

# Preliminary Engineering Guideline

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# Table of Contents

<i>Purpose</i> .....	1
<i>Introduction</i> .....	1
<i>Environmental Regulations</i> .....	1
National Environmental Policy Act of 1969.....	1
Executive Order 215 .....	2
<i>Initiate Preliminary Engineering</i> .....	2
<i>Mapping</i> .....	2
<i>Pavement</i> .....	5
<i>Alternatives Analysis</i> .....	7
<i>Utilities</i> .....	8
<i>Engineering and Plans</i> .....	10
<i>Right of Way</i> .....	15
<i>Technical Environmental Studies</i> .....	16
Section 106 .....	16
New Jersey Register of Historic Places.....	22
Section 4(f) Process .....	23
Green Acres .....	28
Air Quality .....	29
Ecology .....	31
Socio-Economic.....	32
Noise .....	33
Hazardous Waste .....	34
<i>Environmental Documents</i> .....	35
Certified Categorical Exclusion Document .....	35
Categorical Exclusion Document .....	36
Environmental Assessment.....	37

<b>Environmental Impact Statement .....</b>	<b>41</b>
<b>NJ Executive Order 215.....</b>	<b>47</b>
<b><i>Construction Support.....</i></b>	<b>49</b>
<b><i>Design Exceptions.....</i></b>	<b>51</b>
<b><i>Preliminary Engineering Report .....</i></b>	<b>52</b>
<b><i>Major Projects.....</i></b>	<b>54</b>
<b><i>Preliminary Engineering Approvals .....</i></b>	<b>55</b>
<b><i>FD Designer.....</i></b>	<b>55</b>
<b><i>Preliminary Engineering Closeout .....</i></b>	<b>58</b>

## Purpose

The purpose of this document is to provide guidance on performing engineering and environmental activities in the Preliminary Engineering (PE) Phase of the New Jersey Department of Transportation (NJDOT) Project Delivery Process. This guide is primarily intended for Division of Project Management Project Managers, environmental coordinators and NJDOT Subject Matter Experts (SMEs) and other stakeholders involved in the project delivery process. The following documents can be referenced for additional information:

- Preliminary Engineering Phase Network Diagram
- Preliminary Engineering Phase Activity Descriptions
- Preliminary Engineering Phase Work Breakdown Structure (WBS) and WBS Dictionary

This guide is divided into sections reflecting the major areas of the engineering and environmental process for the PE phase.

All PE design decisions, including environmental commitments, need to be recorded in the Design Communications Report (DCR).

## Introduction

The primary objectives of the PE Phase are to obtain the approved environmental document and an approved Design Exception Report, if required. The required environmental document is determined based on factors such as funding sources and the project type. Federally funded projects are governed by the National Environmental Policy Act of 1969 (NEPA). State funded projects are governed by New Jersey Executive Order 215. A Design Exception Report may be required if a project design proposes one or more controlling substandard design elements. A design exception may be approved when it can be documented that a lesser design value is the best practical alternative.

An approved environmental document or design exception report is obtained utilizing varying degrees of engineering design. Engineering design also establishes the right of way impacts in order to secure the appropriate level of funding for Final Design.

The Division of Project Management (DPM) conducts all PE Phase projects, except in cases where another entity other than the Department such as an MPO, local municipalities or counties serve as the lead agency. In that case, a DPM or Local Aid staff member is assigned to work with the lead agency and provide guidance during this phase of work.

## Environmental Regulations

### National Environmental Policy Act of 1969

*NEPA* requires an agency using Federal funds to conduct a review of the social, economic and environmental impacts that a proposed action would have on the environment. *NEPA* makes clear the need to analyze these impacts and promotes the use of the social sciences to assess the effects on the human environment. *NEPA* was reinforced by the *Federal Aid Highway Act of 1970 (23 USC 109(h))*, which defines specific adverse economic, social and environmental impacts to communities that must be considered when developing a project on any Federal-aid system. The act calls for final decisions to be made "in the best overall public interest" balancing the need for fast, safe, and efficient transportation, public services, and the costs of "eliminating or minimizing such effects as:

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 1 of 58

Released: 04/2019

air, noise and water pollution; destruction or disruption of man-made and natural resources, aesthetic values, community cohesion, and the availability of public facilities and services; adverse employment effects, and tax and property value losses; injurious displacement of people, businesses, and farms; and disruption of desirable community and regional growth.”

### **Executive Order 215**

Signed on September 11, 1989, New Jersey Executive Order 215 requires State departments, agencies and authorities to prepare and submit to the New Jersey Department of Environmental Protection (DEP) an Environmental Assessment (EA) or Environmental Impact Statement (EIS) in support of major construction projects in order to reduce or eliminate potential adverse environmental impacts of projects initiated or funded by the State.

## **Initiate Preliminary Engineering**

### **Overview**

A kickoff meeting is intended to bring all the major players together (Project Manager, Division of Community and Constituent Relations (CCR), and Designer) to discuss the project and highlight potential issues and decisions documented in the Design Communications Report (DCR).

If necessary, a similar meeting can be scheduled for local officials. This is recommended if a long time has elapsed between the conclusion of Concept Development and the beginning of Preliminary Engineering. The Project Manager will determine if this is necessary and will instruct CCR to schedule.

### **Major Tasks**

#### **Initiate Preliminary Engineering (3005)**

The Project Manager schedules and holds a kickoff meeting with the Designer to discuss the project, including the design decisions documented in the Design Communications Report and commence PE. The Designer prepares meeting minutes documenting the kickoff meeting and, after they are reviewed by the Project Manager, distributes to the meeting attendees. The Project Manager updates the Project Reporting System (PRS) indicating the start of PE.

The Project Manager notifies CCR to schedule a kickoff meeting with the local officials. CCR contacts the applicable municipal officials to schedule the kickoff meeting. The purpose of the meeting is to introduce the PE Designer and CCR representative and discuss the proposed project. The Designer prepares Meeting Minutes documenting the local officials kickoff meeting, and after they are reviewed by the Project Manager, distributes to the meeting attendees.

## **Mapping**

### **Overview**

Design level mapping is obtained during PE to support engineering and design activities during PE and FD. Components of mapping include a control survey report, topographic survey, base maps and horizontal and vertical geometry. Note that due to limited seasonal availability to conduct aerial

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survey, Limited Scope projects may acquire design level mapping under a separate agreement. If so, the mapping is then provided to the Designer to be used during the PE Phase. Consult with Survey Services to determine if mapping has already been acquired.

A control survey report consists of the control survey and data required to establish primary and photogrammetry control. The control survey and data are utilized in the completion of the topographic survey.

A topographic survey provides documentation, within specific project limits and offsets, of the site's existing field conditions including but not limited to existing and proposed baselines, centerlines, existing and proposed right of way lines, structure clearances, drainage systems, utility lines, Intelligent Transportation Systems (ITS) facilities, soil borings, control points and elevations. The topographic survey may supplement any necessary photogrammetric survey or GIS work.

Utilizing the topographic survey, base maps are developed which depict in detail the required existing topography. The base maps also include the mainline and secondary road baselines, baseline information and existing right of way deed search results. This data is to be provided in accordance with Article 51, Standards and Procedures, and current NJDOT CADD Standards.

The horizontal and vertical geometry are tied into the existing base map to produce an accurate depiction of the proposed impacts. The Preliminary Preferred Alternative (PPA) is utilized as a guide to layout the proposed horizontal and vertical geometric alignment. The calculated geometry, roadway and bridge sections, driveways, and slopes are necessary to determine right of way, utility, and environmental impacts and the need for Design Exceptions.

## **Major Tasks**

### **Prepare Control Survey Report (3015)**

The Designer conducts a control survey and prepares a Control Survey Report. This report consists of the control survey and data required to establish primary and photogrammetry control. The Designer completes the Control Survey Report and submits it to the Geodetic Survey Unit and Project Manager for review and comment.

The Project Manager reviews the Control Survey Report for completeness. The Geodetic Survey Unit reviews the control survey report for technical accuracy. The Project Manager compiles the DPM and Geodetic Survey Unit comments and provides written comments to the Designer.

The Designer addresses comments and resubmits the report to the Geodetic Survey Unit and Project Manager for approval. After the Geodetic Survey Unit approves the final report, the final primary and photogrammetry Control Survey Report is distributed to the Project Manager, Regional Survey Office and the Geodetic Survey Unit. The Designer includes a summary of the Control Survey Report in the Draft PE Report.

### **Conduct Topographic Survey (3020)**

Once the control survey points are established, the topographic survey may begin. This activity may be performed by the Designer or by the Regional Survey Office if the project is being designed by in-house staff. If the topographic survey is to be performed by the Regional Survey Office, the Project

Manager prepares a survey request to notify the Regional Survey Office to conduct a topographic survey.

The Designer or the Regional Survey Office:

- Performs a site investigation and document research. Reconnaissance should be made prior to starting the survey work.
- Requests control criteria from the Geodetic Survey Unit or utilizes the project approved survey primary control report.
- Evaluates the geodetic survey information and incorporates into the field survey work.
- Researches and recovers the geodetic survey monumentation as needed.
- Establishes existing and proposed base line(s) and ROW lines (field determined), and recovers existing baseline control.
- Performs bench run, based on recovered survey control.
- Conducts topographic survey, utility location survey and ROW location survey as needed. If utility marking was requested, locate all paint markings and identify owner/contact number.
- Provides traffic control and safety as needed.
- Prepares field notes and/or a summary of the investigation.
- Prepares a project survey report and submits to the Regional Survey Office for review and approval.

### **Prepare Base Maps (3025)**

Upon completion of the topographic survey, base maps are developed which depict, in detail, the required existing topography along with mainline and secondary road baselines and baseline information. The Base maps are prepared in MicroStation CADD format in accordance with Article 51, Standards and Procedures, of the Agreement.

The Designer:

- Reviews existing base maps or reference sources.
- Incorporates the horizontal/vertical control onto base maps.
- Conducts deed search and plots deeds.
- Checks existing alignment and adds final details and description.
- Prepares the base maps.

### **Prepare Horizontal & Vertical Geometry (3030)**

The Horizontal and Vertical geometry of the PPA is essential to the completion of critical environmental and ROW tasks during Preliminary Engineering.

The Designer:

- Calculates the roadway horizontal and vertical geometry sufficient to evaluate specific proposed improvements or impacts.
- Develops typical section(s) to depict proposed roadway design elements such as lane, shoulder, median and border widths and cross slopes.

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- Develops roadside details such as berm, curb, or umbrella section, beam guiderail offset, utility pole location, sidewalk location, cut and fill slopes, swales, ditches, ROW line and proposed pavement.
- Identifies the locations and offsets of structural elements such as retaining walls, noise barriers, bridge piers and parapets, culverts and overhead sign structure supports.
- Ties geometry into the existing base map to produce an accurate depiction of the proposed impacts. The calculated geometry is necessary to determine ROW impacts and the need for design exceptions.
- Identifies all substandard horizontal geometric design elements including those not contained in the Concept Development report.
- Calculates horizontal alignment in accordance with governing design standards to evaluate critical design elements.
- Calculates profiles in accordance with governing design standards including tangent grades, vertical curve lengths, vertical clearances, and low and high points of the roadway to evaluate critical design elements. Identifies all substandard vertical design elements.
- Develops proposed cross slopes, superelevation rates and transitions, roadway widths and any other controlling design elements as needed to evaluate critical project needs and identify substandard design elements.
- Develops critical cross sections to identify slope impacts at critical locations based on the calculated horizontal and vertical control alignments.
- Develops modifications to driveways where needed to conform to acceptable access and geometric standards.

## **Pavement**

### **Overview**

The objective of the pavement effort in PE is to gather the existing pavement and subsurface information and determine the proposed traffic data to prepare the pavement recommendation for the project. The Pavement Recommendation identifies the proposed pavement materials and the desired thicknesses of the roadway pavement box. Depending on the project, the pavement box may involve the traveled way and the shoulder.

### **Major Tasks**

#### **Obtain Pavement Design Data (3960)**

To develop the pavement recommendation for each roadway section, the Designer must obtain traffic volume and load projections for the roadway section to be improved.

Unless otherwise indicated, counts should be taken for at least 48-72 hours on Tuesdays, Wednesdays and Thursdays during non-holiday weeks. Turning movement counts should be conducted during AM and PM peak hours. Roadways with seasonal characteristics may require counts to be taken on Saturdays and possibly on weekends. Weekend counts should also be included for staging and detour analysis.

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For in-house projects, the Project Manager provides the Pavement Design Data to the Pavement Design Unit.

The Designer:

- Conducts traffic counts (if necessary) and submits traffic count data to the Bureau of Transportation Data Development.
- Determines Average Annual Daily Traffic (AADT) for Construction and Future Years.
- Determines heavy truck % (classification count).
- Determines directional distribution.
- Determines axle loads.

### **Collect Existing Pavement and Subgrade Soil Information (3970)**

The NJDOT Pavement Management System maintains existing pavement data, which can be researched through NJDOT TRANSINFO or requested from the Manager of the Pavement Management System by the Project Manager.

The Designer:

- Gathers and reviews current Pavement Management System condition data and functional condition information (Surface Distress Index (SDI), International Roughness Index (IRI), skid number), subsurface soil information, and as-built typical sections.
- Determines the load bearing capacity by analyzing the existing condition of the subgrade soil.
- Evaluates the need for in-situ pavement testing (Falling Weight Deflectometer (FWD), Dynamic Cone Penetrometer (DCP), Ground Penetrating Radar (GPR), soil borings, pavement coring) and/or roadway subsurface exploration to determine material parameters for pavement structure analysis.

### **Conduct Pavement Testing Program (3975)**

A Pavement Testing Program is developed for the project area to determine the existing structural adequacy of the pavement. Data obtained from the testing program is used to prepare the pavement recommendation.

The Designer:

- Performs field testing to determine the structural properties of existing pavement structures.
- Prepares a FWD testing plan and the number and locations of pavement cores, DCP tests, soil borings, test pits and laboratory tests and includes within the Pavement Recommendation.
- If required, procures the services of a Pavement Engineering Consultant and/or specialty contractor to perform the pavement testing, coring, etc.
- Conducts FWD testing, pavement coring, DCP, Ground Penetrating Radar (GPR), soil borings and other in-situ testing.
- Sends the soil samples for laboratory analysis.
- Prepares the lab and field testing report and includes with the pavement recommendation.

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### **Prepare Pavement Recommendation (3980)**

The Pavement Recommendation provides the pavement design criteria for a roadway section based on the results of the pavement design data and the pavement testing. The Pavement Recommendation identifies the materials to be used and desired thickness for the anticipated load.

The Designer:

- Performs pavement structural design calculations to determine the required pavement thickness.
- Conducts a structural performance analysis and evaluates technically viable alternatives.
- Recommends the pavement structure to accommodate traffic for the intended design period.
- Prepares and submits the pavement recommendation to the Pavement Design Unit for approval.
- Utilizes the current AASHTO Geometric Design of Highways and Streets to determine the pavement recommendation.

The Pavement Design Unit provides written approval to the Designer. The Designer includes a summary of the approved pavement recommendation in the Draft PE Report and includes the pavement recommendation as an attachment to the Draft PE Report.

## **Alternatives Analysis**

### **Overview**

The identification, consideration and analysis of alternatives are key to the National Environmental Policy Act (NEPA) process and goal of objective decision making. Consideration of alternatives leads to a solution that satisfies the transportation need and protects environmental and community resources. The Council on Environmental Quality (CEQ) refers to the alternatives analysis section as the "heart of the Environmental Impact Statement (EIS)," and requires agencies to:

- Rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- Include reasonable alternatives not within the jurisdiction of the lead agency.
- Include the alternative of No Action.
- Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft EIS and identify such alternative in the final EIS unless another law prohibits the expression of such a preference.
- Include appropriate mitigation measures not already included in the proposed action or alternatives.

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## **Major Task**

### **Prepare Alternatives Analysis Report (3635)**

An Alternatives Analysis (AA) Report is a document that is required to be prepared for an EA or EIS. An AA Report clearly indicates why and how a range of project alternatives were developed, including what kind of public and agency input was involved. In addition, the AA Report should explain why and how alternatives were eliminated from consideration and how or why an alternative doesn't meet the Purpose and Need. Information obtained during the Concept Development alternative analysis should be evaluated. It must be made clear what criteria were used to eliminate alternatives, at what point in the process the alternatives were removed, who was involved in establishing the criteria for assessing alternatives and the measures for assessing the alternatives' effectiveness. The no action alternative (which might include short-term minor activities) must always be included in the analysis and serves as a baseline against which the other alternatives can be compared.

The Designer prepares the AA Report and submits to the Project Manager for completeness and accuracy. The Project Manager determines if an NJDOT SME review is needed. The Project Manager compiles the DPM and SME comments and provides written comments to the Designer.

The Designer includes the AA Report as an attachment to the Draft PE Report.

## **Utilities**

### **Overview**

The objective of the utility effort in PE is to prepare and update the utility base plans, establish utility engineering funding and prepare and execute a utility engineering agreement. The funding and agreement allow the utility companies to be compensated for providing utility engineering design work. Under the proposed Utility Accommodation Policy, the utility companies will not be compensated for verifying their facilities on the utility base plans. A summary of the utility engineering is included in the Draft PE Report.

Subsurface utility engineering (SUE) is performed to determine the exact location of underground utilities. Depending upon the type of utility and potential design conflict, several SUE methods can be utilized. If only horizontal location is needed, underground utilities may be located remotely using ground penetrating radar, metal detectors or similar devices. This method will not provide utility depth. If depths of utilities are needed, a subsurface test pit may be required. Test pits are not needed to locate every utility and should only be used in locating utilities that have a potential conflict.

### **Major Tasks**

#### **Prepare Utility Base Plans (3035)**

The precise location of utility facilities is essential to determine potential conflicts and impacts on the project's design, cost, schedule and construction. The utility base plans are prepared by the Designer to identify the location of all existing utilities from the topographic survey field data.

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 8 of 58

Released: 04/2019

These plans are the base plans for the alternatives of accommodation and the Utility Agreement Plan. The utilities on the base plans may include signs or markers showing the presence of underground utilities, drainage inlets, valves, manholes, pumps, backflow preventers, vents, meters, poles and guy wires.

#### **Establish Utility Engineering Funding (3040)**

Utilizing the utility preliminary engineering estimate obtained in Concept Development from the Utility Contact Letter, the Project Manager requests preliminary engineering funding from Program Coordination. If no preliminary engineering estimate was received, an anticipated utility design estimate is projected for the corresponding utility company. Program Coordination authorizes utility engineering funding. Program Coordination authorizes utility engineering funding.

The Project Manager prepares and submits a memorandum to Program Coordination requesting preliminary engineering funding. Program Coordination reviews the funding request and provides the Funding Year and Item Number to the Project Manager.

#### **Send Utility Verification Request Letter (3045)**

The Designer sends the Utility Verification Request Letter and two sets of utility base plans to the contact person of each utility company within the project limits. The utility company is requested to verify the location of all their existing facilities shown on the plans. The information shown includes the size, location and type of any underground and overhead utility facilities.

#### **Prepare Utility Agreement (3050)**

Utilizing the standard model for utility agreements, the Project Manager prepares and sends a Utility Engineering Construction Agreement (UECA) and a transmittal letter to each affected utility company contact for signature. The transmittal letter includes an effective date for the utility company to begin incurring costs.

#### **Conduct Utility Risk Analysis (3055)**

The utility company submits the marked-up utility base plans to the Designer. The precise location of utility facilities is essential to determine potential conflicts and impacts on the project's design, cost, schedule and construction. The Designer reviews the marked-up utility base plans and overlays the proposed roadway design features (geometry, drainage, structures, etc.) to identify any potential utility conflicts. These are the base plans for the alternatives of accommodation and the Utility Agreement Plan. The utilities on the base plans may include signs or markers showing the presence of underground utilities, drainage inlets, valves, manholes, pumps, backflow preventers, vents, meters, poles and guy wires. If necessary, the Designer makes a recommendation to the Project Manager for test pits to confirm the location of specific utility facilities to avoid any conflicts.

#### **Execute Utility Agreement (3060)**

Each utility company signs and returns the UECA to the Project Manager. The Project Manager reviews the signed UECA's to ensure that the agreement language was not modified by the utility company. The Project Manager prepares a transmittal letter and forwards the signed UECA's to the Deputy Attorney General (DAG) for review and approval. Upon receiving the approval from the DAG, the Project Manager prepares a Department Action Slip (AD-12) for each UECA, signs the

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 9 of 58

Released: 04/2019

AD-12s and circulates the AD-12s and attached UECAs for Department signatures. Once approved and signed, the AD-12s and UECAs are returned to the Project Manager. The Project Manager prepares transmittal letters and distributes the executed UECAs to the utility companies.

### **Conduct Subsurface Utility Engineering (3080)**

Subsurface Utility Engineering (SUE) may be necessary to locate underground utilities. The Designer recommends the appropriate methodology based on the utility and the potential impact. Test pits are commonly used but other methods (e.g., ground penetrating radar, metal detectors) are also utilized. The number and location of test pits are approved by the Project Manager.

The Designer:

- Recommends the method (remote locating or test pits) of SUE to be used.
- Determines if previous SUE testing was done and whether the data is available.
- Confirms with the utility company if previous SUE test pits have been performed for the conflict area and horizontal and vertical data exists.
- Arranges for a SUE Contractor or the utility company to dig subsurface test pits.
- Determines the exact location of utility facilities.
- Prepares a report to summarize the findings of the test pits.
- Utilizes the report information to eliminate design conflicts.
- Includes a summary of the SUE report in the Draft PE Report.

### **Update Utility Risk Assessment Plan (3985)**

This updated plan is utilized as a reference to address utility risks and to prepare the updated construction staging plans and preliminary roadway plans.

The Designer informs the Project Manager of any new project specific utility risks or changes to previously identified utility risks. The Project Manager may include these within the project Risk Register.

The Designer:

- Updates the Utility Risk Assessment Plan based upon information received by the utility companies and subsurface utility engineering.

## **Engineering and Plans**

### **Overview**

The engineering performed in the PE Phase is in support of obtaining approval of an environmental document and a Design Exception Report, if necessary. The PE engineering work generally consists of SUE, preliminary drainage design, preliminary Intelligent Transportation Systems (ITS) facility design, traffic engineering facility location identification, preliminary geotechnical work and preliminary structural design. An access plan and impact summary are also prepared to understand how the engineering design affects access and right of way (ROW).

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The preliminary drainage design shows the footprint of the proposed storm water runoff system. The footprint includes the size, shape and location of inlets, manholes, pipes and Storm Water Management (SWM) Best Management Practices (BMP). Traffic engineering facility locations are plotted onto the base maps to determine ROW needs. The preliminary ITS facility design plans show existing and proposed ITS facilities based on the ITS Inventory Database and Systems Engineering Review Form (SERF) executed during the Concept Development (CD) Phase.

The Preliminary Geotechnical Engineering Report identifies soil-structure interaction, stability and anticipated settlement for the roadway, major and special geotechnical features and geotechnical construction concerns.

The Structural Design Recommendation Summary documents the structural selection process, the recommended structure type, aesthetic treatments and utility, right of way and environmental impacts.

## **Major Tasks**

### **Prepare Preliminary Drainage Design (3085)**

The preliminary drainage design shows the footprint of the proposed storm water runoff system. The design must attempt to maintain compatibility and minimize interference with existing drainage patterns, control flooding of the roadway surface and minimize environmental impacts from highway related storm water runoff. Consideration should be given to avoid deep cuts, utilities, hazardous material, archeology sites, acid producing soils and ecologically sensitive areas whenever possible.

The Designer:

- Performs a field investigation and evaluates the existing drainage and topography.
- Obtains appropriate drainage area maps.
- Delineates tributary drainage areas.
- Investigates conceptual schemes to minimize utility conflicts and impacts to private property.
- Selects an optimal preliminary drainage system scheme that considers storm water management regulations. The drainage system collects storm water runoff from the roadway surface, right of way, and tributary off-site areas and discharges it to an adequate receiving area without causing adverse impacts.
- Determines the need for and potential locations of storm water management basins or structures.
- Determines the location for storm water discharge and any warranted outlet protection.
- Determines the location of swales and ditches required to convey runoff.
- Determines if easements and ROW are needed to accommodate the proposed drainage system.
- Plots the preliminary drainage design information on the base maps.
- Prepares and submits a Preliminary Drainage Design Report to the Project Manager for review.

### **Determine Traffic Engineering Facility Locations (3090)**

Traffic engineering facility locations are plotted onto the base maps to determine ROW needs. ROW needs may include locations of overhead sign and lighting structures or traffic signal facilities. If the

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conceptual level plans include a traffic signal, the Designer submits the signal design to the Bureau of Traffic Signal and Safety Engineering (TSSE) for review and approval.

The Designer:

- Updates the peak hour capacity analyses to validate the operation (if necessary).
- Prepares conceptual level plans for the layout of lighting design, guide signs, regulatory traffic control devices and signal design to determine any associated ROW needs.
- Establishes the traffic signal pole layout.
- Identifies and resolves any potential underground or aerial utility conflicts.
- Prepares and submits a Lighting Warrant Analysis Report to the Bureau of TSSE for review and comment.
- Includes a traffic engineering summary in the Draft PE Report.

### **Prepare Preliminary ITS Facility Design (3065)**

Preliminary ITS facility design plans show the existing and proposed ITS facilities. The design should reflect the information collected from the ITS inventory database and the information included in the SERF. The Federal Regulation outlining ITS requirements is 23 CFR 940.

The Designer:

- Follows Federal Regulation, the NJ Statewide ITS Architecture Report, the ITS Design Manual and ITS Interim Guidelines
- Prepares conceptual level plans for the layout of ITS facilities.
- Revises the SERF prepared in the CD Phase if additional ITS facilities are needed.
- Submits the revised SERF to Traffic Operations for review and approval.
- Shows all existing ITS facilities on the ITS plan sheets with any proposed construction impacts.
- Identifies and resolves any potential utility, ROW and network conflicts.
- Resolves any conflicts associated with the conduit and ITS facility layout.
- Confirms the availability of power and communication services for the proposed ITS facilities.
- Includes an ITS facility design summary in the Draft PE Report.
- Coordinates with Traffic Operations to determine the location of any temporary ITS devices such as portable CCTV, portable VMS, real time work zone travel time system, etc.
- Coordinates with the Bureau of Transportation Data Development for any proposed Traffic Volume System or Weigh-in-Motion System.
- Coordinates with Maintenance Engineering Electrical for any proposed Roadway Weather Information System.

### **Prepare Preliminary Geotechnical Engineering Report (3095)**

A subsurface exploration program including soil borings, cone penetration tests (CPT), other in-situ tests and laboratory tests that may be necessary will be determined on a project-by-project basis with the Project Manager and NJDOT SME input.

The Designer:

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- Gathers the existing soil information using NJDOT GDMS (on-line soil boring data), Engineering Soil Survey Report by Rutgers University, available geologic publications and as-built plans.
- Evaluates the collected soil information.
- Conducts a geotechnical study of the applicable project area.
- Prepares a Preliminary Geotechnical Engineering Report and submits to the Project Manager for review.
- Summarizes the Preliminary Geotechnical Engineering Report findings within the Draft PE Report.

The Preliminary Geotechnical Engineering Report evaluates and identifies:

- Soil-structure interaction for the required bearing strength, stability and anticipated settlements that pertain to the foundation system supporting the proposed bridges and other structures/walls.
- Stability and anticipated settlement (embankments and cuts) for the proposed roadway. If rock slope is within the project, a rock mechanics study should be performed to evaluate the stability of existing and proposed slopes.
- Major and special geotechnical features (e.g., ground improvements, large diameter (36 inches and greater) piles and drilled shafts, soil nails, ground anchors) required to support bridges, structures and roadways.
- Construction concerns, vibration impacts, potential settlement associated with anticipated construction means and methods (dewatering, cofferdam, sheeting, etc.), ROW and easements that are required for tie-backed retaining systems, and rock slope excavation and its impacts.

### **Prepare Structural Design Recommendation Summary (3100)**

The Structural Design Recommendation Summary documents the structural selection process, the recommended structure type, aesthetic treatments and utility, right of way and environmental impacts.

The Designer:

- Reviews the horizontal and vertical geometry and hydrologic and hydraulic analysis.
- Determines the structural type (if not determined in CD), length, width and footprint.
- Develops general structural plans and elevations if needed for the environmental document or Design Exception Report.
- Prepares a Structural Design Recommendation Summary and submits to the Project Manager for review.
- Includes the Structural Design Recommendation Summary in the Draft PE Report.

### **Prepare Project Access Plans and Access Impact Summary (3105)**

The Project Access Plan (PAP) is prepared in accordance with the NJDOT Access Management Guidelines. It identifies each driveway within the project area and any proposed alterations of each property's access. This includes the identification of NJ State Highway Access Management Code implications and the identification and elimination of any potential "fatal flaw" access issues.

The Designer:

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- Determines whether the PPA, has the potential to impact access and/or parking and determines whether the impacts can be mitigated on-site.
- Reviews and analyzes all existing driveways within the project limits.
- Verifies the property owners of record.
- Verifies the existing topographic features for each impacted property.
- Identifies the types of access alterations for each property.
- Confirms the use and operation of the affected properties.
- Prepares an Access Impact Summary (AIS).
- Identifies any warranted "waivers" to the Access Code requirements with justifications listed within the AIS.
- Prepares and submits the PAP and the AIS to the Office of Access Design (OAD) for review and acceptance.
- Addresses all OAD comments.
- Prepares and submits a Comment Resolution Summary to OAD.
- Updates the PAP and AIS accordingly.
- Includes a summary of the PAP and AIS in the Draft PE Report.

### **Prepare Preliminary Roadway Plans (3070)**

The preliminary roadway plans include the topographic survey results, the proposed horizontal and vertical geometry and all other preliminary engineering design. Utilizing the NJDOT Sample Plans and agreed upon design standards, the Designer incorporates the project design and details onto the plan sheets. The Designer includes the preliminary roadway plans as an attachment to the Draft PE Report.

### **Hold Diagnostic Team Meeting (3075)**

The purpose of the Diagnostic Team Meeting (DTM) is to coordinate railroad issues with the affected stakeholders. Meeting attendees discuss the grade crossing, gather expert testimony and develop recommendations for modifications to the grade crossing.

The Designer creates plans identifying the proposed roadway improvements across the grade crossing (conceptual level plans for the layout of lighting design, guide signs, regulatory traffic control devices and signal design) to the Railroad Engineering and Safety Engineer for the DTM. The Designer provides the DTM information to the Project Manager who forwards it to the Railroad Engineering and Safety Unit, Diagnostic Team Leader (DTL). The DTL coordinates with the meeting invitees and schedules an on-site DTM. The attendees may include the railroad operator, local officials, engineer, school and emergency services, Project Manager, Designer and any NJDOT unit or entity deemed relevant.

The DTL holds the on-site DTM and prepares the Memorandum of Record documenting the results of the DTM. The DTL distributes the final meeting minutes to the meeting attendees. The Designer incorporates any design changes that result from the DTM into the roadway plans. The Designer includes a summary of the DTM in the Draft PE Report.

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### **Determine and Calculate Deforested Areas (3010)**

The acreage of proposed deforested area is calculated to assess the impact and to determine the type and amount of deforestation compensation. If the total area of deforestation:

- Is less than ½ acre, no additional action is required.
- Is equal to or greater than ½ acre, a reforestation plan is required.
- Is one acre or larger, a Public Information Center (PIC) is required in addition to a reforestation plan. When required, the PIC shall be held at least 180 calendar days before deforestation.

The Designer provides the Office of Landscape Architecture (OLA) with the project base plans. OLA determines the total area of proposed deforestation and notifies the Project Manager.

OLA prepares an initial deforestation/reforestation plan demarcating areas of deforestation and possible reforestation and provides the plan to the Designer. The initial deforestation/reforestation plan is utilized at a PIC if one acre or larger of deforestation is proposed. The Designer includes a summary of the PIC and a summary of the initial deforestation/reforestation plan in the Draft PE Report.

## **Right of Way**

### **Overview**

The preliminary right of way (ROW) work performed in the PE Phase is in support of obtaining approval of an environmental document and a Design Exception Report, if necessary. The ROW work consists of preparing a ROW report, initiating a ROW impact plan, holding a ROW kickoff meeting and preparing an initial ROW estimate.

### **Major Tasks**

#### **Prepare ROW Report (3110)**

The Right of Way (ROW) Report reflects the potential acquisition of all real property and property easements required for all roadway improvement projects. An individual ROW Report is prepared and issued for each project. The report is to be used as the basis for the presentation at the ROW Kickoff Meeting. The report is to be updated and submitted at all ROW submissions. Utilize the ROW Engineering Guidelines in preparation of the ROW Report.

The Designer:

- Prepares the ROW Report.
- Includes a ROW Report summary in the Draft PE Report.

#### **Initiate ROW Impact Plan (3115)**

The ROW Impact Plan accurately depicts all ROW impacts (acquisitions) required for the proposed improvements, inclusive of potential sites for reforestation, wetland and riparian buffer mitigation, if anticipated. The ROW Impact Plan consists of the preliminary General Property Parcel Maps (GPPM) that indicate the block and lot numbers along with the owners' names and the acquisition area for each parcel. The ROW Impact Plan will also indicate any recent preliminary and final site

plan approvals. This plan will be used at the ROW Kickoff Meeting and updated following the meeting to address comments. This plan also will be used to prepare the Initial ROW Estimate.

The Designer:

- Prepares the ROW Impact Plan.
- Includes the ROW Impact Plan as an attachment to the Draft PE Report.

### **Hold ROW Kickoff Meeting (3120)**

The purpose of the ROW Kickoff Meeting is to present and discuss the ROW Report and the ROW Impact Plan to the meeting attendees. The Project Manager coordinates with the Manager of the Office of Access Design and ROW Engineering and schedules and holds the ROW Kickoff meeting. Meeting attendees may include the ROW SMEs and the Designer. The Designer or Project Manager presents the ROW Impact Plan and the ROW Report for discussion and concurrence. During this meeting, the Project Manager will request that ROW Engineering provide parcel numbers which will be used to update the ROW Impact Plan. The Designer prepares meeting minutes documenting the ROW Kickoff meeting and, after they are reviewed by the Project Manager, distributes to the meeting attendees.

### **Prepare Initial ROW Estimate (3125)**

An initial ROW Estimate is based on the agreed upon ROW Impact Plan, inclusive of potential sites for reforestation, wetland and riparian buffer mitigation. If specific environmental mitigation parcels have not been identified, an anticipated cost should be included for all environmental mitigation.

The Designer provides the Project Manager with the necessary plans and other pertinent materials needed to request the Initial ROW Estimate. The Project Manager requests the Division of ROW and Access Management to develop the Initial ROW Estimate. The Division of ROW and Access Management develops the estimate and sends it to the Project Manager for review and comment. Once finalized, the Project Manager sends the Initial ROW Estimate to the Designer and enters the Initial ROW Estimate into the Project Reporting System (PRS). The Designer includes a summary of the initial ROW Estimate in the Draft PE Report and includes the initial ROW Estimate as an attachment to the Draft PE Report.

## **Technical Environmental Studies**

### **Section 106**

#### **Overview**

The following major tasks describe, in detail, the steps required to comply with Section 106 of the US Historic Preservation Act and related statutes. FHWA is responsible for implementation of the process and for making key decisions in consultation with the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation and “Consulting/Interested Parties” as appropriate. Most activities are completed by NJDOT staff and NJDOT-managed consultants.

NJDOT Technical Scopes of Work must be followed and all reports/documents/surveys must conform to guidelines developed by the NJ Historic Preservation Office. For projects within the

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 16 of 58

Released: 04/2019

Pinelands Commission's jurisdiction, reports and documents must conform to guidelines established by the Commission. Public Involvement requirements of the Section 106 Process are integrated with the overall public involvement activities for the overall project. (36 CFR Part 800, 23 CFR 771)

All Federal actions are subject to the requirements of Section 106 of the National Historic Preservation Act of 1966 as amended [16 U.S.C. 470 et seq.]. The work required to comply with this law is described in 36 CFR 800. Review the text of the Code of Federal Regulation (CFR) prior to initiating any work.

The following is designed only to familiarize the user with the basic steps of the process. Technical assessments must be made by or under the direction of personnel meeting the Secretary of the Interior's Professional Qualifications Standards [48 FR 44738-9]. Decisions about eligibility for listing in the National Register of Historic Places are based on the Criteria for Evaluation, contained in 36 CFR 60. FHWA (or other Lead Federal Agency) retains the regulatory authority for compliance, although a recent programmatic agreement allows NJDOT to complete a number of the steps in the process independently of the FHWA. Projects not involving a Federal action are subject to the N.J. Register of Historic Places Act [P.L. 1970, c.268, N.J.S.A. 13:1B-15.128, et seq.].

The Section 106 process is comprised of five basic steps:

1. Identification of significant resources (listed/eligible for listing in the National Register of Historic Places)
2. Determination of the effects of the project (none, no adverse or adverse effects)
3. If the effects are adverse:
  - a. Consult with SHPO on ways to avoid or minimize the effects.
  - b. Develop a Memo of Agreement (MOA) for the project if the adverse effect(s) cannot be avoided.
4. Prepare the appropriate documentation to substantiate the finding and, when appropriate, the MOA.
5. Providing the Advisory Council the opportunity to comment on the findings for the project.

**Eligibility** - If SHPO disagrees on the assessment of eligibility, attempt to resolve disagreement. (This may involve additional research to respond to specific and general concerns.) If efforts to resolve disagreements are unsuccessful, inform CPM managers and seek the assistance of the FHWA in resolving the disagreements. If further efforts fail to resolve disagreements regarding eligibility, the Bureau of Landscape Architecture Environmental Solutions (BLAES) Cultural Resources (CR) Specialist will prepare appropriate documentation and forward it to the FHWA for transmittal to the Keeper of the Register. Procedures for this are contained in 36 CFR 63. This provides a 45-day review period for consideration of requests for determinations of eligibility. The opinion of the Keeper on issues of eligibility is final.

**Effect** - If there is disagreement on the finding of effect, attempt to resolve disagreement. If unsuccessful, inform CPM managers and seek the assistance of the FHWA in resolving the disagreements. If further efforts fail to resolve disagreements regarding effects, the BLAES CR Specialist will prepare appropriate documentation as per the provisions of 36 CFR 800.8(d) and forward it to the FHWA for transmittal to the Advisory Council. The Council shall provide its comments to the FHWA within 60 days; the FHWA must consider the comments of the Council before reaching a final finding of effect.

Procedures are subject to change without notice.

Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 17 of 58

Released: 04/2019

**Mitigation** - Unless the cooperation of the property owner is obtained, many mitigation activities cannot be initiated until after ROW has been purchased or, in the case of condemnation proceedings, legal access to a parcel has been obtained. As a goal, mitigation should be completed before the project can be authorized by FHWA for construction. Historic American Building Survey/Historic American Engineering Record (HABS/HAER) recording must be completed and at least conditionally accepted by the National Park Service. The SHPO staff archeologists should be consulted to reach concurrence that archeological mitigation activities meet the goals of the mitigation plan and no additional work is needed. Activities which do not generally impede construction such as preparation of a study, non-technical report, article or book, development of a museum-quality exhibit, development of a walking tour, preparation of a National Register nomination, etc. with the FHWA concurrence, can be completed after the initiation of construction activities as long as any pertinent data or resources have been collected.

## **Major Tasks**

### **Initiate Environmental Technical Studies (3880)**

The Environmental Coordinator confirms which Environmental Technical Studies need to be completed and informs the Designer to begin their preparation. The Environmental Technical Studies to be completed may include Air Quality, Noise, Ecology, Cultural Resources, Hazardous Waste, Section 4(f) and Socio-Economics.

The Environmental Coordinator determines the level of Section 4(f) evaluation (Individual, Programmatic or Not Applicable) for Parkland. The level of Section 4(f) evaluation for historic sites is determined following State Historic Preservation Office (SHPO) concurrence of Adverse Effect.

### ***Initiate Cultural Resource Process***

#### **Initiate Cultural Resources (Section 106) Process (3300)**

The first major task in Section 106 is to initiate the cultural resource process. The BLAES CR Specialist initiates the Cultural Resources (Section 106) process by consulting with the State Historic Preservation Officer (SHPO). Initiation consists of determining the Area of Potential Effect (APE) for architecture and archaeology and identifying Consulting/Interested parties. The BLAES CR Specialist meets with SHPO to submit and discuss the APE Package. SHPO reviews and approves the APE Package by providing written concurrence.

The BLAES CR Specialist determines the APE as required by 36 CFR 800.4 and 800.16(d). Elements of the Area of Potential Effects include:

- APE for architecture drawn on tax maps.
- APE for archaeology includes the footprint of disturbance and any staging areas if known, shown on draft plan sheets.
- List of Consulting/Interested Parties.
- PE Public Involvement Action Plan (PIAP)

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The SHPO's website is utilized to identify any known cultural resources and historic districts within the project area. Use county and municipal sites to identify Consulting/Interested parties. These include the county/municipal clerk and any historical societies or commissions. SHPO may also be aware of additional Interested parties. It often helps to have a field visit with SHPO or provide photographs before submitting the APE. Always submit the APE Package under a NJDOT cover letter even if a consultant prepares the APE Package, and provide a concurrence signature line for SHPO.

### ***Conduct Cultural Resource Survey***

#### **Conduct CR Survey (3305)**

Once the APE is approved, the Designer or BLAES conducts appropriate level technical studies to identify the presence of historic properties within the APE that are on or eligible for the State/Federal Register of Historic Places. This work must be performed by qualified professionals meeting the Secretary of Interior's Standards, which can be found on the SHPO web site.

The Designer or BLAES performs the following work:

- Identify properties listed in, nominated to, or are eligible for the State/National Register of Historic Places that are located within the project Area of Potential Effect (APE). Also note those properties included in the NJ Historic Sites Inventory, the Historic American Buildings Survey, the Historic American Engineering Record Catalogs, and any government inventories.
- Conduct a thorough search of archeological literature to identify known historic and prehistoric sites including recent publications, cultural resource survey reports and articles available from SHPO and the New Jersey State Museum.
- Conduct research using primary and secondary source materials pertaining to the history, ethno-history and ecology of the area, and interview professionals and community individuals that might have historical knowledge of the area.
- Conduct fieldwork and a pedestrian survey of the APE. Gather information from local historians, officials or individuals. Conduct Phase I archaeological investigation and start subsurface testing to evaluate the potential for archaeological resources within the APE. Phase I studies are conducted if necessary.

#### **Prepare CR Survey Report (3310)**

The Designer or BLAES documents the results of the Cultural Resources Survey in a detailed report. The data collected during the Cultural Resources Survey will be analyzed and documented in accordance with SHPO guidance.

The Cultural Resources Survey Report identifies properties within the Area of Potential Effect (APE) that are on or potentially eligible for listing on the State or National Register of Historic Places. For resources identified in the APE, apply criteria of effect from 36 CFR 800 caused by the project, clearly present rationale and prepare documentation for approval by BLAES. The outcomes that are possible are:

- No Resources – There are no historic resources within the APE.
- No Effect – There are historic resources within the APE; however, the proposed undertaking will have no effect.

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Check the Capital Project Delivery website to ensure this is the current version

- No Adverse Effect – Found when the undertaking’s effects do not meet the criteria of Adverse Effect.
- No Adverse Effect with Conditions – Found when the undertaking is modified or conditions are imposed to ensure consistencies with the Secretary’s standards for the treatment of historic property (36 CFR Part 68).
- Adverse Effect – Found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling or association. May include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative.

The Designer or BLAES submits the draft Cultural Resources Survey Report to the Environmental Coordinator for review.

### **Review CR Survey Report (3315)**

The Environmental Coordinator reviews the draft Cultural Resources Survey Report for completeness and accuracy. If archaeology resources are identified, refer to the NJDOT archaeology SME for review. If architecture resources are identified, refer to the NJDOT architecture SME for review. Review suggested mitigation efforts for feasibility and prudence. Provide written comments to the preparer.

### **Address Comments on CR Survey Report (3320)**

The Designer or BLAES addresses the comments from the Environmental Coordinator, updates the Cultural Resources Survey Report and resubmits it to the Environmental Coordinator for approval.

### **Approve CR Survey Report (3325)**

The Environmental Coordinator reviews the updated Cultural Resources Survey Report to confirm all comments were appropriately addressed and approves the report.

The Environmental Coordinator prepares a transmittal letter (NJDOT letterhead) to accompany the Cultural Resource Survey Report. If the outcome of Effects Assessment results in a finding of No Resources, No Effect or No Adverse Effect, the Environmental Coordinator sends the Cultural Resources Survey Report to Consulting/Interested parties and SHPO for review and comment. If the outcome of Effects Assessment results in a finding of Adverse Effect or No Adverse Effect with Conditions, the Environmental Coordinator submits the Cultural Resources Survey Report to FHWA for review and comment. NOTE: If acceptable to the specific agency, the transmittal letter and report can be submitted on a CD.

### ***Findings of No Effect, No Resources, No Adverse Effect***

### **Obtain SHPO Concurrence (No Resources, No Effect, No Adverse Effect) (3330)**

SHPO reviews the Cultural Resources Survey Report and provides comments. BLAES must allow 30 calendar days for this review to occur. During this period, Consulting/Interested Parties may review the report and provide comments to BLAES. The Designer or BLAES addresses the SHPO

comments. SHPO provides concurrence with No Resources, No Effect or No Adverse Effect to BLAES with a written response.

### ***Findings of Adverse Effect, No Adverse Effect With Conditions***

#### **Obtain FHWA Approval of CR Survey Report (3345)**

If the outcome of Effects Assessment results in initial finding of Adverse Effect or No Adverse Effect with Conditions, BLAES sends the Cultural Resources Survey Report to FHWA for review and comment. FHWA provides BLAES with written approval of the findings and mitigation measures.

#### **Obtain SHPO Concurrence (No Adverse Effect with Conditions or Adverse Effect) (3340)**

BLAES distributes the FHWA approved CR Survey Report and the Alternatives Analysis (when available) to Consulting/Interested parties and SHPO for review and comment. SHPO and Consulting/Interested Parties will conduct a 30 calendar day review of the CR Survey Report and provide comments to BLAES. SHPO provides written concurrence and may provide recommendations to reduce and/or mitigate impacts.

#### **Prepare Draft MOA (Adverse Effect Only) (3335)**

The Designer or BLAES prepares a draft Memo of Agreement (MOA) between FHWA, SHPO and NJDOT to understand the project, its effect on historic properties and mitigation measures. The MOA includes NJDOT's cultural resource commitments to mitigate adverse effects. A meeting may be required with all agencies to discuss mitigation measures.

#### **Prepare Adverse Effect Documentation & Submit to FHWA (Adverse Effect Only) (3350)**

BLAES prepares the Adverse Effect Documentation including the CR Survey Report, summary letter (NJDOT template) and FHWA cover letter to the Advisory Council on Historic Preservation (ACHP) (NJDOT template) supporting the FHWA Adverse Effect determination and submits to FHWA.

#### **FHWA Sends Adverse Effect Documentation to ACHP (3355)**

FHWA distributes the Adverse Effect Documentation (CR Survey Report and summary letter) to ACHP and offers ACHP the opportunity to participate in consultation to resolve Adverse Effects caused by the project. The Adverse Effect Document must be submitted to ACHP by FHWA.

#### **ACHP Reviews & Accepts or Declines Participation (3360)**

ACHP reviews the Adverse Effect Documentation (CR Survey Report and summary letter) and responds to FHWA in writing indicating if they accept or decline participation in resolution of Adverse Effects. If ACHP will participate, FHWA notifies NJDOT in writing of that participation. NJDOT in turn notifies SHPO.

#### **Resolve Adverse Effects (3365)**

BLAES holds a meeting with FHWA, SHPO, Consulting/Interested Parties, the Designer and the Project Manager to evaluate ways to avoid/reduce and mitigate impacts to cultural resources. Designer prepares needed materials including graphics, alternatives analysis matrix, design plans, rendering, etc. Additional engineering activities may be necessary to modify the Preliminary

Procedures are subject to change without notice.

Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 21 of 58

Released: 04/2019



Preferred Alternative (PPA) to minimize adverse effects. An agreement must be reached between FHWA and SHPO. The Designer or BLAES revises the draft MOA to reflect any additional mitigation measures or changes to the undertaking.

If an agreement cannot be reached between FHWA and SHPO, additional work must be performed, which will add at least 75 calendar days to the project schedule. FHWA contacts ACHP for comment and resolution. ACHP has 45 calendar days to offer comments on adverse effect and outstanding issues. FHWA must take into consideration ACHP comments and prepare a summary and justification of FHWA's final resolution of adverse effect decision.

### **Circulate MOA for Comment (3370)**

BLAES prepares a transmittal letter (NJDOT letterhead) and circulates the draft Memorandum of Agreement (MOA) to FHWA, SHPO and additional signatory parties for review and comment.

### **Prepare Final MOA (3375)**

FHWA, SHPO and additional signatory parties provide comments to BLAES. BLAES addresses comments on the draft Memorandum of Agreement (MOA), redistributes for final review and prepares a final MOA for signatures.

### **Execute the MOA (3380)**

BLAES prepares a transmittal letter (NJDOT letterhead) and distributes along with the appropriate number of copies for each party to receive an original, signed copy. In the following order, NJDOT, Consulting/Interested Parties (if participating), SHPO, FHWA, ACHP (if participating) and additional signatory parties execute the document by signing the Memorandum of Agreement (each copy) and returning to BLAES. Upon receipt of all signed copies, BLAES distributes to each signatory party an executed, signed original. ACHP receives a signed original even if not participating.

## **New Jersey Register of Historic Places**

### **Overview**

New Jersey State law requires that the State, a county, municipality or an agent thereof shall not undertake any project that will encroach upon, damage or destroy any portion of an area, site, structure or object listed in the New Jersey Register of Historic Places without the prior consent of the Commissioner of the New Jersey Department of Environmental Protection. The regulations describing how to complete this process are very similar to the Federal regulations, which guide the Section 106 consultation process.

Important differences include the following:

1. The State Register process considers only historic properties which are listed in the New Jersey Register.
2. The Section 106 process is initiated as early as possible in the project development process and requires consultation at several points. A conceptual meeting with Historic Sites Council can be arranged; however, formal application cannot be submitted until PPA plans are available and mitigation activities are identified.

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Check the Capital Project Delivery website to ensure this is the current version

3. The NJ Historic Preservation Office (HPO) staff reviews the NJ Register application and, if there will be an encroachment, makes a recommendation to the Historic Sites Council (HSC). The HSC is charged with making a recommendation to the Commissioner of the New Jersey Department of Environmental Protection, who must then make a final decision on the application.

## **Major Tasks**

### **Submit Historic Sites Council Application (3390)**

The Designer or BLAES prepares the Application for Project Authorization (NJDOT template) under the New Jersey Register of Historic Places for any project that may encroach upon a New Jersey Register listed property. Applicants are encouraged to contact SHPO and the Historic Sites Council as early as possible to discuss the undertaking. The application includes project location maps, PPA, Cultural Resources Survey Report, project purpose and need statement, photographs, tax maps, information regarding NJ listed properties, consulting parties and alternatives analysis.

The Historic Sites Council meets every other month and applications must be submitted to SHPO 120 calendar days in advance of the scheduled meeting. BLAES confirms with SHPO that the application was received, is technically complete, and is placed on the Historic Sites Council agenda.

SHPO provides advanced notice of the meeting 45 calendar days prior to the scheduled meeting. SHPO notifies the Secretary of State, the chief elected local official and major circulation newspapers in the project area. SHPO must notify directly affected property owners, local historical societies and historic preservation commissions, relevant local agencies concerned with historic preservation and relevant statewide preservation organizations.

### **Present to Historic Sites Council (3395)**

The Designer or BLAES (applicant) prepares a formal presentation, holds a script meeting and presents the project to the Historic Sites Council at an open public meeting. At the meeting interested members of the public are provided with an opportunity to comment on the project. The Historic Sites Council evaluates the public benefit of the proposed undertaking, potential prudent and feasible alternatives and the measures taken to avoid, minimize, or mitigate the encroachment. After receiving the applicant's and public comments, the Council makes a formal recommendation to the New Jersey Department of Environmental Protection Commissioner.

## **Section 4(f) Process**

### **Overview**

23 CFR 774 Section 4(f) of the US Department of Transportation Act (49 U.S.C. 303) requires that transportation projects must avoid the taking of publicly owned recreation land or historic sites unless it has been demonstrated that there are no prudent and feasible alternatives and all steps are taken to minimize harm. This is accomplished through a careful and thorough analysis of alternatives, coordination with agencies with jurisdiction over the property and the preparation of documentation presented to FHWA for approval as described in 23 CFR 774.135. The FHWA has issued its *Guidance for Preparing and Processing Environmental and Section 4(f) Documents (TA6640.8A)*,

Procedures are subject to change without notice.

Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 23 of 58

Released: 04/2019

which emphasizes early and continuing coordination with agencies and the public and the exchange of information throughout the environmental review process.

### **Types of 4(f) Documentation**

There are three types of 4(f) documentation – Nationwide Programmatic (including Net Benefit), *De Minimis* and Individual.

**Nationwide Programmatic Section 4(f)** approvals are already granted nationwide by FHWA for minor use. They are not applicable when a project requires an EIS. Nationwide Programmatic includes: Programmatic for Historic Bridges, Programmatic for Historic Sites, Programmatic for Public Recreation Areas, Net Benefit, and Independent Bikeway or Walkway projects.

Documentation needs to be presented to FHWA that the impact fits the programmatic criteria. FHWA approval is given by the NJ Division Office.

**Net Benefit to 4(f) Property** - This Nationwide Programmatic Section 4(f) evaluation has been prepared for certain Federally assisted transportation improvement projects on existing or new alignments that will use Section 4(f) property. FHWA and officials with jurisdiction must agree that the use will result in a net benefit to the Section 4(f) property.

**De Minimis** - For publicly owned parks, recreation areas and wildlife or waterfowl refuges, a *de minimus* impact is one that will not adversely affect the activities, features or attributes of the property. For historic sites, a *de minimus* impact means that FHWA has determined that (in accordance with 36 CFR Part 800) either no historic property is affected by the project or that the project will have no adverse effect on the historic property.

**Individual Section 4 (f)** evaluations are prepared in circumstances where Programmatic Section 4(f) criteria do not apply. Individual Section 4(f) evaluations require the preparation of draft documentation, circulation for comment, final documentation and approval at the Regional level of FHWA. If a 4(f) document is required for an EA or EIS, it is included in these documents and processed concurrently. If 4(f) is required for CE, it is prepared and processed as a separate “self-standing” document.

The following major tasks describe in detail, steps required to comply with Section 4(f) of the USDOT Act of 1966.

### **Major Tasks**

#### ***Programmatic 4(f)***

#### **Inform Jurisdictional Agency Regarding Programmatic Section 4(f) Impacts (3400)**

BLAES writes a letter (template – NJDOT letterhead) to the agencies with jurisdiction over parkland regarding impacts from the project and anticipated mitigation and requests a response in writing agreeing with the proposed project and anticipated impacts. Agencies with jurisdiction may include municipalities or counties. The Green Acres Program should be contacted if the property is encumbered, which can be determined by checking the Green Acres Recreation and Open Space Inventory. If the resource impacted is a historic site or bridge, Section 106 consultation satisfies this requirement.

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### **Receive Concurrence Regarding Programmatic Section 4(f) Impacts (3405)**

The agencies with jurisdiction over parkland review the provided letter. If in agreement with the proposed project and anticipated impacts and mitigation, the agencies provide written concurrence. If not in agreement, the agencies will respond with alternative mitigation measures or a request to consider other alternatives. BLAES and DPM must resolve any comments prior to preparing the Programmatic Section 4(f) Evaluation.

### **Prepare Programmatic Section 4(f) Evaluation (3410)**

The Designer or BLAES prepares a Programmatic Section 4(f) Evaluation to document the proposed project impacts to historic sites, recreation land, parkland, or wildlife and waterfowl refuges. Utilizing the alternatives analysis performed in Concept Development, justify selection of the most prudent and feasible alternative. Discuss measures to minimize harm and proposed mitigation. Attach any agency correspondence to the evaluation.

### **Prepare *De Minimis* Section 4(f) Evaluation (3420)**

The Designer or BLAES prepares a *De Minimis* Section 4(f) Evaluation to document the proposed project's *de minimis* impacts to historic sites, recreation land, parkland or wildlife and waterfowl refuges. A *de minimis* impact determination does not require analysis to determine if avoidance alternatives are feasible and prudent, but consideration of avoidance, minimization, mitigation or enhancement measures should occur. The evaluation will include a discussion of the post construction effectiveness of any impact mitigation and avoidance commitments adopted as part of the project.

### **Prepare Programmatic Net Benefit Section 4(f) Evaluation (3425)**

The Designer or BLAES prepares a Programmatic Net Benefit Section 4(f) Evaluation to document the proposed project's net benefits to historic sites, recreation land, parkland, or wildlife and waterfowl refuges. A statement from the appropriate agency indicating agreement that the proposed project will have the documented net benefit must be attached to the evaluation.

### **NJDOT Reviews Programmatic Section 4(f) Evaluation (3430)**

BLAES reviews the Programmatic Section 4(f) and provides comments to the preparer.

### **Revise Programmatic Section 4(f) Evaluation (NJDOT Comments) (3435)**

The Designer or BLAES addresses the comments, updates the Programmatic Section 4(f) and resubmits the document. BLAES verifies that the comments have been adequately addressed and sends the Programmatic Section 4(f) to FHWA using NJDOT cover letter (NJDOT letterhead).

### **FHWA Reviews Programmatic Section 4(f) Evaluation (3440)**

FHWA conducts an independent review of the Programmatic Section 4(f) Evaluation and, if necessary, submits comments to BLAES.

### **Revise Programmatic Section 4(f) Evaluation (FHWA Comments) (3445)**

The Designer or BLAES addresses the FHWA comments, updates the Programmatic Section 4(f) Evaluation and BLAES resubmits the document to FHWA (NJDOT letterhead).

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### **FHWA Approves Programmatic Section 4(f) Evaluation (3450)**

FHWA verifies that the comments have been adequately addressed and approves the Programmatic Section 4(f) Evaluation and notifies BLAES in writing. BLAES notifies the Project Manager and Designer.

### ***Individual 4(f)***

#### **Inform Jurisdictional Agency Regarding Draft Individual Section 4(f) Impacts (3460)**

BLAES writes a letter (template – NJDOT letterhead) to the agency with jurisdiction over parkland regarding impacts from the project and anticipated mitigation and requests a response in writing agreeing with the proposed project and anticipated impacts. Agencies with jurisdiction may include Green Acres Program, municipalities or counties. The Green Acres Program should be contacted if the property is encumbered, which can be determined by checking the Green Acres Recreation and Open Space Inventory. If the resource impacted is a historic site or bridge, Section 106 consultation satisfies this requirement.

#### **Receive Concurrence Regarding Draft Individual Section 4(f) Impacts (3465)**

The agencies with jurisdiction over parkland review the provided letter. If in agreement with the anticipated impacts and mitigation, the agencies provide written concurrence. If not in agreement, the agencies will respond with alternative mitigation measures or a request to consider other alternatives. BLAES and DPM must resolve any comments prior to preparing the Individual Section 4(f) Evaluation.

#### **Prepare Draft Individual Section 4(f) Evaluation (3470)**

In accordance with Federal regulations, the Designer or BLAES prepares a Draft Individual Section 4(f) Evaluation to document the proposed project impacts to historic sites, recreation land, parkland, or wildlife and waterfowl refuges. Utilizing the alternatives analysis performed in Preliminary Engineering, justify selection of the most prudent and feasible alternative. Include a least harm analysis and proposed mitigation. 23 CFR 774.3(c) includes a list of factors to consider in making the determination of least overall harm. Attach any agency correspondence to the evaluation. NOTE: The Draft Individual Section 4(f) Evaluation is significantly more detailed than the Programmatic Section 4(f) Evaluation.

#### **NJDOT Reviews Draft Individual Section 4(f) Evaluation (3475)**

BLAES reviews the Draft Individual Section 4(f) and provides comments to the preparer.

#### **Revise Draft Individual Section 4(f) Evaluation (NJDOT Comments) (3480)**

The Designer or BLAES addresses the comments, updates the Draft Individual Section 4(f) and resubmits the document. BLAES verifies that the comments have been adequately addressed and sends the Draft Individual Section 4(f) to FHWA using NJDOT cover letter (NJDOT letterhead).

### **FHWA Reviews & Comments on Draft Individual Section 4(f) Evaluation (3485)**

FHWA conducts an independent review of the Draft Individual Section 4(f) Evaluation and, if necessary, submits comments to BLAES.

### **Revise Draft Individual Section 4(f) Evaluation (FHWA Comments) (3490)**

The Designer or BLAES addresses the comments, updates the Draft Individual Section 4(f) and resubmits the document (NJDOT letterhead). FHWA verifies that the comments have been adequately addressed for the legal sufficiency review of the Draft Individual Section 4(f).

### **Conduct Draft Individual Section 4(f) Legal Sufficiency Review (3495)**

In accordance with Federal regulations, the FHWA NJ Division Office submits the Draft Individual Section 4(f) Evaluation to the FHWA National Resource Center for a legal sufficiency review and comment. If the legal sufficiency review results in comments to be addressed, BLAES and the Designer consult on the changes needed and resubmit to the FHWA NJ Division Office. The FHWA National Resource Center has 30 calendar days to complete the legal sufficiency review. If the document complies with Federal regulations, the FHWA National Resource Center and the NJ Division Office approve the Draft Individual Section 4(f) for legal sufficiency.

### **Circulate Draft Individual Section 4(f) Evaluation (3500)**

The Designer prepares the appropriate number of copies of the Draft Individual Section 4(f) Evaluation as instructed by BLAES. BLAES prepares a transmittal letter (NJDOT letterhead) and distributes the Draft Individual Section 4(f) Evaluation to the appropriate public agencies. Consult the BLAES distribution list for a list of public agencies and determine which should receive the draft evaluation. The Draft Individual Section 4(f) Evaluation comment period is 30 calendar days. If the Draft Individual Section 4(f) is prepared with an EA or Draft Environmental Impact Statement (DEIS), the Draft Individual Section 4(f) is circulated as part of the EA or DEIS document.

### **Prepare Final Individual Section 4(f) Evaluation (3505)**

The Designer and BLAES evaluate all public and agency comments in consultation with the Project Manager and FHWA. If necessary, the Designer and BLAES provide a written response to comments received and revise the document accordingly. The Final Individual Section 4(f) is submitted to FHWA using NJDOT cover letter (NJDOT letterhead). If the Draft Individual Section 4(f) is prepared with an EA or DEIS, the Draft Individual Section 4(f) is submitted as part of the EA or DEIS document.

### **FHWA Approves Final Individual Section 4(f) Evaluation (3510)**

FHWA approves the Final Individual Section 4(f) and notifies BLAES in writing. BLAES notifies the Project Manager and Designer. If the Draft Individual Section 4(f) is prepared with an EA or DEIS, the Draft Individual Section 4(f) is approved as part of the EA or DEIS document.

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 27 of 58

Released: 04/2019

## **Green Acres**

### **Overview**

The Green Acres Program was created in 1961 to meet New Jersey's growing recreation and conservation needs. Green Acres purchases land to protect environmentally sensitive open space, water resources and other significant natural and historical open space. Land purchased by Green Acres becomes part of the statewide system of parks and forests, wildlife management areas and natural areas.

The Green Acres Program serves as the real estate agent for the New Jersey Department of Environmental Protection (DEP), acquiring land, much of which has been offered for sale by property owners, that becomes part of the system of state parks, county and municipal open space land, forests, natural areas and wildlife management areas.

If NJDOT is to acquire land encumbered by the Green Acres Program, approval from the State House Commission is required. The Green Acres process is initiated during the Preliminary Engineering Phase, however, an application is not submitted to DEP until the Final Design Phase. Because the Green Acres approval process occurs during the Final Design Phase, it may significantly increase the total project schedule duration. NOTE: The Green Acres property must be acquired before the Construction Phase can begin.

The Designer includes a summary of the Green Acres Process in the Draft PE Report.

### **Major Tasks**

#### **Inform Green Acres Program & Local Officials (3520)**

BLAES writes a letter (template – NJDOT letterhead) to the Green Acres Program and the property owner (county, municipality, etc.) regarding impacts from the project and anticipated mitigation, and requests a response in writing agreeing with the proposed project and anticipated impacts. The letter requests a response confirming encumbrance due to Green Acres.

#### **Receive Concurrence on Green Acres Impacts (3525)**

The Green Acres Program and the property owner review the provided letter. If in agreement with the proposed project and anticipated impacts and mitigation, the Green Acres Program and property owner provide written concurrence. If not in agreement, the Green Acres Program and property owner will respond with alternative mitigation measures or a request to consider other alternatives. BLAES and DPM must resolve any comments.

If the property is determined not to be Green Acres encumbered, the Green Acres Program notifies NJDOT in writing. If not encumbered, State House Commission approval is not required and the remaining Green Acres activities are not required.

#### **Hold Green Acres Pre-Application Meeting (3530)**

BLAES schedules and holds a meeting with the Green Acres Program and property owners. A pre-application meeting shall include a review of the applicable rules, procedures and forms and a visit to the encumbered property to be affected. The Designer presents the initial concepts of the proposed

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Green Acres diversion or disposal, alternatives analysis, copy of the deed, reference map showing the location of the encumbered property in its entirety, proposed mitigation and discusses the proposal and application requirements. A full list of the required materials can be found in the NJ State Regulation (NJAC7:36). Pre-application requirements (in accordance with NJ State Regulation) are different whether the diversion is major or minor.

### **Negotiate Green Acres Compensation (3535)**

BLAES negotiates agreement with the Green Acres Program and property owners on the type of compensation for the diverted or disposed property. These negotiations begin during the Pre-application Meeting. Compensation could consist of replacement parkland, monetary compensation, parkland improvements or a combination of those three. Green Acres responds in writing indicating agreement with compensation measures.

Once the type of compensation is agreed upon, BLAES requests a right of way (ROW) cost estimate from ROW Technical Support for the Green Acres parcels and for any replacement property, if applicable. ROW Technical Support prepares and provides the ROW cost estimate to BLAES. The quantifiable amount of compensation is negotiated in the Final Design Phase.

## **Air Quality**

### **Overview**

The purpose of the Air Quality Technical Environmental Study is to evaluate and document potential impacts to air quality, which may include a hot spot carbon monoxide analysis and a qualitative Particulate Matter (PM) 2.5 analysis and PM 10 analysis. If the project changes traffic capacity as defined in FHWA/EPA regulations, include a discussion of conformity with the State Implementation Plan (SIP) and the current Congestion Management System (CMS).

Recommendations are made to improve air quality by reducing Vehicle Miles Traveled, enhanced use of bike/pedestrian mobility or other measures if and as appropriate. This activity can vary significantly in response to project scope. Consult the NJDOT Air Quality scope statement and FHWA regulations. Guidance should be sought from an Air Quality subject matter expert. Air quality regulations can be found at 23 CFR 770, 40 CFR 51 and 93.

### **Major Tasks**

#### **Conduct Air Quality Study (3740)**

The Designer or BLAES verifies the project is in the State Transportation Improvement Plan (STIP) and/or corresponding Metropolitan Planning Organization's (MPO) Transportation Improvement Plan (TIP) and obtains traffic data and the Preliminary Preferred Alternative (PPA) from the Project Manager to complete the study. The STIP is located on the NJDOT Website and the TIP can be found on the MPO Website.

To determine if an air quality study is required, determine how the project is categorized by the Transportation Conformity Rule (TCR). If the project type is listed in Table 2 or Table 3 of the TCR, an air quality study is not required. If no air quality study is required, then the Designer or BLAES

Procedures are subject to change without notice.

Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 29 of 58

Released: 04/2019



completes the air quality section of the Categorical Exclusion Document (CED). Other projects may require an air quality analysis and the results of which will be completed and incorporated into a CED or TES as appropriate.

If an air quality study is required, the Designer or BLAES evaluates potential impacts to air quality, which may include a hot spot carbon monoxide (CO) analysis and Particulate Matter (PM) 2.5 and PM 10 analysis. The Designer or BLAES verifies the project location on the PM 2.5 Nonattainment Areas and CO Maintenance Areas maps located at: [www.epa.gov/air](http://www.epa.gov/air). Currently, all of NJ is in attainment for PM 10, therefore analysis is not required for this criterion. The Designer or BLAES conducts a field reconnaissance to identify all sensitive receptors within 250 feet from the edge of the traveled way and performs a hot-spot analysis for criteria pollutants. Obtain traffic data and level of service for all signalized and unsignalized intersections from the Project Manager. Obtain existing CO background levels for the peak one hour and peak eight hours from a NJDEP monitoring site which is near the project area. The Designer or BLAES plots and identifies all sensitive receptors on the preliminary plan.

#### **Prepare Air Quality TES (3745)**

The Designer or BLAES prepares an impact assessment and provides compliance statements regarding the Clean Air Act and Amendments within the Air Quality TES. Perform CO hot-spot analysis for the existing year and design year for the no-build and build alternatives for the worst three intersections for projects in non-attainment and maintenance areas. Perform the hot-spot analysis in PM 2.5 and PM 10 in non-attainment and maintenance areas. Perform mobile source air toxic (MSAT) analysis as per FHWA guidance.

The Designer or BLAES also makes recommendations to improve air quality by reducing Vehicle Miles Traveled, enhanced use of bike/pedestrian mobility or other measures if and as appropriate within an Air Quality TES. If the project changes traffic capacity as defined in FHWA/Environmental Protection Agency regulations, include a discussion of conformity with the State Transportation Improvement Plan (STIP) and/or corresponding Metropolitan Planning Organization's Transportation Improvement Plan (TIP) and the current Congestion Management System (CMS). The Designer submits the Air Quality TES to the Environmental Coordinator for review.

#### **NJDOT Reviews Air Quality TES (3750)**

BLAES reviews the Air Quality TES to ensure compliance with FHWA and US EPA regulations and guidelines and provides written comments to the preparer.

#### **Address Air Quality TES Comments (3755)**

The Designer or BLAES addresses the comments, updates the Air Quality TES and resubmits for approval.

#### **Approve Air Quality TES (3760)**

BLAES reviews the updated Air Quality TES to confirm all comments were appropriately addressed and approves the TES. If the Air Quality SME determines that an FHWA review and approval is required, BLAES sends the NJDOT approved Air Quality TES to FHWA.

## **Ecology**

### **Overview**

Ecology is a technical environmental study (TES) that evaluates and documents potential impacts to natural resources from each alternative. Natural resources may include surface and ground water quality, wetlands, water-bodies including aquatic species and habitats, floodplains and flooding, terrestrial species and habitats, soils, upland forests, vernal pools and threatened and endangered species. As part of the TES, BLAES or the Designer recommends measures to avoid/minimize or mitigate impacts and ways to enhance environmental quality. BLAES begins initial coordination with the appropriate agencies having jurisdiction over resources that will be potentially affected and document early coordination efforts. Agencies may include US Fish and Wildlife, NJDEP Natural Heritage Program and NJDEP Land Use Regulation. The Ecology TES identifies permits that might be required.

### **Major Tasks**

#### **Conduct Ecology Study (3765)**

The Designer or BLAES evaluates existing conditions and potential impacts of the Preliminary Preferred Alternative (PPA) to natural resources. This includes surface and ground water quality, upland forests, soils, wetlands, water-bodies including aquatic species and habitats, floodplains and flooding, terrestrial species and habitats, vernal pools and threatened and endangered species. BLAES or the Designer conducts a field visit and prepares GIS mapping to determine what resources are within the project area. Begin initial coordination with the appropriate agencies having jurisdiction over resources that will be potentially affected. Appropriate agencies may include:

- US Army Corps of Engineers
- US Coast Guard
- US Fish and Wildlife Service
- US Environmental Protection Agency
- National Marine Fisheries Service
- Delaware and Raritan Canal Commission
- NJ Department of Environmental Protection Natural Heritage Program
- NJ Department of Environmental Protection Land Use Regulation Program
- Meadowlands Commission
- Highlands Commission
- Pinelands Commission

#### **Prepare Ecology TES (3770)**

The Designer or BLAES documents the existing conditions and potential impacts of the PPA to natural resources within an Ecology TES. The TES documents early coordination efforts with appropriate agencies, provides GIS mapping, provides photographs from the field, provides a written description of the existing resources within the project area and identifies permits required. Provide recommendations that avoid/minimize or mitigate impacts and ways to enhance environmental

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quality, if identified. The Designer submits the Ecology TES to the Environmental Coordinator for review.

### **NJDOT Reviews Ecology TES (3775)**

The Environmental Coordinator reviews the Ecology TES for completeness and accuracy. If ecological resources are identified, refer to the NJDOT ecology SME for review. Review suggested mitigation efforts for feasibility and prudence. Provide written comments to the preparer.

### **Address Ecology TES Comments (3780)**

The Designer or BLAES addresses the comments, updates the Ecology TES and resubmits for approval.

### **Approve Ecology TES (3785)**

BLAES reviews the updated Ecology TES to confirm all comments were appropriately addressed and approves the TES.

## **Socio-Economic**

### **Overview**

Socio-Economic is a Technical Environmental Study (TES) that evaluates and documents potential project related impacts to communities, effects on community cohesion, quality of life, aesthetics, land-use patterns, business and employment, public mobility and access, use of public facilities and displacements of residents and businesses. The potential for disproportionate impacts to minority or low-income populations will also be assessed as per Presidential Executive Order 12898 on Environmental Justice. Identify opportunities for enhancing quality of life within the project area of effect. This may require close consultation with CCR and the Division of Civil Rights and Affirmative Action, including integration with local community activities.

### **Major Tasks**

#### **Conduct Socio-Economic Study (3790)**

Using the Community Profile developed in Concept Development and the Field Visit Checklist located in the Socio-Economic Guidance Manual, the Designer or BLAES evaluates potential project related impacts to communities, effects on community cohesion, quality of life, aesthetics, land-use patterns, business and employment, public mobility and access, use of public facilities, and displacements of residents and businesses. Potential for disproportionate impacts to minority or low-income populations will also be assessed as per Title VI of the Civil Rights Act and Presidential Executive Order 12898 on Environmental Justice.

#### **Prepare Socioeconomic TES (3795)**

The Designer or BLAES documents the existing conditions and potential impacts of the PPA to the human environment within a Socio Economic TES. Provide recommendations that avoid/minimize or mitigate impacts and improve quality of life, if identified. This may require close consultation with

the CCR and Civil Rights to integrate with community involvement activities for the project. The Designer or BLAES submits the Socio-Economic TES for review.

### **NJDOT Reviews Socioeconomic TES (3800)**

BLAES reviews the Socio-Economic TES and provides written comments to the preparer.

### **Address Socioeconomic TES Comments (3805)**

The Designer or BLAES addresses the comments, updates the Socio-Economic TES and resubmits for approval.

### **Approve Socioeconomic TES (3810)**

BLAES reviews the updated Socio-Economic TES to confirm all comments were appropriately addressed and approves the TES.

## **Noise**

### **Overview**

Noise is a TES that evaluates and documents potential noise impacts on noise sensitive receptors such as residences, businesses, schools, parks, etc. The scope of this activity can vary significantly in response to project scope. BLAES should consult the NJDOT Noise Scope of Work, NJDOT Noise SME and FHWA regulations. Noise abatement measures will be considered in accordance with FHWA/ NJDOT Noise Abatement Policy.

### **Major Tasks**

#### **Conduct Noise Study (3815)**

The Designer or BLAES obtains traffic data, digital mapping and the PPA from the Project Manager. Consult with the NJDOT Noise SME to determine if the project will require a noise study. Projects which require a noise study are often those that will change the vertical or horizontal alignment of the roadway or increase traffic volumes substantially.

If no noise study is required, documentation is included within the NEPA document. Other projects may require a noise analysis, the results of which will be completed and incorporated into the NEPA document as appropriate.

If a noise study is required, the Designer or BLAES evaluates potential noise impacts on noise sensitive receptors such as residences, businesses, schools, parks, etc. The Noise TES preparer conducts field reconnaissance to identify all noise sensitive receptors within 200 feet from the edge of traveled way for a two-lane roadway or 400 feet for a four-lane roadway. The preparer quantifies the number and type of sensitive receptors and identifies them on the PPA. If necessary, noise monitoring data is obtained to determine impacts adjacent to the project due to the substantial increase in the future projected noise levels.

### **Prepare Noise TES (3820)**

The Designer or BLAES documents the results of the noise study within the Noise TES. On 100 or 200 scale topographic scale plans using traffic data, in the no-build and build alternatives (cross-sections and profiles), plot roadway terrain and receiver information which is required for the Traffic Noise Model (TNM) noise prediction program. Using the current version of the TNM, develop the 66 dBA Leq Noise Contour for the preferred alternative. Identify areas where noise levels approach or exceed noise abatement criteria for the designated design year. Also identify those areas that will have an increase of 10 dBA or more in predicted noise levels over existing noise levels even when the impact criteria is not reached.

Using the current TNM program, evaluate the possible options of noise abatement (barriers, air conditioning, design modifications, etc.) to mitigate noise impacts, taking into account barrier cost effectiveness and engineering feasibility. Noise abatement measures will be considered according to the FHWA/NJDOT Noise Abatement Policy. Quantitatively describe the construction noise impacts associated with the project and any feasible mitigation measures.

### **NJDOT Reviews Noise TES (3825)**

BLAES reviews the Noise TES and provides written comments to the preparer.

### **Address Noise TES Comments (3830)**

The Designer or BLAES addresses the comments, updates the Noise TES and resubmits for approval.

### **Approve Noise TES (3835)**

BLAES reviews the updated Noise TES to confirm all comments were appropriately addressed and approves the TES. BLAES sends the NJDOT approved Noise TES to FHWA for review, comment and approval.

## **Hazardous Waste**

### **Overview**

Hazardous Waste is a TES that evaluates and documents the project's potential involvement with known or suspected contaminated sites, underground storage tanks or other hazardous waste. The investigation should be designed to determine the potential for contamination within a study corridor consisting of the proposed ROW acquisitions and/or easements plus 250 feet from the edge of roadway. The Industrial Site Recovery Act (ISRA) places conditions on the sale, transfer or closure of industrial establishments involved in the generation, manufacturing, refinement, transportation, treatment, storage, handling or disposal of hazardous waste or substances. ISRA ensures that lands being conveyed are substantially uncontaminated.

### **Major Tasks**

#### **Conduct Hazardous Waste Study (3840)**

The Designer or BLAES evaluates the project's potential involvement with known or suspected contaminated sites, underground storage tanks or other hazardous waste. Establish a corridor

consisting of an area 250 feet from the edge of the proposed ROW and easement. Conduct an environmental database (FirstSearch or equivalent) search for known contaminated sites within the project corridor. Review historic information (historic aerials, Sanborn Insurance Maps, historic fill) for suspected land use in the past. Contact local, state and Federal sources of information and review NJDEP case files, as appropriate. Perform site reconnaissance to verify site addresses and current land uses. The Designer may recommend the need for further investigation and sampling.

#### **Prepare Hazardous Waste TES (3845)**

The Designer or BLAES documents all the findings from the hazardous waste study within the Hazardous Waste TES. Provide conclusions and recommend appropriate geometric measures to reduce impacts. A sampling plan may be submitted to BLAES for advanced approval.

#### **NJDOT Reviews Hazardous Waste TES (3850)**

The Environmental Coordinator reviews the Hazardous Waste TES for completeness and accuracy. If hazardous waste sites are identified, refer to the NJDOT Hazardous Waste SME for review. If recommendations for further investigation and sampling are provided, the Hazardous Waste SME provides concurrence. If the TES contains geometric recommendations to reduce impacts, consult with the Project Manager. Provide written comments to the preparer.

#### **Address Hazardous Waste TES Comments (3855)**

The Designer or BLAES addresses the comments, updates the Hazardous Waste TES and resubmits for approval.

#### **Approve Hazardous Waste TES (3860)**

BLAES reviews the updated Hazardous Waste TES to confirm all comments were appropriately addressed and approves the TES. Individual site investigations (sampling) may be initiated, and the degree of involvement with project alternatives will be evaluated based on ROW and proposed excavation plans.

## **Environmental Documents**

### **Certified Categorical Exclusion Document**

#### **Overview**

Federally funded projects that qualify for approval as a Certified Categorical Exclusion (CCE) have the following criteria:

- Do not cause significant environmental impacts
- Are limited in scope

Types of projects that qualify as CCEs are listed in the Programmatic Agreement for approval of certain Categorical Exclusions between FHWA and NJDOT. Documentation and processing requirements are detailed in the June 2, 2008 Programmatic Agreement between NJDOT and the NJ FHWA Division Office. Minor environmental investigations, as directed by BLAES, may be required to verify applicability of the CCE. A CCE does not require Federal review and approval.

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 35 of 58

Released: 04/2019

The Designer includes a summary of the CCE in the Draft PE Report and includes the CCE as an attachment to the Draft PE Report.

## **Major Tasks**

### **Prepare Certified Categorical Exclusion (CCE) Document (3890)**

The Environmental Coordinator completes a Categorical Exclusion Document (CED) form, per Federal regulations and the Programmatic Agreement, and submits to the BLAES Supervisor for review. The CED form documents existing environmental conditions and impacts associated with the proposed project. A project location map and SHPO consultation comments are attached to the CED. The Environmental Coordinator submits the CED to the BLAES Supervisor for review and comment.

### **Review and Approve Certified Categorical Exclusion (CCE) Document (3900)**

The BLAES Supervisor reviews the CED and forwards any comments to the Environmental Coordinator. The Environmental Coordinator addresses all the comments and resubmits two copies to the BLAES Supervisor. The BLAES Supervisor signs the CED and forwards to the BLAES Bureau Manager. The BLAES Bureau Manager signs the CED certifying that the project meets the criteria outlined in the regulations and Programmatic Agreement. One copy is filed and the other copy is sent to the Project Manager. FHWA review and approval is not required.

## **Categorical Exclusion Document**

### **Overview**

Federally funded projects that qualify for approval as a Categorical Exclusion (CE) are projects that are minor in nature but do not meet the criteria contained in the Certified Categorical Exclusion Programmatic Agreement. The same form is used for Certified CED and CED projects. CED projects require FHWA review and approval. The federal regulation outlining CED requirements is 23 CFR 771.117.

The Designer includes a summary of the CED in the Draft PE Report and includes the CED as an attachment to the Draft PE Report.

## **Major Tasks**

### **Prepare CED (3870)**

Utilizing the technical environmental studies, cultural resource survey report and Section 4(f) evaluation (if required), the Designer or BLAES summarizes existing environmental conditions and assesses the project impacts with respect to each environmental discipline (Noise, Air Quality, Ecology, Cultural Resources, Section 4(f), Hazardous Waste, Socio-economic and Environmental Justice) and completes the CED form. A project location map, SHPO consultation comments, resolution of support from the community and any other correspondence with any outside agencies are attached to the CED. Submit the CED to the BLAES Supervisor for review and comment.

### **Hold Public Information Center (3865)**

If a Public Information Center (PIC) was determined to be necessary (e.g., deforestation of one acre or larger, NEPA document), the Project Manager instructs the Division of Community and

Constituent Relations (CCR) to schedule and hold the PIC to obtain public input on the Preliminary Preferred Alternative (PPA). The PIC is a community outreach forum to develop a partnership with the public.

Consult with CCR and Communications for review of the PIC handout and mailing list. The display boards may include an aerial of the project area, the PPA, a profile of the existing condition and the proposed improvement, existing and proposed typical sections, environmental concerns, a right of way matrix showing the amount of each property impact, detours, construction staging, traffic volumes, collision diagrams, structural elevations and photo simulations. Consult with CCR for review and comment of the displays.

If a PIC is required due to NJDEP No Net Loss Reforestation Act requirements, the Office of Landscape Architecture (OLA) prepares a plan showing the deforested areas and a general plan of reforestation. The community has 60 days to submit oral and written comments. OLA forwards copies of the written responses to the NJDEP Division of Forestry State Forester and responds to comments within 60 days after the comment period closes.

CCR prepares a Memo of Record of the PIC. The Designer prepares meeting minutes to document the input obtained and attaches the sign-in sheet to the minutes.

### **NJDOT Reviews and Approves CED (3875)**

The BLAES Supervisor reviews the CED and forwards any comments to the Environmental Coordinator. The Designer or Environmental Coordinator addresses all the comments and resubmits two copies to the BLAES Supervisor. The BLAES Supervisor signs the CED and forwards to the BLAES Bureau Manager for signature. The Environmental Coordinator prepares a cover letter for the BLAES Bureau Manager signature and sends the CED with cover letter to FHWA for approval.

FHWA reviews and approves the CED and returns two copies to the Environmental Coordinator. One copy is filed and the other copy is sent to the Project Manager.

## **Environmental Assessment**

### **Overview**

Federally funded projects classified as Environmental Assessments (EA) are larger in scope and may cause significant environmental impacts. Documentation of any Section 4(f) impacts may also be required if property protected under Section 4(f) of the USDOT Act is unavoidably affected.

An EA shall be prepared for a proposed Federal action that is not a Categorical Exclusion and where the significance of environmental impacts is not clearly established (i.e., it does not clearly require the preparation of an EIS). 40 CFR 1508.9 defines when an EA is required and what its intended uses are. FHWA regulations for preparing and processing an EA are contained under 23 CFR 771.119 and 23 CFR 771.121.

An EA must be a “concise public document” which briefly provides sufficient evidence and analysis for determining whether it is necessary to prepare an EIS or a Finding of No Significant Impact



(FONSI). Unlike an EIS, the EA need not be circulated for comment, but must be made available for public inspection through appropriate notices.

The Designer includes a summary of the EA in the Draft PE Report and includes the EA as an attachment to the Draft PE Report.

## **Major Tasks**

### **Identify Alternatives (EA Only) (3540)**

The Designer, BLAES and the Project Manager identify reasonable alternatives that could meet the project Purpose and Need. Choose final alternatives selected for detailed study in the Environmental Assessment (and 4(f) if applicable) from this list. The range of alternatives shall include No Action and Build alternatives including improvement of existing highways and alternatives on new location, and may include Transportation System Management and Mass Transit.

### **Prepare EA or EA/4(f) (3545)**

The BLAES Bureau Manager notifies FHWA to advertise an intent to prepare an EA (and 4(f) if applicable) by sending a Notice of Planned Action Letter to Federal and State agencies, which may have interest, jurisdiction or special expertise that would contribute to impact assessment, including local governmental officials. BLAES identifies the appropriate Federal and State agencies for FHWA.

The Designer prepares an EA (and 4(f) if applicable) in cooperation with BLAES. The EA (and 4(f) if applicable) identifies the preferred alternative, evaluates all reasonable alternatives and discusses the reasons why other considered alternatives were eliminated from detailed study. The EA includes the Section 4(f) evaluation (if applicable), Purpose and Need Statement, Alternatives Analysis and a summary of the TES, Cultural Resource Survey Report, reviews, consultation with regulatory agencies, and public involvement required by environmental laws or Executive Orders to the extent appropriate at this stage in the environmental process. Submit the EA (and 4(f) if applicable) to the Environmental Coordinator for review and comment. The Environmental Coordinator notifies the Project Manager that the draft EA has been received.

### **NJDOT Reviews EA (3550)**

The Environmental Coordinator reviews the EA (and 4(f) if applicable) for completeness and accuracy. The Environmental Coordinator determines if an NJDOT SME review is needed. The Environmental Coordinator compiles the BLAES and SME comments and provides written comments to the Designer.

### **Revise EA (NJDOT Comments) (3555)**

The Designer addresses the comments from the Environmental Coordinator, updates the EA (and 4(f) if applicable) and resubmits it to BLAES. The Environmental Coordinator verifies that the EA (and 4(f) if applicable) comments have been adequately addressed and decides if additional NJDOT SME verification is necessary. Once the Environmental Coordinator determines all comments have been adequately addressed, the Environmental Coordinator consults with FHWA to determine the appropriate number of copies required for review. The Environmental Coordinator provides a cover letter and the EA to the BLAES Bureau Manager to submit to FHWA.

### **FHWA Reviews EA (3560)**

FHWA conducts an independent review of the EA (and 4(f) if applicable) and submits written comments to the BLAES Bureau Manager. The BLAES Bureau Manager sends the FHWA comments to the Environmental Coordinator for distribution to the Designer.

### **Revise EA (FHWA Comments) (3565)**

The Designer, in collaboration with BLAES, addresses FHWA's comments. This may require additional engineering, environmental, public involvement or agency coordination activities. The EA (and 4(f) if applicable) is revised and resubmitted to BLAES.

Once the Environmental Coordinator determines all comments have been adequately addressed, the Environmental Coordinator provides a cover letter and the revised EA (and 4(f) if applicable) to the BLAES Bureau Manager to submit to FHWA.

### **FHWA Approves EA (3570)**

FHWA verifies that the EA (and 4(f) if applicable) comments have been adequately addressed and approves the EA (and 4(f) if applicable). If the EA has a Draft Individual Section 4(f), a legal sufficiency review of the Draft Individual Section 4(f) is necessary. FHWA sends a letter to the BLAES Bureau Manager indicating all comments have been addressed and the document is ready for a legal sufficiency review.

### **Conduct Draft Individual Section 4(f) Legal Sufficiency Review (EA) (3575)**

In accordance with Federal regulations, the FHWA NJ Division Office submits the Draft Individual Section 4(f) Evaluation to the FHWA National Resource Center for a legal sufficiency review and comment. If the legal sufficiency review results in comments to be addressed, BLAES and the Designer consult on the changes needed and resubmit to the FHWA NJ Division Office. The FHWA National Resource Center has 30 calendar days to complete the legal sufficiency review. If the document complies with Federal regulations, the FHWA National Resource Center and the NJ Division Office approve the Draft Individual Section 4(f) for legal sufficiency.

### **Circulate EA (3580)**

The Environmental Coordinator determines the number of copies of the EA (and 4(f) if applicable) needed for circulation by consulting the BLAES distribution list of public agencies to determine which should receive the draft document. The Environmental Coordinator notifies the Designer of the appropriate number of copies. The Designer prepares the appropriate number of copies of the EA (and 4(f) if applicable) and submits to BLAES for distribution. The Environmental Coordinator prepares a transmittal letter for the BLAES Bureau Manager signature, indicating the time, date and location of the public hearing (if known). The BLAES Bureau Manager signs the transmittal letter, and the Environmental Coordinator distributes the EA (and 4(f) if applicable) to public officials, Federal, State and local government agencies with jurisdiction and expertise involving the proposed action, as well as special interest groups and members of the public with identified interest in the proposed action.

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### **Hold EA Public Hearing & Comment Period (3585)**

The Environmental Coordinator notifies CCR to schedule and hold a public hearing no sooner than 15 calendar days after the circulation of the EA (and 4(f) if applicable). CCR contacts the applicable municipal officials to schedule the public hearing. To accommodate the public, a public hearing is typically held late afternoon or early evening at a municipal facility. The Designer publishes an advanced notice of the hearing within the local newspaper, notifying the public of the availability of the EA (and 4(f) if applicable). The Designer also arranges for the provision of a stenographer to record verbal testimony at the public hearing.

For the public hearing, the Designer prepares display boards, which may include an aerial of the project area, the PPA, a profile of the existing condition and the proposed improvement, existing and proposed typical sections, environmental concerns, a right of way matrix showing the amount of each property impact, detours, construction staging, traffic volumes, collision diagrams, structural elevations, and photo simulations. Consult with CCR for review and comment of the displays. The EA (and 4(f) if applicable) is also available for inspection at the public hearing and at other public locations.

The Designer, Project Manager, Environmental Coordinator, CCR and any appropriate NJDOT SMEs (e.g., ROW, Access) should attend the public hearing. BLAES accepts comments either in writing or as verbal testimony given at the public hearing. The stenographer provides a transcript of the public hearing to the Environmental Coordinator. The Environmental Coordinator sends written comments and the public hearing transcript to the FHWA for their information. The required public comment period for an EA (and 4(f) if applicable) is 30 calendar days beginning with the publication of the EA availability.

### **Address EA Comments (3590)**

The Designer and Environmental Coordinator evaluate all public and agency comments in consultation with the Project Manager. The Designer and BLAES make appropriate recommendations to the Project Manager to modify the project to avoid, minimize or mitigate impacts to the environment and to incorporate measures to enhance environmental quality in response to comments received. The Project Manager coordinates with any necessary SMEs that may be affected by the proposed geometric changes. The Designer and Environmental Coordinator provide a written response to comments received, if necessary. FHWA receives a copy of all written responses.

At this point, FHWA determines to issue a Finding of No Significant Impact (FONSI) for the proposed action, or FHWA determines that the action is likely to have a significant impact on the environment and the preparation of an EIS is required. FHWA provides their decision to BLAES.

### **Submit FONSI Request Package (3595)**

If the results of the EA identify no significant environmental impacts, the Environmental Coordinator prepares a FONSI and a transmittal letter to FHWA. The BLAES Bureau Manager reviews the FONSI and submits to FHWA. BLAES also submits the EA (and 4(f) if applicable), if revised.

### **FHWA Approves Final Individual Section 4(f) (EA) (3600)**

FHWA approves the Final Individual Section 4(f) and notifies BLAES in writing. BLAES notifies the Project Manager.

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### **FHWA Reviews and Issues FONSI (3605)**

During a required 30-day EA public review period (see 23 CFR 771.119 (h) for applicability), FHWA reviews the FONSI. At the end of the 30-day review period, if applicable, FHWA issues (signs) the FONSI. FHWA provides a copy of the signed FONSI to BLAES who notifies the Project Manager, Designer and CCR.

### **Publish Notice of FONSI Availability (3610)**

BLAES and CCR prepare a Notice of FONSI Availability and send to the Designer for distribution to affected Federal, State and local agencies.

## **Environmental Impact Statement**

### **Overview**

Federally funded projects requiring Environmental Impact Statements (EIS) have large scopes, require comprehensive evaluation of alternatives and are likely to cause significant environmental impacts. Documentation of Section 4(f) impacts may also be required. If a FONSI is not issued for an EA, an EIS is required. The Federal Regulation outlining EIS requirements is 23 CFR 771.123, 125, 127.

FHWA regulations for preparing and processing an EIS are contained in 23 CFR 771, which lists the following examples of actions that *normally* require an EIS:

- A new controlled access freeway
- A highway project of four or more lanes on a new location
- New construction or extension of fixed rail transit facilities

An EIS is a public document that incorporates results of an alternatives analysis, technical environmental studies, Section 106 processes, Section 4(f) evaluation, consultation with cooperating agencies and public involvement. An EIS requires a public comment period and a public hearing.

The Designer includes a summary of the EIS in the Draft PE Report and includes the EIS as an attachment to the Draft PE Report.

### **Major Tasks**

#### ***Draft EIS***

### **Publish Notice of Intent in Federal Register (EIS Only) (3620)**

The Environmental Coordinator prepares a Notice of Intent (to prepare an EIS) for the BLAES Bureau Manager to review and submit to FHWA. FHWA publishes the Notice of Intent within the Federal Register. The Environmental Coordinator also sends a Notice of Planned Action (NOPA) Letter to Federal, State and local agencies, who may have interest, jurisdiction or unique expertise that would contribute to the impact assessment. The Environmental Coordinator consults the BLAES distribution list of public agencies to determine which should receive the NOPA.

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### **Invite Cooperating Agencies (EA & EIS) (3625)**

FHWA invites agencies with regulatory responsibility and jurisdiction over the proposed action or that have expertise valuable to the assessment of impacts to be cooperating agencies in the preparation of the EA or EIS. A cooperating agency participates in meetings and reviews during the development of the EA or EIS.

### **Hold NEPA Scope Meeting (EIS Only) (3630)**

BLAES invites the cooperating agencies to a NEPA Scope Meeting to identify existing environmental conditions, which will be addressed in the EIS. The Project Manager may update the PE Scope Statement based on input received from the cooperating agencies at the NEPA Scope Meeting.

In accordance with Federal regulations, the NEPA Scope Meeting will identify a list of alternatives to be evaluated that meet the Purpose and Need. The NEPA Scope Meeting attendees select the final alternatives for detailed study in the Draft EIS (DEIS) (and 4(f) if applicable). The range of alternatives shall include No Action, Transportation System Management, Mass Transit, and Build alternatives, including improvement of existing highways and alternatives on a new location, as appropriate. The Designer prepares a memorandum of record and sends to the Project Manager for distribution.

### **Prepare DEIS or DEIS/4(f) (3640)**

The Designer prepares a DEIS (and 4(f) if applicable) in cooperation with BLAES. The DEIS (and 4(f) if applicable) evaluates all reasonable alternatives and discusses the reasons why other considered alternatives were eliminated from detailed study. The DEIS includes the Section 4(f) evaluation (if applicable), Purpose and Need Statement, Alternatives Analysis and a summary of the technical environmental studies and Cultural Resource Survey Report, reviews, consultation with cooperating agencies and public involvement required by environmental laws or Executive Orders to the extent appropriate at this stage in the environmental process. Submit the DEIS (and 4(f) if applicable) to the Environmental Coordinator for review and comment. The Environmental Coordinator notifies the Project Manager that the DEIS has been received.

### **NJDOT Reviews DEIS (3645)**

The Environmental Coordinator reviews the DEIS (and 4(f) if applicable) for completeness and accuracy. The Environmental Coordinator determines if an NJDOT SME review is needed. The Environmental Coordinator compiles the BLAES and SME comments and provides written comments to the Designer.

### **Revise DEIS (NJDOT Comments) (3650)**

The Designer addresses the comments from the Environmental Coordinator, updates the DEIS (and 4(f) if applicable) and resubmits it to BLAES. The Environmental Coordinator verifies that the DEIS (and 4(f) if applicable) comments have been adequately addressed and decides if additional NJDOT SME verification is necessary. Once the Environmental Coordinator determines all comments have been adequately addressed, the Environmental Coordinator consults with FHWA to determine the appropriate number of copies required for review. The Environmental Coordinator provides a cover

letter and the DEIS to the BLAES Bureau Manager to submit to FHWA. All technical studies are also submitted to FHWA at this time.

### **FHWA Reviews DEIS (3655)**

FHWA conducts an independent review of the DEIS (and 4(f) if applicable) and the technical environmental studies and submits written comments to the BLAES Bureau Manager. The BLAES Bureau Manager sends the FHWA comments to the Environmental Coordinator for distribution to the Designer.

### **Revise DEIS (FHWA Comments) (3660)**

The Designer, in collaboration with BLAES, addresses FHWA's comments. This may require additional engineering, environmental, public involvement or agency coordination activities. The DEIS (and 4(f) if applicable) is revised and resubmitted to BLAES.

Once the Environmental Coordinator determines all comments have been adequately addressed, the Environmental Coordinator provides a cover letter and the revised DEIS (and 4(f) if applicable) to the BLAES Bureau Manager to submit to FHWA.

### **FHWA Approves DEIS to Circulate (3665)**

FHWA verifies that the DEIS (and 4(f) if applicable) comments have been adequately addressed and approves the DEIS (and 4(f) if applicable). FHWA sends a letter to the BLAES Bureau Manager indicating all comments have been addressed and the document is ready for print and circulation to cooperating agencies.

### **Publish Notice of Availability in Federal Register (DEIS) (3670)**

The Environmental Coordinator prepares a transmittal letter for the BLAES Bureau Manager's signature. The BLAES Bureau Manager submits the FHWA-approved DEIS (and 4(f) if applicable) to the Environmental Protection Agency (EPA). EPA publishes the Notice of Availability in the Federal Register. EPA notifies FHWA of the publication. FHWA notifies the BLAES Bureau Manager of the publication. Date of publication begins a mandated 45 calendar day public comment period.

### **Circulate DEIS (3675)**

The Environmental Coordinator determines the number of copies of the DEIS (and 4(f) if applicable) needed for circulation by consulting the BLAES distribution list of public agencies. The Environmental Coordinator notifies the Designer of the appropriate number of copies. The Designer prepares the appropriate number of copies of the DEIS (and 4(f) if applicable) and submits to BLAES for distribution. The Environmental Coordinator prepares a transmittal letter for the BLAES Bureau Manager signature, indicating the time, date and location of the public hearing (if known). The BLAES Bureau Manager signs the transmittal letter, and the Environmental Coordinator distributes the DEIS (and 4(f) if applicable) to public officials, Federal, State and local government agencies with jurisdiction and expertise involving the proposed action as well as special interest groups and members of the public with identified interest in the proposed action. The DEIS (and 4(f) if applicable) is also available for public review at NJDOT headquarters, at the local government library and the state and county libraries. BLAES distributes the DEIS (and 4(f) if applicable) no later than

the date the Environmental Protection Agency publishes the Notice of Availability in the Federal Register.

### **Hold EIS Public Hearing & Comment Period (3680)**

The Environmental Coordinator notifies the CCR to schedule and hold a public hearing no sooner than 15 calendar days after the circulation of the DEIS (and 4(f) if applicable). CCR contacts the applicable municipal officials to schedule the public hearing. To accommodate the public, a public hearing is typically held late afternoon or early evening at a municipal facility. The Designer publishes an advanced notice of the hearing within the local newspaper, notifying the public of the availability of the DEIS (and 4(f) if applicable) and requesting comments. The Designer also arranges for the provision of a stenographer to record verbal testimony at the public hearing.

For the public hearing, the Designer prepares display boards, which may include an aerial of the project area, the proposed alternatives, a profile of the existing condition and the proposed improvement, existing and proposed typical sections, environmental concerns, a right of way matrix showing the amount of each property impact, detours, construction staging, traffic volumes, collision diagrams, structural elevations and photo simulations. Consult with CCR for review and comment of the displays. The DEIS (and 4(f) if applicable) is also available for inspection at the public hearing and at other public locations.

The Designer, Project Manager, Environmental Coordinator, CCR and any appropriate NJDOT SMEs (e.g., ROW, Access) should attend the public hearing. BLAES accepts comments either in writing or as verbal testimony given at the public hearing. The stenographer provides a transcript of the public hearing to the Environmental Coordinator. The Environmental Coordinator sends written comments and the public hearing transcript to the FHWA for their information. The required public comment period for a DEIS (and 4(f) if applicable) is 45 calendar days beginning with the publication of the DEIS availability.

### **Address Public and Agency Comments (3685)**

The Designer and Environmental Coordinator evaluate all public and agency comments in consultation with the Project Manager. The Designer and BLAES make appropriate recommendations to the Project Manager to modify the project to avoid, minimize or mitigate impacts to the environment and incorporate measures to enhance environmental quality in response to comments received. The Project Manager coordinates with any necessary SMEs that may be affected by the proposed geometric changes. The Designer and Environmental Coordinator provide a written response to comments received, if necessary. FHWA receives a copy of all written responses.

### **Select Final Alternative (3690)**

The Project Manager collaborates with BLAES, FHWA, the Designer and other SME units to select a final alternative for recommendation to the Capital Program Screening Committee (CPSC) and inclusion in the Final Environmental Impact Statement (FEIS) (and 4(f) if applicable).

### **Present to Capital Program Screening Committee (3215)**

The Capital Program Screening Committee (CPSC) consists of NJDOT Directors (voting members), FHWA, North Jersey Transportation Planning Authority, Delaware Valley Regional Planning

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Commission and South Jersey Transportation Planning Organization. The three MPOs and FHWA are non-voting members. The CPSC is responsible for deciding what issues will be elevated to the Capital Program Committee (CPC).

The Project Manager prepares a memo for the Capital Investment Planning and Development (CIPD) Director to request placement on the agenda of the next scheduled CPSC Meeting. The Project Manager assembles an information package that briefly describes the Final Alternative and provides supporting documentation. The Project Manager prepares a memo for the Executive Regional Manager's signature. The Executive Regional Manager forwards the signed memo and information package to the CIPD Director. The CIPD Director places the project on the agenda of the next CPSC meeting.

The Project Manager presents the Final Alternative to the CPSC on the scheduled date and answers any CPSC members' questions. The CPSC provides their recommendation regarding advancement of the Final Alternative to the Project Manager and forwards their recommendation to the CPC for approval.

### **Capital Program Committee Approves Final Alternative (3220)**

The CPC consists of the NJDOT Deputy Commissioner and all Assistant Commissioners. The agenda items from the CPSC are discussed with the associated recommendations. The purpose of this meeting is to obtain concurrence on the CPSC recommendations. NJDOT Directors may be invited to attend, but they do not vote. Project Managers do not attend the CPC meeting unless requested.

The CIPD Director presents the CPSC recommendation regarding the Final Alternative to the CPC for review and approval. The CPC concurs with the CPSC recommendation or makes another recommendation. Once CPC approval is obtained, the Project Manager notifies the Environmental Coordinator that CPC has approved the Final Alternative.

## ***Final EIS***

### **Prepare & Submit FEIS (3700)**

Upon receiving CPC approval, the Project Manager notifies the Designer to prepare the Final Environmental Impact Statement (FEIS) (and 4(f) if applicable). The FEIS identifies the final alternative, evaluates reasonable alternatives, addresses substantive comments received on the Draft Environmental Impact Statement (DEIS) (and 4(f) if applicable) and describes mitigation/enhancement measures that will be incorporated into the proposed action. Include results of any additional technical studies which address comments to the DEIS (and 4(f) if applicable). The Designer submits the FEIS (and 4(f) if applicable) to BLAES for review. The Environmental Coordinator reviews the FEIS for completeness and accuracy.

The Environmental Coordinator consults with FHWA to determine the appropriate number of copies required for review. The Environmental Coordinator provides a cover letter and the FEIS (and 4(f) if applicable) to the BLAES Bureau Manager to submit to FHWA. BLAES also sends the FEIS (and 4(f) if applicable) to Cooperating Agencies for review and comment.

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### **FHWA Reviews & Comments on FEIS (3705)**

FHWA conducts an independent review of the FEIS (and 4(f) if applicable) and submits written comments to the BLAES Bureau Manager. The BLAES Bureau Manager sends the FHWA comments to the Environmental Coordinator for distribution to the Designer.

### **Address FEIS Comments (3710)**

The Designer, in collaboration with BLAES, addresses FHWA's comments. This may require additional engineering, environmental, public involvement or agency coordination activities. The FEIS (and 4(f) if applicable) is revised and resubmitted to BLAES.

Once the Environmental Coordinator determines all comments have been adequately addressed, the Environmental Coordinator provides a cover letter and the revised FEIS (and 4(f) if applicable) to the BLAES Bureau Manager to submit to FHWA.

### **FHWA Reviews FEIS for Legal Sufficiency & Approval (3715)**

In accordance with Federal regulations, the FHWA NJ Division Office reviews and submits the FEIS (and 4(f) if applicable) to the FHWA National Resource Center for a legal sufficiency review and comment. If the legal sufficiency review results in comments to be addressed, BLAES and the Designer consult on the changes needed and resubmit to the FHWA NJ Division Office. The FHWA National Resource Center has 30 calendar days to complete the legal sufficiency review. If the document complies with Federal regulations, the FHWA National Resource Center and the FHWA NJ Division Office approve the FEIS (and 4(f) if applicable) for legal sufficiency. FHWA approves the FEIS (and 4(f) if applicable) for printing and distribution, and signs and dates the cover page. FHWA notifies BLAES that the FEIS (and 4(f) if applicable) is approved and BLAES determines the number of copies of the FEIS (and 4(f) if applicable) needed for circulation.

### **Publish EIS Notice of Availability in Newspaper (3720)**

The Environmental Coordinator and CCR prepare a Notice of Availability and send to the Designer for publication in appropriate newspapers.

### **Circulate FEIS (3735)**

The Environmental Coordinator determines the number of copies of the FEIS (and 4(f) if applicable) needed for circulation by consulting the BLAES distribution list of public agencies. The Environmental Coordinator notifies the Designer of the appropriate number of copies. The Designer prepares the appropriate number of copies of the FEIS (and 4(f) if applicable) and submits to BLAES for distribution. The Environmental Coordinator prepares a transmittal letter for the BLAES Bureau Manager's signature. The BLAES Bureau Manager signs the transmittal letter, and the Environmental Coordinator distributes the FEIS (and 4(f) if applicable) to public officials, Federal, State and local government agencies with jurisdiction and expertise involving the proposed action, as well as special interest groups and members of the public who made substantive comments on the DEIS. The FEIS (and 4(f) if applicable) is also available for public review at NJDOT headquarters, at the local government library and at state and county libraries.

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### **Publish FEIS Notice in Federal Register (3725)**

The Environmental Coordinator provides a cover letter and the FEIS (and 4(f) if applicable) to the BLAES Bureau Manager to submit to the EPA. EPA publishes the Notice of Availability in the Federal Register.

### ***Record of Decision***

#### **FHWA Publishes ROD in Federal Register (3730)**

FHWA completes and signs a Record of Decision (ROD) no sooner than 30 days after publication of the FEIS (and 4(f) if applicable) notice in the Federal Register or 90 days after publication of a notice for the DEIS, whichever is later. The ROD will present the basis for the decision, summarize any mitigation measures that will be incorporated in the project and document any required section 4(f) approval. BLAES distributes the ROD to the list of FEIS recipients. FHWA notifies BLAES when the ROD is published.

### **NJ Executive Order 215**

#### **Overview**

NJ Executive Order 215, signed on September 11, 1989 by Governor Thomas H. Kean, applies to all major construction projects using at least 20% State agency or Authority funds. The objective of this Order is to reduce or eliminate any potential adverse environmental impacts of projects initiated or funded by the State. If a construction project uses any Federal funding, environmental compliance must be documented through the NEPA process.

EO 215 requires departments, agencies, and authorities of the State to prepare and submit to the NJDEP an Environmental Assessment (EA) or Environmental Impact Statement (EIS) prepared in accordance with the outline provided in EO 215.

The process is not required if the project is being processed under NEPA and receives FHWA approvals. While the technical disciplines are generally the same as the Federal NEPA process, there are some that are not applicable, such as the Federal Section 106 Process and Section 4(f) Process. Consult the NJDEP “Guidelines for the Preparation of an Environmental Impact Statement/ Environmental Assessment” to establish the appropriate scope of activities for the project.

Executive Order 215 governs the environmental documentation required for State-funded projects, which exceed \$1,000,000 in construction costs. There are two levels of EO 215 environmental documents that are organized similar to NEPA: *Environmental Assessment* - applies to projects with construction costs more than one million dollars and *Environmental Impact Statement* - applies to projects with construction costs in excess of five million dollars *and* which involve land disturbance in excess of five acres. If a project has a cost of less than \$1,000,000 and meets the criteria of a CED, NJDEP review is not required. EO 215 does not apply to maintenance/repair projects and facilities/equipment replaced in-kind at the same location.

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The Designer includes a summary of the EO 215 in the Draft PE Report and includes the EO 215 as an attachment to the Draft PE Report.

## **Major Tasks**

### **Prepare Draft EO 215 Document (3910)**

BLAES determines the appropriate level of documentation (Environmental Assessment or Environmental Impact Statement). The Designer or BLAES prepares multi-disciplined technical environmental studies as outlined in NJDEP EO 215 guidelines. Using the multi-disciplined technical studies, the Designer or BLAES prepares the environmental document.

Note: An Environmental Assessment and Environmental Impact Statement, per Executive Order 215, do not have the same requirements as the Federal NEPA process.

### **NJDOT Reviews Draft EO 215 Document (3920)**

BLAES reviews the draft EO 215 document and provides written comments to the preparer.

### **Revise Draft EO 215 Document (NJDOT Comments) (3925)**

The Designer or BLAES addresses the comments, revises the draft EO 215 document and resubmits it to BLAES. BLAES verifies that the comments have been adequately addressed. The Environmental Coordinator prepares a cover letter for the BLAES Manager's signature and sends the EO 215 document with cover letter to NJDEP.

### **NJDEP Reviews EO 215 Document (3930)**

NJDEP conducts a review of the EO 215 document. In accordance with EO 215, NJDEP has a 20 calendar day review for administrative completeness and a 60 calendar day content review. Upon completing its review, NJDEP provides written comments to BLAES. The comments may include identification of additional probable adverse environmental impacts, additional identification of permits or regulatory requirements and recommendations including, but not limited to, approval, conditional approval, additional impact assessment, project modification or major reconstruction of the project.

### **Address NJDEP Comments & Prepare Final EO 215 Document (3940)**

BLAES provides NJDEP with a written response indicating acceptance of any recommendations or a response indicating issues that remain unresolved. Any dispute involving implementation of the recommendations shall be resolved in good faith between NJDOT and NJDEP. An inter-agency meeting may be required to resolve any outstanding issues.

If required, conduct additional environmental and engineering activities as needed to address comments and prepare the final EO 215 document. BLAES submits the final EO 215 document to NJDEP for final review.

### **NJDEP Approves EO 215 Document (3945)**

NJDEP reviews and approves the final EO 215 document and sends written confirmation to BLAES. BLAES provides a copy of the approval to the Project Manager.

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## **Construction Support**

### **Overview**

The preliminary construction work in the PE Phase consists of updating the preliminary detour and construction staging plans, preparing a construction cost estimate and conducting a constructability and maintenance review.

Detour and construction staging plans are intended to identify the design of the construction zone, how the proposed project will be constructed (stages) and how the traffic will be managed during construction. The design of the construction zone should also incorporate the safety of the workers and traveling public within the work zone.

Construction cost estimates are developed through all phases of the project development process and updated as the project plan is refined in each consecutive phase. An accurate construction cost estimate developed during PE is essential to the programming of appropriate funds for the project.

Constructability and Maintenance reviews are necessary to identify elements in a project plan that can be modified to help reduce construction time and cost overruns.

### **Major Tasks**

#### **Update Preliminary Detour and Construction Staging Plans (3130)**

The preliminary construction staging plans that were developed and reviewed during the CD Phase are updated to reflect PE design changes to the PPA.

The Designer:

- Reviews the preliminary detour and construction staging plans that were developed during the CD Phase.
- Determines if a detour will be needed for traffic control if one was not proposed during CD.
- Coordinates efforts with outside agencies (local and county officials and engineers) if the detour that was proposed in the CD Phase needs to be updated.
- Obtains concurrence from the Bureau of Traffic Operations and other appropriate NJDOT SMEs if the preliminary detour and construction staging plans are revised.
- Assesses the need for interim or temporary signals as a result of the construction staging and verifies the need with the Bureau of TSSE.
- Updates the construction sequence narrative.
- Prepares a preliminary construction schedule with anticipated construction stage durations.
- Retains any documentation of support from the local and county officials for a specific detour route.
- Submits the Preliminary Detour and Construction Staging Plans to the Project Manager.
- Includes documentation of support from the local and county officials in the Draft PE Report.
- Includes the preliminary construction schedule in the Draft PE Report.

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- Includes a summary of the Preliminary Detour and Construction Staging Plans in the Draft PE Report and includes the Preliminary Detour and Construction Staging Plans as an attachment to the Draft PE Report.

### **Prepare Construction Cost Estimate (3135)**

A construction cost estimate is prepared using the TRNS•PORT cost estimating system. The Construction Cost Estimate is necessary to properly program construction funds for the project.

The Designer:

- Consults the Department's Construction Cost Estimating Guide for more details about using TRNS•PORT and developing construction cost estimates.
- Prepares the Construction Cost Estimate using TRNS•PORT. If the project environmental document is an Environmental Assessment (EA) or Environmental Impact Statement (EIS), use the Alternative Analysis Report in the preparation of the construction cost estimate.
- Submits the Construction Cost Estimate to the Project Manager for review and comment.
- Includes a summary of the Construction Cost Estimate in the Draft PE Report and includes the Construction Cost Estimate as an attachment to the Draft PE Report.

The Project Manager:

- Reviews the Construction Cost Estimate and provides written comments to the Designer.
- Inputs the Construction Cost Estimate into PRS.

### **Conduct Preliminary Engineering Constructability-Risk Analysis Workshop (3145)**

Constructability and Maintenance reviews potentially reduce the duration of construction and ensure the project can be constructed while maintaining public safety.

The Project Manager forwards the Preliminary Detour and Construction Staging Plans to the Bureau of Construction Management, Bureau of Traffic Operations and the Regional Maintenance Engineer for review and comment. Construction Management performs a constructability review of the proposed project. The Regional Maintenance Engineer performs a maintenance review of the proposed project to minimize long term maintenance costs. The Bureau of Traffic Operations performs a review of the traffic impacts during construction. The Bureau of Construction Management, Bureau of Traffic Operations and the Regional Maintenance Engineer send their recommendations to the Project Manager. The Project Manager forwards the recommendations to the Designer. The Designer incorporates the recommendations into the related plans, estimates, etc.

The Project Manager will have the Designer provide the Updated Preliminary Detour and Construction Staging Plans, Updated Utility Risk Assessment Plan, Preliminary Geotechnical Engineering Report, Risk Register and related information to Construction Management [and will coordinate scheduling of a Preliminary Engineering Constructability-Risk Analysis \(PECRA\) Workshop on the proposed project.](#)

[The Designer and Construction Management will facilitate the PECRA Workshop, which will provide an opportunity for members of Construction Management, Traffic Operations, Regional Maintenance Engineering, Utility Engineering, and select SMEs, to collaborate and review identified risks and](#)

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opportunities, review risk response strategies, and identify any risks not previously identified in the Risk Register.

The PECRA Workshop Group will provide comments on construction methods, construction staging and duration, to potentially avoid or mitigate constructability risks, to potentially avoid or mitigate utility risks, and help to develop a reasonable construction cost estimate. The PECRA Workshop Group will perform a maintenance review, to minimize long term maintenance costs, and review of the traffic impacts during construction.

The Designer reviews the results of the PECRA Workshop for any identified constructability or maintenance risks. Notify the PM to update the Risk Register if new risks or changes to existing risks are identified from the PECRA Workshop. After receiving the results of the PECRA Workshop, the Project Manager may request a meeting with the Designer, Construction Management, and members of the PECRA Workshop Group to discuss incorporating the Group's recommendations into related plans, estimates, etc.

## Design Exceptions

### Overview

When conditions warrant, a design exception may be granted for a project design that proposes one or more Controlling Substandard Design Elements (CSDEs). A design exception may be approved when it can be documented that a lesser design value is the best practical alternative. The factors to be considered when determining if a lesser design value should be elected shall include social, economic and environmental impacts together with safe and efficient traffic operations.

### Major Tasks

#### Prepare Design Exception Report (3150)

If CSDEs were identified during Concept Development or exist as a result of any PE engineering design, a Design Exception Report is prepared. The report identifies the location of the CSDEs, contains a description of each CSDE, including the standard design value, the proposed safety measure, crash analysis and the impacts of providing the standard design value.

The Designer prepares the Design Exception Report using the NJDOT Design Exception Manual as a guideline. The Designer submits the Design Exception Report to the Project Manager. The Project Manager reviews the document for completeness and forwards it to the Bureau of Quality Management Services (QMS). QMS reviews the Design Exception Report and sends written comments back to the Project Manager who forwards the comments to the Designer. The Designer addresses the comments and resubmits three copies of the Design Exception Report (four copies if FHWA approval is also necessary) to the Project Manager who forwards them to QMS. QMS forwards the copies of the Design Exception Report to the State Transportation Engineer for approval. The State Transportation Engineer signs all three Design Exception Report copies and distributes the copies to QMS, the Project Manager and the Director of Capital Program Support.

If FHWA approval is necessary, the State Transportation Engineer prepares a transmittal letter and sends four copies of the Design Exception Report to FHWA. FHWA reviews and signs all four copies

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Check the Capital Project Delivery website to ensure this is the current version  
Revision 10

Page 51 of 58

Released: 04/2019

of the Design Exception Report and returns three of them to the State Transportation Engineer who distributes as noted above.

The Designer includes a summary of the Design Exception Report in the Draft PE Report and includes the Design Exception Report as an attachment to the Draft PE Report.

## **Preliminary Engineering Report**

### **Overview**

The Preliminary Engineering Report documents all of the design and environmental efforts performed during the PE Phase. Attachments to the PE Report may include the Approved Project Plan, Environmental Document, FD Scope Statement, PE Quality Certification, Complete Streets Checklist and FD Public Involvement Action Plan.

### **Major Tasks**

#### **Prepare Draft Preliminary Engineering Report (3160)**

The Preliminary Engineering Report is a compilation of all analysis, data, plans, environmental document, etc. that was developed for the Project Plan. The Draft PE Report should include the Environmental Document, Design Exception Report, Final Design Scope Statement, the Design Communications Report and the appropriate plans in support of the Environmental Document and Design Exception Report. The PE Report Table of Contents template lists the items to be included in the Draft PE Report.

The Designer:

- Prepares the PE Report using the PE Report Table of Contents template as a guide and submits it to the Project Manager.

#### **Finalize Project Plan (3165)**

If preliminary roadway plans are not prepared during PE, the PPA developed during Concept Development is updated to become the Project Plan to reflect design changes during PE. If mapping was not done during Concept Development, the Project Plan should reflect PE level mapping. The Project Plan or roadway plans will become the Approved Project Plan.

The Project Manager:

- Schedules and holds a Core Group meeting.
- Presents the Project Plan to the Core Group.
- Completes the Complete Streets Checklist

The Designer:

- Prepares the Project Plan for the Core Group Meeting.
- Addresses the Core Group Meeting comments.
- Revises the Project Plan based on comments obtained from the Core Group.
- Includes a summary of the Project Plan in the Draft PE Report.

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### **Prepare Final Design Scope Statement (3170)**

The FD Scope Statement identifies the activities to be completed during the FD Phase and helps to shape the scope of work and man-hour cost. Concurrence by key SMEs is essential to controlling the scope of the project during the FD Phase. The FD Scope Statement is attached to the Draft PE Report and will be used to solicit a designer man-hour estimate and fee proposal for FD.

The Designer:

- Prepares the FD Scope Statement form and submits to the Project Manager.
- The Designer includes the FD Scope Statement as an attachment to the Draft PE Report.

The Project Manager:

- Reviews the FD Scope Statement form for completeness and circulates it to the appropriate SMEs for concurrence and signatures.
- Sends the approved FD Scope Statement to the Designer.

### **Complete Preliminary Engineering Quality Certification (3175)**

The Designer prepares the PE Quality Certification and submits it to the Project Manager for approval and signature. The Project Manager sends the approved Quality Certification to the Designer. The Designer includes the PE Quality Certification as an attachment to the Draft PE Report.

### **Develop FD Public Involvement Action Plan (3185)**

Public Involvement during the FD Phase should be a continuation of the PE Phase public outreach efforts. The Project Manager, Designer and Division of Community and Constituent Relations (CCR) representative evaluate the PE Public Involvement Action Plan (PIAP) and make recommendations for the FD PIAP. The Project Manager and Designer develop an FD PIAP to identify critical points for public involvement during FD, and the objectives for each point.

The Designer drafts the FD PIAP and submits to the Project Manager. The Project Manager circulates the FD PIAP to the Environmental Coordinator and CCR representative for comment. The Project Manager coordinates with the Environmental Coordinator when preparing the FD PIAP to determine involvement with State/Federal permitting agencies responsible for Cultural Resources, Green Acres, CAFRA, Waterfront Development and other public involvement requirements. The Designer incorporates any comments, finalizes the FD PIAP and submits to the Project Manager for signature. The Project Manager sends the FD PIAP to CCR for signature. The Designer includes the FD PIAP as an attachment to the Draft PE Report.

The FD PIAP may include a reforestation element, when required, due to proposed project impacts. If one acre or larger of deforestation is proposed, a public information center is required, if not already held during PE.

The Designer includes the FD PIAP as an attachment to the Draft PE Report.

### **NJDOT Reviews Draft Preliminary Engineering Report (3205)**

The Project Manager reviews the Draft PE Report for completeness. The Project Manager should use the PE Report Table of Contents template as a checklist. If found to be complete, the Project Manager sends a copy of the Draft PE Report to the NJDOT SMEs for review and comment. The NJDOT



SMEs review the Draft PE Report and send written comments to the Project Manager. The Project Manager compiles the comments and sends them to the Designer for revision. The Designer addresses the comments and resubmits the PE Report to the Project Manager. The Project Manager prepares a transmittal letter and forwards the letter and the PE Report to FHWA for approval.

## Major Projects

### Overview

FHWA guidelines define a Major Project as one with an estimated cost of \$500 million or more that is receiving Federal financial assistance. A Project Management (PM) and Financial Management (FM) Plan is required for all Major Projects. The PM Plan for Major Projects should follow the FHWA guidelines. A Project Management Plan for Major Projects requires FHWA approval.

### Major Tasks

#### Prepare Project Management Plan (Major Projects) (3195)

The Purpose of the Project Management Plan for Major Projects as outlined by FHWA is to “Clearly define the roles, responsibilities, procedures and processes that will result in the major project being managed such that it is completed on-time, within budget, with the highest degree of quality, in a safe manner for both workers and traveling public and in a manner that maintains the public trust, support and confidence.” Guidance can be found at:

[http://www.fhwa.dot.gov/ipd/project\\_delivery/tools\\_programs/project\\_management\\_plans/guidance.htm](http://www.fhwa.dot.gov/ipd/project_delivery/tools_programs/project_management_plans/guidance.htm)

A PM Plan is required for Major Projects with an estimated total cost of \$500,000,000 or more. The following identifies some of the sections to be included in the Plan (See FHWA Guidance for a complete list): project description, goals and objectives, project organizational chart, roles and responsibilities, project phases, procurement and contract management, cost budget and schedule and reporting and tracking.

The Designer:

- Develops Draft PM Plan for Major Projects and submits it to the Project Manager.
- Revises the Draft PM Plan for Major Projects, as needed.
- The Designer includes the Draft PM Plan for Major Projects as an attachment to the Draft PE Report.

Project Manager:

- Reviews the Draft PM Plan for Major Projects for completeness.
- Obtains input from SMEs, if required.
- Provides written comments to Designer.
- Prepares a transmittal letter for FHWA.
- Submits the revised Draft PM Plan for Major Projects to FHWA 60 days prior to the NEPA document submission.

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### **FHWA Approves Project Management Plan (Major Projects) (3200)**

FHWA reviews the Draft PM Plan for Major Projects and provides written comments to the Project Manager. Some comments may require the Project Manager to provide FHWA with additional information. Once all FHWA requests and comments have been satisfactorily addressed, FHWA notifies the Project Manager that the PM Plan for Major Projects has been approved.

## **Preliminary Engineering Approvals**

### **Overview**

FHWA approval of the PE Report and Environmental Document is required to advance from the PE Phase to the FD Phase.

### **Major Tasks**

#### **FHWA Reviews and Approves Preliminary Engineering Report (3210)**

After the Designer addresses the Project Manager and Subject Matter Experts' comments on the Draft PE Report, the Project Manager forwards the Draft PE Report to FHWA for review and approval. The duration for FHWA review and comment will vary based on project complexity. The duration for making changes to the PE Report will vary based on the extent of FHWA comments.

FHWA reviews the PE Report with the attached environmental document and, if necessary, provides written comments to the Project Manager. The Project Manager forwards FHWA's comments to the Designer for revision. The Designer addresses the comments and resubmits the PE Report to the Project Manager. The Project Manager forwards the revised PE Report to FHWA. Once all of the FHWA comments have been satisfactorily addressed, FHWA notifies the Project Manager that the PE Report and Environmental Document have been approved.

## **FD Designer**

### **Overview**

The FD Designer work culminates with securing a designer for the FD Phase. The PE Designer may be retained to complete FD or a new designer may be selected.

### **Major Tasks**

#### **Assess Designer (3225)**

The PE Designer is assessed to determine if they will perform the required FD activities. The Designer can be assessed once the PE Report is approved by FHWA.

The Project Manager assesses the performance and available resources of the PE Designer to successfully perform the FD Phase activities. The PE Designer can either be a consultant designer or NJDOT in-house design. If the PE Designer is a consultant designer, the Project Manager makes a recommendation to amend the existing contract with an addendum.

The Project Manager sends their designer recommendation to the Executive Regional Manager for concurrence. The Executive Regional Manager evaluates the recommendation to retain the PE Designer or select a new designer for FD. If the Executive Regional Manager does not concur, the

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issue is elevated to the Director for discussion and resolution. If the decision is to not continue with the PE Designer, the Project Manager initiates the process to select a new designer.

### **Develop FD Designer Fee Proposal (3230)**

The FD Designer Fee Proposal is a document that details the FD Designer's Scope of Services and associated fee. The FD Designer utilizes the FD Scope Statement to prepare the detailed Fee Proposal.

The Project Manager requests that the FD Designer prepare a Fee Proposal to perform the FD phase activities. The Designer prepares a Fee Proposal and forwards the proposal to the Project Manager. The Project Manager ensures the Fee Proposal is prepared in accordance with internal NJDOT Policy and Procedure #328, "Agreement Development Process for Procurement of Professional Services."

### **Develop FD Independent Cost Estimate (3235)**

An FD Independent Cost Estimate (ICE) is used to compare the estimated designer costs against the designer's fee proposal. The FD ICE is developed utilizing historical data for similar projects.

The Project Manager requests that the Office of Schedule and Budget Management develop an FD ICE to compare to the designer's fee proposal. An ICE will be used in contract negotiations. The Project Manager submits the FD Scope Statement to the Office of Schedule and Budget Management. The Office of Schedule and Budget Management consults with SMEs when developing man-hour estimates on unique or major tasks. The Office of Schedule and Budget Management submits the Preliminary FD ICE to the Project Manager for review and comment.

### **Create FD Schedule (3240)**

The Project Manager or DPM Scheduler requests the Office of Schedule and Budget Management to create an active schedule in Primavera based on the standard FD schedule template. The Project Manager sends the standard FD schedule template to the DPM Scheduler or Office of Schedule and Budget Management to customize the schedule based on the FD Scope Statement and historic data. The DPM Scheduler or Office of Schedule and Budget Management sends the draft FD schedule to the Project Manager. The Project Manager negotiates the draft schedule activities and durations with the Designer. The Project Manager provides the negotiated draft schedule to the DPM Scheduler or Office of Schedule and Budget Management to update the active schedule.

The Project Manager is responsible for updating all schedules on a monthly basis and may do so by providing updates to the DPM Scheduler or Office of Schedule and Budget Management.

### **Negotiate FD Addendum (3245)**

The FD Addendum is negotiated to ensure that the proper designer Scope of Services are included and that those services are performed for a fair price.

The Project Manager reviews the consultant Designer Fee Proposal and negotiates with the designer utilizing the ICE as a comparison. If FD is performed in-house, the Project Manager will negotiate man-hours with NJDOT in-house design staff. The Project Manager sends the recommended Fee Proposal comments to the Designer. The Designer may update the FD Scope Statement with detailed task descriptions, if directed by the Project Manager. Changes to the FD Scope Statement will be approved by the Project Manager. The designer revises the original fee proposal per negotiations and

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submits it to the Project Manager. If the Designer's fee proposal exceeds 10% of the ICE, the Project Manager requests further clarification and justification.

If negotiations are unsuccessful, the Project Manager escalates unresolved issues according to NJDOT Policy and Procedure #328. After completion of negotiations, the Project Manager sends the total negotiated hours to the Office of Schedule and Budget Management.

The Project Manager may request the Office of Schedule and Budget Management prepare a Summary ICE Report that provides a comparison of design man-hour estimates between ICE values and the Designer's man-hour proposal.

### **Approve FD Schedule (3250)**

The FD schedule needs to be approved before FD funding can be authorized.

The Project Manager completes the Project Baseline Schedule Approval form and submits it to the Executive Regional Manager for approval. The Project Manager forwards the Project Baseline Schedule Approval form to the Office of Schedule and Budget Management. The Office of Schedule and Budget Management creates the baseline for the FD Schedule.

### **Develop FD Budget (3255)**

The FD Budget is comprised of the in-house Designer's man-hour costs and the SME unit man-hours to support the Designer.

The Project Manager requests the Office of Schedule and Budget Management develop a FD man-hour budget estimate. If NJDOT in-house design is the designer for the FD Phase, the budget estimate includes in-house design man-hours. An Office of Schedule and Budget Management Budget Analyst develops the Draft Budget in PRS with input from SME units for support hours. The Project Manager is responsible for negotiating any SME unit support hours.

### **Finalize FD Budget (3260)**

The Project Manager completes the Project Baseline Schedule Approval Form and compiles the FD documents required for both budget approval and funding authorization. These documents include the FD Budget Estimate, Project Baseline Schedule Approval Form and if appropriate, Designer's Fee Proposal. Forward the compiled FD documents to the Executive Regional Manager.

### **Approve FD Budget (3265)**

The Executive Regional Manager reviews and approves the FD Budget Package. The Project Manager forwards the Project Baseline Schedule Approval Form to the Office of Schedule and Budget Management to document approval in PRS.

### **Authorize Final Design (3270)**

The Project Manager prepares and submits the FD funding request to CIPD. CIPD determines the appropriate funding source, and if the project is Federally funded, CIPD prepares the request to FHWA for authorization of engineering funds for FD. CIPD notifies the Project Manager of funding authorization approval and provides a copy of the job number and Agreement ID.

### **Execute FD Addendum (3275)**

The Project Manager prepares an FD Addendum and sends to the Designer. The Designer signs the FD Addendum and sends two signed and sealed original copies back to the Project Manager along with copies of the Corporate Resolution and Business Registration Certificates for any new subconsultants. The Project Manager circulates the FD Addendum and an AD-12 to NJDOT Management for signature and approval. The Project Manager distributes the executed FD Addendum to the appropriate parties. Once the FD Addendum is fully executed, the Project Manager issues a Notice to Proceed to the Designer.

## **Preliminary Engineering Closeout**

### **Overview**

To close out the PE Phase the Project Manager must update PRS and request a final invoice from the PE Designer.

### **Major Tasks**

#### **Complete PE Closeout (3285)**

The Project Manager performs a series of internal procedural steps to close out the PE Phase. If required, The Project Manager instructs the Designer to submit their Final Invoice for the PE Phase. Upon payment of the final invoice, notify Accounting to close the job number.

Note: The closeout of the NJDOT PE Phase does not close FHWA PE Authorization.