

Problem Statement Guidance

This guidance has two primary purposes: 1) to help long range transportation planners consistently document the data used to develop the Problem Statement (PS) as part of a Comprehensive Transportation Plan (CTP) study; and 2) to help choose the level of PS and the data needed to support the foundation for the Purpose and Need (PN) when the project is programmed and moves to project development for environmental analysis. There is a great deal of work occurring during the CTP study that can be used to support the PN for individual projects. With consistent documentation and format, this crucial information will be more easily and completely carried from long-range plans to individual projects thereby decreasing "redo" during project planning.

During the Comprehensive Transportation Plan (CTP) process the PS should describe an identified deficiency in the area's transportation system. The deficiencies are identified by using travel demand modeling and/or forecasting techniques that take into account land development patterns, employment and population projections, and community values. This data is used to analyze the transportation needs of the area and develop a CTP that recommends transportation improvements to alleviate identified deficiencies. The development of these recommendations involves consideration of the physical, natural, social and economic environment. The CTP process is a cooperative effort between local governments, MPOs, RPOs, FHWA, and NCDOT. The PS is typically used by the North Carolina Department of Transportation's (NCDOT) Project Development and Environmental Analysis Branch (PDEA) to develop Purpose and Need statements for projects during the project development stage. The information provided in the PS is intended to help support decisions made in the NEPA/SEPA process.

The sections below describe how to develop a Full Problem Statement, Minimum Problem Statement, or Problem Statement that References a Purpose and Need Underway.

When developing a PS as part of a CTP, all elements of the Minimum PS should be included in the documentation for each proposed project. As resources allow, additional information should be added from the Full PS guidance. When developing a PS upon request from project development, the Transportation Planning Branch (TPB) project engineer should use the Full PS guidance, including all information that is readily available. Refer to the 'Development of Problem Statement' procedure for more information. Following are the criteria for determining which level of Problem Statement to develop for proposed projects as part of the CTP.

Criteria for Determining which Level of Problem Statement to Develop for Various Proposed Projects in the CTP

Full Problem Statement

- Time Frame
 - First, select projects from the State Transportation Improvement Program (STIP) or 5-year Work Program.
 - Then, add projects from the 10-year Work Program.
 - Add additional proposed projects, as resources allow, from the closest interim year(s) in the CTP/LRTP (if specified) or from the MPO/ RPO Project Priority List that is submitted as part of NCDOT's biennial prioritization process.
- Scope: Highest priority should be given to projects that are major new location, major multi-lane widening, and other major projects from all modes, as resources allow.

Minimum Problem Statement

- Develop at least a Minimum PS for all proposed projects for which Purpose and Need is not currently underway.

Problem Statement that References a Purpose and Need Underway

- The Problem Statement must reference the Purpose and Need as shown in the following guidance if Purpose and Need concurrence has been achieved or development is underway by PDEA prior to adoption of the CTP.

This guidance contains descriptions of each section of a PS. The lists of data in each section show the possible types and sources of information to include. However, only include the information that is directly applicable (and additional information may be added if it is relevant). Only project-specific information is to be included. Information that pertains to the entire CTP study is contained elsewhere in the CTP Report. For example, a general description of the public involvement process is contained elsewhere in the CTP Report; only specific issues about the proposed project are to be included in the PS under the Public/ Stakeholder Involvement section. When information is cited from another existing plan or program, include the relevant information and reference that document by official title, author (may be an agency), date, and web link (if available).

FULL PROBLEM STATEMENT GUIDANCE

*For a given CTP proposal, the first ½ page (up to a whole page, if necessary) is used to show maps of the proposed project. The heading should contain the facility name, Local ID number, and improvement description. Include maps of the proposed project and of the planning area in which it is located. Optionally, aerial maps and/ or photos may also be included. Refer to the 'Development of Problem Statement' procedure for instructions on creating the maps and examples.

Road Name (SR #), Local ID: XXXX#####-X

IDENTIFIED PROBLEM

Provide a clear and concise description of the problem; the primary goals the possible solutions are expected to accomplish; and a big picture description of the desired results. There should not be any part of the "Identified Problem" section that would identify or limit potential project alternatives.

Justification of Need

Provide data to support the transportation problem or need. Document any specific information from the analysis that led to identification of the problem, as well as any other factors that led to the proposed project being included on the CTP.

- Concept- general description of the need for the proposed project
- Problem description/ conceptual purpose. To determine the primary purpose(s) (i.e. legislative intent, congestion, safety, etc.), refer to the '*Purpose and Need Guidance for FHWA-funded Projects in North Carolina*', FHWA NC Division, Version 2, February 2009. Include secondary purpose(s) and/ or other desirable outcomes only if appropriate. Include measurable goals or performance measures if considered as part of the CTP study.
 - Explanation of the system and/ or (sub) area deficiencies, economic development, etc.
 - Description of the purpose(s) for addressing the need(s)
- Transportation deficiency data
 - Safety/ congestion/ economic development/ etc., based on the primary purpose(s)
 - Identification of deficiencies in the CTP study area, which could include system-wide deficiencies related to the proposed project

Data: Also refer to the '*Purpose and Need Guidance for FHWA-funded Projects in North Carolina*', Appendix B for types of data that may be included based on the identified primary purpose.

- Travel demand data
 - Current and projected traffic volume (provide range or volume by section if needed)
 - Person-trips
 - Prior/ background information (if available)
 - Trip type (s)
 - Average trip length(s)/ travel time(s)
 - Type of traffic/ vehicle mix/ classification
 - Speeds
- Travel analysis
- Measures of effectiveness
- Safety/ crash data and analysis (includes fatality data) *Note: Based on the initial safety screening conducted as part of the CTP Study, contact the NCDOT Safety Planning Group to request a crash analysis for location(s) requiring further evaluation. Refer to the 'Collection and Presentation of Crash Data' procedure. Include safety data in the problem

statement only if the analysis reveals crash rates greater than the critical crash rate and there are potential transportation countermeasures.

- Economic development related data (if part of the purpose), such as state and local economic development plans; information should be specific to the type of economic development the area is looking to attract
- Legislative mandates
- Long-term commitments to maintaining mobility along corridors

Community Vision and Problem History

Identify important issues, goals and ideas relating to the community's future vision. Include information on how the problem relates to the context or vision of the community it is intended to serve. Document the evolution of the problem over time.

Data:

- Reference information from comprehensive plans and local land use plans related to community vision specific to the identified problem, including history/ background of the problem
- Outcomes of the evaluation of the land use plan (from the land use sub-process)
- Identified goals and objectives related to the identified problem
- Description of how the problem relates to the community vision, policies, goals and objectives

CTP PROJECT PROPOSAL

Provide supporting information related to the project that is shown on the CTP. The information should be specific to the project on the CTP. Information related to the overall CTP development and development of solutions (alternatives and scenario analysis) would be located elsewhere in the CTP document. The categories of information are listed below. While information from a CTP study may fit into multiple sections below, it should be documented in the most appropriate section and not repeated.

- [Project Description and Overview](#)
- [Natural & Human Environmental Context](#)
- [Relationship to Land Use Plans](#)
- [Linkages to Other Plans and Proposed Project History](#)
- [Multi-modal Considerations](#)
- [Public/ Stakeholder Involvement](#)

Project Description and Overview

Include a short summary of the concept and justification for the proposed project. Identify users and benefits associated with the proposed project. While projects on the CTP may be interdependent, proposed projects should be able to stand on their own merit. If the benefits relate to other proposed projects, it should be made clear what the benefits are for the given project without the other project(s).

- Concept- general description of the proposed project
- Project concept and justification for concept
 - Description of the problem that this proposed project is intended to solve, possibly in combination with other system plan components (reference measures of effectiveness, as appropriate)

- Benefits
 - Users
 - Safety
 - LOS
 - Nature of demand

Data:

- Facility name(s)/ numbering
- Location (county, municipality, or other geographic identifier)
- Beginning and end points
- Traffic (existing and future estimate)
- Facility Type
- Number of Lanes (existing and proposed)
- Multi-modal elements, if proposed
- Area Type
- Sub-area boundary, if the proposed project was studied as part of a sub-area
- Geometric/ design considerations related to the proposed project's purpose
- Other pertinent information, such as interaction with other major proposed project(s) if it directly affects the purpose or implementation of the given proposed project

Natural & Human Environmental Context

Document the identified protected resources and list special physical community attributes desired to be protected or enhanced in the proposed project area. Include information on whether the proposed project is part of conforming transportation plan in a non-attainment/maintenance area, recognizing that any changes in timeline, scope, etc. could impact air quality conformity.

- Unique local assets/ resources important to the community
- Potential natural environmental impacts
- Potential community impacts, such as neighborhoods, sensitive assets, etc.
- If the proposed project is an element of a conforming air quality plan, identify the non-attainment pollutant and specify the assumptions made in the conformity report related to project scope, location, timeframe, etc.

Data:

- Description of the level of environmental screening conducted for the proposed project (if different than the general environmental screening conducted for the entire CTP), including any resource agency input for identification of priority avoidance areas or issues of concern
- Listing and locations of physical features of special importance to community in the proposed project area and their source(s), such as a local comprehensive plan, the land use priorities list developed as part of the CTP study, and/ or public involvement
- Natural environmentally-sensitive areas in the proposed project area identified in the CTP environmental screening
- Environmental mitigation opportunities, as appropriate
- Information from EEP watershed plans

Relationship to Land Use Plans

Include information specific to the proposed project concerning existing and future land use patterns, and other local priorities, considered in the CTP study.

Data:

- Information from the local land use plan(s) (specific to the proposed project and not already provided in the 'Community Vision' section above)
- Information pertaining to socio-economic data projection and inventory
- Information about alternative land use strategies studied
- Documentation of land use priorities that affect the proposed project
- Economic development impact
- Impact/ influence of the proposed project on land use (e.g. commute sheds, travel times for non-developed areas)
- Information from existing land use, environmental constraints and zoning maps
- Information from water and sewer plans

Linkages to Other Plans and Proposed Project History

Include information about the proposed project's linkage to:

- Overall CTP
- Other plans [land use, local transportation, statewide corridors, environmental/conservation, specially administered lands (Federal, parks, etc.), economic development, etc.]
- Other projects (CTP projects, local projects, and/or TIP projects)

Document the evolution of the proposed project over time and previous transportation plan updates.

- History/ background of the proposed project
- Changes to the proposed project from previous recommendations and why the changes were made.

Data:

- Description of how the proposed project relates to system-wide goals and priorities, as identified in the CTP
- Proposed project's relationship to other plans (land use, infrastructure, local transportation, adjacent area(s) transportation, statewide corridors, economic development, other agencies' plans including environmental)
- Relationship to corridor/ overlay plans, sign/ setback/ tree ordinances, unified development ordinances, etc.
- Other related needs/ proposed project(s) identified in the CTP
- Relationship/ function/ role of the proposed project and related CTP elements, including how they change over time (evolution)
- Other projects (transportation and non-transportation) that should be addressed to fulfill overall CTP goals and address the problem/ need related to the given proposed project (include measures of effectiveness information as appropriate)
- Proposed project history, including length of time in local area plans, evolution of concept over time, etc.
- History of community support and/ or opposition to the proposed project
- Major past issues concerning the proposed project

Multi-modal Considerations

Document how all modes were considered for the planning area during the CTP development process, as appropriate. Provide information on the type of modal analysis conducted, as it relates to the proposed project. There should also be an explanation if alternative modes were not analyzed as part of the CTP development process.

Data:

- Existing transit service and plans – fixed route and demand response
- Existing rail corridors (distinguish whether active or inactive and specify whether serves freight and/ or passenger rail)
- Statewide bike routes
- Local bike and/ or pedestrian plans
- Information on the modal analysis related to the problem and possible solutions, including demographic profile, population density, etc.
- Reference to local land use plans, as they relate to multi-modal considerations for the problem and possible solutions

Public/ Stakeholder Involvement

Provide details from the public involvement process that relate to the proposed project (information should only be related to this specific problem or CTP project proposal; general CTP public involvement would be located elsewhere in the CTP documentation).

- Public involvement feedback related to the proposed project, including description of how the public input was captured
- Description of how the problem statement is based on community values and how input was derived from public involvement efforts

Data

- Input received related to the proposed project
- Mechanism(s) for obtaining the input (surveys, public meetings, 'working group(s)' or organized team(s), etc.) including dates

MINIMUM PROBLEM STATEMENT GUIDANCE

Road Name (SR #), Local ID: XXXX####-X (include description of termini if there are multiple problem statements for a single corridor in the CTP area)

Include a concise description of the ***problem*** and a summary of the primary purpose(s) and any goals intended to be accomplished. Describe the transportation problem or need, based on deficiency or other data. Include information on how the problem relates to the context or vision of the community it is intended to serve.

Provide a description and known supporting information of the ***proposed project*** in the CTP, including a summary of the concept of the proposed project. Identify users and benefits associated with the proposed project. Include the following information if applicable:

- Document the identified protected resources and list special physical community attributes desired to be protected or enhanced in the proposed project area. Include information on whether the proposed project is part of an air quality conformity determination.
- Include any important information about the proposed project's linkage to overall CTP, other plans, and/ or other projects.
- Document the proposed project's inclusion in previous transportation plans, including any major changes in the concept over time.
- Provide information about any alternative modes that relate to the proposed project.
- Include any important information from the public involvement process that relates to the proposed project.

PROBLEM STATEMENT THAT REFERENCES A PURPOSE AND NEED UNDERWAY GUIDANCE

Road Name (SR #), Local ID (TIP No.): X-####

Include a concise description of the primary goals the proposed project is expected to accomplish and a summary of the concept and purpose. Include the following sentence to reference the Purpose and Need underway:

"For additional information about this project, including the Purpose and Need, contact NCDOT PDEA."