

ARTERIAL

PRESERVATION PROGRAM

US 58 Arterial Preservation Plan – Final Recommendations

March 20, 2018; 5:00 PM – 7:00 PM

Emporia, VA

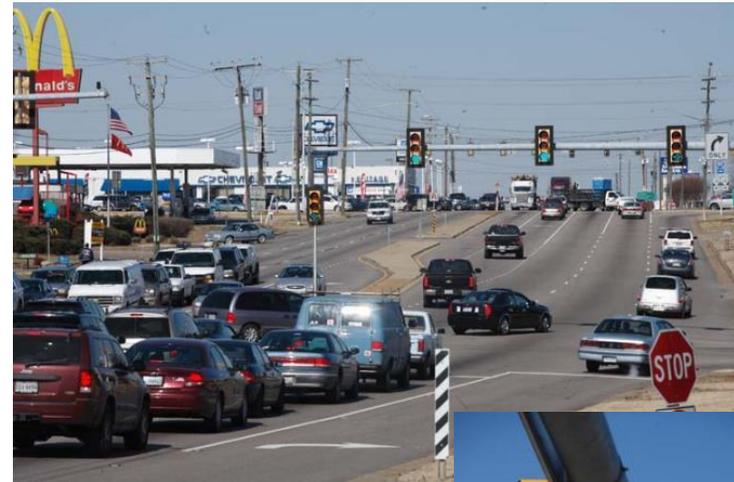


Arterial Preservation Program

Background

Summary of Program Goals

- To preserve and enhance the capacity and safety of Virginia's critical transportation highways:
 - Reduce congestion on arterial mainline
 - Minimize delays
 - Improve safety
 - Limit the number of conflict points



Implementation Strategies

- Integrate program priorities with local economic development goals
- Improve access management
- Educate communities on the benefits of improved mobility
- Inspire coordinated transportation and land use planning efforts
- Eliminate unwarranted traffic signals
- Implement innovative intersection configurations

Why This Matters

- Preparing for future traffic and economic development reduces the need for expensive, disruptive "retrofit" projects
- Route 58 is anticipated to see additional commercial and residential development
- Route 58 provides access to local destinations, the Port of Virginia, and tourist destinations



Arterial Preservation Program

Access Management Overview

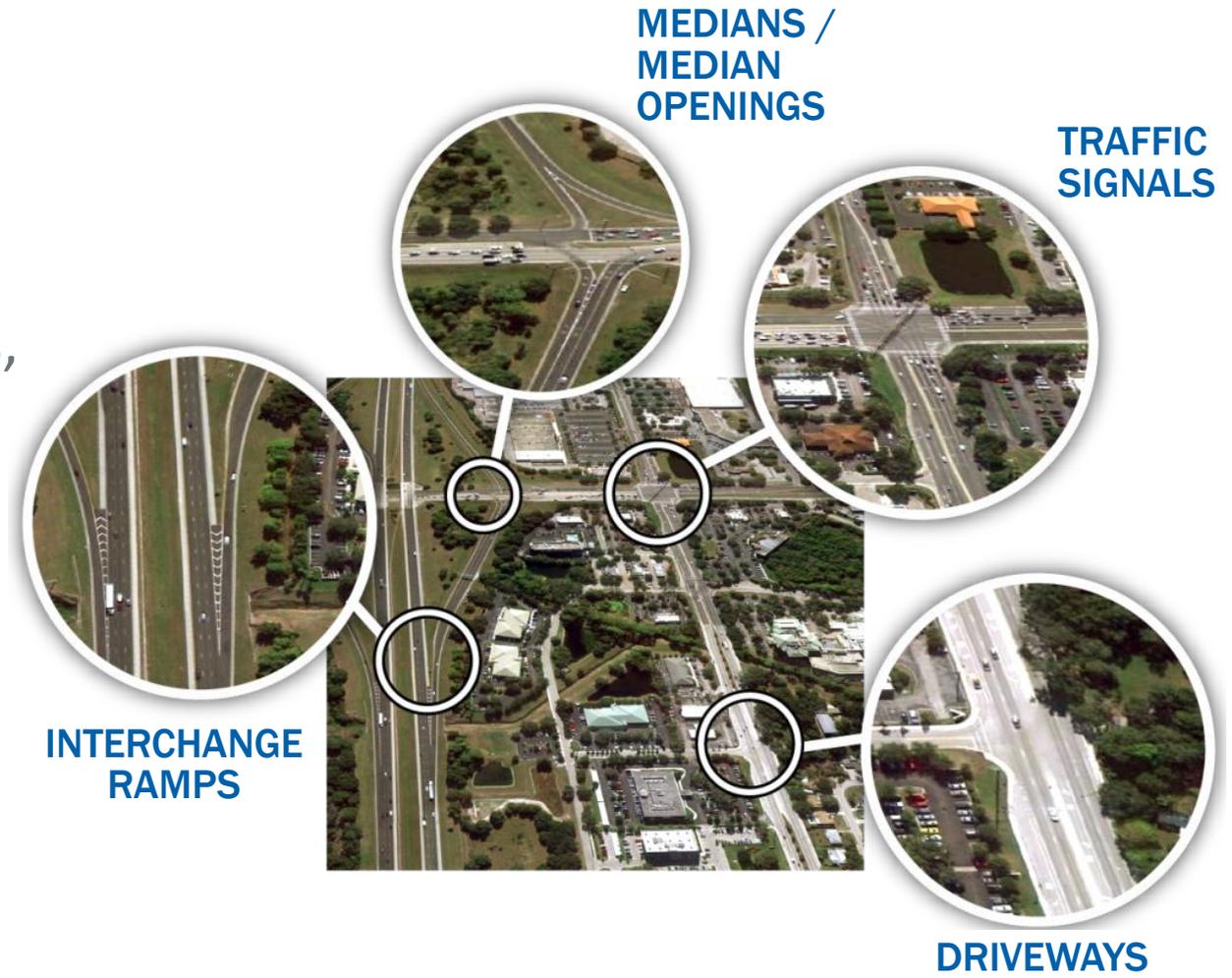
Access Management

What is Access Management?

Access management involves the location, spacing, and design of driveways, medians, median openings, traffic signals, and interchanges

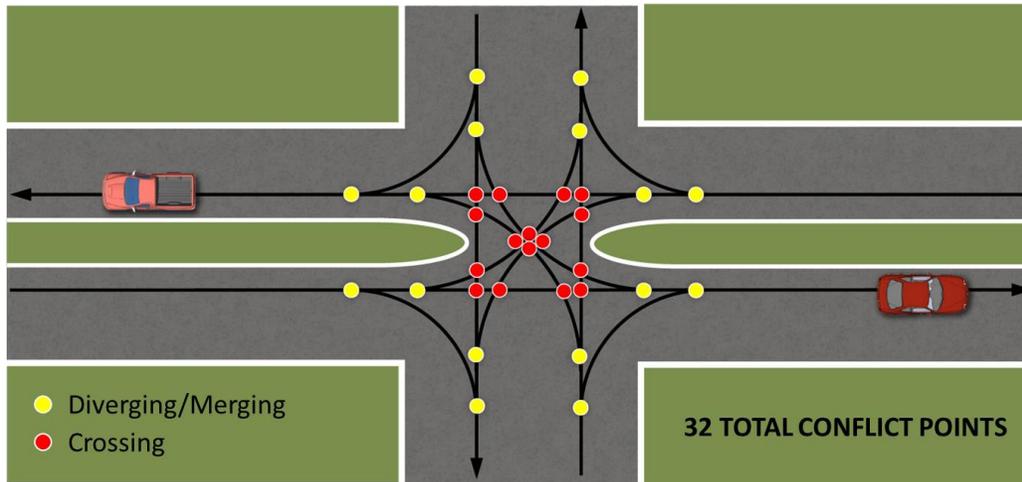
Guiding Principles

- Limit the number of conflict points
- Separate conflict points
 - Reduce the number of median openings
 - Improve driveway design
 - Consolidate driveways to reduce frequency
- Look at conflict points from a network perspective

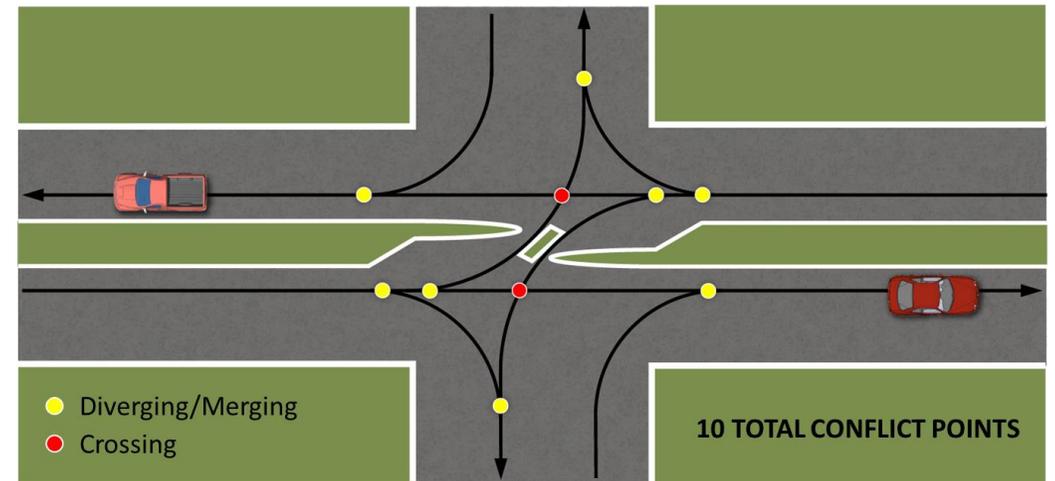


Conflict Points

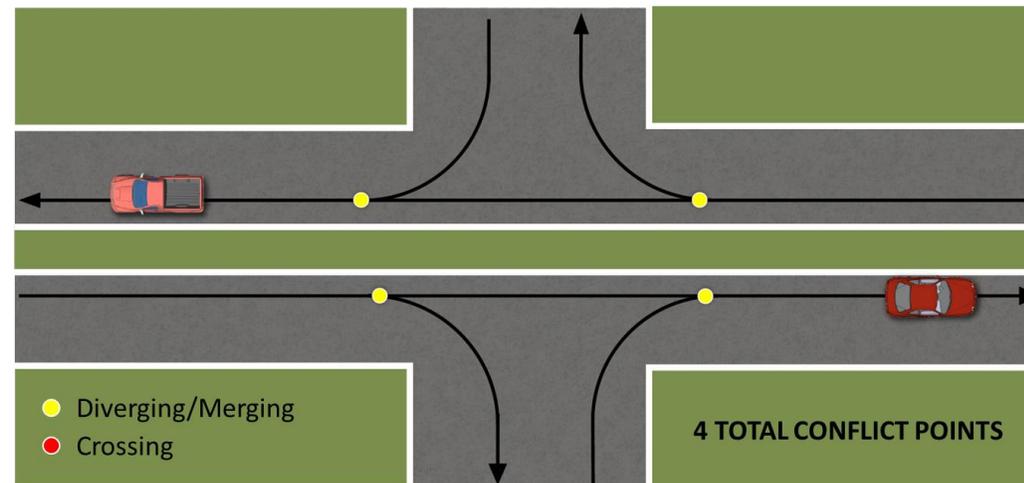
FULL UNSIGNALIZED MEDIAN OPENING



DIRECTIONAL MEDIAN OPENING

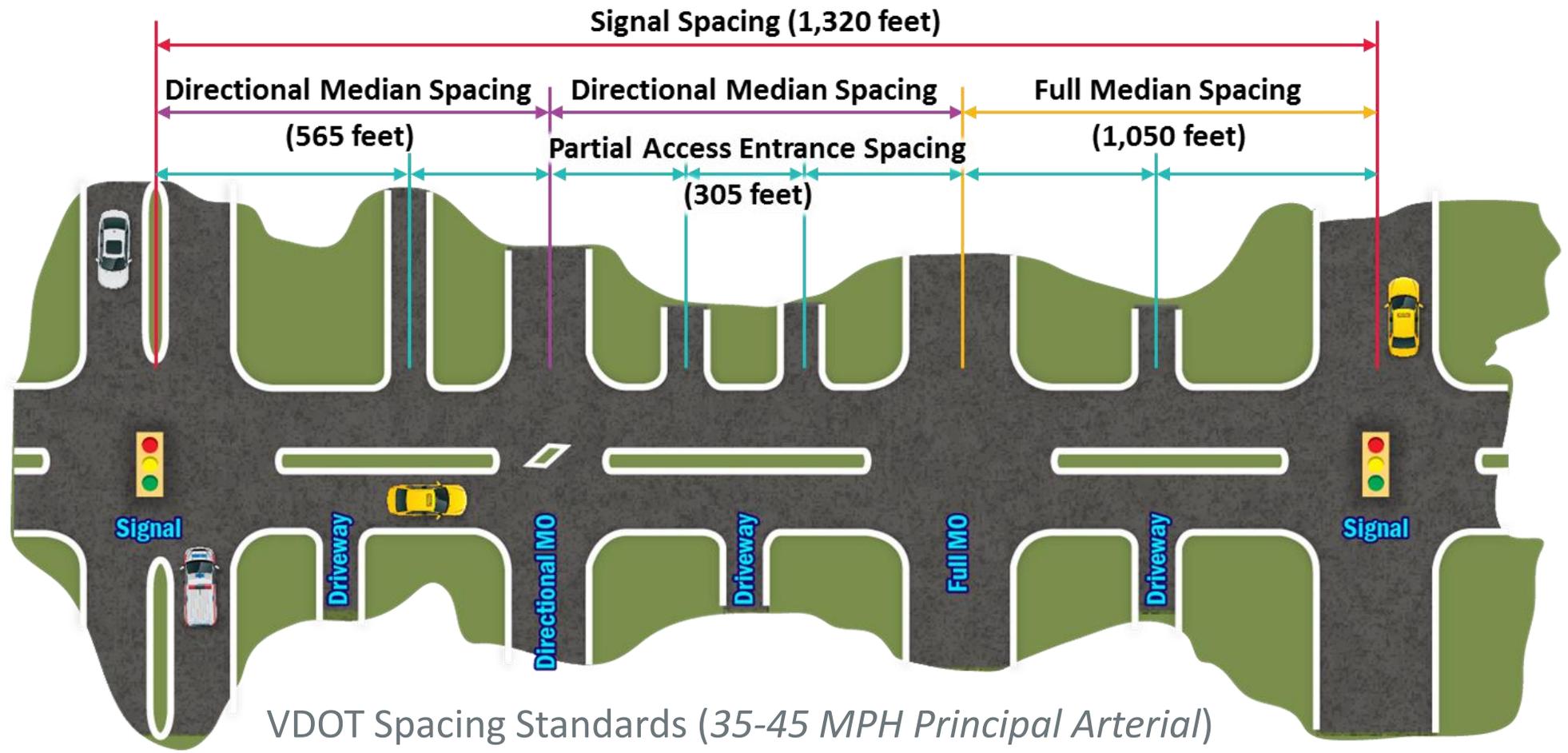


RIGHT-IN/RIGHT-OUT DRIVEWAY



Access Management Guidelines

45



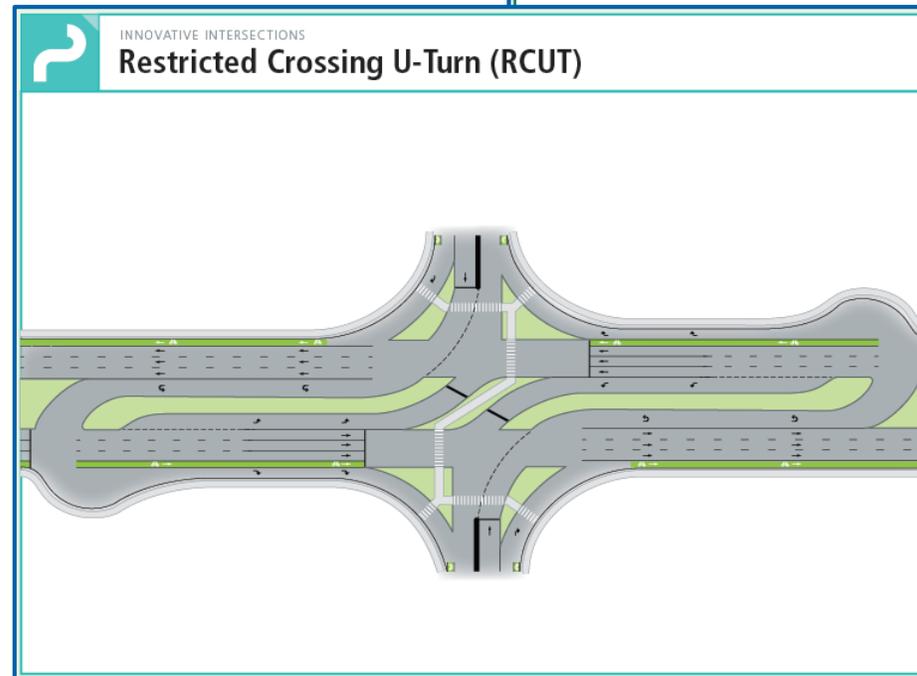
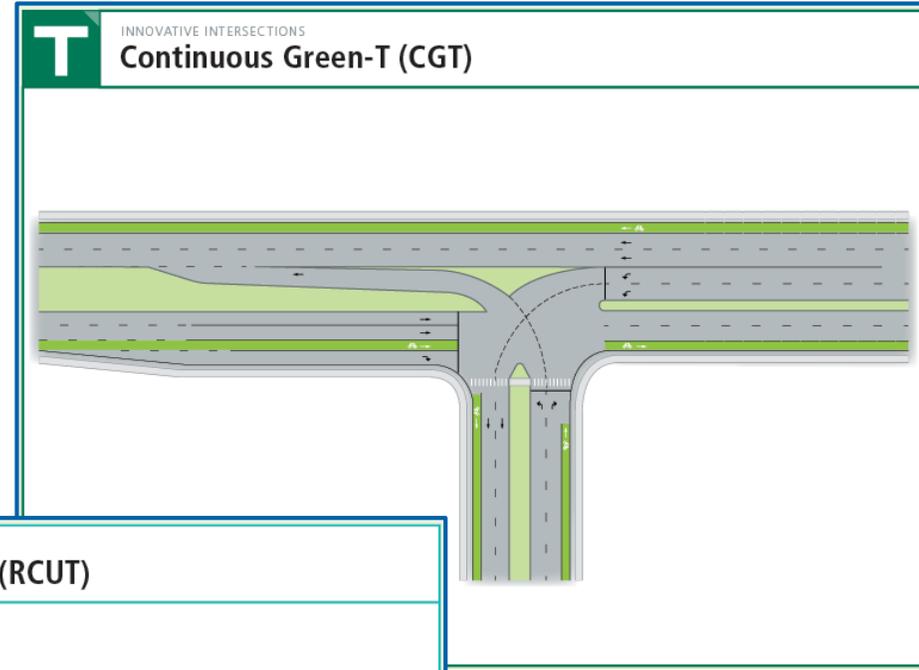
VDOT Spacing Standards (35-45 MPH Principal Arterial)

Arterial Preservation Program

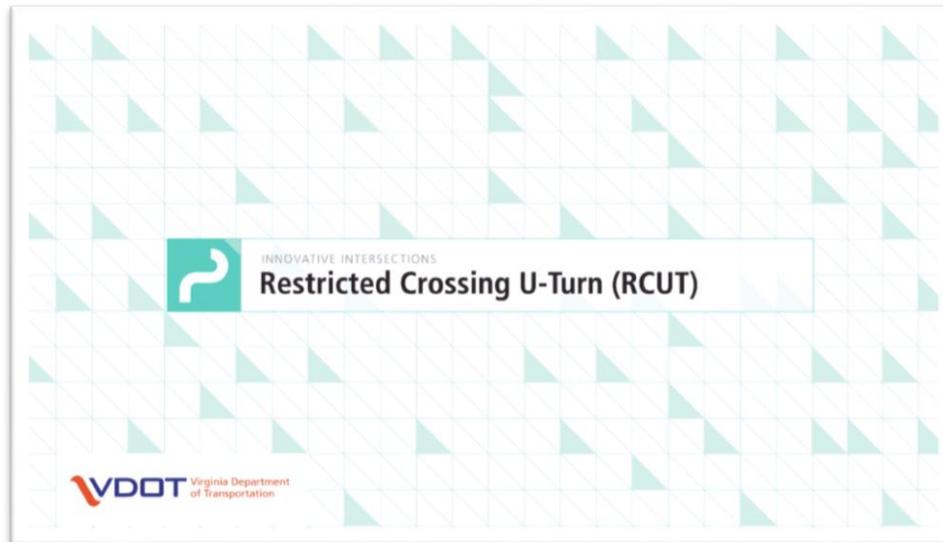
Innovative Intersections Overview

Innovative Intersections

- Intersection designs which:
 - Improve safety
 - Reduce delay
 - Increase efficiency
- Can reduce delays and crashes as much as 50%
- Also known as:
 - Alternative
 - Non-traditional
 - Unconventional
 - Reduced Conflict



Innovative Intersection Videos



Arterial Preservation Plan

US 58 Corridor

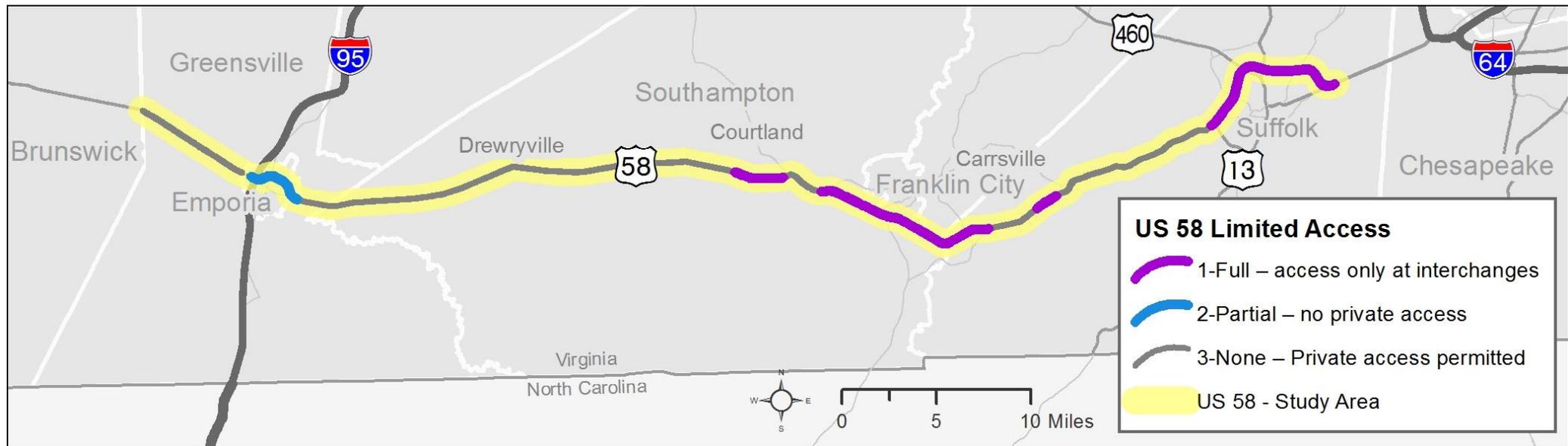
Study Corridor

US 58 from Suffolk Bypass to Brunswick – Greenville County Line
(~71 miles)

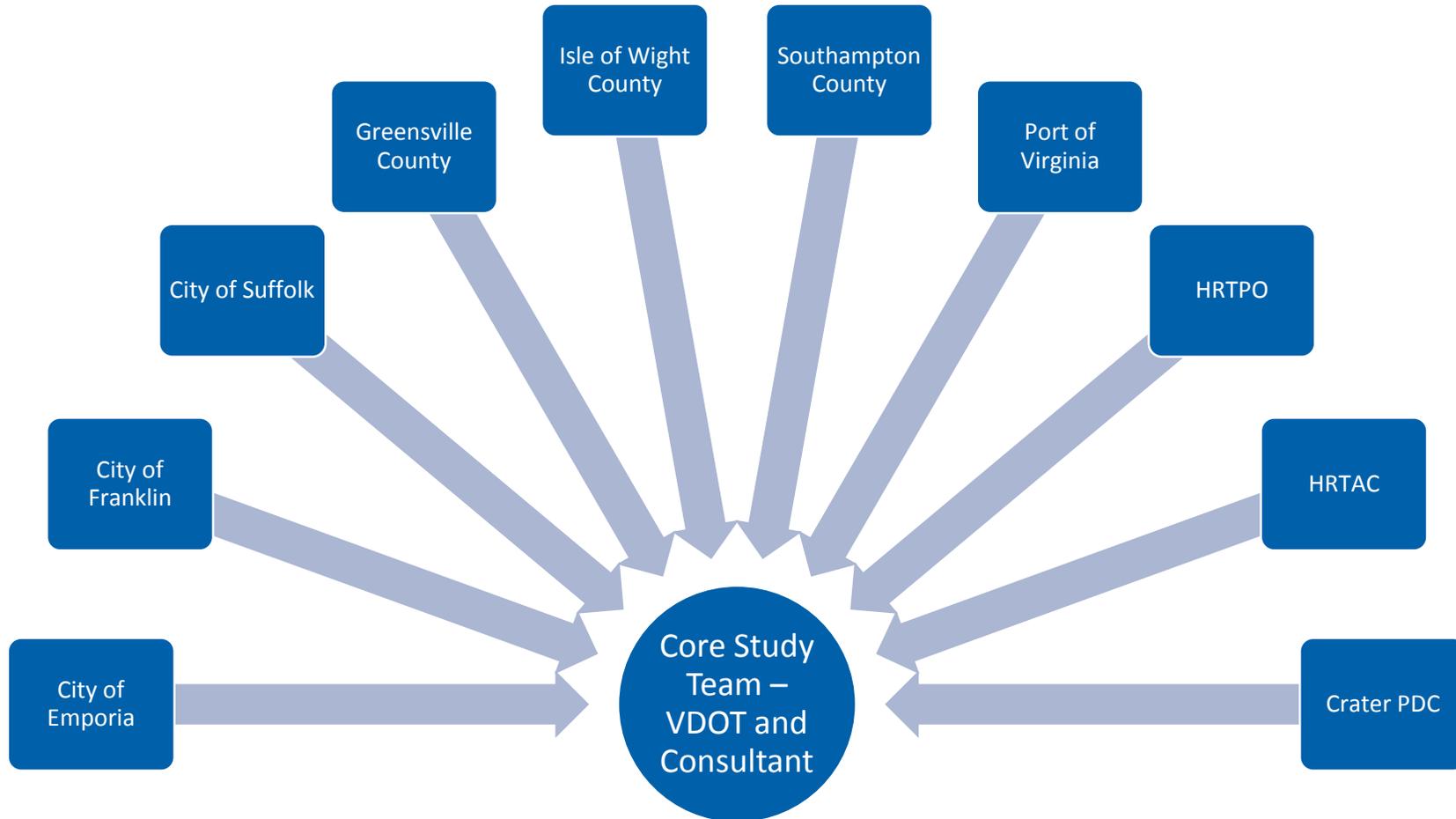


Study Corridor

- Limited-access bypass segments were considered to be improved and therefore received limited analysis as part of this study



Project Stakeholders / Working Group



Key issues identified in study corridor

- Safety concerns
 - Lack of adequate shoulders
 - Poor sight distance at intersections in certain locations
 - Poor geometric curves for high-speeds in certain locations (East of Holland BYP)
 - Higher levels of crashes in dense commercial and developed areas
 - Below standard turn lanes
- Operational challenges
 - High number of crossovers and access points
 - Delay in more developed areas
- Maintaining local access
- Future traffic growth

Example recommendations

- There are 110 crossovers and 50 intersections along the corridor
- Recommendations were prepared for each of the above and are available tonight for your review
- After the presentation, you can talk with staff and look up a specific location in the printed copies on the tables

How to Read the Figures

US 58 Arterial Preservation Plan

GREENSVILLE
COUNTY LINE

FRANKLIN CITY
LINE

US 58 Arterial Preservation Plan Figure 17 Intersections & Median Crossovers Southampton County

I## - Intersection #
C## - Crossover #

Crossover #47:
Recommendation: No Recommendation

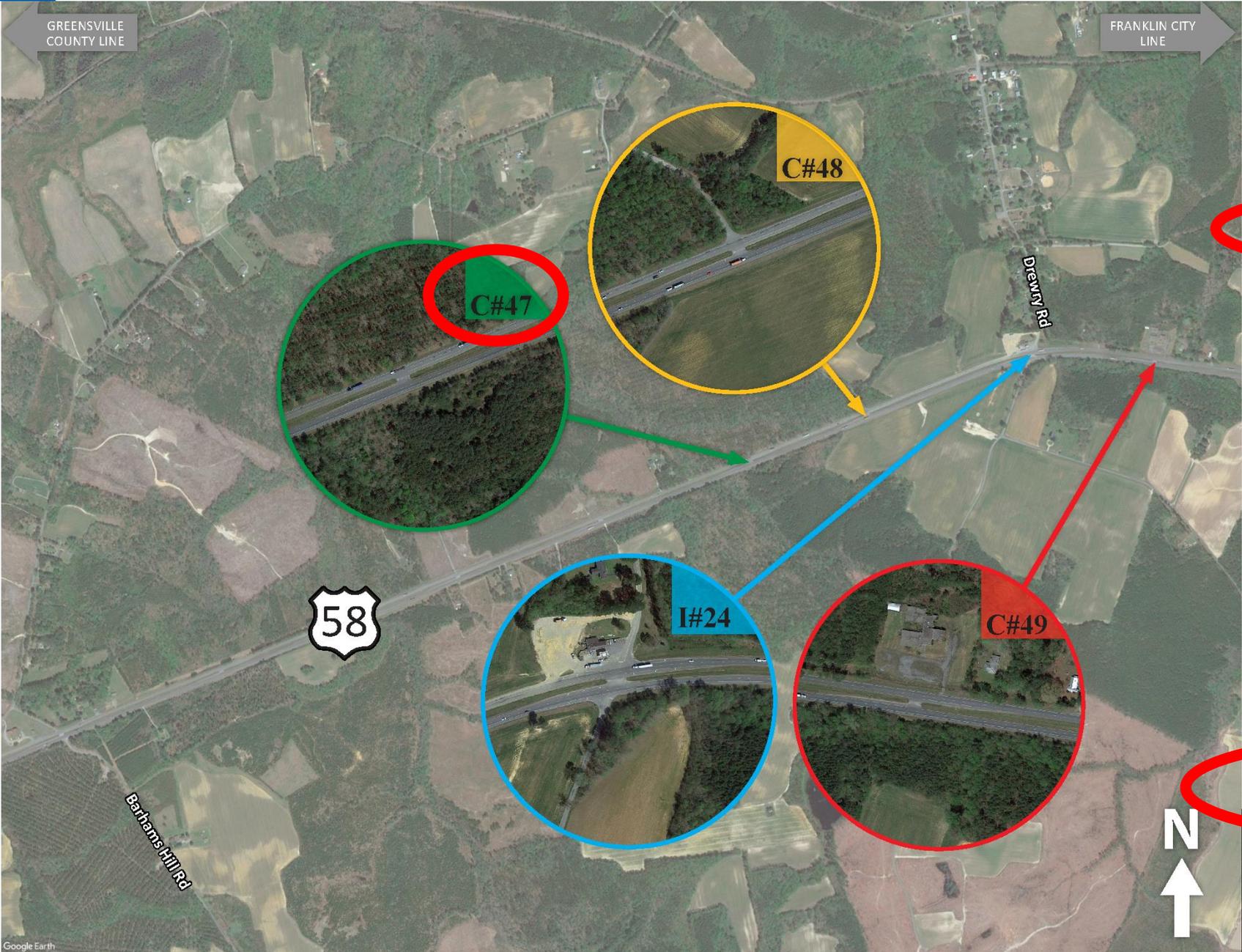
Crossover #48:
Recommendation: Construct westbound right-turn lane on US 58
Cost: \$0.3M to \$0.4M

Intersection #24: Drewry Rd with US 58
Recommendation: See Figure 18
Cost: \$1.7M to \$2.3M

Crossover #49:
Recommendation: Remove crossover
Cost: \$0.3M to \$0.4M

Green circle - No Recommendation
Red circle - Recommended Removal
Yellow circle - Minor Improvement
Blue circle - Major Improvement





US 58 Arterial Preservation Plan
Figure 17
Intersections & Median Crossovers
Southampton County

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Crossover #47:
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Crossover #48:
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Crossover #49:
Recommendation: Remove crossover
Cost: \$0.3M to \$0.4M

● No Recommendation ● Minor Improvement
● Recommended Removal ● Major Improvement



GREENSVILLE COUNTY LINE

FRANKLIN CITY LINE

US 58 Arterial Preservation Plan Figure 17 Intersections & Median Crossovers Southampton County

I## - Intersection #
C## - Crossover #

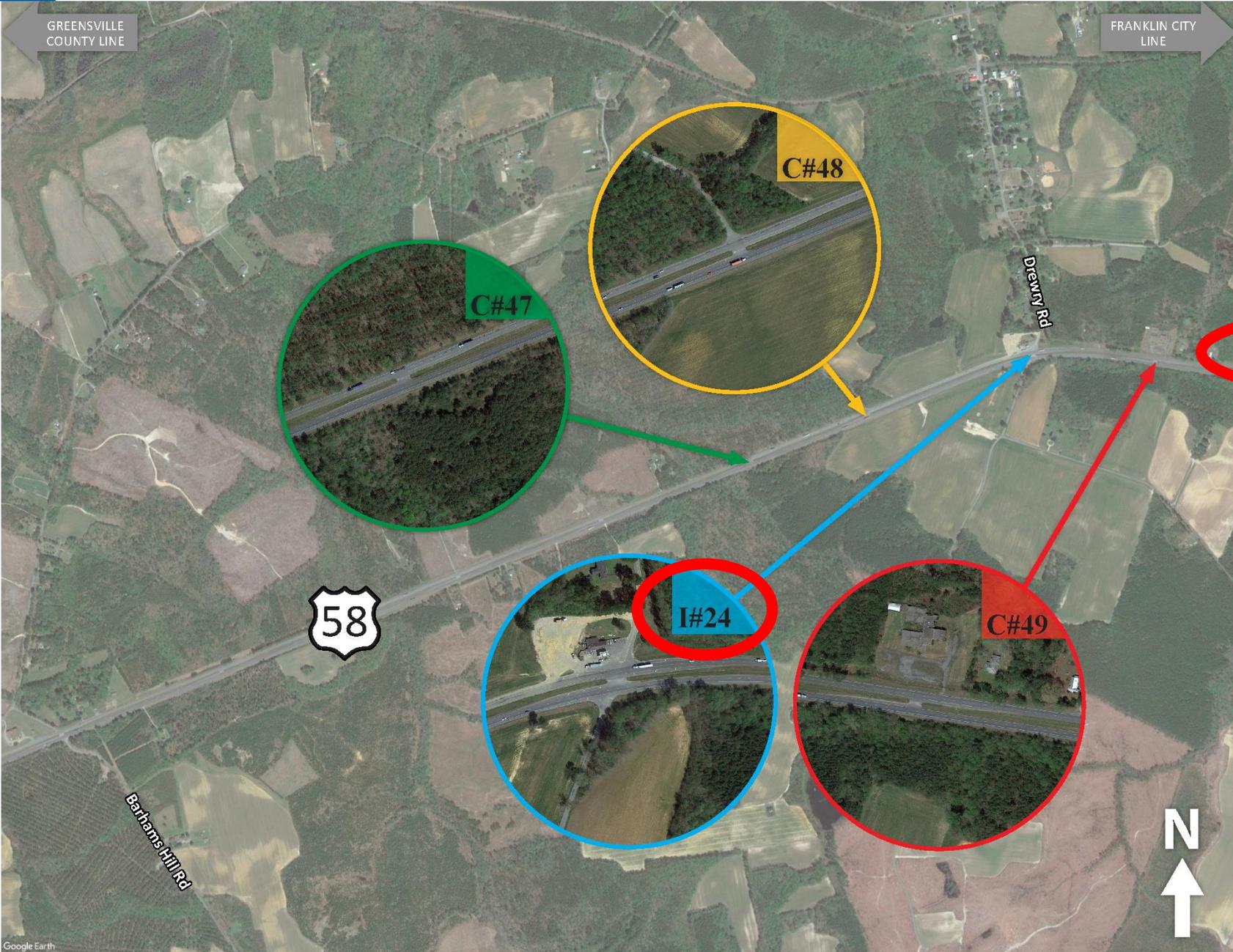
Crossover #47:
Recommendation: No Recommendation

Crossover #48:
Recommendation: Construct westbound right-turn lane on US 58
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Intersection #24: Drewry Rd with US 58
Recommendation: See Figure 18
Cost: \$1.7M to \$2.3M

Crossover #49:
Recommendation: Remove crossover
Cost: \$0.3M to \$0.4M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement





US 58 Arterial Preservation Plan Figure 18 Intersection #24: US 58 and Drewry Rd Southampton County

Recommendation: Reconfigure intersection of US 58 and Drewry Rd to Restricted Crossing U-Turn (RCUT). Construct u-turn areas with loons east and west of intersection at Drewry Rd and US 58. Reconstruct all existing turn lanes to VDOT design standards.

ROW Impacts: Minimal land acquisition and disturbance. Some minor ROW impacts may require minimal land acquisition.

Improvement Type: Safety, Travel Time Preservation

Key Operations & Safety:

Traffic Operations	Minimal Improvements
Safety	Reduced conflict points where vehicles cross paths. Reduced risk of head-on collisions.

Cost: \$1.7M to \$2.3M

→ Standard Movements
→ Rerouted Movements

Emporia/Greensville Concepts

US 58 Arterial Preservation Plan

BRUNSWICK COUNTY LINE

SOUTHAMPTON COUNTY LINE

SEE FIGURE 7

SEE FIGURE 9

58

INTERSTATE 95

Purdy Rd

Market Dr

SEE FIGURE 8 FOR I-95 INTERCHANGE RECOMMENDATION

INTERSTATE 95



US 58 Arterial Preservation Plan
Figure 6
I-95 Area Summary



BRUNSWICK COUNTY LINE

I-95

US 58 Arterial Preservation Plan

Figure 7

Intersection #9: US 58 and Purdy Rd City of Emporia

Recommendation: Reconfigure intersection to remove left-turns on US 58 and Purdy Rd southbound. Construct Jug-handle west of main intersection. Construct New Rd around development in southwest corner. Widen Wiggins Road to accommodate trucks (pictured left).

ROW Impacts: Jug-handle and New Rd will require land acquisition. ROW may be required to widen Wiggins Road to accommodate trucks. The main intersection will require little to no land acquisition, as most of this will be new lane markings.

Improvement Type: Congestion, Safety, Travel Time Preservation

Traffic Operations:

Total Intersection Delay (s)	AM	PM
Existing Conditions	25.7 - C	28.0 - C
2040 No Build Conditions (Conventional Intersection)	21.5 - C	67.4 - E
2040 Build Conditions	19.2 - B	17.4 - B

Cost: \$2.0M to \$3.0M



Standard Movements
Rerouted Movements



BRUNSWICK COUNTY LINE

SOUTHAMPTON COUNTY LINE



Option 1: DDI

Option 2: SPUI

SEE FIGURE 7

THIS SHEET

SEE FIGURE 9

US 58 Arterial Preservation Plan Figure 8 Intersection #10: US 58 and I-95 City of Emporia

Recommendation: Option one will be to reconfigure interchange to Diverging Diamond Interchange (DDI) (pictured left). Option two will be to reconfigure interchange to Single Point Urban Interchange (SPUI) (inset)

Impacts: Requires minimal configuration to existing I-95 ramps and bridge. In addition, two signals at both ends of the US 58 bridge will require signalization to permit crossover.

Improvement Type: Safety, Travel Time Preservation

Traffic Operations & Safety:

Traffic Operations	Minimal Improvements
Safety	Traffic entering and exiting freeway does not cross opposing lanes of traffic. Reduced number of conflict points where vehicles cross.

Cost: \$7.7M to \$9.6M (DDI)
Cost: \$9.0M to \$12.3M (SPUI)

Eastbound US 58 Traffic
Westbound US 58 Traffic



BRUNSWICK COUNTY LINE

SOUTHAMPTON COUNTY LINE

US 58 Arterial Preservation Plan

Figure 9

Intersection #11: US 58 and Market Dr City of Emporia

Recommendation: Reconfigure intersections to coordinated signalized intersections. The westbound direction at Market Dr and the eastbound direction at New Rd will be free-flow. Construct new intersection east of Market Dr and US 58 to include Continuous Green-T for southbound left-turns and u-turn area for US 58 Business left-turns onto US 58 (pictured left).

ROW Impacts: Land acquisition will be required for new intersection and connection to Market Rd. Market Rd between New Rd and Market Dr will require improvements.

Improvement Type: Congestion, Safety, Travel Time Preservation

Traffic Operations:

Total Intersection Delay (s)	AM	PM
Existing Conditions	25.6 - C	32.3 - C
2040 No Build Conditions (Conventional Intersection)	27.4 - C	87.9 - F
2040 Build Conditions	19.9 - B	31.0 - C

Cost: \$3.1M to \$4.9M

-  Standard Movements
-  Southbound Market Dr to Eastbound US 58
-  Southbound Market Dr to US 58 Business
-  Northbound US 58 Business to Westbound US 58
-  Northbound US 58 Business & Eastbound US 58 To Market Dr



Next Steps

- Review meeting input and finalize study report
 - Report will be available on study website once complete
- Work with City & County officials to implement solutions
 - Identify priorities & seek funding
 - Concepts do not advance without local support
 - No date has been established for construction
 - Recommendations will be implemented as opportunity and funding permits

How to find more information

- Arterial Preservation Program Website

http://www.virginiadot.org/programs/vdot_arterial_preservation_program.asp

- Innovative Intersections Website

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

- US 58 Project Web Page

http://www.virginiadot.org/projects/hamptonroads/us_58_arterial_management_plan.asp

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