



# INTEGRATED PROJECT DELIVERY (IPD)

## Candidate Project Guidance

Version 4.0

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## Executive Summary

This guidance serves to describe NCDOT's evolving Candidate Project process and the roles and responsibilities of Division Corridor Development Engineers (Div CDE) or their designee in supporting that process.

Project Initiation is the planning and programming phase of NCDOT's broader Integrated Project Delivery (IPD) initiative. The primary goal of IPD is to streamline NCDOT's overall Project Delivery process, reduce delays and associated cost overruns, eliminate unneeded steps in the process, and ultimately deliver the Department's program of much-needed transportation system improvements to the public more quickly and efficiently.

In examining the benefits that could be realized from IPD, the Department has recognized that there are real and valuable opportunities within the Project Initiation phase to improve the scope, definition, and documentation of projects as those projects transition from Systems Planning to Project Programming.

If Candidate Project steps are conducted properly, projects will evolve, refining project concept and scope, identifying and addressing potential flaws and risks, and concluding with a package of project-specific information, the Project Initiation Packet, that will smooth the transition to Project Development. The Candidate Project process culminates with the issuance of a Notice to Proceed to the Project Development team, beginning environmental planning and final design.

To achieve the Candidate Project objectives summarized above, Div CDEs have a critical role in shepherding projects through planning and programming. They will ensure continuing local engagement, rigorous refinement of project concept and scope, and compilation and transfer of a complete body of relevant project information to the Project Development team to expedite timely project advancement and reduce schedule delays. In this role, Div CDEs will expedite or facilitate the various Project Initiation steps.

### Div CDE Candidate Project Role and Assignment

This guidance defines Candidate Project roles of the Div CDE as NCDOT's shepherd of projects as they transition through the process. Div CDEs support all tasks and lead in assembling the Final Project Initiation Packet that will be the foundation for subsequent Project Development (including NEPA environmental clearance and design).

### Candidate Project Process and Div Corridor Development Engineer Responsibilities

As shown in Attachment 1, the Project Initiation phase of IPD consists of 12 distinct steps.

- A. Evaluate Project Scope & Cost
- B. Develop Preliminary Prioritization Candidate Project List
- C. Has Project had Adequate Level of Evaluation?
- D. Refine Cost Estimate as Needed
- E. Complete Express Design
- F. Refine Project as Needed
- G. Review and Test in SPOT Online
- H. Submit Project for Prioritization
- I. Complete Project Prioritization
- J. Develop STIP
- K. Complete Project Scoping Report
- L. Complete Final Project Initiation Packet

In the Guidance, each of these steps is described, step products are defined, the lead agency or business unit is identified, and the Div CDE's role and responsibilities are presented.

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# Candidate Project Guidance

## Guidance Purpose

This guidance defines a Candidate Project process for advancing potential transportation system improvements through what is defined here as the Candidate Project Flow Chart (see Attachment 1), from identification of system improvements in adopted long-range transportation plans to the start of Project Development<sup>1</sup>. This includes preparation of Express Designs, prioritization of projects for possible funding in the State Transportation Improvement Program (STIP), preparation of Project Scoping Reports (PSR) and development of the STIP, and accumulation of project information in anticipation of Project Development. The Guidance also defines certain project coordination roles and responsibilities of the Division Corridor Development Engineers (Div CDE) or their designee in facilitating the Candidate Project process. These guidelines will be used collaboratively by the North Carolina Department of Transportation (NCDOT), Rural Planning Organizations (RPO), Metropolitan Planning Organizations (MPO), and NCDOT Highway Divisions in advancing project proposals from systems planning to project development.

**NOTE:** The Candidate Project process and Div CDE project coordination roles and responsibilities defined here apply only to highway improvement projects brought forward by RPOs, MPOs, or NCDOT Highway Divisions for potential programming and funding in the STIP. Projects being developed by other agencies or NCDOT business units for consideration for programming will not be subject to these guidelines.

## Need for Candidate Project Guidance and Defined Division Corridor Development Engineer Project Coordination Roles and Responsibilities

The life of a transportation system improvement project is an evolutionary one as it transitions from Systems Planning into Project Development. Major milestones and pivotal points in a project life, particularly in corridor improvement projects, occur throughout the Candidate Project process. These milestones and points in the process are led by a variety of NCDOT business units. Preparers of various elements of project initiation are concerned that information seems to get lost in translation and transition as projects pass successive Candidate Project milestones, as listed below:

- Early needs and project identification in regional systems plans (Comprehensive or Metropolitan Transportation Plans [CTPs or MTPs]) by MPOs and RPOs, in partnership with NCDOT's Transportation Planning Division (TPD)
- Project refinement in subarea or corridor studies by MPOs, RPOs, and TPD (e.g., Strategic Transportation Corridors Master Plans)
- Compilation of project information to support scoring in project prioritization by MPOs, RPOs, and NCDOT Highway Divisions or NCDOT modal business units
- Refinement of project information (e.g., project costs) during Express Design by NCDOT's Feasibility Studies and Corridor Development Units (FSU/CDU)

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<sup>1</sup> The Project Development phase follows programming of the project in the Statewide Transportation Improvement Program and generally includes environmental screening and permitting and preliminary design. Document time and project duration begins with issuance of Notice to Proceed.

- Project scoring by NCDOT's Strategic Planning Office of Transportation (SPOT), including project clarification and scope refinement with Project Sponsors, to rank projects for possible STIP programming
- Programming of projects, including budgeting and scheduling, in the STIP by NCDOT's Division of Planning and Programming
- Project refinement through preparation of Project Scoping Reports (PSR) by FSU/CDU to produce critical elements (e.g., Project Initiation Forms, Purpose & Need, Screening of Alternatives) that will transition a project from Systems Planning to Project Development (i.e., environmental clearance and final design); for selected PSRs, the refinement might include clearance of Merger Concurrence Point 1 – Purpose and Need, and setting the stage for clearance of Merger Concurrence Point 2 - Definition of Alternatives

Throughout this process, the project is refined to identify key elements that will influence the subsequent Project Development process. Refined information might affect any of the following:

- Project scope and concept
- Project termini
- Project cost
- Project funding
- Construction type
- Environmental class of action

To the extent that any of these elements can be defined and documented prior to the start of the Project Development phase, that phase may be simplified and streamlined.

As the IPD process has evolved, two shortcomings in the transitioning of a project were identified. First, during the transition, there was a consistent voice missing to ensure a complete and accurate understanding of the project and ensure all project information was made available to the professionals responsible for managing and processing the next project phase. Second, the lack of a consistent feedback loop to the Project Sponsors to ensure that the original objectives of a project identified in Systems Planning were being preserved through subsequent Project Initiation steps.

## Division Corridor Development Engineers Definition, Role, and Organizational Assignment

Reflecting the identified benefit to project continuity of having an assigned individual to shepherd projects from Systems Planning to entry into Project Development, this Guidance identifies the Div CDEs as the primary NCDOT assigned lead. However, recognizing that variations may occur within Divisions on assignments made to Div CDEs, it is also recognized that the Division Planning Engineer and others may share these responsibilities. It is the intent of this Guidance to identify who is responsible unless otherwise directed by the Division Engineer.

The purpose of each Div CDE in project initiation is two-fold:

1. To serve as a project resource tasked with ensuring that a complete project record (technical and decision documentation) is carried forward through Project Initiation; and
2. To serve as a bridge between the Project Sponsor and NCDOT business units to resolve conflicts in project objectives, concept, and scope as projects advance through the Project Initiation process.

The Candidate Project: Systems Planning to Programming Flow Chart establishes the individual processes that a project should follow in Project Initiation. It identifies the lead group and support team for each process. The Flow Chart is shown in Attachment 1.

## Candidate Project Guidance and Division Corridor Development Engineer Responsibilities in Process Steps

The Div CDE is responsible for shepherding the project from Systems Planning through Programming. The intent is to ensure smooth flow of information as the project advances through planning and programming and to provide feedback information to Project Sponsors of possible changes to project scope or concept, connecting project stakeholders to project managers as project scope decisions or interpretations are made.

Following are Project Initiation Processes and Div CDE roles and responsibilities:

### A. Evaluate Project Scope & Cost

- Summary: This element corresponds to early Candidate Project efforts, whereby a quick assessment of a proposed regional transportation system improvement's design concept, scope, and estimated cost may be completed to determine if additional work is needed to update/refine these elements. If additional work is needed, then the Project Sponsor can work with their partners to better define the proposed improvement and its associated costs. The benefit of this early assessment and potential additional work is to avoid advancement of projects through the Candidate Project process that have serious challenges in terms of buildability, permitting, or excessive, unanticipated costs.
- Products:
  - Project Key Contact Sheet (Attachment 2)
- Lead agency or business unit: Project Sponsor
- Support: Div CDE, Division Planning Engineer, Corridor Development Unit/Feasibility Studies Unit, and Transportation Planning Division
- Div CDE Roles and Responsibilities: In coordination with the Project Sponsor, the Div CDE may support efforts to conduct a quick assessment of projects to determine if projects need to be updated/refined from how they have been identified in long-range transportation planning. If additional work is needed, the Div CDE will support the effort to update/refine concept, scope, and estimated cost. As a deliverable for this phase, the Div CDE will help develop a Project Key Contact Sheet for each project, identifying key agencies and individuals who have been or will be engaged in advancing the project through the project's various phases. This listing will be a key resource when a project transitions into Project Development.

### B. Develop Preliminary Prioritization Candidate Project List (PPCPL)

- Summary: Understanding that long-range transportation planning will identify more system improvements than can be implemented during the time span of NCDOT's current work programs, a listing of those system improvement projects seen by the Project Sponsors as being the highest priority to address key long-range transportation plan objectives will be developed. Working with the NCDOT business units and other stakeholders, Project Sponsors will develop their own criteria for defining their highest priority projects. The benefit of this step is to provide a list of potential SPOT submittals to the FSU/CDU to be reviewed to see if an Express Design or only a refined cost estimate is recommended, Project

Initiation Step C. It is understood that Project Sponsors have the authority to submit projects directly to SPOT.

- Products:
  - Preliminary Prioritization Candidate Project List
- Lead agency or business unit: Project Sponsor
- Support: Div CDE, Division Planning Engineer, Corridor Development Unit/Feasibility Studies Unit, State Transportation Improvement Program Unit, Strategic Prioritization Office of Transportation, and Transportation Planning Division
- Div CDE Roles and Responsibilities: The Div CDE will participate in and document RPO, MPO, and Highway Division preliminary project prioritization meetings and assist in the development of the Preliminary Prioritization Project List.

#### C. Has Project had Adequate Level of Evaluation?

- Summary: Once projects have been identified as being of high priority for implementation through Preliminary Prioritization Candidate Project Listing, they will be screened for adequacy of concept scope development and cost estimates, with three recommendations: no further analysis is needed, to simply have the cost estimate updated, or to be subjected to a complete Express Design. Parameters for adequacy will be developed by the FSU and CDU. The screening recommendations will be documented on the Pre-Prioritization Design Concept & Scope Sufficiency Form and the Preliminary Prioritization Project List.
- Products:
  - Pre-Prioritization Design Concept & Scope Sufficiency Form
- Lead agency or business unit: FSU/CDU
- Support: Div CDE, Division Planning Engineer, Project Sponsor, Transportation Planning Division
- Div CDE Roles and Responsibilities: Assemble form information for each PPCPL project and support adequacy determination by providing requested information on project scope and cost evaluation.

#### D. Refine Cost Estimate as Needed

- Summary: The evaluation of Step C will determine that some projects have been sufficiently developed and do not require an Express Design. Instead, the cost estimates for these projects will be updated to reflect current unit costs and inflation rates. This step will lead to that updated cost estimate. Cost estimates will reflect the latest guidance from the FSU and CDU.
- Products:
  - Updated cost estimate
- Lead agency or business unit: FSU/CDU
- Support: Div CDE, Division Planning Engineer, Project Sponsor, Transportation Planning Division
- Div CDE Roles and Responsibilities: Ensure that the Feasibility Studies and Corridor Development Units have the complete project package for reference in updating the cost estimate.

#### E. Complete Express Design

- Summary: The Express Design Evaluation investigates conceptual design option(s) and prepares cost estimates needed for the project to go through the prioritization process, in accordance with the Strategic Transportation

- Investments Law (STI), for potential inclusion in the STIP. This step includes an opportunity for public review and comment on the Express Design deliverables.
- Products: The Express Design Evaluation will result in submittals that include, at a minimum, the following:
  - Summary (a page summary of the project description and costs)
  - Conceptual design(s) on environmental features mapping and design assumptions
  - Cost estimates (copies of construction, Right of Way, utilities, and ITS cost estimates for the project)
  - Traffic memo (if applicable)
  - Constructability narrative (if applicable)
  - Traffic Safety Screening Tool Results
  - Traffic Safety Analysis (if applicable)
  - Proposed mapping limits for project surveys (pdf and dgn files)
  - Stakeholder coordination log and documentation
- Lead agency or business unit: FSU/CDU
- Support: Div CDE, Division Planning Engineer, Project Sponsor, Transportation Planning Division
- Div CDE Roles and Responsibilities: Ensure participation of all relevant stakeholders in the Express Design process to support refinement of study scope and provision of complete project data from Project Sponsor.

#### F. Refine Project as Needed

- Summary: The Express Design may determine that the project concept and scope as proposed by the Project Sponsor have significant design issues requiring significant scope changes to address. In this step, the Express Design team will be available to work with the Project Sponsor to refine the project prior to its submittal to SPOT for project prioritization.
- Products:
  - Updated Project Sheet
  - Updated Cost Estimate
- Lead agency or business unit: Project Sponsor
- Support: Div CDE, Division Planning Engineer, Corridor Development Unit/Feasibility Studies Unit, Transportation Planning Division
- Div CDE Roles and Responsibilities: Ensure collaboration between the Express Design team, Project Sponsor, and local government to work through project refinements prior to project submittal for scoring.

#### G. Review and Test in SPOT Online

- Summary: This step in the Candidate Project process allows Project Sponsors to test potential projects to determine their preliminary prioritization scores prior to the start of actual scoring by SPOT.
- Products:
  - SPOT Test Run Results
- Lead agency or business unit: Project Sponsor
- Support: Div CDE, Division Planning Engineer, Strategic Prioritization Office of Transportation, Transportation Planning Division
- Div CDE Roles and Responsibilities: Assist Project Sponsors as needed by running projects through the SPOT Online tool and testing the effect of minor project scope changes.

#### H. Submit Project for Prioritization

- Summary: In this step, Project Sponsors submit their projects to SPOT for scoring, using the project submittal guidance developed by SPOT as part of its Project Prioritization Process.
- Products:
  - Confirmation of project submittals
- Lead agency or business unit: Project Sponsor
- Support: Div CDE, Division Planning Engineer, Strategic Prioritization Office of Transportation, Transportation Planning Division
- Div CDE Roles and Responsibilities: Support Project Sponsors as needed in efforts to assemble needed information for project prioritization packets responsive to SPOT requirements.

#### I. Complete Project Prioritization

- Summary: In this step, project scores for each project are developed by obtaining project submittal information from the Project Sponsor through SPOT Online and applying the appropriate STI scoring measures and criteria weighting as defined by the prioritization workgroup and approved by the Board of Transportation. Final scores are provided to the STIP Unit for use and guidance in developing the STIP. Final scores also trigger completion of Project Scoping Report efforts (see Process Step K, below). This step includes an opportunity for the public to review and comment on the STI scoring.
- Products:
  - Spreadsheet of final quantitative scores for all submitted projects in the six modes: highway, aviation, bicycle/pedestrian, ferry, transit, and rail
  - Map of evaluated projects with scoring data (and funded status when applicable)
- Lead agency or business unit: SPOT
- Support: Div CDE, Division Planning Engineer, Corridor Development Unit/Feasibility Studies Unit, Project Sponsor
- Div CDE Roles and Responsibilities: Support SPOT as needed in efforts to assess and refine project scores

#### J. Develop STIP

- Summary: Prepare STIP to communicate to the public projects that NCDOT intends to work on during the next 10 years, and to satisfy federal and state funding requirements.
- Products:
  - Draft STIP (Hardcopy and PDF)
  - Draft STIP website update, including interactive map
  - Final STIP (Hardcopy and PDF)
  - Final STIP website update, including interactive map
  - Final STIP – Division Supplements (Hardcopy and PDF)
  - Final STIP – MPO and RPO Supplements (Hardcopy and PDF)
- Lead agency or business unit: State Transportation Improvement Program Unit
- Support: Div CDE, Division Planning Engineer, Corridor Development/Feasibility Studies Unit, Strategic Prioritization Office of Transportation
- Div CDE Roles & Responsibilities: Support STIP Unit as needed in efforts to assemble draft STIP, including providing information on project readiness and local funding commitments.

#### K. Complete Project Scoping Report

- Summary: The final document prepared as part of the Candidate Project process is the Project Scoping Report (PSR). The PSR is intended to compile previous technical evaluation results and further refine the project for Project Development. All projects recommended for inclusion in the draft STIP will be screened to determine the level of PSR: Streamlined, Regular, or Plus. For small, straightforward projects, a Streamlined PSR will be developed that includes a Screening Checklist and Project Initiation Form. For projects expected to require more robust documentation, the Regular PSR will be developed to include the elements of a Streamlined PSR and a detailed technical report. A Plus PSR will include all elements of the Regular PSR plus Public Involvement Documentation and Resource Agency Documentation needed to define Merger Screening, document achieving Merger Concurrence Point 1, and define alternatives. This step includes an opportunity for the public and stakeholders to be involved in scoping transportation improvement projects.
- Products:
  - Project Scoping Report Level-of-Detail Screening Form (to determine the level of PSR report development)
  - Traffic Safety Screening Form
  - Project Scoping Report (reflecting latest PSR guidance)
  - Merger Pre-Screening Form
  - Project Initiation Form
  - Concurrence Point 1 documentation (to document pre-NEPA decisions and decision process)
- Lead agency or business unit: FSU/CDU
- Support: Div CDE, Division Planning Engineer, Project Manager, Project Sponsor, Transportation Planning Division
- Div CDE Roles and Responsibilities: Ensure participation of all relevant stakeholders, including local governments, in the PSR process to support refinement of study scope and provision of complete project data from Project Sponsor.

#### L. Complete Final Project Initiation Packet

- Summary: Throughout the Candidate Project process, a record of documents that have defined the project will be compiled and maintained, for ultimate delivery to the project development team. This step includes an opportunity for public review and comment on all project planning materials included in the Final Project Initiation Packet.
- Products: The full Project Initiation Packet may include but is not limited to:
  - Long-range transportation planning Project Sheet including the Problem Statement
  - Community Understanding Report
  - Public Involvement documentation
  - Alternative and Scenario Analysis
  - Environmental Considerations and Features Map
  - Land Use Information
  - Indirect and Cumulative Effects documentation
  - Identified Need Form
  - Express Design
  - Corridor/Feasibility Study
  - Project Scoping Report
  - Project Initiation Form

A more complete listing of documents to be included in the Project Initiation Packet is shown in Attachment 3. All documents comprising the Project Initiation Packet will be uploaded to appropriate Project Initiation resource repositories, such as ATLAS.

- Lead agency or business unit: Div CDE
- Support: Division Planning Engineer, Corridor Development Unit/Feasibility Studies Unit, Project Manager, Project Sponsor, Transportation Planning Division
- Div CDE Roles & Responsibilities: Ensure that all relevant planning information at any point in the planning process is available to all relevant partners.

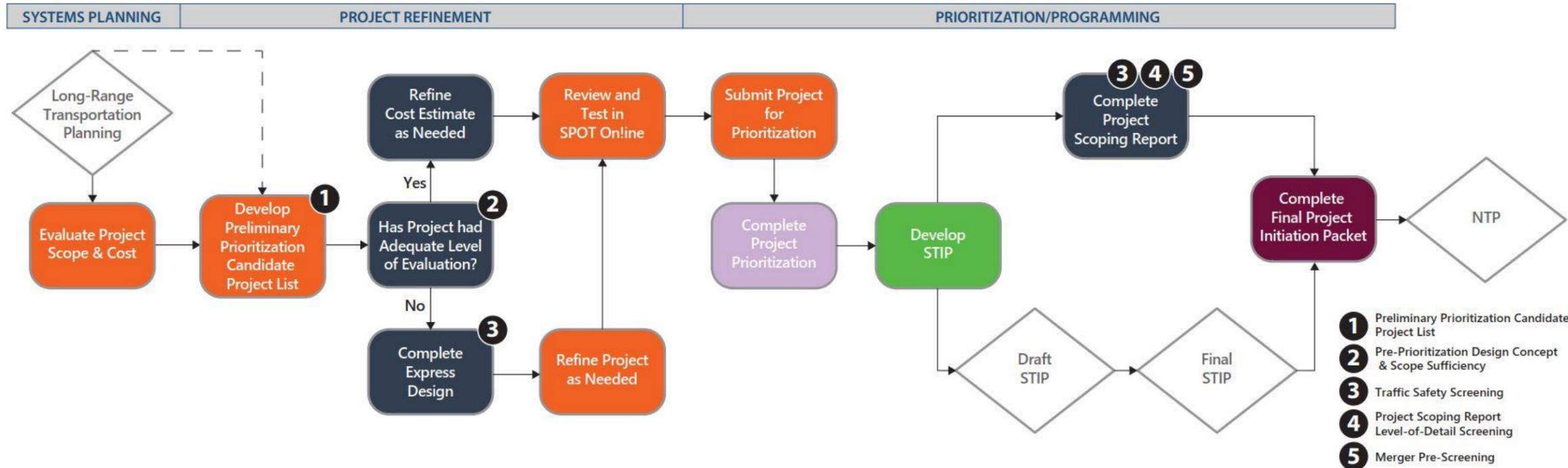
## Attachments

Candidate Project: Systems Planning to Programming Flow Chart  
Project Key Contact Sheet template  
Project Initiation Packet elements

# Candidate Project: Systems Planning to Programming



DATE: August 31, 2021



- 1** Preliminary Prioritization Candidate Project List
- 2** Pre-Prioritization Design Concept & Scope Sufficiency
- 3** Traffic Safety Screening
- 4** Project Scoping Report Level-of-Detail Screening
- 5** Merger Pre-Screening

	Evaluate Project Scope & Cost	Develop Preliminary Prioritization Candidate Project List	Has Project had Adequate Level of Evaluation?	Complete Express Design	Refine Cost Estimate as Needed	Refine Project as Needed	Review and Test in SPOT Online	Submit Project for Prioritization	Complete Project Prioritization	Develop STIP	Complete Project Scoping Report	Complete Final Project Initiation Packet
Division Corridor Development Engineer	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	LEAD
Division Planning Engineer	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT
Corridor Development/ Feasibility Studies Unit	SUPPORT	SUPPORT	LEAD	LEAD	LEAD	SUPPORT			SUPPORT	SUPPORT	LEAD	SUPPORT
Project Manager											SUPPORT	SUPPORT
Project Sponsor (MPO, RPO, Division - DPE)	LEAD	LEAD	SUPPORT	SUPPORT	SUPPORT	LEAD	LEAD	LEAD	SUPPORT		SUPPORT	SUPPORT
State Transportation Improvement Program Unit		SUPPORT								LEAD		
Strategic Prioritization Office of Transportation		SUPPORT					SUPPORT	SUPPORT	LEAD	SUPPORT		
Transportation Planning Division	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT	SUPPORT			SUPPORT	SUPPORT

## Attachment 2: Project Key Contact Sheet Template

<b>Project Identifying Information</b>			
Project Name: _____			
Sponsoring Agency: _____			
Planning Identification #: _____			
STIP #: _____			
<b>Agency/Organization</b>	<b>Name</b>	<b>Phone #</b>	<b>Email</b>
Project Sponsor (MPO, RPO, Highway Division)			
<ul style="list-style-type: none"> <li>- Transportation Planning Division CTP Engineer</li> <li>- Other NCDOT Modal Unit Representatives</li> </ul>			
Key Project Stakeholders (e.g., resource agencies, neighborhood representatives, affected business interests)			
Express Design Team (Feasibility Study Unit manager, ED Consultant)			
PSR Team (Feasibility Study Unit manager, PSR Consultant)			
Other			

### Attachment 3: Project Initiation Packet elements

<b>Packet Element</b>	<b>Initial Responsible NCDOT Agency</b>
Problem Statement	Transportation Planning Division
Community Understanding Report	Transportation Planning Division
Public Involvement documentation	Transportation Planning Division
Alternatives Analysis	Transportation Planning Division
Environmental Considerations and Features Map	Transportation Planning Division
Land Use Information	Transportation Planning Division
Indirect and Cumulative Effects documentation	Transportation Planning Division
Project Key Contact Sheet	Div CDE
Conceptual Design	Div CDE
Corridor/Feasibility Study	Feasibility Studies/Corridor Development
Preliminary Prioritization Project List	Project Sponsor
Project Screening Sufficiency Sheet	Feasibility Studies/Corridor Development
Cost Estimate	Feasibility Studies/Corridor Development
Updated Project Sheet	Project Sponsors (MPO/RPO, Highway Division)
Project Scoping Report Screening Results	Feasibility Studies/Corridor Development
Identified Need Form	Div CDE
Express Design	Feasibility Studies/Corridor Development
Project Scoping Report	Feasibility Studies/Corridor Development
Project Initiation Form	Feasibility Studies/Corridor Development