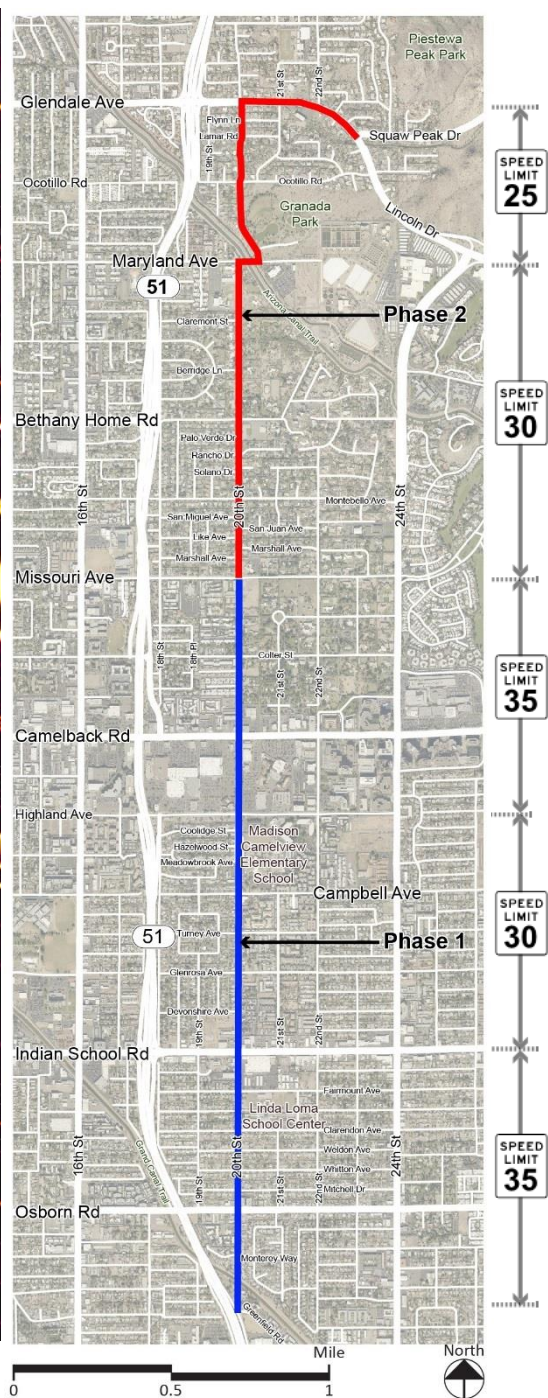




20th Street



Existing Speed Limits

Project Overview

- The 20th Street corridor from Glendale Avenue to the Grand Canal was identified as the 4th highest priority out of 39 corridors for implementation in the City of Phoenix Bicycle Master Plan adopted by City Council in November 2014.
- Maricopa Association of Governments (MAG) awarded the City of Phoenix Design Assistance Grant funds to complete a project assessment and develop a series of safety improvements for the 20th Street bicycle corridor.
- The proposed improvements are meant to transform the corridor into a low-stress environment for bicyclists, close gaps in the sidewalk network, and make the pedestrian facilities accessible to people of all abilities.
- A bicycle and pedestrian network is being developed that connects the Camelback East core to Downtown. This project is a section of that plan.

Proposed phasing

- **Phase 1** – near term improvements between the Grand Canal Path and Missouri Avenue (tentatively scheduled for Fiscal Year 2019)
- **Phase 2** – from Missouri Avenue to Glendale Avenue (proposed for funding in Fiscal Years 2021 and/or 2022)

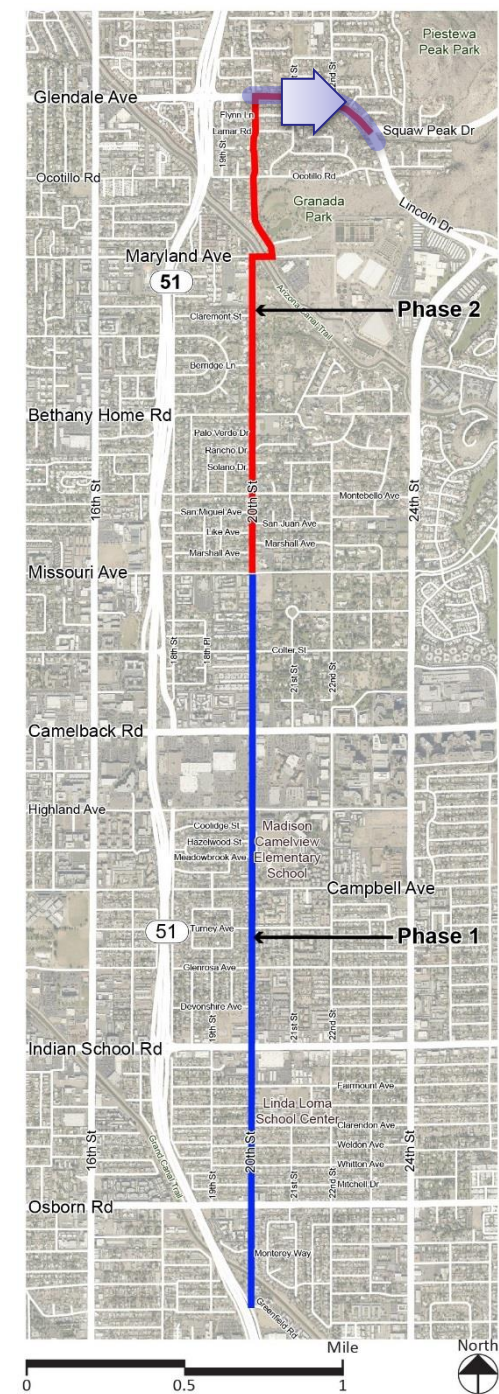
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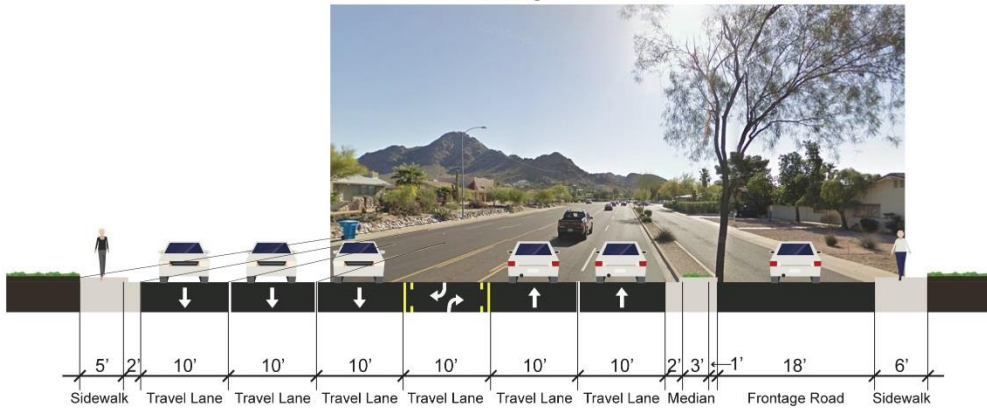
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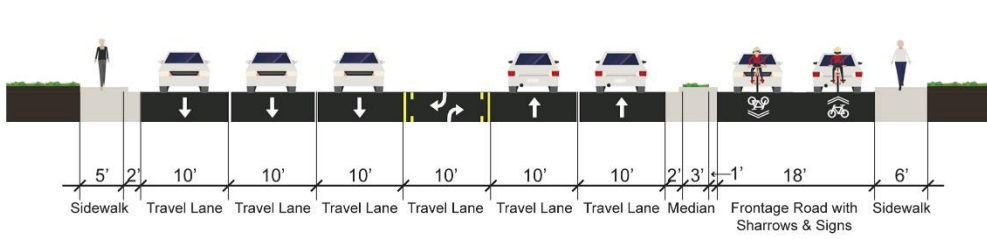
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Glendale Ave - 20th St to Squaw Peak Dr
Existing



Sharrows



Cross sections key:
Shows the existing lane configuration and proposed shared-use of frontage road long the south side of Glendale Avenue

Frontage road treatments

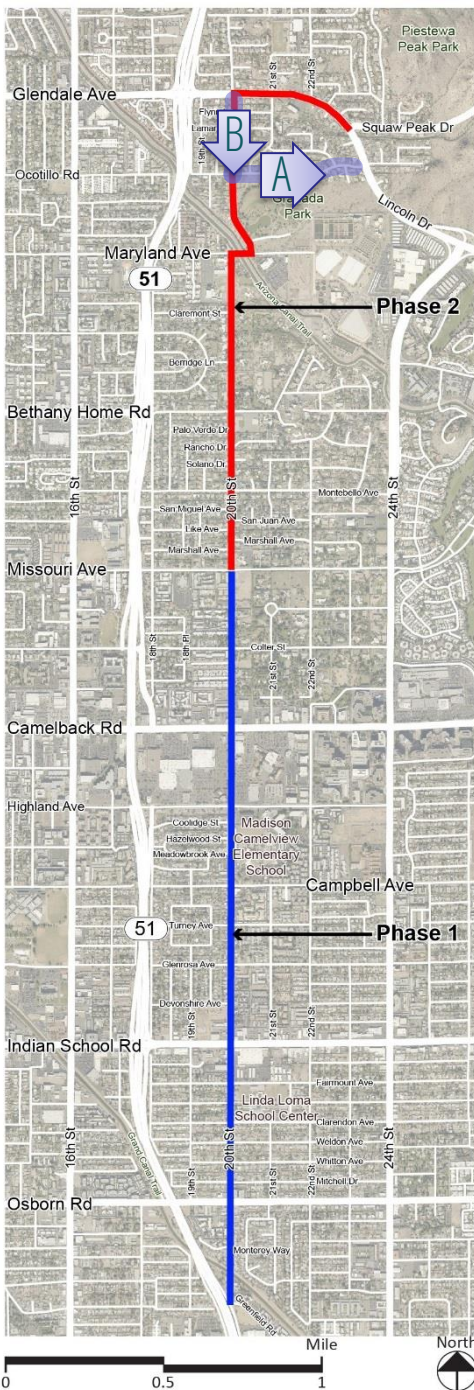
- Handle low car volumes at low speeds
 - Are physically separated from faster moving arterial traffic
- ↓
- Shared use of the road is appropriate for all users

Proposed treatment

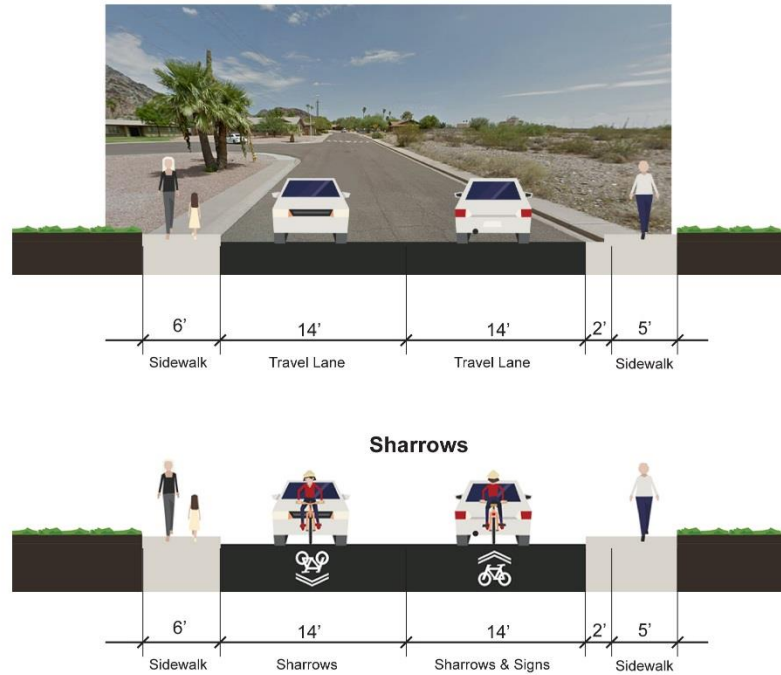
- Install sharrows pavement markings to indicate the shared use of the road for cars and bikes
- Install bike route signing for wayfinding and increased awareness

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Ocotillo Rd - 20th St to Lincoln Dr
Existing



Cross sections key:
Shows the existing street conditions and proposed minor improvement. The sharrows cross section applies to both Ocotillo Road and north section of 20th Street

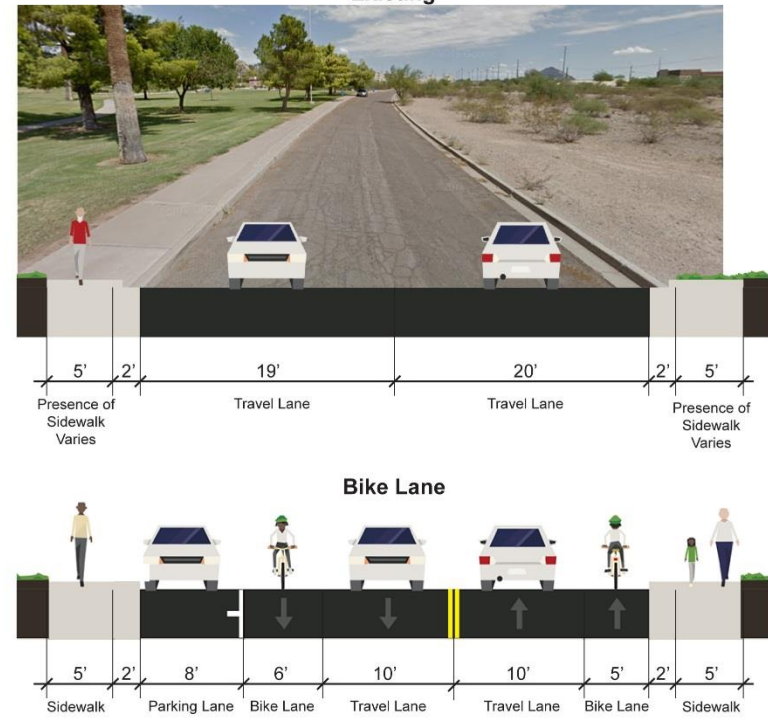
- A Residential road treatments**
 - Ocotillo Rd handles low car volumes at relatively low speeds. The posted speed limit is 25 mph.
 - B Residential road treatments**
 - 20th Street handles low car volumes. The posted speed limit is 25 mph.
- ↓
- Shared use of the road may be appropriate for all users

Proposed treatment

- Install sharrows pavement markings to indicate the shared use of the road for cars and bikes
- Install bike route signing for wayfinding and increased awareness



Glendale Ave to Maryland Ave Existing



Cross sections key:
Shows the existing street conditions and proposed improvement from Maryland Avenue to Ocotillo Road.

Residential road treatments

- 20th Street handles low car volumes. The posted speed limit is 25 mph. On-street parking is allowed along the Granada Park.



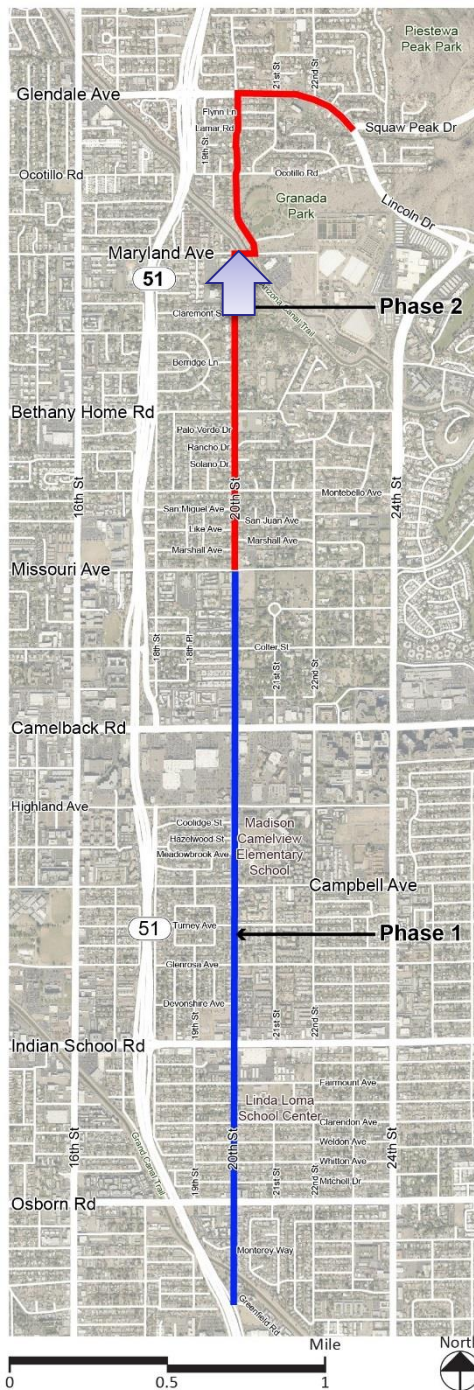
- Shared use of the road is not appropriate given the wide pavement area, which promotes higher travel speeds than the posted speed limit

Proposed treatment

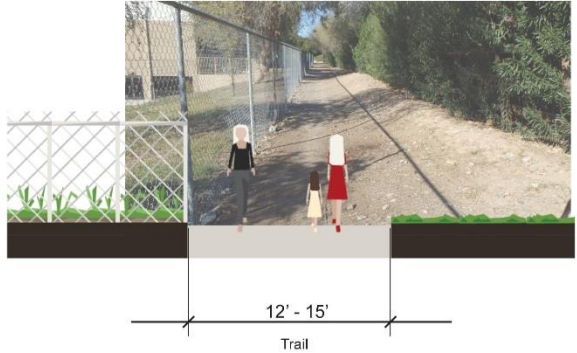
- Mark the on-street parking space along the Granada Park
- Install bicycle lanes to separate bikes from cars
- Mark the vehicular lanes at 10 feet wide to promote slower speeds
- Install bike route signing for wayfinding and increased awareness
- Close the gaps in the sidewalk network long the west side of the road
- Rebuild corner ramps and driveway aprons to meet ADA standards

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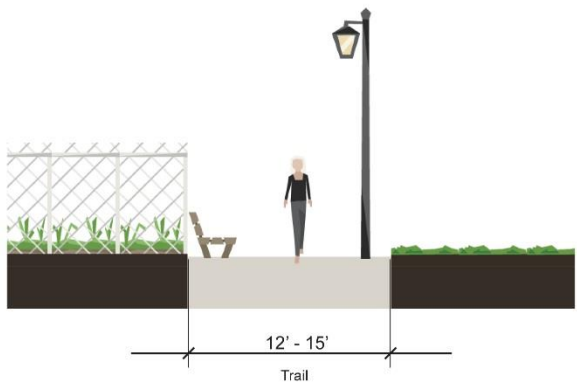




Trail - Maryland Ave to North of Claremont St Existing



Option 1: Shared Use Path with Privacy Fencing



Cross sections key:
Shows the existing "goat-path" and proposed improvement along the 20th Street extension from Maryland Avenue to Claremont Street

Shared-use path treatment

- North of Claremont Street, 20th Street dead-ends into an easement that is used by pedestrians

Proposed treatment

- Construct a paved shared-use path within the easement
- Improve the connection at Maryland Avenue with ramps that meet ADA standards
- Install privacy screens along the western property fencing

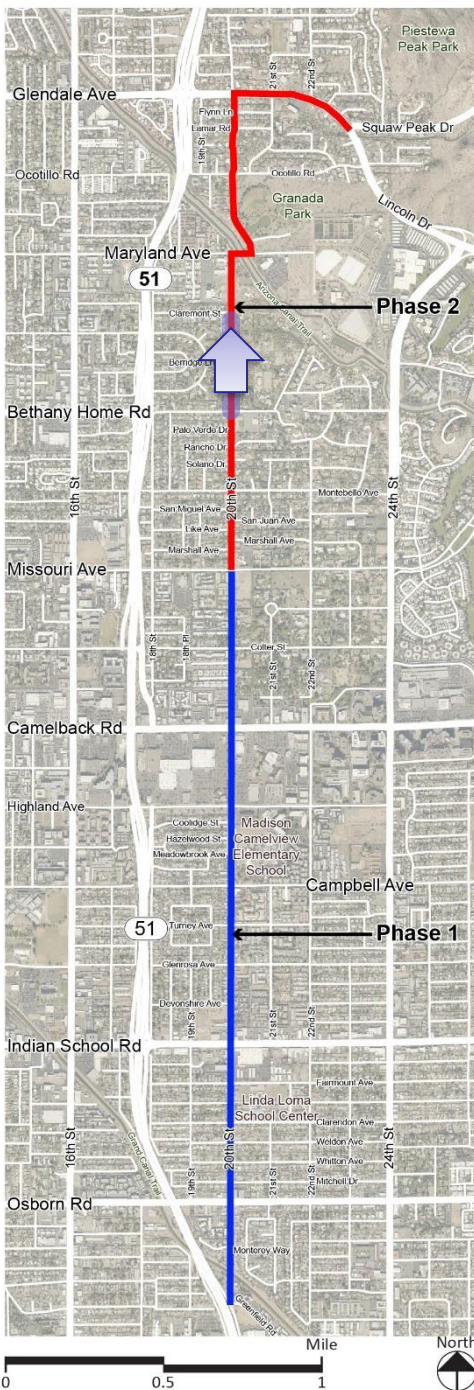
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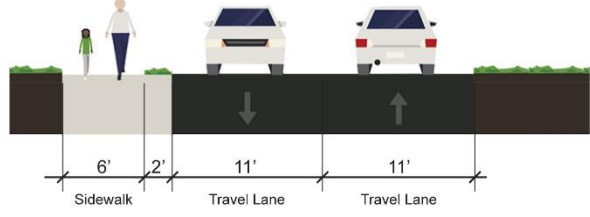
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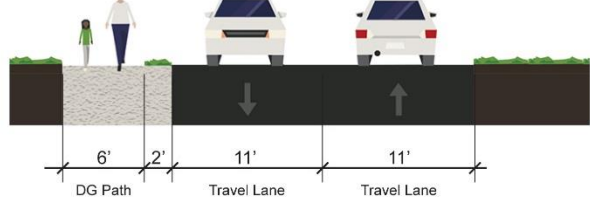
Claremont St to Bethany Home Rd Existing



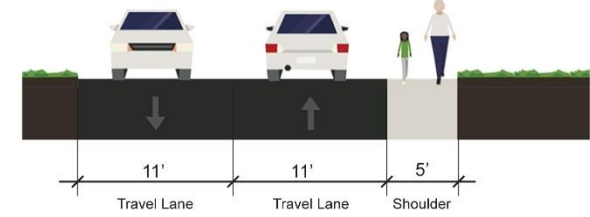
Option 1: New Sidewalk



Option 2: New DG Path on Eas



Option 3: New Street Shoulder



Residential road treatments

- 20th Street handles low car volumes at low speeds. The street dead-ends at Bethany Home Road
- 20th Street has no sidewalks or curb



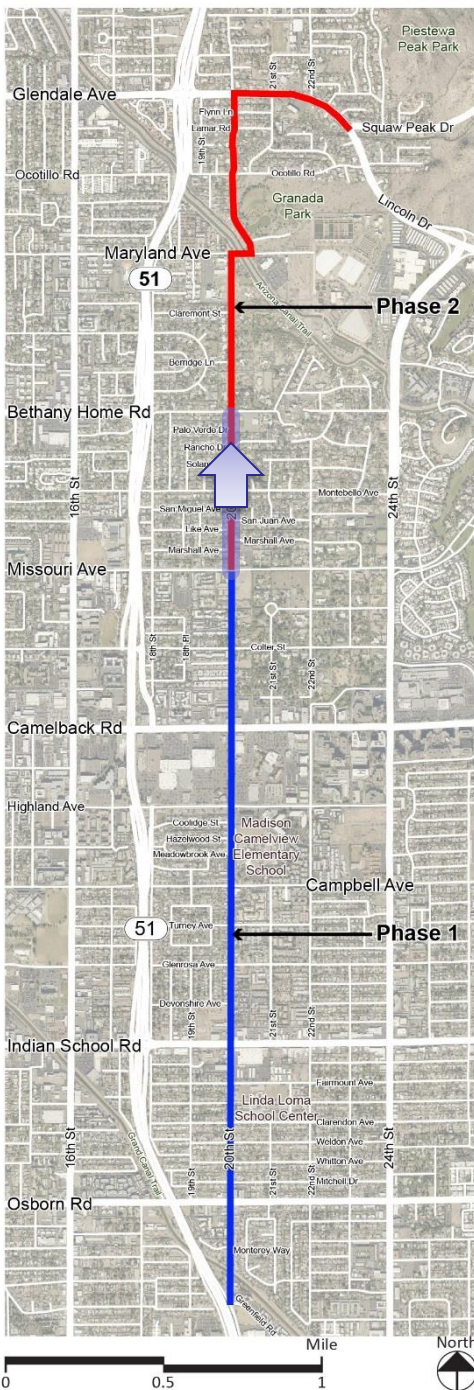
- Shared use of the road is appropriate for all users

Proposed treatments

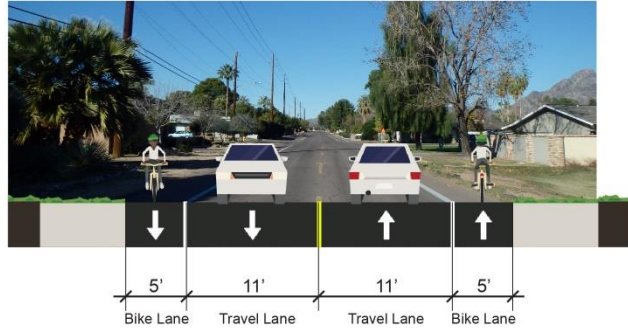
- Install sharrows pavement markings to indicate the shared use of the road for cars and bikes
- Install bike route signing for wayfinding and increased awareness
- Install a concrete sidewalk along the west side of the road to provide continuous pedestrian access along the corridor
- Or
- Install a decomposed granite path on the west side of the street that could blend easier with the character of the neighborhood
- Or
- Widen the road to provide a 5-foot shoulder for pedestrian use

Cross sections key:
Options for consideration from
Claremont St to Bethany Home Road

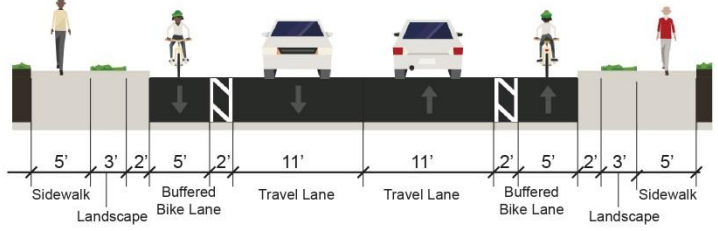




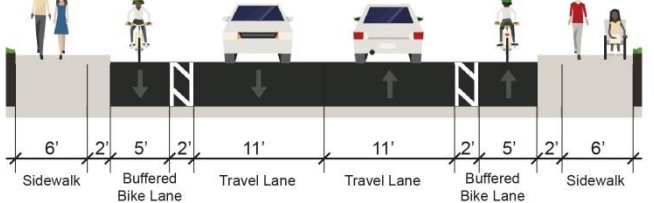
Bethany Home Rd to Missouri Ave Existing



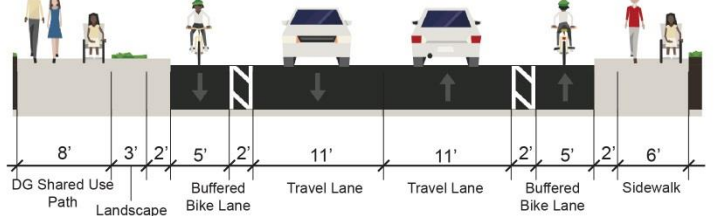
Option 1: Detached Sidewalks and Buffered Bike Lanes



Option 2: Attached Sidewalks and Buffered Bike Lanes



Option 3: Shared-use Path and Sidewalk and Buffered Bike Lanes



Residential road treatments

- 20th Street handles low car volumes and has bike lanes. The posted speed limit is 30 mph.



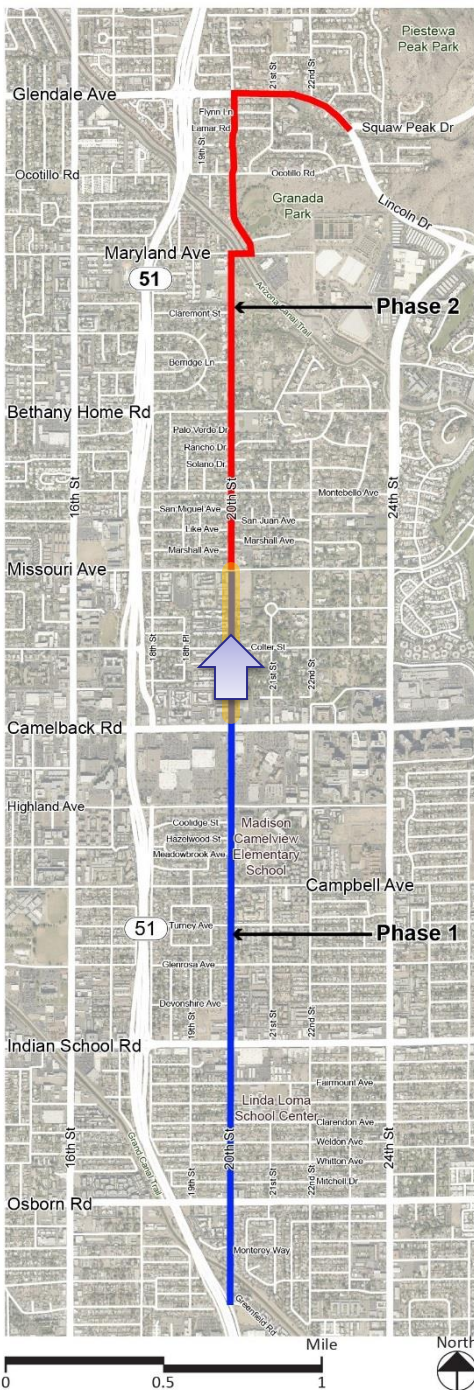
- Shared use of the road is not appropriate given the wide pavement area, which promotes higher travel speeds than the posted speed limit

Proposed treatments

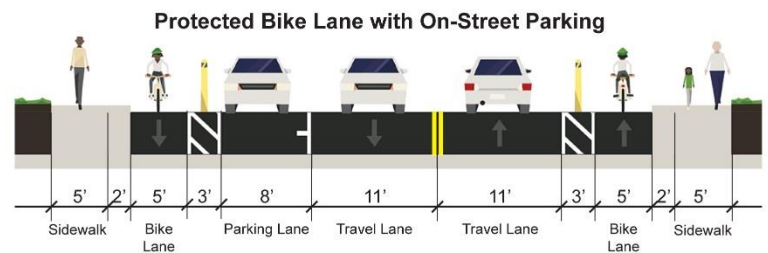
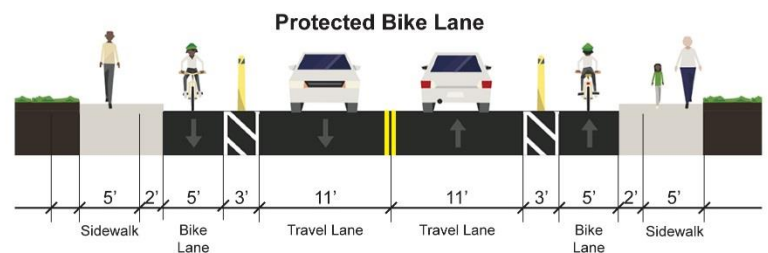
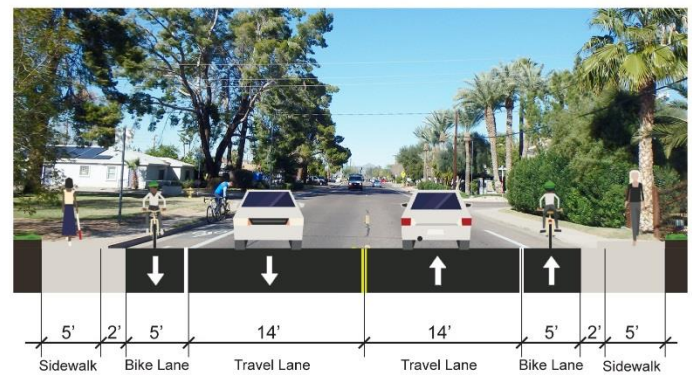
- Install buffered bike lanes
- Install ADA compliant corner ramps and driveway aprons
- Add detached concrete sidewalks
- Or
- Add attached concrete sidewalks
- Or
- Add a concrete sidewalk on the east side of the street and a decomposed granite (DG) shared-use path on the west side of the street

Cross sections key:
Options for consideration from Bethany Home Road to Missouri Avenue





Missouri Ave to Camelback Rd Existing



Cross sections key:
Shows the existing lane configuration and proposed treatments from Missouri Avenue to Camelback Road

Collector road treatments

- 20th Street handles car volumes in excess of 10,000 vehicles per hour at speeds greater than 35 MPH



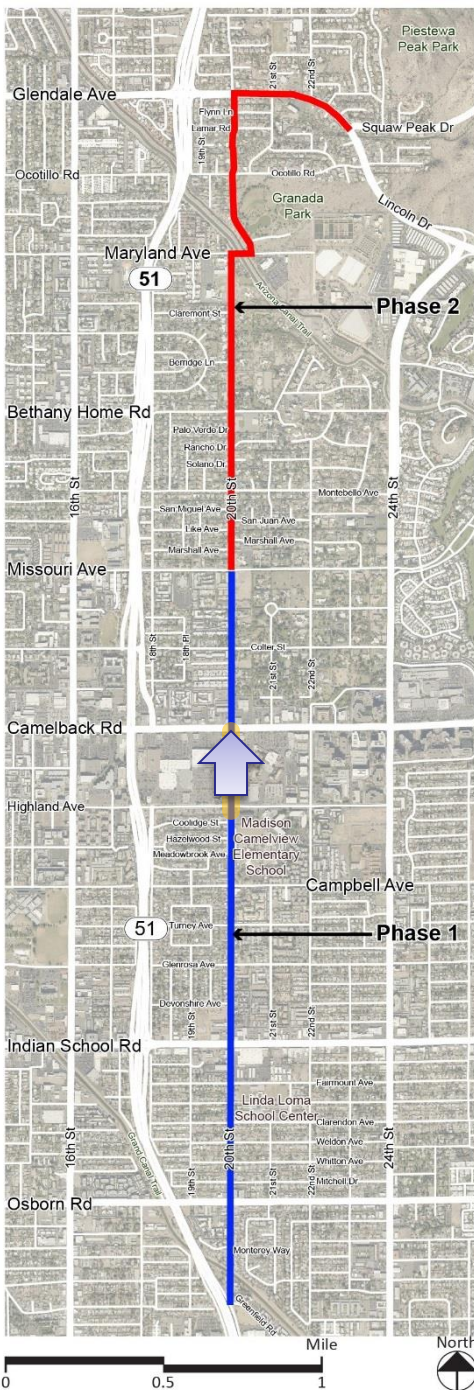
- Greater separation between cyclists and cars is required due to the high speed of the vehicles. Typical bike lanes are not appropriate for concerned cyclists

Proposed treatments

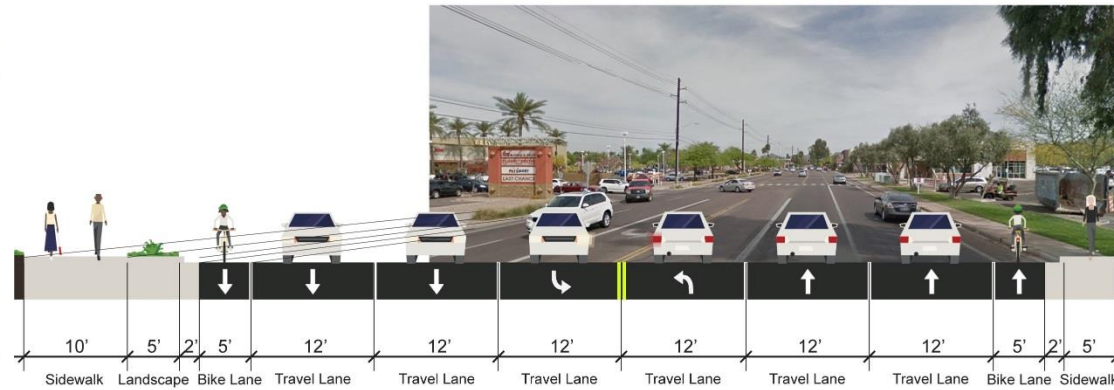
- Reduce the speed limit to 30 mph
- Install separated bike lanes
- Narrow the traffic lanes to promote slower car speeds
- Create additional separation between the bike and the travel lane by locating existing on-street parking between them
- Rebuild corner ramps and driveway aprons to meet ADA standards

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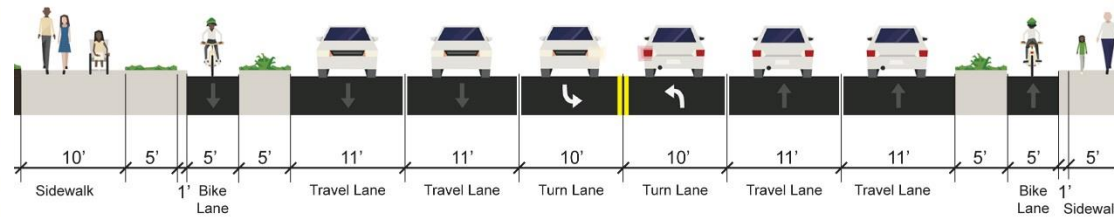




Camelback Rd to Highland Ave Existing



Protected Bike Lanes



Access management considerations

- Maintain access to adjacent commercial properties through the existing driveways
- Maintain the dual-center-left-turn lanes and full turning maneuvers to commercial driveway

Cross sections key:

Shows the existing lane configuration and proposed improvement between Camelback Road and Highland Avenue

Commercial core road treatments

- 20th Street handles car volumes in excess of 20,000 vehicles per hour at speeds greater than 35 MPH



- Greater separation between cyclists and cars is required due to the high speed of the vehicles. Typical bike lanes are not appropriate for concerned cyclists

Proposed treatment

- Reduce the speed limit to 30 mph
- Install protected bike lanes to create an off-street riding environment
- Narrow the travel lanes to 11 feet to promote slower travel speeds
- Install raised medians mid-block to provide a refuge for pedestrians crossing and help reinforce a slower driving environment
- Decorate the bike lane separators to enhance the corridor aesthetics

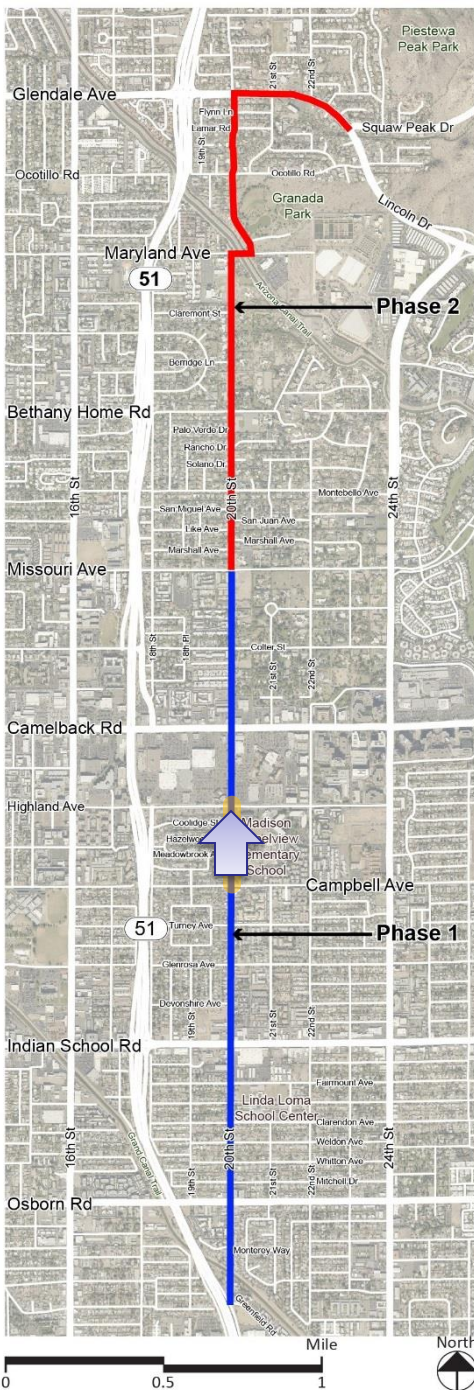
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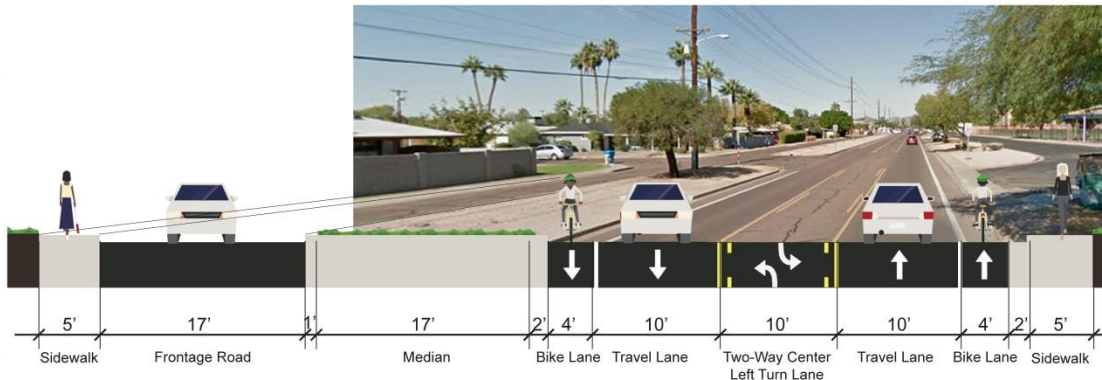
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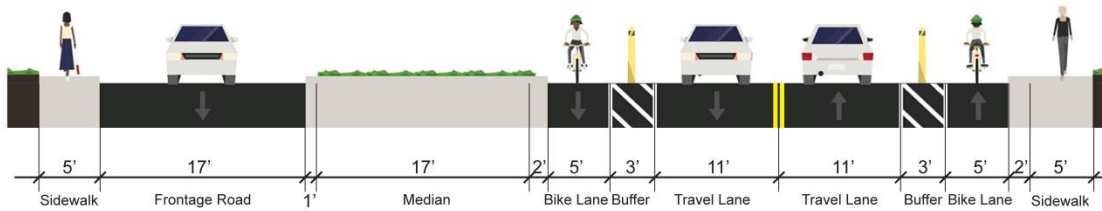
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Highland Ave to Campbell Ave Existing



Proposed Protected Bike Lanes



Cross sections key:
Shows the existing lane configuration and proposed improvement between Highland Avenue and Campbell Avenue

Collector road treatments

- 20th Street handles car volumes in excess of 10,000 vehicles per hour at speeds greater than 35 MPH



- Greater separation between cyclists and cars is required due to the high speed of the vehicles. Typical bike lanes are not appropriate for concerned cyclists

Proposed treatments

- Reduce the speed limit to 30 mph
- Install separated bike lanes
- Narrow the traffic lanes to promote slower car speeds
- Install sharrow pavement markings on the frontage road as a parallel travel option
- Rebuild corner ramps and driveway aprons to meet ADA standards

**20th Street Bicycle and Pedestrian Facilities Improvement Project
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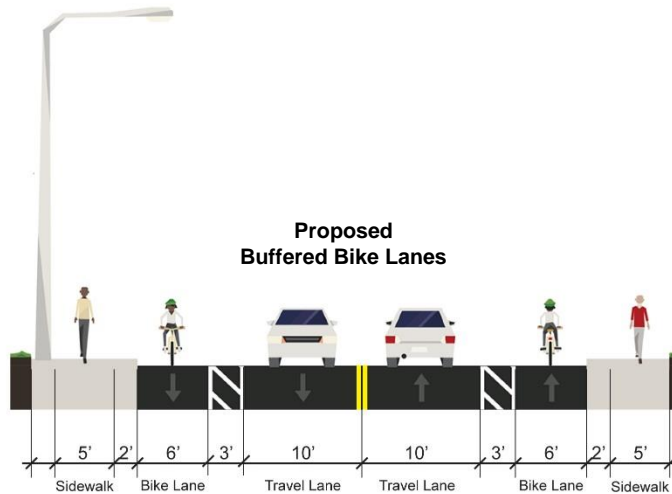
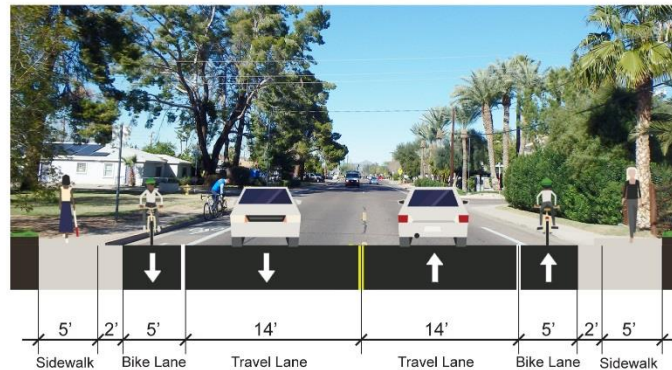


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**Campbell Ave to Indian School Rd
Existing**



Collector road treatments

- 20th Street handles car volumes in excess of 5,000 vehicles per hour at speeds greater than 30 MPH



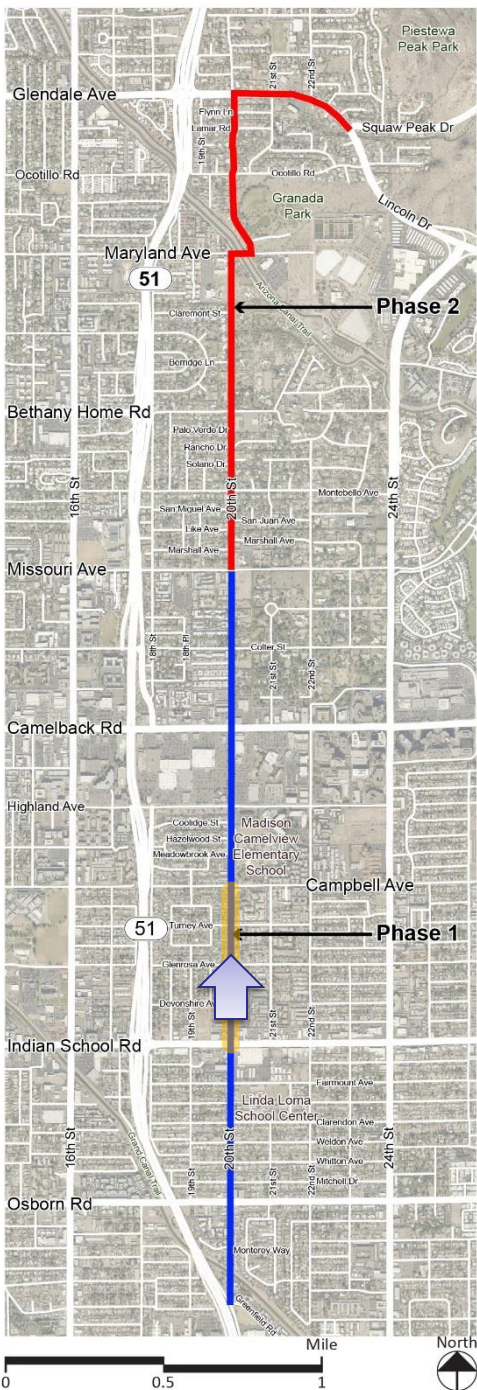
- Greater separation between cyclists and cars is required due to the high speed of the vehicles. Typical bike lanes are not appropriate for concerned cyclists

Proposed treatments

- Install buffered bike lanes
- Narrow the traffic lanes to promote slower car speeds
- Rebuild corner ramps and driveway aprons to meet ADA standards
- Install additional street lighting

Cross sections key:

Shows the existing lane configuration and proposed improvement between Campbell Avenue and Indian School Road

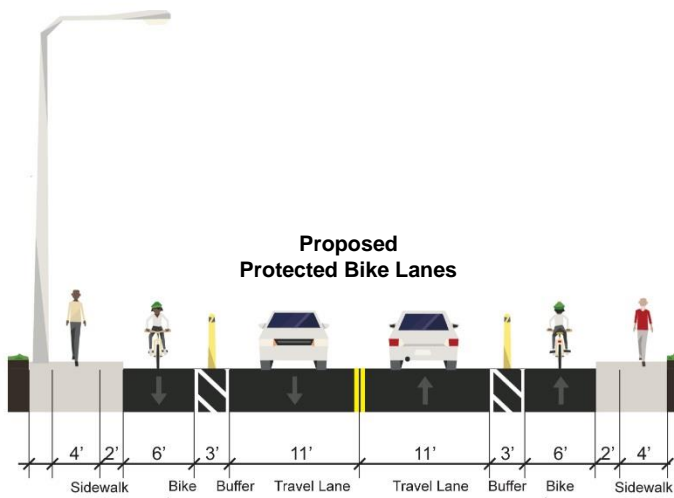
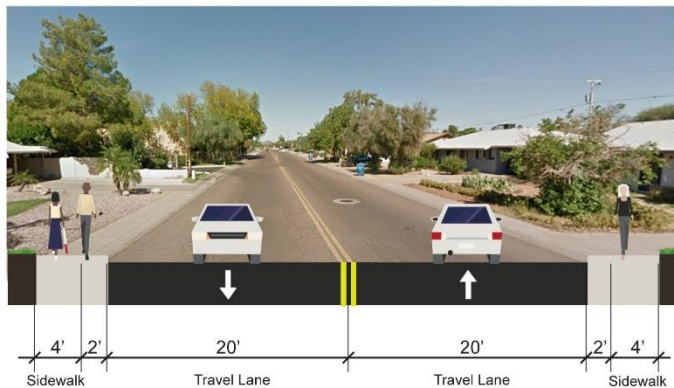


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Indian School Rd to Osborn Rd Existing



Collector road treatments

- 20th Street handles car volumes in excess of 5000 vehicles per hour and has a posted speed limit of 35 MPH



- Greater separation between cyclists and cars is required due to the high speed of the vehicles. Typical bike lanes are not appropriate for concerned cyclists

Proposed treatments

- Reduce the speed limit to 30 mph
- Install separated bike lanes
- Narrow the traffic lanes to promote slower car speeds
- Rebuild corner ramps and driveway aprons to meet ADA standards
- Install additional street lighting

Proposed intersection treatment

- Install shared bicycle and right-turn only lanes

Cross sections key:

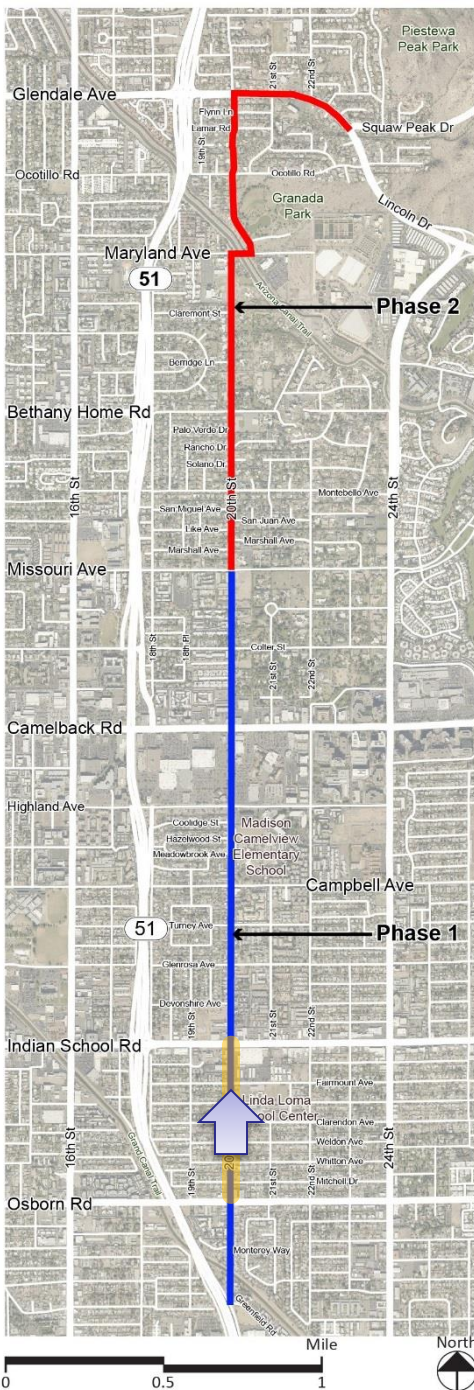
Shows the existing lane configuration and proposed improvement between Indian School Road and Ocotillo Road



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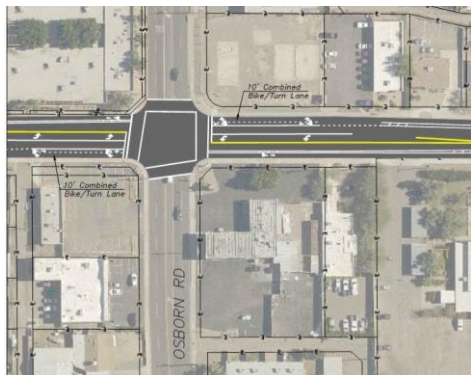
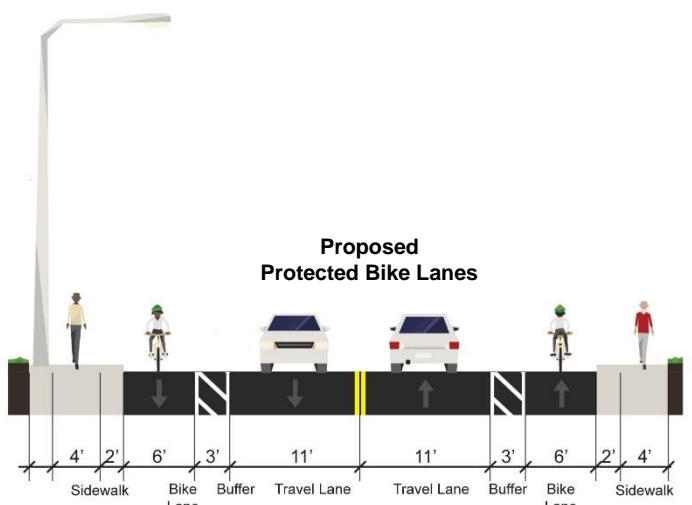
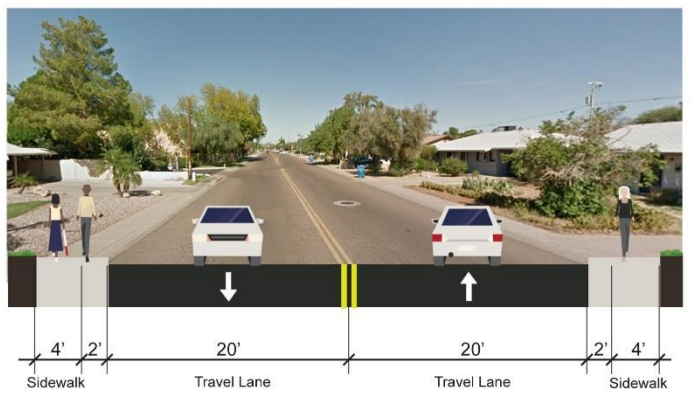


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Osborn Rd to Grand Canal Existing



Cross sections key:
Shows the existing lane configuration and proposed improvement between Osborn Road to the Grand Canal

Collector road treatments

- 20th Street handles car volumes in excess of 5000 vehicles per hour and has a posted speed limit of 35 MPH



- Greater separation between cyclists and cars is required due to the high speed of the vehicles. Typical bike lanes are not appropriate for concerned cyclists

Proposed treatments

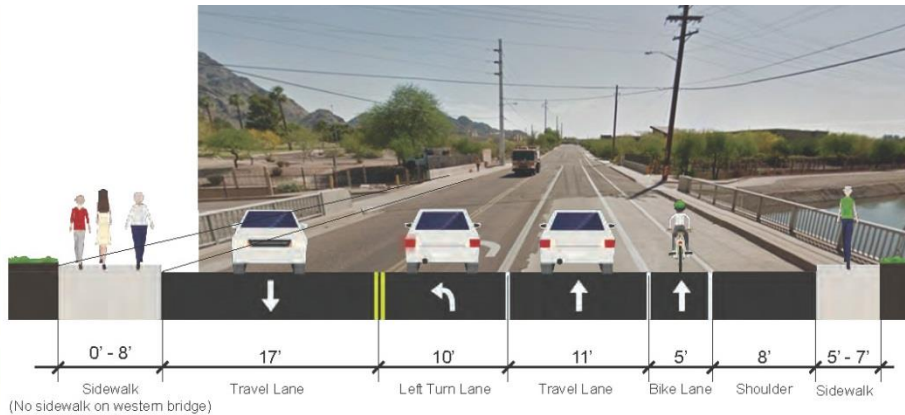
- Reduce the speed limit to 30 mph
- Install buffered bike lanes
- Narrow the traffic lanes to promote slower car speeds
- Rebuild corner ramps and driveway aprons to meet ADA standards
- Install additional street lighting

Proposed intersection treatment

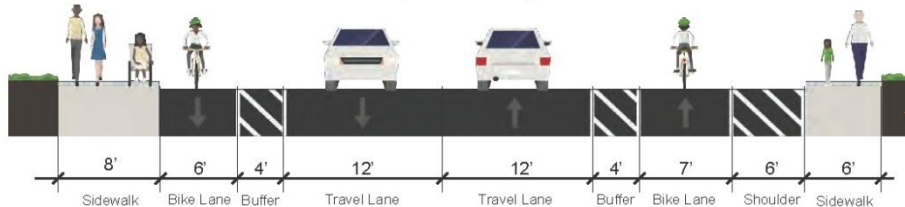
- Install shared bicycle and right-turn only lanes



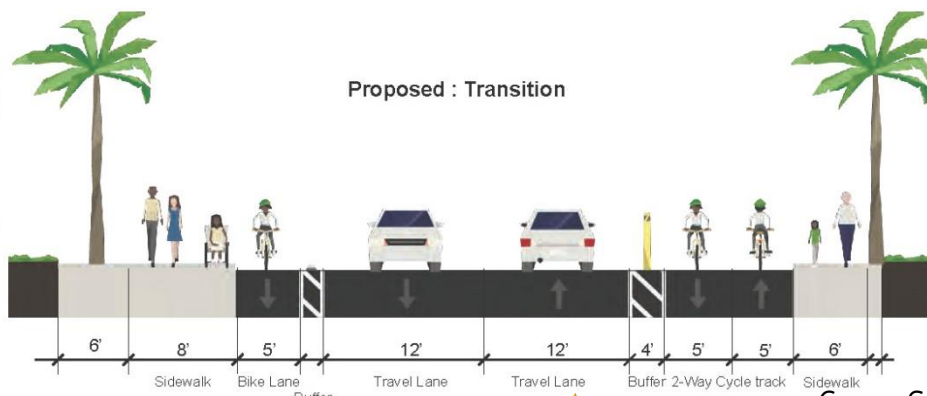
Maryland Ave across the Arizona Canal Existing



Proposed : Bridge



Proposed : Transition



Cross sections key:
Shows the existing lane configuration and proposed improvement on Maryland Avenue at the Arizona Canal

Residential road treatments

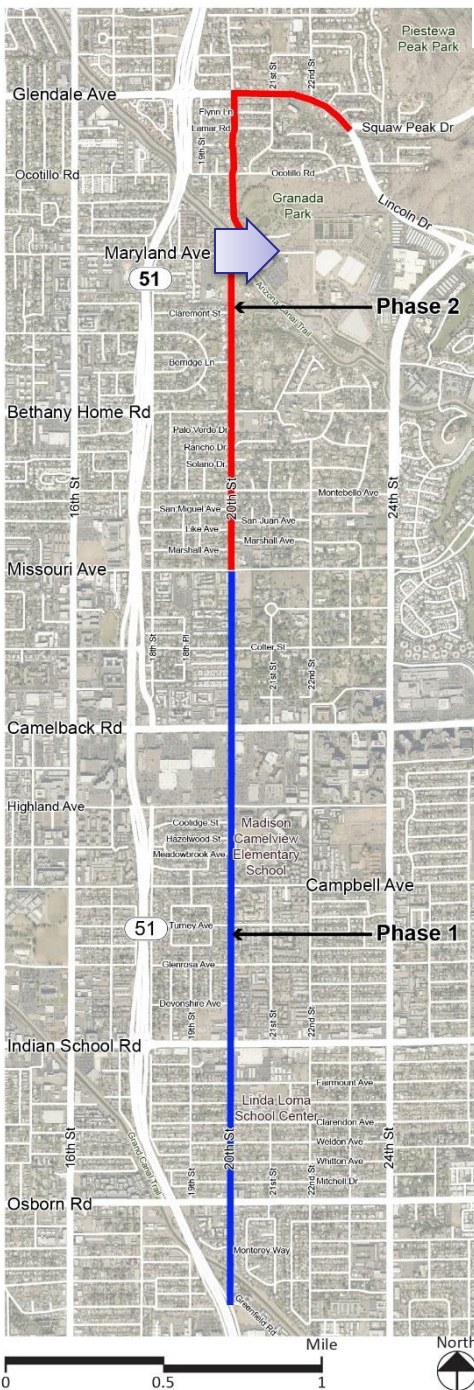
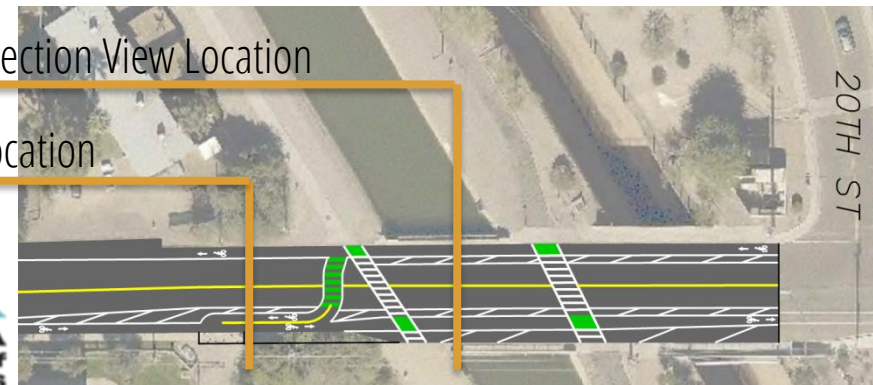
- Maryland Avenue provides connections to the Arizona Canal share-use path and the northern end of the 20th Street corridor
- Maryland Avenue is also a key east-west bicycle network connection with an underpass at SR 51
- The street dead-ends east of the 20th Street intersection
- The Arizona Canal crossings are not marked

Proposed treatment

- Install high visibility crosswalks for the Arizona Canal crossings
- Install buffered bike lanes from 20th Street to the proposed share-use path connection south of Maryland Avenue
- Install a sidewalk on the south side of Maryland connecting the proposed shared-use path to the Arizona Canal

Cross Section View Location

Cross Section View Location

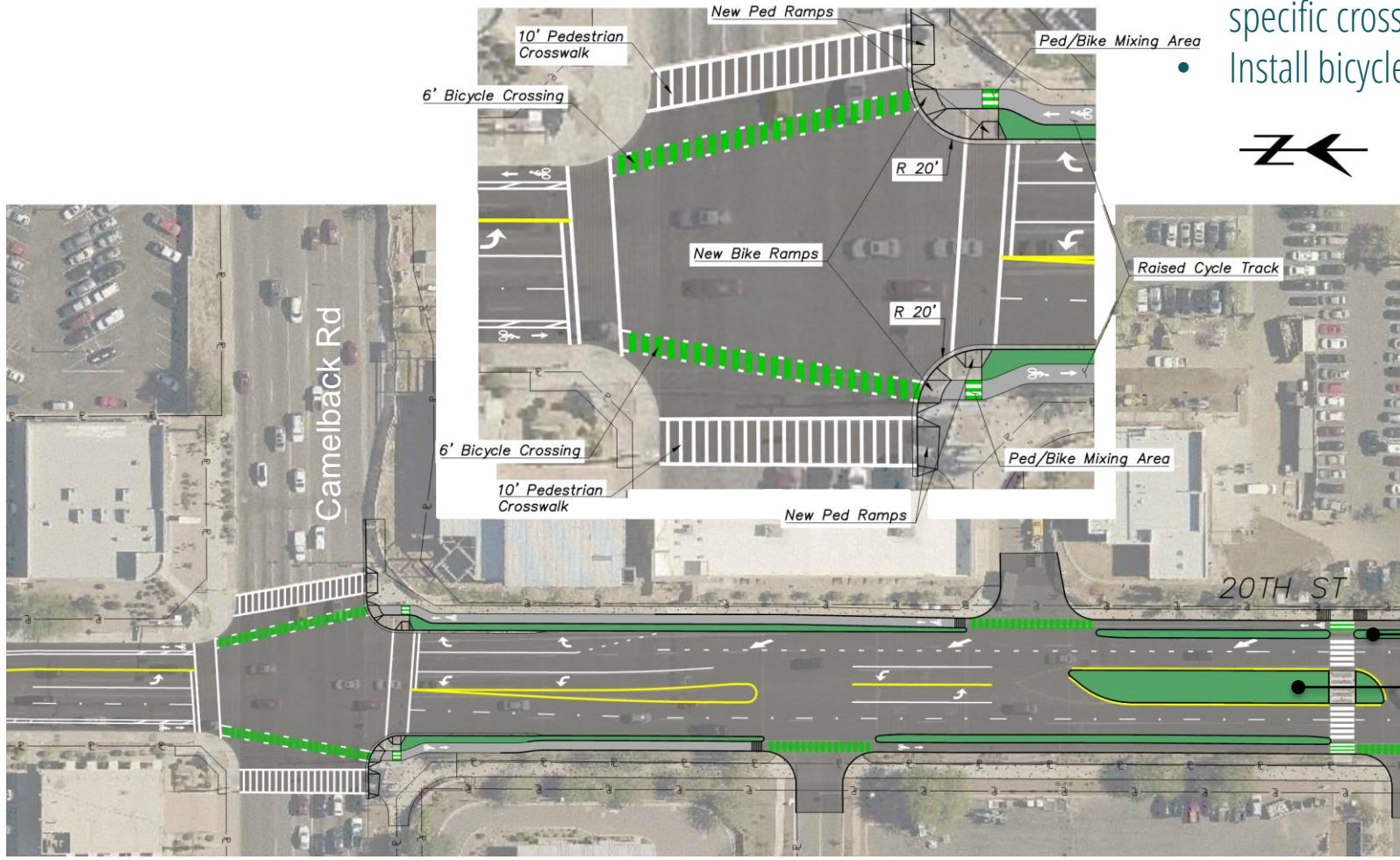
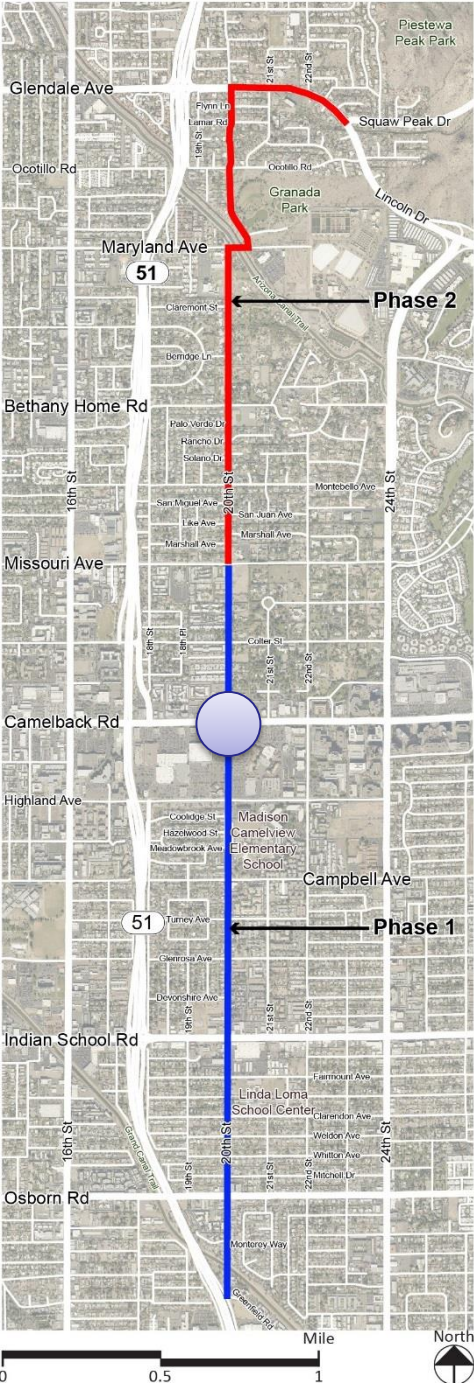


Intersection treatment

Camelback Road at 20th Street

Proposed treatments

- Transition from separated bike lane to protected bike lanes by creating bicycle specific crosswalks and ramps
- Install bicycle traffic signal heads



Protection treatment for cyclists (to be determined)

Raised Median

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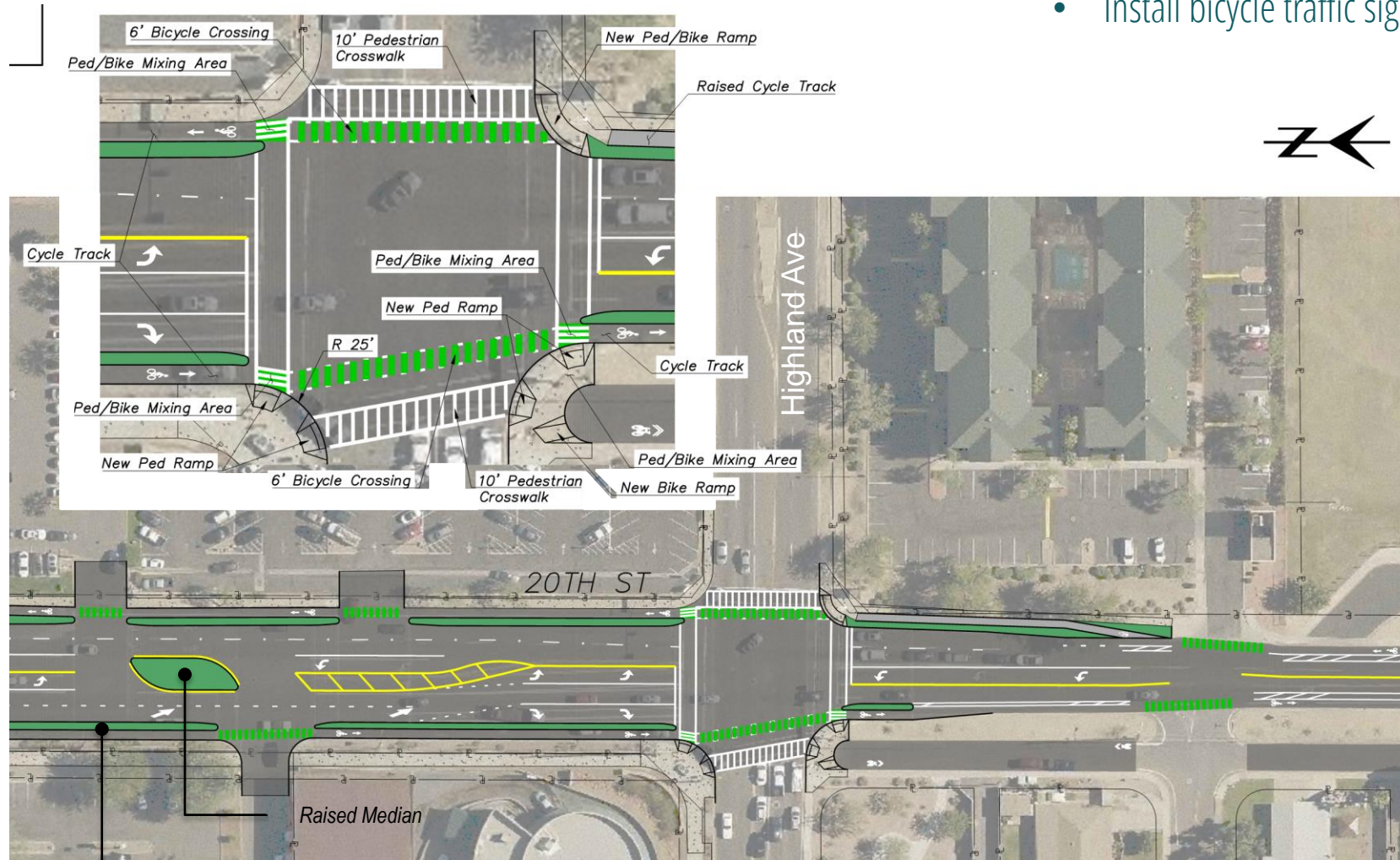
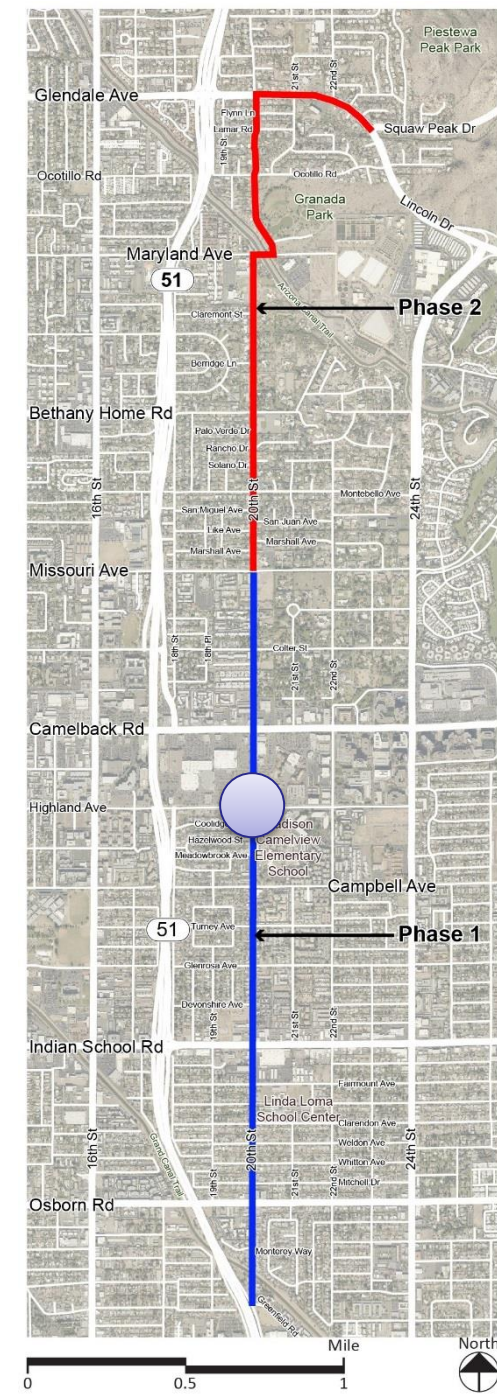


Intersection treatment

Highland Avenue at 20th Street

Proposed treatments

- Create bicycle specific crosswalks and ramps
- Install bicycle traffic signal heads



Protection treatment for cyclists (to be determined)

20th Street Bicycle and Pedestrian Facilities Improvement Project
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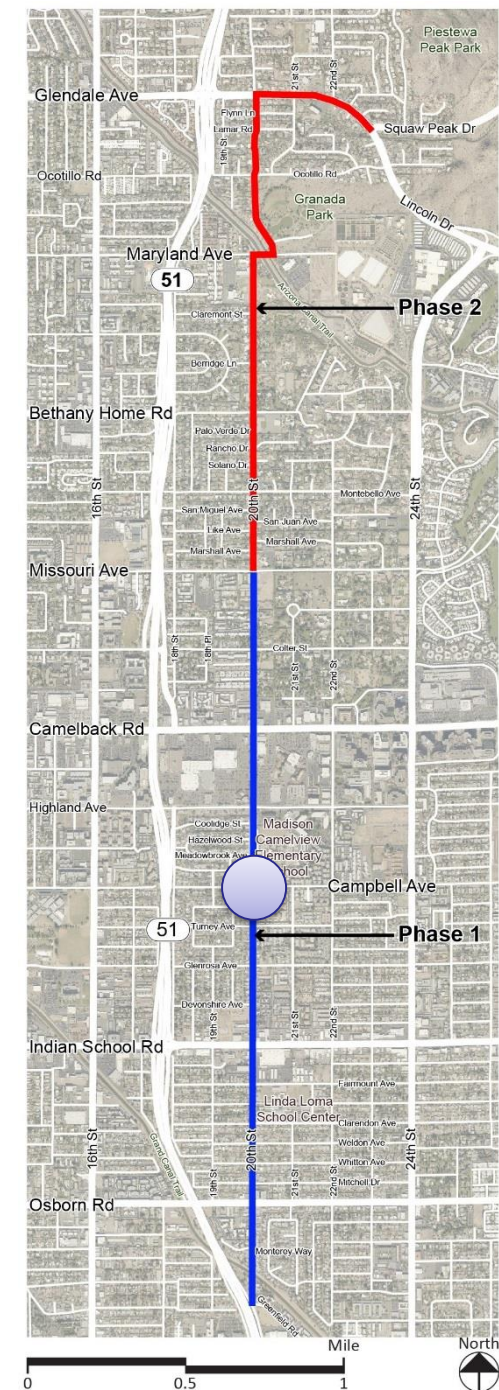
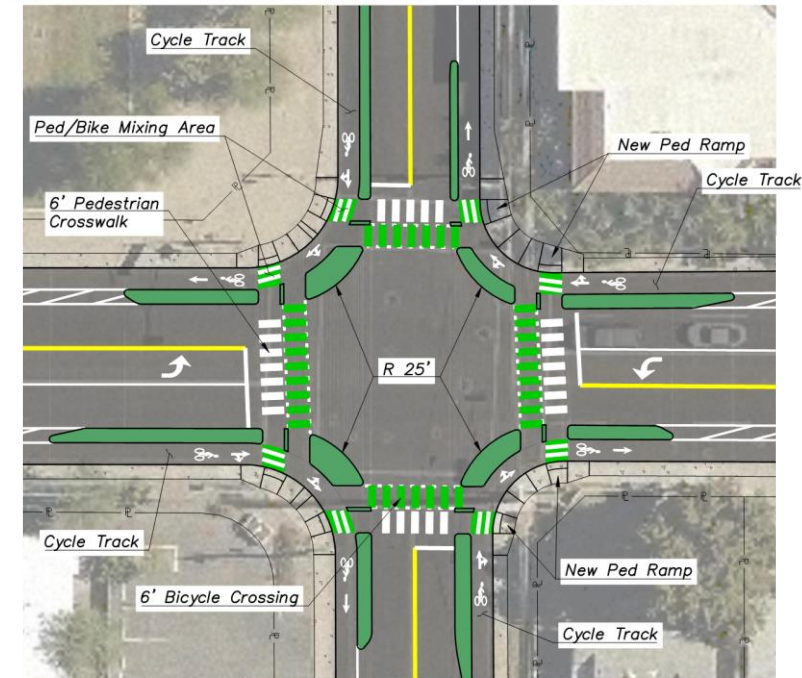
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Intersection treatment

Campbell Avenue at 20th Street

Proposed treatments

- Protect the bike lane through the intersection by creating a buffer between it and the curb return
- Install bicycle traffic signal heads



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