U.S. Department of Transportation
Federal Railroad Administration

DRAFT STATEMENT OF WORK FRAMEWORK VERSION 2

Corridor Identification and Development Program
Step 2 Service Development Plan

FRA published the first Draft Statement of Work Framework in August 2023. This updated version – published in March 2024 – is intended to supersede the August 2023 draft document. The new version reflects changes in the program's terms and conditions (Attachment 2) as well as for minor changes and clarifications based on industry feedback FRA received on the August 2023 draft document.

A. INTRODUCTION

The Federal Railroad Administration (FRA) Corridor Identification and Development Program (CIDP) is a comprehensive intercity passenger rail planning and development program that will help guide intercity passenger rail development throughout the country and create a pipeline of intercity passenger rail products ready for implementation. Under the CIDP, corridor development will occur in three sequenced steps: Step 1 – Corridor Development Initiation and Scope, Schedule, and Cost Estimate for Preparing a Service Development Plan (SDP); Step 2 – Service Development Plan; and Step 3 – Project Development.

The purpose of this document is to provide a scope of work (SOW) framework for conducting a service development plan (SDP) under Step 2 of the CIDP. This document is based on previous service development planning efforts funded by FRA and is intended to provide interested corridor sponsors early expectations about the types and levels of analysis expected to conduct a SDP under 49 U.S.C. § 25101(d) for a new passenger rail corridor. The tasks in an SOW for improvements to or an extension of an existing service under the CIDP may be similar to the tasks identified in this document, although some tasks may be scaled back or unnecessary.

FRA will evaluate any prior SDP efforts, including previously completed SDPs or SDP elements, during Step 1 to assess whether those efforts may fulfill some of the subtasks and tasks identified below or whether updates or modifications to existing analyses is necessary as part of Step 2. Updates or modifications may be necessary due to differences between the previous efforts and what the corridor sponsor proposed under CIDP, as well as the lifespan/timing of the previous work.

Completing a SDP under CIDP occurs during the Project Planning stage of the Project Lifecycle as outlined in FRA's Guidance on Development and Implementation of Railroad Capital Projects (January 11, 2023).[1] FRA will consider completion of the SDP

[1] The Guidance on Development and Implementation of Railroad Capital Projects (January 11, 2023) is

under Step 2, other applicable documentation, and corridor readiness when assessing whether a project is ready to advance to the Project Development stage, which includes both environmental review (i.e., NEPA) and preliminary engineering, under Step 3 of the CIDP.

The intended audience of this framework includes interested corridor sponsors, partners, stakeholders, and professionals who contribute to completing the tasks outlined herein. Throughout the document, FRA has provided instructions to help potential corridor sponsors understand the intent of the tasks and subtasks related to preparing a service

development plan and how the tasks might be tailored for the specific and unique circumstances of individual corridors.

For the purposes of this framework, "work products" are generally required for FRA to ensure methodologies and outputs are developed succinctly and appropriately for specific technical analyses, while "deliverables" represent the substantial completion of an overall task, including the culmination of work products under each task.

available at https://railroads.dot.gov/elibrary/fra-guidance-development-and-implementation-railroad-capital-project

B. SOW FRAMEWORK

I. BACKGROUND

Instructions: In this section, the Recipient will provide a high-level background of the corridor history/status to inform the SDP preparation (approximately ½ page). Information may include, but is not limited to:

- ***Identifying existing corridor service characteristics (if applicable) or identifying high-level characteristics of proposed corridor***
- ***If an existing corridor, provide a high-level statement of intent for service development planning effort, such as "to improve reliability" or "extend current corridor from X to Y" or "to increase frequencies from X to Y"***
- ***Identifying relevant stakeholders in the development of the proposed corridor***
- ***Identifying relevant preceding efforts which may have been completed to date (which would be validated by FRA under Step 1)***

II. OBJECTIVE

This grant will fund the completion of a SDP for *"Insert Corridor Name"* Corridor in partnership with FRA. The main objectives of a SDP are to identify the draft Purpose and Need Statement for intercity passenger rail development; incorporate an analysis of alternatives supported by technical transportation planning and conceptual engineering; incorporate a high-level analysis and consideration of environmental factors associated with the alternatives; include input provided through public involvement and relevant public agencies; and identify the governance structure for the implementation and operation of the *"Insert Corridor Name"* Corridor.

The SDP results in a corridor project inventory identify the capital projects necessary to achieve the proposed service. The SDP serves as the foundation for Step 3 Project Development activities under the CIDP.

III. PROJECT LOCATION

Instructions: In this section, the Recipient will describe and identify the "Insert Corridor Name" project's[2] study area (Study Area) and provide a map identifying at a minimum the major markets the corridor is intending to serve. The description may include identifying existing rail corridors that are relevant to the SDP.

IV. DESCRIPTION OF WORK

The Recipient will complete the Project through the following tasks:

[2] For purposes of this Statement of Work, the term "Project" refers to the scope of this grant. The term "*Insert Corridor Name* Project" refers to the proposed passenger rail system and subject of this planning effort.

TASK 1: PROJECT ADMINISTRATION AND MANAGEMENT

Subtask 1.1: Project Management

Instructions: Identify all Project partners and other entities responsible for implementing the Project. Identify all actions the Recipient will perform to ensure the effective management and oversight of the Project.

The Recipient will perform all tasks required for the Project through a coordinated process, which will involve affected railroad owners, operators, and funding partners, including:

- [*list parties other than the Recipient and identify role*]
- FRA

The Recipient will facilitate the coordination of all activities necessary for implementation of the Project. Upon award of the Project, the Recipient will:

- Participate in a project kickoff meeting with FRA [if not already held prior to award]
- Complete necessary steps to hire a qualified consultant/contractor to perform required Project work, as necessary
- Hold regularly scheduled Project meetings with FRA
- inspect and approve work as it is completed; and
- participate in other coordination, as needed.

The Recipient will prepare a project management plan (PMP), budget, and schedule for completing Step 2. The PMP will include information about the project management approach, including team organization, team decision-making, roles and responsibilities, and address quality assurance and quality control procedures. The PMP, budget, and schedule will be reviewed and approved by FRA.

Subtask 1.2: Step 2 Project Management Plan

The Recipient will prepare a Project Management Plan (PMP) for Step 2 that describes how the Project will be implemented and monitored to ensure effective, efficient, and safe delivery of the Project on time and within budget. The PMP will describe the activities and steps necessary to complete the tasks outlined in this Statement of Work.

The PMP will include a Project Schedule and Project Budget for the work to be performed under this Agreement. The Project Schedule will be consistent with the Approved Project Schedule from CID Step 1, but provide a greater level of detail. Similarly, the Project Budget should be consistent with the Approved Project Budget from CID Step 1, but

provide a greater level of detail.

The Recipient will submit the PMP to FRA for review and approval. The Recipient will implement the Project as described in the approved PMP. The Recipient will not begin work on subsequent tasks until FRA has provided written approval of the PMP.

FRA may require the Recipient to update the PMP. The Recipient will submit any such updates to FRA for review and approval, and FRA will determine if updates to the PMP require an amendment to this Agreement.

Subtask 1.3: Project Closeout

The Recipient will submit a Final Performance Report to FRA within 120 days of the end of the grant's period of performance. The Final Performance Report should describe the cumulative activities of the Project, including a complete description of the Recipient's achievements with respect to the Project objectives, milestones, and deliverables.

Task 1 Deliverables:

- Project Management Plan, Budget, and Schedule
- Final Performance Report

TASK 2: DRAFT PURPOSE AND NEED STATEMENT & STAKEHOLDER COORDINATION

Instructions: If applicable, a corridor sponsor may be able to use existing data, analyses, and approaches required to fulfill many of the subtasks associated with Task 2. In Step 1 of the CIDP, FRA will evaluate previous materials developed by the Recipient and determine whether previous methodologies and outputs fulfill the objectives of the subtasks; whether previous methodologies and outputs require an update or refresh; or whether the corridor sponsor needs to develop new components to fulfill the task. Based on the Step 1 intake process, the language under each sub-task is subject to modification.

The objectives of Task 2 are to develop a draft Purpose and Need Statement and identify the key stakeholders and coordination approaches to inform the technical analyses of the SDP. The Recipient will not begin work on Tasks 3, 4, and 5 until the draft Purpose and Need Statement, Railroad Stakeholder Coordination Plan, Agency Coordination Plan, and Public Coordination Plan have been completed, submitted to FRA, and the Recipient has received approval in writing from FRA.

Subtask 2.1: Draft Purpose and Need Statement

The Recipient will develop a draft Purpose and Need Statement that will serve as the foundation for the analysis of the SDP and the evaluation of infrastructure improvements to be identified through Tasks 3 and 4.

In developing a draft Purpose and Need Statement, the Recipient will consider the broad market conditions that inform the corridor, which may include work undertaken as part of Subtask 2.2, some of the provisions identified under 49 U.S.C. 25101(c), and a description of how the corridor would contribute to the development of a multi-State regional network of intercity passenger rail (consistent with 49 U.S.C. 25101(d)(9)). The Recipient will review previously prepared studies to help identify Purpose and Need information as appropriate (e.g., local planning studies, engineering feasibility studies, etc.). If applicable, the Recipient may rely on a vision statement or information that was developed to support a previous phase of the *Insert Corridor Name* Project to inform the draft Purpose and Need Statement. The Recipient will submit the draft Purpose and Need Statement to FRA for review and approval.

The Recipient will develop and refine the draft Purpose and Need Statement, as necessary, to address information collected on the *Insert Corridor Name* Project during data collection, transportation analysis, and public and agency scoping and involvement. The draft Purpose and Need Statement will be subject to agency and public review and comment as part of the subsequent National Environmental Policy Act (NEPA) process in Step 3 of the CIDP.

Subtask 2.2: Market Analysis

The objective of this subtask is to identify factors, conditions, and characteristics of intercity passenger rail transportation for the *Insert Corridor Name* Project. Market analysis considers the existing and projected characteristics of the transportation market to be served. Market analysis typically focuses on broader corridor wide data trends, such as passenger travel volumes in the corridor by mode, current and future quality of transportation service, and demographic trends.

The goal of market analysis is to identify gaps between current rail service and rail service desired by users and potential users, and to analyze quantitative data for the draft Purpose and Need Statement. Market analysis establishes the context for the role that the proposed rail service will play in that intercity travel market and helps determine the factors to be considered in travel demand forecasting (Subtask 4.3). Information from earlier and relevant planning efforts associated with the corridor, such as regional rail planning efforts, may be utilized to inform market analysis. Market analysis outputs should include travel volumes by mode, service characteristics between major cities, and demographic and macroeconomic trends.

The Receipt will also consider other potential intercity passenger rail efforts which may share the same stations, corridor segments, or geographic markets in the market analysis. The Recipient will submit a Market Analysis Report to FRA for review and approval.

Subtask 2.3: Railroad Stakeholder Engagement Plan

Instructions: The FRA Outreach Team is available to provide support and direction to the corridor sponsor in developing the appropriate level of outreach with host and operating railroad.

The Recipient will prepare and submit to FRA for approval a Railroad Stakeholder Engagement Plan that will outline the role of the host railroad(s), applicable operating railroads, and the potential corridor service operator(s) in the *Insert Corridor Name* Project's Study Area.

The plan will identify involvement activities linked to key milestones in the planning/engineering and alternatives analysis process and align with the schedule from Task 1. Involvement activities will include the corridor sponsor's planned engagement activities with key railroad stakeholders. The Railroad Stakeholder Engagement Plan will include a proposed schedule for completing the *Insert Corridor Name* Project analysis that accounts for engagement activities and appropriate review periods with key rail stakeholders. Railroad stakeholder engagement activities identified in the plan will be completed as part of Subtask 265 primarily during the completion of Tasks 3, 4, and 5, and all efforts will be summarized and documented in a Stakeholder, Agency, and Public Engagement Summary Report after the completion of Task 5.

Subtask 2.4: SDP Agency Coordination Plan

The Recipient will prepare and submit to FRA for approval an SDP Agency Coordination Plan that will outline the role of public agencies and Federally recognized tribes in the *Insert Corridor Name* Project. The plan will identify key contacts within potential state, local, and federal agencies, and tribal governments that the Recipient will attempt to consult. The Recipient will engage stakeholders throughout the entirety of this planning phase of the *Insert Corridor Name* Project.

The plan will identify involvement activities linked to key milestones in the planning/engineering and alternatives analysis process and align with the schedule from Task 1. Involvement activities may include individual agency or tribal consultation meetings, existing agency or tribal coordination efforts, or developing topic specific technical working groups. The Agency Coordination Plan will include a project schedule for completing the *Insert Corridor Name* Project analysis that accounts for appropriate review and a schedule for corresponding engagement activities with agencies and tribal governments. Agency coordination activities identified in the plan will be completed as part of Subtask 2.6 primarily during the completion of Tasks 3, 4, and 5, and all efforts will be summarized and documented in a Stakeholder, Agency, and Public Engagement Summary Report after the completion of Task 5.

Subtask 2.5: Public Coordination Plan

The Recipient will prepare and submit to FRA for approval a Public Coordination Plan that will outline the role of the public in the *Insert Corridor Name* Project. The plan will identify key contacts within civic and business groups, public officials, non-federally recognized tribes, relevant interest groups, present and potential riders/users, private service providers/shippers, communities with environmental justice concerns, and the public. If not already identified in the previous two subtasks, the Public Coordination Plan will identify all relevant entities required to be consulted in the preparation of the SDP as identified under 49 U.S.C. § 25101(e).

The plan will identify involvement activities linked to key milestones in the planning/engineering and alternatives analysis process and align with the schedule from Task 1. Involvement activities will include the corridor sponsor's planned engagement activities with key public stakeholders. Activities may also include project specific public meetings, virtual engagement opportunities, consultation meetings, existing agency coordination efforts, or developing topic specific technical working groups. The Public Coordination Plan will include a project schedule for completing the *Insert Corridor Name* Project analysis that accounts for appropriate review and a schedule for corresponding engagement activities with public stakeholders. Public engagement activities identified in the plan will be completed as part of Subtask 2.6 primarily during the completion of Tasks 3, 4, and 5, and all efforts will be summarized and documented in a Stakeholder, Agency, and Public Engagement Summary Report after the completion of Task 5.

Subtask 2.6: Engagement Activities

The Recipient will perform the public and agency engagement activities identified in the Railroad Stakeholder Engagement Plan, Public Coordination Plan and SDP Agency Coordination Plan as part of Subtasks 2.3, 2.4 and 2.5. These activities may include, but are not limited to, project specific public meetings, virtual engagement opportunities, consultation meetings, existing agency coordination efforts, or conducting topic specific technical working groups. Engagement activities will be completed primarily during the completion of Tasks 3, 4, and 5, and all efforts will be documented in a Stakeholder, Agency, and Public Engagement Summary Report after the completion of Task 5.

Task 2 Deliverables:

- Draft Purpose and Need Statement
- Draft and Final Market Analysis Report
- Railroad Stakeholder Engagement Plan
- Agency Coordination Plan
- Public Coordination Plan
- Stakeholder, Agency, and Public Engagement Summary Report

TASK 3: ALTERNATIVES ANALYSIS

Instructions: If applicable, a corridor sponsor may be able to use existing data, analyses, and approaches required to fulfill many of the subtasks associated with Task 3. In Step 1 of the CIDP, FRA will evaluate previous materials developed by the Recipient and determine whether previous methodologies and outputs fulfill the objectives of the subtasks, whether previous methodologies and outputs require an update or refresh, or whether the corridor sponsor needs to develop new components to fulfill the task. Additionally, if the proposed corridor program is for improvements and/or extension of an existing service, some steps of the alternative analysis may not be necessary and/or can be scaled back considerably. The corridor sponsor will engage FRA during the Step 1 process to determine the appropriate degree of analysis required under this task. Based on the Step 1 intake process, the language under each sub-task is subject to modification.

The objective of this task is to conduct an alternatives analysis to identify preliminary alternatives for the proposed infrastructure investments that satisfy the draft Purpose and Need statement developed under Task 2. The Recipient will complete Task 3 concurrently with, and supported by, the analytical outputs of Tasks 4 and 5. After completion of the SDP, the preliminary alternatives will be evaluated further in a subsequent NEPA process in Step 3 of the CIDP.

Under each subtask of the Alternatives Analysis, the Recipient will develop or refine and evaluate options for satisfying the draft Purpose and Need Statement. These will include options for routes ("Route Options"), service configurations ("Service Options"), and physical infrastructure investments ("Investment Packages"), which will be comprised of multiple individual infrastructure projects (or "Component Investments"). The Alternatives Analysis may also include developing and evaluating "Design Options" for each Component Investment. The Recipient will develop or refine and evaluate each type of Option sequentially as separate subtasks, beginning with Subtask 3.1.

Taken together, the Route, Service, and Investment Package Options, and corresponding Design Options carried forward under the respective subtasks will define the preliminary alternatives for the proposed infrastructure investments that will ultimately comprise the corridor project inventory (consistent with 49 U.S.C. 25101(d)(2)(A)).

Under each subtask, the Recipient will first prepare a Methodology Work Product that describes the methodology for conducting the options analysis under that subtask, including:

- The methods to be used for developing or refining options;
- The criteria for evaluating the options to determine which will be carried forward for further screening in the next subtask, including:
    - Metrics (quantitative and qualitative) to be used;
    - Method of evaluating options against those metrics (i.e., measurement methods); and
    - Standards, based on the assessment of options against the identified metrics, for determining which options will be carried forward for further screening in the next subtask;
- The means for incorporating the analytical outputs of Tasks 4 and 5; and

- The means for incorporating stakeholder input in accordance with the coordination plans developed under Task 2.

The Recipient will submit the Methodology Work Product for each subtask in Task 3 to FRA. The Recipient will not commence work on the options analysis for the subtask until FRA has provided written approval of the Methodology Work Product. Following receipt of written approval from FRA, the Recipient will conduct the options analysis for the subtask in accordance with the approved Methodology Work Product.

Upon completing the options analysis for each subtask in Task 3, the Recipient will prepare and submit to FRA a Final Subtask Work Product. The Recipient will not commence work on the subsequent subtask until FRA has provided written approval of the Final Subtask Work Product.

Upon completion of Subtask 3.4, the Recipient will submit a Preliminary Alternatives Analysis Report that summarizes the work undertaken in each subtask and identifies the preliminary alternatives that will be carried forward for further evaluation as part of the NEPA process in Step 3 of the CIDP.

Subtask 3.1: Route Options Analysis

The Recipient will develop and assess potential routes for the proposed rail line through the Study Area. In conducting the Route Options Analysis, the Recipient will consider the market needs and anticipated operating requirements specified in the draft Purpose and Need statement.

Subtask 3.1 Work Products:

- Route Options Analysis Methodology Work Product
- Route Options Analysis Final Subtask Work Product

Subtask 3.2: Service Options Analysis

For those Route Options carried forward for further analysis, the Recipient will develop and assess potential viable service and operating options in the Service Options Analysis. In conducting the Service Options Analysis, the Recipient will consider the anticipated operating requirements specified in both the draft Purpose and Need Statement and Subtask 4.1, and identify which service options may be carried forward for further analysis and refinement at both the Investment and Design Options (Subtasks 3.3 and 3.4). The effort will be completed in coordination with (*note specific host and operating railroads related to the project*) and other stakeholders, and the Recipient will incorporate appropriate inputs associated with Stakeholder Engagement as part of Task 2. The Service Options Analysis should include, but is not limited to:

- A fleet analysis that identifies the type and quality of preferred train equipment to be used, with technical specifications such as maximum speed, passenger capacity, energy consumption profile, acceleration and deceleration rates (consistent with 49 U.S.C. 25101(d)(7));
- Signal systems required, including Positive Train Control (PTC);

- Service frequency, operating speeds, and trip times (consistent with 49 U.S.C. 25101(d)(1));
- Fares and fare structure comparisons among proposed services;
- Description of potential service with existing and planned intermodal connections (consistent with 49 U.S.C. 25101(d)(10)); and
- Station locations and maintenance facility locations and, for each, whether it is existing or new and how it maximizes the use of existing infrastructure (consistent with 49 U.S.C. 25101(d)(6)).

Subtask 3.2 Work Products:

- Service Options Analysis Methodology Work Product
- Service Options Analysis Final Subtask Work Product

Subtask 3.3: Investment Package Options Analysis

For those Service Options carried forward for further analysis, the Recipient will develop and assess Investment Packages along those routes that could achieve the operational requirements specified in the draft Purpose and Need Statement and identify which Investment Packages will be carried forward for further analysis. The Investment Packages will include Component Investments, which are the individual physical investments that make up the Investment Package. The Investment Package Options Analysis will consider the potential phased implementation of physical investments.

Subtask 3.3 Work Products:

- Investment Options Analysis Methodology Work Product
- Investment Options Analysis Final Subtask Work Product

Subtask 3.4: Design Options Analysis

For each Component Investment included in the Investment Package Options carried forward for further analysis under Subtask 3.3, the Recipient may develop and assess the Design Options, if necessary, for that Component Investment. Conceptual level design is sufficient for Component Investments that are likely to fall within the scope of a NEPA Categorical Exclusion specified under 23 CFR part 771. Where there is more than one Design Option for the Component Investment, the Design Options will be evaluated in the subsequent NEPA process in Step 3 of the CIDP.

Subtask 3.4 Work Products:

- Design Options Analysis Methodology Work Product
- Design Options Analysis Final Subtask Work Product

Task 3 Deliverables:

- Preliminary Alternatives Analysis Report

TASK 4: TRANSPORTATION PLANNING

Instructions: If applicable, a corridor sponsor maybe able to utilize existing data, analyses, and approaches required to fulfill many of the subtasks associated with Task 4. In Step 1 of the CIDP, FRA will evaluate previous materials developed by the Recipient and determine whether previous methodologies and outputs fulfill the objectives of the subtasks, whether previous methodologies and outputs require an update or refresh, or whether the corridor sponsor needs to develop new components to fulfill the task. Additionally, if the proposed corridor program is for improvements and/or an extension of an existing service, some steps of the transportation planning task may not be necessary and/or can be scaled back considerably. The corridor sponsor will engage FRA during the Step 1 process to determine the appropriate degree of analysis required under this step. Based on the Step 1 intake process, the language under each sub-task is subject to modification.

The objective of this task is to conduct technical transportation planning analyses necessary to determine the characteristics of the proposed rail service. The Recipient is responsible for undertaking technical transportation planning activities, as applicable, to support the development and screening of preliminary alternatives, concurrently with Task 3. Task 4 is divided into subtasks, and the completion of each subtask will result in a Final Subtask Work Product summarizing the work undertaken in and results of that subtask. The Final Subtask Product for Subtask 4.1 will be submitted to and approved by FRA prior to the Recipient commencing work on any of the subsequent subtasks in Task 4.

The Recipient will provide, prior to the initiation of work under each subtask in Task 4, a Work Product documenting the methodologies to be employed in the work comprising that subtask. The Recipient will submit the Methodology Work Product for each subtask in Task 4 to FRA and will not commence work on a subtask until the Recipient has received approval of the subject Methodology Work Product in writing from FRA.

Task 4 will culminate in a Project Development Report that will document the *Insert Corridor Name* Project development outputs for those alternatives included in the Preliminary Alternatives identified at the completion of Task 3.

Subtask 4.1: Operational Requirements and Existing Physical Conditions Data Collection

Instructions: FRA is still evaluating the appropriateness of the information drafted under this Subtask. The information below is consistent with recent SDP SOWs developed by FRA and corridor sponsors. Before initiating the SOW, FRA and the Recipient will discuss the application of the following provisions:

The objective of this task is to collect all relevant existing physical and operating conditions and other relevant data related to the corridor to appropriately inform the corridor sponsor, FRA, and other key stakeholders before commencing work on any of the other detailed transportation planning activities identified under the remaining subtasks in Task 4. The Recipient will translate the general operational requirement

consistent with the draft Purpose and Need Statement and described in the Service Options Analysis from Subtask 3.2 into a set of detailed operating requirements appropriate for supporting the development of Service Options. To the extent practicable, the Recipient will also collect and/or have access to other data on existing conditions relevant to the analysis to be undertaken in Task 4, including, but not limited to, the following:

- Existing train volumes (by operator/train type, and including all transfer, yard, local, and deadhead moves)
- Existing train characteristics (length, trailing tons, horsepower)
- Existing train routings through the Study Area (entry/exit and origination/destination points), including wye movements required of all passenger trains arriving at major passenger terminals
- Specific operating timetables for scheduled services or operating windows for unscheduled service
- Maintenance-of-way window requirements
- Abandoned rail lines and/or connections between rail lines, and/or abandoned/removed track(s) on existing lines
- Track charts, including yards, industrial leads, etc.
- Existing track conditions, including FRA track class
- Existing junctions, including turnout speeds and parallel diverging moves
- Existing and proposed locations of intercity and commuter platforms
- Location of highway grade crossings and number of lanes
- Aerial photography
- Public and employee timetables
- Existing signal system design and PTC implementation status
- Existing operating practices
- Existing documented survey information, which is readily available in either printed, archived or digital format.
- Route information including routes operating over-dimensional loads
- Railroad property records including existing right-of-way limits, including demarcation between owners/controllers of different sections of rail line and long-term operating leases
- Aboveground and underground rights lease to utility companies for communications or power facilities along rail lines
- Historical employee and public timetables for operations/services
- National Register of Historic Places-listed, eligible, and potential eligible rail facilities
- Design documentation for adjacent highway structures
- Navigable waterways operating through moveable railroad bridges, including frequency of moves
- Locations where local freight activity or freight yard operations may foul main line activities for extended periods of time
- Documentation for other projects under development within the Study Area

To the extent practicable, the Recipient will make available to FRA data on existing conditions relevant to the analysis. The Recipient agrees that it will take no action that could limit FRA's access to such data without the express prior written approval of FRA.

Work completed under conditions that limit FRA's access to the data outlined above or any component of the operations modeling analysis such as, but not limited to, methodology for determining type and location of infrastructure improvements, freight and passenger service assumptions that impact existing and future rail operations scenarios, and passenger and freight performance outputs for draft and final networks will be ineligible for reimbursement if no prior approval from FRA was obtained.

Subtask 4.1 Work Products:

- Specification of Detailed Operational Requirements and Data Collection Methodology Work Product
- Specification of Detailed Operational Requirements and Data Collection Final Subtask Work Product

Subtask 4.2: Operations Analysis

The objective of this subtask is to assess the current physical conditions, proposed service characteristics, and other operating characteristics identified under Subtask 4.1 as inputs into an operations analysis that will identify the potential infrastructure and operational needs required to operate the proposed service. In support of the development and screening of alternatives undertaken in Task 3, the Recipient will undertake operations analysis of the various Route and Service Options under consideration to identify infrastructure investments for implementing the *Insert Corridor Name* Project. The Recipient will use appropriate tools, including train performance calculators and railroad operations simulation software, in performing the operations analysis. The operations analysis will allow for iterative development and stakeholder feedback. It will also include randomization of modeling scenarios with statistically significant results to ensure reliable corridor operations. Software used for operations modeling will require integration of data from existing infrastructure, freight railroad operations, and other passenger operations identified in Subtask 4.1.

The Recipient will outline the methodology to be used for this task in the Operations Analysis Methodology Work Product. The Recipient will ensure FRA concurs with the operations analysis approach prior to commencing operations analysis through the approval of the Operations Analysis Methodology Work Product. Throughout the operations analysis, the Recipient will ensure that an appropriate degree of oversight and transparency is maintained. Since the results of operations analysis will be used to identify the corridor project inventory and capital and operating costs in subsequent tasks, the Recipient acknowledges that it is critical that FRA and the Recipient undertake this task with a high degree of confidence that the results of the operations analysis are appropriate and defensible relative to the level of public investment and benefit anticipated.

Subtask 4.2 Work Products:

- Operations Analysis Methodology Work Product
- Operations Analysis Final Subtask Work Product

Subtask 4.3: Travel Demand and Ridership Forecasting

The objective of this subtask is to generate reasonable and empirically supported ridership estimation for potential rail service plans so the corridor sponsor can evaluate tradeoffs between different service features in conjunction with the ridership estimation under Subtask 4.4. The outputs of the market analysis completed under Subtask 2.2 will also be used to inform this subtask. The Recipient will perform ridership forecasting based on passenger rail travel demand (consistent with 49 U.S.C. 25101(d)(8)(B)). Two major components of travel demand forecasting include developing a travel demand model for the market area (or using a preexisting travel demand forecasting model if appropriate) and using the model to generate demand forecasts. Inputs to this effort include, but are not limited to, socioeconomic data and growth rates, trip rates by mode, data regarding traveler's mode choice, station locations, transit connections, equipment technology, operating speeds, land use, etc. Travel demand forecasting methodology, in addition to supporting decision-making between alternatives, should also be rigorous and thorough enough to support a funding decision. The Recipient will also identify base and horizon service years that indicate the anticipated start date of the service and the implementation of the full-service vision. Additional ridership analysis will be performed as refinements are made to the route, station locations, train speed, and other aspects impacting the service plan.

Subtask 4.3 Work Products:

- Ridership Forecasting Methodology Work Product
- Ridership Forecasting Final Subtask Work Product

Subtask 4.4: Revenue Evaluation Analysis

The objective of this subtask is to generate a reasonable revenue evaluation for potential rail service plans in conjunction with the ridership estimation under Subtask 4.3. The Recipient will develop a Revenue Evaluation Analysis with potential operating partners to support the evaluation and screening of the alternatives undertaken in Task 3 (consistent with 49 U.S.C. 25101(d)(8)(A)). A ticket pricing strategy will be proposed for this service based on comparable services around the country. This information will then be used to generate revenue forecasts from fares and ridership for the Service Options Analysis from Subtask 3.2. The Revenue Evaluation will also detail the boardings and alightings based on varying station locations and other key variables. If applicable, special events will also be analyzed to understand how service fares can impact ridership levels during events. Additional work will include identifying other revenue sources for the *Insert Corridor Name* Project (advertising, grants, local contributions, etc.).

Subtask 4.4 Work Products:

- Revenue Evaluation Analysis Methodology Work Product
- Revenue Evaluation Analysis Final Subtask Work Product

Subtask 4.5: Station Area and Access Analysis

The objective of this subtask is to identify the location of the stations to be served by the proposed infrastructure, examine how these stations will accommodate the trains and passengers associated with the proposed infrastructure, how passengers will access the stations, and how the stations will be integrated with or connected to other modes of transportation (consistent with 49 U.S.C. 25101(d)(6)). The assessment of the operations for each alternative should be performed to a level sufficient to identify key characteristics, challenges, or impacts to existing and future passenger rail service. The Recipient will prepare a station area and access analysis to include but is not limited to:

- Determining the operational requirements of stations and station access for the new passenger rail service;
- Maximizing connectivity to existing transit services where available and to future planned services not yet providing service to these specific station locations;
- Accommodating pedestrian, bicycle, micromobility, and other ride-sharing services with efficient access;
- Connecting to major transportation roadway arterials and provision of parking areas;
- Discussing the economic development potential (commercial/residential) at each station area; and
- Developing a conceptual engineering layout for each station, including parking sufficient for *Insert Corridor Name* Project projected ridership and operations plans.

The Recipient will submit the Station Area and Access Analysis, as part of the *Insert Corridor Name* Project Development report, to FRA for approval.

Subtask 4.5 Work Products:

- Station Area and Access Analysis Methodology Work Product
- Station Area and Access Analysis Final Subtask Work Product

Subtask 4.6: Conceptual and Early Preliminary Engineering

The objective of this task is to identify and classify the list of capital projects needed to construct and operate the proposed service. Conceptual engineering converts the required infrastructure identified in the other planning elements into discrete capital projects. These capital projects will be accompanied by a set of conceptual engineering drawings that include basic visual depictions of the projects, including maps, track charts, conceptual stations, and proposed interlockings. In support of the development and screening of alternatives undertaken in Task 3, the Recipient will develop conceptual and early preliminary engineering for the various Investment and Design Options under consideration that is sufficient to support the analysis identified in the respective subtasks.

The Investment Options Analysis will be supported by conceptual-level engineering which will address, at a minimum and for each Component Investment:

- The specific operational objectives and functional requirements of the Component Investment; and
- The location of the Component Investment for track designs, a linear scale schematic showing track configuration, turnout sizes and type (powered, hand thrown, etc.), proposed signal locations, distance between signals, limits of signalization, limits of curves with degree of curvature, and proposed speeds, including a comparison (through parallel drawings) of the existing and proposed designs.

The Design Option Analysis will be supported by early preliminary-level engineering which will address, at a minimum and for each Component Investment:

- The physical feasibility of the design;
- The ability of the proposed design to fulfill the operational objectives and functional requirements of the specific Component Investment (as established in the Investment Options Analysis);
- The general constructability of the design, including consideration of potential construction phasing to allow for the continuation of operations during the construction period; and
- The adequacy of the design to support a future detailed, site-specific environmental analysis of the Component Investment.

For new track infrastructure, scale drawings should include, as appropriate: turnout sizes and type (powered, hand thrown, etc.), proposed signal locations, distance between signals, limits of signalization, limits of curves and curve geometry, gradients, and proposed speeds, including a comparison (through parallel drawings) of the existing and proposed designs.

Subtask 4.6 Work Products:

- Conceptual and Early Preliminary Engineering Methodology Work Product
- Conceptual and Early Preliminary Engineering Final Subtask Work Product

Subtask 4.7: Capital Cost Estimation

The objective of this subtask is to identify the capital cost to design, construct, and implement the proposed service. This includes developing a cost-estimating methodology to document the assumptions for costing the projects as well as a phasing strategy to implement the project that identifies service targets and infrastructure needs by phase.

The Recipient will prepare capital cost estimates for each preliminary alternative including unit cost and quantities relating to core track structures and other components, fleet, management, design and construction management allowances, and contingencies (consistent with 49 U.S.C. 25101(d)(8)(C and D)). At a minimum, these will include an initial high-level cost estimate (based on the Conceptual Engineering developed under Subtask 4.6) to be used to support the Investment Options Analysis, and a more detailed cost estimate (based on the early preliminary-level engineering developed under Subtask 4.6) to be used to support the Design Options Analysis. As the *Insert Corridor Name* Project is currently in the planning phase, the capital cost estimation should be

commensurate with other planning assumptions and analyses. As the program moves beyond project planning and towards project development (Step 3 of the CIDP) and implementation (beyond the CIDP), capital cost estimation will be further refined. In developing the Capital Cost Estimation Methodology, the Recipient may refer to FRA's Capital Cost Estimating Guidance.

Subtask 4.7 Work Products:

- Capital Cost Estimation Methodology Work Product
- Capital Cost Estimation Final Subtask Work Product

Subtask 4.8: Operations and Maintenance Cost Estimation

The objective of this subtask is to convert the identified operating resources such as labor, materials, and services needed to operate the proposed service into an annual cost projected for the planning horizon. The Recipient will prepare general estimates of operating, maintenance, and capital renewal costs for a 40-year period (consistent with 49 U.S.C. 25101(d)(8)(E)). Operating cost estimates will also include analysis of labor planning needs. Potential labor and staffing needs should include full-time equivalent estimates for maintaining and operating assets, as well as administration functions, to include, but not limited to management, legal, and commercial/marketing needs of the corridor.

Subtask 4.8 Work Products:

- Operations and Maintenance Cost Estimation Methodology Work Product
- Operations and Maintenance Cost Estimation Final Subtask Work Product

Task 4 Deliverables:

- Draft *Insert Corridor Name* Project Development Report
- Final *Insert Corridor Name* Project Development Report

TASK 5: ENVIRONMENTAL PLANNING

Instructions: If applicable, a corridor sponsor may be able to utilize existing data, analyses, and approaches required to fulfill some of the analysis associated with Task 5. In Step 1 of the CIDP, FRA will evaluate previous materials developed by the Recipient and determine whether previous methodologies and outputs fulfill the objectives of the Task, whether previous methodologies and outputs require an update or refresh, or whether the corridor sponsor needs to develop new components to fulfill the Task. Based on the Step 1 intake process, the language under this task is subject to modification.

The objective of this task to is to identify key environmental considerations in the development of the alternatives to support future lifecycle stages of the corridor's development, including project-level environmental analysis. The Recipient will perform a high-level qualitative socioeconomic, cultural, human environment, and natural environmental resource inventory and preliminary effects analysis as part of the development and screening of options concurrently with Tasks 3 and 4. The Recipient will build upon the findings from environmental effect analysis to assess potential environmental effects of the preliminary route, service, investment, and design options, and employ the outputs of this environmental effect analysis to support the screening of those options. Where environmental documentation is not available, the Recipient will perform additional desktop analysis to inventory existing conditions and identify key social, cultural, natural, and physical project concerns. The Recipient will review the environmental resources and determine, with input from agencies and the public, the extent of analysis needed for each resource for the subsequent NEPA process in Step 3 of the CIDP.

The Recipient will prepare an Environmental Concerns Analysis Report that will document the potential significant socioeconomic, cultural, human environment, and natural environmental effects of the Preliminary Alternatives identified at the completion of Task 3. The Report will document the anticipated benefits of the corridor's impacts as it relates to other transportation modes, energy consumption, land use, and economic development (consistent with 49 U.S.C. 25101(d) (11 and 12). The Report will also address possible approaches to completing the environmental review of those alternatives, including the potential NEPA class(es) of action for subsequent environmental document(s) under Step 3 of the CIDP. This report will identify potential programmatic mitigation strategies and anticipated permits and agency clearance requirements that will be needed for the alternatives moving forward for additional consideration during NEPA.

Task 5 Work Products:

- Environmental Concerns Analysis Methodology

Task 5 Deliverable:

- Environmental Concerns Analysis Report

TASK 6: FINANCIAL PLANNING AND BENEFIT COST ANALYSIS

Instructions: If applicable, a corridor sponsor maybe able to utilize existing data, analyses, and approaches required to fulfill many of the subtasks associated with Task 6. In Step 1 of the CIDP, FRA will evaluate previous materials developed by the Recipient and determine whether previous methodologies and outputs fulfill the objectives of the subtasks, whether previous methodologies and outputs require an update or refresh, or whether the corridor sponsor needs to develop new components to fulfill the task. Based on the Step 1 intake process, the language under each sub-task is subject to modification.

The objective of this task is to clearly identify the financial resources required to implement and operate the proposed service and compare the anticipated benefits that accrue from a project to the anticipated costs of the project over a specified period of time. The Recipient is responsible for developing *Insert Corridor Name* Project financial analysis by completing a financial plan and a benefit cost analysis. The financial plan will clearly identify potential financial resources required to implement and operate the proposed service consistent with 49 U.S.C. 25101(d)(8). Although financial planning and benefit-cost analysis (BCA) use many of the same data inputs, the BCA should quantify all non-monetary benefits and combine them with the monetary costs and benefits identified under the financial plan.

The Recipient will not commence work on Task 6 prior to FRA's written concurrence or acceptance of Tasks 4 and 5. Task 6 is divided into subtasks and the completion of each subtask will result in a Final Subtask Work Product summarizing the work undertaken in and results of that subtask. Since the BCA is dependent upon the outputs of the financial plan, the Recipient will submit Final Subtask Product for Subtask 6.1 to FRA for approval prior to commencing work on Subtask 6.2.

The Recipient will provide, prior to the initiation of work under each subtask in Task 6, a work product documenting the methodologies to be employed in the work comprising that subtask. The Recipient will submit the Methodology Work Product for each subtask in Task 6 to FRA for approval prior to commencing work on a subtask.

Subtask 6.1: Financial Planning

The Recipient will compete a financial plan that will identify the potential financial resources required to implement and operate the proposed *Insert Corridor Name* Project components identified in the *Insert Corridor Name* Project Development Report (Task 4) (consistent with 49 U.S.C. 25101(d)(2)(A)(iii)). The financial plan will focus on the direct monetary factors of the *Insert Corridor Name* Project and will provide a single financial statement showing the proposed service's financial projections over the course of the planning horizon. The financial analysis will describe the capital and operating dollars needed to implement and operate the *Insert Corridor Name* Project and identify sources of capital investment and operating financial support.

As the *Insert Corridor Name* Project is currently in the planning phase, the financial planning analysis should be commensurate with other planning assumptions and

analyses. As the program moves beyond project planning and towards project development (Step 3 of the CIDP) and implementation (beyond the CIDP), financial planning will be further refined to specify the precise levels of funding needed and explore additional sources of funding. This may include cost sharing agreements, government grants, loans, and other available funding opportunities.

Subtask 6.1 Work Products:

- Financial Planning Methodology
- Financial Planning Final Subtask Work Product

Subtask 6.2 Benefit Cost Analysis

The Recipient will complete a BCA that will document the overall economic impact of the *Insert Corridor Name* Project. This will include both the financial results as described in Subtask 6.1 and the benefits and impacts for the *Insert Corridor Name* Project such as operational benefits, travel time savings, air quality impacts, community and economic development, and other user and non-user economic benefits. This is informed by earlier tasks and will be used to assess the transportation-related merits of the service alternative. As the *Insert Corridor Name* Project is currently in the planning phase, the benefit cost analysis should be commensurate with other planning assumptions and analyses. As the program moves beyond project planning and towards project development (Step 3 of the CIDP) and implementation (beyond the CIDP), the benefit cost analysis maybe further refined.

The BCA should reference USDOT's *Benefit-Cost Analysis Guidance for Discretionary Grant Programs* (January 2020) or latest edition, as appropriate.

Subtask 6.2 Work Products:

- Benefit Cost Analysis Methodology
- Benefit Cost Analysis Final Subtask Work Product

Task 6 Deliverable:

- Financial Planning and Benefit Cost Analysis Report

TASK 7: GOVERNANCE

Instructions: If applicable, a corridor sponsor maybe able to utilize existing data, analyses, and approaches required to fulfill some of the analysis associated with Task 7. In Step 1, FRA will evaluate previous materials developed by the Recipient and determine whether previous methodologies and outputs fulfill the objectives of the subtask, whether previous methodologies and outputs require an update or refresh, or whether the corridor sponsor needs to develop new components to fulfill the task. Based on the Step 1 intake process, the language under this task is subject to modification.

The objective of this task is to determine how the corridor program will be administered throughout the project development lifecycle, to include responsibility for construction and ongoing operation of the service. The Recipient will assess potential governance and program administration options for the long-term management structure for design, construction, maintenance, and operations of a future *Insert Corridor Name* system. Options may include private investment, public private partnerships, and/or publicly funded investment for program delivery and administration. The Recipient will provide organizational charts identifying the roles, responsibilities, and staffing requirements for each entity involved in advancing the corridor throughout each stage of the corridor's project lifecycle. The Recipient will assess governance options allowable under state law and other examples of potential governance structures for other state-supported Amtrak services that fall under Section 209 of the Passenger Rail Investment and Improvement Act of 2008 if applicable/appropriate. The Recipient will facilitate meetings, in coordination with Amtrak (if applicable/appropriate), FRA, and other potential stakeholders, on the governing and operating organization for the future passenger rail service associated with the *Insert Corridor Name* Project (consistent with 49 U.S.C. 25101(d)(4). The Recipient will identify all necessary agreements with potential stakeholders to advance the project into Step 3 of the CIDP and into subsequent stages of implementation.

The Recipient will identify key entities necessary to implement the SDP (consistent with 49 U.S.C. 25101(d)(4)) and to progress the corridor including:

- The proposed entity who will manage the corridor's development and operation;
- The proposed entities required to implement the corridor project inventory from Step 2 of the CIDP into Step 3 (consistent with 49 U.S.C. 25101(d)(2)(A)(ii));
- The proposed operator or type of operator for the service; and
- The entities who will comply with all safety and security laws, orders, and regulations (consistent with 49 U.S.C. 25101(d)(5)).

Task 7 Deliverable:

- Corridor Governance Report

TASK 8: PHASED IMPLEMENTATION PLAN

The Recipient will develop a phased implementation plan that identifies the implementation sequencing of the capital project inventory (consistent with 49 U.S.C. 25101(d)(2)) to support the Investments and Design Options identified in Tasks 3.3 and 3.4. The Phased Implementation Plan will identify implementation years and desired service levels for those years based on ridership demand for the *Insert Corridor Name* service. The Phased Implementation Plan will identify a schedule of the capital projects required to support the service levels for each of the corresponding service years (consistent with 49 U.S.C. 25101(d)(3)). The Phased Implementation Plan will also include consideration of phasing the project lifecycle stages for each capital project – project development (PE/NEPA), final design, and construction, and the appropriate time to initiate each lifecycle stage for a capital project. The Recipient will identify an initial prioritized list of projects based on service phasing considerations that can be advanced to environmental analysis and preliminary engineering studies to complete Project Development under Step 3 of the CIDP. Additional operations modeling may be required to support the development of the Phased Implementation Plan.

Subtask 8 Work Products:

- Phased Implementation Plan Methodology

Task 8 Deliverables:

- Phased Implementation Plan

TASK 9: DRAFT AND FINAL REPORTS

The Recipient will prepare a draft report of the SDP including the culminating results of the *Insert Corridor Name* Project elements (Task 2 through Task 8) that includes an Executive Summary. Following appropriate reviews by the entities expected to participate in carrying out the plan, stakeholders, and the FRA, the Draft will be revised based on comments received and a final SDP document will be produced. The Recipient requires written approval by FRA for completion of the Final Report

Task 9 Deliverables:

- Draft Service Development Plan
- Final Service Development Plan