

**Purpose & Need Guidance
for FHWA-funded Projects in North Carolina**
(Version 2, February 2009)



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Purpose & Need for this Guidance

The Purpose & Need (P&N) section is perhaps the most important chapter of an Environmental Impact Statement (EIS) prepared pursuant to the National Environmental Policy Act (NEPA). It establishes why the agency is proposing to implement a project while at the same time possibly causing significant impacts. A clear, well-reasoned P&N section explains to the public and decision-makers that the expenditure of funds is necessary and worthwhile and that the priority the project is being given relative to other needed highway projects is warranted. Although significant impacts may be expected, the P&N section should clarify and describe why impacts are acceptable based on the project's importance.

The AASHTO Practitioner's Handbook on "Defining the Purpose And Need And Determining The Range of Alternatives For Transportation Projects" provides a good summary of relevant court decisions related to P&N.
environment.transportation.org/pdf/PG07.pdf

As importantly, the project P&N drives the process for alternatives consideration, development, in-depth analysis, and ultimate selection. The Council on Environmental Quality (CEQ) regulations require the EIS to address the "no-action" alternative and "rigorously explore and objectively evaluate all reasonable alternatives." A well-reasoned P&N is also vital to meeting the requirements of other legislation (e.g. Section 4(f) of the USDOT Act). Without a well-defined, -established and -reasoned P&N, it will be difficult to determine which alternatives are reasonable, prudent and practicable, and it may be impossible to dismiss the no-build alternative.

In 2000, NCDOT developed "Purpose and Need Guidelines" for use by the Transportation Planning Branch to assist in developing a "planning level" P&N statement that could then be used by PDEA as a basis for a "project level" P&N statement. Since 2000, the following actions have occurred, suggesting a need for developing North Carolina-specific guidance for planners as well as PDEA project managers:

- An on-going initiative "Integration of the Comprehensive Transportation Planning Process and the Project Development Process ([Integration Project](#))" which is designed to identify, through data driven decision making, long range transportation solutions that can be evaluated, detailed and permitted for construction;
- [Section 6002](#) of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) which established a framework for an environmental review process;
- FHWA [guidance](#) on implementation of Section 6002 of SAFETEA-LU;
- FHWA/FTA (Federal Transit Administration) [Joint Guidance on Purpose and Need](#);
- Approval of "[Merger 01](#)", a process to streamline the project development & permitting processes;
- Identification of an opportunity for improving the time required to get from "Start of Study" to Concurrence Point #1 (Purpose & Need) in the Merger 01 process as a result of reviewing performance measures for Merger 01 as adopted by the [Interagency Leadership Team](#); and
- CEQ exchange of [letters](#) with FHWA regarding Purpose & Need.

As part of the Integration Project, a multi-agency team ([Appendix C](#)) was assembled to "develop the process, documentation standards (format and content) and training module for Comprehensive Transportation Plan (CTP) Problem Statement that may be used as the primary source of information for establishing Purpose and Need". This document is an output of the team's purpose.

Purpose & Need: Why, What, Who, How, When?

Why must we develop Purpose & Need?

A P&N Statement is a fundamental requirement when developing a proposal that will require future NEPA documentation.

- For an EIS, the CEQ regulations (40 CFR 1502.13) require that *“The statement shall **briefly** specify the underlying purpose and need to which the agency is responding in proposing the alternatives including the proposed action.”*
- For an EA, CEQ regulations (40 CFR 1508.9(b)) require that the EA *“Shall include brief discussions of the need for the proposal...”*.

The P&N also plays an important role in determining the requirements of other federal laws. The AASHTO Practitioner’s Handbook on *“Defining the Purpose And Need And Determining The Range of Alternatives For Transportation Projects”* provides a good summary.
<http://environment.transportation.org/pdf/P07.pdf>

The P&N statement is intended to clarify the expected outcome of a public expenditure and to justify that expenditure—what is to be accomplished and why it is necessary. A well-written P&N statement helps to:

- Avoid developing an ill-conceived project;
- Develop a shared understanding of the transportation problems, objectives and possible solutions;
- Define a project’s scope;
- Guide development of alternatives;
- Evaluate alternatives;
- Achieve environmental streamlining;
- Identify potential context sensitive solutions;
- Allow transportation decisions to be legally defensible;
- Justify impacts and spending of funds; and
- Justify projects for programming.

What is a “Need”?

The “Need” describes the key problem(s) to be addressed and, to the extent possible, explains the underlying causes of those problems. It also provides the factual foundation for the statement of project purpose. The Need:

- Establishes evidence of current or future transportation problems or deficiencies;
- Is factual and quantifiable;
- Articulates the commitment of resources and impacts to the environment;
- Identifies a problem;
- Establishes and justifies logical termini (23 CFR 771.111(f)); and
- Supports the assertion made in the purpose statement.

Example of a good “need” statement:
“Crash analysis shows that the critical crash rate for this facility during wet conditions is twice the statewide average for similar facilities.”

What is a “Purpose”?

The “Purpose” states clearly and succinctly why the project is being proposed and articulates the positive outcomes that are intended. If a project has several distinct purposes, each purpose should be individually listed. The Purpose:

- Presents objectives to address the need;
- Can be used to develop and evaluate potential solutions;
- Is achievable;
- Is unbiased;
- Is comprehensive enough to allow for a reasonable range of alternatives, and specific enough to limit the range of feasible alternatives; and
- Allows for a range of alternatives that are in context with the setting.

Valid transportation purposes are discussed in more detail (starting on [page 10](#)).

Example of a poor purpose (it should not state a solution):

“The purpose is to widen the road to 4 lanes”.

Example of a good purpose:

“The purpose is to reduce night crashes by 20%.”

What about “other desirable outcomes”?

As a way of communicating the full range of factors that will be considered in decision-making, representing a broader vision for the project, it may be helpful to differentiate between the primary purpose(s) of the project and other goals or objectives that may be accomplished as part of the project (hereinafter referred to as “**other desirable outcomes**”).

- A **primary purpose** is a “driver” of the project (i.e. it is a goal that reflects the fundamental reason why the project is being proposed). An alternative that does not achieve a primary purpose would be eliminated as unreasonable.
- An “**other desirable outcome**” is an additional goal that is desirable, but is not the core purpose of the project. An “other desirable outcome” would not, by itself, provide a basis for eliminating alternatives in the screening stage, but could be considered as a factor in screening and could also be considered in selecting a preferred alternative.

A well-crafted P&N defines as sharply as possible the fundamental reasons why the project is being proposed.

Note: Having one or two, well-defined purposes is preferable to multiple, tenuous purposes (more is not always better).

Who develops the Purpose & Need Statement?

In general, the responsibility for defining a project’s purpose and need rests with the lead Federal agency preparing the NEPA document. For Federal-aid (FHWA Title 23 US Code funded) projects, the lead Federal agency is FHWA. Under the environmental review process defined in Section 6002 of SAFETEA-LU (23 U.S.C. § 139), lead agencies are responsible for defining the P&N. If the joint lead agencies cannot agree, the process does not move forward until the disagreement is resolved. In making this decision, the joint lead agencies must consider the input received from participating agencies and the public, but the decision ultimately is made by the joint lead agencies.

Other Federal agencies may have an independent responsibility to comply with NEPA for a transportation project. This responsibility arises when the project requires a permit or other approval from that agency. For example, if a project requires a Section 404 permit from the US Army Corps of Engineers (USACE), the USACE has an obligation to comply with NEPA before issuing the permit. Because these other Federal agencies have an independent responsibility to comply with NEPA, they are not required to adopt the purpose and need as defined by the transportation agencies. However, the CEQ has [stated](#) that non-transportation agencies should give “substantial deference” to transportation agencies’ definition of a project’s P&N. In [joint guidance](#), FHWA and FTA observed that “substantial deference” means that other Federal agencies “should only raise questions regarding our purpose and need statements when those questions relate to substantive or procedural problems (including omission of factors) important to that agency’s independent legal responsibilities.”

In North Carolina, the NEPA decision-making process utilized by FHWA (for funding decisions) and by the USACE (for Section 404 permitting decisions) has been “merged” (this process is called “[Merger 01](#)”) for certain types of projects (generally projects requiring preparation of an EIS and/or needing an Individual Permit from the USACE). The Merger 01 process calls for “concurrence” by all agencies represented on individual project teams at various project milestones (with P&N being the first milestone).

“Concurrence” is defined as:
“I do not object to the proposed action based on the laws and regulations of my program and agency.”

How is Purpose & Need Used?

The P&N is a key factor in determining a reasonable range of alternatives considered in an EIS (as well as an EA and—to some extent—a Categorical Exclusion). Specifically, the P&N defines and establishes the parameters for the range of alternatives. This is important when assessing alternatives—alternatives can be eliminated based on various issues (e.g. cost, environmental impacts, constructability as well as not meeting P&N).

Caution: The P&N should not unduly limit a reasonable range of alternatives.

Thus, an agency can dismiss, without detailed study, any alternative that fails to fully meet the project’s P&N. If the project has two distinct purposes, each of which is considered primary (i.e., vital to the project), an alternative that clearly fails to meet one of those purposes is not reasonable and should be eliminated. The fact that an alternative meets one of the primary purposes does not make it a reasonable alternative. On the other hand, if an alternative satisfies the primary purpose(s) of the project but fails to satisfy some secondary purpose that is not essential to (but desired for) the project, then the alternative is reasonable. This underscores the benefits of providing a clear statement of the essential elements of the P&N.

When establishing that a need exists and defining a project purpose, it is important to consider this question: “*How will we determine whether an alternative actually meets this purpose and need?*” For some projects, there will be a definitive answer to that

question (e.g. an alternative meets the project purpose if it relieves congestion at a specific intersection in a certain forecast year). For other projects, especially larger and more complex ones that serve several purposes, the answers to this question will be less definitive. Even for those straightforward projects, it is helpful to begin identifying—during the development of the P&N—the criteria that will be used when evaluating the ability of alternatives to meet the purpose and need. These evaluation criteria can be provided to agencies and the public for comment along with the proposed P&N.

How do we measure whether alternatives meet P&N?

When determining the reasonable range of alternatives to consider, the alternatives under consideration should be assessed to determine whether or not they fully meet the P&N. If an alternative does not fully meet P&N, then it may be eliminated. When developing a P&N statement, **it is important to also identify how the performance of alternatives will be measured against meeting the P&N.**

Note: A separate guidance document on developing alternatives is planned.

Often, P&N statements are written with open-ended terms (e.g. “improve”, “reduce”, “noticeable”). When these terms are utilized, it becomes very difficult to eliminate alternatives since almost any suggested alternative would fully meet the P&N (albeit with varying degrees of benefit). Therefore, it is important to articulate and substantiate a measurable goal. This can be accomplished several ways:

- We could express the **measurable goal in the P&N statement**;
- We could have an open-ended P&N statement, but then have associated **performance measures** that explain how we will evaluate alternatives based on meeting (or not) the P&N;
- We could have an open-ended P&N statement, but then utilize **screening criteria** during alternatives analysis that explain how we will evaluate alternatives based on meeting (or not) the P&N.

Any of these three methods are acceptable—the critical point is that we have articulated and substantiated how we will use the P&N for evaluating alternatives.

Consider the following example:

Through the planning process, an MPO develops a Congestion Management Plan (CMP). The CMP states that the MPO desires to achieve a Level of Service (LOS) “E” for all urban area roads (note: there may be other metrics that measure congestion—not just LOS). The identified need from the planning process is a capacity deficiency and the suggested solution is to widen a road (the projected LOS is “F”). Alternatives (and future LOS) developed for this project include:

- Transportation System Management (TSM)—future LOS F;
- Transportation Demand Management (TDM)—future LOS F;
- Add two lanes—future LOS E; and
- Add four lanes—future LOS D.

If the P&N statement is written as “*the purpose is to reduce congestion*”, then all alternatives fully meet the P&N and thus none can be eliminated based on P&N (we

would eliminate alternatives based on other factors—environmental impacts, level of benefit, cost, etc.—but not on P&N).

If the P&N statement is written as “*the purpose is to increase capacity*”, then the TDM alternative can be eliminated based on not fully meeting P&N (changing the demand—even if it involves a reduction of trips—does nothing to increase the capacity of the facility). The other alternatives must be carried forward since they all fully meet P&N.

If the P&N statement is written as “*the purpose is to achieve at least a LOS E in the design year*”, then the TSM and TDM alternatives can be eliminated (since they do not achieve at least a LOS E and thus do not fully meet P&N). The remaining two alternatives (involving adding lanes) can be carried forward.

How & When is the Public Involved?

The CEQ regulations do not specifically require agency coordination or public involvement in the development of a purpose and need statement. The scoping process (required for every EIS) has always provided a forum for agencies and the public to provide input on the purpose and need.

However, Section 6002 of SAFETEA-LU requires lead agencies to provide an “opportunity for involvement” for agencies and the public in defining purpose and need and determining the range of alternatives. The law leaves lead agencies with substantial flexibility in determining how to provide this opportunity, but does state that it must occur “as early as practicable” in the NEPA process—which implies, at a minimum, that this opportunity must occur before the Draft Environmental Impact Statement (DEIS) is published; it cannot simply be combined with the comment period on the DEIS. In guidance, FHWA and FTA have determined that the opportunity for involvement on purpose and need can occur simultaneously with the opportunity for involvement on the range of alternatives; they do not have to occur sequentially.

Note: to meet the requirements of Section 6002, the current Merger 01 is being updated to add this public involvement step.

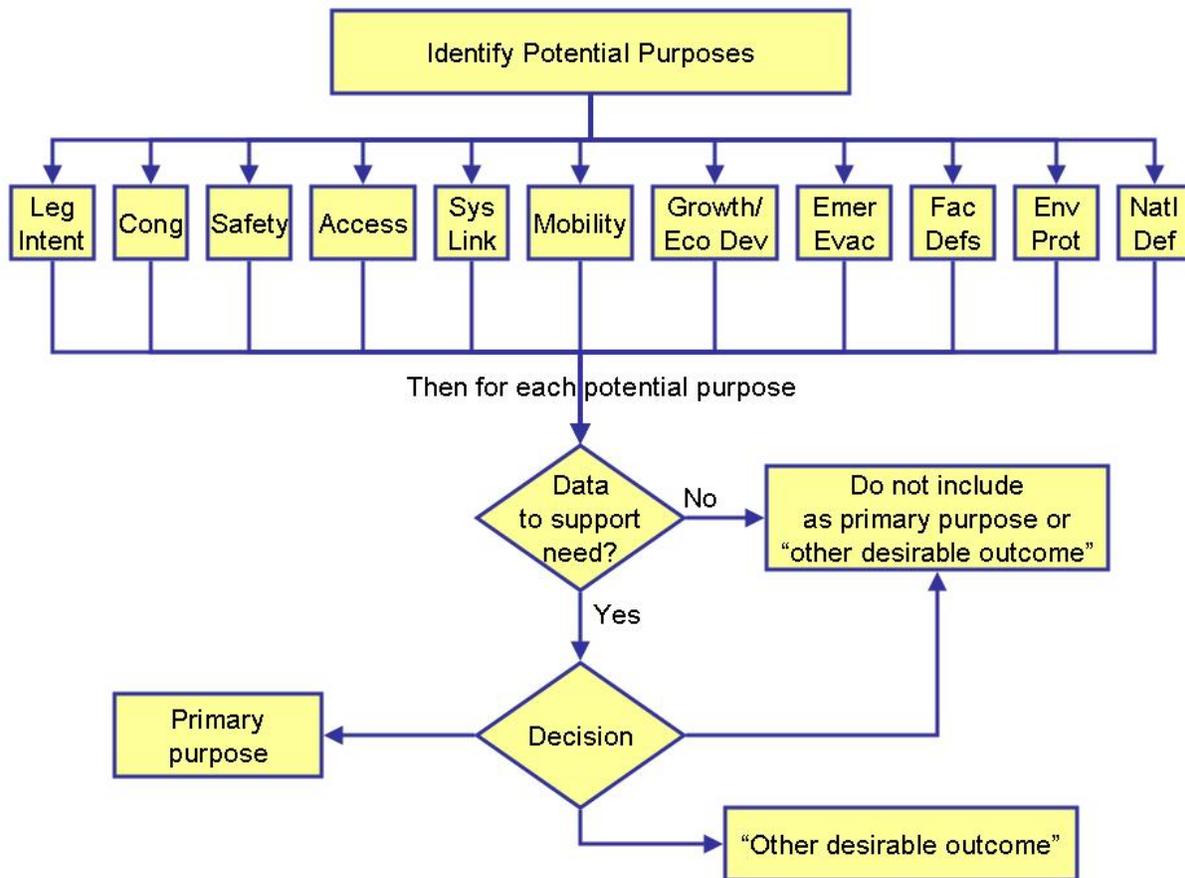
How do we determine what purpose(s) to include?

The first step is to understand how the proposed project was conceived. Then, a range of potential purposes can be developed. This is followed by an analysis for each of the potential purposes to determine whether there is a well-defined and well-supported need. For each of the potential purposes that have well-defined and well-supported needs, the author of the P&N statement can choose one of the following options:

- Include as a primary purpose;
- Include as an “other desirable outcome”; or
- Do not include.

Note: there needs to be at least one primary purpose for a project.

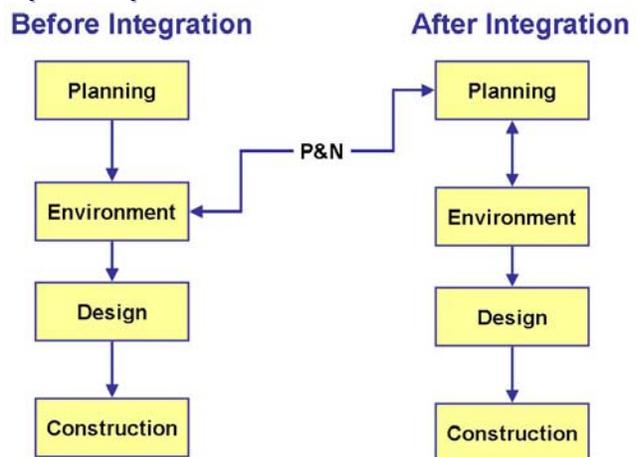
The graphic below depicts this framework.



When must we develop Purpose & Need?

Historically, NCDOT has developed the P&N during the Environmental phase (see figure). The Project Development & Environmental Analysis (PDEA) project managers may or may not have information from the Planning phase that is useful in developing the P&N.

A purpose of this document is to facilitate development of P&N during the Planning phase (if desired) so that when a project progresses to the Environmental phase, the P&N has already been established and simply needs revalidation (a determination that conditions and assumptions have not changed to the point where the original P&N is no longer appropriate) before the project proceeds to the identification of alternatives.



Substantial changes in P&N could require re-analysis of screening-level decisions on alternatives and re-initiation of the public and participating agency involvement.

[Appendix A](#) depicts how P&N can be developed during the Planning phase and still be compliant with FHWA’s guidance on Section 6002 of SAFETEA-LU.

Developing Purpose and Need

There is not an all-inclusive list of possible purposes. Possible purposes for transportation projects include:

- [Legislative Intent](#);
- [Transportation Goals/Objectives](#):
 - [Congestion](#);
 - [Safety](#);
 - [Facility Deficiencies](#);
 - [Access](#);
 - [System Linkage](#);
 - [Mobility](#);
 - [Emergency Evacuation](#).
- [Non-Transportation Goals/Objectives](#):
 - [Environmental Protection](#);
 - [Growth/Economic Development](#); and
 - [National Defense/Security](#).

Legislative Intent in Purpose and Need

Courts have specifically recognized that Federal agencies can and should consider legislative (Congress and/or state legislatures) direction when determining a project’s purpose. This legislative direction can take many forms (e.g. legislation that establishes a specific highway corridor, special funding (e.g. tolling), Public-Private Partnerships or calls for incorporation of transit or pedestrian facilities as part of highway projects). However, existence of project-specific legislation does not necessarily determine the project purpose—the lead agency(ies) still must exercise judgment in the NEPA process when deciding whether, and to what extent, to incorporate legislative direction into the project purpose. Unless legislative intent exempts FHWA from compliance with relevant laws (e.g. NEPA), legislative intent cannot be used as the sole reason for directing decisions on the project.

A source for legislative intent could be a Congressional earmark. In the case of earmarks, often there is just a brief description of the project. The description may not be clear enough to use legislative intent in the P&N. A potentially helpful source to seek clarification on Congressional intent is the Conference Report (if one exists) associated with the legislation.

Occasionally, Congress has exempted federal actions from environmental laws
[knowledge.fhwa.dot.gov/ReNepa/ReNepa.nsf/All+Documents/FF96BFD3BCD15C85256BD100436523/\\$FILE/Legislation%20Limiting%20Scope%20of%20NEPA%20Review.pdf](https://knowledge.fhwa.dot.gov/ReNepa/ReNepa.nsf/All+Documents/FF96BFD3BCD15C85256BD100436523/$FILE/Legislation%20Limiting%20Scope%20of%20NEPA%20Review.pdf).

Before incorporating legislative intent into a P&N statement, consider the following questions:

- Is there specific legislation related to the project?
- If so, how is it worded?
 - Does it call for a particular type of facility design (e.g. an Interstate)?
 - Does it call for a particular location (e.g. the project must start/stop at a specific place)?
 - Does it call for a particular mode (e.g. for all vehicles or just for busses)?
- Is there another source for information on legislative intent (e.g. a Conference Report)?
- Are there other purposes that might accomplish the same outcome as the legislative intent?
- Is legislative intent even needed for inclusion in the P&N (e.g. there is another purpose that is sufficient justification for the project without including legislative intent)?

[Appendix B](#) contains a template for determining whether/how to include Legislative Intent as a purpose, along with data needs and an example.

Transportation Goals/Objectives in Purpose and Need

The transportation planning process can be used to establish transportation policies that inform the P&N. As with legislation, the transportation planning process can provide policy direction for the NEPA process in many ways, such as designating networks or systems; defining performance goals; or defining the respective roles of highways and transit modes in meeting transportation needs (e.g. if a Metropolitan Planning Organization (MPO) has established performance measures for congestion reduction, those performance measures could provide the basis for defining the need for transportation improvements on a specific facility). Recent FHWA guidance clarifies that, if the groundwork is laid in the planning process, a project purpose can be defined in terms of a specific mode and a general project location. The guidance also notes that the use of these planning-level goals and choices must be appropriately explained during NEPA scoping and in the NEPA document.

In addition to establishing broad, systems-level policies and plans, the transportation planning process also can involve a more detailed study of a specific corridor or area. These studies—which are known as “corridor or sub-area studies” in FHWA’s recently revised planning regulations (23 CFR 450 as included in the Final Metropolitan and Statewide Transportation Planning Rule (published on 2/14/07)—can be used as the basis for defining the purpose and need and determining the range of alternatives for individual projects.

In 2005, FHWA and FTA issued joint guidance on linking the transportation planning and NEPA processes. In 2007, this guidance was incorporated, with some changes, into Appendix A of the new statewide and metropolitan transportation planning regulations (23 CFR 450). Appendix A refers to the transportation planning process as the “primary source” of the purpose and need, and lists four specific ways in which the planning process can be used to develop a purpose and need:

- Goals and objectives from the transportation planning process may be part of the project's purpose and need statement;
- A general travel corridor or general mode(s) (e.g., highway, transit, or a highway/transit combination) resulting from planning analyses may be part of the project's purpose and need statement;
- If the financial plan for a metropolitan transportation plan indicates that funding for a specific project will require special funding sources (e.g., tolls or public-private financing), such information may be included in the purpose and need statement; or
- The results of analyses from management systems (e.g., congestion, pavement, bridge, and/or safety) may shape the purpose and need statement.

Before including transportation goals/objectives in the P&N, there needs to be the ability to identify some source(s) to support including transportation goals/objectives in the P&N statement. Possible sources might include:

- MPO Long Range Transportation Plan (LRTP);
- Comprehensive Transportation Plan (CTP);
- NCDOT Long-Range Statewide Multimodal Transportation Plan;
- NCDOT Strategic Highway Corridors Policy Statement;
- county and/or municipal comprehensive plans.

Valid transportation-related Goals/Objectives include the following:

- [Congestion](#);
- [Safety](#);
- [Facility Deficiencies](#);
- [Access](#);
- [System Linkage](#);
- [Mobility](#); and
- [Emergency Evacuation](#).

Congestion in Purpose and Need

Addressing congestion may be the most common purpose for transportation projects. It should be fairly easy to identify support for reducing congestion from policy statements--the FHWA, NCDOT, MPOs and local communities typically have goals/objectives to reduce congestion.

When considering congestion as a project purpose, **the first step should be to define congestion**. This may seem obvious, but there is not always a universally agreed-upon definition of congestion for a particular community, agency or even project.

The Transportation Research Board defines congestion as "Travel time in excess of that normally incurred under light or free-flow conditions".

Once congestion has been defined, the next step is to determine what performance level is desired for a particular facility (i.e. what is the minimum level of congestion that would still justify the expenditure of public funds). **This determination is made by the**

project manager. The project manager may have available resources to assist in defining the target for reduction. For example:

- While FHWA does not define acceptable levels of congestion for areas or facility types, FHWA may, on a case-by-case basis, state that the project must achieve a certain performance level. For example, for an I-26 project in Asheville, FHWA has stated that the project must achieve at least a LOS of “D” in order for FHWA to participate in the funding.
- NCDOT has a policy that sets performance standards for urban facilities based on speed (e.g. for expressways in suburban areas, the average travel speed during peak travel conditions is 45 mph). This policy can be found at: <http://www.ncdot.org/doh/preconstruct/traffic/tepl/Topics/L-06/L-6p.pdf>.
- An MPO Congestion Management Plan (CMP) may identify minimum performance levels for facilities (e.g. the Durham-Chapel Hill-Carrboro MPO CMP has identified LOS “E” as “unacceptable”).
- Some transportation facilities are operating so poorly that “acceptable operating levels” may be defined outside what would ideally be desired (e.g. a road operating at a travel speed of 30mph, with a posted speed of 55, may have “acceptable” defined at a speed less than 55, reflecting social, environmental or economic constraints that would preclude ever achieving the optimal performance.)
- A transportation agency may have a minimum Benefit-Cost Ratio that is desired.

A range of measures can be used to demonstrate that a congestion need exists, such as levels of service (LOS), volume-to-capacity (V/C) ratios, and vehicle hours of delay. The key to demonstrating a congestion need is to use performance measures that are appropriate to conditions in the project area—the same set of measures will not apply to every project.

The Travel Demand Model (TDM) used in the Transportation Planning process provides sufficient data to establish a congestion-related need for a project. The TDM includes a capacity for a particular transportation facility. It also estimates the demand for that facility. Therefore, when the TDM indicates a transportation facility is over the capacity, the data from the TDM can be used to identify the need and then to frame the purpose.

A good P&N statement will:

- Be framed in the context of addressing congestion; and
- Include a measurable target of such reduction.

[Appendix B](#) contains a template for determining whether/how to include Congestion as a purpose, along with data needs and an example.

Safety in Purpose and Need

Transportation projects can often produce safety benefits, in that completing the project may yield reductions in crash numbers, rates, types and/or severity. However, the potential safety benefit does not necessarily mean that safety should be a primary purpose of the project.

Historically, safety has often been incorporated into P&N statements based on the assumption that simply by modifying a facility, the facility will be safer. **This is an erroneous assumption.** A determination of whether a facility will be “safer” is dependent upon not only what type/frequency/severity of crashes likely will be reduced or eliminated by the project, but also what type/frequency/severity of crashes could be caused by the same project. Caution should be applied when deciding whether to include safety as a primary purpose in that, if used inappropriately, the seemingly innocuous addition of safety into the P&N could result in the elimination of alternatives that otherwise would address the real purpose of the project.

The following scenarios are provided to guide the decision as to whether (and how) safety could be included in the P&N:

- **“Relative Overall” safety incorporated as a primary purpose.** In this scenario, a primary purpose of the project is to improve the safety of the facility. The safety purpose is articulated through the use of relative descriptors such as “improve” or “reduce” (e.g. “*the purpose of this project is to improve safety*”). Particular aspects of safety are not identified, just the concept of somehow making the facility safer.
- **A particular aspect of safety incorporated as a primary purpose.** In this scenario, a primary purpose of the project is to improve a particular safety aspect of the facility. The safety purpose is articulated by identifying one or more (but not all) aspects of safety to be addressed (e.g. “*the purpose of this project is to reduce the frequency of fatal lane departure crashes*”). When utilizing this type of P&N statement, there will be a narrower focus on the particular safety issue and other safety issues may not be addressed.
- **Safety is incorporated as an “other desirable outcome” of the project (but not a primary purpose).** In this scenario, some other primary purpose (e.g. remedying congestion) is driving the project, but safety is identified as an “other desirable outcome”. Alternatives in this scenario that do not fully meet safety objectives **cannot** be dismissed as not meeting the P&N. However, potential safety benefits can be considered in subsequent screening of alternatives, including selection of a preferred alternative.

Safety Dos and Don'ts:

- **Do consult with the NCDOT Safety Planning Group if you want to include safety in the P&N.**
- **Do base safety analysis on accepted engineering practices.**

- **Don't include safety in the P&N if you don't have documented crash data.**
- **Don't add safety to the P&N just because it “sounds good”.**
- **Don't add safety to the P&N to increase justification for the project.**
- **Don't forget to consider unintended negative safety consequences.**

For informational purposes only:

The following websites provides a list of countermeasures and the expected crash reductions:

http://www.ncdot.org/doh/preconstruct/traffic/safety/Resources/project_guide/regionalfacts.pdf

[Countermeasure Development](#)

In all cases where safety is to be included as either a primary purpose or

an “other desirable outcome”, the following information and issues **must** be addressed:

- There must be an identified safety need (e.g. a critical crash rate that exceeds the statewide average for similar roadways);
- There must be a method for identifying:
 - potential countermeasures associated with the proposed project and/or alternatives to address the safety need; as well as
 - how (and to what extent) such potential countermeasures could be effective in reducing/eliminating the number, type, frequency and/or severity of existing and projected crashes;
- There must be a method for identifying:
 - negative effects of such potential countermeasures associated with the proposed project and/or alternatives; as well as
 - how (and to what extent) potential countermeasures could have a negative effect on crash numbers, type, frequency and/or severity; and
- There must be a method of assessing how the positive and negative effects of countermeasures associated with the proposed project and/or alternatives can be combined to determine an overall positive or negative effect on the safety of the facility.

A negative consequence is when, by addressing one type, frequency or severity of crash, another type, frequency or severity of crash is increased. For example: Controlling access (e.g. eliminating driveways/median access) can be effective in reducing angle/rear-end crashes. But, by controlling access, it’s likely that speeds on the mainline will increase due to fewer vehicular conflicts. While the number of crashes would be expected to decrease, the severity of the crashes may increase due to the remaining crashes occurring at higher speeds.

[Appendix B](#) contains a template for determining whether/how to include Safety as a purpose, along with data needs and an example.

Facility Deficiencies in Purpose and Need

“Facility deficiencies” are physical characteristics of a facility that are below the desired performance. Examples include:

- Substandard geometrics;
- Load limits on structures;
- Inadequate cross-sections; and/or
- High maintenance costs.

Data identifying the need can come from various planning sources. Examples include:

- Pavement Management System;
- Bridge Management System;
- Maintenance Management System;
- Roadway Design Manuals and Guidelines; and/or
- Structure Standards.

[Appendix B](#) contains a template for determining whether/how to include Facility Deficiencies as a purpose, along with data needs and an example.

Access in Purpose and Need

Access is rarely a primary purpose of a project and caution should be used when proposing access as a primary purpose. Usually, there is some other root cause (e.g. congestion on nearby roads or a desire to promote economic development) that suggests a need, and the solution (but not necessarily the purpose) includes some element of access to a facility.

The following scenarios address how access could/shouldn't be incorporated into the P&N:

- **Interstate System.** The need for an Interstate System was expressed by President Eisenhower (<http://www.fhwa.dot.gov/infrastructure/originalintent.cfm>). Safety, congestion, courts, national economy and national defense were cited as the underlying needs. The operation and safety of the Interstate system is paramount. Neither new access points nor modifications to existing access points can ever improve the operation and safety of the Interstate. **Therefore, do not propose access as a purpose in the P&N** (either as a primary purpose or as an “other desirable outcome”).
- **Other controlled-access facilities.** Before considering access in the P&N, there should be an analysis to determine whether access (or lack thereof) is the root cause of the problem. Usually, congestion or a desire to facilitate economic development is the driving needs for providing transportation infrastructure. When this occurs, access should not be identified as a primary purpose. Rather, it could be included as an “other desirable outcome”.
- **New access to an area.** If there is a need to provide transportation infrastructure to an area that currently does not have such infrastructure (e.g. a proposed industrial park), then the underlying need likely is to facilitate economic development. In this case, access should not be included as a primary purpose, but could be identified as an other desirable outcome.
- **Modified access to an area.** If there is a need to modify transportation infrastructure to an area that currently has such infrastructure (e.g. a developing area), then the underlying need likely is either to reduce congestion or facilitate economic development. In this case,

“Improving” Access Or Not?

Assume a congested two-lane undivided road. A four-lane divided facility is proposed. The rationale has typically been “*we’re improving travel conditions, therefore it’s easier to get to businesses and homes, therefore access is improved*”. True statement.

But. Providing a divided facility where one currently does not exist also results in a restriction of access for businesses and residences along the road. Whereas they used to be able to turn left into their driveways, now access is restricted. They must go down the road, make a U-turn, then come back to their driveway.

So, if an alternative improves access for some of the users but also restricts access for other users, **is the alternative really improving access?**

access should not be included as a primary purpose, but could be identified as an other desirable outcome (be careful—see box below).

- **Building a facility on speculation.** If a community desires to build a road to an area that currently does not have transportation infrastructure, with no intent to serve existing or proposed development (therefore the road would speculatively be providing access), then it is possible to include access as a primary purpose. Caution should be exercised when making this determination since it is rare that a speculative road would be a higher priority than a road that has current or anticipated needs.

When considering use of access in P&N, careful consideration of different aspects of access is necessary in order to understand the implications (both positive and negative) of “improving” [changing] access. See box to the right.

[Appendix B](#) contains a template for determining whether/how to include Access as a purpose, along with data needs and an example.

System Linkage in Purpose and Need

System linkage (for purposes of this guidance) is defined as:

- Linking two or more existing transportation facilities (e.g. providing a new link between two Interstates);
- Linking two or more modal facilities (e.g. establishing an intermodal facility);
- Linking two or more geographic areas (e.g. providing a rail link between Charlotte and Fayetteville);
- Linking two or more regional traffic generators and/or geographic areas (e.g., a mall, regional sports complex, etc.);
or
- Linking an existing transportation facility/network to a geographic area that currently does not connect to the facility/network (e.g. linking the road network to Cape Lookout).

Example: “A purpose of this project is to enhance connectivity between two Interstate routes”.

When considering inclusion of system linkage in the P&N, careful consideration should be given as to whether system linkage is a primary purpose or an “other desirable outcome”. It will be a rare situation where system linkage will be the primary purpose. We don’t typically decide to link something just because we can. Usually there is a different underlying need and the linkage is a method of addressing that need. System linkage as a Purpose does not necessarily translate to a completely new transportation facility. It is possible that modification of an existing facility may be a viable method of improving system linkage.

[Appendix B](#) contains a template for determining whether/how to include System Linkage as a purpose, along with data needs and an example.

Mobility in Purpose and Need

Mobility in a broad sense refers to the movement of people and goods. The planning realm addresses mobility issues with respect to all modes (e.g. roads, transit, rail, aviation, pedestrian and bicycle). Therefore, during planning is when mobility needs should be identified. It should be possible to clearly identify a source(s) to support including mobility in the P&N statement. Possible sources might include:

- the MPO Long Range Transportation Plan or Comprehensive Transportation Plan;
- State transportation plans;
- county and/or municipal:
 - visioning documents;
 - land development plans.

Including mobility in the P&N is reasonable either as a primary purpose or as an “other desirable outcome”.

When deciding whether to include mobility in the P&N, attention should be

paid as to how the language is crafted. The transportation planning process can not only serve as a source for including mobility in the P&N, it can also provide policy direction for defining the P&N statement. FHWA guidance clarifies that, if the groundwork is laid in the planning process, a project purpose can be defined in terms of a specific mode and a general project location. When projects are identified through the planning process, initial assumptions are made as to the project—typically a mode, general project location, service level, etc. are identified. If a P&N statement is written too broadly, then a wider range of reasonable alternatives (reasonable from the NEPA perspective—not necessarily from the community perspective) will need to be analyzed.

From an actual MPO LRTP: “Goal—Support efforts to improve mobility for Urban Area residents”. Objective—Support any expansion plans [for local transit] that will improve mobility for the general public...”

[Appendix B](#) contains a template for determining whether/how to include Mobility as a purpose, along with data needs and an example.

Emergency Evacuation in Purpose and Need

Emergency evacuation (for purposes of this document) applies only for the following circumstances:

- Hurricane evacuation; and
- Nuclear power plant evacuation.

Emergency evacuation information/ routes are identified at:
www.ncdot.org/traffictravel/emergencyinfo/

Before considering emergency evacuation in the P&N, there must be a documented need (state or local goal/policy and/or evacuation study) and the proposed project must be designated as an evacuation route (for hurricanes and/or nuclear power plants).

Note: Merely assigning a transportation project independent utility as an emergency response measure does not create its own P&N (e.g. if the receiving locations can't empty it fast enough and/or there aren't pulloffs for disabled vehicles, then it may be completely ineffective as an emergency evacuation route).

It's important to understand whether emergency evacuation as a proposed

purpose for a transportation project represents the total evacuation need, as opposed to transportation being a component of a larger project (e.g. creation of an emergency response plan). If an emergency evacuation plan has been developed, there may be standards and/or measurements that specify a desired level of performance (e.g. evacuate an amount of vehicles/people within a certain timeframe. Adoption of that plan by a state or local agency would provide a foundation for a proposed transportation project to meet the desired standards/measurements and would then provide the basis for a P&N (e.g. the proposed project will decrease evacuation time).

Emergency evacuation will likely rarely be the sole primary purpose for transportation projects. In most cases, there will be other primary purposes (e.g. system connectivity, reduction of congestion).

When considering whether to include emergency evacuation as a primary purpose, the following must be documented:

- An adopted emergency evacuation plan;
- The proposed project location is on an identified evacuation route;
- The scope of the proposed project will address all relevant needs for successful evacuation.

Notes:

Some areas are using vertical evacuation as last resort, and if hurricane evacuation is the sole purpose for the project, the reasonableness of this alternative for the area may merit some discussion.

Unless there is a portion of the P&N that also addresses general transportation needs (e.g. congestion) alternatives that may not be open to everyday, general use may need to be considered.

If all of these items cannot be documented, the do not use emergency evacuation as a primary purpose. If one or more (but not all) of these items can be documented, then emergency evacuation could be included as an “other desirable outcome”.

[Appendix B](#) contains a template for determining whether/how to include Emergency Evacuation as a purpose, along with data needs and an example.

Non-Transportation Goals/Objectives in Purpose and Need

The transportation planning process can result in goals/objectives that are not directly related to transportation (e.g. a goal to protect the environment or improve economic development). When crafting a P&N statement to address non-transportation goals, the P&N should focus on the underlying reasons for proposing the transportation project--reasons based on meeting a transportation need. Considerations that relate to the manner in which the project is carried out generally should be distinct from the P&N. **Therefore, when there is a desire to address non-transportation issues in a P&N, these issues should not be incorporated as primary purposes. Rather, they could be included as “other desirable outcomes”.**

Potential non-transportation-related Goals/Objectives include the following:

- [Environmental Protection](#);

- [Growth/Economic Development](#); and
- [National Defense/Security](#).

Environmental Protection in Purpose and Need

Environmental protection is an issue that is addressed when developing a project and often a project will incorporate elements that help to protect the environment.

Sometimes the elements can be proscriptive (e.g. compensatory mitigation pursuant to Section 404 of the Clean Water Act). Other times, environmental protection elements can be voluntary. Regardless, the P&N focuses on the underlying reasons for proposing the transportation project--reasons based on meeting a transportation need. Considerations that relate to the manner in which the project is carried out (e.g. avoiding/minimizing environmental impacts) generally should be distinct from the P&N. Even when the project seems to be focused on an environmental issue (e.g. implementing a stormwater project), these projects are still linked to some other transportation issue (e.g. treating stormwater resulting from collection on the transportation network).

The “Executive Order 13274 Task Force on Purpose and Need” report states: “for the bulk of transportation projects, most staff across Federal agencies agreed that although environmental protection and community enhancement are important goals, these issues should not be a part of the purpose and need statement itself.”

Before including environmental protection in the P&N, there needs to be the ability to clearly identify a source(s) to support including environmental protection in the P&N statement. Possible sources might include:

- the MPO Long Range Transportation Plan or Comprehensive Transportation Plan;
- State transportation plans;
- county and/or municipal:
 - visioning documents;
 - land development plans.

With few exceptions, environmental protection should not be cited as a primary purpose; however environmental protection can be incorporated as an “other desirable outcome”.

In the case of the example in the box to the right, clearly there is a desire of the MPO to “preserve and enhance the...environment”. However, this desire is in the context of solving a transportation problem. Thus, the primary purpose of this project should relate to the transportation problem. Environmental protection can be identified as an “other desirable outcome”—but environmental problems are not the root cause of the project that is being proposed.

From an actual MPO LRTP: “Goal—Develop a transportation system that preserves and enhances the natural and built environment. Objective—Support transportation projects that may preserve and complement the Urban Area’s natural features”.

There may be a few instances where

Endangered Species Act, Section 2(c): “...all Federal departments and agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of the Act”.

environmental issues are the actual root cause of the proposed project. It's possible that FHWA could propose to fund a stand-alone project that helps to conserve protected species under the Endangered Species Act. In this case, environmental protection should be the primary purpose of the project. But when the root cause of the proposed project is based on solving a transportation need, environmental protection should only be utilized as an "other desirable outcome".

[Appendix B](#) contains a template for determining whether/how to include Environmental Protection as a purpose, along with data needs and an example.

Growth/Economic Development in Purpose and Need

Most (if not all) communities have a vision for how they want their communities to evolve and prosper. Often, a desirable outcome of a transportation project is the facilitation of growth/economic development. However, provision of transportation facilities rarely is the sole cause of growth/economic development. Transportation infrastructure, other public infrastructure (e.g. water, sewer, schools) and other considerations (e.g. tax rates, available workforce, available land and/or buildings, real estate values) collectively help determine how and where a community will grow. Provision of transportation infrastructure can facilitate the changing of land uses (e.g. paving an existing dirt road can make the adjacent properties more likely to support greater densities and/or intensities of use) which can lead to community growth/economic development.

When growth and/or economic development is desired for inclusion as part of the P&N, the P&N statement should **not** be written as "*the purpose is to promote growth/economic development*". Rather, the P&N statement should be grounded in transportation (e.g. "*the purpose is to provide transportation infrastructure to support community growth/development as identified in [a plan]*"). By focusing on the transportation system, this approach avoids defining a purpose so broad that it would require consideration of a vast range of non-transportation alternatives for promoting growth/economic development.

Before including Growth/Economic Development in a P&N statement, it is necessary to identify a source to support including growth/economic development in the P&N statement. Possible sources include:

- the MPO Long Range Transportation Plan or Comprehensive Transportation Plan;
- county and/or municipal:
 - visioning documents;
 - land development plans;
 - resolutions or other forms of support for:
 - individual developments (e.g. Dell in Winston-Salem);
 - non-governmental entities (e.g. downtown development commissions, chambers of commerce);
 - public-private partnerships; and/or
 - Capital improvement programs.

If the desire for growth/land use objectives cannot be substantiated, then growth/economic development should not be included in the P&N.

[Appendix B](#) contains a template for determining whether/how to include Growth/Economic Development as a purpose, along with data needs and an example.

National Defense/Security Goals/Objectives in Purpose and Need

Transportation systems are vital to our national defense/security. There are several critical surface transportation modal systems that transportation professionals should be aware of:

- Strategic Highway Network (STRAHNET);
- Railroads for National Defense (RND); and
- Ports for National Defense (PND).

From a **Highway** perspective, the two most important functions are to:

- Identify the minimum public highway infrastructure that the US Department of Defense (DOD) needs to fulfill its mission; then integrate these public highway needs into civil policies, plans, and programs; and
- Ensure the defense readiness capability of public highway infrastructure and establish policy on how DOD uses the public highway system.

The DOD's public highway needs are identified as the [Strategic Highway Network \(STRAHNET\)](#). STRAHNET is a system of about 61,000 miles of highways, including the Interstate System to STRAHNET (an additional 2,000 miles of STRAHNET Connectors link important military installations and ports). Together, STRAHNET and the Connectors define the total minimum public highway network necessary to support Defense deployment needs. A map of STRAHNET in North Carolina can be found at: http://www.fhwa.dot.gov/hep10/nhs/maps/nc/nc_northcarolina.pdf

From a **Rail** perspective, the Railroads for National Defense Program (RND) ensures the readiness capability of the national railroad network to support defense deployment and peacetime needs. The RND integrates defense rail needs into civil sector planning affecting the Nation's railroad system. Rail transportation is extremely important to the DOD since heavy and tracked vehicles will deploy by rail to seaports of embarkation. The RND in conjunction with the US Federal Railroad Administration (FRA), established the [Strategic Rail Corridor Network \(STRACNET\)](#) to ensure DOD's minimum rail needs are identified and coordinated with appropriate transportation authorities. STRACNET is an interconnected and continuous rail line network consisting of over 38,000 miles of track serving over 170 defense installations.

From a **Ports** perspective, the [Ports for National Defense \(PND\) Program](#)'s primary goal is to ensure the identification, adequacy, and responsiveness of defense-important Continental United States port infrastructure in both peacetime and wartime.

Real Example: The U.S. Department of Defense (DoD) eliminated public access to Beulah Street and Woodlawn Road within Fort Belvoir following events of 9.11.01. These roads linked Richmond Highway and Telegraph Road in this area of Fairfax County, Virginia. Removal of the alternative access routes substantially diminished the flexibility of traffic movement. **"The purpose of this project is to restore this link with a roadway on an alignment that does not threaten the security of Fort Belvoir"**.

Ports in North Carolina include:

- Wilmington;
- Morehead City; and
- Military Ocean Terminal at Sunny Point.
-

In order to include National Defense/Security in a P&N statement, the proposed project must be located on (or intersect) one or more of the following:

- the STRAHNET;
- the STRACNET;
- a PND Port; and/or
- a military installation.

For inclusion as a primary purpose, there must be an identified need from a military perspective. If a proposed project happens to be located on the STRAHNET, but the underlying need for the project is based on congestion identified by the local community, then National Defense/Security could be used as an “other desirable outcome” but should not be identified as a primary purpose.

[Appendix B](#) contains a template for determining whether/how to include National Defense/Security as a purpose, along with data needs and an example.

Appendix A (Section 6002 Environmental Review Process)

The Section 6002 Environmental Review Process is mandatory for all projects for which a Notice of Intent (NOI) was published in the Federal Register subsequent to August 10, 2005. Since a NOI is only required for an Environmental Impact Statements (EIS), Section 6002 is only mandatory for EIS projects. FHWA has the flexibility to apply the Section 6002 process to other classes of action (Environmental Assessments, Categorical Exclusions) either on a programmatic basis or on a case-by-case basis. FHWA-NC has not elected to apply the Section 6002 Environmental Review Process to either EA or CE projects at this time.

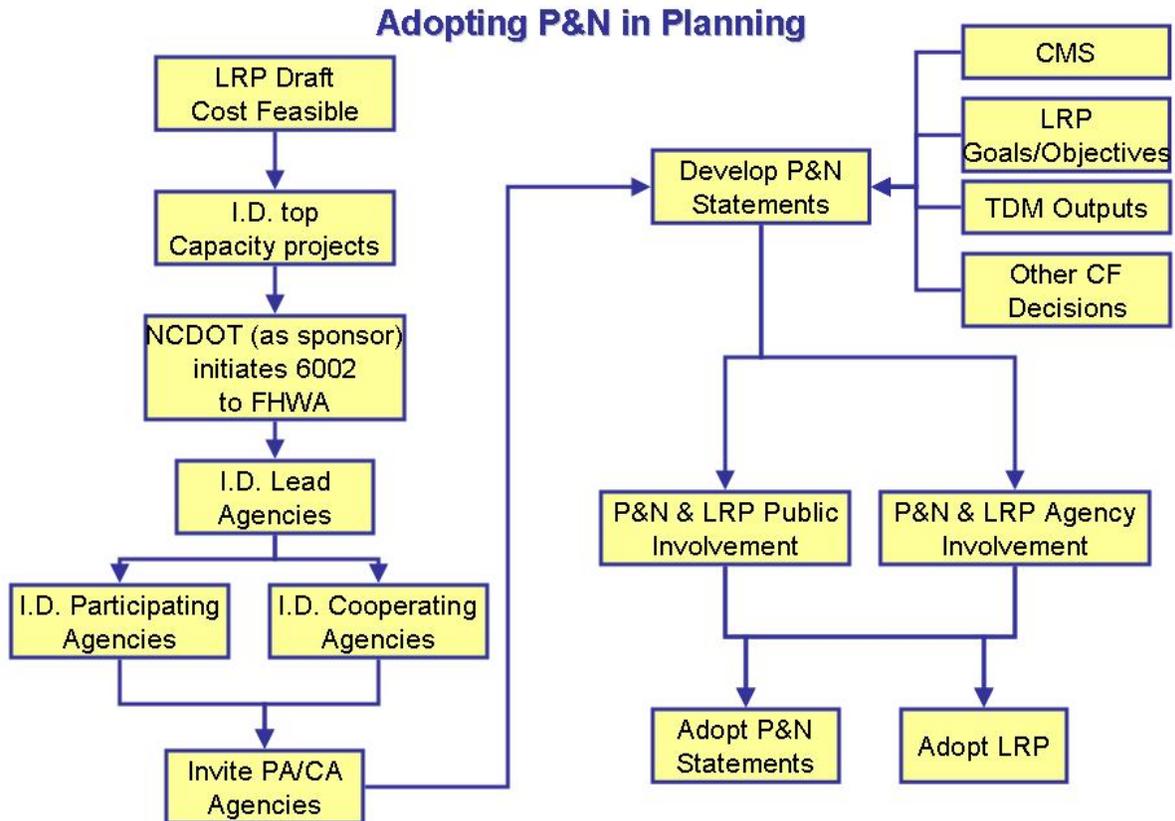
For projects in the planning realm that are expected to require preparation of an EIS, it is prudent to initiate the Section 6002 process in the planning realm. By doing this, it eliminates the need to “redo” later efforts related to P&N to comply with Section 6002. To also minimize effort, development of P&N pursuant to Section 6002 should be “piggybacked” onto the MPO Long Range Plan process.

Logistically, this can be accomplished as follows:

1. MPO develops draft Cost Feasible Plan;
2. MPO/NCDOT identify top capacity projects that PDEA expects to start work on before next Long Range Plan update;
3. NCDOT initiates 6002 for these top capacity projects;
 - a. NCDOT sends initiation correspondence to FHWA; information includes (for each project):
 - i. Type of work;
 - ii. Termini;
 - iii. Length;
 - iv. General location; and
 - v. Other Federal approvals.
4. Identify Lead Agency(ies);
 - a. FHWA always Lead;
 - b. NCDOT always Joint Lead; and
 - c. Others?
5. Identify Cooperating & Participating Agencies;
 - a. Joint Lead Agencies identify potential Cooperating & Participating Agencies;
 - b. NCDOT sends correspondence inviting Agencies; and
 - c. Agencies respond.
6. Joint Lead Agencies draft P&N Statements using:
 - a. LRP Goals & Objectives;
 - b. Congestion Management System;
 - c. TDM outputs; and/or
 - d. Other Cost Feasible Plan decisions.
7. Involve Public & Participating Agencies;
 - a. Combine LRP public involvement with P&N public involvement; and

- b. Combine LRP agency involvement with P&N agency involvement.
- 8. Finalize P&N Statements (if desired).

The following flowchart depicts how the Section 6002 Environmental Review Process could be achieved in Planning.



Appendix B (Templates, Data Needs & Examples)

Legislative Intent Template, Data Needs & Examples

Step 1: Identify a source that indicates legislative intent (Need):

Identify specific Congressional or state legislature language, including:

- Any intent for a particular type of facility design (e.g. an Interstate);
- Any intent for a particular location (e.g. the project must start/stop at a specific place);
- Any intent for a particular mode (e.g. for all vehicles or just for busses); and/or
- Any exemption from federal or state laws.

Document the following:

- Source and exact wording from legislation.

Decision point:

- If legislative intent cannot be clearly established, **do not incorporate legislative intent as part of the Purpose & Need**; or
- If legislative intent can be clearly established, proceed to next step.

Step 2: Identify performance measures and acceptable levels.

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s).

Decision point: none.

Step 3: Determine whether/how to include in Purpose & Need:

At this point, Legislative Intent has been defined, success has been defined and performance measures have been identified. However, this doesn't mean that Legislative Intent should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Legislative Intent should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Legislative Intent **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Legislative Intent **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Legislative Intent **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and

- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Legislative Intent **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Legislative Intent as a primary purpose

Congress passed the Manassas National Battlefield Park Amendments of 1988 [source], requiring the Secretary of the Interior to consider and develop plans for closing the portions of US 29 and VA 234 that transect the Park and to provide alternative routes for traffic traveling through the Park.

“The purpose for this study is to develop alternatives that will allow for the rerouting of the portions of US 29 and VA 234, which currently transect the Manassas National Battlefield Park, and to provide alternatives for the traffic traveling through the Park [primary purpose]. As such, it is not the purpose of this project to provide additional capacity through the Park, but rather to study whether or not relocating the existing capacity in another location or by another means would allow for the closure of the roads [performance measure] within the Park.”

Congestion Template, Data Needs & Examples

Step 1: Describe Facility:

Document the following:

- Facility Name(s)/Numbering;
- Termini;
- Location map;
- Facility Type;
- Number of Lanes;
- Area Type; and or
- Other pertinent information.

Decision point: none.

Step 2: Determine Congestion Measure:

Examples include:

- Travel speed;
 - peak hour;
 - peak period (could be different than one hour);
- Amount of delay (time below desired operating condition);
 - Peak hour;
 - Peak period (could be different than one hour);
- Level of Service;
 - Peak hour;
 - Peak period;
- Volume to Capacity (V/C) Ratio;
 - Peak hour;
 - Peak period;
- Vehicle Miles Traveled (VMT);
- Density/Headway (amount of space between traveling vehicles);

- Traffic Signal Cycle Failure
- Queue Length.

Document the following:

- Congestion measure(s) to be used.

Decision point: none.

Step 3: Define Congestion:

Once a metric has been established, determine what level of that metric will be used to define when the facility becomes congested. Sources of information include:

- MPO Long Range Transportation Plans;
- TMA Congestion Management Plans;
- Comprehensive Transportation Plans;
- National Guidelines (e.g. AASHTO Green Book);
- State Guidelines/Standards/Policies (e.g. NCDOT Policy on urban facilities);
- State Plans (e.g. Strategic Highway Corridors);
- Highway Capacity Manual;
- FHWA NC Division office determinations; and/or
- Local government plans/standards/policies/guidelines.

Document the following:

- Congestion definition to be used;
- Source of congestion definition.

Decision point: none.

Step 4: Determine if there may be a congestion problem (Need):

Obtain Congestion information. Compare the existing and forecasted operating conditions to the congestion definition for the metric.

Document the following:

- Existing congestion levels;
- Future congestion levels;
- Desired congestion levels;
- Source(s) for desired congestion levels.

Decision point:

- If the forecasted operating condition equals or exceeds the congestion definition for the metric, proceed to next step; or
- If the forecasted operating condition falls below the congestion definition for the metric, **do not incorporate congestion as a primary Purpose & Need (it could be included as an “other desirable outcome”).**

Step 5: Identify performance measures and acceptable levels:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s).

Decision point: none.

Step 6: Determine whether to include in Purpose & Need:

At this point, Congestion has been defined, Congestion measures have been identified, a need for Congestion has been established, success has been defined and performance measures have been identified. However, this doesn't mean that Congestion should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Congestion should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Congestion **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Congestion **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Congestion **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Congestion **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Congestion as a primary purpose

SR 123 is a 4-lane, controlled access freeway between US 1 and US 2, located in the Townsville MPO urban area [facility description]. The MPO Long Range Transportation Plan goal articulates a desire for Road A to operate at LOS "E" [measure, source & congestion definition]. The Average Annual Daily Traffic (AADT) for such a facility type at LOS "E" is determined to be 20,000 AADT. The TDM forecasts an AADT of 25,000 in the MPO planning horizon year (2035).

The need can be expressed as: *"the community desires for roads to operate at least at a LOS "E". The expected traffic will cause Road A to operate at LOS "F" in 2035".*

The purpose can then be expressed as: *"the purpose of this project is to reduce congestion to a point where Road A operates at least at a LOS "E" in 2035".*

Critique of Congestion Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Congestion. The critique focuses on various wording scenarios using Congestion as a primary purpose for highway projects.

"The purpose of this project is to widen the road to four lanes". This statement too narrowly prescribes the solution in a manner that does not allow a reasonable range of alternatives to be considered (e.g. an alternative that includes operational modification may meet the need but would not be considered with the purpose written as above).

“The purpose of this project is to increase capacity”. It’s likely the rare situation where increasing the capacity of a facility will be the primary purpose (we don’t typically decide to expand something just because we can). Usually there is a different underlying need (congestion) and adding capacity is a method of addressing that need. Also, if the need is expressed in terms of reducing congestion, then this statement really doesn’t allow an assessment as to whether congestion will be reduced by various alternatives.

“The purpose of this project is to reduce congestion”. This statement is acceptable. However, use of the word “reduce” allows an alternative that reduces congestion by any amount—no matter how little—to fully meet P&N. This could lead to more time/effort/cost in further developing alternatives that are not likely to be selected as the preferred alternative. Therefore, defining a specific reduction level/measure (see next example below) below strengthens the P&N.

“The purpose of this project is to reduce congestion by achieving a minimum travel speed of 50 mph during the peak period for the design year”. This is a good P&N statement. It addresses the need to reduce congestion and it specifies a performance target that is measurable (specific travel speed). Incorporation of a measurable target of congestion reduction helps to identify the reasonable range of alternatives. It also helps to eliminate alternatives that do not fully meet the P&N.

Safety Template, Data Needs & Examples

Step 1: Describe Facility:

Document the following:

- Facility Name(s)/Numbering;
- Termini;
- Location map;
- Facility Type;
- Number of Lanes;
- Area Type; and or
- Other pertinent information.

Decision point: none.

Step 2: Obtain Crash Information:

Document the following:

- 3-year crash history;
- Statewide crash rates for similar facilities (F_a);
- Probability constant (k); and
- Vehicle exposure (M).

Decision point:

- If this information is obtainable, proceed to next step; or
- If this information is not obtainable, **do not incorporate Safety as part of the Purpose & Need.**

Step 3: Determine if there may be a safety problem (Need):

The appropriate indicator of a potential safety problem is the **critical crash rate**, which is a statistical tool that assists in screening for high crash locations by utilizing a confidence interval that can be adjusted (up or down) to accommodate the needs of the safety program. *Note: simply comparing the roadway crash rate with the statewide crash rate is **not** sufficient to determine a potential safety problem. Only the CCR should be used to determine a potential safety problem.*

$$F_c = F_a + k(F_a/M)^{1/2} + 1/2M$$

F_c = the critical crash rate

F_a = statewide crash rate of roadway class or average crash rate

k = a probability constant. Some values are:

$k = 1.645$ for a 95% confidence level, commonly used for rural areas

$k = 3.291$ for a 99.95% confidence level, commonly used for urban areas

M = vehicle exposure (exposure should be calculated in 100 million vehicle miles (mvm) if NC Statewide Rate is used)

Have the NCDOT [Safety Planning Group](#) perform the calculation.

Document the following:

- CCRs;
- Data/analysis/methods used to calculate CCRs;
- Suggested countermeasures.

Decision point:

- If one or more of the roadway crash rates exceed the corresponding critical crash rate **and** the NCDOT Safety Planning Group suggests effective countermeasures, proceed to next step; or
- If none of the roadway crash rates exceed the corresponding critical crash rates **or** the NCDOT Safety Planning Group does not suggest effective countermeasures, **do not incorporate Safety as part of the Purpose & Need.**

Step 4: Identify performance measures and acceptable levels:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose. With Safety, there are several possible desired outcomes:

- "Overall" Safety;
- a particular aspect of Safety (for example):
 - Particular crash type (e.g. rear-ends);
 - Particular environmental conditions (e.g. wet conditions).

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s).

Decision point: none.

Step 5: Determine whether/how to include in Purpose & Need:

At this point, a need for Safety has been established, success has been defined and performance measures have been identified. However, this doesn't mean that Safety should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Safety should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Safety **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Safety **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Safety **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Safety **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Safety as a primary purpose

US XXX (John Doe Parkway) is proposed for improvements between Jane Doe Road and Jim Doe Road (a length of approximately 5.15 miles). John Doe Parkway is an urban, two-lane, undivided, United States (US) route [facility description].

The NCDOT Safety Planning Group has evaluated the 2001-2003 crash history of this facility and has determined the Critical Crash Rates for a comparable route type and configuration as shown in the table below [crash info & CCR].

Rate	Crashes	Crashes per 100 MVM	Critical Rate
Total	144	268.55	364.90
Fatal	1	1.86	4.14
Non-Fatal Injury	45	83.92	137.97
Night	45	83.92	80.72
Wet	21	39.16	77.92

The analysis by the NCDOT Safety Planning Group indicated there were 144 reported crashes during the study period. The one fatal crash that occurred on the road east of John Doe Parkway was a lane-departure crash. Rear-end crashes accounted for 38%, frontal impact crashes accounted for 27% and night crashes accounted for 31% of the total number of crashes. The night crash rate exceeds the statewide and critical crash rates [need].

The recommendation from the NCDOT Safety Planning Group is the installation of street lighting and improvements to the pavement delineation may help to reduce the incidences of night crashes [results].

Critique of Safety Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Safety. The critique focuses on various wording scenarios using Safety as a primary purpose for highway projects.

“The purpose of this project is to improve safety”. By just using “improve safety”, the implication is that all aspects of safety should be addressed. Thus, a comparison of the positive and negative effects of the proposed countermeasure(s) is required to determine if there is a net improvement in safety. It also introduces the possibility that all aspects of safety must be improved in order to meet the P&N.

“The purpose of this project is to reduce rear-angle crashes”. This statement focuses on a particular type of crash. However, use of the word “reduce” allows an alternative that reduces rear-end crashes by any amount—no matter how little—to fully meet P&N.

“The purpose of this project is to reduce rear-end crashes by 20%”. This statement not only focuses on a particular crash type, but also specifies a measurable level of crash reduction.

Facility Deficiencies Template, Data Needs & Examples

Step 1: Describe Facility:

Document the following:

- Facility Name(s)/Numbering;
- Termini;
- Location map;
- Facility Type;
- Number of Lanes;
- Area Type; and or
- Other pertinent information.

Decision point: none.

Step 2: Identify and Quantify Need (Deficiencies):

Examples of deficiencies might include:

- Substandard geometrics;
- Load limits on structures;
- Inadequate cross-sections;
- High maintenance costs.

Document reference(s) for deficient condition. For example:

- Pavement Management System;
- Bridge Management System;
- Maintenance Management System;
- Roadway Design Manuals and Guidelines;
- ASSHTO Green Book;
- State/local policies;
- Structure Standards.

Decision point:

- If this information is obtainable, proceed to next step; or
- If this information is not obtainable, **do not incorporate Facility Deficiencies as part of the Purpose & Need.**

Step 3: Identify performance measures and acceptable levels:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance (and source for acceptable level of performance);
- Performance measure(s) (and rational for performance measure(s));
- Source(s).

Decision point: none.

Step 4: Determine whether/how to include in Purpose & Need:

At this point, Facility Deficiencies has been defined, a need for Facility Deficiencies has been established, success has been defined and performance measures have been identified. However, this doesn't mean

that Facility Deficiencies should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Facility Deficiencies should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Facility Deficiencies **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Facility Deficiencies **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Facility Deficiencies **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Facility Deficiencies **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Facility Deficiencies as a primary purpose

NC 181 between Townsville and Beattyburgh is currently a 2-lane rural, minor arterial used primarily by commuter traffic [facility description]. Several logging operations have recently started along this route. The pavement structure was not designed for such heavy truck traffic. Two miles of pavement are starting to show deterioration as a result of the heavy logging trucks utilizing this route. The pavement condition survey rating [performance measurement] shows a score of 59[need/quantification]. A score less than 60 indicates failure [acceptable level]. *“The purpose of this project is to bring the pavement condition rating to an acceptable level (60 or better) that can accommodate the current and projected travel load [primary purpose].”*

Critique of Facility Deficiencies Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Facility Deficiencies. The critique focuses on various wording scenarios using Facility Deficiencies as a primary purpose for highway projects.

“The purpose of this project is to replace the bridge”. This statement too narrowly prescribes the solution in a manner that does not allow a reasonable range of alternatives to be considered (e.g. an alternative that includes rehabilitation may meet the need but would not be considered with the purpose written as above).

“The purpose of this project is to eliminate the deficient status of the bridge”. This statement focuses on achieving the desired result of having a facility that is not deficient, but still allows a range of alternatives (rehabilitation as well as replacement) that could possibly meet the purpose.

“The purpose of this project is to widen the paved shoulders”. By just using “widen”, the implication is that all wider shoulder widths would meet the purpose.

“The purpose of this project is to achieve minimum acceptable standards for paved shoulders”.

This statement refers to a measurable target (the standard). Thus, alternatives that fall short of the standard would be eliminated as not meeting the purpose.

Access Template, Data Needs & Examples

Step 1: Identify the need for Access modifications:

Determine the root cause of the problem to be addressed (verify that access modification are an appropriate means for addressing the needs).

Document the following:

- Who originated the need;
- What is the need;
- Project location;
- Local/state/federal goal providing the basis for the need;
- Verification that Access is the root cause of the need;
- What Access deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If Access is the root cause of the problem, proceed to next step; or
- If Access is not the root cause of the problem, **do not incorporate Access as part of the Purpose & Need.**

Step 2: Identify performance measures and acceptable levels:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s).

Decision point: none.

Step 3: Determine whether/how to include in Purpose & Need:

At this point, Access has been defined, a need for Access has been established, success has been defined and performance measures have been identified. However, this doesn't mean that Access should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Access should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Access **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Access **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Access **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Access **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Access as a primary purpose

The local comprehensive plan identifies Public Area #1 which currently is not served by any form of transportation infrastructure. The future plan [source] for this area calls for it to become a public park, accessible by motorized vehicles [need]. Therefore, there is a desire to provide transportation access to this area[performance measure & acceptable service]. ***“The purpose of this project is to provide new highway access to Public Area #1”.***

Critique of Access Purpose Statements for Highway Projects

The following sample purpose statements assume an **erroneous** need for Access. The critique focuses on various wording scenarios using Access as a primary purpose for highway projects.

“The purpose of this project is to provide access to Interstate-40 in the project area”. This statement is unacceptable because access to the Interstate system is never the purpose of the Interstate system.

“The purpose of this project is to provide additional access to the barrier island”. If access currently exists, then there is likely an underlying reason (not related to access) that is driving the need. If the current access is congested, then the root cause of the problem is congestion—not access—and the purpose should be articulated in terms of solving the congestion problem rather than the perceived access problem.

The following sample purpose statements assume a scenario where no access exists at all. The critique focuses on various wording scenarios using Access as a primary purpose for highway projects.

“The purpose of this project is to provide new access to the barrier island”. This statement is too broad since it allows non-highway alternatives to meet the purpose.

“The purpose of this project is to provide new highway access to the barrier island”. This statement provides more focus since it references a particular type of access.

System Linkage Template, Data Needs & Examples

Step 1: Define “Linkage”:

Document the following:

- Linkage definition.

Decision point: none.

Step 2: Identify “things” to link:

Examples include:

- Existing transportation facilities;
- Modal facilities;
- Geographic areas;
- Regional traffic generators;
- Any of the above.

Document the following:

- Linkages.

Decision point: none.

Step 3: Identify Need for Linkage:

Identify current conditions, future conditions and gap (difference between). Identify why it is important to close the gap. Verify that System Linkage is the root cause of the gap (as opposed to other possible purposes (e.g. congestion)).

Document the following:

- Who originated the need;
- What is the need;
- Project location;
- Local/state/federal goal providing the basis for the need;
- Verification that System Linkage is the root cause of the gap;
- What System Linkage deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If System Linkage is the root cause of the problem, proceed to next step; or
- If System Linkage is not the root cause of the problem, **do not incorporate System Linkage as part of the Purpose & Need.**

Step 4: Identify performance measures and acceptable levels.

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s).

Decision point: none.

Step 5: Determine whether/how to include in Purpose & Need:

At this point, System Linkage has been defined, a verified need for System Linkage has been established, success has been defined and performance measures have been identified. However, this doesn't mean that System Linkage should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether System Linkage should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that System Linkage **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that System Linkage **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that System Linkage **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that System Linkage **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using System Linkage as a primary purpose

New passenger rail service is planned for eastern North Carolina. The terminus of the rail line is in the City of Townsville, which has an extensive city bus service. In order for the transportation system to work effectively, there needs to be a link between these two modes of travel [definition & things to link]. Currently, the bus routes do not have a stop at the proposed rail station. There is a need for a facility that will enable bus riders and rail passengers to switch from one mode to another at a single location. The performance measure will be:

A single location whereby bus and rail passengers can transfer from one mode to another with no more than a two hour interval between:

- a bus arrivals and a rail departure; and
- a rail arrival and a bus departure [performance measure/acceptable level].

Critique of System Linkage Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for System Linkage. The critique focuses on various wording scenarios using System Linkage as a primary purpose for highway projects.

“The purpose of this project is link Community A and Community B”. This statement is too broad in that it allows the following range of alternatives to meet the purpose:

- non-transportation options (e.g. communications, other infrastructure);
- non-highway options (e.g. rail, transit, aviation)

“The purpose of this project is provide a transportation linkage between Community A and Community B”. This statement is more focused than the previous example since it now constrains the range of alternatives to those related to transportation. However it still allows a range of alternatives that include non-highway modes.

“The purpose of this project is provide a roadway linkage between Community A and Community B”. This statement is more focused than the previous example since it now constrains the range of alternatives to those related to highway transportation.

Mobility Template, Data Needs & Examples

Step 1: Define Mobility:

Document the following:

- Mobility definition.

Decision point: none.

Step 2: Identify and document the need for Mobility:

A Mobility need will likely originate from the following sources:

- MPO Long Range Transportation Plans;
- MPO Congestion Management Plans;
- Comprehensive Transportation Plans;
- National Guidelines (e.g. AASHTO Green Book);
- State Guidelines/Standards/Policies;
- State Plans (e.g. Strategic Highway Corridors);
- Local government plans/standards/policies/guidelines.

Document the following:

- Who originated the need;
- What is the need;
- Project location;
- Local/state/federal goal providing the basis for the need;
- What Mobility deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If Mobility Goals/Objectives cannot be substantiated, **do not incorporate Mobility as part of the Purpose & Need**; or
- If Mobility Goals/Objectives can be substantiated, proceed to next step.

Step 3: Identify performance measures and acceptable levels.

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s);
 - Source for performance measure(s).

Decision point: (none)

Step 4: Determine whether/how to include in Purpose & Need:

At this point, Mobility has been defined, a need for Mobility has been established, success has been defined and performance measures have been identified. However, this doesn't mean that Mobility should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Mobility should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Mobility **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Mobility **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and

- There are other primary purposes being considered.

Indications that Mobility **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Mobility **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Mobility as a primary purpose

The MPO Long Range Transportation Plan contains a goal of “improving mobility” between Community A and Community B. The Plan defines mobility as the provision of transportation infrastructure for all types of motorized and non-motorized vehicles, as well as pedestrians. The Plan also specifies that the desired performance level for all roads within the area will be a minimum travel speed of 35 mph in the peak period, peak direction.

Currently, there is only one highway route between the two communities. This route is already operating at an unacceptable level of performance and is expected to become worse in the future. No bicycle or pedestrian facilities are present within the corridor. [need]

“The purpose of this project is to provide a facility between Community A and Community B that allows a minimum vehicular travel speed of 35 mph in the peak period, peak direction, while also providing facilities for pedestrians and bicyclists.” [performance]

Critique of Mobility Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Mobility. The critique focuses on various wording scenarios using Mobility as a primary purpose for highway projects.

“The purpose of this project is to improve mobility”. This statement is probably too broad in that it allows non-highway modal alternatives as well as alternatives outside of the study area to fully meet P&N

“The purpose is to improve the mobility along Corridor X”. This statement is more focused than the previous example since it specifies a particular geographic area (thus narrowing the range of alternatives).

“The purpose is to improve the mobility of vehicular travel along Corridor X”. This statement is more focused than the previous example since it specifies a particular mode of travel (thus further narrowing the range of alternatives).

“The purpose is to improve the mobility of vehicular travel along Corridor X during rush hour”. This statement is more focused than the previous example since it specifies a particular time of travel (thus narrowing the range of alternatives).

“The purpose is to improve the mobility of vehicular travel along Corridor X during the PM peak period, peak direction”. This statement is more focused than the previous example since it specifies an even more focused traffic movement (thus further narrowing the range of alternatives).

Emergency Evacuation Template, Data Needs & Examples

Step 1: Identify and document the need for Emergency Evacuation:

An Emergency Evacuation need will likely originate from the following scenarios:

- Legislation;
- Adopted Evacuation Plan.

Document the following:

- Who originated the need;
- What is the need;
- Project location;
- Local/state/federal goal providing the basis for the need;
- Adopted Evacuation plan; and
- What Emergency Evacuation deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If a need for emergency evacuation cannot be established, **do not incorporate emergency evacuation as part of the Purpose & Need**; or
- If a need for emergency evacuation can be established, proceed to next step.

Step 2: Determine whether the proposed project is on a designated evacuation route (for hurricanes and/or nuclear power plants):

Document the following:

- Proof from Evacuation Plan and/or legislation verifying that the project is on a designated evacuation route.

Decision point:

- If the proposed project is not designated as above, **do not incorporate emergency evacuation as part of the Purpose & Need**; or
- If the proposed project is designated as above, proceed to next step.

Step 3: Determine whether the scope of the proposed project can address all relevant components of emergency evacuation:

Emergency Evacuation is a complex issue that requires much more than just transportation infrastructure to be successful. Simply improving one aspect of emergency evacuation does not necessarily guarantee a successful outcome.

Document the following:

- All components required for successful evacuation;
- What role transportation infrastructure plays in successful evacuation;
- Whether the project purpose will contribute to successful evacuation.

Decision point:

- If the scope of the proposed project cannot address all relevant components of emergency evacuation, **do not incorporate emergency evacuation as a primary purpose (could be an “other desirable outcome” if transportation is part of the evacuation needs)**; or
- If the scope of the proposed project can address all relevant components of emergency evacuation, proceed to next step.

Step 4: Identify performance measures and acceptable levels:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will

enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s);
 - Source for performance measure(s).

Decision point: (none)

Step 5: Determine whether/how to include in Purpose & Need:

At this point, a need for Emergency Evacuation has been established, the project is on a designated evacuation route, the scope of the project can successfully address evacuation, success has been defined and performance measures have been identified. However, this doesn't mean that Emergency Evacuation should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Emergency Evacuation should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Emergency Evacuation **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Emergency Evacuation **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Emergency Evacuation **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Emergency Evacuation **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Emergency Evacuation as a primary purpose

NCGS 136-102.7 establishes a hurricane evacuation standard of 18-hours [**need**]. According to the "NCDOT State Hurricane Evacuation Study (2005)", clearance times (time required for all evacuees to reach I-95) for a Category 3 hurricane with 75% tourist occupancy for the southeastern portion of the state range from 8 to 14 hours presently, and are projected to range from 11 to 21 hours in 2030 [**need**].

Beatty Boulevard is a 4-lane principal arterial that connects the coastline in Smith County to points west. It is a designated evacuation route [**designation**].

The Smith County evacuation plan identifies a number of evacuation components that, if implemented, would assist Smith County residents and visitors in achieving the 18 hour clearance time. Components include:

- Transportation modifications;
- Law enforcement actions; and
- Ancillary features (e.g. fuel stations & pull-offs).

As the Federal Highway Administration and the NCDOT only have the authority to make transportation modifications, the scope of this action is limited to transportation modifications. It is recognized and accepted that transportation modifications alone likely cannot achieve the 18 hour standard, however, transportation modifications are likely to have a positive effect (lowering of clearance times) [scope].

Critique of Emergency Evacuation Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Emergency Evacuation. The critique focuses on various wording scenarios using Emergency Evacuation as a primary purpose for highway projects.

“The purpose of this project is to improve hurricane evacuation”. This statement is probably too broad in that it allows non-highway modal alternatives as well as alternatives outside of the study area to fully meet P&N

“The purpose is to improve hurricane evacuation within the project study area”. This statement is more focused than the previous example since it specifies a particular geographic area (thus narrowing the range of alternatives).

“The purpose is to improve hurricane evacuation along Corridor X”. This statement is more focused than the previous example since it specifies a particular location (thus further narrowing the range of alternatives).

“The purpose is to improve hurricane evacuation of vehicles along Corridor X”. This statement is more focused than the previous example since it specifies a particular mode of transportation (thus narrowing the range of alternatives).

“The purpose is to improve hurricane evacuation of vehicles along Corridor X by at least two hours”. This statement is more focused than the previous example since it specifies a minimum acceptable performance standard (thus further narrowing the range of alternatives).

“The purpose is to meet the 18-hour standard for hurricane evacuation of vehicles along Corridor X”. This statement is similar to the previous example since it also specifies a minimum acceptable performance standard.

Environmental Protection Template, Data Needs & Examples

Step 1: Identify and document the need for Environmental Protection:

An Environmental Protection need will likely originate from the following scenarios:

- Reducing impacts (e.g. mitigation/conservation) for one or more transportation projects;
- Goals/policies/mandates for Environmental Protection.

Examples of a potential need include (but may not be limited to):

- The federal mandate to conserve species protected under the Endangered Species Act;
- Local/state/federal goals to protect one or more aspects of the environment.
- Mitigation for impacts to streams/wetlands under the Clean Water Act.

Document the following:

- Who originated the need;
- What is the need;

- Project location;
- Local/state/federal goal providing the basis for the need;
- What Environmental Protection deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If an Environmental Protection need cannot be established, **do not incorporate Environmental Protection as part of the Purpose & Need**; or
- If an Environmental Protection need can be established, proceed to next step.

Step 2: Ensure that the need is not a method of implementing a project:

It is important to discern whether the need can stand alone versus either being a method of implementing a project or a response to a project's impacts.

Example of a stand-alone need:

- FHWA has a mandate under the Endangered Species Act to conserve protected species.

Example of the need being a method of implementing a project:

- Implementing Best Management Practices.

Examples of the need being a response to an environmental impact:

- Clean Water Act compensatory mitigation;
- Endangered Species Act Conservation Measures;
- NCDOT Greensheet commitments.

Decision point:

- If the Environmental Protection need either describes how a project will be implemented or is a response (e.g. compensatory mitigation) to an environmental impact, **do not incorporate Environmental Protection as part of the Purpose & Need**; or
- If the Environmental Protection can stand alone as the sole purpose, proceed to next step.

Step 3: Identify eligibility for Federal-aid funding participation:

As this guidance is written specifically for projects funded by the Federal-Aid Highway Program (FAHP), consult with FHWA to determine if the project is eligible for reimbursement from the FAHP.

Document the following:

- Verification for eligibility under the Federal-Aid Highway Program.

Decision point:

- If the proposed project is not eligible for Federal-aid participation, **do not incorporate Environmental Protection as part of the Purpose & Need**; or
- If the proposed project is eligible for Federal-aid participation, proceed to next step.

Step 4: Identify an acceptable level of performance and performance measures:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s)
 - Source for performance measure(s).

Decision point: (none)

Step 5: Determine whether/how to include in Purpose & Need:

At this point, a need for Environmental Protection has been established, the project is eligible for federal-aid reimbursement, the project is not a method of implementation, success has been defined and performance measures have been identified. and the project is eligible for FHWA reimbursement. However, this doesn't mean that Environmental Protection should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Environmental Protection should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Environmental Protection **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Environmental Protection **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Environmental Protection **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Environmental Protection **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using Environmental Protection as a primary purpose

Under Section 2(c) of the Endangered Species Act, "...all Federal departments and agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of the Act".

NCDOT anticipates programming 30 transportation projects over the next twenty years in Smith County (home to the only remaining population of the federally endangered blue mussel (*musselipticus azur*). NCDOT anticipates that of these 30 projects, twenty eight will require one or more federal discretionary actions (e.g. USACE permits and/or FHWA funding) [**eligibility**]. There is a need to stabilize the population of mussel [**need**] so that future Federal-aid projects will be less likely to jeopardize the continued existence of this protected species. This project has independent utility from the 30 transportation project [**not a method of implementation**].

The primary purpose of this project is to maintain the current habitat [**performance measure/acceptable level**] of the blue mussel in Smith County [**decision to include as primary purpose**].

Critique of Environmental Protection Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Environmental Protection. The critique focuses on various wording scenarios using Environmental Protection as a primary purpose for highway projects.

“The purpose is to improve Environmental Protection”—This statement is too broad. A wide range of non-highway solutions (e.g. aviation, rail, seaports, etc.), non-transportation solutions (e.g. land development controls), as well as solutions outside of the project study area could meet the project purpose. Also,

“The purpose is to improve Environmental Protection for the transportation system”—This statement is more focused than the previous example, since it does narrow the range of solutions to those that relate to the transportation system. However, there still could be possible solutions that are either beyond highway-related solutions (e.g. aviation, rail, seaports, etc.) or outside of the project study area that could meet the project purpose.

“The purpose is to improve Environmental Protection for the State Highway System”—This statement is more focused than the previous example, since it specifies a certain transportation system. However, it still would allow for a range of non-infrastructure solutions (e.g.) and even non-highway-related solutions (aviation-related solutions would still meet the project purpose).

Growth/Economic Development Template, Data Needs & Examples

Step 1: Identify and document the need for Growth/Economic Development:

A Growth/Economic Development need will likely originate from the following scenarios:

- the MPO Long Range Transportation Plan;
- NCDOT plans:
 - Strategic Highway Corridors
 - Comprehensive Transportation Plans;
 - Other.
- county and/or municipal:
 - visioning documents;
 - land development plans;
 - resolutions or other forms of support for;
 - individual developments (e.g. Dell in Winston-Salem);
 - non-governmental entities (e.g. downtown development commissions, chambers of commerce);
 - public-private partnerships; and/or
 - Capital improvement programs.

Examples of a potential need include (but may not be limited to):

- The federal mandate to conserve species protected under the Endangered Species Act;
- Local/state/federal goals to protect one or more aspects of the environment.
- Mitigation for impacts to streams/wetlands under the Clean Water Act.

Document the following:

- Who originated the need;
- What is the need;
- Project location;
- Local/state/federal goal providing the basis for the need; and
- What Growth/Economic Development deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If Growth/Economic Development Goals/Objectives cannot be established, **do not incorporate Growth/Economic Development as part of the Purpose & Need**; or
- If Growth/Economic Development Goals/Objectives can be established, proceed to next step.

Step 2: Identify level of influence that transportation infrastructure has on Growth/Economic Development:

It is important to understand how transportation investments might affect the ability to achieve Growth/Economic Development.

Document the following:

- Correlation between transportation infrastructure investment and its effect on achieving Growth/Economic Development goals.

Decision point:

- If there is not a strong correlation between transportation infrastructure and Growth/Economic Development, **do not incorporate Growth/Economic Development as part of the Purpose & Need**; or
- If there is a strong correlation between transportation infrastructure and Growth/Economic Development, proceed to next step.

Step 3: Identify performance measures and acceptable levels:

It is critical to establish a means to determine whether the project (and various alternatives) will successfully meet the purpose of the project. There should be a targeted goal that, if met, means an alternative will successfully meet the purpose. There should also be a performance measure that will enable evaluation of alternatives against the project purpose to determine whether an alternative meets the purpose.

Document the following:

- Acceptable level of performance;
 - Source for acceptable level of performance;
- Performance measure(s);
 - Rational for performance measure(s);
 - Source for performance measure(s).

Decision point: (none)

Step 4: Determine whether/how to include in Purpose & Need:

At this point, a need for Growth/Economic Development has been established, there is a strong correlation between the provision of transportation infrastructure and Growth/Economic Development, success has been defined and performance measures have been identified.. However, this doesn't mean that Growth/Economic Development should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether Growth/Economic Development should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that Growth/Economic Development **should** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that Growth/Economic Development **could** be included as a **primary purpose**:

- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that Growth/Economic Development **could** be included as an **other desirable outcome**:

- Transportation-related options are believed to be able to address the need; and

- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that Growth/Economic Development **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statements using Growth/Economic Development as a primary purpose

The City of Townsville has a comprehensive plan that includes the following goals:

- “Enhance economic development” [i.d. growth goal];
- “Improve Safety”
- “Improve Mobility”

Population growth has been 0.5% per year for the past ten years and is expected to continue at the same rate for the next ten years [growth needs].

The comprehensive plan contains a scoring system which assigns numeric values for each public interest [If the desire for growth/economic development can be substantiated through one or more sources, then there should be a determination as to how much “weight” growth/economic development played in identification of the project versus other public interests].

The comprehensive plan also contains metrics for each of the three public interests. The metrics for Growth/Economic Development are:

- Provision of municipal water/sewer to all parcels within designated growth areas; and
- 20% increase of roadway capacity for freight movement within designated growth areas.

The table below provides an example of the relative level of influence relative to growth/economic development objectives versus other public interests for each project. It also provides a means of identifying (within each public interest) how much value is placed on a project for that public interest.

Project	Safety (0-20 points)	Mobility (0-50 points)	Growth/ED (0-30 points)	Total Score (max 100 points)
Project A	10	50	3	63
Project B	20	30	10	60
Project C	10	10	30	50

For Project “A”, growth/economic development received 3 out of a possible 30 points, whereas mobility received 50 out of 50 possible points. In this case, the P&N would likely include mobility, and should probably not even mention growth/economic development [decision not to include at all].

For Project “B”, growth/economic development received 10 out of a possible 30 points, whereas safety and mobility received more points. In this case, the P&N should probably not include growth/economic development as a primary purpose, but could include it as an “other desirable outcome”. This would not allow alternatives to be eliminated based on not fully meeting P&N, but would allow the potential for growth/economic development benefits to be included in subsequent alternative screenings and selection of a preferred alternative [decision to include as an other desirable outcome].

For Project “C”, growth/economic development received the maximum score. In this case, the P&N would likely include growth/economic development as a primary purpose “The purpose is to provide sufficient transportation infrastructure to facilitate economic development” [decision to include as primary purpose]. A possible metric (for evaluating whether alternative meet the P&N) could be “20% increase [acceptable level] of roadway capacity for freight movement within designated growth areas within the project study area” [performance measure].

Critique of Growth/Economic Development Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for Growth/Economic Development. The critique focuses on various wording scenarios using Growth/Economic Development as a primary purpose for highway projects.

“The purpose is to improve Economic Development”—As written, this purpose statement is too broad, since the purpose allows a range of alternatives that include:

- Non-highway solutions (e.g. aviation, rail, seaports, etc.);
- Non-transportation solutions (e.g. land development controls, tax breaks, other public infrastructure);
- Solutions outside of the project study area.

Also:

- There are no performance measures; and
- The acceptable level of performance (simply to “improve”) is open to interpretation.

“The purpose is to provide transportation infrastructure to facilitate Economic Development”—

This statement is more focused than the previous example, since it now limits the range of alternatives to transportation-related solutions. However, it still allows a range of alternatives that include:

- Non-highway solutions (e.g. aviation, rail, seaports, etc.);
- Solutions outside of the project study area.

Also:

- There are no performance measures; and
- The acceptable level of performance (simply to “improve”) is open to interpretation.

“The purpose is to provide highway infrastructure to facilitate Economic Development”—This

statement is more focused than the previous example, since it now limits the range of alternatives to highway-related solutions. However, it still allows a range of alternatives that include:

- Solutions outside of the project study area.

Also:

- There are no performance measures; and
- The acceptable level of performance (simply to “improve”) is open to interpretation.

“The purpose is to provide highway infrastructure within the project study area to facilitate Economic Development”—This statement is more focused than the previous example, since it now limits the range of alternatives to solutions within the project study area. However:

- There are no performance measures; and
- The acceptable level of performance (simply to “improve”) is open to interpretation.

“The purpose is to improve highway performance within the project study area to facilitate Economic Development”—This statement is more focused than the previous example, since it now suggests a change in performance. However:

- The acceptable level of performance (simply to “improve”) is open to interpretation.

“The purpose is to provide a roadway operating at a minimum of 35 mph within the project study area to facilitate Economic Development”—This statement is more focused than the previous example, since it now identifies a measurable level of desired performance.

National Defense Template, Data Needs & Examples

Step 1: Identify and Document the National Defense Need.

A national defense need can originate from any of the following scenarios:

- During the planning process, the US Department of Defense (DoD) communicates their desire for a transportation modification;
- During the planning process, a local and/or state entity identifies a potential national defense need for a transportation modification;
- During project scoping and/or coordination, the DoD communicates their desire for a transportation modification.

Examples of an identified need include (but may not be limited to):

- Substandard vertical clearance for bridge structures over the STRAHNET;
- Undesirable operating conditions on a national defense network; and/or
- Remove civilian traffic from military installations.

Document the following:

- Who originated the need;
- What national defense network is involved;
- What deficiency exists (or will exist) if a transportation modification is not made.

Decision point:

- If a National Defense need cannot be established, **do not incorporate National Defense as part of the Purpose & Need**; or
- If a National Defense need can be established, proceed to next step.

Step 2. Determine if there is US DOD support for a National Defense purpose:

During coordination with the US DOD, the USDOD will either be supportive, non-committal, or not supportive of the project addressing a national defense need.

Document the following:

- written opinion from the US Department of Defense on whether the project should address a national defense need.

Decision point:

- If the US DOD is either non-committal or does not support the project addressing a national defense need, **do not incorporate National Defense as part of the Purpose & Need**; or
- If the US DOD is supportive of the project addressing a national defense need, proceed to next step.

Step 3: Determine if the proposed project is part of/connects to a national defense facility:

Obtain maps of the following national defense facilities:

- Strategic Highway Network (STRAHNET);
- Strategic Rail Corridor Network (STRACNET);
- Ports for National Defense (PND); and
- Military installations.

Compare the project location to the national defense facilities. Determine whether the project is part of or connects to a national defense facility

Document the following:

- A location map that shows the proposed project and the relationship to the national defense facility.

Decision point:

- If the proposed project is not on (or connects to) one of these national defense facilities, **do not incorporate National Defense as part of the Purpose & Need**; or
- If the proposed project is on (or connects to) one of these national defense facilities, proceed to next step.

Step 4: Determine whether/how to include in Purpose & Need.

At this point, a need for national defense has been established, the US DOD is supportive, the project relates to a national defense network, success has been defined and performance measures have been identified. However, this doesn't mean that national defense should **automatically** be included in the purpose (either as a primary purpose or as an other desirable outcome). There may be other purposes under consideration that are either more fundamental to the project or have a stronger foundation for the need. The author of the purpose statement must make a judgment call on whether national defense

should be included (and if so, how). The following includes suggested information items that should help the author make such a decision.

Indications that national defense **should** be included as a **primary purpose**:

- The US DOD originated the need;
- The US DOD has provided written support for national defense;
- Transportation-related options are believed to be able to address the need; and
- There are no other primary purposes being considered.

Indications that national defense **could** be included as a **primary purpose**:

- The US DOD originated the need;
- The US DOD has provided written support for national defense;
- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered.

Indications that national defense **could** be included as an **other desirable outcome**:

- The US DOD has provided written support for national defense;
- Transportation-related options are believed to be able to address the need; and
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Indications that national defense **should not** be included as either a **primary purpose** or an **other desirable outcome**:

- Transportation-related options are **not** believed to be able to address the need; or
- There are other primary purposes being considered that are more fundamental to the origination of the project.

Decision point:

- Include as a primary purpose;
- Include as an other desirable outcome; or
- Do not include as a purpose.

Example Purpose Statement using National Defense as a primary purpose

Jane Doe Road, located in Smith County, is a four-lane, divided facility that generally runs in a north/south direction. Part of Jane Doe Road traverses through Fort Jones, a US Army installation [connection to national defense facility]. The US Department of Defense (DOD) has communicated a desire to remove civilian traffic from the portion of this facility through the base [DOD support]. The intent of this request was to increase security at this National Defense installation [need].

Due to the restriction on access for Jane Doe Road through the base, there is a need to accommodate the current and projected through traffic on transportation facilities outside of the base [need].

The primary purpose of this project is to accommodate existing and future traffic demands that will be created by the closing of civilian traffic on Jane Doe Road through Fort Jones [decision to include as primary purpose].

Example Purpose Statement using National Defense as an other desirable outcome

Bridge #1 crosses over Interstate XX in Smith County. Interstate XX is a component of the STRAHNET [this sentence provides the connection of the project to a national defense network]. Bridge #1 has a sufficiency rating of 50.1 and has been determined to be functionally obsolete. Part of this rating is due to the bridge having a substandard minimum vertical clearance for Interstate routes on the STRAHNET (fhwa.dot.gov/bridge/081597.htm). The minimum vertical clearance standard for this facility is 4.9 meters. Currently, Bridge #1 has a vertical clearance of 4.5 meters [these sentences demonstrate the need]. During the planning process for this project, the US Department of Defense has requested that when bridges on the STRAHNET are replaced or rehabilitated, that the bridges meet the minimum vertical clearances for facilities on the STRAHNET [this sentence demonstrates the support from the US DOD regarding national defense needs].

Critique of National Defense Purpose Statements for Highway Projects

The following sample purpose statements assume a well-documented need for national defense. The critique focuses on various wording scenarios using national defense as a primary purpose for highway projects.

“The purpose is to improve national defense”—As written, this purpose statement is too broad. A wide range of non-highway solutions (e.g. aviation, rail, seaports, etc.), non-transportation solutions (e.g. troop deployments), as well as solutions outside of the project study area could meet the project purpose.

“The purpose is to improve the national security of the transportation system”—This is a bit better than the example before, since it does narrow the range of solutions to those that relate to the transportation system. However, there still could be possible solutions that are either beyond highway-related solutions (e.g. aviation, rail, seaports, etc.) or outside of the project study area that could meet the project purpose.

“The purpose is to improve the security of the transportation system within Fort Bragg”—This is a bit better than the example before, since it specifies a locational transportation system (i.e. only the system within Fort Bragg). However, it still would allow for a range of non-infrastructure solutions (e.g. additional security guards to inspect vehicles) and even non-highway-related solutions (aviation-related solutions would still meet the project purpose).

“The purpose is to improve the security of the roadway system within Fort Bragg”—This is a bit better than the example before, since it narrows the range of solutions to highway-related solutions. However, it still allows non-infrastructure-related solutions (e.g. additional security guards).

Appendix C (P&N Team)

The following persons collaborated on this document:

-  Pat Strong, Triangle J Council of Governments
-  Mike Kozlowsky, Wilmington MPO
-  Felix Nwoko, Durham MPO
-  Brian Wrenn, NCDWQ
-  Dan Thomas, NCDOT
-  Derrick Lewis, NCDOT
-  Karen Capps, NCDOT
-  Jennifer Fuller, NCDOT
-  Tammye Fontenot, NCDOT
-  Loretta Barren, FHWA
-  Ron Lucas, FHWA
-  Rob Ayers, FHWA

Appendix D (Internet Resources)

Federal Highway Administration

- FHWA Website: fhwa.dot.gov
- FHWA-NC Website: fhwa.dot.gov/ncdiv
- FHWA/FTA Joint Guidance on Purpose & Need: environment.fhwa.dot.gov/guidebook/Gjoint.asp
- SAFETEA-LU Section 6002: fhwa.dot.gov/hep/section6002/appx.htm
- FHWA Guidance on SAFETEA-LU Section 6002: fhwa.dot.gov/hep/section6002/index.htm
- US Code, Title 23 (Highways) & Title 49 (Transportation): law.cornell.edu/uscode/
- Code of Federal Regulations, Title 23 (Highways) & Title 49 (Transportation): gpoaccess.gov/CFR/INDEX.HTML
- FHWA Memo on "Vertical Clearance, Interstate System": fhwa.dot.gov/bridge/081597.htm

North Carolina Department of Transportation

- NCDOT Website: ncdot.org
- Merger 01 Website: ncdot.org/doh/preconstruct/pe/MERGER01/
- Interagency Leadership Team Website: ncdot.org/programs/environment/development/interagency/ncilt/
- Integration Project: ncdot.org/programs/environment/development/improvement/integration.html
- NCDOT Policy on Desirable Levels of Service for State Highway systems Streets and Highways in Urban Areas: ncdot.org/doh/preconstruct/traffic/tepl/Topics/L-06/L-6p.pdf
- NCDOT Project Development Crash Reduction Factor Information: ncdot.org/doh/preconstruct/traffic/Safety/ses/project_guide/regionalfactors.pdf
- FHWA's Highway Safety Engineering Studies Procedural Guide: ncdot.org/doh/preconstruct/traffic/Safety/ses/project_guide/frames.html
- Emergency Evacuation Routes: ncdot.org/traffictravel/emergencyinfo/
- NCDOT Guidelines for Utilizing NC Statewide Crash Rates: ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/guidelines.pdf
- NCDOT Crash Profiles: ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/rates.html

AASHTO

- Practitioner's Handbook "Defining the Purpose And Need And Determining The Range of Alternatives For Transportation Projects": environment.transportation.org/pdf/PG07.pdf

Council on Environmental Quality

- CEQ Exchange of Letters with Secretary of Transportation: Purpose and Need: ceq.hss.doe.gov/nepa/regs/CEQPurpose.pdf and ceq.hss.doe.gov/nepa/regs/CEQPurpose2.pdf
- National Environmental Policy Act: ceq.hss.doe.gov/nepa/regs/nepa/nepaegia.htm
- CEQ Regulations for Implementing NEPA: ceq.hss.doe.gov/nepa/regs/ceq/toc_ceq.htm

US Department of Defense

- DOD Programs for National Defense: tea.army.mil/DODProg/default.htm