



Memorandum

Date: October 17, 2017
To: Transportation Authority Board
From: Joe Castiglione – Deputy Director for Technology, Data and Analysis
Subject: 11/14/17 Board Meeting: Award Three-Year Professional Services Contracts, with an Option to Extend for Two Additional One-Year Periods, to WSP USA Inc. and Resource Systems Group, Inc. in a Combined Amount Not to Exceed \$400,000 for On-Call Modeling Services

<p>RECOMMENDATION <input type="checkbox"/> Information <input checked="" type="checkbox"/> Action</p> <ul style="list-style-type: none"> • Award three-year professional services contracts, with an option to extend for two additional one-year periods, to WSP USA Inc. (WSP) and Resource Systems Group, Inc. (RSG) in a combined amount not to exceed \$400,000 for on-call modeling services • Authorize the Executive Director to negotiate contract payment terms and non-material terms and conditions <p>SUMMARY</p> <p>The Transportation Authority relies on on-call consultants to support the Technology, Data, and Analysis Division with various services related to travel modeling and analysis. On-call modeling services include model development, model maintenance, model application, data collection, and other related activities. This action would award contracts to two highly qualified and deeply experienced teams to support these needs.</p>	<ul style="list-style-type: none"> <input type="checkbox"/> Fund Allocation <input type="checkbox"/> Fund Programming <input type="checkbox"/> Policy/Legislation <input type="checkbox"/> Plan/Study <input type="checkbox"/> Capital Project Oversight/Delivery <input type="checkbox"/> Budget/Finance <input checked="" type="checkbox"/> Contract/Agreement <input type="checkbox"/> Other: <hr/>
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DISCUSSION

Background.

The Transportation Authority seeks on-call transportation modeling services to support the Transportation Authority’s Fiscal Year (FY) 2017/18 and future year activities, including assistance with travel demand model development, dynamic traffic assignment modeling, project-level modeling assistance, data collection, traffic operations analysis and data warehousing and visualization in support of the Congestion Management Program, Connect SF, the San Francisco Transportation Plan update, the Freeway Corridor Management Study, Travel Demand Management strategy evaluation, Transportation Network Company research and numerous other local and regional studies. The complete scope of services is included as Attachment 1.

The Transportation Authority’s current on-call modeling services contract, with a team led by WSP (formerly Parsons Brinckerhoff, Inc.), has served the Transportation Authority well over the past five years and is approaching the end of its contract term.

Transportation Authority Models.

The Transportation Authority maintains and applies a travel demand forecasting model known as the San Francisco Chained Activity Modeling Process (SF-CHAMP). SF-CHAMP incorporates a disaggregate approach to forecasting travel demand. This activity-based model is more sensitive than traditional four-step models to a broader array of conditions that influence travelers' choices. SF-CHAMP v5.2, the current version of SF-CHAMP, includes geographic coverage of the entire nine-county San Francisco Bay Area, provides detailed sensitivity to pricing effects, includes support for toll/non-toll choice, has more detail in time-of-day decision-making, and has both cordon- and area-based toll operations capabilities. Recent advances to SF-CHAMP include updates to input assumptions, functional additions, and operational improvements.

The next generation of SF-CHAMP, currently under development, will replace the current choice model core with an implementation of the DaySim activity-based travel simulator. The transition to DaySim will occur during the period of performance for this on-call services contract. The future DaySim-based model update will add more spatial, temporal, activity purpose, and land use detail and will introduce new capabilities to represent important conditions such as transit station parking lot capacity constraints and overall parking availability by type (on-street/off-street, paid/free) transit pass availability, and more. This significant model upgrade will further enhance the SF-CHAMP's role as a valuable tool supporting project analysis at the Transportation Authority and across partner agencies.

Other Transportation Authority models include dynamic traffic assignment (DTA) and dynamic transit assignment models. The Transportation Authority developed these models to give planners a more fine-grained view of transportation system performance, as well as a better understanding of why and how drivers route themselves within San Francisco and how transit riders negotiate a complex a transit system.

Procurement Process.

The Transportation Authority and the Treasure Island Mobility Management Agency (TIMMA) issued a joint Request for Qualifications (RFQ) for on-call modeling services on September 5, 2017. We held a pre-response conference on September 11, 2017, which provided opportunities for small businesses and larger firms to meet and form partnerships. 8 firms attended the conference.

We took steps to encourage participation from small and disadvantaged business enterprises, including advertising in five local newspapers: the San Francisco Examiner, the San Francisco Bay View, Nichi Bei, the Small Business Exchange, and the Western Edition. We also distributed the RFQ, sign-in sheets for the pre-response conference, and periodic updates on the RFQ to certified small, disadvantaged and local businesses, Bay Area and cultural Chambers of Commerce, the Small Business Councils, as well as the Travel Model Improvement Program.

By the due date of October 4, 2017, we received three Statements of Qualifications (SOQs) in response to the RFQ. Interviews were not conducted nor deemed necessary due to the quality of the SOQs and the familiarity of staff with previous work performed by the majority of firms who submitted SOQs. A selection panel comprised of San Francisco Municipal Transportation Agency and Transportation Authority staff evaluated the SOQs based on qualifications and other criteria identified in the RFQ. Based on the competitive process, defined in the evaluation criteria of the RFQ document, the selection panel recommends awarding contracts to the two highest-ranked firms: WSP and RSG. The selection panel recommends that the Transportation Authority and TIMMA both

Agenda Item 4

award contracts to the same two firms, as the agencies' share modeling staff resources. Awarding contracts to the same on-call modeling consultant teams will enhance staff efficiency in issuing task orders and supporting project needs. The contract award for TIMMA's portion of the contract will be considered by the TIMMA Committee at its October 24, 2017 meeting.

Both WSP and RSG have unique skills, technical expertise, and project experience in relevant areas. Both firms have provided modeling services to the Transportation Authority in the past, have strong track records of providing modeling services on time and on budget, and have established teams with specialized knowledge and abilities.

Given the wide range of desired proficiencies and experience, the amount and complexity of the Transportation Authority's work program, and occasional conflicts of interest or availability that arise for specific efforts, there is a need for broad and deep access to transportation modeling skills in the on-call modeling services contract. We propose to contract with two consultant teams with whom the Transportation Authority may call upon on a task order basis. Such an arrangement has been used in the past for the Transportation Authority's previous on-call modeling services contracts, which has proved beneficial to the Transportation Authority's Technology, Data and Analysis Division's work program.

Consultants selected for a contract will remain eligible for consideration for task order negotiation on an as-needed basis for the initial three-year term plus two optional one-year extensions. While the Transportation Authority intends to engage pre-qualified firms based on capabilities, experience and availability, no selected team is guaranteed a task order.

We expect to receive federal financing assistance to fund a portion of this contract, and will adhere to federal procurement regulations. For this contract, we established a Disadvantaged Business Enterprise (DBE) goal of 5%, accepting certifications by the California Unified Certification Program. SOQs from both teams meet the DBE goal. The WSP team includes 12.5% DBE participation from two subconsultants: Asian Subcontinent-owned W&S Solutions, LLC and Women-owned Transportation Analytics, in addition to two other subconsultants: INRO Consultants, Inc. and the University of Kentucky. The RSG team includes 10% DBE participation from one subconsultant: Asian-Subcontinent-owned TJKM, in addition to two other subconsultants: INRO and Bowman Research and Consulting.

FINANCIAL IMPACT

The scope of work described in the RFQ is anticipated in the Transportation Authority's adopted Fiscal Year 2017/18 work program and budget through relevant projects and studies, including the San Francisco Transportation Plan. Budget for these activities will be funded by a combination of federal Surface Transportation Planning grants, federal and/or state grants from Caltrans and the Metropolitan Transportation Commission, local agency contributions and Prop K sales tax funds. The first year's activities are included in the Transportation Authority's adopted Fiscal Year 2017/18 budget, and sufficient funds will be included in future fiscal year budgets to cover the cost of these contracts.

CAC POSITION

The CAC will consider this item at its October 25, 2017 meeting.

Agenda Item 4

SUPPLEMENTAL MATERIALS

Attachment 1 – Scope of Services

Attachment 1 – Transportation Authority Scope of Services

The Transportation Authority seek consultant teams with expertise in multimodal activity-based modeling, dynamic traffic/transit assignment, land use modeling, and data collection, analysis, visualization and warehousing in complex urban settings. It is the intent of the Transportation Authority to pre-qualify multiple consultant firms and/or teams of firms in the major tasks described below that will collectively provide the best overall service packages, inclusive of fee considerations, on an as-needed basis for modeling projects through the issuance of Task Orders. The Transportation Authority will separately contract with the selected teams for a three-year term, with an option to extend, which may be exercised at the discretion of the Transportation Authority, for two additional one-year periods (up to a total of five years). Consultant firms will be pre-qualified to perform services for the Transportation Authority. The Transportation Authority has budgeted \$400,000 for these contracts for the first three-year term, with the value of subsequent one-year extensions to be determined by future Transportation Authority budgets.

Travel Model Technical Assistance Required: As noted above, it is the intent of the Transportation Authority to contract with one or more modeling consultant teams, with whom the Transportation Authority shall select prospective consultants on a Task Order basis for modeling development and application projects. The establishment of contracts with one or more consultant teams will enable the Transportation Authority to enlist the services of a broad range of modeling specialists on an on-call, as-needed basis. As needs arise, the Transportation Authority will share outline scopes of work with lead firms to obtain more detailed team task order proposals (scopes, schedules/availability, personnel, budgets). The Transportation Authority will assign tasks on these criteria as well as conflicts of interest, if any. No selected team is guaranteed a Task Order under this contract.

A list of six general areas of expertise sought in prospective teams is provided below, lettered A through F. The Transportation Authority will favorably consider teams that have capabilities in all six areas of expertise, but specialized teams may also submit responses for one or more areas of expertise that match the team's capabilities. Teams must declare which of these areas of expertise they are qualified to support.

A. Activity-Based Travel Model (“ABM”) Development

- Developing and managing travel model source code using git/github version control
- Update individual subcomponents of SF-CHAMP to provide enhanced analytic capabilities
- Enhance local-area validation for specific corridors as project studies arise; for example, improve the peninsula roadway validation in support of San Francisco's Freeway Corridor Management Study
- Support estimation and calibration of DaySim subcomponents within SF-CHAMP
- Evaluate the latest technologies in activity-based travel models around the globe, and prioritize next steps for continuing the incremental advancement of SF-CHAMP capabilities based on the needs of planners in San Francisco
- Evaluate areas for improving computational efficiency, legibility, and maintainability
- Develop comprehensive SF-CHAMP model documentation
- Further develop the Transportation Authority's Quality Assurance/Quality Control (QA/QC) process for network coding
- Economic, land use, and demographic forecasting to support ABM

Attachment 1 – Transportation Authority Scope of Services

B. Dynamic Traffic Assignment (“DTA”) and/or Dynamic Transit Assignment

- Update the Transportation Authority’s DTA model and expand the network regionally
- Update regional activity-based model and DTA demand and supply integration
- Validate and apply the DTA model for various projects
- Support continuing development of fast-trips dynamic transit assignment model

C. Model Applications

- Provide modeling support for various upcoming ABM and/or DTA model applications
- Develop, code, run, and provide insight on modeling scenarios
- Update Network Wrangler project files based on recently adopted Plan Bay Area 2040 and a forthcoming refinement of MTC’s zone system and network (as part of Travel Model Two)

D. Data Collection and Analysis

- Traffic data collection and surveying
- Collection and analysis of passively collected and/or location-based data

E. Traffic Operations Analysis

- Evaluate roadway operations
- Conduct traffic microsimulation analysis
- Analysis and forecasting of toll roads, managed lanes, transportation pricing, and travel demand management policies
- Advise on transportation facility design regarding operational performance and geometric or technological constraints

F. Data Warehouse and Visualization

- Data warehouse system development
- Data warehouse maintenance
- Graphical representation, mapping, and visualization
- Web-based data presentation and interactive tools
- Develop data delivery methods (i.e. open application programming interfaces (APIs)) for public data per open data and Gov 2.0 ideals

The above-mentioned areas of expertise and example task types are representative of needs in the coming three years – additional undetermined task types are anticipated to be needed and not all task types listed above will necessarily be produced under this contract in the next three years.