TAHOE REGIONAL PLANNING AGENCY

TRANSPORTATION

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Tahoe Travel Demand Model Update and Improvements
REQUEST FOR PROPOSALS
July 25th, 2018

OVERVIEW:

The Tahoe Regional Planning Agency (TRPA) is requesting proposals for the services of a qualified vender to provide Travel Demand Modelling expertise in accordance with the scope of services provided within this RFP. Services are requested as part of the upcoming minor update to the activity-based Tahoe Travel Demand Model. The total budget for this project is $75,000.

PURPOSE: The purpose of this RFP is to select a Consultant to review, assess, make improvements to, calibrate, and validate the Lake Tahoe Travel Demand Model.

TIMELINE:

Bids are requested by **5:00pm PST, Friday, August 17th, 2018** to Reid Haefer at rhaefer@trpa.org. Please place in the subject headline: DO NOT OPEN: TRANSCAD MODEL UPDATE BID. Late responses will NOT be considered and will be returned to the sender.

Proposal Questions must be submitted by **5:00pm PST on Friday, August 10th, 2018** to Reid Haefer via email. Answers will be posted to the TRPA website by **5:00pm PST on Tuesday, August 14th, 2018** at http://www.trpa.org/document/rfps/.

Interviews, if pursued, interviews will be held **August 22th-29th, 2018.** Interviews may be planned in person or via conference call. The proposal evaluation team will make this determination at the time of the interview process.

Consultant Selection will take place **the week of September 3rd, 2018.** Work is expected to begin in September 2018. Contract end date will be approximately May 31st, 2019. Selected consultant will be expected to sign the TRPA Consultant Services Agreement. Terms and Conditions of TRPA's standard contract can be viewed on-line at http://www.trpa.org/document/rfps/trpa-two-party-contract/.

TRPA reserves the right to contract separately with any subcontractor who submits as part of a consultant team, or to request that the successful bidder take on as a subcontractor a firm that applied either individually or as part of another bidding team. TRPA reserves the right to negotiate with bidders on all aspects of the proposed work or to reject all proposals and reissue the RFP or withdraw the RFP at any time without prior notice. TRPA reserves the right to award all, part, or none of the bid amount as part of the contract.

EVALUATION: Bids will be evaluated based on team qualifications, ability to meet survey timelines, proposed scope of work, proposed budget, references, and sample products. TRPA reserves the right to select a consultant based solely on the written proposals and not convene oral interviews. If oral interviews are needed, the qualified consulting firms will be invited to make a formal presentation to a selection committee (see above for more information). TRPA is not required to contract with a consultant, and may choose not to select any of the submitted consultants.

BUDGET:
Budget will be determined based on consultant proposals.

PROPOSAL REQUIREMENTS:
Interested firms should submit bids of no more than five (5) pages in length. In the bid, please include the following:

1. **Cover Letter / Qualifications:** List of project team and their billable rates, qualifications and skillsets of team members, and description of past similar project work.
2. **Project Approach and Proposed Scope of Work, Budget, and Timeline:** Outline your project approach by task and how it may differ from the proposed scope of work suggested as part of this request for proposals. Please include estimated amount of time, specific staff, and budget needed to complete each task and clearly define each deliverable, including time and budget needed to review and revise products based on feedback from TRPA staff. Make sure to include estimated travel budget. If using sub-consultants, clearly identify which firm and person will lead each task.
3. **Sample Work:** Two (2) samples of similar work (not included as part of your five-page minimum)
4. **References:** Two (2) references

PROJECT BACKGROUND
The Tahoe Regional Planning Agency (TRPA) is a bistate regional planning agency and metropolitan planning organization (MPO) located on the border of California and Nevada. Created through a Bi-State Compact between California and Nevada, TRPA leads the cooperative effort to preserve, restore, and enhance the Lake Tahoe Region, while improving local communities and visitors' interactions with its irreplaceable environment. As the Lake Tahoe Region's federally-designated metropolitan planning organization, TRPA plays a leading role in identifying and planning solutions for its transportation challenges.

http://www.tahoeopendata.org/datasets/trpa-boundary

As part of their Pathways 2007 project TRPA updated their travel-forecasting model. The previous model, a 3-step model developed in the 1980's, was originally developed in Tranplan and was converted to the TransCAD platform during the first phase of model work. While the model was successfully converted, it was not able to address many important policy issues because of the limitations of trip-based models. The current Lake Tahoe Resident and Visitor Model consists of an activity-based resident model and an activity-based visitor model. Because the number of resident households, employment locations, person activities, and the resident/visitor mix are potentially very different in the region

during the summer versus the winter, socio-economic data has been developed for the two seasons. Thus, the user may choose to model an average summer weekday or an average winter weekday, with yearly travel being the sum of the seasonal travel. The current model is used to assist TRPA in analyzing a variety of planning policies as well as accurately forecast VMT in the region. The last major model run occurred for the 2017 Regional Transportation Plan.

PRELIMINARY SCOPE OF WORK
The following tasks reflect the anticipated scope of work required for completion of the Model Update project. As part of your proposal, please add detail or make recommendations as to how this scope of work could be more cost effective, time efficient, or produce a stronger, more useful product. If subconsultants are going to be utilized, please clearly state staffing and which tasks they would perform.

Task 1   Model Review

Review the model and document its inputs, outputs, and architecture

Task 1

- 1.1 - Comprehensive review of TRPA model, including review of full model documentation and TransCAD files
- 1.2 - Detailed description of all model input data
- 1.3 - Detailed description of how to access and interpret all model output files. This shall include a description of each output file, including all model output reports, summaries, and GIS files
- 1.4 - Detailed description of the model code, including a description of each 'code' file and how each relates to the model architecture

Deliverables

- 1.5 - Draft memo – which will be reviewed by TRPA staff – and a final memo that documents all elements of Task 1 into single, comprehensible resource that staff and the public can use to better understand the basic characteristics of the TRPA model.

Deadline:

- October 31th, 2018

Task 2   Recommendations of Model Updates

Provide recommendations for near-term and long-term model updates based upon industry best practices to estimate VMT and other transportation performance measures such as safety, truck travel reliability, and peak hour of excessive delays. Recommendations could include other sources that can best articulate the complexity of transportation planning.

Task 2

- 2.1 - Recommendations of updates to model inputs, including recommended data sources, data collection methodology, and the associated costs of each update, which may include:
  - o Household Travel Survey Data
  - o External Workers Survey Data
  - o Visitor Travel Survey Data
  - o Employment Data
    - Number of Employees for retail, service, gaming, recreation, and other per TAZ
  - o Socioeconomic Data
    - Residential Occupancy Rate per TAZ
    - Total Occupied Units for low/medium/ high income per TAZ
    - Total Housing Units per TAZ
    - Average number of persons per Occupied Unit per TAZ
    - Total Population per TAZ
  - o Traffic Count Data
    - Bidirectional counts at all external stations
    - Link volumes
  - o Visitor Lodging data
    - Occupancy Rates broken down by Hotel/Model, Resort, Casino, Vacation Rental, Campground per TAZ
    - Total Number of Lodging Rooms broken down by Hotel/Model, Resort, Casino, Vacation Rental, Campground per TAZ
  - o School Enrollment data
    - Elementary, Middle School, High School, and College Enrollment Per TAZ
  - o Roadway Network
  - o Transit Network
- 2.2 - Recommendations of updates to model architecture, including the associated costs of each update, which may include:
  - o Update to Residential Sub-Model
  - o Update to Visitor Sub-Model
  - o Update to External Worker Sub-Model
  - o Update to Traffic Assignment

Deliverables:
- 2.3 - Draft memo – which will be reviewed by TRPA staff – and a final memo that documents all elements of Task 2 into single, comprehensible resource that staff can use in considering potential updates to the TRPA model

Deadline:
- December 31st, 2018

Task 3   *Model Update Implementation (discretionary task)*

Work with TRPA staff to implement updates to the model. The deliverables listed below in Task 3 are discretionary; once Task 2 is completed, TRPA staff will determine which of the below listed deliverables that the Consultant shall complete.

Task 3

- 3.1 - Work with TRPA staff to make changes to zonal and GIS input files,
  - Zonal and GIS input files include:
    - Household Travel Survey Data
    - External Workers Survey Data
    - Visitor Travel Survey Data
    - Employment Data
    - Socioeconomic Data
    - Traffic Count Data
    - Visitor Lodging Data
    - School Enrollment Data
    - Roadway Network
    - Transit Network
  - Document the assumptions, methods, findings, and products of the basic zonal input file changes.
  - A minimum of 3 hours to allow staff time to test concepts presented, in-person or via interactive, web-based meetings with graphics and voice communication abilities (i.e. Skype, GoToMeeting).
- 3.2 - Work with TRPA staff on model calibration and provide documentation of calibration process
  - Calibration may include adjustments to external worker model, residential model, visitor model
  - Document the assumptions, methods, findings, and products of the model calibration tasks.
  - A minimum of 6 hours to allow staff time to test concepts presented, in-person or via interactive, web-based meetings with graphics and voice communication abilities (i.e. Skype, GoToMeeting).
- 3.3 - Work with TRPA staff on model validation and provide documentation of validation process
  - Validate model traffic volumes against observed link volumes and volumes at basin entry/exit points
    - Static validation tests may include Volume-to-Count Ratio, Percent of Links within CalTrans Deviation Allowance, Correlation Coefficient, and Percent Root Mean Square Error (%RMSE)
  - Document the assumptions, methods, findings, and products of the model validation tasks.
  - A minimum of 6 hours to allow staff time to test concepts presented, in-person or via interactive, web-based meetings with graphics and voice communication abilities (i.e. Skype, GoToMeeting).

Deliverables:
- 3.4 - Draft memo – which will be reviewed by TRPA staff – and a final memo that documents all elements of Task 3 into single, comprehensible resource that staff and the public can use to better understand the model update process; which parts

of the model were updated; how to perform those updates in the future; any other issues or considerations about updating the model

Deadline:

- March 31st, 2019

Task 4   *Stakeholder Working Group Support*

Assist TRPA staff with supporting a model update stakeholder working group, which may include presenting model recommendations, sharing best practices, and answering technical questions.

Task 4

- 4.1 - Technical support for a TRPA model update stakeholder working group
    - A minimum of 3-two hour (6 hours total) meetings between November 2018 and April 2019 at the TRPA office in Stateline, Nevada to present and answer questions from stakeholders about the model update process

Deadline:

- May 31st, 2019

Task 5   *Regional Traffic Monitoring Assessment*

The Lake Tahoe Region experiences severe fluctuations in visitor traffic levels that impact the roadway system. TRPA is seeking an improved system to monitor traffic volumes to identify hotspots for congestions, determine regional auto use, and other metrics on a real-time basis. Other considerations include the need to identify patterns and the ability to forecast visitation traffic and efficiently deploy appropriate management strategies. This task is focused on providing recommendations for improving the region's traffic monitoring system, including recommendations for traffic data collection, technologies, and potential monitoring locations.

Task 5

- 5.1 - Recommendations for methods to collect better traffic data, which will enable TRPA to more accurately estimate regional transportation performance measures (eg VMT), which may include:
    - How to best collect real time traffic data that captures daily, monthly, and seasonal patterns?
    - What are the best technologies for modern traffic data collection (eg Miovision, Road Tubes, Radar, Laser, Inrix, Blyncsy)?
    - Which locations should we prioritize for additional data collection?

Deliverables:

- 5.2   - Draft memo – which will be reviewed by TRPA staff – and a final memo that documents the recommendations of Task 5 into an implementation plan for equipment investments and improved data collection and monitoring protocol.

Deadline:

- May 31st, 2019