



Informal Request for Proposal
(IRFP 16/17-04)
for
Data Warehouse and Data Visualization Services

The San Francisco County Transportation Authority (Transportation Authority) manages an extensive set of transportation-related datasets, including on-going transportation system performance monitoring, detailed representations of transit, bicycle, pedestrian and roadway networks, transit, bicycle and traffic counts, socioeconomic data, and travel model inputs and forecasts. Presently these are maintained in a variety of different file formats and locations. The Transportation Authority is seeking consultant services to design and implement a data warehouse to support on-going acquisition, storage, querying/reporting, and visualization of both spatially-referenced and non-spatially-referenced data. In addition, the Transportation Authority is seeking assistance in designing and implementing procedures for populating this data warehouse, prioritizing dynamic transit assignment model and congestion monitoring data. In order to make the data in the warehouse accessible to Transportation Authority staff as well as to external parties, assistance in the design and implementation of data reporting and visualization capabilities is also sought.

Proposed Project

The objectives of the proposed project are to:

- Design and implement data warehouse to support on-going acquisition, storage, querying/reporting, and visualization of both spatially-referenced and non-spatially-referenced data
- Design and implement procedures for populating data warehouse, prioritizing dynamic transit assignment model and congestion monitoring data
- Design and implement data reporting and visualization capabilities

Consultant Tasks

The Consultant scope of work will include the following tasks:

Task 1. Review Data

Consultant will review the data to be included in the initial version of the data warehouse. These data include observed transit AVL and APC data, dynamic transit assignment model outputs, congestion monitoring data, and observed traffic count data. The Consultant will work with Transportation Authority staff to assess the original data formats, potential schema(s) for the warehouse as well as for each data source and type, and assess the implications of continuous longitudinal updating and expansion of the data warehouse. This assessment should include consideration of additional data sources such as activity-based model inputs and outputs, transportation network data, and land use and socioeconomic data that may ultimately be incorporated into the data warehouse. The assessment should also consider current Transportation Authority data processes and workflow.

Deliverable: Memo assessing data sources, proposing data processes and workflow, and documenting potential warehouse data schema(s).

Task 2. Design Data Warehouse

Consultant will propose a data warehouse structure and implementation platform that can accommodate both near-term and long-term data acquisition, archival, retrieval, and reporting/summarization of warehouse data, as well as support visualization/analysis capabilities. This design will be informed by a review of the practices of other comparable agencies that have implemented data warehouse solutions. The proposed structure will reflect the broad range of data sources, types and sizes anticipated to be included in the warehouse, and will specifically address incorporating dynamic transit assignment model outputs, observed transit AVL and APC data, congestion monitoring data, and observed traffic count data. The data warehouse design will consider runtime performance issues associated with large datasets. The proposed platform will use, to the greatest extent possible, open-source technologies, and will support or integrate with Consultant-identified data reporting and visualization tools. The reporting and visualization tools will support use by both internal and external users. Consultant will also identify and advise on local versus hosted solutions.

Deliverable: Memo documenting data warehouse design and implementation platform and technologies.

Task 3. Develop Data Acquisition and Maintenance Protocols and Procedures

Consultant will work with Transportation Authority staff to develop a set of data acquisition and maintenance protocols and procedures for incorporating dynamic transit assignment model outputs, observed transit AVL and APC data, congestion monitoring data, and observed traffic count data. These protocols and procedures will address issues such as the extent of pre-processing of data, data warehouse and data change management, frequency of data updates, and archiving. When appropriate, procedures will be maintained using the Transportation Authority's GitHub site.

Deliverable: Memo documenting data acquisition and maintenance protocols and procedures for initial warehouse datasets, and associated code.

Task 4. Implement Data Warehouse

Consultant will work with Transportation Authority staff to install and configure all core technologies required for data warehouse implementation, reporting and visualization. Consultant will support Transportation Authority staff in applying the data acquisition and maintenance protocols to import dynamic transit assignment model and congestion monitoring data. Consultant will work with Transportation Authority staff to devise and implement a set of tests of data warehouse acquisition, querying and visualization capabilities. At minimum, the implementation will incorporate transit assignment model and congestion monitoring data, and provide means for both internal and external users to view, query, and report data.

Deliverable: Data warehouse and visualization technologies and procedures installed on Transportation Authority-specified server.

Task 5. Documentation

Consultant will work with Transportation Authority staff to document the data warehouse structure, implementation, and protocols and procedures on the Transportation Authority's internal wiki and GitHub site as necessary.

Deliverable: Documentation of warehouse structure, implementation, and protocols and procedures on the Transportation Authority's internal wiki and/or GitHub site

Budget

The Transportation Authority has allocated \$75,000 for all tasks. The Transportation Authority may select to implement all or some of the tasks listed above so the cost proposal should clearly identify the scope, schedule and cost for each task separately as individual elements independent of each other to allow for the contract to include or exclude each task.

Schedule

All tasks are to be completed by June 30, 2017.

Proposal

If Consultant is interested and able to complete the work described above, please submit an electronic proposal that incorporates the scope of work, schedule, and budget by **Thursday, December 29, 2016 at 5:00 p.m.** to info@sfcta.org. Proposals should be limited to 5 pages, excluding cover letter, table of contents, résumés, and certifications for Disadvantaged Business Enterprise (DBE). Proposals should also include the following:

1. Description of the technical approach to the delivery of the services described above. This should include the Consultant's approach to the following items along with descriptions of previous related work completed:
 - a. Data warehouse architecture

- b. Data extraction, cleaning, and transformation
 - c. Integrating and storing a variety of transportation systems data
 - d. Backup and archiving data
 - e. End user (internal and external) interfaces for querying/reporting and visualization of both spatial and non-spatial data
2. The proposing Consultant's services are federally funded, which necessitate compliance with additional requirements. Special attention is directed to Exhibit 10-I, Notice to Proposers DBE Information. The proposing Consultant shall complete and submit the following forms with the proposal to be considered responsive. These forms and instructions are provided for the proposer in this IRFP. The required exhibits will not count towards the 5-page limitation.
- Local Agency Proposer DBE Commitment (Consultant Contracts); (Exhibit 10-O1). **The Transportation Authority's current contract DBE Goal is 5%.**
 - DBE Information - Good Faith Effort (Exhibit 15-H) – Required only if DBE goal is not achieved. It is recommended that proposer prepare and submit a GFE irrespective of meeting the DBE goal.

Upon award and through completion of the project, the successful proposing Consultant will be required to follow applicable federal-aid requirements and shall complete and submit with the agreement the following forms at the time of award:

- Local Agency Proposer DBE Information (Consultant Contracts) (Exhibit 10-O2)
 - Disclosure of Lobbying Activities (Exhibit 10-Q)
 - Any other relevant forms required during the project.
3. Three (3) references (other than the Transportation Authority), including project name, contact name, email address and telephone number and value of contract.
4. A cost proposal table listing labor, direct and indirect costs and hours by name of person or classification proposed for the work shown above, broken down by task. Identify your expected staff time, subcontractor's involvement and level of commitment in the project. Your cost proposal must encompass all expenses associated with the project, including your time, materials, equipment and/or services provided by others, and any other incidental costs.
5. Résumés of all technical personnel to be assigned to work within the scope of services as outlined above (résumés will not count toward the page limit).

The Transportation Authority reserves the right to modify and/or suspend any and all aspects of this procurement, to obtain further information from any firm or person responding to this procurement, to waive any informality or irregularity as to form or content of this procurement or any response thereto, to be the sole judge of the merits of the proposals received, and to reject any or all proposals. Upon receipt at the Transportation Authority's offices, all proposals submitted in response to this procurement will become the property of the Transportation Authority.

You are welcome to submit written questions to request clarification about any aspect of this procurement via email to info@sfcta.org by **Tuesday, December 13, 2016 at 5:00 p.m.**

Attachments (3):

1. Exhibit 10-I – Notice to Proposers DBE Information
2. Exhibit 10-O1 – Consultant Proposal DBE Commitment
3. Exhibit 15-H – DBE Information – Good Faith Efforts

EXHIBIT 10-I NOTICE TO Proposers DBE INFORMATION

The Agency has established a DBE goal for this Contract of 5 %

OR

The Agency has not established a goal for this Contract. However, respondents are encouraged to obtain DBE participation for this contract.

1. TERMS AS USED IN THIS DOCUMENT

- The term “Disadvantaged Business Enterprise” or “DBE” means a for-profit small business concern owned and controlled by a socially and economically disadvantaged person(s) as defined in Title 49, Code of Federal Regulations (CFR), Part 26.5.
- The term “Agreement” also means “Contract.”
- Agency also means the local entity entering into this contract with the Contractor or Consultant.
- The term “Small Business” or “SB” is as defined in 49 CFR 26.65.

2. AUTHORITY AND RESPONSIBILITY

- A. DBEs and other small businesses are strongly encouraged to participate in the performance of Contracts financed in whole or in part with federal funds (See 49 CFR 26, “Participation by Disadvantaged Business Enterprises in Department of Transportation Financial Assistance Programs”). The Consultant must ensure that DBEs and other small businesses have the opportunity to participate in the performance of the work that is the subject of this solicitation and should take all necessary and reasonable steps for this assurance. The respondent must not discriminate on the basis of race, color, national origin, or sex in the award and performance of subcontracts.
- B. Respondents are encouraged to use services offered by financial institutions owned and controlled by DBEs.

3. SUBMISSION OF DBE INFORMATION

If there is a DBE goal on the contract, Exhibit 10-O1 *Consultant Proposal DBE Commitment* must be included in the Request for Qualifications. In order for a respondent to be considered responsible and responsive, the respondent must make good faith efforts to meet the goal established for the contract. If the goal is not met, the respondent must document adequate good faith efforts. All DBE participation will be counted towards the contract goal; therefore, all DBE participation shall be collected and reported.

4. DBE PARTICIPATION GENERAL INFORMATION

It is the respondent’s responsibility to be fully informed regarding the requirements of 49 CFR, Part 26, and the Department’s DBE program developed pursuant to the regulations. Particular attention is directed to the following:

- A. A DBE must be a small business firm defined pursuant to 13 CFR 121 and be certified through the California Unified Certification Program (CUCP).
- B. A certified DBE may participate as a prime consultant, subconsultant, joint venture partner, as a vendor of material or supplies, or as a trucking company.

- C. A DBE respondent not proposing as a joint venture with a non-DBE, will be required to document one or a combination of the following:
 - 1. The respondent is a DBE and will meet the goal by performing work with its own forces.
 - 2. The respondent will meet the goal through work performed by DBE subconsultants, suppliers or trucking companies.
 - 3. The respondent, prior to proposing, made adequate good faith efforts to meet the goal.
- D. A DBE joint venture partner must be responsible for specific contract items of work or clearly defined portions thereof. Responsibility means actually performing, managing, and supervising the work with its own forces. The DBE joint venture partner must share in the capital contribution, control, management, risks and profits of the joint venture commensurate with its ownership interest.
- E. A DBE must perform a commercially useful function pursuant to 49 CFR 26.55, that is, a DBE firm must be responsible for the execution of a distinct element of the work and must carry out its responsibility by actually performing, managing and supervising the work.
- F. The respondent shall list only one subconsultant for each portion of work as defined in their SOQ and all DBE subconsultants should be listed in the bid/cost proposal list of subconsultants.
- G. A prime consultant who is a certified DBE is eligible to claim all of the work in the Contract toward the DBE participation except that portion of the work to be performed by non-DBE subconsultants.

5. RESOURCES

- A. The CUCP database includes the certified DBEs from all certifying agencies participating in the CUCP. If you believe a firm is certified that cannot be located on the database, please contact the Caltrans Office of Certification toll free number 1-866-810-6346 for assistance.
- B. Access the CUCP database from the Department of Transportation, Office of Business and Economic Opportunity Web site at: <http://www.dot.ca.gov/hq/bep/>.
 - 1. Click on the link in the left menu titled Disadvantaged Business Enterprise;
 - 2. Click on Search for a DBE Firm link;
 - 3. Click on Access to the DBE Query Form located on the first line in the center of the page.

Searches can be performed by one or more criteria. Follow instructions on the screen.

6. MATERIALS OR SUPPLIES PURCHASED FROM DBES COUNT TOWARDS THE DBE GOAL UNDER THE FOLLOWING CONDITIONS:

- A. If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies. A DBE manufacturer is a firm that operates or maintains a factory, or establishment that produces on the premises the materials, supplies, articles, or equipment required under the Contract and of the general character described by the specifications.
- B. If the materials or supplies purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies. A DBE regular dealer is a firm that owns, operates or maintains a store, warehouse, or other establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the Contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. To be a DBE regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question. A person may be a DBE regular dealer in such bulk

items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business provided in this section.

- C. If the person both owns and operates distribution equipment for the products, any supplementing of regular dealers' own distribution equipment shall be, by a long-term lease agreement and not an ad hoc or Agreement-by-Agreement basis. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not DBE regular dealers within the meaning of this section.
- D. Materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, will be limited to the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on the job site, provided the fees are reasonable and not excessive as compared with fees charged for similar services.

EXHIBIT 10-O1 CONSULTANT PROPOSAL DBE COMMITMENT

1. Local Agency: San Francisco County Transportation Authority 2. Contract DBE Goal: 5%
 3. Project Description: Travel Model Research MTC & SFCTA
 4. Project Location: San Francisco Bay Area
 5. Consultant's Name: _____ 6. Prime Certified DBE: ☐

7. Description of Work, Service, or Materials Supplied	8. DBE Certification Number	9. DBE Contact Information	10. DBE %
Local Agency to Complete this Section			
7. Local Agency Contract Number: _____ 8. Federal-Aid Project Number: <u>ATF5512L-6084(184)</u> 9. Proposed Contract Execution Date: _____			11. TOTAL CLAIMED DBE PARTICIPATION %
Local Agency certifies that all DBE certifications are valid and information on this form is complete and accurate. 20. _____ 21. _____ Local Agency Representative's Signature Date 22. _____ 23. _____ Local Agency Representative's Name Phone 24. _____ Local Agency Representative's Title			IMPORTANT: Identify all DBE firms being claimed for credit, regardless of tier. Written confirmation of each listed DBE is required. 12. _____ 13. _____ Preparer's Signature Date 14. _____ 15. _____ Preparer's Name Phone 16. _____ Preparer's Title

DISTRIBUTION: Original – Included with consultant's SOQ to local agency.

INSTRUCTIONS – CONSULTANT PROPOSAL DBE COMMITMENT**CONSULTANT SECTION**

- 1. Local Agency** - Enter the name of the local or regional agency that is funding the contract.
- 2. Contract DBE Goal** - Enter the contract DBE goal percentage as it appears on the project advertisement.
- 3. Project Description** - Enter the project description as it appears on the project advertisement (Bridge Rehab, Seismic Rehab, Overlay, Widening, etc.).
- 4. Project Location** - Enter the project location as it appears on the project advertisement.
- 5. Consultant's Name** - Enter the consultant's firm name.
- 6. Prime Certified DBE** - Check box if prime contractor is a certified DBE.
- 7. Description of Work, Services, or Materials Supplied** - Enter description of work, services, or materials to be provided. Indicate all work to be performed by DBEs including work performed by the prime consultant's own forces, if the prime is a DBE. If 100% of the item is not to be performed or furnished by the DBE, describe the exact portion to be performed or furnished by the DBE. See LAPM Chapter 9 to determine how to count the participation of DBE firms.
- 8. DBE Certification Number** - Enter the DBE's Certification Identification Number. All DBEs must be certified on the date bids are opened.
- 9. DBE Contact Information** - Enter the name, address, and phone number of all DBE subcontracted consultants. Also, enter the prime consultant's name and phone number, if the prime is a DBE.
- 10. DBE %** - Percent participation of work to be performed or service provided by a DBE. Include the prime consultant if the prime is a DBE. See LAPM Chapter 9 for how to count full/partial participation.
- 11. Total Claimed DBE Participation %** - Enter the total DBE participation claimed. If the total % claimed is less than item "Contract DBE Goal," an adequately documented Good Faith Effort (GFE) is required (see Exhibit 15-H DBE Information - Good Faith Efforts of the LAPM).
- 12. Preparer's Signature** - The person completing the DBE commitment form on behalf of the consultant's firm must sign their name.
- 13. Date** - Enter the date the DBE commitment form is signed by the consultant's preparer.
- 14. Preparer's Name** - Enter the name of the person preparing and signing the consultant's DBE commitment form.
- 15. Phone** - Enter the area code and phone number of the person signing the consultant's DBE commitment form.
- 16. Preparer's Title** - Enter the position/title of the person signing the consultant's DBE commitment form.

LOCAL AGENCY SECTION

- 17. Local Agency Contract Number** - Enter the Local Agency contract number or identifier.
- 18. Federal-Aid Project Number** - Enter the Federal-Aid Project Number.
- 19. Proposed Contract Execution Date** - Enter the proposed contract execution date.
- 20. Local Agency Representative's Signature** - The person completing this section of the form for the Local Agency must sign their name to certify that the information in this and the Consultant Section of this form is complete and accurate.
- 21. Date** - Enter the date the DBE commitment form is signed by the Local Agency Representative.
- 22. Local Agency Representative's Name** - Enter the name of the Local Agency Representative certifying the consultant's DBE commitment form.
- 23. Phone** - Enter the area code and phone number of the person signing the consultant's DBE commitment form.
- 24. Local Agency Representative Title** - Enter the position/title of the Local Agency Representative certifying the consultant's DBE commitment form.

EXHIBIT 15-H DBE INFORMATION —GOOD FAITH EFFORTS**DBE INFORMATION - GOOD FAITH EFFORTS**Federal-aid Project No. ATF5512L-6084(184) Bid Opening Date December 29, 2016

The San Francisco County Transportation Authority established a Disadvantaged Business Enterprise (DBE) goal of 5% for this project. The information provided herein shows that a good faith effort was made.

Lowest, second lowest and third lowest bidders shall submit the following information to document adequate good faith efforts. Bidders should submit the following information even if the “Local Agency Bidder DBE Commitment” form indicates that the bidder has met the DBE goal. This will protect the bidder’s eligibility for award of the contract if the administering agency determines that the bidder failed to meet the goal for various reasons, e.g., a DBE firm was not certified at bid opening, or the bidder made a mathematical error.

Submittal of only the “Local Agency Bidder DBE Commitment” form may not provide sufficient documentation to demonstrate that adequate good faith efforts were made.

The following items are listed in the Section entitled “Submission of DBE Commitment” of the Special Provisions:

- A. The names and dates of each publication in which a request for DBE participation for this project was placed by the bidder (please attach copies of advertisements or proofs of publication):

<u>Publications</u>	<u>Dates of Advertisement</u>

- B. The names and dates of written notices sent to certified DBEs soliciting bids for this project and the dates and methods used for following up initial solicitations to determine with certainty whether the DBEs were interested (please attach copies of solicitations, telephone records, fax confirmations, etc.):

<u>Names of DBEs Solicited</u>	<u>Date of Initial Solicitation</u>	<u>Follow Up Methods and Dates</u>

- C. The items of work which the bidder made available to DBE firms including, where appropriate, any breaking down of the contract work items (including those items normally performed by the bidder with its own forces) into economically feasible units to facilitate DBE participation. It is the bidder's responsibility to demonstrate that sufficient work to facilitate DBE participation was made available to DBE firms.

Items of Work	Bidder Normally Performs Item (Y/N)	Breakdown of Items	Amount (\$)	Percentage Of Contract

- D. The names, addresses and phone numbers of rejected DBE firms, the reasons for the bidder's rejection of the DBEs, the firms selected for that work (please attach copies of quotes from the firms involved), and the price difference for each DBE if the selected firm is not a DBE:

Names, addresses and phone numbers of rejected DBEs and the reasons for the bidder's rejection of the DBEs:

Names, addresses and phone numbers of firms selected for the work above:

- E. Efforts made to assist interested DBEs in obtaining bonding, lines of credit or insurance, and any technical assistance or information related to the plans, specifications and requirements for the work which was provided to DBEs:

- F. Efforts made to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services, excluding supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate:

- G. The names of agencies, organizations or groups contacted to provide assistance in contacting, recruiting and using DBE firms (please attach copies of requests to agencies and any responses received, i.e., lists, Internet page download, etc.):

Name of Agency/Organization	Method/Date of Contact	Results

- H. Any additional data to support a demonstration of good faith efforts (use additional sheets if necessary):

NOTE: USE ADDITIONAL SHEETS OF PAPER IF NECESSARY.