

# Introduction to NEPA and Mitigation for TxDOT PDP

NEPA and Environmental Mitigation in the  
TxDOT Project Development Process

by

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## **Workshop Materials and Instructor Guide**



## Lesson Plan Summary

<b>Overview and Purpose</b>	<p>The purpose of this workshop is to provide transportation planners, engineers, environmental practitioners, and local officials with an introduction to National Environmental policy Act (NEPA), mitigation, and the project development process (PDP) at TxDOT. The workshop can be presented in a 3- or 6-hour format.</p>
<b>Time Allocation</b>	<p><b><u>Option 1: 3-hour workshop (morning or afternoon)</u></b>  The 3-hour workshop includes two lessons with 1) an introduction to NEPA and the PDP and 2) an introduction to mitigation and TxDOT PDP.</p> <p><b><u>Option 2: 6-hour workshop (approximately 9:00 a.m.–3:00 p.m.)</u></b>  Option 2 is a 6-hour workshop and more in-depth discussions, and includes an additional lesson on the Integrated Ecological Framework (IEF) for environmental mitigation. The extended format allows for additional time for activities, and more in-depth discussion on environmental mitigation for TxDOT projects.</p>
<b>Workshop Learning Objectives</b> (Specify skills/information that will be learned.)	<p><u>Workshop Objectives</u>  At the end of the workshop, participants should be able to:</p> <ul style="list-style-type: none"> <li>• Describe NEPA concepts and documents</li> <li>• Describe mitigation in the project development process</li> <li>• Explain the Integrated Ecological Framework</li> </ul> <p><u>Lesson 1—Learning Objectives</u>  At the end of the NEPA and PDP lesson, the participant should be able to:</p> <ul style="list-style-type: none"> <li>• Describe NEPA and document classification</li> <li>• Describe how documents and mitigation fit into the TxDOT project development process</li> <li>• Identify resources for environmental documents in the TxDOT PDP</li> <li>• Explain risk assessment and scoping in the PDP</li> <li>• Identify compliance issues</li> </ul> <p><u>Lesson 2—Learning Objectives</u>  At the end of the Mitigation and PDP lesson, the participant will be able to:</p> <ul style="list-style-type: none"> <li>• Describe common types of mitigation</li> <li>• Identify mitigation milestones in the PDP timeline</li> <li>• Describe costs associated with mitigation</li> <li>• Describe examples of mitigation best practices</li> <li>• Identify compliance issues in the mitigation and PDP</li> </ul> <p><u>Lesson 3—Learning Objectives</u>  At the end of the Integrated Ecological Framework lesson, the participant will be able to:</p> <ul style="list-style-type: none"> <li>• Explain the Integrated Ecological Framework (IEF)</li> <li>• Describe the Regional Ecological Framework (REF)</li> <li>• Describe the project development process</li> <li>• Identify IEF resources</li> <li>• List steps in the IEF process</li> </ul>

<b>Instructional Method</b>	The instructor will use a combination of lecture and participant activities to achieve learning objectives. Each lesson will include a participant or learning activity that reinforces the learning objectives. These activities may include group or individual exercises.
<b>Verification</b>	Verification will be accomplished by reviewing learning objectives at the end of each lesson, conducting learning activities, and discussing with participants.
<b>Activities</b>	A variety of participant activities will be used to support learning outcomes.
<b>References</b>	The primary content source material is TxDOT RMC Project 0-6762.
<b>Materials Needed</b>	At least two flip charts for class activities. Projector.

### ***Lesson Time Allocation***

<b>Workshop Time Allocation Summary</b>	<ul style="list-style-type: none"> <li>• Introduction = 30 minutes</li> <li>• Lesson 1 = 90 minutes</li> <li>• Lesson 2 = 90 minutes</li> <li>• Lesson 3 = 90 minutes</li> </ul>	
<b>Introduction and Overview</b>	30 minutes	8:30 a.m.– 9:00 a.m.
<b>Lesson 1 NEPA and the PDP</b>	<ul style="list-style-type: none"> <li>• 60 minutes instruction and participation activities</li> <li>• 15 minutes of break time</li> <li>• 15 minutes of review and assessment</li> <li>• Total 90 minutes from approximately 8:30 a.m.– 10:30 a.m.</li> </ul>	9:00 a.m.– 10:30 a.m.
<b>Lesson 2 Mitigation Process and Practice</b>	<ul style="list-style-type: none"> <li>• 10 minutes of lesson background and introduction</li> <li>• 60 minutes instruction and participation activities</li> <li>• 20 minutes of review and assessment</li> <li>• Total 90 minutes from approximately 10:30 a.m.– noon</li> </ul>	10:30 a.m.– noon
<b>Lunch Break</b>	60 minutes	Noon– 1:00 p.m.
<b>Lesson 3 Introduction to IEF</b>	<ul style="list-style-type: none"> <li>• 10 minutes of lesson background and introduction</li> <li>• 40 minutes instruction and participation activities</li> <li>• 15 minutes of break time</li> <li>• 25 minutes of lesson and workshop review and assessment</li> <li>• Total 90 minutes from approximately 1:00 p.m.– 2:30 p.m.</li> </ul>	1:00 p.m.– 2:30 p.m.

***Lesson Plan for NEPA and the TxDOT PDP***

<b>Lesson 1</b>	<b>NEPA for TxDOT PDP</b>	<b>Time</b>
<b>Introduction and Overview</b>	<b>Learning Outcomes</b> At the end of this introduction, the participant will be able to: <ul style="list-style-type: none"> <li>• Describe the workshop learning objectives.</li> <li>• Describe workshop expectations.</li> </ul>	8:30 a.m.–9:00 a.m.
	<b>Instructional Method</b> <ul style="list-style-type: none"> <li>• Instructor welcomes participants, introduces him/herself, and leads participants through introductions. Participants introduce themselves, and provide a brief description of their role and experience with NEPA and mitigation in the project development processes and their expectation for the workshop (30 min.).</li> <li>• Instructor provides an overview of the workshop objectives, outcomes, agenda, and reference materials (10 min.).</li> <li>• Instructor discusses ground rules, sign-in sheet, feedback forms, and other housekeeping items as needed (5 min.).</li> <li>• Instructor provides an overview and information on the National Highway Institute (NHI) online course NHI-142052 NEPA Tutorial. Introduction to NEPA and the Transportation Decision-Making Process.</li> </ul>	30 min.
<b>Lesson 1 NEPA and the TxDOT PDP</b>	<b>Learning Outcomes</b> At the end of this lesson, the participant will be able to: <ul style="list-style-type: none"> <li>• Describe NEPA and document classification.</li> <li>• Describe how documents and mitigation fit into TxDOT project development process (PDP).</li> <li>• Identify resources and forms for completing documents in the TxDOT PDP.</li> <li>• Explain risk assessment and scoping in the PDP.</li> <li>• Identify compliance issues.</li> </ul> <b>Time Allocation</b> Lesson 1 includes approximately: <ul style="list-style-type: none"> <li>• 60 minutes instruction and participation activities.</li> <li>• 15 minutes of break time.</li> <li>• 15 minutes of review and assessment.</li> <li>• Total 90 minutes from approximately 8:30 a.m.–10:30 a.m.</li> </ul>	9:00 a.m.–10:00 a.m.
	<b>Instructional Method</b> Instructor provides an overview of NEPA, document classification for Categorical Exclusions (CE) and Environmental Assessments (EA), common terms, and TxDOT resources. This includes an overview of CE and EA document classification and NEPA class of action, including introduction to TxDOT forms, funding and products (30 min.).  Instructor provides an overview of TxDOT project development process, including NEPA assignment, risk assessment, scoping, and project management process. The	30 min.

	<p>participants should be able to answer: “Who does what and when? Where do projects come from?”</p> <p><b>Instructional Method (continued)</b></p> <ul style="list-style-type: none"> <li>• Instructor discusses best practices in the TxDOT project development process.</li> <li>• Ask participants to share experience with document preparation and lessons learned, and ECOS.</li> <li>• Ask participants to identify and describe current “deficiency areas” in CE and EA process.</li> </ul> <p><b>Activity 1:</b> Questions and Answers (10 min.) NEPA Jeopardy. Instructor uses Jeopardy-style answers to solicit questions about NEPA and documents to assess participant knowledge.</p>	
	Break 10:00 a.m.–10:15 a.m.	10:00 a.m.–10:15 a.m.
		15 min.
	<p>Instructor continues with NEPA lesson after break. Instructor then uses a variety of activities to assess learning.</p> <p><b>Activity 2:</b> Instructor leads participants in assigning class of action for sample projects.</p> <p><b>Activity 3:</b> Participants are presented with an example project in a suburban setting, and must decide on the class of action and NEPA document. Participants share their results, and the form is reviewed with the entire class.</p> <p><b>Activity 4:</b> Participants are provided a more complicated example section of Interstate access road through an urban setting. The class discusses challenges and issues with the example project. The purpose of the Interstate section is to share experiences and discuss strategies for scoping and risk assessment. Instructor should review common deficiencies that have previously occurred in the project development process. These deficiencies may include discussion of document preparation, ECOS, and general compliance in the NEPA assignment processes. Instructor should seek input and comments on current deficiencies, and seek consensus from participants on how to resolve the issues. Instructor should seek presentation of results and discussion of compliance issues from participants.</p>	30 min.
<b>Lesson 1 Review</b>	<p><b>Activity 5:</b> Instructor conducts a brief review of the Lesson 1—NEPA and assesses learning outcomes through question-and-answer session (15 min.). Included in the evaluation is an opportunity to list deficiency and compliance issues. The purpose of the activity is to collect practitioner feedback on deficiencies and issues affecting the process.</p>	<p>10:15 a.m.–10:30 a.m.</p> <p>15 min.</p>

## ***Lesson Plan for Mitigation Process and Practice***

Lesson 2	Mitigation 101	
	The 3-hour workshop is intended to follow-on after the NEPA 101 morning session. It is a stand-alone workshop. Attending NEPA 101 is recommended, but is not a prerequisite.	<b>Time</b>
<b>Introduction and Overview</b> <i>OPTIONAL</i>	<b>Learning Outcomes</b> <ul style="list-style-type: none"> <li>Describe the workshop learning objectives.</li> <li>Describe workshop expectations.</li> </ul>	10:30 a.m.–noon
	<b>Instructional Method (optional for new participants)</b> This introduction is needed <b>ONLY</b> if there are new workshop participants. Instructor welcomes <i>NEW</i> participants, introduces him/herself, and leads participants through introductions. <i>NEW</i> participants introduce themselves and provide a brief description of their role and experience in the project development processes and their expectation for the workshop (20 min.). Instructor leads discussion on mitigation, and provides an overview of the workshop objectives, outcomes, agenda, and reference materials ground rules, sign-in sheet, feedback forms, and other housekeeping items as needed (10 min.)	10 min.
<b>Lesson 2 Mitigation</b> (Mitigation Concepts for PDP)	<b>Learning Outcomes</b> At the end of this lesson, the participant will be able to: <ul style="list-style-type: none"> <li>Describe common types of mitigation.</li> <li>Identify mitigation milestones in the PDP timeline.</li> <li>Describe costs associated with mitigation.</li> <li>Describe examples of mitigation best practices.</li> <li>Identify ENV compliance issues in the PDP.</li> </ul> <b>Time Allocation</b> Lesson 2 includes approximately: <ul style="list-style-type: none"> <li>10 minutes of lesson background and introduction.</li> <li>60 minutes instruction and participation activities.</li> <li>20 minutes of review and assessment.</li> <li>Total 90 minutes from approximately 10:30 a.m.–noon.</li> </ul>	10:40 a.m.–11:40 a.m.
	<b>Instructional Method</b> Instructor provides a quick review of mitigation concepts and issues, and leads discussion on the following: <ul style="list-style-type: none"> <li>Where mitigation activities occur in the project development process.</li> <li>Best practices in mitigation.</li> <li>Most common resource agency requirements and coordination.</li> <li>Common mitigation requirements and common “project killers.”</li> </ul> <b>Activity 1:</b> Questions and Answers (10 min.) Mitigation Jeopardy. Instructor should assess knowledge through Q&A.	60 min.

<b>Mitigation Practices Research Findings</b>	<p><b>Instructional Method (continued)</b></p> <p>Instructor provides a review of recent mitigation costs, and how mitigation is funded.</p> <p>Instructor provides example practices from TxDOT and other states/MPOs, and regional mitigation efforts.</p> <p>Roles and responsibilities: Who does what and when? Where do projects come from? Why? What are the benefits?</p> <p>Instructor leads a discussion using a list of issues to help participants identify and rank compliance problems.</p> <p>The instructor leads a discussion on the role of EPICs and mitigation.</p> <p><b>Activity 2:</b> Using actual project examples ask participant what mitigation may be necessary. A bridge replacement and frontage road project will be reviewed.</p> <p><b>Activity 3:</b> Participants are presented with an example bridge replacement project in a rural suburban setting. A schematic may be provided to assist in determining what mitigation may be required. Participants also may be provided with an example section of Interstate/Frontage road through an urban setting. The class discusses challenges and issues with the example project. The purpose of the Interstate section is to share experiences, and discuss strategies to avoid-minimize-compensate.</p>	
<b>Lesson 2 Review</b>	<p><b>Activity 4:</b> Instructor conducts a brief review of the lesson and assesses learning outcomes through Q&amp;A.</p>	11:40 a.m.– Noon
<b>Break</b>	Lunch break	Noon– 1:00 p.m.  60 min.



***Lesson Plan for Integrated Ecological Framework (IEF)***

<b>Lesson 3</b>	<b>Introduction to IEF</b>	<b>Time</b>
<b>Introduction to IEF</b>	Background and Introduction to IEF. Describe literature, citations and context of IEF with Planning and Environmental Linkages (PEL), and FHWA's <i>Eco-Logical</i> Program	10 min.
<b>Lesson 3</b>	<p><b>Learning Objectives:</b> At the end of the Integrated Ecological Framework lesson, the participant will be able to:</p> <ul style="list-style-type: none"> <li>• Explain the Integrated Ecological Framework.</li> <li>• Describe the Regional Ecological Framework.</li> <li>• Describe the project development process.</li> <li>• Identify IEF resources.</li> <li>• List steps in the IEF process.</li> </ul> <p><b>Time Allocation</b> Lesson 3 includes approximately:</p> <ul style="list-style-type: none"> <li>• 10 minutes of lesson background and introduction.</li> <li>• 40 minutes instruction and participation activities.</li> <li>• 15 minutes of break time.</li> <li>• 25 minutes of lesson and workshop review and assessment.</li> </ul>	1:10 p.m.– 2:10 p.m.
	<p><b>Instructional Method</b> Instructor provides a review of how the IEF was developed, and leads discussion on the following:</p> <ul style="list-style-type: none"> <li>• Include discussion on how IEF fits with NEPA assignment, and how NEPA scoping contributes to IEF.</li> <li>• Describe each step in the IEF process, and ask participants to provide examples for each step.</li> <li>• Ask participants to provide examples of how to scale the IEF process to project, corridors, etc.</li> <li>• Review lessons learned from IEF when it was piloted at other state DOTs.</li> <li>• Describe MAP 21 rules for programmatic mitigation, and ask participants to provide examples of where programmatic mitigation can be applied in their regions.</li> </ul> <p><b>Activity:</b> Questions and Answers (10 min.) Instructor should assess knowledge through Q&amp;A.</p>	60 min.

<b>Lesson 3 Review</b> <b>Workshop Review and Wrap-Up</b>	<b>Lesson Review</b> Instructor conducts a brief review of Lesson 3—The IEF Process to assess learning outcomes through Q&A. <b>Workshop Review</b> Instructor should review and assess learning object of the workshop. <ul style="list-style-type: none"> <li>• Describe NEPA concepts and documents.</li> <li>• Describe mitigation in the project development process.</li> <li>• Explain the Integrated Ecological Framework.</li> </ul>	2:10 p.m.– 2:35 p.m.
	Participants are given an opportunity to complete evaluations (15 min.). Included in the evaluation is an opportunity to list deficiency and compliance issues. The purpose of the activity is to collect practitioner feedback on deficiencies and issues affecting the process.	25 min.