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September 10, 2018

Angela Obeso, PE
Project Manager
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

RE: Ravenswood Avenue Railroad Crossing Project, Extra Work Request (Amendment 3)

Dear Angela:

At the May 8, 2018 City Council meeting, Council directed that additional scope items be considered for the project. Per these City Council meeting minutes, additional scope items will include “(1) a financial assessment for a trench/tunnel and; (2) a conceptual design, noise, tree, and visual impact assessment of a fully elevated alternative.” Below is a description of the scope of work for these items (Tasks 6, 7 and 8).

SCOPE OF WORK**Task 1: Project Management**Task 1.1 Project Administration

Due the extension in the schedule and the additional scope items described below, AECOM will provide additional project management services for the period from June 2018 through March 2019. These services include:

- Coordinating with in-house design staff, subconsultants, and the City
- Conducting additional check-in conference calls
- Monitoring schedule and budget status and preparing invoices

Task 6: Tunnel Feasibility Analysis and Funding AnalysisTask 6.1 Tunnel Feasibility Analysis

AECOM will analyze the feasibility of a tunnel alternative based on a track profile that begins at two potential locations:

1. Just south of the Fifth Avenue Underpass in unincorporated San Mateo County (between Redwood City and Atherton).
2. Just south of Woodside Road in Redwood City.

The tunnel profile would conform back to existing grade between Charleston Road and San Antonio Road near the Palo Alto/Mountain View border. Note: The southern conform point is based on current, preliminary exhibits prepared by AECOM for the City of Palo Alto for their City-wide tunnel option.

The analysis will include the anticipated engineering challenges and potential mitigation measures, and logistical opportunities and issues associated with constructing a tunnel that spans through a segment of six jurisdictions (Redwood City, San Mateo County, Atherton, Menlo Park, Palo Alto and Mountain View).

The analysis will include the following topics. These will be discussed in the memorandum, described in Task 6.2, at a high-level to determine the overall feasibility of this alternative.

- Type of Tunnel (Single or Dual Bore)
- Entry/Exit Portal Locations
- Construction Impacts (Including anticipated station and/or road closures during construction)
- Right-of-Way and Utility Impacts (Including anticipated temporary construction easements)
- Drainage (Including impacts to major channels/creeks)
- Groundwater and Geotechnical Issues
- Final Station and Roadway Configurations
- Long-term Maintenance

Task 6.2 Tunnel Feasibility Analysis Memorandum

AECOM will develop a memorandum summarizing the items described in Task 6.1. The memorandum will include a description of the tunnel alternative with a schematic plan, profile and typical section.

AECOM will also prepare an order-of-magnitude cost estimate of the tunnel concept, including the approximate cost within the City of Menlo Park only.

Task 6.3 Tunnel Funding Analysis

As a follow up to Tasks 6.1 and 6.2, AECOM will identify and evaluate potential funding resources and financing mechanisms applicable to the tunnel alternative. The funding analysis will develop a high-level overview and assessment of the project funding and financing opportunities. The purpose of the analysis will be to provide a comprehensive overview and understanding of potential funding availability and constraints sufficient for an initial assessment of the project's financial feasibility.

The analysis will be primarily focus on identifying approaches and assessing their potential for funding the construction of the Menlo Park segment of the project. However, AECOM will also provide a high-level characterization of the complete project's funding needs, constraints and options with an assessment of its funding potential and viability from a corridor-wide perspective.

AECOM will identify funding options from local sources (e.g. fee/tax measures and value capture mechanisms if applicable), regional/state sources (e.g. San Mateo County Transportation Authority (SMCTA) Measure A and California High Speed Rail Authority) and federal programs (e.g. BUILD grants). AECOM will analyze the following key evaluation factors for each funding source under consideration:

- Summary description;
- Applicability and restrictions;
- Implementability and qualification requirements;
- Approval process and authorizing agencies;
- Extent, type and scheduling of obtained funding; and
- Overall viability, key risk and success factors.

AECOM will work with Caltrain and the City staff to determine the land-use opportunities and development constraints on the property above the tunnel segment within Caltrain's right-of-way. If possible, some illustrative case studies may be used for informative purposes. Based on this research and analysis, AECOM will evaluate the properties' development potential and resulting capacity for revenue generation and project funding contribution.

Task 6.4 Tunnel Funding Analysis Memorandum

The funding analysis findings and recommendations will be documented in a "White Paper" format suitable for internal use and public distribution. AECOM will provide a short-list of the funding sources considered to be most promising and viable with recommendations on next steps and further investigation.

Note that at this initial stage, detailed financial feasibility analysis of the project or specific funding sources is not recommended and is not proposed under this task. The financial calculations and projections performed for the funding analysis will be based on readily available data and standard assumptions (e.g. local property values, bond/loan terms, investor rate of return requirements, economic and land use projections/trends etc.).

Task 7: Fully Elevated Alternative Analysis

Task 7.1 Preliminary Engineering

AECOM will develop preliminary engineering for a fully elevated alternative. The track profile limits will begin just south of Encinal Avenue and end just north of San Francisquito Creek. This task will include the following:

- Engineering (track and road profiles, shoofly track alignment, etc.) to define the limits of construction and approximate quantities to complete an order-of-magnitude cost estimate.
- Utility and Right-of-Way impacts.
- Preliminary cost estimate (using a similar format that was used for Alternatives A & C).
- A track profile analysis to determine the maximum grade needed to provide sufficient elevation to avoid roadway excavation at Glenwood Avenue (span completely over the street); while simultaneously avoiding impact to Encinal Avenue.

Task 7.2 Meetings

AECOM will attend and prepare PowerPoint slides for up to four (4) separate meetings; City Council (1), Rail Subcommittee (1), Planning Commission (1) and the Complete Streets Commission (1).

Task 7.3 Renderings

AECOM will prepare still image, 3D CAD renderings from up to three (3) vantage points.

Task 7.4 Technical Memorandum

AECOM will prepare a Technical Memorandum to summarize the items prepared as part of Task 7.1 and 7.3.

Task 8: Noise Study

AECOM will evaluate how each of the five proposed alternatives, noted below, would affect noise levels; both on a single event (pass-by) basis as well as average daily exposure (such as day-night noise level, L_{dn}) which would likely be used to assess environmental noise impacts as per Federal Transit Administration (FTA) noise impact criteria.

The study will include a round of noise measurements describing single event and daily noise exposure for existing conditions. The study will also include prediction of expected changes in noise level (single event and daily exposure) for the different alternatives. The alternatives to be studied are as follows:

- i. Existing (Baseline) Condition (No Build)
- ii. Alternative A
- iii. Alternative C
- iv. Alternative D – Fully elevated with three grade separations
- v. Alternative E – Multi-city, corridor-wide tunnel

Task 8.1 Review Project information

The AECOM noise team will review provided and relevant project information. At the conclusion of this review, the noise team will develop a data request to the City and/or Caltrain, for any additionally required information.

Task 8.2 Site Visit and Noise Measurements

Two AECOM noise specialists will visit the project area and conduct a series of long-and short-term measurements of current existing conditions. The long-term measurements will run for at least 24 hours at two different locations in the noise study area, and short-term measurements will be conducted for a shorter duration (typically 15-30 minutes each) to document ambient conditions and individual train events at another 4 to 8 locations representing a variety of noise-sensitive land uses throughout the study area. The noise team will also carefully identify and document other existing noise sources present as well as buildings, topography and other features that could influence acoustical propagation in the study area.

Depending on the preliminary tunnel concepts to be evaluated under Alternative E (Tunnel), some noise measurements may also be conducted at other locations outside of the study area to characterize noise sources associated with that alternative (such as passive tunnel vent shafts, or powered ventilation fan stations which may be identified on similar rail tunnels elsewhere).

Task 8.3 Analyze Noise Measurement Data

The noise measurement data will be analyzed and developed into charts and tables to represent the varying noise environment over the course of the day at each of the measurement locations as well as detailed noise levels for individual train events identifying individual contributions from train cars, locomotives and horn soundings on a per event basis (to the degree possible).

Task 8.4 Conduct FTA and CadnaA Noise Modeling

AECOM will conduct an FTA style spreadsheet analysis to predict and compare project related 24-hour (L_{dn}) noise levels consistent with methods described in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA VA-90-1003-06), general noise assessment method, at up to 20 different point locations representing noise sensitive locations within the project area. The noise team will also develop more detailed noise models using the CadnaA noise model platform to produce noise contour data for typical maximum noise levels for each alternative.

Task 8.5 Develop Draft Noise Technical Memorandum

AECOM will prepare a technical noise memorandum reporting the methodology, results and conclusions of Tasks 8.1 to 8.4.

Task 8.6 Develop Final Noise Technical Memorandum

AECOM will provide responses to one set of agency comments and prepare a final technical memorandum.

DELIVERABLES LIST

The following deliverables will be provided as part of this extra work:

- Draft & Final Tunnel Feasibility Analysis
- Draft & Final Tunnel Funding Analysis
- Draft & Final Technical Memorandum of Viaduct Alternative Analysis
- Draft & Final Noise Technical Memorandum

FEE ESTIMATE

A detailed level of effort per task for this Extra Work (Amendment 3) is provided as an attachment.

We look forward to working with the City to complete these additional tasks. If you have any questions, please contact Millette Litzinger at 408.961.8417 or millette.litzinger@aecom.com.

Yours sincerely,

AECOM Technical Services, Inc.

Millette Litzinger, PE
Deputy Project Manager

Etty Mercurio, PE
Vice President

Attachments

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