

**VIRGINIA DEPARTMENT OF TRANSPORTATION**

**TRANSPORTATION AND MOBILITY PLANNING DIVISION**

**INSTRUCTIONAL AND INFORMATIONAL MEMORANDUM**

GENERAL SUBJECT: Strategically Targeted Affordable Roadway Solutions (STARS)	NUMBER: IIM-TMPD-3.0
SPECIFIC SUBJECT: The STARS program is designed to identify timely and cost-effective solutions to relieve critical highway safety and congestion problems. This policy memorandum outlines the process for evaluating needs and developing recommendations for STARS improvements.	DATE: 9/5/2019
	SUPERSEDES: N.A.
APPROVED:  Marsha Fiol State Transportation Planning Director Approved September 5, 2019	

---

**EFFECTIVE DATE**

- 
- This guidance is effective on the date of the signed approval, above.
- 

**IMPORTANT Abbreviations and Definitions:**

**Abbreviations:**

**APN** Arterial Preservation Network  
**CTB** Virginia Commonwealth Transportation Board  
**DRPT** Virginia Department of Rail and Public Transportation  
**FHWA** Federal Highway Administration  
**IIM** Instructional and Informational Memorandum  
**MPO** Metropolitan Planning Organization  
**PDC** Planning District Commission  
**R/W** right(s) of way  
**STARS** Strategically Targeted Affordable Roadway Solutions  
**STIP** Statewide Transportation Improvement Program  
**SYIP** Six-Year Improvement Program  
**TDM** Transportation Demand Management  
**TMPD** Transportation and Mobility Planning Division  
**TIP** MPO Transportation Improvement Program  
**VDOT** Virginia Department of Transportation

**Definitions**

---

---

**Framework Document:** This document defines the study roles and responsibilities for VDOT and the Localities. It includes the requirements for public involvement and a commitment from the Locality to seek or apply for transportation funding for implementing the recommended STARS improvements.

**Locality:** A "Locality" or "local government" means a county, city, or town as the context may require. (the Code of Virginia - § 15.2-102.)

**Planning Studies:** This term includes all activities to collect and analyze information and data, determine needs, evaluate transportation alternatives, identify solutions and estimate the costs for transportation improvement recommendations. This includes any activities, facility operational analyses, or evaluations of transportation alternatives prior to the assignment of a project UPC. For the purposes of this IIM, the terms the plan or the study are interchangeable and refer to any study that is conducted or administered by VDOT.

**Stakeholder:** This term includes: local residents, property owners, and business owners, state and local elected leaders, homeowners' associations, civic groups, advocates for transportation modes, as well as people who use the travel corridor regularly and may be impacted by the proposed transportation improvement.

**STARS/Study Team Manager:** The VDOT staff person designated to manage a STARS transportation planning study from inception to completion. The study team manager will work with the District staff, the Locality and others to develop the framework for the STARS study process. The study manager is responsible for ensuring (1) that the study addresses any issues that may arise, and (2) the work proceeds on time and within budget. In this IIM, the terms the STARS Team or the study team are interchangeable.

**The Public:** This term refers to local residents and other stakeholders who may have a vested interest in the planning study and the recommendations.

---

## **PURPOSE AND OVERVIEW**

---

The purpose of the STARS (Strategically Targeted Affordable Roadway Solutions) program is to provide a continuous stream (a "pipeline") of cost efficient improvement recommendations that are eligible for programming/funding in VDOT's Six Year Improvement Program (SYIP).

The objective of the STARS program is to evaluate transportation needs, and develop innovative transportation solutions to relieve congestion and solve critical traffic and safety challenges throughout the Commonwealth. These solutions must be timely and cost-effective safety and/or congestion improvements

STARS recommendations are data driven, i.e. the recommendations are based on information and data collected for a site where traffic congestion (and crashes) occur frequently and this congestion

creates a bottleneck in the travel corridor. The information and data is evaluated based on accepted analytical practices for transportation planning and traffic operations.

VDOT's Transportation and Mobility Planning Division (TMPD), is responsible for oversight of the STARS program and provides guidance to each District STARS Study team. The TMPD Conceptual Planning Program Manager is the lead point of contact for the STARS program, and the general STARS studies process. Since the STARS program is a data driven process, TMPD provides the STARS data analysis and review to ensure quality and consistency. TMPD's participation also includes providing GIS mapping layers with technical information, such as; Statewide Planning System information, traffic data, travel time index (TTI) volume/capacity ratios, etc. TMPD also provides administrative oversight of the consultants who perform work on STARS planning studies.

Each District STARS Study team will include representatives from transportation planning, traffic engineering, roadway design and the Residency office. These VDOT representatives along with local and regional stakeholders will jointly identify cost-effective measures for improving safety and reducing congestion. FHWA and other VDOT disciplines such as Bridge, Environmental, and Right of Way, may be called on to participate when needed. This is illustrated in Figure 1 below.

**FIGURE 1**

# STARS Stakeholders



Statewide Planning and Research (SPR) funding is typically used to fund the STARS studies which identify, evaluate, plan, and conceptually design improvements that can be included as

projects in the Six Year Improvement Program (SYIP). When STARS studies result in multiple recommendations for improvements eligible for funding and implementation, the recommendations must be prioritized and function independently.

The following section on “PROCEDURES” contains instructions and information on the development of STARS program recommendations. The STARS development process will provide a continuous pipeline of transportation improvement recommendations for inclusion in the SYIP for implementation.

---

## **PROCEDURES**

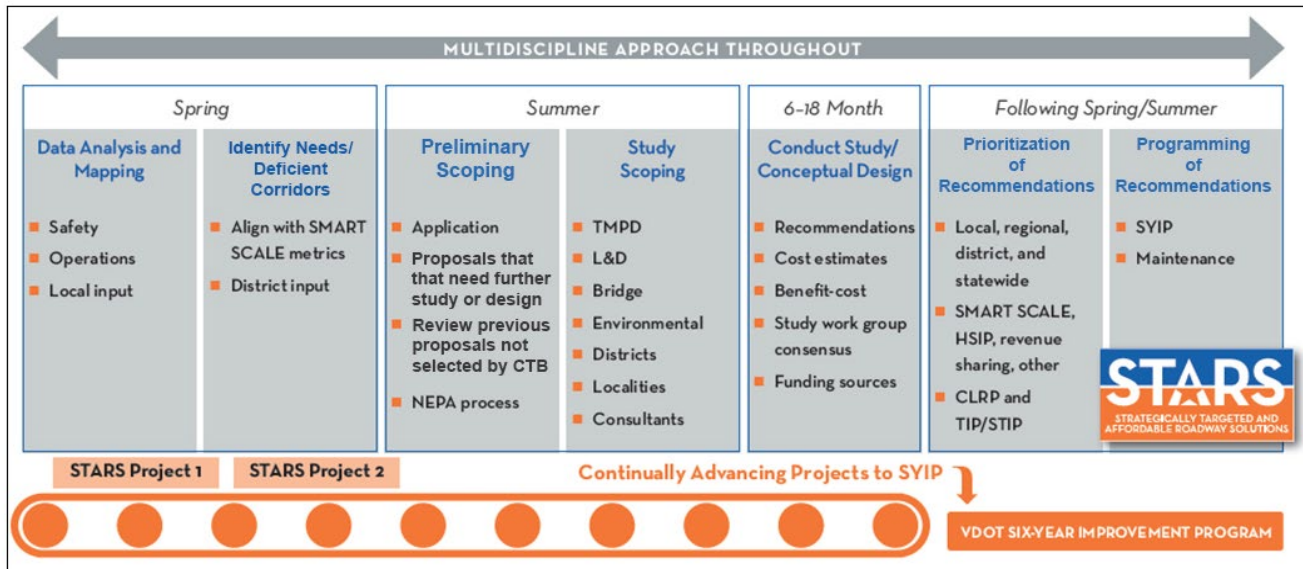
---

- **The District STARS Study Team:** The VDOT District Planning Manager serves as the manager for the District’s STARS Study Teams (STARS Team). (Exceptions to the management assignment are addressed on a case-by-case basis and are approved by the TMPD Conceptual Planning Manager). The STARS Team manager is responsible for the STARS study process and for making certain that the staff and stakeholder members listed earlier in this policy have the opportunity to participate in the studies. The STARS Team manager is responsible for a timely process, coordination of all activities including coordination with all disciplines within VDOT, as well as the coordination with other stakeholders, localities, MPOs, PDCs and FHWA.
- **The STARS Study Process:** The study process for developing STARS improvement recommendations is continuous, with newly identified needs being considered annually. The study process is funded each year when planning funds are included in an annual planning work program. TMPD administratively coordinates the funding of the upcoming fiscal year’s planning work activities. The planning work program includes the STARS studies that may be performed by VDOT staff, local/regional agency staff and consultants (working at the direction of the aforementioned agency staffs).
- The STARS study process begins with the identification of the critical safety and congestion locations to be considered and evaluated during the current annual cycle. A STARS study is often initiated by a request for VDOT to examine a congestion or a potential safety problem on a travel corridor. These requests may come from local residents, elected officials and other stakeholders. Following the identification of the need or deficiency, the STARS Team will review the potential safety/congestion needs on a travel corridor for consistency with the Locality’s Comprehensive Plan, VTrans, and the State Highway Plan. This review will include any previous studies or recommendations for the corridor.
- TMPD provides the STARS Team with related data analysis for the initial step in developing a proposed STARS study and reviews the STARS application. **NOTE:** *The information provided by TMPD may include TMPD’s GIS mapping, traffic count data, traffic crash data, corridor length, the potential for safety improvement (PSI) rankings – for intersections or specific segments, Travel Time Index (TTI) for am/pm weekdays, Planning Time Index (PTI) for am/pm weekends, buffer time index (BTI) as well as other*

data or related information. TMPD will also provide administrative oversight of the consultants who perform in STARS studies.

- The STARS program annual development cycle is shown in Figure 2 below;

**FIGURE 2**



The basic steps of the STARS study development process are as follows:

- The District STARS Team: Identifies the transportation needs/network deficiencies, sets the study limits (segments/intersections/interchanges, etc.), collects needed information and data on the deficient location(s), evaluates the deficiencies, recommends potential solutions along with preliminary cost estimates, identifies priorities, and submits a STARS Application to TMPD for review.
- The STARS Review Committee: Typically includes: TMPD, TED, L&D representatives and a District Staff member. This committee reviews the STARS Application, determines if the improvement recommendations meet the intent of the STARS program, refines and right sizes the recommendation(s), confirms its readiness and costs.
- The STARS Selection Committee: Includes: TMPD, TED and L&D representatives. The selection committee determines if the improvement recommendations are appropriate for the STARS program, ranks the proposals by priority and determines which study recommendations can be funded in the annual cycle.
- TMPD assigns the study/studies to an on/call consultant (On/Call) to develop a \*Framework document for a specific study. The District STARS Teams is notified that study is to move forward and the STARS Study Team is responsible for managing the study. Note: the \*Framework document defines the 'On/Call' contract work, as well as the inputs that will be provided by VDOT, other State Agencies and Localities.
- The District STARS Team works with the On/Call to meet with and share the Framework document with the localities and get their concurrence to the provisions and participation in

the study, and meet with stakeholders to share information. Refine the study based on input from localities and stakeholders.

- Hold public information meetings in accordance with VDOT's policies to inform the stakeholders of the study and the recommendations – **see IIM-TMPD-004 on Public Involvement for more details.**
  - Build stakeholder consensus.
  - Develop reliable cost estimates.
  - Identify potential benefits versus costs.
  - Prepare information to be used to populate SMART SCALE or other funding applications for review, prioritization and possible selection (by the CTB) for inclusion in VDOT's Six Year Improvement Program.
  - Track implementation.
- Information for the STARS study should include the following:
    - An inventory of the current geometrics, traffic control devices, current traffic volumes and a review of any previous studies or recommendations for the site.
    - Safety, congestion and traffic operational needs and data are assessed based on procedures outlined in VDOT's Traffic Operations and Safety Analysis Manual (TOSAM), VDOT's Travel Demand Modeling Policies and Procedures and IIM-TMPD-2.0, as applicable. The analysis should include information on:
      - Traffic volumes (typically the AM & PM peak hours) and traffic crash history
      - Traffic speeds (during peak periods and off peak)
      - Traffic congestion, and delays
      - Previous transportation planning studies including STARS studies
      - Highway projects underway, advertised or planned that relate to this study area
      - Other information (VTrans, Corridors of Statewide Significance, as well as local & regional plans, Urban Development Areas, regional transportation plans and networks, etc.).
    - The location(s), type(s) and extent of safety and/or congestion improvement need(s) are mapped using GIS layers, and GIS overlays that identify the highway corridors appropriate for STARS projects.
    - A STARS study/preliminary design recommendation is developed to respond to the congestion and/or safety needs. The recommendation should be a timely, cost-effective solution, which includes the benefits, risks, cost and schedule along with other requirements (NEPA documentation, permits, planning and/or programing status).
- A STARS improvement recommendation may be eligible for implementation under various funding sources depending on project type. Funding sources potentially include applications using the SMART SCALE\* process for state high priority projects or highway construction district grants, applications for the Highway Safety Improvement Program (HSIP)\*, State of Good Repair budgets, Transportation Alternatives Program (TAP)\*, MPO related Regional Surface Transportation Block Grant Program (RSTP)\* or Congestion Mitigation and Air Quality program (CMAQ)\*, and/or applications for Revenue

Sharing\*. The Locality may also fund the STARS improvements through regional funds or other funds available to the Locality.

- Those funding programs listed above and marked with an “\*” require some level of locality participation or support. Since most funding sources require the locality’s support in some way, the locality’s commitment early in the STARS effort is critical.

These basic steps are shown in the flow chart in Figure 3 below.

**Figure 3**



---

## **NOTES**

---

- *The SMART SCALE program uses a biennial process. The STARS studies should be developed to synchronize with SMART SCALE program timeline. The studies should be scheduled so that they are completed prior to the time that the SMART SCALE funding application period re-opens under its biennial cycle.*
- 

## **REFERENCES**

---

- I. VDOT's website summarizing the VDOT STARS program is at:  
<http://www.virginiadot.org/projects/stars.asp>
- II. VDOT's policy on conducting corridor planning studies and developing Arterial Management Plans: [http://www.virginiadot.org/Corridor\\_Planning\\_Studies-Arterial\\_Management\\_Plans.pdf](http://www.virginiadot.org/Corridor_Planning_Studies-Arterial_Management_Plans.pdf)
- III. VDOT's Design Guide for Innovative Intersections and Interchanges:  
[http://www.virginiadot.org/info/alternative\\_intersection\\_informational\\_design\\_guides.asp](http://www.virginiadot.org/info/alternative_intersection_informational_design_guides.asp)
- IV. Presentations regarding the STARS program and its study recommendations for relieving highway safety and/or congestion needs are available at:
  - [http://www.virginiadot.org/projects/resources/2016PlanningProgramming/5\\_STAR\\_S\\_Update.pdf](http://www.virginiadot.org/projects/resources/2016PlanningProgramming/5_STAR_S_Update.pdf)
  - <http://www.virginiadot.org/projects/resources/2016PlanningProgramming/STARS-handout-Feb2016-v5.pdf>.
- V. TMPD Public Meeting Requirements:
  - TMPD IIM-004 – Public Participation in Virginia's Transportation Planning Activities
  - [http://www.virginiadot.org/projects/resources/Public\\_Participation\\_in\\_Transportation\\_Planning\\_and\\_Programming\\_Process.pdf](http://www.virginiadot.org/projects/resources/Public_Participation_in_Transportation_Planning_and_Programming_Process.pdf)

---

## **EXTRA NOTES:**

STARS STUDY PROCESS – Additional details



- The Process for conducting studies on the Arterial Preservation Network (IIM- TMPD-2.0 should be followed when there are several STARS locations in proximity to each other on the same corridor.
- The STARS studies for individual intersections or a few locations should follow these general steps:
  - The Initiation of the STARS study process requires establishment of a STARS study team, its specific members (I.E.: the study manager with members including Planning, PE, Traffic, TMPD, FHWA, Local, Regional, and /or Transit representatives), and the purpose and need of the study which will include a clear articulation of the focus areas and issues, approach and goals of the study.
  - The STARS study team will set out the **study scope** including the:
    - Study limits with segments/intersections/interchanges
    - Whether it's a continuation of improvements to a corridor
    - Horizon year
    - Analysis period (AM/PM)
    - Analysis tool(s)-HCS, SYNCHRO, VISSIM, etc.)
    - Number of alternatives
    - Limit to run through planning level Screening
    - Limit to conduct detailed analysis
    - Detailed analysis will generally be limited to max of 3 alternatives (where the planning level screening and decision matrix should be used to narrow range of alternatives to conduct detailed analysis)
    - Data collection needs
    - Traffic counts
    - Safety data information
    - Local comp plan, zoning, parcels, development, etc.
    - Level of PE work needed (PE work should be limited to those items that are deemed critical and at risk to significantly impact: 1) construct-ability or 2) cost estimate)
    - Cost estimation- planning unit cost or PCES (If limited PE work, then unit cost will be used)
    - Identification of potential funding sources
    - Deliverables, and anticipated project timeline of milestones and target start/end dates for study.
  - The decisions and documentation from the above are sent to the STARS consultant team.
  - The STARS consultant team prepares a draft Project Framework document.
  - A “kickoff meeting” is held by the consultant with the STARS study team to review and adjust, as needed, the following: Draft Framework; STARS study team representatives (External- Local, Regional, Transit); and the many study scope parameters listed in the initial step. The group will discuss and document data and information already available that can support study. The meeting will identify who will provide what by when: Studies/traffic data; Mapping/GIS; Current and Future Comp plan, zoning, local improvement plans, land development activities- approved and pending within and adjacent to study area.
  - A study timeline will be agreed on, establishing start/end dates for study and key milestones in-between. Meetings will be held at key decision points - typically 3-5 times throughout study – but this does not include framework related meetings (if

applicable). Any plan to exceed 5 study group meetings must get prior approval from TMPD prior to the second meeting. The STARS Team manager will review all meeting materials prior to the meetings.

- Briefing materials for the Study Work Group (the consultant and the STARS study team) will be developed in such a manner that they double for use in outreach to local board/council and the general public. The local/regional stakeholders (MPO/PDC representatives) will take the lead on outreach to local elected officials and the public during the course of the study.
- Finalize and approve the Framework Document
- Develop and finalize detailed Statement of Work and execute study contract
- Initiate the STARS Study

----- End of Document -----