



# Pedestrian and Bicycle Facilities

Reston Metrorail Access  
Group

October 29, 2007

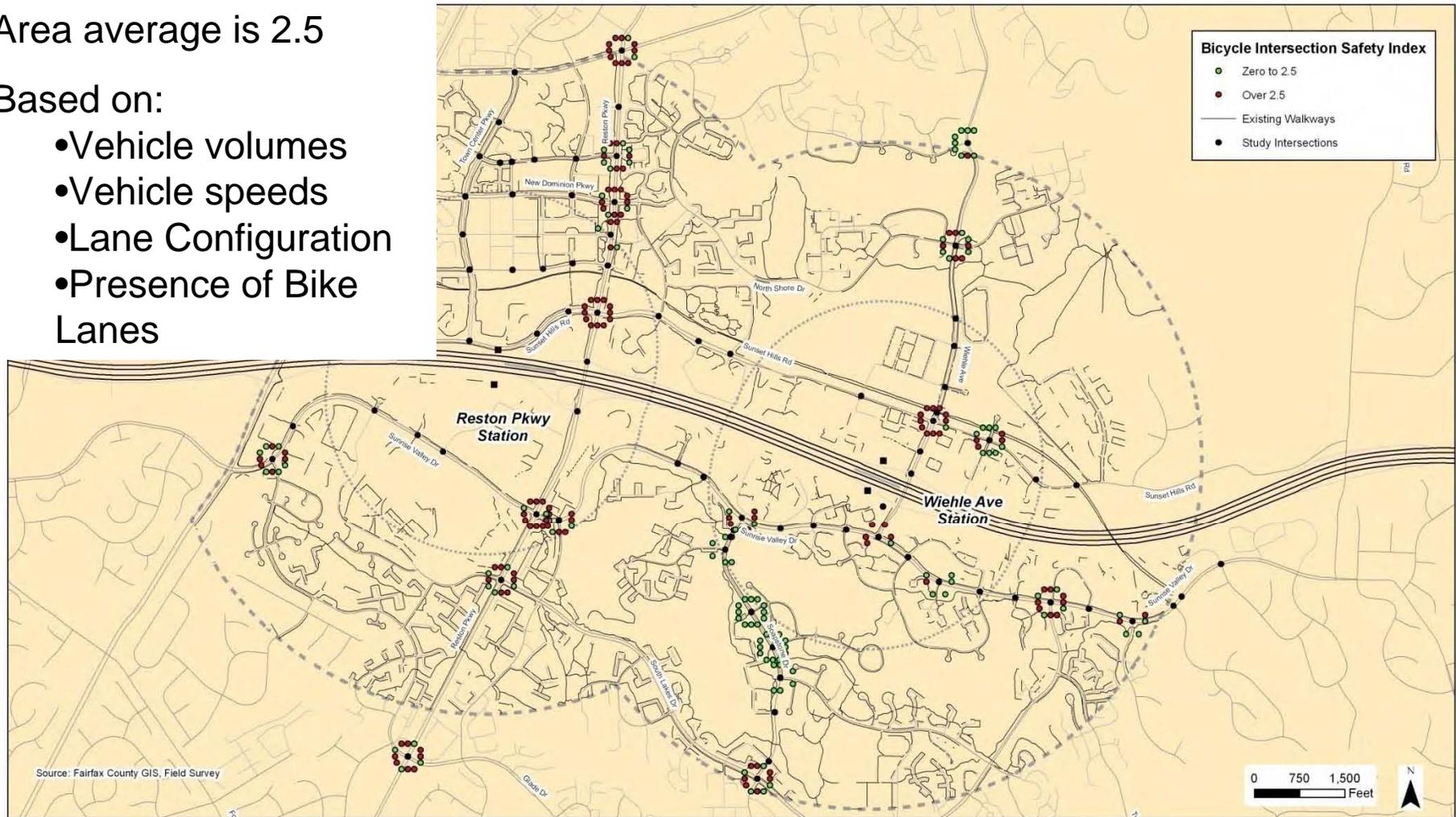


## Bicycle Facilities

- Inventoried within 2 miles of proposed stations
- W&OD Trail – at-grade and grade-separated crossings
- No marked on-street bike lanes
- Assessed bike facilities using Bicycle Intersection Safety Index (Bike ISI)



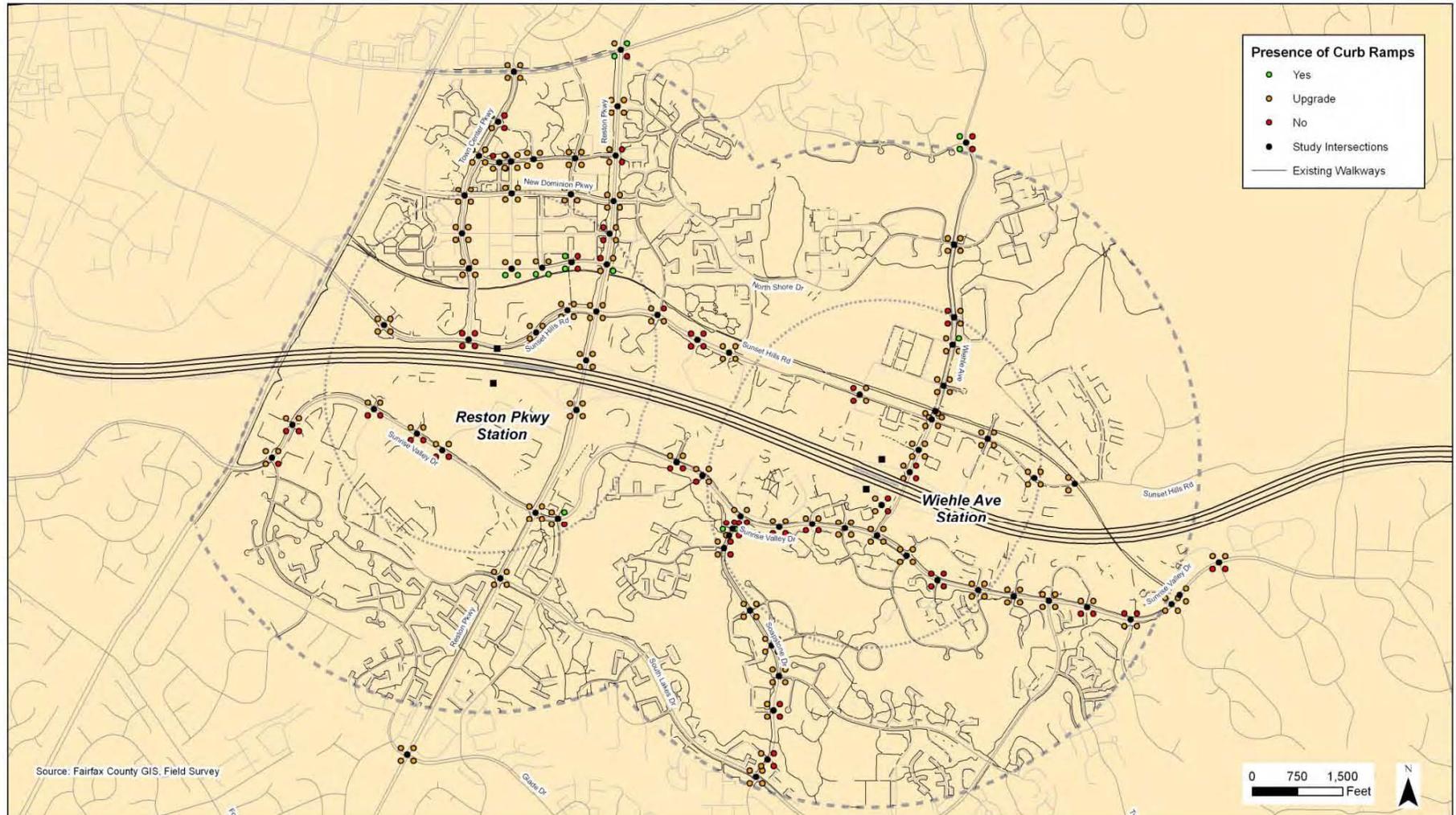
- Area average is 2.5
- Based on:
  - Vehicle volumes
  - Vehicle speeds
  - Lane Configuration
  - Presence of Bike Lanes



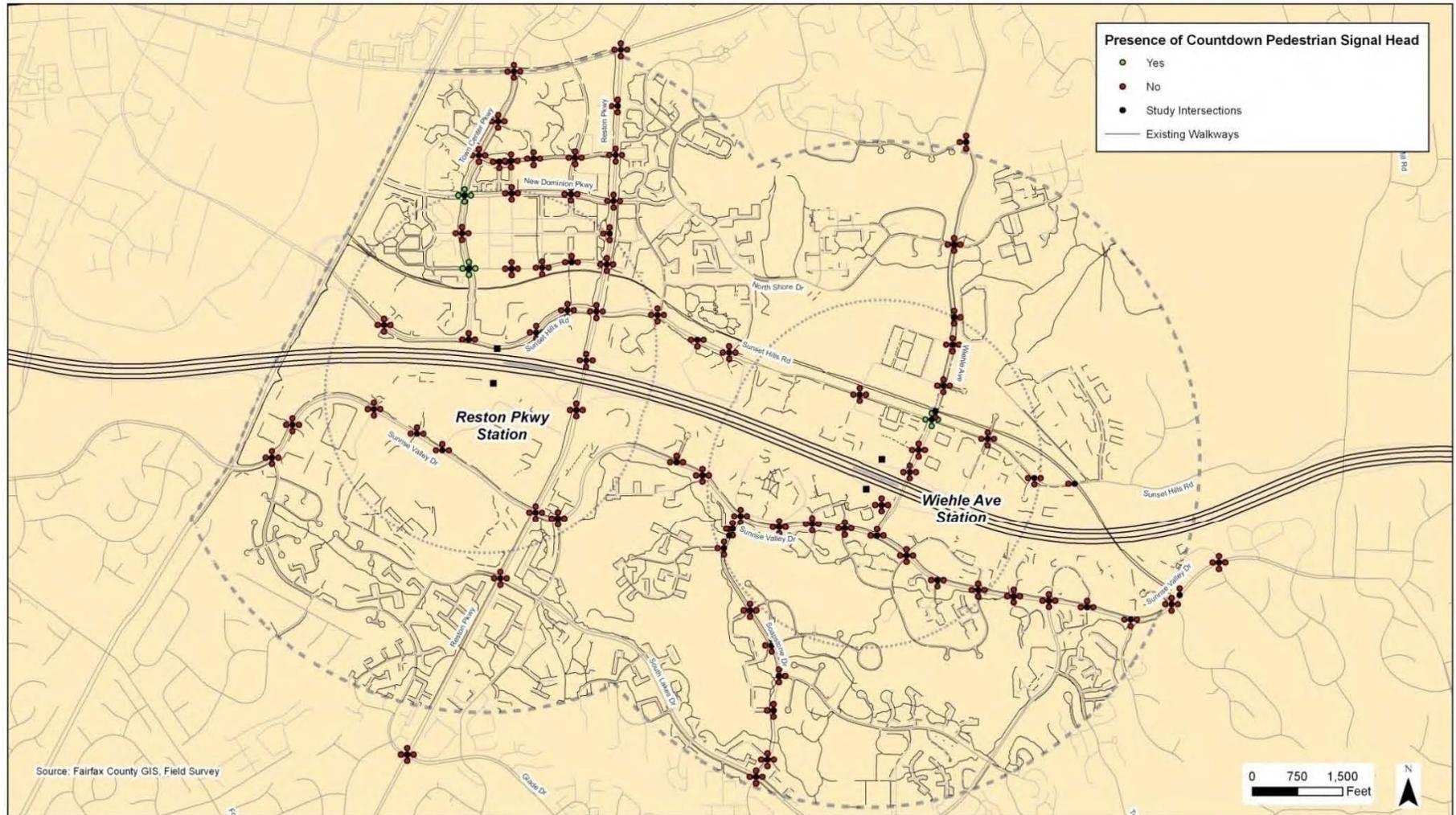


# Pedestrian Facilities

- Inventoried more than 80 intersections and mid-block crossings within 1 mile of proposed stations
- Data inventory included:
  - Crosswalks
  - Pedestrian signals
  - Pedestrian signal countdowns
  - ADA compliance
- Pedestrian ISI quantified
- Sidewalks inventoried on all major routes



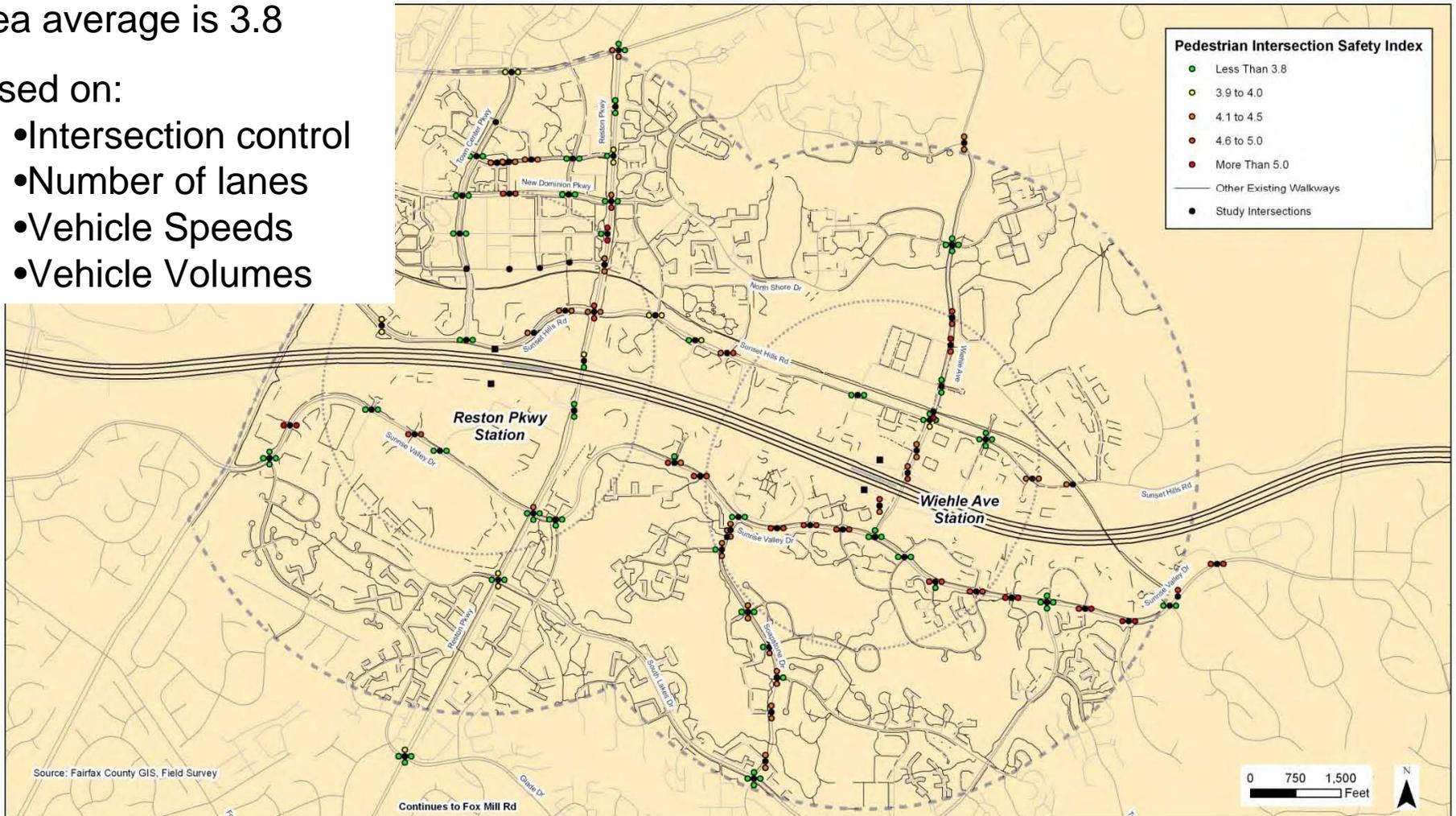




Source: Fairfax County GIS, Field Survey



- Area average is 3.8
- Based on:
  - Intersection control
  - Number of lanes
  - Vehicle Speeds
  - Vehicle Volumes





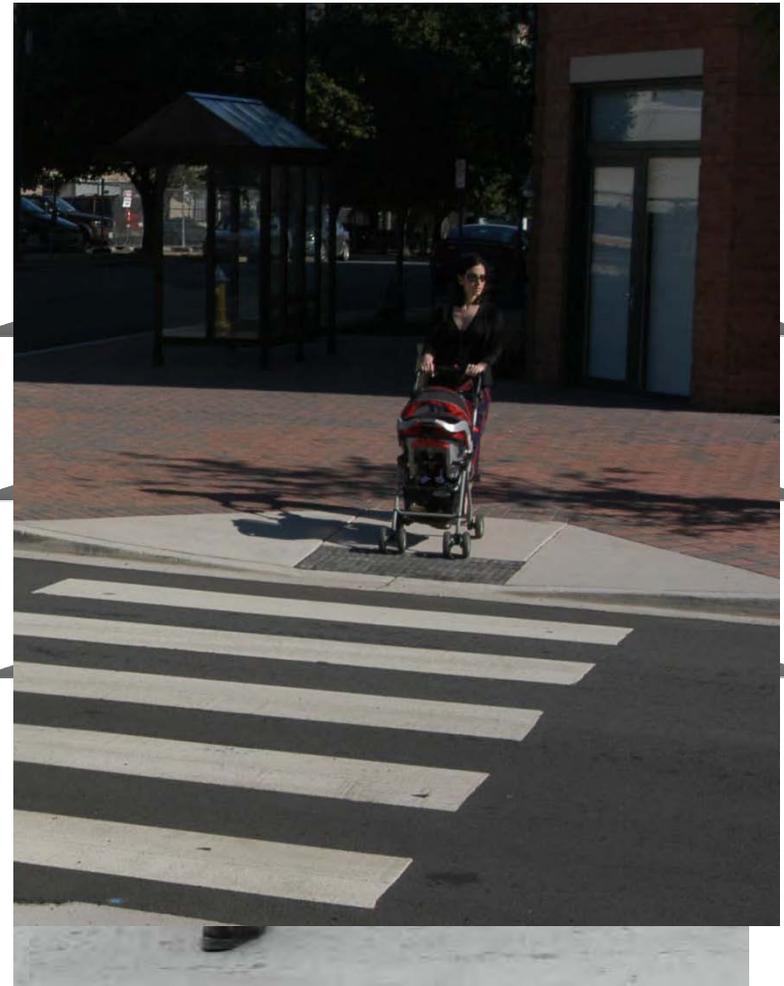


## Inventory Results

- 42 signalized & 37 stop-controlled intersections
- 300 potential crossing locations were identified:
  - 40% have crosswalks
  - 27% have pedestrian signals
  - 5% have countdown displays
  - 5% have ADA compliant ramps

# Recommendations Overview

- Upgrade intersection curb ramps
- Install pedestrian countdown signals at all signalized intersections within ½ mile
- Apply high-visibility crosswalk markings at all signalized intersections within ½ mile
- Evaluation of some improvements with traffic analysis





# **Bicycle Facility Improvements**



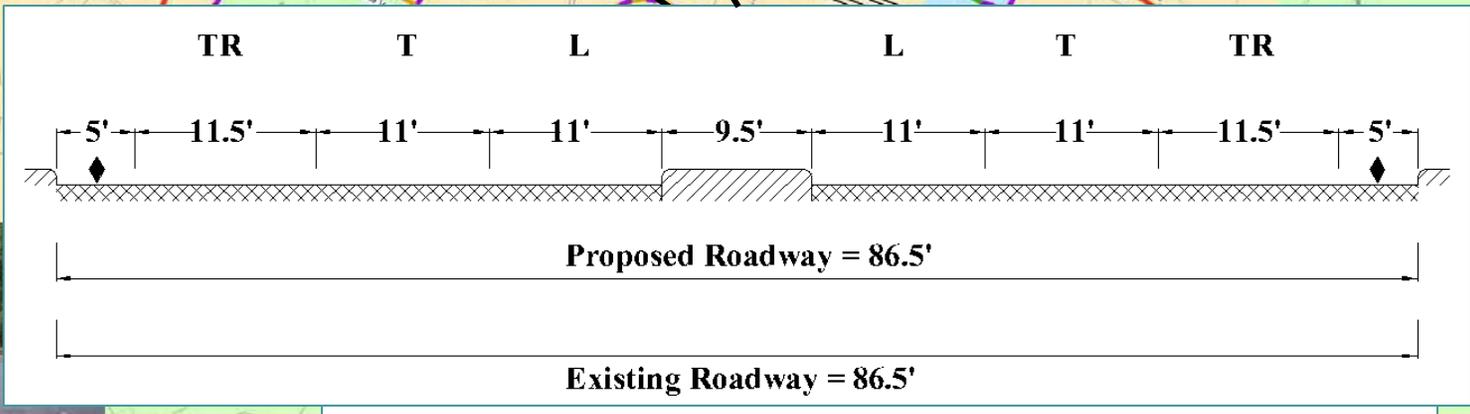
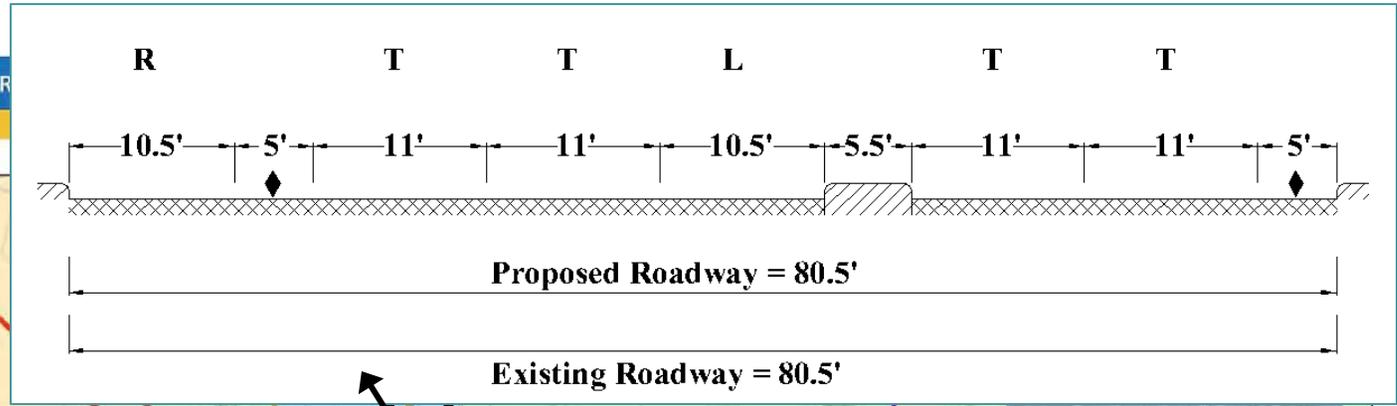
# Basic Principles

- Increase connectivity of existing paths
- Provide more direct access
- Ensure vehicle speeds are compatible with bicycle travel

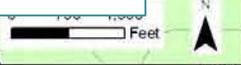


Wiehle Avenue & R

- Primary Bike Facilities**
- Type
- Existing Paved Trail
  - Proposed On-Street Bike Lane
  - Proposed Paved Trail
  - Phased Trail/Bike Lane Implementation
  - Wide Curb Lane
- Development Characteristics**
- Type
- Residential/Compatible for Bike Travel
  - Urban Core/Compatible for Bike Travel



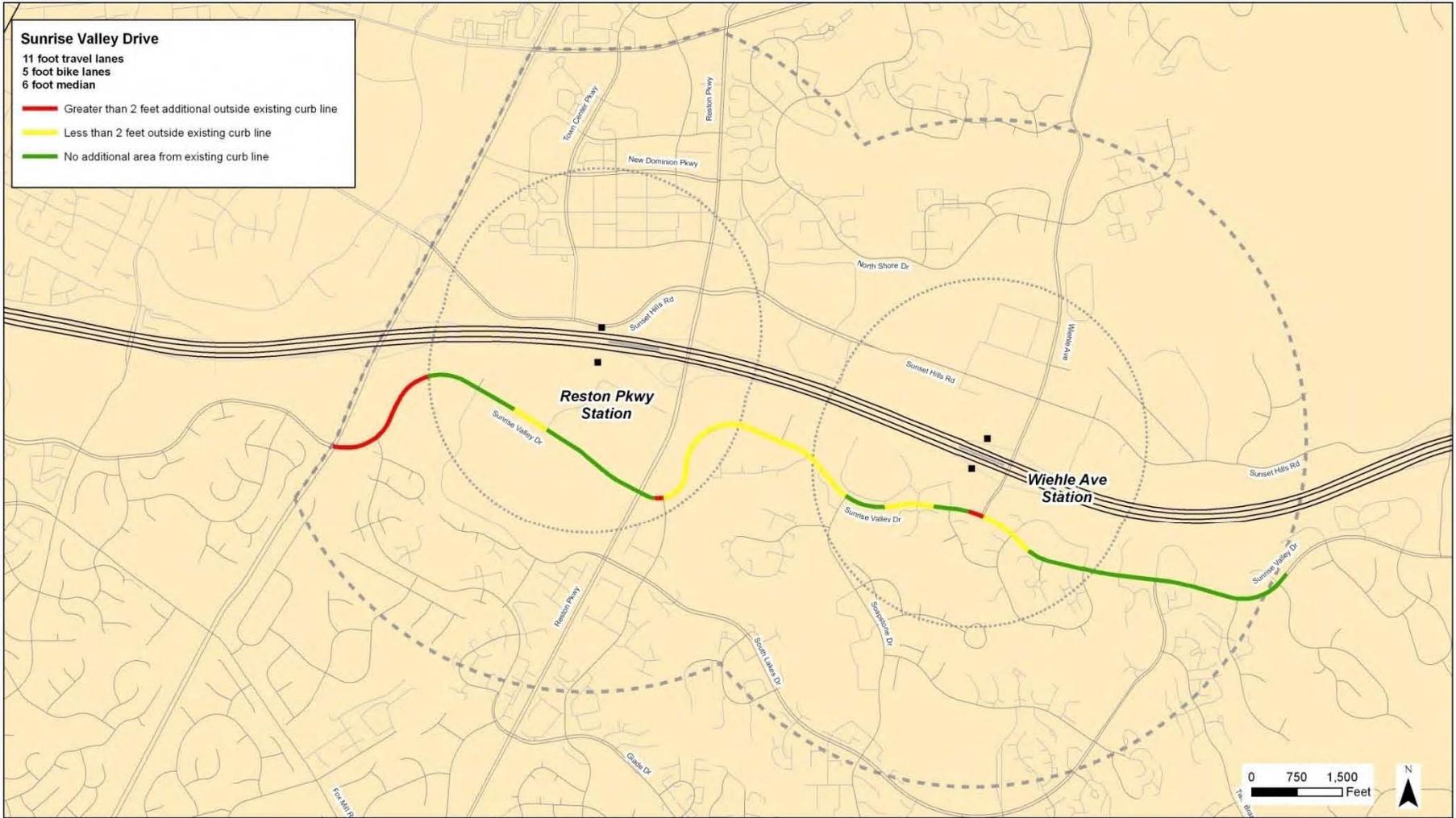
Source: Fairfax County GIS, Field Survey





**Sunrise Valley Drive**  
 11 foot travel lanes  
 5 foot bike lanes  
 6 foot median

- Greater than 2 feet additional outside existing curb line
- Less than 2 feet outside existing curb line
- No additional area from existing curb line



Source: Fairfax County GIS, Field Survey



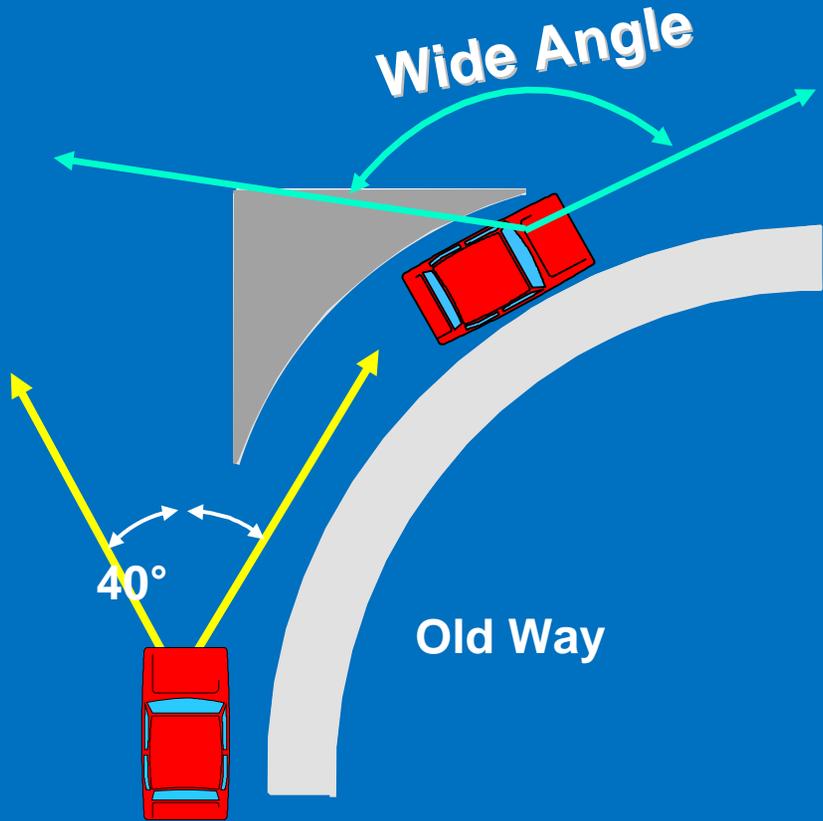
# **Pedestrian Facility Improvements**



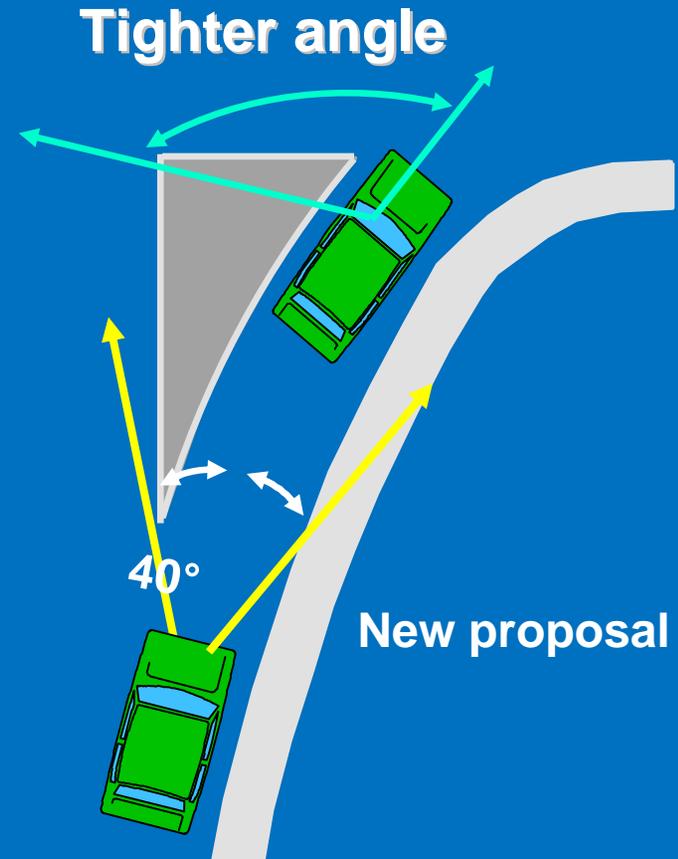
# Basic Principles

- Increase connectivity of existing paths
- Provide more direct access
- Minimize exposure of pedestrians
- Increase visibility of pedestrians

# Right-Turn Slip Lane: Design for pedestrians

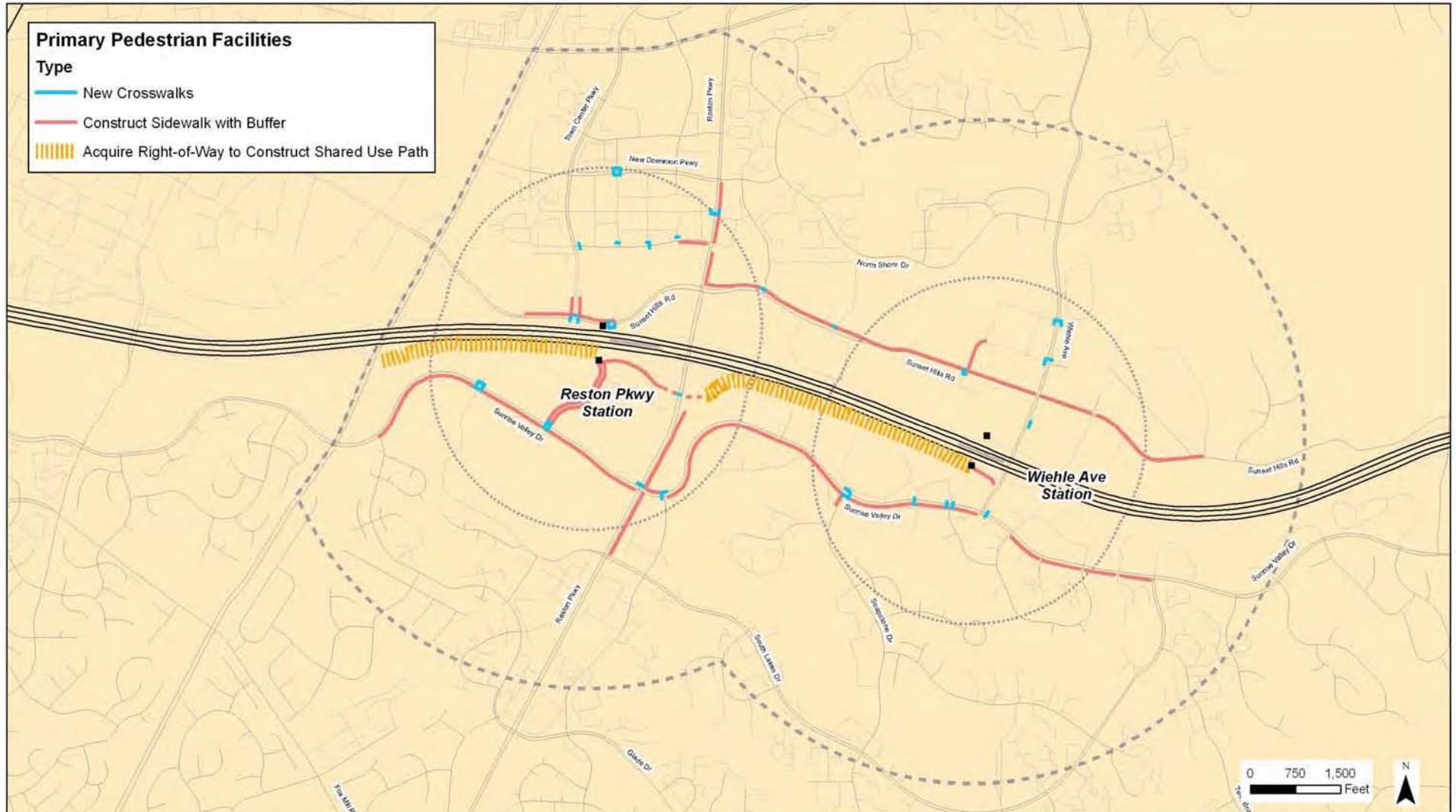


High speed, head turner =  
low visibility of pedestrians

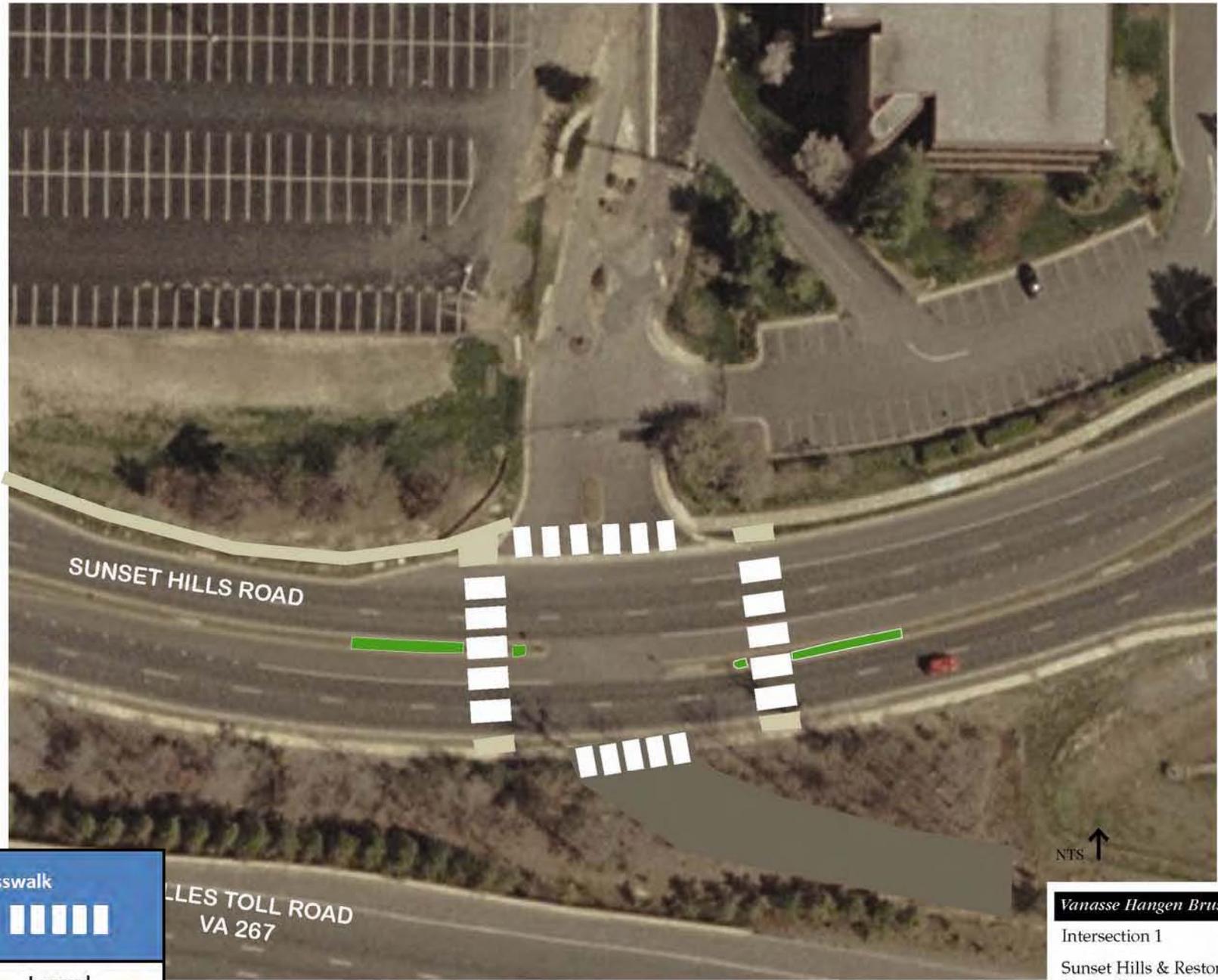


Slow speed, good angle =  
good visibility of pedestrians





Source: Fairfax County GIS, Field Survey



Crosswalk



Legend

*Vanasse Hangen Brustlin, Inc.*  
 Intersection 1  
 Sunset Hills & Reston Pkwy  
 Station Entrance



DEMOCRACY DRIVE

DISCOVERY STREET

BLUEMONT WAY

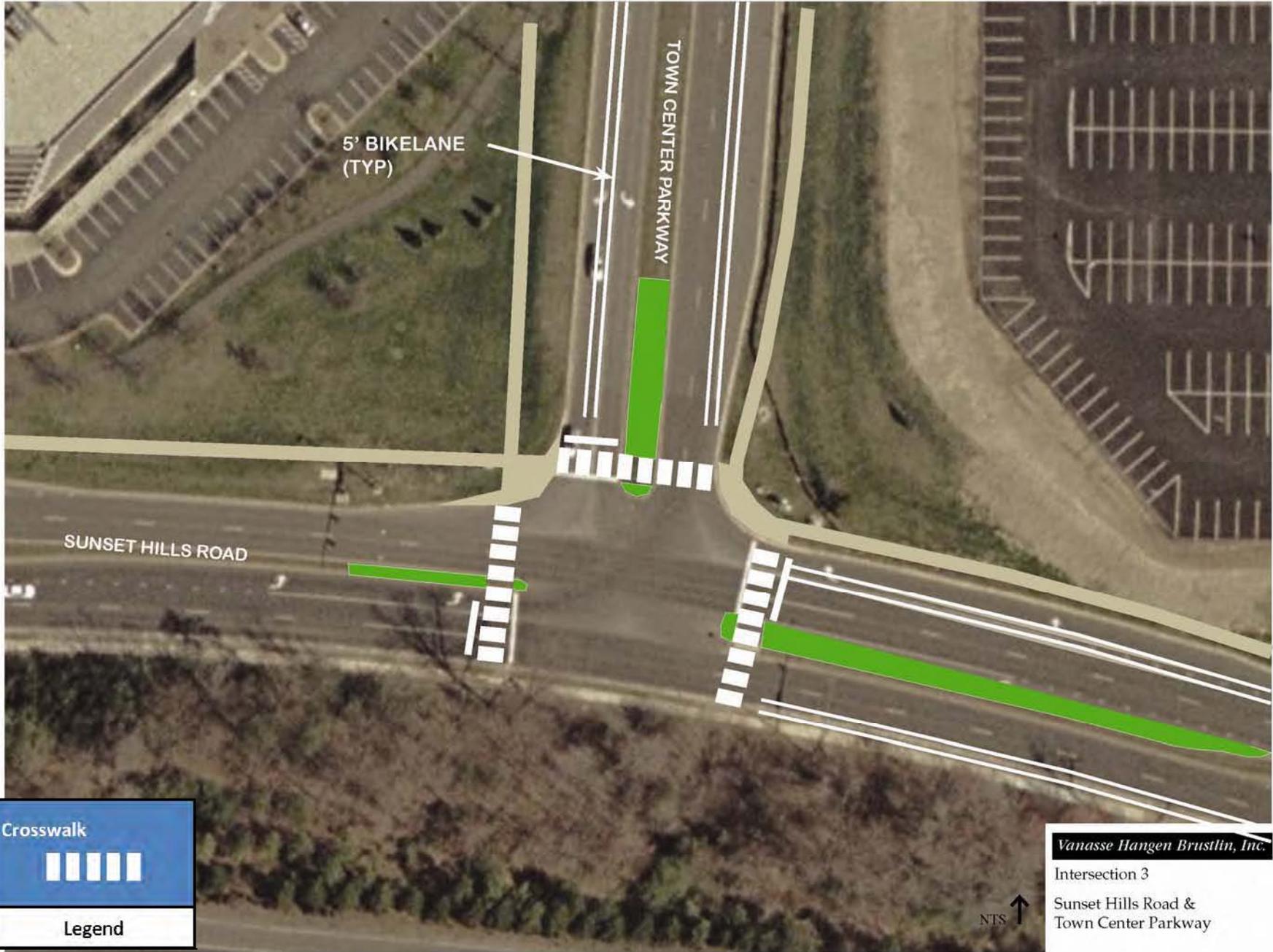
NTS ↑

Crosswalk



Legend

*Vanasse Hangen Brustlin, Inc.*  
 Intersection 2  
 Bluemont Way & Discovery Street  
 Pedestrian Bridge



5' BIKELANE  
(TYP)

TOWN CENTER PARKWAY

SUNSET HILLS ROAD

Crosswalk

Legend

Vanasse Hangen Brustlin, Inc.

Intersection 3

Sunset Hills Road & Town Center Parkway

NTS ↑



5' BIKELANE  
(TYP)

BLUEMONT WAY

TOWN CENTER PARKWAY



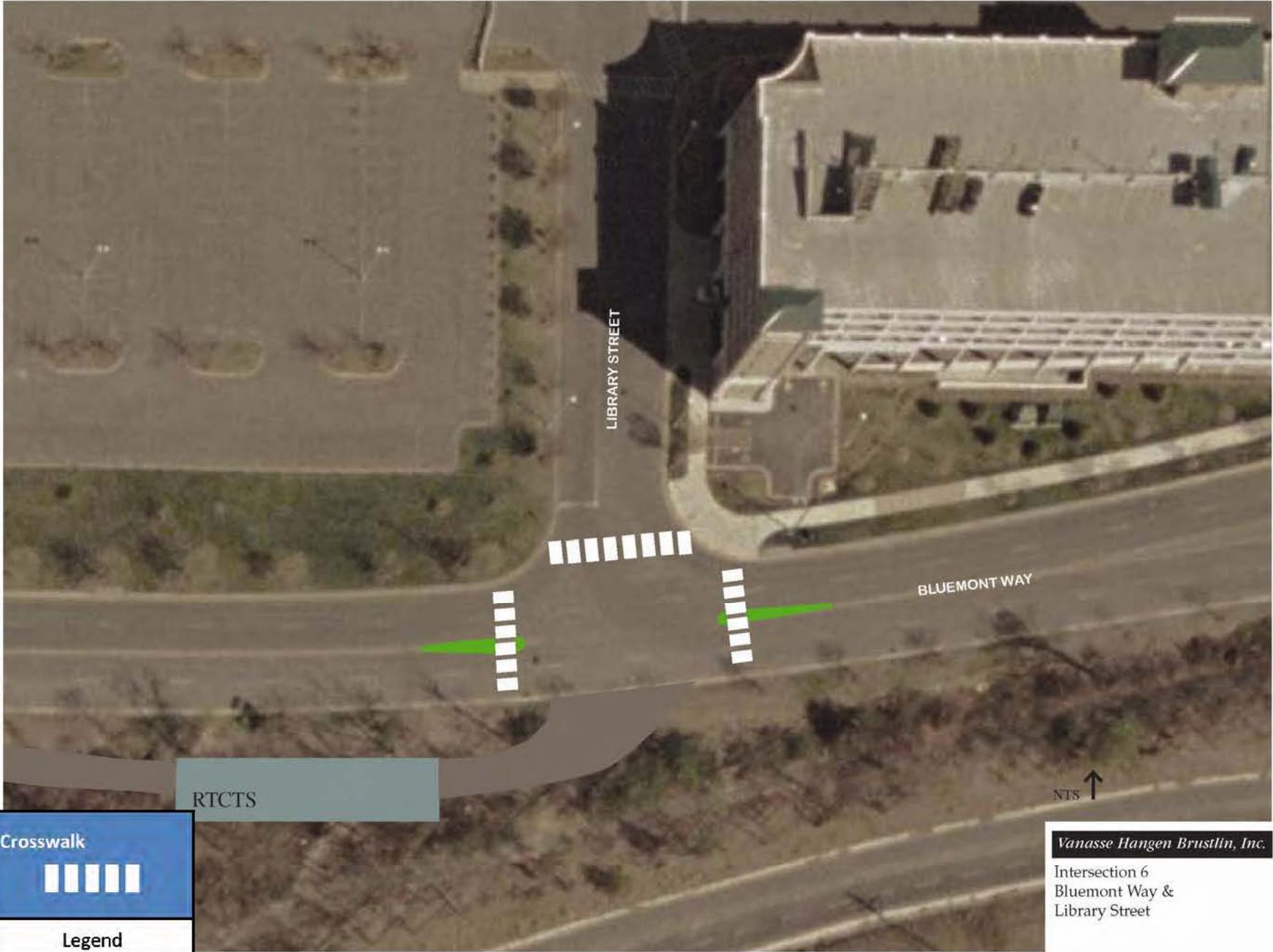
*Vanasse Hangen Brustlin, Inc.*

Intersection 4  
Bluemont Way &  
Town Center Parkway

Crosswalk



Legend



LIBRARY STREET

BLUEMONT WAY

RTCTS

NTS ↑

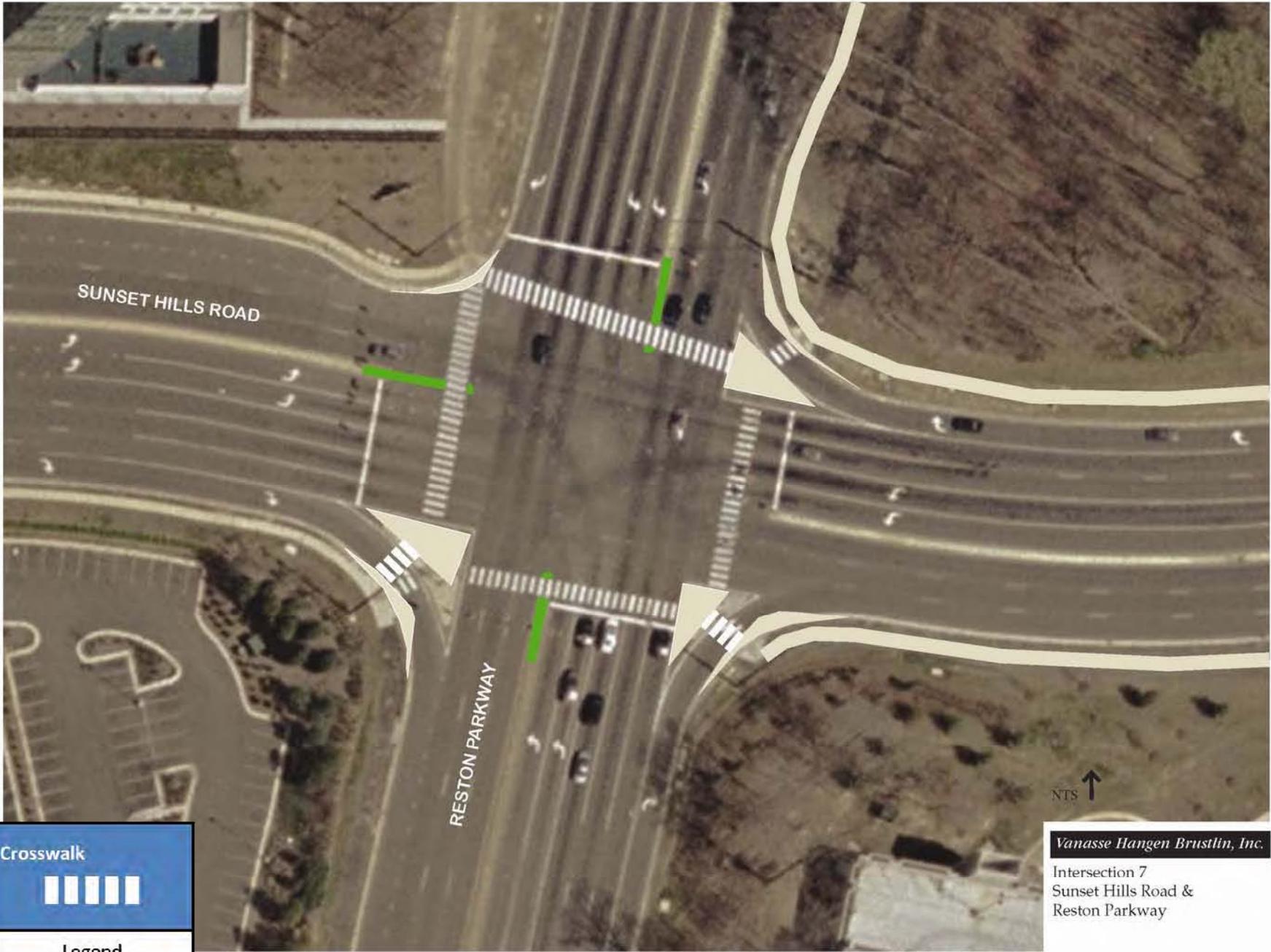
Crosswalk



Legend

*Vanasse Hangen Brustlin, Inc.*

Intersection 6  
Bluemont Way &  
Library Street



Crosswalk

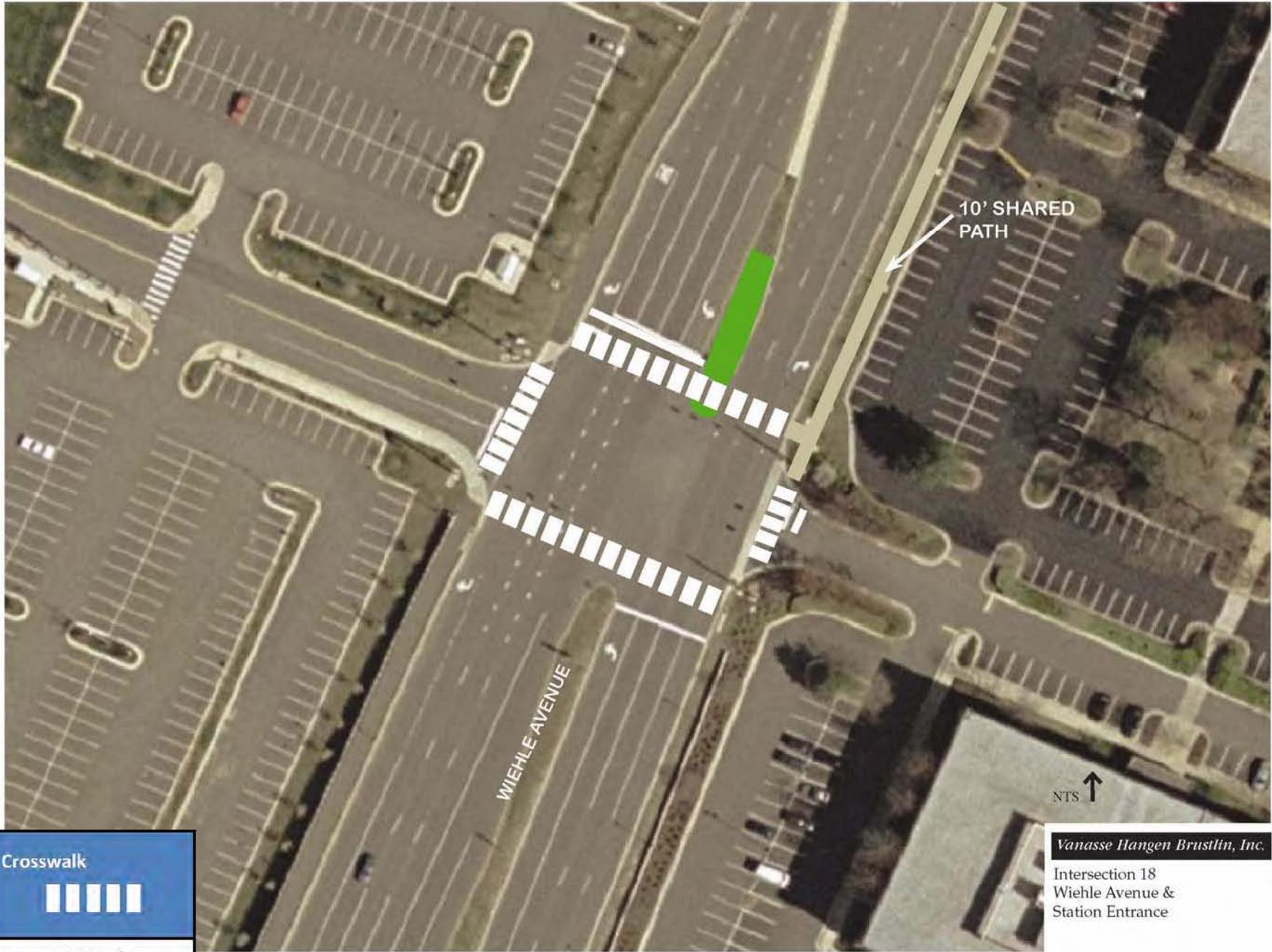


Legend

NTS ↑

*Vanasse Hangen Brustlin, Inc.*

Intersection 7  
Sunset Hills Road &  
Reston Parkway



10' SHARED  
PATH

WIEHLE AVENUE

NTS ↑

*Vanasse Hangen Brustlin, Inc.*

Intersection 18  
Wiehle Avenue &  
Station Entrance

Crosswalk



Legend



YIELD TO PEDESTRIAN AND BIKES (TYP)

10' SHARED PATH

SUNSET HILLS ROAD

WIEHLE AVENUE

10' SHARED PATH

NTS ↑

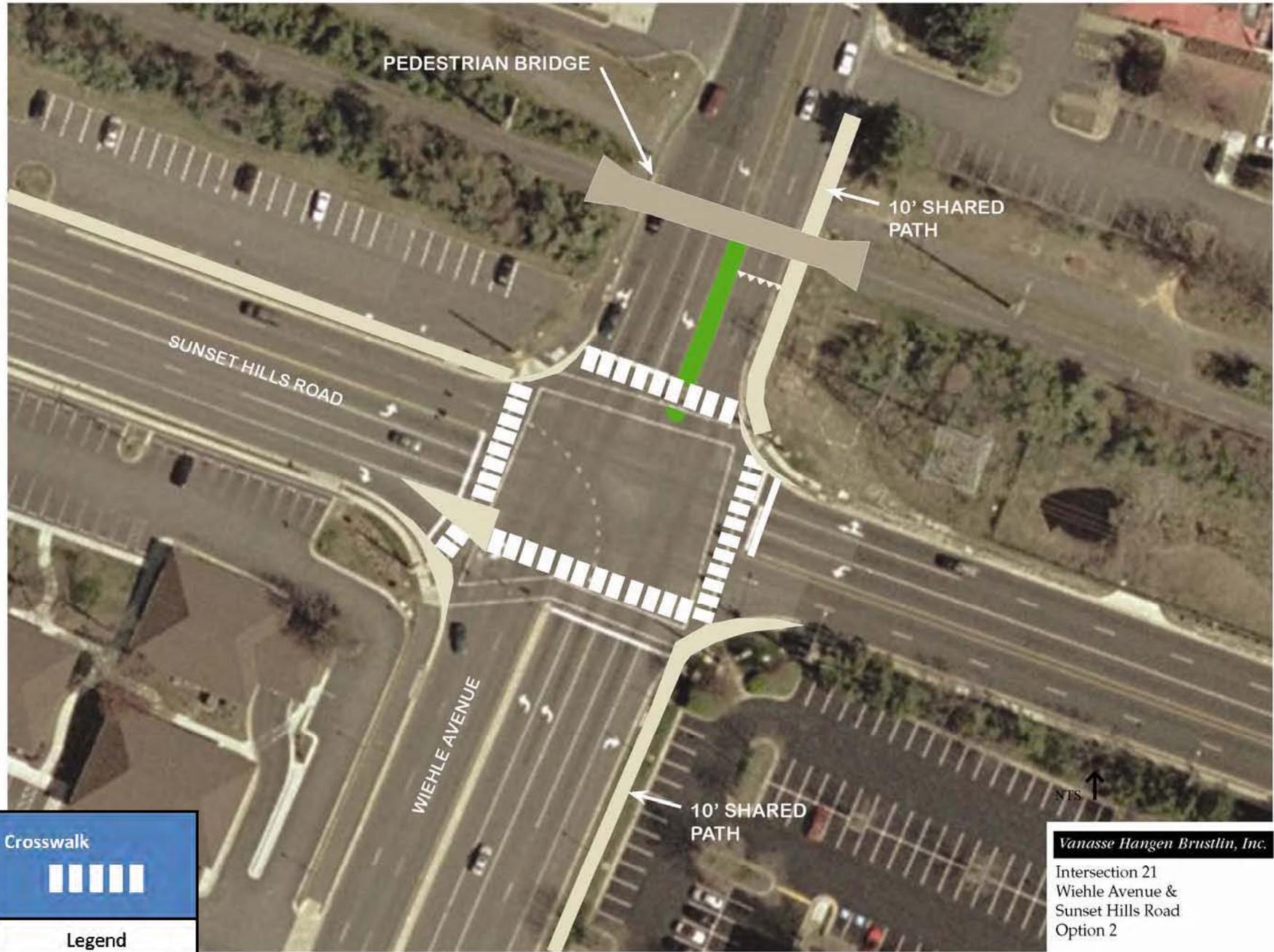
Crosswalk



Legend

*Vanasse Hangen Brustlin, Inc.*

Intersection 21  
Wiehle Avenue &  
Sunset Hills Road  
Option 1



PEDESTRIAN BRIDGE

10' SHARED PATH

SUNSET HILLS ROAD

WIEHLE AVENUE

10' SHARED PATH

NTS ↑

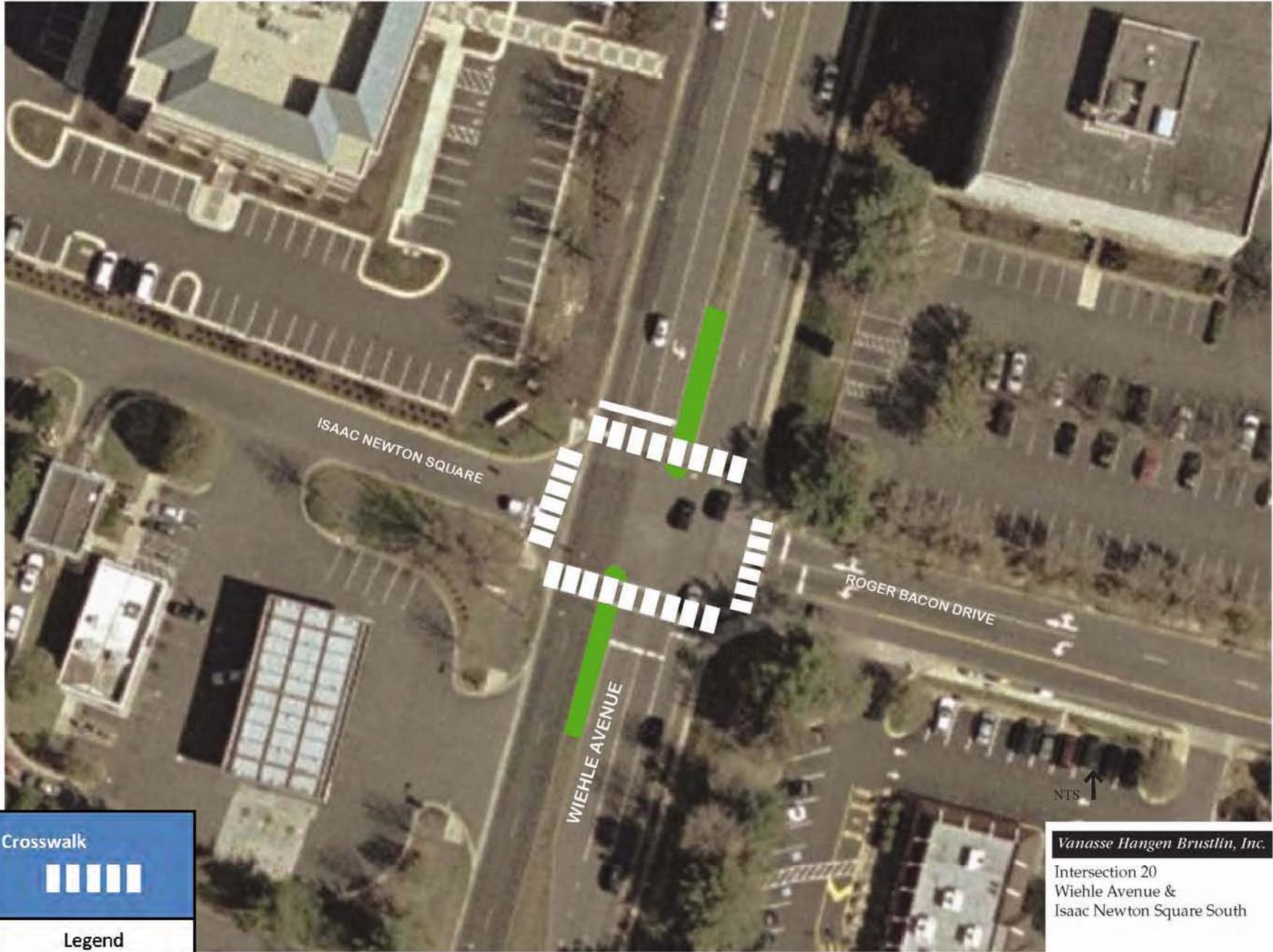
Crosswalk



Legend

*Vanasse Hangen Brustlin, Inc.*

Intersection 21  
Wiehle Avenue &  
Sunset Hills Road  
Option 2



*Vanasse Hangen Brustlin, Inc.*

Intersection 20  
Wiehle Avenue &  
Isaac Newton Square South

Crosswalk



Legend



Crosswalk



Legend

NTS



*Vanasse Hangen Brustlin, Inc.*

Intersection 19  
Wiehle Avenue &  
Isaac Newton Square North



Crosswalk



Legend

NTS ↑

*Vanasse Hangen Brustlin, Inc.*

Intersection 25  
Wiehle Avenue &  
Sunrise Valley Drive  
Option 1



Crosswalk

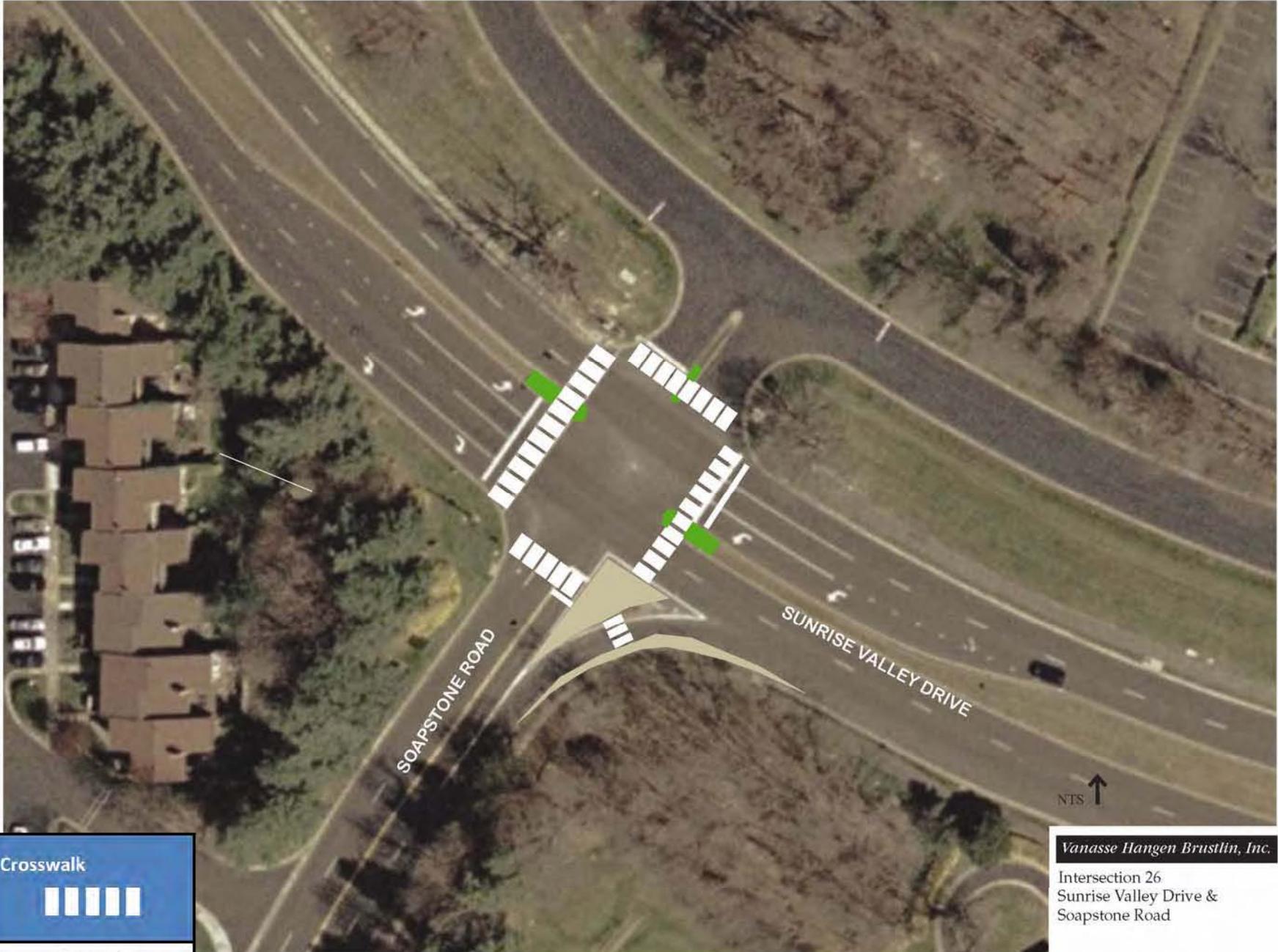


Legend

NTS ↑

*Vanasse Hangen Brustlin, Inc.*

Intersection 25  
Wiehle Avenue &  
Sunrise Valley Drive  
Option 2



NTS ↑

*Vanasse Hangen Brustlin, Inc.*

Intersection 26  
Sunrise Valley Drive &  
Soapstone Road

Crosswalk



Legend



# Study Area Recommendations

- Intersection improvements include:
  - Install 71 pedestrian countdown signals
  - Construct 20 curb ramps
  - Upgrade 79 curb ramps
  - Add 46 new crosswalks
  - Improve 42 existing crosswalks to high visibility
  - Construct 40 pedestrian median refuges
  - Channelize right turns at 5 locations
  - Add warning signage at 7 crossing locations
  - Decrease crossing distance at 19 crosswalks
  - Decrease turning radius at 19 locations



## Study Area Recommendations

- Construct new pathways:
  - Up to 6 miles of on-street bike lanes (2.2 miles initially)
  - Over 7 miles of bicycle paths/shared-use
  - Up to 7.25 miles of new sidewalks