Injury: [Red circle]

0 1/4 1  
1/8 1/2 Miles

ENHANCED INTERSECTIONS  
HUMMINGBIRD LANE NEIGHBORHOOD



# ENHANCED INTERSECTIONS

## Road Safety Improvements

- Re-alignment of intersection
- Adding stop signs/yield signs
- Option in adding decorative pavement details
- As needed, other related traffic design improvements



Illustrative Example

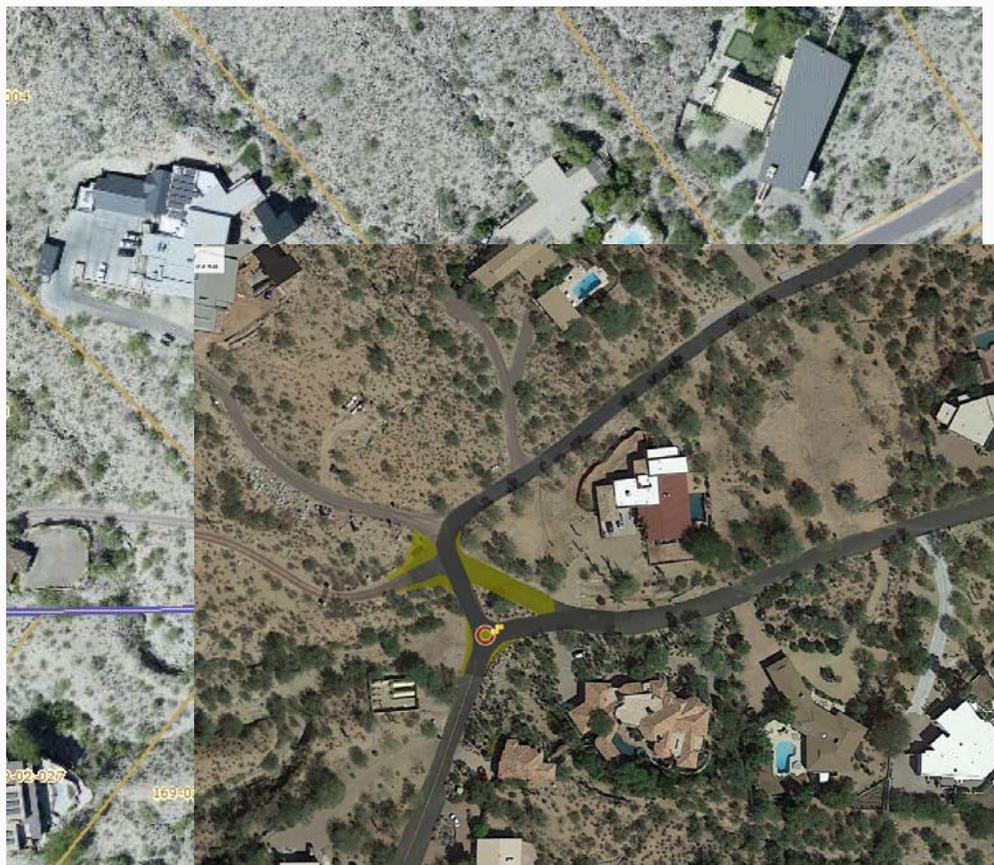


Illustrative Example

## ENHANCED INTERSECTIONS

### Road Safety Improvements

- Adding mini-roundabout
- Roundabout options can be 6" raised curb or flush
- Option in adding decorative pavement details
- As needed, other related traffic design improvements



Illustrative Example

## ENHANCED INTERSECTIONS

### Road Safety Improvements

- Adding mini-roundabout
- Removing road segment
- Option in adding decorative pavement details
- As needed, other related traffic design improvements

# SUPPORTING STANDARDS

## TOOLBOX

Application to specific locations will require a separate process via individual request to Council or be done with annual Capital Improvement Program



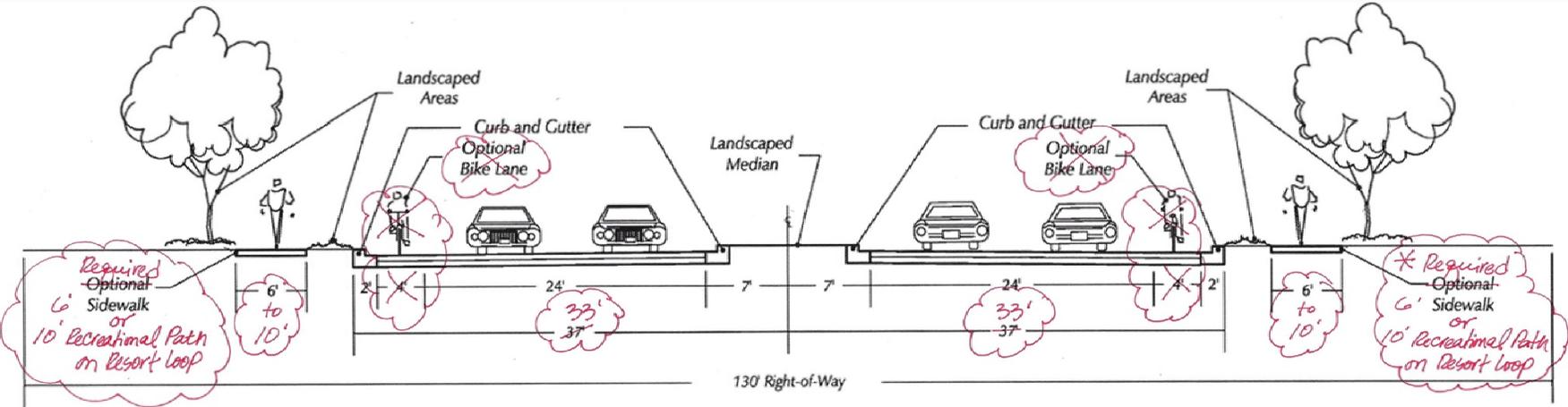
# STREET CLASSIFICATIONS



# CROSS-SECTIONS |

## Proposed Major Arterial

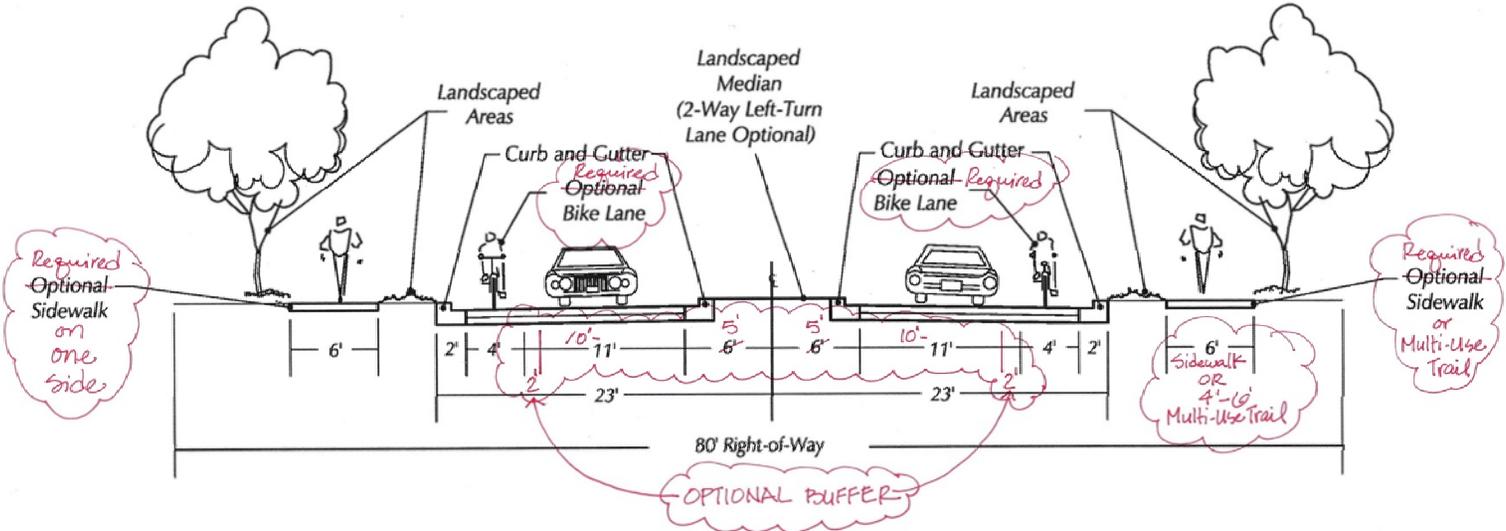
- NOTE: Apply Visually Significant Corridor Standards.
- \* Sidewalk, Recreational Path or \_\_\_\_\_ Surface Optional on 1-side of Tatum Blvd. Refer to Ped/Bike MP
- Lincoln Drive
- Tatum Boulevard



# CROSS-SECTIONS |

## Proposed Minor Arterial:

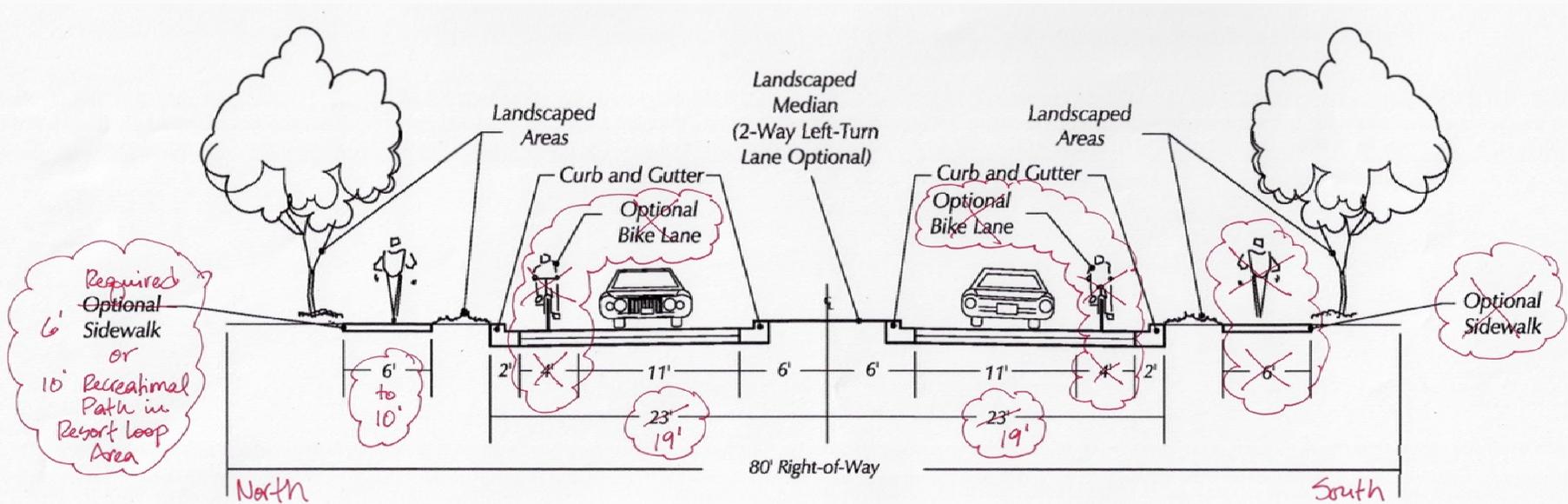
- Doubletree Ranch Road
- Invergordon Road
- Mockingbird Lane



# CROSS-SECTIONS |

## Proposed Minor Arterial:

- McDonald Drive (Tatum Boulevard to Invergordon Road)

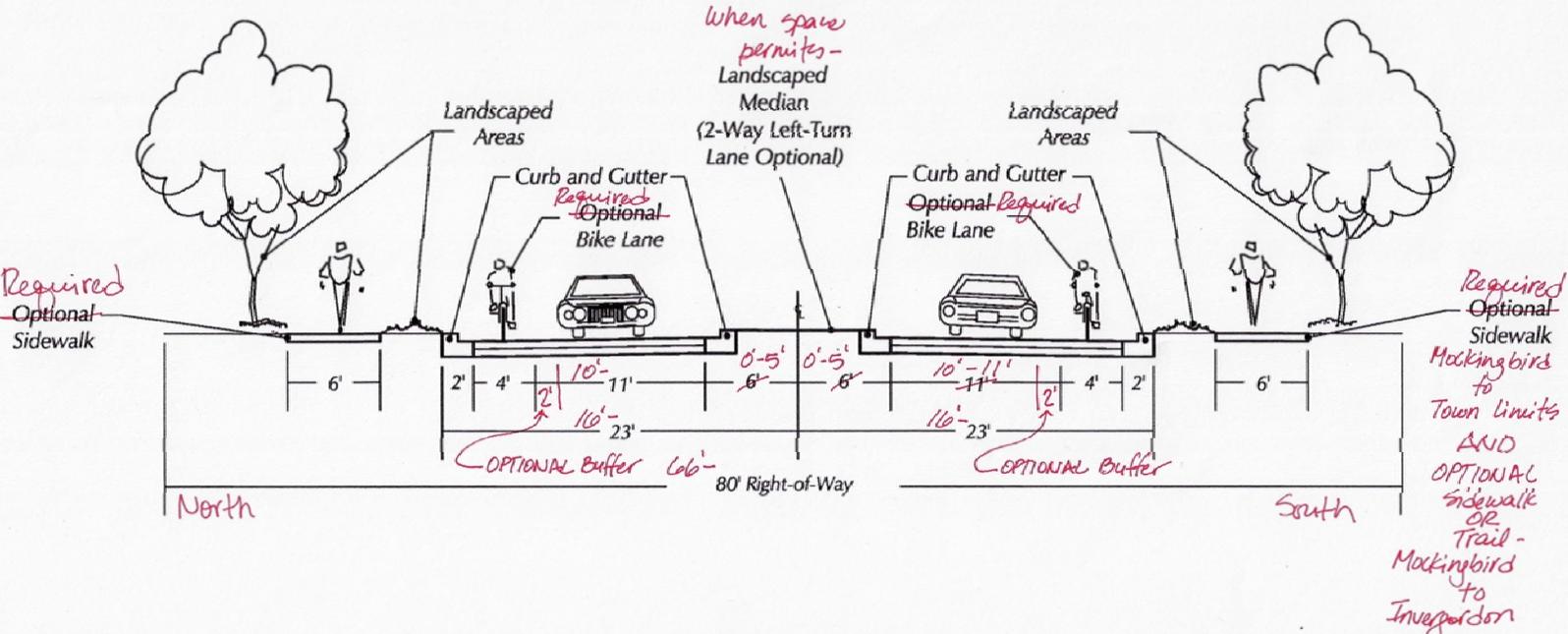


\*OPTIONAL Bulb out @ medians for easier passing & reduce bike/vehicle conflict.

# CROSS-SECTIONS |

## Proposed Minor Arterial:

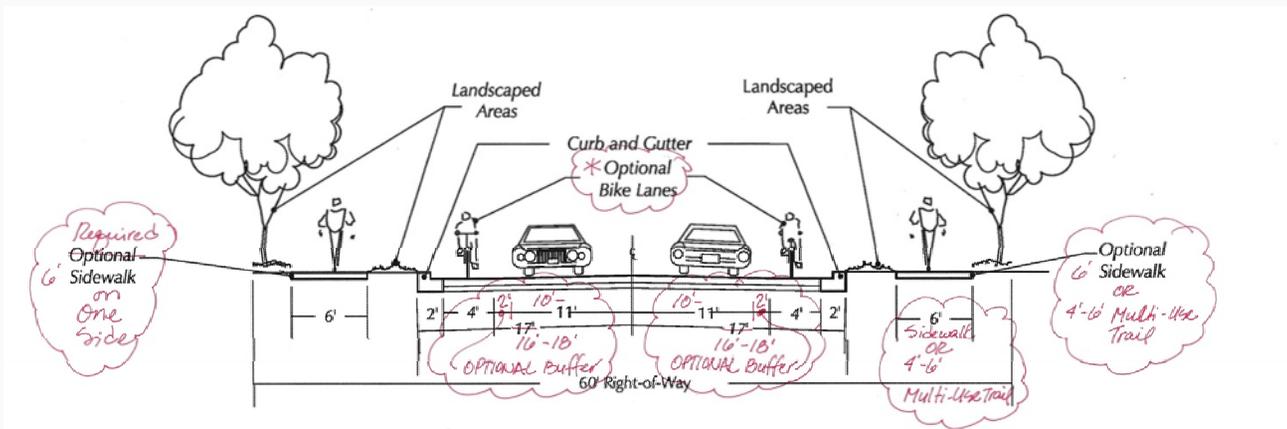
- McDonald Drive (East of Invergordon Road)



# CROSS-SECTIONS |

## Proposed Collector:

- Mountain View Rd (52<sup>nd</sup> to Tatum & 56<sup>th</sup> to Invergordon)
- 52<sup>nd</sup> St (Shea to Mockingbird)
- Mockingbird Ln (Invergordon west)
- 56th St (S. Mockingbird to Doubletree)
- Stanford Dr (32nd to 44th)
- Palo Cristi (Lincoln to Stanford)
- Jackrabbit Rd (Invergordon to Scottsdale)
- Monte Vista Dr (Jackrabbit to Chaparral)
- Cheney Dr (Mockingbird to Scottsdale)
- Indian Bend Rd (Mockingbird to Scottsdale)
- 40th (south of Stanford)

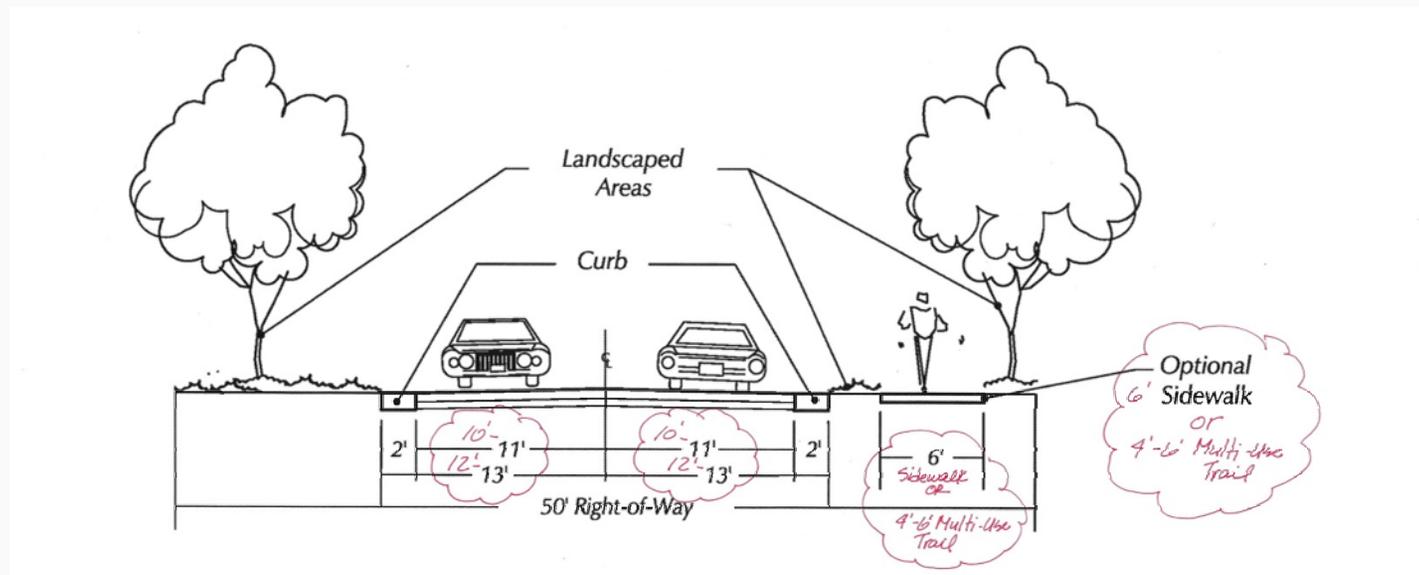


\*OPTIONAL Bike Lanes except as shown on Ped/Bike MP where bike lanes are required.

# CROSS-SECTIONS |

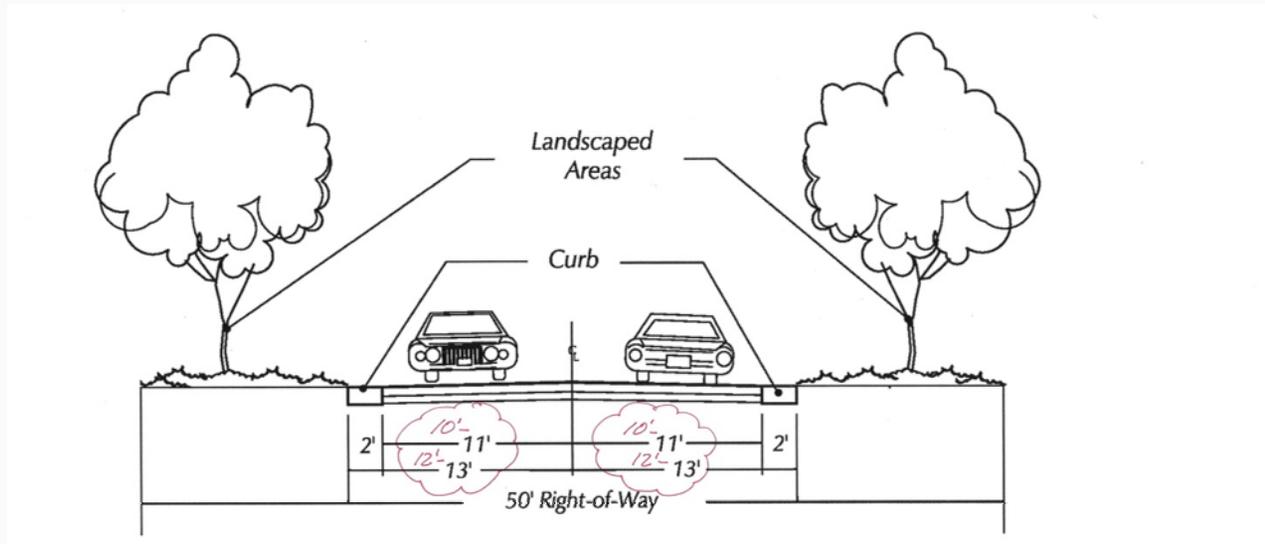
## Proposed Local Option A-1:

- Option A-2 = Optional Bike Lanes (i.e. Enhanced Local Section A from Draft MP #1)
- Option A-3 = Optional Walkable Shoulder (i.e. Enhanced Local Section C from Draft MP #1)
  - NOTE: Options A-1, A-2, and A-3 require Town Council approval.



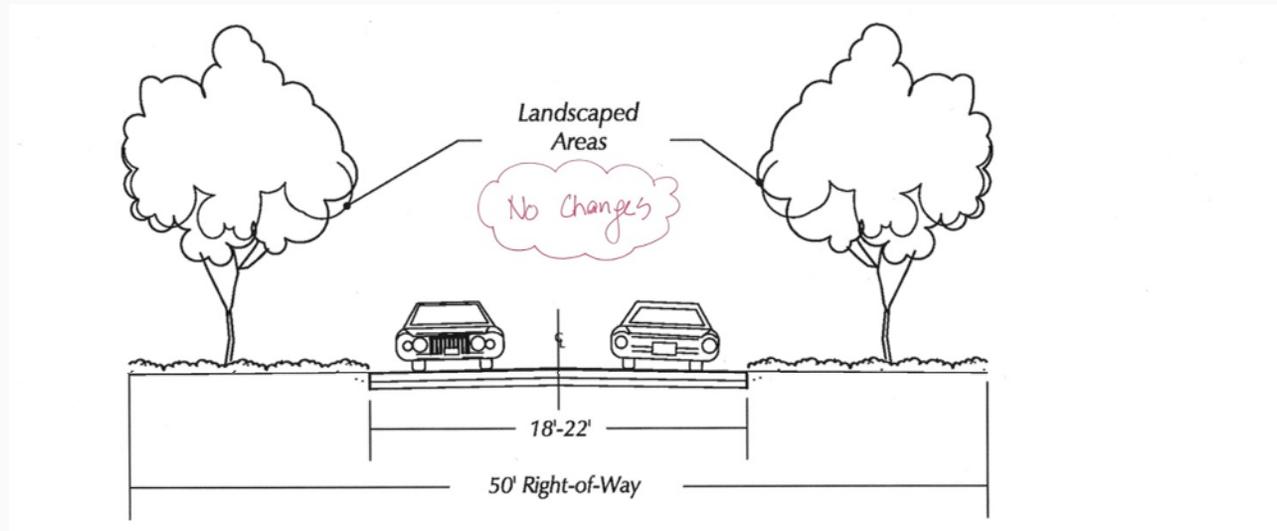
# CROSS-SECTIONS |

## Proposed Local Option B:



# CROSS-SECTIONS |

## Proposed Local Option C:



## CROSS-SECTIONS |

### Local Street Option- Selection Criteria Might Consider:

- Improves safety
- Connects to adjacent facilities
- Links to a destination (who does it serve?)
  - Within a heavy use corridor
- Can be combined with already planned projects
- ROW, pavement width + site conditions are accommodating
  - Cost responsibility is identified

## CROSS-SECTIONS |

### Berniel Ditch:



# TRAFFIC CALMING



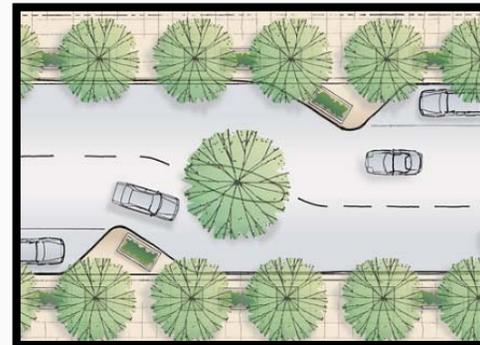
# TRAFFIC CALMING

## Chicanes

- Reduce speed and traffic volumes
- Include bicycle bypass
- May include rainwater catchment
- Include landscaping
- Include warning signs in advance of approaching the chicane
- Already use this device within the Town

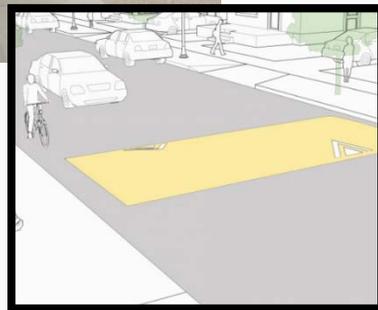


Figure \_\_: Supporting Standards -Chicanes



WALK & BIKE PARADISE VALLEY

The Paradise Valley Bicycle and Pedestrian Master Plan



## TRAFFIC CALMING

### Speed Humps

- Reduces speed on low volume-low speed roads only (local roads)
- Certain height and width dimensions
- Has a gradual raised area versus an abrupt raised area like a speed bump
- Hump reduces speed to 15-20 mph versus a bump reduces speed to 5 mph
- Now need to accommodate space for emergency vehicles
- Already use this device within the Town
- Include warning signs
- Town has an approval policy in place

## **POLICY GOVERNING SPEED CONTROL DEVICES – "SPEED HUMPS"**

Generally, if a particular street meets specific criteria for speed humps, has an unusually high speeding problem, and is used as a short-cut to avoid other higher classification streets, the Town will consider installation of a speed hump. Town criteria for consideration for speed control devices is as follows:

1. Must be a paved residential classification street in a residential area, preferably with curbs and gutters.
2. The street must have a normal crown for drainage along the sides of the street.
3. The speed limit must be 25 miles per hour prior to speed hump installation.
4. Humps will not be installed on a curve or a grade of more than plus or minus 3%.
5. Humps will not be installed if they will divert traffic onto other local streets.
6. Petitions must indicate 90% resident approval from an area affected by placement of humps.
7. Humps generally will not be installed within 200 feet of a stop sign.
8. Police enforcement must be utilized to try to reduce speeding prior to the use of speed humps.

## **TRAFFIC CALMING**

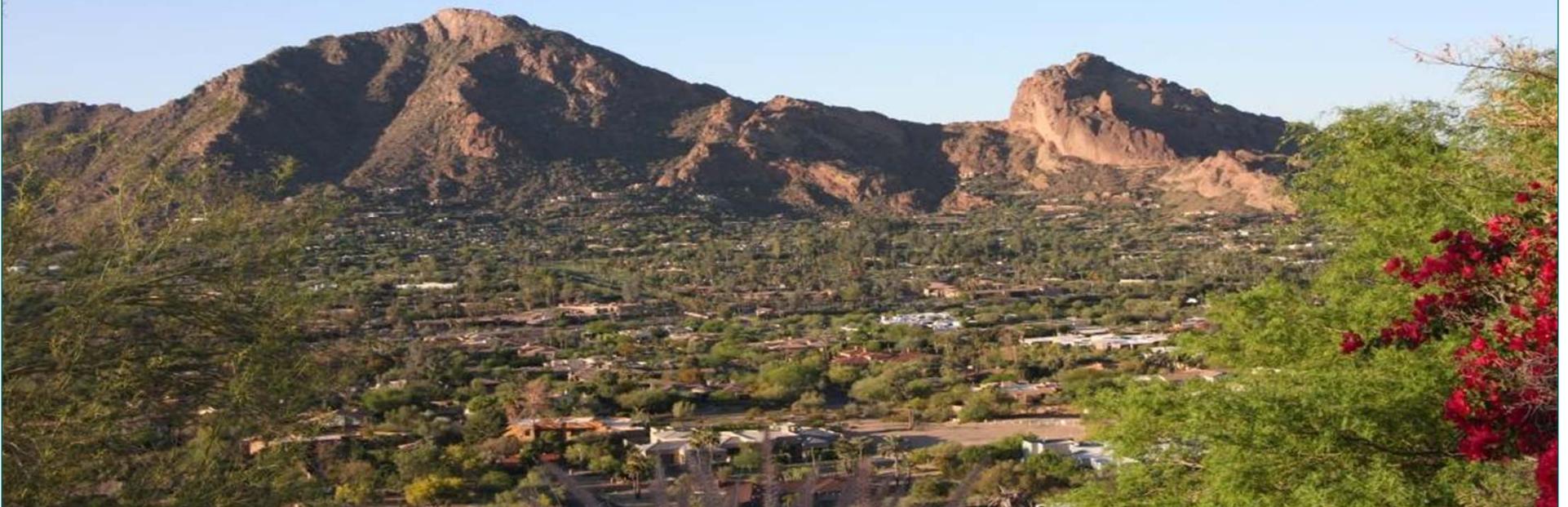
### **Speed Humps – Policy**

- Policy approved in 1999
- Used on local streets of 25 mph or less
- 90% resident approval
- Could use the same or a similar policy for neighborhoods requesting any of the supporting standards that would be part of the bike-ped plan

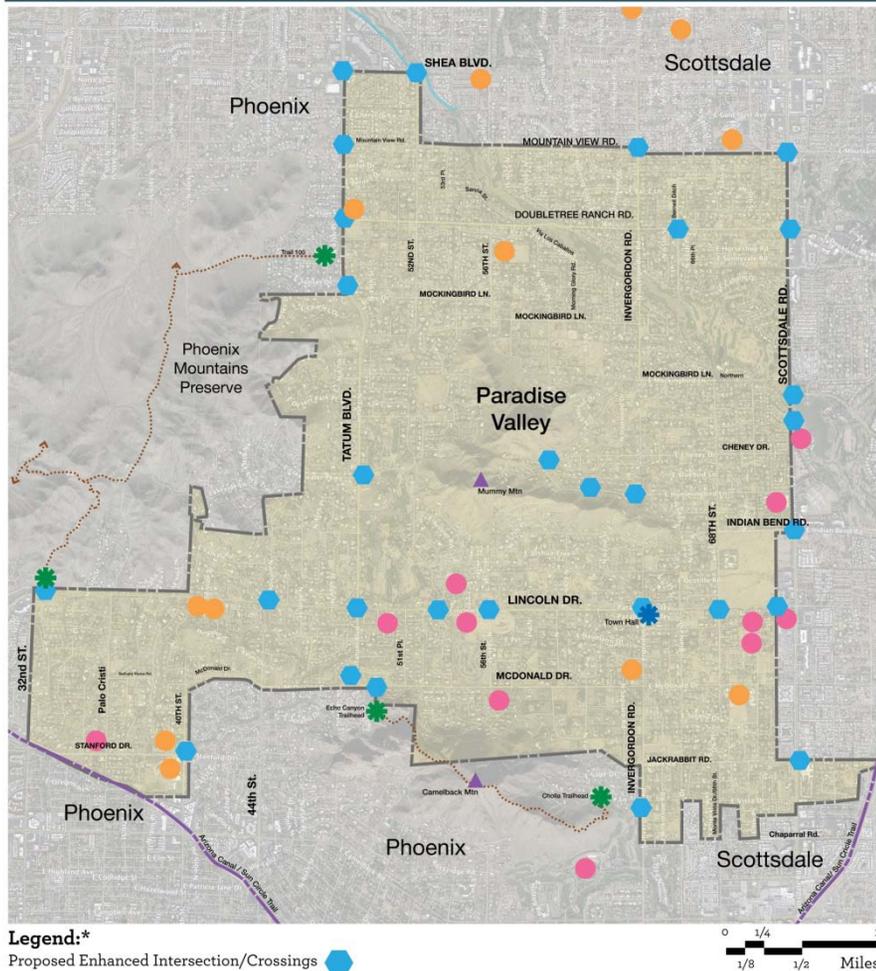
# ENHANCED INTERSECTIONS

Master Plan will include a toolbox of preferred crossings

Specific locations will be identified, but specific locations will require a separate process via annual Capital Improvement Program for exact design



## Enhanced Intersections and Crossing Facilities



## ENHANCED INTERSECTIONS

### Purpose

- Used to heighten driver awareness of crosswalks and pedestrian areas
- Use designs that enhance and blend with Town aesthetics
- Designs must accommodate persons with disabilities
- Certain minimum engineering standards
- Draft Plan 1 proposed potential locations that will need to be discussed



## ENHANCED INTERSECTIONS

### Crossing

- Marked crosswalk
- Used on most type streets
- Used to heighten driver awareness
- Use designs that enhance and blend with Town aesthetics
- Designs must accommodate persons with disabilities
- Certain minimum engineering standards

Scottsdale Road – Kierland Commons



83<sup>rd</sup> Avenue – Peoria Sports Complex



## ENHANCED INTERSECTIONS

### Z-Crossing Hawk Beacon

- Staggered crosswalks, with safety area in middle (median)
- Used on high volume streets like Lincoln Drive or Tatum Boulevard
- None used in Town presently
- If considered, items to keep in mind
  - Might have one or two in Town
  - A design that blends with Town aesthetics
  - Impact to adjoining homeowners
- May have associated Hawk Beacon warning lights

Stanford Drive Roundabout



Mini-Roundabout



## ENHANCED INTERSECTIONS

### Roundabout

- Roundabout
- Mini-Roundabout
  - Used on 2-lane streets of 35 mph or less
  - Smaller diameter than typical roundabout of 50' – 80'
  - Center island that may be traversable

# ENHANCED INTERSECTIONS

## Road Safety Improvements

- Re-alignment of intersections
- Adding stop signs/yield signs
- Adding decorative pavement details
- Other related traffic design improvements



Illustrative Example

# WAYFINDING



- Network Orientation

- Provides rules, regulations, overview map, etc. at select Town entrances and secondary locations
- SOD considers in secondary locations as Informational Signs



- Route Identification

- Number/symbol designating route
- Placement on vertical poles or on pavement
- SOD removes bike routes – bike lane identification



- Route Guide

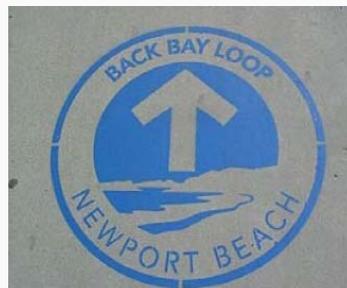
- Indicates locations, distances, and directions
- Placement on vertical poles or on pavement
- SOD removes bike routes – might consider resort loop

## WAYFINDING

### Draft 1 Sign Types

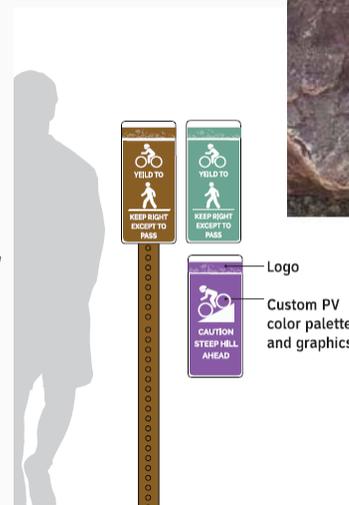


- Pavement Markings
  - Reinforce routes, provide direction, and enhance branding
  - Considered for bike lanes and routes
  - Might consider on resort loop



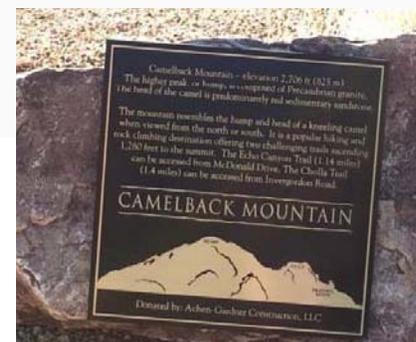
- Wayside
  - Provides supplemental information
  - This is the interpretive signs in the SOD

- Regulatory/Warning
  - Provides regulatory, warning of upcoming hazards, and related information
  - SOD recognizes the need for this sign type



## WAYFINDING

### Draft 1 Sign Types

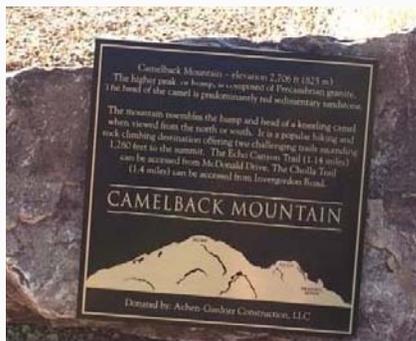


WALK & BIKE PARADISE VALLEY

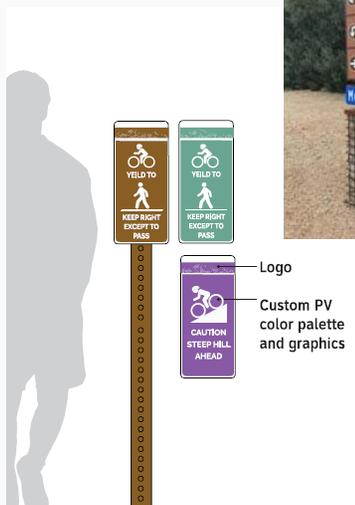
The Paradise Valley Bicycle and Pedestrian Master Plan

# WAYFINDING

## SOD Sign Types



- Interpretative
  - *information that is unique to Paradise Valley such as pointing out local mountains/plant life*
- Informational
  - *located in limited pedestrian-concentrated spots like the Town Hall*
  - *Similar to Network Orientation sign in Draft 1 Plan*
- Regulatory/warning
  - *Necessary for safety*



Logo  
Custom PV color palette and graphics



Bike lane markings/signs

# WAYFINDING

## Materials & Colors

- Use existing wayfinding signage as basis for materials and colors
  - Metal panels that emulate rusted steel
  - Gabion walls as bases or accents
  - Cast in place letters in concrete
  - Dark browns, earth and flora tones
  - White copy for contrast with darker colors
- Use Manual Uniform Traffic Control Devices methods when appropriate
  - Reflective materials to provide night time visibility due to the low light
  - High contrast of copy to background for better readability

Existing Paradise Valley Sign Materials and Colors





