

FHWA Planning and Environment Linkages National Framework



U.S. Department of Transportation

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Relevant Terms

- **Framework** – frame or structure composed of parts fitted together.

The PEL Framework consists of foundational principles and core pillars fitted together to achieve desired benefits.

- **Approach** – procedure or technique for doing something.

A PEL approach is a collaborative and integrated method to planning, decision-making, and project delivery.

- **Application** – the special use or purpose to which something is put.

The application of the PEL Framework is flexible. It can be applied through a study to develop planning products to inform the environmental review process (NEPA) or applied to support PEL pillars, such as methods for collaboration, analysis, and documentation.

Overview

What is PEL and its National Framework?

Planning and Environment Linkages (PEL) is a collaborative and integrated approach to planning, decision-making, and project delivery that specifically incorporates environmental considerations during the planning process to align with the environmental review process that can help accelerate project delivery, reduce risks, and improve project and planning outcomes. Transportation systems are inextricably linked with environment and community systems, and a PEL approach helps transportation agencies to collaborate with environmental resource and land planning agencies to develop transportation plans, programs, and projects that are in better harmony with environmental preservation, growth management, and economic prosperity goals. It uses the analyses, products, and decisions developed in planning to inform the environmental review process.

PEL, as an approach, has broader applicability and can yield benefits to a wider range of transportation plans and programs prior to project development. Transportation agencies have typically applied PEL through a study conducted between early transportation systems planning and project-based National Environmental Policy Act (NEPA) review. A key objective of these PEL studies has been to accelerate project delivery by developing planning products that can inform NEPA. While this type of study remains a fundamental application of PEL, PEL as an approach has broader applicability. Viewed in this way, a PEL approach can help keep all partners focused on their common desire to support environmental preservation, community building, and a better quality of life.

This document outlines a proposed National PEL Framework that is both flexible and scalable. The National PEL Framework provides a concise understanding of key components in linking the transportation planning process with the environmental process to harmonize efforts in decision making, data alignment, and documentation throughout the planning process and project development. The Framework comprises of 1) the Necessary Foundation - Leadership Commitment 2) three Core Pillars that include early collaboration & integration, data management & access, and documentation, 3) the Resulting Benefits. The National PEL Framework is flexible; there is no singular prescribed process. Different applications of PEL can help address a range of transportation agency needs from accelerating project delivery to addressing key issues such as climate change and resiliency, transportation equity, and stormwater management. The National PEL Framework is also scalable because applications exist at a range of levels from a long-range statewide transportation plan to a metropolitan transportation plan to corridor or subarea planning studies. The proposed National PEL Framework is shown and described in the following pages in terms of its necessary foundation, core pillars, and resulting benefits.

An application of this PEL Framework is described by detailing the spectrum of transportation planning and decision-making processes from early systems planning to corridor planning to project development and NEPA. PEL can be applied through a transportation planning process or study to develop planning products that inform the environmental review process, or pillars of the framework can be applied to improve planning products, decisions, and outcomes.

State Workshops to Enhance PEL

Between 2020 and 2022, FHWA organized workshops with six state DOTs and partner resource/regulatory agencies and metropolitan planning organizations (MPOs) to discuss their application of PEL, certain challenges they are experiencing in implementing their PEL program, and opportunities for enhancement. The objective of the workshops was to identify technical assistance needs to further the state PEL programs and use their experiences and perspectives in implementing PEL to develop a National PEL Framework. The states included Arizona, Utah, Oregon, Colorado, Minnesota, and North Carolina. These six states are known to be actively engaged in applying PEL and interested in furthering their practices. Florida DOT also participated in workshops with Utah and Arizona to share their application of PEL, Efficient Transportation Decision Making (ETDM) Process, which has been fully integrated into the planning and project development process.

Some of the key challenges for implementing PEL expressed by the state DOTs and partner agency participants at the workshops include the following:

- Maintaining engagement of environmental resource agencies and land planning agencies in their PEL programs
- Reducing the high cost and long duration of corridor studies supporting PEL objectives
- Providing access to and maintaining reliable data for analyses supporting early planning and environmental review by PEL practitioners
- Gaining leadership commitment for PEL programs from the planning and environmental resource agencies involved in implementing PEL
- Educating colleagues and partner agencies of the benefits of PEL

The workshop in Arizona focused on opportunities to apply PEL in early systems planning conducted by metropolitan planning organizations. The Utah workshop focused on opportunities to apply PEL to an existing corridor and sub-area planning program called *Solutions Development*. Meanwhile, the Oregon workshop explored how PEL could be applied to Oregon DOT's stormwater management process.

The Colorado workshop focused on improving environmental resource agency engagement, communicating the purpose and benefits of PEL, and improving scoping and documentation for corridor studies supporting PEL. The Minnesota workshop focused on the application of PEL in long-range transportation systems planning and right-sizing PEL studies to the need, including the level of analysis, resource agency engagement, and expected planning products.

Because North Carolina has long and wide-ranging experience, the workshop focused on application of PEL within systems and corridor planning based on their success implementing their robust Integrated Project Delivery process.

The workshops revealed an interest among the six DOTs in applying PEL throughout transportation decision-making, particularly in early systems planning. As a result, the National PEL Framework envisions PEL as more than a study and more than developing planning products that can support decision making in the NEPA process. PEL as an approach can create stronger planning and environmental linkages across the spectrum of transportation decision-making processes from early systems planning to NEPA, while also helping build a culture of collaboration and shared understanding.

Supporting FHWA PEL resources

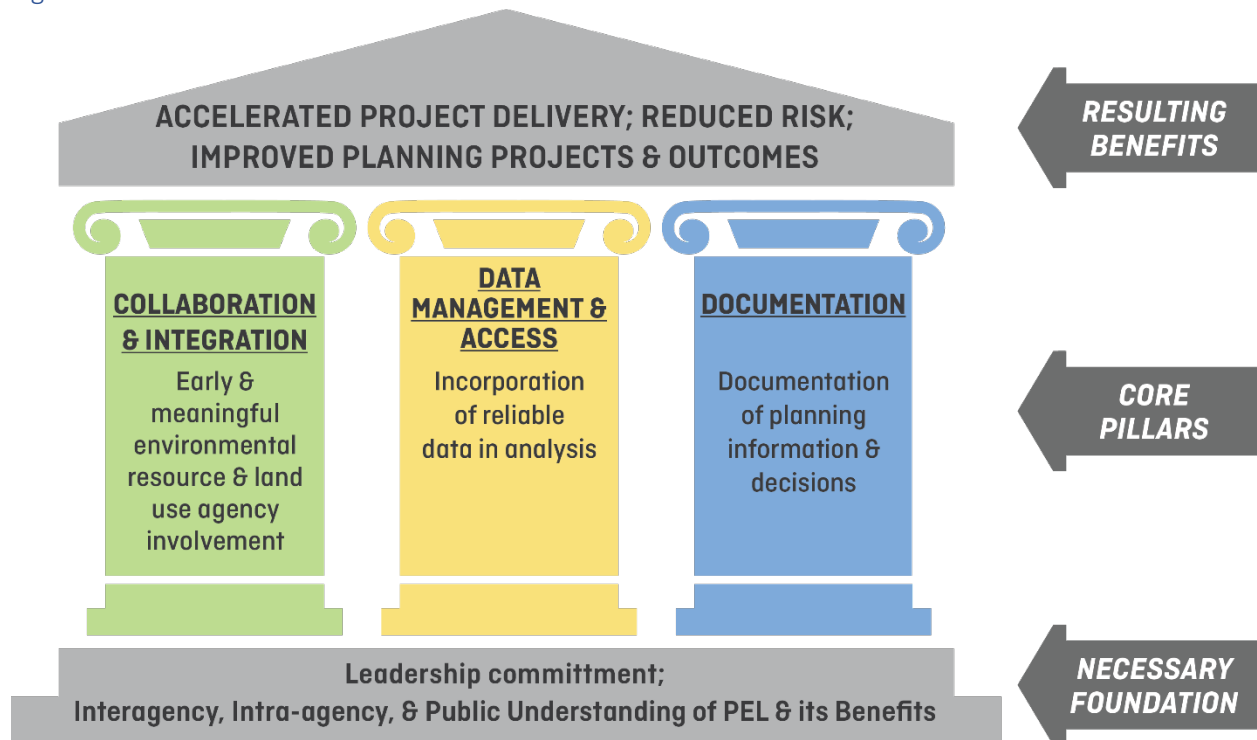
This National PEL Framework defines and organizes resources and applications of PEL around core pillars. Various other resources have already been created by FHWA with different focus areas and more detailed information on specific topic areas. These include:

- **PlanWorks** which provides information on application of PEL to 43 unique decision-making points within transportation decision making,
- **Eco-Logical**, which is an FHWA initiative to accelerate transportation project delivery, and
- **PEL hypothetical case studies** that highlight different applications of PEL.

A more detailed explanation of these resources, with links to relevant sites, is included in Appendix 1. The regulatory and statutory basis and authority for PEL is also included in Appendix 1.

National PEL Framework

Figure 1. National PEL Framework



Necessary Foundation

For PEL to succeed as an approach, it is necessary for all involved agencies and the public to understand its benefits, and for leadership to commit to the approach. When land use, environmental and transportation agencies can clearly see that PEL is beneficial for their respective goals, they can more easily be brought together around these shared goals building a solid foundation for partnership and

collaboration. Goals for environmental protection, growth management, and infrastructure improvements have common ground that a PEL approach helps reveal. This foundation is also built when agencies and the public can clearly see the links between tangible projects and the integrated vision and goals of land use, environmental and transportation agencies.

Without this foundation, transportation projects are often viewed as bringing negative impacts to the resources that agencies are charged with protecting. Additionally, environmental resource or regulatory agencies often have concerns that commenting during early planning stages could be misconstrued as representing agency approval. These issues can lead to a hesitancy among resource/regulatory agency staff to engage in early transportation planning.

Support from leadership at the highest levels of an agency can help overcome these concerns. Collaboration also leads to trust, which is foundational and must be nurtured over time. Forums for open sharing and discussion among State DOT and resource/regulatory agencies can be key methods for building the necessary PEL foundation. Operating agreements can address areas of concern, build trust, and facilitate data sharing because resource and regulatory agencies know how it will be used and protected. Clarifying the planning products that can be developed through PEL applications is also necessary in communicating the tangible benefits. Some of these include more tailored NEPA specific requirements such as project purpose and need, preliminary evaluation and elimination of unreasonable alternatives, and programmatic mitigation. These benefits are detailed further under “Resulting Benefits”.

Core Pillars

PILLAR 1 Collaboration - Early and Meaningful Environmental Resource and Land Use Agency Involvement

The first core pillar of PEL as an approach includes ensuring that a variety of relevant agencies and the public are meaningfully engaged early in the planning process. These agencies include environmental resource/regulatory agencies, Native American tribes, land use planning agencies, transportation agencies, and community stakeholders. ***Collaboration and communication within agency departments, such as state DOT planners, asset managers, and environmental review, is equally important to realizing the benefits of implementing PEL approaches.*** Through this engagement, coordinated development for transportation, community, and environmental systems occurs. This can help bring a holistic consideration of environmental preservation, growth management, economic prosperity, resiliency, equity, and other important community goals into the early transportation planning decision making process.

Without understanding and prioritizing this type of collaboration, professional specialization in transportation planning can lead to “stovepipes” where people focus on their planning discipline, often isolated from other important interconnected considerations. The first point of engagement with a transportation project by resource/regulatory agency staff is often at the advance notification of a NEPA study. As such, the resource/regulatory agency may generally lack understanding of how the project fits into a larger vision for transportation, development, and the environment within the region. This means that resource/regulatory agencies are missing an opportunity to get involved at the point where

transportation projects are concepts that can be revised or adjusted early on to support both environmental preservation, growth management, and multimodal transportation goals.

To overcome this tendency to focus too narrowly, early and continuous cross-discipline communication, information sharing, and collaboration can nurture trust and better teamwork. This type of collaboration ultimately leads to better planning projects and outcomes, which are the resulting benefits of PEL as an approach.

PILLAR 2 Data Organization and Analysis - Incorporation of Reliable Data in Analysis

The second core pillar of PEL as an approach includes the incorporation of reliable environmental, transportation, community, and economic data in analysis. Transportation and the natural, cultural, and human environment are both complex and connected systems. The incorporation of ecosystem level data sets, which exist at the same scale as regional transportation planning data sets, can support better consideration of environmental resources in early transportation systems planning. Incorporating these various data sets supports the creation of plans that are better aligned with environmental resource agency, land use planning agency, and community goals and helps kickoff the transportation planning process in a manner that yields benefits all the way through to NEPA.

While transportation is planned at a systems level, environmental resource protection and restoration are typically considered within such planning efforts at the project or programmatic levels. An additional challenge of typical existing processes is insufficient data on the environmental context for use in early transportation systems planning and a lack of understanding regarding its importance and use by transportation or land use planners. The absence of this information may cause decision-makers to underestimate potential effects of transportation actions and the risk these effects pose to project timelines and feasibility. A secondary result of not planning transportation and environmental systems holistically is that mitigation strategies are defined at a project level and implemented in piecemeal fashion, which further disrupts the sustainability of environmental systems.

To address these challenges, the application of this second core pillar of PEL involves identifying opportunities and approaches for storing, organizing, and providing access to reliable environmental, transportation, community, and economic data. Data accessibility and management are key considerations for the successful incorporation of such data sets in early systems planning.

PILLAR 3 Documentation - Documentation of Planning Information and Decisions

The third core pillar of PEL as an approach involves the documentation of planning information and decisions. This pillar is especially important in achieving the benefits of accelerated project delivery. Good documentation of planning products and decisions are required for later use in NEPA. Often, documentation of planning products and decisions is not completed or produced to thoroughly describe the analysis, supporting data, engagement process, and resulting outcomes. Furthermore, it may be developed but not stored for easy access by planning and NEPA practitioners. Through the application of

PEL, agencies can agree to a project's purpose and need, define the preliminary range of alternatives, eliminate unreasonable alternatives, and develop other planning products and decisions prior to NEPA, [if it meets the requirements of NEPA or whichever PEL authority that applies](#). This is true assuming the data that support these decisions are accurate, current, and meet the requirements of NEPA or the PEL authority [see Appendix] that applies. Thorough documentation of the analysis and engagement supporting planning decisions can lead to accelerated project delivery, particularly within NEPA. Documentation should include details of data, assumptions, analyses, and engagement supporting products and decisions.

Resulting Benefits

The application of this PEL Framework results in improved planning and project outcomes, reduced risk, and accelerated project delivery. The coordination of diverse, and sometimes competing, objectives can result in transportation plans that are resilient, aligned with a responsible growth strategy, and supportive of community and environmental preservation goals. This in turn can create favorable conditions for accelerated project delivery. Early engagement of the community, environmental resource/regulatory agencies, and land use planning agencies results in integrated and holistic plans that are better understood by all stakeholders. Concerns are addressed earlier, risks are reduced, and the avoidance or minimization of potential environmental impacts can be prioritized in early planning.

Improved Planning and Project Outcomes

- At the statewide and metropolitan levels, long-range transportation plans are developed in a partnership with resource/regulatory agencies, Native American tribes, and land management agencies, resulting in stronger information sharing, communication, and coordinated decisions.
- Community and public involvement throughout the transportation planning process is continuous and better connected, resulting in more meaningful input and a stronger understanding of the project context and purpose and need.

Accelerated Project Delivery

- Time and cost efficiencies are gained from less duplication of transportation planning and project development efforts. A common understanding of the transportation project's purpose and need is developed in early planning, project alternatives are evaluated, and unreasonable alternatives are removed from further consideration. The environmental context is fully integrated into transportation decision-making.
- The decision-making process between transportation planning and NEPA is more unified and informed, resulting in the development of relevant planning products that inform NEPA.

Figure 2. Silos in the Planning and Environmental Review Process

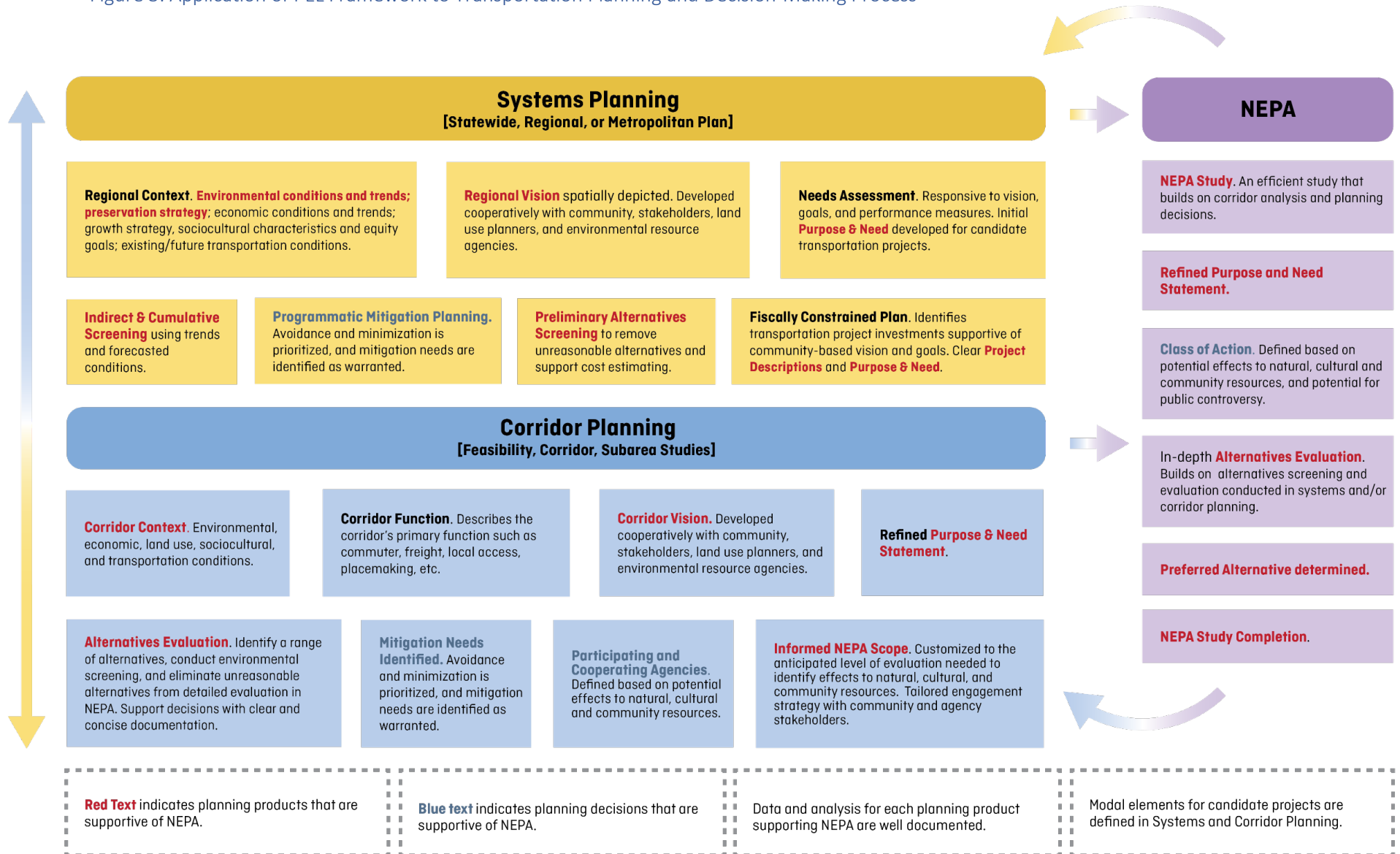


The PEL Framework is Flexible and Scalable

Reimagining the Transportation Planning Process with the Application of PEL

PEL is a collaborative and integrated approach to transportation decision making and is both scalable and flexible. There is no one-size-fits-all approach or a specific step by step process that must be followed as each state will have different assets and organizational structures. Different starting points, strengths, and weaknesses will also inform the approach best suited for each state. The following diagram intends to present the opportunity for practitioners to gain a more complete understanding of how the PEL Framework can be applied to the transportation planning and decision-making process and to inspire ideas of what is possible with case study examples. Figure 3 details the transportation planning processes from early systems planning to corridor planning and NEPA. As such, it outlines the “how” of the National PEL Framework.

Figure 3. Application of PEL Framework to Transportation Planning and Decision-Making Process



Transportation Systems Planning

Transportation systems planning is conducted for a broad geography, commonly at the state or regional level. Examples include long-range statewide transportation plans developed by state DOT or metropolitan transportation plans developed by MPOs and plans for specific modes of transportation or types of infrastructure (e.g., transit, freight, multi-use trails, or bridge plans). In traditional transportation systems planning, environmental resource agencies and Native American tribes are typically not always intimately involved in the planning process, so even if environmental data sets are referenced, it's not always integrated into the transportation plans in meaningful ways. Rather than consulting resource agencies in the final stages of plan development, a PEL approach to systems planning means that resource agencies, land planning agencies, and appropriate internal agency departments are engaged throughout the process and are involved in plan development. This fundamental shift results in the creation of better transportation plans and programs, fewer projects that threaten environmental sustainability, and accelerated project delivery as a result of well-documented planning products and decisions, and informed NEPA processes that build on these decisions. The early engagement of environmental resource and land use planning agencies also strengthens project prioritization through the inclusion of environmental considerations and allows for the identification of potential mitigation measures in plan development.

Corridor and Sub-area Planning

Corridor and sub-area planning emerges from systems transportation planning. In metropolitan areas, corridors for candidate transportation projects included in the fiscally constrained metropolitan transportation plan created during the systems planning process are programmed, most commonly, into the federally-required four-year funded metropolitan Transportation Improvement Program (TIP) and Statewide Transportation Improvement Program (STIP). These multi-year programs of projects include NEPA studies and subsequent design, right-of-way acquisition, and construction phases. With an application of PEL in transportation systems planning, significant cost efficiencies may be realized during corridor and subarea planning resulting from the early and continuous engagement of environmental resource and land use planning agencies, and the development and documentation of planning products and decisions. This foundation leads to better corridor and sub-area 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.

While there are clear benefits to applying a PEL approach to transportation systems planning, PEL authorities provide flexibility to apply PEL approaches as early as systems planning or beginning at corridor planning, as well as applying it to specific elements of systems or corridor planning.

Project Level Environmental Review / NEPA

With the application of PEL to systems and corridor/subarea level planning, the requirements and steps for environmental review in NEPA become less onerous as much of the foundational work has been completed. PEL allows for the adoption of transportation planning products for use in NEPA, [if it meets the requirements of NEPA or whichever PEL authority that applies](#). Documentation throughout the systems and corridor planning processes is especially necessary for a more efficient and tailored NEPA study.

Appendix

Appendix 1: Previously Existing FHWA PEL resources

PlanWorks

PlanWorks provides how-to information to support collaboration in transportation planning and project development. It describes how to apply PEL to four levels of transportation decision making at 43 unique decision-making points (called the *Decision Guide*). PEL application is provided for decision making within 1) Long-Range Transportation Planning, 2) Programming, 3) Corridor Planning, and 4) Environmental Review/NEPA Merged with Permitting.

PlanWorks also contains three assessments to help practitioners identify barriers to successful transportation planning, programming, and project development and delivery. It provides strategies for overcoming them, which include partner collaboration, stakeholder collaboration, and expediting project delivery. PlanWorks is particularly useful for applying PEL at the corridor or subarea planning level. PlanWorks can be accessed at: <https://fhwaapps.fhwa.dot.gov/planworks/Home>.

Eco-Logical

Eco-Logical is an FHWA initiative to accelerate transportation project delivery. It outlines steps for bringing ecosystem level considerations into early systems planning. For example, it describes and defines a regional ecosystem framework, which consolidates data on resources of interest, land use plans, and transportation plans. This helps make clear where planned improvements overlie important resources which results in transportation systems that consider regional conservation priorities.

Eco-Logical also supports PEL objectives by providing a framework for collaboration. Transportation agencies collaborate with partners and stakeholders during the planning process to understand, identify, and prioritize ecosystem and cultural resources, and discuss strategies to avoid or mitigate impacts in advance of project design. Eco-Logical can be accessed at:

https://www.environment.fhwa.dot.gov/env_initiatives/eco-logical.aspx

PEL Hypothetical Case Studies

FHWA published a set of hypothetical case studies that highlight applications of PEL within:

- **Planning Analyses:** Lays out a method for collaboration between transportation and resource/regulatory agencies for organizing and updating data resources.
- **Planning Studies:** Lays out hypothetical processes for PEL studies, which are developed with the stated purpose of producing planning analyses and decisions that can be adopted and/or incorporated into subsequent project-level environmental reviews.
- **Alternatives:** Describes approaches for considering alternatives and eliminating unreasonable alternatives using PEL authorities.
- **Purpose and Need:** Describes approaches for defining purpose and need using PEL authorities.

The PEL Hypothetical Case Studies can be accessed at:

https://www.environment.fhwa.dot.gov/env_initiatives/pel/publications/casestudy_hypothetical_Studies.aspx

Regulatory and Statutory Authorities

Figure A.1 below summarizes various considerations, outcomes and associated PEL authorities. The differences in desired outcomes illustrate the flexibility in applying PEL and convey the different authorities that are applicable in difference scenarios. Becoming familiar with the PEL authorities is beneficial in understanding the conditions and requirements applicable to the planning process and subsequently in the environmental review process. Knowing the requirements of each authority is critical in leveraging the benefits of PEL.

Figure A.1 - PEL Authorities

