

Programmatic Mitigation Planning Guidebook



Improving Environmental
Outcomes and Transportation
Project Delivery

September 2023



U.S. Department of Transportation
Federal Highway Administration

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently

valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY) 09-30-2023		2. REPORT TYPE Final Report		3. DATES COVERED (From - To) 05-2017 – 09-2023	
4. TITLE AND SUBTITLE Programmatic Mitigation Planning Guidebook: Improving Environmental Outcomes and Transportation Project Delivery				5a. CONTRACT NUMBER HW97	
				5b. GRANT NUMBER NA	
				5c. PROGRAM ELEMENT NUMBER NA	
6. AUTHOR(S) Jessica Torossian, Angela Berthaume, Patrick Welch, Chris Timmel, Leah Epstein, Jordan Wainer Katz, Mike Ruth (FHWA), David Williams (FHWA)				5d. PROJECT NUMBER HW97A1/HW97A2/HW97C223	
				5e. TASK NUMBER G965/R144	
				5f. WORK UNIT NUMBER NA	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Department of Transportation John A Volpe National Transportation Systems Center 55 Broadway Cambridge, MA 02142-1093				8. PERFORMING ORGANIZATION REPORT NUMBER DOT-VNTSC-FHWA-23-17	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) US Department of Transportation Federal Highway Administration Office of Project Development and Environmental Review 1200 New Jersey Avenue, SE Washington, DC 20590				10. SPONSOR/MONITOR'S ACRONYM(S) FHWA	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S) FHWA-HEP-23-045	
12. DISTRIBUTION / AVAILABILITY STATEMENT This document is available to the public on the FHWA website at https://www.environment.fhwa.dot.gov/pubs_resources_tools/publications.aspx					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT This Programmatic Mitigation Planning Guidebook (guidebook) serves as a resource for transportation and environmental practitioners at State Departments of Transportation (DOTs), Metropolitan Planning Organizations (MPOs), and other transportation entities to assist in the development and implementation of programmatic mitigation plans (PMPs) for impacts of future transportation projects to environmental, cultural, or historic resources. The guidebook identifies the steps agencies should consider, in coordination with the appropriate resource and regulatory agencies, to develop and implement a PMP. Additionally, it provides connections to the statutory and regulatory requirements as well as Administration priorities, details the economic and environmental benefits of using PMPs, and shares best practices and additional resources for developing and implementing such plans. Each section contains examples illustrating the development of PMPs in practice.					
15. SUBJECT TERMS Programmatic mitigation planning, PMP, environmental review, project delivery					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unlimited	18. NUMBER OF PAGES 41	19a. NAME OF RESPONSIBLE PERSON Richard Darden
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (include area code) 202-366-9509

Table of Contents

Page

4	Guidebook Purpose and Overview
5	Programmatic Mitigation Planning
6	Benefits of Programmatic Mitigation Planning
8	Legislative Authority
9	Considerations for Success
13	Framework to Develop a Programmatic Mitigation Plan
14	Step 1: Conduct Needs Assessment
16	Step 2: Identify and Engage Key Stakeholders
18	Step 3: Develop Mitigation Strategy
20	Step 4: Draft Plan
22	Step 5: Lead Public Review Process
24	Step 6: Implement Plan and Monitoring & Evaluation Process
26	Conclusion
28	Appendix A: Common protected resources and associated policies
29	Appendix B: Additional Resources



Cover image credits (clockwise from top left): Kaleb Kroetsh, 123RF.com; FHWA; hidalgo, 123RF.com; nadtochiy, 123RF.com.

Icons for Step 1 made by Nor Phai; for Steps 2, 4, and 6 made by Eucalyp; and for Steps 3 and 5 made by Freepik from www.flaticon.com.

List of Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials	MSA	Magnuson-Stevens Act
ACHP	Advisory Council on Historic Preservation	NEPA	National Environmental Policy Act
BMP	Best Management Practices	NGO	Non-Governmental Organization
CEQ	Council on Environmental Quality	NHPA	National Historic Preservation Act
CFR	Code of Federal Regulations	NMFS	National Marine Fisheries Service
CWA	Clean Water Act	NMSA	National Marine Sanctuaries Act
DOI	Department of the Interior	NOAA	National Oceanic and Atmospheric Administration
DOT	Department of Transportation	NOI	Notice of Intent
EDC	FHWA's Every Day Counts initiative	NPDES	National Pollution Discharge Elimination System
EFH	Essential Fish Habitat Consultation	PEL	Planning and Environment Linkages
EO	Executive Order	PMP	Programmatic Mitigation Plan
EPA	Environmental Protection Agency	PPP	Public Participation Plan
ESA	Endangered Species Act	RIBITS	Regulatory In-lieu fee & Bank Information Tracking System
FAQ	Frequently Asked Question	ROD	Record of Decision
FAST	Fixing America's Surface Transportation Act	SHPO	State Historic Preservation Office
FHWA	Federal Highway Administration	SHRP2	Strategic Highway Research Program 2
FTA	Federal Transit Administration	SOP	Standard Operating Procedure
GIS	Geographic Information System	STIP	State Transportation Improvement Program
ILF	In-Lieu Fee	THPO	Tribal Historic Preservation Office
L RTP	Long-range Transportation Plan	TIP	Transportation Improvement Program
MAP-21	Moving Ahead for Progress in the 21st Century Act	USACE	United States Army Corps of Engineers
MOA	Memorandum of Agreement	USC	United States Code
MOU	Memorandum of Understanding	USFWS	United States Fish and Wildlife Service
MPO	Metropolitan Planning Organization	USGS	United States Geological Survey

List of Tables and Figures

Page

- 5 Figure 1. The mitigation sequence.
- 11 Table 1. Impacted resources and potential required actions.
- 25 Figure 2. Adaptive management process for PMPs.

Guidebook Purpose and Overview

This Programmatic Mitigation Planning Guidebook (guidebook) serves as a resource for transportation and environmental practitioners at State Departments of Transportation (DOTs), Metropolitan Planning Organizations (MPOs), and other transportation entities to assist in the development and implementation of programmatic mitigation plans (PMPs) for impacts of future transportation projects to environmental, cultural or historic resources.

The guidebook identifies the steps agencies should consider, in coordination with the appropriate resource and regulatory agencies, to develop and implement a PMP. Additionally, it provides connections to the statutory and regulatory requirements as well as Administration priorities, details the economic and environmental benefits of using PMPs, and shares best practices and additional resources¹ for developing and implementing such plans. Each section will contain examples illustrating the development of PMPs in practice.

Often, mitigation is identified and implemented at the project level during the environmental review process, but agencies can gain efficiencies and produce better environmental outcomes if mitigation is considered during planning at a regional or landscape level. A State DOT or MPO may develop programmatic mitigation plans as part of the transportation planning process to address the potential environmental impacts of future transportation projects.

Except for the statutes and regulations cited, the contents of this document do not have the force and effect of law and are not meant to bind the public in any way. This document is intended only to provide information regarding existing requirements under the law, agency policies, and Administration priorities.



Florida wetlands. (Photo: Irina Schmidt, 123RF.com)

¹ See [Appendix B](#) for a complete list of resources linked to throughout the guide, as well as their respective URLs.

Programmatic Mitigation Planning

Programmatic mitigation planning is an approach to mitigation that identifies opportunities and establishes mitigation plans prior to the environmental review process for potential impacts to resources based on forecasts, corridor transportation plans, and long-range transportation plans (LRTPs).

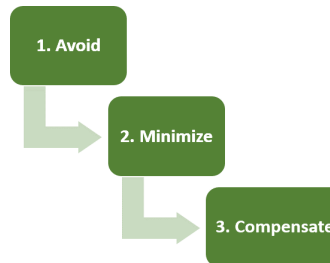
PMPs, developed through this process, are meant to be flexible and can encompass single or multiple resources across various geographic scales to best meet the objectives and goals of the transportation agency or project proponent. In contrast to traditional project-based mitigation strategies, PMPs can produce benefits, including:

- Improved environmental outcomes;
- Accelerated project delivery with reduced project delays;
- Fulfillment of permit requirements and environmental commitments;
- Reduced mitigation costs; and
- Increased quality and predictability of mitigation measures.

At its core, a PMP is a framework developed by a transportation agency or project proponent for mitigation strategies that help maximize the effectiveness of mitigation at a scale appropriate to offset adverse impacts for transportation projects; and the agency or project proponent collaborates with partners at resource and regulatory agencies to fulfill mitigation requirements and leverage opportunities.

Under applicable Federal law (and implementing regulations) such as the Clean Water Act (CWA), the Endangered Species Act (ESA), and Section 106

Figure 1. The mitigation sequence.



of the National Historic Preservation Act (NHPA), transportation agencies and project proponents have the responsibility to mitigate unavoidable impacts to ensure the preservation of environmental and cultural resources.² Mitigation requirements are considered during the environmental review process under the National Environmental Policy Act (NEPA) and may also be considered before NEPA review during project planning.³ By developing mitigation strategies and opportunities at multiple scales, programmatic mitigation planning allows transportation agencies and project proponents to meet both program needs and permitting requirements through mitigation sequencing,⁴ illustrated in Figure 1, which includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action and by looking at practicable alternatives with less adverse impacts;
- Minimizing impacts by limiting the degree or magnitude of the action, if the impacts cannot be avoided; and
- Compensating for the impact by replacing or providing substitute resources or environments through compensatory mitigation.⁵

2 See compensatory mitigation requirements for Section 404 of the CWA (33 U.S.C. § 1344) at 33 CFR Part 332 and 40 CFR Part 230. See mitigation requirements for the ESA (16 U.S.C. §§ 1531 et seq.) at 50 CFR Part 17. See mitigation requirements for Section 106 of the NHPA (54 U.S.C. § 306108) at 36 CFR Part 800. Other laws and polices frequently applicable to PMPs are listed in [Appendix A](#).

3 See 23 CFR 771.105(e) and 771.111(a)(2)(ii). See also 40 CFR 1505.3 and 1508.1(s).

4 The 2008 joint U.S. Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA) final rule on compensatory mitigation for losses of aquatic resources (33 CFR 332 and 40 CFR 230), known as the 2008 Mitigation Rule, builds upon the sequencing concept for the CWA Section 404 compensatory mitigation requirements ([73 FR 19593](#), Apr. 10, 2008).

5 The Council on Environmental Quality (CEQ) definition of mitigation includes measures that avoid, minimize, repair or restore, reduce over time, and compensate for effects caused by a proposed action or alternatives as described in an environmental document or record of decision and that have a nexus to those effects ([40 CFR 1508.20](#)).

Benefits of Programmatic Mitigation Planning

Before deciding to invest in developing a PMP, it is important to understand the value added. Programmatic mitigation planning has numerous benefits that make it worth pursuing, from reducing habitat fragmentation to building trust and relationships among agencies. Through early coordination with stakeholders to assess potential impacts and mitigation needs, programmatic mitigation planning can lead to more predictability in the environmental review process, accelerate project delivery, and save money compared to project-level mitigation.

Improves Environmental & Community Outcomes

By planning at the appropriate ecosystem-based scale, programmatic mitigation leads to improved environmental and community outcomes through:

- Holistic landscape management that combines attributes of existing mitigation options (e.g., mitigation banking, in-lieu-fee banking, conservation banking, conservation plans, and permittee responsible mitigation);
- Flexibility in targeting a variety of resources, habitats, and species to obtain greater conservation benefit;
- Opportunity to consider how ongoing development might lead to cumulative impacts on habitat connectivity, ecosystem services, historic and cultural resource preservation;
- Supporting climate change resilience and sustainability (e.g., wetland mitigation can provide carbon sequestration, flood protection, and shoreline erosion benefits);
- Opportunity to incorporate equity and environmental justice principles by involving the public, including traditionally underserved and under-represented populations, and using their input to inform mitigation planning decisions; and
- Resources to evaluate the effectiveness of the mitigation overall.



Sweetwater Marsh, CA. (Photo: Lisa Cox, USFWS)

Accelerates Project Delivery

Transportation agencies nationwide often face backlogs of projects for various reasons, from budget limitations to lengthy environmental reviews. Programmatic mitigation planning may allow for accelerated project delivery by:

- Providing opportunities for early engagement of the public and resource agencies to consider data and environmental resources at a statewide, regional, corridor, or project level and identify options for mitigating impacts to environmental resources;
- Saving time during planning, scoping, environmental review, and project design by front-loading these efforts during PMP development which can be applied to future projects, thus saving time during planning, scoping, environmental review, and project design;
- Facilitating early review and identification of impacted resources, allowing for more efficient implementation of mitigation procedures; and
- Standardizing review procedures and design protocols to reduce redundancy and improve efficiency.

Programmatic mitigation planning:

- *Allows for flexibility;*
- *Maximizes mitigation effectiveness; and*
- *Meets project and permitting needs.*

Provides Measurable Cost Savings

Programmatic mitigation planning may translate to cost savings through:

- Decreased staff time needed for review of programmed projects by creating a standardized review process that can include the permitting decision process;
- Reduced funding needed to address regulatory and resource issues on a project-by-project basis;
- Reliable and predictable mitigation costs for programmed projects;
- Flexibility in the PMP allowing for changing management priorities to be addressed as they arise during the environmental review process or through adaptive management;
- Pro-active planning for multi-phase, large-scale, or multiple projects in advance of project design and construction that allows for early mitigation, which can be especially important when land is being procured as it can help avoid escalating land costs over time by locking in current rates; and
- Integration of mitigation planning with large-

scale and long-term transportation plans, especially if larger-scale mitigation is required – acquiring larger parcels to mitigate for multiple projects typically results in reduced transaction costs and savings per acre.

Improves Predictability and Builds Trust

The collaborative partnerships and early coordination of programmatic mitigation planning result in greater consistency and predictability during environmental review. The collaborative nature of developing a PMP also helps with on-going agency relationship building by:

- Increasing early and ongoing coordination between agencies and the public;
- Providing enhanced understanding of collective missions, goals, and priorities; and
- Building trust between agencies that can lead to more effective partnerships and more effective results.



Roadside wild red poppies. (Photo: susazoom, 123RF.com)

Legislative Authority

The Moving Ahead for Progress in the 21st Century Act, Pub. L. 112-141 (Jul. 6, 2012), ([MAP-21](#)) created a new section under Title 23, [23 U.S.C. 169](#), which provides that a State or MPO may develop PMPs to address the potential environmental impacts of future transportation projects.⁶

The Fixing America's Surface Transportation (FAST) Act, Pub. L. No. 114-94 (Dec. 4, 2015), amended 23 U.S.C. 169 to provide that environmental review agencies must give substantial weight to recommendations in PMPs⁷ developed pursuant to Section 169. The Infrastructure Investment and Jobs Act, also known as the Bipartisan Infrastructure Law,⁸ did not make any further amendments to Section 169.

Section 169 and its implementing regulations are cited in the text box. [23 CFR 450.214](#) applies to States and [450.320](#) to MPOs. The implementing regulations provide that:

- A State DOT or MPO may use the framework set forth in the regulations to develop PMPs to address the potential environmental impacts of future transportation projects as a part of the statewide or metropolitan transportation planning process;
- The scope and contents of a plan are determined by the DOT or MPO in consultation with the resource agencies that have jurisdiction over the resources;
- A draft of the plan must be available to the public for review and comment and the public's comments must be considered and addressed in the final plan;⁹ and
- State DOTs and MPOs can use State Planning & Research (SP&R), Metropolitan Planning Funds (PL) and Surface Transportation Block Grant Program (STBG) funds, as authorized by 23 CFR 420,

to develop PMPs.¹⁰

Programmatic mitigation planning also supports the [Council on Environmental Quality's \(CEQ's\) regulations for implementing NEPA](#).

Subsequent sections of this guidebook contain more detail and references to applicable sections of the regulations.

23 U.S.C. 169(a): Development of Programmatic Mitigation Plans

In General.—As part of the statewide or metropolitan transportation planning process, a State or metropolitan planning organization may develop programmatic mitigation plans to address the potential environmental impacts of future transportation projects.

23 CFR 450.214(a) (States) & 450.320(a) (MPOs): Development of Programmatic Mitigation Plans¹

A [State/MPO] may utilize the optional framework in this section to develop programmatic mitigation plans as part of the statewide transportation planning process to address the potential environmental impacts of future transportation projects. The State/MPO in consultation with FHWA and/or FTA and with the agency or agencies with jurisdiction and special expertise over the resources being addressed in the plan, will determine:

(1) Scope.

(i) A [State/MPO] may develop a programmatic mitigation plan on a local, regional, ecosystem, watershed, statewide or similar scale.

(ii) The plan may encompass multiple environmental resources within a defined geographic area(s) or may focus on a specific type(s) of resource(s) such as aquatic resources, parkland, or wildlife habitat.

(iii) The plan may address or consider impacts from all projects in a defined geographic area(s) or may focus on a specific type(s) of project(s).[...]

⁶ MAP-21 Sec. 1311

⁷ See 23 U.S.C. § 169(f)

⁸ Pub. L. No. 117-58.

⁹ See 23 C.F.R. § 450.214(b)

¹⁰ For more info see [FHWA's Guide to Federal-Aid Programs and Projects](#)

¹ 23 CFR 450.214(f) and 450.320(f) clarify that a PMP can be developed separately from the transportation planning process and outside of the framework described in this section.

Considerations for Success

The legislation and regulations that define programmatic mitigation planning are broad and allow agencies to create PMPs that:

- Address a variety of scopes and scales;
- Can be developed during the transportation planning process; and
- Cover different types of projects, environmental and community resources, and programs.

When considering programmatic mitigation planning, agencies should think through project and resource suitability as well as resource needs and availability.

Project Types and Environmental Impacts

Although PMPs can accommodate a variety of project types at different scales, there are certain situations in which a programmatic approach is more suitable. Certain project groupings may share a similar geographic scale or project scope, or share similar resource impacts. PMPs are generally most beneficial for multi-phase projects, corridor projects, and sets of similar projects (such as a series of bridge replacements) or projects with similar resource impacts.

Anticipated Development and Project Backlogs

In regions experiencing high rates of new development, PMPs can be particularly useful. These areas may need to prioritize investments in existing or new infrastructure projects to meet regional needs, while also meeting resource protection and conservation requirements. Single large-scale or multiple smaller-scale projects can rapidly increase workloads for resource and regulatory agencies who have jurisdiction over potentially impacted resources. Limited availability of staff time and resources at these agencies may also result in environmental review bottlenecks. By identifying

and agreeing to mitigation strategies programmatically and early in the planning process, developing a PMP is one solution to streamline the review of this backlog of projects, provide for greater predictability to reduce project delays, and fulfill environmental commitments.

Potential Partnerships

Areas with few major transportation projects can still take advantage of programmatic mitigation. If one agency's programmed projects alone do not warrant a programmatic approach, agencies can consider forming partnerships and broadening the scope of the PMP to include other agencies' projects. PMPs can provide greater economic and ecological benefits to agencies simply by grouping projects together. Mitigation can help standardize costs, so combining needs from multiple projects to conduct mitigation can generate more predictable timelines and cost savings. Further holistic mitigation strategies that consider impacts at multiple stages or from multiple projects can create more impactful ecological improvements than project-by-project mitigation.



Testing water quality. (Photo: New Hampshire DOT)

Time Commitment

Developing a PMP involves time and resource commitments from all participating agencies.¹¹ It can be a multi-year effort, and even once the PMP is complete, ongoing maintenance and other efforts and considerations may be necessary to ensure the objectives of the PMP are fulfilled.¹² As projects evolve or mitigation needs change, a PMP may need to be periodically reviewed and updated. If substantial changes are made, the PMP should be redistributed for public comment to maintain legal defensibility.¹³

Stakeholder Engagement

Depending on the resources involved and the scale of the mitigation project, various experts, agencies, and community members should be included in the PMP development.¹⁴ Environmental planners, environmental, resource and historic preservation specialists, and community-based organizations should be involved in the planning phase, as necessary. Transportation planners and engineers will also help to evaluate mitigation needs early in the project development process. In addition to the range of expertise needed, strong relationships, communication, and data sharing among stakeholders are also key to successful PMP development and implementation. Project proponents have an obligation to incorporate community perspectives and engage in meaningful public involvement throughout the programmatic mitigation planning process.

Creative Application of Programmatic Mitigation

Although programmatic mitigation has been effective with natural resources (e.g. species, wetlands, streams etc.), other resource types (e.g., cultural resources, community facilities, stormwater, air quality, and noise) may also be appropriate for programmatic mit-

igation through innovative thinking and collaboration with resource agencies and community groups. For example, historic bridges can create very long project delays and some States, with support from the Advisory Council on Historic Preservation (ACHP), have started to look programmatically at this resource. The [Program Comment for Common Post-1945 Concrete and Steel Bridges](#) is one example of a programmatic approach for historic resources.

Mitigation and Additional Experience

Additional expertise may be needed to ensure mitigation efforts are implemented appropriately and are successful long-term. For specific types of mitigation mechanisms, such as mitigation banks or in-lieu fee (ILF) programs, financial and business experts may need to be involved to ensure the programs are set-up and run successfully.¹⁵ In addition, PMPs often utilize Geographic Information System (GIS) data and expertise to analyze and visualize spatial data to inform mitigation planning.

The questions on the following page can help to determine if programmatic mitigation is a good fit for a transportation agency. However, ongoing coordination and communication with resource and regulatory agency partners is critical to making this determination. These agency partners can help identify the potential impacts of programmed projects, identify existing conservation plans, and frame possible programmatic mitigation options.



Historic bridge. (Photo: Ricardo Angel, Unsplash)

11 See 23 U.S.C. 139(d); and 23 CFR 771.107 and 40 CFR 1508.1(w)

12 See, e.g., 23 U.S.C. § 169; and 23 CFR 450.214, 450.320, and 777.9.

13 See 23 U.S.C. § 169(b) and 169(d); and 23 CFR 450.214(b) and 450.320(b).

14 See authorities cited in preceding footnote

15 See 33 CFR 332.8, 40 CFR 230.98, and 23 CFR 777.9

Questions to Consider before Pursuing a PMP

1. Does the agency have a large, multi-phased project upcoming?
2. Are there multiple programmed activities with similar environmental impacts?
3. Do programmed activities have potential to impact environmental or cultural resources?
4. Has a recent change in regulation (e.g., change in the definition of waters of the US or listing/delisting of a threatened and endangered species) impacted resources within the agencies jurisdiction?
5. Is there a current or anticipated backlog of transportation projects at resource or regulatory agencies?
6. Are there appropriate geographic locations to mitigate project impacts that have the same/equivalent type, value, and function of the habitat being impacted?
7. What agencies and stakeholders should be involved and what are the current practices for stakeholder engagement?

Example: Programmatic Mitigation Planning in Practice

As an example, consider a State DOT with a series of planned bridge replacements along a 20-mile long corridor that have been programmed in the Statewide Transportation Improvement Program (STIP). Due to the similarities (e.g., action/activity and watershed) in these replacement projects and agency responsibilities, the State DOT determined that programmatic mitigation planning could be a viable and enhanced alternative to the traditional, project-by-project approach to mitigation.

Avoid, Minimize, Compensate: Through the PMP process, the DOT first sought opportunities to avoid and minimize impacts to resources, and then worked with its resource agency partners to plan a compensatory mitigation approach that satisfied its obligations for the entire program of projects.

Resources Impacted and Agency Obligations: These bridge replacement projects impact two

main resources, wetlands and habitat supporting a federally listed endangered species found in freshwater streams requiring consultation with various agencies, summarized below:

Resource Impacted	Potential Permit(s) / Action Required	Agencies of Jurisdiction
Wetlands	Section 404 of CWA	USACE State natural resource agency
Federally listed protected species	Section 7 of the Endangered Species Act (ESA) ¹⁶	USFWS

Table 1. Impacted resources and potential required actions.

Deciding on a PMP Approach: The State DOT coordinated with staff at the State natural resource agency, U.S. Army Corps of Engineers (USACE), and the U.S. Fish and Wildlife Service (USFWS), to discuss the development and use of a PMP to address the potential resource impacts of the entire series of bridge replacement projects. While recognizing the upfront investment necessary to develop a PMP, the agencies agreed that a programmatic mitigation approach would be the most effective since it has the potential to:

- Accelerate project delivery by expediting project review;
- Simplify coordination for agencies with overlapping jurisdiction that would affect the necessary mitigation;
- Satisfy the agency obligations for the program of projects; and
- Improve environmental outcomes through strategic mitigation at an ecosystem scale.

The following section provides additional information on how this example relates to each step of the programmatic mitigation planning process.

¹⁶ The National Marine Fisheries Service (NMFS) also shares responsibility for implementing the ESA, but is primarily responsible for marine species.



THIS PAGE IS INTENTIONALLY LEFT BLANK

Framework to Develop a Programmatic Mitigation Plan

PMPs can take a variety of forms. Under 23 U.S.C. 169 and 23 CFR 450.214 and 450.320, State DOTs and MPOs can develop a PMP in a fashion that best meets the needs of the planning area to address the impacts of future infrastructure projects. Except for the procedural requirements, the legislation is not prescriptive, but rather provides suggestions to agencies on how to develop a plan that will best serve the agencies and their planning areas as part of the statewide and metropolitan planning processes.

This section of the guidebook provides a framework through which State DOTs and MPOs may develop a PMP, in coordination with resource agencies and other stakeholders, that not only meets the statutory requirements, but also builds upon best practices in mitigation, resource science, and transportation planning. Although agencies must follow existing statutes and regulations addressing PMPs, the framework provided in this guidebook is not legally binding and is voluntary only.

Note that throughout each Step on the following pages, there are call out boxes with text directly from the applicable regulations. These call out boxes are intended to highlight the relevant text from each regulation, not the regulation text in its entirety. Please refer to Appendix C for the entire text of 23 CFR 450.214 (State development of PMPs) and 23 CFR 450.314 (MPO development of PMPs).



Step 1: Conduct Needs Assessment



Step 2: Identify and Engage Key Stakeholders



Step 3: Develop Mitigation Strategy



Step 4: Draft Plan



Step 5: Lead Public Review Process



Step 6: Implement Plan and Monitoring

Step 1: Conduct Needs Assessment

GOALS

1. Establish baseline conditions
2. Identify conservation needs
3. Estimate direct and cumulative effects from transportation projects



At the onset of the PMP process, a needs assessment should be performed to identify resources in the program area and the potential impacts to these resources. The data collected and the analysis conducted throughout the needs assessment will set the foundation for Steps 2-6.

Goal 1: Establish baseline conditions. Comparing future conditions to baseline conditions enables partner agencies to evaluate the effectiveness of programmatic mitigation in the short- and long-term. The needs assessment is a data intensive process that requires knowledge of, and access to, accurate and relevant data sources. Transportation agencies should always include potential stakeholders (see [Step 2](#)) in data discussions, as they often have first-hand knowledge of key data sources. Data collected from regulatory and resource agencies (See Key Data Sources Box on page 12) will depend on the type of plan being developed and could include:

- An inventory of natural, cultural, and community resources and any potential threats to these resources;
- Documentation of the resources existing conditions;
- Documentation of Environmental Justice data points including air quality, socioeconomic indicators, climate change vulnerability, and health disparities.¹⁷
- Analysis of demographic and socioeconomic data and historic and recent trends; and
- An examination of planned or existing development and transportation projects.

Goal 2: Identify conservation needs. For resources that may be impacted from programmed transportation

projects, transportation agencies should work with stakeholders to identify conservation needs and goals. Examples of these resources include wetlands, streams, rivers, stormwater, parklands, cultural resources, historic resources, farmlands, threatened or endangered species' critical habitat, and community facilities. This process may also lead to the identification of areas of high conservation value and avoidance priorities.

Goal 3: Estimate direct, indirect and cumulative effects.¹⁸ Work with stakeholder agencies and across offices within the State DOT to determine potential impacts and stressors the programmed projects could have on resources. These impacts should be determined through:

- Review of existing transportation and land use plans, such as the Transportation Improvement Program (TIP), STIP, Metropolitan Transportation Plans, and LRTP;
- Consideration of the full geographic and community extent that could be affected as impacts from

23 CFR 450.214(a)(2) (States) & 450.320(a)(2) (MPOs)

The programmatic mitigation plan may include:

(i) An assessment of the existing condition of natural and human environmental resources within the area covered by the plan, including an assessment of historic and recent trends and/or any potential threats to those resources.

(ii) An identification of economic, social, and natural and human environmental resources within the geographic area that may be impacted and considered for mitigation. Examples of these resources include wetlands, streams, rivers, stormwater, parklands, cultural resources, historic resources, farmlands, archaeological resources, threatened or endangered species, and critical habitat. This may include the identification of areas of high conservation concern or value and thus worthy of avoidance. [...]

¹⁷ See EPA's EJ Screen tool for reference.

¹⁸ Note that this is different from the consideration of direct and cumulative effects under NEPA.



Site inspection. (Photo: drepicter, 123RF.com)

the project(s) may occur well outside of the footprint of the project(s); and

- Creation of an integrated map that overlays resource conservation and restoration priorities with transportation program data and other land use, infrastructure, environmental justice and socioeconomic information.

The needs assessment will provide a preliminary assessment of areas in which planned transportation projects intersect with conservation priority areas, community needs and interests, and what types and quantity of mitigation may be needed (see Step 3).

The needs assessment may also indicate that there are not enough projects currently programmed within the DOT or MPO to warrant the development of a PMP. Instead of falling back on project-based mitigation, agencies could consider engaging with other groups or private organizations working on similar projects or in need of similar mitigation strategies. This can help defray the upfront costs and share the mitigation

KEY DATA SOURCES

Always consider data availability, format collection, and GIS capability when collecting data. You should identify and address any data gaps that would hinder a complete and reliable assessment.

Some common sources include:

- [EPA Geospatial Resources](#)
- [EPA EJScreen](#)
- [USFWS Geospatial Services](#)
- [USFWS Endangered Species Lists](#)
- [USGS National Land Cover Database](#)
- [NMFS Endangered Species Lists](#)
- [NMFS shape files for designated critical habitat](#)
- State or Local Conservation Plans

credits through mutually beneficial public-private partnerships.

Example: Conducting a Needs Assessment

After initial conversations with resource and regulatory agencies that led to agreement on pursuing a PMP, the project team needed to establish baseline conditions for the corridor of concern (Goal 1). The State DOT agreed to collect and manage the data using GIS mapping software. The State DOT coordinated with local, State, and Federal partner agencies to assemble the needed data. It also worked with resource agencies to identify the location and type of several wetlands (emergent, forested, and upland forested) and suitable habitat for endangered species in the region. In partnership with the resource agencies, the State DOT also conducted field verifications. With this field-verified list of resources in hand, the State DOT worked with stakeholders to identify resource conservation goals and targets (Goal 2).

The bridge projects from the STIP were overlaid on the GIS map. The overlay provided the State DOT with a more complete assessment of the potential impacts (direct, indirect, and cumulative) to critical resources (Goal 3). In addition to the wetlands and critical habitat impacted by the bridge replacements, the project team identified patches of critical habitat that would not be impacted by any of the bridge replacements, but were in proximity to a rapidly developing residential area and ripe for conservation.

MORE INFORMATION

- [U.S. DOT Environmental Review Checklist](#)
- [Eco-Logical Step 3: Integrated Planning-The First Steps toward an Ecosystem Approach, FHWA](#)
- [State Wildlife Action Plans, Association of Fish & Wildlife Agencies](#)
- [Advance Mitigation Program, Caltrans](#)
 - » [A Reference Manual for Caltrans Staff on Regional Advanced Mitigation Impact Assessment Methods](#)

Step 2: Identify and Engage Key Stakeholders

GOALS

1. Identify key stakeholders
2. Perform outreach to stakeholders and host kick-off meeting
3. Build relationships and continue consultation throughout the PMP development process



Goal 1: Identify key stakeholders. Identifying the stakeholders involved in project-level environmental review and engaging them as early as possible is also essential to a successful planning process. See [Appendix B](#) for resources to help identify stakeholders. State and national transportation liaisons are key contacts and should be engaged when possible, as they often serve as a bridge between DOTs, MPOs, and resource and regulatory partners.

Typical Stakeholders include:

- Federal resource and land management agencies (see example on page 14 for sample list);
- Federally recognized Tribes and Tribal Historic Preservation Offices (THPOs);
- State resource and land management agencies; and
- State historic preservation offices (SHPOs).

The general public must also be engaged.¹⁹ Stakeholders representing key groups of the general public should be engaged outside of the regular comment period. Community groups often have important information about local conservation plans, zoning requirements, community facilities and needs and can address issues on behalf of the constituency they represent. These additional stakeholders typically include county agencies, local governments, park districts, local historic preservation societies and non-governmental organizations, environmental groups, neighborhood organizations and other groups representing low-income or minority communities.

Goal 2: Perform outreach to stakeholders and host kick-off meeting. Once the initial list of stakeholders is developed, the State DOT or MPO should host a kick-off meeting to introduce the idea of programmatic

mitigation planning and to solidify buy-in from partner agencies. The kick-off meeting also allows for the early identification of potential issues or opportunities that may help shape the scope and scale of the PMP.

When possible, follow these best practices for the kick-off meeting:

- Conduct the meeting virtually, hybrid, or in-person to establish relationships and build trust among the team as early as possible;
- Be open to other viewpoints and understand there will be differences of opinion;

23 U.S.C. 169(d)

Before adopting a programmatic mitigation plan, a State or metropolitan planning organization shall—

- (1) *consult with each agency with jurisdiction over the environmental resources considered in the programmatic mitigation plan;*
- (2) *make a draft of the plan available for review and comment by applicable environmental resource agencies and the public*

23 CFR 450.214(a) (States) & 450.320(a) (MPOs)

The [State/MPO], in consultation with FHWA and/or FTA and with the agency or agencies with jurisdiction and special expertise over the resources being addressed in the plan, will determine:

- (1) *Scope*
 - (i) *A [State/MPO] may develop a programmatic mitigation plan on a local, regional, ecosystem, watershed, statewide or similar scale.*
 - (ii) *The plan may encompass multiple environmental resources within a defined geographic area(s) or may focus on a specific type(s) of resource(s) such as aquatic resources, parkland, or wildlife habitat.*
 - (iii) *The plan may address or consider impacts from all projects in a defined geographic area(s) or may focus on a specific type(s) of project(s). [...]*

¹⁹ See 23 U.S.C. § 169(d); and 23 CFR 450.214(b) and 450.320(b).

- Keep in mind not all stakeholders have the personnel and financial resources to support travel or to participate in meetings; and
- Use a professional facilitator since multiple interests will be represented.

Goal 3: Build relationships and continue consultation throughout the PMP development process.

Meaningful and successful initial engagement will facilitate sustained involvement and commitment to subsequent steps of the process. The degree to which PMPs are useful later in the project development process frequently depends on the extent of consultation and the level of detail that is developed during the preliminary planning process. Having early and meaningful consultation with the resource agencies that have jurisdiction over a particular resource will help manage risk associated with mitigation and satisfy permit requirements as a result.



USFWS field inspections in South Carolina. (Photo: USFWS)

MORE INFORMATION

- [Transportation Liaison Community of Practice](#)
- [FHWA Planworks Assessment Tool](#)
- [Identifying and Engaging Stakeholders Podcast, United States Geological Survey \(USGS\)](#)
- [Introduction to Stakeholder Participation, NOAA](#)
- [US Public Participation Playbook, various Federal agencies](#)
- [Public Participation Guide, EPA](#)

Example: Identifying Stakeholders

The needs assessment identified potential resources, including endangered species and wetlands that could be impacted and require mitigation. Correspondingly, the State DOT planned to engage the USACE, the State natural resource agencies, and USFWS, in addition to the FHWA division office. The State DOT also used a stakeholder analysis table²⁰ to identify the following list of additional stakeholders (Goal 1) to invite to the kick-off meeting and involve throughout the process of developing a PMP:

- SHPO;
- Local Historic Preservation Societies;
- Local governments;
- Utility providers;
- Emergency responders;
- School district representatives;
- Area residents;
- Non-Governmental Organizations (NGOs) that could include the environmental community; and
- Community leaders or organizations representing underserved areas

The kick-off meeting (Goal 2) was successful and enabled the State DOT to identify historically significant bridges that would require them to engage the SHPO and gain insight from local governments on sensitive land-use issues in the program footprint.

Following the kick-off meeting, the State DOT continued the consultation throughout the PMP process (Goal 3). To discuss and develop the specific mitigation strategies (see [Step 3](#)), the State DOT hosted frequent calls and facilitated in-person meetings with the primary stakeholders. Additional stakeholders were engaged through meetings, webinars and written communication to solicit feedback as appropriate.

²⁰ A [template stakeholder analysis worksheet](#) is available from the National Oceanic and Atmospheric Administration (NOAA).

Step 3: Develop Mitigation Strategy

GOALS

1. Identify the scope and scale of the PMP
2. Establish consensus around mitigation strategies
3. Document the agreement



Goal 1: Identify the scope and scale of the PMP.

Recognizing and fulfilling this goal is needed to develop an appropriate mitigation strategy. The PMP can cover a single resource type or multiple resources within a specified area. Establish the scope of the PMP by taking into consideration:

- Findings of the needs assessment (see [Step 1](#));
- Input from stakeholders (see [Step 2](#)); and
- Resources within the area that will be considered for mitigation due to potential project-related impacts.

Goal 2: Establish consensus around mitigation strategies. Work with the resource agencies that will be involved in developing the PMP and the project approval process. Assess existing mitigation opportunities that would apply to the resources identified in the impact area. The type of mitigation and the requirements for developing mitigation strategies will depend on the resources involved and the type of mitigation best suited to that resource. The process of determining mitigation strategies may include:

- An inventory of existing mitigation banks or ILF programs;²¹
- Methodologies for calculating appropriate mitigation measures (e.g. setting and negotiating mitigation ratios);
- Criteria for determining appropriate mitigation sites;
- Development of standard measures (e.g. design criteria) and operating procedures for mitigation (e.g. updated design standards, specific windows for construction activities);
- Connections to other existing plans;

- Monitoring adaptive management;
- Long-term stewardship/management; and
- Education and outreach.

Goal 3: Document the agreement. The State DOT or MPO should work to develop and document an agreement or agreements with its Federal and State, and local collaborators throughout the resource eval-

23 CFR 450.214(a)(1)(ii)

(ii) The plan may encompass multiple environmental resources within a defined geographic area(s) or may focus on a specific type(s) of resource(s) such as aquatic resources, parkland, or wildlife habitat.

23 CFR 450.214(a)(2) (States) & 450.320(a)(2) (MPOs)

The programmatic mitigation plan may include: [...]

(iii) An inventory of existing or planned environmental resource banks for the impacted resource categories such as wetland, stream, stormwater, habitat, species, and an inventory of federally, State, or locally approved in-lieu-of-fee programs.

(iv) An assessment of potential opportunities to improve the overall quality of the identified environmental resources through strategic mitigation for impacts of transportation projects, which may include the prioritization of parcels or areas for acquisition and/or potential resource banking sites.

(v) An adoption or development of standard measures or operating procedures for mitigating certain types of impacts; establishment of parameters for determining or calculating appropriate mitigation for certain types of impacts, such as mitigation ratios, or criteria for determining appropriate mitigation sites. [...]

21 The USACE's [Regulatory In-lieu fee & Bank Information Tracking System \(RIBITS\)](#) is a tool that provides more information on available ILF, wetland and stream mitigation and conservation banking programs across the country.

uation processes and the development of mitigation strategies. The agreement (or agreements) may be of various types; for example, an agreement may be formally structured and signed, or it may be a more informal list, tool or other record of items the parties have agreed upon. The relationships and trust built throughout the stakeholder engagement process ([Step 2](#)) will be essential throughout the negotiation process and can help accelerate this often time-consuming process. Although there is no prescribed agreement type required by the PMP process, the agreement type should typically:

- Formalize the mitigation commitments outlined in the PMP;
- Engage appropriate regulatory authorities at federal and state levels. Depending on the number and type of stakeholders, one or multiple agreements with the required parties may be developed (see example below);
- Meet the legal requirements of the State as well as the organization's needs;
- Include all relevant provisions so that the proposed processes are sufficient to facilitate the project review process; and
- Satisfy specific statutory or regulatory requirements from the engaged resource agencies regarding mitigation for certain resource types.

MORE INFORMATION

- [Maine Atlantic Salmon Programmatic Consultation](#)
- [Indiana Bat and Northern Long-eared Bat Sec 7 Consultation and Conservation Strategy](#)
- [FHWA In-Lieu Fee and Mitigation Banking FAQs](#)
- [National Park Service \(NPS\) INSTEP TOOL](#)
- [AASHTO Practitioner's Handbook: Implementing Eco-Logical: Integrating Transportation Planning and Ecological Decision Making](#)

Example: Identify Scope of PMP, Establish Mitigation & Document Agreement

The needs assessment helped define the scope of the PMP to include a set of bridge replacements across most of the State, and also identified an endangered freshwater fish species inhabiting several of the waterways adjacent these projects (Goal 1), creating the potential for costly and time consuming consultations.

Based on priority habitat classifications, the State DOT and USFWS agreed to establish an ILF instrument for projects in non-critical, priority habitat areas (Goal 2) and determined the amounts that the State DOT would pay into the ILF instrument based on the impacts attributed to each project. Instead of prescribing mitigation on a project-by-project basis, the ILF instrument enables project proponents to pay into a fund that can be used for mitigation elsewhere.

Concurrently, the State DOT worked with USACE to establish similar protocols for programmatic wetland mitigation under Section 404 of the CWA, including how to calculate wetland mitigation credits. Rather than establishing a new wetland mitigation bank, the State DOT and USACE identified an existing bank within the same watershed (8-unit Hydrologic Unit Code) as the programmed projects.

The State DOT combined both mitigation-related programs into an agreement for bridge replacement projects within the scope of the PMP (Goal 3). To help meet the objectives of the plan, the State DOT, USFWS and USACE decided to execute a signed MOA.²² This agreement helped expedite project delivery by specifying review procedures, timelines, and a set of statutory and regulatory obligations for mitigation at the program-level (with programmed projects subject to individual review as required by the agreement).

²² Although in this example the agreement was signed, there are many other ways to document and execute an agreement. All parties should work together to ensure the documentation is sufficient to meet local, State, or Federal requirements as applicable.

Step 4: Draft Plan

GOALS

1. Draft a full plan
2. Establish standard operating procedures



The PMP is the official, public-facing strategic framework record that documents the entire planning process. While the agreement established in Step 3 focuses on mitigation strategies for protected resources, the plan details the agency coordination efforts, establishes criteria for assessing and determining impacts, provides parameters for appropriate mitigation measures, and outlines procedures for mitigation implementation and management.

Goal 1: Draft a full plan. The plan, drafted with input from stakeholders and the public, should address the resources considered, locations of potential mitigation sites, and specific agencies involved in mitigation efforts. Key elements to the plan include:

- Overview of the mitigation strategy (see [Step 3](#)) that includes details on plan scope (project activities, schedule, and geographic region), a summary of the needs assessment, current conditions, and interagency involvement to date;
- The process for calculating impacts and mitigation ratios for mitigation banking or ILF instruments, as necessary;
- Measurable goals and objectives;
- Performance standards and monitoring plan to track impacts;
- Financial assurances (such as a performance bond letter of credit, demonstrating the availability of and a commitment to the required funding); and
- Adaptive management protocols to adjust the plan as necessary. Quantitative retention or restoration goals for each resource are useful and should be established in close coordination with resource agencies and other experts. Critical to this step is the development of a thorough baseline conditions assessment (see [Step 1](#)).

There is no prescribed format or type of plan, though it should be developed in a format that best meets the goals, objectives, and requirements of all stakeholders and signatory agencies involved. To maximize benefits

23 CFR 450.214(a)(1) (States) & 450.320(a)(1) (MPOs)

(i) A [State/MPO] may develop a programmatic mitigation plan on a local, regional, ecosystem, watershed, statewide or similar scale.

(ii) The plan may encompass multiple environmental resources within a defined geographic area(s) or may focus on a specific type(s) of resource(s) such as aquatic resources, parkland, or wildlife habitat.

(iii) The plan may address or consider impacts from all projects in a defined geographic area(s) or may focus on a specific type(s) of project(s). [...]

23 CFR 450.214(a)(2) (States) & 450.320(a)(2) (MPOs)

The programmatic mitigation plan may include: [...]

(iv) An assessment of potential opportunities to improve the overall quality of the identified environmental resources through strategic mitigation for impacts of transportation projects, which may include the prioritization of parcels or areas for acquisition and/or potential resource banking sites.

(v) An adoption or development of standard measures or operating procedures for mitigating certain types of impacts; establishment of parameters for determining or calculating appropriate mitigation for certain types of impacts, such as mitigation ratios, or criteria for determining appropriate mitigation sites.

(vi) Adaptive management procedures, such as protocols or procedures that involve monitoring actual impacts against predicted impacts over time and adjusting mitigation measures in response to information gathered through the monitoring.

(vii) Acknowledgment of specific statutory or regulatory requirements that must be satisfied when determining appropriate mitigation for certain types of resources.

of developing a PMP, agencies should consider how the plan could aid in satisfying NEPA requirements when projects within the scope of the plan are initiated and include the information necessary to streamline future review processes.

Goal 2: Establish standard operating procedures (SOPs). Develop detailed SOPs that address agency procedures and best management practices (BMPs) for successful plan implementation that include protocols for:

- Any required agency coordination and consultations;
- Mitigation monitoring and evaluation to aid in adaptive management of the mitigation strategies; and
- Addressing changing project, agency, or resource needs or circumstances to ensure the plan can easily be updated and utilized in future scenarios.

Finally, the PMP should acknowledge the specific statutory or regulatory requirements that must be satisfied when determining appropriate mitigation for certain types of resources. Programmatic mitigation still must meet the existing mitigation requirements for the relevant resource. A non-exhaustive list of common resources and their corresponding regulations is included in Appendix A.

MORE INFORMATION

- [Every Day Counts \(EDC\) Initiatives to Accelerate Project Delivery, FHWA](#)
- [Implementing Quality Environmental Documentation, FHWA](#)
- [Advance Mitigation Program Final Formal Guidelines \(October 2019\), Caltrans](#)

Considerations for developing SOP:

- What agencies are involved in mitigation for each resource?
- Are all the resources with potential impacts addressed?
- What is the service area for a bank or off-site mitigation?
- How will mitigation ratios be calculated?
- How will mitigation be registered and tracked?
- What long-term monitoring is needed?
- How will changes in circumstances be addressed?

Example: Establish SOPs and Draft Plan

The State DOT, USFWS, and USACE developed a public facing document that provided additional context for the PMP and more detailed discussion on the implementation and adaptive management strategies for the developed mitigation strategy (Goal 1). This plan incorporated the agreements established in Step 3, while also providing background information on reasoning behind entering into this programmatic approach, interagency coordination efforts, and the thought processes and justifications behind the established mitigation strategies. In addition to summarizing the outcome of the needs assessment and detailing the scope including the programmed transportation projects, the plan identified several SOPs detailing plan implementation (Goal 2). One SOP for adaptive management identifies the protocol for any changes in the target resources or their mitigation requirements, and for changes in the consultation procedures required of either agency.

Step 5: Lead Public Review Process

GOALS

1. Share draft with key stakeholders and the general public for comment
2. Review and respond to comments
3. Update and finalize the PMP



Goal 1: Share a draft plan with key stakeholders and the general public for comment. Agencies must make the draft PMP available for review and comment by the appropriate resource agencies and the general public.²³ While key stakeholders have been consulted throughout the plan development, this review of the draft plan allows agencies to provide a formal review of the document to ensure all requirements are being met, particularly on the topics where they have jurisdiction and are the leading expert. Public comment offers a formal opportunity allowing the public to provide meaningful input²⁴ on the plan. Agencies should follow specific public engagement protocol and provide a review period available to everyone to a reasonable extent practicable.

The project proponent may also need to proactively engage and educate the public on this topic, as well as the planning process generally, and their role within it, as the public may not be knowledgeable on programmatic mitigation. Strategies and timing to engage with the public could vary depending on the community demographics and existing engagement practices and if the PMP is being developed as part of the PEL process.²⁵ State DOTs and MPOs should leverage public involvement approaches that have been successful for other projects or document reviews. In the end, the public will have the opportunity to submit comments on the draft document, and it should be made as easy as possible.

²³ 23 USC 169(d)(2), 23 CFR 450.214(b)(2) and 450.320(b)(2)

²⁴ See [Promising Practices for Meaningful Public Involvement In Transportation Decision-Making](#) for more information

²⁵ See the [PEL website](#) for additional information.

²⁶ See 23 USC 169(d)(3)-(4); and 23 CFR 450.214(b)(3)-(4) and 450.320(b)(3)-(4).

Goal 2: Review and respond to comments. After the State DOT or MPO receives all comments from the resource agencies, general public, and other stakeholders, they shall:²⁶

- Review and consider the appropriate response, as well as if and how comments should be reflected in the final PMP; and
- Address the comments in the final plan (similar to how comments would be addressed in environmental documents), demonstrating to the public that they have a meaningful role in decision making.

During the public participation process, a wide range of interests and views may be raised, prompting a need for the State DOT or MPO to carefully balance differing opinions.

Goal 3: Update and finalize the PMP. Once the State

23 CFR 450.214(b)(2) (States) & 450.320(b)(2) (MPOs)

A [State/MPO] may adopt a programmatic mitigation plan developed pursuant to paragraph (a), or developed pursuant to an alternative process as provided for in paragraph (f) of this section through the following process:

- (1) Consult with each agency with jurisdiction over the environmental resources considered in the programmatic mitigation plan;*
- (2) Make available a draft of the programmatic mitigation plan for review and comment by appropriate environmental resource agencies and the public;*
- (3) Consider comments received from such agencies and the public on the draft plan; and*
- (4) Address such comments in the final programmatic mitigation plan.*

DOT or MPO has reviewed and carefully considered all comments, they shall update the document to address, as appropriate, the input received.²⁷ Agencies may disagree on the best approach to update the document. This is a normal part of the public participation process, and may require stakeholders to negotiate on their positions that best reflects the larger group's interests. Once complete, the PMP can be finalized. As a best practice, the final PMP should be made available online.

Example: Collaborative Public Participation Approach

The State DOT began planning for public participation by first referencing its documented public participation process, or Public Participation Plan (PPP). The PPP is the central point that provides details on the various activities and procedures to engage with the public and gather meaningful input. Because the development of a PMP is a collaborative process with various Federal and State resource and regulatory agencies, the State DOT thought it would be beneficial to leverage these relationships to build an outreach and communication strategy that not only brings together a mix of proven engagement strategies, but targets a wide range of stakeholders. This process included the following:

MORE INFORMATION

- [Public Involvement Techniques for Transportation Decision Making, FHWA](#)
- [Planning Public Involvement and its Role in Project Development, FHWA](#)
- [Planning and Environment Linkages – Questions and Answers, FHWA](#)
- [Public Participation Guide, EPA](#)
- [Virtual Public Involvement, FHWA](#)
- [NEPA Public Involvement, FHWA](#)

- Leading a series of traditional public meetings in different communities across areas where the bridge replacement projects are proposed to explain the PMP purpose, present the draft document, and provide an opportunity for questions (Goal 1);
- Hosting several virtual town hall meetings to accommodate members of the public that are unable to attend in-person public meetings. The town halls followed the structure of the traditional public meetings, though reached a wider audience by using web-based communication platforms (e.g., YouTube, Facebook Live, etc.); and
- Developing a website that explains what programmatic mitigation planning is, outlines the process and benefits, and includes frequently asked questions (FAQs) and a user-friendly tool to submit comments and questions.

After receiving ample feedback from key stakeholders and the public, the State DOT compiled and reviewed comments. The State DOT carefully considered each comment, and documented how each comment was responded to or addressed in the plan (Goal 2). After all the comments were considered, the State DOT was able to appropriately update the plan (Goal 3).



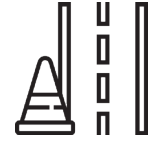
Stakeholder tour of Blackfoot Valley, MT. (Photo: USFWS)

²⁷ See 23 CFR 450.214(b)(4) and 23 CFR 450.320(b)(4)

Step 6: Implement Plan and Monitoring & Evaluation Process

GOALS

1. Implement the programmatic mitigation strategies for transportation projects
2. Monitor and evaluate mitigation performance measures



Goal 1: Implement the programmatic mitigation strategies for transportation projects. Once the plan is finalized, the mitigation strategies can be implemented and the PMP can be used to help fulfill agency responsibilities during the NEPA and permitting processes. A PMP can help fulfill these requirements by establishing approved protocols on how to identify and address impacts to ecological resources from a defined set of actions through the established SOPs and formal agreements between DOTs and resource and regulatory agencies (such as the agreements discussed under Step 3). Agencies can use the information, analysis, and products developed during programmatic mitigation planning to adopt and/or incorporate by reference into the environmental review process under NEPA, or to inform that process, if the documents, information and analysis meet applicable NEPA standards. The early collaboration and analysis inherent in PMPs may result in a more seamless decision-making process that minimizes duplication of effort, promotes environmental stewardship and environmental justice, and accelerates project delivery. For more information about Planning and Environment Linkages (PEL) and how to incorporate PMPs into NEPA, visit [FHWA's PEL website](#).

Goal 2: Monitor and evaluate mitigation performance measures. The PMP should have a monitoring plan to track impacts over time and compliance with environmental commitments established in the PMP that may be incorporated into NEPA documents. The plan should include specific goals, performance measures, and standards (Step 4). Through monitoring, the success of the implemented strategies can be evaluated and adjusted as needed, following adaptive manage-

ment protocols. The focus of adaptive management is to relate observed mitigation outcomes to the planned activities and impacts. The monitoring and evaluation procedures established in the PMP help identify impacts and highlight changing mitigation needs as projects progress. These procedures can be used to periodically assess the need for updates to the PMP in order to ensure that the plan is still accurate and useful, and, if substantial changes are made, redistributed for public comment to maintain legal defensibility.²⁸ Figure 2 shows the cyclical and iterative process of adaptive management, and demonstrates how monitoring and evaluation can lead to improved mitigation strategies.

23 CFR 450.214 (c) - (e) (States) See also 23 CFR 450.320 (c) - (e) (MPOs)

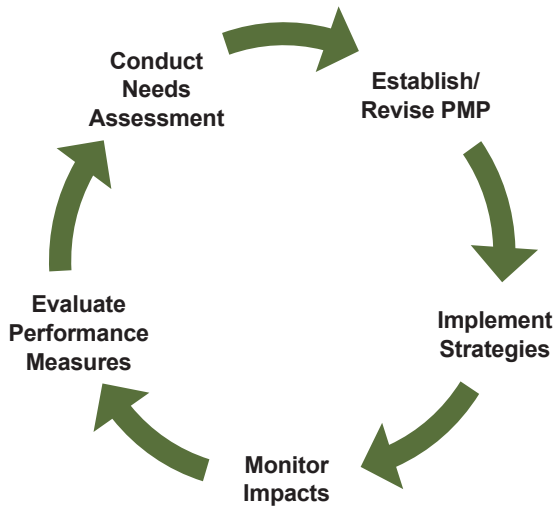
(c) [A State may integrate] a programmatic mitigation plan with other plans, including, watershed plans, ecosystem plans, species recovery plans, growth management plans, State Wildlife Action Plans, and land use plans.

(d) If a programmatic mitigation plan has been adopted pursuant to paragraph (b), any Federal agency responsible for environmental reviews, permits, or approvals for a transportation project shall give substantial weight to the recommendations in the programmatic mitigation plan when carrying out its responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321et seq.) (NEPA) or other Federal environmental law.

(e) Nothing in this section limits the use of programmatic approaches for reviews under NEPA.

²⁸ See 23 U.S.C. § 169(b); and 23 CFR 450.214(b) and 450.320(b).

Figure 2. Adaptive management process for PMPs.



Example: Adaptive Management

The State DOT and partner agencies established an adaptive management strategy in the PMP by detailing the monitoring and evaluation procedures involved during program implementation. Monitoring efforts assessed how the ecological responses matched predicted responses and if the mitigation strategy met interim and long-term targets and performance measures. Based on this assessment, the State DOT, in coordination with resource and regulatory agencies, determined if any component(s) of the mitigation strategy(s) needed to be altered or modified to better achieve the interim and long-term targets and performance measures, provide additional or

newly identified necessary ecological benefits, or improve the cost effectiveness of the mitigation. The mitigation strategies were improved through this adaptive management process that considered new scientific information and provided flexibility to accommodate unforeseen circumstances.

The adaptive management program included the following to better monitor the critical ecological mitigation indicators and evaluate effects from specific mitigation actions:

- Prioritized monitoring needs;
- Specific performance measures and ecological indicators;
- Assessment of external environmental and human drivers that may impact future needs; and
- Procedures for the integration of monitoring, modeling, and research findings into the evaluation procedure.

The adaptive management plan allowed the involved agencies to not only assess the impacts of the implemented mitigation strategies but also assess the effectiveness of the plan and make necessary adjustments so the mitigation strategies would be more successful.

MORE INFORMATION

- [Chapter on Adaptive Management, U.S. Department of Interior \(DOI\)](#)
 - » [Adaptive Management: The DOI Applications Guide](#)
- [Planning and Environment Linkages, FHWA](#)

Conclusion

This guidebook demonstrated each of the six steps to develop a PMP through an example State DOT with a series of planned bridge replacements. The table below summarizes the process.

	Step 1: Conduct a Needs Assessment	The State DOT coordinated with other agencies to gather data necessary to establish baseline conditions, identify conservation needs, and estimate effects to natural resources from transportation projects.
	Step 2: Identify and Engage Key Stakeholders	The State DOT used the needs assessment results to identify and engage relevant stakeholders, and hosted a kick-off meeting. Based on the potential impacts identified, the State DOT engaged USACE for wetland mitigation and USFWS for endangered species and critical habitat mitigation.
	Step 3: Develop Mitigation Strategy	These agencies developed strategies to address impacts to wetlands through a wetland mitigation bank within the same watershed and impacts to endangered fish species through an ILF program, and formalized the agreement in an MOU.
	Step 4: Draft Plan	The State DOT, USFWS, and USACE drafted a plan serving as the public facing document providing additional context that established SOPs for plan implementation, monitoring, evaluation, and adaptive management.
	Step 5: Lead Public Review Process	The State DOT shared the draft with key stakeholders and the general public for comment, and reviewed and responded to comments to update and finalize the plan.
	Step 6: Implement Plan and Monitoring, & Evaluation Process	The State DOT and partners applied the programmatic mitigation strategies for transportation projects within the scope of the plan, monitored the mitigation impacts, and evaluated results against the established performance measures to determine if any strategies need to be modified to better achieve plan target goals.



Sign designating habitat restoration work. (Photo: USFWS)

Programmatic mitigation planning has numerous benefits. Unlike the traditional mitigation approach that focuses on project level impacts, programmatic mitigation planning brings together key stakeholders to develop a strategic plan to address potential environmental and community impacts of multiple infrastructure projects at a scale that achieves a broader, more meaningful conservation benefit than disjointed, piecemeal mitigation. Furthermore, programmatic mitigation has the potential to reduce the time and costs associated with traditional project review and associated mitigation, accelerating project delivery while enhancing environmental outcomes.

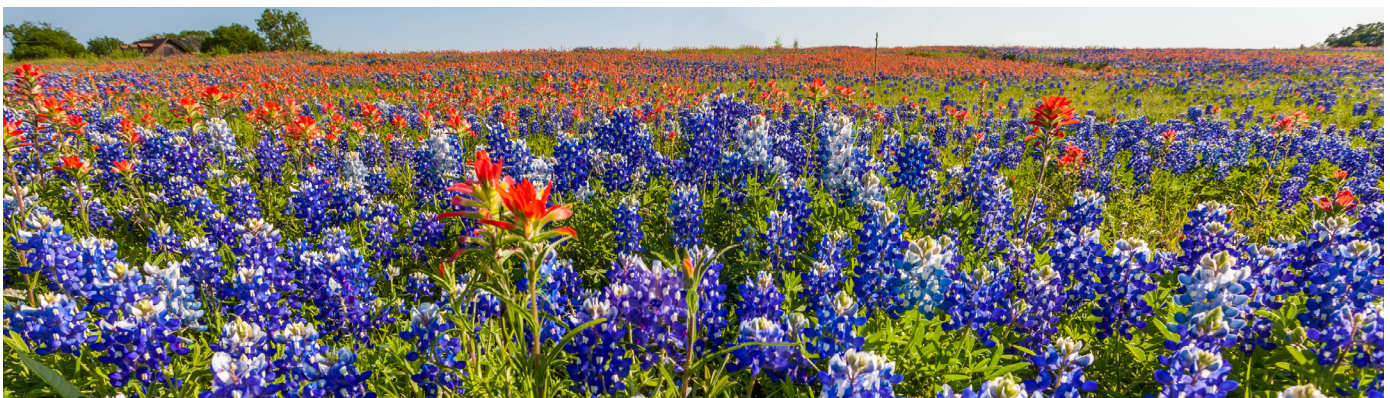
Programmatic mitigation planning is one of several connected initiatives that FHWA is working on to accelerate project delivery, including:

- **Planning and Environment Linkages (PEL)**: A collaborative and integrated approach to transportation decision making that considers environmental, community, and economic goals early in the planning process and uses that information to inform the environmental review process.²⁹
- **Eco-Logical**: A landscape-scale approach for planning and developing infrastructure projects that brings together infrastructure, resource, and regulatory agencies, and others, to form strong partnerships and accelerate project delivery while advancing environmental conservation and protection. The Eco-Logical initiative and guide (*Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects*) was developed eight

Federal agencies (including FHWA, USACE, EPA, and USFWS) and four State DOTs in 2006.³⁰

- **Every-Day Counts (EDC)**: Every Day Counts works with State transportation departments, local government, tribes, private industry, and other stakeholders to identify and deploy innovations that make our transportation system adaptable, sustainable, equitable and safer for all.
- **The Second Strategic Highway Research Program's Expediting Project Delivery (SHRP2)**: A product aimed at accelerating planning and environmental review processes for transportation projects. It identifies 24 strategies for addressing or avoiding 16 common constraints to accelerating project delivery. Funding liaison positions is one of the strategies.
- **2015 Redbook: Synchronizing Environmental Review for Transportation and Other Infrastructure Projects**: The book provides guidance on how agencies can synchronize NEPA and other regulatory reviews. It includes information on statute and regulation requirements, compliance procedures, and provides recommendations on how reviews can be synchronized to create an effective and efficient regulatory review process. Mitigation is identified as one component of the synchronization process.

Additional information on these initiatives and other resources related to programmatic mitigation planning can be found at [FHWA's Environmental Review Toolkit](#).



Texas wildflowers. (Photo: Kan Khampanya, 123RF.com)

29 PEL is authorized by 23 U.S.C. §§ 168 and 139(f). See also 23 CFR 450.212, 23 CFR 450.318, and Appendix A of 23 CFR Part 450.

30 [Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects](#)

Appendix

Appendix A: Common protected resources and associated policies

Resource	Agency	Policy
Essential Fish Habitat	NMFS	Magnuson-Stevens Act (MSA), Section 305 Essential Fish Habitat (EFH) Consultation
Historic Resources	ACHP	Section 106 of the National Historic Preservation Act (NHPA)
Marine Sanctuary	NOAA	Consultation to Protect National Marine Sanctuaries under the National Marine Sanctuaries Act (NMSA)
Stormwater and Surface Water	EPA	Section 402 of the Clean Water Act (CWA) and National Pollutant Discharge Elimination System (NPDES)
Threatened and Endangered Species; Critical Habitat	USFWS & NMFS	Endangered Species Act (ESA) Consultation
Wetlands, Streams, and other Waters of the U.S.	USACE	Section 404 of CWA

Appendix B: Additional resources

Regulatory Framework	
Compensatory Mitigation for Losses of Aquatic Resources under CWA Section 404, Final Rule (2008 Mitigation Rule)	<p>This EPA resource provides background information regarding the Clean Water Act Section 404 compensatory mitigation requirements.</p> <p>https://www.epa.gov/cwa-404/background-about-compensatory-mitigation-requirements-under-cwa-section-404</p>
MAP-21	<p>This FHWA website provides an overview of the Moving Ahead for Progress in the 21st Century Act as well as links to both the original legislation and guidance on FHWA regulations pertaining to MAP-21.</p> <p>https://www.fhwa.dot.gov/map21/</p>
CEQ NEPA Regulations	<p>This CEQ website provides the current NEPA implementing regulations under CEQ.</p> <p>https://www.ecfr.gov/current/title-40/chapter-V/subchapter-A</p>
FHWA NEPA Regulations	<p>This website provides the current NEPA implementing regulations for FHWA. These regulations supplement the CEQ NEPA regulations.</p> <p>https://www.ecfr.gov/current/title-23/chapter-I/subchapter-H/part-771</p>
Fixing America's Surface Transportation (FAST) Act (P.L. 114-94).	<p>https://www.govinfo.gov/content/pkg/PLAW-114publ94/pdf/PLAW-114publ94.pdf</p>
The Infrastructure Investment and Jobs Act (IIJA) (P.L. 117-58), also known as the Bipartisan Infrastructure Law (BIL)	<p>This site provides the full text of the IIJA/BIL signed on November 15, 2022.</p> <p>https://www.govinfo.gov/content/pkg/PLAW-117publ58/pdf/PLAW-117publ58.pdf</p>
EO 14008: Tackling the Climate Crisis at Home and Abroad	<p>This EO was signed on January 27, 2021</p> <p>https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad</p>
EO 13985: Advancing Racial Equity and Support for Underserved Communities Through the Federal Government	<p>This EO was signed on January 20, 2021</p> <p>https://www.federalregister.gov/documents/2021/01/25/2021-01753/advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government</p>
General Resources	
Eco-Logical	<p>The Eco-Logical approach organizes current methods for addressing natural resource identification, avoidance, minimization and mitigation into a systematic, step-wise process that starts at the beginning of the transportation planning process and concludes with establishing programmatic approaches to recurring natural resource issues that are implemented at the project level.</p> <p>https://www.environment.fhwa.dot.gov/env_initiatives/eco-logical/Report/eco_index.aspx</p>

FHWA's EDC

This FHWA website describes Every Day Counts (EDC)—a State-based model that identifies and rapidly deploys proven, yet underutilized innovations to shorten the project delivery process, enhance roadway safety, reduce traffic congestion, and integrate automation. Recent related innovations include programmatic agreements, use of in-lieu fee and mitigation banking, and integrating NEPA and permitting.

<https://www.fhwa.dot.gov/innovation/everydaycounts/>

FHWA's Guide to Federal-Aid Programs and Projects

This FHWA guide provides basic information about the Federal-Aid programs, projects, and other program characteristics.

<https://www.fhwa.dot.gov/federalaid/projects.pdf>

Program Comment for Common Post-1945 Concrete and Steel Bridges

In 2012, the Advisory Council on Historic Preservation (ACHP) issued a Program Comment to relieve all Federal agencies from the Section 106 of the National Historic Preservation Act (Section 106) requirement to consider the effects of undertakings on certain common bridges and culverts constructed of concrete or steel after 1945. This FHWA website provides information about how a program comments can be used to accelerate project delivery.

https://www.environment.fhwa.dot.gov/env_topics/historic_pres/program_comment.aspx

Watershed Approach Handbook

This handbook is intended to advance the use of a “watershed approach” in the selection, design, and siting of wetland and stream restoration and protection projects.

https://www.eli.org/sites/default/files/eli-pubs/watershed-approach-handbook-improving-outcomes-and-increasing-benefits-associated-wetland-and-stream_0.pdf



Step 1: Conduct Needs Assessment

Caltrans Advance Mitigation Program

This website provides a variety of resources related to the Caltrans Advance Mitigation Program, a new business practice that allows Caltrans to reduce delays by proactively obtaining environmental mitigation in advance of—rather than during—transportation projects.

<https://dot.ca.gov/programs/environmental-analysis/caltrans-biology/biological-science-and-innovation/advancemitigation>

FHWA Eco-Logical

The Eco-Logical approach organizes current methods for addressing natural resource identification, avoidance, minimization and compensatory mitigation into a systematic, step-wise process that starts at the beginning of the transportation planning process and concludes with establishing programmatic approaches to recurring natural resource issues that are implemented at the project level.

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

Integrated Planning-The First Steps toward an Ecosystem Approach

This chapter from “Eco-Logical: An Ecosystem Approach to Developing Infrastructure Projects” provides an overview of the first step to taking an ecosystem approach to developing infrastructure projects. This resource will be useful for agencies at the early stages of PMP development for natural resources.

https://www.environment.fhwa.dot.gov/env_initiatives/eco-logical/Report/eco_3.aspx

A Reference Manual for Caltrans Staff on Regional Advanced Mitigation Impact Assessment Methods

This manual reviews the motivations and methods for transportation project impact assessment under Caltrans' Regional Advance Mitigation Planning (RAMP) framework.

<https://escholarship.org/uc/item/76n8793q>

State Wildlife Action Plans

This website provides links to Wildlife Action Plans developed by U.S. states and territories in 2005 and revised in 2015.

<https://www.fishwildlife.org/afwa-informs/state-wildlife-action-plans>

Transportation Liaison Community of Practice

This FHWA website provides resources, information, and best practices on transportation liaisons. Transportation liaisons are personnel housed in State or Federal resource and regulatory agencies that are funded by State DOTs to facilitate the environmental and permitting review process for transportation projects. The goal of a transportation liaison is to improve the timeliness of agency response to State DOTs and provide input and comments on projects early in the planning process.

https://www.environment.fhwa.dot.gov/env_initiatives/liaisonCOP.aspx

Screening Tool for Equity Analysis of Projects

The Screening Tool for Equity Analysis of Projects is a web application that permits rapid screening of potential project locations anywhere in the United States to support Title VI, environment justice and other socioeconomic data analyses. The tool provides estimates of the socioeconomic characteristics of the resident population surrounding a project location.

<https://hepgis.fhwa.dot.gov/fhwagis/buffertool/>



Step 2: Identify and Engage Key Stakeholders

EPA Public Participation Guide

Designed with government agencies in mind, this EPA guide provides tools for public participation and public outreach in environmental decision-making.

<https://www.epa.gov/international-cooperation/public-participation-guide>

FHWA Planworks Assessments for Stakeholder Collaboration, Partner Collaboration & Expediting Project Delivery

PlanWorks assessments help identify strategies for successful project and plan development.

<https://fhwaapps.fhwa.dot.gov/planworks/Assessment>

Identifying and Engaging Stakeholders Podcast

This podcast, featuring Dr. Katie Steiger-Meister, Senior Public Affairs Specialist with the USFWS Midwest Office of External Affairs, discusses both the importance of and tools for stakeholder identification and engagement.

<https://my.usgs.gov/hd/training/identifying-and-engaging-stakeholders>

Introduction to Stakeholder Participation

This NOAA publication discusses important considerations and offers a guide to common techniques for stakeholder participation. This document can help an agency determine when stakeholder participation is needed, identify and analyze stakeholders, practice stakeholder participation techniques, and evaluate overall processes for stakeholder engagement.

<https://coast.noaa.gov/digitalcoast/training/stakeholder.html>

Stakeholder Analysis Worksheet

This worksheet can help an agency identify stakeholders and their respective interests and positions when starting the PMP process.

<https://coast.noaa.gov/digitalcoast/training/stakeholder-analysis-worksheet.html>

U.S. Public Participation Playbook

This playbook is a resource for government managers to effectively evaluate and build better services through public participation using best practices and performance metrics.

<https://participation.usa.gov/>

U.S. DOT Environmental Review Checklist

The checklist is intended to generally help project sponsors identify agencies of jurisdiction and cooperating agencies; develop the information needed for the purpose and need and alternatives for analysis; and improve interagency collaboration to help expedite the permitting process for the lead agency and agencies of jurisdiction.

<https://www.transportation.gov/administrations/office-policy/checklist-environmental-requirements-and-resources-1313-and-appendix>



Step 3: Develop Mitigation Strategy

AASHTO Practitioner's Handbook: Implementing Eco-Logical: Integrating Transportation Planning and Ecological Decision Making

This handbook is intended to introduce transportation practitioners to a method of integrating ecological interests into transportation planning to address natural resource conservation and restoration priorities at a regional scale, and to establish a more reliable and efficient delivery program for projects with partner agencies.

<https://environment.transportation.org/resources/practitioners-handbooks/implementing-eco-logical-integrating-transportation-planning-and-ecological-decision-making/>

In-Lieu Fee and Mitigation Banking FAQs

This FHWA guide answers frequently asked questions about compensatory mitigation, ILF programs, and mitigation banking.

https://www.fhwa.dot.gov/innovation/everydaycounts/edc-1/pdf/banking_faq.pdf

Maine Atlantic Salmon Programmatic Consultation

This website documents the collaborative process by the USFWS, MaineDOT, FHWA, USACE, and the Maine Turnpike Authority (MTA) to expedite the consultation process under the Endangered Species Act while meeting both wildlife and project goals. The agencies have committed to specific design standards that seek to reconnect waters for endangered salmon, with benefits to other fish and wildlife.

<https://www.maine.gov/mdot/maspc/>

NPS INSTEP Tool

The NPS Innovative and Sustainable Transportation Evaluation Process (INSTEP) includes goals, strategies, metrics, and guidance by resource for transportation and construction projects in National parks.

<https://www.nps.gov/articles/transinstep.htm>

RIBITS

The Regulatory In-lieu fee and Bank Information Tracking System (RIBITS) was developed by the USACE with support from the EPA, USFWS, FHWA, and NOAA Fisheries to provide better information on mitigation and conservation banking and in-lieu fee programs across the country. This system allows users to access information on the types and numbers of mitigation and conservation bank and in-lieu fee program sites, associated documents, mitigation credit availability, service areas, as well information on national and local policies and procedures that affect mitigation and conservation bank and in-lieu fee program development and operation.

<https://ribits.ops.usace.army.mil/>



Step 4: Draft Plan

Caltrans Advance Mitigation Program Final Formal Guidelines (October 2019)

These guidelines outline the Caltrans Advance Mitigation Program (Program) that was established by the Road Repair and Accountability Act of 2017 authorizing Caltrans to plan and implement advance mitigation solutions for its future transportation projects.

<https://dot.ca.gov/-/media/dot-media/programs/environmental-analysis/documents/env/amp-final-formal-guidelines-a11y.pdf>

FHWA EDC Initiatives to Accelerate Project Delivery

This webpage provides summaries of the Every Day Counts Program initiatives, descriptions and examples of programmatic approaches to mitigation, as well as AASHTO resources for programmatic agreements.

https://www.environment.fhwa.dot.gov/env_initiatives/programmatic_agreements.aspx

Implementing Quality Environmental Documentation

This FHWA webpage documents Everyday Counts-2 initiative Implementing Quality Environmental Documentation, which focuses on ensuring that the project purpose and need, consideration of alternatives, and impacts are appropriately documented and effectively included in the NEPA document.

<https://www.fhwa.dot.gov/innovation/everydaycounts/edc-2/iqed.cfm>



Step 5: Lead Public Review Process

Promising Practices for Meaningful Public Involvement in Transportation Decision-Making

This US DOT guide, contains promising practices that can help project proponents meet the requirements of meaningful public involvement and participation under Title VI of the Civil Rights Act of 1964, the National Environmental Protection Act of 1969 (NEPA), and other existing requirements .

<https://www.transportation.gov/sites/dot.gov/files/2022-10/Promising%20Practices%20for%20Meaningful%20Public%20Involvement%20in%20Transportation%20Decision-making.pdf>

EPA Public Participation Guide

This EPA guide, designed with government agencies in mind, provides tools for public participation and public outreach in environmental decision-making.

<https://www.epa.gov/international-cooperation/public-participation-guide>

NEPA Public Involvement

This FHWA video, from “Federal-aid Essentials for Local Public Agencies,” discusses the NEPA requirement that agencies must seek input from stakeholders and the public throughout a project’s lifespan.

<https://www.fhwa.dot.gov/federal-aidessentials/catmod.cfm?id=42>

Planning and Environment Linkages – Questions and Answers

This FHWA guide answers frequently asked questions to provide information and guidance for implementing Planning and Environment Linkages (PEL).

<https://www.fhwa.dot.gov/hep/guidance/pel/pelfaq16nov.cfm>

Public Involvement Techniques for Transportation Decision-making

This guide provides a variety of tools to secure meaningful input from the public on transportation plans, programs, and projects, and it can help agencies improve their overall public involvement techniques

https://www.fhwa.dot.gov/planning/public_involvement/publications/pi_techniques/

Virtual Public Involvement

This FHWA webinar discusses how transportation agencies can increase meaningful public involvement in planning and project development by integrating virtual tools into their overall public involvement approach.

https://www.fhwa.dot.gov/planning/public_involvement/vpi/



Step 6: Implement Plan and Monitoring

Adaptive Management: The U.S. Department of the Interior Applications Guide

This guide uses natural resource examples to demonstrate how adaptive management can be implemented in the field. The first half of the guide covers the foundations and challenges of adaptive management, including summaries of the principles and relevant issues. This is followed by descriptions of potential and actual applications in four thematic areas: climate change, water resources, energy resources, and the interface of human and natural systems

<https://mylearning.nps.gov/library-resources/adaptive-management-applications-guide/>

Planning and Environment Linkages

This FHWA website provides an overview of Planning and Environment Linkages (PEL)—a collaborative and integrated approach to transportation decision-making that 1) considers environmental, community, and economic goals early in the transportation planning process, and 2) uses the information, analysis, and products developed during planning to inform the environmental review process

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

Sample Plans

Atlantic Salmon PBA

This biological assessment documents the activities, design standards and mitigation options that were developed through the Maine Atlantic Salmon Programmatic Consultation (see Step 3).

<https://www.maine.gov/mdot/maspc/docs/AtlanticSalmonPBA.pdf>

FHWA NLAA Program Criteria

This document “FHWA Transportation Projects, Design Criteria, and Procedures for Authorization under a Programmatic Determination of Not Likely to Adversely Affect Select ESA-Listed Species in the Greater Atlantic Region” documents the results of FHWA and NOAA’s National Marine Fisheries Service’s (NMFS) Greater Atlantic Regional Fisheries Office joint effort to develop project design criteria (PDC) and procedures to reduce adverse impacts both to select Endangered Species Act (ESA)-listed species and designated critical habitat while also expediting the consultation process.

https://www.greateratlantic.fisheries.noaa.gov/protected/section7/FHWA_documents/fhwa_program_criteria_april_2018.pdf

Indiana Bat and Northern Long-eared Bat Programmatic Agreement

This agreement, jointly developed by USFWS and FHWA, describes the agencies' standardized approach to assessing impacts to Indiana bats and northern long-eared bats from highway construction and expansion projects; then avoiding, minimizing and mitigating those impacts.

<https://www.fws.gov/program/endangered-species/bat-consultation-conservation-strategy>

PBA for WSDOT Eastern Regions

This programmatic biological assessment (PBA) is designed to address many of the projects that will be completed in Washington State Department of Transportation's (WSDOT) North Central, South Central, and Eastern regions (regions) in an approximate 5-year period. This PBA covers those projects that will have no effect or that are not likely to adversely affect listed species under the U.S. Fish and Wildlife Service (USFWS) jurisdiction.

<https://environment.transportation.org/pal-agreement/programmatic-biological-assessment-for-the-washington-state-department-of-transportation-eastern-washington-regions-working-document-usfws-jurisdiction/>

Maryland Watershed Resources Registry

The tool was created out of a need to allow agencies to cooperatively evaluate projects and their cumulative impacts, and to employ consistent spatial datasets. In 2011, Maryland's eight analyses were made available in an easy-to-use interactive map and since then, the map is continually updated with new data.

<https://watershedresourcesregistry.org/states/maryland.html>

Important Contacts

FHWA Office of Project Development and Environmental Review

The mission of this FHWA office, located in the Office of Planning, Environment, and Realty, is to advance environmental stewardship and streamlining for FHWA-funded projects through the application of NEPA principles and the NEPA process at the project level.

https://www.environment.fhwa.dot.gov/about/contacts_hepe.aspx

FHWA Planning and Environment Linkages

If you are interested in learning more about the PEL program and would like to discuss opportunities for your agency to accelerate project delivery using this collaborative and integrated approach to decision making, visit the link below.

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

FHWA Resource Center Environment, Air Quality, and Realty Team

This team is comprised of subject matter experts with advanced knowledge and experience who are committed to enhancing FHWA's environmental, air quality, and realty programs by providing an expert level of technical assistance and quality workshops, training and seminars to our customers and partners.

<https://www.fhwa.dot.gov/resourcecenter/teams/environment/>

National Transportation Liaisons

The National Transportation Liaisons serve as FHWA's connection to Federal resource and regulatory agencies regarding liaison activities at a national level.

https://www.environment.fhwa.dot.gov/env_initiatives/liaisonCOP/liaisoncontacts.aspx

Appendix C

23 CFR 450.214 Development of programmatic mitigation plans (States)

(a) State may utilize the optional framework in this section to develop programmatic mitigation plans as part of the statewide transportation planning process to address the potential environmental impacts of future transportation projects. The State in consultation with FHWA and/or FTA and with the agency or agencies with jurisdiction and special expertise over the resources being addressed in the plan, will determine:

(1) Scope.

(i) A State may develop a programmatic mitigation plan on a local, regional, ecosystem, watershed, state wide or similar scale.

(ii) The plan may encompass multiple environmental resources within a defined geographic area(s) or may focus on a specific type(s) of resource(s) such as aquatic resources, parkland, or wildlife habitat.

(iii) The plan may address or consider impacts from all projects in a defined geographic area(s) or may focus on a specific type(s) of project(s).

(2) Contents. The programmatic mitigation plan may include:

(i) An assessment of the existing condition of natural and human environmental resources within the area covered by the plan, including an assessment of historic and recent trends and/or any potential threats to those resources.

(ii) An identification of economic, social, and natural and human environmental resources within the geographic area that may be impacted and considered for mitigation. Examples of these resources include wetlands, streams, rivers, stormwater, parklands, cultural resources, historic resources, farmlands, archeological resources, threatened or endangered species, and critical habitat. This may include the identification of areas of high conservation concern or value, and thus worthy of avoidance.

(iii) An inventory of existing or planned environmental resource banks for the impacted resource categories such as wetland, stream, stormwater, habitat, species, and an inventory of federally, State, or locally approved in-lieu-of-fee programs.

(iv) An assessment of potential opportunities to improve the overall quality of the identified environmental resources through strategic mitigation for impacts of transportation projects, which may include the prioritization of parcels or areas for acquisition and/or potential resource banking sites.

(v) An adoption or development of standard measures or operating procedures for mitigating certain types of impacts; establishment of parameters for determining or calculating appropriate mitigation for certain types of impacts, such as mitigation ratios, or criteria for determining appropriate mitigation sites.

(vi) Adaptive management procedures, such as protocols or procedures that involve monitoring actual impacts against predicted impacts over time and adjusting mitigation measures in response to information gathered through the monitoring.

(vii) Acknowledgment of specific statutory or regulatory requirements that must be satisfied when determining appropriate mitigation for certain types of resources.

(b) A State may adopt a programmatic mitigation plan developed pursuant to paragraph (a), or developed pursuant to an alternative process as provided for in paragraph (f) of this section through the following process:

- (1) Consult with each agency with jurisdiction over the environmental resources considered in the programmatic mitigation plan;
- (2) Make available a draft of the programmatic mitigation plan for review and comment by appropriate environmental resource agencies and the public;
- (3) Consider comments received from such agencies and the public on the draft plan; and
- (4) Address such comments in the final programmatic mitigation plan.

(c) A State may integrate a programmatic mitigation plan with other plans, including, watershed plans, ecosystem plans, species recovery plans, growth management plans, State Wildlife Action Plans, and land use plans.

(d) If a programmatic mitigation plan has been adopted pursuant to paragraph (b), any Federal agency responsible for environmental reviews, permits, or approvals for a transportation project shall give substantial weight to the recommendations in the programmatic mitigation plan when carrying out its responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) (NEPA) or other Federal environmental law.

(e) Nothing in this section limits the use of programmatic approaches for reviews under NEPA.

(f) Nothing in this section prohibits the development, as part of or separate from the transportation planning process, of a programmatic mitigation plan independent of the framework described in paragraph (a) of this section. Further, nothing in this section prohibits the adoption of a programmatic mitigation plan in the statewide and nonmetropolitan transportation planning process that was developed under another authority, independent of the framework described in paragraph (a).

23 CFR 450.320 Development of programmatic mitigation plan (MPOs)

(a) An MPO may utilize the optional framework in this section to develop programmatic mitigation plans as part of the metropolitan transportation planning process to address the potential environmental impacts of future transportation projects. The MPO, in consultation with the FHWA and/or the FTA and with the agency or agencies with jurisdiction and special expertise over the resources being addressed in the plan, will determine:

(i) Scope.

(i) An MPO may develop a programmatic mitigation plan on a local, regional, ecosystem, watershed, statewide or similar scale.

(ii) The plan may encompass multiple environmental resources within a defined geographic area(s) or

may focus on a specific type(s) of resource(s) such as aquatic resources, parkland, or wildlife habitat.

(iii) The plan may address or consider impacts from all projects in a defined geographic area(s) or may focus on a specific type(s) of project(s).

(2) Contents. The programmatic mitigation plan may include:

(i) An assessment of the existing condition of natural and human environmental resources within the area covered by the plan, including an assessment of historic and recent trends and/or any potential threats to those resources.

(ii) An identification of economic, social, and natural and human environmental resources within the geographic area that may be impacted and considered for mitigation. Examples of these resources include wetlands, streams, rivers, stormwater, parklands, cultural resources, historic resources, farmlands, archeological resources, threatened or endangered species, and critical habitat. This may include the identification of areas of high conservation concern or value and thus worthy of avoidance.

(iii) An inventory of existing or planned environmental resource banks for the impacted resource categories such as wetland, stream, stormwater, habitat, species, and an inventory of federally, State, or locally approved in-lieu-of-fee programs.

(iv) An assessment of potential opportunities to improve the overall quality of the identified environmental resources through strategic mitigation for impacts of transportation projects which may include the prioritization of parcels or areas for acquisition and/or potential resource banking sites.

(v) An adoption or development of standard measures or operating procedures for mitigating certain types of impacts; establishment of parameters for determining or calculating appropriate mitigation. For certain types of impacts, such as mitigation ratios, or criteria for determining appropriate mitigation sites.

(vi) Adaptive management procedures, such as protocols or procedures that involve monitoring actual impacts against predicted impacts over time and adjusting mitigation measures in response to information gathered through the monitoring.

(vii) Acknowledgement of specific statutory or regulatory requirements that must be satisfied when determining appropriate mitigation for certain types of resources.

(b) A MPO may adopt a programmatic mitigation plan developed pursuant to paragraph (a), or developed pursuant to an alternative process as provided for in paragraph (f) of this section through the following process:

(1) Consult with each agency with jurisdiction over the environmental resources considered in the programmatic mitigation plan;

(2) Make available a draft of the programmatic mitigation plan for review and comment by appropriate environmental resource agencies and the public;

(3) Consider comments received from such agencies and the public on the draft plan; and

(4) Address such comments in the final programmatic mitigation plan.

(c) A programmatic mitigation plan may be integrated with other plans, including watershed plans, ecosystem plans, species recovery plans, growth management plans, State Wildlife Action Plans, and land use plans.

(d) If a programmatic mitigation plan has been adopted pursuant to paragraph (b), any Federal agency responsible for environmental reviews, permits, or approvals for a transportation project shall give substantial weight to the recommendations in the programmatic mitigation plan when carrying out its responsibilities under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.) (NEPA) or other Federal environmental law.

(e) Nothing in this section limits the use of programmatic approaches for reviews under NEPA.

(f) Nothing in this section prohibits the development, as part of or separate from the transportation planning process, of a programmatic mitigation plan independent of the framework described in paragraph (a) of this section. Further, nothing in this section prohibits the adoption of a programmatic mitigation plan in the metropolitan planning process that was developed under another authority, independent of the framework described in paragraph (a).

THIS PAGE IS INTENTIONALLY LEFT BLANK



U.S. Department of Transportation
Federal Highway Administration