

**STAFF REPORT FOR CALENDAR ITEM NO.: 11
FOR THE MEETING OF: February 9, 2023**

TRANSBAY JOINT POWERS AUTHORITY

BRIEF DESCRIPTION:

Authorize the Executive Director to execute Amendment No. 02 to Agreement No. 20-06-GEC-000 (Agreement), General Engineering Consultant (GEC) services for the Downtown Rail Extension project between the Transbay Joint Powers Authority (TJPA) and Parsons Transportation Group Inc. (Parsons), authorizing additional scope and increasing the contract amount by \$20,000,000 for a total not-to-exceed contract amount of \$47,500,000, consistent with the original procurement strategy, to allow Parsons to perform needed continuing engineering services under the accelerated schedule.

EXPLANATION:

The Downtown Rail Extension (DTX) project, now also known as “The Portal”, requires a multi-disciplinary engineering design team to provide engineering services on behalf of the TJPA; assist in planning, engineering/designing, managing, and implementing this large and complex public infrastructure project; and provide other related professional services.

Procurement Strategy

In July 2020, the TJPA issued Request for Proposals (RFP) No. 20-06 for General Engineering Consulting (GEC) services for the project. The RFP explained the selected consultant's scope of work would include four primary categories, extending through project construction:

1. Project Management: management, coordination, quality control and assurance, risk management, pursuit of approvals, evaluating financing alternatives, code compliance and design criteria, and similar tasks.
2. Project Development: updating the existing design to 30 percent preliminary engineering. This work will generally involve preparing studies, reports, plans and specifications, amendment documentation, and a cost estimate, and providing procurement support.
3. Project Procurement: producing the contract documents for the updated design of all project elements, including advance construction packages.
4. Engineering Support: construction administration and other support services for the project construction contracts.

This GEC scope was developed by TJPA, its Program Management/Program Controls (PMPC) team, and other subject matter experts, including staff from the City, SFCTA, MTC, and Caltrain. Members of the Integrated Program Management Team (IPMT) reviewed and concurred with the scope.

Although the RFP contemplated a full scope of GEC services through construction of the project, because the TJPA had not yet determined the construction contract delivery method and schedule, the TJPA elected to authorize only a portion of the GEC scope under the base contract. In particular, the base contract included only the GEC scope anticipated to be required to update and complete preliminary engineering in anticipation of a broad range of project delivery

methods. The \$25M budget under the base contract was the expected budget required to deliver only that limited portion of the GEC services. The TJPA expressly contemplated that it would later authorize the remainder of the GEC scope described in the RFP and an associated increase in the maximum budget.

Current Status

In November 2020, as a result of the competitive procurement and based on the recommendation of the selection committee, which included representatives from TJPA, Caltrain, SFCTA, and MTC, the TJPA awarded the base Agreement to Parsons. As explained above, the TJPA elected to award only the first portion of the GEC scope and associated budget (expressly recognizing future amendments to scope and budget were anticipated as work progressed). The Baseline Schedule anticipated a certain period to complete this portion of the work.

In April 2021, however, with the support of the Executive Steering Committee (ESC), the TJPA Board approved an acceleration modification to its Comprehensive Work Plan for the project. Consistent with the accelerated schedule, Parsons completed the first portion of the GEC scope in 11 months, saving 7 months on the Baseline Schedule.

Subsequently, the TJPA required continued GEC efforts to support the Accelerated Work Plan, including technical studies, 60% design work for the advance works utility package, and commencement of the progressive design build documents for the main civil package. All of these services were contemplated in the 2020 RFP for GEC services. As such, in December 2022, consistent with the TJPA Board's Procurement Policy, the TJPA Executive Director authorized Amendment No. 01 to the Parsons Agreement for \$2,500,000, increasing the not to exceed contract amount to \$27,500,000.

Proposed Amendment No. 02

Consistent with the procurement strategy for the GEC services, Amendment No. 02 would authorize additional scope and increase the maximum authorized compensation under the Agreement by \$20,000,000, for a total not to exceed contract amount of \$47,500,000. Staff anticipates that this authorization would allow Parsons to complete the following scope in order to advance the project per the Board adopted accelerated workplan and scheduled entry into the Engineering Phase of the Federal Transit Administration, Capital Investment Grants process:

- a. Continuation of the preparation of design and bid documents for an advance utility relocation construction package;
- b. Performance of design work and preparation of engineering drawings for an advance 4th and King Site Work construction package;
- c. Preparation of design and bid documents for an advance building demolition construction package;
- d. Continuation of providing technical support to the TJPA in preparation of progressive design build documents for the main civil construction package;
- e. Performance of design work and preparation of engineering drawings for the core systems and trackwork construction package to a 60% design level;
- f. Continuation of providing technical support to the TJPA in interfacing with and reviewing documents produced by Caltrain, the California High-Speed Rail Authority, and the Federal Railroad Administration;

- g. Support for the TJPA in preparation of New Starts Program documentation.

As with all TJPA contracts, the scope of services to be performed under Amendment No. 02 will be authorized by the TJPA through a written Notice to Proceed (NTP) as specific tasks and durations are defined. Staff expects the scope of this Amendment No. 02 to be complete by the end of the base contract term in November 2024.

Parsons is exceeding the 21.45 percent Small Business Enterprise (SBE) utilization goal in the Agreement with a to-date contribution from SBEs of nearly 25 percent. The Parsons team includes the following SBE subcontractors on their team: 360 Total Concept, Bello & Associates – Structural Engineers, Chaudhary & Associates Inc., CHS Consulting Group, Cornerstone Transportation Consulting, Inc., Robin Chiang & Company, Structus Inc., Wilson Ihrig and Associates, BESS Testlab Inc., and YEI Engineers, Inc.

Approach to Completing Remaining GEC Scope

Proposed Amendment No. 02 includes contract authority for some, but not all, of the GEC services that will be required to advance the project. As such, staff plans to return to the TJPA Board in the future with additional authority requests to advance the project and begin construction procurement after sufficient funding is secured to advance the project. The anticipated remaining scope is as follows:

- a. Project Procurement:
 - 1. Producing 90%, 100%, and issue for bid design and bid documents for a core systems and trackwork construction package
 - 2. Preparing 60%, 90%, 100%, and issue for bid design and bid documents for a station fit out construction package
- b. Engineering Support: Engineering Support during construction for all construction packages
- c. Project Management Tasks: Associated project management, coordination, and other as-requested support for the Project Procurement and Engineering support (during construction) phases.

As described above, all of the anticipated future scope was contemplated in the 2020 RFP for GEC services and, thus, is eligible for award to Parsons. Staff will, however, continue to assess whether it would be advantageous to the TJPA to issue a new procurement for any portion of the future anticipated scope.

RECOMMENDATION:

Staff recommends that the Board authorize the Executive Director to execute Amendment No. 02 to the Agreement with Parsons, authorizing additional scope and increasing the contract amount by \$20,000,000 for a total not-to-exceed contract amount of \$47,500,000.

ENCLOSURES:

- 1. Resolution
- 2. Amendment No. 02

TRANSBAY JOINT POWERS AUTHORITY

BOARD OF DIRECTORS

Resolution No. _____

WHEREAS, On July 2, 2020, the TJPA issue Request for Proposals (RFP) No. 20-06 for a consultant specializing in the design, engineering, and procurement of heavy civil underground rail transit projects to provide General Engineering Consultant (GEC) services for the Downtown Rail Extension project, know also known as “The Portal”; and

WHEREAS, The RFP explained the selected consultant's scope of work would include four primary categories, extending through project construction: 1. Project Management: management, coordination, quality control and assurance, risk management, pursuit of approvals, evaluating financing alternatives, code compliance and design criteria, and similar tasks; 2. Project Development: updating the existing design to 30 percent preliminary engineering. This work will generally involve preparing studies, reports, plans and specifications, amendment documentation, and a cost estimate, and providing procurement support; 3. Project Procurement: producing the contract documents for the updated design of all project elements, including advance construction packages; and 4. Engineering Support: construction administration and other support services for the project construction contracts; and

WHEREAS, On September 4, 2022, the TJPA received one proposal from Parsons Transportation Group, Inc. (Parsons), in response to the RFP; and

WHEREAS, A selection committee consisting of representatives of the TJPA, MTC, Caltrain, and SFCTA found the proposal submitted by the Parsons-led team to be responsive to the RFP and the proposer to be qualified to perform the scope of services; and

WHEREAS, Although the RFP contemplated a full scope of GEC services through construction of the project, because the TJPA had not yet determined the construction contract delivery method and schedule, the TJPA elected to authorize only a portion of the GEC scope and associated budget, while expressly contemplating that it would later amend the contract to authorize the remainder of the GEC scope and make a corresponding increase in the maximum budget; and

WHEREAS, On November 12, 2020, the TJPA Board of Directors adopted Resolution No. 20-035, which authorized the Executive Director to execute an agreement in an amount not to exceed \$20,000,000 for a portion of the GEC services by Parsons (Agreement) for a term not to exceed four (4) years and provides that the TJPA shall have the right to extend the Agreement for two (2) additional consecutive three (3) year terms; and

WHEREAS, In April 2021, the TJPA Board approved an acceleration modification to its Comprehensive Work Plan for the project, and, based on that accelerated schedule, Parsons completed portions of the scope of services under the Agreement more quickly than originally contemplated; and

WHEREAS, On December 31, 2022, consistent with the TJPA Board's Procurement Policy and the Accelerated Work Plan, the TJPA Executive Director authorized Amendment No. 01 to the Agreement, continuing professional engineering design services for the project, as contemplated in the RFP for GEC services, at an additional cost not to exceed \$2,500,000 (\$27,500,000 aggregate); and

WHEREAS, Consistent with the procurement strategy for the GEC services and the Accelerated Work Plan, staff recommend an Amendment No. 02 to the Agreement, continuing professional engineering design services for the project, as contemplated in the RFP for GEC services, at an additional cost not to exceed \$20,000,000 (\$47,500,000 aggregate); now, therefore, be it

RESOLVED, That the TJPA Board of Directors authorizes the Executive Director to execute Amendment No. 02 to the Agreement in the form presented, authorizing additional scope and increasing the contract amount by \$20,000,000 for a total not-to-exceed contract amount of \$47,500,000.

I hereby certify that the foregoing resolution was adopted by the Transbay Joint Powers Authority Board of Directors at its meeting of February 9, 2023.

Secretary, Transbay Joint Powers Authority

Amendment No. 02
Agreement No. 20-06-GEC-000 between
the Transbay Joint Powers Authority and
Parsons Transportation Group, Inc.

This AMENDMENT No. 02 to AGREEMENT 20-06-GEC-000 is entered into as of February _____, 2023, by and between the TRANSBAY JOINT POWERS AUTHORITY (“TJPA”) and PARSONS TRANSPORTATION GROUP, INC. (the “Contractor”).

By this Amendment No. 02, the TJPA and the Contractor hereby modify Agreement No. 20-06-GEC-000, dated November 12, 2020, as previously amended (“Agreement”), only to the extent expressly provided in this Amendment No. 02. All other terms and conditions of the Agreement shall remain in full force and effect.

Recitals

- A. On November 12, 2020, the TJPA Board of Directors adopted Resolution No. 20-035, which authorized the Executive Director to execute an agreement in an amount not to exceed \$25,000,000 for General Engineering Consultant services by Contractor for a term not to exceed four (4) years from the Effective Date of the Agreement (November 20, 2020), and provides that the TJPA shall have the right to extend the Agreement for two (2) additional consecutive three (3) year terms.
- B. On December 31, 2022, the TJPA and the Contractor entered Amendment No. 01 to the Agreement, increasing the compensation under the Agreement by \$2,500,000 for a total not-to-exceed contract amount of \$27,500,000 to support advancement of Phase 2 design and engineering efforts.
- C. Consistent with the TJPA’s procurement strategy and the scope of services contemplated in the competitive procurement leading to the selection of Contractor, the TJPA and the Contractor wish to further amend the Agreement to make certain modifications to the scope of services to support advancement of Phase 2 design and engineering efforts, and increase the compensation under the Agreement by \$20,000,000 for a total not-to-exceed contract amount of \$47,500,000.
- D. The TJPA and Contractor intend that this Amendment No. 02 to the Agreement complies with the regulations of the United States Department of Transportation (“USDOT”).

Now, THEREFORE, the parties agree as follows:

Terms and Conditions

Compensation

Article 5.a. of the Agreement, Compensation / Generally, is hereby modified to increase the maximum compensation for work to be performed, as provided below:

All work under this Agreement shall be compensated on in accordance with Appendix B, subject to any maximum price set forth in a particular Task Order. In no event shall the total compensation under this Agreement exceed ***Forty Seven Million Five Hundred Thousand Dollars (\$47,500,000)*** ~~Twenty Seven Million Five Hundred Thousand Dollars (\$27,500,000)~~ ("Contract Limit"). The Contract Limit includes (a) the allowable actual cost of services ("Contract Costs"), plus (b) the Contractor's fee ("Contract Fee"). The Contract Costs shall not exceed ***Forty-Three Million One Hundred Eighty Two Thousand Dollars (\$43,182,000)*** ~~Twenty Four Million Nine Hundred Seventy Thousand Dollars (\$24,970,000)~~ and the Contract Fee shall not exceed ***Four Million Three Hundred Eighteen Thousand Dollars (\$4,318,000)*** ~~Two Million Five Hundred Thirty Thousand Dollars (\$2,530,000)~~.

Scope of Services

Appendix A of the Agreement, Scope of Services, is hereby modified to add the scope attached hereto.

All other provisions of the Agreement shall remain in full force and effect.

The individuals executing this Amendment No. 02 to the Agreement represent and warrant that they have the legal capacity and authority to do so on behalf of their respective legal entities.

IN WITNESS WHEREOF, the parties hereto have executed this contract Amendment No. 02 on the day first mentioned above.

**TRANSBAY JOINT POWERS
AUTHORITY**

**CONTRACTOR
PARSONS**

Adam Van de Water
Executive Director

Transbay Joint Powers Authority
Board of Directors
Resolution No. _____
Adopted: _____
Attest:

Secretary, TJPA Board

Rick M. Meade
Senior Vice President, Western US
Regional Manager, Aviation, Rail and
Transit

Parsons Transportation Group, Inc.
100 West Walnut Street, Suite T-963
Pasadena, CA 91124
Phone: (949) 672-8738
Tax Identification No.: 36-0982270

Approved as to Form by:

TJPA Legal Counsel

[Attached Appendix A - Amended]

APPENDIX A - AMENDED
Phase 2 General Engineering Consultant
Scope of Work

The scope described in this Appendix A is as follows: project management tasks; project development tasks; project procurement tasks; and, engineering support tasks. The Contract Limit set forth under Article 5 Compensation under the Original Contract reflects budget for SFCTA allocation scope (approved at the San Francisco County Transportation Authority Board meeting on April 28, 2020) and project management tasks 1-5, and project development tasks. The revised Contract Limit under Amendment 2 covers the continuation of project management tasks 1-5 and the project procurement tasks as described herein. Project management task 6 “As-Requested Services” ~~project procurement tasks~~ and engineering support tasks are not currently budgeted under the Contract Limit.

Project Management Tasks

1. Project Management
 - a. Submission of monthly status report with each monthly invoice, indicating work performed on each of the approved tasks for which payment is being requested.
 - b. Project meetings (e.g., TJPA staff, TJPA Board meetings, or TJPA consultants).
 - c. Scheduling.
 - d. Quality Control and Quality Assurance.
 - e. Risk Management.
 - f. Submission of native files for all project design work including, but not limited to, CADD, Excel, 3D Revit, MicroStation, and other modeling program files.
 - g. Other Direct Costs as requested and/or agreed by the TJPA.
2. Coordination and Applicable Approvals.
 - a. Train Operators: Coordination including participation and materials, preparation for meetings on topics including, but not limited to: criteria; programmatic requirements; operator design review and as applicable, approval; analysis of rolling stock impacts to the TJPA infrastructure; ~~operations modeling; ridership forecasting;~~ and right-of-way considerations for the Fourth and King Station/Yard (owned by Prologis and operated by Caltrain).
 - b. Not Used.
 - c. State and Federal Agencies: Coordination with Federal Transit Administration (FTA), Federal Railroad Administration (FRA), Bay Area Rapid Transit (BART), California Public Utilities Commission (CPUC), State Fire Marshal, other utilities, and as-needed SEIS/EIR addenda coordination.
 - d. City and County of San Francisco (City): Coordination with City agencies for design, permitting, and construction needs.
 - e. Adjacent Projects: Coordination with adjacent projects such as Central Subway, the Pennsylvania Avenue Extension, Railyards Development, Link 21 New Transbay Rail Crossing, and others.
 - f. Property Owners/Developments: Coordination with adjacent property developments and, if necessary, the City Department of Building Inspection to protect DTX from adverse impacts along its alignment; as-needed coordination with property owners. ROW record survey of property drawings are excluded.

- g. Services made necessary by the default of the Contractor, or by major defects or deficiencies in the work of the Contractor, or otherwise caused by the Contractor or others during construction, excluding the GEC's consultants or employees.
- h. Preparation of design and construction documents for procurement or manufacture or creation of artwork that is to be incorporated in the Project as an integral building or site element, beyond those services necessary to coordinate the design and structure of the building or site to accommodate the installation of such artwork.
- i. Services, consultants, or scope of work not stipulated as included in this Agreement, and not customarily provided as part of an GEC's scope of services, which include but are not limited to:
 - Wind, shadow study, and environmental consultants, including noise and vibration consultants
 - Archaeological or historic resources consultants
 - Hazardous materials consultants
- j. Other specialized consultants requested by the TJPA that were not included on the GEC's team upon execution of this agreement.
- k. Structural engineering: time history analysis and/or design of shoring, excavation, bracing, and underpinning systems for properties not included in the base scope of work.
- l. Services to incorporate substantial structural changes or other like work to integrate the artwork administered by the TJPA after the completion and acceptance of the design development phase drawings.
- m. Services in connection with change in scope of the Project directed by the TJPA, but not including changes proposed and recommended by the GEC.
- n. InSAR satellite-based adjacent structure monitoring, as directed by the TJPA.
- o. Station studies.

Project Development – All Project Development scope was completed under the Original Contract; all milestones met. No further scope in this Project Development section is covered by this Contract Amendment 2.

Develop and update 30% level design (preliminary engineering) plans and prepare outline technical specifications commensurate with the design.

30% Preliminary Engineering (PE) Design Work

As noted in the RFP, various elements of the Phase 2 design were previously at a PE design level. All project elements listed below must be brought to the 30% design level by updating existing plans/reports or by preparation of new plans/reports if existing are not available, unless an element is specifically noted as conceptual level design below. In addition to specific scope listed below, technical memoranda, plans, and estimate should be provided for all elements in draft form for review and comment and in final form.

- 1. Civil
 - a. Street work including coordination with City agencies.
 - b. Traffic including a Traffic Management Plan and coordination with transit operators.
 - c. Utilities
 - Protection planning for all utilities anticipated to remain in place and relocation plans for permanent and temporary relocations.
 - Support advance utility relocation package scoping.
 - Coordinate potholing process and perform utility potholing to confirm locations/depths/sizes of utilities.

2. Train Operations
 - a. Update alignment for the Tunnel Options Study concept in new train operations model train for use in review.
 - b. Review analysis performed by Caltrain, CHSRA, and others that feed into the DTX line.
 - c. Assure that the design adequately meets the operators' operational needs.
3. Track
 - a. Perform a review of the throat trackwork geometry to reassess and minimize impacts on affected properties – deliverables shall include trackwork sketches for coordination and approval from stakeholders and discussion with stakeholders.
 - b. Prepare track layouts in coordination with potential eastward extension of tracks from the transit center to support a future loop or East Bay extension. Prepare an associated memorandum for the study.
 - b. Revise precise 1" = 40' PE track plan and profiles to include adjustments at Fourth and Townsend Street Station and lower profile for the Tunnel Options Study concept, as well as precise alignments for tracks connecting Tunnel Stub to future Pennsylvania Avenue Extension tunnel.
 - c. Verify special trackwork elements and identification of long-lead specialty items.
 - d. Revise at-grade interlocking design concept along Seventh Street, including MOW tracks, turnback tracks, and provisions for at-grade crossings in coordination with Caltrain and concepts developed by their consultants as part of Railyard modification studies. Work to include staging plans for tie-in of DTX tracks with operating Caltrain tracks in the at-grade section.
 - e. Develop staging plans for cut-over of tunnel stub to a future rail connecting Pennsylvania Avenue Extension tunnel.
 - f. Prepare precise alignment control tables.
4. Structural
 - a. Train box extension including design of reduced-size train box extension and evaluation of shoring system designed in coordination with potential eastward extension of tracks to support a future loop or East Bay extension, and soil-structure interaction with selected adjacent buildings for adjacent structure impact analyses.
 - b. Transit center including coordination with FLS, systems, and architectural design efforts.
 - c. Throat cut-and-cover including details for the transit center interface, headwall to tunnel, and coordination with Tunnel Options Study concepts or as directed by the TJPA.
 - d. Townsend Street headwall to tunnel including coordination with Tunnel Options Study concepts or as directed by the TJPA.
 - e. Fourth and Townsend Street Station including review of opportunity to add a third platform face as recommended by the SFCTA 2 vs. 3 track peer review (See Reference Documents). Identify options for connections to a potential future underground station within the current railyard.
 - f. U-wall/tunnel stub including permanent structure and shoring to incorporate new track alignment (not to preclude future undergrounding of surface yard tracks by others) and tunnel stub transition; perform impact analysis for u-wall/tunnel stub adjacent to the I-280 Sixth Street off-ramp foundations, including APS/PSR for I-280.
 - g. Underpinning/right-of-way structural engineering including preparation of underpinning concepts in coordination with the geotechnical engineers for affected private properties along the alignment and assessing potential impacts of adjacent property developments.
 - h. Ventilation/emergency exit structures including coordination with architectural design and FLS.

- i. Building settlement assessment for buildings not previously studied by Arup in 2010. Plaxis analysis is excluded.
5. Architectural
 - a. Transit center update of previous Phase 2 Conceptual Design Plans, including (conceptual level only) space planning for FLS and systems elements and coordination with the structural engineering design.
 - b. Fourth and Townsend Street Station including review of opportunity to add a third platform face as recommended by the SFCTA 2 vs. 3 track peer review (see Reference Documents) and coordination with Caltrain with goal of making the station complex function in an integrated manner.
 - c. Ventilation/emergency exit structures at Second and Harrison streets and Third and Townsend streets including coordination with structural design and FLS.
 - d. Signage including signage designs for the Fourth and Townsend Street Station and the transit center. Signage for each of these stations will be independent of the other.
 6. Fire-Life Safety (FLS)
 - a. Ventilation/emergency exit structures including coordination with architectural and structural design.
 - b. Perform CFD (computational fluid dynamic) station modeling and SES (subway environment simulation) modeling for all project elements and provide associated reports for the Tunnel Options Study concepts or as directed by the TJPA, including tunnel exiting technical memorandum.
 - c. Perform pedestrian flow/exit analysis at the transit center and at the Fourth and Townsend Street Station.
 - d. All design work must account for tunnel being an electrified environment.
 7. Geotechnical
 - a. Underpinning/right-of-way geotechnical engineering including preparation of underpinning concepts in coordination with the structural engineers for affected private properties along the alignment and assessing potential impacts of adjacent property developments.
 - b. Field investigations including at least three borings in the vicinity of the tunnel stub and needed additional field work (including at least four borings) and lab testing to support the Tunnel Options Study tunnel design.
 - c. Reapply permitting, signages, and re-start investigation program for additional tunnel stub explorations that were approved in 2018.
 - d. Quarterly monitoring of the groundwater in the existing (where accessible) and new wells.
 - e. Update Geotechnical Data Report to include the new explorations and lab testing.
 - f. Update Geotechnical Interpretive Reports to include updated parameters for the soil and rock units based on additional data and needs.
 - g. Preparation of Geotechnical Baseline Report.
 8. Tunnel
 - a. Replace and extend with TBM+SEM method proposed in Tunnel Options Study including mining under 235 Second Street (and associated underpinning, as necessary) and mining under Howard Street or as directed by the TJPA.
 - b. Design adits and temporary shafts for ground improvement, as needed.

- c. Continue technical support of the TJPA coordination with adjacent properties related to the staging locations by discipline lead.
 - d. Design interface with, and protection of, Central Subway at-grade Muni light-rail tracks at Fourth Street and provide coordination with SFMTA.
 - e. Update the zone of influence based on Tunnel Options Study or as directed by the TJPA. Perform building settlement analysis for the updated zone of influence (Plaxis analysis excluded).
 - f. Prepare adjacent structure impact analyses due to tunneling including APS/PSR for I-80.
9. Systems
- a. Tunnel electrical and lighting.
 - b. Station electrical, mechanical and plumbing for the Fourth and Townsend Street Station and the transit center.
 - c. Ventilation structure electrical and lighting.
 - c. Overhead catenary systems including coordination and approval from train operators as basis of design.
 - d. Signals including approval from coordination with train operators as basis of design.
 - e. Communications including approval from coordination with train operators as basis of design.
 - f. Fire protection.
10. Intercity Bus Facility
- a. Prepare conceptual level design memoranda and plans including code analysis, programming document, street work, utilities, traffic, structural and architectural design, transit center interface, MEP, and FLS to support the cost estimate.
 - b. Prepare a summary conceptual level report and consolidated plans summarizing all design efforts including applicable technical memoranda and report in appendixes.
11. BART/Muni Pedestrian Connector
- a. Prepare conceptual level design memoranda and plans including code analysis, programming document, geotechnical (with field work for at least two borings), street work, utilities, traffic, structural and architectural design, transit center interface, MEP, and FLS to support the cost estimate.
 - b. Prepare a summary conceptual level report and consolidated plans summarizing all design efforts including applicable technical memoranda and report in appendixes.
12. Preliminary (and Conceptual, where noted) Engineering Report and Plans
- a. Prepare a summary report summarizing all design efforts including applicable technical memoranda and report in appendixes.
 - b. Prepare a consolidated set of PE plans.
13. Cost Estimate and Construction Schedule. Prepare a bottom-up risk-adjusted cost estimate based on the preliminary (and conceptual, where noted) engineering, as well as a construction schedule.

Project Procurement

Develop and finalize contract document packages; these may involve various procurement methods depending on the design segment/package: private-public-partnership variations; mixed contractor, CM at-risk, design-build, and design-bid-build. The TJPA Board has selected a project delivery method

for the advance works by design-bid-build and the main civil package by progressive design build. The scope herein has been expanded from what was included in the original agreement. Station fit-out design at the Salesforce Transit Center and the Fourth and Townsend Street Station is excluded from this Contract Amendment 2, and will be covered under a Future Contract Amendment.

1. Prepare advance package design drawings, specifications, and bid documents. Advance packages may include Fourth and King Site Work, utility relocation, and building demolition/site clearing.

a. Fourth and King Site Work

Completion of Final 30%, 60%, 90%, and 100% design packages are covered under this Contract Amendment 2. Draft 30% design drawings were covered under the Original Contract.

- All plans will be prepared using the TJPA CAD Standards and Epoch 2010.
- Disciplines include:
 - Track
 - Systems – Overhead Catenary System (OCS)
 - Systems – Signals
 - Systems – Communications
 - Systems – Traction Power
 - Utilities within the Fourth and King Site
- Final Basis of Design Report for the Fourth and King Site Work Scope
- Construction Cost Estimate for the Fourth and King Site Work
- Technical specifications for 60%, 90%, and 100% design packages.

b. Utility Relocations

Completion of 90%, and 100% design packages. 60% design package was covered under the Original Contract.

c. Building Demolition and Site Clearing

Completion of 30%, 60%, 90%, and 100% design packages.

2. Develop other drawings and documents, as required, based on the project delivery method, such as instrumentation, specifications, technical requirements, a Geotechnical Baseline Report.

a. Main Civil Package

Work will include providing technical support services to the TJPA in developing and advertisement of the Main Civil progressive design build package.

- Assist in determining what technical information is to be provided to the bidders as Contract Documents and as Reference Documents.
- Package the 30% preliminary engineering documents relevant to the Main Civil Package in the agreed upon format for inclusion in the Contract and Reference Documents.
- Provide technical input on the Design and Construction General Requirements and Standards and Specifications sections of the Technical Provisions.
- Develop a Geotechnical Baseline Report.

b. Core Systems and Trackwork Package

60% design drawings and specifications for the core systems and trackwork package. 90%, 100%, and Issued for Bid design documents will be covered under a Future Contract Amendment.

c. Additional Assessments

Assessment of structures adjacent to the train box extension.

3. Participate in and assist the TJPA with pre-bid conference(s).
4. Prepare responses to bidders' questions, interpret Construction Documents, evaluate requests for substitutions and prepare addenda for approved substitutions and clarifications, and assist the TJPA as required in responding to bidders' questions.
5. Provide the TJPA with originals of all addenda to be issued.
6. Assist the TJPA with review and evaluation of bids submitted, and recommendation for award of construction contract.
7. Perform necessary redesign services as may be required.
8. Upon award of a construction contract, consolidate a set of construction documents with all addenda, accepted or rejected alternates, incorporated into appropriate specification sections or drawing sheets; from this set, provide the TJPA with a conformed "for construction" drawing set and Project Manual including specifications.

Engineering Support – To be covered under a Future Contract Amendment.

The GEC shall demonstrate the capability to provide Engineering Support services during construction, comprising Construction Administration, for the Phase 2 construction contract(s). Engineering support services shall be provided under a separate, future task order as determined by the TJPA. Engineering support services will vary depending upon contract delivery methods, and may include but not be limited to the following:

1. Review and comment on Contractors baseline schedule and progress schedules.
2. Maintain and update checklists of all special inspection and testing, equipment startups, submittals, warranties, guarantees, maintenance and operation manuals, extra stock, and all other close-out documents; determine the acceptability of all items during the course of construction and provide a final status report of all items by the end of construction.
3. Review requests for information (RFIs), submittals, mock-ups, substitutions, and change requests properly prepared by and received from the Contractor within the time specified in the Contract Documents and make appropriate recommendations with supporting documentation and data to the TJPA.
4. Prepare, reproduce, and distribute supplementary drawings and specifications in response to RFIs, or as otherwise required to clarify the design intent of the Construction Documents.
5. Prepare drawings, specifications, and other documents that may be necessary for the Construction Manager to prepare change orders and construction change directives.

6. Make all revisions and changes to the Contract Documents and prepare additional appropriate documents as directed by the TJPA to correct design errors, conflicts, or omissions.
7. Make periodic visits to the project site as appropriate to the stage of construction to (a) become generally familiar with and to keep the TJPA informed about the progress and quality of the portion of the work completed; (b) to endeavor to guard the TJPA against defects and deficiencies in the work; and, (c) to determine in general if the work is in accordance with the Contract Documents.
8. Attend project meetings throughout the construction phase as requested by the TJPA, the Project Manager, or Construction Manager.
9. In coordination with the Construction Manager, review and advise on claims, disputes, and other matters in question between Contractor and the TJPA relating to the interpretation of the Contract Documents or proposed changes to the same.
10. Review a baseline schedule of values prepared by the Contractor in coordination with the Construction Manager.
11. In coordination with the Construction Manager, review the Contractor's applications for payment and recommend to the TJPA certification of the amounts due the Contractor.
12. Advise the TJPA to reject work that the GEC believes in good faith does not conform to the Contract Documents.
13. Review and comment on proposed procedures and results of testing and special inspection procedures that are required by the Contract Documents.
14. In coordination with the Construction Manager, verify the final punch list, recommend changes, participate in site visits to determine and track the status of the acceptability of all punch-list items, participate in the final review of the Project and advise the TJPA as to the approval of work performed by the Contractor.
15. Assist the TJPA in arranging for commissioning, start-up and testing; submit a statement to the TJPA as to the proper functioning of all items of equipment prior to the release of final payment to the Contractor.
16. Conduct observations and review completed work to determine the date or dates of substantial completion and the date of final completion.
17. With the Construction Manager, coordinate with all artists in the installation of artwork, either by the artists, contractors, or separate installers that are to be incorporated in the Project as an integral building or site element.
18. Review record drawings showing changes and relations in the Work made during construction based on marked-up prints, drawings, and other data.
19. During the warranty period, assist the TJPA's maintenance and operation personnel in conducting warranty inspections following final completion.