



STARS PROGRAM OVERVIEW

STARS

STRATEGICALLY TARGETED AND
AFFORDABLE ROADWAY SOLUTIONS

February 10, 2016

*Integrating Transportation Planning, Project
Development, and Project Programming*

PRESENTATION OUTLINE

- What is the STARS Program?
- How can STARS Help You?
- Example STARS Project
- Next steps



**Strategically Targeted and Affordable
Roadway Solutions**





WHAT IS THE STARS PROGRAM?

Program to develop solutions to reduce crashes and congestion bottlenecks using a data-driven approach

Crash hotspots
Speed data
AADT data

}

Use this information together to identify corridors with safety and congestion challenges

Overall goal of STARS is to develop solutions that can be programmed in the VDOT Six-Year Improvement Program (SYIP)

STARS BRIDGING THE GAP

- Planning linked to operations/ITS, safety and design
- Designers engaged early in the planning process
- Project risks identified
- Readiness improved for project implementation

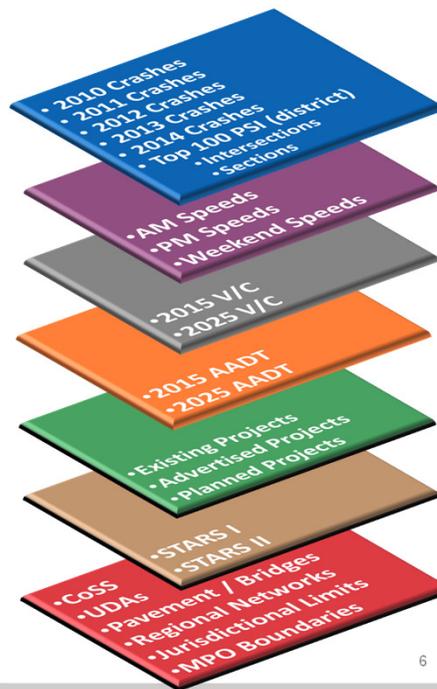
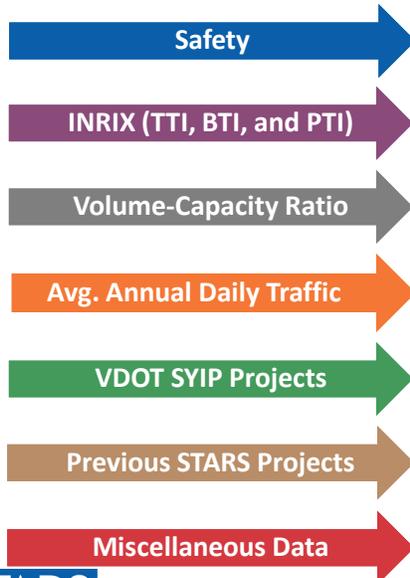
Estimates ↔ Budgets

Schedules ↔ Deadlines



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WHAT DATA IS AVAILABLE?



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STARS PROJECT DEVELOPMENT CORRIDOR CRITERIA

Category	Indicator	Measure	Criteria	
Planning Designations	Corridor Length	Yes/No	0.5 - 10 miles	
	Located on CoSS	Yes/No		
	Corridor Location	Urban/Rural		
	Future Improvements Identified		Yes/No	SYIP Project
			Yes/No	In Long Range Transportation Plan
			Yes/No	In State Highway Plan
		Yes/No	NEPA Study	
Safety	Historic Crash Pattern		Approximate number of crashes	
	PSI Rating - Segment	Rank		
	PSI Rating - Intersection	Rank		
Operations	V/C Ratio		Percentiles	
	Travel Time Index		Percentiles	
	Planning Time Index		Percentiles	
	Buffer Time Index		Percentiles	
District Coordination	Corridor Already Studied	Yes/No	What type of study conducted	
	District Identified Problems	Yes/No	Description of problems/concerns	
	District Administration Support	Yes/No		
	Local / MPO Support	Yes/No		
	Funding Identified	Yes/No	Source(s)	
	Economic Development Impact	Yes/No	Supporting details needed	



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WHY IS STARS IMPORTANT TO YOU?

- Prepares a source of current data
- Develops solutions that can be funded in the SYIP
 - HB2, HSIP, CMAQ, RSTP, Revenue Sharing
- Improves accuracy of cost estimates and schedules



The screenshot displays the 'All Projects' search results page in the STARS system. It includes a search bar with filters for District, Jurisdiction, Residency, and Road System. Below the search bar, a table lists project details such as ID, Description, Road System, Estimate, and Percentiles. The table shows various projects like 'VIRGINIA CAPITAL TRAIL - WESTERN SECTION' and 'LANDSCAPE INTERSTATE 66 SP-TOWNS INTO THE CITY OF RICHMOND'.



REVIEW POTENTIAL PROJECT CORRIDORS



THE STARS TEAM

VDOT Districts and Residencies

- Coordinate with localities, MPOs, and PDCs
- Submit STARS applications
- Lead STARS projects
- Coordinate with consultant team

VDOT Central Office

- Provides program oversight, data analysis, and application review

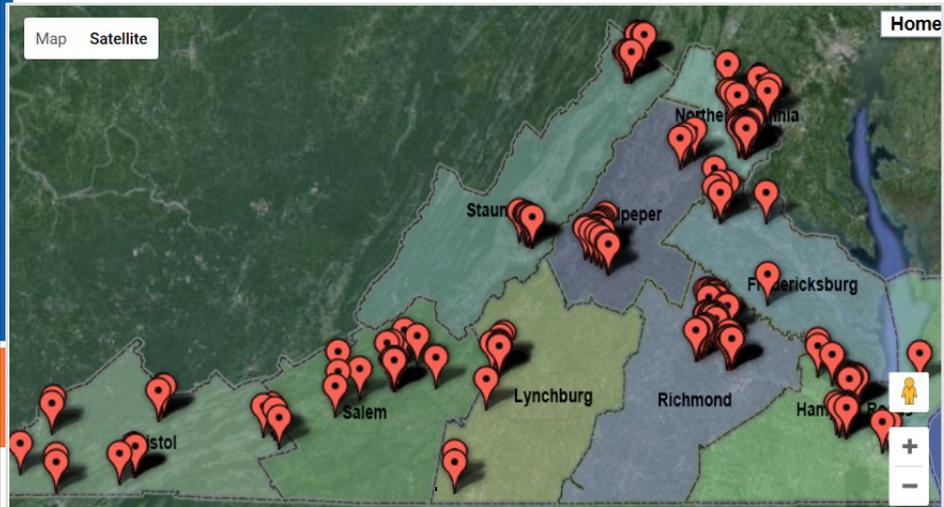
Consultants

- Provide project support



Kimley»Horn **PARSONS BRINCKERHOFF**

STARS PROJECTS



LYNCHBURG EXPRESSWAY (US 29 BUS)

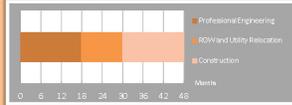
- 4.5 miles of limited access highway
- 10 interchanges / 41 ramps / 23 intersections
- Built in phases between 1950s and 1970s
- City of Lynchburg
- Liberty University
- Traffic analysis tools used
 - CORSIM
 - Synchro



STARS PROJECT SUMMARIES

CONCEPT C – CANDLERS MOUNTAIN ROAD AUXILIARY LANES AND RAMP REALIGNMENT INSTALL AUXILIARY LANES AND REALIGN NORTHBOUND ENTRANCE RAMP AT CANDLERS MOUNTAIN ROAD INTERCHANGE

Preliminary Engineering	\$1,200,000
ROW and Utility Relocation	\$300,000
Construction	\$14,720,000
Total Cost =	\$16,220,000



PROJECT DESCRIPTION

- The proposed improvement includes constructing a 600-foot northbound Lynchburg Expressway auxiliary lane between the entrance ramp from a southbound Candler Mountain Road and the exit ramp to westbound Candler Mountain Road, constructing a 700-foot southbound Lynchburg Expressway auxiliary lane between the entrance ramp from westbound Candler Mountain Road and the exit ramp to southbound Candler Mountain Road, and realigning the northbound Lynchburg Expressway entrance ramp from westbound Candler Mountain Road to increase the curve radius and meet the minimum AASHTO recommended design length.
- The improvement includes replacing the Candler Mountain Road bridge.

PROJECT BENEFITS

Safety Measures	
Total Crashes* (2010 – 2012)	88
Crash Reduction Factor	75 (all crash types, all severities)
20-Year Safety Savings	\$24,092,135
*Number of annual vehicle miles of travel on the proposed improvement	



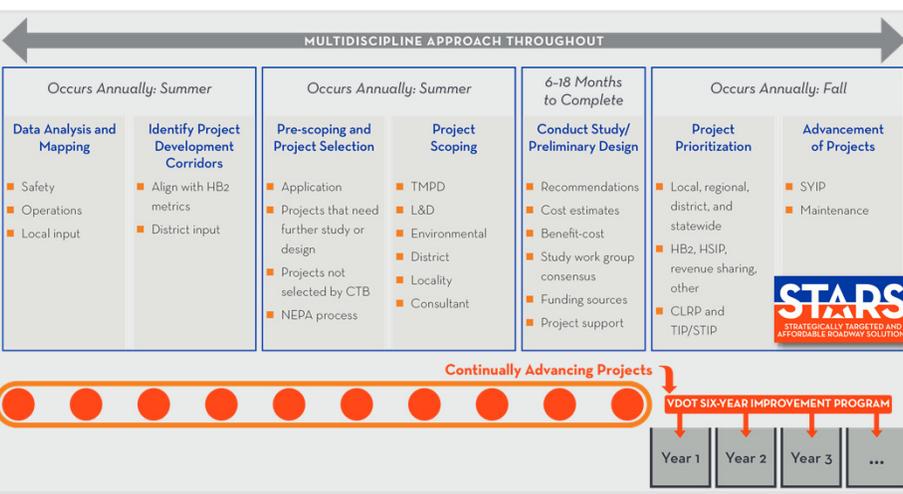
Traffic Operations Measures	
2040 No Build Travel Time*	114.30 sec
2040 Build Travel Time*	113.61 sec
Δ Travel Time	-1.29 sec
20-Year Operations Savings	\$194,790
*Total of AM and PM travel times in the influence area of the proposed improvement	



Constructing the northbound and southbound Lynchburg Expressway auxiliary lanes at the Candler Mountain interchange will improve safety by providing longer acceleration and deceleration distances for vehicles merging onto and off of the Lynchburg Expressway. In addition, realigning the northbound Lynchburg Expressway entrance ramp from westbound Candler Mountain Road will allow vehicles to reach a higher speed before merging onto the Lynchburg Expressway.

B/C: 1.46

STARS PROJECT DEVELOPMENT CYCLE



NEXT STEPS

- STARS 2016 annual study cycle
- Coordinate with VDOT District Planner

- Contact Samuel W. Hayes, PE

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(804) 896-3762 – mobile
Samuel.Hayes@VDOT.Virginia.gov



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QUESTIONS?

The screenshot shows the VDOT website's STARS project page. At the top, there is a navigation menu with links for 'Home', 'Projects', and 'STARS'. Below this, there are links for 'Travel Center', 'Newsroom', 'Info Center', 'Business Center', 'Programs', and 'Projects & Studies'. A search bar is located on the right side of the page. The main content area features a section titled 'STARS' with a description of the program's objectives and a list of key activities. To the right of this text is a circular diagram titled 'STARS Project Stakeholders' that includes 'Planning', 'VDOT Localities', 'Travel/TTS', 'Safety', 'Roadway', 'Bridge', 'Environmental', and 'Maintenance'. The diagram also mentions 'HPO/URDCs' and 'Federal Highway Universities'.

http://www.virginiadot.org/projects/stars_ii.asp

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