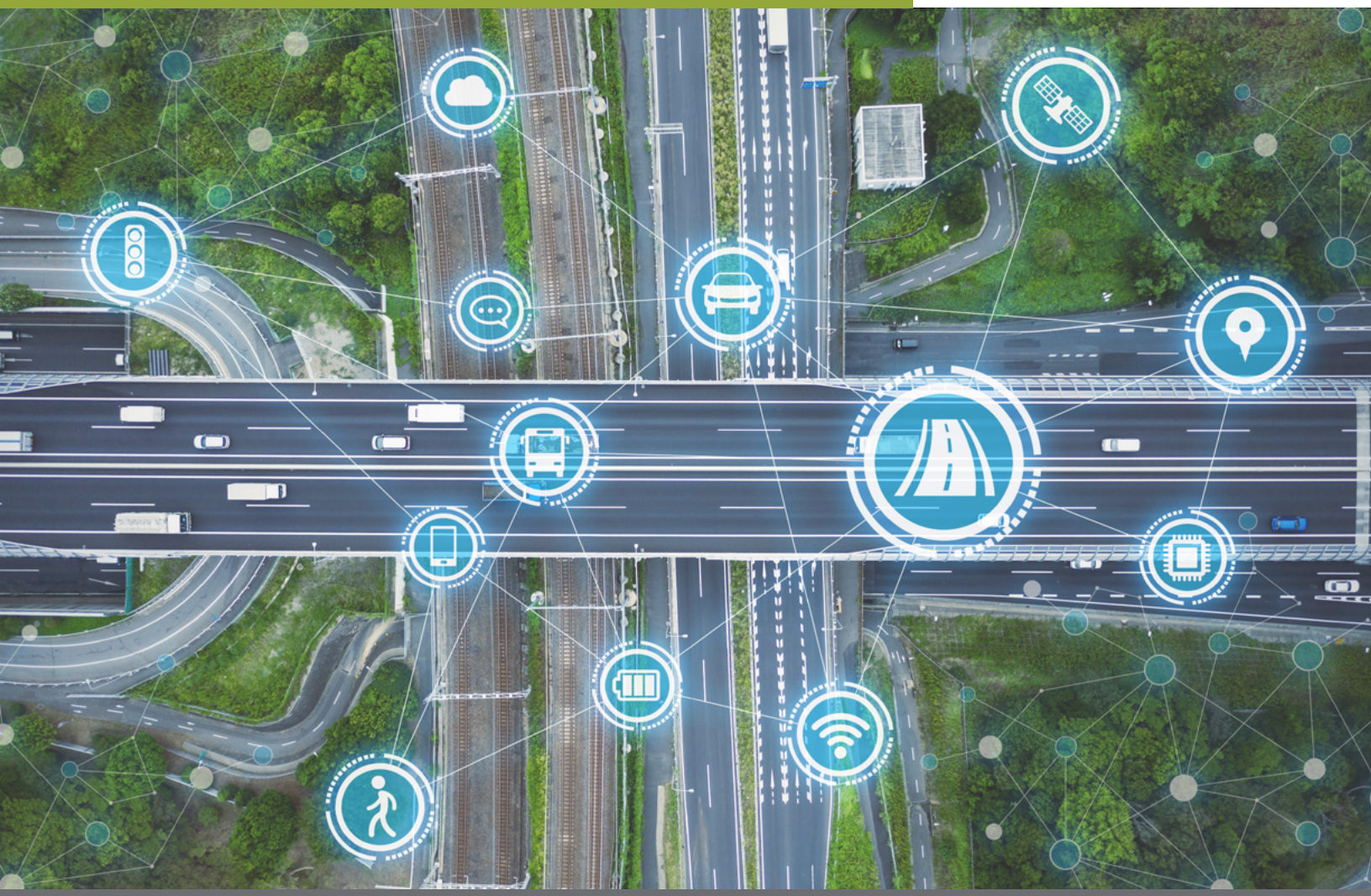
Program Guide 2025-2026

PROJECT PIPELINE

Planning for Performance



DRPT

Office of INTERMODAL Planning and Investment

VDOT

JANUARY 2025

FOR MORE INFORMATION

Visit vaprojectpipeline.virginia.gov for additional details, updates, and documentation about the Project Pipeline planning program. Please contact the Project Pipeline Program Team at the Office of Intermodal Planning and Investment (OIPI) to request an alternative format.

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For information regarding the initiation of the program by the Commonwealth Transportation Board (CTB), including presentations and resolutions, please visit the following links.

CTB Resolution – March 17, 2021
CTB Resolution – December 8, 2021

Public and agency involvement is an integral part of the CTB's policy development process. This Program Guide documents relevant CTB policies as of the writing and composition of the guide. Any comments and feedback related to Project Pipeline policies will be considered for future modifications of the program.

List of Acronyms/Abbreviations

CTB – Commonwealth Transportation Board
DMV – Virginia Department of Motor Vehicles
DRPT – Virginia Department of Rail and Public Transportation
L&D – Location and Design
MOE – Measure of Effectiveness
MPO – Metropolitan Planning Organization
NEPA – National Environmental Policy Act
OIPI – Office of Intermodal Planning and Investment
PDC – Planning District Commission
SWG – Stakeholder Working Group
STARS – Strategically Targeted Affordable Roadway Solutions Program
TMPD – Transportation and Mobility Planning Division
VDOT – Virginia Department of Transportation
VTrans – Virginia's Multimodal Surface Transportation Plan

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APPENDICES

Office of Intermodal Planning and Investment

The Office of Intermodal Planning and Investment (OIPI) is located within the Office of the Secretary of Transportation and was created in 2002 to support and advise the Secretary in his/her role as chairperson of the Commonwealth Transportation Board (CTB).

The goals of OIPI are to promote transparency and accountability of the programming of limited transportation funds; to ensure that the Commonwealth has a multimodal transportation system that promotes economic development, intermodal connectivity, environmental quality, accessibility for people and freight, and transportation safety; to encourage the use of data driven best practices to improve the efficiency and effectiveness of the Commonwealth's surface transportation network; and to promote the coordination between transportation investments and land use planning.

OIPI takes a leadership role across four key steps within the performance-based planning and programming process:

- **Plan** – Conduct statewide planning by establishing vision, goals, and objectives; identify and prioritize multimodal transportation needs; identify impacts of trends and establish long-term risks and opportunities; analyze and prioritize freight movement-related considerations; and build local capacity by providing technical assistance to promote OIPI's goals.
- **Develop** – Identify cost-effective solutions to multimodal transportation needs which can compete for funding through statewide programs.
- **Invest** – Prioritize capacity, operations, and transportation demand management (TDM) investments to improve and strengthen the network.
- **Manage** – Monitor and evaluate performance of investments to ensure progress is being made and allow for course corrections.

In this role, OIPI collaborates with the Virginia Department of Transportation (VDOT) and Virginia Department of Rail and Public Transportation (DRPT) and engages stakeholders and the public to conduct planning studies and technical analyses, prioritizes investments, and tracks system performance.

INTRODUCTION: PURPOSE OF THE PROGRAM GUIDE

This Program Guide outlines the policies and procedures related to Project Pipeline, Virginia's performance-based planning program established by the CTB. The Program Guide is intended to document the processes, procedures, and roles and responsibilities of study partners at the state, regional, and local levels.

The Program Guide is also meant to serve as a resource for planners, engineers, other professionals, and the public interested in the processes, data sources, and methods used for planning, funding, and programming transportation solutions.

CHAPTER 1:
PROJECT PIPELINE BACKGROUND AND PURPOSE

Background

In 2018, the CTB adopted a resolution requiring the Commonwealth's advanced planning and project development activities for capacity expansion projects to be linked to Virginia's Multimodal Surface Transportation Plan (VTrans) Priority 1 locations. The CTB initiated a series of pilot studies funded by OIPI and VDOT in 2019 and formally initiated the Project Pipeline program, including a provision to include VTrans Priority 2 locations, in the spring of 2021. $6 million of pre-scoping funding is set aside annually to fund the program and studies that consider a wide range of multimodal options to address identified VTrans needs.

The Project Pipeline program is managed by OIPI. The program formalizes the connection between VTrans and programming and mandates the inclusion of key stakeholders in every study.

Program Goals and Objectives

Project Pipeline is designed to develop a steady stream, or pipeline, of high-priority projects through efficient studies that feed into Virginia's statewide prioritization processes. The objective of the program is to conduct studies across the Commonwealth with a focus on the priority locations and corridors that were adopted during Virginia's statewide VTrans process. This process is a comprehensive assessment of transportation needs and long-term risks and opportunities to guide Virginia's transportation future. The Project Pipeline program is directed by applicable guiding principles from VTrans – to optimize return on investment; consider operational improvements and demand management first; and improve coordination between transportation and land use. To learn more about VTrans needs and priorities visit vtrans.virginia.gov.

The Project Pipeline program:

- Focuses on the multimodal priorities established by the CTB;
- Streamlines project planning and improves project readiness to ensure that needs are understood before offering solutions;
- Develops and refines tools that make use of powerful data and improve collaboration;
- Identifies investment strategies that solve more problems with limited state transportation funds and resources; and
- Standardizes a performance-oriented and multidisciplinary approach.

The goal of Project Pipeline is to provide a clear connection between the CTB's VTrans priorities and Virginia's project development and prioritization processes. In order to accomplish this goal, the Project Pipeline program works to improve access to travel and safety data and develops tools to better understand how to solve transportation problems. The program also seeks to strengthen the Commonwealth's collaboration with local governments and regional planning organizations while developing potential solutions. The studies are intended to develop into projects, solutions, and investment strategies that may be considered for statewide funding programs such as SMART SCALE, Revenue Sharing, and Virginia Highway Safety Improvement Program (HSIP), as well as regional and local funding sources. The Project Pipeline program streamlines the project planning and development process, which improves project readiness and better manages project risks.

Project Pipeline fits within the overall performance-based planning and programming cycle that has been established through the SMART SCALE and VTrans programs to form a comprehensive planning, performance, and funding effort across the Commonwealth.

Continuous Program Improvement

The 2021–2022 cycle was the inaugural round of the Project Pipeline program. OIPI continues to further develop the appropriate functions and operations of the program and define the roles and responsibilities of study partners. The following additional goals and objectives are also considered:

- Assess the capacity to conduct studies
- Implement best practices to improve efficiency
- Establish a policy that can be carried forward into future years
- Measure the funding success rate of identified solutions
- Develop a relationship and synergy with other statewide planning study programs (e.g., STARS, Arterial Management Plans, etc.)

Lessons learned and best practices are developed through extensive stakeholder review and input and are incorporated into the processes and information documented in this guide. Since implementing the Project Pipeline program, information has been collected to identify potential improvements to the program's processes, data resources, project selection, schedule, documentation, and training. The Program Guide will be updated as necessary to reflect policy changes and procedural improvements.

CHAPTER 2:
STUDY SELECTION PROCESS

Consistent with CTB policy, the identification and selection of study locations begins with Priority 1 and 2 locations identified as part of the VTrans process. The objective of the study selection process is to focus limited statewide planning funds on the most critical needs for study in each district that are also supported locally for funding pursuits. Additional information on the VTrans prioritization process is available on the VTrans Mid-term Needs and Priorities webpage at vtrans.virginia.gov/mid-term-planning/mid-term-needs-and-priorities.

Biennial Cycle

The focus of the Project Pipeline program is to prepare projects for all federal, state, regional, and local funding sources. However, it is recognized that Virginia's SMART SCALE process is the main investment strategy for many local jurisdictions and transit agencies. As such, the Project Pipeline study cycle is integrated into SMART SCALE's biennial schedule.

Project Pipeline studies are selected following validation and scoring of the SMART SCALE funding year to allow for the main study efforts to occur in the SMART SCALE "off years," currently during odd-numbered years. Preferred alternatives are identified prior to the April 1st pre-application deadline and the studies are completed to meet readiness requirements on or before the August 1st full application deadline of even-numbered years.

District Study Selection Process

OIPI works with VDOT, DRPT, and the CTB to identify study candidates for CTB approval. The number of studies selected per district during any given round varies based on each district's needs and capacity to support the Project Pipeline program. Studies are intended to follow one of two approaches:

1. A new study to identify projects and solutions that address the priority needs at a given location.
2. A value-engineering approach to previous recommendations or proposed projects to develop alternative or revised solutions that meet core needs in a more cost-efficient or effective manner and will improve competitiveness for funding.

The following criteria should be utilized to screen candidate studies for eligibility:

- VTrans Statewide and Construction District Priority 1 and 2 Locations (see InteractVTrans MapExplorer)
- Locations that do not have currently funded Six-Year Improvement Program Projects; previous unsuccessful application projects are eligible for consideration of a performance-based planning study to improve the competitiveness of identified solutions
- Corridors or intersections not recently (within the last three to five years) studied through the STARS Program, an Arterial Management Plan, or other district- or state-level studies

Additional factors and input that may be included in the final selection process for each study include:

- Locality concurrence for the study and the willingness to apply for funding to achieve the proposed solutions.
- Input from the district CTB member on the importance of the study for the district and local area.
- A combination or bundling of several need locations in close proximity to form logical termini and cover key corridors, segments, and intersections.

After receiving support from local jurisdictions, final study locations are agreed upon by the District Planning Managers, District Administrators, CTB members, and OIPI before proceeding in Project Pipeline.

Additional Selection Criteria

Additional criteria are considered for district selections, including:

- Recommendation of one study location in each district that is not a VTrans Priority 1 and 2 location by CTB members.
- Consideration of locations that may have at least one Priority 1 need in a specific category within the district, such as safety, congestion, or multimodal access.
- Consideration of local input where available data suggests emerging needs have not yet been captured by VTrans, such as planned development, recent crash trends, or shifting travel demand patterns that are creating an immediate concern.

Available funding for study and project implementation may also shape future decisions regarding the number of studies included in each cycle.

CHAPTER 3:
ROLES & RESPONSIBILITIES

Key Roles & Leadership

Project Pipeline studies are intended to be:

1. ***Planning-led*** – District Planning Staff serve as Project and Study Managers to guide the overall process from study selection through to the submission of investment applications to ensure consistency and focus on the performance-based planning approach and addressing the core needs of each study. In the event a study is primarily focused on transit, DRPT staff will take lead responsibility in guiding the study and coordination with local and regional stakeholders.
2. ***Multidisciplinary*** – Study teams include technical staff and resources to incorporate feedback from various perspectives, such as planning, traffic operations, roadway engineering, and communications, throughout the process.
3. ***Collaborative*** – By bringing together multiple state agencies with the internal and external technical resources to engage with localities and other stakeholders to develop solutions, the objective is to identify and advance the multimodal projects that address the priorities and needs of the transportation system.

Several key roles and responsibilities are critical to meeting the study objectives and to the overall success and final outcomes of each study. Staff assignments are developed at the start of each study and generally include:

- **OIPI Staff** – OIPI staff lead the Project Pipeline program and provide guidance to VDOT District Planning Project Managers and Consultant Team Managers, ensuring that the studies are aligned with the program's guidelines and statewide consistency of the study planning process.
- **Program Management Team** – The Program Management Team includes OIPI staff and key members of the Consultant Team that provide overall support for the program.
- **VDOT District Planning Project Manager** – The District Planning Sections are responsible for preliminary studies, as well as supporting and guiding applications to federal, state, regional, and local funding sources. The VDOT District Planning Project Manager is responsible for leading and managing the selected studies from initiation through the completion of all final phase preliminary design work and investment applications.
- **Consultant Team Manager** – Each district has the support of a full-service consultant team. The Consultant Team Manager is responsible for building the appropriate team, including subconsultants, to support the various studies. The Consultant Team Manager works directly with the VDOT District Planning Project Manager, OIPI staff, and the Program Management Team to develop scopes of work and plan all necessary efforts for the district's studies.
- **Technical Teams** – Technical Teams are formed to review data, develop preliminary alternatives, refine solutions, and provide clear messages to stakeholders regarding the most viable and effective solutions related to the priorities and needs for each study. The priorities, needs, and scope of each study guides the level of Technical Team involvement. In general, the Technical Teams include OIPI, VDOT, and consultant staff from the following departments and/or disciplines:
  - District Planning
  - District Traffic Operations
  - District Location and Design (L&D)
  - District Subject Matter Experts (e.g., Right of Way, Utilities, and Environmental, as needed)
  - Consultant Teams
  - Central Office Division(s), as needed (Note: Central Office L&D participation is required for any study involving a limited access facility)
  - DRPT, as needed
  - Localities, if applicable
  - Metropolitan Planning Organizations (MPOs) or Planning District Commissions (PDCs), if applicable
- **Stakeholder Working Groups** – Stakeholder Working Groups (SWGs) are critical to each study. SWG members provide feedback and guidance on local input and potential solutions. These groups should include OIPI, VDOT, and consultant staff from the Technical Teams, as well as the following stakeholders, as needed:
  - Federal Highway Administration (FHWA) Staff (Note: FHWA participation is required for any study involving an interstate facility)
  - County, City, or Town Staff
  - MPO or PDC Staff
  - District Public Affairs/Communications Staff
  - Residency Engineers and Liaisons
  - Transit Operators and Leaders
  - Local Law Enforcement and Emergency Services Representatives

Technical Teams

The goal of engaging Technical Teams is to improve the efficiency and effectiveness of the study process through extensive collaboration. This organizational approach is intended to combine the technical expertise of district staff, support and resources from the Consultant Teams, and input from other state and local technical staff relevant to each study. To achieve the intended efficiency and consistency, it is generally expected that the same Technical Team is responsible for all studies within a district for the duration of the cycle. The use of Technical Teams requires fewer meetings and better focuses time and attention on addressing study needs. The Technical Teams should routinely meet to review data, brainstorm, and obtain and analyze input from various disciplines and perspectives.

The Technical Teams use all available data and informational resources, starting with the foundational VTrans needs, to diagnose the core contributing factors to those needs. Data dashboards are developed, updated, and made available to the teams to provide consistent supporting technical data from various sources, including VDOT, DRPT, the Virginia Department of Motor Vehicles (DMV), external "big data sources," public feedback, and other agency data. The Technical Teams collaborate to establish the study's needs that establish the intent of potential solutions. The Technical Teams then work together to identify potential solutions that address those needs and reach consensus on the most feasible and fundable solutions for presentation to the SWGs based on a data-driven approach.

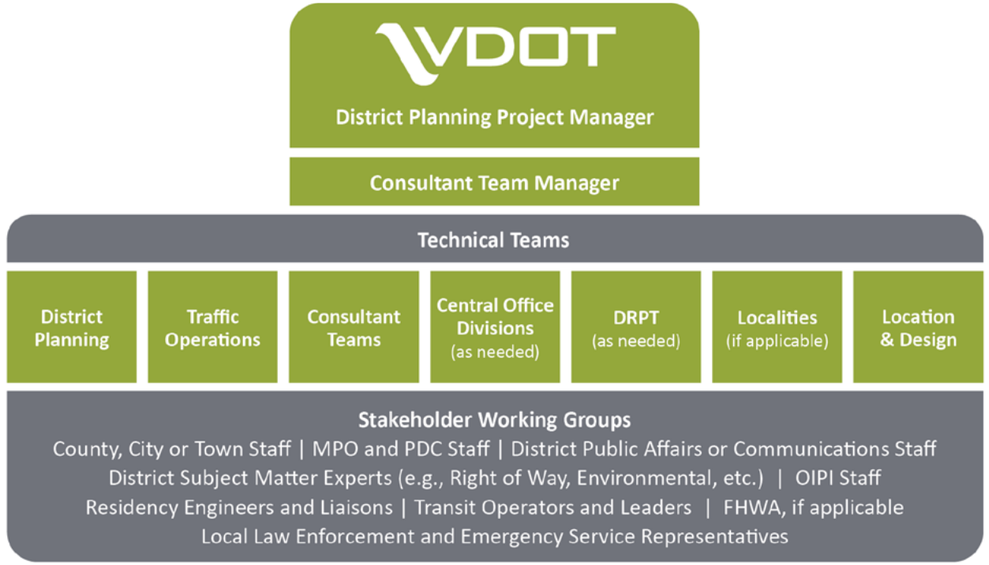
A critical component of the success of the Project Pipeline studies is the ongoing, close technical collaboration and exchange of data and ideas to deliver the best, performance-based solutions to the SWGs for consideration.

After receiving stakeholder feedback on potential solutions, the Technical Teams refine alternatives and conduct additional outreach to obtain feedback from the public and other stakeholders who may have a vested interest in the planning study and the recommendations. Further findings and analysis are coordinated with the SWGs to select preferred alternatives that meet the core needs and have stakeholder and community support. The Technical Teams are responsible for developing documents and analyses in support of the preferred alternatives that serve as the basis of Phase 3.

Each Technical Team includes certain leadership and technical roles that are needed for each study, including the following:

- VDOT District Planning Project Manager – Provides leadership and direction; responsible for study progress and outcomes
- Consultant Team Manager – Provides direct support to the VDOT District Planning Project Manager; coordinates the work and technical efforts of consultant staff
- District Planning Staff – Provide technical input regarding capacity, forecasting, land use, multimodal, and planning
- District Traffic Operations Staff – Provide technical input regarding safety and operations
- District L&D Staff – Provide technical input regarding design criteria, exceptions/waivers, construction risks, and cost estimates
- Consultant Team Technical Staff – Provide multidisciplinary input, analysis, technical support, and expertise

The graphic on the next page depicts a sample organizational chart, including the roles, responsibilities, and structure of a Technical Team.



Additional team members and roles should be considered where appropriate. Certain roles may not be necessary for all studies; however, the following roles may contribute to study success during different stages and/or for different types of study areas.

Staff	Involvement
Central Office Divisions	For high profile or critical studies that would benefit from additional resources and input from a statewide perspective.
DRPT	Where transit and rail needs are present and of high need.
Locality Technical Experts	Where counties, cities, or towns have planning and/or engineering staff with a transportation focus, technical expertise and local background are highly valuable and key staff may be involved in Technical Team meetings.
District and/or Central Office L&D	The VDOT District Planning Project Manager is required to engage L&D staff early on with the Technical Team depending on the complexity of the alternatives that are being considered. They should be included during the development of potential and preferred alternatives in Phase 1 and Phase 2, so staff understand the process that led to projects and investment strategies. They are a core part of the Technical Teams during Phase 2 and Phase 3, should provide insight into ongoing risk assessments and potential preliminary engineering or constructability issues identified during phase 3, and are critical to developing final outcomes.
Right of Way & Utilities	Early involvement to identify key risks and potential impacts of proposed alternatives.
Environmental	Early involvement to identify key risks and potential impacts of proposed alternatives.
OIPI Staff	OIPI Staff should be invited to participate in all Technical Team meetings.

Stakeholder Working Groups

Engaging and collaborating with a SWG is critical to the success of every study. Stakeholders provide background information and local input to help define the study's needs, as well as preferences and support for solutions presented by the Technical Teams. The SWGs should serve as steering committees to the Technical Teams. The groups should include local representatives with the knowledge and engagement to ensure study outcomes are strongly supported and approved by local governing bodies and officials, and that the studies are able to proceed to funding applications.

The Technical Teams provide progress updates and present their work to the SWGs. SWG meetings serve as the main opportunity for members to ask questions, provide direct commentary and feedback, and express their preferences on solutions. Key technical representatives and subject matter experts, such as Right of Way, Utilities, or Environmental Division staff, should also be included to provide guidance on risk areas and issues that could be fatal flaws to alternatives being evaluated.

Each SWG should include key local and agency staff, including:

Role	Responsibility
County, City, and/or Town Staff	• Communicate with local governing bodies • Represent local interests • Contribute to the decision-making process
MPO and PDC Staff	• Provide guidance from the MPO/PDC perspective • Contribute input on Project Pipeline studies related to other regional long-range planning and study efforts
Residency Engineers and Staff	• Include for awareness • Provide input from their perspectives
District Public Affairs and Communications Staff	• Provide key insight regarding other applicable public outreach/ engagement activities • Support critical public outreach efforts related to the studies
Additional District, Regional, and Technical Staff	• District Environmental should be engaged with the SWG to provide insight on studies that may be sensitive for various environmental and cultural resource issues • Right of Way & Utilities should be engaged early for awareness and especially during estimating and conceptual phases for input and awareness on potential impacts
OIPI Staff	• Required for all SWG meetings to ensure that the study process is being applied consistently statewide, provide study-level support, and address any questions

Additional SWG members and roles should be considered based on the needs and scope of each study. Other groups that may provide critical insights include:

- Local First Responders – Representatives from local law enforcement/police departments and emergency medical services should be included where safety is an especially high need. Representatives can provide insight into incidents from their perspectives.
- Transit Operators and Leadership Staff – Where local or regional transit services are present, representatives from operators should be included to share local service data and long-range plans.
- District Subject Matter Experts/Specialty Groups – Representatives from other groups, such as Right of Way, Utilities, Environmental, and Civil Rights, should be included to provide valuable input, as needed, particularly relative to identified risks.
- Central Office L&D – Support from the Assistant State Location & Design Engineer assigned to the district is required for studies at interchanges that trigger IIM-LD-200 requirements for FHWA coordination; for improvements that are likely to exceed $10M that will require a high level, detailed estimate review (and comment response from the district); and/or for improvements that are likely to exceed $50M that will require detailed, independent estimate review, as well as comment resolution and concurrence.

CHAPTER 4:
STUDY APPROACH & SCHEDULE

Bundled Approach

Studies are bundled by district to allow for a greater number of needs to be studied, analyzed, and assessed through a dedicated effort involving a single point of contact both for the District Planning Project Manager and consultant team support. This streamlined approach allows the Technical Teams to consider all studies within a district in their efforts and reduce the number of meetings and separate efforts that occur when multiple managers and consulting teams conduct numerous studies within the same jurisdiction. Overall administrative efforts and time can be reduced by using single task orders that cover the full levels of effort needed to perform the selected studies in a more efficient and collaborative manner.

Phased Approach

The schedule for the Project Pipeline program includes progress checkpoints at key milestones and identifies transitions in effort. These checkpoints define the specific phases to evaluate levels of effort and support needed for each study, ensure stakeholder coordination, and incorporate the appropriate communications and public outreach throughout each study.

The key activities and efforts of each phase are listed below (further details are provided in Chapters 6 through 8):

Phase 1 – Kickoff Study, Diagnose Needs, and Develop Preliminary Alternatives

- Initiate study and hold kickoff meeting with SWG
- Review needs and priorities identified for the selected location
- Review any previous study efforts related to or in the vicinity of the study
- Understand regional long range or comprehensive plan recommendations within the study area
- Prepare framework documents to summarize study goals, objectives, and execution
- Collect data
- Conduct preliminary public outreach
- Analyze data dashboards and assess existing conditions

- Brainstorm potentially viable alternatives
- Coordinate and communicate with Technical Team and SWG
- Develop Phase 2 scope of work based on alternatives to focus on and advance needs to be addressed

Phase 2 – Evaluate Alternatives, Obtain Public Feedback, and Select Preferred Alternative

- Conduct detailed evaluations of alternatives
- Refine alternatives based on modeling and analysis
- Coordinate with SWG and obtain feedback on alternatives
- Conduct public outreach on alternative(s) under consideration
- Refine alternative(s)
- Prepare planning level cost estimate(s)
- Select preferred alternative
- Seek concurrence and approval from local jurisdiction(s)
- Develop Phase 3 scope of work in coordination with L&D and design team leads

Phase 3 – Develop Preferred Alternative, Conduct Risk Assessment, and Support Identification of Investment Strategy and Development of Application

- Develop preferred alternative beyond pre-scoping design through review and development with practical, risk-based approach
- Conduct preferred alternative risk assessment
- Refine design based on assessment of risk and findings of design development
- Document assumptions and basis of cost
- Prepare detailed cost estimate and project sketch up to a maximum 30% design level
- Submit final study deliverables and support for investment strategies and applications

The matrix below summarizes the roles and responsibilities throughout the Pipeline study process, these are described in greater detail in the following chapters.

Phase	Responsibility	OIPI/Program Support	District	Consultant	DRPT	Locality	MPO/PDC	VDOT Central Office
Study Selection & Initiation	Identify Study Needs and Priorities		X		X	X	X	
	Coordinate with CTB Members	X	X					
	Approve Final Study Locations	X						
	Data Collection Planning		X					
	Data Dashboards	X						
	Assign Consultants & Issue Task Orders	X						X
Phase 1	Initiate Study & Hold Kickoff Meeting		X	X	X			
	Prepare Framework Document		X	X				
	Approve Framework Document		X		X	X	X	
	Provide Existing Data		X		X	X	X	
	Collect New Data			X				
	Coordinate with Local Leaders					X		
	Conduct & Support Initial Public Outreach (if desired)	X	X	X		X		X
	Diagnose Existing Needs			X				
	Brainstorm & Develop Preliminary Alternatives		X	X	X			X
	Present Diagnosis & Alternatives to SWG			X				
	Provide Feedback & Input on Analysis & Alternatives					X	X	
	Develop Phase 2 Scope of Work			X				
	Approve Scope & Issue Task Orders	X						X
Phase 2	Conduct Detailed Analysis of Alternatives			X				
	Develop & Provide input on Traffic Forecasting/Travel Demand Model	X				X	X	
	Refine Alternatives		X	X	X			X
	Present Alternative Analysis Findings to SWG		X	X				
	Provide Feedback on Alternatives				X	X	X	X
	Prepare Planning Level Cost Estimates			X				
	Conduct & Support Public Outreach on Alternatives	X	X	X		X		X
	Concurrence on Preferred Alternative(s)		X		X	X	X	X
	Develop Phase 3 Scope of Work			X				
	Approve Scope & Issue Task Orders	X						X
Phase 3	Conduct Alternative Risk Assessment		X	X				X
	Develop Practical Concept Design & Address Risk of Preferred Alternative		X	X				
	Prepare Cost Estimate with Workbook			X				
	Document Assumptions & Basis of Cost			X				
	Review & Concur with Concept & Estimate		X		X			X
Investment, Application & Closeout	Prepare Final Study Deliverables, Design Packages & Estimates			X				
	Apply for Funding of Preferred Alternative(s)				X	X	X	
	Application Support	X	X	X				
	Submit & Documentation & All Related Work			X				
	Review & Approve Final Deliverables for Public Visibility		X		X			
	Program Closeout & Summary	X						

Study Approaches

Studies may follow two approaches depending on the identification and history of the study and other recent efforts.

Planning Study

A planning study is a traditional approach conducted throughout the Commonwealth and covered by this guide. A full study effort is required if no recent studies have been performed, and issues are largely unknown. This approach follows the normal three-phase process outlined in Chapters 6 through 8 and involves the coordination, technical, development, and outreach efforts that are expected of a VDOT planning study.

…the traditional approach follows the normal three-phase process outlined in Chapters 6 through 8…

Performance-Based Value Engineering Study

A performance-based value engineering study can be used if previous study outcomes have not been successful in achieving funding and a new review of previous alternatives may be appropriate. This type of study largely skips Phase 1 efforts as core issues should have been previously identified. Technical Teams utilize prioritization scoring and other metrics to assess where prior projects did not compete well for funding. Additionally, Technical Teams may reassess high-cost elements that are not contributing to study area needs. Phase 1 and Phase 2 consist of new alternative(s) development, refinement, scoping or value engineering aimed at improving benefits or reducing costs. Public involvement may be necessary based on district input if significant changes or new alternatives are considered. SWG involvement is still critical to ensuring local support for any changes in the alternative scope or strategy.

Program Schedule

The primary Pipeline cycle is intended to occur in the SMART SCALE off-years. The phased approach is generally anticipated to follow the schedule below.

Study Selection – October to December (Even Year)

- As validation of the previous cycle of applications is completed and new VTrans needs are available, new locations for the next round of studies should be identified to allow for ample time to execute all study needs.

Phase 1 – January to June (Odd Year)

- Initiating the studies in January of the odd year allows ideal windows for data collection, if needed, and time for stakeholder coordination, as well as initial public involvement.

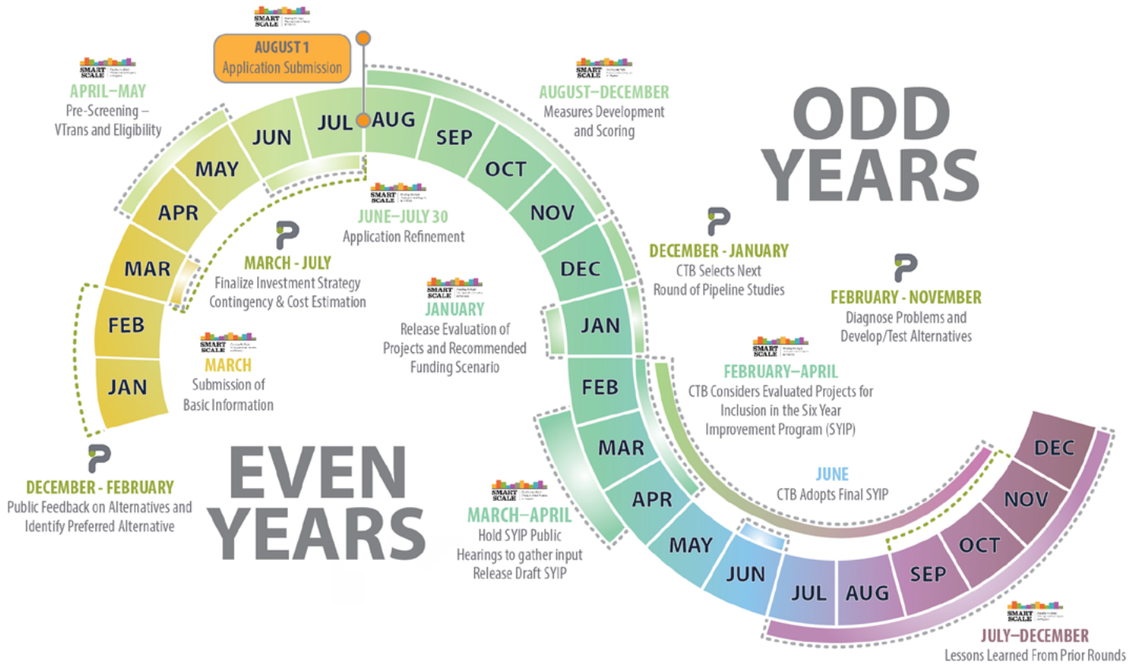
Phase 2 – June to December (Odd Year)

- Phase 2 requires the most technical work to analyze alternatives and fully vet options through stakeholder and public involvement. The timing of Phase 2 allows some float into the start of the even year, if needed, for full concurrence, as well as achieving the needed resolutions and readiness requirements of pre-application. It is critical to initiate Phase 2 public outreach by October and complete it by the end of November in order to have all of the necessary input to select the preferred alternative.

Phase 3 – January to August (Even Year)

- Beginning the final phase early in the even year is crucial so the level of effort required for conducting the Phase 3 tasks and deliverables, including initial design and preliminary engineering, can be evaluated and achieved to fully vet projects and assess risks. The goal is to advance applications well beyond the scoping level so that estimates and contingency are within a tighter range than typical planning levels of effort.

The graphic below shows the overall Project Pipeline process, key milestones, and schedule in relation to the critical SMART SCALE dates.



CHAPTER 5: STUDY RESOURCES & DELIVERY

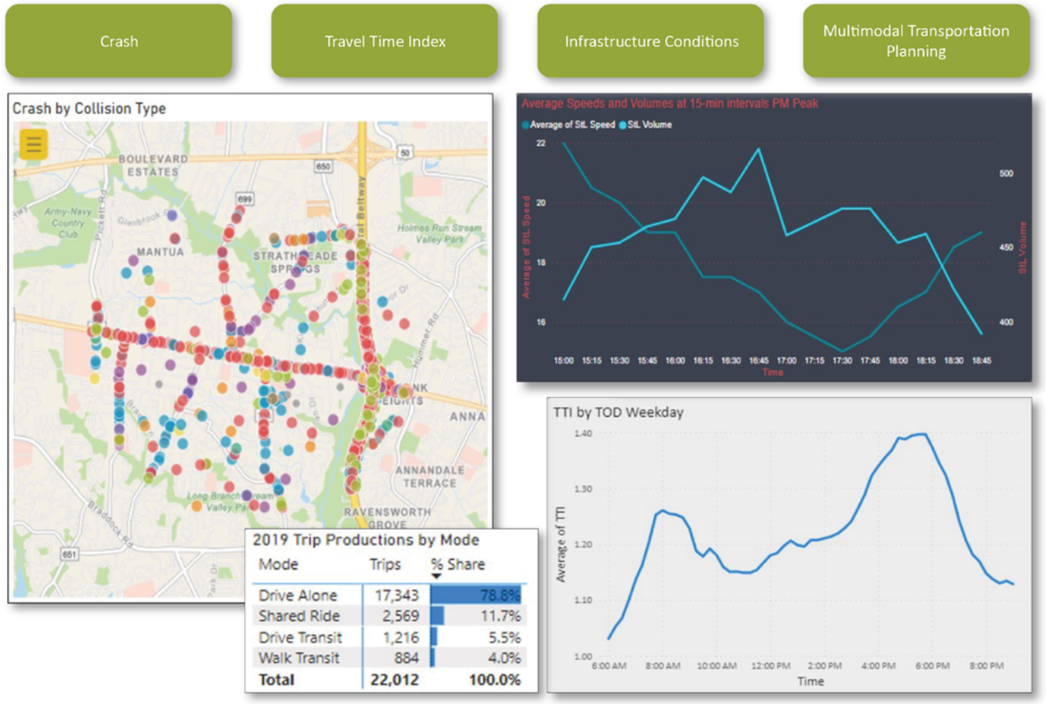
The Project Pipeline program requires a high level of commitment from VDOT District Planning Project Managers who have additional duties and responsibilities beyond the Pipeline studies. The program includes support intended to ease the overall burdens and requirements of managing the studies. This chapter describes several of the resources designed to reduce the time and effort required while improving overall program effectiveness.

Data Dashboards and Analytics

Two key goals of Project Pipeline are to streamline project planning and develop and refine tools that make use of powerful data and improve collaboration. It often takes several months to gather the requisite data from multiple sources and build a complete picture of existing conditions for a typical study. Therefore, a large portion of the study effort is typically focused on gaining a full understanding of the needs and problem areas before the team can even begin to develop alternatives.

OIPI and VDOT collaborate to develop data dashboards that assemble multiple data sources to streamline and increase the efficiency of existing conditions analyses. These dashboards are accessible in one location through user-friendly platforms to visualize study areas in depth and through many data lenses. Microsoft Power BI serves as the current base platform for interfacing with data from numerous statewide and regional sources. The Program Management Team has prepared technical “How to Guides” for creating ArcGIS and Microsoft Power BI dashboards for safety, travel time reliability, multimodal planning, crash, and infrastructure conditions data for the study routes. These dashboards are used for data collection, analysis and processing, and visualization.

The figure below is a representative depiction of the data compiled for each study area.



Sample data dashboards

The Project Pipeline program is refined iteratively to better utilize all VTrans data and other data sources from VDOT, DRPT, and OIPI. The Program Management Team develops process guidance in conjunction with tools, such as Pathways for Planning (P4P), to make data more accessible and allow dashboards to be developed more quickly and made available through more interactive tools, such as Microsoft Power BI and ArcGIS.

The Program Management Team develops and finalizes these tools following the identification of candidate studies and approval by the CTB, respectively, to allow study teams to quickly diagnose needs and have more constructive conversations as part of the Phase 1 kickoff and public outreach efforts.

Contracts

Consultant and technical support for the Project Pipeline program is primarily provided through various on-call contracts to provide access to consultant teams that are experienced in the overall goals of the program and bring the depth of resources needed to support the VDOT District Planning Project Managers, Technical Teams, and SWGs. Utilizing multiple contracts offers the potential for accessing additional subject matter experts, subconsultants, and/or teams when the number and scale of studies necessitates supplementing the contracts or when available capacity may be limited due to term or expiration factors.

To aid in the overall efficiency, one consultant team is assigned to each district to dedicate the desired support, communication, focus, and consistency for completing multiple studies in a relatively short amount of time.

Central Office Divisions

The involvement of Central Office Divisions varies depending on the types of studies selected by the districts during a given cycle. Chapter 3 included a brief reference regarding Central Office Division support of the Technical Teams. Appendix H: Readiness Gates of the SMART SCALE Technical Guide includes examples of the VDOT divisions and staff that might have review and/or approval responsibilities or technical expertise that impact the success of study alternatives and reduce the need for reevaluation or additional efforts during final phases.

As Phase 1 proceeds and preliminary alternatives are considered, consideration should be given to the areas of input necessary for collaboration and avoiding future disruptions or delay. Integrating input from the Central Office Divisions is often critical to achieving agency support of preferred alternatives. The Central Office Divisions that should be involved in several areas and types of studies include, but are not limited to:

- Transportation and Mobility Planning Division (TMPD) – As the main sponsor of program funding and contracts, TMPD points of contact should be aware of all study efforts and progress. TMPD staff are involved in handling studies that require significant additional efforts or resources.
- Right of Way and Utilities Division – Coordination with regional right of way and utilities staff should be incorporated in all phases of key studies, particularly for projects that have significant property impacts or where major utilities are present.
- Traffic and Operations Division – Coordination with and support from Traffic and Operations Division staff is required for studies involving interstates, freeways, interchanges, locations on the Arterial Preservation Network, or Corridors of Statewide Significance.
- Central Office L&D – Support from the Assistant State Location & Design Engineer assigned to the district is required for studies at interchanges that trigger IIM-LD-200 requirements for FHWA coordination; for improvements that are likely to exceed $10M that will require a high level, detailed estimate review (and comment response from the district); and/or for improvements that are likely to exceed $50M that will require detailed, independent estimate review, as well as comment resolution and concurrence.
- Structure & Bridge Division – When significant structures or bridge assets are included, District or Central Office Bridge staff should be part of study efforts and support alternatives where necessary.
- Environmental Division – Environmental Division performs an initial review. Where cultural resources, historical properties or districts, natural habitats, and other impacts are likely due to the roadway environment and scale of solutions, environmental input should be sought early to avoid pursuing alternatives that will be particularly difficult to achieve or require additional lead time and effort during National Environmental Policy Act (NEPA) or other processes.
- Central Office Communications – The OIPI-led Program Management Team coordinates directly with Central Office Communications staff, particularly the Statewide Social Media Manager, to schedule geotargeted paid social media advertisements for the Phase 1 and Phase 2 public surveys (discussed in more detail below).

Public Involvement & Communications

Public involvement is a critical element in the development and delivery of transportation projects. The people that live along or use a corridor daily can provide key insights into the issues and challenges that exist, which leads to better and more complete solutions. Proactive and ongoing public outreach and engagement is critical to developing awareness regarding the studies and eventually obtaining support for the preferred alternatives.

The [Project Pipeline website] includes an overview of the program and each of the individual studies organized by district. A narrated presentation provides more detailed information regarding the program purpose and goals, approach, and schedule.

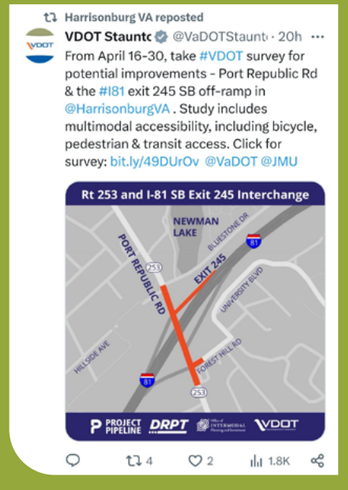
An interactive, web-based map delineates the studies within each round by identifying each study's spatial location at a district level. Users can manually enhance the scaling to zoom in and change the mapping from a district level to a street level view. Each round has different color-coded symbology to help distinguish the studies by round. If a user selects a study element at the district level or street level view, a pop-up box containing the study name, study ID, study limits, district, point of contact, and page link will appear, allowing users to access additional information about each study.

The Program Management Team developed the program logo and branded templates for presentations, reports, social media, etc. The reports and deliverables prepared for the Project Pipeline program are designed to be concise and easy to understand. Summary sheets are used to visualize and frame the critical safety, operations, and multimodal transportation needs along each study corridor to develop solutions that improve performance.

The study teams typically seek feedback from the public during Phases 1 and 2. The Program Management Team coordinates extensively with the district points of contact and communications managers, as well as Central Office Communications, on geotargeted paid social media campaigns to encourage participation in online surveys and in-person public meetings. During the inaugural round, 19,024 online surveys were completed in English, Arabic, Korean, and Spanish. During the second round, 40,607 participants responded to 63 online surveys. Public engagement summaries document the participation in each survey.

The Program Management Team develops and provides social media ad copy and graphics for each of the studies to facilitate the preparation and posting of paid and organic social media posts on Facebook, Instagram, Twitter, Nextdoor, Reddit, etc. The VDOT District Planning Project Manager, Consultant Team Manager, or Program Management Team should work with the localities to cross-promote the social media content to expand the reach to a larger audience across multiple platforms.

The Program Management Team also provides a news release template to each district to notify key stakeholders and the public regarding the district-led surveys. The template includes information regarding the overall Project Pipeline program and placeholders for study-specific details regarding the existing conditions, potential alternatives, and survey links.



Opportunities exist for more robust public involvement and communications based on study-specific needs and the potential for earlier and more continuous outreach. Recommended enhancements for in-person and virtual public involvement include, but are not limited to, the following:

- Public information meetings
  - Hold public information meetings, as necessary, to explain the purpose and need for the planning recommendations and receive any input from the attendees at the initiation of the study, and provide opportunities to review and comment on the technical analysis and preliminary recommendations
- Social Media Ads
  - Diversification of paid social media ads (copy and graphics) during the initial ad runs and reminder notifications to differentiate between the studies, reach multilingual users and/or address potential ad fatigue
  - Enhanced social media presence on Facebook, Instagram, Twitter, Nextdoor, and Reddit through organic posts to reach different audiences and increase public awareness and participation
- News Releases and Media Advisories
  - Stronger emphasis on news releases and media advisories distributed by OIPI and the districts to facilitate the sharing of information about key milestones and public participation activities by the localities, communities, and local media
- Other Tools and Resources
  - Incorporation of additional rounds of surveys, as needed, to obtain input from key stakeholders and the public regarding the identification of priorities in Phase 1 and evaluation of alternatives under consideration in Phase 2
  - Use of a variety of tools, such as PublicInput.com, to facilitate engagement

For example, during the inaugural round, the Bristol and Hampton Roads Districts held public information meetings for specific studies to provide information regarding potential transportation safety and operations improvements and obtain feedback regarding potential alternatives.

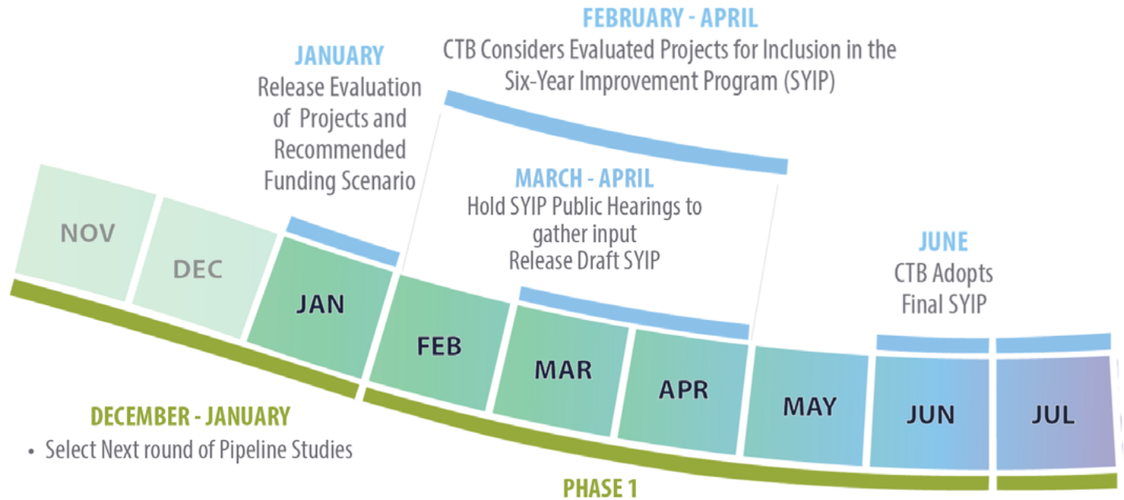
Scopes and Templates

Several templates were developed to support efficiency and ensure consistency across the Project Pipeline program. Each template was designed to provide "flexibility within a framework" for each deliverable. The program requires a consistent process to ensure overall goals are met and expectations are clear. The templates include:

- Framework Documents – A standardized framework document captures the VTrans needs, general background, and basic methodologies of the study. Additional information can be added for particularly complex studies.
- Checklists – Checklists regarding the key deliverables and data associated with each phase assist the Technical Teams with the overall process, development of concepts, and schedule. Refer to the Phase Requirements Checklist for the milestone meetings and phase requirements that must be completed and approved prior to transitioning into the next study phase.
- Scopes of work – Standardized scopes of work for each phase are prepared to support and streamline the initiation of task orders. Phase 1 is typically expected to be consistent across all studies. Phase 2 is informed by Phase 1 but follows standard objectives and required common deliverables. Phase 3 follows a consistent process for each study with optional efforts, as needed. Please refer to Chapters 6 through 8 for additional information regarding the scopes of work for each phase.
- Executive Summaries and Stakeholder Presentations – Summary sheets and presentations for each phase are made available to all districts and Technical Teams to communicate information with the executive sponsors of each study, other key stakeholders, and the public.
- Basis of Design Memoranda and Cost Estimates – Comprehensive templates for considering an array of design inputs and risk categories are composed and vetted through District L&D for Phase 3 efforts. These deliverables are suitable for use in SMART SCALE or other applications to validate estimates and concepts.

Template examples are included in the Appendices. These templates are continuously updated for use during future rounds based on feedback received and the needs of the program.

CHAPTER 6: PHASE 1



Schedule and Scope

Phase 1 is scheduled to occur between January and June of the off-year cycle, currently during odd years, following study selection. This time frame allows the districts to organize their study teams and hold kickoff meetings to establish the needs and goals of the studies early in the phase. Once the study teams agree on the framework and general methodology, additional data collection and public involvement can be conducted while Technical Teams simultaneously begin to utilize tools and information to develop a better understanding of the study areas.

The Phase 1 scope includes the initial study activities, including organization, kickoff, and planning, followed by the diagnosis of needs, and preliminary screening of alternatives. The goal is to use the available Project Pipeline data and tools in conjunction with stakeholder and public input to quickly identify the underlying core issues of the VTrans needs that are causing adverse conditions in the study area. The team should seek and analyze the most critical patterns, movements, segments, or deficiencies, like a doctor evaluating and diagnosing a patient. The team can then brainstorm and conceptualize the most viable options for resolving the issues and to determine the level of analysis needed to fully evaluate the preliminary alternatives in Phase 2.

A more data-driven approach is at the core of the Project Pipeline program. The Technical Teams have been working to improve the tools that allow for quicker diagnoses and a more thorough understanding of issues and their causes. The idea is to solve more problems with the limited funding available.

If certain data collection, such as volume, speed, or turning movements, are needed, the current Phase 1 timing allows for these activities to occur before the end of the school year. Study teams should carefully consider the appropriate data collection timing and needs, including activities that could impact normal travel conditions. Additionally, if transit ridership and commuter assistance program data are applicable to the study, they should be included in Phase 1. Consideration may be given to the overall methodology and other available background sources that may allow phases to move more quickly without the time or cost of data collection. The timing and scope of the initial public outreach efforts is determined on a study-specific basis. Public outreach is not mandatory during Phase 1, as the mid-term needs and priority locations have already been established through the VTrans process. However, early outreach can be highly beneficial based on the study profile, environment, level of community engagement, and locality preference. By informing the public of the study and soliciting feedback regarding needs, the study team can raise awareness, encourage collaboration, and identify the community's preferences and/or priorities.

Depending on the type of study and where the teams are in relation to the schedule, there is flexibility to begin Phase 2 tasks in Phase 1.

At the conclusion of Phase 1, the Technical Teams and SWGs should have performed the work and collaboration necessary to establish a firm understanding of the issues that need to be addressed by the preliminary alternatives. Additionally, teams should have a basic understanding of which options are likely to provide benefits and could be viable solutions. The teams should have engaged in robust discussions regarding which alternatives have the greatest potential to improve transportation, achieve funding, and receive public support.

Key Activities and Outcomes

The important activities outlined below form the basis and workflow of Phase 1. Many of these activities can be performed concurrently.

- Initiate study and develop Phase 1 scope – The VDOT District Planning Project Manager establishes the Technical Team and SWG, coordinate with DRPT, as well as develop the Phase 1 scope of work with the Consultant Team and DRPT Support.
- Hold kickoff meeting – The Technical Team, OIPI, SWG, and others (as needed) schedules a coordination meeting to discuss the study area and background. All participants should share information, priorities, and goals based on their respective roles. This meeting serves an important milestone to formally initiate the study.
- Develop framework document – The study team should summarize the input received during the kickoff meeting to memorialize the study goals, objectives, and plan for execution. Representatives from VDOT, affected localities, and planning organizations responsible for making critical decisions and advancing alternatives to funding applications should agree on the framework document.
- Outline data collection plans and tasks – The study team outlines its plans, as needed, based on the scope and background of the study.
- Conduct preliminary public outreach – The district, with support from the Program Management Team and Consultant Team, should conduct preliminary public outreach, if desired. A combination of outreach methods, including in-person and virtual events or events targeted to local elected officials, may be used. Public feedback obtained at this stage should be used to solidify and contextualize transportation issues in the study area.
- Collaborate with the Technical Team – The Technical Team should meet regularly to review all studies within the district and begin the analysis and assessment. The number and scope of the meetings should be determined by the district and Consultant Team Manager based on the complexity and breadth of the studies. Key activities include:
    - Analyzing the data dashboard and assessing existing conditions
    - Diagnosing needs
    - Brainstorming potential alternatives
    - Preparing a sketch-level conceptualization
    - Analyzing public input
    - Reviewing collected data
    - Preparing presentations and communications to the SWG
- Present Phase 1 summary to SWG – The district, Consultant Team, and Technical Team present their findings and preliminary alternatives to and solicit feedback from the SWG. It is essential to obtain feedback from the SWG to help determine which areas require analysis and evaluation, and the viability of the preliminary alternatives from the SWG's perspective. Input received from the SWG supports the development of the Phase 2 scope. This coordination meeting is an important milestone in transitioning from Phase 1 to Phase 2.
- Develop Phase 2 scope – The Phase 2 scope of work is based on the tools, resources, and methodology necessary to focus on the identified needs and assessment of potential alternatives. It includes the levels of effort needed for consultant support to plan for coordination with the SWG, evaluate alternatives, engage in public outreach, and any other tasks required for developing and selecting a preferred alternative.

Denotes a key milestone

The final Phase 1 deliverables include:

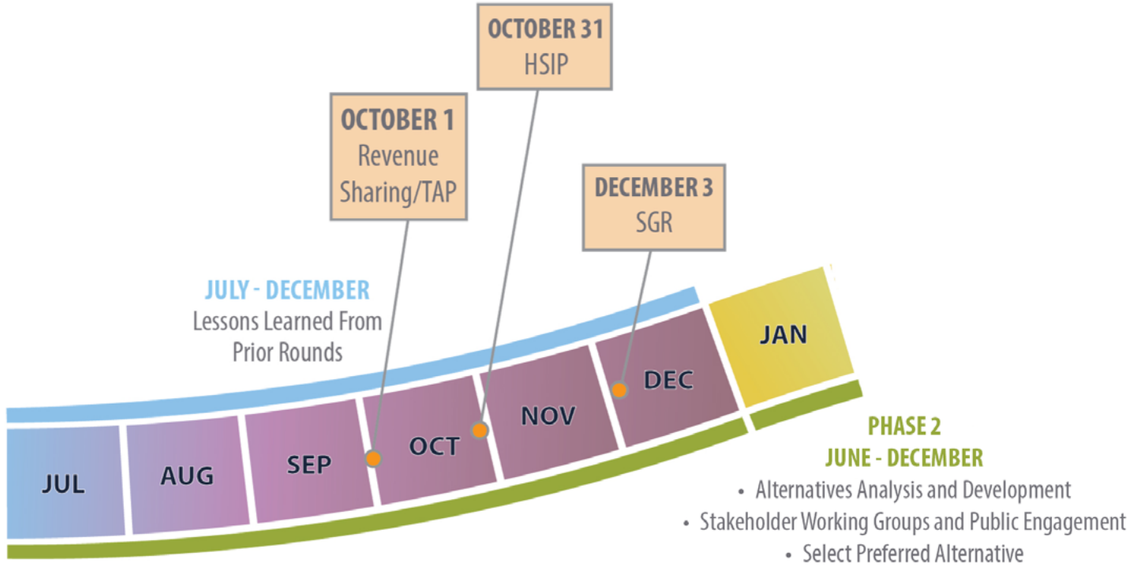
1. Phase 1 Scope of Work
2. A signed Framework Document
3. Phase 1 Executive Summary identifying the study needs by technical area (safety / access, multimodal, and operations) in a concise format for communicating with key stakeholders and the public
4. Phase 1 Public Engagement Summary, if applicable
5. Phase 1 Stakeholder Presentation
6. A summary of the study needs and diagnosis determined during Phase 1, which will ultimately be included in the Phase 3 Final Report
7. Phase 2 Scope of Work

Alternative Approach

In cases where a performance-based planning or value engineering approach is selected (see page 16 in Chapter 4) to review previous alternatives that have been unsuccessful, study teams should utilize Phase 1 to analyze and assess the performance of alternatives in funding processes. The teams should review data, analysis, and scoring data, as well as overall estimates and costs, to determine what portions of alternatives may or may not be achieving intended results. Scoring details and estimate assumptions should be thoroughly understood to ascertain components of the project that do or do not meet needs, as well as those that are causing high costs or risks relative to benefits.

Phase 1 should be a more abbreviated effort of understanding alternatives and beginning to develop opportunities for efficiency, as well as improved, phased or retooled alternatives for consideration. Initial stakeholder coordination is still critical to understanding the previous process and potential concessions regarding desired outcomes. Additional public outreach and data collection might not be necessary in Phase 1 depending upon previous efforts. Phase 1 should conclude with SWG engagement to discuss findings and lay the groundwork for Phase 2 efforts.

CHAPTER 7: PHASE 2



Schedule and Scope

Following the completion of Phase 1, the general timeline allows approximately six months from June to December during the off year (odd years) for the Phase 2 activities. With concurrence from OIPI staff and the Program Management Team, **if Phase 1 is completed early, Phase 2 may immediately commence**. The duration of Phase 2 largely depends on the range and complexity of alternatives, as well as the extent of stakeholder coordination and public outreach. The consequences of an extended Phase 2 include, but are not limited to, reduced time for further estimating and design refinement in support of funding applications. VDOT District Planning Project and Consultant Team Managers should always note the potential impact of holidays toward the end of Phase 2, which could constrain the availability of stakeholders and public input and delay the completion of this phase.

The Phase 2 scope includes study activities focused on fully conducting and refining the detailed analysis and communication needed to advance the development of options from preliminary alternatives to a preferred alternative. Building on the efforts in Phase 1 to diagnose the needs and establish the range of alternatives, the tasks in Phase 2 should work through the appropriate measures of effectiveness (MOEs) related to the needs to narrow down the list of options to focus on the alternatives that will provide maximum impact at achievable funding levels. The MOEs and goals should be established in conjunction with the VTrans needs and stakeholder input. Like most transportation improvements, the process involves a balance of objectives and require extensive collaboration and consensus building.

The level of analysis conducted in Phase 2 is based on the extensive coordination between the study teams and SWGs that occurred, and the framework document developed during Phase 1, as well as the complexity and specific needs of the study area. For example, a more urban, congested area may require a detailed microsimulation, while an area that is more focused on safety may not. Based on Phase 1 data, areas where transit or other multimodal needs are high may require further coordination with local operators and additional analysis to determine demand and impact on existing services or of new routes. Division staff and stakeholders may also note other important factors for consideration, such as economic development facilitation, environmental impacts, land use, etc.

Further testing is often necessary to assess the future performance of alternatives under forecasted conditions. Travel demand forecasting and future year analysis scenarios should be established within the framework document based on appropriate local and regional factors and resources but should only be used as one factor in assessing alternatives. Frequently, future forecasts may cause bias in favor of larger, more expensive alternatives (such as interchanges or widening projects) that might not be fundable if they do not adequately address existing needs. The study team should continue to focus on a performance-based approach that adequately solves the current needs and incorporates flexibility for future scenarios while still providing long-term benefits over existing conditions at a competitive cost point.

The Technical Teams should refine alternative concepts and designs as they are further developed through the analysis. General impacts and risk factors, such as right of way, utilities, or environmental concerns, should be considered as part of the assessment to the extent possible. Conceptual drawings are informed by the analysis to include the critical features, capacity, and characteristics that will address the overall needs. Planning level estimating should be included to allow for a comparison of costs in relation to projected benefits. It should be noted that an assessment that results in multiple alternatives that address different needs in different areas or for different time ranges is a positive outcome. The goal of the Project Pipeline program is to achieve as many fundable projects as possible that address the statewide priority needs. Study teams should consider multiple funding sources as alternatives advance through the process.

At the conclusion of Phase 2, Technical Teams and SWGs should reach consensus regarding which alternatives and projects have local, agency, and overall support for the pursuit of future funding and implementation. A Preferred Alternative should have a strong foundation of analysis that defines its benefits, as well as documentation that details the scope, features, and critical elements that are integral to addressing the identified needs of the study. This foundation will serve as the basis for advancing a project for consideration of future funding and ensure it is highly competitive.

Key Activities and Outcomes

Phase 2 includes a wide range of technical activities. However, the overall process includes the following activities:

- Continue Technical Team efforts – Phase 2 begins with work by the Technical Teams to analyze and assess the alternatives that were carried forward from Phase 1. The amount of effort and collaboration is determined by VDOT District Planning Project and Consultant Team Managers. Meetings and technical work should support:
  - Refinement of alternatives based on modeling and analysis
  - Input from specialty staff and divisions
  - Detailed evaluations of alternatives
  - Alternative scoping and concept development
- Hold SWG Alternatives meeting(s) – The Technical Teams should present their findings and analysis to stakeholders for detailed feedback and input. This milestone is a key collaboration point to ensure alternatives are on track and stakeholders have a full understanding of positive and negative aspects of all potential options. Stakeholders should provide sufficient guidance regarding outstanding issues, questions, or concerns that need to be addressed prior to soliciting public feedback. Interim meetings, which may involve fewer members of the SWG (such as locality staff), would provide opportunities for more detailed discussions necessary for obtaining this critical feedback.
- Conduct public outreach – During Phase 2, all studies should include public education and outreach to provide information and solicit input on potential alternatives under consideration. TMPD Instructional and Informational Memorandum 4.0 outlines opportunities for the public to provide their comments on transportation improvement recommendations that may have an impact on their travel patterns or access to their property.
- Perform additional Technical Team tasks, as needed
- Refine alternatives and perform planning-level cost estimation
- Present Preferred Alternative to SWG
- Seek concurrence and approval of efforts from local jurisdiction(s)
- Develop Phase 3 scope in coordination with L&D and Design Team leads

Denotes a key milestone

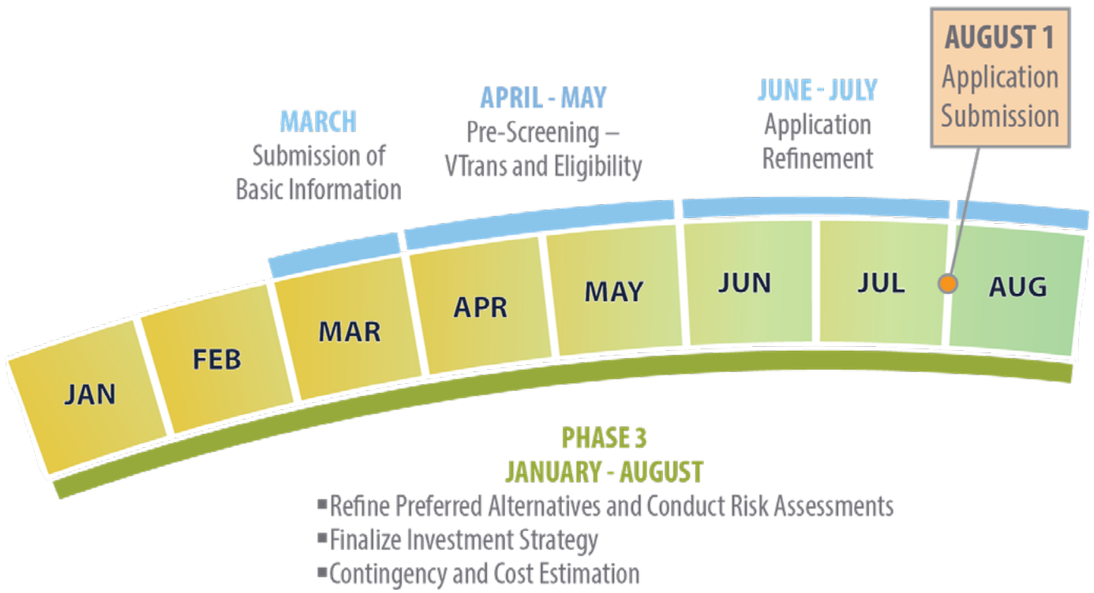
The expected outcomes that should be achieved and deliverables that should be completed prior to the end of Phase 2 include:

- Technical deliverables, such as models and other evaluation tools
- Identification of Preferred Alternative(s) with necessary concurrence from key VDOT SMEs
- Phase 2 Executive Summary identifying the Preferred Alternative(s) in a concise format for communicating with key stakeholders and the public
- Phase 2 Stakeholder Presentation
- Phase 2 Public Engagement Summary
- A summary of the Phase 2 alternatives analysis, refinement, outcomes and public outreach, which will ultimately be included in the Phase 3 Final Report
- Phase 3 Scope of Work

Alternative Approach

In cases where a performance-based planning or value engineering approach is selected, Phase 2 should focus on developing alternatives or efficiencies to the original alternative following collaboration with and input from stakeholders. Areas, such as scope reduction for non-beneficial items, innovative or alternative configurations that may reduce impacts, addition of minor items that may improve benefits, or alternatives designs that may reduce costs or eliminate risk, should be considered and analyzed. Generally, the achievements of the alternative should be consistent, but, when necessary, additional analyses may be conducted while leveraging previous work to ensure results are as anticipated. Some design work related to high-risk items or project elements would be appropriate. The timing and extent of public outreach efforts is dependent upon whether the scope of the original alternative has changed and, if so, to what degree.

CHAPTER 8: PHASE 3



Schedule and Scope

The schedule for Phase 3 should utilize the available time between the completion of Phase 2 and the funding application and validation deadlines. Related to the SMART SCALE schedule, the schedule generally should allow five to six months for work to be completed and collaboration to occur. Understanding that numerous applications and projects are ongoing during this time, the objective is to begin early to allow a more detailed effort and for the engagement of optional services, if needed.

The Phase 3 scope of work is intended to cover study activities after the selection of the Preferred Alternative through the submission of funding applications and project validation. Phase 3 transitions from selection to refinement of the alternative. The goal is to ensure that projects are defined to the maximum extent possible and to identify and mitigate potential risks. Utilizing the combined technical resources of VDOT and the Consultant Teams, a multidisciplinary design approach should be part of the overall effort that provides the necessary input and problem-solving to ensure funding applications are thoroughly vetted and advanced beyond a planning-level sketch and estimate.

The level of design and effort is based on the complexity of the alternative and associated project(s). As part of the Phase 3 scoping process, key areas of design, such as structures, drainage, environmental, right of way, utilities, etc., should be identified. Technical Teams should review and develop projects from the same areas and perspectives that would be considered up to a Preliminary Field Inspection or 30% design effort. Where high-risk items are identified, optional services, such as survey, geotechnical, utility exploration, environmental, or other specialized areas, may be needed. The information gathered or analysis performed should assist with defining the risks and support making decisions that account for or avoid those risks.

The objective of these efforts is not to arbitrarily reduce estimates for alternatives. The goal is to develop more detailed, quantity-based, deterministic estimates and designs paired with thoughtful risk assessment and mitigation. This combined approach should reduce uncertainty and allow for lower contingencies and overall funding requirements. Technical Teams should use practical design and common-sense engineering methods to document the assumptions and approaches that lead to the most efficient and effective project scopes. The effort should maintain focus on the purpose and needs identified through Phase 1 and Phase 2 that address the VTrans priorities.

During Phase 3, Technical Teams should engage in thorough communication and collaboration with districts, Central Office Divisions, FHWA, or other key partners and stakeholders that may have decision-making authority or provide input on final designs if projects are selected for future funding. An intended outcome is that projects, if funded, will have the documentation and support for innovation and flexibility that may be necessary to achieve success. The key partners and stakeholders should be part of the process to the maximum extent possible. It is critical for everyone involved to have a deep understanding of the needs and value of the project and consequences should scopes or budgets creep beyond reasonable levels that would endanger future implementation.

The Phase 3 Technical Teams should develop the analyses, design, deliverables, and documentation that will serve as the basis for future preliminary engineering work on the projects. Understanding that individuals involved in projects regularly change and future project managers and design teams likely will not have had detailed involvement, the documentation and approvals during this stage will be critical to the future success of projects. Study teams should utilize the templates and scopes provided to fully cover all work to communicate the basis of design, assumptions, development of plans, waivers or exceptions, and judgment exercised throughout the process.

At the conclusion of Phase 3, projects should have a solid foundation of understanding from a planning and preliminary engineering focus that will ensure applications are well validated, reasonably scoped, meet the needs originally established for the studies, and have a high probability of success.

Key Activities and Outcomes

Phase 3 includes the following activities:

- Perform a risk assessment – The Phase 3 Technical Teams should assess preferred alternatives for potential risks that may cause significant impacts to project scope, costs, or feasibility. The risks should be documented, and mitigation strategies should be considered.
- Conduct scoping for design review and development – Using a practical, risk-based approach, and to the extent possible, teams should develop the design concept to a level that clearly defines the scope of the project based on available data. While design packages are not intended, it is expected that the Study Teams consider the features and overall design parameters to the level of confidence generally achieved.
- Refine the design – Based on the assessment of risk and findings of design development, the Study Team should refine the Preferred Alternative. Features that may be driving cost might need to be removed or further discussed with VDOT District Planning Project Managers and key SWG members may need to be consulted if scopes significantly vary. The Phase 1 and Phase 2 Technical Teams may need to be engaged if additional analysis is required to validate or quantify the impacts of any changes related to original assumptions and MOEs.
- Perform advanced design-level cost estimation – Utilizing the VDOT Cost Estimation Manual and Workbook format requirements, phase estimates and contingencies should be developed by the Consultant and VDOT teams. It is expected the level of effort carries estimates beyond pre-scoping levels of detail or to a high confidence pre-scoping level that will reduce risks and contingencies.
- Document the assumptions and basis of cost – Study Teams should prepare deliverables, such as Basis of Design Memoranda, and complete other reports that document and validate all of the work and assumptions used for developing the cost estimates.
- Prepare final study deliverables – The Study Team should summarize the Phase 3 technical work and integrate it into the Final Report. The Final Report should provide the necessary support for pursuing investment strategies and applications that result from the work of the Study Team. Delivery of the Final Report with Phase 3 documentation marks the completion of the study effort.

Denotes a key milestone

The expected outcomes that should be achieved and deliverables completed prior to the end of Phase 3 include:

- Project Risk Registers
- Basis of Design Technical Memoranda and Conceptual Plans
- Preliminary Design Waiver/Exception Determinations/Concurrence
- Cost Estimate Packages, including Workbook
- Investment strategy for pursuit of funding
- Final Report

SUMMARY & CONCLUSION

Project Pipeline is a robust program that is intended to address the highest priority multimodal transportation needs across the Commonwealth. Utilizing a data-driven, multidisciplinary, and bundled approach, the purpose of the program is to improve the focus and efficiency of the study process. The outcome of the studies should result in well-defined projects that are supported by the localities and key stakeholders and reflect clear investment strategies that set the standard for future funding applications.

The program puts the resources and guidance in place to support District Planners in this objective with flexibility to follow local and regional specific policies and preferences. With dedication to further development, the program will continue to improve and implement the tools necessary to meet the changing needs of Virginia's transportation system. Overall, the program will ensure that a true pipeline of projects that improve the most critical areas of our infrastructure is included in each cycle of the statewide prioritization and funding programs.