

Proposed Transportation Work Program Project
Proposed by: Qing Xia/Mark Schlappi

1. Title: 2006 Freeway Level of Service (LOS) Study
2. Brief Description:

The purpose of the study is to update information on freeway traffic conditions and to evaluate freeway Level of Service (LOS) in the MAG urbanized area. The data will be collected through an aerial survey. Similar surveys were conducted in 1991, 1998, and 2001. The 2006 survey will be using the same methodology, except that survey coverage (length of the freeway) will expand to approximately 200 mile of freeway (170 miles of freeway was included in the 2001 survey). By repeating aerial photograph survey on a 3-5 year cycle, current freeway condition can be observed, long-term trend can be monitored, and the effect of the changes on the system can be evaluated. The data to be derived from the aerial survey include freeway traffic density/ LOS, ramp queues, ramp number of lanes, etc. These information will be used to help identify freeway bottlenecks, and to help prioritize the improvement projects.
3. How the project fits with MAG's mission:

One of the MAG's goal is to maintain an acceptable and reliable level of service on transportation and mobility systems by monitoring performance by mode and by facility type. The freeway LOS study will provide useful information about the status of the freeway system's operational performance. By identifying the length and intensity of congestion on the MAG freeway system, this study will help prioritize the improvement projects, and help calibrate the MAG transportation forecast model.
4. Resources Required:
 - a. Consultant: \$120,000
 - b. Staff: project management - \$10,000
 - c. Other:
 - d. Proposed Budget: \$130,000
 - e. Need for on-going funding or update: periodic update of the aerial photograph survey on a 3-5 year cycle.
5. Expected Outcome:

During aerial survey program, overlapping photographic coverage will be obtained on the designated freeways, repeating once an hour over a couple of morning and evening commuter periods. Data will be extracted from the aerial photographs such that by link and by time slice, average recurring daily traffic conditions could be measured and freeway traffic density/ LOS could be calculated. The severity and frequency of congestion as well as causes of the problems will be described. Queue populations at freeway on-ramps and off-ramps will be recorded. All the data collected will be available in a survey

database built in Microsoft Access. A report will be prepared documenting the traffic quality on each segment of the freeway. Two interactive CD products will also be prepared: one is Congestion Highlight slide show that presents the findings of the report. The other is a Peak Hour Photolog that contains a snapshot of the entire freeway system surveyed.

6. Benefit to MAG Member Agencies:

This project will provide useful information to the decision makers to understand severity and frequency and to monitor the long-term trend of freeway congestion and bottlenecks. The information will also help prioritize the improvement projects. Traffic level of congestion is one of the key considerations in phasing plan elements. Segments with greater congestion that are identified are considered for earlier implementation in the improvement plan. The information gained in this study will facilitate the performance audit required under house bill 2456.

7. Benefit to the Public:

This project will provide useful information to the public about the status of the freeway system's operational performance. The public will also benefit from the improvement projects implemented based on the information provided by this project.