



Subject: Big Data Pilot Project

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Prepared by: Shengyi Gao			Approved by: Matt Carpenter		
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- 1. Issue:** Should SACOG partner on pilot testing the use of big data for transportation planning?
- 2. Recommendation:** That the Transportation Committee recommend that the Board approve SACOG's entry into a partnership with the California Air Resources Board (CARB), and California Department of Transportation (Caltrans) for pilot testing a transportation planning application of big data, and authorize the chief executive officer to negotiate and sign necessary agreements to carry out the pilot effort.
- 3. Background:** "Big data" refers to extremely large data sets that may be analyzed to reveal patterns, trends, and associations, especially relating to human behavior and interactions. Of particular interest for transportation planning is big data such as cell signals, GPS and location data collected through smart phones and other electronic devices such as in-vehicle navigation systems. Several vendors have begun offering big data products and services targeted to transportation planning agencies. Although the offerings of each vendor vary significantly, the common elements are: estimates of volumes of person or vehicle trips from origin to destination, tabulated by time of day, day of week, etc.; the ability to query trip data for specific information (e.g., all trips using a particular roadway segment at a particular time); and options for mapping the data. Vendor offerings vary in how the confidentiality and privacy of the underlying raw data is protected, and the level of detail for mode of travel and trip purpose. The market for these big data products and services is evolving quickly, with changes occurring frequently in the type of data offered, user interfaces, pricing of data and services, etc.
- 4. Discussion/Analysis:** Over the last six months, SACOG organized a review of some of the available big-data-for-transportation offerings, in collaboration with several local and state agencies, and UC Davis. At the conclusion of this review, Caltrans, the California Air Resource Board, and UC Davis indicated a strong interest in pooling resources to pilot test an application of big data for transportation planning. This group of agencies foresees that big data will be a major tool in understanding and tracking transportation in our region; the question is when public agencies will elect to participate more actively in on-boarding of data and services. This group also believes that though the marketplace is evolving quickly,

the products and services currently available are developed enough to merit a serious pilot test.

In order to activate this partnership, a Memorandum of Agreement (MOA) will need to be signed by the participating agencies for purposes of the pilot project. The MOA will include the following components: 1) a statement of goals of the pilot test; 2) definition of roles of each participant in the pilot; and 3) the funding each partner is willing to commit. SACOG would serve as manager of the pilot.

The total cost for the pilot will be based on proposals from vendors. The goal is to acquire an up-to-two-year license providing full access to data and services from the selected vendor to all partners. Based on current discussions with the other partners, the funding commitments from each partner are: SACOG—up to \$200,000 (local funds); Caltrans—up to \$400,000 (federal and state funds); ARB—up to \$110,000 (state funds). UC Davis indicated strong interest but has not committed any funding to join the partnership at this time.

SACOG's funding commitment will come from funds awarded for the Household Travel Survey Project through the Regional/Local funding round by the SACOG Board of Directors in 2015 and from the SAFE Board of Directors in 2016. Staff has reserved \$200,000 of those funds for this Big Data Pilot Project. The big data acquired through the Pilot will augment the detailed, person- and household-level data collected through the Household Travel Survey, and provide a "universe" of travel activity data that will be useful for weighting and expanding the survey data, as well as for independently analyzing current travel patterns in the region.

To minimize the cost and meet the requirements of federally funded projects, SACOG will conduct a competitive procurement through a request for proposal (RFP) process to enter into a contract with the selected consultant.

- 5. Fiscal Impact/Grant Information:** The project is a proposed new project in SACOG's 2018 work plan. Existing SACOG funding from the budget for the household travel survey will be used towards this project.