

**Purpose & Need Guidance  
for FHWA-funded Projects in North Carolina**  
(Version 1, August 2008)



For information, contact:  
Rob Ayers, AICP, Environmental Programs Coordinator  
Federal Highway Administration, North Carolina Division  
E-mail: [rob.ayers@fhwa.dot.gov](mailto:rob.ayers@fhwa.dot.gov)  
Website: [www.fhwa.dot.gov/NCDIV](http://www.fhwa.dot.gov/NCDIV)

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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](http://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.**

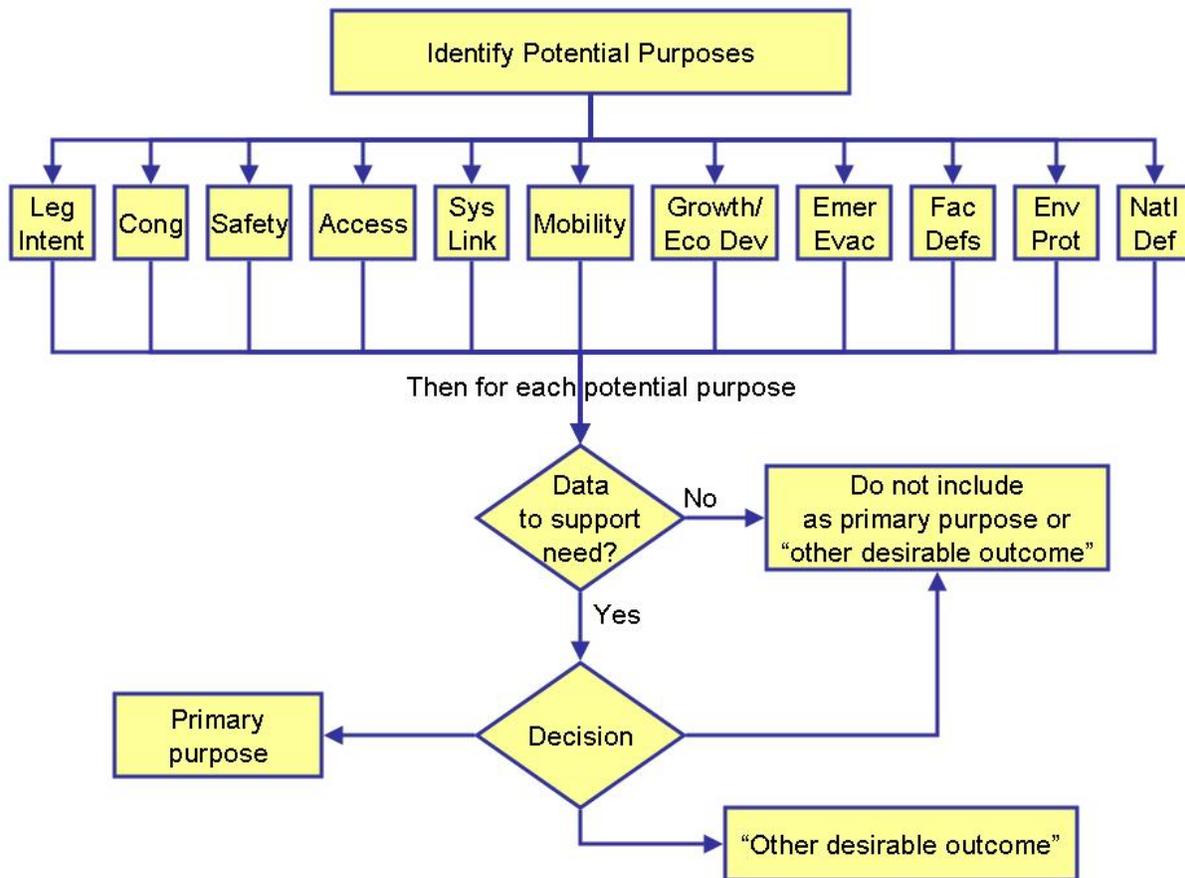
## How do we determine what purpose(s) to include?

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.**

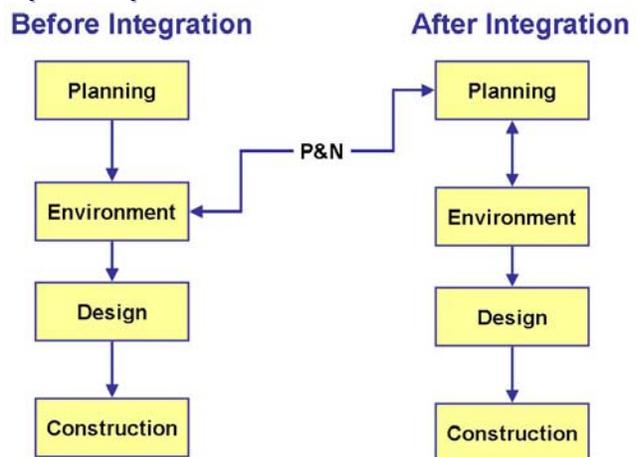
The graphic below depicts this framework.



### 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.

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.

**For informational purposes only:**  
 The following websites provides a list of countermeasures and the expected crash reductions:  
[www.ncdot.org/doh/preconstruct/traffic/Safety/ses/project\\_guide/regionalfactors.pdf](http://www.ncdot.org/doh/preconstruct/traffic/Safety/ses/project_guide/regionalfactors.pdf)  
[www.ncdot.org/doh/preconstruct/traffic/Safety/ses/project\\_guide/frames.html](http://www.ncdot.org/doh/preconstruct/traffic/Safety/ses/project_guide/frames.html)

**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.

Sample purpose statements for facility deficiencies:

- “The purpose of this project is to remedy geometric deficiencies”.
- “The purpose of this project is to eliminate the “deficient” status of the bridge”.
- “The purpose of this project is to achieve minimum acceptable standards for pavement conditions”.

[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, 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.

**“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?**

### 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

**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...”.**

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.

[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/traffictavel/emergencyinfo/](http://www.ncdot.org/traffictavel/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).

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).

**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).**

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).

**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.**

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

**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.**

- 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.

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

**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.”**

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).

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

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.

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,

**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”.**

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.

There may be a few instances where 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”.

**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”.**

[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](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.

Ports in North Carolina include:

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

**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”.**

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.

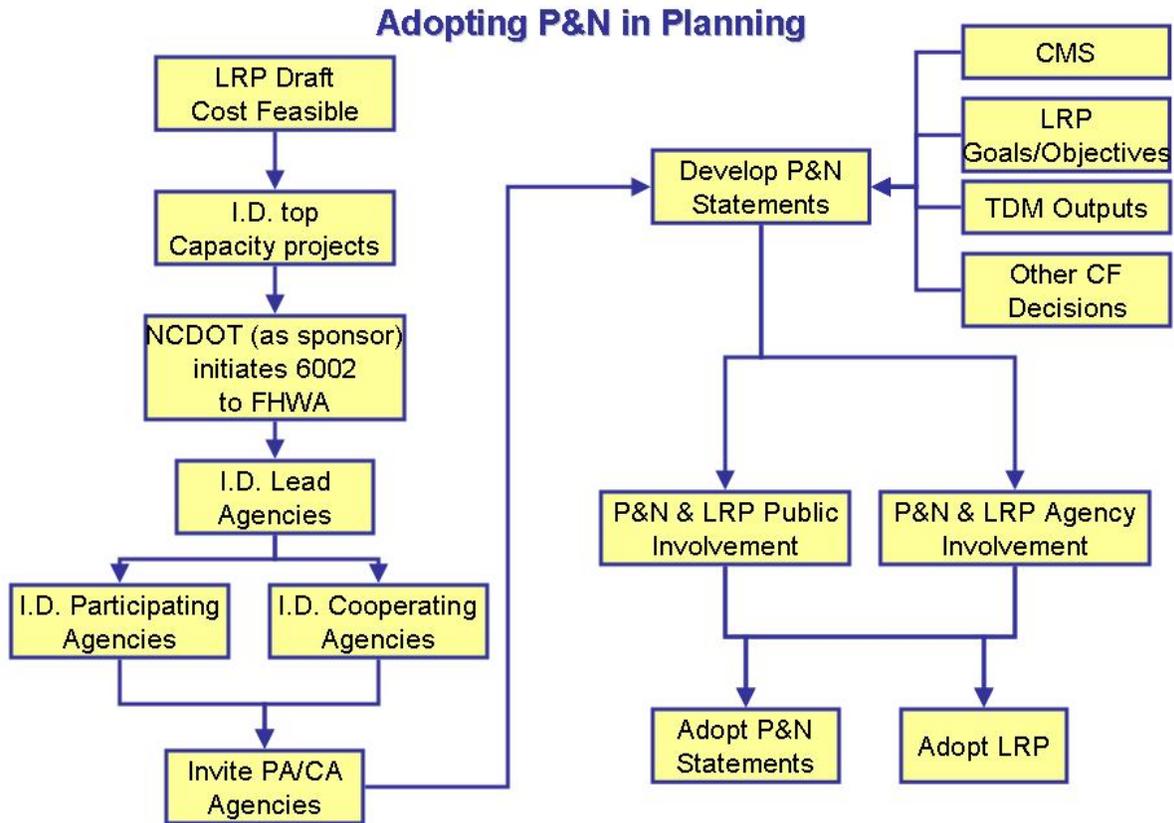
For projects in the planning realm that are expected to require preparation of an EIS, it is prudent to initiate the Section 6002 process in the planning realm. By doing this, it eliminates the need to “redo” later efforts related to P&N to comply with Section 6002. To also minimize effort, development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

### 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 sources.

Decide:

- 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.

### 2. Identify performance measures and acceptable levels.

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

### 3. Determine whether to include in Purpose & Need:

Document the decision to include (or not) legislative intent into the P&N.

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

If Legislative Intent is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Consider the following:

- 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.
- 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)?

### Example (actual)

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

### 1. Describe Existing Facility:

- Name(s)/Numbering;
- Termini;
- Location map;
- Facility Type;
- Functional Classification;
- Number of Lanes; and
- Area Type.

### 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.

### 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.

### 4. Obtain Congestion Information:

Data depends on which metric is used.

Document congestion information and source(s).

### 5. Determine if there may be a congestion problem (Need):

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

Decide:

- 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”).**

Document analysis and decisions.

## 6. Determine whether to include in Purpose & Need:

Decide:

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

If Congestion is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

### Example (hypothetical)

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 & 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”.*

### Analysis of sample congestion-related P&N statements

**Unacceptable Example:** *“The purpose of this project is to widen the road to four lanes”.* It 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).

**Poor Example:** *“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.

**Fair Example:** *“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 (as in the “good” example) below strengthens the P&N.

**Good Example:** *“The purpose of this project is to eliminate 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 (even going farther to eliminate 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

### 1. Describe Facility:

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

### 2. Obtain Crash Information:

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

Document crash information.

Decide:

- 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.**

### 3. Calculate Critical Crash Rates (CCR):

The appropriate indicator of a potential safety problem is the **critical crash rate** ([ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/guidelines.pdf](http://ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/guidelines.pdf)). The CCR 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

(<http://www.ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/rates.html>)

$k$  = 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)

Decide:

- If this formula can be followed, proceed to next step; or
- If this formula cannot be followed;
  - Get NCDOT [Safety Planning Group](#) to perform the calculation, proceed to next step; or
  - **do not incorporate Safety as part of the Purpose & Need.**

Document CCRs and data/analysis/methods used to calculate CCRs.

### 4. Determine if there may be a safety problem (Need):

Decide:

- If one or more of the roadway crash rates exceed the corresponding critical crash rate, then document which roadway crash rates exceed critical crash rates and proceed to next step; or
- If none of the roadway crash rates exceed to corresponding critical crash rates, **do not incorporate Safety as part of the Purpose & Need.**

Document decisions.

**5. Request analysis from NCDOT Safety Planning Group:**

Provide all previous data and analysis to the NCDOT Safety Planning Group.

**6. Document results from NCDOT Safety Planning Group analysis:**

Decide:

- If the NCDOT Safety Planning Group suggests effective countermeasures, document the NCDOT Safety Planning Group report and proceed to next step; or
- If the NCDOT Safety Planning Group does not suggest effective countermeasures, **do not incorporate Safety as part of the Purpose & Need.**

Document results.

For informational purposes, a list of countermeasures and their potential effectiveness can be found at: ([ncdot.org/doh/preconstruct/traffic/Safety/ses/project\\_guide/regionalfactors.pdf](http://ncdot.org/doh/preconstruct/traffic/Safety/ses/project_guide/regionalfactors.pdf)).

**7. Determine whether/how to include in Purpose & Need:**

Decide:

- Include overall Safety as a primary purpose;
- Include overall Safety as an “other desirable outcome”;
- Include a particular aspect of Safety as a primary purpose:
  - Particular crash type (e.g. rear-ends); and/or
  - Particular environmental conditions (e.g. wet conditions).
- Include a particular aspect of Safety as an “other desirable outcome”:
  - Particular crash type (e.g. rear-ends); and/or
  - Particular environmental conditions (e.g. wet conditions);
- Do not include.

If Safety is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

**Example (actual)**

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**].**

A copy of the NCDOT Safety Planning Group analysis is attached [analysis not attached for this example] to this report.

### **Example (hypothetical)**

Wilner Way is a 2-lane road that has an unsignalized intersection with Brew Boulevard (also a 2-lane road). Documented crash analysis shows that the critical crash rate for angle crashes is above the statewide average for this type of facility. These crashes are caused by vehicles making left turns onto each road. The countermeasure associated with the proposed project is to convert the intersection to a roundabout. On the positive side, conversion of the intersection to a roundabout is expected to reduce the number of angle and rear-end crashes. A possible negative consequence of this countermeasure may be a decrease in the safety of pedestrians trying to cross the side street since vehicles exiting the side street will no longer need to stop before entering the mainline. A properly designed roundabout would also force the mainline traffic to slow down in order to maneuver the intersection (which may improve safety for pedestrians attempting to cross the mainline).

From the example above:

- If overall safety is included as a primary purpose, then a determination as to whether the overall safety is increased (i.e. “will the purpose be fully met”) requires a comparison of the positive and negative effects of the countermeasure (in this case a roundabout) and a determination as to whether the facility will be safer from an overall perspective (i.e. the positive benefits outweigh the negative consequences).
- If a particular aspect of safety is included as a primary purpose (e.g. “reduce rear-end crashes”), then the determination as to whether the purpose will be fully met only requires looking at whether rear-end crashes are being reduced—negative consequences do not need to be factored into this determination. Later, during screening of alternatives analysis and selection of a preferred alternative, both positive and negative effects of the alternatives can be considered in arriving at a preferred alternative.
- If overall safety (or a particular aspect of safety) is included as an “other desirable outcome” (but not as a primary purpose), then safety has no bearing on whether alternatives fully meet the Purpose & Need. Rather, safety can be used to assist in screening alternatives and choosing a preferred alternative.

## Facility Deficiencies Template, Data Needs & Examples

### 1. Describe Facility:

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

### 2. Identify and Quantify Need (Deficiencies):

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

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; and/or other.

Decide:

- 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.**

### 3. Identify performance measures and acceptable levels:

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

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

If Facility Deficiency is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

#### Example (hypothetical)

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].

## Access Template, Data Needs & Examples

### 1. Identify the need for Access modifications:

- Congestion;
- Promote Economic Development;
- Connect Areas;
- Connect Facilities;
- User Conflicts (caution: maybe more of a safety need).

Document needs.

Determine:

- 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.**

### 2. Identify performance measures and acceptable levels:

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

- Include as a primary purpose (Interstate—never, other controlled access/new access/modified access—unlikely, speculative road—possibly);
- Include as an “other desirable outcome” (Interstate—never, all others—possibly);
- Do not include.

If Access is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

#### Example (hypothetical)

None where access is a primary purpose.

# System Linkage Template, Data Needs & Examples

## 1. Define “Linkage”:

Document definition.

## 2. Identify “things” to link:

Examples include:

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

Document linkage.

## 3. Identify Need for Linkage:

Identify current conditions, future conditions and gap (difference between). Identify why it is important to close the gap.

Determine:

- 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.**

## 4. Identify performance measures and acceptable levels.

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

- Include as a primary purpose (rarely);
- Include as an “other desirable outcome” (possibly);
- Do not include.

If System Linkage is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

### Example (hypothetical)

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**].

# Mobility Template, Data Needs & Examples

## 1. Define Mobility:

Document definition.

## 2. Identify Mobility Goals/Objectives:

Document source(s) and particular goals/objectives/standards to support including mobility objectives in the P&N statement. Possible sources include:

- 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.

Decide:

- 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.

## 3. Identify Mobility Needs (Deficiencies):

Describe and document how existing/future conditions do not meet mobility goals/objectives.

## 4. Identify performance measures and acceptable levels.

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

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

If Mobility is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

### Example (hypothetical)

A transportation plan contains a goal of “improving mobility.” A project is identified that suggests a need to widen a road from point A to point B.

A poor P&N statement for this project would be “*the purpose of this project is to improve mobility*”. This is poor language because it allows the following range of options to fully meet P&N:

- alternatives with non-highway modes; and/or
- alternatives in other parts of the community (or even outside of the community).

Somewhat better P&N statements (assuming there is a supporting basis) might be:

- “The purpose is to improve the mobility along Corridor X”;
- “The purpose is to improve the mobility of vehicular travel”; or
- “The purpose is to improve the mobility during rush hour”.

An even better P&N statement could include:

- “The purpose is to improve the mobility of motorized vehicles along Corridor X during the PM peak period”.

# Emergency Evacuation Template, Data Needs & Examples

## 1. Identify the need for emergency evacuation:

Decide:

- 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.

Document goals/policies/studies for emergency evacuation.

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

Decide:

- 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.

Document designation.

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

Decide:

- 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.

Identify and document components necessary to achieve emergency evacuation and how the proposed project meets all/part/none of the necessary components.

## 4. Identify performance measures and acceptable levels:

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

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

If Emergency Evacuation is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

### Example (hypothetical)

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](#)].

# Environmental Protection Template, Data Needs & Examples

## 1. Identify the need for environmental protection:

Decide:

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

Document goals/policies/mandates for environmental protection.

## 2. Identify eligibility for Federal-aid funding participation:

Decide:

- 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.

Document eligibility. Consult with FHWA as needed.

## 4. Ensure that the need is not a method of implementing a project:

Decide:

- If the environmental protection 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.

Document decision.

## 4. Identify performance measures and acceptable levels:

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

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

If Environmental Protection is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

### Example (hypothetical)

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 (*musselpticus 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**].

# Growth/Economic Development Template, Data Needs & Examples

## 1. Identify Growth/Economic Development Goals/Objectives:

Document source(s) and particular goals/objectives/standards to support including growth/economic development objectives 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.

Decide:

- 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.

## 2. Identify Growth/Economic Development Needs (Deficiencies):

Describe and document how existing/future conditions do not meet goals/objectives.

## 3. Identify level of influence that transportation infrastructure has on Growth/Economic Development:

Decide:

- 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.

Document correlation.

## 4. Identify performance measures and acceptable levels:

Identify and document one or more metrics (and acceptable performance levels) that will be used to evaluate whether alternatives meet the P&N.

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

Decide:

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

If Growth/Economic Development is included as a primary purpose, decide whether the performance measures and acceptable levels will be included in the P&N statement or elsewhere in the decision-making process.

Document the decision(s).

### Example (hypothetical)

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].

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 ODO].

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].

## National Defense Template, Data Needs & Examples

### 1. Identify the following national defense facilities:

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

### 2. Determine if the proposed project is part of (or connects to) one of the national defense facilities:

- 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.

Provide a location map that shows the proposed project and the relationship to the national defense facility.

### 3. Document the National Defense Need:

Document any of the following:

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

### 4. Determine if there is support for a National Defense purpose:

- If support does not exist, **do not incorporate National Defense as part of the Purpose & Need**; or
- If support exists, document such support and proceed to next step.

Support for National Defense is evident by:

- Correspondence from US Department of Defense indicating a desire for a change to the system; and/or
- Goal/policy indicating a desired performance standard for the system.

FHWA has a standard for minimum vertical clearances for Interstate routes on the STRAHNET ([fhwa.dot.gov/bridge/081597.htm](http://fhwa.dot.gov/bridge/081597.htm)).

### 5. Determine whether to include in Purpose & Need:

Document the decision to include (or not) National Defense into the P&N.

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

### Example (hypothetical)

Interstate XX, located in rural Smith County, is a component [relationship to network] of the STRAHNET [defense facility]. FHWA has a standard for minimum vertical clearances for Interstate routes on the STRAHNET ([fhwa.dot.gov/bridge/081597.htm](http://fhwa.dot.gov/bridge/081597.htm)). The minimum vertical clearance for this rural facility is 4.9 meters. Currently, I-XX has one bridge that does not meet this minimum vertical clearance:

- Bridge # XXXX (mile marker XX) has a vertical clearance of 4.5 meters [need].

The DoD has requested [support] that when bridges need to be replaced, that the replacement bridges meet the minimum vertical clearance.

The purpose of this project is to achieve consistency with the 4.9 meter vertical clearance standard [decision to include as primary purpose].

#### **Example (hypothetical)**

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 [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 [support]. The intent of this request was to increase security at this National Defense installation.

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 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].

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

## North Carolina Department of Transportation

- NCDOT Website: [ncdot.org](http://ncdot.org)
- Merger 01 Website: [ncdot.org/doh/preconstruct/pe/MERGER01/](http://ncdot.org/doh/preconstruct/pe/MERGER01/)
- Interagency Leadership Team Website: [ncdot.org/programs/environment/development/interagency/ncilt/](http://ncdot.org/programs/environment/development/interagency/ncilt/)
- Integration Project: [ncdot.org/programs/environment/development/improvement/integration.html](http://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](http://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](http://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](http://ncdot.org/doh/preconstruct/traffic/Safety/ses/project_guide/frames.html)
- Emergency Evacuation Routes: [ncdot.org/traffictravel/emergencyinfo/](http://ncdot.org/traffictravel/emergencyinfo/)
- NCDOT Guidelines for Utilizing NC Statewide Crash Rates: [ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/guidelines.pdf](http://ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/guidelines.pdf)
- NCDOT Crash Profiles: [ncdot.org/doh/preconstruct/traffic/Safety/ses/rates/rates.html](http://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](http://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](http://ceq.hss.doe.gov/nepa/regs/CEQPurpose.pdf) and [ceq.hss.doe.gov/nepa/regs/CEQPurpose2.pdf](http://ceq.hss.doe.gov/nepa/regs/CEQPurpose2.pdf)
- National Environmental Policy Act: [ceq.hss.doe.gov/nepa/regs/nepa/nepaegia.htm](http://ceq.hss.doe.gov/nepa/regs/nepa/nepaegia.htm)
- CEQ Regulations for Implementing NEPA: [ceq.hss.doe.gov/nepa/regs/ceq/toc\\_ceq.htm](http://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](http://tea.army.mil/DODProg/default.htm)