

# SHORT AND MEDIUM TERM SOLUTIONS FOR VISION ZERO

## COMPLETE SIDEWALK NETWORK & ENHANCE PEDESTRIAN SAFETY AND COMFORT

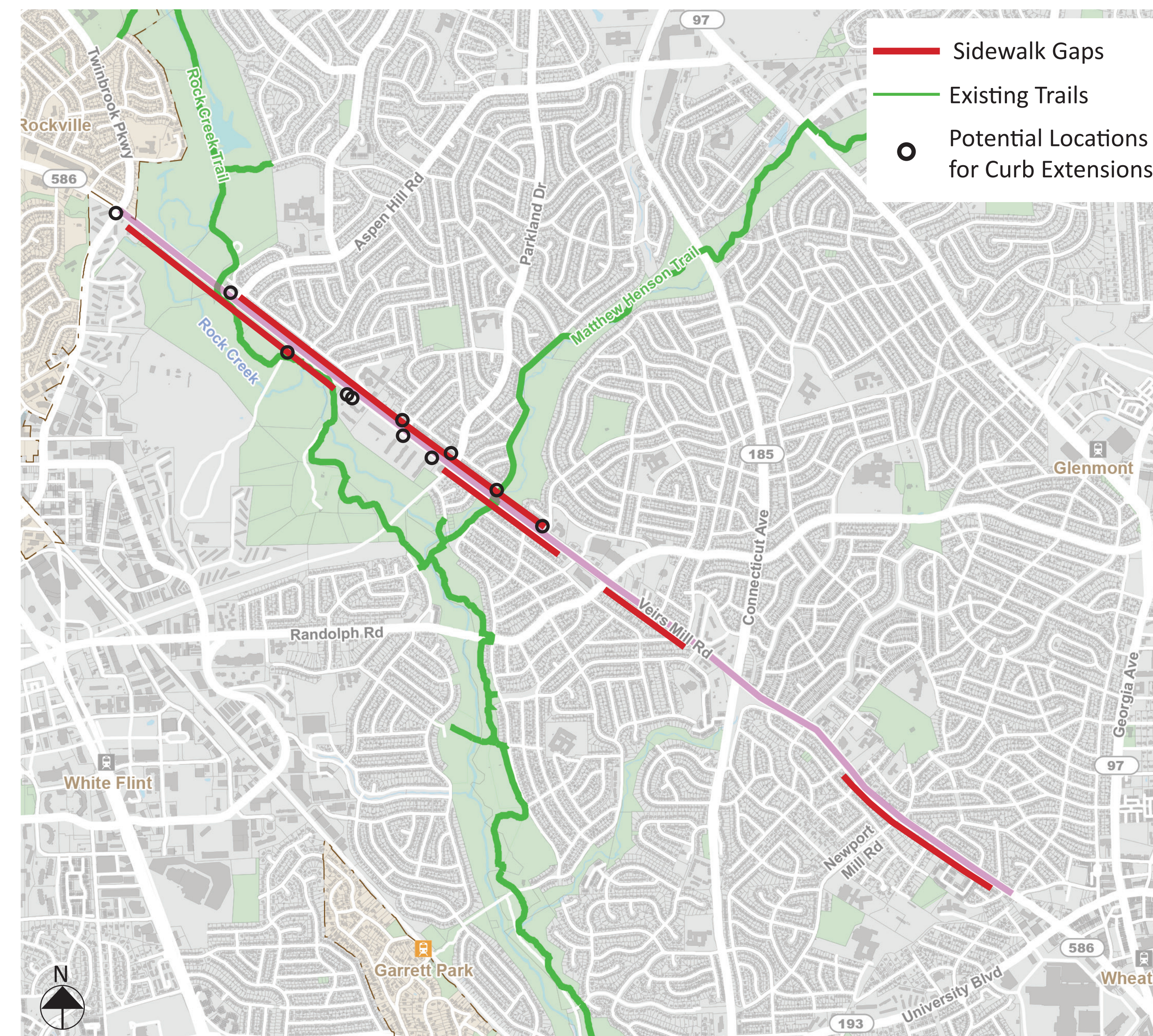
### Problems:

- » The pedestrian environment is poorly separated from fast moving traffic.
- » Sidewalks are not continuous.
- » Driveways and pedestrian ramps are often not ADA compliant.
- » Existing sidewalks are narrow and poorly maintained.
- » Continuous right turn lanes that function as through lanes bring fast/weaving traffic near to the edge of the roadway.

### Potential Solutions:

- » Create continuous ADA compliant sidewalks by filling sidewalk network gaps.
  - » Some areas may require short retaining walls due to grading issues.
- » Create a landscaped buffer between curb and sidewalk / sidepath wherever possible.
- » Plant shade giving street trees wherever space allows, to create a pleasant environment, provide a buffer and slow traffic.
- » Retrofit driveways and pedestrian ramps to make them ADA compliant. At driveways, short ramps can enable sidewalks to remain at one level.
- » Add pedestrian scale lighting and improve maintenance protocols to ensure full sidewalk is passable for its whole length.

### SIDEWALKS GAPS



### BETTER MAINTAIN EXISTING SIDEWALKS



Existing sidewalks obstructed by landscaping debris or showing a lack of maintenance

### FILL IN SIDEWALK GAPS

- » Create continuous ADA compliant sidewalks.
- » Create a landscape buffer between curb and sidewalk / sidepath wherever possible.
- » Plant shade giving street trees wherever space allows.



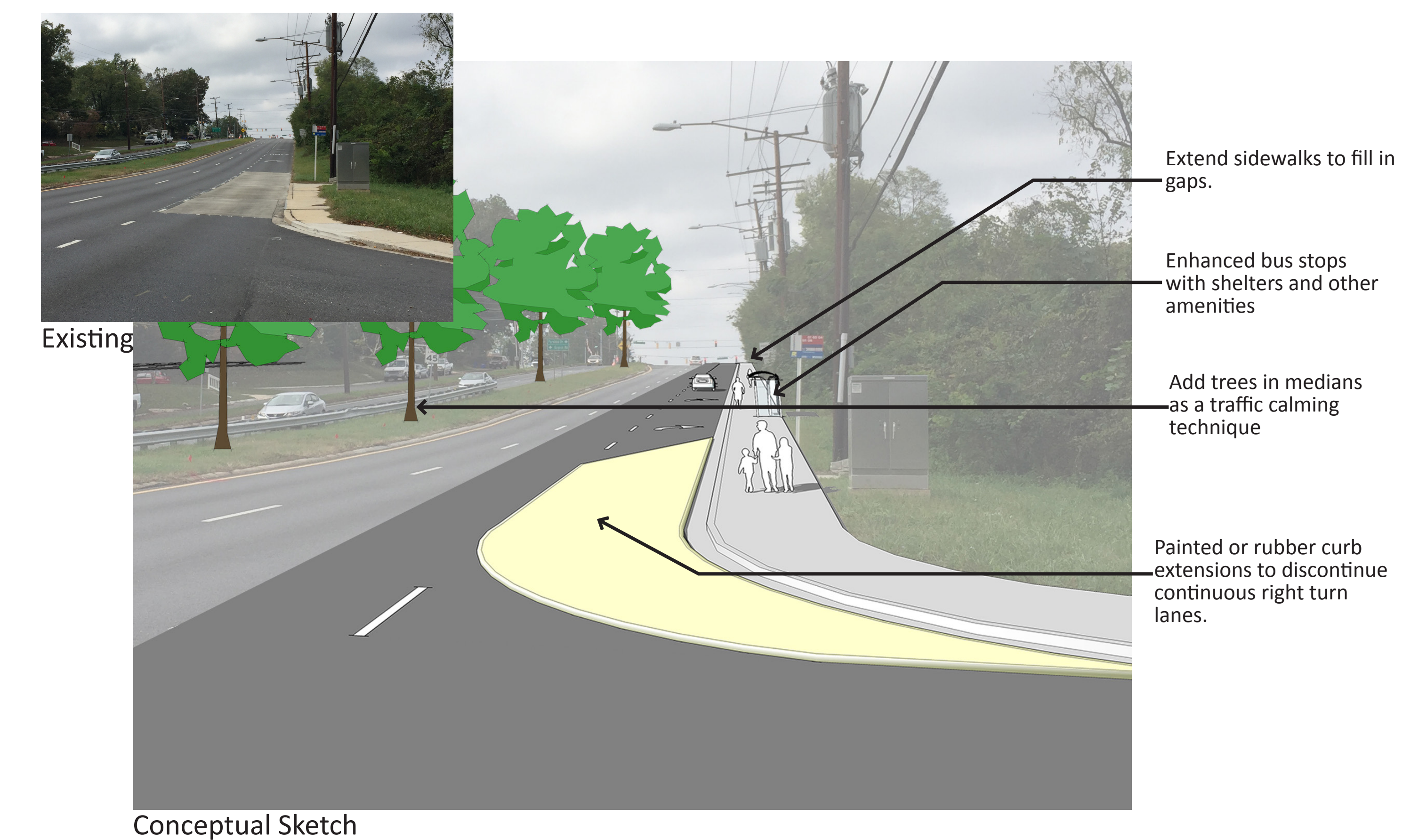
### RETROFIT DRIVEWAYS TO MAKE THEM ADA COMPLIANT

- » Use short driveway ramps to create continuous ADA compliant sidewalks / sidepath
  - » Route the level sidewalk behind this ramp.
- » Creating a short ramp can reduce speeds of turning vehicles.



### ADD CURB EXTENSIONS TO DISCONTINUE RIGHT TURN LANES

- » Interruptions in right turn lane created by curb extensions prevents its use as through travel lane.
- » Curb extensions help reduce speed of turning vehicles.
- » Curb extensions help shorten crossing distance for pedestrians.





# SHORT AND MEDIUM TERM SOLUTIONS FOR VISION ZERO

## CREATE SAFE, COMFORTABLE, AND FREQUENT CROSSINGS

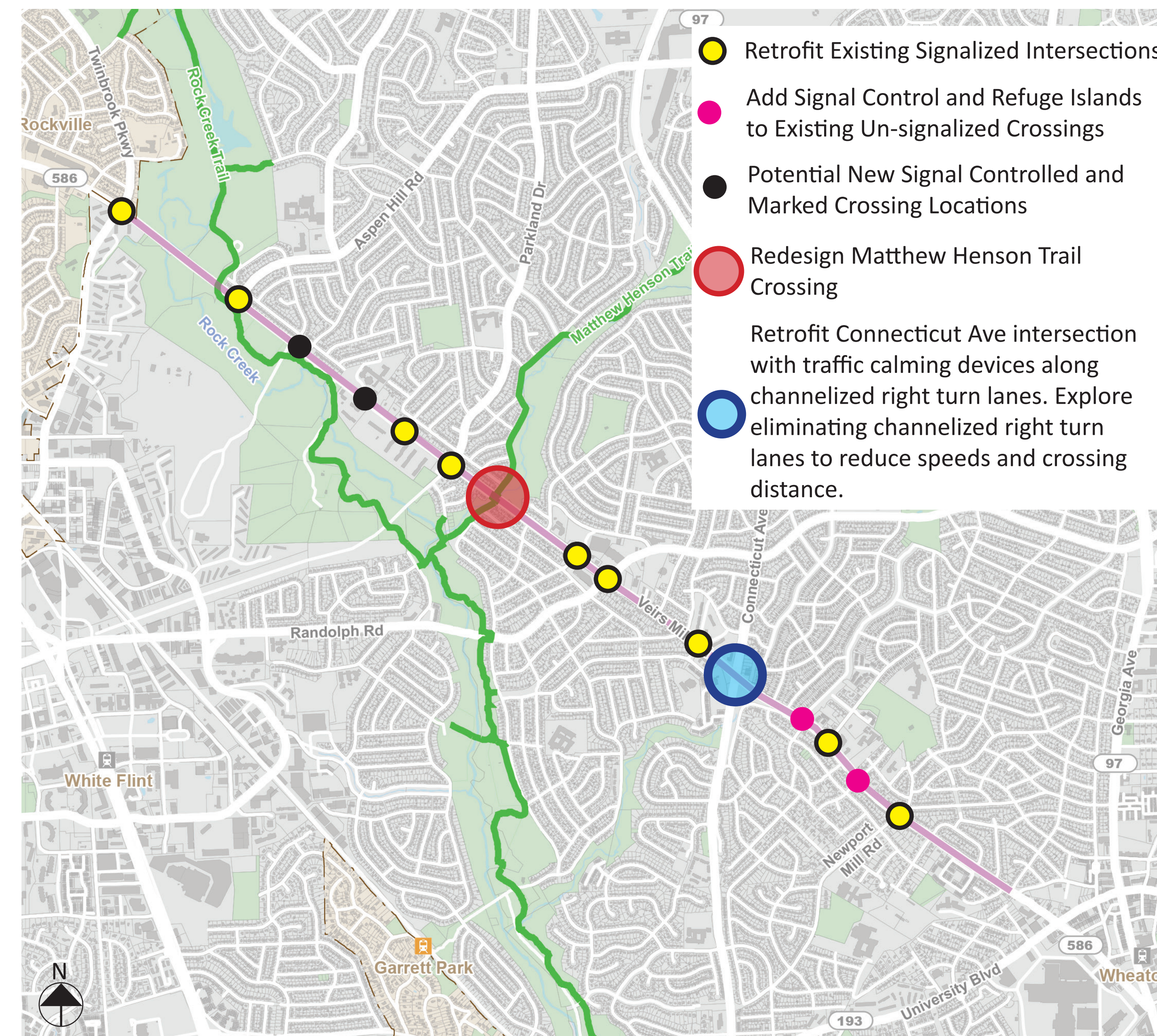
### Problems:

- » The pedestrian environment is poorly separated from fast moving traffic.
- » Many driveways and pedestrian ramps are not ADA compliant.
- » Un-signalized crossings across 6-7 lanes.
- » Matthew Henson Trail crossing design and timing.
- » Channelized right turn lanes at Connecticut Ave.
- » Lack of pedestrian refuge islands at many intersections.
- » Many bus stops have no crossing opportunities.
- » Top traffic speeds are high.

### Potential Solutions:

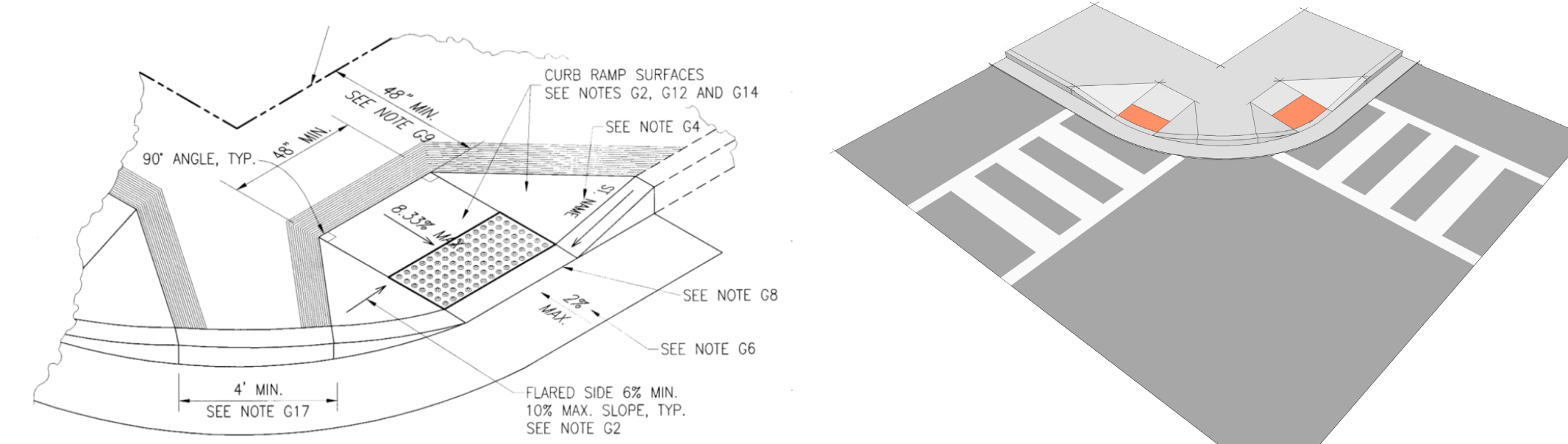
- » Retrofit existing and add new pedestrian curb ramps to be ADA compliant.
- » Create direct and short crossings.
- » Reduce top speeds with traffic calming techniques.
- » Add pedestrian refuge islands to shorted crossings.

### PEDESTRIAN AND BICYCLE CROSSING OPPORTUNITIES

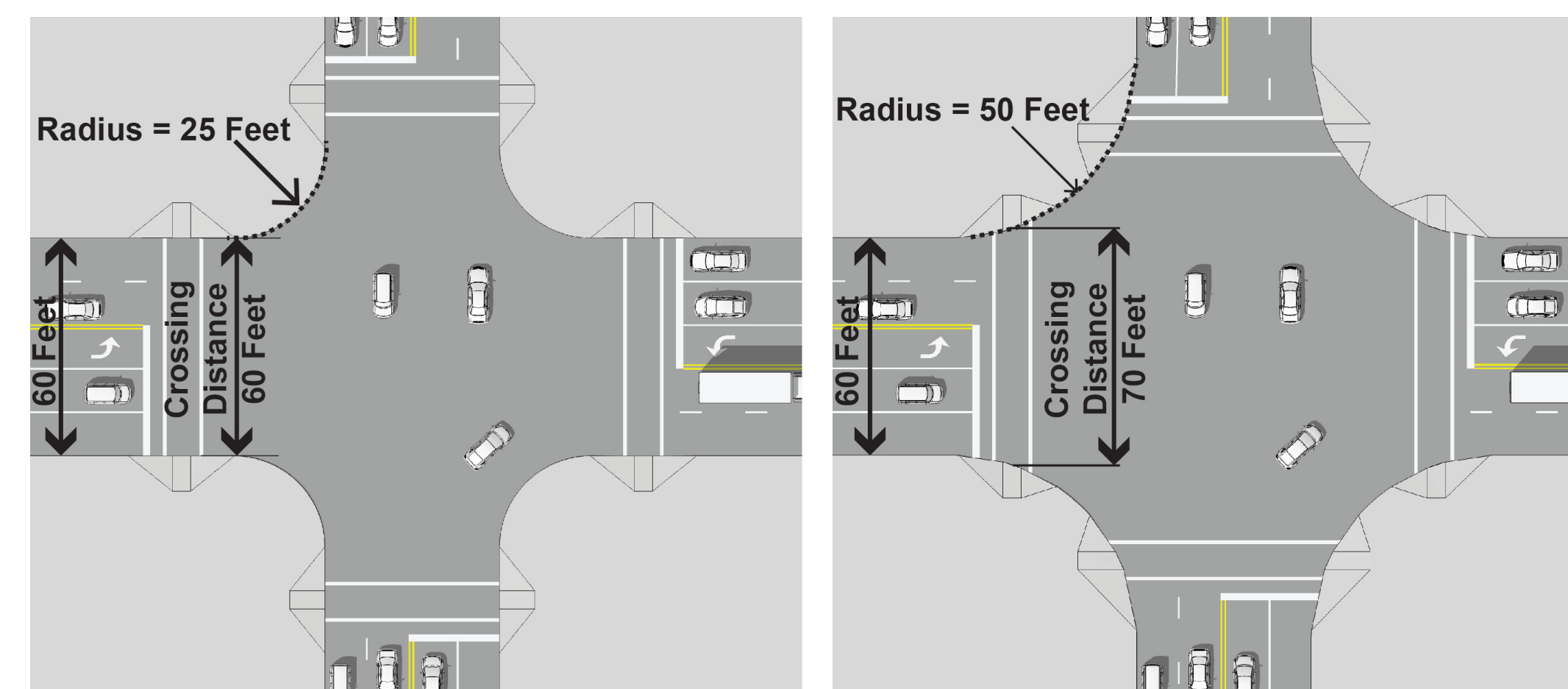


### RETROFIT EXISTING INTERSECTION CROSSINGS MATTHEW HENSON TRAIL CROSSING

- » Ensure all curb ramps are ADA compliant.
- » Add ladder style crosswalk markings on all legs.
- » Create bidirectional pedestrian curb ramps wherever possible.
- » Reduce turning radii wherever possible.



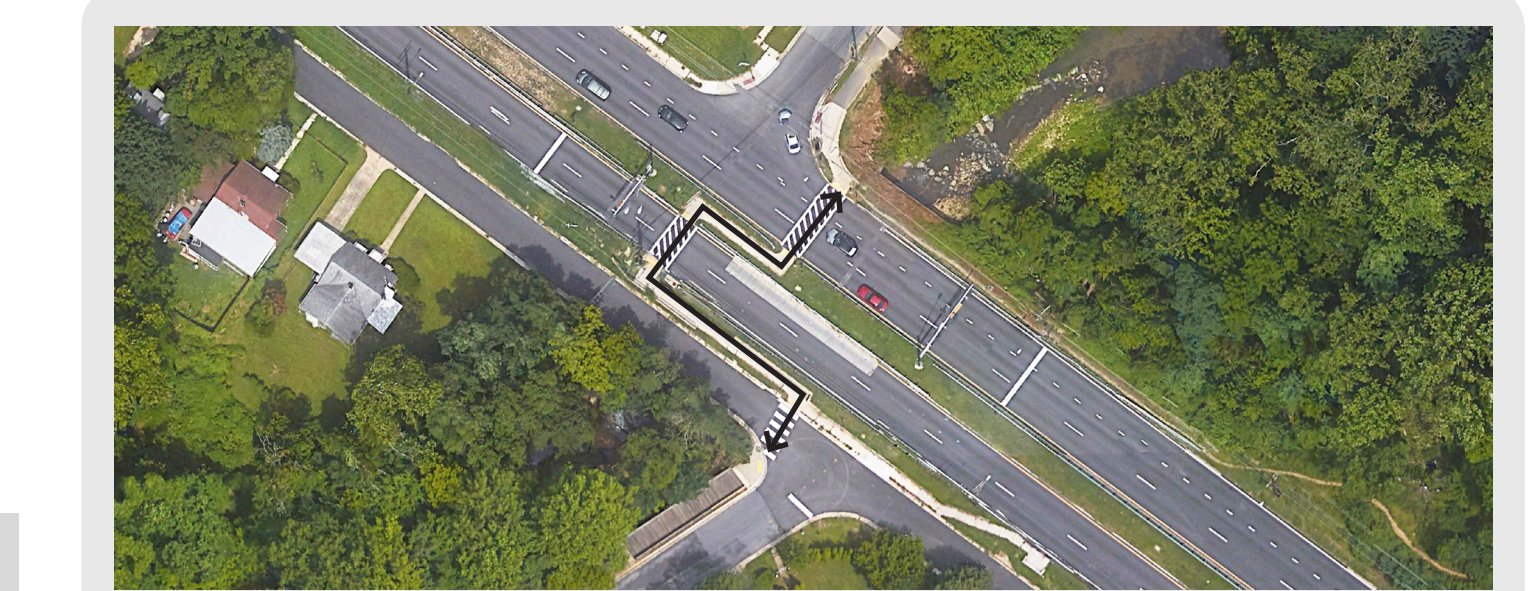
Typical ADA Compliant Pedestrian Curb Ramp Typical Bidirectional Pedestrian Curb Ramps



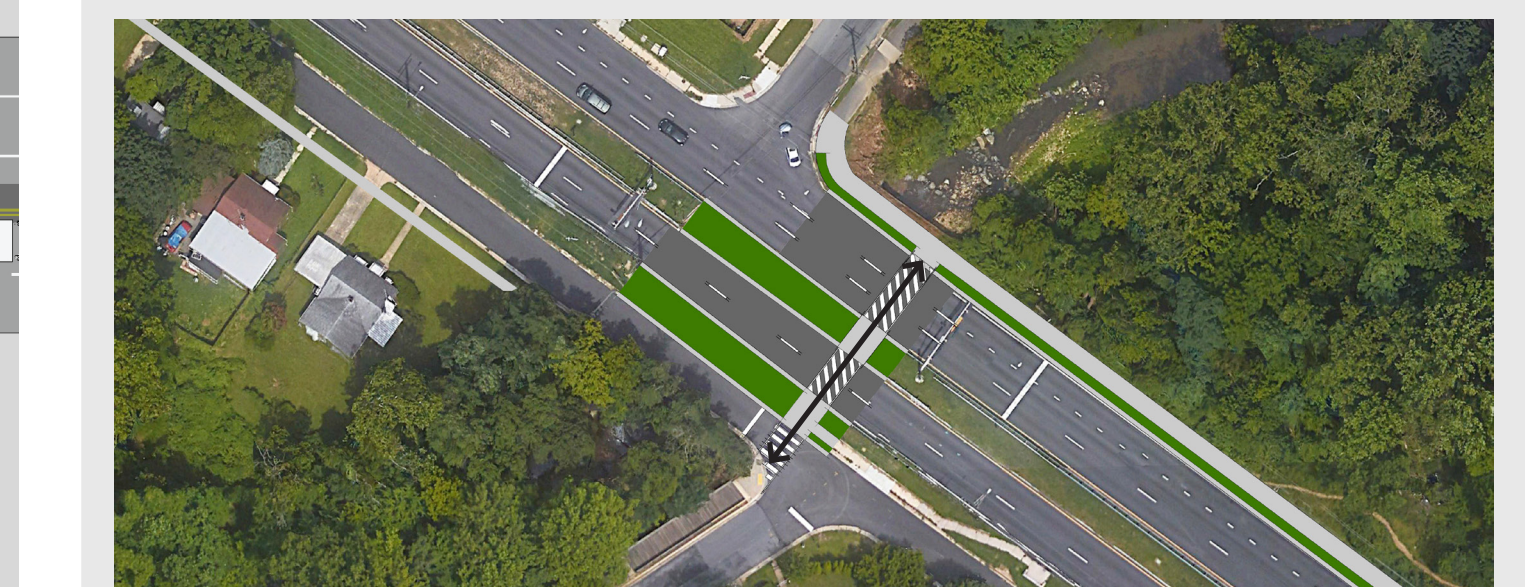
Crossing distance and turning vehicle speeds decrease as turning radii is reduced

### CROSSING

- » Create short direct crossing.
- » Reduces crossing distance from 240 feet to 115 feet.
- » Keeps signal control as is existing.



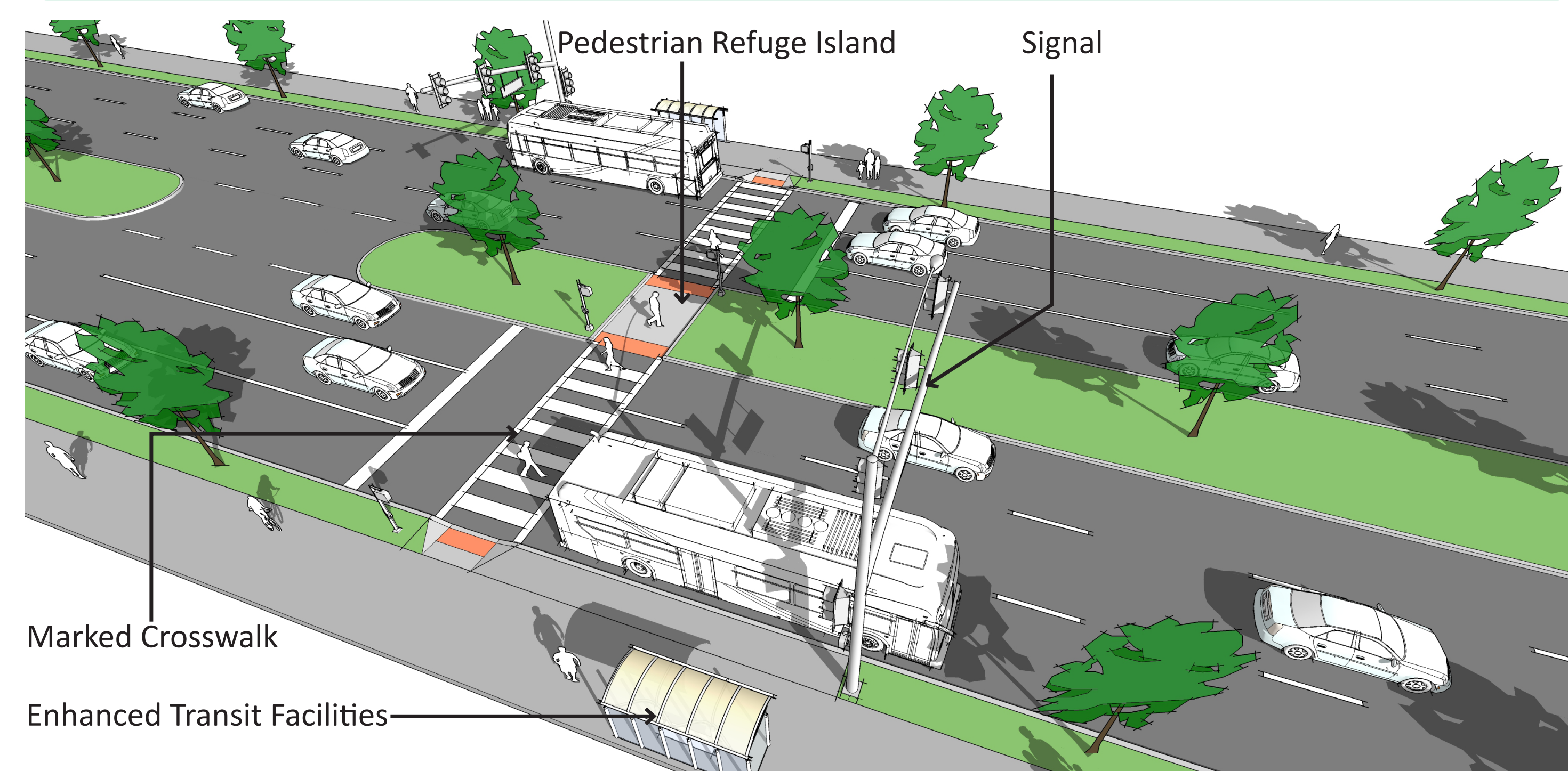
Existing Crossing Distance = 240 Feet



Conceptual Sketch Crossing Distance = 115 Feet

### ADD PEDESTRIAN REFUGE ISLANDS AND SIGNAL CONTROL TO ALL PEDESTRIAN CROSSINGS

- » At each un-signalized intersection study the feasibility of adding a traffic signal.
- » Add signal controls similar to the Matthew Henson Trail crossing to mid-block crossings as well as any new crossings.
- » Consider adding new crossings at bus stop locations.
- » Add transit shelters and other facilities at bus stops.



Conceptual Sketch

- » Eliminate left turn lanes (where feasible) to create wider refuge islands.
- » Use temporary material such as paint to stripe out lanes that are not required.
- » Add signal/beacon at any location with marked crosswalk.



Conceptual Sketch

### ADD RAISED CROSSWALKS ON CHANNELIZED RIGHT

- » Helps reduce speeds for turning vehicles.
- » Keeps crosswalks at sidewalk level and prioritized pedestrians.
- » Could be signal controlled with Pedestrian Hybrid Beacon.



Conceptual Sketch



# SHORT AND MEDIUM TERM SOLUTIONS FOR VISION ZERO

## CREATE CONTINUOUS BICYCLE FACILITY

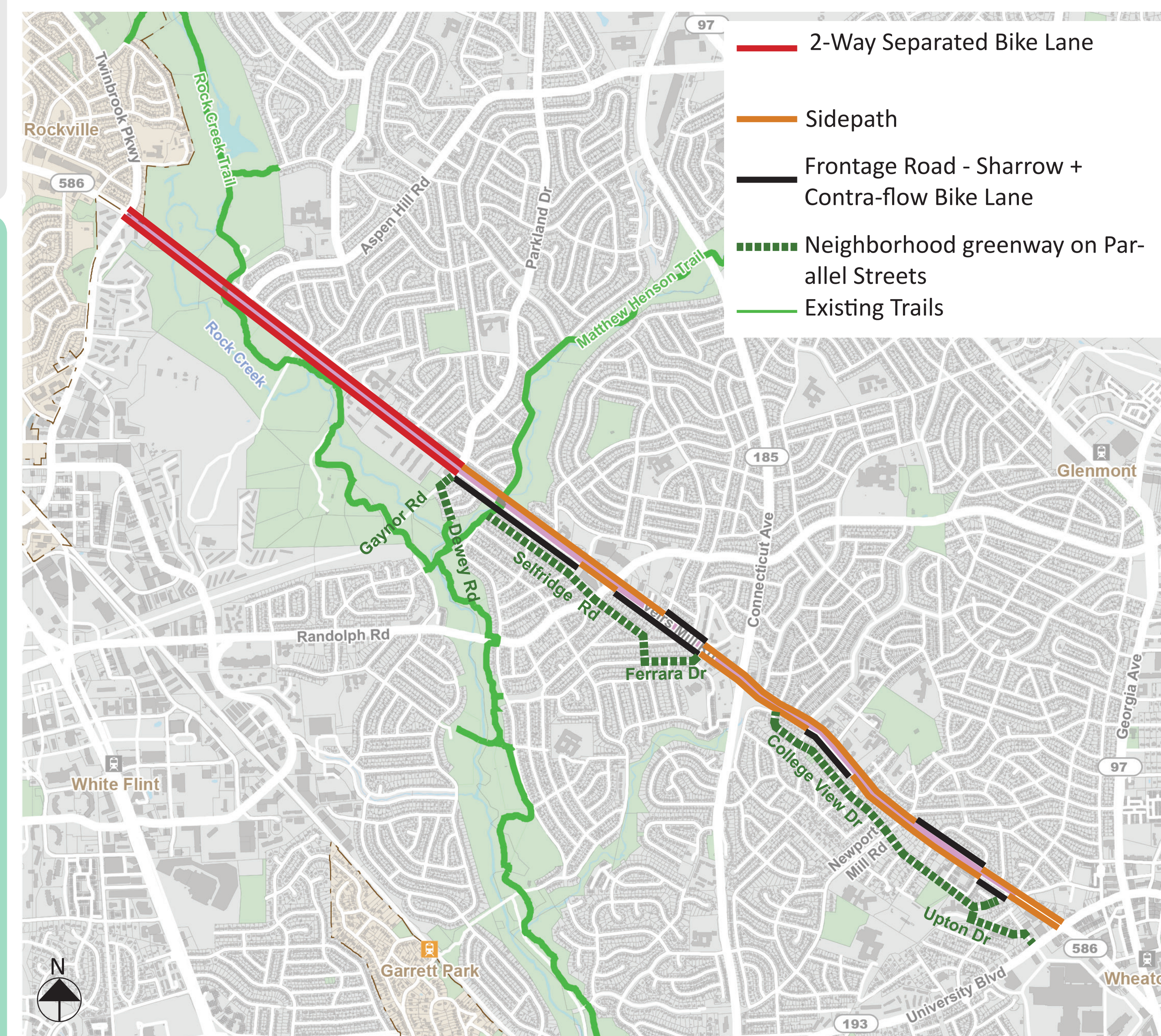
### Problems:

- » Bicycling along a high traffic, high speed road is unsafe and/or uncomfortable for most riders

### Potential Solutions:

- » Transform wide shoulders into 2-way separated bike lanes where applicable.
- » In constrained sections, widen existing sidewalk to create minimum 8' wide sidepath, or create new sidepaths where no sidewalks exist and where there is no frontage road or shoulder.
- » Convert frontage roads to two-way bikeways, including a "sharrow" marking in the direction of traffic and contra-flow bike lane in the opposing direction.
- » Create a neighborhood greenway on parallel residential streets. Neighborhood greenway treatment can include traffic calming devices, bicycle pavement markings, enhanced signs and way-finding, etc.

### POTENTIAL BICYCLE FACILITIES



### TWO-WAY SEPARATED BIKE LANES ON SHOULDERS

- » Transform wide shoulders into 2-way separated bike lanes.
- » Use a vertical element to create a physical separation for bicyclists.
- » Add shade giving street trees wherever possible.



Example of a 2-way Separated Bike Lane

Source: www.movabilityaustin.org

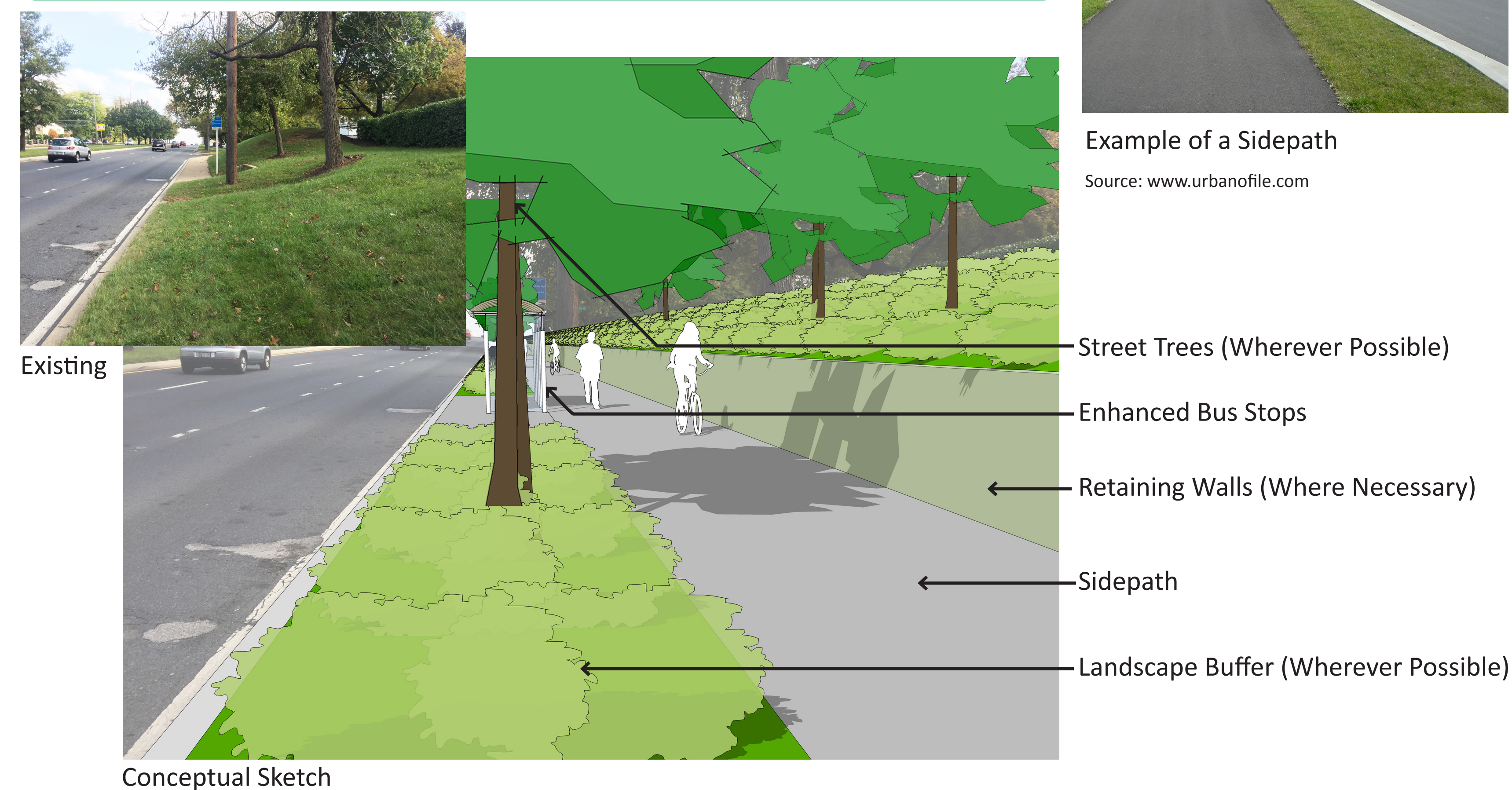


Example of a 2-way Separate Bike Lane behind bus stops

Source: NACTO / Dongho Chang

### SIDEPATHS

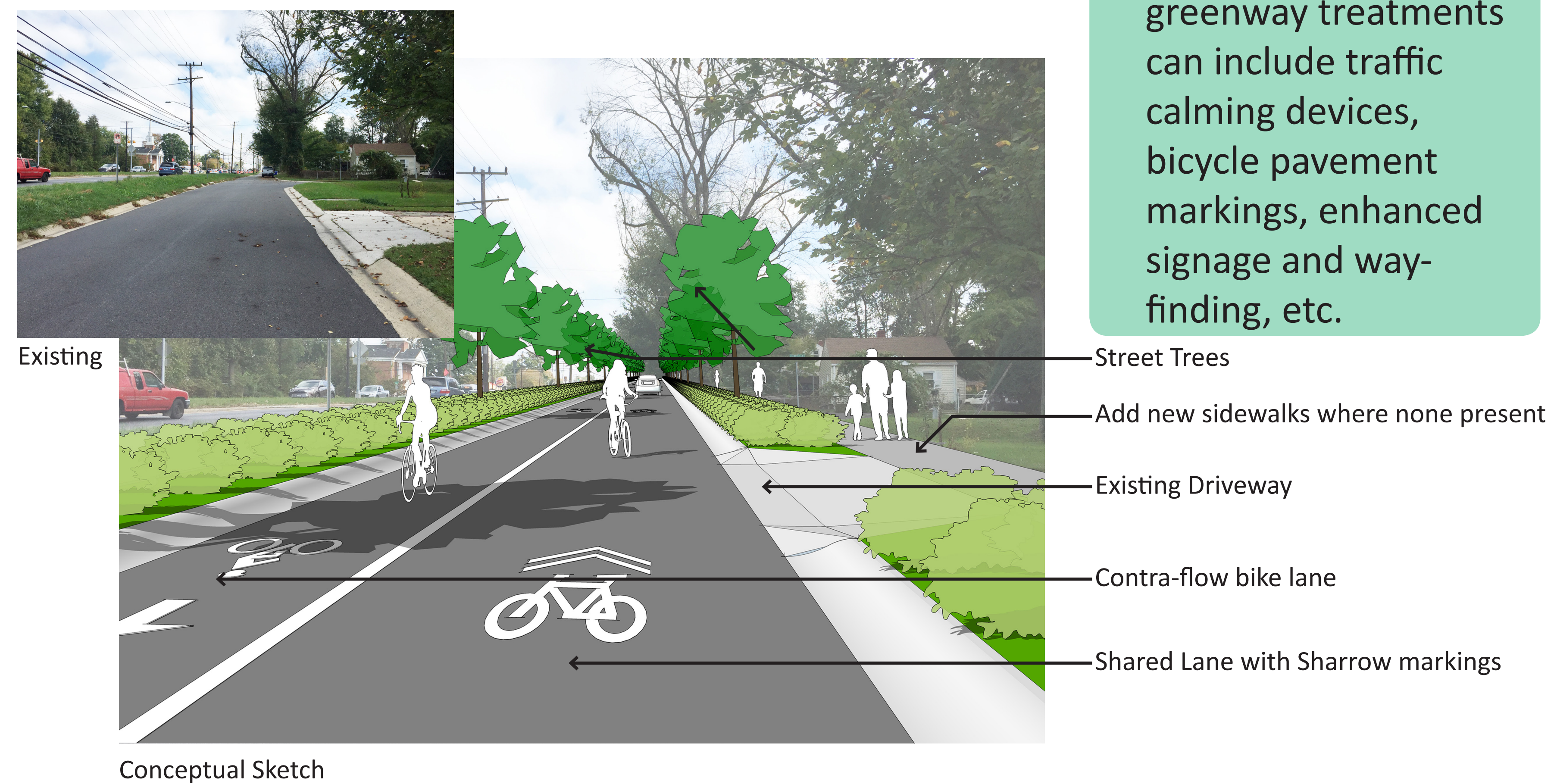
- » Widen existing sidewalk to create minimum 8' wide sidepath, or create new sidepaths where no sidewalks exist and where there is no frontage road or shoulder.



Example of a Sidepath  
Source: www.urbanofile.com

### SHARROWS AND CONTRA-FLOW BIKE LANES ON FRONTAGE ROADS

- » Stripe frontage roads as shared roads with sharrow markings and contra-flow bike lanes



Existing

Conceptual Sketch

### NEIGHBORHOOD GREENWAY ON PARALLEL STREETS

- » Create a neighborhood greenway on parallel residential streets. Neighborhood greenway treatments can include traffic calming devices, bicycle pavement markings, enhanced signage and way-finding, etc.



Typical Parallel Residential Street to Veirs Mill Road



Example of a Neighborhood greenway

(Source: NACTO)