# Concept Development Activity Descriptions

## January, 2017

PM

PROGRAM MANAGEMENT OFFICE

*SCOPE
*SCHEDULE
*COST

Procedures are subject to change without notice.
Check the Capital Project Delivery website
to ensure this is the current version.

## Table of Contents

**Concept Development ..... 1**

Concept Development Initiated (2000) ..... 1
Review Problem Statement and Charter (2005) ..... 1
Review Problem Screening Report (2010) ..... 2
Obtain Management Systems Input (2015) ..... 2
Determine Mapping Level and Resources Required (2020) ..... 3
Obtain Stakeholder Input (2025) ..... 4
Develop Community Profile (2030) ..... 5
Prepare CD Public Involvement Action Plan (2035) ..... 6
Develop CD Scope Statement (2040) ..... 7
Create CD Schedule (2045) ..... 8
Develop CD Fee Proposal (2050) ..... 9
Update PRS (2055) ..... 10
Execute CD Task Order (2060) ..... 10
Start Design Communications Report (2065) ..... 11
Conduct Traffic Counts (2100) ..... 12
Perform Supplemental Data Collection (2105) ..... 13
Forecast Travel Projections (2110) ..... 14
Prepare CD Mapping (2115) ..... 14
Conduct Field Inventory of Physical Conditions (2120) ..... 15
Identify Substandard Design Elements (2125) ..... 16
Coordinate with Local Officials (2130) ..... 17
Perform Environmental Screening (2135) ..... 18
Review Environmental Screening (2140) ..... 19
Obtain Maps for Storm Water Management Rules Compliance (2145) ..... 20
Prepare Drainage Area Maps (2150) ..... 20
Send Utility Contact Letter (2155) ..... 21
Validate and Compare with Regional Model (2160) ..... 22
Obtain Crash Records (2170) ..... 22
Prepare Utility Risk Assessment Plan (2175) ..... 23
Prepare Crash Analysis & Crash Diagram (2200) ..... 24
Conduct Existing Traffic Analysis (2205) ..... 24
Conduct Scour and Seismic Retrofit Analysis (2210) ..... 25
Conduct Hydrologic & Hydraulic Analysis (2230) ..... 26
Conduct ITS Needs Assessment (2235) ..... 26
Prepare Project Fact Sheet (2240) ..... 27
Prepare Draft Purpose & Need Statement (2250) ..... 28

Hold Scope Team Meeting (2260) ..... 29
Hold Initial Local Officials Briefing (2270) ..... 30
Complete Purpose and Need Statement (2280) ..... 31
Purpose and Need Statement Completed (2290) ..... 31
Develop Alternatives (2300) ..... 31
Obtain Stakeholder Input on Developed Alternatives (2310) ..... 32
Prepare Railroad Agreement (2315) ..... 33
Develop Preliminary Detour and Construction Staging Plans (2320) ..... 34
Perform Impact Assessment (2330) ..... 34
Develop Preliminary Construction Cost Estimates (2340) ..... 35
Conduct Proposed Traffic Analysis (2350) ..... 36
Obtain Reasonable Assurance of Design Exception Approval (2360) ..... 37
Perform SWM Analysis (2370) ..... 38
Prepare Alternatives Matrix (2380) ..... 39
Coordinate with Permitting Agencies (2400) ..... 40
Obtain SME Input (2410) ..... 41
Perform Quantitative Risk Analysis (2425) ..... 42
Revise Alternatives Matrix (2420) ..... 42
Hold Core Group Meeting (2430) ..... 43
Conduct Value Engineering Review (2435) ..... 44
Hold Local Officials Briefing (2440) ..... 45
Prepare Value Engineering Technical Report (2445) ..... 46
Hold Town Council Presentation (2450) ..... 46
Hold Public Information Center (2460) ..... 47
Finalize Preliminary Preferred Alternative (2470) ..... 48
Preliminary Preferred Alternative Selected (2480) ..... 48
Perform PPA Constructability Review (2500) ..... 49
Confirm Environmental Document (2510) ..... 49
Prepare PE Public Involvement Action Plan (2515) ..... 50
Prepare PE Scope Statement (2520) ..... 51
Develop Project Management Plan (2530) ..... 51
Prepare Systems Engineering Review Form (2535) ..... 52
Prepare CD ROW and Access Impact Plan and Matrix (2540) ..... 53
Prepare CD ROW and Access Cost Estimate (2550) ..... 53
Complete CD Quality Certification (2560) ..... 54
Prepare Draft CD Report (2570) ..... 54
Investigate need for Traffic Regulation Orders (2485) ..... 55
Review Draft CD Report and Address Comments (2580) ..... 56
FHWA Reviews and Approves CD Report (2600) ..... 56
Present to CPSC (2610) ..... 57

CPC Approves Advancement (2620) ..... 58
Finalize CD Report (2630) ..... 59
Complete CD Closeout (2640) ..... 60
Prepare Solicitation Package (2700) ..... 60
Form Technical Evaluation Committee (2710) ..... 61
Receive Technical Proposals (2720) ..... 61
Score Proposals (2730) ..... 62
Hold Oral Presentations (2 Step) (2740) ..... 62
Select Designer (2750) ..... 63
Develop PE Independent Cost Estimate (2800) ..... 64
Develop Designer Fee Proposal (2810) ..... 65
Negotiate Contract (2820) ..... 65
Finalize Proposal (2830) ..... 66
Prepare Draft Agreement (2840) ..... 67
Create PE Schedule (2850) ..... 67
Approve PE Schedule (2855) ..... 68
Develop PE Budget (2860) ..... 68
Finalize PE Budget (2865) ..... 69
Approve PE Budget (2870) ..... 70
Authorize PE (2880) ..... 70
Execute Designer Agreement (2890) ..... 71
Concept Development Completed (2950) ..... 72

# Concept Development

## Concept Development Initiated (2000)

### Previous ID: 6300

The Concept Development Phase has been initiated (Milestone).

| | |
|---|---|
| Activity Predecessor: | N/A |
| Activity Successor: | 2005, 2010<br>(2015, 2025, 2040 for Limited Scope Study) |

## Review Problem Statement and Charter (2005)

### Previous ID: 6310

The Project Manager reviews the Problem Statement and Charter developed during Problem Screening and checks for completeness and confirms the route, milepost, township and county. The Problem Statement should specify if the problem is related to planning, operational capacity, congestion, safety, bridge replacement, transit, or a park-and-ride. If there is missing information, contact the owner of the Problem Statement. Review the Straight Line Diagram, Project Reporting System, and Geographic Information Systems to identify other projects or studies within close proximity to obtain preliminary information.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | Author of the Problem Statement |
| Informed: | Author of Problem Statement |
| Activity Predecessor: | 2000 |
| Activity Successor: | 2015, 2020, 2025 |
| Activity Duration: | 10 |
| WBS Element Produced: | None |
| Related Guidance Document: | CD Guideline |

## Review Problem Screening Report (2010)

### Previous ID: 6340

The Project Manager reviews the Problem Screening Report for accuracy and completeness. The report should include (at least) the study location, a clearly defined problem statement, background information, documented field observations that included input received from Subject Matter Expert units and local officials. It should also include Management System rankings, results from the preliminary environmental investigation, project needs and recommendations, and Capital Program Screening Committee assignment. If preliminary information collected is outdated, the Problem Screening Report may need to be updated (Estimated duration: 10 additional days).

The Project Manager should assign a Designer at this point, if necessary. Once a Designer is assigned, the Project Manager can include the Designer in Concept Development initiation activities pending task order execution.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | Author of Problem Screening, Subject Matter Experts (as deemed necessary), Local Officials |
| Informed: | NA |
| Activity Predecessor: | 2000 |
| Activity Successor: | 2015, 2020, 2025 |
| Activity Duration: | 10 |
| WBS Element Produced: | Updated 1.2.4.1 |
| Related Guidance Document: | CD Guideline |

## Obtain Management Systems Input (2015)

### Previous ID: 6320

If Management System Input wasn't obtained during the Problem Screening Phase, the Project Manager sends a letter to the service areas responsible for Management Systems that states the phase of the study and briefly describes the intent of the study. The request will solicit input or information that may be relevant to the study. The Management Systems should include:

- Congestion Management Systems (CMS)
- Bridge Management Systems (BMS)
- Drainage Management Systems (DMS)
- Rockfall Hazard Management Systems (RHMS)
- Pavement Management Systems (PMS)
- Safety Management Systems (SMS)
- Maintenance Management Systems (MMS)
- Smart Growth Management Systems (SGM
- Pedestrian Safety Management System (PS

Service areas provide needed information to the Division of Project Management. Management Systems information may be utilized in the preparation of the CD Scope Statement. Based on

information received from the management systems, the Project Manager includes any project specific risks within the Risk Register. If a Risk Register has not been created, the Project Manager creates it.

*Note for Limited Scope Study:*
The Project Manager reviews the Project Reporting System to identify any conflicting projects. The Project Manager will utilize the management systems information to populate the appropriate Limited Scope CD Checklist.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Management Systems Owners |
| Consulted: | NA |
| Informed: | Designer |
| Activity Predecessor: | 2005, 2010<br>(2000 for Limited Scope Study) |
| Activity Successor: | 2040<br>(2040 FF for Limited Scope Study) |
| Activity Duration: | 20<br>(2 for Limited Scope Study) |
| WBS Element Produced: | 2.1.9, 2.2.1.8 |
| Related Guidance Document: | CD Guideline, Risk Management Guideline, Risk Register Example, Risk Register Template, Project Input Contact Table |

## Determine Mapping Level and Resources Required (2020)

### Previous ID: New Activity

The Project Manager determines the "level of mapping" (Level 1, 2, 3, or 4 as outlined in "Mapping for Concept Development") needs based on project constraints. The Project Manager will determine the needs based on availability of funds, transportation needs, study complexity and severity of potential fatal-flaw.

The Project Manager coordinates with in-house Survey and CADD units to assure a good understanding of expected level of mapping to comply with the latest NJDOT standards, set up control points for level of mapping Levels 2, 3 and 4.

This information is utilized in the creation of the CD Scope Statement.

*Note for Limited Scope Study:*
Due to limited seasonal availability to conduct aerial survey, Limited Scope studies may have already had the mapping prepared under a separate task order. Consult with Survey Services to determine if mapping has already been acquired.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | Survey Services |
| Informed: | Designer |
| Activity Predecessor: | 2005, 2010 |
| Activity Successor: | 2040 |
| Activity Duration: | 10 |
| WBS Element Produced: | Associated with 2.2.1.13 |
| Related Guidance Document: | Mapping for Concept Development (Mapping section within CD Guideline) |

## Obtain Stakeholder Input (2025)

### Previous ID: 6330

The Project Manager sends a letter to various internal NJDOT units and external stakeholders. This request may include, but is not limited to, information such as:

- Available traffic studies
- Recently completed work orders or projects
- Any development plans within study limits
- Bicycle/pedestrian plans
- Trails Plans
- Station area access plans
- Township Master Plan
- Adjacent or concurrent studies or proje
- Other relevant information

Various internal NJDOT units and external stakeholders send requested information to the Division of Project Management. Based on information received from the stakeholders, the Project Manager includes any project specific risks within the Risk Register.

This information is needed to refine the Problem Statement or define the Purpose and Need Statement.

*Note for Limited Scope Study:*
The Project Manager requests available as-built plans.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Stakeholders |
| Consulted: | NA |
| Informed: | Designer |
| Activity Predecessor: | 2005, 2010<br>(2000 for Limited Scope Study) |
| Activity Successor: | 2100, 2105, 2170<br>(2100, 2120, 2130, 2135, 2240, 2250 for Limited Scope Study) |
| Activity Duration: | 25<br>(15 for Limited Scope Study) |
| WBS Element Produced: | 2.1.1<br>(2.2.1.12 for Limited Scope Study) |
| Related Guidance Document: | CD Guideline, Risk Management Guideline, Risk Register Example, Risk Register Template, Project Input Contact Table |

## Develop Community Profile (2030)

### Previous ID: 6410, 6420

The Project Manager may assign a Designer to develop the Community Profile. The Project Manager and Designer (if assigned) should obtain US Census demographic data for the study area and conduct a field trip to become familiar with the study area. The field trip will help to determine the characteristics of the affected area, such as neighborhood boundaries, locations of residences and businesses, demographic and economic information, and land use pattern. The field trip should also alert the Project Manager to potential impacts from the proposed project and help to determine the boundary of the project study area. Information in the Community Profile will be helpful when developing the Public Involvement Action Plan and stakeholder list.

The Designer assigned to develop the Community Profile may not be the same Designer assigned to complete Concept Development.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | Community Group Leaders, Local Officials, Division of Community and Constituent Relations |
| Informed: | Division of Community and Constituent Relations, Designer |
| Activity Predecessor: | 2060 |
| Activity Successor: | 2035 |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.1.2 |
| Related Guidance Document: | CD Guideline, Community Profile Checklist |

## Prepare CD Public Involvement Action Plan (2035)

### Previous ID: 6440, 6430, 6450, 6820, 7410

The Project Manager develops a Public Involvement Action Plan (PIAP) to identify critical points for public involvement, and the objectives for each point. The goal is to solicit public involvement as early as possible. This will include, at minimum, developing a database of known stakeholders, determining the number of anticipated meetings with local officials, citizens groups and any outside agencies impacted by the proposed project.

The creation of a Community Advisory Committee (CAC) may be beneficial. The purpose of establishing a CAC is to establish a partnership with the community, solicit information about the community, how a project might impact the community and help to build a consensus and trust between the community and NJDOT. CAC meetings should be held at points in project development where key decisions need to be made.

Circulate the PIAP to the Division of Community and Constituent Relations (CCR) for final comments and signature.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Division of Community and Constituent Relations |
| Consulted: | NA |
| Informed: | Division of Community and Constituent Relations |
| Activity Predecessor: | 2030 |
| Activity Successor: | 2025 FF |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.1.8 |
| Related Guidance Document: | CD Guideline |

## Develop CD Scope Statement (2040)

### Previous ID: New Activity + 6370, 6380, 6480, 6560

Utilizing the master CD Scope Statement template, the Project Manager identifies the tasks necessary for the particular assignment, including any risk analysis activities to be performed. The Project Manager and the Bureau of Landscape Architecture and Environmental Solutions (BLAES) will determine if NJDOT staff or a designer will perform environmental screening work. BLAES will inform the Project Manager in writing, within three days of the initial request if BLAES cannot complete the screening. BLAES and other appropriate subject matter expert units will review the CD Scope Statement before it is approved.

Determine if the Bureau of Traffic Data Development is able to conduct the traffic counts or if it needs to be assigned to a designer. Once it is determined, the scope of traffic data collection (e.g., automatic traffic recorder (ATR) counts, manual counts, and license plate survey, origin destination survey) is established as per the proposed project need.

This CD Scope Statement includes all the tasks needed to conduct CD and will be used to solicit a designer man-hour estimate and a cost proposal for CD.

*Note for Limited Scope Study:*
Utilize the Limited Scope CD Scope Statement Template to identify the tasks necessary for the particular assignment. Refer to the Project Delivery Process Customization Guideline for necessary revisions to the Scope Statement.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | Bureau of Landscape Architecture and Environmental Solutions, Bureau of Traffic Data Development, Division of Community and Constituent Relations, Risk Management Support Group |
| Informed: | Designer |
| Activity Predecessor: | 2015, 2020<br>(2000 for Limited Scope Study) |
| Activity Successor: | 2045, 2050, 2055<br>(2045, 2050, 2055 for Limited Scope Study) |
| Activity Duration: | 15<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.1.3 |
| Related Guidance Document: | Scope Management Guideline, CD Scope Statement Template, Limited Scope CD Scope Statement Template, Risk Management Guideline |

## Create CD Schedule (2045)

### Previous ID: New Activity

The Project Manager or Division of Project Management (DPM) Scheduler request the Office of Schedule and Budget Management to create an active schedule in Primavera based on the standard CD schedule template. The Project Manager sends the standard CD schedule template to the DPM Scheduler or Office of Schedule and Budget Management to customize the schedule based on the CD Scope Statement and historic data. The Project Manager negotiates the draft schedule 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.

*Note for Limited Scope Study:*
The Project Manager utilizes the Limited Scope CD primavera schedule. Refer to the Project Delivery Process Customization Guideline for necessary revisions to the schedule.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Division of Project Management Scheduler, Office of Schedule and Budget Management |
| Consulted: | Project Manager, Office of Schedule and Budget Management, Designer |
| Informed: | Project Manager |
| Activity Predecessor: | 2040 |
| Activity Successor: | 2060 |
| Activity Duration: | 15<br>(10 for Limited Scope Study) |
| WBS Element Produced: | 2.1.4 |
| Related Guidance Document: | CD Guideline |

## Develop CD Fee Proposal (2050)

### Previous ID: New Activity

The Project Manager develops a CD man-hour estimate based on the CD Scope Statement. The Designer prepares a Fee Proposal based on the CD Scope Statement. The Project Manager and the Designer negotiate the CD Fee Proposal.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2040 |
| Activity Successor: | 2060 |
| Activity Duration: | 15<br>(10 for Limited Scope Study) |
| WBS Element Produced: | 2.1.5 |
| Related Guidance Document: | CD Guideline |

## Update PRS (2055)

### Previous ID: New Activity

The Project Manager is required to enter all available information into Project Reporting System (PRS), such as study description, county/municipality, mileposts, organization representatives, costs; responsible managers, etc. PRS is required to be updated monthly (at a minimum) to reflect the current study status.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2040 |
| Activity Successor: | 2060 |
| Activity Duration: | 1 |
| WBS Element Produced: | 2.1.6 |
| Related Guidance Document: | NA |

## Execute CD Task Order (2060)

### Previous ID: 6390, 6400

The Division of Project Management (DPM) completes the Notice to Proceed (NTP) and instructs the Designer to begin work.

Prepare three copies of the original NTP form, sign and distribute for further execution. After execution of NTP, DPM will provide a copy to the Designer and accounting, and keep one copy in the study file.

| Role Description | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2045, 2050, 2055 |
| Activity Successor: | 2030, 2065<br>(2065, 2100, 2120, 2130, 2135, 2170, 2240, 2250 for Limited Scope Study) |
| Activity Duration: | 5<br>(3 for Limited Scope Study) |
| WBS Element Produced: | 2.1.7 |
| Related Guidance Document: | CD Guideline |

## Start Design Communications Report (2065)

### Previous ID: New Activity

The Designer will prepare the initial Design Communications Report (DCR). The Designer submits DCR entries to the Project Manager for approval. After approval is received, the Designer uploads the DCR to the NJDOT Capital Project Delivery web site.

The Designer will maintain the DCR throughout CD.

| Role Description | |
|---|---|
| Responsible: | Designer, Project Manager |
| Consulted: | Unit Subject Matter Experts as appropriate |
| Informed: | NA |
| Activity Predecessor: | 2060 |
| Activity Successor: | 2100, 2105, 2170<br>(2125 for Limited Scope Study) |
| Activity Duration: | 1 |
| WBS Element Produced: | 2.4.1 |
| Related Guidance Document: | Interactive Communications Procedure |

## Conduct Traffic Counts (2100)

### Previous ID: 6550, 6570, 6580

The Project Manager shall send a request memo to Bureau of Traffic Data Development (BTDD) along with a Traffic Count Request form, marked-up straight-line diagram and study area map if it is determined that the BTDD will conduct the traffic counts. If existing data is not available, BTDD will usually perform traffic volume counts for small-scale projects through their Task Order Agreements. If the traffic volume counts are not performed by BTDD, they will be performed by the Designer.

The Designer establishes a traffic count program for the study. This should account for all roads, streets, ramps, highways, driveways, traffic generators, seasonal influences, and related modes that would have an impact on the study and surrounding area. It is important that the amount, location, and type of traffic data collected be study specific. Determine if the traffic flow within the study area has any seasonal characteristics

The traffic-counting program may require Automatic Traffic Recorders (ATR), manual traffic counts, vehicle classification counts, intersection turning movement traffic counts, bicyclist and pedestrian counts, and origin-destination surveys. The traffic count data may include travel time/speed studies and vehicle-delay data collection. All traffic related data must be uploaded to the NJDOT BTDD data warehouse as required in all NJDOT agreements.

*Note for Limited Scope Study:*
Traffic counts may not be necessary for Limited Scope studies if recent traffic data is available for the project area. For roadway resurfacing projects, traffic data should be obtained from the Pavement Recommendation Report.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Traffic Data Development |
| Informed: | NA |
| Activity Predecessor: | 2025, 2065<br>(2060 for Limited Scope Study) |
| Activity Successor: | 2110 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.1.9 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Perform Supplemental Data Collection (2105)

### Previous ID: 6710, 6730

Gather any additional data and information needed but not obtained during the Problem Screening or in the initial CD activities. The data may include the following:

- Plans & As-Built plans (Upon receiving a request from the Designer, Project Manager submits a completed EDU-2 form to the engineering Documents Unit)
- Drainage inventory
- Base Maps
- Jurisdictional Maps and Agreements
- ROW and Access
- Utility information
- Environmental Data
- Bridge Inspection and Scour Reports
- Intelligent Transportation Systems information
- Traffic Signal Timing Plans
- Maintenance Work Orders
- Permanent Traffic Monitoring station Locations
- Any relevant reports from other agencies such as the Metropolitan Planning Organization, County, Town, etc.

*Note for Limited Scope Study:*
For Limited Scope studies that may require ROW to address ADA compliance, obtain appropriate tax map and ROW As-built information to determine preliminary ROW impacts based upon the preliminary ADA compliance design.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | Engineering Documents Unit |
| Informed: | NA |
| Activity Predecessor: | 2025, 2065 |
| Activity Successor: | 2115, 2120, 2130, 2135, 2145, 2150 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.1.1.1, 2.2.1.1.2, 2.2.1.1.3, 2.2.1.2, 2.2.1.5, updated 2.2.1.8, 2.2.1.9, 2.2.1.10, 2.2.1.12 |
| Related Guidance Document: | Engineering Documents Unit Plan Request Form, Complete Streets Checklist |

## Forecast Travel Projections (2110)

### Previous ID: 6590

It is important to utilize the reasonable Growth Rate Factor for traffic projection calculations. A Background Growth Rate memo shall be developed by the Designer and approved by the Project Manager prior to forecasting. Utilize the traffic counts collected in Activity 2100 to forecast traffic volumes 20 years beyond the anticipated construction completion date. For resurfacing projects, project out 10 years beyond the anticipated construction completion date.

*Note for Limited Scope Study:*
For roadway resurfacing projects, travel projections should be obtained from the Pavement Recommendation Report.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2100 |
| Activity Successor: | 2160<br>(2240 FF for Limited Scope Study) |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.1.2 |
| Related Guidance Document: | CD Guideline |

## Prepare CD Mapping (2115)

**Previous ID: New Activity**

The Designer prepares photogrammetric base mapping as required for CD. This may include the utilization of New Jersey Department of Environmental Protection (NJDEP) aerials. Utilize as-built plans obtained in Activity 2105 to identify specific roadway features, including right of way, property lines and utility locations.

While Level 1 mapping will typically be created for CD, higher level mapping may be necessary.

Additional time to conduct detailed mapping:

Level 2: Approximately 12 weeks
Level 3: Approximately 24 weeks
Level 4: Approximately 32 weeks

*Note:*

Durations for higher level mapping activities may vary significantly from project to project. The duration to complete aerial flights may also be affected by time of year. The level of mapping required is determined in Activity 2020.

High level and low level flights may be performed during CD to provide a base for developing detailed mapping in Preliminary Engineering.

If Level 2, 3 or 4 mapping is required, the Geodetic Survey Report is prepared and submitted to the Geodetic Survey Unit for approval. Additionally, the duration of mapping activities will be longer and some mapping activities may not be required to be completed prior to Activity 2300 (Develop Alternatives).

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Survey Services |
| Informed: | NA |
| Activity Predecessor: | 2105 |
| Activity Successor: | 2125, 2210, 2230, 2235 |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.2.1.13, 2.2.1.14, 2.2.1.15, 2.2.1.15.1, |
| Related Guidance Document: | Aerial Photogrammetric Mapping Guidelines, Survey Manual |

## Conduct Field Inventory of Physical Conditions (2120)

### Previous ID: 6720

Arrange a field visit to verify and evaluate existing conditions or measurements obtained from plans or reports, discuss important issues and potential solutions, and identify potential stakeholders. Invite the Project Manager and other subject matter expert units, the Designer, FHWA, Design Standards, and Maintenance, the municipal and county engineer and representative, Metropolitan Planning Organization (MPO), and Municipal Police on an as needed basis. Roadway features to be inventoried may include utilities, drainage, environmental, Intelligent Transportation Systems (ITS), Transportation Data & Safety, etc. Utilize the Complete Streets Checklist while performing the field inventory.

*Note for Limited Scope Study:*
The Designer and Project Manager utilize the appropriate Limited Scope CD Checklist while in the field to determine the full impacts associated with the identified problem. This effort will also include cross slope spot checks to verify the information on the as-built plans. If there is recent field survey information or recent flights and mapping, that may be utilized in lieu of spot checks.

In the unlikely event that the study does not qualify under the definition of the Limited Scope approach, the Limited Scope Study is terminated. In order to proceed, the proposed project is returned to the Capital Program Committee to advance under the standard project delivery process.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Subject Matter Expert Units, Design Standards, FHWA, Metropolitan Planning Organization, Maintenance, Local Officials |
| Informed: | NA |
| Activity Predecessor: | 2105<br>(2025, 2060 for Limited Scope Study) |
| Activity Successor: | 2125, 2155, 2175 |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.2.1.1, 2.2.1.1.1, 2.2.1.1.2, 2.2.1.1.3, 2.2.1.1.4<br>(2.2.1.1.5, 2.2.1.1.6, 2.2.1.1.7, 2.2.1.1.8 or 2.2.1.1.9 for Limited Scope Study) |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist, (Limited Scope CD Pavement Checklist, Limited Scope CD Bridge Checklist, Limited Scope CD Culvert Checklist, Limited Scope CD Sign Structure Checklist or Limited Scope CD Thin Surface Treatment Checklist for Limited Scope Study) |

## Identify Substandard Design Elements (2125)

### Previous ID: 6890, 6900

Identify all existing substandard design elements (roadway and bridge) within the study limits. Compare this information directly with the crash information to determine if there is an excessive crash rate within or adjacent to the limits of a substandard element. If there are a high number of crashes within or near the limits of a substandard element, send the information to the Bureau of Safety Programs (BSP) for analysis. BSP will determine if the crashes occurring are a result of the substandard element. This information should be available for discussion at the Scope Team Meeting and Core Group Meeting.

*Note for Limited Scope Study*:
Identification of substandard design elements is only required on projects types that require design exception approval. These specific project types are listed in the Project Customization Guideline.

Substandard design elements should not be identified on projects that do not require design exception approval.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Safety Programs, Quality Management Services |
| Informed: | NA |
| Activity Predecessor: | 2115, 2120, 2170<br>(2065, 2120, 2170 for Limited Scope Study) |
| Activity Successor: | 2200 |
| Activity Duration: | 15<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.2.1.6 |
| Related Guidance Document: | Design Exception Manual, Project Customization Guideline |

## Coordinate with Local Officials (2130)

### Previous ID: 0120

The Project Manager will coordinate with the affected municipalities and counties to solicit input on problem verification and the development of alternatives to address the project need. The Project Manager will identify any municipal input requested in Activity 2025 (Obtain Stakeholder Input) that remains outstanding. If a formal meeting is necessary, the Division of Community and Constituent Relations (CCR) will schedule the meeting at least three weeks in advance and coordinate with the engineer, planner, city, town, township, municipal manager, and administrator or appropriate agent a time and location convenient for the local officials. CCR prepares a Memo of Record. The Designer prepares Meeting Minutes.

*Note for Limited Scope Study:*
The Project Manager notifies the affected municipalities and counties of the proposed project.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Division of Community and Constituent Relations, Designer |
| Consulted: | Designer |
| Informed: | NA |
| Activity Predecessor: | 2105<br>(2025, 2060 for Limited Scope Study) |
| Activity Successor: | 2240, 2250<br>(2240 FF, 2250 FF for Limited Scope Study) |
| Activity Duration: | 20<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.2.2.5, 2.2.2.8 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Perform Environmental Screening (2135)

### Previous ID: 6500, 6490, 6520, 7500

The Designer or Bureau of Landscape Architecture and Environmental Solutions (BLAES) performs the Environmental Screening to identify environmental concerns or "fatal flaws." The Project Manager requests an environmental screening by sending a memo to BLAES. Prepare an Environmental Screening Report (ESR) which will identify and document potential environmental issues. It will include environmental constraints or sensitive areas, such as wetlands, parkland, cultural resources, hazardous waste, permits, air/noise, socio-economic, Environmental Justice, etc.

If the ESR is prepared by the Designer, the Project Manager will request BLAES to review NJDEP Regulations. This is necessary to determine the applicability of wetlands, Cultural Resources, Storm Water Regulation, and Deforestation regulations, etc. to the study.

*Note for Limited Scope Study:*
Preparation of an Environmental Screening Report may not be required for a Limited Scope Study. Consult with BLAES prior to conducting an environmental screening to determine if one is necessary.

| Role Description | |
|---|---|
| Responsible: | Designer or Bureau of Landscape Architecture and Environmental Solutions (BLAES), Project Manager |
| Consulted: | Project Manager, BLAES |
| Informed: | NA |
| Activity Predecessor: | 2105<br>(2025, 2060 for Limited Scope Study) |
| Activity Successor: | 2140 (if needed), otherwise 2240, 2250<br>(2140 (if needed), otherwise 2240 FF for Limited Scope Study) |
| Activity Duration: | 20<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.2.1.7 |
| Related Guidance Document: | CD Guideline |

## Review Environmental Screening (2140)

### Previous ID: 6510

This activity is only applicable if a Designer prepares the Environmental Screening Report. The Bureau of Landscape Architecture and Environmental Solutions (BLAES) will review the Environmental Screening Report and provide comments to the Designer.

| Role Description | |
|---|---|
| Responsible: | Bureau of Landscape Architecture and Environmental Solutions |
| Consulted: | Project Manager, Designer |
| Informed: | NA |
| Activity Predecessor: | 2135 |
| Activity Successor: | 2240, 2250<br>(2240 FF for Limited Scope Study) |
| Activity Duration: | 15<br>(3 for Limited Scope Study) |
| WBS Element Produced: | Updated 2.2.1.7 |
| Related Guidance Document: | CD Guideline |

## Obtain Maps for Storm Water Management Rules Compliance (2145)

### Previous ID: 6740

Obtain soil survey maps (Arc/Info coverage) from the Natural Resource Conservation Service (NRCS) and Land Use maps (Arc/Info coverage) from NJDEP for the study area, and a USGS Digital Elevation Model. Obtain United States Geological Survey (USGS) Digital Elevation Model (DEM 1:24,000). Geo-reference all digital maps to the State plane coordinate system to delineate the drainage areas and compute the hydrologic parameters.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2105 |
| Activity Successor: | 2230 |
| Activity Duration: | 5 |
| WBS Element Produced: | Associated with: 2.2.1.3 and 2.2.3.3 |
| Related Guidance Document: | CD Guideline |

## Prepare Drainage Area Maps (2150)

### Previous ID: 6760

Produce Drainage Area Maps for the study area. Delineate the watershed boundaries that contribute storm-water runoff to the project site. In the field, verify the drainage area boundaries and add additional drainage features identified in the study area that may alter the hydrologic characteristic of the watershed. Determine the existing drainage areas contributing runoff to the roadway and runoff from NJDOT right of way. Determine runoff from offsite contributing areas to the roadway. Determine if offsite runoff can be separated from NJDOT drainage systems to reduce the volume of water.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2105 |
| Activity Successor: | 2230 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.1.3 |
| Related Guidance Document: | Drainage Design Manual |

## Send Utility Contact Letter (2155)

### Previous ID: 1100

The Designer determines which utility companies are serving the proposed project area through research and a field survey. Utilizing the NJDOT Utility Contact List, the Designer identifies the Regional utility owner contacts, confirms the Regional utility contacts with the Project Manager and sends the Utility Contact Letter. The intent of the Utility Contact Letter is to request verification that utilities are in the vicinity of a proposed project, request the specific utility and railroad field contacts, and request an order of magnitude Preliminary Engineering (PE) Utility Engineering cost estimate. The Designer receives the responses and informs the Project Manager.

| **Role Description** | |
|---|---|
| Responsible: | Designer, Utility Companies |
| Consulted: | Project Manager |
| Informed: | Project Manager |
| Activity Predecessor: | 2120 |
| Activity Successor: | 2240<br>(2240 FF for Limited Scope Study) |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.2.1.11 |
| Related Guidance Document: | Utility Contact Letter Template, NJDOT Utility Contact List |

## Validate and Compare with Regional Model (2160)

### Previous ID: 6600

Compare the traffic counts collected in Activity 2100 to assignments from the existing base year regional travel demand models for reasonableness. Use the appropriate future year model runs to calculate a future growth rate for the specific roadways. Compare this model derived future growth rate against the Growth Rate Factor obtained in Activity 2110.

This activity may only be necessary for studies that include congestion or capacity related issues. The Project Manager will determine if this activity is necessary.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Systems & Analysis |
| Informed: | NA |
| Activity Predecessor: | 2110 |
| Activity Successor: | 2205 |
| Activity Duration: | 10 |
| WBS Element Produced: | Included in: 2.2.3.4 |
| Related Guidance Document: | CD Guideline |

## Obtain Crash Records (2170)

### Previous ID: 6530, 6540

The Designer completes the Crash Report/Analysis Request Form to obtain the crash history for the most recent three years and sends it to the Project Manager. The Project Manager forwards the request to the Bureau of Safety Programs (BSP). BSP compiles the requested crash records and sends to the Project Manager. The Project Manager forwards the crash records to the Designer.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | Bureau of Safety Programs |
| Informed: | NA |
| Activity Predecessor: | 2025, 2065<br>(2060 for Limited Scope Study) |
| Activity Successor: | 2125 |
| Activity Duration: | 20 |
| WBS Element Produced: | Included in: 2.2.3.4 |
| Related Guidance Document: | CD Guideline, Crash Report/Analysis Request Form, Complete Streets Checklist |

## Prepare Utility Risk Assessment Plan (2175)

### Previous ID: New Activity

Utilizing data obtained in Activity 2120 (Conduct Field Inventory of Physical Conditions) and utility information obtained in Activity 2155 (Send Utility Contact Letter), prepare the Utility Risk Assessment Plan. The Designer assesses for potential high risk utility impacts and notes those impacts on the plan. This plan will be utilized to complete the utility section within the Project Fact Sheet. The Designer should consult with the utility companies to prepare the Utility Risk Assessment Plan.

The Designer informs the Project Manager of project specific utility risks. The Project Manager may include these within the project Risk Register.

| Role Description | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Utility Companies, Utility Management |
| Informed: | NA |
| Activity Predecessor: | 2120 |
| Activity Successor: | 2240 |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.2.3.5 |
| Related Guidance Document: | Risk Management Guideline, Risk Register Example, Risk Register Template, Utility Risk Assessment Plan Example |

## Prepare Crash Analysis & Crash Diagram (2200)

### Previous ID: 6880

Utilizing the crash data that was obtained in Activity 2170, plot all crashes from police records on a crash diagram. Identify the cause of the crashes and associated sub-standard features identified in Activity 2125. This information will be used in the development of the Purpose and Need Statement and the preparation of the proposed Project Fact Sheet.

*Note for Limited Scope Study:*
If substandard design elements are identified, the Project Manager completes a Crash Data/Analysis Request Form and sends to the Bureau of Safety Programs to request a Design Exception Crash Analysis.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2125 |
| Activity Successor: | 2240, 2250<br>(2240 FF, 2360 for Limited Scope Study) |
| Activity Duration: | 30<br>(20 for Limited Scope Study) |
| WBS Element Produced: | 2.2.3.2 and included in 2.2.3.4 |
| Related Guidance Document: | NA |

## Conduct Existing Traffic Analysis (2205)

### Previous ID: 6870

Analyze traffic counts to develop existing Level of Service (LOS) using the Highway Capacity Manual and software. Conduct a LOS analysis for the existing conditions (no-build condition) for the current year. Existing conditions LOS analysis is required for the construction year and 20 years after construction. For resurfacing projects, project out 10 years beyond the anticipated construction completion date.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2160 |
| Activity Successor: | 2240, 2250 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.3.1 and included in 2.2.3.4 |
| Related Guidance Document: | NA |

## Conduct Scour and Seismic Retrofit Analysis (2210)

### Previous ID: 1280, 2405

The Designer will secure all information and details needed to perform scour analysis if the bridge has been identified as scour critical. Determine if the proposed design is scour critical and if so, propose required scour countermeasures and incorporate into the structural design.

Perform an abbreviated Seismic Retrofit Analysis for each alternative to determine a structure's retrofit eligibility and cost effectiveness. If only a deck replacement is proposed, a Seismic Retrofit Analysis will be performed on a case by case basis.
The results of these analyses shall be documented in the proposed Project Fact Sheet.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Structural Design |
| Informed: | NA |
| Activity Predecessor: | 2115 |
| Activity Successor: | 2240, 2250 |
| Activity Duration: | 20 |
| WBS Element Produced: | Included in 2.2.3.4 |
| Related Guidance Document: | Bridges and Structures Design Manual |

## Conduct Hydrologic & Hydraulic Analysis (2230)

### Previous ID: 1275

Perform hydrologic and hydraulic (H&H) analysis for a stream or river for each alternative that involves a change to the bridge opening, roadway profile, or any item within the 100-year floodplain of a stream with a drainage area over 50 acres.

Secure all pertinent information, data, and details necessary to model the stream flow, including existing HEC-2 analysis if the waterway is a State studied stream, from the New Jersey Department of Environmental Protection (NJDEP). Perform backwater analysis to determine impacts to water surface elevation. Present the study to NJDEP to confirm conformance with regulations and to identify potential problems. Note modifications to bridge/culvert design, if required. Compute storm water runoff rates and storm water volumes (from the contributing watershed areas to the Storm Water Management Area) by utilizing the Natural Resources Conservation Service Method, and to treat for water quality and volume.

The Designer prepares an H&H Analysis Report documenting the analysis.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Landscape Architecture and Environmental Solutions, New Jersey Department of Environmental Protection |
| Informed: | NA |
| Activity Predecessor: | 2115, 2145, 2150 |
| Activity Successor: | 2240, 2250 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.3.3 |
| Related Guidance Document: | Drainage Design Manual, RDM – Section 10 |

## Conduct ITS Needs Assessment (2235)

### Previous ID: New Activity

The Designer reviews the existing Intelligent Transportation Systems (ITS) database and conducts an ITS needs assessment for additional ITS facilities. If additional ITS facilities are recommend by the Designer, the Project Manager coordinates with Traffic Operations to obtain concurrence.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Traffic Operations, Bureau of Intelligent Transportation Systems Engineering |
| Informed: | NA |
| Activity Predecessor: | 2115 |
| Activity Successor: | 2240, 2250 |
| Activity Duration: | 20 |
| WBS Element Produced: | Included in 2.2.3.4 |
| Related Guidance Document: | ITS Engineering Inventory, ITS Engineering Interim Guidelines |

## Prepare Project Fact Sheet (2240)

### Previous ID: New Activity

Prepare a proposed Project Fact Sheet; include relevant information such as traffic data, accident data, environmental data, management systems input, utility assessment, a description of the problem and any other information necessary to understand the proposed project need and intent before holding the scope meeting. Send the proposed Project Fact Sheet and other relevant information to the Scope Team three weeks before the meeting.

*Note for Limited Scope Study:*
If approved by the Project Manager, a Limited Scope Checklist may be utilized in place of the Project Fact Sheet for Limited Scope studies.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | Subject Matter Experts |
| Activity Predecessor: | 2130, 2135 or 2140, 2155, 2175, 2200, 2205, 2210, 2230, 2235<br>(2025, 2060 for Limited Scope Study) |
| Activity Successor: | 2260<br>(2110 FF, 2130 FF, 2135 FF or 2140 FF, 2155 FF, 2200 FF, 2260 for Limited Scope Study) |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.3.4 |
| Related Guidance Document: | NA |

## Prepare Draft Purpose & Need Statement (2250)

### Previous ID: 6910, 7040

A Purpose and Need Statement (PN) is a fundamental requirement to develop a concept that will require future National Environmental Protection Agency documentation and is the basis for alternatives development. The PN Statement has three parts: The Purpose, the Need, and Goals and Objectives. The Purpose defines the transportation problem to address the issue. The Need provides data to support the problem statement (Purpose). The Goals and Objectives describe other issues that need to be resolved as part of a successful solution to the problem. The Designer will review the Concept Development Problem Statement and Management Systems input to ensure that facts support the stated problems and needs and considers the Department's Complete Streets Policy.

The Project Manager and the Bureau of Landscape Architecture and Environmental Solutions will review the Purpose and Need Statement to ensure that facts support the proposed project's problem and need.

| **Role Description** | |
|---|---|
| Responsible: | Designer, Project Manager, Bureau of Landscape Architecture and Environmental Solutions |
| Consulted: | NA |
| Informed: | Division of Project Management Executive Regional Manager |
| Activity Predecessor: | 2130, 2135 or 2140, 2200, 2205, 2210, 2230, 2235<br>(2025, 2060 for Limited Scope Study) |
| Activity Successor: | 2260 (15 day lag)<br>(2130 FF, 2260 for Limited Scope Study) |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.1.4 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Hold Scope Team Meeting (2260)

### Previous ID: 6780, 6770

Identify Scope Team Members and schedule a Scope Team Meeting. Request the Scope Team members visit the study site, evaluate the data on the proposed Project Fact Sheet and be prepared to provide valuable input at the Scope Team Meeting.

The Scope Team Meeting is conducted by the Project Manager and the Designer to introduce the study and solicit input on various issues including the Draft Purpose and Need Statement, identification of initial concepts, etc.

The Designer will prepare Meeting Minutes and distribute to Scope Team members.

*Note for Limited Scope Study:*
If issues identified during the field visit require further discussion, the Project Manager holds a Scope Team Meeting to resolve outstanding issues.

| Role Description | |
|---|---|
| Responsible: | Designer, Project Manager |
| Consulted: | Project Manager, Scope Team Members |
| Informed: | Scope Team Members |
| Activity Predecessor: | 2240, 2250 |
| Activity Successor: | 2270<br>(2280 for Limited Scope Study) |
| Activity Duration: | 20<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.2.2.1 |
| Related Guidance Document: | CD Guideline |

## Hold Initial Local Officials Briefing (2270)

### Previous ID: New Activity

An initial Local Officials Briefing is held with the affected municipalities and counties to solicit input on the Draft Purpose and Need Statement. Discussion items for the meeting should include a verification of the problem statement, the results of the data analysis, the input from the Scope Team Meeting, and the goals of the study and the role of the stakeholders in the overall process.

Division of Community and Constituent Relations (CCR) will schedule the meeting at least three weeks in advance, and coordinate with the engineer, planner, city, town, township, municipal manager, and administrator or appropriate agent a time and location convenient for the local officials. The CCR prepares a Memo of Record. The Designer prepares Meeting Minutes.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Division of Community and Constituent Relations, Designer |
| Consulted: | Local Officials |
| Informed: | NA |
| Activity Predecessor: | 2260 |
| Activity Successor: | 2280 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.2.5, 2.2.2.8 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Complete Purpose and Need Statement (2280)

### Previous ID: New Activity

The Designer will review and finalize the Draft Purpose and Need Statement based on the input provided by the Local Officials and the Scope Team.

*Note for Limited Scope Study:*
For a Limited Scope Study, Local Officials input is considered, but not required.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Landscape Architecture and Environmental Solutions |
| Informed: | NA |
| Activity Predecessor: | 2270<br>(2260 for Limited Scope Study) |
| Activity Successor: | 2290 |
| Activity Duration: | 5<br>(2 for Limited Scope Study) |
| WBS Element Produced: | 2.2.4 |
| Related Guidance Document: | CD Guideline |

## Purpose and Need Statement Completed (2290)

### Previous ID: 6915

The Purpose and Need Statement has been completed (Milestone).

| | |
|---|---|
| Activity Predecessor: | 2280 |
| Activity Successor: | 2300<br>(2300, 2320, 2340, 2570 for Limited Scope Study) |

## Develop Alternatives (2300)

### Previous ID: 0140, 6350, 6360

Produce alternative plans based on the data collected. Analyze each alternative to determine its ability to address the project need with respect to safety, capacity, community, environment and operational improvements, including Intelligent Transportation Systems (ITS) deployment. Use information from meetings with local officials/stakeholders and possibly the impacted community held earlier in the

process to provide positive input up front and to lead to community ownership of the solution. Use a "complete streets" and "context-sensitive solution" approach to develop alternatives that strive to integrate the community's vision and provide accommodations for all current and future users. The conceptual solutions should consider the effects they may have on the land uses and community context both positive and negative. Considering the function of the proposed project, provide cost effective quality solutions.

Determine how to address the substandard design element identified in Activity 2125 by consulting with subject matter expert units and obtaining concurrence.

*Note for Limited Scope Study:*
Produce preliminary curb ramp, sidewalk, etc. designs in order to address ADA compliance based on the data collected. Using the preliminary designs, determine which locations may have ROW impacts due to ADA compliance.

An alternatives analysis narrative is prepared and included within the related section of the Limited Scope CD Report. Prepare a project limits graphic that illustrates project features and constraints.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2290 |
| Activity Successor: | 2310, 2315, 2320, 2330, 2340, 2350, 2360, 2370, 2380<br>(2560, 2570 lag, 3170 for Limited Scope Study) |
| Activity Duration: | 60<br>(1 for Limited Scope Study) |
| WBS Element Produced: | 2.2.5.1<br>(2.2.6 for Limited Scope Study) |
| Related Guidance Document: | CD Guideline, Complete Streets Policy, Complete Streets Checklist |

## Obtain Stakeholder Input on Developed Alternatives (2310)

### Previous ID: New Activity, 7140, 7420, 2600, 2610, 2620

Meet with stakeholders as per the Public Involvement Action Plan (PIAP) to obtain input on the developed alternatives to determine community support and preferences. Stakeholders may include a Community Advisory Committee, county officials, local officials and other agencies. This may require separate meetings with different stakeholder groups.

It is important at this point to confirm that the public involvement strategies being used are effective. Coordinate with the Division of Community and Constituent Relations for comments and review of the strategies used to date. Update the PIAP if necessary.

*Note:*
The 20 day activity duration is based on one meeting providing three week's notice of the meeting. The activity duration may increase based on the number of meetings necessary to obtain input.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Division of Community and Constituent Relations, Designer |
| Consulted: | Project Manager, Division of Community and Constituent Relations |
| Informed: | NA |
| Activity Predecessor: | 2300 |
| Activity Successor: | 2380 FF |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.2.2.3 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Prepare Railroad Agreement (2315)

### Previous ID: 1130

If applicable, the Project Manager prepares a funding agreement for railroad review work. The Project Manager sends four (4) copies of a railroad engineering construction authorization (RECA) to the railroad company.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | Designer |
| Informed: | Railroad Companies |
| Activity Predecessor: | 2300 |
| Activity Successor: | 2310 lag |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.5.6 |
| Related Guidance Document: | PM Utility Agreement Template |

## Develop Preliminary Detour and Construction Staging Plans (2320)

### Previous ID: 7230, 7240, 7250

Prepare a preliminary construction-staging plan to help determine how many stages of construction, anticipated durations, and if a detour of traffic will be necessary for all valid alternatives. Determine if a detour will be needed for traffic control and assess the need to include provisions for pedestrians and bicyclists. Prepare a construction sequence narrative that summarizes each stage. Coordinate efforts with outside agencies if a detour plan is proposed. These outside agencies will include local and county officials and engineers. Keep documentation of support from the local and county officials for a specific detour route on file and in the CD Report. Obtain concurrence from appropriate NJDOT Subject Matter Expert groups.

*Note for Limited Scope Study:*
For a Limited Scope Study, conceptual detour and construction staging schemes are prepared to ensure constructability.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, NJDOT Subject Matter Experts, Local & County Officials |
| Informed: | NA |
| Activity Predecessor: | 2300<br>(2290 for Limited Scope Study) |
| Activity Successor: | 2380 FF<br>(2560, 2570 lag, 3170 for Limited Scope Study) |
| Activity Duration: | 20<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.2.5.4 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Perform Impact Assessment (2330)

### Previous ID: New Activity, 7490

Assess each alternative for potential impacts to environmental, right of way, utilities, access, drainage, storm water management, walking, bicycling, transit and socio-economic features. Determine an anticipated environmental document for each alternative.

These impacts will be included in the Alternatives Matrix prepared during Activity 2380. If access is impacted, conduct a circulation study, if necessary.

If the environmental screening identifies Section 4(f), cultural resources or land use permit impacts, a more detailed alternatives analysis may be required.

Based upon the Impact Assessment, the Designer lists major project specific risks for each alternative within the Alternatives Matrix.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, NJDOT Subject Matter Experts, Risk Management Support Group |
| Informed: | NA |
| Activity Predecessor: | 2300 |
| Activity Successor: | 2380 FF |
| Activity Duration: | 10 |
| WBS Element Produced: | Included in 2.2.5.2 |
| Related Guidance Document: | Alternatives Matrix Example, CD Guideline, Complete Streets Checklist |

## Develop Preliminary Construction Cost Estimates (2340)

### Previous ID: 7270

Develop a preliminary construction cost estimate for each alternative. Apply the same base assumptions to each alternative, which is sufficient to compare alternatives. At a minimum, estimates should be done for construction, right of way and utilities.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2300<br>(2290 for Limited Scope Study) |
| Activity Successor: | 2380 FF<br>(2560, 2570 lag, 3170 for Limited Scope Study) |
| Activity Duration: | 10<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.2.5.5 |
| Related Guidance Document: | Construction Cost Estimating Guide |

## Conduct Proposed Traffic Analysis (2350)

### Previous ID: 7300, 7310, 7320

Perform the Level of Service (LOS) for each alternative for the current year, the year following construction (build year), and 20 years after construction. Conduct a failure year analysis if an alternative fails prior to the construction year. Utilizing the existing year LOS, determine the target LOS for the study area. All of the traffic analyses/ traffic simulations performed as part of this activity are to be submitted to the Bureau of Traffic Signal and Safety Engineering on a compact disc for their review and concurrence.

Develop a traffic simulation for the existing conditions, if necessary, and each alternative to analyze the conditions on a network-wide basis. These simulations may be presented to graphically show the traffic impacts to stakeholders and local officials.

Evaluate the traffic impacts caused on a regional level if appropriate. Analyze the regional traffic model (e.g., Metropolitan Planning Organization model) to assess the impact of the study on the regional traffic. The Project Manager will determine if this activity is necessary. Add 10 days to the activity duration to evaluate the affect on the regional model level.

Develop study specific model if needed. Study specific models may need to be developed by extracting data from the regional model and adjusted with study specific data. These models are used to study regional traffic, diversions, and complex scenarios such as interstate weave movements or Information Technology Systems (ITS) strategies and characteristics such as air quality impacts. Add 20 additional days to the activity duration if a study specific model is needed.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Traffic Signal and Safety Engineering, Bureau of Systems and Analysis |
| Informed: | NA |
| Activity Predecessor: | 2300 |
| Activity Successor: | 2380 FF |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.3.1 |
| Related Guidance Document: | CD Guideline |

## Obtain Reasonable Assurance of Design Exception Approval (2360)

### Previous ID: 7470

The Project Manager is responsible for obtaining Reasonable Assurance that Quality Management Services will approve a design exception for each alternative. An alternative may not be advanced without Reasonable Assurance.

The Project Manager requests the Bureau of Safety Programs (BSP) prepare a Design Exception Crash Analysis Memorandum. BSP submits the completed Design Exception Crash Analysis Memorandum to the Project Manager.

The Project Manager prepares a memorandum listing the anticipated substandard elements for the alternatives being developed for which Reasonable Assurance is requested and submits to Quality Management Services. The Design Exception Crash Analysis Memorandum prepared by the Bureau of Safety Programs is included with the memorandum. The Project Manager also submits base mapping and alternative plans that include the substandard element location.

Quality Management Services reviews the package and provides the Project Manager with a Reasonable Assurance decision.

*Note for Limited Scope Study:*
Design exception approval is only required for specific project types. These project types are detailed in the Project Customization Guideline. For these specific project types, the Project Manager notifies Quality Management Services in advance of any upcoming Reasonable Assurance requests. The Project Manager provides Quality Management Services with a list of substandard elements (without a base map) and the crash analysis for the substandard elements.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Bureau of Safety Programs, Quality Management Services |
| Consulted: | Designer |
| Informed: | NA |
| Activity Predecessor: | 2300<br>(2200 for Limited Scope Study) |
| Activity Successor: | 2380 FF<br>(2560, 2570 lag, 3170, 3870 or 3890 for Limited Scope Study) |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.5.3 |
| Related Guidance Document: | CD Guideline, Project Customization Guideline |

## Perform SWM Analysis (2370)

### Previous ID: 7570, 7580, 7600, 7610

The Designer evaluates the developed alternatives to determine if storm water management (SWM) compliance is necessary by consulting the current New Jersey Department of Environmental Protection regulations. Current 2010 regulations state that SWM compliance is required for an alternative that has over one-quarter acre of new impervious surface or over one acre of ground disturbance.

If SWM compliance is required, the Designer evaluates non-structural strategies to address SWM. Determine Total Suspended Solids (TSS) removal rates and recharge potential to comply with all SWM rules. If non-structural strategies are feasible, the Project Manager coordinates with the NJDOT SWM subject matter experts to determine if soil testing is necessary. If soil testing is necessary, the Designer conducts soil tests in potentially suitable areas to determine soil permeability and the seasonal water table, as well as any other information that will conform to regulations. Determine right of way issues.

If a non-structural strategy is not feasible, the Designer evaluates structural Best Management Practices (BMP). Document the future maintenance requirements of the BMP chosen within the Alternatives Matrix. Provide a summary of the required maintenance plan.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Bureau of Landscape Architecture and Environmental Solutions, Geotechnical Unit |
| Informed: | NA |
| Activity Predecessor: | 2300 |
| Activity Successor: | 2380 FF |
| Activity Duration: | 40 |
| WBS Element Produced: | Included in 2.2.5.2 |
| Related Guidance Document: | CD Guideline, Storm Water Quantity & Quality Standards (NJAC 7:8; 5.4-5.5), Soil Boring Data Submission Standards, Soil Boring Submission Template |

## Prepare Alternatives Matrix (2380)

### Previous ID: 7210

Develop a comparison matrix of all the alternatives. The Project Manager will determine which of the following will be included in the matrix.

| | |
|---|---|
| Access Impacts and waivers if necessary | Additional traffic analysis if needed (Transit 7F, Traf Net Sim, etc.) |
| Complete Streets Policy Compliance | Existing & Design year Level of Service analysis, year of Level of Service F if before the design year |
| Constructability | Estimated Construction Cost |
| Design Exceptions | Limits of Disturbance |
| Anticipated Environmental Document | Environmental Constraints and Mitigation Costs |
| Community Impacts (Environmental Justice) | Estimated ROW (# of acquisitions, total acres) |
| Design Criteria | Design standards (NJDOT Standard Specifications, AASHTO) |
| Railroad Crossing impacts | ROW impacts (areas, easements, land use & impacts, lot and block) |
| Safety Improvement | Signal warrants for all proposed signals |
| Structures | Traffic Management Alternatives |
| Typical Sections | Utilities relocation and associated costs |
| Major Risks | |

*Note:*

The Designer lists the major risks specific to each alternative in the Alternatives Matrix.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Risk Management Support Group |
| Informed: | NA |
| Activity Predecessor: | 2300 |
| Activity Successor: | 2310 FF, 2320 FF, 2330 FF, 2340 FF, 2350 FF, 2360 FF, 2370 FF, 2400, 2410, 2425 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.5.2 |
| Related Guidance Document: | Alternatives Matrix Example, CD Guideline, Complete Streets Checklist, Risk Management Guideline |

## Coordinate with Permitting Agencies (2400)

### Previous ID: New Activity, 7510, 7520, 2620

The Bureau of Landscape Architecture and Environmental Solutions begins consultation with permitting agencies, if the Environmental Screening (Activity 2135) indicates that major permitting agency coordination will be required to obtain the necessary permits.

If significant impacts are anticipated in the study area such as wetlands, endangered species, historic structures, riparian, storm water, provide the Alternatives Matrix to the permitting agencies to present the study and range of alternatives being considered. Invite the permitting agencies to the next scheduled core group meeting to solicit input on the selection of the Preliminary Preferred Alternative.

Permitting agencies may include:

- Highlands Council
- Pinelands Commission
- Meadowlands Commission
- Delaware and Raritan Canal Commission
- State Historic Preservation Office
- Division of Land Use Regulation Program
- Army Corps of Engineers

| Role Description | |
|---|---|
| Responsible: | Bureau of Landscape Architecture and Environmental Solutions |
| Consulted: | Project Manager |
| Informed: | Designer |
| Activity Predecessor: | 2380 |
| Activity Successor: | 2430 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.2.6 |
| Related Guidance Document: | CD Guideline |

## Obtain SME Input (2410)

### Previous ID: 7550, 7220, 7560

Coordinate with subject matter expert units and hold individual meetings, as necessary, to obtain input on specific alternative issues or impacts. Issues and impacts that may need to be addressed include road user costs, life cycle costs, fill material availability, right of way, drainage, access, utilities, traffic, aesthetic treatments, etc. The Project Manager sends the Alternatives Matrix to Quality Management Services for review and comment.

It is important that infrastructure improvements are consistent with the overall intentions of the State Development and Redevelopment Plan (SDRP). Statewide Planning is responsible for providing this determination.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | NJDOT Subject Matter Experts, Statewide Planning |
| Informed: | NA |
| Activity Predecessor: | 2380 |
| Activity Successor: | 2420 |
| Activity Duration: | 20 |
| WBS Element Produced: | Updated 2.2.5.2 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Perform Quantitative Risk Analysis (2425)

### Previous ID: New Activity

For projects with a total construction cost over $100 million and if approved by the Project Manager and concurred with by the Executive Regional Manager, the Designer performs quantitative risk analysis. Quantitative risk analysis provides the Project Manager and Core Group with additional cost and schedule impact information to assist in selecting the Preliminary Preferred Alternative.

Utilizing the Quantitative Risk Analysis Worksheet, the Designer includes each major risk for each alternative. If needed, the Designer may utilize the Sample Risk List when populating the Quantitative Risk Analysis Worksheet. For each risk that is added to the worksheet, the Designer calculates the probability of occurrence and magnitude of schedule and cost impact. For each risk that has a high or very high probability of occurrence and a high or very high magnitude of impact, the Designer performs quantitative risk analysis. Methods to quantify cost and schedule impacts vary and the Designer and Project Manager should determine how best to calculate these impacts. Quantitative risk analysis results in a more accurate estimation of probability of occurrence and a numerical value in days of schedule impact and dollars of cost impact.

The quantitative risk analysis is documented in the Quantitative Risk Analysis Report. The risk strategy and plans will be used in the development of the PE Scope Statement.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, NJDOT Subject Matter Experts, Risk Management Support Group |
| Informed: | NA |
| Activity Predecessor: | 2380 |
| Activity Successor: | 2420 FF |
| Activity Duration: | 40 |
| WBS Element Produced: | Updated 2.1.9, 2.2.5.7, 2.2.5.7.1 |
| Related Guidance Document: | CD Guideline, Quantitative Risk Analysis Worksheet Template, Risk Management Guideline, Sample Risk List |

## Revise Alternatives Matrix (2420)

### Previous ID: 0190, 7130

Revise the Alternatives Matrix based on the input provided by the subject matter expert units. Update the preliminary construction cost estimate and include any other pertinent information received since the Alternatives Matrix was created.

Significant revisions may require repeating several previous activities starting with Activity 2300 (Develop Alternatives) resulting in delays and additional costs.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2410 |
| Activity Successor: | 2425 FF, 2430 |
| Activity Duration: | 10 |
| WBS Element Produced: | Updated 2.2.5.2 & 2.2.5.5 |
| Related Guidance Document: | Alternatives Matrix Example, CD Guideline |

## Hold Core Group Meeting (2430)

### Previous ID: 7370

Schedule and hold a Core Group Meeting to review and compare each alternative, ultimately recommending one alternative that best accommodates design standards, community needs and has reasonable cost for the derived benefit. The Core Group Meeting is required to solicit subject matter expert (SME) input to make sure that the selected alternative is technically and environmentally sound, and all the SME units have had the opportunity to provide their input in CD. At the conclusion of the meeting, there should be clear direction on which alternative will best serve as the Preliminary Preferred Alternative (PPA).

The Project Manager and the Designer will develop the meeting minutes to document important decisions. All decisions will be documented in the Design Communications Report.

When clear direction is given by the Core Group on a draft PPA, the Project Manager instructs the Designer to populate the Risk Register with the associated risks for the draft PPA. The Designer should utilize the Sample Risk List when populating the Risk Register.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | NJDOT Subject Matter Expert Units |
| Informed: | NA |
| Activity Predecessor: | 2400, 2420 |
| Activity Successor: | 2435 |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.2.2.2, Updated 2.1.9 |
| Related Guidance Document: | CD Guideline, Risk Register Example, Risk Register Template, Sample Risk List |

## Conduct Value Engineering Review (2435)

### Previous ID: New Activity

As per FHWA Regulation 23 CFR Part 627, a Value Engineering Technical Report shall be prepared on all Federal-aid projects with an estimated total cost of $25 million or more for roadway projects, a total cost of $20 million or more for bridge projects or any other project designated by the Secretary of Transportation. Effective as of October 1, 2012, the Moving Ahead for Progress in the 21st Century Act, (MAP-21) raised the limit to $50 million or more for new roadway projects and $40 million for new bridge projects authorized after this date.

A multi–disciplined Value Engineering (VE) team performs a review of the draft Preliminary Preferred Alternative (PPA) to identify, evaluate, develop and recommend alternative designs or methods that will provide an acceptable or improved product to maximize the value of every dollar spent and minimize life cycle costs. The VE team identifies the function of the proposed project and provides a cost effective, quality solution.

To perform an adequate review, a workshop is required with appropriate internal and/or external stakeholders. If significant issues are identified, an outcome of this review may be to re-evaluate one or more alternatives and perform further analysis. The Change Control Board will determine the level of work required to address the VE recommendations.

In addition to meeting the federal requirements, a VE Review should be performed for any project that the Project Manager deems appropriate.

| **Role Description** | |
|---|---|
| Responsible: | Value Engineering Unit |
| Consulted: | Subject Matter Expert Units, Project Manager, Designer |
| Informed: | Project Manager |
| Activity Predecessor: | 2430, 2445 SS (10 day lag) |
| Activity Successor: | 2440 |
| Activity Duration: | 25 |
| WBS Element Produced: | Associate with: 2.2.14 |
| Related Guidance Document: | CD Guideline, Complete Streets Policy |

## Hold Local Officials Briefing (2440)

### Previous ID: 7390

Schedule and hold a Local Officials Briefing to present the developed alternatives to the local and county officials. Only those alternatives that were approved by the core group will be presented. Provide copies of the alternatives to the attendees at least one week in advance of the briefing for their review. The goal of this briefing is to obtain support of an alternative. If support of an alternative cannot be obtained at the briefing, additional briefings may be required.

Resources included in the meeting may include a handout, project location map/aerial, display of the alternatives, profile plans, detour route, construction staging, traffic flow diagrams, crash diagram, environmental concerns/screening and photographs. Notify the local officials that an official Resolution of Support will be needed to advance an alternative.

The Division of Community and Constituent Relations (CCR) will schedule the briefing at least three weeks in advance, and coordinate with the city, town, township, municipal manager, and administrator or appropriate agent a time and location convenient for the local officials. The CCR prepares a Memo of Record.  The Designer prepares Meeting Minutes.

| Role Description | |
|---|---|
| Responsible: | Division of Community and Constituent Relations, Project Manager, Designer |
| Consulted: | Project Manager, Local Officials |
| Informed: | NA |
| Activity Predecessor: | 2435 |
| Activity Successor: | 2450 (if required), otherwise 2460, 2500, 2510, 2515, 2520, 2530, 2535 |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.2.2.5, 2.2.2.7 (unless Town Council Presentation is required), 2.2.2.8 |
| Related Guidance Document: | CD Guideline |

## Prepare Value Engineering Technical Report (2445)

### Previous ID: New Activity

The Value Engineering (VE) team prepares a Technical Report documenting the VE review results and recommendations. Approximately 10 days after you conduct the VE Review, begin the VE Technical Report.

The VE Technical Report is included as an attachment within the CD Report.

| Role Description | |
|---|---|
| Responsible: | Value Engineering Unit |
| Consulted: | Subject Matter Expert Units, Project Manager, Designer |
| Informed: | Project Manager |
| Activity Predecessor: | 2435 SS (10 day lag) |
| Activity Successor: | 2580 FF |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.14 |
| Related Guidance Document: | CD Guideline |

## Hold Town Council Presentation (2450)

### Previous ID: 7400

In some instances, the local officials may request NJDOT to present the study at their town council meeting before a Resolution of Support is issued. The Project Manager and the Designer may be

requested to present the draft Preliminary Preferred Alternative to the Town Council for their endorsement.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2460 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.2.7 |
| Related Guidance Document: | CD Guideline |

## Hold Public Information Center (2460)

### Previous ID: 0250, 7630

Schedule and hold the Public Information Center (PIC). The goal of the PIC is to obtain public input on the PPA. The PIC is conducted in all cases unless the Executive Regional Manager and the Division of Community and Constituent Relations (CCR) representative agree that it is not needed. The PIC is a community outreach forum to develop a partnership with the public. The public is a stakeholder, along with local and state officials, and public interest groups. It is preferable to obtain documentation of local support before the PIC; however, the officials may not support a proposed project until the public has provided input.

The Project Manager requests CCR to consult with the Division of Communications to review the PIC handout and mailing list. The display boards may include: an aerial of the study area, the Preliminary Preferred Alternative, 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.

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

| Role Description | |
|---|---|
| Responsible: | Project Manager, Division of Community and Constituent Relations, Designer |
| Consulted: | Division of Communications |
| Informed: | NA |
| Activity Predecessor: | 2450 (if required), otherwise 2440 |
| Activity Successor: | 2470 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.2.2.4, 2.2.2.8 |
| Related Guidance Document: | CD Guideline |

## Finalize Preliminary Preferred Alternative (2470)

### Previous ID: 7330

Finalize the Preliminary Preferred Alternative based on the input received at the Local Officials Briefing, Town Council Presentation (if held) and Public Information Center. Coordinate with appropriate subject matter expert units if necessary.

| Role Description | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2460 |
| Activity Successor: | 2480 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.6, Updated 2.2.1.1.4 |
| Related Guidance Document: | CD Guideline, Complete Streets Checklist |

## Preliminary Preferred Alternative Selected (2480)

### Previous ID: 7335

The Preliminary Preferred Alternative has been selected (Milestone).

| | |
|---|---|
| Activity Predecessor: | 2470 |
| Activity Successor: | 2570 FF |

## Perform PPA Constructability Review (2500)

### Previous ID: 7260

The constructability review will provide an opportunity for construction personnel to review the Preliminary Preferred Alternative (PPA) and provide comments to improve the construction methods and construction staging. The goal is to incorporate construction's comments into the PPA to potentially reduce the construction duration. Constructability personnel review the Risk Register for any previously identified constructability risks. If new risks or changes to existing risks are identified, the PM updates the Risk Register. The constructability review may help to develop a more accurate construction cost estimate.

The Project Manager sends a memo to the Bureau of Construction Management requesting an evaluation of the constructability and staging of the proposed project. Include the study location and enclose a copy of the PPA and Staging Plan. All comments shall be in writing.

The Project Manager may request a meeting with the Bureau of Construction Management and Regional Construction Engineer to discuss the constructability issues.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Bureau of Construction Management |
| Consulted: | Designer |
| Informed: | Designer |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2540 |
| Activity Duration: | 20 |
| WBS Element Produced: | Updated 2.1.9, 2.2.13 |
| Related Guidance Document: | Constructability Process Summary |

## Confirm Environmental Document (2510)

### Previous ID: 7540

The Project Manager coordinates with the Bureau of Landscape Architecture and Environmental Solutions (BLAES) to determine the environmental document that will be obtained in PE. If BLAES determines that a Categorical Exclusion is applicable, Certified Categorical Exclusion criteria are assessed. Reference the Programmatic Agreement for Approval of Certain Categorical Exclusions between FHWA and NJDOT to determine if the project qualifies as a Categorical Exclusion or Certified Categorical Exclusion.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Bureau of Landscape Architecture and Environmental Solutions |
| Consulted: | Designer |
| Informed: | Designer |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2580 FF |
| Activity Duration: | 5 |
| WBS Element Produced: | Included in 2.2 |
| Related Guidance Document: | Programmatic Agreement for Approval of Certain Categorical Exclusions |

## Prepare PE Public Involvement Action Plan (2515)

### Previous ID: New Activity, 1060

The Project Manager and Designer develop a PE Public Involvement Action Plan (PIAP) to identify critical points for public involvement during PE, and the objectives for each point. The PE PIAP includes, at minimum, updating the database of known stakeholders, determining the number of anticipated meetings with local officials, citizens groups and any outside agencies impacted by the proposed project.

The Project Manager circulates the PIAP to CCR for final comments and signature.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Designer, Division of Community and Constituent Relations |
| Consulted: | NA |
| Informed: | Division of Community and Constituent Relations, Project Manager |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2520 FF |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.15 |
| Related Guidance Document: | CD Guideline |

## Prepare PE Scope Statement (2520)

### Previous ID: 0200, 0210

The Designer reviews the master Preliminary Engineering (PE) Scope Statement template and updates it with the tasks necessary for the completion of PE. The PE Scope Statement documents commitments from supporting subject matter expert (SME) units and provides an area for the SME units to state any assumptions, to clarify and customize standard activities, and to add new activities (e.g., risk activities) and their descriptions. This PE Scope Statement will include all the tasks needed to conduct PE, and will be used to solicit a designer fee proposal for PE.

The Project Manager circulates the PE Scope Statement to all the NJDOT SME units for official sign-off. The Manager of each SME unit will sign and return the form to the Project Manager within three weeks.

*Note for Limited Scope Study*:
A PE Scope Statement is not prepared for Limited Scope studies. Limited Scope studies advance directly to Final Design. Utilize the Limited Scope Final Design Scope Statement Template. Refer to the Project Delivery Process Customization Guideline for necessary revisions to the scope statement.

| **Role Description** | |
|---|---|
| Responsible: | Designer, Project Manager |
| Consulted: | NJDOT Subject Matter Expert Units |
| Informed: | NA |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2515 FF, 2580 FF |
| Activity Duration: | 40 |
| WBS Element Produced: | 2.2.7 |
| Related Guidance Document: | Scope Management Guideline, PE Scope Statement Template |

## Develop Project Management Plan (2530)

### Previous ID: New Activity

The Project Manager develops the Project Management (PM) Plan, which is the formal document that defines how the specific project will be executed, monitored and controlled. It is typically written at a summary level defining the overall approach and documenting any exceptions to the typical process. The objective of a PM Plan is to define the approach to be used by NJDOT to deliver the intended project. Determine if in-house design staff will design the project and include in the PM Plan. Document any customization of the project delivery process within the PM Plan. A PM Plan is mandatory for all projects.

| Role Description | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | Designer |
| Informed: | NA |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2580 FF |
| Activity Duration: | 5 |
| WBS Element Produced: | 2.2.8 |
| Related Guidance Document: | Scope Management Guideline, Project Management Plan Template |

## Prepare Systems Engineering Review Form (2535)

### Previous ID: New Activity

If additional Information Technology Systems (ITS) facilities are proposed for the study area (Activity 2235), the Designer prepares a Systems Engineering Review Form (SERF). For the majority of standard ITS deployments, a programmatic conformance process has been established and a SERF must be completed. Any ITS deployment that is not covered as programmatic will require the Designer to develop a Concept of Operations Report, including coordination with impacted stakeholders to address the seven sections under the SERF. The SERF, including a detailed Concept of Operations Report, if required, is to be included as an attachment within the CD Report. The SERF is approved by Traffic Operations and submitted to FHWA. Submission of a SERF is not required if the scope is only replacing in-kind existing ITS facilities.

| Role Description | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Traffic Operations |
| Informed: | Bureau of Intelligent Transportation Systems Engineering |
| Activity Predecessor: | 2440 |
| Activity Successor: | 2580 FF |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.2.9, 2.2.9.1 (if necessary) |
| Related Guidance Document: | ITS Interim Guidelines, SERF-Programmatic Instructions, SERF-Programmatic Template |

## Prepare CD ROW and Access Impact Plan and Matrix (2540)

### Previous ID: 7440

Develop a Right of Way (ROW) and Access Impact Plan and Matrix for the selected Preliminary Preferred Alternative (PPA). This plan and matrix shows the affected properties. The ROW plan will show the area of takings, type of use of properties, and any potential easements needed for the proposed project.

When there are potential candidates for PPA, request ROW comparisons prior to the selection of the PPA to assist in the shaping of the selected PPA.

The matrix will list each affected parcel by Block and Lot indicating the type of acquisition it will be (partial, entire or easement), the amount of property to be acquired, the existing use of the property (e.g., residential, commercial, industrial) and the access impacts (adjustment, modification, revocation, waiver).

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager, Right of Way Regional Office |
| Informed: | NA |
| Activity Predecessor: | 2500 |
| Activity Successor: | 2550 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.2.10, 2.2.11 |
| Related Guidance Document: | CD Guideline, Access Design Guidelines |

## Prepare CD ROW and Access Cost Estimate (2550)

### Previous ID: New Activity, 7450

Request a right of way (ROW) and access cost estimate from the ROW Regional Office. This provides an estimate of the future ROW funding needs of the proposed project. Send the CD ROW and Access Impact Matrix and three sets of the CD ROW and Access Impact Plan of the Preliminary Preferred Alternative. Also include a map depicting the study area and tax maps.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Right of Way Technical Support, Right of Way Regional Office |
| Consulted: | NA |
| Informed: | Designer |
| Activity Predecessor: | 2540 |
| Activity Successor: | 2560, 2570 |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.2.12 |
| Related Guidance Document: | CD Guideline |

## Complete CD Quality Certification (2560)

### Previous ID: New Activity

The Designer completes the certification form that stipulates the Designer has completed work in accordance with the approved CD Scope Statement. The Designer sends the signed CD Quality Certification to the Project Manager. The Project Manager will not sign and approve the CD Quality Certification until the Capital Program Committee approves the completion of CD.

| Role Description | |
|---|---|
| Responsible: | Designer |
| Consulted: | NA |
| Informed: | Project Manager |
| Activity Predecessor: | 2550<br>(2300, 2320, 2340, 2360 for Limited Scope Study) |
| Activity Successor: | 2570 FF |
| Activity Duration: | 1 |
| WBS Element Produced: | 2.3.1 |
| Related Guidance Document: | Design Submission Procedure, CD Designer Certification Template |

## Prepare Draft CD Report (2570)

### Previous ID: 0220

The Designer prepares and submits the Draft CD Report to the Project Manager for review and comment. The Draft CD Report should include all support information used to develop the

Preliminary Preferred Alternative. The CD Report template lists all the items to be included in the Draft CD Report.

*Note for Limited Scope Study*:
For Mill X, Pave X, plus 1" projects or bridge deck/superstructure replacement projects, utilize the appropriate Limited Scope CD Report Template. For other types of Limited Scope projects, customize the Limited Scope CD Report Template as needed to match the project's characteristics.

For all Limited Scope projects, the environmental document is submitted to FHWA with the Final Design Authorization Package. The environmental document is not included as an appendix within the Limited Scope CD Report.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2550<br>(2300 lag, 2320 lag, 2340 lag, 2360 lag for Limited Scope Study) |
| Activity Successor: | 2480 FF, 2560 FF, 2580<br>(2560 FF, 2580 for Limited Scope Study) |
| Activity Duration: | 20<br>(10 for Limited Scope Study) |
| WBS Element Produced: | 2.2 |
| Related Guidance Document: | CD Report Template, CD Guideline, Limited Scope CD Report Pavement Template, Limited Scope CD Report Bridge Template |

## Investigate need for Traffic Regulation Orders (2485)

### Previous ID: New Activity

Following NJDOT Policy and Procedures 907, Adoption of Traffic Regulations, the Designer investigates the need for any Traffic Regulation Orders (TROs) for the Preliminary Preferred Alternative (PPA). The Designer notifies the Project Manager of the TRO need investigation outcome. The Project Manager notifies the appropriate municipal officials about the future need for any TRO resolutions (upon reaching substantial construction completion) to support the TRO process.

| Role Description | |
|---|---|
| Responsible: | Designer |
| Consulted: | NA |
| Informed: | Project Manager |
| Activity Predecessor: | 2570 |
| Activity Successor: | 2600 |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.2.2.9 |
| Related Guidance Document: | NJDOT Policy and Procedures 907, Adoption of Traffic Regulations |

## Review Draft CD Report and Address Comments (2580)

### Previous ID: New Activity

The Project Manager reviews the Draft CD Report and provides comments to the Designer. The Designer addresses the Project Manager's comments and makes the appropriate changes. The Designer submits a final Draft CD Report to the Project Manager.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Designer |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2570 |
| Activity Successor: | 2445 FF, 2510 FF, 2520 FF, 2530 FF, 2535 FF, 2600<br>(2600) |
| Activity Duration: | 30<br>(10 for Limited Scope Study) |
| WBS Element Produced: | Updated 2.2 |
| Related Guidance Document: | CD Guideline |

## FHWA Reviews and Approves CD Report (2600)

### Previous ID: New Activity

For PoDI & PoCI Projects Only, FHWA will review the Draft CD Report and provide comments to the Project Manager for incorporation in the CD Report. The Designer addresses FHWA's comments and the Project Manager re-submits to FHWA for approval. This process will be repeated until FHWA approves the report.

The duration for FHWA review and comment is 30 days. The duration for making changes to the CD Report will vary based on the extent of FHWA comments.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Designer, FHWA |
| Consulted: | Designer |
| Informed: | NA |
| Activity Predecessor: | 2580<br>(2580 for Limited Scope Study) |
| Activity Successor: | 2610<br>(2610 for Limited Scope Study) |
| Activity Duration: | 45<br>(5 for Limited Scope Study) |
| WBS Element Produced: | Updated 2.2, 2.5.1 |
| Related Guidance Document: | CD Guideline |

## Present to CPSC (2610)

### Previous ID: 0270

The Project Manager sends a memo to the Division of Capital Investment Planning and Development (CIPD) once FHWA has approved the CD Report. The memo will either recommend that the Preliminary Preferred Alternative (PPA) advance to PE or no further action be taken and will request placement on the agenda of the next scheduled Capital Program Screening Committee (CPSC) Meeting. The memo will also include an information package that briefly presents the PPA and provides supporting documentation. The Executive Regional Manager will forward the approved memo and package information to CIPD. CIPD will place the study on the agenda of the next CPSC meeting.

The Project Manager presents the PPA to CPSC. The CPSC provides their recommendation for advancement to the Project Manager and forwards their recommendation to the Capital Program Committee (CPC) for approval.

*Note for Limited Scope Study:*
If no community impacts are anticipated the Project Manager prepares a memo recommending advancement to Final Design. If significant community impacts are anticipated (e.g., detours, travel distruption) the Project Manager prepares a CPSC memo recommending advancement to Final Design and presents the PPA to the CPSC. Typically, Mill X, Pave X, plus 1” projects advance without a CPSC presentation.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Executive Regional Manager, Division of Capital Investment Planning and Development, Capital Program Screening Committee |
| Consulted: | Designer |
| Informed: | NA |
| Activity Predecessor: | 2600 |
| Activity Successor: | 2620 |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.5.2, 2.5.3 |
| Related Guidance Document: | CD Guideline |

## CPC Approves Advancement (2620)

### Previous ID: 0280, 7170

The Capital Program Committee (CPC) provides agreement and support to advance the proposed project to Preliminary Engineering (PE). If the Preliminary Preferred Alternative is approved by the CPC to advance to PE, the PE designer selection process may begin if in-house design staff will not be completing the project design work.

The Project Manager signs and approves the CD Quality Certification upon receipt of CPC approval to advance the project to the PE phase.

*Note for Limited Scope Study:*
Under the Limited Scope process, a study is advanced to Final Design upon CPC approval.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Capital Program Committee |
| Consulted: | Division of Project Management |
| Informed: | Designer |
| Activity Predecessor: | 2610<br>(2600 for Limited Scope Study) |
| Activity Successor: | 2630, 2700 and 2710 or 2850<br>(2630, 2750 or 3240 for Limited Scope Study) |
| Activity Duration: | 30<br>(10 for Limited Scope Study) |
| WBS Element Produced: | 2.5.4 |
| Related Guidance Document: | CD Guideline |

## Finalize CD Report (2630)

### Previous ID: 0290

The Designer updates the CD Report, indicating Capital Program Committee approval. The Designer provides copies of the Finalized CD Report to the Project Manager and in-house design if they will be completing the project design work.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2620 |
| Activity Successor: | 2640<br>(3950 FF for Limited Scope Study) |
| Activity Duration: | 5<br>(2 for Limited Scope Study) |
| WBS Element Produced: | Updated 2.2 |
| Related Guidance Document: | CD Guideline |

## Complete CD Closeout (2640)

### Previous ID: New Activity

As outlined in the NJDOT Procedures Manual, perform the series of steps necessary to close out the existing task order in CD. Instruct the Designer to submit their Final Invoice. Update the Project Reporting System and notify appropriate subject matter expert units of the Capital Program Committee decision.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | NA |
| Informed: | NJDOT Subject Matter Expert Units, Designer |
| Activity Predecessor: | 2630 |
| Activity Successor: | 2890 FF, 2950 |
| Activity Duration: | 10 |
| WBS Element Produced: | NA |
| Related Guidance Document: | NJDOT Procedures Manual |

## Prepare Solicitation Package (2700)

### Previous ID: 0410

The Project Manager determines the selection process (1-Step or 2-Step) to be used and prepares the solicitation package. The Division of Project Management Director sends the solicitation package to the Division of Procurement Professional Services. Professional Services approves and posts the solicitation documents on the NJDOT Website.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Division of Project Management Director, Division of Procurement Professional Services |
| Consulted: | NJDOT Subject Matter Expert Units |
| Informed: | NA |
| Activity Predecessor: | 2620 |
| Activity Successor: | 2720 |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.6.1 |
| Related Guidance Document: | Unit procedure (Professional Services), Professional Services Guidelines |

## Form Technical Evaluation Committee (2710)

### Previous ID: 0400

The Project Manager will form a Technical Evaluation Committee consisting of the Project Manager, a Bureau of Landscape Architecture and Environmental Solutions representative and an appropriate subject matter expert unit staff. The committee is responsible for developing rating criteria, evaluating and ranking designers' technical proposals for a 1-Step process and oral presentations when required for the 2-Step process.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2620 |
| Activity Successor: | 2700 FF |
| Activity Duration: | 15 |
| WBS Element Produced: | Associated with: 2.6.3 |
| Related Guidance Document: | Unit procedure (Professional Services) |

## Receive Technical Proposals (2720)

### Previous ID: 0420

After the solicitation has been posted, pre-qualified consultants submit Technical Proposals to the Division of Procurement Professional Services within 15 working days from the posting date, unless otherwise noted.

| **Role Description** | |
|---|---|
| Responsible: | Pre-Qualified Designers, Division of Procurement Professional Services |
| Consulted: | Division of Procurement Professional Services |
| Informed: | Project Manager |
| Activity Predecessor: | 2700 |
| Activity Successor: | 2730 |
| Activity Duration: | 20 |
| WBS Element Produced: | 2.6.2 |
| Related Guidance Document: | Unit procedure (Professional Services), Professional Services Guidelines |

## Score Proposals (2730)

### Previous ID: 0430

1-Step Process: The Technical Evaluation Committee will review and rank technical proposals and submit the results to the Consultant Selection Committee (CSC).

2-Step Process: The Technical Evaluation Committee will review and rank technical proposals and submit the results to the CSC. The Technical Evaluation Committee also determines the list of technically qualified firms within 5% of the top ranked firm. The Project Manager presents this list to the CSC to determine the short-list of technically qualified firms that will be requested to give an oral presentation.

| **Role Description** | |
|---|---|
| Responsible: | Technical Evaluation Committee, Division of Procurement Professional Services |
| Consulted: | NA |
| Informed: | Professional Services, Designers |
| Activity Predecessor: | 2720 |
| Activity Successor: | 2740 or 2750 |
| Activity Duration: | 30 |
| WBS Element Produced: | 2.6.3, 2.6.5 |
| Related Guidance Document: | Unit procedure (Professional Services), Professional Services Guidelines |

## Hold Oral Presentations (2 Step) (2740)

### Previous ID: 0480

The second step of a 2-Step process will be an oral presentation. The oral presentation will be followed by a question and answer period from the Technical Evaluation Committee. After presentations are evaluated and ranked, prepare and forward the scores and designer recommendation to the Secretary/Moderator of the Consultant Selection Committee, to request selection.

| **Role Description** | |
|---|---|
| Responsible: | Designers, Technical Evaluation Committee |
| Consulted: | NA |
| Informed: | Consultant Selection Committee |
| Activity Predecessor: | 2730 |
| Activity Successor: | 2750 |
| Activity Duration: | 20 |
| WBS Element Produced: | Updated 2.6.3; 2.6.2.1 |
| Related Guidance Document: | Unit procedure (Professional Services), Professional Services Guidelines |

## Select Designer (2750)

### Previous ID: 0440

The Project Manager presents the technical evaluation results and designer recommendation to the Consultant Selection Committee (CSC). The CSC reviews the recommendation for selection, the factors responsible for the distribution of the scores, significance of the rating criteria, selects one designer and verifies that the selected designer has an approved Quality Management Plan. The Division of Procurement Professional Services notifies the Project Manager and the selected designer of the outcome of the Consultant Selection Committee meeting. If the selected designer does not have an approved Quality Management Plan, they have 10 working days to obtain one. Upon confirmation that the selected designer has an approved quality management plan, the Deputy Commissioner signs the Executive Decision Document approving selection.

Prepare an electronic debriefing memo and provide to designers upon request.

*Note for Limited Scope Study:*
A designer is selected to perform Final Design from a previously solicited batch agreement.

| **Role Description** | |
|---|---|
| Responsible: | Consultant Selection Committee, Division of Procurement Professional Services |
| Consulted: | NA |
| Informed: | Project Manager, Designer |
| Activity Predecessor: | 2730 or 2740<br>(2620 for Limited Scope Study) |
| Activity Successor: | 2800<br>(2810, 3235 for Limited Scope Study) |
| Activity Duration: | 10 (20 if no approved Quality Management Plan)<br>(1 for Limited Scope Study) |
| WBS Element Produced: | 2.6.4 |
| Related Guidance Document: | Unit procedure (Professional Services), Professional Services Guidelines |

## Develop PE Independent Cost Estimate (2800)

### Previous ID: 0600

The Project Manager requests that the Office of Schedule and Budget Management develop an Independent Cost Estimate (ICE) to compare to the designer's fee proposal. An ICE will be used in contract negotiations. The Project Manager submits the PE Scope Statement and the solicitation package to the Office of Schedule and Budget Management. The Office of Schedule and Budget Management consults with subject matter expert units when developing man-hour estimates on unique or major tasks. The Office of Schedule and Budget Management submits the Preliminary ICE to the Project Manager for review and comment.

| **Role Description** | |
|---|---|
| Responsible: | Office of Schedule and Budget Management |
| Consulted: | Project Manager |
| Informed: | NA |
| Activity Predecessor: | 2750 |
| Activity Successor: | 2810 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.6.6 |
| Related Guidance Document: | Unit procedure |

## Develop Designer Fee Proposal (2810)

### Previous ID: 0450

The selected designer will prepare a Fee Proposal utilizing the PE Scope Statement and forward the proposal to the Project Manager within 10 days of the selection. 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."

*Note for Limited Scope Study:*
The selected designer prepares a Fee Proposal utilizing the Limited Scope FD Scope Statement.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | Project Manager |
| Informed: | Project Manager |
| Activity Predecessor: | 2800<br>(2750 for Limited Scope Projects) |
| Activity Successor: | 2820 |
| Activity Duration: | 10<br>(5 for Limited Scope Study) |
| WBS Element Produced: | 2.6.9.1 |
| Related Guidance Document: | P&P #328 |

## Negotiate Contract (2820)

### Previous ID: 0510

In accordance with NJDOT Policy and Procedure #328, the Project Manager reviews the Designer Fee Proposal and negotiates with the designer utilizing the Independent Cost Estimate (ICE) as a comparison. If PE is performed in-house, the Project Manager will negotiate with the appropriate division of NJDOT in-house design. The designer may update the PE Scope Statement with detailed task descriptions, if necessary. Changes to the PE Scope Statement will be approved by the Project Manager. If the designer's fee proposal exceeds 10% of the ICE, review and request further clarification and justification.

If negotiations are unsuccessful, escalate unresolved issues according to NJDOT Policy and Procedure #328. If items of contention with consulting firm are not resolved, the Division of Project Management Director will request authorization from the Consultant Selection Committee to terminate negotiations and begin negotiations with the next ranked firm.

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.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Office of Schedule and Budget Management |
| Consulted: | Designer |
| Informed: | NA |
| Activity Predecessor: | 2810<br>(2810, 3235 for Limited Scope Study) |
| Activity Successor: | 2830, 2850<br>(2830, 3240 for Limited Scope Study) |
| Activity Duration: | 30<br>(5 for Limited Scope Study) |
| WBS Element Produced: | Updated 2.6.9.1, Updated 2.2.7 (if necessary), 2.6.6.1<br>(Updated 2.6.9.1, Updated 3.9.4 (if necessary), 3.10.3.1 for Limited Scope Study) |
| Related Guidance Document: | P&P #328 |

## Finalize Proposal (2830)

### Previous ID: 0520

The designer revises the original fee proposal per negotiations and submits to the Project Manager.

| **Role Description** | |
|---|---|
| Responsible: | Designer |
| Consulted: | NA |
| Informed: | Project Manager |
| Activity Predecessor: | 2820 |
| Activity Successor: | 2840 |
| Activity Duration: | 5 |
| WBS Element Produced: | Updated 2.6.9.1 |
| Related Guidance Document: | P&P #328 |

## Prepare Draft Agreement (2840)

### Previous ID: 0530

Once the final proposal is fully negotiated, enter the fee proposal, schedule and scope of services into the appropriate Model Agreement. The Project Manager prepares the Draft Agreement and sends to the Division of Procurement Professional Services for review and comment. If changes are needed to the Draft Agreement, the Division of Procurement Professional Services sends comments to the Project Manager. Once Professional Services provides the Project Manager with final approval, the Draft Agreement is considered final.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Division of Procurement Professional Services |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2830 |
| Activity Successor: | 2880<br>(3270 for Limited Scope Study) |
| Activity Duration: | 15<br>(10 for Limited Scope Study) |
| WBS Element Produced: | 2.6.9 |
| Related Guidance Document: | P&P #328 |

## Create PE Schedule (2850)

### Previous ID: 0630

The Project Manager or Division of Project Management (DPM) Scheduler request the Office of Schedule and Budget Management to create an active schedule in Primavera based on the standard PE schedule template. The Project Manager sends the standard PE schedule template to the DPM Scheduler or Office of Schedule and Budget Management to customize the schedule based on the PE Scope Statement and historic data. The Project Manager negotiates the draft schedule 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.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Division of Project Management Scheduler, Office of Schedule and Budget Management |
| Consulted: | Project Manager, Office of Schedule and Budget Management, Designer, Subject Matter Expert Units |
| Informed: | Project Manager |
| Activity Predecessor: | 2620 or 2820 |
| Activity Successor: | 2855, 2860 |
| Activity Duration: | 15 |
| WBS Element Produced: | 2.6.8 |
| Related Guidance Document: | Unit procedure |

## Approve PE Schedule (2855)

### Previous ID: 0640

The Project Manager completes the Project Baseline Schedule Approval form and submits it to the Executive Regional Manager and Director 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 PE Schedule.

| Role Description | |
|---|---|
| Responsible: | Project Manager, Office of Schedule and Budget Management |
| Consulted: | NA |
| Informed: | Project Manager |
| Activity Predecessor: | 2850 |
| Activity Successor: | 2880 |
| Activity Duration: | 5 |
| WBS Element Produced: | Approved 2.6.8 |
| Related Guidance Document: | Unit procedure |

## Develop PE Budget (2860)

### Previous ID: 0610

The Project Manager requests the Office of Schedule and Budget Management develop a PE man-hour budget estimate. The budget estimate includes subject matter expert (SME) unit man-hours to support the Designer. If NJDOT in-house design staff completes PE, the budget estimate includes in-

house design man-hours. An Office of Schedule and Budget Management Budget Analyst develops the Draft Budget in the Project Reporting System with input from SME units for support hours. The Project Manager is responsible for negotiating any SME unit support hours.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Office of Schedule and Budget Management Budget Analyst |
| Consulted: | NJDOT Subject Matter Expert Units |
| Informed: | Project Manager |
| Activity Predecessor: | 2850 |
| Activity Successor: | 2865 |
| Activity Duration: | 10 |
| WBS Element Produced: | 2.6.7 |
| Related Guidance Document: | Unit procedure |

## Finalize PE Budget (2865)

### Previous ID: 0620

The Project Manager completes the Budget Action Request Form and compiles the PE documents required for both budget approval and funding authorization. These documents include the PE Budget Estimate, Budget Action Request Form and if appropriate, Designer's Fee Proposal. Forward the compiled PE documents to the Division of Project Management Director.

| **Role Description** | |
|---|---|
| Responsible: | Project Manager |
| Consulted: | NA |
| Informed: | Division of Project Management Director |
| Activity Predecessor: | 2860 |
| Activity Successor: | 2870 |
| Activity Duration: | 10 |
| WBS Element Produced: | NA (Package includes 2.2.7, 2.2.8, 2.6.7, 2.6.8, 2.6.9.1) |
| Related Guidance Document: | Unit procedure |

## Approve PE Budget (2870)

### Previous ID: 0625

The Division of Project Management Director reviews and approves the PE Budget Package. The Project Manager forwards the Budget Action Request Form to the Office of Schedule and Budget Management to document approval in the Project Reporting System.

| **Role Description** | |
|---|---|
| Responsible: | Division of Project Management Director, Project Manager, Office of Schedule and Budget Management |
| Consulted: | NA |
| Informed: | NA |
| Activity Predecessor: | 2865 |
| Activity Successor: | 2880 |
| Activity Duration: | 5 |
| WBS Element Produced: | Approved 2.6.7 |
| Related Guidance Document: | Unit procedure |

## Authorize PE (2880)

### Previous ID: 0540

The Project Manager requests FHWA authorization to begin PE. The Project Manager prepares and submits the funding request to the Division of Capital Investment Planning and Development (CIPD) (as per FHWA authorization procedures), who prepares the request to FHWA for authorization of funds. CIPD notifies the Executive Regional Manager of FHWA approval and provides a copy of the job number and Federal Agreement ID.

*Note:*
At the start of each federally-funded project, a “Federal Project End Date” should be established per NJDOT Policy No. 365

| **Role Description** | |
|---|---|
| Responsible: | Project Manager, Division of Capital Investment Planning and Development, FHWA |
| Consulted: | NA |
| Informed: | Division of Project Management Executive Regional Manager |
| Activity Predecessor: | 2840, 2855, 2870 |
| Activity Successor: | 2890 |
| Activity Duration: | 20 |
| WBS Element Produced: | Associated with: 2.6.9 |
| Related Guidance Document: | FHWA Design Standards 23 CFR Part 625, NJDOT Policy No. 365 |

## Execute Designer Agreement (2890)

### Previous ID: 0550

The Division of Project Management (DPM) Contract Manager sends the Final Agreement and Articles to the Designer. The Designer signs the Final Agreement and sends two signed and sealed original copies back to the DPM Contract Manager along with copies of the Corporate Resolution and Business Registration Certificates for the Prime and all Sub-consultants. The DPM Contract Manager sends the signed and sealed Final Agreement Package to the Deputy Attorney General for approval. The DPM Contract Manager forwards the approved Final Agreement Package and an AD-12 to NJDOT Management for signature and approval. The DPM Contract Manager distributes the executed Agreement to the appropriate parties, including FHWA.

| **Role Description** | |
|---|---|
| Responsible: | Division of Project Management Contract Manager, Designer, Deputy Attorney General |
| Consulted: | NA |
| Informed: | Project Manager, Designer |
| Activity Predecessor: | 2880<br>(3270 for Limited Scope Study) |
| Activity Successor: | 2640 FF |
| Activity Duration: | 30<br>(20 for Limited Scope Study) |
| WBS Element Produced: | 2.6.9 |
| Related Guidance Document: | P&P #328 |

## Concept Development Completed (2950)

### Previous ID: 7695

The Concept Development Phase has been completed (Milestone).

| | |
|---|---|
| Activity Predecessor: | 2640 |
| Activity Successor: | 3000 |