



Route 3 Arterial Management Plan



July 21, 2015

Study Work Group Members

- Spotsylvania County
- Virginia Department of Transportation
- National Park Service
- Michael Baker International
- YOU!



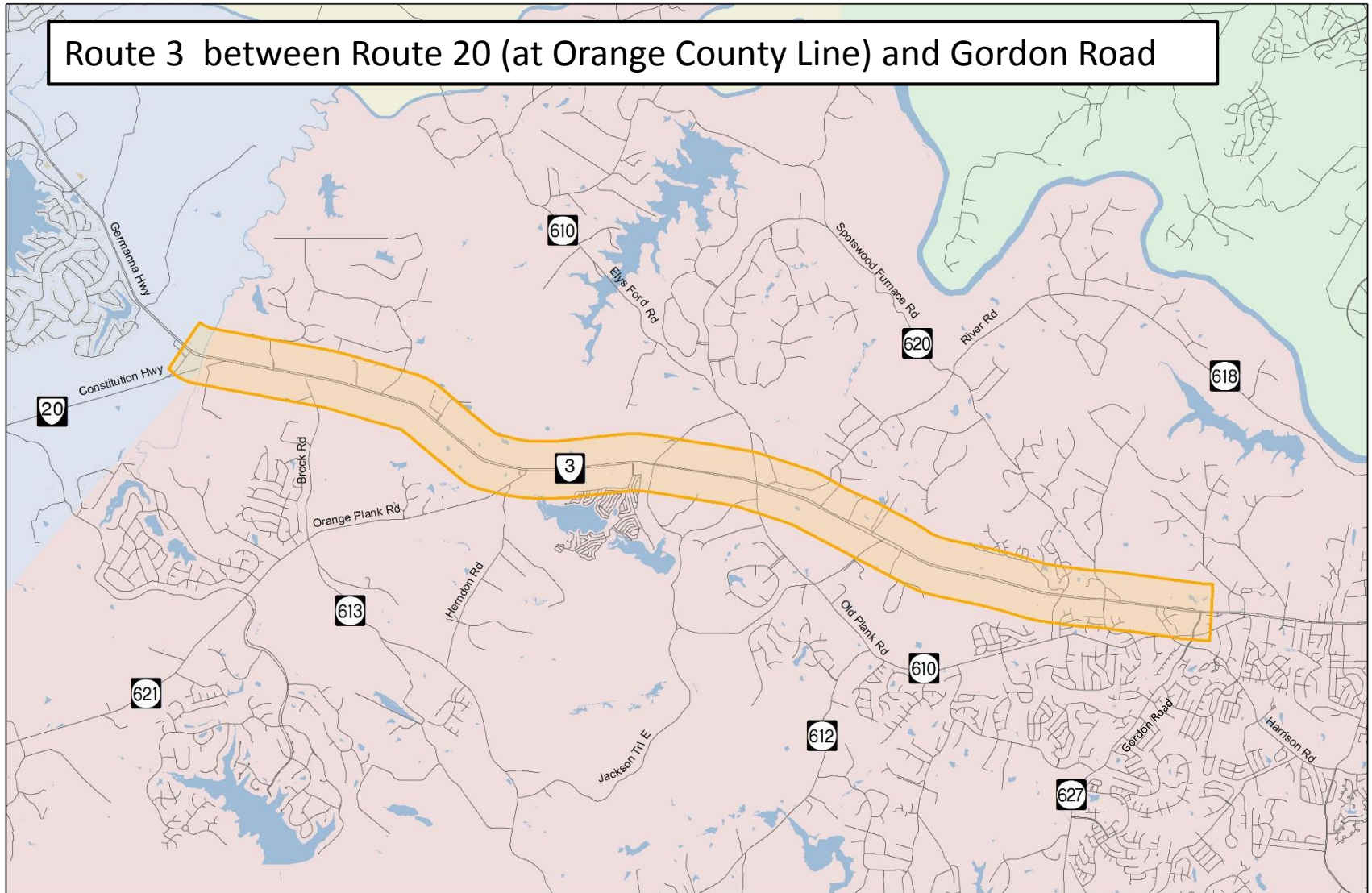
Meeting Agenda

- Purpose of Study
- Existing Conditions and Issues
- Estimate of Future Conditions
- Providing Your Input
- Next Steps

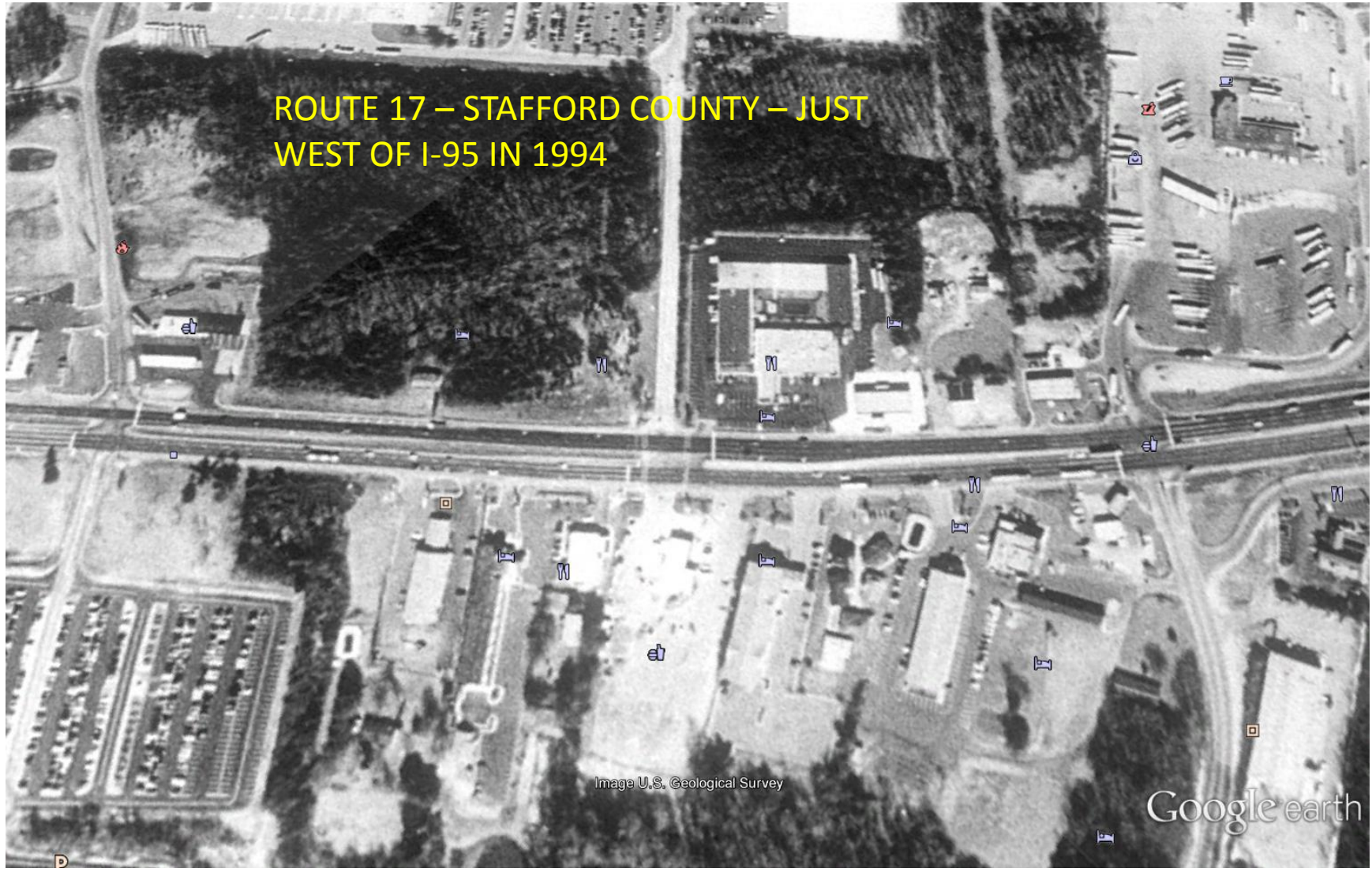


Study Corridor

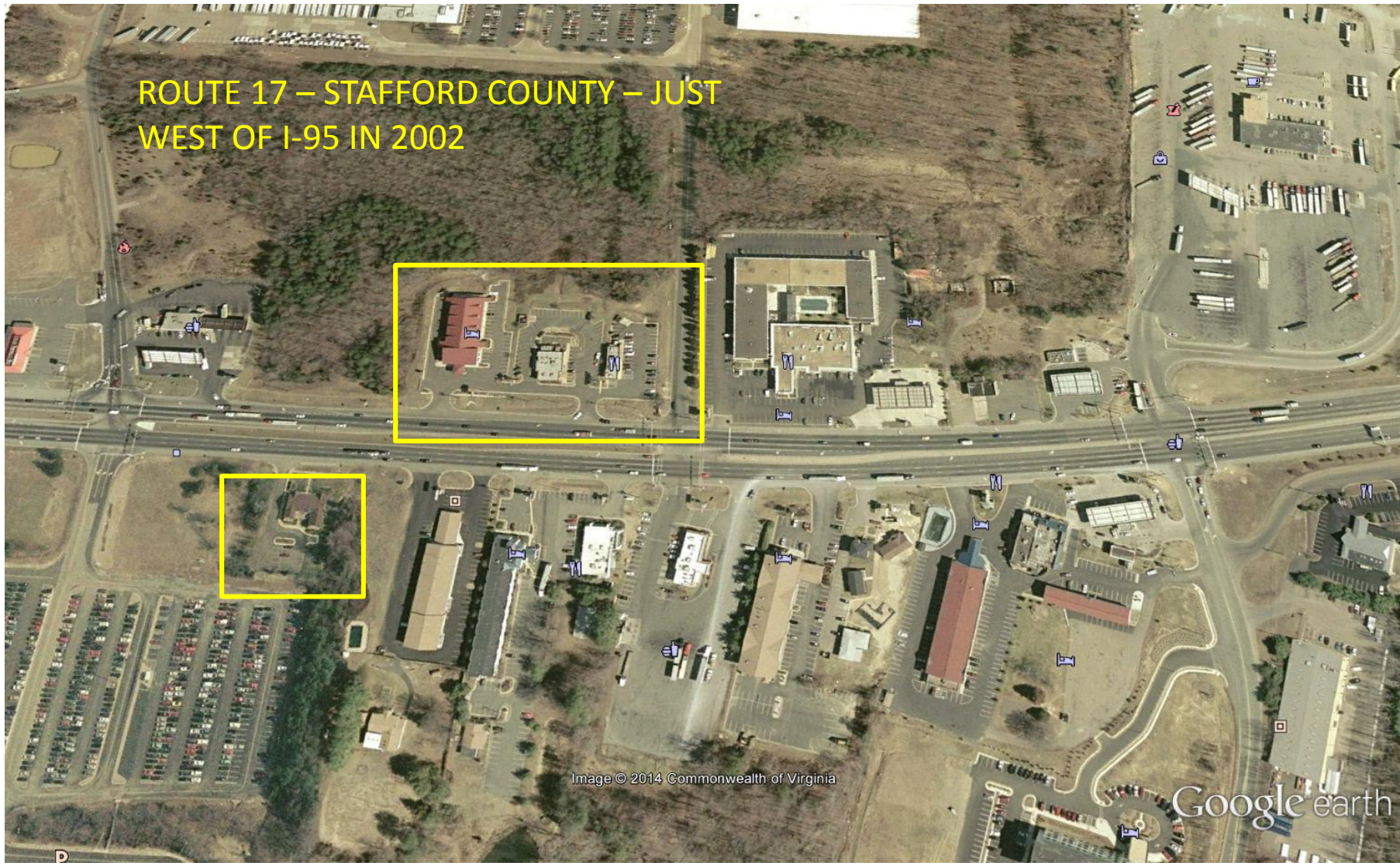
Route 3 between Route 20 (at Orange County Line) and Gordon Road



Arterial Management Plans



Arterial Management Plans



Arterial Management Plans

ROUTE 17 – STAFFORD COUNTY – JUST WEST OF I-95 IN 2006

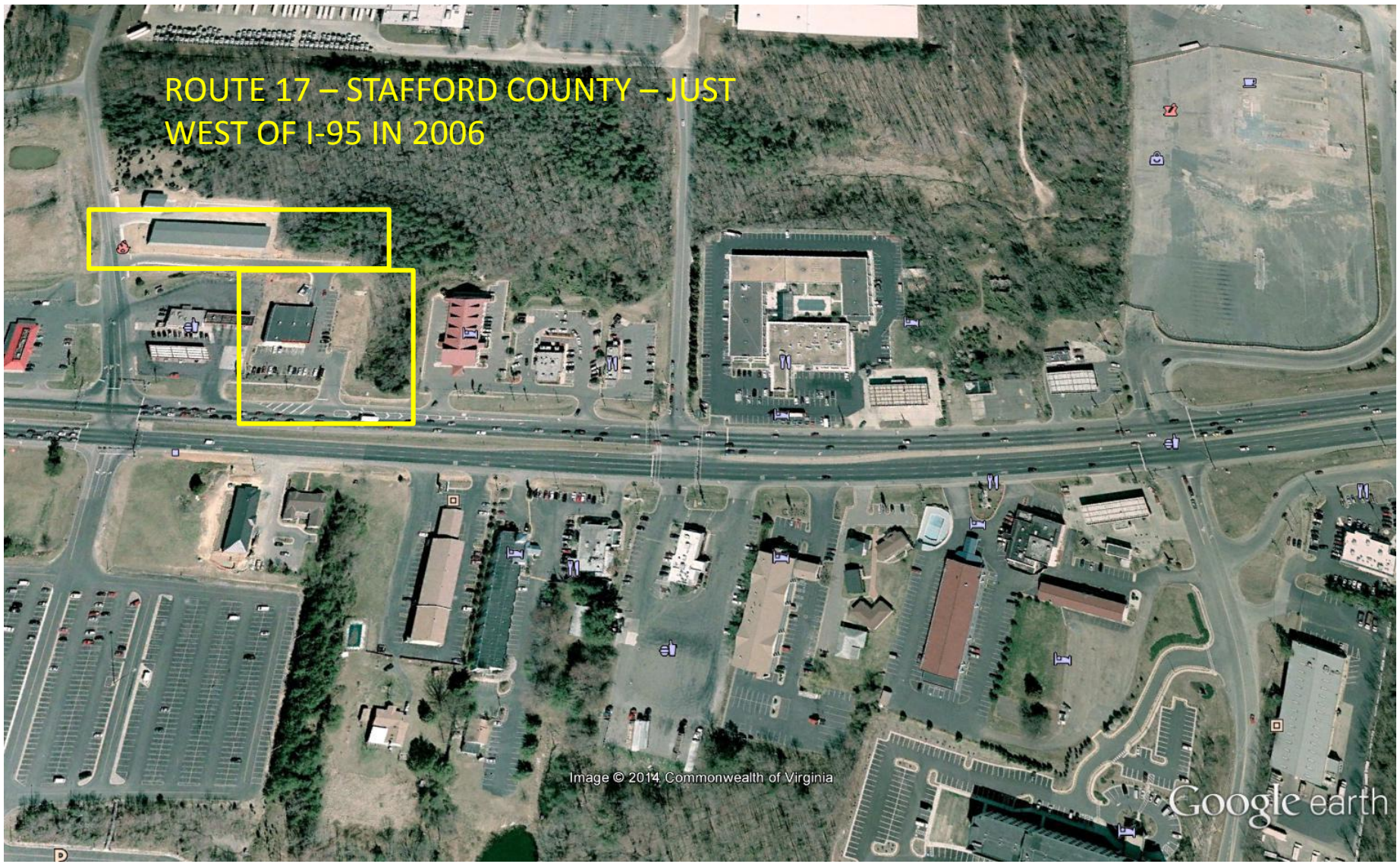
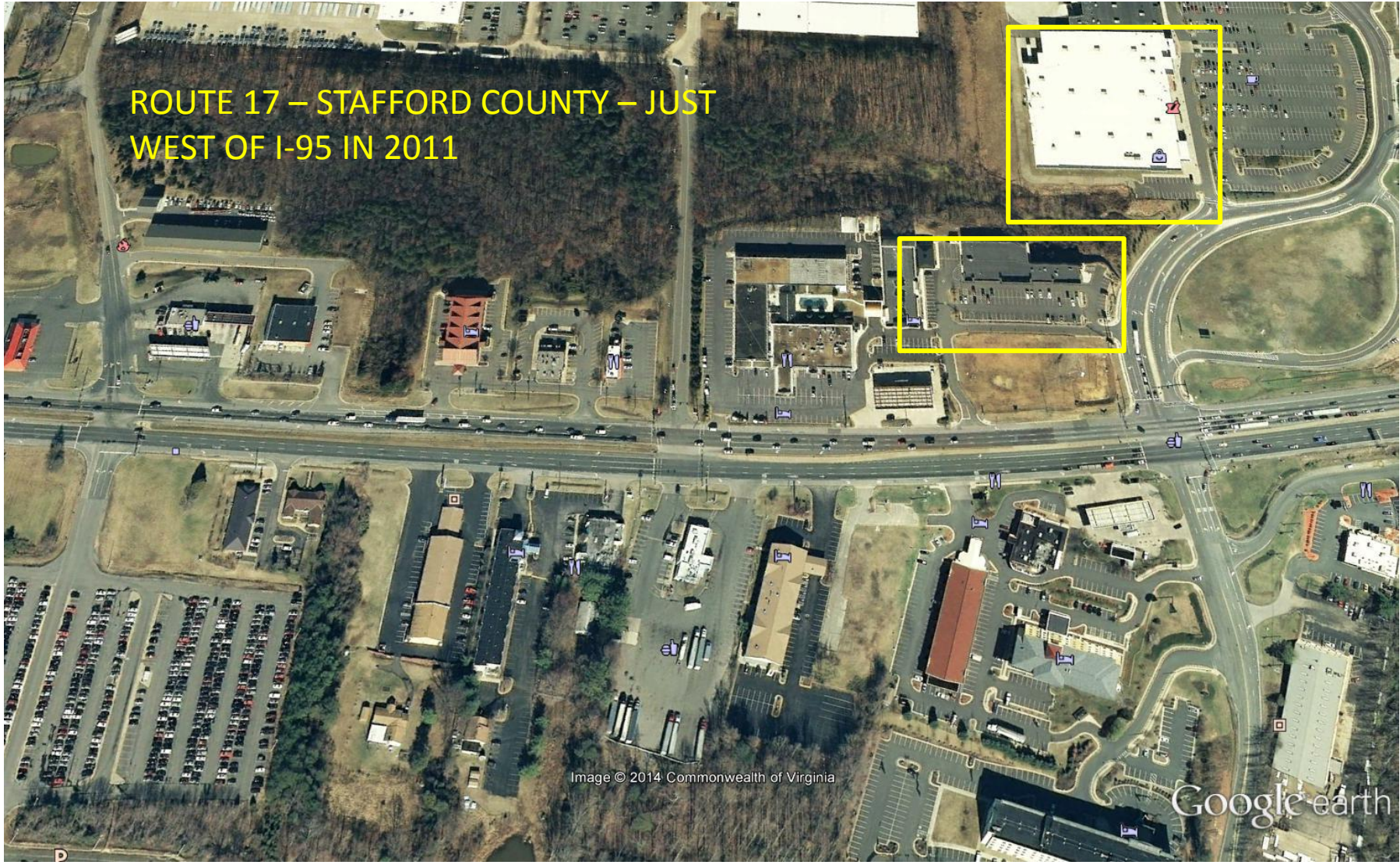


Image © 2014, Commonwealth of Virginia

Google earth

Arterial Management Plans

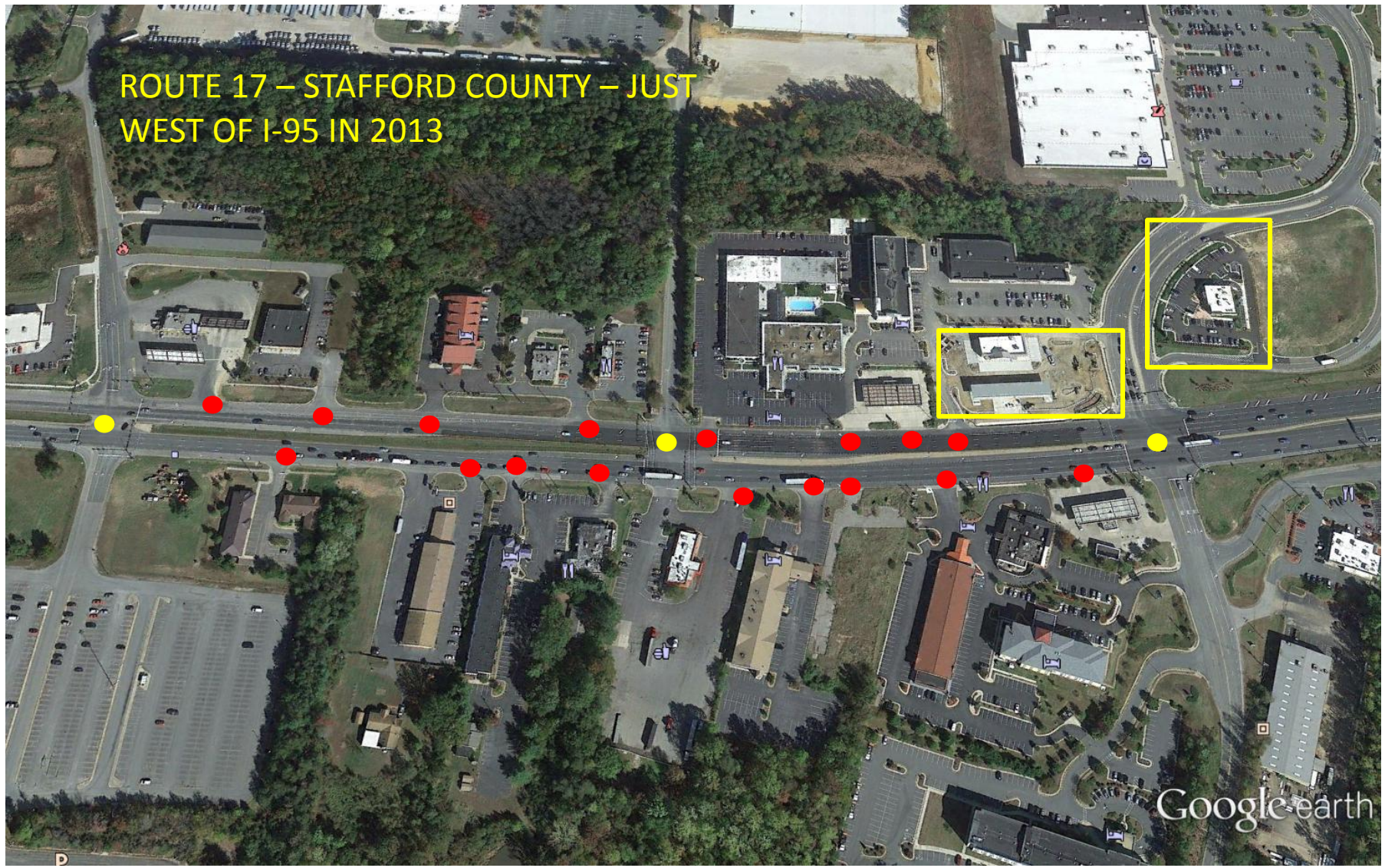


ROUTE 17 - STAFFORD COUNTY - JUST WEST OF I-95 IN 2011

Image © 2014 Commonwealth of Virginia

Google earth

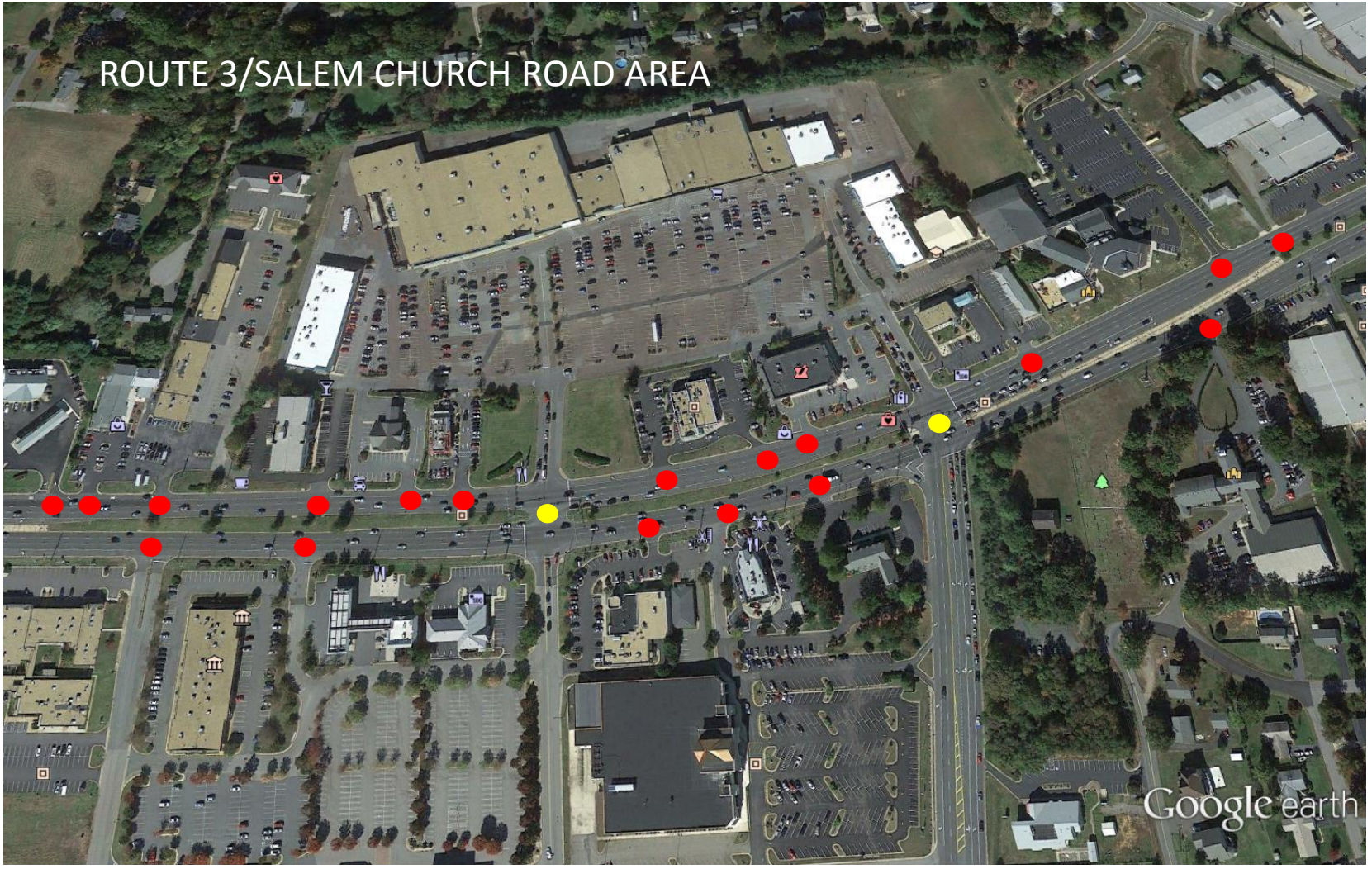
Arterial Management Plans



ROUTE 17 - STAFFORD COUNTY - JUST WEST OF I-95 IN 2013

Google earth

Arterial Management Plans



Arterial Management Plans



Purpose:

To ensure the safety and preserve the capacity of the Commonwealth's arterial highway network without wide scale road widenings while accommodating economic development.

Project Vision

Develop a joint state and local strategy to guide development and transportation decisions along Route 3 between Gordon Road and the Orange County line.

Project Goals

- Develop a streamlined and repeatable Arterial Management Plan (AMP) process
- Develop an AMP methodology

Arterial Management Plan Benefits

Local Governments (Towns, Cities, and Counties):

- + Safer arterial street system
- + Allow localities to maximize densities allowed in Comprehensive/Master Plans
- + Maintain corridors' economic development potential by having a cohesive plan
- + Aid in the land development process by providing local government/VDOT expectations before a developer's plans are created
- + Assist with projects being programmed since they are identified in an approved plan
- + Save dollars by reducing the need to retrofit improvements in the future

VDOT

- + Result in a safer arterial street system
- + Preserve corridor capacity and efficiency
- + Maintain Commonwealth's mobility and thus economic competitiveness
- + Lower long-term infrastructure capital and maintenance costs

Arterial Management Plan Benefits

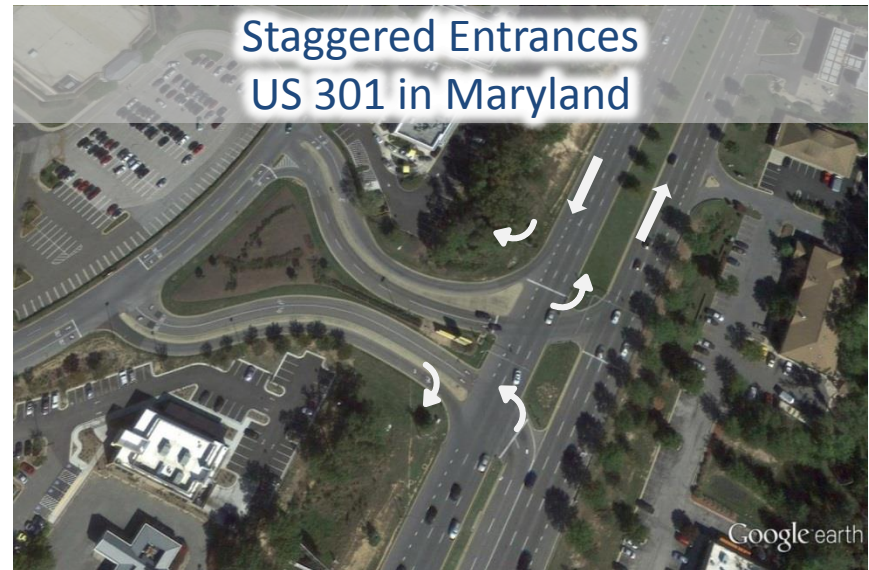
Land Owners

- + Blueprint for developers, adherence to plan = quicker approval from VDOT/Local Government
- + Maintain size of market area (based on travel time to businesses)
- + Better allow land owners to maximize densities allowed in Comprehensive/Master Plans
- + Maintain a corridors' economic development potential by having a cohesive plan

Regional and Local Travelers

- + Safer trips
- + Quicker trips
- + Easy access to destinations

Arterial Management Examples



Summary of Existing Conditions

- Field Observations
- Traffic Data (Collected April 2014)
 - Turning Movement Counts
 - Average Daily Traffic (ADT)
 - Speed Data
- Crash and Data Analysis
- Inventory of Existing Access Points
- Operational Analysis
- Planned Area Improvements



Existing Conditions – Site Review



Sight Distance



Rolling Terrain



Wide- Medians at Signals



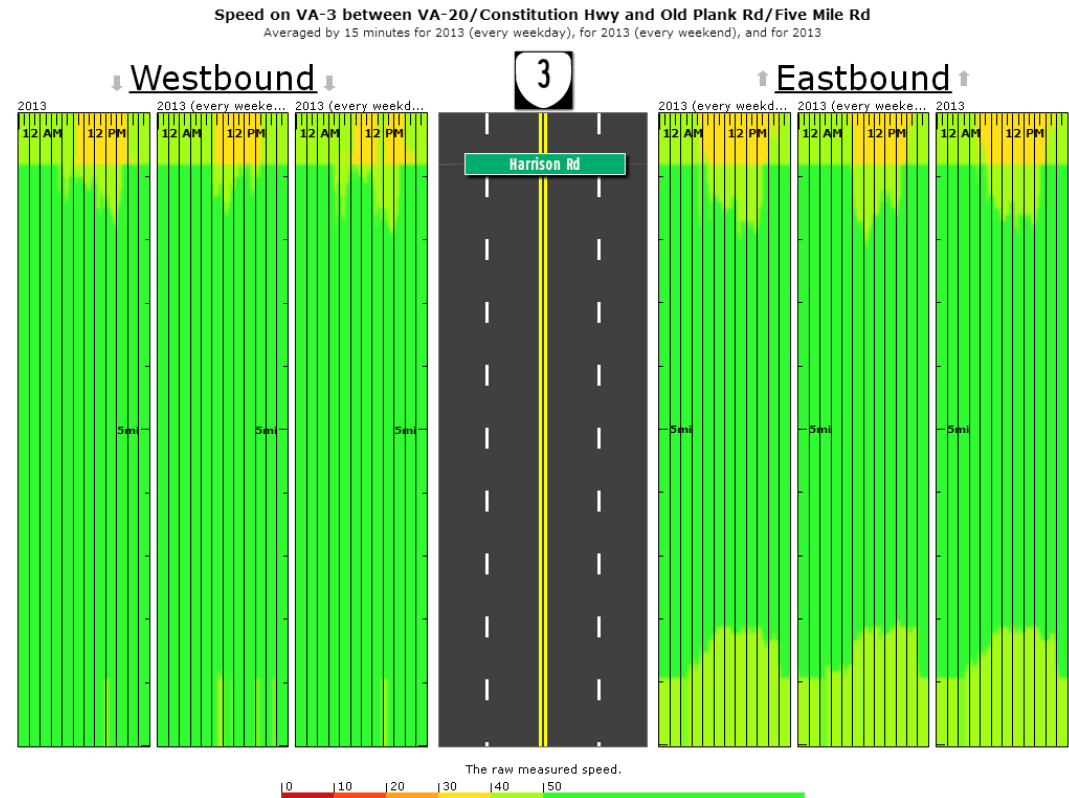
Grade Differential at Crossovers

Existing Conditions – Site Review

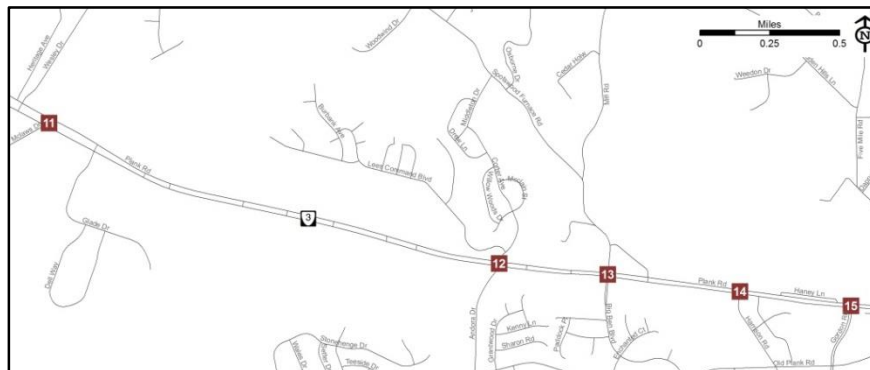
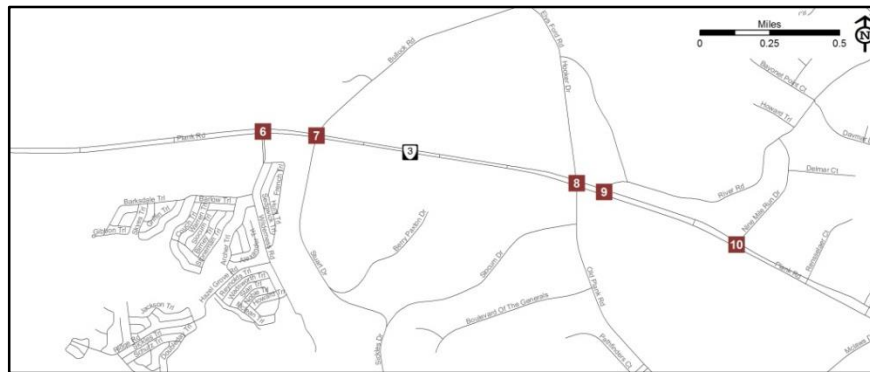
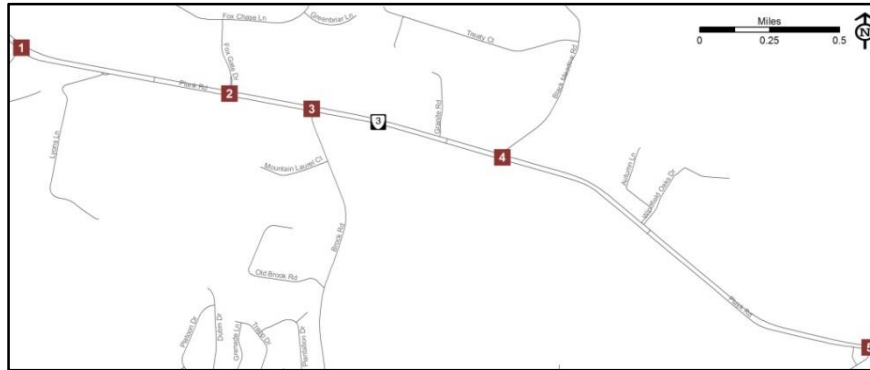
Historic Resources



- Adjacent land uses generate approx. 100,000 trips per day
- Average Daily Traffic – 23,000 to 41,000 vehicles per day
- Truck % varies from 2% to 8%
- AM peak hour = 7:00-8:00 AM
- PM peak hour = 4:45-5:45 PM
- Average speeds generally exceed speed limit slightly throughout the corridor except between Harrison Road and Gordon Road



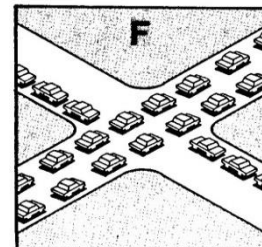
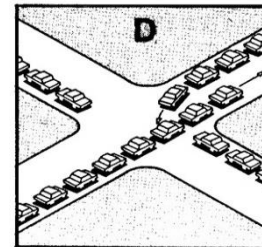
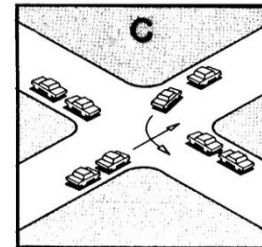
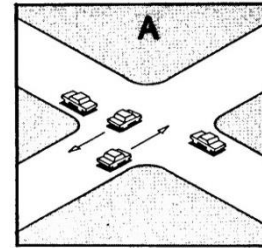
Traffic Data Collection



Turning Movement Count Locations

INTERSECTION	
Number	Name
1	Constitution Hwy / Route 3
2	Fox Gate Drive / Route 3
3	Brock Road / Route 3
4	Black Meadow Rd / Route 3
5	Orange Plank Rd / Route 3
6	Wilderness Road / Route 3
7	Stuart Rd / Bullock Rd / Route 3
8	Elys Ford Rd / Route 3
9	River Road / Route 3
10	Nine Mile Run Dr / Route 3
11	McLaws Dr / Route 3
12	Andora / Corter Avenue/ Route 3
13	Big Ben /Spotswood Furnace / Route 3
14	Harrison Rd / Route 3
15	Gordon Rd / Route 3

INTERSECTION		Existing Peak Hour LOS	
Number	Name	AM	PM
1	Constitution Hwy / Route 3	C	C
2	Fox Gate Drive / Route 3	A	A
3	Brock Road / Route 3	B	B
4	Black Meadow Rd / Route 3	A	A
5	Orange Plank Rd / Route 3	F	C
6	Wilderness Road / Route 3	A	A
7	Stuart Rd / Bullock Rd / Route 3	A	A
8	Elys Ford Rd / Route 3	C	C
9	River Road / Route 3	A	A
10	Nine Mile Run Dr / Route 3	A	A
11	McLaws Dr / Route 3	A	A
12	Andora / Corter Avenue/ Route 3	D	C
13	Big Ben /Spotswood Furnace / Route 3	E	E
14	Harrison Rd / Route 3	B	C
15	Gordon Rd / Route 3	A	C

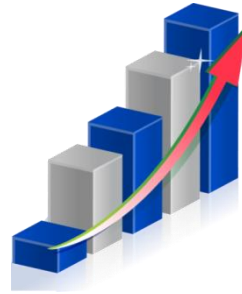


LOS

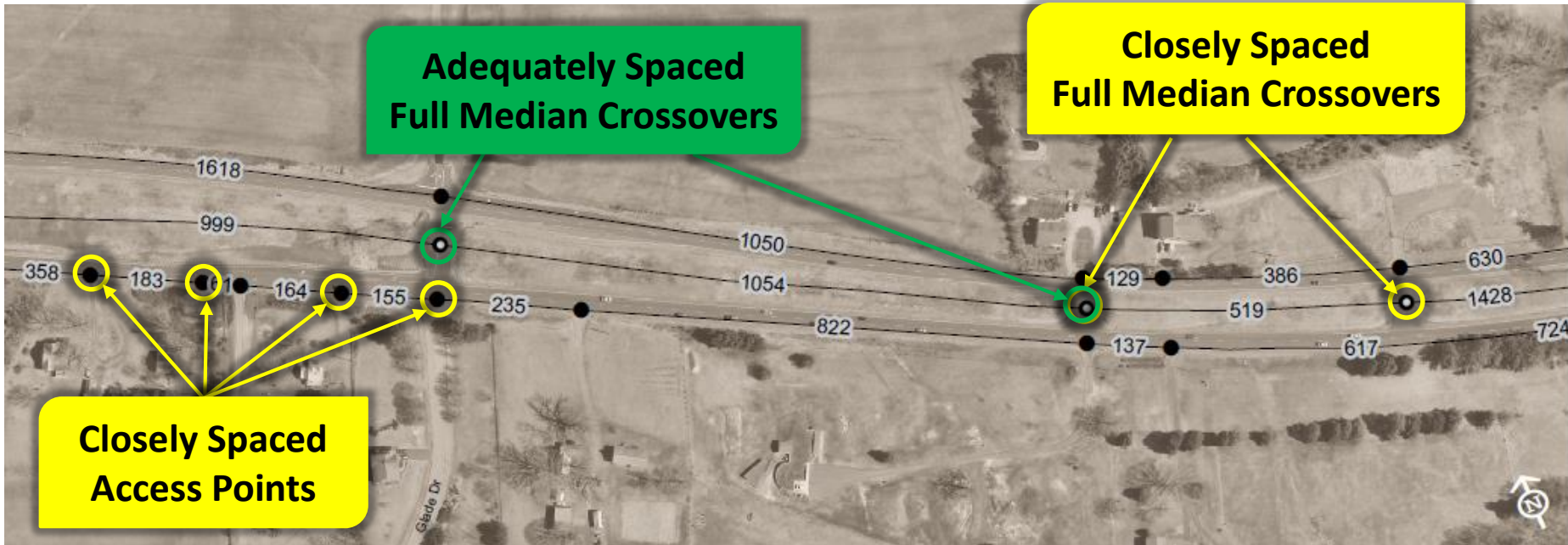
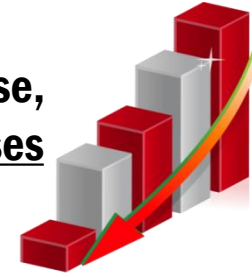
- A** Free flow
- B** Stable flow
- C** Average Flow
- D** Restricted Flow
- E** Congested
- F** Severely Congested

Inventory of Existing Access Points

As number of driveways increase, crashes increase

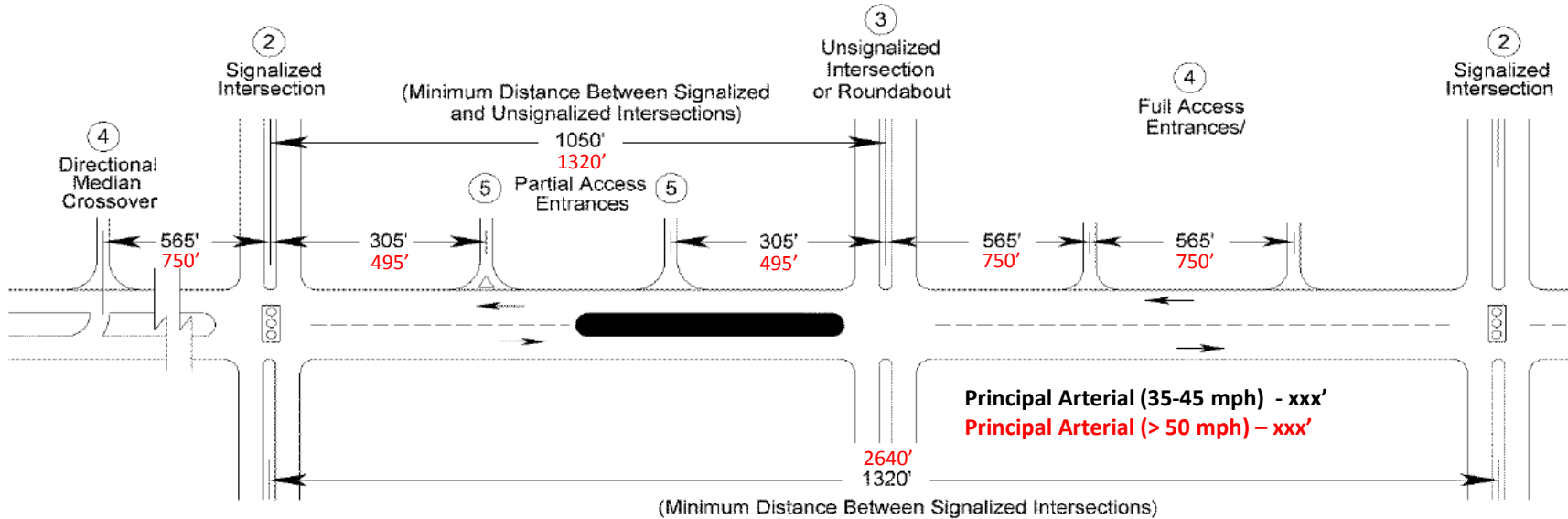


As number of driveways increase, capacity decreases



Inventory of Existing Access Points

Minimum Centerline to Centerline Spacing (Feet)

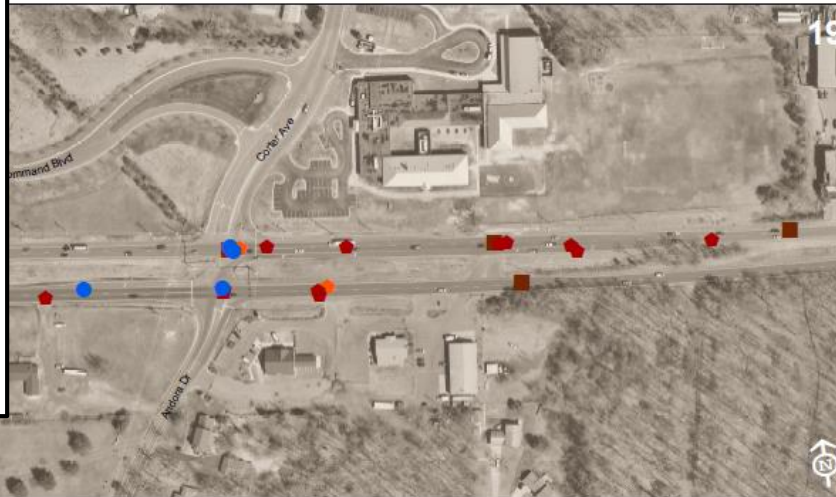


Roadway	Number of Access Points	Access Points Per Mile	Per VDOT Spacing Guidelines	
			Compliant	Non-Compliant
Route 3	222	25	111	111

Existing Conditions - Crashes

Crash Analysis

- Crash Severity
 - Identifies the fatalities and injury types
- Crash Location Scatter Plots
 - Identifies hot spots and crash patterns



Route 3 Arterial
Management Plan

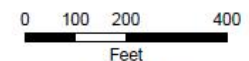
Figure 6
Crash Data
Sheets 19 & 20

Legend

Collision by Type

- Angle
- Backed Into
- Bicyclist
- Deer
- Fixed Object - In Road
- Fixed Object - Off Road
- Head On
- Motorcyclist
- ▲ Non-Collision
- ▲ Other
- ▲ Other Animal
- ▲ Pedestrian
- ◆ Rear End
- ◆ Sideswipe - Opposite Direction
- ◆ Sideswipe - Same Direction
- ◆ Train

Sheet Locator



1 inch = 200 feet

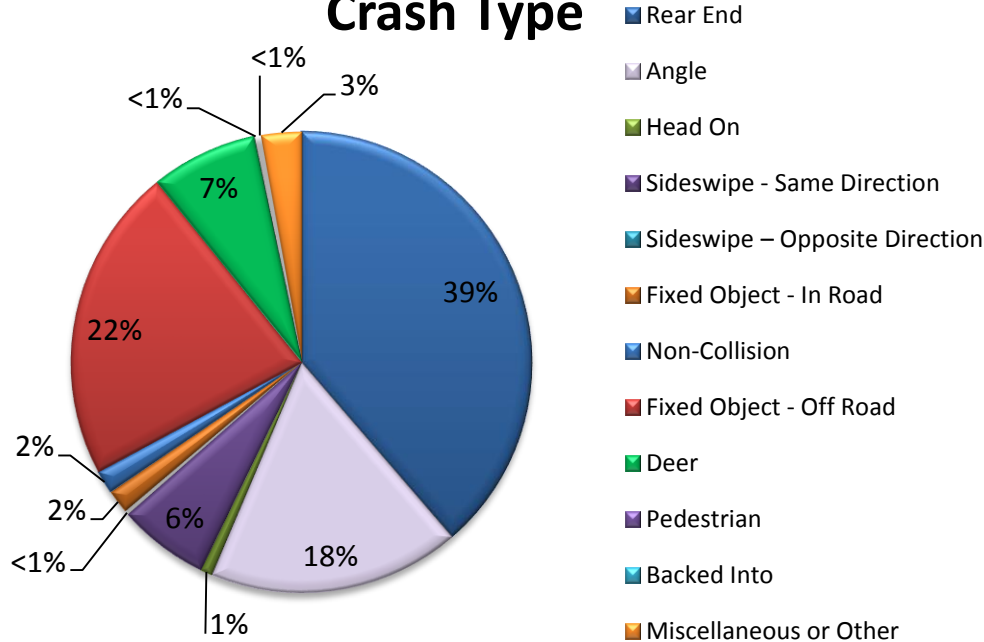
7/9/2014
Data: VDOT, VBMP

Baker

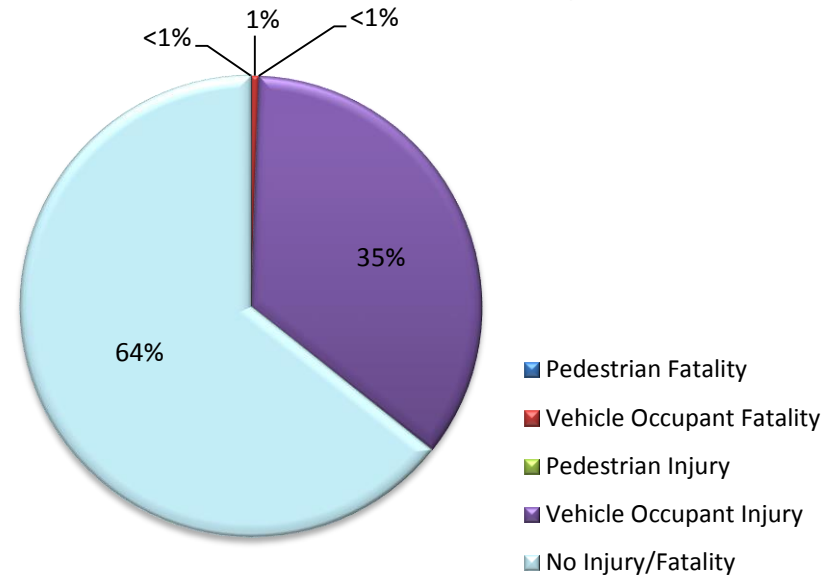


Corridor Crash Summary

Crash Type



Crash Severity



Crash Rate for RURAL Route 3
(west of Andora Dr.)

85

National
Average

77

Crash Rate for URBAN Route 3
(east of Andora Dr.)

183

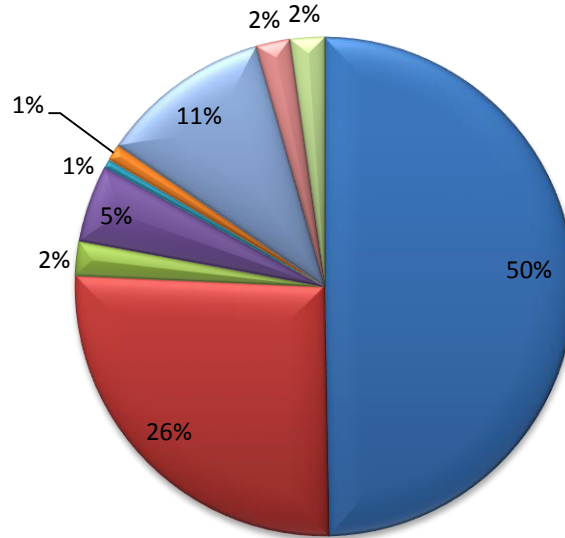
National
Average

120

Crash Rates are per 100 million vehicle miles traveled

Corridor Crash Summary

Crash Type- Intersections



- Rear End
- Angle
- Head on
- Sideswipe - Same direction of travel
- Fixed object in road (from ditch to ditch)
- Non-Collision, overturned, jackknifed or ran off road (no object)
- Fixed object off road (from outside of ditch)
- Deer
- Miscellaneous or other

The number of crashes is higher at signalized intersections in the corridor:

- Intersections: 4 crashes per year per unsignalized intersection
- Signalized intersections: 6 crashes per year per intersection

Stakeholder Input Summary

5 Stakeholder Interviews – 2 Private Citizens, 3 County Representatives

Highlighted Input

- Pro-development
- National Park Service influence concerns
- Want a regional approach
 - Route 3 by-pass
 - I-95 capacity and access improvements
- Concerned about congestion
 - at intersections leading to schools
 - from new development
 - from Orange County thru traffic
 - Portions of eastern Route 3 that are densely developed impacting eastern end of this study area (east of Harrison Crossing)

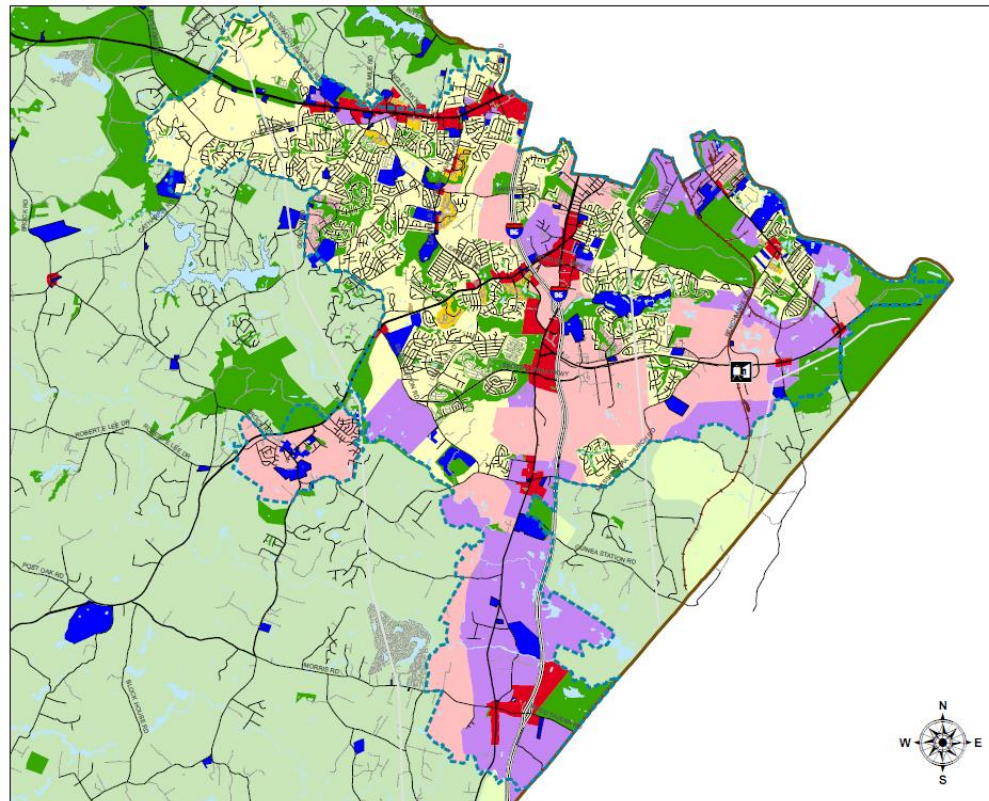
Additional Input

- Varying thoughts on preferred type of development
- Varying thoughts on where roadway improvements are needed
- Concerns about the effectiveness of the proposed road from Central Park to Gordon Road to relieve congestion on Route 3
- Varying thoughts on importance of need for:
 - Operational Improvements
 - Geometric Improvements
 - Access Improvements
 - Safety Improvements
 - Capacity Improvements
 - Multimodal Improvements
 - Policy Changes

Future Conditions – Land Use

Future Land Use

- Coordination with County Staff
- Spotsylvania County Comprehensive Plan
- Planned and Approved Developments
- Zoning Maps
- Ordinances



Spotsylvania County
Future Land Use



Legend

- Primary Development Boundary
- Water

Land Use Designations

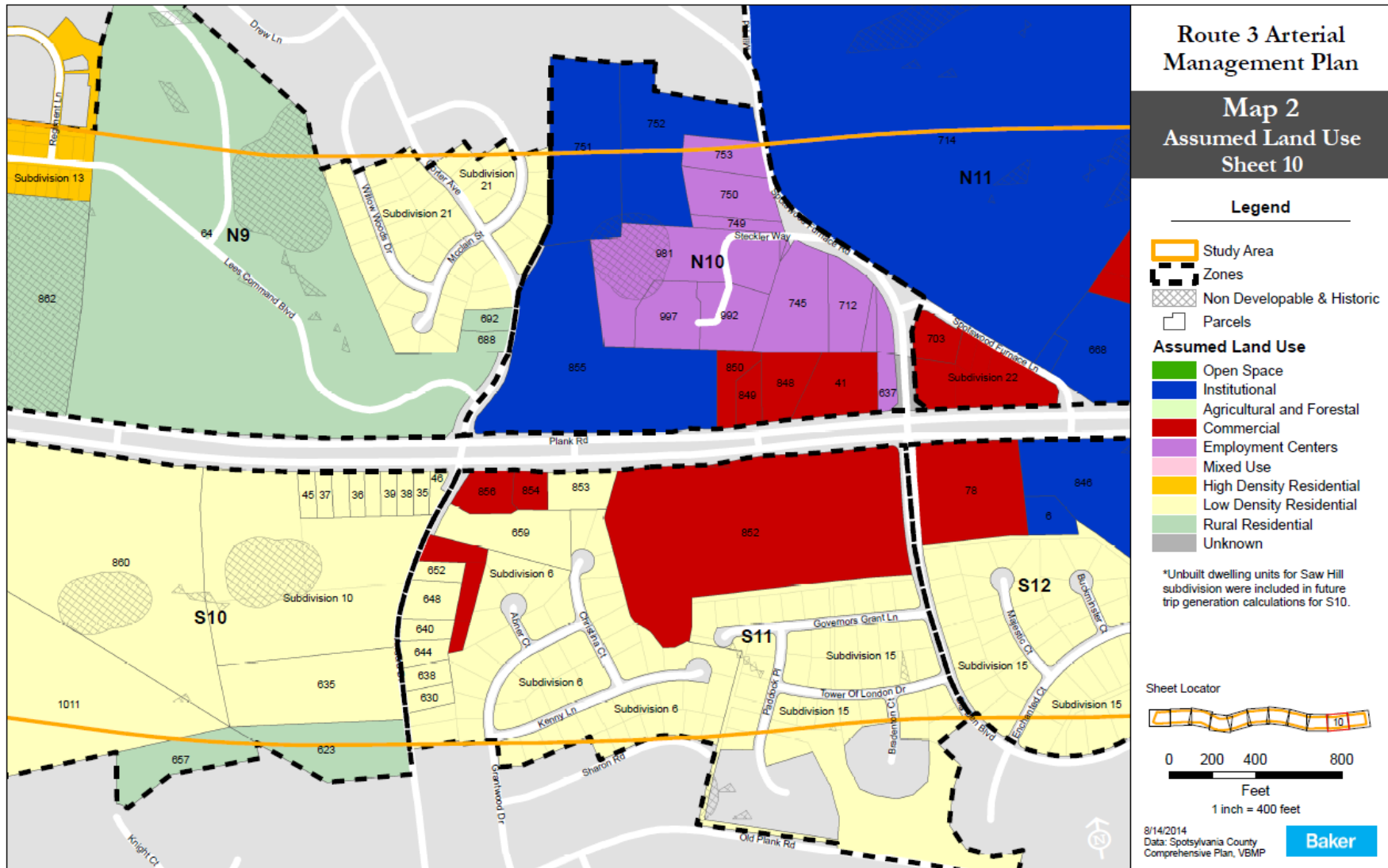
- Categories
- Open Space
 - Institutional
 - Commercial Land Use
 - Employment Centers
 - Mixed Land Use
 - High Density Residential Land Use
 - Low Density Residential Land Use
 - Rural Residential Land Use
 - Agricultural and Forestal Land Use



0 0.5 1 2 3 Miles
1 in = 1 miles

Map Approved: November 14, 2013

Future Conditions – Land Use



Future Conditions – Future Trips

Total Assumed New Development for the Route 3 Corridor:

- Commercial: 376,000 sq. ft. = **29,664 Trips**
- Industrial: 20,000 sq. ft. = **139 Trips**
- Office: 709,000 sq. ft. = **8,067 Trips**
- New Dwelling Units: 2,078 = **19,790 Trips**
- Other: 265,000 sq. ft. = **2,474 Trips**

Total Additional Trips = 60,134



How Can YOU Help?

Ask US questions and provide YOUR input.

- 2014 Existing Conditions (Board 1)
 - Confirm existing conditions data.
 - What traffic and safety related issues concern you?

- 2040 Future Development Assumptions (Board 2)
 - Provide input on assumed future development?
 - What types of developments do you envision and where?

- Priority of Improvement Types
 - Indicate which type of improvements are a priority for you?

Study Update & Next Steps

Next Steps

- Finish Future Conditions (Unmanaged Condition)
- Develop Recommendations (Managed Condition)
- Another Public Meeting
- Seek Adoption of Plan by Board of Supervisors

Schedule

YOU ARE HERE

Task	2014												2015											
	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June	July	August	September	October	November	December			
Study Work Group & Public Meetings				●			●				●				▲				▲					
Data Collection																								
2014 Existing Conditions																								
2040 Future Land Use																								
Toolbox of Alternatives																								
2040 Traffic Volume Forecasting																								
2040 Traffic Volume Analysis																								
Transportation Plan Recommendations																								
Report & Methodology																								



Indicates Public Meeting

Indicates Working Meeting

Questions?



Contacts for additional questions
or to provide comments:

Zach Harris

Michael Baker International

804-287-3169

zharris@mbakerintl.com

or

Rob Williams

VDOT Central Office

804-371-4868

robertj.williams@vdot.virginia.gov