

BART Agreement Number: 6M6146-SC2

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Work Plan No. A.01-02 Link21: Travel Demand and Land Use Supplemental WP1.01

Scope:

In Work Plan 2, the Consultant will be responsible for on-going support in the development and application of a refined travel demand and land use model system that will be used for project evaluation. The development and application of the refined travel demand and land use model system is split into eight tasks, which are described in detail below.

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Task 1 Program and Project Management (2.T12.01)

Management and coordination within the context of the larger program, including developing, managing, and reporting on scope, schedule, and budget, and coordinating with the PMT and other consultants. This task also includes internal communication and project management within the Consultant team to monitor progress and ensure adherence to scope, schedule, and budget.

1.1. Onboarding/Orientation (2.T12.01.01)

This work plan does not include budget for this task.

1.2. Revised Work Plan Development (2.T12.01.02)

This work plan does not include budget for this task.

1.3. Coordination Meetings

This work plan does not include budget for this task.

1.4. Project Controls (2.T12.01.04)

The Consultant will provide project controls services to gather and manage data and implement analytical processes to predict and constructively influence the time and cost outcomes of the work plan proposed scope. This information will be communicated in formats that assist in effective management and decision making and that enable integration with other Link21 work plans and projects.

1.5. Quality Management

Provide quality management of Consultant and subconsultant services through execution of the Quality Management Plan (QMP) and its associated quality procedures.

1.6. Information Systems

This work plan does not include budget for this task.

1.7. Invoicing and Progress Reporting (2.T12.01.07)

This work plan does not include budget for this task.

▲ *1.8. Equity Implementation (2.T12.01.08)*

This work plan does not include budget for this task.

1.9. Internal Project Management

This work plan does not include budget for this task.

1.10. Stage Gate 2 Support Activities (2.T12.01.80)

This task includes ongoing but limited effort for Stage Gate 2 support activities from January 2024 to the end of May 2024. Types of support activities include:

- Materials for SG2 four SG2 Reviews – with upto 20 hours per review = 80 hours
- Attendance to support presentations at SG2 reviews: 1 person for 2 SG2 meetings with up to 6 hours per meeting = 12 hours
- Response to comments and actions from SG2 reviewers: four SG2 reviews with up to 10 hours per review = 40 hours
- Internal Review panelist: 1 person for 1 meeting at up to 16 hours per meeting, including prep and debrief = 16 hours

Deliverable

- 1. As-needed deliverables.*

Task 2 Model Development (2.T12.02)

This work plan does not include budget for this task.

Task 3 Uncertainty/Risk Analysis Planning (2.T12.03)

This work plan does not include budget for this task.

Task 4 Technical Peer Review (2.T12.04)

This work plan does not include budget for this task.

Task 5 Coordination (2.T12.05)

This work plan does not include budget for this task.

Task 6 As-needed Modeling Support (2.T12.06)

This task will include miscellaneous discrete activities to support the efforts of the Link21 Team and various stakeholders. Activities under this task will be associated with specific deliverables and will require explicit prior authorization from BART/CCJPA to draw upon these hours.

Budget for this task includes running a maximum of seven travel demand model runs and two land-use model runs.

Deliverable

1. *As-needed deliverables*

Task 7 Cloud Computing, Licensing, and Data Purchases (2.T12.07)

This task includes direct costs associated with software and data licenses, local or cloud computing resources, travel, and other purchases warranted to accomplish Tasks 1 through Task 8.

Budget ODC costs include:

- Emme Licenses – 1 year lease (1): \$9,000
- AWS Computing: \$62,635

Deliverable

1. *Software or data procured as part of this work authorization, if applicable.*

Task 8 Model Application (2.T12.08)

For the Link21 travel demand model application phase, the consultant team will conduct multiple runs of the travel demand and land-use model system to produce, at a minimum, output metrics to support developing the Business Case.

8.1. Baseline and Representative Concepts

The consultant will conduct two (2) travel demand and land-use model runs that include substantial changes to transit alignments, highway networks, or input data development.

Each model run includes the following:

- Coordination with other teams to ensure the correct inputs and outputs (i.e. performance metrics) are prepared for the model runs
 - Produce business case performance metrics
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- Identifying and preparing the inputs to the model run
- Running the model, including monitoring the run
- Preparing and summarizing the outputs including desired visualizations
- Documenting QC throughout the process
- Documentation of model run inputs and outputs
- Investigating and analyzing model outputs as requested by other teams

This task includes general coordination, analysis, or documentation irrespective of the number of runs that are performed. This task also includes on-going support in the preparation, analysis, and documentation of additional concepts.

8.2. Uncertainty Tests

The consultant will develop uncertainty test scenarios that include substantial preparation, such as extensive changes to the rail network, and other changes involving a complex set of input changes. This task includes preparation, running, and documentation of the following scenarios.

It also includes the preparation, running, and documentation of the following uncertainty tests, each on three concepts (Baseline plus two concepts):

- PBA50 Scenario: Rising Tides, Falling Fortunes
- PBA50 Scenario: Clean and Green
- PBA50 Scenario: Back to the Future
- Greater preference for remote working (i.e. teleworking)

This task also includes on-going support, general coordination, analysis, or documentation related to uncertainty test scenarios irrespective of the number of runs that are performed.

8.3. Alternative Concept Runs

This work plan does not include budget for this task.

8.4 On-going Modeling Support

The Consultant shall NOT undertake any activities under Task 8.4 until until Consultant has secured written approval from the BART Delivery Manager based on scope and budget provided in a timely manner by the Consultant.

This task will involve on-going support in the development, due diligence analysis, and documentation of a detailed demand forecasting system and a land use forecasting system to support efforts in Task 8.1 through 8.3.

This task may include the development of an airport trip analysis that forecasts origin-destination rail trips utilizing SFO and OAK rail stations for each of the concepts and tests.

Deliverable

1. As-needed deliverables

Prime: Cambridge Systematics, Inc.

Subconsultant	Amount	DBE (Y/N)	SBE (Y/N)
Insight Transportation Group	\$ 297,352	Y	Y
MapCraft	\$ 45,268	N	N
ECONorthwest	\$ 68,117	N	N
Cambridge Systematics	\$ 553,215	N	N

Total Work Plan Value: \$ 963,953