Application of PEL Framework to Transportation Planning and Decision Making Process

U.S. Department of Transportation

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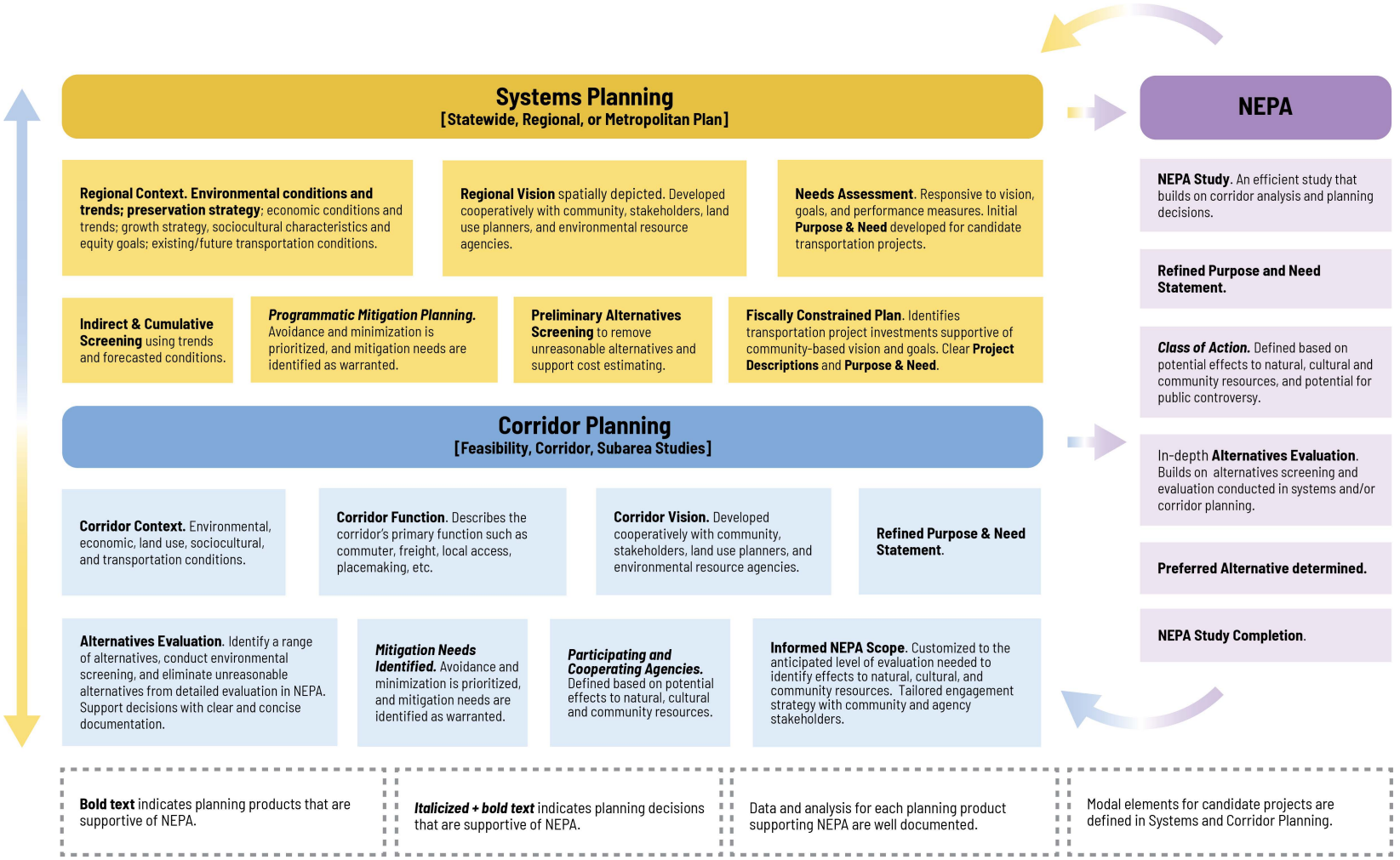
Table of Contents

Application of PEL Framework to Transportation Planning and Decision Making Process 1
Web Based Content Vision: 3
PEL Approach 2
Assess Opportunities for Adopting a PEL Approach 2
Systems Planning 3
Regional Context: 3
Regional Vision: 3
Needs Assessment: 4
Indirect and Cumulative Screening: 4
Programmatic Mitigation Planning: 5
Preliminary Alternatives Screening: 5
Fiscally Constrained Transportation Plan: 6
Corridor Planning 6
Corridor Context: 6
Corridor Function: 7
Corridor Vision: 7
Refined Purpose and Needs Statement: 7
Alternatives Evaluation: 7
Mitigation Needs Identified: 8
Participating and Cooperating Agencies: 8
Informed NEPA Scope: 8
NEPA: Positioning for a More Efficient NEPA Study 9

Web Based Content Vision:

Based on the below graphic, the web-based content will allow users to click on each one of the boxes and have a more detailed explanation open for them to read. This content is especially useful for practitioners and resource agencies who may not be as familiar with the transportation planning and project development process.

Figure 1. Application of PEL Framework to Transportation Planning and Decision-Making Process



PEL Approach

PEL is a collaborative and integrated approach to transportation decision making and is both scalable and flexible. The diagram (Figure 1) presents a view of how the PEL Framework can be applied to various elements of the transportation planning and decision-making process. It is not meant to be viewed as a complex or specific step by step process that must be comprehensively followed to reap the benefits of PEL applications. Rather, each state will have different assets, organizational structures, and planning processes, and therefore potentially different starting points for applying a PEL approach.

Assess Opportunities for Adopting a PEL Approach

Unique challenges and resources available to different agencies can inform the application of a PEL approach in a way that leads to the most beneficial results. For example, an MPO or state DOT could choose to engage the public and environmental resource agencies when establishing the corridor vision or when developing the purpose and need for different projects. The type of engagement they conduct can vary depending on the relationships and structures already formed within the community.

Thus, an important opportunity at the outset of systems and corridor planning is for transportation and environmental resource/regulatory agencies to collaboratively assess areas for improvement to their existing processes and to adopt PEL approaches. Collaboration and communication within agency departments, such as state DOT planners, asset managers, and environmental review, is equally important. Understanding the areas within the transportation planning process that could be improved and obtaining feedback from other practitioners on different areas can either serve as a starting place or it can be used iteratively to improve practices. Below are some key considerations to guide a facilitated discussion among the key partners involved in PEL.

- Identify an aspect or aspects of the transportation planning process to apply a PEL approach (e.g., metropolitan transportation plan, long-range statewide transportation plan, corridor study in advance of NEPA, etc.).
- Identify interagency and intra-agency partners who should collaborate to implement the PEL approach (e.g., MPO, DOT planners and asset managers, environmental resource agencies, public, and other stakeholders).
- Develop the technical method and interagency/stakeholder engagement for applying PEL.
- Document the planning products that will be developed, as well as how they will be used, to inform a subsequent NEPA/environmental review process.
- Document the expected benefits anticipated from implementing a PEL approach.

The results from this collaboration can help planners and practitioners target specific opportunities within the transportation planning process which are most applicable and will yield the greatest benefit from applying a PEL approach.

To optimize the benefits of applying a PEL approach to any component of the transportation planning process, practitioners should consider how the PEL core pillars will be applied, including interagency collaboration, management and use of data supporting technical analyses, and the development and documentation of planning products for use in NEPA or later implementation efforts.

Systems Planning

Systems planning is conducted for a broad geography, commonly at the state or regional level. Examples include state DOT or MPO long-range transportation plans and plans for specific modes of transportation or types of infrastructure(e.g., transit, freight, or bridge plans). In traditional transportation systems planning, environmental resource agencies and Native American tribes are typically not involved in the planning process, so even if environmental data sets are referenced, they are not necessarily integrated into the plans in meaningful ways. Rather than consulting resource agencies in the final stages of plan development, a PEL approach to systems planning means that environmental resource agencies, in addition to the public, land planning agencies, and other stakeholders, are engaged throughout the process and are involved in plan development. As part of this engagement, relevant data sets with expertise from these diverse stakeholders are used in analysis, and planning decisions and information is documented for use in subsequent planning and implementation efforts. This fundamental shift results in the creation of better plans, and a prioritization of future projects that align with environmental preservation goals and available funding. It also results in accelerated project delivery due to well-documented planning products and decisions and a more informed NEPA processes that build on these decisions.

Regional Context:

Before the creation of any transportation plan, MPOs or state DOTs set out to understand and outline the existing conditions and trends that will impact the current transportation system and future demands. These conditions and trends include population growth and growth patterns, sociocultural characteristics, and transportation goals, as well as existing and forecasted transportation conditions.

PEL Approach: Explore opportunities to engage with resource agencies, land use agencies, and the public in the development of existing conditions and regional context. Intra-agency coordination is equally important. Include discussions about which data may be useful to understand the broader regional context and incorporate insight through collaboration with various stakeholders. For example, resource agencies could convey the context and importance of environmental systems as transportation concepts are being planned. As a result of this collaboration and integration of data, transportation strategies included in the plan can be adjusted to avoid and minimize potential effects to environmental systems and align with other community interests. Working collaboratively at the systems level helps advance proactive rather than reactive protection and planning for environmental systems from all sides. Include discussions about the usefulness of the planning information and decisions produced throughout this process to understand ways this information can be better integrated into future planning and implementation efforts. Ensure that the coordination and approach for development of the regional context is well documented for use in NEPA.

Regional Vision:

A vision for the region is developed among land use and transportation planners, and diverse community stakeholders. The vision typically illustrates a growth strategy that details growth rates and development patterns within the region and a supporting transportation system to guide demand or adapt to meet demand. Strategies and policies can then be developed for organized growth patterns that recognize environmental preservation and transportation mobility goals.

PEL Approach: Explore opportunities to develop the regional vision in a partnership with environmental resource agencies, land planning agencies, transportation agencies and other community stakeholders. This collaboration will vary depending on the specific state and regional context including existing relationships and avenues for communication and coordination. Collaboration with environmental resource agencies is meant to ensure that the vision for growth and development aligns with the vision for environmental sustainability. The documentation of this vision can also be tailored to fit the intended goals of the process, whether that is to fit into the environmental review process, or to inform future decision making. The insight gathered in the development of a regional vision can impact the way the transportation system is developed as environmental perspectives are integrated into its development. Ensure that the regional vision is clearly illustrated and characterized for reference in NEPA.

Needs Assessment:

The need for new transportation infrastructure and services are identified during the development of long-range transportation plans. Transportation needs are largely derived from travel demand modeling exercises that estimate when travel conditions on the transportation system are anticipated to deteriorate based on forecasts of population, employment, and school enrollment. Needs are also based on other placemaking, economic development, and emergency evacuation, among a host of other regional or community-based objectives. The purpose and need for candidate transportation projects is best understood at the systems level during the development of a long-range transportation plan, yet it is typically not clearly articulated within the plan documentation. The project level purpose and need is usually only developed at the commencement of NEPA.

PEL Approach: Rather than waiting until NEPA begins, consider opportunities to develop and document the purpose and need for different components of the transportation system through engagement with the public, land use, and resource agencies. The type of involvement and collaboration will vary based on context and existing avenues for communication. Explore opportunities for incorporating data sets to expand your understanding of transportation needs in collaboration with these various stakeholders and discuss ways that the documentation of planning decisions and information can be useful and integrated into future planning and implementation efforts. Including land use planners and environmental resource agencies in this planning step should result in a common understanding of the purpose and need for candidate projects which will be included in long term plans. Once individual projects advance to NEPA, resource agencies, stakeholders and the public already have a base level of understanding of the purpose and need transportation projects, resulting in better defined and well-documented project purpose and need prior to NEPA.

Indirect and Cumulative Screening:

Indirect and cumulative effects evaluation is required by NEPA. This evaluation requires the identification of potential effects of past, present, and reasonably foreseeable actions to the sustainability of environmental systems like watersheds, wetlands, or habitats for endangered species. The analysis, for example, needs to determine the effects of transportation, induced land development, and other indirect effects such as water runoff to certain environmental resources such as a wetland system. These environmental systems are often expansive encompassing large areas. Evaluating environmental systems only at the corridor level, rather than a systems level, may result in a more

limited understanding of the indirect and cumulative effects. Partially because of this, states and agencies have struggled to conduct the indirect and cumulative effect analysis for past, present, and reasonably foreseeable actions within NEPA. Moreover, the strategies for mitigating the effects to the affected environmental resources require system-wide approaches that are more effectively solved for during systems planning, rather than at the project level in NEPA.

PEL Approach: Conduct an initial screening of potential indirect and cumulative effects as part of the development of your long-range transportation planning efforts. Consider ways to collaborate with environmental resource agencies, land planning agencies, and any other relevant interagency and intra-agency stakeholders in the development of your plan. Discuss data sets that should be included in this initial screening to help you identify the cumulative past, present, and foreseeable threats to the environmental system or resource. Identify documentation products and methods to ensure that planning decisions and information are thoroughly documented in a way that is useful for later planning or implementation efforts. Collaboration between land use, transportation and resource agencies should result in the development of transportation strategies and land use policies that better protect environmental resources and systems.

Programmatic Mitigation Planning:

It is required that potential mitigation strategies be identified during the development of long-range transportation plans, yet most MPOs lack expertise on their staff to define a sound environmental mitigation strategy. Often, opportunities to avoid or minimize potential effects to environmental resources, rather than default to mitigation strategies, are missed.

PEL Approach: Consider opportunities to collaborate with resource agencies and intra-agency colleagues to provide insight on system level mitigation planning. Discuss and include important data sets in your analysis and ensure that planning information and decisions are documented in a way that will be useful and can be integrated into later planning and implementation efforts. This approach can lead to better planned mitigation banks which align with preservation goals to protect the sustainability of important environmental resources and systems and more streamlined efforts during NEPA. The incorporation of data sets, documentation and collaboration involved in programmatic mitigation planning can vary in scope and detail depending on state and regional context, available resources, and desired outcomes.

Preliminary Alternatives Screening:

Preliminary project alternatives are often not defined or screened in early systems planning. When they are, resource agencies are typically not involved to identify and document fatal flaws or potentially significant impacts to environmental resources informing the elimination of unreasonable alternatives before the NEPA process begins.

PEL Approach: Consider opportunities to define and screen preliminary alternatives in collaboration with environmental resource agencies, land use agencies and public input. Intra-agency collaboration is equally important. Discuss potential data sets to include in this preliminary analysis with the various stakeholders. Conducting this preliminary screening can result in better plans and eventually transportation projects with fewer fatal flaws. Ensure that collaboration, planning decisions and information are thoroughly documented and describe the rationale and process for eliminating unreasonable alternatives. As a result of this process, NEPA may be conducted with a reduced number of alternatives and may be a more streamlined and cost-efficient process. Additionally, this process can

help to identify early on avoidance and minimizations options, leaving the remaining alternatives which advance to NEPA to undergo more detailed evaluation.

Fiscally Constrained Transportation Plan:

The transportation planning process culminates in a fiscally constrained metropolitan transportation plan. Engaging with various stakeholders including land use and resource agencies and the public is an important part of the process which ensures that the projects emerging from the fiscally constrained plan are in line with stakeholder visions and priorities.

PEL Approach: Explore opportunities to develop the fiscally constrained plan with input or collaboration with land use and resource agencies, as well as internally within respective agencies. Effective fiscally constrained plans have clear project descriptions and purpose and needs statements. Successful collaboration and engagement will result in land planning and environmental resource agencies who understand the plan and have helped guide its creation. Additionally, the fiscally constrained plan should respond to the broad objectives of environmental resource, land planning, and transportation agencies. Ensure that fiscally constrained plan is clearly illustrated and documented for reference in NEPA.

Corridor Planning

Corridor planning emerges from systems planning. Corridors for candidate transportation projects included in the fiscally constrained plan are programmed, most commonly, into five-year funded work programs. These programs include NEPA studies and subsequent design, right-of-way acquisition, and construction phases. With an application of PEL in systems planning, time and cost efficiencies may be realized during corridor planning, resulting from the early and continuous engagement of environmental resource and land planning agencies, incorporation of relevant data sets, and the development and documentation of planning products and decisions. This foundation leads to better corridor plans, the refinement of planning products based on more detailed corridor level analysis, and the identification of potential effects to natural, cultural and community resources within the corridor.

Corridor Context:

The conditions and trends within the corridor are defined, including reference to or maps of environmental data sets.

PEL Approach: Consider opportunities to engage and collaborate with environmental resource agencies, land use agencies and the public to understand the corridor context. Intra-agency coordination is equally important. This collaboration can provide an opportunity for resource agencies to convey the environmental context and communicate the significance of overlapping environmental resources, as a foundation for the identification and evaluation of transportation strategies and land use policies within the corridor. Work with land use and resource agencies, as well as internal departments, to understand potential data sets that may be valuable in understanding the corridor context and discuss methods to ensure that planning products and decisions emerging from the process are useful and can be integrated into later planning or implementation efforts. Ensure that the coordination and approach for development of the regional context is well documented for use in NEPA.

Corridor Function:

An important foundation for developing transportation strategies and land use policies within corridor planning is understanding the corridor function, or what and who the corridor serves. This could be commuters or freight vehicles, or the corridor could serve to provide access to local destinations, for example.

PEL Approach: Consider opportunities to engage or collaborate with resource agencies, land use agencies and the public to improve their understanding of the function and context of the corridor in relation to the larger system. This supports stakeholder understanding of the need for transportation solutions and positions resource agencies with the ability to discuss potential transportation strategy/environmental preservation tradeoffs before NEPA commencement. Documentation of this process should be considered in coordination with relevant stakeholders to ensure that planning information and decisions are useful for subsequent planning or implementation efforts.

Corridor Vision:

The corridor vision emerges out of the regional vision, but corridor details are typically illustrated to show the relationship and interplay between the transportation features and built environment. The transportation elements, such as roadway lanes, sidewalks, bicycle facilities and streetscape, are illustrated as well as the urban or rural form and scale of development.

PEL Approach: Consider opportunities to engage or collaborate with environmental resource agencies, land use agencies, and the public in the development of the corridor vision. Intra-agency coordination is equally important. Involvement during the development of this vision will provide them with important contextual understanding of the transportation features and desired built environment. As a result, transportation planners will be better positioned to incorporate various interests and goals and can integrate the preservation of environmental features into a holistic corridor vision. Documentation of this process should be considered in coordination with relevant stakeholders to ensure that planning information and decisions are useful for subsequent planning and implementation efforts.

Refined Purpose and Needs Statement:

NEPA requirements for advanced notifications, which include the details of a specific transportation project as well as the project purpose and need, are typically sent out to environmental resource agencies to initiate the NEPA environmental review process.

PEL Approach: Consider opportunities to engage and collaborate with resource agencies, land use agencies, and the public within the corridor planning process to achieve a strong understanding of the project purpose and need. Intra-agency coordination is equally important. With prior engagement, incorporation of important data sets, and documentation, there is foundational information to achieve the project purpose and need as a planning decision, if it meets the requirements of NEPA or whichever PEL authority that applies, prior to NEPA commencement.

Alternatives Evaluation:

NEPA requirements for analysis of alternatives can be very time and resource intensive, especially if alternatives have not been previously identified and screened during systems or corridor planning to identify potential fatal flaws.

PEL Approach: Identify opportunities to evaluate a range of alternatives to eliminate unreasonable alternatives from further evaluation in NEPA, if it meets the requirements of NEPA or whichever PEL authority that applies. Collaborate with and engage environmental resource agencies, land planning agencies, the public and other stakeholders, and with internal agency departments, to identify and eliminate unreasonable alternatives. The incorporation of data sets with land use or environmental agency expertise can help in this analysis, and clear documentation of planning decisions and the agency collaboration ensures the usefulness of the analysis can be used in subsequent NEPA environmental review.

Mitigation Needs Identified:

Consideration of mitigation needs are required within NEPA.

PEL Approach: Consider opportunities to meaningfully engage and collaborate with resource and land use agencies during corridor planning efforts before NEPA. This engagement along with integration of relevant data sources from the agencies engaged can lead to strengthened identification of plans for important environmental resources and systems. It can also lead to coordinated mitigation efforts and opportunities to avoid or minimize harm. The appropriate documentation of collaboration, data sets incorporated in analysis, and other planning decisions made can ensure that they are useful for later planning decisions and implementation efforts.

Participating and Cooperating Agencies:

Under NEPA, it is required for the lead agency to invite participating and cooperating agencies to be involved in the study. This is often the first time that many of these agencies have been engaged in the transportation project and must take time to understand the vision and purpose of the project. Agencies must decide if they would like to be engaged at the level of a cooperating or participating agency. Participating agencies are primarily kept informed of the process, while cooperating agencies are expected to contribute more.

PEL Approach: Explore ways to engage and collaborate with participating and cooperating agencies prior to NEPA. This allows agencies to better understand the appropriate participation level and their role within project planning, as they have prior understanding of the project vision, purpose and need and potential effects to the resources that they're responsible for protecting and managing. Ensure that the coordination and logic for identifying participating and cooperating agencies is thoroughly documented.

Informed NEPA Scope:

State DOTs often have a template NEPA scope that is used for every project undergoing the NEPA process. The cost and duration of the environmental review process can vary depending on prior collaboration, analysis, and documentation of planning decisions and information.

PEL Approach: Consider ways to engage and collaborate with land use, resource and regulatory agencies, internal agency departments, and the public throughout the corridor planning process. Discuss and determine how decisions and planning efforts from this engagement are documented and can be used to inform the NEPA scope. If conducted, early screenings and alternatives analysis can result in the elimination of unreasonable alternatives, if it meets the requirements of NEPA or whichever PEL authority that applies, and if documented appropriately, can eliminate further evaluation in NEPA. Prior analysis and documentation can therefore be used to better inform the NEPA scope. Efficiencies can be

realized if agencies are engaged in the process, valuable data sets have been included in analysis, and concerns have been raised and addressed at earlier points in the transportation planning process. The incorporation of data sets, documentation, and collaboration throughout the corridor planning process all provide a foundation for evaluation in NEPA and can vary depending on state and regional context, available resources, and desired outcomes.

NEPA: Positioning for a More Efficient NEPA Study

Applying PEL approaches to various components of the transportation planning process should lead to a NEPA study that has a more refined purpose and needs statement. It should also lead to an understanding of significant potential effects to environmental resources and the development of better plans. It will also allow for unreasonable alternatives to be eliminated, if it meets the requirements of NEPA or whichever PEL authority that applies, and allow for more in-depth analyses to be conducted for the remaining alternatives. As a result, the NEPA study may be completed in a shortened and more cost-efficient manner.