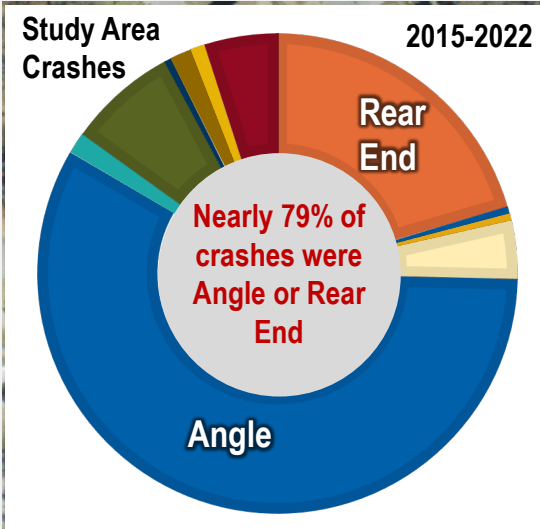


Project Overview | RI-23-09

VA 36 / (Winston Churchill Drive)

Study Corridor Includes:

- VA 36 / Winston Churchill Drive from High Avenue to Miles Avenue,
- 0.4 mile



- ### 2019 VTrans Prioritized Mid-Term District Needs
- Priority 1 (Red)
 - Priority 2 (Orange)
 - Priority 3 (Yellow)
 - Priority 4 (Green)
 - Study Area (Blue)



Project Purpose, Goals, &

Analyze the operational and safety issues identified along the Winston Churchill Drive study corridor, with a focus on providing enhanced Transportation Demand Management, safety, and bicycle 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 related to intersections; No fatalities recorded during the study period.
- One pedestrian crash occurred at the intersection of VA 36/ Roanoke Avenue; No existing bicycle lanes or shared-use paths. Limited crosswalks and sidewalks;
- No existing park and ride facilities present along the corridor. There are existing transit routes with limited stops.
- Congestion issues along Northbound VA 36/ Winston Churchill Drive at the key intersections; Travel Time Index > 1 during AM / PM peak hours;

Project Fact Sheet

VDOT District	Richmond
Locality	City of Hopewell
# of Study Intersections	6
Transit Routes	Hopewell Circulator Petersburg Area Transit (PAT) – 1 NB Stop at Miles Avenue – 1 SB Stop at Miles Avenue
Intermodal Connections	None
Nearby Bike lanes	Along High Avenue and Along Miles Avenue
Functional Classification	Principal Arterial
Speed Limit	35 mph

Operations / Access Needs

Bicycle/Pedestrian Access Needs Identification Summary

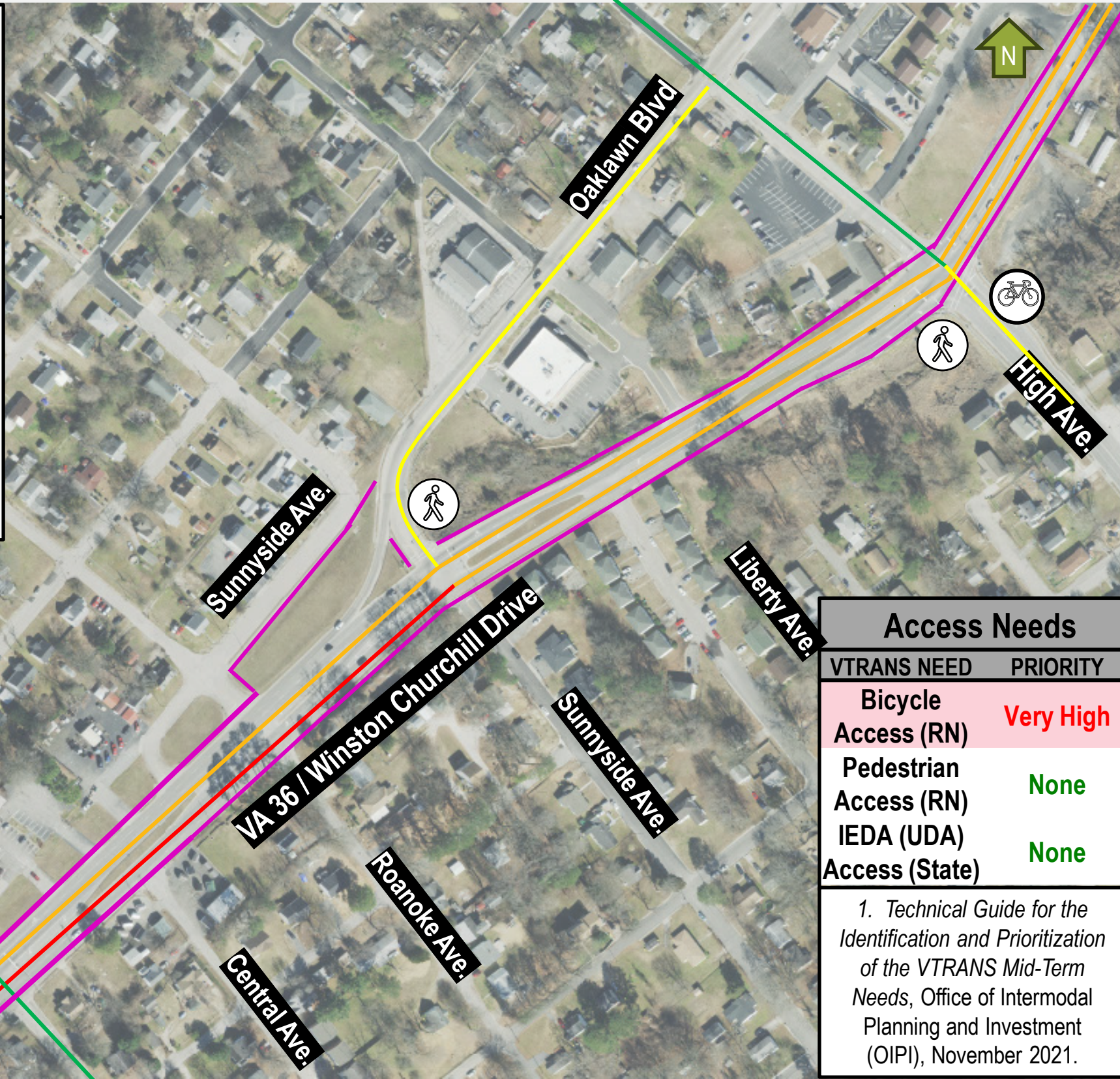


Legend

- Signalized Pedestrian Crossing w/Crosswalks
- Designated Bicycle lanes

2019 VTrans Prioritized Bicycle Access Needs

- Priority 1
- Priority 2
- Priority 3
- Priority 4
- Existing Sidewalks



Access Needs	
VTRANS NEED	PRIORITY
Bicycle Access (RN)	Very High
Pedestrian Access (RN)	None
IEDA (UDA) Access (State)	None

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 bicycle lanes / shared-use paths along study corridor.
- Closest designated bicycle lanes are along Miles Avenue (north of the corridor); and along High Avenue (bicycle lane on south of the study corridor and Sharrows on north of the study corridor)
- The **Bicycle Access** VTrans Need is 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

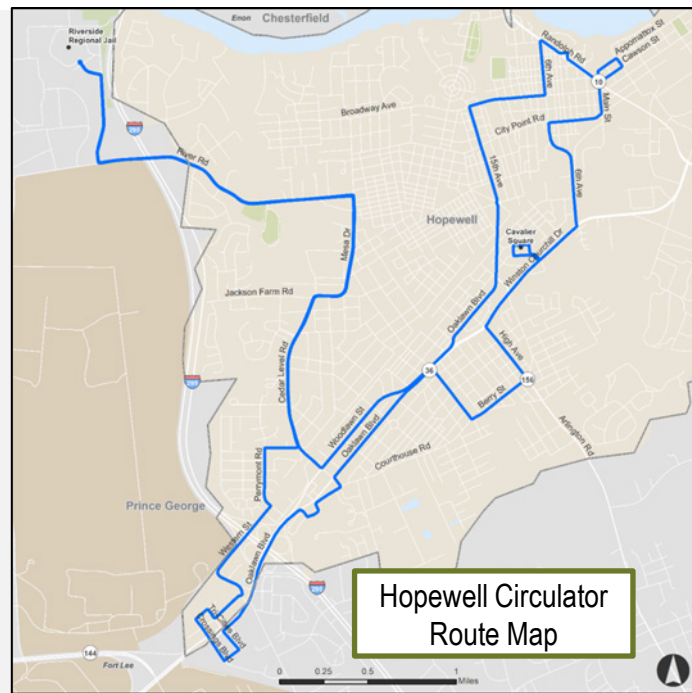
- Sidewalks present on both sides of study corridor
- Crosswalks present only at a few locations:
 - intersection of Winston Churchill Drive / High Avenue, only east leg; signalized w/o pedestrian push buttons.
 - intersection of Winston Churchill Drive / High Avenue, only east leg; signalized w/o pedestrian push buttons.
- The **Pedestrian Access** VTrans Need is based on "Applicable roadway segments within walking distance (one mile) of VTrans Activity Centers, fixed-guideway transit stations, or BRT lines.¹"

ACCESS MANAGEMENT SUMMARY	ACCESS POINTS
Corridor-Wide*	16
VA 36 / Winston Churchill Drive Northbound	6
VA 36 / Winston Churchill Drive Northbound	10

* Between High Avenue and Miles Avenue

Operations / Access Needs

Transit Access/ TDM Needs Identification Summary



Hopewell Circulator Route Map

Legend

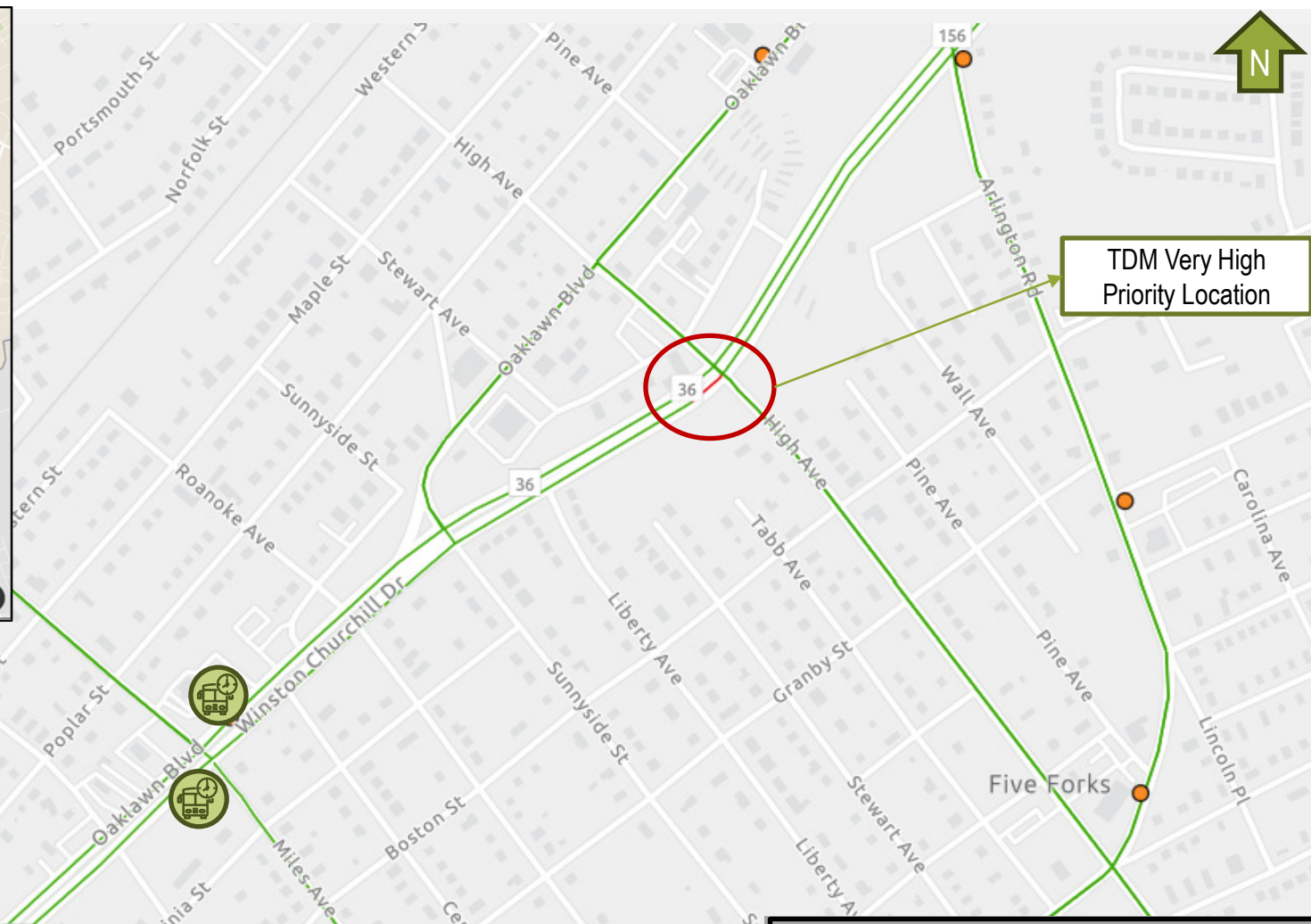
- Bus Stop along Study Corridor
- Other Bus Stop

2019 VTrans Prioritized TDM Needs

- Priority 1
- Priority 2
- Priority 3
- Priority 4

Source: PAT – Hopewell Circulator Route Map
http://www.petersburg-va.org/DocumentCenter/View/6425/PAT-TDP_122019

- Technical Guide for the Identification and Prioritization of the VTRANS Mid-Term Needs, Office of Intermodal Planning and Investment (OIPI), November 2021.
- Note*: TDM - Majority of the corridor has low priority needs; only one small section is identified as Very High Priority



TDM Very High Priority Location

Transit / TDM Needs	
VTRANS NEED	PRIORITY
Rail On-Time Performance (CoSS)	No Need
Transit Access (RN)	Low
Transit Access for Equity Emphasis Areas (RN)	Low
Transportation Demand Management (RN)	Very High ²

Transportation Demand Management Summary

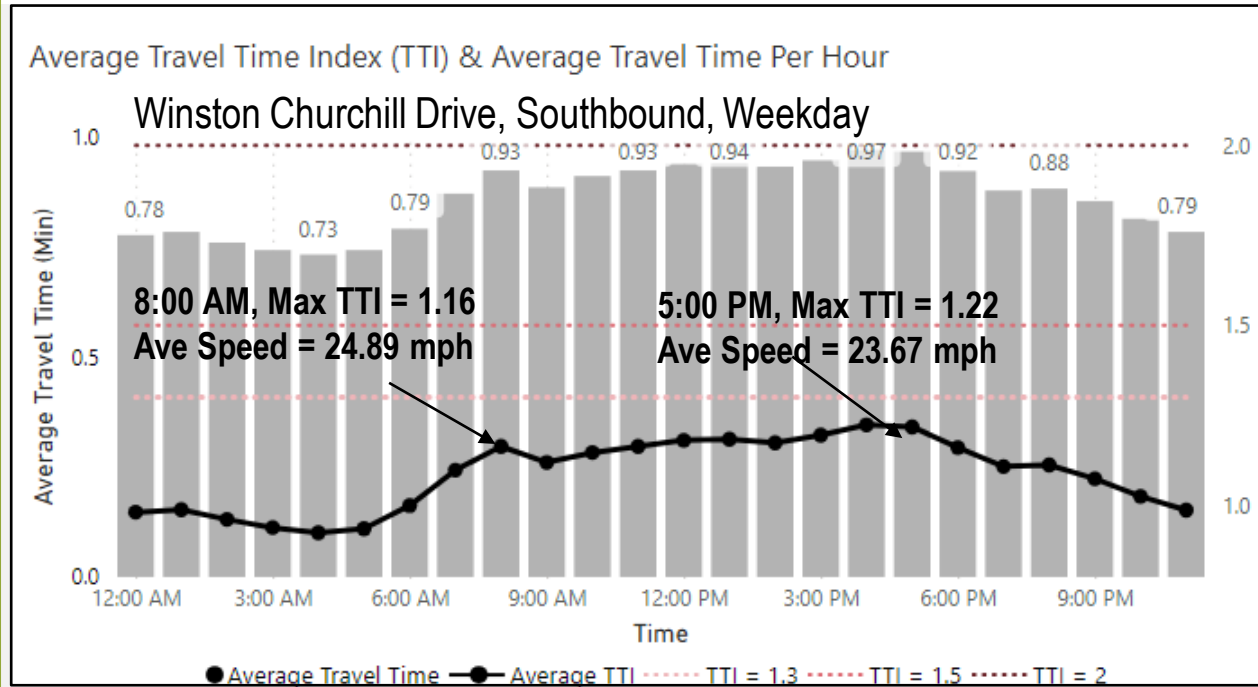
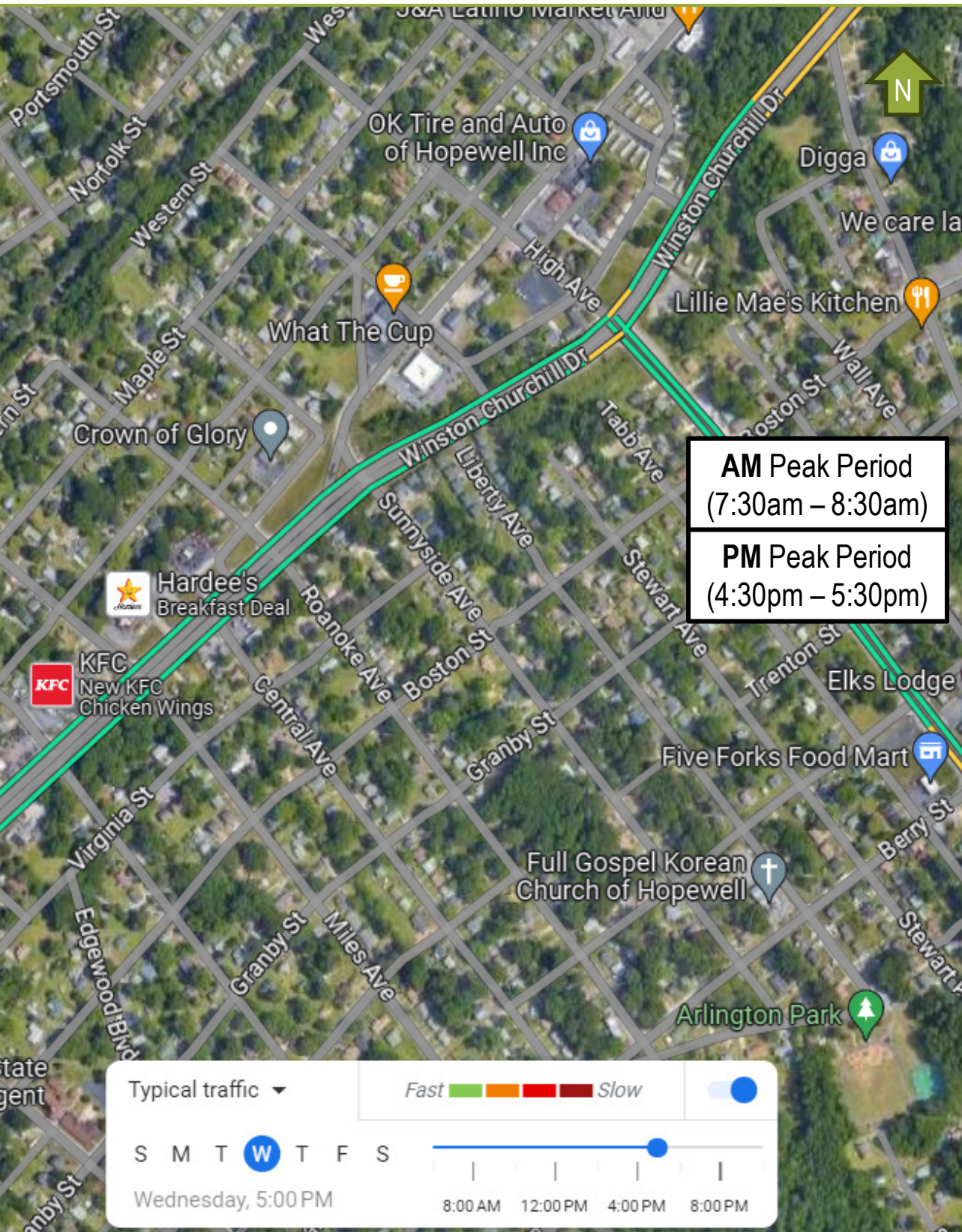
- No existing park and ride or other intermodal facilities exist in the vicinity of the study area.
- The **Transportation Demand Management (TDM)** VTrans Need is based on “Roadway segments where TDM strategies such as new or expanded public transportation services/facilities, new or expanded bicycle and pedestrian facilities, or coordination of commuter assistance programs can be beneficial to reduce vehicle miles traveled.¹”

Transit Accessibility Summary

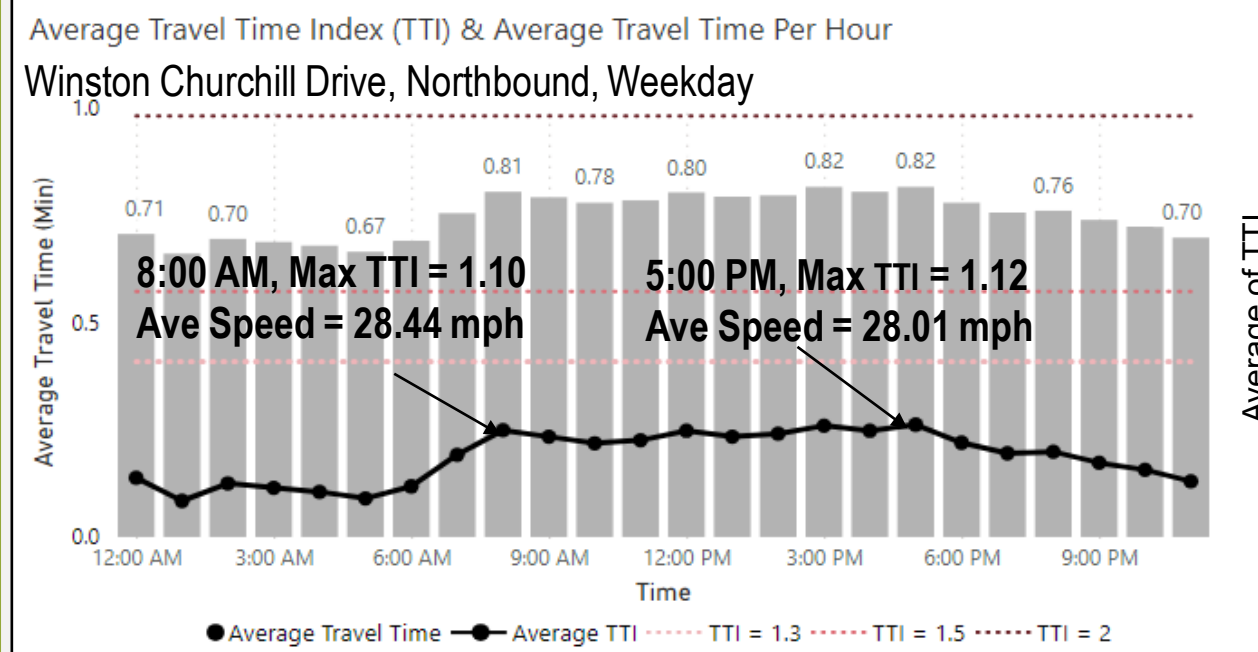
- Petersburg Area Transit (PAT)’s Hopewell Circulator Route serves part of the study corridor
- Two existing bus stops are located at the intersection of VA 36 (Winston Churchill Drive / Miles Avenue, along the study corridor,
 - 13 trips made on weekdays, starting at 5:45 am and ending at 6:45 pm
 - 12 trips made on Weekends from 6:45 am to 6:45 pm
 - 1 Bus stop along Northbound.
 - 1 Bus stop along Southbound.
- No shelters or benches for both stops.
- Lack of crosswalks at the intersection (Winston Churchill Drive / Miles Avenue
- A few other bus stops along Miles Avenue, Arlington Road, Oaklawn Blvd and Sunnyside Street are also part of the Hopewell Circulator Route.
- The **Transit Access** VTrans Need is 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”

Operations / Access Needs

Operations Needs Identification Summary



Operations Needs		1. Technical Guide for the Identification and Prioritization of the VTRANS Mid-Term Needs, Office of Intermodal Planning and Investment (OIPI), November 2021.
VTRANS NEED	PRIORITY	
Reliability (RN)	None	
Congestion Mitigation (RN)	Medium	
Capacity Preservation (CoSS/ RN)	None	



Operations Summary

- VA 36/ Winston Churchill Drive has a **Medium** Congestion Mitigation VTrans Need at along the northbound and **low** priority along the westbound at the intersection of Winston Churchill Drive and High Avenue. The VTrans needs for Reliability are **low** priority along the westbound at the intersection of Winston Churchill Drive and High Avenue.
- **“Congestion Mitigation Needs** are based on Travel Time Index (TTI), travel speeds, and the percentage of travel taking place in excessively congested conditions.
- The Vtrans needs for the **Capacity Preservation** along the corridor are none. “Roadway segments along Regional Networks (RNs) or Corridors of Statewide Significance (CoSS), and included in VDOT’s Arterial Preservation Network, are identified as those with a Capacity Preservation 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 Winston Churchill Drive, a maximum TTI of 1.22 occurs in the 5 PM hour along southbound direction. A TTI of 1.12 occurs in the 5 pm hour along northbound direction.
- The average speed per hour along northbound during AM/PM peak hours was recorded to be 28 mph. However, along southbound, average speed was recorded to be 23-25mph, making southbound slightly congested compared to northbound.

Safety Needs

Safety Improvement Needs Identification Summary



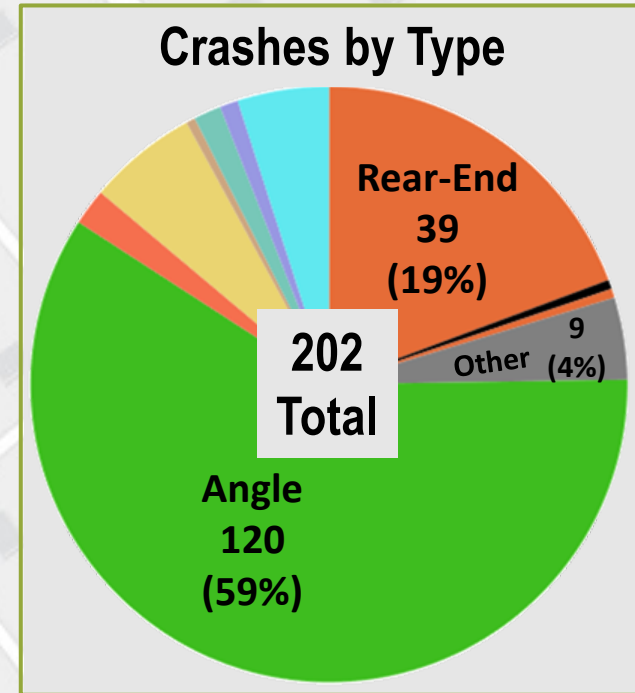
Study Area Crash (2015-2022 Data)

Roadway Safety Improvement Summary

- The **Safety Improvement** VTrans Need is High along the corridor based on "Areas with a higher calculated risk of crashes based on roadway characteristics and observed crash data."¹

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

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

VDOT 2015-2022 Crash Data	Crash Severity				
	A	B	C	O	Total
High Avenue	5	39	30	11	85
Miles Avenue	5	27	33	8	73
Oaklawn Boulevard/Sunnyside Avenue	0	8	10	2	20
Roanoke Avenue	0	6	9	4	19
Liberty Avenue	0	0	2	0	2
*Top 100 "Potential Safety Improvement" (PSI) Intersections					

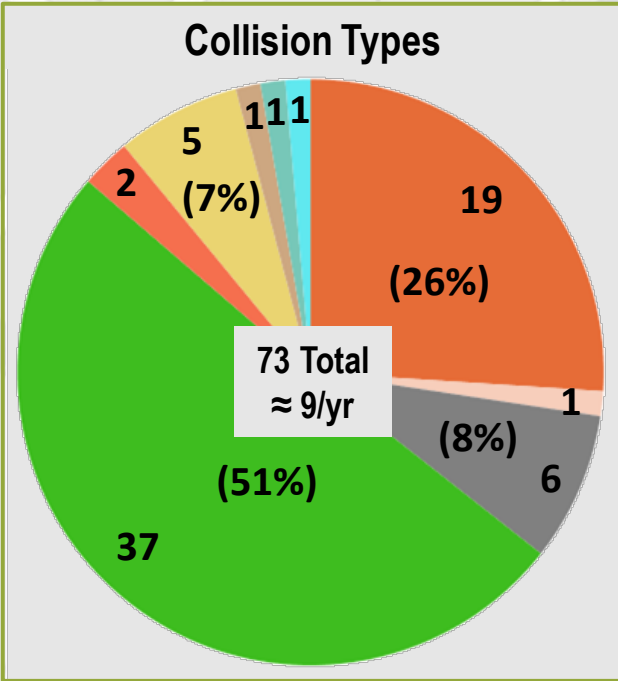
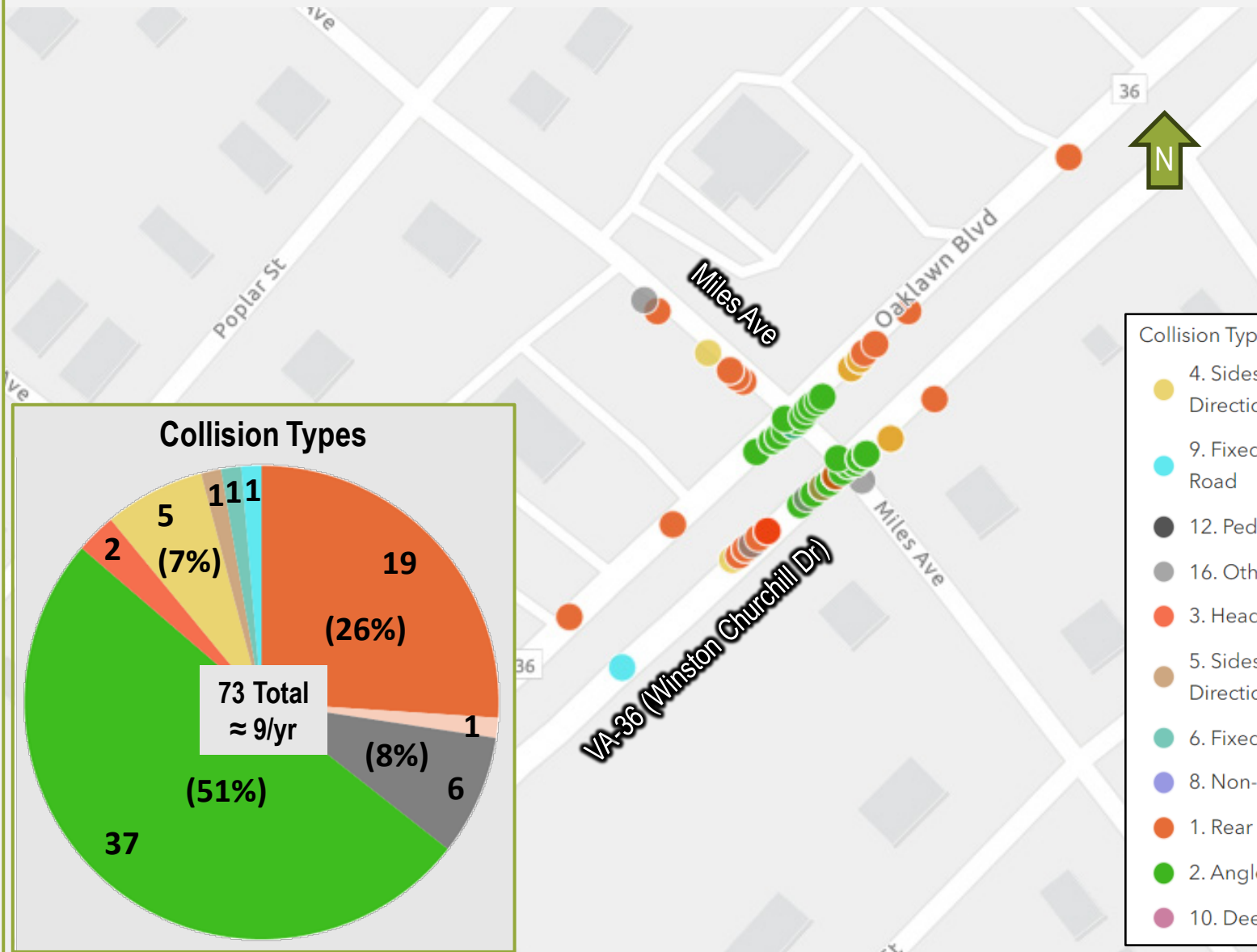
Safety Needs

Intersection Crash Analysis (2015 – 2022 Data)



Crashes at VA-36 (Winston Churchill Drive) & Miles Avenue

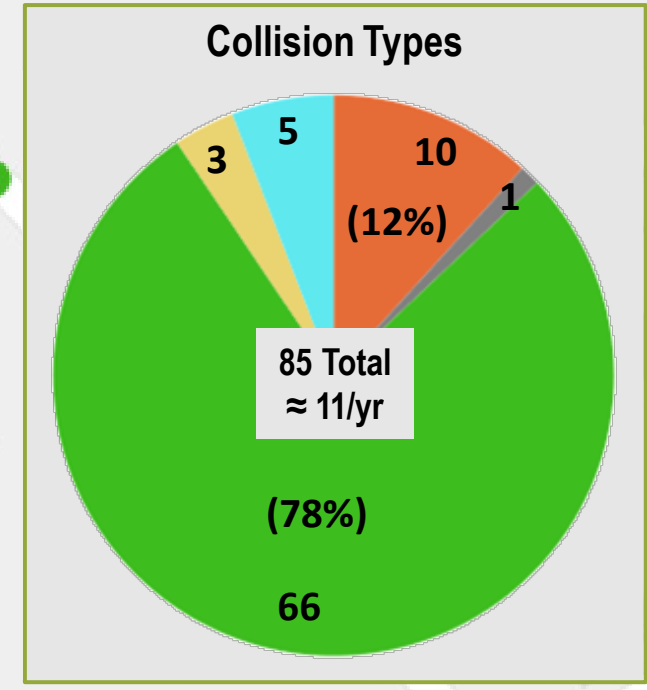
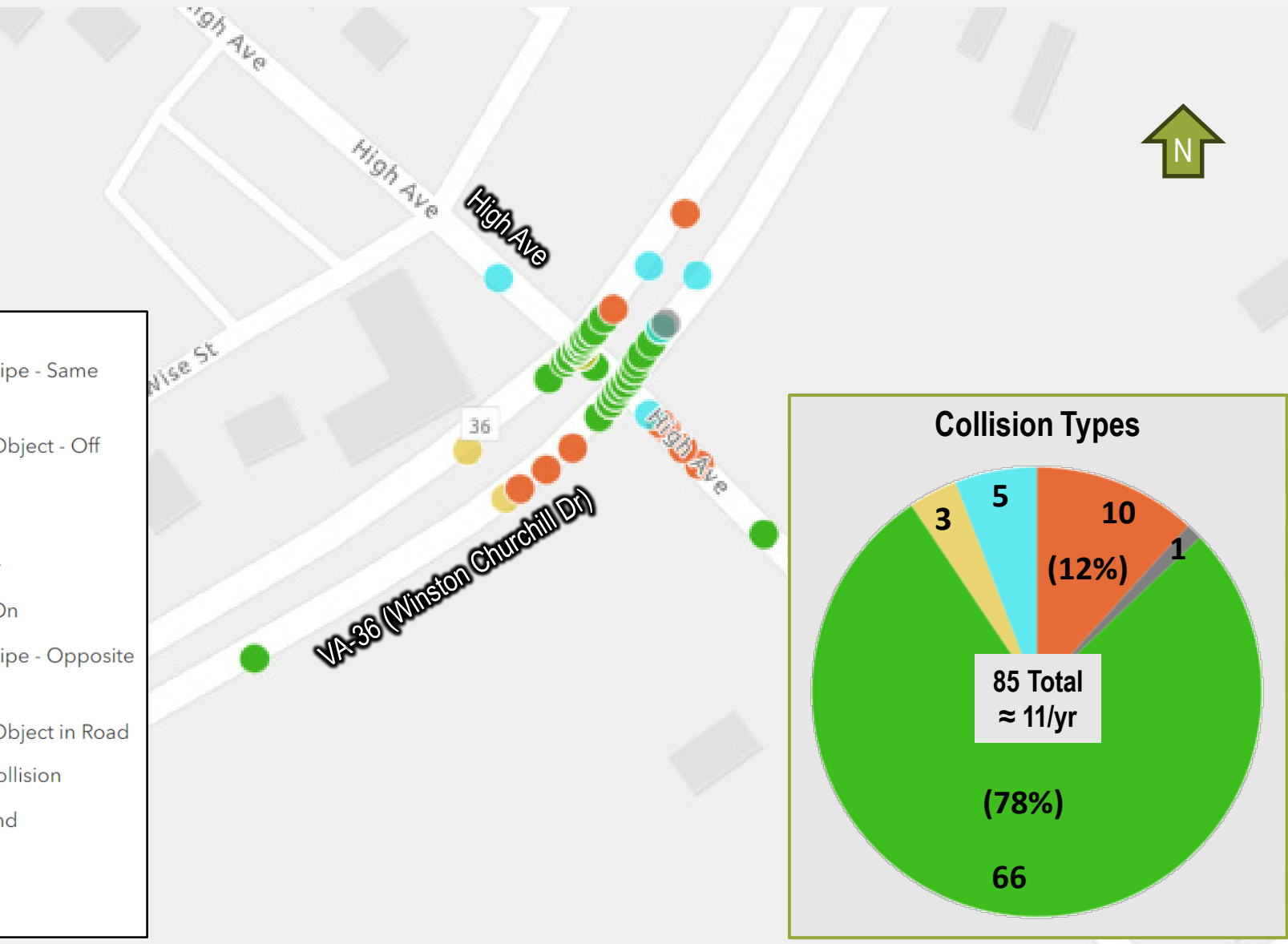
Control: Signalized



- 51% of crashes were angle collisions, 26% of crashes were rear-end collisions.
- 54% of angle collisions involved an EB vehicle on VA-36 (Winston Churchill Dr), 38% WB.
- 37% of rear-end collisions occurred along EB VA-36 (Winston Churchill Dr), 37% WB.
- Other Trends: 89% No Adverse Conditions, 25% Night-time.

Crashes at VA-36 (Winston Churchill Drive) & High Ave

Control: Signalized



- 78% of crashes were angle collisions, 12% of crashes were rear-end collisions.
- 41% of angle collisions involved an EB vehicle on VA-36 (Winston Churchill Dr), 53% WB.
- 40% of rear-end collisions occurred along EB VA-36 (Winston Churchill Dr), 20% WB.
- Other Trends: 88% No Adverse Conditions, 39% Night-time.

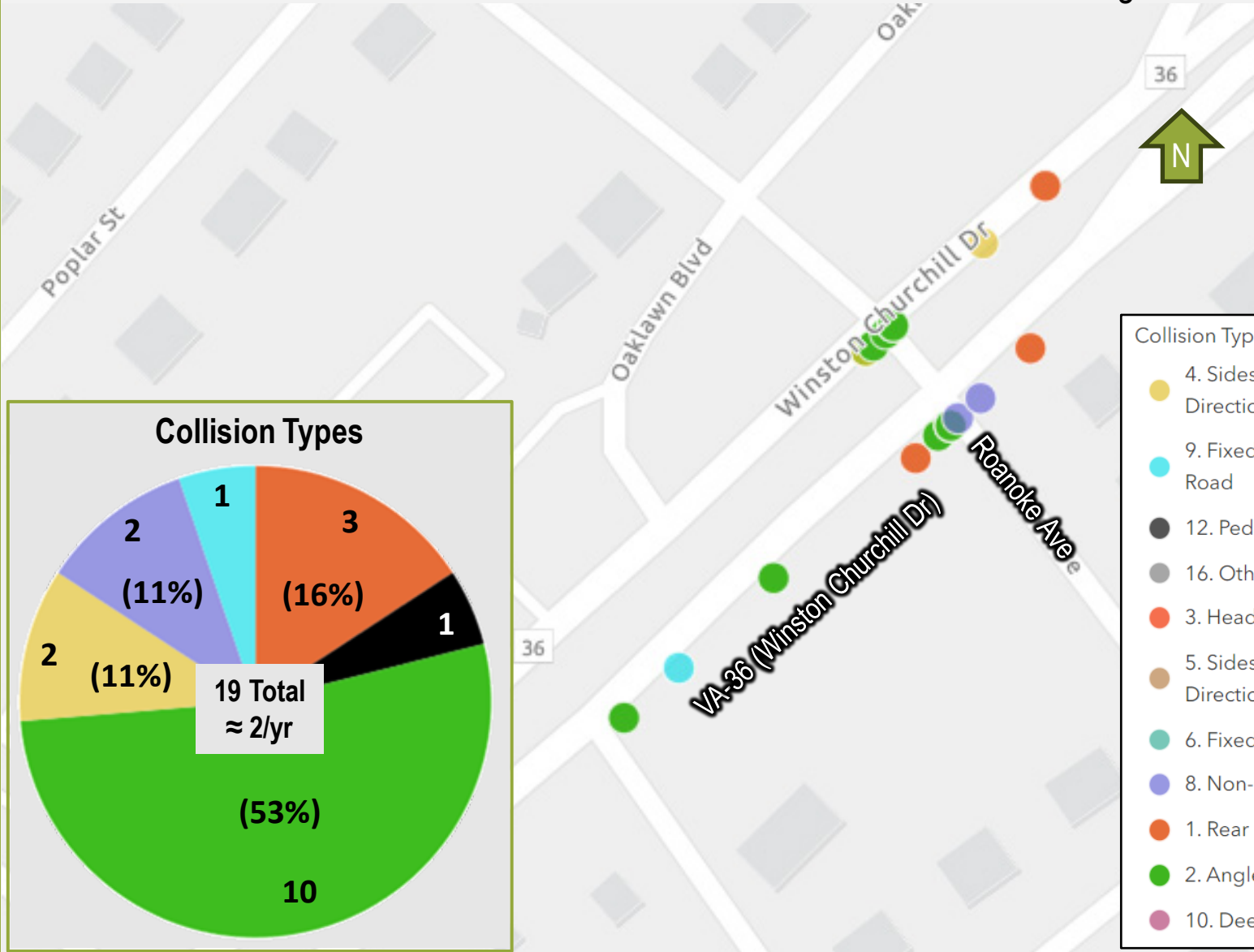
Safety Needs

Intersection Crash Analysis (2015 – 2022 Data)



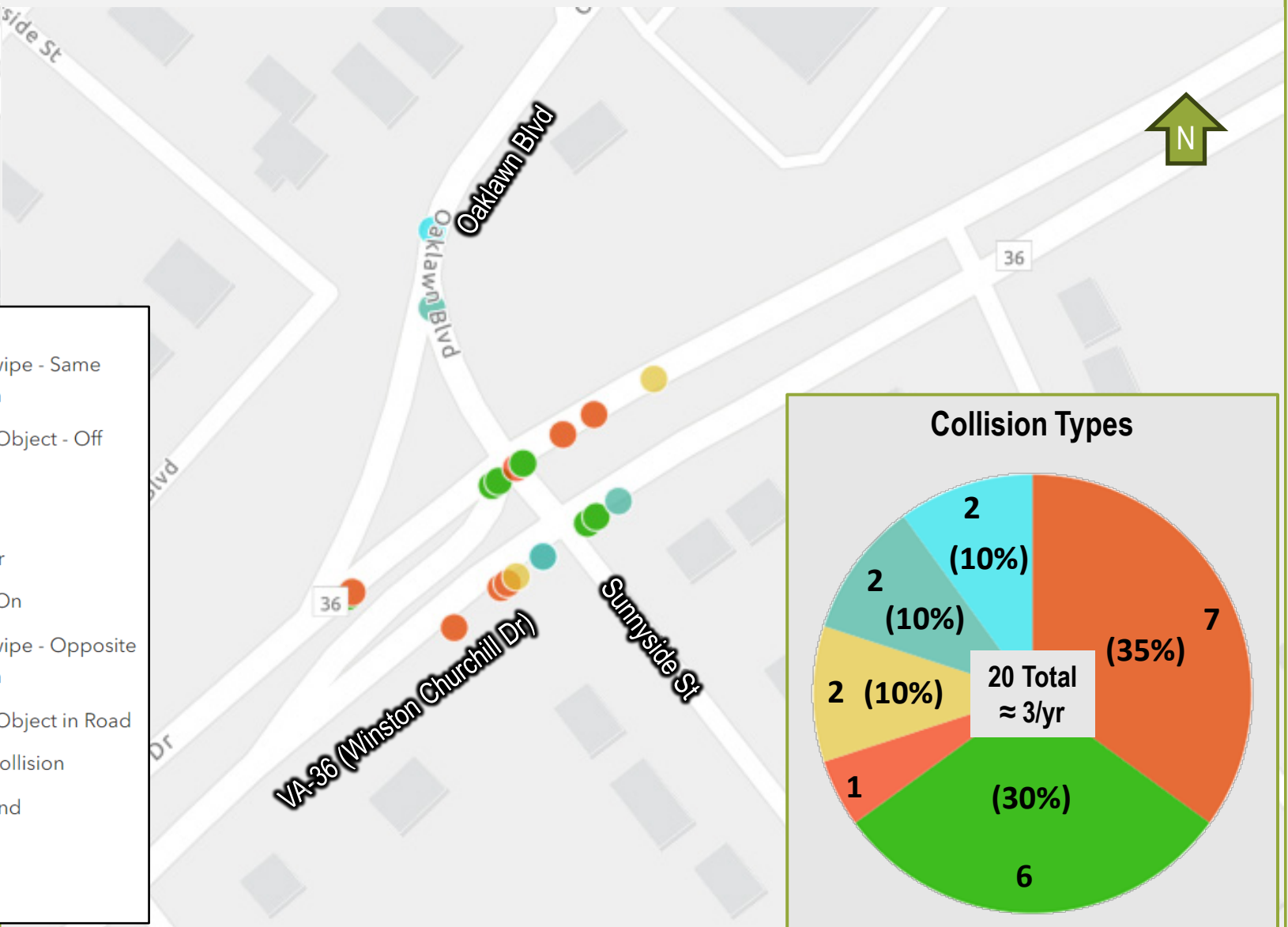
Crashes at VA-36 (Winston Churchill Road) & Roanoke Avenue

Control: Unsignalized



Crashes at VA-36 (Winston Churchill Road) & Oaklawn Blvd/Sunnyside St

Control: Signalized



- 53% of crashes were angle collisions, 16% of crashes were rear-end collisions.
- 50% of angle collisions involved an EB vehicle on VA-36 (Winston Churchill Dr), 50% WB.
- 67% of rear-end collisions occurred along EB VA-36 (Winston Churchill Dr), 33% WB.
- Other Trends: 80% No Adverse Conditions, 42% Night-time.





- 30% of crashes were angle collisions, 35% of crashes were rear-end collisions.
- 33% of angle collisions involved an EB vehicle on VA-36 (Winston Churchill Dr), 67% WB.
- 57% of rear-end collisions occurred along EB VA-36 (Winston Churchill Dr), 43% WB.
- Other Trends: 90% No Adverse Conditions, 40% Night-time.

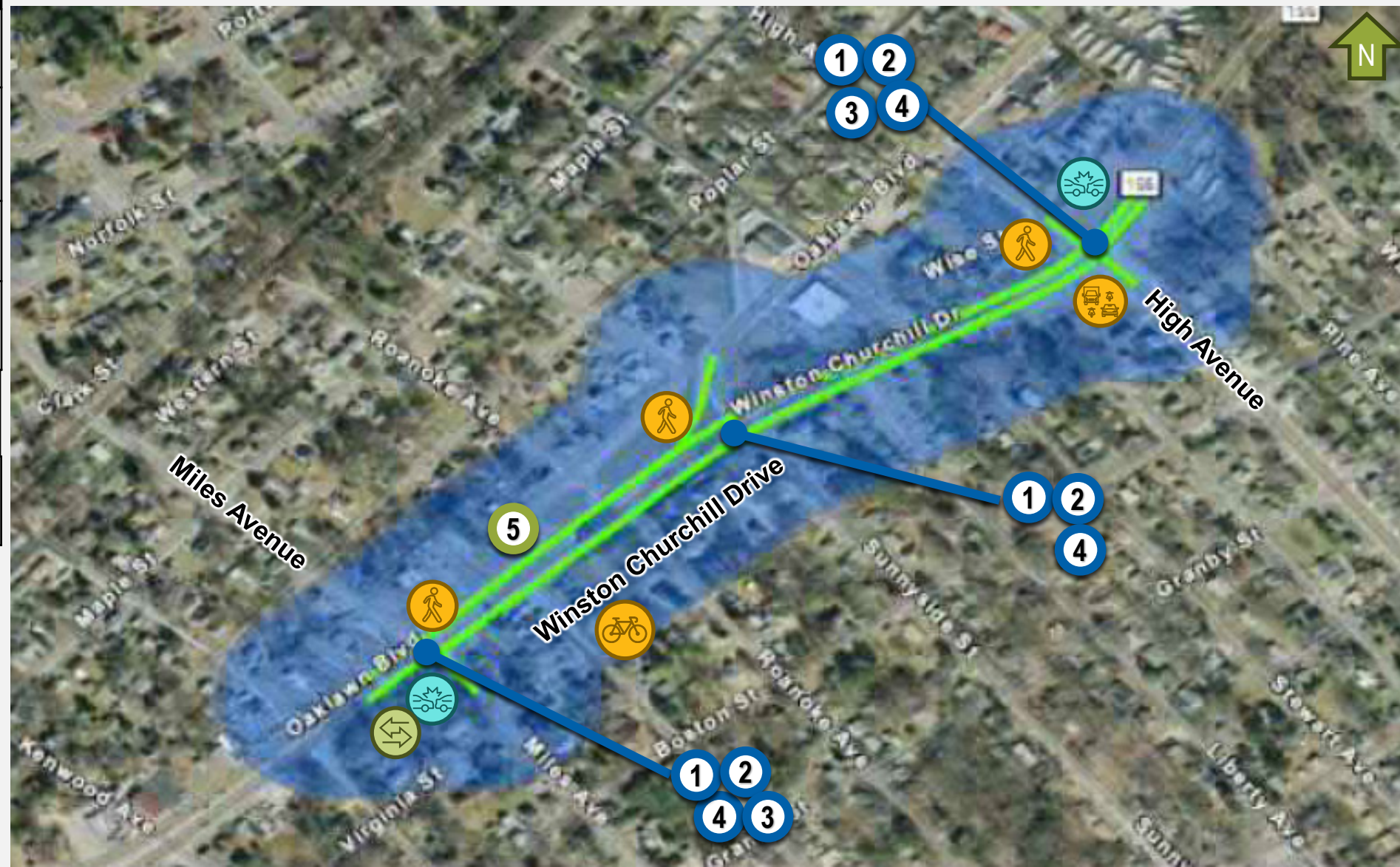
Phase 1 Scoping-Level Improvement Concepts

VA 36 / (Winston Churchill Drive)



Legend: VTrans Needs Addressed

-  Bicycle Access
-  Congestion Mitigation/ Capacity Preservation
-  Pedestrian Access
-  Safety Improvement
-  Transit Improvement
-  TDM Improvement





Safety Improvements

- 1** Signal timing and phasing optimization – **Protected Left-turn phasing**
- 2** Crosswalks w/pedestrian push buttons at all Signalized intersections / ADA ramp compliance review
- 3** Median U-Turn*
- 4** Roundabout*

Corridor Wide Access Improvements **5**

- Bicycle lanes Feasibility throughout the corridor 
- Access management review.

Transit and TDM Improvements

- Improve Bus STOP locations with benches and shelters. 
- Additional Bus STOP locations along the corridor could improve ridership and reduce VMT. 

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

<https://www.virginiadot.org/innovativeintersections/>



RI-23-09 VA-36 (WINSTON CHURCHILL DRIVE) Phase II – Preferred Alternative

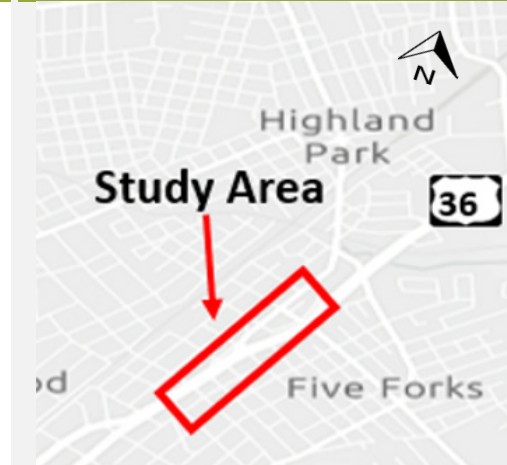
FROM MILES AVENUE TO HIGH AVENUE

Project Description

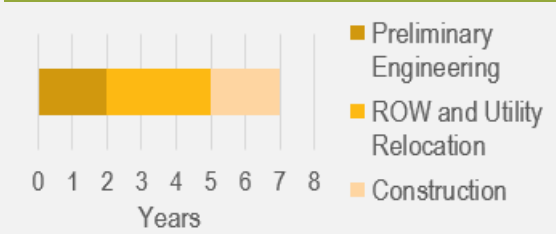
The VA 36 (Winston Churchill Drive) corridor is lacking adequate pedestrian and bicycle facilities and Traffic Demand Management (TDM). This project focuses on operational and safety issues identified along VA 36, and provides enhanced pedestrian, bicycle, and transit access. Buffered bike lanes will be implemented along VA 36 between Miles Avenue and Sunnyside Avenue, and bike lanes with no buffer will be implemented along VA 36 between Sunnyside Avenue and High Avenue.

- Winston Churchill Drive and Miles Avenue: Implement a roundabout, pedestrian crossings across all legs with ADA compliant ramps, improved intersection lighting, rectangular rapid flashing beacon (RRFB), and relocate existing bus stops slightly south of the intersection.
- Winston Churchill Drive and Roanoke Avenue: Make intersection right-in/right-out, provide crosswalks along both sides of VA 36, ADA compliant ramps, improved intersection lighting.
- Winston Churchill Drive and Sunnyside Avenue: Implement a roundabout, pedestrian crossings across all legs with ADA compliant ramps, improved intersection lighting, and a RRFB.
- Winston Churchill Drive and Liberty Avenue: Make intersection right-in/right-out, provide a crosswalk across Liberty Avenue, ADA compliant ramps, and improved intersection lighting.
- Winston Churchill Drive and High Avenue: Implement a roundabout, pedestrian crossings across all legs with ADA compliant ramps, improved intersection lighting, and a RRFB.
- High Avenue and Oaklawn Boulevard: Provide improved crosswalks across Oaklawn Boulevard, ADA compliant ramps, and improved intersection lighting.

Project Location



Project Schedule



Note: Project schedules and cost estimates were developed based on information available at the time of study and should be reassessed prior to submitting funding applications.

Traffic Operations Benefits

- Implement roundabouts at three intersections to improve traffic flow through the corridor.
- Make the intersections of Winston Churchill Drive and Roanoke Avenue / Liberty Avenue function as right-in/right-out to improve traffic flow.
- Reconfiguring access along the corridor to reduce slowdown due to turning vehicles and improve traffic flow.

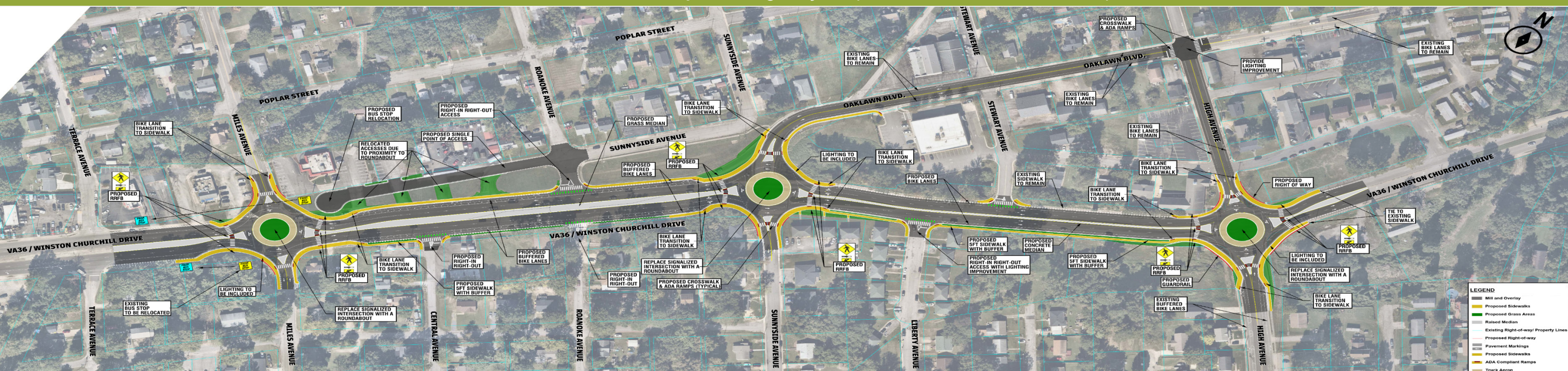
Safety Benefits

- Converting the signalized intersections to roundabouts mitigates left turn crash risk.
- Reduced congestion and queueing along the corridor will result in fewer rear end collisions.
- Install enhanced pedestrian crossing to improve pedestrian safety, comfort level and visibility.
- Reconfiguring access along the corridor to improve safety issues caused by turning vehicles.
- Encourage non-auto commute and create a more livable community through the addition of bike lanes (both buffered and non-buffered).

Planning Level Cost Estimate

Phase	FY 2024
	Estimate
Preliminary Engineering	\$ 1.5 - 2.5 M
ROW and Utility Relocation	\$ 2.0 - 2.5 M
Construction	\$ 13.0 - 15.0 M
Total Cost	\$ 16.5 - 20.0 M

Preferred Alternative: Conceptual Design Layout (VA-36/ Winston Churchill Drive)





RI-23-09 VA-36 (WINSTON CHURCHILL DRIVE) Phase II – Preferred Alternative

FROM MILES AVENUE TO HIGH AVENUE

PHASE 2 – PREFERRED ALTERNATIVE

PROJECT DESCRIPTION

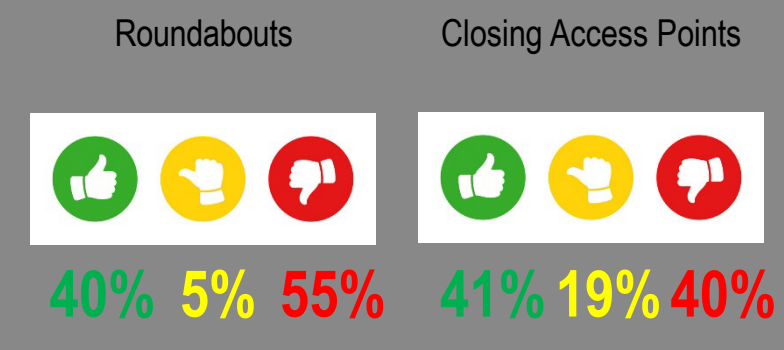
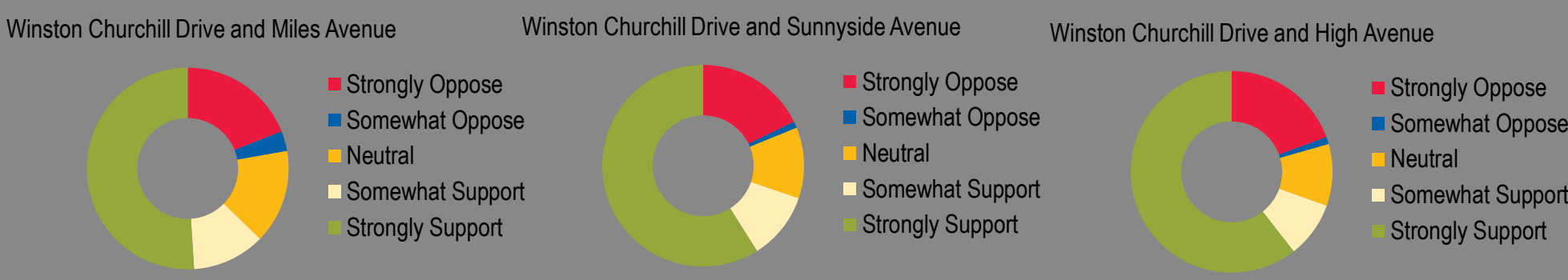
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- Winston Churchill Drive and Sunnyside Avenue: Implement a roundabout, pedestrian crossings across all legs with ADA compliant ramps, improved intersection lighting, and a RRFB.
- Winston Churchill Drive and Liberty Avenue: Make intersection right-in/right-out, provide a crosswalk across Liberty Avenue, ADA compliant ramps, and improved intersection lighting.
- Winston Churchill Drive and High Avenue: Implement a roundabout, pedestrian crossings across all legs with ADA compliant ramps, improved intersection lighting, and a RRFB.
- High Avenue and Oaklawn Boulevard: Provide improved crosswalks across Oaklawn Boulevard, ADA compliant ramps, and improved intersection lighting.

PROJECT BENEFITS

- Access Management**
 - Access Management along Winston Churchill Drive reduces conflict points thus reducing the number of crashes while maintaining business access.
- Safety Improvement**
 - Roundabouts along Winston Churchill Drive mitigates left turn crash risk.
 - Installation of enhanced pedestrian crossing will improve pedestrian safety, comfort level and visibility.
- Pedestrian Access**
 - Bike lane implementation will improve bicycle accessibility/connectivity.
- Congestion**
 - Conversion of two intersections to right-in/right-out improves intersection safety.

PUBLIC SURVEY



Survey Respondents rated this alternative an average of 4.32 out of 5

Please rate this scenario

WINSTON CHURCHILL DRIVE TYPICAL SECTIONS

