TSM Limited Scope
Project Delivery Process
Activity Descriptions

November 2017

Procedures are subject to change without notice.

Check the NJDOT website to ensure this is the current version.

Table of Contents

Concept Development

Concept Development Initiated (2000)

The Concept Development Phase has been initiated (Milestone).

Activity Predecessor:	N/A
Activity Successor:	2015, 2025, 2040, 2285

Obtain Management Systems Input (2015)

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 (SGMS)
- Pedestrian Safety Management Systems (PSMS)
- Intelligent Transportation Systems (ITS)

Service areas provide needed information to the Transportation Systems Management (TSM). 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. Additionally, 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.

Note:

For Advanced Arterial Management (AAM) Projects, refer to NJDOT's Classification of Arterial Systems Technology (COAST) and reference activity 2285 for the tier assignment from AAM.

Role Description	
Responsible:	Project Manager, Management Systems Owners
Consulted:	NA
Informed:	Designer
Activity Predecessor:	2000
Activity Successor:	2045, 2050, 2055
Activity Duration:	5

Obtain Stakeholder Input (2025)

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 projects
- ITS/Traffic Signal/Electrical Plans
- Other relevant information

Various internal NJDOT units and external stakeholders send requested information to Transportation Systems 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.

Additionally, the Project Manager requests available as-built plans for the project area from EDU & other units as applicable.

Role Description	
Responsible:	Project Manager, Stakeholders
Consulted:	Engineering Documents Unit
Informed:	Designer
Activity Predecessor:	2000
Activity Successor:	2065, 2105, 2120, 2130, 2135, 2215
Activity Duration:	10

Develop CD Scope Statement (2040)

Utilizing the TSM Limited Scope CD 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 Environmental Program Resources (BEPR) will determine if NJDOT staff or a designer will perform environmental screening work. BEPR will inform the Project Manager in writing, within three days of the initial request if BEPR cannot complete the screening. BEPR and other appropriate subject matter expert units will review the CD Scope Statement before it is approved.

Confirm if AAM has traffic counts available at the desired locations. When traffic counts are not available from AAM, determine if the Bureau of Transportation Data & Safety (BTDS) 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 in coordination with BTDS 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.

Notes:

Refer to the Project Delivery Process Customization Guideline for necessary revisions to the Scope Statement.

The PM executes activity 2100 when traffic counts are required to be performed by the designer.

Role Description	
Responsible:	Project Manager
Consulted:	Bureau of Environmental Program Resources, Bureau of Traffic Data Development, Division of Community and Constituent Relations, Risk Management Support Group
Informed:	Designer
Activity Predecessor:	2000
Activity Successor:	2045, 2050, 2055
Activity Duration:	5

Create CD Schedule (2045)

The Project Manager or 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 TSM Limited Scope CD schedule template to the 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 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 Scheduler or Office of Schedule and Budget Management.

Note:

Refer to the Project Delivery Process Customization Guideline for necessary revisions to the schedule.

Role Description	
Responsible:	Project Manager, Scheduler, Office of Schedule and Budget Management
Consulted:	Project Manager, Scheduler, Office of Schedule and Budget Management, Designer
Informed:	Project Manager
Activity Predecessor:	2015, 2040, 2285
Activity Successor:	2060
Activity Duration:	5

Develop CD Fee Proposal (2050)

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:	2015, 2040, 2285
Activity Successor:	2060
Activity Duration:	5

Update PRS (2055)

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. Additionally, the Project Manager is responsible to provide regular updates to TSM Facilities Database coordinator.

Role Description	
Responsible:	Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	2015, 2040, 2285
Activity Successor:	2060
Activity Duration:	1

Execute CD Task Order (2060)

Transportation Systems Management (TSM) completes the Notice to Proceed (NTP) and instructs the Designer to begin work.

Prepare three original NTP form, sign and distribute for further execution. After execution of NTP, TSM will provide an original to the Designer and Accounting, and keep one original in the study file and provide a copy to Bureau of Professional Services.

Role Description	
Responsible:	Project Manager
Consulted:	NA
Informed:	Designer, Division of Accounting, Bureau of Professional Services
Activity Predecessor:	2045, 2050, 2055
Activity Successor:	2065, 2105, 2120, 2130, 2135, 2215
Activity Duration:	3

Start Design Communications Report (2065)

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. Follow the procedure for uploading DCR located at: http://www.state.nj.us/transportation/capital/pd/documents/QMInteractiveCommunicationsProcedure.pdf.

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:	2025, 2060
Activity Successor:	2125, 2155, 2175
Activity Duration:	1

Conduct Traffic Counts (2100)

NOTE: ONLY EXECUTE THIS ACTIVITY WHEN TRAFFIC COUNTS ARE REQUIRED TO BE PERFORMED BY THE DESIGNER AS PER THE CD SCOPE STATEMENT.

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 and this activity will be added in the proposal.

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.

Role Description	
Responsible:	Designer
Consulted:	Project Manager
Informed:	NA
Activity Predecessor:	2020, 2060
Activity Successor:	2115
Activity Duration:	10

Perform Supplemental Data Collection (2105)

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
- ITS Facilities Plans
- Electrical Plans
- Traffic Signal Timing Plans
- Maintenance Work Orders
- Any relevant reports from other agencies such as the MPO, County, Town, etc.

Role Description	
Responsible:	Project Manager, Designer
Consulted:	Engineering Documents Unit
Informed:	NA
Activity Predecessor:	2020, 2060
Activity Successor:	2115
Activity Duration:	10

Prepare CD Mapping (2115)

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 need to be discussed with the PM for a possible termination of the project. In the 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, Survey Services
Informed:	NA
Activity Predecessor:	2105
Activity Successor:	2235
Activity Duration:	10

Conduct Field Inventory of Physical Conditions (2120)

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, Quality Management Services, and Maintenance, the municipal and county engineer and representative, Metropolitan Planning Organization (MPO), NJTA, PANYNJ, TRANSCOM, DRJTBC, and Municipal Police on an as needed basis. Roadway features to be inventoried may include utilities, drainage, environmental, Intelligent Transportation Systems (ITS), etc. Utilize the Complete Streets Checklist while performing the field inventory.

Additionally, field visits are to be documented through photographs and submitted with the report.

Notes:

The Designer and Project Manager utilize the TSM 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. Any high or low points on the highway profile will also be noted on the as-built plans to help locate proposed ITS facilities at the desired location. If there is recent field survey information or recent flights and mapping, that may be utilized in lieu of spot checks.

In the 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.

In addition, for AAM Projects, the Designer is to field verify and incorporate in the TSM Limited Scope CD Checklist items including but not limited to:

- ADA compliance deficiencies at each signalized intersection within the project limits.
- Controller cabinet and foundation type to ensure compatibility with CTSS Design.
- ROW confirmation of existing traffic signal and electrical equipment. If ROW conflicts exist, add to the Risk Register and note in the CD Report to conduct further investigation under activity 4600 during FD.
- Review of existing communication backbone and connections to project intersections.
- Constraints with existing infrastructure (i.e. junction boxes and conduits) that would require an intersection upgrade.

The Designer should contact the PM for further guidance and clarification.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Subject Matter Expert Units, Quality Management Services, FHWA, Metropolitan Planning Organization, Maintenance, Local Officials, Mobility & Systems Engineering
Informed:	NA
Activity Predecessor:	2025, 2060
Activity Successor:	2125, 2155, 2175
Activity Duration:	10

Identify Substandard Design Elements (2125)

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.

Notes:

Identification of substandard design elements is only required on project types that require design exception approval. These specific project types are listed in the Project Customization Guideline.

Procedures are subject to change without notice.

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:	2065, 2120, 2215
Activity Successor:	2250 FF, 2260, 2360
Activity Duration:	5

Coordinate with Local Officials (2130)

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: 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:	2025, 2060
Activity Successor:	2260, 2360
Activity Duration:	5

Perform Environmental Screening (2135)

The Designer or Bureau of Environmental Program Resources (BEPR) performs the Environmental Screening to identify environmental concerns or "fatal flaws." The Project Manager requests an environmental screening by sending a memo to BEPR. 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 BEPR 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: Preparation of an Environmental Screening Report may not be required for a Limited Scope Study. Consult with BEPR prior to conducting an environmental screening to determine if one is necessary.

Role Description	
Responsible:	Designer or Bureau of Environmental Program Resources (BEPR)Project Manager
Consulted:	Project Manager, BEPR
Informed:	NA
Activity Predecessor:	2025, 2060
Activity Successor:	2140
Activity Duration:	5

Review Environmental Screening (2140)

This activity is only applicable if a Designer prepares the Environmental Screening Report. The Bureau of Environmental Program Resources (BEPR) will review the Environmental Screening Report and provide comments to the Designer.

Role Description	
Responsible:	Bureau of Environmental Program Resources (BEPR)
Consulted:	Project Manager, Designer
Informed:	NA
Activity Predecessor:	2135

Activity Successor:	2250 FF, 2260, 2360
Activity Duration:	3

Send Utility Contact Letter (2155)

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 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:	2065, 2120, 2215
Activity Successor:	2250 FF, 2260, 2360
Activity Duration:	15

Prepare Utility Risk Assessment Plan (2175)

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:	2065, 2120, 2215
Activity Successor:	2240 FF, 2250 FF, 2260, 2360
Activity Duration:	10

Complete CD Checklist (2215)

The Designer completes (PM completes for in-house CD) the CD Checklist to determine the impact of the project and activities and requirements that are required to be completed throughout the design process.

Note:

CD Checklist is completed in lieu of Project Fact Sheet (Activity ID 2240), if approved and directed by

the Project Manager.

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	NA
Activity Predecessor:	2025, 2060
Activity Successor:	2125, 2155, 2175
Activity Duration:	5

Conduct ITS Needs Assessment (2235)

The Designer reviews the existing Intelligent Transportation Systems (ITS) database and conducts ITS needs assessment for additional ITS facilities. If additional ITS facilities are recommend by the Designer, the Project Manager coordinates with Traffic Operations, ITS Engineering (ITS), Mobility Management (MM), and Advanced Arterial Management (AAM) units to obtain concurrence and will provide further direction to the Designer.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Traffic Operations, MSE
Informed:	NA
Activity Predecessor:	2115
Activity Successor:	2240, 2250
Activity Duration:	5

Prepare Project Fact Sheet (2240)

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: If approved by the Project Manager, a TSM Limited Scope CD Checklist (Activity ID 2215) may be utilized in place of the Project Fact Sheet.

Role Description	
Responsible:	Designer
Consulted:	Project Manager
Informed:	Subject Matter Experts
Activity Predecessor:	2235
Activity Successor:	2260, 2360
Activity Duration:	10

Prepare Draft Purpose & Need Statement (2250)

A Purpose and Need Statement (PN) is a fundamental requirement to develop a concept that will require future National Environmental Policy Act (NEPA) documentation and is the basis for alternatives development. The PN Statement has three parts: The Purpose, the Need, and the 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 Environmental Program Resources (BEPR) will review the Purpose and Need Statement to ensure that facts support the proposed project's problem and need.

Note: In addition, for AAM Projects, this activity must also include information from activity 2285.

Role Description	
Responsible:	Designer, Project Manager, Bureau of Environmental Program Resources
Consulted:	N/A
Informed:	TSM Executive Regional Manager
Activity Predecessor:	2235
Activity Successor:	2260, 2360
Activity Duration:	10

Hold Scope Team Meeting (2260)

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.

.**Role Description**	
Responsible:	Designer, Project Manager
Consulted:	Project Manager, Scope Team Members
Informed:	Scope Team Members
Activity Predecessor:	2130, 2140, 2125, 2155, 2175, 2240, 2250
Activity Successor:	2280
Activity Duration:	5

Tier Assignment - Classification of Arterial System Technology (COAST) (2285)

This activity is specific to TSM projects involving Traffic Signal Corridor.

A corridor in consideration for a Controlled Traffic Signal System (CTSS) project is analyzed for tier assignment which is identified depending on the anticipated level of treatment that a corridor requires and potential conflicts. The corridor is assigned one of the following six tiers:

- Tier 1 (T1) – Adaptive Signal Control Technology (ASCT)
- Tier 2 (T2) – Responsive System, inbound and outbound timing plans
- Tier 3 (T3) –CTSS that communicates to a Central location and has a Central software that can be accessed from remote locations, intersections have optimized Time of Day (TOD) timings
- Tier 4 (T4) –System with field communications only, intersections have optimized TOD timings
- Tier 5 (T5) – Optimized with existing infrastructure.
- Tier 6 (T6) – Isolated intersection

Following the tier assignment, it will be determined whether a corridor will be considered for a project. If the corridor is not selected, MSE will log it into a corridor database for future consideration. If the corridor is determined to be Tier 1 through 3, the project is recommended as a new CTSS project. If the corridor is assigned Tiers 4 through 5 the project will follow the Traffic Signal Optimization Process detailed in Part F of the NJDOT TSM Procedures Manual, version 1.0 and coordination with conflicting projects will continue through the life of the project. If assigned T6, the intersection may be improved through hardware or timings upgrades but the intersection will not be part of a coordinated system.

Traffic signal optimization (TSO) will always be considered part of any CTSS project. At FD Initiation (Activity 4000), it will be determined if TSO will be included in the project based on review by the PM.

Role Description	
Responsible:	Project Manager
Consulted:	Advanced Arterial Management Unit
Informed:	NA
Activity Predecessor:	2000
Activity Successor:	2045, 2050, 2055
Activity Duration:	1

Complete Purpose and Need Statement (2280)

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

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Bureau of Environmental Program Resource
Informed:	NA
Activity Predecessor:	2260
Activity Successor:	2290
Activity Duration:	2

Purpose and Need Statement Completed (2290)

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

Activity Predecessor:	2280
Activity Successor:	2290

Develop Alternatives (2300)

Produce alternative Intelligent Transportation Systems (ITS)/Traffic Signal/Traffic Signal-Electrical deployment 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, operational improvements and ROW impacts. The Designer will ensure that the proposed ITS facility location is within ROW and is not proposed outside of State Jurisdiction limits by reviewing the ROW plans, Jurisdictional Maps & tax maps to supplement the information gathered in CD Mapping (Activity ID 2115) as needed. 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.

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

A Preliminary Preferred Alternatives (PPA) is chosen based off the SME input (Activity ID 2340), from which the designer will develop a preliminary location plan for all of the proposed ITS/Traffic Signal/Traffic Signal-Electrical facilities.

A Communications Concept & Analysis Report is developed. Refer to TSM Procedures Manual for further guidance.

In addition, for AAM projects, identify the number of signalized intersections and possible CTSS facilities within the alternatives analysis narrative.

Note: Use information gathered in Activity 2105 (Perform Supplemental Data Collection) where applicable.

Role Description	
Responsible:	Designer
Consulted:	Project Manager
Informed:	NA
Activity Predecessor:	2290
Activity Successor:	2560, 3170
Activity Duration:	15

Develop Preliminary Detour and Construction Staging Plans (2320)

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 in coordination with MM – Work Zone unit of MSE & Traffic Operations. 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: Prepare Conceptual detour and construction staging schemes to ensure constructability.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, NJDOT SMEs, Local & County Officials
Informed:	NA
Activity Predecessor:	2290
Activity Successor:	2560, 3170
Activity Duration:	5

Initial OIT/IT Coordination (2325)

The designer coordinates with Office of Information Technology (OIT) and NJDOT Information Technology (IT) for high level network requirements. This coordination will include other SMEs as recommended by the PM. Discuss the capacity and need for any new network equipment, leased services, network security etc. and initiate any process that requires lead time to complete.
Initiate any Systems Architectural Review (SAR) processes that are needed for the project.

Role Description	
Responsible:	Designer, Project Manager
Consulted:	Office of Information Technology (OIT), NJDOT Information Technology (IT)
Informed:	Project Manager
Activity Predecessor:	2290
Activity Successor:	2535 FF, 2560, 3170
Activity Duration:	5

Develop Preliminary Construction Cost Estimates (2340)

Develop a preliminary construction cost estimate for each alternative. Apply the same base assumptions to each alternative, which is sufficient to compare alternatives.

Role Description	
Responsible:	Designer
Consulted:	Project Manager
Informed:	NA
Activity Predecessor:	2290
Activity Successor:	2560, 3170

Activity Duration:	5

Obtain Reasonable Assurance of Design Exception Approval (2360)

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 Transportation Data & Safety 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: 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:	2130, 2140, 2125, 2155, 2175, 2240, 2250
Activity Successor:	2560, 3170
Activity Duration:	5

Obtain SME Input (2410)

Coordinate with subject matter expert units and hold individual meetings, as necessary, to review the alternatives and 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.

It is important that ITS infrastructure improvements are consistent with the overall intentions of the ITS Investment Strategy.

Role Description	
Responsible:	Project Manager, Designer
Consulted:	NJDOT Subject Matter Experts, Statewide Planning
Informed:	NA
Activity Predecessor:	2290

Activity Successor:	2300 FF, 2560, 3170
Activity Duration:	5

Prepare Systems Engineering Review Form (2535)

If new Intelligent Transportation 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. 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.

Note: Any ITS deployment that is not covered as programmatic, or any CTSS deployment, will require the Designer to complete Systems Engineering activities as described under Activity IDs 4505 & 4560.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Traffic Operations
Informed:	Bureau of Mobility and Systems Engineering
Activity Predecessor:	2290
Activity Successor:	2560, 3170
Activity Duration:	5

Complete CD Quality Certification (2560)

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 Manger
Activity Predecessor:	2300, 2320, 2325, 2340, 2360, 2410, 2535
Activity Successor:	2570 FF, 2580
Activity Duration:	1

Prepare Draft CD Report (2570)

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.

Notes:

Customize the TSM 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 TSM

Limited Scope CD Report.

Role Description	
Responsible:	Designer
Consulted:	Project Manger
Informed:	NA
Activity Predecessor:	2290
Activity Successor:	2580
Activity Duration:	10

Review Draft CD Report and Address Comments (2580)

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:	2560, 2570
Activity Successor:	2600
Activity Duration:	10

FHWA Reviews and Approves CD Report (2600)

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 two weeks. The duration for making changes to the CD Report will vary based on the extent of FHWA comments.

Note: Complete this activity for all federally funded CD studies.

Role Description	
Responsible:	Project Manager, FHWA
Consulted:	Designer
Informed:	NA
Activity Predecessor:	2580, 3170
Activity Successor:	2610
Activity Duration:	10

Present to CPSC (2610)

If no community impacts are anticipated, 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 recommend advancement of the Preliminary Preferred Alternative (PPA) to FD. If significant community

impacts are anticipated (e.g., detours, travel disruption) the Project Manager prepares a CPSC memo recommending advancement to Final Design and will request placement on the agenda of the next scheduled Capital Program Screening Committee (CPSC) Meeting for presentation of the PPA. The memo will also include an information package that briefly presents the PPA and provides supporting documentation. The Director of Mobility and Systems Engineering (MSE) 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.

Role Description	
Responsible:	Project Manager; Executive Director, MSE; Division of Capital Investment Planning and Development; Capital Program Screening Committee
Consulted:	Designer
Informed:	NA
Activity Predecessor:	2600
Activity Successor:	2620
Activity Duration:	20

CPC Approves Advancement (2620)

The Capital Program Committee (CPC) provides agreement and support to advance the proposed project to Final Design (FD). If the Preliminary Preferred Alternative is approved by the CPC to advance to FD, the FD 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 FD phase.

Role Description	
Responsible:	Project Manager, Capital Program Committee
Consulted:	Division of Transportation Systems Management
Informed:	Designer
Activity Predecessor:	2610
Activity Successor:	2630, 2750
Activity Duration:	10

Finalize CD Report (2630)

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:	3870, 3890
Activity Duration:	2

Complete CD Closeout (2640)

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:	3950
Activity Successor:	2950
Activity Duration:	10

Select Designer (2750)

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, Bureau of 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.

Role Description	
Responsible:	Consultant Selection Committee, Division of Procurement Professional Services
Consulted:	NA
Informed:	Project Manager, Designer
Activity Predecessor:	2620
Activity Successor:	3230, 3235
Activity Duration:	1

Negotiate Contract (2820)

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. The designer may update the FD Scope Statement with detailed task descriptions, if necessary. Changes to the FD 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 Director of Mobility and Systems Engineering (MSE) will request authorization from the Consultant Selection Committee to terminate negotiations and begin negotiations with the next selected firm.

After completion of negotiations, the Project Manager sends the total negotiated hours to Budget Management.

The Project Manager may request the Budget Manager to 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, Budget Management
Consulted:	Designer
Informed:	NA
Activity Predecessor:	3230, 3235
Activity Successor:	2830, 3240
Activity Duration:	5

Finalize Proposal (2830)

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

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	2820, 3240
Activity Successor:	2840
Activity Duration:	5

Prepare Draft Agreement (2840)

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, Bureau of 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.

Note: For PoDI Projects, the PM will need to obtain FHWA approval on the agreement.

Role Description	
Responsible:	Project Manager, Division of Procurement Professional Services
Consulted:	NA
Informed:	NA
Activity Predecessor:	2830
Activity Successor:	3270
Activity Duration:	10

Execute Designer Agreement (2890)

The 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 Contract Manager along with copies of the Corporate Resolution, Certified Payrolls, and Business Registration Certificates for the Prime and all Sub-consultants. The Contract Manager sends the signed and sealed Final Agreement Package to the Deputy Attorney General for approval.

The Contract Manager forwards the approved Final Agreement Package and an AD-12 to NJDOT Management for signature and approval. The Contract Manager distributes the executed Agreement to the appropriate parties, including FHWA.

Role Description	
Responsible:	Contract Manager, Designer, Deputy Attorney General
Consulted:	NA
Informed:	Project Manager, Designer
Activity Predecessor:	3270
Activity Successor:	2950
Activity Duration:	20

Concept Development Completed (2950)

The Concept Development Phase has been completed (Milestone).

Activity Predecessor:	2640, 2890
Activity Successor:	4000

Prepare Final Design Scope Statement (3170)

The Designer reviews the Final Design (FD) Limited Scope Statement template and updates with the tasks necessary for the completion of FD. The FD Limited 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 FD Limited Scope Statement will include all the tasks needed to conduct FD. The FD Scope Statement will be attached to the CD Report and will be used to solicit a designer man-hour estimate and a fee proposal for FD.

The Project Manager will circulate the FD Limited Scope Statement to all of 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.

Role Description	
Responsible:	Designer, Project Manager, Subject Matter Experts
Consulted:	NA
Informed:	NA
Activity Predecessor:	2300, 2320, 2325, 2340, 2360, 2410, 2535
Activity Successor:	2600
Activity Duration:	10

Develop FD Designer Fee Proposal (3230)

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

Role Description	
Responsible:	Designer
Consulted:	Project Manager
Informed:	NA
Activity Predecessor:	2750
Activity Successor:	2820
Activity Duration:	10

Develop FD Independent Cost Estimate (3235)

The Project Manager requests that the Budget Manager 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 FD Scope Statement to the Budget Manager. The Budget Manager consults with subject matter expert units when developing man-hour estimates on unique or major tasks. The Budget Manager submits the Preliminary ICE to the Project Manager for review and comment.

Role Description	
Responsible:	Budget Manager
Consulted:	Project Manager
Informed:	NA
Activity Predecessor:	2750
Activity Successor:	3230 FF, 2820
Activity Duration:	5

Create FD Schedule (3240)

The Project Manager or Scheduler request the Office of Schedule and Budget Management to create an active schedule in Primavera based on TSM Limited Scope FD schedule template. The Project Manager sends the standard FD schedule template to the Scheduler or Office of Schedule and Budget Management to customize the schedule based on the FD 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 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 Scheduler.

Note: Refer to the Project Delivery Process Customization Guideline for necessary revisions to the schedule.

Role Description	
Responsible:	Project Manager, 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:	2750
Activity Successor:	2820 FF, 2830, 3250, 3255
Activity Duration:	5

Approve FD Schedule (3250)

The Project Manager completes the Project Baseline Schedule Approval form and submits it to the Director of Mobility & Systems Engineering (MSE) for approval. The Project Manager forwards the Project Baseline Schedule Approval form to the Office of Schedule and Budget Management. The Office of Schedule and Budget Management creates the baseline for the FD Schedule.

Role Description	
Responsible:	Project Manager, Office of Schedule and Budget Management
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	2820, 3240
Activity Successor:	3270
Activity Duration:	5

Develop FD Budget (3255)

The Project Manager requests the Budget Manager to develop a FD 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 is going to complete FD, the budget estimate includes in-house design man-hours. The Budget Manager 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, Budget Manager
Consulted:	NJDOT Subject Matter Expert Units
Informed:	Project Manager
Activity Predecessor:	2820, 3240
Activity Successor:	3260
Activity Duration:	5

Finalize FD Budget (3260)

The Project Manager completes the Project Baseline Schedule Approval Form and compiles the FD documents required for both budget approval and funding authorization. These documents include the FD Budget Estimate, Project Baseline Schedule Approval Form and if appropriate, Designer's Fee Proposal. Forward the compiled FD documents to the Director of Mobility and Systems Engineering (MSE).

Role Description	
Responsible:	Project Manager
Consulted:	NA
Informed:	Director - MSE
Activity Predecessor:	3255
Activity Successor:	3265
Activity Duration:	5

Approve FD Budget (3265)

The Director of Mobility and Systems Engineering (MSE) reviews and approves the FD Budget Package. The Project Manager forwards the Project Baseline Schedule Approval Form to the Office of Schedule and Budget Management (OSBM) to document approval in the Project Reporting System.

Role Description	
Responsible:	Director – MSE, Project Manager, OSBM
Consulted:	NA
Informed:	Budget Manager
Activity Predecessor:	3260
Activity Successor:	3270
Activity Duration:	5

Authorize Final Design (3270)

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

Role Description	
Responsible:	Project Manager, Division of Capital Investment Planning and Development
Consulted:	NA
Informed:	Director - MSE
Activity Predecessor:	2840, 3250, 3265
Activity Successor:	2890
Activity Duration:	15

Prepare CED (3870)

Utilizing the technical environmental studies, cultural resource survey report and Section 4(f) evaluation, the Designer or Bureau of Environmental Program Resources (BEPR) assesses the project impacts and risks with respect to each environmental discipline (Noise, Air Quality, Ecology, Cultural Resources, Section 4(f), Hazardous Waste, Socio-economic and Environmental Justice) The Designer or BEPR reviews the risk response strategies within the Risk Register and identifies any risks not previously identified. Notify the PM to update the Risk Register if new risks or changes to existing risks are identified from the aforementioned technical environmental studies and evaluations. Upon completing the risk assessment, the Designer or BEPR prepares the Categorical Exclusion Document (CED).

If the need for permits cannot be avoided and the project will remain a TSM initiative, concurrently with the CED process, the Designer or BEPR initiates the permitting process and preparation of appropriate permit applications. A pre-Application may be scheduled depending on the complexity of the permitting issues. . BEPR will coordinate with reviewing agencies and will be responsible for the submission of all permit applications; permit fees will be paid by the Designer.

The Designer submits the CED to BEPR for review and approval. 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.

Note:

For Programmatic TSM limited scope projects, the Designer or the Project Manager completes page 1 of the standard CED template and requests BEPR to complete the CED. If Section 106 or Section 4(f) properties are involved, the appropriate activities shall be conducted during Concept Development.

Role Description	
Responsible:	Bureau of Environmental Program Resources (BEPR) or Designer
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	2630
Activity Successor:	3875
Activity Duration:	20

NJDOT Reviews and Approves CED (3875)

The Bureau of Environmental Program Resources (BEPR) Supervisor and BEPR Manager review and approve the Categorical Exclusion Document (CED).

Role Description	
Responsible:	Bureau of Environmental Program Resources (BEPR)
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	3870
Activity Successor:	3950
Activity Duration:	3

Prepare Certified Categorical Exclusion (CCE) Document (3890)

The Bureau of Environmental Program Resources (BEPR) Environmental Coordinator completes a Categorical Exclusion Document (CED) form per Federal regulations and the Programmatic Approval Agreement and submits to the BEPR Supervisor and BEPR Manager for review and approval. 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.

Note:

For Programmatic TSM limited scope projects, the Designer or the Project Manager completes page 1 of the standard CED template and requests BEPR to complete the CED. If Section 106 or Section 4(f) properties are involved, the appropriate activities shall be conducted during Concept Development.

Role Description	
Responsible:	Bureau of Environmental Program Resources (BEPR)
Consulted:	Project Manager
Informed:	Project Manager
Activity Predecessor:	2630
Activity Successor:	3900
Activity Duration:	20

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

The Bureau of Environmental Program Resources (BEPR) Supervisor and BEPR Manager sign the Categorical Exclusion Document (CED) and certify that the project meets the criteria outlined in the regulations and Programmatic Approval Agreement. FHWA review and approval is not required.

Role Description	
Responsible:	Bureau of Environmental Program Resources (BEPR)
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	3890
Activity Successor:	3950
Activity Duration:	3

Completed Environmental Document (3950)

The environmental document has been completed. (Milestone)

The point that signals when funding may be obtained for Final Design. After FHWA concurs with a Categorical Exclusion, Finding of No Significant Impact (FONSI), or issuance of a Record of Decision (ROD), the National Environmental Policy Act (NEPA) approval process is concluded. This includes New Jersey Department of Environmental Protection (NJDEP) concurrence with the recommendations presented in an EO 215 document.

The Project Manager may request authorization of Federal funds for right of way acquisition and Final Design from FHWA after approval of the Environmental Document. This is not the end of the Environmental process.

Activity Predecessor:	3875, 3900
Activity Successor:	2640

Final Design

Conduct Topographic Survey (3020)

The Designer conducts a topographic survey that provides documentation, within specific project limits and offsets, of the site's existing field conditions including existing baselines, centerlines, existing and proposed right of way lines, structure clearances, drainage systems, utility lines, Intelligent Transportation Systems (ITS) facilities, traffic signal and electrical facilities, soil borings, control points, and elevations. The topographic survey may supplement any necessary photogrammetric survey or GIS work. The topographic survey may begin once control survey points are established. A project survey report is prepared by the surveyor and submitted to the regional survey office for review and approval.

Note: Due to limited seasonal availability to conduct aerial survey, Limited Scope projects 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:	Designer
Consulted:	Geodetic Survey Unit, Survey Services
Informed:	Project Manager
Activity Predecessor:	4010
Activity Successor:	3025, 3035, 3050, 4005 FF
Activity Duration:	15

Prepare Base Maps (3025)

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

Note: Due to limited seasonal availability to conduct aerial survey, Limited Scope projects 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:	Designer
Consulted:	Geodetic Survey Unit, CADD Support Unit, Survey Services, Project Manager
Informed:	NA
Activity Predecessor:	3020, 4005
Activity Successor:	4215
Activity Duration:	15

Prepare Utility Base Plans (3035)

The Designer prepares utility base plans from field survey data to show existing surface utility facilities. These plans are the base plans for the alternatives of accommodation and the Utility Agreement Plan.

Role Description	
Responsible:	Designer
Consulted:	Project Manger
Informed:	NA
Activity Predecessor:	3020, 4005
Activity Successor:	3045, 3050
Activity Duration:	10

Establish Utility Engineering Funding (3040)

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

Role Description	
Responsible:	Project Manager, Designer, Program Coordination
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4010
Activity Successor:	3025, 3035, 3050
Activity Duration:	20

Send Utility Verification Request Letter (3045)

The Designer submits the Utility Verification Request Letter and two sets of the utility base plans to each utility company to identify their existing facilities on the utility base plans.

Role Description	
Responsible:	Designer, Utility Companies
Consulted:	Project Manager
Informed:	Project Manager
Activity Predecessor:	3035, 3050
Activity Successor:	3055
Activity Duration:	5

Prepare Utility Agreement (3050)

The Project Manager prepares a Utility Engineering Construction Agreement (UECA) and sends to utility

companies for signature (an authorization date should be included in the transmittal letter for the owners to incur engineering costs).

Role Description	
Responsible:	Project Manager
Consulted:	Designer
Informed:	Utility Companies
Activity Predecessor:	3020, 3040, 4005
Activity Successor:	3045, 3060
Activity Duration:	10

Update Base Plans & Identify Conflicts (3055)

The Designer coordinates with the affected utility companies and incorporates the collective utility company comments onto the base maps. Identify potential utility conflicts between existing utility facilities and proposed design. The Designer and utility companies identify potential subsurface utility engineering (SUE) test pit locations to verify the exact location of utilities.

The Designer reviews the Risk Register for any previously identified utility risks. Notify the PM to update the Risk Register if new risks or changes to existing risks are identified.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Utility Companies
Informed:	NA
Activity Predecessor:	3045, 3060
Activity Successor:	3080, 3985
Activity Duration:	20

Execute Utility Agreement (3060)

The Project Manager obtains the signed Utility Engineering Construction Authorization (UECA) from the utility companies and forwards to the Deputy Attorney General (DAG) for review and approval. Once approval is received, the Project Manager prepares a Department Action Slip (AD-12) for each UECA for internal circulation and signature. Once the UECAs are executed, the Project Manager prepares letters of transmittal and sends the UECAs to the utility companies.

Role Description	
Responsible:	Project Manager, Utility Companies, Deputy Attorney General
Consulted:	NA
Informed:	Project Manager, Utility Companies
Activity Predecessor:	3050
Activity Successor:	3055
Activity Duration:	20

Conduct Subsurface Utility Engineering (3080)

The Designer conducts subsurface utility engineering (SUE) in order to determine the exact location of underground utilities. Depending upon the type of utility and potential design conflict, several SUE

methods can be utilized. If only horizontal location is needed, underground utilities may be located remotely using ground penetrating radar, metal detectors or similar devices. This method will not provide utility depth. If depths of utilities are needed, the Designer arranges for a SUE Contractor or the utility company to dig subsurface test pits. Test pits are not needed to locate every utility and should only be used in locating utilities that have a potential conflict. Prior to conducting SUE test pits, the Designer must confirm with the utility company if previous SUE test pits have been performed for the conflict area and horizontal and vertical data exists. The Project Manager approves the proposed SUE test pit locations. Test pits are dug to locate underground utilities and linked to physical features in the field by a survey crew. The Designer prepares a SUE test pit report and includes the survey notes from the SUE Contractor or utility company with the report.

If a project specific Subsurface Exploration Program is required due to potential unexpected utility conflicts reported by the utility companies and discovered by the SUE contractor, coordinate with the PM and other SMEs to develop a program.

Role Description	
Responsible:	Designer, SUE Contractor and/or Utility Companies
Consulted:	Project Manager, Utility Companies
Informed:	NA
Activity Predecessor:	3055
Activity Successor:	4220, 4240, 4250, 4405, 4425, 4435
Activity Duration:	20

Determine Traffic Engineering Facility Locations (3090)

If necessary, the Designer updates the peak hour capacity analyses to validate the operation, establishes the traffic signal pole layout, and prepares a lighting warrant analysis report (vehicular and/or pedestrian) and submits to the Bureau of Traffic Signal and Safety Engineering. Prepare conceptual level plans for the layout of lighting design, guide signs, regulatory traffic control devices and signal design to determine any associated right of way needs. Right of way needs may include locations of overhead sign and lighting structures or traffic signal facilities. Identify and resolve any potential underground or aerial utility conflicts.

Note: In addition, for AAM projects, this activity encompasses updates needed to traffic signal plans, timings, and any structural calculations required as a part of the CTSS design.

Role Description	
Responsible:	Designer
Consulted:	Advanced Arterial Management
Informed:	Project Manager
Activity Predecessor:	4215
Activity Successor:	4220, 4240, 4250, 4405, 4425, 4435
Activity Duration:	10

Conduct Constructability and Maintenance Review (3145)

The Designer performs a constructability review of the proposed project for construction and future maintenance activities along with any potential utilities (underground and overhead), environmental,

historical and/or ROW/Jurisdictional conflicts (if not already addressed in previous activities).

The Designer coordinates with MSE and the necessary SMEs to conduct a constructability review meeting. The Regional ITS Maintenance personnel will perform a maintenance review to minimize long term maintenance costs and to ensure safe access to all facilities. Traffic Operations and MSE's Work Zone unit will perform a review of the traffic impacts during construction. The desired result is to incorporate the potential comments from Construction Management, Traffic Operations, ITS Maintenance and SME's to reduce the duration of construction and ensure the project can be constructed while maintaining public safety. In addition, this review helps to develop a reasonable construction cost estimate. Upon completion, Construction Management, ITS Maintenance Unit of MM and Traffic Operations forward comments to the MSE Project Manager for the Designer to incorporate into related plans, estimates, etc.

The Designer reviews the comments for any identified constructability or maintenance risks and prepares a Comment Response Summary for MSE (and applicable SME) review. After MSE (and applicable SMEs) approves the Comment Resolution, the Designer revises the Design documents in accordance with the Comment Resolution Summary. In addition, the Designer reviews the comments for any identified constructability or maintenance risks and updates the Risk Register if new risks or changes to existing risks are identified from the constructability and maintenance review.

As part of the Interim Submission, the Designer submits a Constructability Review Report.

Designer will provide assumptions/backup for the Scope of Work regarding the level of effort related to this task and associated meetings.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Mobility & Systems Engineering
Informed:	NA
Activity Predecessor:	4240, 4250, 4405, 4445, 4455, 4460, 4465, 4595
Activity Successor:	4470 FF, 4475
Activity Duration:	10

Develop FD Public Involvement Action Plan (3185)

NOTE: ONLY EXECUTE THIS ACTIVITY IF REQUESTED IN ACTIVITY ID 2215

The Project Manager and Designer develop an FD Public Involvement Action Plan (PIAP) to identify critical points for public involvement during FD, and the objectives for each point. The FD 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. If one acre or larger of deforestation is proposed, a public information center is required.

The Project Manager coordinates with BEPR when preparing the FD PIAP to determine Title VI/Environmental Justice requirements ,involvement with State/Federal permitting agencies as needed and any other public involvement requirements.

The Project Manager circulates the PIAP to the Division of Community and Constituent Relations for final comments and signature.

Role Description	
Responsible:	Project Manager, Designer, Division of Community and Constituent Relations
Consulted:	NA
Informed:	Project Manager, Division of Community and Constituent Relations
Activity Predecessor:	4010
Activity Successor:	3025, 3035, 3050
Activity Duration:	10

Update Utility Risk Assessment (3985)

The Designer updates the Utility Risk Assessment Plan based upon information received by the utility companies and subsurface utility engineering. This updated plan is utilized as a reference to address utility risks and to prepare the updated construction staging plans and preliminary roadway plans.

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

Role Description	
Responsible:	Designer
Consulted:	Bureau of Mobility & Systems Engineering, Traffic Operations, Information Technology
Informed:	Project Manager
Activity Predecessor:	3055
Activity Successor:	4220, 4240, 4250, 4405, 4425, 4435
Activity Duration:	10

Final Design Initiated (4000)

Start the Final Design Phase. (Milestone)

Activity Predecessor:	2950
Activity Successor:	4010

Conduct Gap Assessment (4005)

The designer shall conduct a Gap Assessment to assess the design requirements for TSM Projects. The designer is required to exercise engineering judgment where necessary to meet the intended goals and objectives outlined in the Gap Assessment procedures. The Designer is also required to outline the progression of the field work to be performed and to coordinate with NJDOT's Project Manager for consultation prior to the start of work.

The Physical Inventory Gap Analysis includes an inventory and visual inspection of the existing infrastructure including switches, junction boxes, patch panels, etc. The Conduit Fill Gap Analysis

includes an inventory and visual inspection of the conduits (communication & electrical) and cables (communication and electrical). In addition for AAM Projects, the Designer is to lay out the initial proposed CTSS device locations for NJDOT approval prior to starting the Physical Inventory Gap Analysis. The Designer should use relevant information from activity 2300 that was performed under the CD Phase.

In addition for AAM Projects, the Physical Inventory Gap Analysis includes an inventory and visual inspection of the traffic signal infrastructure including traffic signals, signal poles, junction boxes, and signal controller cabinets. The Conduit Fill Gap Analysis includes an inventory and visual inspection of the traffic signal conduits, conductors, and cables. As a part of the Physical Inventory Gap Analysis, the Designer will conduct a detailed Field Conditions Memo.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Bureau of Mobility & Systems Engineering
Informed:	NA
Activity Predecessor:	4010
Activity Successor:	3025, 3035, 3040
Activity Duration:	30

Initiate FD (4010)

The Project Manager reviews the approved CD documents and updates the Project Reporting System (PRS) to reflect any changes that may have occurred since CD closeout. The Project Manager sets up the FD job number and notifies the subject matter expert units of the upcoming project.

Note: The Designer will obtain all available data/documents from CD phase from the Project Manager including but not limited to ITS database inventory report, latest Mapping, Traffic Signal/Electrical Plans, Timing Directives, CADD files, project conflict information, CED, etc.

Role Description	
Responsible:	Project Manager
Consulted:	Subject Matter Expert Units, Designer
Informed:	Designer
Activity Predecessor:	4000
Activity Successor:	3020, 4005, 4505, 4510
Activity Duration:	3

Incorporate Utility Design in Contract Documents (4090)

The Designer shows final utility accommodations and betterments on contract documents based on the completed utility agreement plans, specifications and estimates.

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	NA
Activity Predecessor:	4565
Activity Successor:	4290
Activity Duration:	20

Conduct Supplemental Surveys (4215)

The Designer conducts a supplemental survey for any areas not addressed in previous surveys. Supplemental survey information may include additional topographic data, utility test pits, right of way stakeouts, soil borings and wetland delineation. The Designer prepares a supplemental report as an addendum to the original Control Survey Report and submits the results to the appropriate subject matter expert units. Update the base maps to reflect the supplemental survey information.

If the design requires more detailed subsurface investigation, propose tasks related to Activity ID 4300 (Develop Subsurface Exploration Program) & 4305 (Gather Subsurface Information) found in CPM Final Design Activity List.

Role Description	
Responsible:	Designer
Consulted:	Regional Design and Survey Services, Geotechnical Unit
Informed:	Project Manager
Activity Predecessor:	3025
Activity Successor:	3090
Activity Duration:	20

Prepare Final Roadway Plans (4220)

The Designer updates the base plans using the details of the surveys conducted earlier to produce the final roadway plans. The final roadway plans shall be prepared in accordance with the NJDOT Sample Plans. Perform a field inventory of existing conditions before finalizing the plans to ensure accuracy. Prepare the Roadway Quantity Calculations and update the Design Communications Report accordingly. The final roadway plans may include:

- Key Sheet
- Typical Sections
- Construction Plans
- Traffic Control And Staging Plans
- Traffic Striping And Signing Plans
- Utility Construction Staging Plans
- Estimate – Distribution of Quantities
- Profiles
- Environmental Plans
- Ties & Grades
- Construction Details
- Electrical Details
- ITS Details
- Plan Sheet Index
- Electrical Plans
- Landscape Plans
- Network Plans
- Method of Cross Sections
- Structural Details
- ITS Plans

The Designer reviews the Risk Register for any previously identified risks and strategies. Incorporate and refine applicable risk response strategies and action plans. Notify the PM to update the Risk Register for any changes to existing risks and strategies. Include any environmental notes or commitments on final roadway documents.

Role Description	
Responsible:	Designer
Consulted:	Subject Matter Experts
Informed:	Project Manager
Activity Predecessor:	3080, 3090, 3985
Activity Successor:	4290, 4555

Activity Duration:	80

Complete Final Design Systems Engineering Review Form (4235)

If additional Intelligent Transportation Systems (ITS) facilities have been proposed since the latest Systems Engineering Review Form (SERF) revision (after Concept Development), revise the SERF and submit it to MSE. Upon approval from MSE, the Designer submits the revised approved SERF to the PM.

Note:

Only perform this activity if Activity ID 2535 in Concept Development was required to be completed.

Role Description	
Responsible:	Designer
Consulted:	Bureau of Mobility & Systems Engineering, Traffic Operations
Informed:	Project Manager
Activity Predecessor:	4255
Activity Successor:	4290, 4555
Activity Duration:	5

Complete Traffic Signal, Signing, and Striping Plans (4240)

The Designer prepares the traffic signal, electrical signal, signing and striping plans and signal timing schedule as per the MUTCD, NJDOT Roadway Design Manual and Sample Plans. Resolve overhead and underground utility conflicts. Prepare interim or temporary signal plans and submit to the Bureau of Traffic Signal and Safety Engineering (TSSE). If requested by TSSE, submit the plans for review prior to the Final Design Submission.

Role Description	
Responsible:	Designer
Consulted:	Bureau of Traffic Signal and Safety Engineering
Informed:	Project Manager
Activity Predecessor:	3080, 3090, 3985
Activity Successor:	3145, 4415, 4470
Activity Duration:	20

Prepare ITS Facilities Layout Plans (4250)

The Designer prepares ITS facilities layout plans for existing and proposed aerial and underground Intelligent Transportation Systems (ITS) facilities to aid in the development of the utility alternatives of accommodation. The Designer obtains appropriate tax maps and ROW As-built information to determine final ROW impacts based upon the preliminary ROW review in Activity 2300.

In addition, for AAM – CTSS projects, the midblock detection device layout and design are included under this activity. The Designer will ensure that the proposed midblock detectors are within NJDOT ROW and are not proposed outside of State Jurisdiction limits by reviewing the ROW plans, Jurisdictional Maps & tax maps.

Role Description	
Responsible:	Designer
Consulted:	Bureau of Mobility & Systems Engineering, Traffic Operations, Office of Information Technology
Informed:	NA
Activity Predecessor:	3080, 3090, 3985
Activity Successor:	3145, 4415, 4470, 4600 FF
Activity Duration:	20

Complete ITS Facilities Plans (4255)

The Designer completes the electrical and communications design work required for the construction plans. The ITS facilities plans include wiring schematics, interconnection drawings, equipment layout special details, any non-standard electrical details, fiber assignment diagrams and network system block diagrams. Also submit the Structure related section of special provisions including details and a separate cost estimate for structures required for the proposed ITS facilities. If any structural issues are identified, the Designer obtains NJDOT approval of the design recommendations. Include the structure plans and FD Systems Engineering Review Form (SERF) with the Final Design Submission.

Notes:

If Systems Engineering Analysis was required to be completed, include Systems Engineering Report with FD Submission in lieu of SERF.

In addition, for AAM – CTSS projects, the midblock detection device layout, design, and any relevant structural calculations are included under this activity.

Role Description	
Responsible:	Designer
Consulted:	Bureau of Mobility & Systems Engineering, Traffic Operations, Office of Information Technology
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4235
Activity Duration:	30

Develop Construction Cost Estimate (4275)

The Designer develops the construction estimate utilizing the Construction Cost Estimating Guide.

Role Description	
Responsible:	Designer
Consulted:	Construction Management
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4290, 4555
Activity Duration:	5

Develop Specifications (4280)

The Designer develops input for the Special Provisions using guidance provided by the latest Baseline Document Changes and Standard Specifications.

The Designer reviews the Risk Register to incorporate applicable risk response strategies and action plans. Notify the Project Manager to update the Risk Register for any changes to existing risks and strategies.

In addition, for AAM projects, Final Specifications should include the System Requirements, Verification Plan, and Validation Plan prepared as part of the Perform Systems Engineering (Activity 4560).

Role Description	
Responsible:	Designer
Consulted:	Construction Management, Risk Management Support Group
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4290, 4555
Activity Duration:	15

Develop Construction Schedule (4285)

The Designer creates a construction schedule using Primavera and the Scheduling Manual for Design Projects.

The Designer reviews the Risk Register to incorporate applicable risk response strategies and action plans. Notify the PM to update the Risk Register for any changes to existing risks and strategies.

Role Description	
Responsible:	Designer
Consulted:	Construction Management, Office of Schedule and Budget Management
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4290, 4555
Activity Duration:	5

Prepare Final Design Submission Package (4290)

The Designer prepares the Final Design (FD) Submission package according to the Quality Management Guideline. The package should include:

- Transmittal letter indicating the distribution of all FD Submission deliverables
- Construction Job Number form (AC-1643)
- Designer FD Submission Certification
- Design Communications Report (DCR)
- Final Plans (prints only) with copies to the appropriate review units. Mylar sheets are to be held by the designer so that any necessary revisions can be made as required by the FD Review and Plans, Specifications and Estimate (PS&E) processing activities
- Special Provisions – show all revisions required to the current Standard Input (SI)
- Construction Cost Estimate
- Construction Schedule with narrative
- Risk Report (summarizes the completed Risk Register)
- Systems Engineering Review Form or Systems Engineering Report as applicable.

The Project Manager holds a meeting with the Designer to discuss the requirements of the submission. The Project Manager and Director of Mobility and Systems Engineering (MSE) will decide, using the FD Scope Statement, which functional Subject Matter Expert (SME) units will be selected for the distribution of documents for review and comment. The construction Cost Estimate and Schedule will always be reviewed by the PM.

If determined by the Project Manager, hold a Project Presentation Meeting and invite all selected units that will review the submission.

Role Description	
Responsible:	Designer, Project Manager
Consulted:	Project Manager, Subject Matter Experts
Informed:	Project Manager, Construction Management, Subject Matter Experts
Activity Predecessor:	4090, 4220, 4235, 4275, 4280, 4285, 4515, 4525, 4535
Activity Successor:	4800
Activity Duration:	15

Identify Non-Standard & Proprietary Items (4405)

When it is not possible to specify a Standard Pay Item, a Non-Standard Pay Item may be used. Non-Standard Pay Items are items of work that are not included in the Standard or Supplemental Specifications, typically, because the Department has not developed an approved Standard Specification for the item. Non-Standard Pay Items differ from Standard Pay Items in the following manner:

1. Any revision to a Standard Pay Item will cause it to become a Non-Standard Pay Item because it is no longer consistent with the Department's approved Standard Specification.
2. Proprietary items specifying an exclusive product or manufacturer required for an item of work.

Proprietary items may be used in projects when the designer has provided justification for their use. The product must be in the best interest and/or health and safety of the public. If a proprietary item is used, which is not an approved Department standard, the designer shall provide at least three approved equals to be included in the specification. If the designer cannot provide three equals, documentation shall be provided, for approval, as to the reason or reasons why the product or manufacturer is necessary for the project. For Federally funded projects, TSM may self-certify the PIF Form for all proprietary items under section A but proprietary items under sections B and C must be approved by FHWA and meet the requirements of 23 CFR Subpart D 635.411 in either case.

3. An experimental item of work for new materials or construction methods currently under review by the Department.

The Designer requests Non-standard Pay Items. Follow NJDOT's procedure (http://www.state.nj.us/transportation/eng/documents/miscref/payiteminstructions.shtm) to gain approval for Non-standard Pay Items to be incorporated into project. Incorporate Non-standard Pay Items into package as part of the Final Design Submission.

Role Description	
Responsible:	Designer
Consulted:	Project Manager
Informed:	Project Manager
Activity Predecessor:	3080, 3090, 3985
Activity Successor:	3145, 4415, 4470
Activity Duration:	5

Update Preliminary Cost Estimate (4415)

The Designer updates Preliminary Cost Estimate to reflect any changes/additions that may have been made during preceding steps.

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4240, 4250, 4405, 4445, 4455, 4460, 4465
Activity Successor:	4475
Activity Duration:	5

Confirm Service Provision (4425)

The Designer finalizes the need of electric, communication, and other resources needed to provide service to proposed devices. Based on information from the utility companies and the data obtained from the field, the Designer determines the service delivery options.

Confirm with appropriate utility company that required service (electric, communication, or other) is available and that it can be delivered to the proposed device. Consult with Project Manager if a Utility

Construction Agreement and Utility Design Authorization Checklist is warranted and needed for the project. If needed, the standard CPM procedure for utility agreements should be followed.

If an agreement is not required, the service confirmation must be obtained from the utility company in written form.

Role Description	
Responsible:	Designer, Utility Companies, Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	3080, 3090, 3985
Activity Successor:	4475
Activity Duration:	10

HUB/TOC As-Built Confirmation (4435)

The Designer obtains the latest as-built plans for Communications Hub/TOC equipment. Perform field survey to verify that as-built plan is up-to-date as equipment in those locations can change frequently. Update as-built plans as necessary.

Role Description	
Responsible:	Designer
Consulted:	Statewide ITS Maintenance
Informed:	Project Manager
Activity Predecessor:	3080, 3090, 3985
Activity Successor:	4445, 4455, 4460, 4465
Activity Duration:	10

Prepare Network Diagram (4445)

The Designer obtains the latest network diagram(s) for Communications Hub/TOC equipment. Update Network Diagram using Communications Hub/TOC As-Builts as reference. Use Network Diagram and add proposed equipment and device locations to create proposed Network Diagram. Update Rack Layouts and Block Diagrams where appropriate to show proposed device locations and connections.

Role Description	
Responsible:	Designer
Consulted:	Office of Information Technology
Informed:	Project Manager
Activity Predecessor:	4435
Activity Successor:	3145, 4415, 4470
Activity Duration:	15

Coordinate with SITSM (4455)

The Designer coordinates with Statewide ITS Maintenance (SITSM) to obtain latest information regarding equipment and devices. Follow SITSM procedures to schedule and perform field visits to Communications Hub/TOC locations. Identify future projects which may have impacts at affected Communications Hub/TOC locations.

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4435
Activity Successor:	3145, 4415, 4445 FF, 4470
Activity Duration:	10

Coordinate with OIT (4460)

The Designer coordinates with Office of Information Technology (OIT) to obtain latest information regarding equipment and devices. Follow OIT procedures to schedule field visits to Communications Hub/TOC locations. Identify future projects which may have impacts at affected Communications Hub/TOC locations.
Finalize any Systems Architectural Review (SAR) processes that were initiated during CD phase.

Role Description	
Responsible:	Designer, Office of Information Technology, Project Manager
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4435
Activity Successor:	3145, 4415, 4445 FF, 4470
Activity Duration:	10

Review ITS Architecture (4465)

Review existing ITS Architecture for ITS facilities around project limits. Analyze how proposed ITS facilities can work with the facilities from surrounding roads to state highways.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, various SMEs
Informed:	NA
Activity Predecessor:	4435
Activity Successor:	3145, 4415, 4470
Activity Duration:	5

Prepare Interim Submission (4470)

The Designer prepares the Interim Submission package for NJDOT review. The package should include:

Transmittal letter indicating the distribution of all submission deliverables

- Systems Engineering Review Form (SERF)
- ITS Layout Plans
- Proposed communication and power
- Preliminary construction estimate
- Non-Standard Items & Proprietary Items
- Interim Submission Review Checklist
- Completed TSO deliverables for AAM projects

Role Description	
Responsible:	Designer, Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	4240, 4250, 4405, 4445, 4455, 4460, 4465, 4595
Activity Successor:	4475
Activity Duration:	10

Interim Submission (4475)

The Interim Submission Package is submitted by the Designer to the Project Manager (Milestone).

Activity Predecessor:	3145, 4415, 4425, 4470, 4600
Activity Successor:	4565

Update ITS Architecture (4555)

Update the ITS Architecture to reflect any changes mandated with the proposed construction of ITS facilities in the project.

Role Description	
Responsible:	Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	4090, 4220, 4235, 4275, 4280, 4285, 4515, 4535
Activity Successor:	4800
Activity Duration:	5

Complete Non-Standard Details (4515)

The Designer completes the non-standard details that are not provided by MSE and obtains and includes all relevant standard details that are available from MSE. The details are included within the Final

Documents and are submitted as part of the Final Design Submission.

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4290, 4555
Activity Duration:	10

Complete Network Design (4525)

The Designer incorporates applicable comments made during NJDOT Review into Network Diagram, Rack Layouts, and Block Diagrams. Finalize all drawings, details, etc. pertaining to project and submit as part of the Final Design Submission.

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4290, 4555
Activity Duration:	10

Reserve Ports with Statewide ITS Management / Office of Information Technology (4535)

The Designer coordinates with Statewide ITS Management (SITSM) / Office of Information Technology (OIT) to reserve ports in network equipment that will be used as a result of the project. Ensure there will be no conflicts with other projects at affected Communications Hubs/TOC locations. Submit port reservations as part of the Final Design Submission.

Role Description	
Responsible:	Designer
Consulted:	ITS Maintenance, Office of Information Technology
Informed:	Project Manager
Activity Predecessor:	4565
Activity Successor:	4290, 4555
Activity Duration:	10

Traffic Signal Optimization (TSO) Initiated (4510)

The Traffic Signal Optimization have been initiated. (Milestone)

Activity Predecessor:	4010
Activity Successor:	4545

Perform Traffic Signal Optimization (TSO) (4545)

The Designer is to perform the TSO work in accordance with the Traffic Signal Optimization section of the TSM Procedures Manual.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Advanced Arterial Management Unit, Engineering Documents Unit, Bureau of Traffic Engineering, Bureau of Transportation Data and Safety, Regional Electrical Operations
Informed:	Project Manager
Activity Predecessor:	4510
Activity Successor:	4595
Activity Duration:	Variable (Project Specific)

Traffic Signal Optimization (TSO) Completed (4595)

The Traffic Signal Optimization has been completed. (Milestone)

Note: If project is optimization only, FD phase is complete. Therefore successor activity is 4895 FD Closeout.

Activity Predecessor:	4545
Activity Successor:	3145, 4240 FF, 4415, 4470

Systems Engineering Initiated (4505)

The Systems Engineering Process and Report have been initiated. (Milestone)

Note: This activity is required along with activity ID 4560 for Non-Programmatic Projects only.

Activity Predecessor:	4010
Activity Successor:	4560

Perform Systems Engineering (4560)

For Non-Programmatic Projects, the Designer performs System Engineering (SE) Analysis and completes a SE report that includes all the required SE documents.

For SE process overview, refer to http://ops.fhwa.dot.gov/publications/seitsguide/index.htm and TSM Procedures Manual.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, MSE Engineers
Informed:	NA
Activity Predecessor:	4505
Activity Successor:	4575
Activity Duration:	30

NJDOT Review (4565)

The Project Manager, Statewide ITS Management, Office of Information Technology (OIT), and appropriate Subject Matter Experts (SMEs) review Interim Submission documents and provide comments to the Designer for their review and corrections as necessary.

Role Description	
Responsible:	Project Manager, SITSM, OIT, Subject Matter Experts
Consulted:	NA
Informed:	NA
Activity Predecessor:	4475
Activity Successor:	4090, 4255, 4275, 4280, 4285, 4515, 4525, 4535,
Activity Duration:	20

Systems Engineering Completed (4575)

The Systems Engineering Process and Report have been completed. (Milestone)

Activity Predecessor:	4560
Activity Successor:	4290, 4555

Conduct Title Search (4600)

Perform this activity ONLY if Activity 4250 (Prepare ITS Facilities Layout Plan) requires an in depth ROW review, such as in the case of conflicting information. Also, if Activity 2120 during CD recommended this to be performed. If Conduct Title Search is executed, proceed to update ITS Facilities Layout Plan as necessary.

The Designer conducts a title search for each potential location of the proposed ITS facility. A Title Summary document will accompany all right of way (ROW) submissions. The Designer will be accountable for the hiring, accuracy, and timeliness of the Title Company's performance.

The Designer reviews the Risk Register for any previously identified ROW risks and identifies any new risks as a result of the title search. Notify the PM to update the Risk Register if new risks or changes to existing risks are identified.

Role Description	
Responsible:	Designer
Consulted:	NJDOT Right of Way Title Unit, Project Manager
Informed:	Project Manager
Activity Predecessor:	4250 lag
Activity Successor:	3145, 4415, 4470
Activity Duration:	10

Execute Final Design Public Involvement Action Plan (4795)

NOTE: ONLY EXECUTE THIS ACTIVITY IF ACTIVITY ID 3185 WAS COMPLETED

The Designer, Project Manager and the Division of Community and Constituent Relations (CCR) perform community involvement as per the Final Design Public Involvement Action Plan (PIAP). This may include public information centers and public meetings, as well as work sessions/focus groups with local officials. CCR will be responsible for scheduling and meeting protocol. Other tasks may include the preparation of mailing lists, data sheets, displays, technical presentations and meeting follow-up. When applicable, the public forum requirements of the Reforestation Act shall be met as part of this presentation.

Role Description	
Responsible:	Designer, Project Manager, Division of Community and Constituent Relations
Consulted:	Project Manager, Division of Community and Constituent Relations
Informed:	Division of Community and Constituent Relations
Activity Predecessor:	4475
Activity Successor:	4800
Activity Duration:	40

Final Design Submission (4800)

The Final Design Submission Package is submitted by the Designer to the Project Manager. (Milestone)

The Designer certifies that all comments provided during 4565 were addressed and mitigated.

Activity Predecessor:	4290, 4555
Activity Successor:	4805, 4810, 4850, 4860, 4865

FHWA Reviews Final Design Submission (4805)

The Project Manager submits the Final Design Submission (FDS) to FHWA for review and comment for PoDI projects. FHWA prepares an FDS comments package (memos and marked up plans) and forwards the package to the Project Manager. The Project Manager reviews the FHWA comments package and incorporates the comments into the FDS comments package.

Note: Complete this activity for PoDI Projects only. When completing this activity also submit Systems Engineering Report to FHWA for review, if Activity ID 4575 was completed.

Role Description	
Responsible:	Project Manager, FHWA
Consulted:	Project Manager, Designer
Informed:	NA
Activity Predecessor:	4800
Activity Successor:	4815, 4835, 4855
Activity Duration:	15

Review Final Design Submission (4810)

The Project Manager and appropriate Subject Matter Experts (SMEs) review the Final Design Submission (FDS) documents and provide comments. The PM and appropriate SMEs review and finalize the construction cost estimate, construction schedule and the project's Substantial and Final Completion dates. The Designer requests Bureau of Quality Management (QMS) to prepare and send the Final Road User Costs and Lane Occupancy Charges to PM (used in the Liquidated Damages Calculations).

QMS prepares and sends the request for Construction Engineering Costs to PM (used in the Liquidated Damages Calculations).

The Designer prepares and sends the Job Training Request on all federal projects to the Division of Civil Rights and Affirmative Action.

The Designer prepares and sends the request for Disadvantaged Business Enterprise (DBE) Goals (federal projects) or Women/Minority Business Enterprise (W/MBE) Goals (100% state projects) to the Division of Procurement. After completing their portion of the request, the Division of Procurement forwards the request to the Division of Civil Rights and Affirmative Action for final goal assignment.

The Project Manager consolidates and reviews the comments to resolve any conflicting comments. The Project Manager prepares an FDS comments package, highlighting the major issues and attaches all comments (memos and marked up plans). The Project Manager forwards the package to the Designer. The Designer documents any design decisions that result from the FDS comments in the Design Communications Report.

Note:
Also submit Systems Engineering Report to FHWA for review, if Activity ID 4575 was required to be completed.

Role Description	
Responsible:	Project Manager, Construction Management, Bureau of Quality Management Services, SMEs, Division of Procurement, Division of Civil Rights and Affirmative Action, Designer
Consulted:	Project Manager, Risk Management Support Group
Informed:	NA
Activity Predecessor:	4800
Activity Successor:	4815, 4835, 4855
Activity Duration:	15

Finalize Specifications for Comptroller Approval (Projects over $10M) (4815)

Based on the comments received during the Final Design Submission review, the Designer finalizes the specifications. For projects over $10M, the Designer provides the Project Manager with the final specifications, estimated construction amount and proposed advertisement date who forwards to the Director of Construction Services and Materials forty (40) days prior to the proposed advertisement date to seek the Office of the State Comptroller's approval. Provide the specifications, estimated construction amount and proposed advertisement date in an electronic format.

Role Description	
Responsible:	Designer, Project Manager, Division of Construction Services and Materials
Consulted:	Office of the State Comptroller
Informed:	NA
Activity Predecessor:	4805, 4810
Activity Successor:	4825
Activity Duration:	15

Comptroller Approves Specifications (Projects over $10M) (4825)

The Office of the State Comptroller reviews the specifications and provides the Director of Construction Services and Materials with approval. The Director of Construction Services and Materials forwards the approval to the Project Manager.

Role Description	
Responsible:	Office of the State Comptroller
Consulted:	NA
Informed:	Project Manager
Activity Predecessor:	4815
Activity Successor:	4870
Activity Duration:	15

Resolve Final Design Submission Comments (4830)

The Designer updates the contract documents, utilizing the Final Design Submission (FDS) comments package, recommendations from the Contract Meeting and any Preliminary Plans, Specifications and Estimate (Pre-PS&E) comments.

At the discretion of the Project Manager, hold a meeting with the Designer and appropriate Subject Matter Experts (SMEs) to discuss the resolution of comments. Once all comments are resolved, the Project Manager informs the Designer that the project can proceed to PS&E. The Designer updates the Design Communications Report (DCR) to reflect any design decisions.

Role Description	
Responsible:	Designer
Consulted:	Project Manager, Subject Matter Experts
Informed:	NA
Activity Predecessor:	4845, 4855
Activity Successor:	4840
Activity Duration:	10

Prepare PS&E Package (4835)

For PoDI Projects only, the Designer prepares the Preliminary Plans, Specifications and Estimate (Pre-PS&E) package, based on the comments received during the Final Design Submission review and Contract Meeting, and submits to the Project Manager. The Project Manager forwards the Pre-PS&E package to FHWA.

Role Description	
Responsible:	Designer, Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	4805, 4810
Activity Successor:	4845
Activity Duration:	15

Submit PS&E Package (4840)

The Designer prepares and submits the Plans, Specifications and Estimate (PS&E) package to the Project Manager as per the Quality Management Guideline. In addition to the project plans, specifications and estimate, the PS&E package may include:

- Designer PS&E Certification
- Soil Boring Log
- Construction Schedule and Narrative
- Trainee Memo
- ESBE Goal Memo
- Approved Design Communications Report
- Quantity Calculations and Design Calculations

Role Description	
Responsible:	Designer
Consulted:	NA
Informed:	NA
Activity Predecessor:	4830
Activity Successor:	4870
Activity Duration:	10

FHWA Reviews Pre-PS&E (4845)

For PoDI Projects only, the FHWA reviews the Preliminary Plans, Specifications and Estimate (Pre-PS&E) Package and returns comments to the Project Manager. The Project Manager forwards the FHWA comments to the Designer.

Role Description	
Responsible:	FHWA
Consulted:	Project Manager
Informed:	Designer
Activity Predecessor:	4835
Activity Successor:	4830
Activity Duration:	20

Certify Soil Erosion & Sediment Control (4850)

The Bureau of Landscape Architecture and Environmental Solutions (BLAES) certifies to the Soil Conservation Districts that Final Design Submission plans and specifications are in conformity with the NJDOT Soil Erosion and Sediment Control standards. Provide a copy of the certification to the Executive Secretary of the State Soil Conservation Committee and the Project Manager.

Role Description	
Responsible:	Bureau of Landscape Architecture and Environmental Solutions
Consulted:	NA
Informed:	Designer, Project Manager, State Soil Conservation Committee
Activity Predecessor:	4800
Activity Successor:	4870
Activity Duration:	10

Confirm Need for Traffic Regulation Orders (4855)

The Bureau of Traffic Engineering reviews the final design submission to confirm the need for any Traffic Regulation Orders (TROs). The Bureau of Traffic Engineering notifies the Project Manager of the TRO needs. The Project Manager notifies the appropriate municipal officials, reminding them of the need for any future TRO resolutions to be issued upon reaching substantial construction completion.

Role Description	
Responsible:	Bureau of Traffic Engineering
Consulted:	NA
Informed:	Project Manager, Appropriate Municipal Offices
Activity Predecessor:	4805, 4810
Activity Successor:	4830
Activity Duration:	10

Obtain Construction Environmental Reevaluation (4860)

The Project Manager requests the Bureau of Environmental Program Resources (BEPR) to complete a Construction Environmental Reevaluation form and an Environmental Inventory Checklist. If the reevaluation indicates that there has been a significant change to environmental considerations, then supplemental environmental documentation or a new Categorical Exclusion document may be required (depending on the magnitude of the change). BEPR submits the reevaluation form and the Environmental

Inventory Checklist to FHWA for approval, if required.

Role Description	
Responsible:	BEPR
Consulted:	Designer, Project Manager
Informed:	NA
Activity Predecessor:	4800
Activity Successor:	4870
Activity Duration:	15

Execute Consultant Agreement Addendum (4865)

The Project Manager requests a proposal from the Designer, to provide construction engineering (CE) services (working drawing review, engineering assistance, preparation of as-built plans, etc.). If a Licensed Site Remediation Professional (LSRP) is required during Final Design, the Designer must continue to utilize a LSRP to oversee the management of contamination during the Construction Phase. The Designer prepares and submits a CE proposal to the Project Manager. The Project Manager reviews and negotiates the CE proposal with the Designer in accordance with NJDOT Policy and Procedure #328. The Designer submits a final CE proposal for execution.

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

Note: For PoDI Projects, the PM will need to obtain FHWA approval on the agreement.

Role Description	
Responsible:	Project Manager, Designer
Consulted:	NA
Informed:	Executive Regional Manager, Designer
Activity Predecessor:	4800
Activity Successor:	4950
Activity Duration:	15

PS&E Submission (4870)

The Plans, Specifications and Estimate (PS&E) package is complete and has been submitted to the Project Manager. (Milestone)

Activity Predecessor:	4825, 4840, 4850, 4860
Activity Successor:	4870

Prepare Advertising Authorization Package (4875)

The Project Manager submits the AC-1643 Construction Job Number Form to the Bureau of Program

Coordination for completion (construction job number, construction year and item funding). The Bureau of Program Coordination sends the completed AC-1643 Construction Job Number Form to the Project Manager.

The PS&E package includes the Designer's PS&E package along with:

- Utility Clearance Letter
- ROW Clearance Letter
- Environmental Re-Evaluations or valid environmental document (federally funded only)
- Soil Boring Logs
- Soil Erosion and Sediment Control Certifications
- Construction Environmental Authorization Checklist/Inventory
- Department Certification (federally funded only)
- Project Summary Information form (federally funded only)

The PM reviews all documents for completeness and when acceptable, prepares the CM Certification, which officially certifies the PS&E package. At this time, the PM also prepares a Construction Inspection Estimate to establish construction inspection funding. The PM sends the CM Certification and the Construction Inspection Estimate to the Bureau of Program Coordination. The Bureau of Program Coordination requests funds for construction and construction inspection to advertise approximately seven (7) calendar days after the receipt of the CM Certification and Construction Inspection Estimate.

The PM circulates the Key Sheet for signature with the CM Certification. For state and federal projects, the Director of MSE and the State Transportation Engineer sign the key sheet. For projects that are sponsored by local or county governments, also obtain key map signatures from the sponsoring body.

The PM reviews the Construction Cost Estimate submitted by the Designer and coordinates with Budget Management and the Bureau of Program Coordination to generate the project's Final Engineer's Estimate and Proposal for bidding. Utilizing the Final Construction Schedule, the PM updates the Substantial and Final Completion dates if necessary into the Special Provisions. The PM verifies that the correct Equal Employment Opportunity (EEO) Special Provisions, Disadvantaged Business Enterprise (DBE) or Women/Minority Business Enterprise (W/MBE) Goals, Training Special Provisions, Environmental Hazards Abatement Specification and general Wage Rates, etc. are included within the Special Provisions.

For federally funded construction projects, the PM compiles the advertising authorization package and submits to the Bureau of Program Coordination. The advertising authorization package includes the Construction Authorization Request, Construction Engineering Authorization Request and Construction Inspection Authorization Request. For state funded construction projects, an advertising authorization package is not needed.

Role Description	
Responsible:	Project Manager, Construction Management, Bureau of Program Coordination, Engineering Documents Unit, Geotechnical Engineering Unit, FHWA, Designer
Consulted:	Project Manager, Office of Schedule and Budget Management
Informed:	NA
Activity Predecessor:	4870
Activity Successor:	4880
Activity Duration:	10

PS&E Certified (4880)

The Plans, Specifications and Estimate (PS&E) package has been certified. (Milestone)

Activity Predecessor:	4875
Activity Successor:	4890

Receive Authorization to Advertise (4885)

For federally funded construction projects, the Bureau of Program Coordination submits the Advertising Authorization Package to FHWA for approval. Upon approval, the Bureau of Program Coordination notifies the Project Manager and the Bureau of Construction Services (Division of Procurement) that the project is ready for advertisement. For state and federally funded construction projects, the PM prepares an AD-12 and circulates for signature.

Role Description	
Responsible:	Bureau of Program Coordination, FHWA, Construction Management
Consulted:	NA
Informed:	Project Manager, Bureau of Construction Services
Activity Predecessor:	4890
Activity Successor:	4950
Activity Duration:	5

Authorization Request Date (4890)

This is the Authorization Request Date for Construction funding recommended by TSM. (Milestone)

Activity Predecessor:	4880
Activity Successor:	4885, 4895

Complete FD Closeout (4895)

The Project Manager performs the steps necessary to close out the NJDOT Final Design (FD) Phase. If required, instruct the Designer to submit their Final Invoice for the FD Phase. Upon payment of the final invoice, notify Accounting to close the job number.

Role Description	
Responsible:	Project Manager
Consulted:	NA
Informed:	Accounting, Designer
Activity Predecessor:	4890
Activity Successor:	4950
Activity Duration:	5

Final Design Complete (4950)

The endpoint of the Final Design Phase. (Milestone)

Activity Predecessor:	4885, 4895
Activity Successor:	5000

Construction

Construction Initiated (5000)

Start the Construction Phase. (Milestone)

Activity Predecessor:	4950
Activity Successor:	5010

Prepare Advertising Package (5010)

The Designer submits the advertising package to the Project Manager. The Project Manager reviews the Construction Cost Estimate and recommends final adjustments as necessary. The PM also reviews the final construction schedule and recommends final adjustments and corrections as necessary. The Designer makes the final adjustments and corrections and submits the revised advertisement package to the Project Manager.

The Project Manager obtains Soil Boring Logs from the Designer and forwards a copy of these logs in PDF format to the TSM's Project Systems Management (PSM) team for Posting on BidX.

The Designer forwards a copy of the Geotechnical Engineering Design Report to the PM. The PM requests PSM to make the Report available to bidders during advertisement.

The PM prepares the Advertisement for Bids memo and sends it to the Bureau of Construction Services Procurement (CSP) (along with the Supplementary Specifications Section 101.01) and Director of Accounting and Auditing by e-mail no later than the Thursday before the scheduled advertisement date.

Upon approval of the Advertisement for Bids memo, the PM prepares and sends the Advertisement for Bids memo to CSP and Regional Traffic Operations.

Upon receipt of FHWA Authorization, the PM sends the Final Plans and Specifications, including the Equal Employment Opportunity (EEO) Special Provisions, to PSM for posting on BidX and distribution.

The PM prepares and circulates the Commission Action (AD-12) for Advertisement for approval.

The public announcement, as required by law, invites bids for construction work to be performed. CSP places an advertisement in all major newspapers three weeks before bid date to inform contractors of the Contract's availability. The public announcement invites bids for construction work to be performed.

Role Description	
Responsible:	Construction Management, Geotechnical Engineering, Designer, Bureau of Construction Services Procurement, Project Manager, Bureau of Program Systems Management
Consulted:	NA
Informed:	Regional Construction, Director of Accounting and Auditing
Activity Predecessor:	5000
Activity Successor:	5020
Activity Duration:	5 State, 10 Federal

Execute Consultant Inspection Agreement (5015)

The selected Construction Inspection Consulting firm will submit a Fee Proposal for Construction Inspection Services to the Project Manager (PM) as detailed in the scope of work section of the technical proposal and upon reviewing the Contract documents.

The PM ensures the Fee Proposal is prepared in accordance with internal NJDOT Policy and Procedure #328, "Agreement Development Process for Procurement of Professional Services."

The Designer submits a final CI Services Fee Proposal for execution.

The PM sends the consultant a Consultant Inspection Agreement which is reviewed, signed, and returned. The PM circulates the agreement with an AD-12 to NJDOT Management for signature and approval. The PM distributes the executed agreement to the appropriate parties. Once the agreement is fully executed, the Project Manager issues a 'Notice to Proceed' to the Consultant.

Note: For PoDI Projects, the PM will need to obtain FHWA approval on the agreement.

Role Description	
Responsible:	Project Manager, Construction Inspection Consultant, NJDOT Management
Consulted:	Bureau of Professional Services, FHWA
Informed:	NA
Activity Predecessor:	5000
Activity Successor:	5060
Activity Duration:	20

Project Advertised (5020)

The project has been advertised. (Milestone)

Activity Predecessor:	5010
Activity Successor:	5030

Prepare Bids (5030)

Contractors review the Advertising Package (contract documents) and prepare and submit bids.

The PM forwards all Contract inquiries from Contractors or Suppliers to the Designer for the appropriate response. All inquiries submitted by the posted deadline (except requests for Bid date extension) will be documented and responded to via addendum. The Designer prepares the addendum. The PM reviews the addendum and submits it to Program Systems Management for posting on BidX.

On Full Oversight projects, FHWA approval is required prior to posting of the addendum on BidX.

Contractors are required to acknowledge all addenda posted through the Department's electronic bidding process program (BidX) before the opening of bids. The Department will not accept a bid if the Bidder has not acknowledged all addenda posted.

If a pre-bid meeting is necessary on larger or unusual projects, the Project Manager makes arrangements for this meeting.

On the day before bids, the PM e-mails the Bid Opening Memo to the Bureau of Construction Services Procurement (CSP).

Role Description	
Responsible:	Contractors, Construction Management, Project Manager, Designer, Bureau of Construction Services Procurement, Division of Capital Program Support, Bureau of Program Systems Management, Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	5020
Activity Successor:	5040
Activity Duration:	15

Bids Received (5040)

Bids from Contractors are received. (Milestone)

Activity Predecessor:	5030
Activity Successor:	5050

Award Contract (5050)

After bids are received on an individual project, the Deputy Attorney General (DAG) and the Bureau of Construction Services Procurement (CSP) perform a legal review of all the bids to identify material defects and reject bids. CSP notifies the Office of Civil Rights, the Bureau of Program Systems Management (PSM) and the Project Manager (PM) of the rejected bids.

PSM adjusts the bid rankings based on the legal review. CSP certifies the individual bid prices that make up each contractor's total bid. CSP organizes and tabulates the bids so that they are ranked by cost and can be compared across bid items. CSP posts the total bid amount for all bids.

The PM reviews the two lowest bids for conformity with the Contract and compares the bids. The PM makes a recommendation to accept the proposal of the lowest responsible bidder and award or reject the bids according to Policy & Procedure 310.

The PM analyzes the bids to determine competitiveness as per FHWA Technical Advisory T-5080.4 and sends a memo to CSP stating the findings and whether the project can be awarded under the State Administered/Alternate Procedures. On Full-Oversight Projects, the CSP sends the bid analysis to the Bureau of Program Coordination to forward to FHWA. FHWA reviews the bid analysis and provides written concurrence on the award. The PM forwards a memo of recommendation for award or rejection to the Director of Mobility & Systems Engineering (MSE) for concurrence. After concurring, the MSE Director forwards the recommendation to CSP.

CSP circulates an AD-12 to award or reject the bids.

CSP prepares and forwards the Award Memo to announce the selected Contractor. CSP notifies the selected Contractor of the NJDOT's selection and posts the results of the bid selection process on

NJDOT's website.

Role Description	
Responsible:	Bureau of Construction Services Procurement, Construction Management, Project Manager, FHWA
Consulted:	NA
Informed:	Contractors
Activity Predecessor:	5040
Activity Successor:	5060
Activity Duration:	15 State, 20 Federal

Contract Awarded (5060)

The contract has been awarded to the lowest bidder. (Milestone)

Activity Predecessor:	5050
Activity Successor:	5070

Execute Contract (5070)

The Bureau of Construction Services Procurement (CSP) prepares and sends the Contract to the selected Contractor. Within fourteen (14) days of the date of Award or Conditional Award, the selected Contractor shall properly and duly sign the Contract.

The selected Contractor signs and returns the Contract with a performance bond and a payment bond. CSP ensures that the penal sum of the bond is equal to at least the Total Contract Price less the bid price for Performance and Payment bond. With the bond, a Surety Agent provides a certification authorizing the attorney-in-fact to commit the Surety and a true and correct statement of the Surety's financial condition. The Contractor submits the broker's fees, the certified rate schedule and the report of execution for the bond to the RE.

Upon receipt of the signed contract and required documents, CSP circulates the Contract for Department signature. After the Contract is executed, CSP prepares the Notice to Proceed (NTP). CSP sends the executed Contract and the NTP to the selected Contractor, Accounting and Auditing, and MSE.

Role Description	
Responsible:	Bureau of Construction Services Procurement, Contractor
Consulted:	NA
Informed:	Accounting and Auditing, Regional Construction, RE
Activity Predecessor:	5060
Activity Successor:	5080
Activity Duration:	35

Hold Pre-Construction Meeting (5080)

Regional Construction holds a pre-construction meeting. The Pre-Construction Meeting is the meeting

between the Department, the selected Contractor and other key stakeholders that provides a project overview and establishes initial project contacts. Prior to attending the Pre-Construction Meeting, the Project Manager, RE and Designer review the Risk Register to familiarize themselves with the associated project risks and risk response action plans. During the Pre-Construction Meeting, if the Contractor identifies any construction-related risks, the Project Manager reviews the Risk Register to determine if the risk has been previously identified. If the risk has not been previously identified, the Project Manager adds the risk to the Risk Register and determines an appropriate risk response action plan.

Stakeholders attending the meeting may include the Division of Community and Constituent Relations, Project Manager, Division of Regional Operations, Bureau of Construction Management, appropriate Subject Matter Experts and Designer.

Role Description	
Responsible:	Regional Construction, Contractor, Division of Community and Constituent Relations, Project Manager, Division of Regional Operations, Construction Management, Subject Matter Experts, Designer
Consulted:	Risk Management Support Group
Informed:	NA
Activity Predecessor:	5070
Activity Successor:	5090
Activity Duration:	20

Construction Started (5090)

The point where the "Notice to Proceed" is given to the Contractor to start the project's construction. (Milestone)

Activity Predecessor:	5080
Activity Successor:	5100, 5110, 5120, 5130, 5140, 5150

Perform Construction (5100)

The Contractor performs the necessary tasks to complete construction of the capital project. During the performance of construction tasks, the Contractor prepares traffic interference notices for all changes to the current traffic pattern and submits them to the Resident Engineer (RE). The RE submits the traffic interference reports to Traffic Operations.

The RE monitors the work to ensure compliance with the Contract. The RE prepares monthly progress estimates that track the progress of contractors and subcontractors.

If the Contractor identifies any risks during construction, the Project Manager reviews the Risk Register to determine if the risk has been previously identified. If the risk has not been previously identified, the Project Manager adds the risk to the Risk Register and determines an appropriate risk response action plan.

The Project Manager, RE, and Designer monitor the project for any contract/design issues raised during construction against the risk response action plans to address the raised issue. The Project Manager controls the risk response strategies as construction progresses.

During construction, inspections are performed by the RE to ensure the safe and proper construction of the project. Near the end of construction, the Contractor informs the RE of Substantial Completion. The RE and PM/Field Manager review and inspect the entire project to concur with the Contractor's assertion of Substantial Completion.

For Major Projects, the Project Manager prepares annual updates to the Financial Plan, as required by FHWA regulations, until the project has completed construction. As per FHWA regulations, a Financial Plan must be completed for a project that is estimated to have a total cost of $100,000,000 or more.

NJDOT works closely with the local elected officials and the business community to minimize impacts on traffic and businesses caused by construction. Meetings are held as necessary to inform the public and local officials of upcoming traffic/access impacts.

Role Description	
Responsible:	Contractor, Regional Construction, RE, Designer, PM, Division of Community and Constituent Relations, Inspection Consultant
Consulted:	NA
Informed:	NA
Activity Predecessor:	5090
Activity Successor:	5165
Activity Duration:	270

Provide Environmental Permit Notifications (5110)

The RE provides the Notice of Construction to the Bureau of Environmental Program Resources (BEPR) for submission to the permitting agencies.

Role Description	
Responsible:	RE, BEPR Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	5090
Activity Successor:	5100 lag
Activity Duration:	15

Prepare Working Drawings (5120)

During Construction, the Contractor prepares and submits Working Drawings. There are two primary types of Working Drawings, those requiring "Certification" and those requiring "Approval." The process for the submission and processing of Working Drawings is specified in Subsection 105.05 of the 2007 Standard Specifications.

Role Description	
Responsible:	Contractor
Consulted:	Regional Construction
Informed:	Project Manager, RE, Engineering Documents Unit
Activity Predecessor:	5090
Activity Successor:	5100 lag
Activity Duration:	60

Prepare Value Engineering Construction Proposal (5130)

The Contractor may prepare a Value Engineering Construction Proposal (VECP) during the course of construction as specified in Subpart 104.02.03 of the 2007 Standard Specifications. As per Federal-aid Policy Guide G011.9 VECPs are "a construction contract provision that encourages the contractor to propose changes in the contract requirements that will accomplish the project's functional requirements at less cost or improve value or service at no increase or a minor increase in cost. The net savings of each proposal is usually shared with the contractor at a stated reasonable rate."

If the Contractor submits a VE Construction Proposal, the Contractor is responsible for also submitting a list of risks associated with the VE Construction Proposal. The Project Manager reviews the identified risks. If the Project Manager accepts the VE Construction Proposal, the Project Manager informs the Contractor that all risks associated with the VE Construction Proposal are the responsibility of the Contractor.

The Bureau of Quality Management Services (QMS) coordinates the review of the VECP with the Project Manager, RE and appropriate Subject Matter Experts. If applicable, QMS prepares specifications, details, etc. for new standards based on approved VE proposals. The RE approves or rejects the VE proposal.

Role Description	
Responsible:	Contractor, Bureau of Quality Management Services, RE
Consulted:	Project Manager
Informed:	NA
Activity Predecessor:	5090 lag
Activity Successor:	5100 lag
Activity Duration:	15

Process Construction Change Requests (5140)

The Department has the right to make changes to the project scope at any time, including altering the Contract, altering the requirements of an Item, increasing or decreasing the quantities of any Item, or deleting any Item. Design changes are made based on field observations that may be requested by MSE, the RE or the Contractor.

Change orders are written orders that modify the contract and are provided to the Contractor by the RE. The Project Manager processes the change orders according to the Change Control Board Procedures, along with Standard Specifications Section 104. The Designer updates the Design

Communications Report (DCR) to reflect any design decisions.

Role Description	
Responsible:	RE, Contractor, Regional Construction, Project Manager
Consulted:	NA
Informed:	NA
Activity Predecessor:	5090
Activity Successor:	5170 FF
Activity Duration:	25

Prepare Contractor Claims (5150)

The Contractor prepares and sends a Contractual Notice Form (DC-161) form to the RE. There are four steps to resolution of disputes and claims:

1. Review by the RE/Project Manager
2. Review by the Regional Dispute Board
3. Review by the Department Claims Committee
4. Nonbinding Mediation

The claims process is specified in Subsection 107.12 of the 2007 Standard Specifications.

Role Description	
Responsible:	Contractor, TSM, Claims Unit, Project Manager, RE, Regional Dispute Board, Department Claims Committee
Consulted:	NA
Informed:	Project Manager, Field Manager, Regional Construction
Activity Predecessor:	5090
Activity Successor:	5200
Activity Duration:	10

Prepare Contractor Evaluations (5160)

The RE evaluates the quality of the Contractor's performance and provides results to the Bureau of Construction Services Procurement.

Role Description	
Responsible:	RE
Consulted:	NA
Informed:	Regional Construction, Bureau of Construction Services Procurement, Field Manager
Activity Predecessor:	5100 lag
Activity Successor:	5170 FF
Activity Duration:	30

Substantial Completion (5165)

The project has reached Substantial Completion. (Milestone)

Activity Predecessor:	5100
Activity Successor:	5170

Final Acceptance (5170)

Upon completion of all construction work, the Contractor submits the paperwork for Project Completion and for Final Acceptance. At this time, the RE and Field Manager (FM) perform the Final Acceptance Inspection. If the RE and FM deem that all work is not completed satisfactorily, the RE notifies the contractor and includes a corrective action list. If the RE and FM find the work has been satisfactorily completed, the RE will send a final inspection notice to all units involved and the local authorities, if applicable. The Contractor addresses all concerns and completes the work to RE satisfaction.

The Project Manager identifies and verifies funding is available for the Construction Engineering Designer to complete the as-built plans.

The RE marks up a set of construction plans with as-built quantities (marked up "white plans") and prepares an As-Built Summary (DC-104). The RE certifies, on the key sheet, that the project has been constructed in conformity with the original plans, specifications and modifications, if any, as described in the approved change orders and signs and dates the certification. The RE forwards the marked up white plans to the Designer and a copy of the transmittal letter to Director of MSE, Construction Field Manager and Project Manager. The Designer transfers all the information as marked by the RE, except the RE certification, onto the project mylars and sends the mylars to Engineering Documents Unit (EDU).

The Designer adds the certification statement: "I CERTIFY THAT THESE PLANS ARE A REPRESENTATION OF THE PROJECT WHICH THE RE CERTIFIED AS CONSTRUCTED IN CONFORMITY WITH THE ORIGINAL PLANS SPECIFICATIONS AND MODIFICATIONS, IF ANY, AS DESCRIBED IN THE APPROVED CHANGE ORDERS" to the project mylars. This statement shall be included on the Key Sheet mylar and shall be signed and dated by the Designer's Project Manager.

The Designer makes one set of vellum or sepia copies of all as-built plan sheets. The Designer forwards the marked up as-built white plans and the vellum or sepia copies to Director of MSE with a copy of the transmittal letter to the Project Manager. The Designer returns the original as-built project mylars to EDU with a copy of the transmittal letter to the Director of MSE, Field Manager and the Project Manager.

After granting Final Acceptance, the PM sends the required documents to FHWA for their records. These documents include:

- Original LB-96 Material Certification
- Original fully executed Final Construction Order without attachments but with the final cost sharing distribution (DC-17/174)
- Original DC-123 Contractor's Final Certification of Compliance
- Copy of the final Certification of Cost; Copy of the AD-12 Department of Action Slip

(Accepting the Project)

- Form FA-8 - Contractor's Statement of Materials and Labor
- Written confirmation that the Final Inspection Deficiencies noted by the FHWA have been corrected, if applicable.

Role Description	
Responsible:	Regional Construction, Project Manager, Designer, RE, Contractor, Engineering Documents Unit
Consulted:	NA
Informed:	Regional Construction Engineer, Field Manager, FHWA
Activity Predecessor:	5165
Activity Successor:	5195
Activity Duration:	40

Complete Consultant Agreement Closeout (5180)

The Project Manager performs the steps necessary to close out the consultant agreement. If required, instruct the Designer to submit their Final Invoice for construction engineering services. Upon payment of the final invoice, notify Accounting to close the job number.

Role Description	
Responsible:	Project Manager, Designer
Consulted:	NA
Informed:	Accounting, Designer
Activity Predecessor:	5195
Activity Successor:	5200
Activity Duration:	20

Issue Traffic Regulation Orders (5185)

Just prior to reaching substantial construction completion, the Project Manager notifies the appropriate municipal officials to issue the applicable Traffic Regulation Order (TRO) resolution(s) for each TRO. Once issued, the appropriate municipal officials sends a sealed copy of the of issued TRO resolution(s) to the Bureau of Traffic Engineering. The Bureau of Traffic Engineering will issue the applicable TRO(s) and sends copies of the executed TRO to the appropriate municipal officials and the Project Manager.

Role Description	
Responsible:	Project Manager
Consulted:	Appropriate Municipal Officials, Bureau of Traffic Engineering
Informed:	Appropriate Municipal Officials, Project Manager
Activity Predecessor:	5100 lag
Activity Successor:	5165
Activity Duration:	20

Complete Consultant Inspection Agreement Closeout (5190)

The PM performs the steps necessary to close out the consultant inspection agreement. If required, instruct the inspection consultant to submit their Final Invoice for construction inspection services.

Role Description	
Responsible:	Regional Construction, Inspection Consultant
Consulted:	NA
Informed:	Inspection Consultant
Activity Predecessor:	5195
Activity Successor:	5200
Activity Duration:	20

Completion (5195)

All construction work has been completed. (Milestone)

Activity Predecessor:	5170
Activity Successor:	5180, 5190

FHWA Project Agreement Closing & Suspense Analysis (5200)

On full oversight projects, the Project Manager determines when all services covered by the Agreement and the Addenda/Modifications to the Agreement have been completed to the satisfaction of the State. The Project Manager then summarizes the Scope of Services undertaken for the project and prepares the request to FHWA for Federal Acceptance.

For State funded projects, the Project Manager notifies the Director of Mobility & Systems Engineering by memo that the project is being closed out. The Project Manager requests any project support materials from the appropriate unit needed for future reference.

The Project Manager prepares an AD-12 requesting the Agreement be closed after Final Audit and cancellation of any remaining funds.

The Project Manager notifies Capital Program Coordination to close out the Job Number, and provide a copy of the notification to Accounting and to the Bureau of Professional Services.

Role Description	
Responsible:	Project Manager, Capital Program Coordination
Consulted:	NA
Informed:	FHWA, Accounting, Bureau of Professional Services
Activity Predecessor:	5150, 5180, 5190
Activity Successor:	5210
Activity Duration:	20

Complete Final Audit (5210)

The Project Manager sends a memo to Auditing requesting if final payment can be made. No payment shall be made until the final as-built project mylars are returned to the Engineering Documents Unit. This includes the approval of all Final Acceptance Inspections (reports and corrective actions), obtaining FHWA approvals (if applicable) and a letter of acceptance as necessary.

Role Description	
Responsible:	Project Manager, Accounting
Consulted:	Engineering Documents Unit
Informed:	Construction Management
Activity Predecessor:	5200
Activity Successor:	5220
Activity Duration:	15

Construction Complete (5220)

The Construction Phase has been completed. This is to occur on or before Project end date. (Milestone)

Activity Predecessor:	5210
Activity Successor:	NA