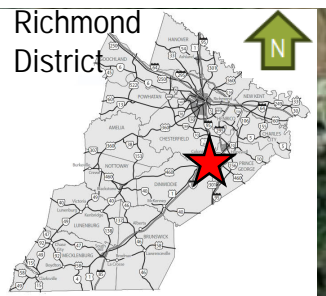
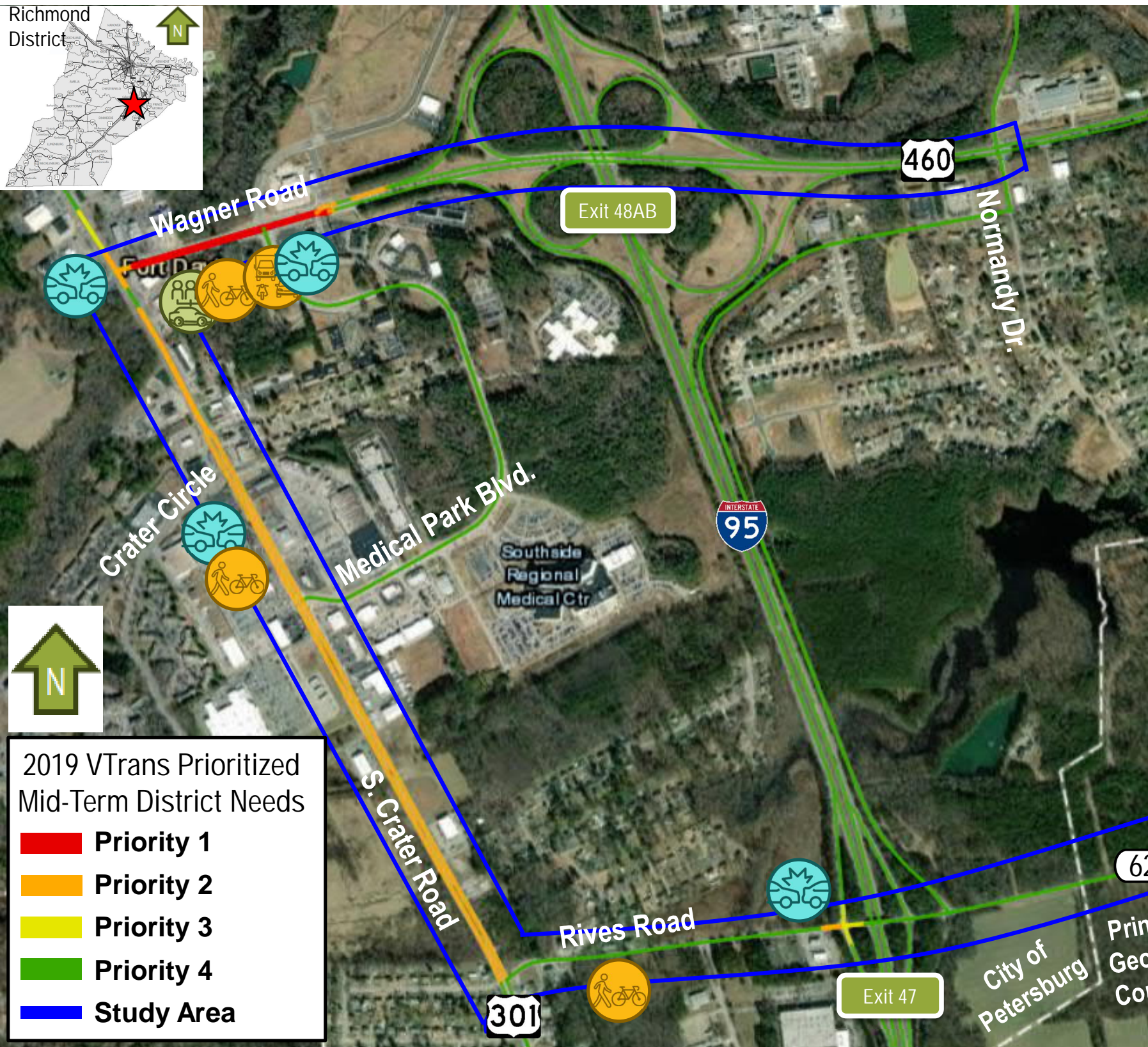


Project Overview | RI-23-06

US-301 (S. Crater Road) Corridor, 3.7 Miles

Study Corridor Includes:

- Wagner Road from Normandy Drive to S. Crater Road, 1.20 miles
- S. Crater Road from Wagner Road to Rives Road, 1.10 miles,
- Rives Road from S. Crater Road to Lakeshore Drive, 1.40 miles



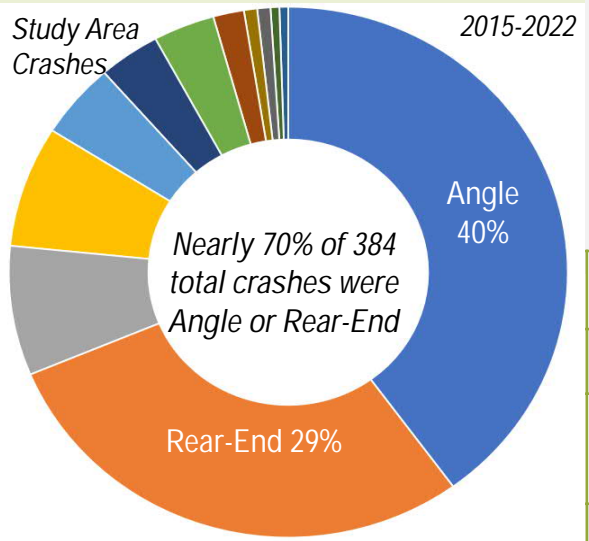
2019 VTrans Prioritized Mid-Term District Needs

- █ Priority 1
- █ Priority 2
- █ Priority 3
- █ Priority 4
- █ Study Area

Project Purpose, Goals, & Objectives

Analyze the operational and safety issues identified within the project area, with a focus on providing enhanced bicycle, pedestrian, and transit access.

Identify cost-effective preferred improvement alternatives that address the deficient conditions and prioritize safety for vulnerable users.



Identified Issues in the Study Area

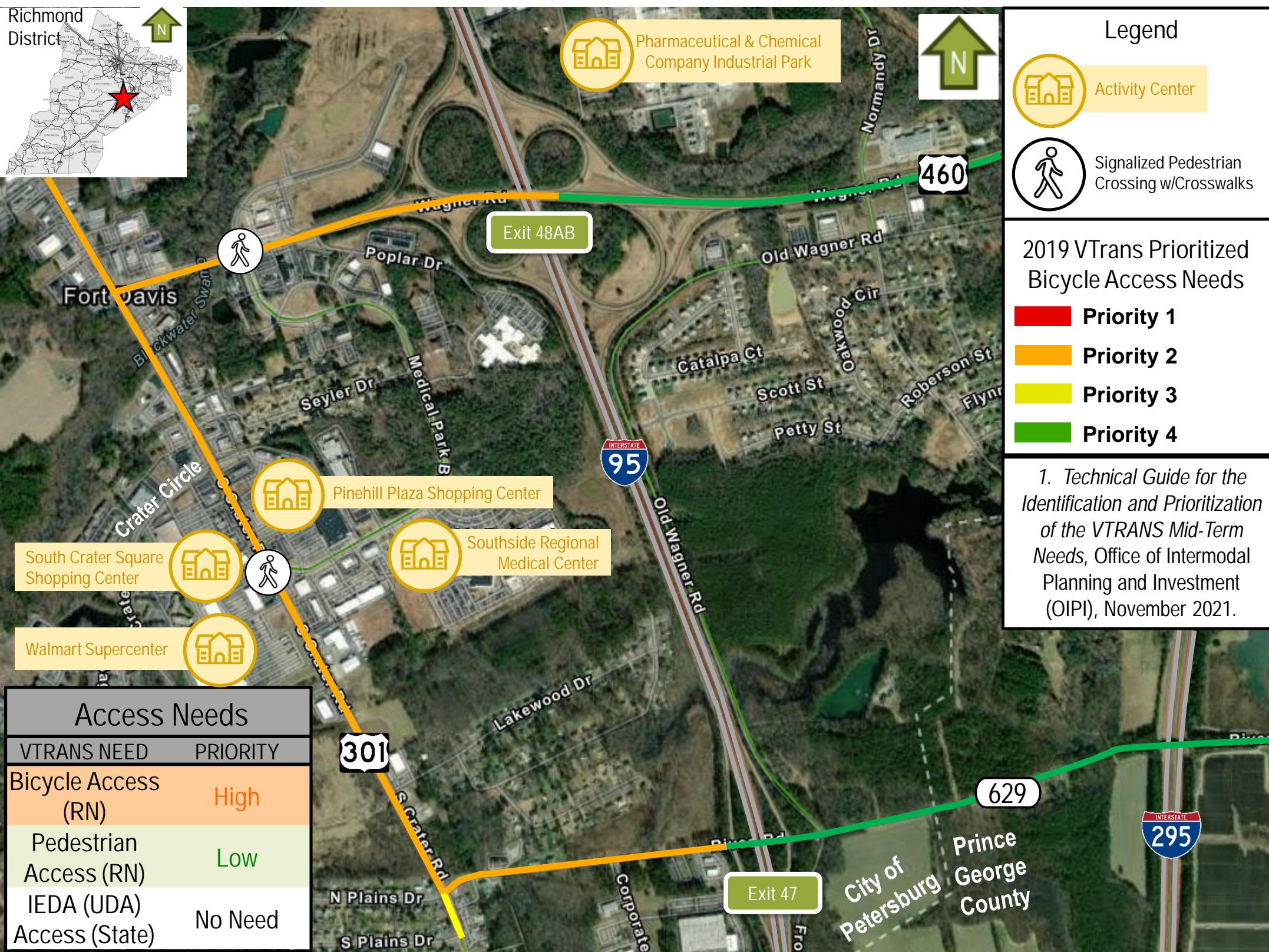
- Significant angle and rear-end crash trend at intersections.
- 2% pedestrian collisions, including a 2016 fatal crash at Crater Circle. Limited crosswalks and sidewalks, no existing bike lanes or shared-use paths.
- Commuters traveling to/from the Southside Regional Medical Center leads to congestion during AM/PM peak hours, particularly along Wagner Road between I-95 & S. Crater Road.
- There are no existing park and ride facilities present along the corridor. There are existing transit routes, but no stops south of Medical Park Blvd or east of I-95.

Project Fact Sheet

VDOT District	Richmond
Locality	City of Petersburg & Prince George County
# of Study Intersections	13
Transit Routes	PAT South Crater Road PAT County Drive 460
Intermodal Connections	None
Nearby Bikeways	Appomattox River Trail, Future Fall Line Trail
Functional Classification	Other Principal Arterial
Speed Limit	35 mph to 45 mph

Operations / Access Needs

Bicycle/Pedestrian Access Needs Identification Summary



Legend

- Activity Center
- Signalized Pedestrian Crossing w/Crosswalks

2019 VTrans Prioritized Bicycle Access Needs

- █ **Priority 1**
- █ **Priority 2**
- █ **Priority 3**
- █ **Priority 4**

1. *Technical Guide for the Identification and Prioritization of the VTRANS Mid-Term Needs*, Office of Intermodal Planning and Investment (OIPi), November 2021.

Bicycle Accessibility Summary

- No existing bike lanes,
- No existing shared-use paths,
- No crashes involving a bicyclist between 2015-2022.
- The Bicycle Access VTrans Need is High based on "Applicable roadway segments within biking distance (seven miles) of VTrans Activity Centers, fixed-guideway transit stations, or BRT lines."¹

Pedestrian Accessibility Summary

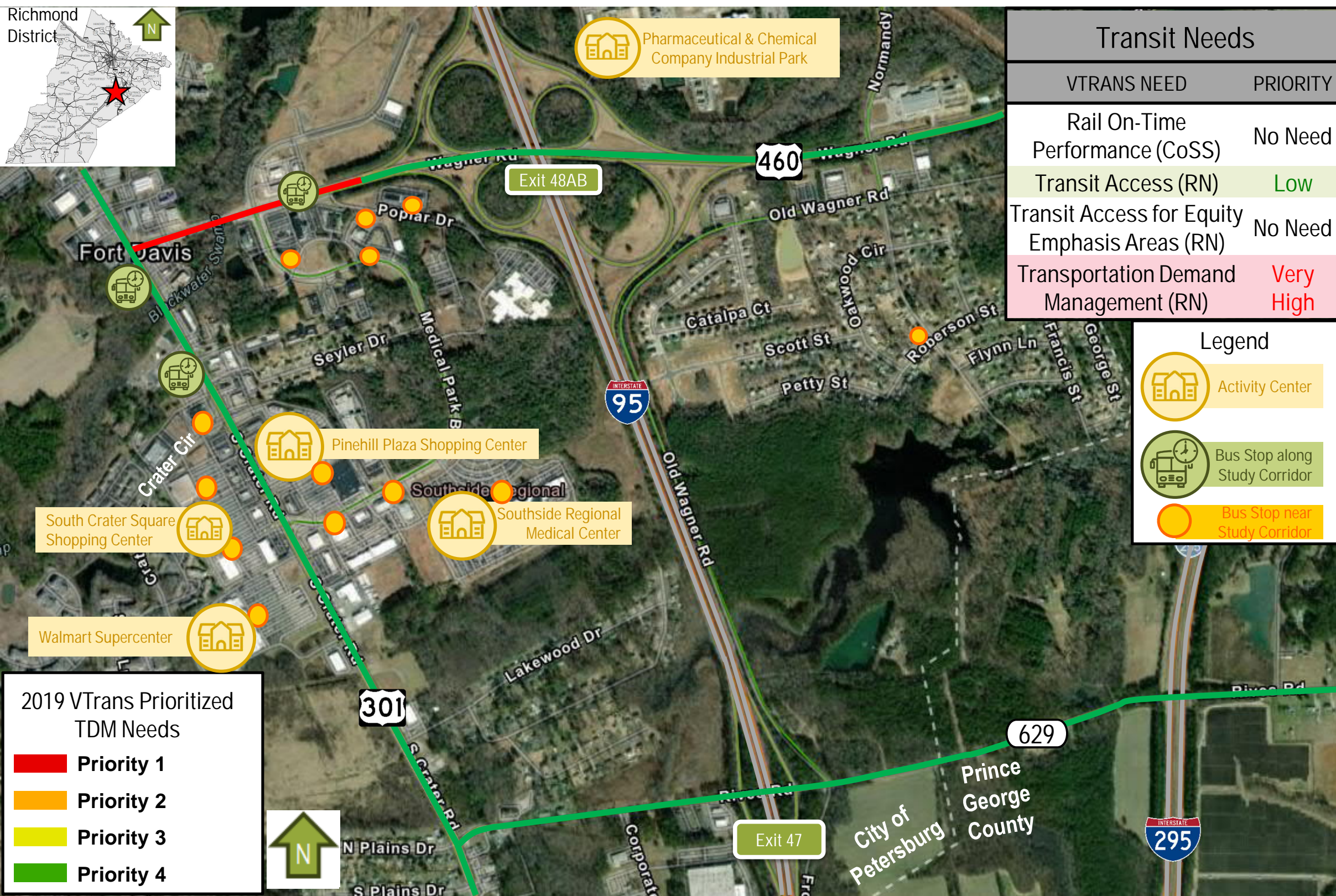
- A sparse, inconsistent network of existing sidewalks.
- Crosswalks only present at two intersections (signalized with pedestrian push buttons):
 - US-301 (S. Crater Road) & Medical Park Blvd.
 - Wagner Road & Medical Park Blvd./Brasfield Pkwy.
- 1 fatal pedestrian crash occurred in 2016 near the intersection of US-301 (S. Crater Road) & Crater Circle.
- The Pedestrian Access VTrans Need is Low based on "Applicable roadway segments within walking distance (one mile) of VTrans Activity Centers, fixed-guideway transit stations, or BRT lines."¹

Access Needs	
VTRANS NEED	PRIORITY
Bicycle Access (RN)	High
Pedestrian Access (RN)	Low
IEDA (UDA) Access (State)	No Need

ACCESS MANAGEMENT SUMMARY	ACCESS POINTS/MILE
Corridor-Wide	13.0
Wagner Road Eastbound	10.0
Wagner Road Westbound	7.5
S. Crater Road Northbound	28.2
S. Crater Road Southbound	12.7
Rives Road Eastbound	12.9
Rives Road Westbound	8.6

Operations / Access Needs

Transit Access Needs Identification Summary



Transportation Demand Management (TDM) Summary

- No existing park and ride or other intermodal facilities exist along or near the study area.
- The TDM VTrans Need is Very High based on "Roadway segments where TDM strategies such as new or expanded public transportation services/facilities, new or expanded bicycle and pedestrian facilities, or coordination of commuter assistance programs can be beneficial to reduce vehicle miles traveled."¹

Transit Accessibility Summary

- Existing Petersburg Area Transit (PAT) Routes:
 - County Drive (460)
 - South Crater Road
- 3 bus stops are located along the corridor. All have sidewalks, but no shelters or benches.
 - 2 stops along SB US-301 (S. Crater Road),
 - 1 stop along WB Wagner Road,
 - Multiple stops along Medical Park Blvd, Crater Circle, Poplar Dr, and S Normandy.
- The Transit Access VTrans Need is Low based on "The number of workers that can access a given VTrans Activity Center via public transit within 45 minutes versus a private automobile. Any transit deficit greater than zero constitutes a need."¹

1. Technical Guide for the Identification and Prioritization of the VTRANS Mid-Term Needs, Office of Intermodal Planning and Investment (OIPI), November 2021.

Operations / Access Needs

Operations / Reliability Needs Identification Summary



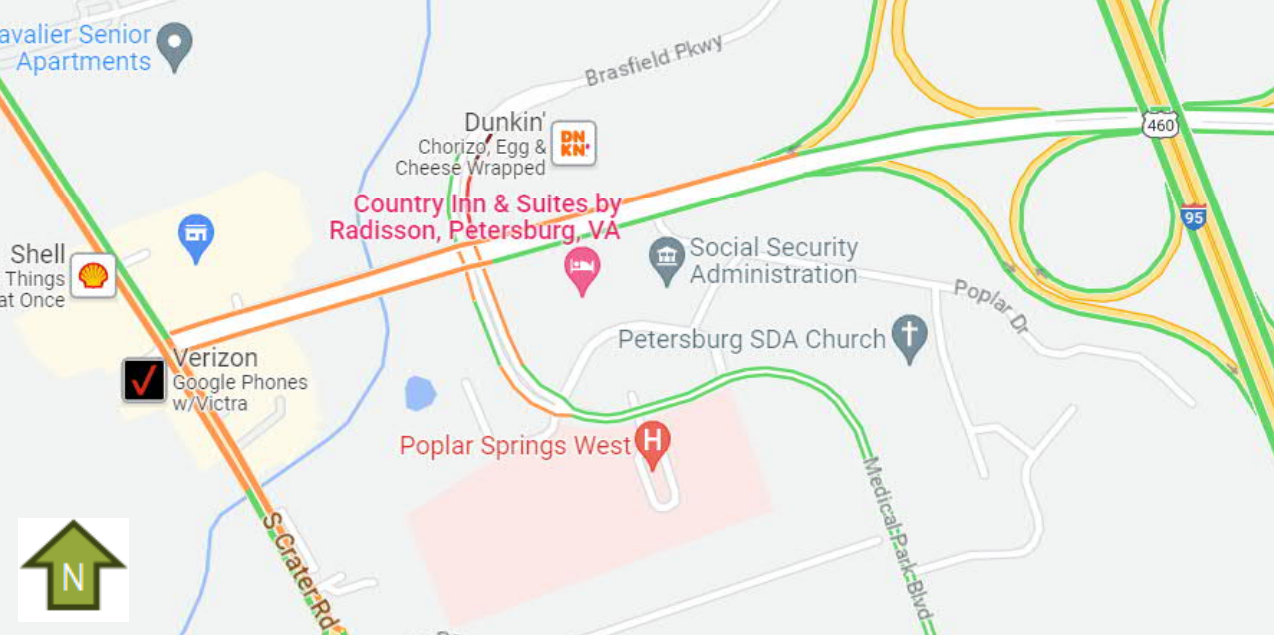
Operations Along Wagner Road

Typical traffic: Fast (green), Slow (red)

S M T W **T** F S

Thursday, 4:00 PM

8:00 AM 12:00 PM 4:00 PM 8:00 PM



AM Peak (9:30 – 10:30 am)
Mid Peak (12:45 – 1:45 pm)
PM Peak (4:00 – 5:00 pm)

Operations Summary

- Congestion occurs on S. Crater Rd & Wagner Rd during the AM, Mid, and PM peak periods as commuters travel between I-95 and the Medical Center.
- Along westbound Wagner Road, there is a short weaving section between I-95 and Medical Park Blvd.
- Wagner Road has a Medium Congestion Mitigation VTrans Need between I-95 and S. Crater Rd based on "Travel Time Index (TTI), travel speeds, and the percent person-miles traveled in excessively congested conditions."¹

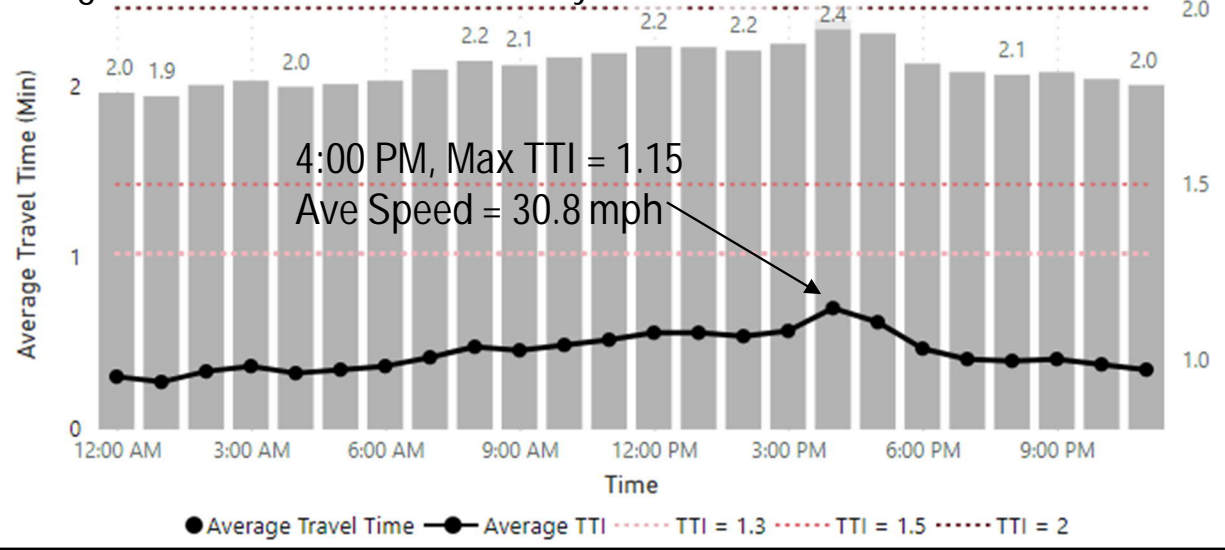
Operations Needs			
VTRANS NEED	PRIORITY		
	Wagner Rd	S. Crater Rd	Rives Rd
Congestion Mitigation (RN)	Medium	No Need	No Need
Capacity Preservation (CoSS/RN)	No Need	No Need	No Need
Reliability (CoSS/RN)	No Need	No Need	No Need

Travel Time Index Summary

- Travel Time Index (TTI) is the ratio of travel time during a specified time period to the time required to make the same trip at typical speeds. A higher value indicates more congestion.
- Along Wagner Road:
 - Eastbound, a maximum TTI of 1.15 occurs in the 4 PM hour.
 - Westbound, maximum TTI of 1.14 occurs in the 7 AM & 4 PM hours.
- Wagner Rd speed limit is 40 mph.
- Eastbound, average speed is below 34 mph between 10 AM & 5 PM, with a low of 31 mph in the 4 PM hour.
- Westbound, average speed is 34 to 35 mph between 7 AM & 5 PM, with a low of 34 mph in the 7 AM hour.

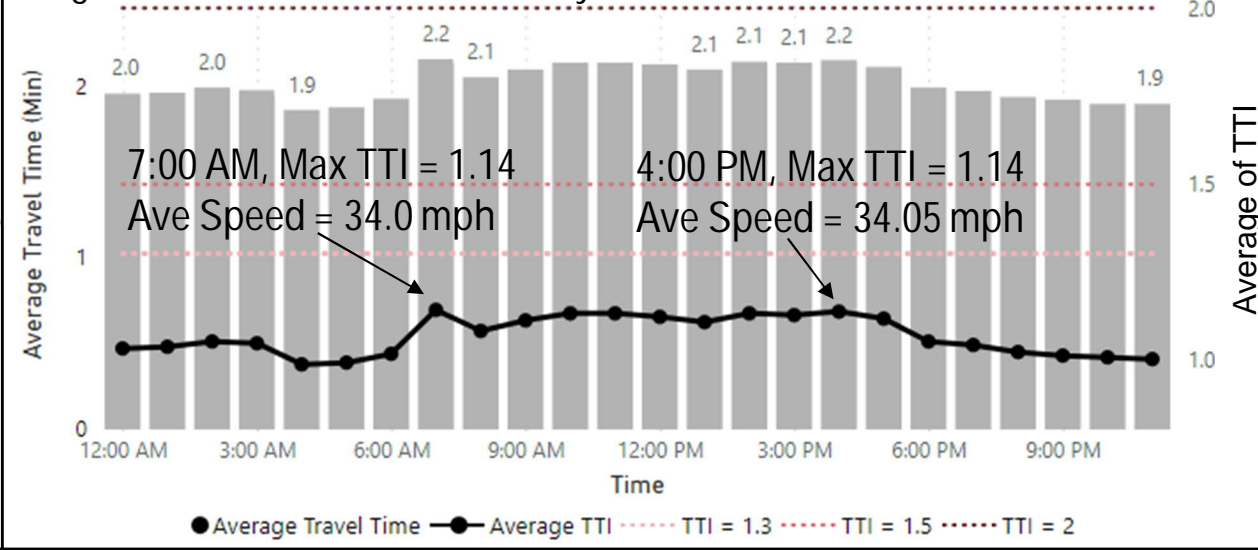
Average Travel Time Index (TTI) & Average Travel Time Per Hour

Wagner Road, Eastbound, Weekday



Average Travel Time Index (TTI) & Average Travel Time Per Hour

Wagner Road, Westbound, Weekday



1. Technical Guide for the Identification and Prioritization of the VTRANS Mid-Term Needs, Office of Intermodal Planning and Investment (OIPi), November 2021.

Safety Needs

Safety Improvement Needs Identification Summary

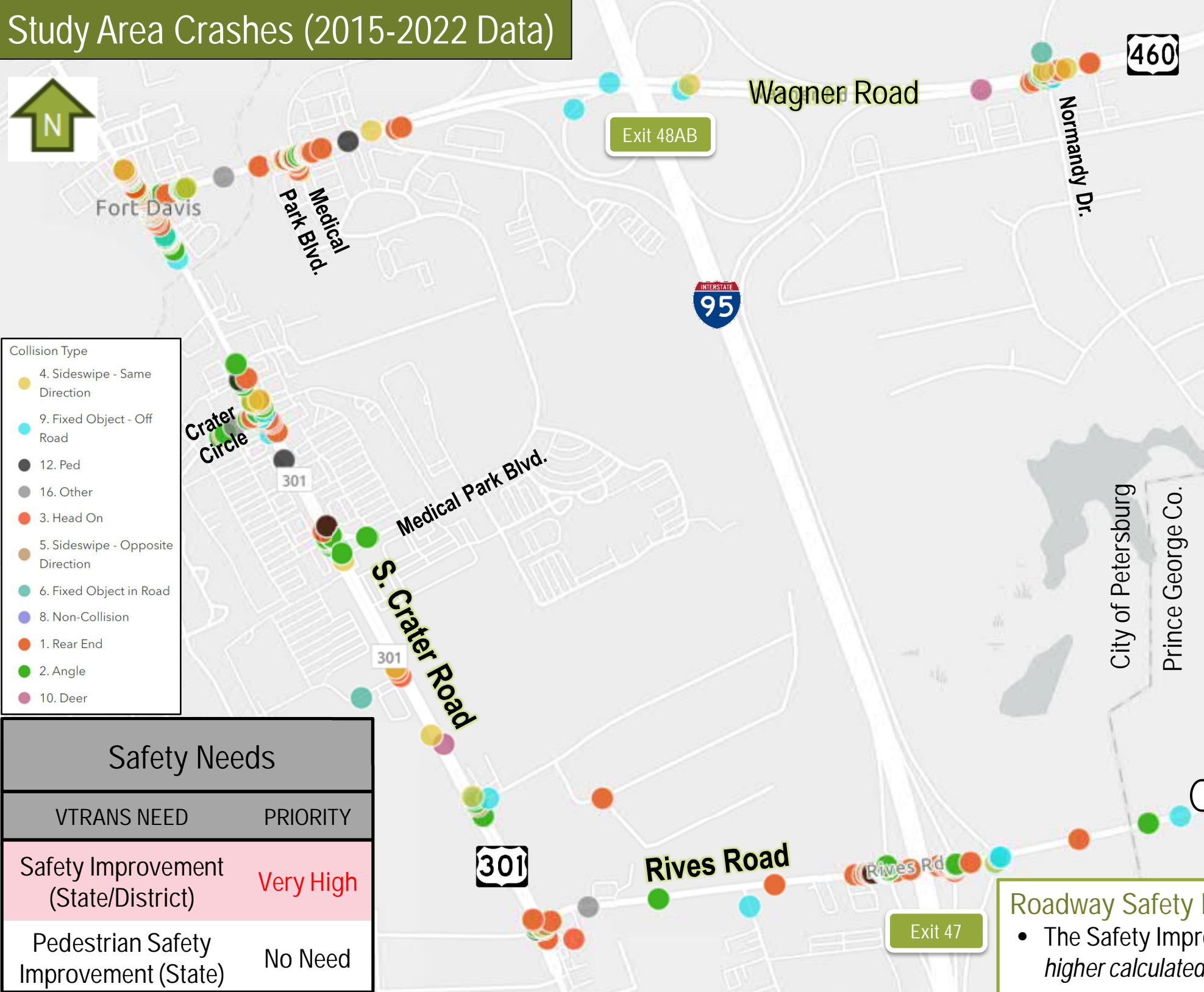


Study Area Crashes (2015-2022 Data)



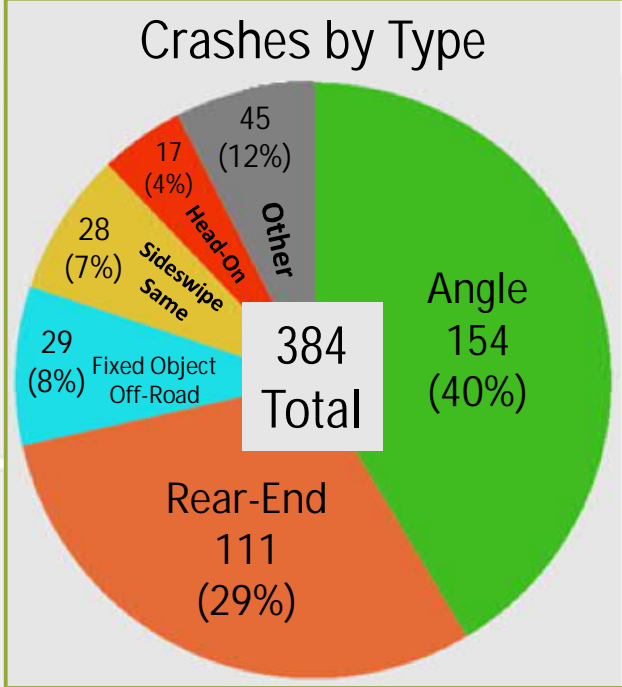
- Collision Type**
- 4. Sideswipe - Same Direction
 - 9. Fixed Object - Off Road
 - 12. Ped
 - 16. Other
 - 3. Head On
 - 5. Sideswipe - Opposite Direction
 - 6. Fixed Object in Road
 - 8. Non-Collision
 - 1. Rear End
 - 2. Angle
 - 10. Deer

Safety Needs	
VTRANS NEED	PRIORITY
Safety Improvement (State/District)	Very High
Pedestrian Safety Improvement (State)	No Need



VDOT 2015-2022 Crash Data		Crashes by Severity					
Hot-Spot Intersections		K	A	B	C	O	Total
*S. Crater Rd & Wagner Rd		0	4	8	35	30	77
Wagner Rd & Medical Park Blvd		0	2	5	17	25	49
*Rives Rd & I-95 SB Ramps		0	1	7	10	24	42
S. Crater Rd & Crater Circle		1	0	4	12	11	28
Wagner Rd & Normandy Dr		0	0	6	6	9	21
S. Crater Rd & Medical Park Blvd		0	0	2	5	13	20
Rives Rd & I-95 NB Ramps		0	1	0	4	14	19
S. Crater Rd & Rives Rd		0	0	4	5	6	15

**Top 100 "Potential Safety Improvement" (PSI) Intersections*



Roadway Safety Improvement Summary

- The Safety Improvement VTrans Need is Very High along the corridor based on "Areas with a higher calculated risk of crashes based on roadway characteristics and observed crash data."

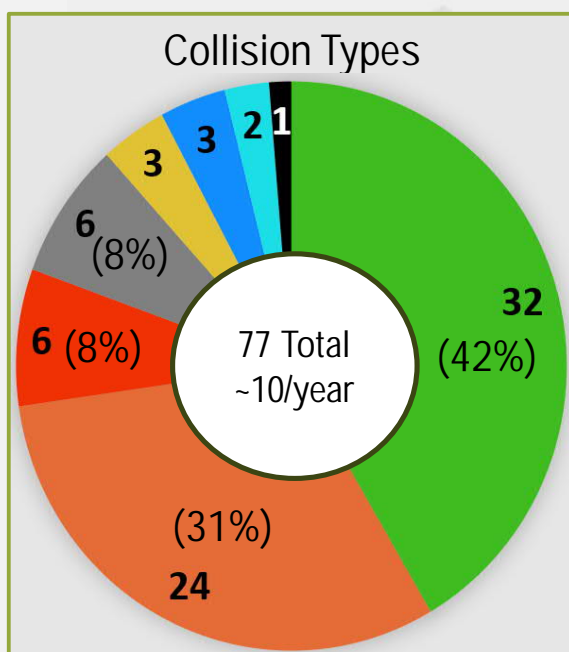
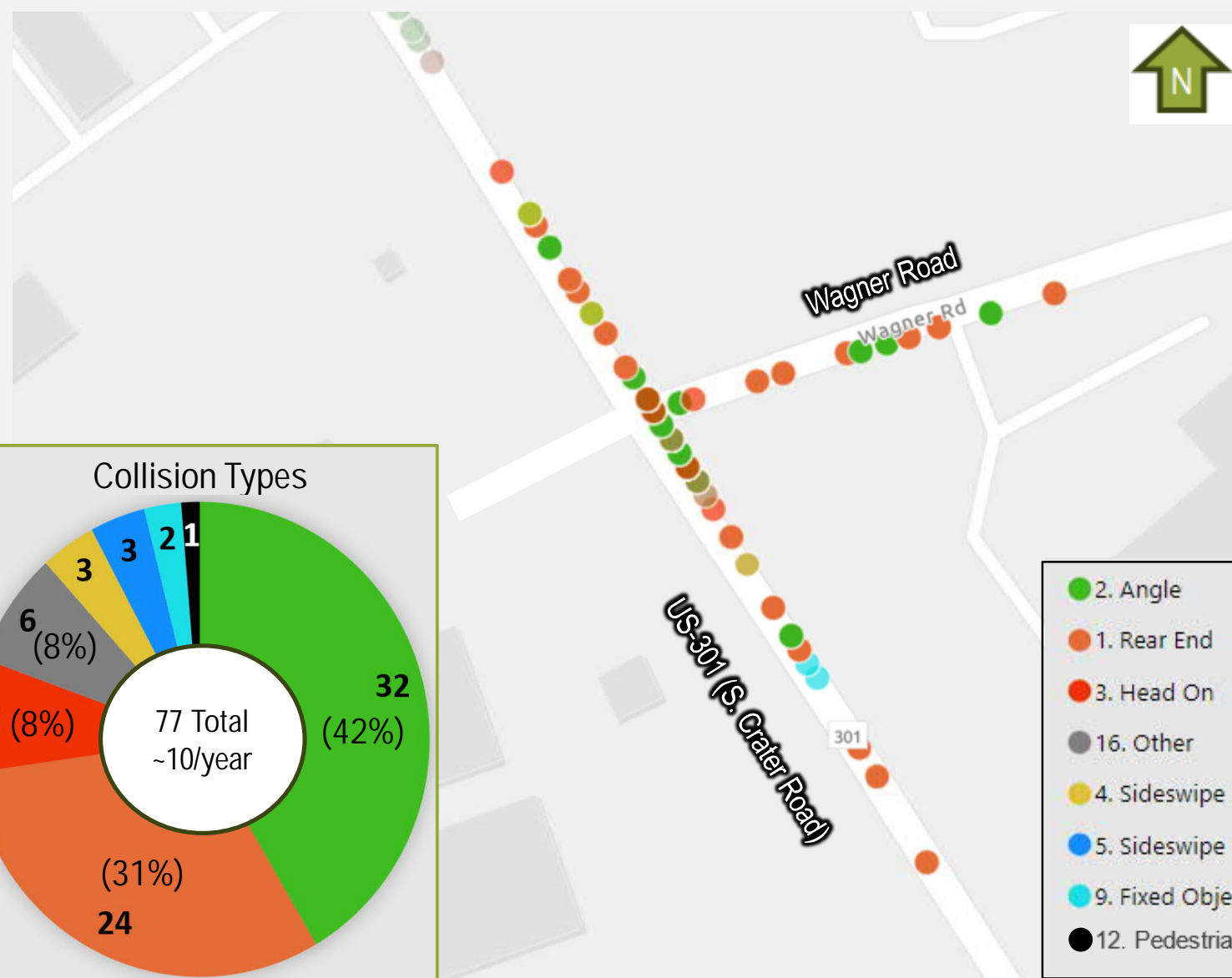
Safety Needs

Detailed Intersection Crash Analysis (2015 – 2022 Data)



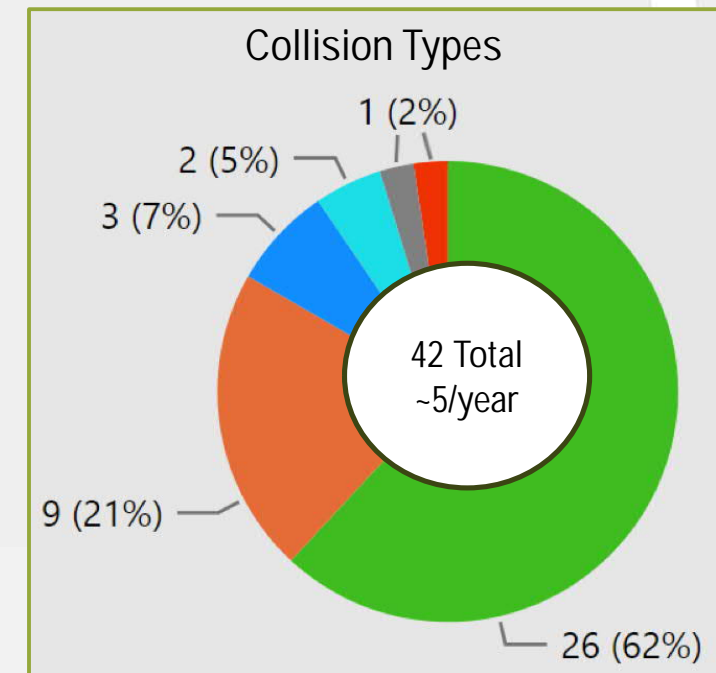
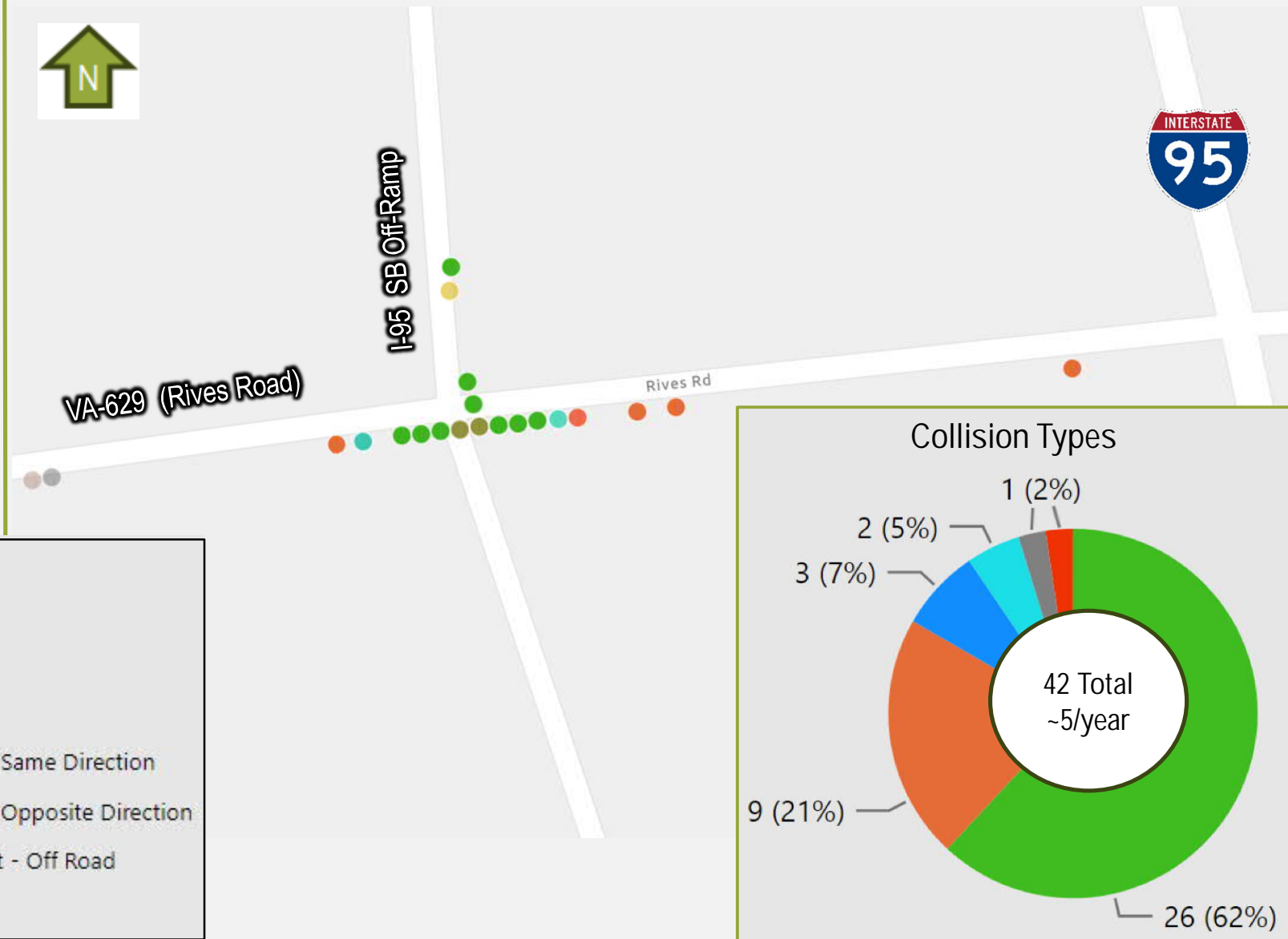
US-301 (S. Crater Road) & Wagner Road
(Top 100 PSI Intersection)

Control: Signalized



VA-629 (Rives Road) & I-95 SB Off-Ramp
(Top 100 PSI Intersection)

Control: One-Way Stop



- 42% of crashes were angle collisions, 31% of crashes were rear-end collisions.
- 63% of angle collisions involved a NB vehicle on S. Crater Rd, 37% SB.
- 46% of rear-end collisions occurred along SB S. Crater Rd, 25% NB.
- Other Trends: 82% No Adverse Conditions, 27% Night-time, 8% Speeding, 3% Alcohol.

- 62% of crashes were angle collisions, 21% of crashes were rear-end collisions.
- 44% of rear-end collisions occurred along WB Rives Rd, 33% EB.
- Other Trends: 90% No Adverse Conditions, 14% Night-time, 10% Speeding, 2% Alcohol.
- Intersection sight distance is an issue due to roadway grade and foliage.

Safety Needs

Detailed Intersection Crash Analysis (2015 – 2022 Data)

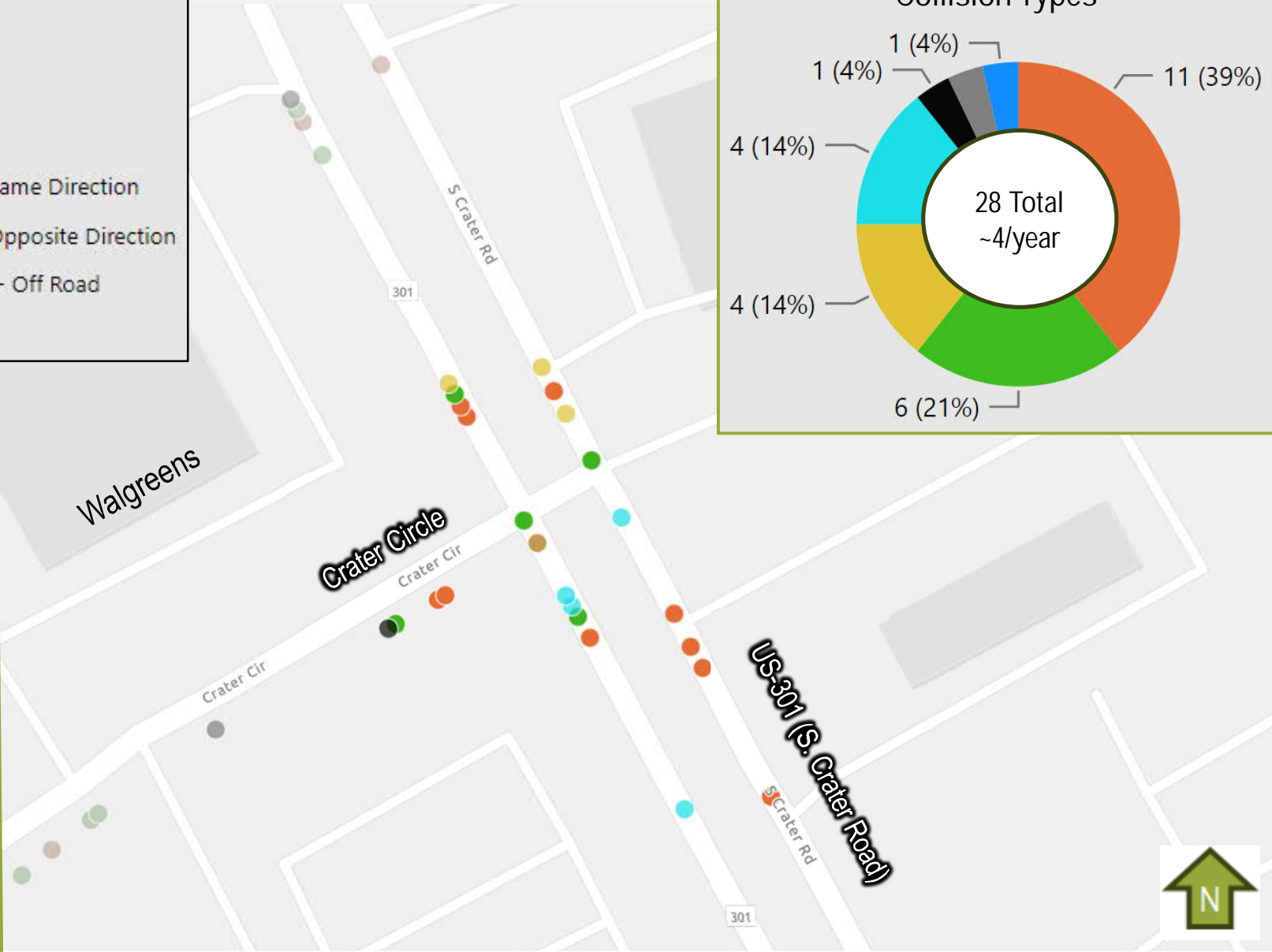
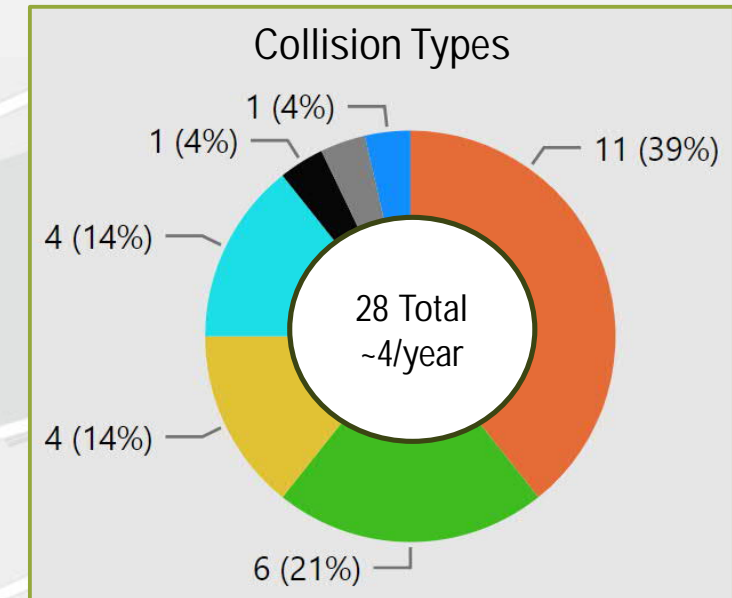
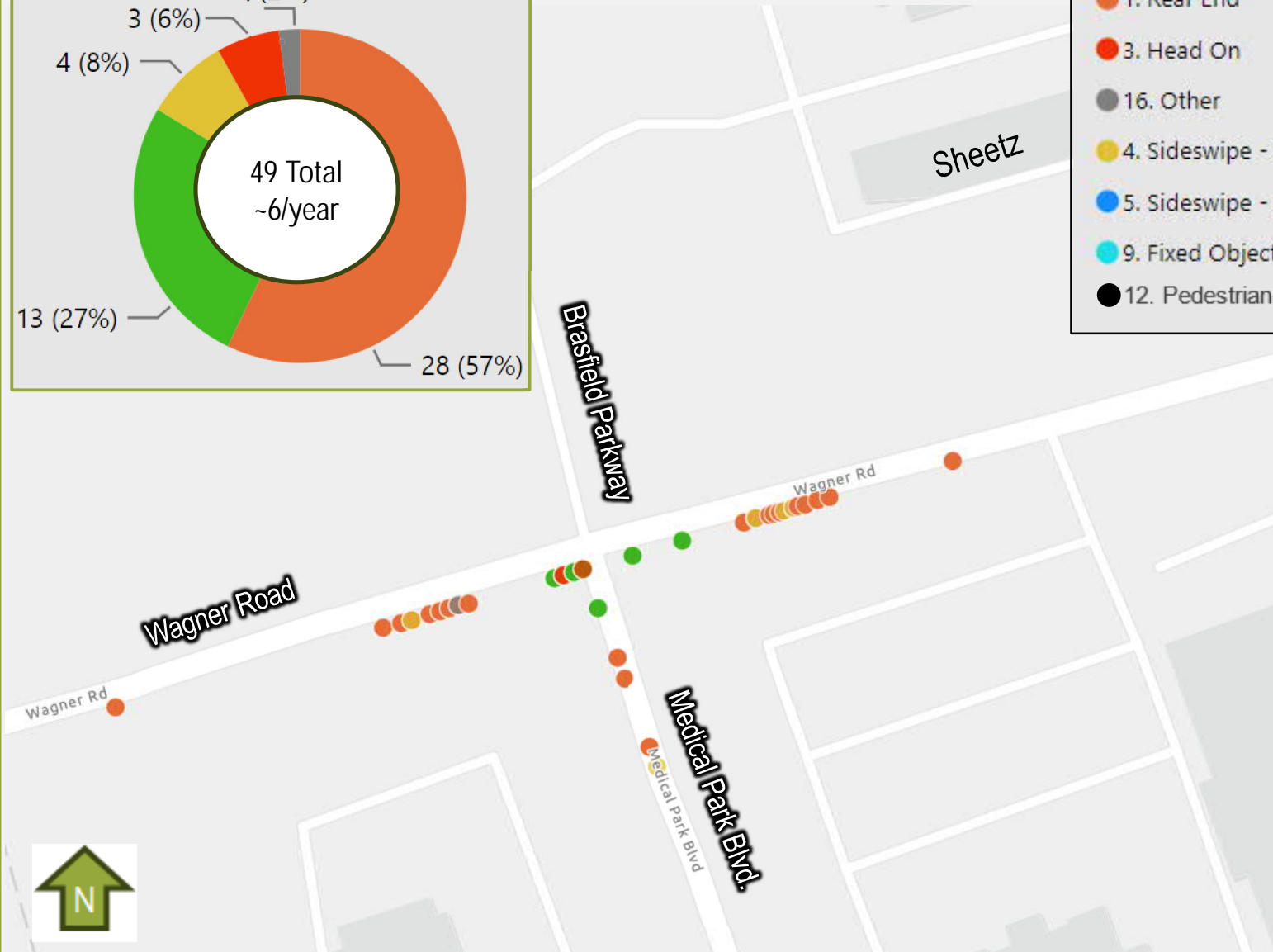
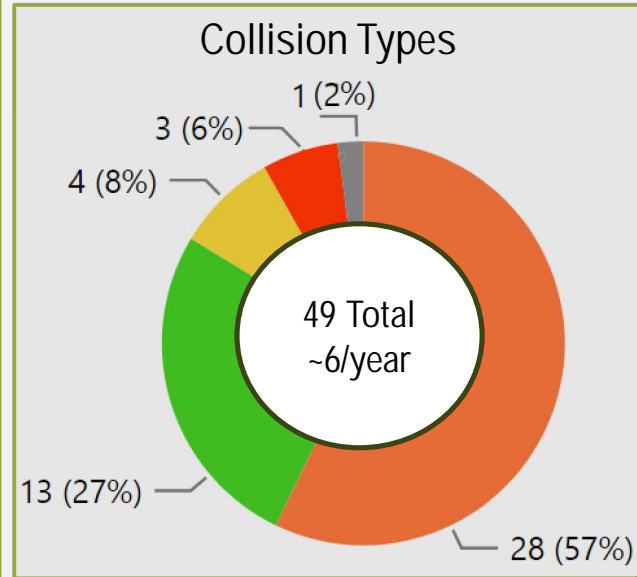


Wagner Road & Medical Park Blvd

Control: Signalized

S. Crater Road & Crater Circle

Control: Signalized



- 57% of crashes were rear-end collisions, 27% of crashes were angle collisions.
- 50% of rear-end collisions occurred along WB Wagner Road, 39% EB.
- Other Trends: 86% No Adverse Conditions, 20% Night-time, 2% Speeding, 2% Alcohol.

- 39% of crashes were rear-end collisions, 21% of crashes were angle collisions.
- 46% of rear-end collisions occurred along NB S. Crater Rd, 36% SB.
- 60% of angle collisions involved a vehicle along SB S. Crater Rd, 40% NB.
- Other Trends: 82% No Adverse Conditions, 32% Night-time, 7% Speeding, 4% Alcohol.

Phase 1 Scoping-Level Improvement Concepts

US-301 (S. Crater Road) Corridor



Legend: VTrans Needs Addressed

Pedestrian/Bicycle Access	Transit / TDM
Congestion Mitigation	Safety Improvement

Pedestrian Improvements

- A** Add crosswalks & pedestrian signals
- B** Improve crosswalks & pedestrian signals
- C** Add Shared Use Path

Corridor Wide Pedestrian Improvements

- Add sidewalks to complete sidewalk network

Transit and TDM Improvements

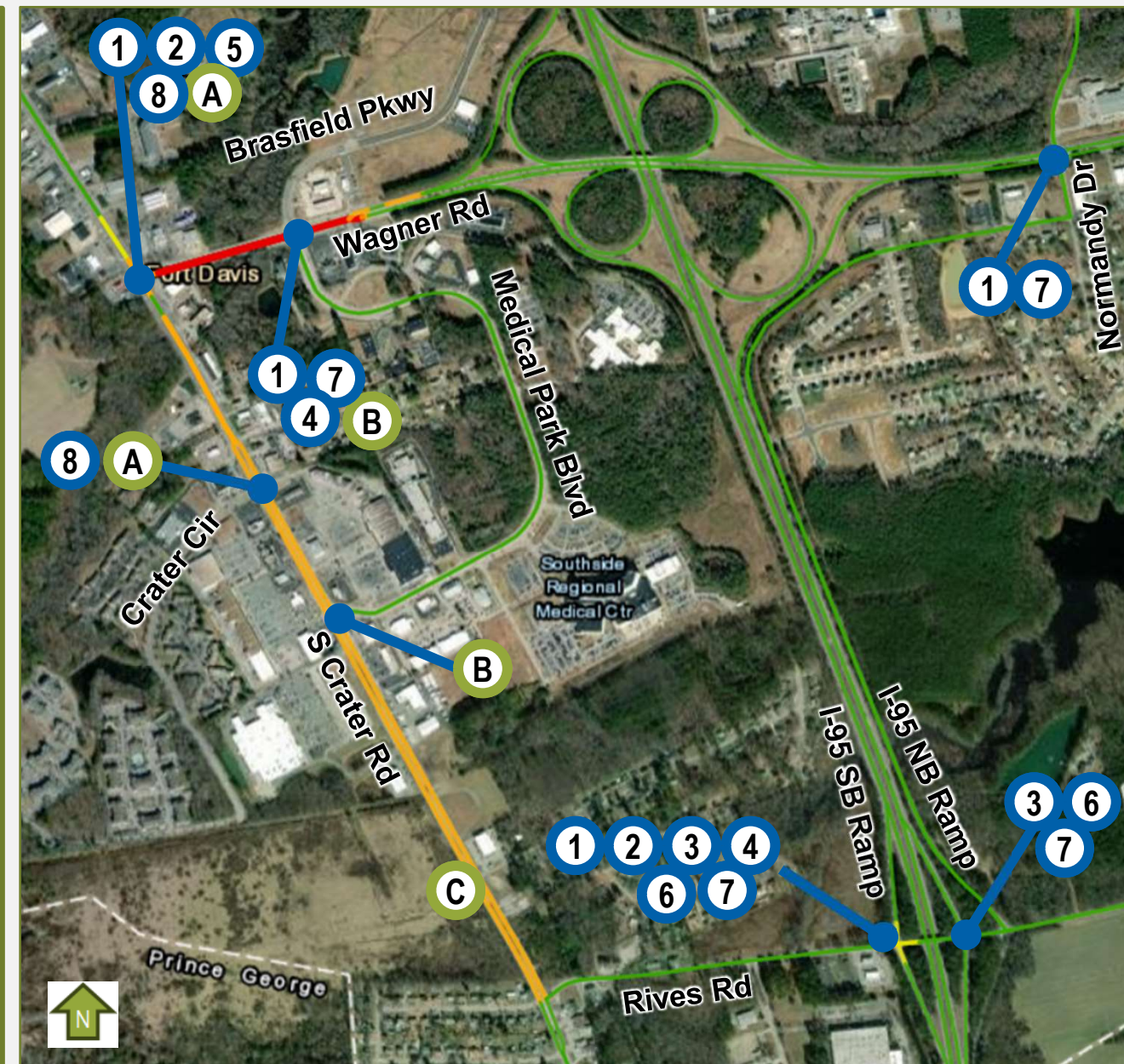
- Add new bus stops
- Improve existing bus stop amenities (install benches, shelters, etc.)
- Implement PAT Transit Strategic Plan (Dec. 2021)

Safety and Operations Improvements

- 1** Lane addition or re-arrangement
- 2** Access management
- 3** Trim foliage to improve sight distance
- 4** Install dynamic advanced intersection warning signs
- 5** Flashing Yellow Arrow signal head
- 6** Roundabout*
- 7** Add lighting
- 8** Reconstruct span wire signals with mast arm signals

Corridor Wide Safety and Operations Improvements

- Refresh or improve pavement markings
- Optimize signal timing and phasing
- Install yellow reflective backplates on signal heads
- Install uniform street name signs



* Denotes an innovative intersection concept. More information on innovative intersections and real-world examples can be found at

<https://www.virginia.gov/transportation/innovativeintersections/>