

Validating the use of Commercial Speed Data for Alameda CTC LOS Monitoring

Review of 2012 data

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1. INTRODUCTION

The Congestion Management Program (CMP) legislation requires that Level of Service (LOS) on the roadway network be monitored periodically to ensure that the network is performing at or above the required minimum LOS. Alameda County Transportation Commission (CTC) has been periodically performing LOS Monitoring on their CMP roadway network, by collecting travel time and speed data biennially using Floating Car Runs methodology.

In view of the other sources of speed data that have become increasingly available, this project explores the option of using commercially available speed data, particularly INRIX data, for the CMP roadway LOS Monitoring. The primary goal is to compare and validate the previously reported 2012 LOS monitoring results with that of the results obtained by analyzing the commercial data for the same period.

1.1 SCOPE

This report is divided into seven sections. First, **Section 2 - Background** describes the Alameda County CMP roadway network and relevant information about the floating car and commercial speed data to provide the context for this report. **Sections 3 - Data Preparation** describes the preliminary data preparation work. **Section 4 – Methodology and Data Analytics** presents subsequent data analytics tasks involved in this project including the resulting commercial data for each CMP segment. **Section 5 – Data Validation Results and Analysis** provides a comparison between the floating car and commercial data using speed and travel time metrics for each CMP roadway category. **Section 6 – Conclusions and Recommendations** includes recommendations for future LOS Monitoring and other related efforts of Alameda CTC, based on the data analysis and comparison results. Supporting data and maps are included in the Appendix.

2. BACKGROUND

As a part of the current efforts, a comprehensive methodology was developed to process the commercial speed data and obtain the LOS. In this context, it is important to understand the background details of Alameda CTC's CMP network and its previous monitoring efforts using floating car methodology and the various terms associated with commercial speed data.

2.1 CMP NETWORK

The Alameda CTC CMP network was initially adopted in 1991 and it consists of all freeways, state routes, principal and major arterials. Since then, limited updates have been made to reflect the growth and changing traffic patterns. The CMP network used in the most recent 2012 monitoring study was used for the current analysis. Figure 1 illustrates the current CMP roadway network, designated by Alameda County for LOS monitoring. The current CMP network consists of a total of 322 miles of roadways (599 segments), which are categorized as follows:

- Tier 1: Freeways – 134 miles (150 CMP segments)
- Tier 1: Ramps – 23 Ramp Connections (23 CMP segments)
- Tier 1: Arterials – 98 miles (232 CMP segments)
- Tier 2: Arterials – 90 miles (194 CMP segments)

Each CMP roadway is divided into several segments (CMP segments) with homogenous characteristics for measuring and reporting speeds. Comparison has been made between floating car and commercial speed data for the CMP network at these level of CMP segments.

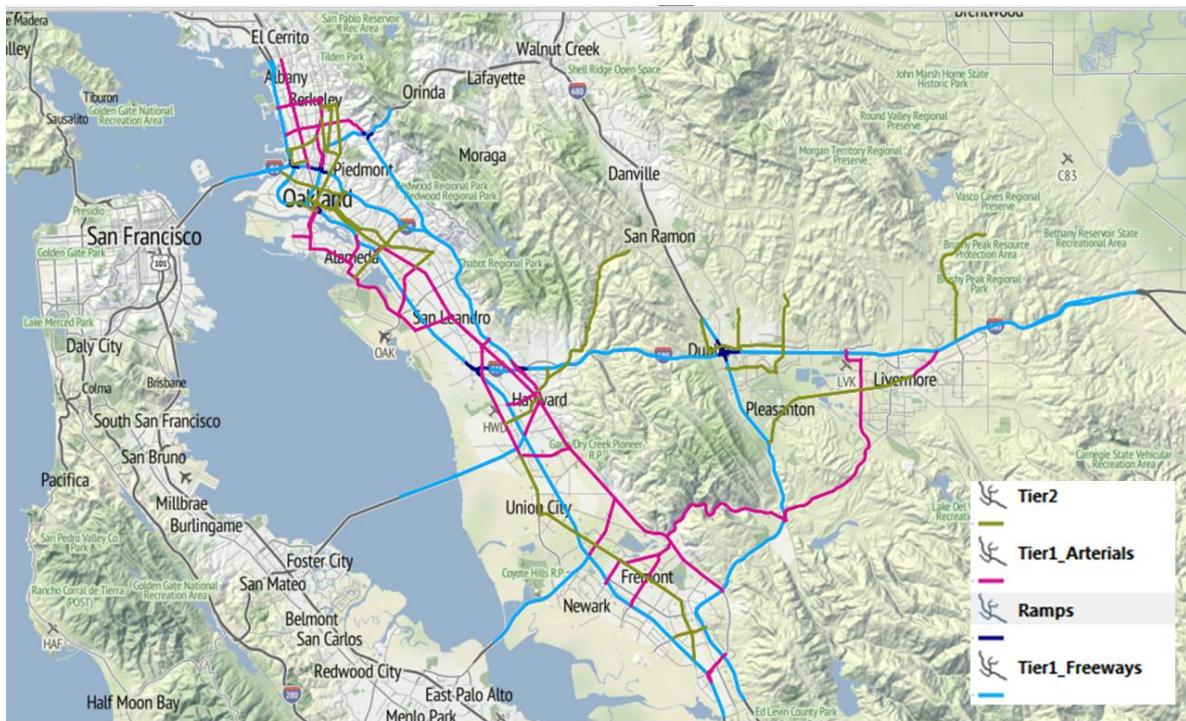


Figure 1: Alameda CTC CMP segments

2.2 FLOATING CAR SURVEY DATA

Floating car survey is a common technique of collecting travel time information on a roadway segment. Typically it utilizes a car, a driver and a Global Positioning System (GPS). The driver is instructed to ‘float’ in amongst other road users. The driver should overtake as many cars as overtake them. The GPS devices record coordinates at a designated time interval allowing for the computation of travel time. Floating car surveys are also called travel time surveys.

For all the previous LOS Monitoring, most recently in 2012, Alameda CTC collected travel time data from the field using floating car methodology, where speed, distance and travel time data were recorded along sections of the roadways during peak commute periods. Speeds were often computed using the gathered travel time data based on a limited number of observations.

2.3 COMMERCIAL SPEED DATA (INRIX)

With the increasing availability of traffic data from various automated sources (sensors and vehicle probes), the role of private sector has been emerging in providing commercial traffic data. This has tremendously helped to close the gaps in data available from traditional methods like floating car surveys and infrastructure sensors.

The commercial speed data used for this study was obtained from INRIX. It was sourced by Alameda CTC from INRIX, Inc. through an agreement with the Metropolitan Transportation Commission (MTC). INRIX is a private provider of speed data collected over a large geography for most roadways on a regional scale. INRIX “aggregates traffic from GPS-enabled vehicles, mobile devices, traditional road sensors and hundreds of other sources.”¹ Traffic data from these sources, which includes point speed data are collected and aggregated for every minute.

This traffic data is reported by INRIX using discrete roadway links that are termed as Traffic Message Channels (TMCs). Each Traffic Message Channel (TMC) link is associated with a unique ID represented by a nine-digit code, where each individual number in the TMC code describes a portion of the geography including country, direction of travel and roadway segment.

INRIX's data inputs have different polling rates, GPS precision and update intervals. The individual readings are packaged by INRIX in a variety of products including real-time and historical speeds applied to a TMC. A consortium standardizes which roadway segments are TMC encoded. This assists with the uniformity of traffic data delivery to many types of automated devices. The TMC codes have defined lengths and locations. They do not cover all roadways particularly as the roadways get smaller and less traveled. There may be regionally significant roads that are not part of the TMC encoded network. Where TMC codes do not exist, INRIX data will be missing.

INRIX includes several metrics that accompany the data for interpretation. The first metric is called a Score with assigns one of three levels (10, 20 or 30) to the data. The Score values mean the following:

- Score of 30: Data are exclusively generated from real-time sources.
- Score of 20: A mix of historical and real-time sources is used.
- Score of 10: Data are exclusively generated from historical data.

3. DATA PREPARATION

Sections 3 discusses the initial data preparation work performed for this project. It includes details on GIS shape file development and the monitoring periods used for analyzing the commercial data.

3.1 CMP NETWORK SHAPE FILE DEVELOPMENT

An extensive review of the CMP network was undertaken using the Geographic information system (GIS) shape files provided by Alameda CTC. The GIS files provided by Alameda CTC were developed for the production of high level LOS maps that were included in the report. However, for the current project and methodology adopted, it was important to ensure the start and end points of each CMP segment mapped in the GIS shape files was accurate and consistent with the segment “start” and “end” points as defined in the Alameda CTC LOS Monitoring reports. Consequently, significant effort was spent to verify and edit the shape files per the CMP segment descriptions in the 2012 LOS Monitoring report of Alameda CTC. New segments were created in the shape files, where applicable. Detailed information including the guidelines used to develop a more accurate CMP network shape file is described in Appendix A.

¹ <http://inrix.com/trafficinformation.asp>

The updated shape file resulted from this effort provides a more reliable shape file that can be used for this project as well as for future monitoring efforts. Since this shape file also included some segments with segment lengths or Start or End points varying from the ones used for the 2012 floating car survey, using these segments for validation of commercial speed data may not provide a similar or consistent comparison. Therefore, validation and related analysis were restricted to the CMP segments where the difference between the length of the updated shape file and reported length in 2012 LOS Monitoring Report was minimal (i.e. less than 0.1 miles). Table 1 shows summary statistics for how many segments were validated. Figure 2 shows a map highlighting the CMP segments validated. Further details can be found in Appendix F.

Table 1: Summary of validation rates

CMP Category	Number of Segments Included for Validation in both AM and PM	Total Number of CMP Segments in the CMP Network	Percentage of CMP Segments Validated
Tier 1 Freeways	78	150	52%
Tier 1 Ramps	20	23	87%
Tier 1 Arterials	196	232	84%
Tier 2 Arterials	146	194	75%

Note: As explained in the later sections of the report, validation was only completed on segments where adequate TMC coverage was available

3.2 COMMERCIAL SPEED DATA MONITORING TIMES

Consistent with the 2012 LOS Monitoring data collection period, commercial speed data was obtained for Alameda County (and adjoining roads) for the period starting on March 6, 2012 and ending on June 13, 2012. Similar to the previous monitoring efforts, the data for the current study was processed to include only Tuesdays, Wednesdays and Thursdays for the AM and PM peak periods. The AM peak period was defined from 7:00am to 9:00am, and the PM peak period was from 4:00pm to 6:00pm.

Furthermore, the following weeks were deemed to be influenced by holidays and were subsequently removed:

- Weeks impacted by spring break including the first two weeks of April: April 3rd to 5th and April 10th to 12th were removed; and
- Week containing Memorial Day holiday (May 28, 2012): May 29th to 31st were removed.

With these criteria, the resulting monitoring period comprised of a total of 35 days or 4,200 minutes of data per peak period. 4,200 minutes of data is equivalent to 120 minutes of data per peak period for each monitoring day.

Days impacted by construction, special events and days impacted by significant weather events were not excluded in this validation study. For the 2014 CMP, it is recommended that the commercial speed data for CMP segments impacted by these events (if significant) be excluded for the duration of the event.

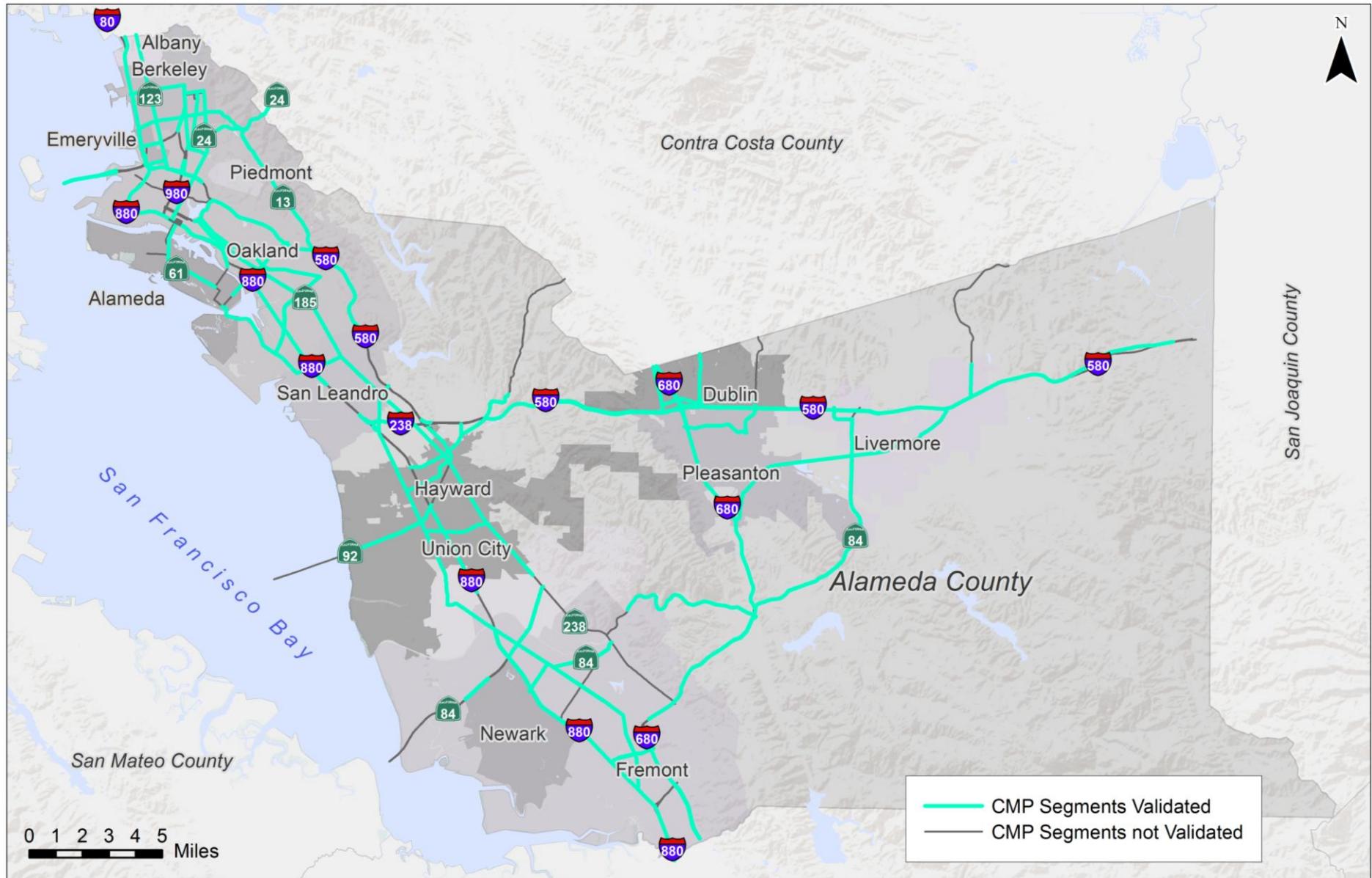


Figure 2: CMP Segments Validated with 2012 Commercial Speed Data

4. METHODOLOGY AND DATA ANALYTICS

The data processing, which ultimately converted the raw TMC link speeds into average peak period speeds on every CMP segment (and compared it with the 2012 LOS Monitoring results), consisted of the following five steps:

1. Map the INRIX TMC links to the CMP segments.
2. Filter the raw data to remove days and times outside the monitoring period and data points with lower data quality scores.
3. Spatially and temporally aggregate the data to produce average peak period speeds by CMP segment.
4. Assign Level of Service (LOS).
5. Compare with 2012 LOS monitoring data from floating car surveys.

Further explanation of each step is provided in the following sections including the resulting commercial data presented for all CMP segments at the end.

4.1 STEP 1: MAPPING TMC SEGMENTS ONTO CMP SEGMENTS

The commercial speed data is aggregated onto a link of roadway called a Traffic Message Channel (TMC) link. These TMC links are typically shorter than CMP segments and the boundaries may or may not align with the boundaries of the CMP. Thus, to obtain performance metrics for a CMP segment, it was necessary to create an index of TMC segments that belong within each CMP. Refer to the schematic example shown in Figure 2.

The example in Figure 3 shows a longer CMP segment, which is made up of two complete TMC links and a partial length of a third TMC link. The left end of the CMP segment aligns with the left end of the TMC link, however there is no alignment at the right end. Therefore, in this example only 65% of the length of the third TMC would be used in the mapping.

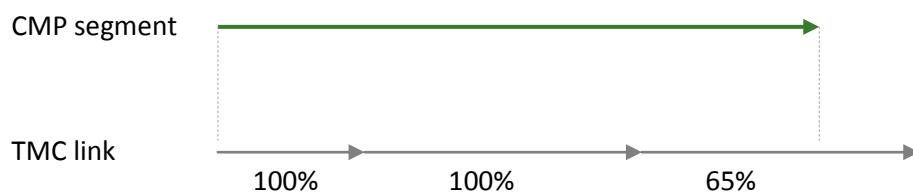


Figure 3: Schematic diagram of CMP to TMC mapping

Table 2 shows a sample of the mapping file produced for each CMP segment. The first half of the table provides information about the CMP segment including an ID, length, direction and description. The IDs are numbered sequentially and include a prefix which aligns with the category of CMP (Freeways – F, Ramps – R, Tier 1 Arterials – A, Tier 2 Arterials – T). The second half of the table includes a list of TMC codes and the associated length of that TMC link that lies within the boundaries of the CMP segment.

Table 2: Sample CMP to TMC mapping file

CMP				TMC		
ID	Length (mi)	Dir	Description	TMC code	Dir	Length (mi)
F1	2.01	E	SF County Line to Toll Plaza	105P04406	E	1.072116
				105+04407	E	0.935052
F2	1.3	E	Toll Plaza to I-80/I-580 (Merge)	105+04407	E	0.083333
				105+04408	E	0.139566
				105P04408	E	0.310949
				105+04409	E	0.201023
				105+04410	E	0.193566
				105P04410	E	0.362028
				105+04411	E	0.010227

The GIS shape files created and confirmed earlier in this project were used to map the TMC links onto the CMP network. The start and end points of the CMP segments were reviewed to ensure that the correct length of TMC links were associated with the CMP segment. This mapping process was completed for each of the four roadway categories of CMP segments for a total of 599 segments.

It may be noted that the TMC network used for the mapping is provided by INRIX, Inc. If commercial speed data is obtained from other providers in future years, this CMP to TMC mapping should be reviewed and confirmed for accuracy. Though the TMC network is a standardized means of providing commercial traffic data, there might be slight variations in how different providers/vendors maintain and attribute traffic to the TMC network.

4.1.1 Quality Control Mapping Processes

This section summarizes three of the quality control processes undertaken when producing the ‘CMP to TMC’ mapping index.

Distance

The first quality control check ensures that the length of TMC mapped equals the length of the CMP segment. As shown in Table 2, the sum of the lengths of the individual TMCs approximately equal the length of the associated CMP segment.

There were some CMPs with no TMC coverage or partial TMC coverage. The master data spreadsheets in Appendix G includes information on which CMP segments have partial or no TMC coverage.

Direction

Secondly, a quality control process was undertaken to ensure that the direction of the CMP is the same as the direction of each TMC. This is an important check, as it is sometimes difficult to choose the correct direction of TMC from the raw TMC network through inspection alone.

Largely, this quality control process was undertaken by comparing the latitude and longitude coordinates of the TMC with the direction of the CMP segment. For CMP segments that changed direction midway (i. e. a curved roadway), a further visual inspection was undertaken to confirm that TMCs in the correct direction were chosen. The direction of freeway ramps was largely confirmed through visual inspection.

Visual Inspection

Lastly, the starting and ending coordinates of each TMC were mapped and plotted against the GIS shape file for the CMP segment. The appropriateness of each TMC selection was evaluated through visual inspection. Checks were made to ensure that there were no gaps in TMC coverage of every CMP segment and that there were no inaccurate TMCs associated with a CMP segment.

4.2 STEP 2: FILTERING

The raw INRIX data were filtered to remove:

- Times outside the AM and PM peak periods;
- Days other than Tuesdays to Thursdays and holiday weeks; and
- Data points with lower data quality scores.

INRIX includes a data quality score that accompanies every INRIX data point. The score value is defined as:

- Score of 30: Data are exclusively generated from real-time sources.
- Score of 20: A mix of historical and real-time sources is used.
- Score of 10: Data are exclusively generated from historical data.

Only raw speeds that were directly measured were used for computing the LOS of the CMP network. As such, data points with scores of 10 and 20 were removed, and only data with a score of 30 were used. The impacts of this filtering is discussed further in the following section.

The quantity of remaining data points was tracked so the sample size of data points associated with Score of 30 was known. The sample sizes statistics are included in the Appendices.

4.3 STEP 3: SPATIAL & TEMPORAL DATA AGGREGATION - AVERAGE SPEED COMPUTATIONS

This section discusses the methodology of aggregating the data both spatially and temporally. The input to this step was 13 million data points of INRIX speed data. Note that Steps 2 and 3 were undertaken using the open source software R. This software is widely used in data analytics and statistics for managing large quantities of data (as was the case in this project). Datasets of this size would be difficult to manipulate in a spreadsheet program. Iteris wrote an R script that performed the processes described

in Steps 2 and 3. To validate the R script, Iteris extracted commercial speed data for a CMP segment and produced an internal spreadsheet to confirm the script results.

Table 3 displays two sample data points used in this step. The output from this step was the average speed and sample size of each CMP segment. A sample of the output is included in Table 4.

Table 3: Sample INRIX input data

TMC Code	Time Stamp	Speed	Score
105-04181	04/09/2013 07:00	69	30
105-04181	04/09/2013 07:01	68	30

Table 4: Sample output from Step 3 – Average speed on CMP link

CMP ID	Route	Jurisdiction	Length (mi)	Time Period	Sample Size	Average Speed (mph)
F1	I-80 - EB: SF County Line to Toll Plaza	Oakland	2.01	AM	3725	59.0
				PM	3833	53.0
F2	I-80 – EB: Toll Plaza to I-580 SB Merge	Oakland	1.3	AM	3647	62.6
				PM	3819	26.6

Aggregation (General Information)

This section discusses the different options available for aggregating the data. Two types of aggregation were required for the current analysis:

1. Spatial aggregation: Aggregation of data from a TMC link onto a CMP link; and
2. Temporal aggregation: Aggregation of multiple time periods of data to a single average data point.

The data was firstly spatially aggregated, and then temporally aggregated. It is important to note that there were two alternative methods for performing both these spatial and temporal aggregations:

- Aggregation by *averaging the speed using a distance weighting*; or
- Aggregation by summing the *travel time*² and then deriving the corresponding speed.

The second option of using a travel time metric produces an average speed that is lower than the distance weighted average speed. Both are valid approaches for data aggregation.

For this analysis, it was determined that aggregation using travel time as a metric is more closely related to the floating car survey method used in the 2012 LOS monitoring. Therefore, this methodology is expected to be more appropriate for this validation exercise. Should this validation report be accepted

² Travel time is back calculated using the commercial speed data and length of roadway

and commercial speed data be used for the 2014 LOS monitoring, Alameda CTC may choose to use either of the above mentioned options for aggregation.

The following sections describe spatial and temporal aggregation in further detail.

Spatial Aggregation

Using the mapping table created in Step 1 and the filtered commercial speed data obtained from Step 2, the TMC data were spatially aggregated on the CMP segments using travel time as a metric. Firstly, the travel time of each TMC was calculated according to the following formula. Note that the TMC length is updated according to the methodology from Step 1 i. e. it is not always the original TMC length when the TMC was not fully nested within the CMP segment.

$$TMC \text{ Travel time (hr)} = \frac{TMC \text{ Length (mi)}}{TMC \text{ Speed (mph)}}$$

In cases where multiple TMC links span a single CMP segment, the CMP Travel Time was calculated by summing the travel time of each TMC associated with the CMP as follows:

$$CMP \text{ Travel Time (hr)} = TMC_1 + TMC_2 + \dots + TMC_n$$

Temporal Aggregation

Temporal aggregation involved the translation of the CMP travel time metric for each minute of data into one average speed value corresponding to each CMP segment for the entire monitoring period. The following formula was used for this:

$$Average \text{ CMP Speed (mph)} = \frac{\sum \text{CMP Length (mi)}}{\sum \text{CMP Travel time (hr)}}$$

Sample size information was retained to assess the confidence level in the computed statistics.

Discussion about Sample Size

The sample size is the number of data points that contributed to the final calculation of average speed. The sample size varied on each TMC through removal of data points during the filtering process and through the processes discussed below.

Removal of TMC data points with scores of 20 and 10 (per Step 2 above) eliminated data for particular one-minute time periods from one or more of the TMCs that comprise certain CMP segments.

Refer to the schematic example in Figure 4 below for explanatory purposes. The example shows a longer CMP segment which is comprised of four TMCs. The table shows the data scores for each TMC for each one minute time period. In time periods 1, 2, and 7, one of the TMCs had a data score of 20 and therefore the record from that TMC was excluded for those minutes. In time period 6, two of the TMCs had data scores of 20 and similarly, these TMC records were also excluded for time period 6. The

percentage of route covered indicates the ratio of the length of the CMP covered by the TMC links with real time scores.

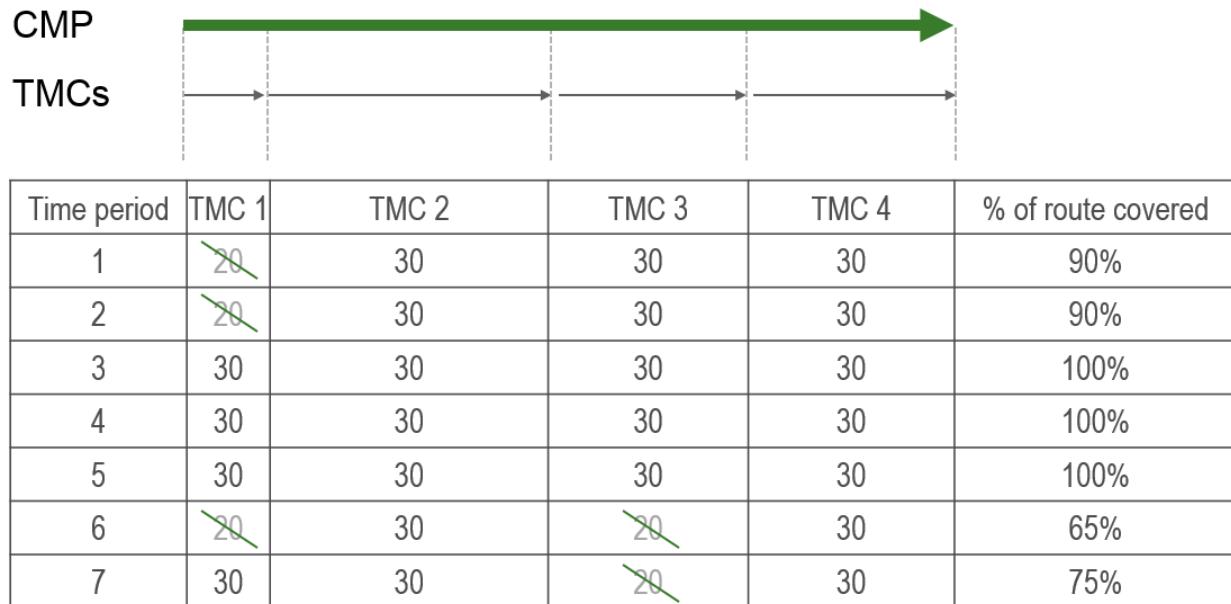


Figure 4: Schematic example of CMP route covered by TMCs in each one minute time period

Iteris performed a check to ensure that any time periods that had too many TMCs removed were not included in the analysis. Where TMC data were available for less than 99% of the TMCs that were chosen for mapping, that one-minute time period was removed. To extend the above example further, if TMC 1 was less than 1% of the CMP segment length, then it would still be possible to use the data in Time periods 1 and 2 (in addition to time periods 3, 4 and 5). This can be justified, because TMC 1 does not contribute significantly to the distance-based average speed calculation.

In a few cases (10% of CMP segments³), using the 99% threshold resulted in removal of too many time periods and an inadequate sample size. In these cases, the threshold was lowered to 70% to ensure that the sample size was adequate. To aid transparency, this is recorded in the comments on these segments in the results. (Alameda CTC and its constituents may choose to do floating car surveys on some of these routes in 2014. Further recommendations are provided in Section 6). Additionally, it should be noted that the travel time aggregation process (defined in Step 3) includes a minor definitional inconsistency on CMP segments that utilize lower lengths of the CMP; however it was still deemed to provide better validation than the distance weighted average speed.

A minimum sample size of 350 is preferable, as it represents 350 minutes of data, or an average of 10 minutes of data per peak period over 35 days in the monitoring period (i. e. $10 \times 35 = 350$). Under the floating car methodology, an average of 6 floating car runs were performed for each CMP segment. For

³ There were 59 CMP segments that utilized between 70 and 99% route coverage with the following breakdown: Tier 1 Freeways: 1 segment, Tier 1 Ramps: 3 segments, Tier 1 Arterials: 18 segments, Tier 2 Arterials: 37 segments.

comparison purposes this can be related to data from 6 vehicles throughout the segment at any given point of time. However, with the commercial data a sample size of 350 minutes relates to data from at least 350 sample vehicles (which is much higher in reality) throughout the segment at any given point of time. This is with the assumption that data for only one vehicle is collected for every single minute. However in reality data from several vehicles is collected for every minute, which is based on the traffic flow rates and the detection rates. Hence, one minute of sample size data in the current study unarguably represents data from one or more vehicle. Hence, this level of data sampling is significantly higher than the floating car survey methodology used in previous monitoring cycles.

The remainder of this section gives information about the sample sizes observed on all CMP segments. As mentioned earlier, there are 599 CMP segments for both directions together each having an AM and PM measurement of average speed. This totals 1198 measurements. The following graph (Figure 5) shows a cumulative distribution of the sample sizes obtained for each CMP (AM and PM recorded separately).

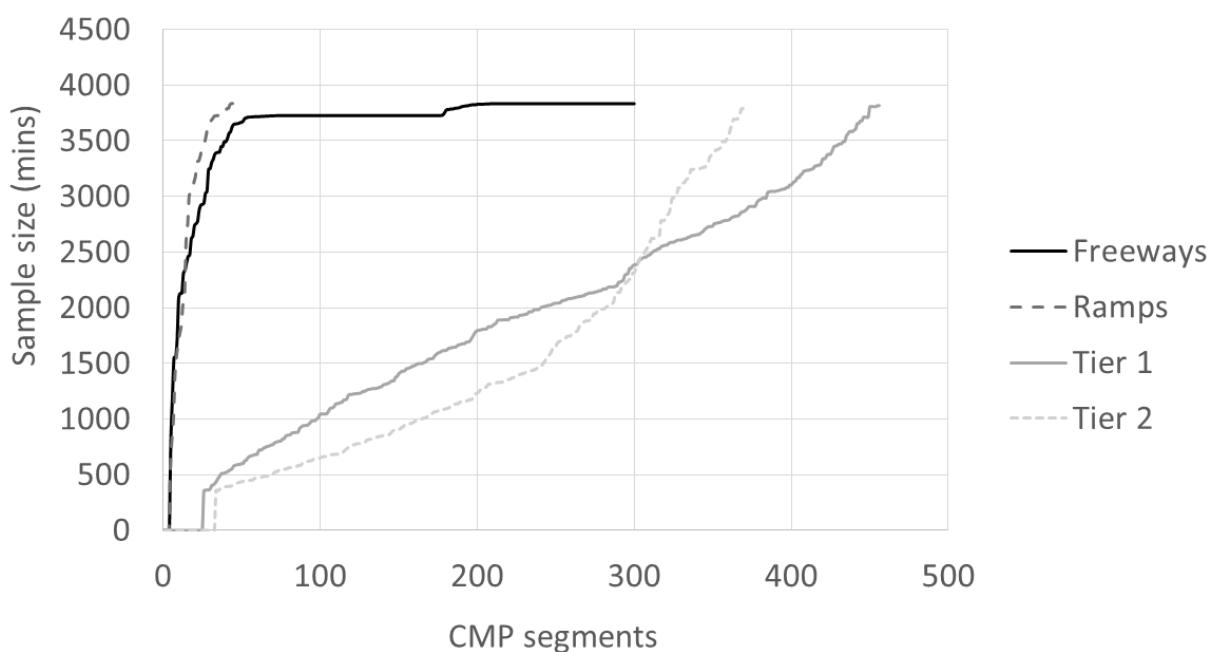


Figure 5: Cumulative distribution of sample sizes

Figure 5 shows that high proportions of ramps (87%) and freeway segments (98%) had sample sizes in the thousands. 5% of Tier 1 arterials and 9% of Tier 2 arterial segments had sample sizes less than 350. Furthermore, there were some CMP segments with sample sizes of zero, as seen in the below graph.

⁴ The I-580 (CMP Segment F57 and F58) had insufficient TMC coverage around the interchange with I-80. Unless the TMC coverage is expanded in 2014, floating car surveys are recommended on this segment.

These correspond to segments with minor TMC coverage, no coverage or numerous poor data scores. Floating car surveys are recommended on all these segments as summarized in the tables and map included in Appendix G.

The assumptions made by Iteris in this section have been confirmed with Alameda CTC for their reasonableness.

4.4 STEP 4: LOS ASSIGNMENT

This section discusses the methodology as adopted in the LOS Monitoring studies of Alameda CTC for assigning a LOS (A to F) to each CMP segment for both the AM and PM peak periods. Firstly each CMP segment was classified as either an arterial (i. e. interrupted flow), a freeway (i. e. uninterrupted flow) or a ramp (uninterrupted flow). The methodology for calculating LOS is slightly different depending on this classification, and is described below.

Tier 1 Freeways

LOS for Tier 1 Freeways segments was assigned using 1985 Highway Capacity Manual (HCM) methodologies. Using the average speed of the freeway in the AM and PM peaks (obtained from the previous step), Table 5 was used to assign a LOS in each time period.

Table 5: Tier 1 Freeway LOS Assignment

Level of Service (LOS)	Density (pc/mi/in)	Speed (mph)	V/C Ratio	Saturation Flow (pcphpl)
A	≤ 12	≥ 60	0.35	700
B	≤ 20	≥ 55	0.58	1,000
C	≤ 30	≥ 49	0.75	1,500
D	≤ 42	≥ 41	0.90	1,800
E	≤ 67	≥ 30	1.00	2,000
F	> 67	< 30	-	-

Range for LOS F for Freeway Sections
F30—Average Travel Speed <30
F20—Average Travel Speed <20
F10—Average Travel Speed <10
These LOS limits were approved by Alameda CTC on June 14, 2004 to show degrees of LOS F on congested roadways.

Source: Alameda CTC CMP Report, 2012

Tier 1 Ramps

LOS on Tier 1 Ramps was calculated according to the methodology given in the 2012 LOS Monitoring Report. LOS A is deemed to occur when vehicles are traveling around free-flow speed for the given roadway conditions. LOS F is estimated to occur when speeds have dropped below 50 percent of the free flow speeds. LOS B to E are calculated at even intervals between the free flow speeds and LOS F speeds.

Table 6: Tier 1 Ramps LOS assignment

LOS	Percent of free flow speed
A	90% or greater
B	80 to 90%
C	70 to 80%
D	60 to 70%
E	50 to 60%
F	0 to 50%

Tier 1 Arterials

Calculating the LOS for Tier 1 arterial segments followed a similar methodology as freeways. However the HCM methodology for arterials requires identifying the classification of the arterial street (Class I, II or III). Class was determined based on the typical free flow speed of the road in light traffic conditions. The arterial street classes were obtained from the data provided by Alameda CTC.

Based on the class of the street and the average travel speed in the AM and PM peak periods (obtained from the previous step), LOS could be determined according to the HCM 1985 methodologies. Refer to Table 7 for the LOS look up table.

Table 7: Tier 1: Arterial LOS Assignment, HCM 1985

Arterial Class	I	II	III
Range of Free Flow Speed (mph)	45 to 35	35 to 30	35 to 25
Typical Free Flow Speed (mph)	40	33	27
Level of Service	Average Travel Speed (mph)		
A	≥ 35	≥ 30	≥ 25
B	≥ 28	≥ 24	≥ 19
C	≥ 22	≥ 18	≥ 13
D	≥ 17	≥ 14	≥ 9
E	≥ 13	≥ 10	≥ 7
F	< 13	< 10	< 7

Source: Table 11-1, Highway Capacity Manual, 1985 as used in the 2012 LOS Monitoring Study of Alameda CTC

Tier 1 Arterials designated by a rural class, were calculated using the Tier 1 Ramps LOS methodology below. This is consistent with the 2012 LOS Monitoring report.

The LOS assignment procedures for Tier 1 arterials, Tier 1 Freeways and Tier 1 Ramps are consistent with previous reporting periods. Also, consistent with the 2012 LOS Monitoring report, LOS was not calculated for Tier 2 Arterials.

4.5 STEP 5: COMPARISON OF FLOATING CAR PERFORMANCE TO COMMERCIAL SPEED DATA

This last section of the methodology summarizes the procedure for comparing floating car performance to commercial speed data.

As discussed in Section 3.1 (CMP Network Shape File Development) and shown in Table 1 and Figure 2, only 440 out of the total 599 CMP segments in the updated shape file were used in these validation efforts. Note that Table 1 and Figure 2 do not reflect information regarding how well these segments were validated, this is discussed in Section 5.

On these CMP segments where the lengths suitably matched, the performance measurement obtained using floating car surveys and commercial speed data was compared using travel time as the primary metric along with average speed for comparison.

While speed data is directly available from the commercial speed data and floating car surveys, travel time was estimated using the newly calculated length of the CMP segment (from the GIS shape file), for both the floating car (FC) and commercial speed (CS) methodologies, as follows:

$$\text{Travel Time}_{CS} (\text{min}) = \frac{\text{Length (mi)} \times 60}{\text{Average Speed}_{CS} (\text{mph})}$$

$$\text{Travel Time}_{FC} (\text{min}) = \frac{\text{Length (mi)} \times 60}{\text{Average Speed}_{FS} (\text{mph})}$$

Then, the travel times of the CMP segments were compared.

$$\text{Difference in Travel Time (min)} = \text{Travel Time}_{FC} - \text{Travel Time}_{CS}$$

where CS = Commerical Speed, FC = Floating Car

5. DATA VALIDATION RESULTS AND ANALYSIS

5.1 COMMERCIAL DATA RESULTS

The resulting speed and travel time data from INRIX for each CMP segment under all four CMP roadway categories along with the data from the 2012 floating car runs are appended in the following attachments:

- Appendix B – Tier 1 Freeways
- Appendix C – Tier 1 Ramps
- Appendix D – Tier 1 Arterials
- Appendix E – Tier 2 Arterials

5.2 AVERAGE SPEED COMPARISON

This section compares the average speed obtained from the floating car surveys to the commercial speed data for the segments considered for validation. Table 8 presents the network average speeds for

CMP segments in each CMP roadway category. Percentage difference shown in Table 8 indicates the increase in average speeds obtained from commercial data when compared to floating car survey data. These speeds were weighted using the travel times to maintain consistency with the other calculations. Further comparisons of floating car surveys and commercial speed data are provided later in Table 9.

Table 8: CMP Network Average Travel Speed (mph)

CMP Roadway Category	2012 Floating Car Survey		2012 Commercial Speed Data		Percentage Difference	
	AM	PM	AM	PM	AM	PM
Tier 1 Freeways	45.8	45.7	48.8	44.0	7%	-4%
Tier 1 Ramps	36.6	30.1	41.1	40.1	12%	33%
Tier 1 Arterials	22.4	19.7	27.6	27.4	23%	39%
Tier 2 Arterials	20.7	19.6	26.5	26.3	28%	34%

Table 8 shows a very close validation on Tier 1 Freeways, with only 7% (AM) and 4% (PM) difference in average speeds. Larger differences were observed for Tier 1 Ramps, Tier 1 Arterials and Tier 2 Arterials, where an average difference of 21% was noted in the AM peak and a difference of 35% in the PM peak. Further details on the comparison are provided in Section 5.3.

Figure 6 and Figure 7 illustrate this relationship presenting data for the entire data sample. Each figure contains a diagonal line which represents parity between the floating car surveys and commercial speed data. Data points above the line indicate that the average speed from commercial speed data was faster than the floating car surveys.

For the uninterrupted facilities presented in Figure 6 (Tier 1 Freeways and Tier 1 Ramps) there is a relatively even spread of values above and below the line. However for the interrupted facilities presented in Figure 7 (Tier 1 Arterials and Tier 2 Arterials), it appears that commercial speed data is faster than the floating car surveys, especially for the lower speeds.

Reasons for the differences in the results could be explained by differences in surveys methodologies and sample sizes. Typically, in floating car surveys, drivers are instructed to follow road rules including the speed limit, traffic signals and not blocking intersections. However the commercial speed data records the actual speeds traveled. Specifically, it is expected that speeds recorded in the commercial speed data are relatively higher since a good amount of rule breaking can be expected in actual driving behavior that increases the overall speed. Such rule breaking behaviors that get recorded by commercial speed data but are excluded in floating car runs include speeding, running yellow and red lights, and blocking intersections.

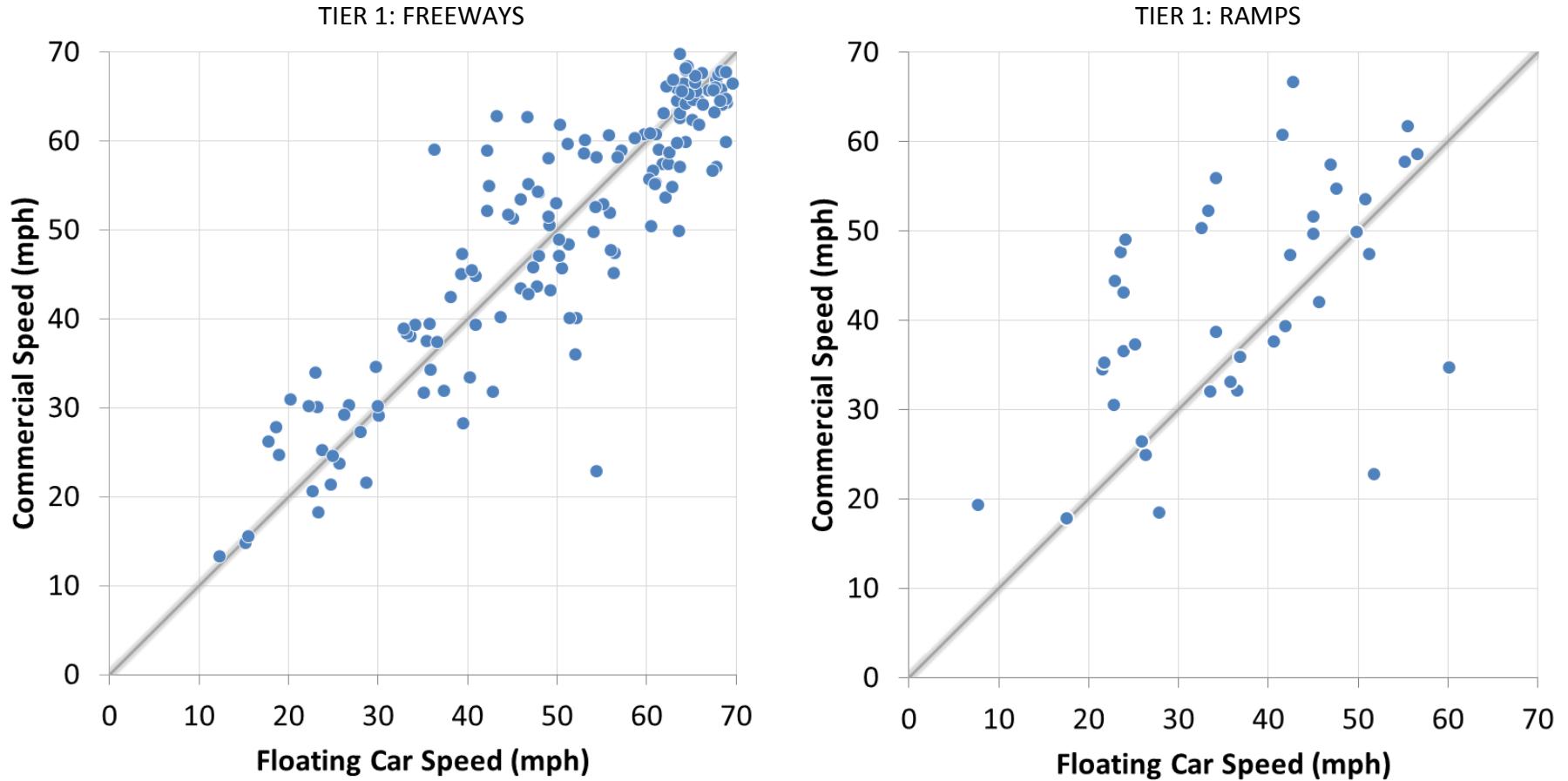


Figure 6: Average Speed Comparison for Tier 1 Freeways and Ramps

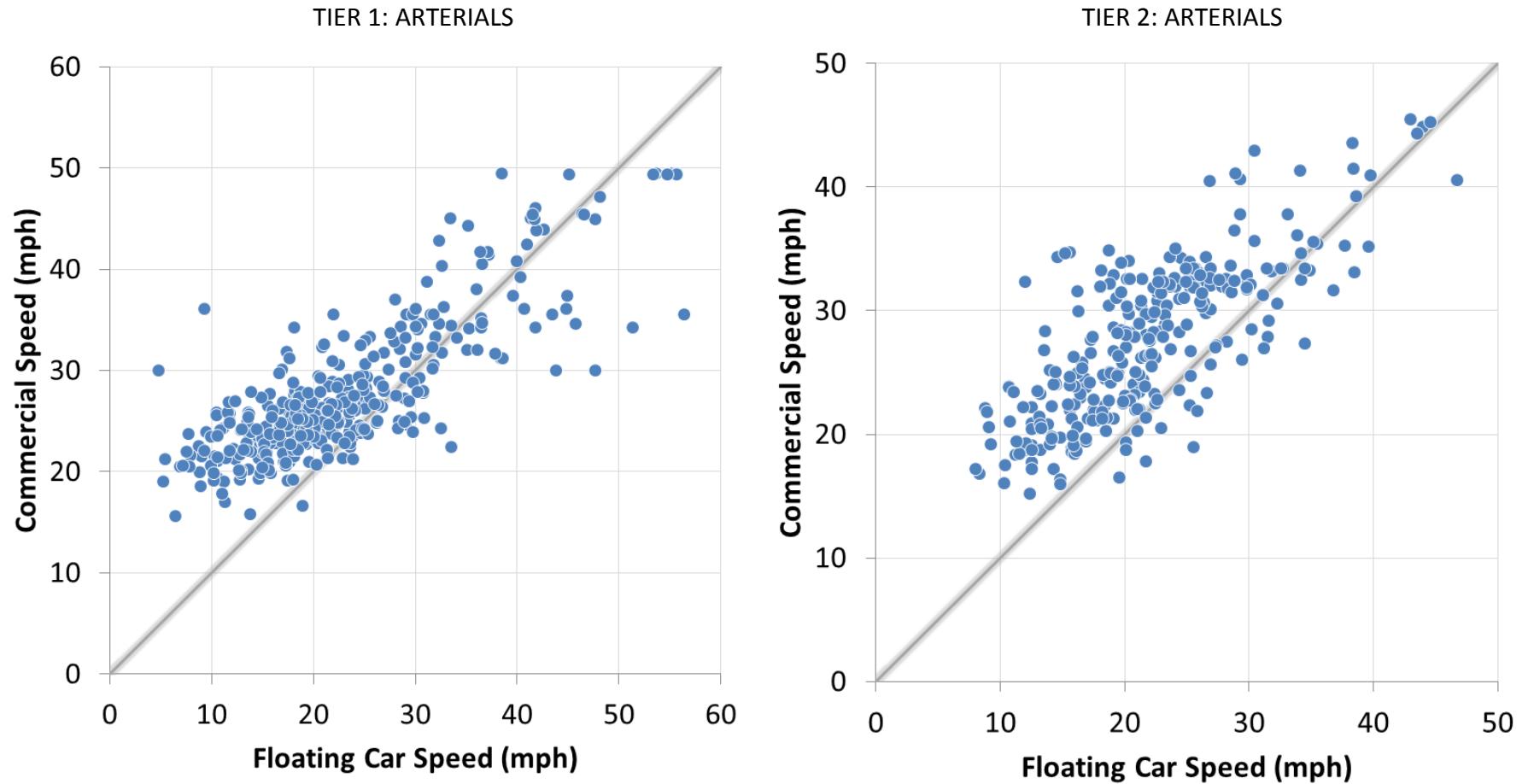


Figure 7: Average Speed Comparison for Tier 1 and Tier 2 Arterials

In floating car surveys, drivers are also instructed to overtake as many cars as overtake them. However there are limitations to how accurately this can be achieved in reality. This is especially true on arterials where different queuing patterns and speeds are experienced in adjacent lanes. For example, lanes of traffic adjacent to on-street parking could be delayed by parking maneuvers, whereas other lanes are not impacted. It is difficult for a floating vehicle driver to adhere to the ‘overtake’ rule in these conditions. This further helps to explain the differences in the results.

The large sample sizes of the commercial speed data should also give confidence that their speeds are more likely to be representative of true traffic conditions in the CMP network. By comparison, the sample size of the floating car survey method is at a maximum 2% of that observed in the INRIX dataset.

Another study was reviewed to help explain the differences in the performance metrics. In 2006, research was performed to compare the accuracy and costs of four floating car surveys and the Caltrans Performance Measurement System (PeMS)⁵ on freeways. The researchers showed that the error⁶ of floating car surveys was in the order of 25 percent (when considering their ability to estimate annual congestion). If all the floating car surveys were completed on a single day, then this error rose to 50 percent. They further explained that the error in comparing floating car surveys from year to year is approximately 35 percent. While, these numbers cannot be generated for this validation exercise (as individual floating car survey results are not available), it is still useful to understand their likely accuracy.

5.3 TRAVEL TIME COMPARISON

This section makes a comparison of the travel times obtained from the floating car surveys and commercial speed data. Table 9 presents the average values for travel time per length of CMP network (i. e. measured in minutes per mile). Percentage difference shown in Table 9 indicates the decrease in average travel times obtained from commercial data when compared to floating car survey data

Figure 8 and Figure 9 illustrate this relationship presenting data for the entire data sample. Each graph includes a diagonal line which represents parity. Data points above the line indicate that the travel time for the commercial speed data was longer than for the floating car surveys. Further graphs are presented in Appendix H.

Table 9: CMP Network Average Travel Times (min/mile)

CMP Roadway Category	2012 Floating Car Survey		2012 Commercial Speed Data		Percentage Difference	
	AM	PM	AM	PM	AM	PM
Tier 1 Freeways	1.31	1.31	1.23	1.36	- 6%	4%
Tier 1 Ramps	1.64	1.99	1.46	1.5	- 11%	- 25%
Tier 1 Arterials	2.68	3.05	2.17	2.19	- 19%	- 28%
Tier 2 Arterials	2.90	3.06	2.26	2.28	- 22%	- 25%

⁵ Kwon *et al* (2006) Evaluation of PeMS to improve the Congestion Monitoring Program: Final Report for PATH TO 5319

⁶ Error was judged to be equivalent to the standard deviation of multiple floating car survey results.

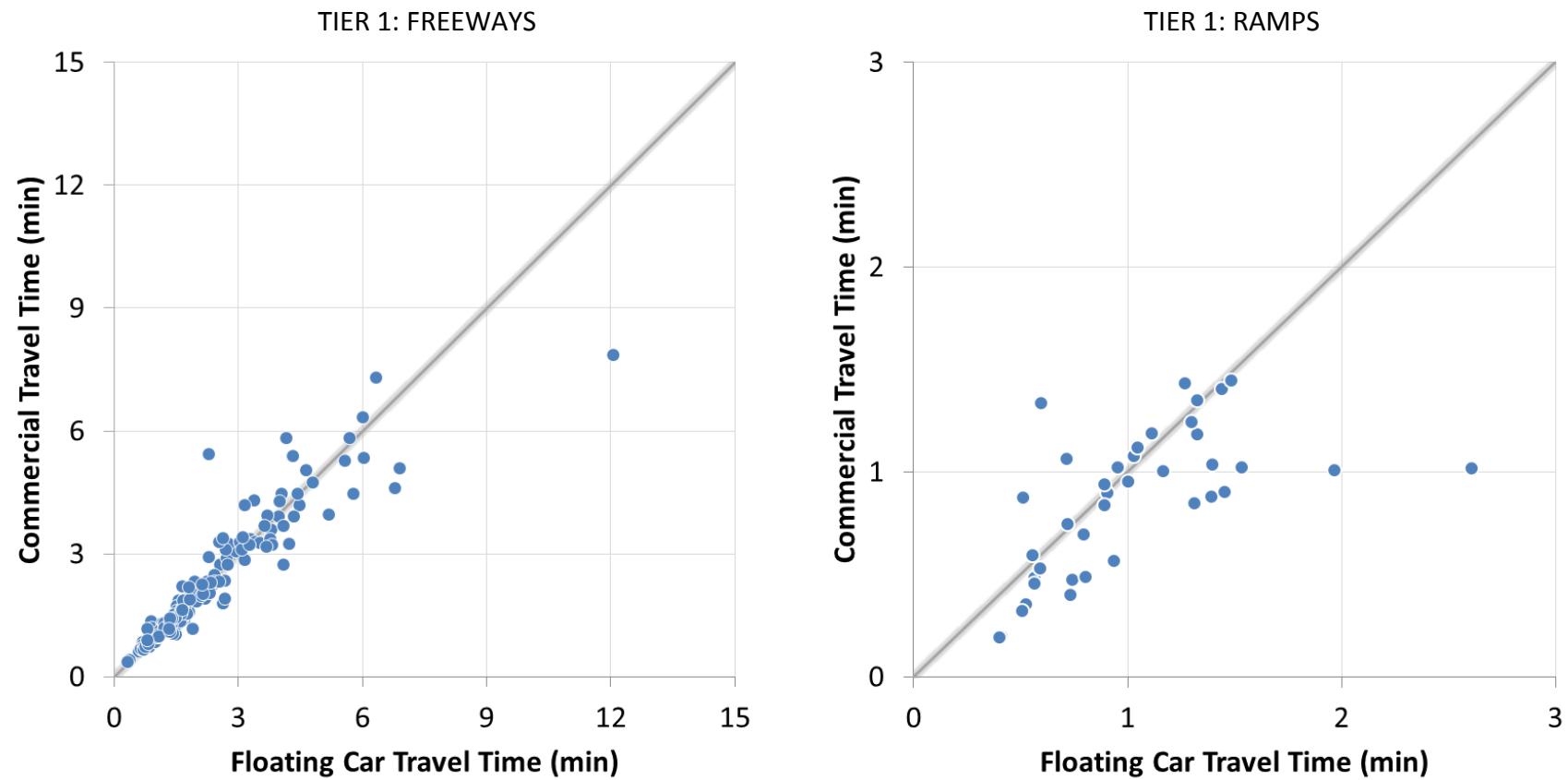


Figure 8: Travel Time Comparison for Tier 1 Freeways and Ramps

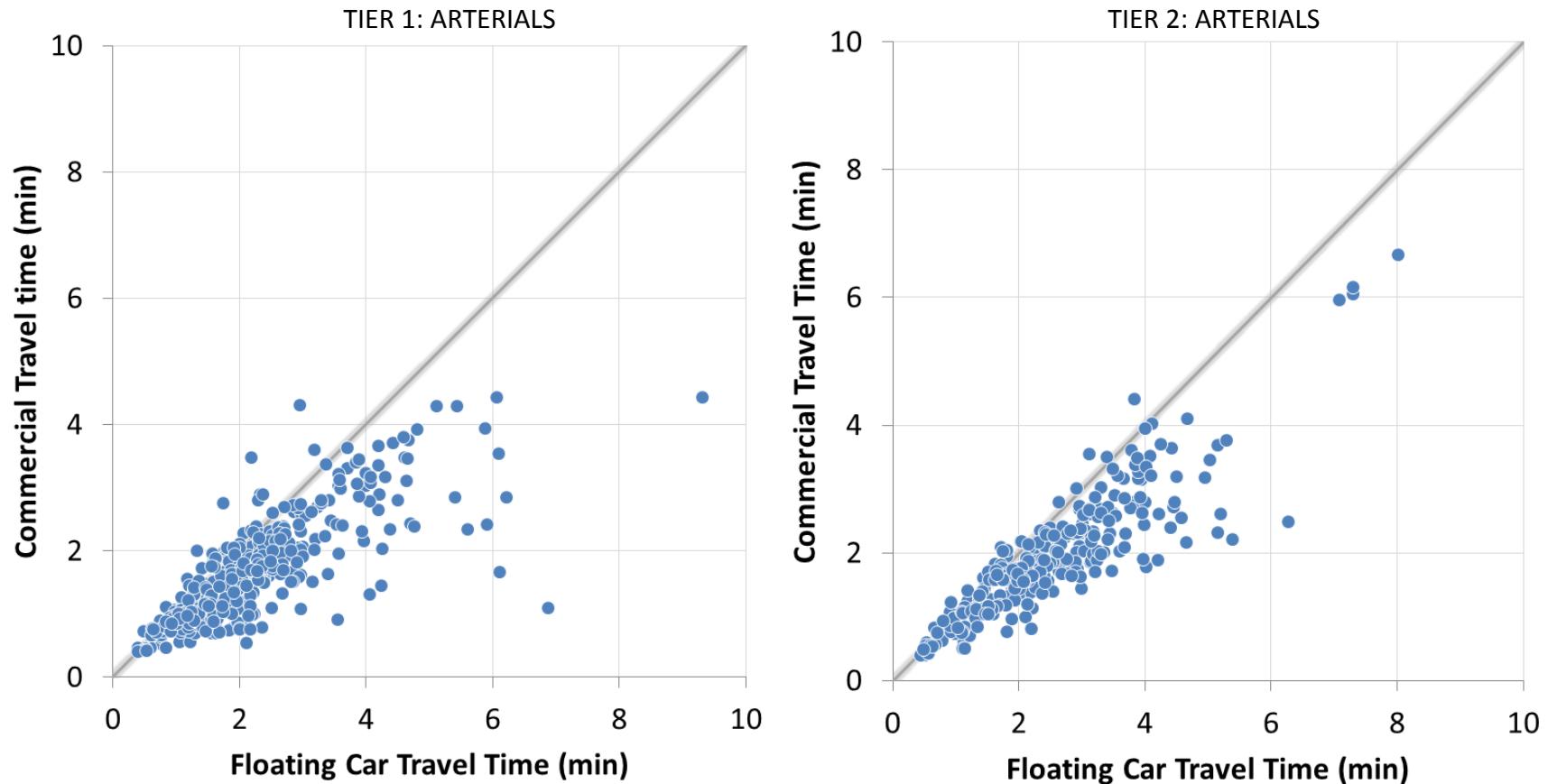


Figure 9: Travel Time Comparison for Tier 1 and Tier 2 Arterials

For the Tier 1 Freeways in Figure 8, it can be seen that there is a high correlation between the travel times obtained from the floating car surveys and the commercial speed data. The difference in average speeds (Table 8) and the differences in travel time were also considered to be low. It is recommended that commercial speed data be used on all Tier 1 Freeway Segments where commercial speed data is available.

Comparison for Tier 1 Ramps in Figure 8 shows that the results ramp segments are more varied, although many of the data points are very close to the diagonal line. The AM shows a closer correlation than the PM. The two obvious outliers ([1. 0, 2. 0] and [2. 6, 1. 0]) seen for Tier 1 Ramps in Figure 8 were both present in the PM. Excluding these values, the percentage difference in travel time for the PM is reduced to 17%.

Given that the overall difference in travel time was reasonable and that it would be difficult to organize floating car surveys on these short but widely spaced ramp segments, it is noted that floating car surveys may not offer a greater benefit over commercial speed data. Hence, it is recommended that commercial speed data be used in 2014 for ramp segments. Should Alameda CTC desire, any ramps that obtain a LOS E or F could be confirmed with supplementary floating car surveys.

After reviewing the results for Tier 1 Arterials from Figure 7 and Figure 9 it can be seen that the floating car surveys often yielded slower results than the commercial speed data. Largely the differences in travel time are within 90 seconds, which is equivalent to the average cycle length at a traffic signals. This could be perceived as missing a green period at an average set of traffic signals. Reasons for these differences are described in Section 5.2 including absence of rule breaking behavior and differences in sample size.

Additionally, results for individual floating car survey runs were reviewed for University Ave-EB (CMP ID A59 to A 63). On each of these CMP segments, a total of six travel time surveys were undertaken in the 2012 between starting times of 4:44pm and 5:45pm. Three of the surveys were completed between 4:00pm-5:00pm and the remainder completed between 5:00-6:00pm. It is noted that the six surveys conducted do not cover the full two hour monitoring period, which is due to understandable constraints in floating car survey logistics.

While it is still acknowledged that the commercial speed data appears to be generally faster, Table 10 highlights large variability in the floating car survey results for these sample Tier 1 Arterial segments. The floating car surveys varied in duration by 30 to 76 seconds on these relatively short CMP segments.

Table 10: Floating car survey travel times for University Av – EB in PM (min)

	Original Length (mi)	Run 1	Run 2	Run 3	Run 4	Run 5	Run 6	Min	Max	Range	Commercial Data
A59	0.4	1.43	1.48	1.72	1.42	1.20	1.25	1.20	1.72	0.52	0.8
A60	0.31	1.13	1.17	0.90	1.38	1.40	1.30	0.90	1.40	0.50	0.89
A61	0.56	2.43	1.62	2.18	1.82	1.38	1.55	1.38	2.43	1.05	1.46
A62	0.48	1.53	1.93	1.47	1.97	1.78	1.75	1.47	1.97	0.50	1.24
A63	0.3	2.00	1.80	1.98	0.97	2.07	0.80	0.80	2.07	1.27	0.91

Table 8 and Table 9 also show a higher variation in network performance measures for Tier 1 Arterials. There was a 19% and 28% difference in travel time per mile for the AM and PM respectively. For this reason and due to the importance of the Tier 1 Arterial results, it is recommended that floating car surveys be considered for Tier 1 Arterials in 2014 in addition to using the commercial speed data. Floating car surveys could be completed for all Tier 1 Arterials, or just for Tier 1 Arterials that yield a LOS E or F with commercial speed data.

Similar to Tier 1 Arterials, the Tier 2 Arterials generally show that the commercial speed data is faster than the floating car surveys. Largely, the difference in travel time was contained to within 90 seconds, which is equivalent to an average cycle time at traffic signals. As Alameda CTC indicates that the priority of these segments is secondary, it is recommended that commercial speed data be used for Tier 2 Arterials in 2014. The 2014 results would then form a baseline for all future results.

6. CONCLUSIONS AND RECOMMENDATIONS

This validation exercise compared the 2012 speed and travel time data from two different survey methodologies:

1. Floating Car Surveys; and
2. Commercial Speed Data.

Overall, 440 CMP segments were validated to compare the floating car surveys with the commercial speed data. Some segments were not validated as the length of the new CMP segments (based on the new shape file developed for this project) varied from the originally reported length in the 2012 monitoring report. The segments that were not validated can be seen in the Figure 2 map included in Section 3. Appendix F includes a complete list of the segments that were not validated. Despite this, they still may be valid candidates for LOS monitoring with commercial speed data in 2014.

Of the validated segments, freeways showed a good alignment across both survey types while the other categories of CMP segments had varying results. For Tier 1 Freeways, the network average travel times obtained from commercial data varied within 6% of the average travel times obtained from floating car surveys. This difference in travel times for Tier 1 and Tier 2 arterials is calculated to be approximately 25%. When comparing the network average speeds, commercial data for Tier 1 Freeways differed from floating car surveys by an average of 6%. However, this difference in speeds is observed to be much larger for Tier 1 and Tier 2 arterials (averaging 31%).

Given these validation results, the following two options are available for 2014 CMP, for monitoring the segments that did not show a close alignment in validation:

1. Complete Floating Car Surveys in addition to a commercial speed analysis; or
2. Complete commercial speed analysis only, however confirm any LOS F recommendations with supplementary floating car surveys (if needed). Floating car surveys could also be considered on CMP segments with LOS E, if desired.

Iteris recommends option two. Given the accuracy⁷ issues associated with floating car surveys, it is likely that there would again be high variability in any comparison between floating car surveys and commercial speed data in 2014. This high variability is likely to diminish ones confidence in the floating car survey results and raise questions about their reliability compared to the huge sets of available commercial speed data. These aspects (and the significant cost associated with the floating car surveys) would make their contribution to the LOS monitoring less meaningful. Based on this, following is a summary of the recommendations for each CMP category:

For Tier 1 Freeways, Tier 1 Ramps and Tier 2 Arterials:

- It is recommended that commercial speed data be used for all CMP segments where there is adequate sample size and acceptable TMC coverage, independent of whether or not they are included for validation in this study.
- Floating car surveys are recommended only on those CMP segments that do not satisfy these conditions.

For Tier 1 Arterials:

- It is deemed appropriate to use floating car surveys on all segments due to the observed variability in the results and the significance these results bear on the conformity of CMP and associated deficiency plans.
- As an alternative and as noted earlier, floating car surveys can be completed only for those Tier 1 Arterials that yield a LOS E or F with commercial speed data analysis, apart from those segments where there is inadequate sample size or TMC coverage.

Appendix G shows a map and list of segments with adequate commercial speed data coverage.

Furthermore, while Iteris has recommended that a minimum of 70% coverage of the route with real time commercial data is sufficient to represent the performance on the entire route based on anecdotal evidence, we acknowledge that Alameda CTC may choose to nominate a higher percentage. The decision to raise the percentage of the route covered by commercial data should be made by balancing the coverage against the additional cost of conducting floating car surveys. This decision about the percentage coverage should be made by Alameda CTC and their constituents, and Iteris recommends going no lower than 70%. Note that, while raising the percentage would add additional floating car surveys, it may not have a significant impact as only 4% of the total CMP segments (excluding Tier 2) used 70-90% coverage threshold. The majority of the segments had 99% or higher coverage of the route with real time commercial data. Appendix G shows the percentage of coverage for each CMP segment.

⁷ Accuracy of floating car surveys is uncertain due to their limited sampling rates, propensity of survey drivers to follow road rules rather than actual normal driving behavior and limitations associated with the ‘overtake rule’. Refer to Section 5.1.

Additional recommendations on using commercial speed data in 2014 LOS monitoring are summarized below:

1. Review the mapping of any CMP segment without full TMC coverage. It is acknowledged that TMC link coverage is periodically expanded and therefore coverage may exist in 2014 where it did not exist in 2012.
2. Further, it will be necessary to confirm that TMC links have not been divided into smaller links on all TMC segments. Checking that the TMC links are the same from year to year can be automated, however any corrections to TMC to CMP mapping would likely have a manual component (to ensure accuracy in the length measurement).
3. For the 2014 monitoring, it is recommended that the commercial speed data for CMP segments impacted by construction/special events/weather (if significant) be excluded for the duration of the event.
4. Travel time in addition to speed was used as the primary metric for aggregation and comparison in this validation exercise as it was deemed most closely related to floating car survey methodology. Should Alameda CTC and constituents desire, a distance based weighted average speed (noted in Section 4.3) may be explored for future CMP Monitoring.
5. Consider expanding the 2014 LOS monitoring to include a ‘big data’ analysis of transit performance including speed and reliability. This might include an analysis of Automatic Passenger Counts (APC) or Automatic Vehicle Location (AVL) data from transit vehicles. This will enable a comparison of the performance of transit to other traffic.
6. For CMP routes with commercial speed data, expand the analysis times so that duration of traffic congestion can be measured.

7. APPENDIX

Appendix A – Details on editing the CMP network GIS shape file

Appendix B – Tier 1 Freeways

Appendix C – Tier 1 Ramps

Appendix D – Tier 1 Arterials

Appendix E – Tier 2 Arterials

Appendix F – CMP Segments Not Validated with 2012 Commercial Speed Data

Appendix G – CMP Segments where Floating Car Surveys are recommended based on poor or no data/TMC coverage

Appendix H –Maps and Graphs comparing the travel times

APPENDIX A – Details on editing the CMP network GIS shape file

As a part of the current project, GIS (Geographic Information System) shape files representing the CMP network were reviewed and updated per the descriptions available from 2012 LOS Monitoring report of Alameda CTC. This appendix outlines some of the major guidelines employed for this task. Some of these guidelines are noted below:

- The start and end points of some of the CMP segments were edited to match their start and end points per 2012 LOS Monitoring Report. For all CMP segments that did not have adequate information to locate the end points, their existing GIS shape file was used;
- For Tier 1 freeway segments, the end points located at interchanges were mapped to the on/off-ramps if the description explicitly specified it as an on/off ramp. For other cases, the center of grade separation was used (excluding the locations where the segment length in existing GIS map matched the length in the report closely and is mapped to a ramp);
- Similar guidelines as above were used for all arterial segments (including Tier 1 and Tier 2) that continued across a freeway or major roadway junctions;
- For the ramp segments (from Appendix G-3/G-6 of the 2012 LOS monitoring report), the CMP segments were mapped to the physical gore, where possible. In the absence of a physical gore, a painted gore was used instead; and
- The underlying assumption for coding all the CMP segments was to match the correct segment limits and the correct segment length as noted in the report. Where it was not possible, effort was made to map it to be reasonably correct. For some segments where the guidelines conflicted with each other, Iteris used its judgment after consulting with Alameda CTC.

The efforts of this task were concentrated primarily on those segments that had a significant difference between the reported lengths and calculated segment lengths in GIS. Those segments that were mapped reasonably correct (with a tolerance level less than or equal to 0.1 miles in difference of lengths) were mostly left as-is.

To aid transparency, the updates made to the CMP segments (reflecting either corrected lengths or descriptions) are categorized into the following three groups:

- Category 1: GIS shape was not changed but reported length was updated, to match the measurement of the shape file. The start and end limits of the CMP segments under this category were verified in GIS and ensured they matched the report descriptions. Majority of the CMP segments (49%, excluding ramps) fall in this category.
- Category 2: GIS shape was updated to reflect the correct description noted in the report. The segment length was updated. 26% of the total segments (excluding ramps) fall under this category. The modified lengths of the majority of CMP segments under Category 2 fall closer to the reported lengths when compared to their lengths in the original GIS shape file.
- Category 3: A few CMP segments fall in this category (3%, excluding ramps). CMP segment ‘Route Name’/‘From’/‘To’ descriptions were updated in the database, after consulting with Alameda CTC, to either match the description or to fix any typographical errors . The reported segment length may or may not have changed. The CMP segments under this category may sometimes overlap with the CMP segments under Category 1 or Category 2.

The following CMP segments were uncategorized:

- The start and end points of the CMP segment was edited in GIS per the 2012 LOS monitoring report, but the reported length is retained. Approximately 6% of the total CMP segments, excluding ramps, fall under this group.
- No corrections were made to the segment, if the descriptions and reported lengths of a CMP segment matched the CMP segment in GIS. 18% of the CMP segments, excluding ramps, fall under this group.

Additionally, it may be noted that:

- To ensure continuity in the network like, Tier 1 and Tier 2 arterials and ramp segments in GIS were snapped to the freeways ensuring the length of the segments match the report lengths, where possible; and
- CMP segment information related to: Jurisdiction (Jurisd), Lanes, Planning Area (Plan Area) were not changed for any segment.

It may be noted that the ramp CMP segments were not included in the above categories, as the GIS shape files were not available initially for this project. Iteris developed new shape files in GIS to code the ramps per the 2012 LOS Monitoring report following similar guidelines as described earlier.

APPENDIX B - TIER 1 FREEWAYS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
F1	I-80 - EB	SF County Line	Toll Plaza	Oak	1	AM	2.06	2.01	0.05	57.2	B	2.11	59.0	B	2.05	3725	0.06		
F1	I-80 - EB	SF County Line	Toll Plaza	Oak	1	PM	2.06	2.01	0.05	49.9	C	2.42	53.0	C	2.28	3833	0.14		
F2	I-80 - EB	Toll Plaza	I-580 SB Merge	Oak	1	AM	1.15	1.3	-0.15	55.8	B	1.40	62.6	A	1.25	3647			
F2	I-80 - EB	Toll Plaza	I-580 SB Merge	Oak	1	PM	1.15	1.3	-0.15	25.4	(F30)	3.07	26.6	(F30)	2.93	3819			
F3	I-80 - EB	I-80/I-580 (Merge)	Powell	Emery - Berk	1	AM	0.79	0.54	0.25	72.9	A	0.44	56.5	B	0.57	3725			
F3	I-80 - EB	I-80/I-580 (Merge)	Powell	Emery - Berk	1	PM	0.79	0.54	0.25	13	(F20)	2.49	13.1	(F20)	2.47	3833			
F4	I-80 - EB	Powell	Ashby	Emery - Berk	1	AM	0.67	0.72	-0.05	51.2	C	0.84	59.7	B	0.72	3725	0.12	C to B	
F4	I-80 - EB	Powell	Ashby	Emery - Berk	1	PM	0.67	0.72	-0.05	12.3	(F20)	3.51	13.2	(F20)	3.26	3833	0.25		
F5	I-80 - EB	Ashby	University	Emery - Berk	1	AM	1.34	1.3	0.04	64.4	A	1.21	59.9	B	1.30	3725	-0.09	A to B	
F5	I-80 - EB	Ashby	University	Emery - Berk	1	PM	1.34	1.3	0.04	25.7	(F30)	3.04	23.7	(F30)	3.29	3833	-0.25		
F6	I-80 - EB	University	Jct I-580 (off)	Berk - Alb	1	AM	1.51	1.37	0.14	62.4	A	1.32	60.1	A	1.37	3725			
F6	I-80 - EB	University	Jct I-580 (off)	Berk - Alb	1	PM	1.51	1.37	0.14	33.5	E	2.45	35.6	E	2.31	3833			
F7	I-80 - EB	Jct I-580 (off)	Central (County Line)	Berk - Alb	1	AM	1.12	0.84	0.28	59.4	B	0.85	57.8	B	0.87	3725			
F7	I-80 - EB	Jct I-580 (off)	Central (County Line)	Berk - Alb	1	PM	1.12	0.84	0.28	27.7	(F30)	1.82	40.0	E	1.26	3833			
F8	I-80 - WB	Central (County Line)	Jct I-580	Berk - Alb	1	AM	0.7	0.7	0	22.7	(F30)	1.85	20.6	(F30)	2.04	3725	-0.19		
F8	I-80 - WB	Central (County Line)	Jct I-580	Berk - Alb	1	PM	0.7	0.7	0	52	C	0.81	36.0	E	1.17	3833	-0.36	C to E	
F9	I-80 - WB	Jct I-580	University	Berk - Alb	1	AM	1.49	1.51	-0.02	24.9	(F30)	3.64	24.6	(F30)	3.68	3725	-0.05		
F9	I-80 - WB	Jct I-580	University	Berk - Alb	1	PM	1.49	1.51	-0.02	28.7	(F30)	3.16	21.6	(F30)	4.19	3833	-1.04		
F10	I-80 - WB	University	Ashby	Emery - Berk	1	AM	1.36	1.31	0.05	47.7	D	1.65	43.6	D	1.80	3725	-0.16		
F10	I-80 - WB	University	Ashby	Emery - Berk	1	PM	1.36	1.31	0.05	23.3	(F30)	3.37	18.2	(F20)	4.31	3833	-0.94	(F30) to (F20)	
F11	I-80 - WB	Ashby	Powell	Emery - Berk	1	AM	0.64	0.71	-0.07	49.3	C	0.86	43.2	D	0.99	3398	-0.12	C to D	
F11	I-80 - WB	Ashby	Powell	Emery - Berk	1	PM	0.64	0.71	-0.07	15.5	(F20)	2.75	15.6	(F20)	2.73	2929	0.02		
F12	I-80 - WB	Powell	I-80/I-580 (Split)	Emery - Berk	1	AM	0.42	0.47	-0.05	47.3	D	0.60	45.8	D	0.62	3448	-0.02		
F12	I-80 - WB	Powell	I-80/I-580 (Split)	Emery - Berk	1	PM	0.42	0.47	-0.05	28	(F30)	1.01	27.2	(F30)	1.04	2920	-0.03		
F13	I-80 - WB	I-580 Split	Toll Plaza	Oak	1	AM	1.2	1.31	-0.11	6	(F10)	13.10	14.3	(F20)	5.48	3624			
F13	I-80 - WB	I-580 Split	Toll Plaza	Oak	1	PM	1.2	1.31	-0.11	39.4	E	1.99	52.6	C	1.49	3830			
F14	I-80 - WB	Toll Plaza	SF County	Oak	1	AM	2	2.01	-0.01	17.8	(F20)	6.78	26.2	(F30)	4.60	3725	2.17	(F20) to (F30)	
F14	I-80 - WB	Toll Plaza	SF County	Oak	1	PM	2	2.01	-0.01	40.9	E	2.95	39.3	E	3.07	3833	-0.12		
F15	I-238 - EB	I-880	I-580	Uninc-San L	2	AM	2.28	2.59	-0.31	60.3	A	2.58	57.7	B	2.69	3725			
F15	I-238 - EB	I-880	I-580	Uninc-San L	2	PM	2.28	2.59	-0.31	38.7	E	4.02	35.5	E	4.38	3833			
F16	I-238 - WB	I-580	I-880	Uninc-San L	2	AM	1.6	2.48	-0.88	20.8	(F30)	7.15	23.8	(F30)	6.26	3725	85% of length used		
F16	I-238 - WB	I-580	I-880	Uninc-San L	2	PM	1.6	2.48	-0.88	52.1	C	2.86	47.2	D	3.15	3745	85% of length used		
F17	I-580 - EB	I-580/I-238 changed fm (I-238/Fthl Off)	Grove	Unincorp	2	AM	2.88	2.68	0.2	54.8	C	2.93	62.5	A	2.57	3725			
F17	I-580 - EB	I-580/I-238 changed fm (I-238/Fthl Off)	Grove	Unincorp	2	PM	2.88	2.68	0.2	51.1	C	3.15	59.0	B	2.72	3824			
F18	I-580 EB	Grove	Eden Canyon	Uninc - Pleas	4	AM	2.17	2.19	-0.02	67.3	A	1.95	56.6	B	2.32	3725	-0.37	A to B	
F18	I-580 EB	Grove	Eden Canyon	Uninc - Pleas	4	PM	2.17	2.19	-0.02	54.3	C	2.42	52.6	C	2.50	3833	-0.08		
F19	I-580 EB	Eden Canyon	San Ramon/ Foothill	Uninc - Pleas	4	AM	4.8	4.82	-0.02	60.4	A	4.79	60.8	A	4.75	3725	0.03		
F19	I-580 EB	Eden Canyon	San Ramon/ Foothill	Uninc - Pleas	4	PM	4.8	4.82	-0.02	48	D	6.03	54.2	C	5.34	3833	0.69	D to C	
F20	I-580 EB	San Ramon/ Foothill	I-680	Plea - Uninc	4	AM	0.77	0.71	0.06	63.7	A	0.67	63.1	A	0.68	3725	-0.01		
F20	I-580 EB	San Ramon/ Foothill	I-680	Plea - Uninc	4	PM	0.77	0.71	0.06	33.2	E	1.28	38.4	E	1.11	3833	0.17		
F21	I-580 EB	I-680	Hopyard	Plea	4	AM	0.76	0.87	-0.11	61.5	A	0.85	64.9	A	0.80	3725			
F21	I-580 EB	I-680	Hopyard	Plea	4	PM	0.76	0.87	-0.11	24.6	(F30)	2.12	32.5	E	1.61	3833			
F22	I-580 EB	Hopyard	Santa Rita	Plea	4	AM	1.96	1.9	0.06	66.9	A	1.70	65.7	A	1.74	3725	-0.03		

*Travel time difference is only shown for the CMP segments validated

APPENDIX B - TIER 1 FREEWAYS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
F22	I-580 EB	Hopyard	Santa Rita	Plea	4	PM	1.96	1.9	-0.06	26.2	(F30)	4.35	29.2	(F30)	3.90	3833	0.45		
F23	I-580 EB	Santa Rita	El Charro	Uninc-Pleas	4	AM	1.24	1.25	-0.01	67.8	A	1.11	66.9	A	1.12	3725	-0.01		
F23	I-580 EB	Santa Rita	El Charro	Uninc-Pleas	4	PM	1.24	1.25	-0.01	34.1	E	2.20	39.3	E	1.91	3833	0.29		
F24	I-580 EB	El Charro	SR 84/Airway Blvd.	Unincorp	4	AM	1.52	1.72	-0.2	66.9	A	1.54	65.2	A	1.58	3725			
F24	I-580 EB	El Charro	SR 84/Airway Blvd.	Unincorp	4	PM	1.52	1.72	-0.2	56.1	B	1.84	52.6	C	1.96	3833			
F25	I-580 EB	SR 84/Airway Blvd.	Portola	Unincorp	4	AM	1.71	1.73	-0.02	68.3	A	1.52	65.8	A	1.58	3725	-0.06		
F25	I-580 EB	SR 84/Airway Blvd.	Portola	Unincorp	4	PM	1.71	1.73	-0.02	61	A	1.70	55.3	B	1.88	3833	-0.18	A to B	
F26	I-580 - EB	Portola	1st St	Liv	4	AM	2.7	2.56	0.14	68.1	A	2.26	65.5	A	2.34	3725			
F26	I-580 - EB	Portola	1st St	Liv	4	PM	2.7	2.56	0.14	65	A	2.36	53.9	C	2.85	3833			
F27	I-580 - EB	1st St	Greenville	Liv-Uninc	4	AM	1.98	2.13	-0.15	56.6	B	2.26	64.6	A	1.98	3725			
F27	I-580 - EB	1st St	Greenville	Liv-Uninc	4	PM	1.98	2.13	-0.15	29.3	(F30)	4.36	37.7	E	3.39	3833			
F28	I-580 - EB	Greenville	N.Flynn	Uninc	4	AM	1.5	2.73	-1.23	42.8	D	3.83	63.8	A	2.57	3725			
F28	I-580 - EB	Greenville	N.Flynn	Uninc	4	PM	1.5	2.73	-1.23	25.4	(F30)	6.45	35.0	E	4.69	3833			
F29	I-580 - EB	N.Flynn	Grant Line	Uninc	4	AM	3.19	4.32	-1.13	50.6	C	5.12	66.5	A	3.90	3725			
F29	I-580 - EB	N.Flynn	Grant Line	Uninc	4	PM	3.19	4.32	-1.13	39.6	E	6.55	50.6	C	5.13	3833			
F30	I-580 - EB	Grant Line	I-205 (SJ Co) Off	Uninc	4	AM	1.11	0.87	0.24	46.7	D	1.12	65.4	A	0.80	3392			
F30	I-580 - EB	Grant Line	I-205 (SJ Co) Off	Uninc	4	PM	1.11	0.87	0.24	37.8	E	1.38	55.9	B	0.93	3785			
F31	I-580 - WB	I-205 (SJ Co)	Grant Line	Liv - Uninc	4	AM	0.89	0.72	0.17	36.7	E	1.18	54.9	C	0.79	3700			
F31	I-580 - WB	I-205 (SJ Co)	Grant Line	Liv - Uninc	4	PM	0.89	0.72	0.17	37.1	E	1.16	65.6	A	0.66	3244			
F32	I-580 - WB	Grant Line	N Flynn	Liv - Uninc	4	AM	4.56	4.59	-0.03	45.9	D	6.00	43.5	D	6.34	3725	-0.34		
F32	I-580 - WB	Grant Line	N Flynn	Liv - Uninc	4	PM	4.56	4.59	-0.03	69	A	3.99	64.3	A	4.28	3799	-0.29		
F33	I-580 - WB	N Flynn	Greenville Rd	Liv - Uninc	4	AM	2.34	2.43	-0.09	36.6	E	3.98	37.3	E	3.90	3725	0.08		
F33	I-580 - WB	N Flynn	Greenville Rd	Liv - Uninc	4	PM	2.34	2.43	-0.09	68	A	2.14	67.4	A	2.16	3805	-0.02		
F34	I-580 - WB	Greenville Rd	1st St	Liv - Uninc	4	AM	2.3	2.21	0.09	23.8	(F30)	5.57	25.2	(F30)	5.27	3725	0.31		
F34	I-580 - WB	Greenville Rd	1st St	Liv - Uninc	4	PM	2.3	2.21	0.09	66.2	A	2.00	67.6	A	1.96	3833	0.04		
F35	I-580 - WB	1st St	Portola Ave	Liv	4	AM	2.52	2.56	-0.04	22.3	(F30)	6.89	30.2	E	5.09	3725	1.80	(F30) to E	
F35	I-580 - WB	1st St	Portola Ave	Liv	4	PM	2.52	2.56	-0.04	63.4	A	2.42	65.9	A	2.33	3833	0.09		
F36	I-580 - WB	Portola	SR 84/Airway Blvd	Liv - Plea	4	AM	1.76	1.73	0.03	37.4	E	2.78	31.9	E	3.26	3725	-0.48		
F36	I-580 - WB	Portola	SR 84/Airway Blvd	Liv - Plea	4	PM	1.76	1.73	0.03	69.6	A	1.49	66.4	A	1.56	3833	-0.07		
F37	I-580 - WB	SR 84/Airway Blvd	Fallon Rd/El Charro	Plea	4	AM	1.78	1.73	0.05	40.9	E	2.54	44.8	D	2.32	3725	0.22	E to D	
F37	I-580 - WB	SR 84/Airway Blvd	Fallon Rd/El Charro	Plea	4	PM	1.78	1.73	0.05	68.4	A	1.52	64.1	A	1.62	3833	-0.10		
F38	I-580 - WB	Fallon Rd/El Charro	Tassajara	Plea	4	AM	1.16	1.23	-0.07	45.1	D	1.64	51.2	C	1.44	3725	0.20	D to C	
F38	I-580 - WB	Fallon Rd/El Charro	Tassajara	Plea	4	PM	1.16	1.23	-0.07	61.3	A	1.20	59.1	B	1.25	3833	-0.05	A to B	
F39	I-580 - WB	Tassajara Rd	I-680	Plea	4	AM	2.87	2.78	0.09	49.1	C	3.40	50.5	C	3.30	3725	0.09		
F39	I-580 - WB	Tassajara Rd	I-680	Plea	4	PM	2.87	2.78	0.09	62.1	A	2.69	53.6	C	3.11	3833	-0.43	A to C	
F40	I-580 - WB	I-680	San Ramon Rd	Uninc - Pleas	4	AM	0.69	0.71	-0.02	64.4	A	0.66	64.1	A	0.66	3725	0.00		
F40	I-580 - WB	I-680	San Ramon Rd	Uninc - Pleas	4	PM	0.69	0.71	-0.02	62.9	A	0.68	54.8	C	0.78	3833	-0.10	A to C	
F41	I-580 - WB	San Ramon Rd	Eden Canyon	Plea - Uninc	4	AM	4.75	4.82	-0.07	65.2	A	4.44	64.7	A	4.47	3725	-0.04		
F41	I-580 - WB	San Ramon Rd	Eden Canyon	Plea - Uninc	4	PM	4.75	4.82	-0.07	62.4	A	4.63	57.4	B	5.04	3833	-0.41	A to B	
F42	I-580 - WB	Eden Canyon	Center St	Plea - Uninc	4	AM	2.28	2.5	-0.22	66.9	A	2.24	61.5	A	2.44	3725			
F42	I-580 - WB	Eden Canyon	Center St	Plea - Uninc	4	PM	2.28	2.5	-0.22	67.8	A	2.21	66.3	A	2.26	3833			
F43	I-580 - WB	Center	I-580/238	Unincorp	2	AM	1.94	2.26	-0.32	47.5	D	2.85	40.9	E	3.32	3725			
F43	I-580 - WB	Center	I-580/238	Unincorp	2	PM	1.94	2.26	-0.32	57.4	B	2.36	66.0	A	2.05	3653			
F44	I-580 - EB	I-80	I-980	Oak	1	AM	1.24	1.27	-0.03	49	C	1.56	58.0	B	1.31	3714	0.24	C to B	
F44	I-580 - EB	I-80	I-980	Oak	1	PM	1.24	1.27	-0.03	18.6	(F20)	4.10	27.9	(F30)	2.73	3833	1.36	(F20) to (F30)	
F45	I-580 - EB	I-980	Harrison	Oak	1	AM	0.95	1.02	-0.07	30.1	E	2.03	29.1	(F30)	2.10	3833	-0.03		
F45	I-580 - EB	I-980	Harrison	Oak	1	PM	0.95	1.02	-0.07	30.1	E	2.03	29.1	(F30)	2.10	3833	-0.07	E to (F30)	

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APPENDIX B - TIER 1 FREEWAYS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
F46	I-580 - EB	Harrison	Lakeshore	Oak	1	AM	0.69	0.84	-0.15	62.3	A	0.81	67.1	A	0.75	3725			
F46	I-580 - EB	Harrison	Lakeshore	Oak	1	PM	0.69	0.84	-0.15	31.2	E	1.62	31.1	E	1.62	3833			
F47	I-580 - EB	Lakeshore	Coolidge	Oak	1	AM	2.25	2.21	0.04	67.6	A	1.96	63.2	A	2.10	3712	-0.14		
F47	I-580 - EB	Lakeshore	Coolidge	Oak	1	PM	2.25	2.21	0.04	43.7	D	3.03	40.2	E	3.30	3832	-0.26	D to E	
F48	I-580 - EB	Coolidge	SH 13 Off	Oak	1	AM	2.15	2.2	-0.05	67.7	A	1.95	66.0	A	2.00	3676	-0.05		
F48	I-580 - EB	Coolidge	SH 13 Off	Oak	1	PM	2.15	2.2	-0.05	52.1	C	2.53	40.1	E	3.29	3831	-0.76	C to E	
F49	I-580 - EB	SH 13 Off	MacArthur	Foothill	1	AM	4.09	4.08	0.01	64.4	A	3.80	67.9	A	3.60	3521	0.20		
F49	I-580 - EB	SH 13 Off	MacArthur	Foothill	1	PM	4.09	4.08	0.01	42.4	D	5.77	54.9	C	4.46	3770	1.31	D to C	
F50	I-580 - EB	MacArthur	I-580/238	SL - Hay	2	AM	4.33	3.78	0.55	66.4	A	3.42	67.9	A	3.34	3450			
F50	I-580 - EB	MacArthur	I-580/238	SL - Hay	2	PM	4.33	3.78	0.55	66.6	A	3.41	67.0	A	3.39	3781			
F51	I-580 - WB	I-238	Foothill/MacArthur	Oak -SL	2	AM	4.42	3.86	0.56	74.1	A	3.13	60.2	A	3.85	3582			
F51	I-580 - WB	I-238	Foothill/MacArthur	Oak -SL	2	PM	4.42	3.86	0.56	71	A	3.26	68.7	A	3.37	3379			
F52	I-580 - WB	Foothill/MacArthur	SH 13 Off	Oak -SL	1	AM	3.89	4.04	-0.15	61.4	A	3.95	42.5	D	5.70	3651			
F52	I-580 - WB	Foothill/MacArthur	SH 13 Off	Oak -SL	1	PM	3.89	4.04	-0.15	64	A	3.79	67.3	A	3.60	3665			
F53	I-580 - WB	SH 13 Off	Fruitvale	Oak	1	AM	2.36	2.63	-0.27	26.4	(F30)	5.98	30.4	E	5.19	3706			
F53	I-580 - WB	SH 13 Off	Fruitvale	Oak	1	PM	2.36	2.63	-0.27	60.8	A	2.60	67.6	A	2.33	3730			
F54	I-580 - WB	Fruitvale	Harrison	Oak	1	AM	2.21	2.68	-0.47	36.6	E	4.39	47.6	D	3.38	3724			
F54	I-580 - WB	Fruitvale	Harrison	Oak	1	PM	2.21	2.68	-0.47	55	C	2.92	65.5	A	2.46	3833			
F55	I-580 - WB	Harrison	SH 24 On-ramp	Oak	1	AM	1.16	1.24	-0.08	46.8	D	1.59	55.2	B	1.35	3725	0.24	D to B	
F55	I-580 - WB	Harrison	SH 24 On-ramp	Oak	1	PM	1.16	1.24	-0.08	53	C	1.40	58.6	B	1.27	3833	0.13	C to B	
F56	I-580 - WB	SH-24 On-ramp	I-80/580 Split	Oak	1	AM	0.69	1.17	-0.48	16.9	(F20)	4.15	35.3	E	1.99	3721			
F56	I-580 - WB	SH-24 On-ramp	I-80/580 Split	Oak	1	PM	0.69	1.17	-0.48	14.2	(F20)	4.94	28.3	(F30)	2.48	3833			
F57	I-580 - EB	Central (County Line)	I-80 Jct	Alb	1	AM	0.77	0.7	0.07	27.3	(F30)	1.54					Insufficient TMC data		
F57	I-580 - EB	Central (County Line)	I-80 Jct	Alb	1	PM	0.77	0.7	0.07	46.3	D	0.91					Insufficient TMC data		
F58	I-580 - WB	I-80 Jct	Central (County Line)	Alb	1	AM	1.07	0.86	0.21	69.2	A	0.75					Insufficient TMC data		
F58	I-580 - WB	I-80 Jct	Central (County Line)	Alb	1	PM	1.07	0.86	0.21	66.6	A	0.77					Insufficient TMC data		
F59	I-680 - NB	Scott Creek Rd	Rt 262/Mission	Fre	3	AM	2.2	2.26	-0.06	65.5	A	2.07	65.6	A	2.07	3725	0.00		
F59	I-680 - NB	Scott Creek Rd	Rt 262/Mission	Fre	3	PM	2.2	2.26	-0.06	51.4	C	2.64	40.1	E	3.38	3833	-0.74	C to E	
F60	I-680 - NB	Rt 262/Mission	Durham Rd	Fre	3	AM	1.34	1.62	-0.28	66.2	A	1.47	67.8	A	1.43	3725			
F60	I-680 - NB	Rt 262/Mission	Durham Rd	Fre	3	PM	1.34	1.62	-0.28	20.1	(F30)	4.84	16.7	(F20)	5.82	3833			
F61	I-680 - NB	Durham Rd	Washington Blvd	Fre	3	AM	1.54	1.3	0.24	65.9	A	1.18	66.1	A	1.18	3725			
F61	I-680 - NB	Durham Rd	Washington Blvd	Fre	3	PM	1.54	1.3	0.24	23.4	(F30)	3.33	18.4	(F20)	4.24	3833			
F62	I-680 - NB	Washington Blvd	Rt 238/Mission	Fre	3	AM	0.89	1.14	-0.25	69.7	A	0.98	64.1	A	1.07	3725			
F62	I-680 - NB	Washington Blvd	Rt 238/Mission	Fre	3	PM	0.89	1.14	-0.25	38.7	E	1.77	31.7	E	2.16	3833			
F63	I-680 NB	SR 238/Mission	Vargas Rd	Unincorp	3	AM	0.82	1.1	-0.28	62.4	A	1.06	64.7	A	1.02	3725			
F63	I-680 NB	SR 238/Mission	Vargas Rd	Unincorp	3	PM	0.82	1.1	-0.28	53.7	C	1.23	43.2	D	1.53	3833			
F64	I-680 NB	Vargas Rd	Andrade Rd	Unincorp	3	AM	2.64	2.21	0.43	65.2	A	2.03	65.8	A	2.01	3723			
F64	I-680 NB	Vargas Rd	Andrade Rd	Unincorp	3	PM	2.64	2.21	0.43	28.9	(F30)	4.59	32.1	E	4.13	3833			
F65	I-680 NB	Andrade Rd	Calaveras	Unincorp	3	AM	1.13	1.15	-0.02	64.1	A	1.08	66.5	A	1.04	3721	0.04		
F65	I-680 NB	Andrade Rd	Calaveras	Unincorp	3	PM	1.13	1.15	-0.02	39.3	E	1.76	45.1	D	1.53	3833	0.22	E to D	
F66	I-680 NB	Calaveras	Rt.84/Vallecitos	Unincorp	3	AM	0.3	0.39	-0.09	73.4	A	0.32	66.2	A	0.35	3718	-0.03		
F66	I-680 NB	Calaveras	Rt.84/Vallecitos	Unincorp	3	PM	0.3	0.39	-0.09	63.7	A	0.37	57.1	B	0.41	3829	-0.04	A to B	
F67	I-680 NB	SR 84	Sunol Blvd	Plea - Uninc	4	AM	3.45	3.52	-0.07	68.3	A	3.09	67.8	A	3.11	3724	-0.02		
F67	I-680 NB	SR 84	Sunol Blvd	Plea - Uninc	4	PM	3.45	3.52	-0.07	64.7	A	3.26	65.3	A	3.23	3824	0.03		
F68	I-680 NB	Sunol Blvd.	Bernal Ave	Plea - Uninc	4	AM	1.52	1.49	0.03	64.6	A	1.38	68.3	A	1.31	3725	0.08		
F68	I-680 NB	Sunol Blvd.	Bernal Ave	Plea - Uninc	4	PM	1.52	1.49	0.03	62.5	A	1.43	58.7	B	1.52	3829	-0.09	A to B	
F69	I-680 NB	Bernal Ave	Stoneridge Dr	Plea	4	AM	2.39	2.53	-0.14	65.4	A	2.32	67.8	A	2.24	3725			

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APPENDIX B - TIER 1 FREEWAYS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
F69	I-680 NB	Bernal Ave	Stoneridge Dr	Plea	4	PM	2.39	2.53	-0.14	60.8	A	2.50	58.7	B	2.59	3829			
F70	I-680 NB	Stoneridge Dr	I-580	Plea	4	AM	0.84	0.74	0.1	70.3	A	0.63	63.9	A	0.69	3725	-0.06		
F70	I-680 NB	Stoneridge Dr	I-580	Plea	4	PM	0.84	0.74	0.1	63.4	A	0.70	59.8	B	0.74	3833	-0.04	A to B	
F71	I-680 - NB	I-580	Alcosta	Dub	4	AM	1.83	1.85	-0.02	47.9	D	2.32	54.3	C	2.04	3725	0.27	D to C	
F71	I-680 - NB	I-580	Alcosta	Dub	4	PM	1.83	1.85	-0.02	55.8	B	1.99	60.6	A	1.83	3833	0.16	B to A	
F72	I-680 - SB	Alcosta	I-580	Dub	4	AM	1.84	1.85	-0.01	67.5	A	1.64	65.7	A	1.69	3725	-0.04		
F72	I-680 - SB	Alcosta	I-580	Dub	4	PM	1.84	1.85	-0.01	68.8	A	1.61	67.8	A	1.64	3833	-0.02		
F73	I-680 SB	I-580	Stoneridge Dr	Plea	4	AM	0.76	0.73	0.03	44.5	D	0.98	51.7	C	0.85	3725	0.14	D to C	
F73	I-680 SB	I-580	Stoneridge Dr	Plea	4	PM	0.76	0.73	0.03	62.2	A	0.70	66.1	A	0.66	3824	0.04		
F74	I-680 SB	Stoneridge Dr	Bernal	Plea	4	AM	2.55	2.54	0.01	40.5	E	3.76	45.4	D	3.35	3725	0.41	E to D	
F74	I-680 SB	Stoneridge Dr	Bernal	Plea	4	PM	2.55	2.54	0.01	65.4	A	2.33	66.5	A	2.29	3795	0.04		
F75	I-680 SB	Bernal Ave.	Sunol Blvd	Unincorp	4	AM	1.31	1.49	-0.18	27.5	(F30)	3.25	38.6	E	2.32	3725			
F75	I-680 SB	Bernal Ave.	Sunol Blvd	Unincorp	4	PM	1.31	1.49	-0.18	59.7	B	1.50	67.1	A	1.33	3793			
F76	I-680 SB	Sunol Blvd.	SR 84	Unincorp	4	AM	3.82	3.71	0.11	44.9	D	4.96	43.0	D	5.18	3725			
F76	I-680 SB	Sunol Blvd.	SR 84	Unincorp	4	PM	3.82	3.71	0.11	67.8	A	3.28	66.7	A	3.34	3792			
F77	I-680 SB	SR 84 (Niles Canyon)	Andrade Rd	Unincorp	3	AM	1.32	1.33	-0.01	49	D	1.63	51.5	C	1.55	3725	0.08	D to C	
F77	I-680 SB	SR 84 (Niles Canyon)	Andrade Rd	Unincorp	3	PM	1.32	1.33	-0.01	65.4	A	1.22	67.3	A	1.19	3810	0.03		
F78	I-680 SB	Andrade Rd	Sheridon Rd	Unincorp	3	AM	1.39	1.4	-0.01	56.7	B	1.48	58.1	B	1.45	3725	0.04		
F78	I-680 SB	Andrade Rd	Sheridon Rd	Unincorp	3	PM	1.39	1.4	-0.01	61.9	A	1.36	63.1	A	1.33	3814	0.03		
F79	I-680 SB	Sheridon Rd	Vargas Rd	Unincorp	3	AM	0.81	0.81	0	58.7	B	0.83	60.3	A	0.81	3725	0.02	B to A	
F79	I-680 SB	Sheridon Rd	Vargas Rd	Unincorp	3	PM	0.81	0.81	0	63.9	A	0.76	65.6	A	0.74	3781	0.02		
F80	I-680 SB	Vargas Rd	SR 238/Mission	Unincorp	3	AM	1.08	1.11	-0.03	46.7	D	1.43	62.7	A	1.06	3725	0.36	D to A	
F80	I-680 SB	Vargas Rd	SR 238/Mission	Unincorp	3	PM	1.08	1.11	-0.03	63.7	A	1.05	69.7	A	0.96	3785	0.09		
F81	I-680 - SB	Rt 238/Mission	Washington Blvd	Fre	3	AM	1.04	1.14	-0.1	50.3	C	1.36	61.8	A	1.11	3725	0.25	C to A	
F81	I-680 - SB	Rt 238/Mission	Washington Blvd	Fre	3	PM	1.04	1.14	-0.1	64	A	1.07	70.0	A	0.98	3833	0.09		
F82	I-680 - SB	Washington Blvd	Durham Rd	Fre	3	AM	1.52	1.35	0.17	51	C	1.59	55.7	B	1.46	3725			
F82	I-680 - SB	Washington Blvd	Durham Rd	Fre	3	PM	1.52	1.35	0.17	67.6	A	1.20	68.5	A	1.18	3833			
F83	I-680 - SB	Durham Rd	Rt 262/Mission	Fre	3	AM	1.67	1.63	0.04	51.3	C	1.91	48.4	D	2.02	3725	-0.12	C to D	
F83	I-680 - SB	Durham Rd	Rt 262/Mission	Fre	3	PM	1.67	1.63	0.04	70.6	A	1.39	68.2	A	1.43	3833	-0.05		
F84	I-680 - SB	Rt 262/Mission	Scott Creek Rd	Fre	3	AM	2.19	2.25	-0.06	63	A	2.14	66.9	A	2.02	3725	0.13		
F84	I-680 - SB	Rt 262/Mission	Scott Creek Rd	Fre	3	PM	2.19	2.25	-0.06	64.4	A	2.10	68.1	A	1.98	3833	0.11		
F85	I-880 - NB	Dix Landing	SR 262/Mission	Fre	3	AM	2.08	2.09	-0.01	75.5	A	1.66	66.9	A	1.87	3725	-0.21		
F85	I-880 - NB	Dix Landing	SR 262/Mission	Fre	3	PM	2.08	2.09	-0.01	32.9	E	3.81	38.9	E	3.22	3833	0.59		
F86	I-880 - NB	SR262/Mission	AutoMall Pkwy	Fre	3	AM	2.44	2.43	0.01	68.8	A	2.12	64.8	A	2.25	3725	-0.13		
F86	I-880 - NB	SR262/Mission	AutoMall Pkwy	Fre	3	PM	2.44	2.43	0.01	46.8	D	3.12	42.7	D	3.41	3833	-0.30		
F87	I-880 - NB	AutoMall Pkwy	Stevenson	Fre	3	AM	1.54	1.53	0.01	68.2	A	1.35	64.5	A	1.42	3725	-0.08		
F87	I-880 - NB	AutoMall Pkwy	Stevenson	Fre	3	PM	1.54	1.53	0.01	50.2	C	1.83	48.9	D	1.88	3833	-0.05	C to D	
F88	I-880 - NB	Stevenson	Decoto	Fre	3	AM	4.04	4.06	-0.02	65.9	A	3.70	61.9	A	3.94	3725	-0.24		
F88	I-880 - NB	Stevenson	Decoto	Fre	3	PM	4.04	4.06	-0.02	56.3	B	4.33	45.2	D	5.39	3833	-1.07	B to D	
F89	I-880 - NB	Decota	Alvarado Blvd	Fre - Un Cty	3	AM	1.17	1.17	0	53.1	C	1.32	60.0	A	1.17	3725	0.15	C to A	
F89	I-880 - NB	Decota	Alvarado Blvd	Fre - Un Cty	3	PM	1.17	1.17	0	42.8	D	1.64	31.8	E	2.21	3833	-0.57	D to E	
F90	I-880 - NB	Alcarado Blvd	Alvarado-Niles Blvd	Fre- Uni Cty	3	AM	1.17	1.57	-0.4	45.8	D	2.06	56.4	B	1.67	3725			
F90	I-880 - NB	Alcarado Blvd	Alvarado-Niles Blvd	Fre- Uni Cty	3	PM	1.17	1.57	-0.4	39.2	E	2.40	31.0	E	3.04	3833			
F91	I-880 - NB	Alv-Niles	Tennyson	Un Cty - Hay	3	AM	2.65	2.6	0.05	38.1	E	4.09	42.4	D	3.68	3725	0.42	E to D	
F91	I-880 - NB	Alv-Niles	Tennyson	Un Cty - Hay	3	PM	2.65	2.6	0.05	24.7	(F30)	6.32	21.4	(F30)	7.30	3833	-0.98		
F92	I-880 - NB	Tennyson	SR 92	Hay	2	AM	1.14	1.02	0.12	64.5	A	0.95	54.2	C	1.13	3725			
F92	I-880 - NB	Tennyson	SR 92	Hay	2	PM	1.14	1.02	0.12	19.2	(F20)	3.19	27.9	(F30)	2.19	3830			
F93	I-880 - NB	SR 92	A St	Hay	2	AM	1.52	1.68	-0.16	53.1	C	1.90	60.1	A	1.68	3725			
F93	I-880 - NB	SR 92	A St	Hay	2	PM	1.52	1.68	-0.16	25.5	(F30)	3.95	32.4	E	3.11	3833			
F94	I-880 - NB	A St	I-238 (Marina before 06)	Oak -SL	2	AM	1.82	1.95	-0.13	57.9	B	2.02	54.7	C	2.14	3725			

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APPENDIX B - TIER 1 FREEWAYS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
F94	I-880 - NB	A St	I-238 (Marina before 06)	Oak - SL	2	PM	1.82	1.95	-0.13	45.1	D	2.59	41.0	E	2.86	3833			
F95	I-880 - NB	I-880/I238 (split)	Marina Blvd	Oak - SL	2	AM	2.66	2.54	0.12	34.3	E	4.44	32.3	E	4.71	3725			
F95	I-880 - NB	I-880/I238 (split)	Marina Blvd	Oak - SL	2	PM	2.66	2.54	0.12	65.8	A	2.32	61.5	A	2.48	3833			
F96	I-880 - NB	Marina Blvd	SR 112/Davis	Oak - SL	2	AM	0.79	0.82	-0.03	30	(F30)	1.64	30.1	E	1.63	3725	0.01	(F30) to E	
F96	I-880 - NB	Marina Blvd	SR 112/Davis	Oak - SL	2	PM	0.79	0.82	-0.03	60.9	A	0.81	55.2	B	0.89	3833	-0.08	A to B	
F97	I-880 - NB	SR 112/Davis	Hegenberger	Oak - SL	2	AM	1.88	1.83	0.05	29.8	(F30)	3.68	34.6	E	3.17	3725	0.51	(F30) to E	
F97	I-880 - NB	SR 112/Davis	Hegenberger	Oak - SL	2	PM	1.88	1.83	0.05	60.5	A	1.81	50.4	C	2.18	3833	-0.36	A to C	
F98	I-880 - NB	Hegenberger	High/42nd	Oak	1	AM	2.47	2.34	0.13	30.8	E	4.56	27.9	(F30)	5.04	3725			
F98	I-880 - NB	Hegenberger	High/42nd	Oak	1	PM	2.47	2.34	0.13	48.5	D	2.89	45.6	D	3.08	3833			
F99	I-880 - NB	High/42nd	23rd (1st on)	Oak	1	AM	1.06	1.25	-0.19	33.2	E	2.26	27.1	(F30)	2.77	3725			
F99	I-880 - NB	High/42nd	23rd (1st on)	Oak	1	PM	1.06	1.25	-0.19	58	B	1.29	53.6	C	1.40	3833			
F100	I-880 - NB	23RD (1ST on)	Jct 980 (off)	Oak	1	AM	2.64	2.63	0.01	48	D	3.29	47.1	D	3.35	3725	-0.07		
F100	I-880 - NB	23RD (1ST on)	Jct 980 (off)	Oak	1	PM	2.64	2.63	0.01	61.8	A	2.55	57.4	B	2.75	3833	-0.20	A to B	
F101	I-880 - NB	Jct 980 (off)	I-880/I-80 split	Oak	1	AM	2.38	2.43	-0.05	63.7	A	2.29	62.5	A	2.33	3725	-0.04		
F101	I-880 - NB	Jct 980 (off)	I-880/I-80 split	Oak	1	PM	2.38	2.43	-0.05	63.6	A	2.29	49.8	C	2.93	3833	-0.63	A to C	
F102	I-880 - NB	I-880/I-80 (split)	I-880/I-80 (merge)	Oak	1	AM	1.4	1.44	-0.04	65.1	A	1.33	62.3	A	1.39	3725	-0.06		
F102	I-880 - NB	I-880/I-80 (split)	I-880/I-80 (merge)	Oak	1	PM	1.4	1.44	-0.04	15.2	(F20)	5.68	14.8	(F20)	5.83	3833	-0.15		
F103	I-880 - SB	I-880/I-80 split	I-880/I-80 merge	Oak	1	AM	1.63	1.28	0.35	67.5	A	1.14	61.0	A	1.26	3725			
F103	I-880 - SB	I-880/I-80 split	I-880/I-80 merge	Oak	1	PM	1.63	1.28	0.35	65	A	1.18	55.6	B	1.38	3833			
F104	I-880 - SB	I-880/I-80 merge	Jct 980	Oak	1	AM	2.65	2.51	0.14	83	A	1.81	62.9	A	2.39	3725			
F104	I-880 - SB	I-880/I-80 merge	Jct 980	Oak	1	PM	2.65	2.51	0.14	72.3	A	2.08	39.0	E	3.86	3833			
F105	I-880 - SB	I-980	23rd	Oak	1	AM	2.79	2.74	0.05	60.7	A	2.71	56.6	B	2.90	3725	-0.20	A to B	
F105	I-880 - SB	I-980	23rd	Oak	1	PM	2.79	2.74	0.05	39.5	E	4.16	28.2	(F30)	5.82	3827	-1.66	E to (F30)	
F106	I-880 - SB	23rd St	High/42nd	Oak	1	AM	1.35	1.1	0.25	56.7	B	1.16	59.2	B	1.11	3725			
F106	I-880 - SB	23rd St	High/42nd	Oak	1	PM	1.35	1.1	0.25	37.3	E	1.77	34.5	E	1.91	3827			
F107	I-880 - SB	High/42nd	Hegenberger	Oak	1	AM	2.27	2.36	-0.09	61	A	2.32	60.8	A	2.33	3725	-0.01		
F107	I-880 - SB	High/42nd	Hegenberger	Oak	1	PM	2.27	2.36	-0.09	35.1	E	4.03	31.7	E	4.47	3833	-0.44		
F108	I-880 - SB	Hegenberger	SR 112/Davis	Oak - SL	1	AM	1.69	1.82	-0.13	60.6	A	1.80	60.5	A	1.80	3725			
F108	I-880 - SB	Hegenberger	SR 112/Davis	Oak - SL	1	PM	1.69	1.82	-0.13	51.7	C	2.11	36.2	E	3.02	3833			
F109	I-880 - SB	SR 112/Davis	Marina Blvd	Oak - SL	1	AM	0.87	0.82	0.05	72.2	A	0.68	58.5	B	0.84	3725	-0.16	A to B	
F109	I-880 - SB	SR 112/Davis	Marina Blvd	Oak - SL	1	PM	0.87	0.82	0.05	56.4	B	0.87	47.4	D	1.04	3833	-0.17	B to D	
F110	I-880 - SB	Marina Blvd	SR 238 WB (merge)	Oak - SL	1	AM	2.41	2.55	-0.14	47.2	D	3.24	48.1	D	3.18	3725			
F110	I-880 - SB	Marina Blvd	SR 238 WB (merge)	Oak - SL	1	PM	2.41	2.55	-0.14	63.7	A	2.40	50.2	C	3.05	3833			
F111	I-880 - SB	I-238 (Marina before 06)	A St	SL-Uninc	2	AM	2.03	1.91	0.12	22.4	(F30)	5.12	25.8	(F30)	4.44	3725			
F111	I-880 - SB	I-238 (Marina before 06)	A St	SL-Uninc	2	PM	2.03	1.91	0.12	53.9	C	2.13	40.5	E	2.83	3833			
F112	I-880 - SB	A St	Rt 92	Hay	2	AM	1.81	1.7	0.11	34.1	E	2.99	34.7	E	2.94	3725			
F112	I-880 - SB	A St	Rt 92	Hay	2	PM	1.81	1.7	0.11	39.9	E	2.56	40.9	E	2.49	3833			
F113	I-880 - SB	Rt 92	Tennyson	Hay	2	AM	0.96	1.01	-0.05	23	(F30)	2.63	34.0	E	1.78	3725	0.85	(F30) to E	
F113	I-880 - SB	Rt 92	Tennyson	Hay	2	PM	0.96	1.01	-0.05	33.6	E	1.80	38.1	E	1.59	3833	0.21		
F114	I-880 - SB	Tennyson	Alv-Niles	Hay - UC	2	AM	2.49	2.6	-0.11	23.5	(F30)	6.64	31.5	E	4.95	3725			
F114	I-880 - SB	Tennyson	Alv-Niles	Hay - UC	2	PM	2.49	2.6	-0.11	41.9	D	3.72	43.4	D	3.59	3833			
F115	I-880 - SB	Alvarado-Niles	Alvarado	UC - Fre	2	AM	1.37	1.56	-0.19	24.6	(F30)	3.80	28.2	(F30)	3.31	3725			
F115	I-880 - SB	Alvarado-Niles	Alvarado	UC - Fre	2	PM	1.37	1.56	-0.19	54	C	1.73	57.1	B	1.64	3833			
F116	I-880 - SB	Alvarado	Decoto	UC - Fre	2	AM	1.17	1.19	-0.02	26.8	(F30)	2.66	30.3	E	2.36	3725	0.31	(F30) to E	
F116	I-880 - SB	Alvarado	Decoto	UC - Fre	2	PM	1.17	1.19	-0.02	42.2	D	1.69	52.1	C	1.37	3833	0.32	D to C	
F117	I-880 - SB	Decoto	Stevenson	Fre	3	AM	4.07	4.06	0.01	20.2	(F30)	12.06	31.0	E	7.86	3725	4.20	(F30) to E	
F117	I-880 - SB	Decoto	Stevenson	Fre	3	PM	4.07	4.06	0.01	54.4	C	4.48	58.2	B	4.19	3833	0.29	C to B	
F118	I-880 - SB	Stevenson	AutoMall Pkwy	Fre	2	AM	1.26	1.52	-0.26	35.5	E	2.57	43.9	D	2.08	3725			
F118	I-880 - SB	Stevenson	AutoMall Pkwy	Fre	2	PM	1.26	1.52	-0.26	64.5	A	1.41	64.8	A	1.41	3833			
F119	I-880 - SB	AutoMall Pkwy	Rt 262/Mission	Fre	2	AM	3.04	2.83	0.21	32.3	E	5.26	47.8	D	3.55	3725			

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APPENDIX B - TIER 1 FREEWAYS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
F119	I-880 - SB	AutoMall Pkwy	Rt 262/Mission	Fre	2	PM	3.04	2.83	0.21	62.5	A	2.72	65.5	A	2.59	3833			
F120	I-880 - SB	SR 262/Mission	Dix Landing(off)	Fre	3	AM	1.27	1.69	-0.42	46.1	D	2.20	58.3	B	1.74	3725			
F120	I-880 - SB	SR 262/Mission	Dix Landing(off)	Fre	3	PM	1.27	1.69	-0.42	68.1	A	1.49	66.7	A	1.52	3833			
F121	I-980 - WB	SR 24 @ 580	I-880	Oak	1	AM	2.27	2.49	-0.22	63.7	A	2.35	64.0	A	2.34	3725			
F121	I-980 - WB	SR 24 @ 580	I-880	Oak	1	PM	2.27	2.49	-0.22	65.2	A	2.29	61.2	A	2.44	3832			
F122	I-980 - EB	I-880	SR 24 @ 580	Oak	1	AM	2.32	2.44	-0.12	60.2	A	2.43	64.0	A	2.29	3725			
F122	I-980 - EB	I-880	SR 24 @ 580	Oak	1	PM	2.32	2.44	-0.12	39.4	E	3.72	45.1	D	3.25	3833			
F123	SR 13 - NB	I-580	Carson/Redwood (1) (off)	Oak	1	AM	1.2	1.27	-0.07	85.8	A	0.89	55.9	B	1.36	2132	-0.47	A to B	
F123	SR 13 - NB	I-580	Carson/Redwood (1) (off)	Oak	1	PM	1.2	1.27	-0.07	83.1	A	0.92	63.4	A	1.20	2093	-0.28		
F124	SR 13 - NB	Carson/Redwood (1) (off)	Joaquin Miller	Oak	1	AM	1.09	1.08	0.01	39.4	E	1.64	47.3	D	1.37	2874	0.28	E to D	
F124	SR 13 - NB	Carson/Redwood (1) (off)	Joaquin Miller	Oak	1	PM	1.09	1.08	0.01	43.3	D	1.50	62.8	A	1.03	2755	0.46	D to A	
F125	SR 13 - NB	Joa Miller/Linc	Moraga Ave	Oak	1	AM	1.77	1.83	-0.06	35.4	E	3.10	37.5	E	2.93	2738	0.18		
F125	SR 13 - NB	Joa Miller/Linc	Moraga Ave	Oak	1	PM	1.77	1.83	-0.06	56	B	1.96	47.7	D	2.30	2774	-0.34	B to D	
F126	SR 13 - NB	Moraga Ave	Hiller (Sig)	Oak	1	AM	1.57	1.63	-0.06	23.2	(F30)	4.22	30.1	E	3.25	1552	0.96	(F30) to E	
F126	SR 13 - NB	Moraga Ave	Hiller (Sig)	Oak	1	PM	1.57	1.63	-0.06	18.9	(F20)	5.17	24.7	(F30)	3.96	1721	1.21	(F20) to (F30)	
F127	SR 13 - SB	Hiller Sig	Moraga Ave	Oak	1	AM	1.66	1.6	0.06	55.9	B	1.72	51.9	C	1.85	1197	-0.13	B to C	
F127	SR 13 - SB	Hiller Sig	Moraga Ave	Oak	1	PM	1.66	1.6	0.06	54.1	C	1.77	49.7	C	1.93	1551	-0.16		
F128	SR 13 - SB	Moraga Ave	Joa Miller/Linc	Oak	1	AM	2.04	1.85	0.19	72	A	1.54	63.7	A	1.74	2404			
F128	SR 13 - SB	Moraga Ave	Joa Miller/Linc	Oak	1	PM	2.04	1.85	0.19	69.6	A	1.59	62.2	A	1.78	2461			
F129	SR 13 - SB	Joaq Miller/Lincoln	Redwood	Oak	1	AM	1.34	1.07	0.27	62.6	A	1.03	66.2	A	0.97	2642			
F129	SR 13 - SB	Joaq Miller/Lincoln	Redwood	Oak	1	PM	1.34	1.07	0.27	61.1	A	1.05	64.6	A	0.99	2620			
F130	SR 13 - SB	Redwood	Jct I-580 (EB Merge)	Oak	1	AM	0.89	1.4	-0.51	41.6	D	2.02	56.3	B	1.49	2311			
F130	SR 13 - SB	Redwood	Jct I-580 (EB Merge)	Oak	1	PM	0.89	1.4	-0.51	15.6	(F20)	5.38	38.2	E	2.20	2130			
F131	SR 24 - EB	Jct I-580 (on)	Broadway/SR 13	Oak	1	AM	2.08	1.84	0.24	65.2	A	1.69	62.2	A	1.78	3716			
F131	SR 24 - EB	Jct I-580 (on)	Broadway/SR 13	Oak	1	PM	2.08	1.84	0.24	16	(F20)	6.90	17.7	(F20)	6.24	3821			
F132	SR 24 - EB	Broadway/SR 13	Caldecott (enter)	Oak	1	AM	1.41	1.65	-0.24	18.3	(F20)	5.41	18.9	(F20)	5.25	3717			
F132	SR 24 - EB	Broadway/SR 13	Caldecott (enter)	Oak	1	PM	1.41	1.65	-0.24	14.1	(F20)	7.02	13.6	(F20)	7.30	3833			
F133	SR 24 - EB	Caldecott (enter)	Fish Ranch Road	Oak	1	AM	1.03	1.04	-0.01	40.2	E	1.55	33.4	E	1.87	3335	-0.32		
F133	SR 24 - EB	Caldecott (enter)	Fish Ranch Road	Oak	1	PM	1.03	1.04	-0.01	35.9	E	1.74	34.2	E	1.82	3722	-0.08		
F134	SR 24 - WB	Fish Ranch Road (CC)	Caldecott (exit)	Oak	1	AM	0.99	0.99	0	50.2	C	1.18	47.1	D	1.26	3250	-0.08	C to D	
F134	SR 24 - WB	Fish Ranch Road (CC)	Caldecott (exit)	Oak	1	PM	0.99	0.99	0	50.5	C	1.18	45.6	D	1.30	793	-0.13	C to D	
F135	SR 24 - WB	Caldecott (exit)	Broadway	Oak	1	AM	1.77	1.73	0.04	60.3	A	1.72	55.7	B	1.86	3713	-0.14	A to B	
F135	SR 24 - WB	Caldecott (exit)	Broadway	Oak	1	PM	1.77	1.73	0.04	68.8	A	1.51	59.9	B	1.73	3397	-0.22	A to B	
F136	SR 24 - WB	Broadway	Jct I-580 (on)	Oak	1	AM	2.19	1.86	0.33	49.2	C	2.27	52.3	C	2.13	3725			
F136	SR 24 - WB	Broadway	Jct I-580 (on)	Oak	1	PM	2.19	1.86	0.33	57.8	B	1.93	51.4	C	2.17	3811			
F137	SR 84 - EB	San M CL	Toll Plaza	Fremont	3	AM	2.97	3.29	-0.32	53.9	C	3.66	66.3	A	2.98	3713			
F137	SR 84 - EB	San M CL	Toll Plaza	Fremont	3	PM	2.97	3.29	-0.32	51.9	C	3.80	65.2	A	3.03	3833			
F138	SR 84 - EB	Toll Plaza	Thornton	Fremont	3	AM	0.27	0.54	-0.27	58.3	B	0.56	65.3	A	0.50	3725			
F138	SR 84 - EB	Toll Plaza	Thornton	Fremont	3	PM	0.27	0.54	-0.27	57.2	B	0.57	64.1	A	0.51	3833			
F139	SR 84 - EB	Thornton Ave/Pascon Padre	Newark Blvd/Ardenwood Blvd	Newark	3	AM	1.23	1.16	0.07	65.9	A	1.06	64.6	A	1.08	3027	-0.02		
F139	SR 84 - EB	Thornton Ave/Pascon Padre	Newark Blvd/Ardenwood Blvd	Newark	3	PM	1.23	1.16	0.07	45.9	D	1.52	53.4	C	1.30	3725	0.21	D to C	

*Travel time difference is only shown for the CMP segments validated

APPENDIX B - TIER 1 FREEWAYS

CMP Information										Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison	
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
F140	SR 84 - EB	Newark Blvd/Ardenwood Blvd	I-880 NB (off)	Newark	3	AM	0.97	1.2	-0.23	41.8	D	1.72	50.0	C	1.44	3046					
F140	SR 84 - EB	Newark Blvd/Ardenwood Blvd	I-880 NB (off)	Newark	3	PM	0.97	1.2	-0.23	16.4	(F20)	4.39	24.3	(F30)	2.96	3728					
F141	SR 84 - WB	I-880 NB (off)	Ardenwood/Newark		3	AM	0.99	1.21	-0.22	42.7	D	1.70	45.9	D	1.58	3719					
F141	SR 84 - WB	I-880 NB (off)	Ardenwood/Newark		3	PM	0.99	1.21	-0.22	47.2	D	1.54	50.4	C	1.44	2337					
F142	SR 84 - WB	Ardenwood/Newark	Paseo Padre Pkwy		3	AM	1.15	1.15	0	36.3	E	1.90	59.0	B	1.17	3655	0.73	E to B			
F142	SR 84 - WB	Ardenwood/Newark	Paseo Padre Pkwy		3	PM	1.15	1.15	0	63.4	A	1.09	64.5	A	1.07	2474		0.02			
F143	SR 84 - WB	Paseo Padre Pkwy	Toll Gate		3	AM	0.75	0.54	0.21	31	E	1.05	42.2	D	0.77	3725					
F143	SR 84 - WB	Paseo Padre Pkwy	Toll Gate		3	PM	0.75	0.54	0.21	44	D	0.74	50.0	C	0.65	3814					
F144	SR 84 - WB	Toll Plaza	San M CL	Fremont	2	AM	3.17	3.29	-0.12	60.7	A	3.25	58.8	B	3.36	3719					
F144	SR 84 - WB	Toll Plaza	San M CL	Fremont	2	PM	3.17	3.29	-0.12	64.1	A	3.08	63.3	A	3.12	2938					
F145	SR 92 - EB	San M CL	Toll Plaza	Uninc - Hay	2	AM	2.61	2.78	-0.17	65.6	A	2.54	66.5	A	2.51	3717					
F145	SR 92 - EB	San M CL	Toll Plaza	Uninc - Hay	2	PM	2.61	2.78	-0.17	47.4	D	3.52	53.1	C	3.14	3833					
F146	SR 92 - EB	Toll Plaza	Clawitter	Uninc - Hay	2	AM	1.76	1.87	-0.11	62.1	A	1.81	65.1	A	1.72	3717					
F146	SR 92 - EB	Toll Plaza	Clawitter	Uninc - Hay	2	PM	1.76	1.87	-0.11	49.7	C	2.26	51.6	C	2.17	3833					
F147	SR 92 - EB	Clawitter	I-880	Hay	2	AM	2.1	2.07	0.03	67.8	A	1.83	57.1	B	2.17	3566	-0.34	A to B			
F147	SR 92 - EB	Clawitter	I-880	Hay	2	PM	2.1	2.07	0.03	54.4	C	2.28	22.9	(F30)	5.43	3788	-3.14	C to (F30)			
F148	SR 92 - WB	I-880	Clawitter	Hay	2	AM	2.01	2.05	-0.04	55.1	B	2.23	52.9	C	2.32	3663	-0.09	B to C			
F148	SR 92 - WB	I-880	Clawitter	Hay	2	PM	2.01	2.05	-0.04	59.7	B	2.06	60.8	A	2.02	3307	0.04	B to A			
F149	SR 92 - WB	Clawitter	Toll Plaza	Uninc - Hay	2	AM	1.87	1.88	-0.01	35.7	E	3.16	39.5	E	2.86	3725	0.30				
F149	SR 92 - WB	Clawitter	Toll Plaza	Uninc - Hay	2	PM	1.87	1.88	-0.01	42.2	D	2.67	58.9	B	1.91	3492	0.76	D to B			
F150	SR 92 - WB	Toll Plaza	San M CL	Uninc - Hay	2	AM	2.61	2.79	-0.18	59	B	2.84	52.5	C	3.19	3725					
F150	SR 92 - WB	Toll Plaza	San M CL	Uninc - Hay	2	PM	2.61	2.79	-0.18	61.7	A	2.71	66.1	A	2.53	3492					

*Travel time difference is only shown for the CMP segments validated

APPENDIX C - TIER 1 RAMPS

CMP information							Shape File Info			Floating Car Survey Results				Commerical Speed Data Results				Comparison		
ID	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow Speed (mph)	Average Speed (mph)	LOS	Travel Time (mins)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△Travel Time * (min)	△ LOS
R1	I-80/I-580 Interchange	I-80 SB	I-580 EB	Oak	1	AM	0.3	0.4	-0.1	38	32.5	B	0.74	50.4	A	0.48	3725		0.26	B to A
R1	I-80/I-580 Interchange	I-80 SB	I-580 EB	Oak	1	PM	0.3	0.4	-0.1	38	33.5	B	0.72	32.0	B	0.75	3833		-0.03	
R2	I-80/I-580 Interchange	I-580 WB	I-80 NB	Oak	1	AM	0.41	0.45	-0.04	40	34.1	B	0.79	38.8	A	0.70	3721		0.10	B to A
R2	I-80/I-580 Interchange	I-580 WB	I-80 NB	Oak	1	PM	0.41	0.45	-0.04	40	26.3	D	1.03	25.0	D	1.08	3833		-0.06	
R3	SR 24 WB/I-580 WB	SR 24 ON	I-580 OFF	Oak	1	AM	0.69	0.77	-0.08	Weaving	36.5	-	1.27	32.2		1.43	3422		-0.17	
R3	SR 24 WB/I-580 WB	SR 24 ON	I-580 OFF	Oak	1	PM	0.69	0.77	-0.08	Weaving	33.3	-	1.39	52.3		0.88	2746		0.50	
R4	I-580/SR 24 Interchange	I-580 WB	SR-24 EB	Oak	1	AM	0.51	0.53	-0.02	45	34.1	C	0.93	56.0	A	0.57	1573		0.36	C to A
R4	I-580/SR 24 Interchange	I-580 WB	SR-24 EB	Oak	1	PM	0.51	0.53	-0.02	45	22.8	E	1.39	30.6	D	1.04	1844		0.35	E to D
R5	I-580/SR 24 Interchange	SR-24 WB	I-580 EB	Oak	1	AM	0.74	0.75	-0.01	51	49.8	A	0.90	49.9	A	0.90	1003		0.00	
R5	I-580/SR 24 Interchange	SR-24 WB	I-580 EB	Oak	1	PM	0.74	0.75	-0.01	51	22.9	E	1.97	44.5	B	1.01	1403		0.95	E to B
R6	SR13/SR 24 Interchange	SR-13 NB	SR-24 EB	Oak	1	AM	0.32	0.33	-0.01	40	27.8	D	0.71	18.6	F	1.07	2024		-0.35	D to F
R6	SR13/SR 24 Interchange	SR-13 NB	SR-24 EB	Oak	1	PM	0.32	0.33	-0.01	40	7.6	F	2.61	19.4	F	1.02	3060		1.59	
R7	SR13/SR 24 Interchange	SR-24 WB	SR-13 SB	Oak	1	AM	0.16	0.16	0	31	23.5	C	0.41	47.7	A	0.20	2592		0.21	C to A
R7	SR13/SR 24 Interchange	SR-24 WB	SR-13 SB	Oak	1	PM	0.16	0.16	0	31	24	C	0.40	49.0	A	0.20	1769		0.20	C to A
R8	I-880/I-238 Interchange	I-880 SB	I-238 EB	SL	2	AM	0.74	0.75	-0.01	47	50.7	A	0.89	53.6	A	0.84	3699	95% of length used	0.05	
R8	I-880/I-238 Interchange	I-880 SB	I-238 EB	SL	2	PM	0.74	0.75	-0.01	47	40.5	B	1.11	37.7	B	1.19	3791	95% of length used	-0.08	
R9	I-880/I-238 Interchange	I-238 WB	I-880 NB	SL	2	AM	0.54	0.51	0.03	54	51.7	A	0.59	22.8	F	1.34	3725		-0.75	A to F
R9	I-880/I-238 Interchange	I-238 WB	I-880 NB	SL	2	PM	0.54	0.51	0.03	54	60.1	A	0.51	34.8	D	0.88	3745		-0.37	A to D
R10	I-880/I-238 Interchange	I-880 NB	I-238 EB	SL	2	AM	0.42	0.42	0	32	44.9	A	0.56	51.7	A	0.49	3725		0.07	
R10	I-880/I-238 Interchange	I-880 NB	I-238 EB	SL	2	PM	0.42	0.42	0	32	17.5	E	1.44	17.9	E	1.41	3833		0.03	
R11	I-880/I-238 Interchange	I-238 WB	I-880 SB	SL	2	AM	0.76	0.81	-0.05	53	36.8	D	1.32	35.9	D	1.35	3723		-0.03	
R11	I-880/I-238 Interchange	I-238 WB	I-880 SB	SL	2	PM	0.76	0.81	-0.05	53	51.2	A	0.95	47.5	B	1.02	3788		-0.07	A to B
R12	I-580/I-238 Interchange	I-580 SB	I-238 EB	Hay	2	AM	0.35	0.7	-0.35	37	22.8	D	1.84	66.6	A	0.63	3725			
R12	I-580/I-238 Interchange	I-580 SB	I-238 EB	Hay	2	PM	0.35	0.7	-0.35	37	22.9	D	1.83	61.6	A	0.68	3824			
R13	I-580/I-238 Interchange	I-238 WB	I-580 NB	Hay	2	AM	0.32	0.36	-0.04	38	41.5	A	0.52	60.8	A	0.36	3725		0.17	
R13	I-580/I-238 Interchange	I-238 WB	I-580 NB	Hay	2	PM	0.32	0.36	-0.04	38	42.7	A	0.51	66.8	A	0.32	3653		0.18	
R14	I-580/I-680 Interchange	I-580 EB	I-680 NB	Pleas	4	AM	0.46	0.52	-0.06	35	21.5	D	1.45	34.5	A	0.90	3019		0.55	D to A
R14	I-580/I-680 Interchange	I-580 EB	I-680 NB	Pleas	4	PM	0.46	0.52	-0.06	35	23.8	D	1.31	36.6	A	0.85	3309		0.46	D to A
R15	I-580/I-680 Interchange	I-580 EB	I-680 SB	Pleas	4	AM	0.28	0.29	-0.01	42	21.7	E	0.80	35.4	B	0.49	2093		0.31	E to B
R15	I-580/I-680 Interchange	I-580 EB	I-680 SB	Pleas	4	PM	0.28	0.29	-0.01	42	23.8	E	0.73	43.1	A	0.40	1674		0.33	E to A
R16	I-580/I-680 Interchange	I-680 NB	I-580 EB	Pleas	4	AM	0.9	0.92	-0.02	63.8	55.1	B	1.00	57.8	A	0.95	3461		0.05	B to A
R16	I-580/I-680 Interchange	I-680 NB	I-580 EB	Pleas	4	PM	0.9	0.92	-0.02	63.8	47.5	C	1.16	54.8	B	1.01	3661		0.15	C to B
R17	I-580/I-680 Interchange	I-680 NB	I-580 WB	Pleas	4	AM	0.66	0.62	0.04	41	35.7	B	1.04	33.2	B	1.12	565	75% of length used	-0.08	
R17	I-580/I-680 Interchange	I-680 NB	I-580 WB	Pleas	4	PM	0.66	0.62	0.04	41	41.8	A	0.89	39.4	A	0.94	815	75% of length used	-0.05	
R18	I-580/I-680 Interchange	I-580 WB	I-680 NB	Pleas	4	AM	0.41	0.42	-0.01	51.5	45.6	B	0.55	42.1	B	0.60	3563		-0.05	
R18	I-580/I-680 Interchange	I-580 WB	I-680 NB	Pleas	4	PM	0.41	0.42	-0.01	51.5	42.4	B	0.59	47.4	A	0.53	3316		0.06	B to A
R19	I-580/I-680 Interchange	I-580 WB	I-680 SB	Pleas	4	AM	0.66	0.64	0.02	39	25.9	D	1.48	26.5	D	1.45	3681	85% of length used	0.03	
R19	I-580/I-680 Interchange	I-580 WB	I-680 SB	Pleas	4	PM	0.66	0.64	0.02	39	25.1	D	1.53	37.4	A	1.03	3497	85% of length used	0.50	D to A
R20	I-580/I-680 Interchange	I-680 SB	I-580 EB	Pleas	4	AM	1.23	1.22	0.01	68.1	55.4	B	1.32	61.8	A	1.18	3013		0.14	B to A
R20	I-580/I-680 Interchange	I-680 SB	I-580 EB	Pleas	4	PM	1.23	1.22	0.01	68.1	56.5	B	1.30	58.7	B	1.25	3358		0.05	
R21	I-580/I-680 Interchange	I-680 SB	I-580 WB	Pleas	4	AM	0.43	0.44	-0.01	58.4	46.9	B	0.56	57.5	A	0.46	3182		0.10	B to A
R21	I-580/I-680 Interchange	I-680 SB	I-580 WB	Pleas	4	PM	0.43	0.44	-0.01	58.4	44.9	C	0.59	49.8	B	0.53	3126		0.06	C to B
R22	I-880/SR 260 Connection	I-880 SB	SR-260 WB	Oak	1	AM	0.99	0.99	0	32	21.4	D	2.78					Insufficient TMC data		
R22	I-880/SR 260 Connection	I-880 SB	SR-260 WB	Oak	1	PM	0.99	0.99	0	32	21	D	2.83					Insufficient TMC data		
R23	I-880/SR 260 Connection	SR-260 EB	I-880 NB	Oak	1	AM	0.36	0.41	-0.05	35	15.5	(F)	1.59					Insufficient TMC data		
R23	I-880/SR 260 Connection	SR-260 EB	I-880 NB	Oak	1	PM	0.36	0.41	-0.05	35	17.5	E	1.41					Insufficient TMC data		

*Travel time difference is only shown for the CMP segments validated

APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A1	150th Ave - EB	Hesperian	I-580	II	SL	2	AM	0.49	0.49	0	-	15.5	D	1.90	26.5	B	1.11	579	85% of length used	0.79	D to B		
A1	150th Ave - EB	Hesperian	I-580	II	SL	2	PM	0.49	0.49	0	-	13.6	E	2.16	25.8	B	1.14	770	85% of length used	1.02	E to B		
A2	150th Ave - WB	I-580	Hesperian	II	SL	2	AM	0.49	0.49	0	-	14.9	D	1.97	27.4	B	1.07	520	85% of length used	0.90	D to B		
A2	150th Ave - WB	I-580	Hesperian	II	SL	2	PM	0.49	0.49	0	-	18.2	C	1.62	28.0	B	1.05	545	80% of length used	0.56	C to B		
A3	A Street - EB	I-880	Western	II	Hay	2	AM	1.08	1.08	0	-	24	C	2.70	27.5	B	2.36	822		0.34	C to B		
A3	A Street - EB	I-880	Western	II	Hay	2	PM	1.08	1.08	0	-	18.8	C	3.45	26.1	B	2.48	800		0.97	C to B		
A4	A Street - EB	Western	SR 238	III	Hay	2	AM	0.53	0.53	0	-	7.5	E	4.24	22.0	B	1.45	1224		2.79	E to B		
A4	A Street - EB	Western	SR 238	III	Hay	2	PM	0.53	0.53	0	-	5.2	(F)	6.12	19.1	B	1.67	1691		4.45	(F) to B		
A5	A Street - WB	SR 238	Western	III	Hay	2	AM	0.53	0.54	-0.01	-	11.4	D	2.84	21.4	B	1.52	1454		1.33	D to B		
A5	A Street - WB	SR 238	Western	III	Hay	2	PM	0.53	0.54	-0.01	-	10.3	D	3.15	21.5	B	1.51	1383		1.64	D to B		
A6	A Street - WB	Western	I-880	II	Hay	2	AM	1.08	1.07	0.01	-	18.2	C	3.53	26.6	B	2.42	1312		1.11	C to B		
A6	A Street - WB	Western	I-880	II	Hay	2	PM	1.08	1.07	0.01	-	17.7	D	3.63	26.6	B	2.41	787		1.22	D to B		
A7	Atlantic - EB	Main	Webster	II	Ala	1	AM	0.8	0.81	-0.01	-	23.9	C	2.03					Insufficient TMC data				
A7	Atlantic - EB	Main	Webster	II	Ala	1	PM	0.8	0.81	-0.01	-	19.5	C	2.49					Insufficient TMC data				
A8	Atlantic - WB	Webster	Main	II	Ala	1	AM	0.8	0.81	-0.01	-	28	B	1.74					Insufficient TMC data				
A8	Atlantic - WB	Webster	Main	II	Ala	1	PM	0.8	0.81	-0.01	-	20.7	C	2.35					Insufficient TMC data				
A9	Hegenberger - EB	SR 61	Edgewater	I	Oak	1	AM	0.76	0.77	-0.01	-	18.5	D	2.50	25.2	C	1.83	1046		0.67	D to C		
A9	Hegenberger - EB	SR 61	Edgewater	I	Oak	1	PM	0.76	0.77	-0.01	-	15.9	E	2.91	25.4	C	1.82	821		1.08	E to C		
A10	Hegenberger - EB	Edgewater	Baldwin	I	Oak	1	AM	0.73	0.73	0	-	24.9	C	1.76	26.6	C	1.65	2977		0.11			
A10	Hegenberger - EB	Edgewater	Baldwin	I	Oak	1	PM	0.73	0.73	0	-	20	D	2.19	27.3	C	1.61	2553		0.58	D to C		
A11	Hegenberger - EB	Baldwin	E 14th	I	Oak	1	AM	1.03	1.02	0.01	-	28.5	B	2.15	32.2	B	1.90	1942		0.24			
A11	Hegenberger - EB	Baldwin	E 14th	I	Oak	1	PM	1.03	1.02	0.01	-	25.5	C	2.40	33.4	B	1.83	1149		0.57	C to B		
A12	Hegenberger - WB	E 14th	Baldwin	I	Oak	1	AM	1.03	1.02	0.01	-	35.1	A	1.74	32.1	B	1.91	754		-0.17	A to B		
A12	Hegenberger - WB	E 14th	Baldwin	I	Oak	1	PM	1.03	1.02	0.01	-	30	B	2.04	31.6	B	1.94	939		0.10			
A13	Hegenberger - WB	Baldwin	Edgewater	I	Oak	1	AM	0.73	0.72	0.01	-	22	C	1.96	26.3	C	1.64	2516		0.32			
A13	Hegenberger - WB	Baldwin	Edgewater	I	Oak	1	PM	0.73	0.72	0.01	-	18.1	D	2.39	27.6	C	1.57	2090		0.82	D to C		
A14	Hegenberger - WB	Edgewater	SR 61	I	Oak	1	AM	0.76	0.77	-0.01	-	20.9	D	2.21	26.3	C	1.76	1946	95% of length used	0.45	D to C		
A14	Hegenberger - WB	Edgewater	SR 61	I	Oak	1	PM	0.76	0.77	-0.01	-	19.5	D	2.37	27.1	C	1.70	1325	95% of length used	0.67	D to C		
A15	Hesperian - NB	Tennyson	SH 92 - WB	I	Hay	2	AM	0.47	0.49	-0.02	-	17.8	D	1.65	24.4	C	1.20	1643		0.45	D to C		
A15	Hesperian - NB	Tennyson	SH 92 - WB	I	Hay	2	PM	0.47	0.49	-0.02	-	14.9	E	1.97	21.1	D	1.39	2352		0.58	E to D		
A16	Hesperian - NB	SH 92	La Playa	II	Hay	2	AM	0.79	0.78	0.01	-	23.4	C	2.00	27.4	B	1.71	1673		0.29	C to B		
A16	Hesperian - NB	SH 92	La Playa	II	Hay	2	PM	0.79	0.78	0.01	-	18.3	C	2.56	25.0	B	1.87	2240		0.68	C to B		
A17	Hesperian - NB	La Playa	W.Winton Ave.	II	Hay	2	AM	0.44	0.43	0.01	-	15.7	D	1.64	27.7	B	0.93	3380		0.71	D to B		
A17	Hesperian - NB	La Playa	W.Winton Ave.	II	Hay	2	PM	0.44	0.43	0.01	-	11.6	E	2.22	25.9	B	1.00	3229		1.23	E to B		
A18	Hesperian - NB	W.Winton Ave	A St	II	Hay	2	AM	0.96	0.97	-0.01	-	25.2	B	2.31	27.2	B	2.14	2824		0.17			
A18	Hesperian - NB	W.Winton Ave	A St	II	Hay	2	PM	0.96	0.97	-0.01	-	13.9	E	4.19	22.0	C	2.65	2107		1.54	E to C		
A19	Hesperian - NB	A St	Hacienda	II	Unin	2	AM	0.65	0.67	-0.02	-	25.4	B	1.58	26.7	B	1.50	2764		0.08			
A19	Hesperian - NB	A St	Hacienda	II	Unin	2	PM	0.65	0.67	-0.02	-	16.8	D	2.39	23.0	C	1.75	2180		0.64	D to C		
A20	Hesperian - NB	Hacienda	Grant	II	Unin	2	AM	0.65	0.66	-0.01	-	30.8	A	1.29	28.0	B	1.41	3195		-0.13	A to B		
A20	Hesperian - NB	Hacienda	Grant	II	Unin	2	PM	0.65	0.66	-0.01	-	16.6	D	2.39	26.2	B	1.51	2892		0.88	D to B		
A21	Hesperian - NB	Grant	Llewelling	II	Unin	2	AM	0.28	0.27	0.01	-	9.9	(F)	1.64	23.5	C	0.69	2502		0.95	(F) to C		
A21	Hesperian - NB	Grant	Llewelling	II	Unin	2	PM	0.28	0.27	0.01	-	6.9	(F)	2.35	20.5	C	0.79	2301		1.56	(F) to C		
A22	Hesperian - NB	Llewelling	Springlake	II	Unin	2	AM	0.4	0.39	0.01	-	24.2	B	0.97	24.1	B	0.97	2004		-0.01			
A22	Hesperian - NB	Llewelling	Springlake	II	Unin	2	PM	0.4	0.39	0.01	-	18.2	C	1.29	22.7	C	1.03	1568		0.26			
A23	Hesperian - NB	Springlake	Fairmont	II	SL	2	AM	0.66	0.66	0	-	20.1	C	1.97	25.0	B	1.59	2635		0.38	C to B		
A23	Hesperian - NB	Springlake	Fairmont	II	SL	2	PM	0.66	0.66	0	-	13.5	E	2.93	25.0	B	1.59	2649		1.35	E to B		
A24	Hesperian - NB	Fairmont	14th	II	San Leandro	2	AM	0.32	0.31	0.01	-	18	D	1.03	23.6	C	0.79	355		0.25	D to C		
A24	Hesperian - NB	Fairmont	14th	II	San Leandro	2	PM	0.32	0.31	0.01	-	15	D	1.24	23.3	C	0.80	1762	95% of length used	0.44	D to C		
A25	Hesperian - SB	14th	Fairmont	II	SL	2	AM	0.31	0.31	0	-	17.8	D	1.04	25.5	B	0.73	1478		0.32	D to B		
A25	Hesperian - SB	14th	Fairmont	II	SL	2	PM	0.31	0.31	0	-	17.5	D	1.06	24.0	B	0.77	1667		0.29	D to B		

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APPENDIX D - TIER 1 ARTERIALS

CMP Information								Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
A26	Hesperian - SB	Fairmont	Springlake	II	SL	2	AM	0.65	0.66	-0.01	-	22.2	C	1.78	26.6	B	1.49	1274		0.29	C to B
A26	Hesperian - SB	Fairmont	Springlake	II	SL	2	PM	0.65	0.66	-0.01	-	17.5	D	2.26	24.7	B	1.60	1406		0.66	D to B
A27	Hesperian - SB	Springlake	Llewelling	II	Unin	2	AM	0.4	0.39	0.01	-	10.6	E	2.21	23.5	C	0.99	2141		1.21	E to C
A27	Hesperian - SB	Springlake	Llewelling	II	Unin	2	PM	0.4	0.39	0.01	-	7.9	(F)	2.96	21.6	C	1.08	1932		1.88	(F) to C
A28	Hesperian - SB	Llewelling	Grant	II	Unin	2	AM	0.28	0.27	0.01	-	15.2	D	1.07	22.7	C	0.71	2022		0.35	D to C
A28	Hesperian - SB	Llewelling	Grant	II	Unin	2	PM	0.28	0.27	0.01	-	13.5	E	1.20	22.1	C	0.73	2088		0.47	E to C
A29	Hesperian - SB	Grant	Hacienda	II	Unin	2	AM	0.65	0.66	-0.01	-	26.9	B	1.47	28.0	B	1.41	2777		0.06	
A29	Hesperian - SB	Grant	Hacienda	II	Unin	2	PM	0.65	0.66	-0.01	-	26.8	B	1.48	28.5	B	1.39	2657		0.09	
A30	Hesperian - SB	Hacienda	A St	II	Unin	2	AM	0.65	0.67	-0.02	-	17	D	2.36	26.9	B	1.49	2595		0.87	D to B
A30	Hesperian - SB	Hacienda	A St	II	Unin	2	PM	0.65	0.67	-0.02	-	19.6	C	2.05	26.3	B	1.53	2101		0.52	C to B
A31	Hesperian - SB	A St	W.Winton Ave.	II	Hay	2	AM	0.96	0.97	-0.01	-	22.1	C	2.63	25.5	B	2.28	2445		0.35	C to B
A31	Hesperian - SB	A St	W.Winton Ave.	II	Hay	2	PM	0.96	0.97	-0.01	-	22.3	C	2.61	28.3	B	2.06	1797		0.55	C to B
A32	Hesperian - SB	W.Winton Ave	La Playa	II	Hay	2	AM	0.44	0.43	0.01	-	18.7	C	1.38	25.5	B	1.01	3349		0.37	C to B
A32	Hesperian - SB	W.Winton Ave	La Playa	II	Hay	2	PM	0.44	0.43	0.01	-	18.4	C	1.40	27.3	B	0.95	2824		0.46	C to B
A33	Hesperian - SB	La Playa	SH 92	II	Hay	2	AM	0.79	0.78	0.01	-	18.2	C	2.57	25.3	B	1.85	3058		0.72	C to B
A33	Hesperian - SB	La Playa	SH 92	II	Hay	2	PM	0.79	0.78	0.01	-	18.6	C	2.52	27.4	B	1.71	2044		0.81	C to B
A34	Hesperian - SB	SH 92 - WB	Tennyson	I	Hay	2	AM	0.47	0.49	-0.02	-	13.6	E	2.16	25.4	C	1.16	3081		1.00	E to C
A34	Hesperian - SB	SH 92 - WB	Tennyson	I	Hay	2	PM	0.47	0.49	-0.02	-	11.7	(F)	2.51	26.9	C	1.09	2082		1.42	(F) to C
A35	Mowry - EB	I-880	Farwell	II	Fre	3	AM	0.34	0.28	0.06	-	19.9	C	0.84					Insufficient TMC data		
A35	Mowry - EB	I-880	Farwell	II	Fre	3	PM	0.34	0.28	0.06	-	17	D	0.99					Insufficient TMC data		
A36	Mowry - EB	Farwell	SH 84	II	Fre	3	AM	2.63	2.48	0.15	-	26.8	B	5.55					Insufficient TMC data		
A36	Mowry - EB	Farwell	SH 84	II	Fre	3	PM	2.63	2.48	0.15	-	25.9	B	5.75					Insufficient TMC data		
A37	Mowry - WB	SH 84	Farwell	II	Fre	3	AM	2.63	2.53	0.1	-	27.1	B	5.60					Insufficient TMC data		
A37	Mowry - WB	SH 84	Farwell	II	Fre	3	PM	2.63	2.53	0.1	-	22.7	C	6.69					Insufficient TMC data		
A38	Mowry - WB	Farwell	I-880	II	Fre	3	AM	0.34	0.28	0.06	-	22.7	C	0.74					Insufficient TMC data		
A38	Mowry - WB	Farwell	I-880	II	Fre	3	PM	0.34	0.28	0.06	-	23.9	C	0.70					Insufficient TMC data		
A39	Park/23rd - EB	Encinal	Santa Clara	III	Ala	1	AM	0.23	0.23	0	-	22.1	B	0.62					Insufficient TMC data		
A39	Park/23rd - EB	Encinal	Santa Clara	III	Ala	1	PM	0.23	0.23	0	-	11.2	D	1.23					Insufficient TMC data		
A40	Park/23rd - EB	Santa Clara	Kennedy	III	Ala	1	AM	0.66	0.68	-0.02	-	12.3	D	3.32					Insufficient TMC data		
A40	Park/23rd - EB	Santa Clara	Kennedy	III	Ala	1	PM	0.66	0.68	-0.02	-	13.1	C	3.11					Insufficient TMC data		
A41	Park/23rd - EB	Kennedy	E 11th	II	Ala - Oak	1	AM	0.45	0.45	0	-	16.5	D	1.64	23.9	C	1.13	372	85% of length used	0.51	D to C
A41	Park/23rd - EB	Kennedy	E 11th	II	Ala - Oak	1	PM	0.45	0.45	0	-	19.8	C	1.36	26.8	B	1.01	422	70% of length used	0.36	C to B
A42	Park/23rd - WB	E 11th	Kennedy	II	Ala - Oak	1	AM	0.45	0.45	0	-	24.8	B	1.09	28.6	B	0.94	743	70% of length used	0.15	
A42	Park/23rd - WB	E 11th	Kennedy	II	Ala - Oak	1	PM	0.45	0.45	0	-	29.8	B	0.91	28.8	B	0.94	361	80% of length used	-0.03	
A43	Park/23rd - WB	Kennedy	Santa Clara	III	Ala	1	AM	0.66	0.68	-0.02	-	15.4	C	2.65	20.7	B	1.97	625	80% of length used	0.68	C to B
A43	Park/23rd - WB	Kennedy	Santa Clara	III	Ala	1	PM	0.66	0.68	-0.02	-	12.8	D	3.19	20.2	B	2.02	760	80% of length used	1.16	D to B
A44	Park/23rd - WB	Santa Clara	Encinal	III	Ala	1	AM	0.23	0.23	0	-	12.4	D	1.11					Insufficient TMC data		
A44	Park/23rd - WB	Santa Clara	Encinal	III	Ala	1	PM	0.23	0.23	0	-	9.7	D	1.42					Insufficient TMC data		
A45	MLK Jr Way - NB	SH 24	Adeline	II	Oak	1	AM	0.9	1.48	-0.58	-	22.9	C	3.88					Insufficient TMC data		
A45	MLK Jr Way - NB	SH 24	Adeline	II	Oak	1	PM	0.9	1.48	-0.58	-	17.4	D	5.10					Insufficient TMC data		
A46	Adeline - NB	MLK Jr - South	MLK Jr - North	II	Berk	1	AM	0.3	0.28	0.02	-	12.9	E	1.30	20.1	C	0.84	987		0.47	E to C
A46	Adeline - NB	MLK Jr - South	MLK Jr - North	II	Berk	1	PM	0.3	0.28	0.02	-	15.2	D	1.11	22.0	C	0.76	1267		0.34	D to C
A47	Adeline - NB	MLK Jr - North	Shattuck	II	Berk	1	AM	0.63	0.61	0.02	-	20.5	C	1.79	22.8	C	1.60	1046		0.18	
A47	Adeline - NB	MLK Jr - North	Shattuck	II	Berk	1	PM	0.63	0.61	0.02	-	15.3	D	2.39	24.5	B	1.50	1429		0.90	D to B
A48	Shattuck NB	Adeline	Dwight	II	Berk	1	AM	0.32	0.31	0.01	-	23.5	C	0.79	23.5	C	0.79	1262		0.00	
A48	Shattuck NB	Adeline	Dwight	II	Berk	1	PM	0.32	0.31	0.01	-	15.7	D	1.18	23.7	C	0.78	1344		0.40	D to C
A49	Shattuck NB	Dwight	University	III	Berk	1	AM	0.63	0.57	0.06	-	18.9	C	1.81	16.6	C	2.06	1852		-0.25	
A49	Shattuck NB	Dwight	University	III	Berk	1	PM	0.63	0.57	0.06	-	13.8	C	2.48	15.8	C	2.16	1804		0.31	
A50	Shattuck SB	University	Dwight	III	Berk	1	AM	0.63	0.57	0.06	-	15.4	C	2.22	20.4	B	1.68	403		0.54	C to B
A50	Shattuck SB	University	Dwight	III	Berk	1	PM	0.63	0.57	0.06	-	12.8	D	2.67	19.2	B	1.78	1453		0.89	D to B

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APPENDIX D - TIER 1 ARTERIALS

CMP Information								Shape Information (mi)			Floating Car Survey				Commerical Speed Data				Comparison		
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
A51	Shattuck SB	Dwight	Adeline	II	Berk	1	AM	0.32	0.3	0.02	-	29.4	B	0.61	27.0	B	0.67	854		-0.05	
A51	Shattuck SB	Dwight	Adeline	II	Berk	1	PM	0.32	0.3	0.02	-	26.3	B	0.68	25.0	B	0.72	2070		-0.03	
A52	Adeline - SB	Shattuck	MLK Jr - North	II	Berk	1	AM	0.63	0.61	0.02	-	17	D	2.15					Insufficient TMC data		
A52	Adeline - SB	Shattuck	MLK Jr - North	II	Berk	1	PM	0.63	0.61	0.02	-	13	E	2.82	24.2	B	1.51	755		1.30 E to B	
A53	Adeline - SB	MLK Jr - North	MLK Jr - South	II	Berk	1	AM	0.3	0.29	0.01	-	19	C	0.92	24.1	B	0.72	798	90% of length used	0.19 C to B	
A53	Adeline - SB	MLK Jr - North	MLK Jr - South	II	Berk	1	PM	0.3	0.29	0.01	-	21.5	C	0.81	21.5	C	0.81	917	95% of length used	0.00	
A54	MLK Jr Way - SB	Adeline	SH 24	II	Oak	1	AM	0.88	1.39	-0.51	-	19.1	C	4.37					Insufficient TMC data		
A54	MLK Jr Way - SB	Adeline	SH 24	II	Oak	1	PM	0.88	1.39	-0.51	-	15.3	D	5.45					Insufficient TMC data		
A55	Tennyson - EB	Hesperian	I-880	I	Hay	2	AM	0.88	0.86	0.02	-	21.8	D	2.37	26.7	C	1.93	1963		0.44 D to C	
A55	Tennyson - EB	Hesperian	I-880	I	Hay	2	PM	0.88	0.86	0.02	-	20.1	D	2.57	24.0	C	2.15	2653		0.42 D to C	
A56	Tennyson - EB	I-880 NB	Rt 238	II	Hay	2	AM	1.55	1.54	0.01	-	20.9	C	4.42	24.9	B	3.71	1499		0.71 C to B	
A56	Tennyson - EB	I-880 NB	Rt 238	II	Hay	2	PM	1.55	1.54	0.01	-	19.2	C	4.81	23.5	C	3.93	2474		0.88	
A57	Tennyson - WB	Rt 238	I-880	II	Hay	2	AM	1.63	1.54	0.09	-	18.1	C	5.10	21.5	C	4.30	2763		0.81	
A57	Tennyson - WB	Rt 238	I-880	II	Hay	2	PM	1.63	1.54	0.09	-	20.1	C	4.60	24.3	B	3.81	1045		0.79 C to B	
A58	Tennyson - WB	I-880	Hesperian	I	Hay	2	AM	0.85	0.86	-0.01	-	22.3	C	2.31	23.4	C	2.21	3068		0.11	
A58	Tennyson - WB	I-880	Hesperian	I	Hay	2	PM	0.85	0.86	-0.01	-	20.5	D	2.52	29.5	B	1.75	1268		0.77 D to B	
A59	University - EB	I-80 SB	6th	II	Berk	1	AM	0.4	0.4	0	-	20.8	C	1.15	23.0	C	1.04	1935		0.11	
A59	University - EB	I-80 SB	6th	II	Berk	1	PM	0.4	0.4	0	-	16.9	D	1.42	30.1	A	0.80	1014		0.62 D to A	
A60	University - EB	6th	San Pablo	II	Berk	1	AM	0.31	0.32	-0.01	-	17.5	D	1.10	19.1	C	1.01	2730		0.09 D to C	
A60	University - EB	6th	San Pablo	II	Berk	1	PM	0.31	0.32	-0.01	-	15.3	D	1.25	21.7	C	0.89	1280		0.37 D to C	
A61	University - EB	San Pablo	Sacramento	II	Berk	1	AM	0.56	0.56	0	-	19.6	C	1.71	20.9	C	1.60	2797		0.11	
A61	University - EB	San Pablo	Sacramento	II	Berk	1	PM	0.56	0.56	0	-	18.4	C	1.83	23.1	C	1.46	1152		0.37	
A62	University - EB	Sacramento	ML King	II	Berk	1	AM	0.48	0.49	-0.01	-	18.8	C	1.56	22.7	C	1.30	3051		0.27	
A62	University - EB	Sacramento	ML King	II	Berk	1	PM	0.48	0.49	-0.01	-	16.6	D	1.77	23.6	C	1.24	1614		0.53 D to C	
A63	University - EB	ML King	Shattck PI	III	Berk	1	AM	0.3	0.29	0.01	-	18	C	0.97	19.2	B	0.91	3053		0.06 C to B	
A63	University - EB	ML King	Shattck PI	III	Berk	1	PM	0.3	0.29	0.01	-	11.2	D	1.55	19.1	B	0.91	2608		0.64 D to B	
A64	University - WB	Shattck PI	ML King	III	Berk	1	AM	0.3	0.29	0.01	-	17.3	C	1.01	20.6	B	0.85	957		0.16 C to B	
A64	University - WB	Shattck PI	ML King	III	Berk	1	PM	0.3	0.29	0.01	-	11	D	1.58	17.8	C	0.98	1221		0.61 D to C	
A65	University - WB	ML King	Sacramento	II	Berk	1	AM	0.48	0.49	-0.01	-	19.9	C	1.48	25.1	B	1.17	1914		0.31 C to B	
A65	University - WB	ML King	Sacramento	II	Berk	1	PM	0.48	0.49	-0.01	-	24.8	B	1.19	24.3	B	1.21	2195		-0.03	
A66	University - WB	Sacramento	San Pablo	II	Berk	1	AM	0.56	0.56	0	-	20	C	1.68	23.4	C	1.43	2065		0.25	
A66	University - WB	Sacramento	San Pablo	II	Berk	1	PM	0.56	0.56	0	-	9.9	(F)	3.39	20.6	C	1.63	2604		1.76 (F) to C	
A67	University - WB	San Pablo	6th	II	Berk	1	AM	0.31	0.32	-0.01	-	20.3	C	0.95	20.7	C	0.93	2015		0.02	
A67	University - WB	San Pablo	6th	II	Berk	1	PM	0.31	0.32	-0.01	-	10.2	E	1.88	19.1	C	1.00	2473		0.88 E to C	
A68	University - WB	6th	I-80 SB	II	Berk	1	AM	0.4	0.4	0	-	38.6	A	0.62	31.2	A	0.77	1829		-0.15	
A68	University - WB	6th	I-80 SB	II	Berk	1	PM	0.4	0.4	0	-	37.8	A	0.63	31.7	A	0.76	1980		-0.12	
A69	SR 13 Ashby - WB	Hiller	Domingo	II	Oak - Berk	1	AM	0.79	0.81	-0.02	-	19.3	C	2.52	24.2	B	2.01	2609		0.51 C to B	
A69	SR 13 Ashby - WB	Hiller	Domingo	II	Oak - Berk	1	PM	0.79	0.81	-0.02	-	21.3	C	2.28	26.0	B	1.87	2169		0.41 C to B	
A70	SR 13 Ashby - WB	Domingo	College	III	Berk	1	AM	0.5	0.52	-0.02	-	14.4	C	2.17	24.2	B	1.29	2609		0.88 C to B	
A70	SR 13 Ashby - WB	Domingo	College	III	Berk	1	PM	0.5	0.52	-0.02	-	16	C	1.95	26.0	A	1.20	2169		0.75 C to A	
A71	SR 13 Ashby - WB	College	Telegraph	III	Berk	1	AM	0.38	0.37	0.01	-	18	C	1.23	22.1	B	1.00	1892		0.23 C to B	
A71	SR 13 Ashby - WB	College	Telegraph	III	Berk	1	PM	0.38	0.37	0.01	-	10.2	D	2.18	19.8	B	1.12	2187		1.06 D to B	
A72	SR 13 Ashby - WB	Telegraph	Shattuck	III	Berk	1	AM	0.38	0.38	0	-	13.1	C	1.74	22.1	B	1.03	1892		0.71 C to B	
A72	SR 13 Ashby - WB	Telegraph	Shattuck	III	Berk	1	PM	0.38	0.38	0	-	14.8	C	1.54	19.8	B	1.15	2187		0.39 C to B	
A73	SR 13 Ashby - WB	Shattuck	ML King	III	Berk	1	AM	0.24	0.26	-0.02	-	9.3	D	1.68	22.1	B	0.71	883		0.97 D to B	
A73	SR 13 Ashby - WB	Shattuck	ML King	III	Berk	1	PM	0.24	0.26	-0.02	-	7.8	E	2.00	20.5	B	0.76	1233		1.24 E to B	
A74	SR 13 Ashby - WB	ML King	San Pablo	III	Berk	1	AM	0.87	0.86	0.01	-	18.3	C	2.82	25.7	A	2.01	3295		0.81 C to A	
A74	SR 13 Ashby - WB	ML King	San Pablo	III	Berk	1	PM	0.87	0.86	0.01	-	11.8	D	4.37	22.1	B	2.33	3455		2.04 D to B	
A75	SR 13 Ashby - WB	San Pablo	I-80 Ramps	II	Berk	1	AM	0.64	0.64	0	-	16.8	D	2.29	24.9	B	1.54	3596	92% of length used	0.74 D to B	
A75	SR 13 Ashby - WB	San Pablo	I-80 Ramps	II	Berk	1	PM	0.64	0.64	0	-	18.2	C	2.11	26.6	B	1.45	3605	92% of length used	0.66 C to B	
A76	SR 13 Ashby - EB	I-80	San Pablo	II	Berk	1	AM	0.61	0.62	-0.01	-	19.5	C	1.91	27.8	B	1.34	1089	95% of length used	0.57 C to B	
A76	SR 13 Ashby - EB	I-80	San Pablo	II	Berk	1	PM	0.61	0.62	-0.01	-	13.9	E	2.68	27.9	B	1.33	984	95% of length used	1.34 E to B	
A77	SR 13 Ashby - EB	San Pablo	ML King	III	Berk	1	AM	0.87	0.86	0.01	-	19	C	2.72	22.8	B	2.27	2039		0.45 C to B	
A77	SR 13 Ashby - EB	San Pablo	ML King	III	Berk	1	PM	0.87	0.86	0.01	-	19.5	B	2.65	23.6	B	2.18	1982		0.46	

*Travel time difference is only shown for the CMP segments validated

APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A78	SR 13 Ashby - EB	ML King	Shattuck	III	Berk	1	AM	0.24	0.26	-0.02	-	10.6	D	1.47	21.5	B	0.73	1173		0.74	D to B		
A78	SR 13 Ashby - EB	ML King	Shattuck	III	Berk	1	PM	0.24	0.26	-0.02	-	7.2	E	2.17	20.6	B	0.76	1142		1.41	E to B		
A79	SR 13 Ashby - EB	Shattuck	Telegraph	III	Berk	1	AM	0.38	0.38	0	-	18.5	C	1.23	22.1	B	1.03	1892		0.20	C to B		
A79	SR 13 Ashby - EB	Shattuck	Telegraph	III	Berk	1	PM	0.38	0.38	0	-	15.8	C	1.44	19.8	B	1.15	2187		0.29	C to B		
A80	SR 13 Ashby - EB	Telegraph	College	III	Berk	1	AM	0.38	0.37	0.01	-	21.3	B	1.04	22.1	B	1.00	1892		0.04			
A80	SR 13 Ashby - EB	Telegraph	College	III	Berk	1	PM	0.38	0.37	0.01	-	12.9	D	1.72	19.8	B	1.12	2187		0.60	D to B		
A81	SR 13 Ashby - EB	College	Domingo	III	Berk	1	AM	0.5	0.52	-0.02	-	20.7	B	1.51	27.9	A	1.12	1637		0.39	B to A		
A81	SR 13 Ashby - EB	College	Domingo	III	Berk	1	PM	0.5	0.52	-0.02	-	7.7	E	4.05	23.7	B	1.31	2386		2.74	E to B		
A82	SR 13 Ashby - EB	Domingo	Hiller	II	Berk - Oak	1	AM	0.79	0.81	-0.02	-	30.2	A	1.61	27.9	B	1.74	1637		-0.14	A to B		
A82	SR 13 Ashby - EB	Domingo	Hiller	II	Berk - Oak	1	PM	0.79	0.81	-0.02	-	25.4	B	1.91	23.7	C	2.05	2386		-0.13	B to C		
A83	SR 61 - SB	Atlantic	Cent/Webster	III	Ala	1	AM	0.55	0.57	-0.02	-	17.3	C	1.98	20.9	B	1.64	508		0.34	C to B		
A83	SR 61 - SB	Atlantic	Cent/Webster	III	Ala	1	PM	0.55	0.57	-0.02	-	12.7	D	2.69	20.2	B	1.70	802		1.00	D to B		
A84	SR 61 - SB	Cent/Webster	Sher/Encino	II	Ala	1	AM	0.73	0.74	-0.01	-	19.4	C	2.29	24.9	B	1.78	363		0.51	C to B		
A84	SR 61 - SB	Cent/Webster	Sher/Encino	II	Ala	1	PM	0.73	0.74	-0.01	-	18.9	C	2.35	25.2	B	1.76	684		0.59	C to B		
A85	SR 61 - SB	Sher/Encino	Park	II	Ala	1	AM	1.22	1.2	0.02	-	21.4	C	3.36	21.4	C	3.37	440		-0.01			
A85	SR 61 - SB	Sher/Encino	Park	II	Ala	1	PM	1.22	1.2	0.02	-	18.7	C	3.85	23.5	C	3.06	600		0.79			
A86	SR 61 - SB	Park	High/Otis	II	Ala	1	AM	1.06	1.05	0.01	-	24.7	B	2.55						Insufficient TMC data			
A86	SR 61 - SB	Park	High/Otis	II	Ala	1	PM	1.06	1.05	0.01	-	21.4	C	2.94	26.0	B	2.42	466	75% of length used	0.52	C to B		
A87	SR 61 (Doolittle) - SB	High	Island Dr	II	Ala	1	AM	0.41	0.44	-0.03	-	21.9	C	1.21	31.0	A	0.85	940		0.35	C to A		
A87	SR 61 (Doolittle) - SB	High	Island Dr	II	Ala	1	PM	0.41	0.44	-0.03	-	20.7	C	1.28	29.3	B	0.90	1336		0.37	C to B		
A88	SR 61 (Doolittle) - SB	Island Dr	Harbor Bay	I	Ala	1	AM	0.5	0.51	-0.01	-	36.6	A	0.84	34.7	B	0.88	859		-0.05	A to B		
A88	SR 61 (Doolittle) - SB	Island Dr	Harbor Bay	I	Ala	1	PM	0.5	0.51	-0.01	-	29	B	1.06	33.2	B	0.92	1891		0.13			
A89	SR 61 - SB	Harbor Bay	Airport Dr	I	Oak	1	AM	2.15	2.17	-0.02	-	32.6	B	3.99	40.3	A	3.23	973		0.77	B to A		
A89	SR 61 - SB	Harbor Bay	Airport Dr	I	Oak	1	PM	2.15	2.17	-0.02	-	31.1	B	4.19	38.8	A	3.36	2020		0.83	B to A		
A90	SR 61 (Doolittle) - SB	Airport	Davis	I	Oak - SL	1	AM	0.95	0.94	0.01	-	27.6	C	2.04	33.7	B	1.68	3408		0.37	C to B		
A90	SR 61 (Doolittle) - SB	Airport	Davis	I	Oak - SL	1	PM	0.95	0.94	0.01	-	30	B	1.88	34.4	B	1.64	3657		0.24			
A91	SR 61 (Doolittle) - NB	Davis	Airport	I	SL - Oak	2	AM	0.95	0.94	0.01	-	36.1	A	1.56	32.0	B	1.76	3653		-0.20	A to B		
A91	SR 61 (Doolittle) - NB	Davis	Airport	I	SL - Oak	2	PM	0.95	0.94	0.01	-	30	B	1.88	36.1	A	1.56	3561		0.32	B to A		
A92	SR 61 - NB	Airport Dr	Harbor Bay	I	Ala	1	AM	2.15	2.17	-0.02	-	36.6	A	3.56	40.6	A	3.21	1890		0.35			
A92	SR 61 - NB	Airport Dr	Harbor Bay	I	Ala	1	PM	2.15	2.17	-0.02	-	36.4	A	3.58	41.7	A	3.12	881		0.45			
A93	SR 61 (Doolittle) - NB	Harbor Bay	Island Dr	I	Ala	1	AM	0.5	0.51	-0.01	-	25.9	B	1.18	31.4	B	0.98	2134		0.21			
A93	SR 61 (Doolittle) - NB	Harbor Bay	Island Dr	I	Ala	1	PM	0.5	0.51	-0.01	-	32.8	A	0.93	36.3	A	0.84	1313		0.09			
A94	SR 61 (Doolittle) - NB	Island Dr	High/Otis	II	Ala	1	AM	0.41	0.44	-0.03	-	12.3	E	2.15	27.0	B	0.98	1841		1.17	E to B		
A94	SR 61 (Doolittle) - NB	Island Dr	High/Otis	II	Ala	1	PM	0.41	0.44	-0.03	-	16.6	D	1.59	29.7	B	0.89	769		0.70	D to B		
A95	SR 61 - NB	High/Otis	Park	II	Ala	1	AM	1.06	1.05	0.01	-	25	B	2.52	24.2	B	2.60	673	75% of length used	-0.08			
A95	SR 61 - NB	High/Otis	Park	II	Ala	1	PM	1.06	1.05	0.01	-	22.8	C	2.76						Insufficient TMC data			
A96	SR 61 - NB	Park/Encnl	Sher/Cent	II	Ala	1	AM	1.22	1.2	0.02	-	15.5	D	4.65	20.8	C	3.46	678		1.19	D to C		
A96	SR 61 - NB	Park/Encnl	Sher/Cent	II	Ala	1	PM	1.22	1.2	0.02	-	17.7	D	4.07	22.7	C	3.17	407		0.90	D to C		

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APPENDIX D - TIER 1 ARTERIALS

CMP Information								Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS
A97	SR 61 - NB	Sher/Cent	Web/Cent	II	Ala	1	AM	0.73	0.74	-0.01	-	23.1	C	1.92	22.9	C	1.94	593		-0.02	
A97	SR 61 - NB	Sher/Cent	Web/Cent	II	Ala	1	PM	0.73	0.74	-0.01	-	21.5	C	2.07	24.7	B	1.80	592		0.27	C to B
A98	SR 61 - NB	Cent/Web	Atlantic	III	Ala	1	AM	0.55	0.57	-0.02	-	15.6	C	2.19	20.2	B	1.70	515		0.50	C to B
A98	SR 61 - NB	Cent/Web	Atlantic	III	Ala	1	PM	0.55	0.57	-0.02	-	15	C	2.28	20.4	B	1.68	718		0.60	C to B
A99	SR 77 (42nd) - EB	I-880 NB	E 14th	I	Oak	1	AM	0.32	0.36	-0.04	No data collected due to construction				36.2	A	0.60	652	80% of length used		to A
A99	SR 77 (42nd) - EB	I-880 NB	E 14th	I	Oak	1	PM	0.32	0.36	-0.04	No data collected due to construction				33.3	B	0.65	664	80% of length used		to B
A100	SR 77 (42nd) - WB	E 14 th	I-880 NB	I	Oak	1	AM	0.3	0.36	-0.06	No data collected due to construction				28.8	B	0.75	585	90% of length used		to B
A100	SR 77 (42nd) - WB	E 14 th	I-880 NB	I	Oak	1	PM	0.3	0.36	-0.06	No data collected due to construction				28.7	B	0.75	984	90% of length used		to B
A101	Decoto - WB	SH 238/Mission	Union Square	II	UC	3	AM	0.85	0.86	-0.01	-	20.2	C	2.55	25.7	B	2.01	2394		0.55	C to B
A101	Decoto - WB	SH 238/Mission	Union Square	II	UC	3	PM	0.85	0.86	-0.01	-	17.4	D	2.97	26.4	B	1.96	1809		1.01	D to B
A102	Decoto - WB	Union Square	Alv-Niles Rd	II	UC	3	AM	0.25	0.24	0.01	-	23.5	C	0.61	25.6	B	0.56	1713		0.05	C to B
A102	Decoto - WB	Union Square	Alv-Niles Rd	II	UC	3	PM	0.25	0.24	0.01	-	13.7	E	1.05	25.6	B	0.56	1227		0.49	E to B
A103	Decoto - WB	Alv-Niles Rd	Fremont CL	II	UC	3	AM	0.66	0.65	0.01	-	22.7	C	1.72	27.1	B	1.44	2815		0.28	C to B
A103	Decoto - WB	Alv-Niles Rd	Fremont CL	II	UC	3	PM	0.66	0.65	0.01	-	29	B	1.34	29.3	B	1.33	2376		0.01	
A104	Decoto - WB	Fremont CL	I-880 NB (off)	II	Fre	3	AM	1.15	1.15	0	-	11.1	E	6.22	24.3	B	2.85	1993		3.37	E to B
A104	Decoto - WB	Fremont CL	I-880 NB (off)	II	Fre	3	PM	1.15	1.15	0	-	23	C	3.00	33.4	A	2.07	1043		0.93	C to A
A105	Decoto - EB	I-880 NB (off)	Union City CL	II	Fre	3	AM	1.15	1.15	0	-	26.9	B	2.57	31.7	A	2.17	1273		0.39	B to A
A105	Decoto - EB	I-880 NB (off)	Union City CL	II	Fre	3	PM	1.15	1.15	0	-	16.4	D	4.21	23.8	C	2.90	2227		1.31	D to C
A106	Decoto - EB	Union City CL	Alv-Niles Rd	II	UC	3	AM	0.66	0.66	0	-	21.9	C	1.81	28.9	B	1.37	1344		0.44	C to B
A106	Decoto - EB	Union City CL	Alv-Niles Rd	II	UC	3	PM	0.66	0.66	0	-	17.9	D	2.21	25.3	B	1.56	2063		0.65	D to B
A107	Decoto - EB	Alv-Niles Rd	Union Square	II	UC	3	AM	0.25	0.24	0.01	-	11.8	E	1.22	25.8	B	0.56	1916		0.66	E to B
A107	Decoto - EB	Alv-Niles Rd	Union Square	II	UC	3	PM	0.25	0.24	0.01	-	19.1	C	0.75	27.6	B	0.52	2578		0.23	C to B
A108	Decoto - EB	Union Square	SH 238/Mission	II	UC	3	AM	0.85	0.85	0	-	17.6	D	2.90	25.8	B	1.98	1916	95% of length used	0.92	D to B
A108	Decoto - EB	Union Square	SH 238/Mission	II	UC	3	PM	0.85	0.85	0	-	21.5	C	2.37	26.8	B	1.90	363		0.47	C to B
A109	SR 84/Mowry (Fre)-WB	SH 238	Peralta	I	Fre	3	AM	0.78	0.81	-0.03	-	32	C	1.52	33.3	B	1.46	945		0.06	C to B
A109	SR 84/Mowry (Fre)-WB	SH 238	Peralta	I	Fre	3	PM	0.78	0.81	-0.03	-	35.3	A	1.38	34.1	B	1.42	1100		-0.05	A to B
A110	SR 84/Peralta (Fre)-WB	Mowry	Fremont	I	Fre	3	AM	1.66	1.66	0	-	29.2	B	3.41	35.5	A	2.81	486		0.60	B to A
A110	SR 84/Peralta (Fre)-WB	Mowry	Fremont	I	Fre	3	PM	1.66	1.66	0	-	27.9	C	3.57	32.8	B	3.03	724		0.54	C to B
A111	SR 84/Fremont(Fre)-WB	Peralta	Thornton	II	Fre	3	AM	0.33	0.33	0	-	9.5	(F)	2.08	24.0	B	0.83	1496		1.26	(F) to B
A111	SR 84/Fremont(Fre)-WB	Peralta	Thornton	II	Fre	3	PM	0.33	0.33	0	-	10.5	E	1.89	25.8	B	0.77	1180		1.12	E to B
A112	SR 84/Thornton(Fre)-WB	Fremont	I-880 SB	II	Fre	3	AM	1.29	1.26	0.03	-	23.4	C	3.23	28.0	B	2.70	2142		0.53	C to B
A112	SR 84/Thornton(Fre)-WB	Fremont	I-880 SB	II	Fre	3	PM	1.29	1.26	0.03	-	26.5	B	2.85	28.9	B	2.61	2097		0.24	
A113	SR 84/Thornton (Fre)-EB	I-880 SB	Fremont	II	Fre	3	AM	1.29	1.26	0.03	-	25.3	B	2.99	29.3	B	2.58	2560		0.41	
A113	SR 84/Thornton (Fre)-EB	I-880 SB	Fremont	II	Fre	3	PM	1.29	1.26	0.03	-	24.9	B	3.04	29.5	B	2.56	2154		0.48	
A114	SR 84/Fremont (Fre)-EB	Thornton	Peralta	II	Fre	3	AM	0.32	0.32	0	-	11.8	E	1.63	25.0	B	0.77	1794		0.86	E to B
A114	SR 84/Fremont (Fre)-EB	Thornton	Peralta	II	Fre	3	PM	0.32	0.32	0	-	10.5	E	1.83	25.6	B	0.75	1889		1.08	E to B

*Travel time difference is only shown for the CMP segments validated

APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A115	SR 84/Peralta (Fre) - EB	Fremont	Mowry	I	Fre	3	AM	1.64	1.64	0	-	25.1	C	3.92	32.9	B	2.99	554		0.93	C to B		
A115	SR 84/Peralta (Fre) - EB	Fremont	Mowry	I	Fre	3	PM	1.64	1.64	0	-	24.6	C	4.00	32.5	B	3.03	856		0.97	C to B		
A116	SR 84/Mowry (Fre) - EB	Peralta	SH 238	I	Fre	3	AM	0.87	0.86	0.01	-	20.9	D	2.47	32.3	B	1.60	2291		0.87	D to B		
A116	SR 84/Mowry (Fre) - EB	Peralta	SH 238	I	Fre	3	PM	0.87	0.86	0.01	-	17.4	D	2.97	31.9	B	1.62	2767		1.35	D to B		
A117	1st Street - SB	I-580 Off	N Mines	I	Liv	4	AM	0.61	0.6	0.01	-	25.1	C	1.43	30.6	B	1.17	2101		0.26	C to B		
A117	1st Street - SB	I-580 Off	N Mines	I	Liv	4	PM	0.61	0.6	0.01	-	21	D	1.71	32.5	B	1.11	1214		0.61	D to B		
A118	1st Street - SB	N Mines	Inman	I	Liv	4	AM	1.05	1.06	-0.01	-	29	B	2.19	30.9	B	2.06	2248		0.13			
A118	1st Street - SB	N Mines	Inman	I	Liv	4	PM	1.05	1.06	-0.01	-	31.8	B	2.00	30.6	B	2.08	740		-0.08			
A119	1st Street - NB	Inman	N Mines	I	Liv	4	AM	1.05	1.06	-0.01	-	31.7	B	2.01	30.1	B	2.11	1289		-0.10			
A119	1st Street - NB	Inman	N Mines	I	Liv	4	PM	1.05	1.06	-0.01	-	30.8	B	2.06	27.8	C	2.29	2455		-0.22	B to C		
A120	1st Street - NB	N Mines	I-580 Off	I	Liv	4	AM	0.61	0.6	0.01	-	30.2	B	1.19	32.2	B	1.12	1304		0.07			
A120	1st Street - NB	N Mines	I-580 Off	I	Liv	4	PM	0.61	0.6	0.01	-	27.4	C	1.31	30.1	B	1.20	1917		0.12	C to B		
A121	SR 84 - EB	SR 238/Mission	Union City Limit	Rural	Fre	3	AM	1.59	1.35	0.24	41.9	38.9	A	2.08	44.0	A	1.84	2588					
A121	SR 84 - EB	SR 238/Mission	Union City Limit	Rural	Fre	3	PM	1.59	1.35	0.24	41.9	35.8	B	2.26	43.7	A	1.85	3273					
A122	SR 84 - EB	Union City Limit	Palamores	Rural	Fre	3	AM	0.94	0.86	0.08	44.5	42.6	A	1.21	44.0	A	1.17	2588		0.04			
A122	SR 84 - EB	Union City Limit	Palamores	Rural	Fre	3	PM	0.94	0.86	0.08	44.5	41.9	A	1.23	43.8	A	1.18	3273		0.05			
A123	SR 84 - EB	Palamoras	Niles Cnyn Quarry	Rural	Fre	3	AM	2.16	2.16	0	43.8	40.7	A	3.18	36.1	B	3.59	2986		-0.41	A to B		
A123	SR 84 - EB	Palamoras	Niles Cnyn Quarry	Rural	Fre	3	PM	2.16	2.16	0	43.8	43.8	A	2.96	30.0	D	4.31	3583		-1.35	A to D		
A124	SR 84 - EB	Niles Cnyn Quarry	Sunol Rd	Rural	Fre	3	AM	1.75	1.74	0.01	46.7	44.8	A	2.33	36.1	C	2.90	2986		-0.57	A to C		
A124	SR 84 - EB	Niles Cnyn Quarry	Sunol Rd	Rural	Fre	3	PM	1.75	1.74	0.01	46.7	47.7	A	2.19	30.0	D	3.47	3583		-1.29	A to D		
A125	SR 84 - EB	Sunol Rd	Plea-Sunol Rd	Rural	Fre	3	AM	0.53	0.55	-0.02	27.6	9.3	(F)	3.55	36.1	A	0.92	2986		2.63	(F) to A		
A125	SR 84 - EB	Sunol Rd	Plea-Sunol Rd	Rural	Fre	3	PM	0.53	0.55	-0.02	27.6	4.8	(F)	6.88	30.0	A	1.10	3583		5.78	(F) to A		
A126	SR 84 - EB	Ple-Sunol Rd	SR 84 (Off)/I-680	Rural	Unin	4	AM	0.77	0.8	-0.03	42.9	40.3	A	1.19	39.2	A	1.22	2631	95% of length used	-0.03			
A126	SR 84 - EB	Ple-Sunol Rd	SR 84 (Off)/I-680	Rural	Unin	4	PM	0.77	0.8	-0.03	42.9	41	A	1.17	42.5	A	1.13	1784	95% of length used	0.04			
A127	SR 84 - EB	SR 84 (Off)/I-680	Vallecitos Ln	Rural	Unin	4	AM	1.07	1.05	0.02	50.8	48.1	A	1.31	47.1	A	1.34	3041		-0.03			
A127	SR 84 - EB	SR 84 (Off)/I-680	Vallecitos Ln	Rural	Unin	4	PM	1.07	1.05	0.02	50.8	13.6	(F)	4.63	20.2	(F)	3.11	3805		1.52			
A128	SR 84 - EB	Vallecitos Ln	Vallecitos Nuc.Cntr	Rural	Unin	4	AM	1.14	1.13	0.01	57.5	53.6	A	1.26	49.4	B	1.37	3046		-0.11	A to B		
A128	SR 84 - EB	Vallecitos Ln	Vallecitos Nuc.Cntr	Rural	Unin	4	PM	1.14	1.13	0.01	57.5	29.1	E	2.33	35.5	D	1.91	3806		0.42	E to D		
A129	SR 84 - EB	Vallecitos Nuc.Center Ent.	Culvert (Lat/Long: 37.613854,-121.817224)	Rural	Unin	4	AM	1.65	1.66	-0.01	58.3	55.2	A	1.80	49.4	B	2.02	3046		-0.21	A to B		
A129	SR 84 - EB	Vallecitos Nuc.Center Ent.	Culvert (Lat/Long: 37.613854,-121.817224)	Rural	Unin	4	PM	1.65	1.66	-0.01	58.3	43.4	C	2.29	35.5	D	2.81	3806		-0.51	C to D		

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APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A130	SR 84 - EB	Culvert (Lat/Long: 37.613854,-121.817224)	Ruby Hill /Kaithoff	Rural	Unin	4	AM	1.62	1.63	-0.01	59.2	55.7	A	1.76	49.4	B	1.98	3046		-0.22	A to B		
A130	SR 84 - EB	Culvert (Lat/Long: 37.613854,-121.817224)	Ruby Hill /Kaithoff	Rural	Unin	4	PM	1.62	1.63	-0.01	59.2	56.4	A	1.73	35.5	E	2.75	3806		-1.02	A to E		
A131	SR 84 - EB	Ruby Hill./Kaithoff	Isabel/Vallecitos	I	Unin	4	AM	0.38	0.38	0	-	38.5	A	0.59	49.4	A	0.46	3046		0.13			
A131	SR 84 - EB	Ruby Hill./Kaithoff	Isabel/Vallecitos	I	Unin	4	PM	0.38	0.38	0	-	29.8	A	0.77	35.5	A	0.64	3806		0.12			
A132	SR 84 (Liv) - NB	Vallecitos/Isabel	Vineyard	I	Liv	4	AM	1.12	1.12	0	-	41.8	A	1.61	46.1	A	1.46	1669		0.15			
A132	SR 84 (Liv) - NB	Vallecitos/Isabel	Vineyard	I	Liv	4	PM	1.12	1.12	0	-	35.2	A	1.91	44.3	A	1.52	2756		0.39			
A133	SR 84 (Liv) - NB	Vineyard	Concannon	I	Liv	4	AM	0.6	0.6	0	-	32.3	B	1.11	42.9	A	0.84	1830		0.27	B to A		
A133	SR 84 (Liv) - NB	Vineyard	Concannon	I	Liv	4	PM	0.6	0.6	0	-	40	A	0.90	40.8	A	0.88	2821		0.02			
A134	SR 84 (Liv) - NB	Concannon	Stanley	I	Liv	4	AM	1.07	1.05	0.02	-	37.1	A	1.70	41.7	A	1.51	2565		0.19			
A134	SR 84 (Liv) - NB	Concannon	Stanley	I	Liv	4	PM	1.07	1.05	0.02	-	37.2	A	1.69	41.4	A	1.52	3036		0.17			
A135	SR 84 (Liv) - NB	Stanley	W. Jack London Blvd.	I	Liv	4	AM	0.88	0.9	-0.02	-	38.4	A	1.41	31.2	B	1.73	3376		-0.33	A to B		
A135	SR 84 (Liv) - NB	Stanley	W. Jack London Blvd.	I	Liv	4	PM	0.88	0.9	-0.02	-	31.5	B	1.71	35.6	A	1.52	3336		0.20	B to A		
A136	SR 84 (Liv) - NB	W. Jack London Blvd.	Airway/Kitty Hawk	I	Liv	4	AM	0.49	0.49	0	-	17.6	D	1.67	31.2	B	0.94	3376		0.73	D to B		
A136	SR 84 (Liv) - NB	W. Jack London Blvd.	Airway/Kitty Hawk	I	Liv	4	PM	0.49	0.49	0	-	22	D	1.34	35.6	A	0.83	3336		0.51	D to A		
A137	SR 84 (Liv) - NB	Airway/Kitty Hawk	I-580	I	Liv	4	AM	1.06	1.06	0	-	32.6	B	1.95	31.7	B	2.00	1677		-0.05			
A137	SR 84 (Liv) - NB	Airway/Kitty Hawk	I-580	I	Liv	4	PM	1.06	1.06	0	-	28.6	B	2.22	34.3	B	1.85	844	80% of length used	0.37			
A138	SR 84 (Liv) - SB	I-580	Airway/Kitty Hawk	I	Liv	4	AM	1.06	1.06	0	-	34.1	B	1.87	33.2	B	1.92	879		-0.05			
A138	SR 84 (Liv) - SB	I-580	Airway/Kitty Hawk	I	Liv	4	PM	1.06	1.06	0	-	33.5	B	1.90	34.4	B	1.85	669		0.05			
A139	SR 84 (Liv) - SB	Airway/Kitty Hawk	W. Jack London Blvd.	I	Liv	4	AM	0.49	0.49	0	-	32.3	B	0.91	34.6	B	0.85	3493		0.06			
A139	SR 84 (Liv) - SB	Airway/Kitty Hawk	W. Jack London Blvd.	I	Liv	4	PM	0.49	0.49	0	-	39.6	A	0.74	37.4	A	0.79	3236		-0.04			
A140	SR 84 (Liv) - SB	W. Jack London Blvd.	Stanley	I	Liv	4	AM	0.9	0.9	0	-	45.7	A	1.18	34.6	B	1.56	3493		-0.38	A to B		
A140	SR 84 (Liv) - SB	W. Jack London Blvd.	Stanley	I	Liv	4	PM	0.9	0.9	0	-	44.9	A	1.20	37.4	A	1.44	3236		-0.24			
A141	SR 84 (Liv) - SB	Stanley	Concannon	I	Liv	4	AM	1.05	1.05	0	-	36	A	1.75	38.0	A	1.66	3123		0.09			
A141	SR 84 (Liv) - SB	Stanley	Concannon	I	Liv	4	PM	1.05	1.05	0	-	41.3	A	1.53	45.0	A	1.40	2354		0.13			
A142	SR 84 (Liv) - SB	Concannon	Vineyard	I	Liv	4	AM	0.6	0.6	0	-	28	C	1.29	37.0	A	0.97	2857		0.31	C to A		
A142	SR 84 (Liv) - SB	Concannon	Vineyard	I	Liv	4	PM	0.6	0.6	0	-	33.4	B	1.08	45.1	A	0.80	1606		0.28	B to A		
A143	SR 84 (Liv) - SB	Vineyard	Isabel/Vallecitos	I	Liv	4	AM	1.12	1.12	0	-	14.6	E	4.60	19.3	D	3.48	2861		1.12	E to D		
A143	SR 84 (Liv) - SB	Vineyard	Isabel/Vallecitos	I	Liv	4	PM	1.12	1.12	0	-	46.4	A	1.45	45.5	A	1.48	1232		-0.03			
A144	SR 84 - WB	Isabel/Vallecitos	Ruby Hill /Kaithoff	I	Liv	4	AM	0.38	0.38	0	-	36.5	A	0.62	34.3	B	0.67	3712		-0.04	A to B		
A144	SR 84 - WB	Isabel/Vallecitos	Ruby Hill /Kaithoff	I	Liv	4	PM	0.38	0.38	0	-	45.1	A	0.51	49.3	A	0.46	2911		0.04			

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APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A145	SR 84 - WB	Ruby Hill /Kaithoff	Culvert (Lat/Long: 37.613854,-121.817224)	Rural	Pleas	4	AM	1.62	1.63	-0.01	55.8	18.1	(F)	5.40	34.3	D	2.85	3712	2.55	(F) to D			
A145	SR 84 - WB	Ruby Hill /Kaithoff	Culvert (Lat/Long: 37.613854,-121.817224)	Rural	Pleas	4	PM	1.62	1.63	-0.01	55.8	55.7	A	1.76	49.3	B	1.98	2911	-0.23	A to B			
A146	SR 84 - WB	Culvert (Lat/Long: 37.613854,-121.817224)	Vallecitos Nuc.Cntr	Rural	Unin	4	AM	1.65	1.65	0	56.5	41.8	C	2.37	34.3	D	2.89	3712	-0.52	C to D			
A146	SR 84 - WB	Culvert (Lat/Long: 37.613854,-121.817224)	Vallecitos Nuc.Cntr	Rural	Unin	4	PM	1.65	1.65	0	56.5	54.7	A	1.81	49.3	B	2.01	2911	-0.20	A to B			
A147	SR 84 - WB	Vallecitos Nuc.Cntr	Vallecitos Ln	Rural	Unin	3	AM	1.14	1.14	0	52.5	51.3	A	1.33	34.3	D	2.00	3712	-0.66	A to D			
A147	SR 84 - WB	Vallecitos Nuc.Cntr	Vallecitos Ln	Rural	Unin	3	PM	1.14	1.14	0	52.5	53.4	A	1.28	49.3	A	1.39	2911	-0.11				
A148	SR 84 - WB	Vallecitos Ln	SR 84/I-680 NB Off	Rural	Unin	3	AM	0.21	0.86	-0.65	55.3	54.7	A	0.94	34.2	D	1.51	2809					
A148	SR 84 - WB	Vallecitos Ln	SR 84/I-680 NB Off	Rural	Unin	3	PM	0.21	0.86	-0.65	55.3	60.5	A	0.85	48.3	B	1.07	1221					
A149	SR 84 - WB	SR 84/I-680 NB Off	Ple-Sunol Rd	Rural	Fre	3	AM	1.27	0.62	0.65	41.4	34.6	B	1.08	37.8	A	0.98	2642					
A149	SR 84 - WB	SR 84/I-680 NB Off	Ple-Sunol Rd	Rural	Fre	3	PM	1.27	0.62	0.65	41.4	43.3	A	0.86	42.9	A	0.87	928					
A150	SR 84 - WB	Ple-Sunol Rd	Sunol Rd	Rural	Fre	3	AM	0.53	0.55	-0.02	41.9	41.7	A	0.79	45.0	A	0.73	3473	0.06				
A150	SR 84 - WB	Ple-Sunol Rd	Sunol Rd	Rural	Fre	3	PM	0.53	0.55	-0.02	41.9	41.5	A	0.80	45.4	A	0.73	1982	0.07				
A151	SR 84 - WB	Sunol Rd	Niles Canyon Quarry	Rural	Fre	3	AM	1.75	1.74	0.01	48.5	47.7	A	2.19	45.0	A	2.32	3473	-0.13				
A151	SR 84 - WB	Sunol Rd	Niles Canyon Quarry	Rural	Fre	3	PM	1.75	1.74	0.01	48.5	46.6	A	2.24	45.4	A	2.30	1982	-0.06				
A152	SR 84 - WB	Niles Canyon Quarry	Fremont City Limit	Rural	Fre	3	AM	1	2.44	-1.44	47.5	47.6	A	3.08	44.7	A	3.28	3063					
A152	SR 84 - WB	Niles Canyon Quarry	Fremont City Limit	Rural	Fre	3	PM	1	2.44	-1.44	47.5	44.6	A	3.28	45.2	A	3.24	1511					
A153	SR 84 - WB	Fremont City Limit	Union City Limit	Rural	Fre	3	AM	2.1	0.59	1.51	41.8	44.6	A	0.79	42.4	A	0.84	3170					
A153	SR 84 - WB	Fremont City Limit	Union City Limit	Rural	Fre	3	PM	2.1	0.59	1.51	41.8	43.1	A	0.82	43.8	A	0.81	1808					
A154	SR 84 - WB	Union City Limit	SR 238	Rural	Fre	3	AM	1.62	1.35	0.27	31.7	24.4	C	3.32	42.3	A	1.91	3170					
A154	SR 84 - WB	Union City Limit	SR 238	Rural	Fre	3	PM	1.62	1.35	0.27	31.7	33.9	A	2.39	43.8	A	1.85	1808					
A155	SR 92 - EB	I-880	Mission	II	Hay	2	AM	1.59	1.71	-0.12	-	18.8	C	5.46	29.3	B	3.50	2081					
A155	SR 92 - EB	I-880	Mission	II	Hay	2	PM	1.59	1.71	-0.12	-	6.9	(F)	14.87	17.3	D	5.92	2970					
A156	SR 92 - WB	Mission	I-880	II	Hay	2	AM	1.59	1.71	-0.12	-	19.1	C	5.37	25.8	B	3.98	2727					
A156	SR 92 - WB	Mission	I-880	II	Hay	2	PM	1.59	1.71	-0.12	-	23.7	C	4.33	29.4	B	3.49	1461					
A157	SR 112 (Davis) - EB	Doolittle	I-880	II	SL	2	AM	0.51	0.52	-0.01	-	23.5	C	1.33	23.9	C	1.31	3240	0.02				
A157	SR 112 (Davis) - EB	Doolittle	I-880	II	SL	2	PM	0.51	0.52	-0.01	-	14.1	D	2.21	23.2	C	1.35	2866	0.87	D to C			
A158	SR 112 (Davis) - EB	I-880	San Leandro	II	SL	2	AM	1.01	0.99	0.02	-	22.3	C	2.66	26.3	B	2.26	2729	0.40	C to B			
A158	SR 112 (Davis) - EB	I-880	San Leandro	II	SL	2	PM	1.01	0.99	0.02	-	26.2	B	2.27	24.9	B	2.39	2715	-0.12				

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APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A159	SR 112 (Davis) - EB	San Leandro	14th	III	SL	2	AM	0.28	0.28	0	-	15.4	C	1.09	21.8	B	0.77	1580		0.32	C to B		
A159	SR 112 (Davis) - EB	San Leandro	14th	III	SL	2	PM	0.28	0.28	0	-	12.1	D	1.39	21.8	B	0.77	1435		0.62	D to B		
A160	SR 112 (Davis) - WB	E 14th	San Leandro	III	SL	2	AM	0.28	0.28	0	-	12.9	D	1.30	24.1	B	0.70	2167		0.61	D to B		
A160	SR 112 (Davis) - WB	E 14th	San Leandro	III	SL	2	PM	0.28	0.28	0	-	10.8	D	1.56	24.1	B	0.70	1488		0.86	D to B		
A161	SR 112 (Davis) - WB	San Leonardo	I-880	II	SL	2	AM	1	0.99	0.01	-	29.3	B	2.03	24.8	B	2.40	2707		-0.37			
A161	SR 112 (Davis) - WB	San Leonardo	I-880	II	SL	2	PM	1	0.99	0.01	-	25.6	B	2.32	26.7	B	2.22	1542		0.10			
A162	SR 112 (Davis) - WB	I-880	Doolittle	II	SL	2	AM	0.51	0.52	-0.01	-	21.1	C	1.48	25.3	B	1.23	3228		0.25	C to B		
A162	SR 112 (Davis) - WB	I-880	Doolittle	II	SL	2	PM	0.51	0.52	-0.01	-	19.5	C	1.60	27.5	B	1.13	2587		0.47	C to B		
A163	SR 123 San Pablo - SB	Carlson	Washington	II	Alb	1	AM	0.53	0.51	0.02	-	24.3	B	1.26	23.8	C	1.28	1546		-0.02	B to C		
A163	SR 123 San Pablo - SB	Carlson	Washington	II	Alb	1	PM	0.53	0.51	0.02	-	23.8	C	1.29	23.4	C	1.31	2135		-0.02			
A164	SR 123 San Pablo - SB	Washington	Marin	III	Alb	1	AM	0.44	0.36	0.08	-	15.5	C	1.39	23.6	B	0.92	1113		0.48	C to B		
A164	SR 123 San Pablo - SB	Washington	Marin	III	Alb	1	PM	0.44	0.36	0.08	-	14.7	C	1.47	22.9	B	0.94	1537		0.53	C to B		
A165	SR 123 San Pablo - SB	Marin	Gilman	II	Alb - Berk	1	AM	0.47	0.45	0.02	-	24.6	B	1.10	23.9	C	1.13	1692		-0.03	B to C		
A165	SR 123 San Pablo - SB	Marin	Gilman	II	Alb - Berk	1	PM	0.47	0.45	0.02	-	16.4	D	1.65	23.1	C	1.17	1886		0.48	D to C		
A166	SR 123 San Pablo - SB	Gilman	University	II	Berk	1	AM	0.86	0.81	0.05	-	16.6	D	2.93	23.8	C	2.04	1230		0.88	D to C		
A166	SR 123 San Pablo - SB	Gilman	University	II	Berk	1	PM	0.86	0.81	0.05	-	16.4	D	2.96	24.1	B	2.02	1525		0.94	D to B		
A167	SR 123 San Pablo - SB	University	Allston	III	Berk	1	AM	0.2	0.19	0.01	-	29	A	0.39	24.6	B	0.46	1499		-0.07	A to B		
A167	SR 123 San Pablo - SB	University	Allston	III	Berk	1	PM	0.2	0.19	0.01	-	13.6	C	0.84	24.7	B	0.46	2041		0.38	C to B		
A168	SR 123 San Pablo - SB	Allston	Dwight	II	Berk	1	AM	0.4	0.38	0.02	-	22.3	C	1.02	24.6	B	0.93	1499		0.10	C to B		
A168	SR 123 San Pablo - SB	Allston	Dwight	II	Berk	1	PM	0.4	0.38	0.02	-	20.2	C	1.13	24.7	B	0.92	2041		0.21	C to B		
A169	SR 123 San Pablo - SB	Dwight	Ashby	II	Berk	1	AM	0.68	0.64	0.04	-	23.2	C	1.66	25.0	B	1.54	2615		0.12	C to B		
A169	SR 123 San Pablo - SB	Dwight	Ashby	II	Berk	1	PM	0.68	0.64	0.04	-	13.6	E	2.82	23.1	C	1.67	2306		1.16	E to C		
A170	SR 123 San Pablo - SB	Ashby	Stanford	II	Berk	1	AM	0.81	0.8	0.01	-	22.5	C	2.13	24.9	B	1.93	2908		0.21	C to B		
A170	SR 123 San Pablo - SB	Ashby	Stanford	II	Berk	1	PM	0.81	0.8	0.01	-	17.2	D	2.79	22.6	C	2.12	2785		0.67	D to C		
A171	SR 123 San Pablo - SB	Stanford	53rd	II	Oak	1	AM	0.27	0.27	0	-	21.2	C	0.76	24.3	B	0.67	3103		0.10	C to B		
A171	SR 123 San Pablo - SB	Stanford	53rd	II	Oak	1	PM	0.27	0.27	0	-	17.1	D	0.95	21.0	C	0.77	3281		0.18	D to C		
A172	SR 123 San Pablo - SB	53rd	Park	II	Emer	1	AM	0.34	0.34	0	-	19.6	C	1.04	24.3	B	0.84	3103		0.20	C to B		
A172	SR 123 San Pablo - SB	53rd	Park	II	Emer	1	PM	0.34	0.34	0	-	17.6	D	1.16	21.0	C	0.97	3281		0.19	D to C		
A173	SR 123 San Pablo - SB	Park	35th	II	Emer - Oak	1	AM	0.45	0.44	0.01	-	18.3	C	1.44	24.6	B	1.08	1248		0.37	C to B		
A173	SR 123 San Pablo - SB	Park	35th	II	Emer - Oak	1	PM	0.45	0.44	0.01	-	12.7	E	2.08	22.0	C	1.20	2012		0.88	E to C		
A174	SR 123 San Pablo - NB	35th	Park	II	Oak - Emer	1	AM	0.45	0.42	0.03	-	16.3	D	1.55	22.8	C	1.10	3538		0.44	D to C		

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APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A174	SR 123 San Pablo - NB	35th	Park	II	Oak - Emer	1	PM	0.45	0.42	0.03	-	12.3	E	2.05	21.2	C	1.19	1829		0.86	E to C		
A175	SR 123 San Pablo - NB	Park	53rd	II	Emer	1	AM	0.34	0.34	0	-	23.6	C	0.86	22.5	C	0.91	3679		-0.04			
A175	SR 123 San Pablo - NB	Park	53rd	II	Emer	1	PM	0.34	0.34	0	-	22.9	C	0.89	21.3	C	0.96	3816		-0.07			
A176	SR 123 San Pablo - NB	53rd	Stanford	II	Oak	1	AM	0.27	0.27	0	-	33.5	A	0.48	22.5	C	0.72	3679		-0.24	A to C		
A176	SR 123 San Pablo - NB	53rd	Stanford	II	Oak	1	PM	0.27	0.27	0	-	14.6	D	1.11	21.3	C	0.76	3816		0.35	D to C		
A177	SR 123 San Pablo - NB	Stanford	Ashby	II	Oak	1	AM	0.81	0.8	0.01	-	20.6	C	2.33	23.8	C	2.02	2432		0.31			
A177	SR 123 San Pablo - NB	Stanford	Ashby	II	Oak	1	PM	0.81	0.8	0.01	-	15	D	3.20	21.9	C	2.19	3132		1.01	D to C		
A178	SR 123 San Pablo - NB	Ashby	Dwight	II	Berk	1	AM	0.68	0.64	0.04	-	28.4	B	1.35	25.1	B	1.53	2229		-0.18			
A178	SR 123 San Pablo - NB	Ashby	Dwight	II	Berk	1	PM	0.68	0.64	0.04	-	14.5	D	2.65	23.5	C	1.63	2785		1.01	D to C		
A179	SR 123 San Pablo - NB	Dwight	Allston	II	Berk	1	AM	0.4	0.38	0.02	-	30.9	A	0.74	25.3	B	0.90	1645		-0.16	A to B		
A179	SR 123 San Pablo - NB	Dwight	Allston	II	Berk	1	PM	0.4	0.38	0.02	-	23.9	C	0.95	21.2	C	1.07	2131		-0.12			
A180	SR 123 San Pablo - NB	Allston	University	III	Berk	1	AM	0.2	0.19	0.01	-	21.8	B	0.52	25.3	A	0.45	1645		0.07	B to A		
A180	SR 123 San Pablo - NB	Allston	University	III	Berk	1	PM	0.2	0.19	0.01	-	5.4	(F)	2.11	21.2	B	0.54	2131		1.57	(F) to B		
A181	SR 123 San Pablo - NB	University	Gilman	II	Berk	1	AM	0.86	0.81	0.05	-	26.7	B	1.82	26.4	B	1.84	1137		-0.02			
A181	SR 123 San Pablo - NB	University	Gilman	II	Berk	1	PM	0.86	0.81	0.05	-	20.3	C	2.39	23.7	C	2.05	1677		0.35			
A182	SR 123 San Pablo - NB	Gilman	Marin	II	Alb - Berk	1	AM	0.47	0.45	0.02	-	32.5	A	0.83	24.3	B	1.11	1615		-0.28	A to B		
A182	SR 123 San Pablo - NB	Gilman	Marin	II	Alb - Berk	1	PM	0.47	0.45	0.02	-	13.4	E	2.01	22.8	C	1.18	1911		0.83	E to C		
A183	SR 123 San Pablo - NB	Marin	Washington	III	Alb	1	AM	0.45	0.36	0.09	-	24.8	B	0.87	24.2	B	0.89	1046		-0.02			
A183	SR 123 San Pablo - NB	Marin	Washington	III	Alb	1	PM	0.45	0.36	0.09	-	23.6	B	0.92	22.8	B	0.95	1418		-0.03			
A184	SR 123 San Pablo - NB	Washington	Carlson	II	Alb	1	AM	0.53	0.51	0.02	-	28.3	B	1.08	24.3	B	1.26	1478		-0.18			
A184	SR 123 San Pablo - NB	Washington	Carlson	II	Alb	1	PM	0.53	0.51	0.02	-	19.8	C	1.55	23.2	C	1.32	2153		0.23			
A185	SR 185 (14th) - SB	42nd	46th St	II	Oak	1	AM	0.26	0.29	-0.03	-	21.9	C	0.79	24.1	B	0.72	1507		0.07	C to B		
A185	SR 185 (14th) - SB	42nd	46th St	II	Oak	1	PM	0.26	0.29	-0.03	-	15.1	D	1.15	22.8	C	0.76	1964		0.39	D to C		
A186	SR 185 (14th) - SB	46th St	Seminary	II	Oak	1	AM	0.79	0.78	0.01	-	29.6	B	1.58	25.4	B	1.84	2667		-0.26			
A186	SR 185 (14th) - SB	46th St	Seminary	II	Oak	1	PM	0.79	0.78	0.01	-	21.6	C	2.17	24.9	B	1.88	2943		0.29	C to B		
A187	SR 185 (14th) - SB	73rd	Oak	II	Oak	1	AM	0.8	0.8	0	-	12.1	E	3.97	22.2	C	2.16	1466		1.81	E to C		
A187	SR 185 (14th) - SB	73rd	Oak	II	Oak	1	PM	0.8	0.8	0	-	10.2	E	4.71	19.8	C	2.43	1931		2.28	E to C		
A188	SR 185 (14th) - SB	73rd Ave	98th Ave	II	Oak	1	AM	1.39	1.41	-0.02	-	21.8	C	3.88	24.6	B	3.44	1288		0.44	C to B		
A188	SR 185 (14th) - SB	73rd Ave	98th Ave	II	Oak	1	PM	1.39	1.41	-0.02	-	18.1	C	4.67	22.5	C	3.76	1861		0.91			
A189	SR 185 (14th) - SB	98th	Broadmoor	II	Oak	1	AM	0.74	0.75	-0.01	-	24.5	B	1.84	24.5	B	1.83	1002		0.00			
A189	SR 185 (14th) - SB	98th	Broadmoor	II	Oak	1	PM	0.74	0.75	-0.01	-	19.5	C	2.31	23.2	C	1.94	2009		0.37			
A190	SR 185 (14th) - SB	Broadmoor	Davis	II	SL	2	AM	0.73	0.73	0	-	22.1	C	1.98	25.0	B	1.75	2549		0.23	C to B		
A190	SR 185 (14th) - SB	Broadmoor	Davis	II	SL	2	PM	0.73	0.73	0	-	19.2	C	2.28	23.9	C	1.83	2678		0.45			

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APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data					Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS		
A191	SR 185 (14th) - SB	Davis	San Leandro	III	SL	2	AM	1.04	1.06	-0.02	-	21.8	B	2.92	23.7	B	2.68	874		0.24			
A191	SR 185 (14th) - SB	Davis	San Leandro	III	SL	2	PM	1.04	1.06	-0.02	-	19.3	B	3.30	23.1	B	2.75	1171		0.54			
A192	SR 185 (14th) - SB	San L Blvd	Hesperian	II	SL	2	AM	0.94	0.94	0	-	22.5	C	2.51	26.4	B	2.14	1598		0.37			
A192	SR 185 (14th) - SB	San L Blvd	Hesperian	II	SL	2	PM	0.94	0.94	0	-	22.4	C	2.52	24.9	B	2.27	2735		0.25			
A193	SR 185 (14th) - SB	Hesperian	Bayfair	II	SL	2	AM	0.46	0.47	-0.01	-	28.9	B	0.98	27.2	B	1.04	630		-0.06			
A193	SR 185 (14th) - SB	Hesperian	Bayfair	II	SL	2	PM	0.46	0.47	-0.01	-	16.7	D	1.69	24.5	B	1.15	1695		0.54			
A194	SR 185 (14th) - SB	Bayfair	170th	II	Unin	3	AM	1.24	1.19	0.05	-	25.1	B	2.84	26.2	B	2.73	526		0.12			
A194	SR 185 (14th) - SB	Bayfair	170th	II	Unin	3	PM	1.24	1.19	0.05	-	24.1	B	2.96	26.0	B	2.74	1738		0.22			
A195	SR 185 (14th) - SB	170th	Llewelling	II	Unin	3	AM	0.21	0.2	0.01	-	25.2	B	0.48	28.2	B	0.42	1616		0.05			
A195	SR 185 (14th) - SB	170th	Llewelling	II	Unin	3	PM	0.21	0.2	0.01	-	23.4	C	0.51	29.1	B	0.41	2451		0.10			
A196	SR 185 (14th) - SB	Llewelling	Sunset	II	Unin	3	AM	1.02	1.05	-0.03	-	23.4	C	2.69	26.4	B	2.38	589		0.31			
A196	SR 185 (14th) - SB	Llewelling	Sunset	II	Unin	3	PM	1.02	1.05	-0.03	-	27	B	2.33	27.9	B	2.26	1274		0.07			
A197	SR 185 Hayward - SB	Sunset	SR 92/238	III	Hay	2	AM	0.84	0.84	0	-	12.8	D	3.94	21.7	B	2.32	1254		1.62			
A197	SR 185 Hayward - SB	Sunset	SR 92/238	III	Hay	2	PM	0.84	0.84	0	-	9	E	5.60	21.6	B	2.34	1319		3.26			
A198	SR 185 Hayward - NB	SR 92/238	Sunset	III	Hay	2	AM	0.84	0.84	0	-	17	C	2.96	21.8	B	2.32	1540		0.65			
A198	SR 185 Hayward - NB	SR 92/238	Sunset	III	Hay	2	PM	0.84	0.84	0	-	10.6	D	4.75	21.0	B	2.39	1277		2.36			
A199	SR 185 (14th) - NB	Sunset	Llewelling	II	Unin	3	AM	1.11	1.05	0.06	-	25.5	B	2.47	27.3	B	2.31	1099		0.16			
A199	SR 185 (14th) - NB	Sunset	Llewelling	II	Unin	3	PM	1.11	1.05	0.06	-	24.9	B	2.53	28.0	B	2.25	512		0.28			
A200	SR 185 (14th) - NB	Llewelling	170th	II	Unin	3	AM	0.21	0.2	0.01	-	22.5	C	0.53	28.8	B	0.42	2150		0.12			
A200	SR 185 (14th) - NB	Llewelling	170th	II	Unin	3	PM	0.21	0.2	0.01	-	30.4	A	0.39	29.3	B	0.41	1247		-0.01			
A201	SR 185 (14th) - NB	170th	Bayfair	II	Unin	3	AM	1.24	1.19	0.05	-	26.4	B	2.70	26.6	B	2.69	1653		0.02			
A201	SR 185 (14th) - NB	170th	Bayfair	II	Unin	3	PM	1.24	1.19	0.05	-	22.8	C	3.13	27.3	B	2.62	877		0.51			
A202	SR 185 (14th) - NB	Bayfair	Hesperian	II	SL	2	AM	0.47	0.47	0	-	26	B	1.08	26.6	B	1.06	1594		0.03			
A202	SR 185 (14th) - NB	Bayfair	Hesperian	II	SL	2	PM	0.47	0.47	0	-	18.3	C	1.54	25.7	B	1.10	944		0.45			
A203	SR 185 (14th) - NB	Hesperian	San L Blvd	II	SL	2	AM	0.94	0.94	0	-	23.7	C	2.38	27.2	B	2.08	2620		0.30			
A203	SR 185 (14th) - NB	Hesperian	San L Blvd	II	SL	2	PM	0.94	0.94	0	-	28.1	B	2.01	27.5	B	2.05	2032		-0.04			
A204	SR 185 (14th) - NB	San Leandro	Davis	III	SL	2	AM	1.02	1.06	-0.04	-	19.3	B	3.30	22.7	B	2.80	2081		0.50			
A204	SR 185 (14th) - NB	San Leandro	Davis	III	SL	2	PM	1.02	1.06	-0.04	-	15.7	C	4.05	22.8	B	2.79	1624		1.26			
A205	SR 185 (14th) - NB	Davis	Broadmoor	II	SL	2	AM	0.72	0.73	-0.01	-	23.5	C	1.86	25.8	B	1.70	2787		0.17			
A205	SR 185 (14th) - NB	Davis	Broadmoor	II	SL	2	PM	0.72	0.73	-0.01	-	21.3	C	2.06	25.3	B	1.73	2424		0.32			
A206	SR 185 (14th) - NB	Broadmoor	98th	II	Oak	1	AM	0.74	0.75	-0.01	-	16	D	2.81	23.3	C	1.93	2196		0.89			
A206	SR 185 (14th) - NB	Broadmoor	98th	II	Oak	1	PM	0.74	0.75	-0.01	-	15	D	3.00	23.5	C	1.92	1137		1.08			
A207	SR 185 (14th) - NB	98th Ave	73rd Ave	II	Oak	1	AM	1.37	1.41	-0.04	-	20.2	C	4.19	23.1	C	3.66	2047		0.53			
A207	SR 185 (14th) - NB	98th Ave	73rd Ave	II	Oak	1	PM	1.37	1.41	-0.04	-	13.9	E	6.09	23.9	C	3.54	1229		2.55			
A208	SR 185 (14th) - NB	73rd Ave	Seminary	II	Oak	1	AM	0.6	0.8	-0.2	-	10.8	E	4.44	20.4	C	2.36	2562		E to C			
A208	SR 185 (14th) - NB	73rd Ave	Seminary	II	Oak	1	PM	0.6	0.8	-0.2	-	14.5	D	3.31	24.6	B	1.95	1374					
A209	SR 185 (14th) - NB	Seminary	46th St	II	Oak	1	AM	0.79	0.78	0.01	-	29.8	B	1.57	23.9	C	1.96	3246		-0.39			
A209	SR 185 (14th) - NB	Seminary	46th St	II	Oak	1	PM	0.79	0.78	0.01	-	28.9	B	1.62	24.9	B	1.88	2687		-0.26			
A210	SR 185 (14th) - NB	46th St	42nd	II	Oak	1	AM	0.26	0.29	-0.03	-	8.8	(F)	1.98	20.0	C	0.87	2657		1.11			
A210	SR 185 (14th) - NB	46th St	42nd	II	Oak	1	PM	0.26	0.29	-0.03	-	8.7	(F)	2.00	22.5	C	0.77	1430		1.23			
A211	SR 238 (Foothill) - NB	Jackson	City Center	III	Hay	2	AM	0.62	0.63	-0.01	-	10.6	D	3.57	19.4	B	1.95	2529		1.61			
A211	SR 238 (Foothill) - NB	Jackson	City Center	III	Hay	2	PM	0.62	0.63	-0.01	-	6.4	(F)	5.91	15.6	C	2.42	3081		3.48			
A212	SR 238 (Foothill) - NB	City Center	I-580	II	Unin-Hay	3	AM	0.73	0.73	0	-	19.5	C	2.25	27.6	B	1.59	2120		0.66			
A212	SR 238 (Foothill) - NB	City Center	I-580	II	Unin-Hay	3	PM	0.73	0.73	0	-	21.5	C	2.04	25.2	B	1.74	2620		0.30			
A213	SR 238 (Foothill) - NB	I-580 Ramp	I-580 Merge	I	Unin	3	AM	0.71	0.68	0.03	-	48	A	0.85				Insufficient TMC data					

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APPENDIX D - TIER 1 ARTERIALS

CMP Information										Shape Information (mi)			Floating Car Survey				Commerical Speed Data				Comparison	
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△ Travel Time (min)*	△ LOS	
A213	SR 238 (Foothill) - NB	I-580 Ramp	I-580 Merge	I	Unin	3	PM	0.71	0.68	0.03	-	48	A	0.85					Insufficient TMC data			
A214	SR 238 (Foothill) - SB	I-580	Cstro V Blvd	I	Unin	3	AM	0.86	0.73	0.13	-	46.4	A	0.94					Insufficient TMC data			
A214	SR 238 (Foothill) - SB	I-580	Cstro V Blvd	I	Unin	3	PM	0.86	0.73	0.13	-	43.7	A	1.00					Insufficient TMC data			
A215	SR 238 (Foothill) - SB	Cstro V Blvd	City Center	II	Hay-Unin	2	AM	1.03	1.04	-0.01	-	23.8	C	2.62	26.2	B	2.38	2757	0.24	C to B		
A215	SR 238 (Foothill) - SB	Cstro V Blvd	City Center	II	Hay-Unin	2	PM	1.03	1.04	-0.01	-	23.1	C	2.70	26.9	B	2.32	2780	0.38	C to B		
A216	SR 238 (Foothill) - SB	City Center	Jackson	III	Hay	2	AM	0.62	0.63	-0.01	-	11.3	D	3.35	17.0	C	2.23	2962	1.12	D to C		
A216	SR 238 (Foothill) - SB	City Center	Jackson	III	Hay	2	PM	0.62	0.63	-0.01	-	8.9	E	4.25	18.6	C	2.04	2529	2.21	E to C		
A217	SR 238 (Mission) - NB	680 NB Rmp	Stevenson	I	Fre	3	AM	2.46	2.35	0.11	-	37.2	A	3.79	35.7	A	3.95	724				
A217	SR 238 (Mission) - NB	680 NB Rmp	Stevenson	I	Fre	3	PM	2.46	2.35	0.11	-	29.1	B	4.85	37.9	A	3.72	791				
A218	SR 238 (Mission) - NB	Stevenson	Nursery	I	Fre	3	AM	2.57	2.43	0.14	-	38.2	A	3.82	38.2	A	3.81	2123				
A218	SR 238 (Mission) - NB	Stevenson	Nursery	I	Fre	3	PM	2.57	2.43	0.14	-	33.4	B	4.37	36.3	A	4.01	1939				
A219	SR 238 (Mission) - NB	Nursery	Tamarack	I	UC	3	AM	2.1	2.63	-0.53	-	29.8	B	5.30	40.0	A	3.95	1910				
A219	SR 238 (Mission) - NB	Nursery	Tamarack	I	UC	3	PM	2.1	2.63	-0.53	-	27.3	C	5.78	39.8	A	3.97	2074				
A220	SR 238 (Mission) - NB	Tamarack	Industrial	I	UC - Hay	3	AM	1.96	1.96	0	-	31.8	B	3.70	35.5	A	3.31	2876	0.39	B to A		
A220	SR 238 (Mission) - NB	Tamarack	Industrial	I	UC - Hay	3	PM	1.96	1.96	0	-	30.6	B	3.84	34.6	B	3.40	3454	0.44			
A221	SR 238 (Mission) - NB	Industrial	Sorenson	II	Hay	2	AM	1.47	1.46	0.01	-	24.4	B	3.59	29.4	B	2.98	2650	0.61			
A221	SR 238 (Mission) - NB	Industrial	Sorenson	II	Hay	2	PM	1.47	1.46	0.01	-	21.5	C	4.07	28.5	B	3.08	3250	1.00	C to B		
A222	SR 238 (Mission) - NB	Sorenson	Jackson	II	Hay	2	AM	1.83	1.83	0	-	20.2	C	5.44	25.6	B	4.30	2458	1.14	C to B		
A222	SR 238 (Mission) - NB	Sorenson	Jackson	II	Hay	2	PM	1.83	1.83	0	-	11.8	E	9.31	24.8	B	4.43	2493	4.88	E to B		
A223	SR 238 (Mission) - SB	Jackson	Sorenson	II	Hay	2	AM	1.83	1.83	0	-	18.1	C	6.07	24.8	B	4.44	3145	1.63	C to B		
A223	SR 238 (Mission) - SB	Jackson	Sorenson	II	Hay	2	PM	1.83	1.83	0	-	18.7	C	5.87	27.9	B	3.93	2836	1.94	C to B		
A224	SR 238 (Mission) - SB	Sorenson	Industrial	II	Hay	2	AM	1.47	1.46	0.01	-	20.4	C	4.29	27.7	B	3.17	3443	1.13	C to B		
A224	SR 238 (Mission) - SB	Sorenson	Industrial	II	Hay	2	PM	1.47	1.46	0.01	-	22.5	C	3.89	30.5	A	2.87	3067	1.02	C to A		
A225	SR 238 (Mission) - SB	Industrial	Tamarack	I	Hay - UC	2	AM	1.96	1.96	0	-	31.7	B	3.71	32.3	B	3.64	3467	0.07			
A225	SR 238 (Mission) - SB	Industrial	Tamarack	I	Hay - UC	2	PM	1.96	1.96	0	-	30.2	B	3.89	34.0	B	3.45	3204	0.44			
A226	SR 238 (Mission) - SB	Tamarack	Nursery	I	UC	3	AM	2.07	2.63	-0.56	-	22.5	C	7.01	34.5	B	4.58	2514				
A226	SR 238 (Mission) - SB	Tamarack	Nursery	I	UC	3	PM	2.07	2.63	-0.56	-	23.6	C	6.69	39.0	A	4.04	2025				

*Travel time difference is only shown for the CMP segments validated

APPENDIX D - TIER 1 ARTERIALS

CMP Information								Shape Information (mi)			Floating Car Survey				Commerical Speed Data				Comparison		
ID	Route	From	To	Class	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Free Flow speed (mph)	Average Speed (mph)	LOS	Travel Time (min)	Average Speed (mph)	LOS	Travel Time (min)	Sample Size	Comment	△Travel Time (min)*	△ LOS
A227	SR 238 (Mission) - SB	Nursery	Stevenson	I	Fre	3	AM	2.57	2.43	0.14	-	29.8	B	4.89	33.8	B	4.31	2094			
A227	SR 238 (Mission) - SB	Nursery	Stevenson	I	Fre	3	PM	2.57	2.43	0.14	-	33.6	B	4.34	36.9	A	3.95	1963			
A228	SR 238 (Mission) - SB	Stevenson	680 NB Rmp	I	Fre	3	AM	2.46	2.35	0.11	-	28.5	B	4.95	29.9	B	4.71	2108			
A228	SR 238 (Mission) - SB	Stevenson	680 NB Rmp	I	Fre	3	PM	2.46	2.35	0.11	-	23.4	C	6.03	34.2	B	4.13	1800			
A229	SR 260 (Tubes) - NB	Atlantic	7th/Web	I	Oak	1	AM	1.31	1.35	-0.04	-	18	C	4.50	28.8	B	2.81	684	1.69	C to B	
A229	SR 260 (Tubes) - NB	Atlantic	7th/Web	I	Oak	1	PM	1.31	1.35	-0.04	-	36.5	A	2.22	35.2	A	2.30	1061		-0.08	
A230	SR 260 (Tubes) - SB	7th/Web	Atlantic	I	Oak	1	AM	1.31	1.43	-0.12	-	15.4	C	5.57	37.6	A	2.28	537	92% of length used		
A230	SR 260 (Tubes) - SB	7th/Web	Atlantic	I	Oak	1	PM	1.31	1.43	-0.12	-	33.5	A	2.56	37.5	A	2.29	600	92% of length used		
A231	SR 262 (Mission) - EB	I-880 NB	I-680 NB	I	Fre	3	AM	1.33	1.48	-0.15	-	28.7	B	3.09					Insufficient TMC data		
A231	SR 262 (Mission) - EB	I-880 NB	I-680 NB	I	Fre	3	PM	1.33	1.48	-0.15	-	17.8	D	4.99					Insufficient TMC data		
A232	SR 262 (Mission) - WB	I-680 NB	I-880 SB	I	Fre	3	AM	1.11	1.67	-0.56	-	21.6	D	4.64					Insufficient TMC data		
A232	SR 262 (Mission) - WB	I-680 NB	I-880 SB	I	Fre	3	PM	1.11	1.67	-0.56	-	30.6	B	3.27					Insufficient TMC data		

*Travel time difference is only shown for the CMP segments validated

APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison △Travel Time (min)*
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment	
T1	T1	W.Grand Ave - Grand Ave -EB	I-80/Maritime St	San Pablo Ave	Oakland	1	AM	1.09	1.63	-0.54	17.9	5.46	27.0	3.62	564		
T1	T1	W.Grand Ave - Grand Ave -EB	I-80/Maritime St	San Pablo Ave	Oakland	1	PM	1.09	1.63	-0.54	13.9	7.04	28.7	3.41	380		
T2	T2	W.Grand Ave - Grand Ave -EB	San Pablo Ave	Broadway	Oakland	1	AM	0.4	0.4	0	20.1	1.19	19.3	1.24	2213	-0.05	
T2	T2	W.Grand Ave - Grand Ave -EB	San Pablo Ave	Broadway	Oakland	1	PM	0.4	0.4	0	10.8	2.22	21.0	1.14	1765	1.08	
T3	T3	W.Grand Ave - Grand Ave -EB	Broadway	I-580	Oakland	1	AM	1.62	1.08	0.54	25.8	2.51	20.6	3.15	925		
T3	T3	W.Grand Ave - Grand Ave -EB	Broadway	I-580	Oakland	1	PM	1.62	1.08	0.54	24.3	2.67	19.3	3.35	581		
T4	T4	W.Grand Ave - Grand Ave -WB	I-580	Broadway	Oakland	1	AM	1.62	1.08	0.54	24.4	2.66	21.0	3.09	610		
T4	T4	W.Grand Ave - Grand Ave -WB	I-580	Broadway	Oakland	1	PM	1.62	1.08	0.54	23.9	2.71	20.3	3.19	898		
T5	T5	W.Grand Ave - Grand Ave -WB	Broadway	San Pablo Ave	Oakland	1	AM	0.4	0.4	0	14.8	1.62	19.7	1.22	2003	0.41	
T5	T5	W.Grand Ave - Grand Ave -WB	Broadway	San Pablo Ave	Oakland	1	PM	0.4	0.4	0	12	2.00	18.8	1.28	1773	0.72	
T6	T6	W.Grand Ave - Grand Ave -WB	San Pablo Ave	I-80/Maritime St	Oakland	1	AM	1.09	1.63	-0.54	18	5.43	27.3	3.58	1330		
T6	T6	W.Grand Ave - Grand Ave -WB	San Pablo Ave	I-80/Maritime St	Oakland	1	PM	1.09	1.63	-0.54	11.4	8.58	28.9	3.39	840		
T7	T7	11th St - Lakeshore Ave-EB	I-980 ON Ramp/Brush St	Webster	Oakland	1	AM	0.46	0.6	-0.14	16.3	2.21				Insufficient TMC data	
T7	T7	11th St - Lakeshore Ave-EB	I-980 ON Ramp/Brush St	Webster	Oakland	1	PM	0.46	0.6	-0.14	17.8	2.02				Insufficient TMC data	
T8	T8	11th St - Lakeshore Ave-EB	Webster	Lake Merrit Blvd	Oakland	1	AM	0.59	0.66	-0.07	23.1	1.71				Insufficient TMC data	
T8	T8	11th St - Lakeshore Ave-EB	Webster	Lake Merrit Blvd	Oakland	1	PM	0.59	0.66	-0.07	20.7	1.91				Insufficient TMC data	
T9	T9	12th St - Lakeshore Ave-EB	Lake Merrit Blvd	MacArthur Blvd/I-580 ON Ramp	Oakland	1	AM	1.24	1.15	0.09	17.5	3.94	21.9	3.14	544	92% of length used	0.80
T9	T9	12th St - Lakeshore Ave-EB	Lake Merrit Blvd	MacArthur Blvd/I-580 ON Ramp	Oakland	1	PM	1.24	1.15	0.09	17	4.06	21.3	3.24	391	92% of length used	0.81
T10	T10	12th St - Lakeshore Ave-WB	MacArthur Blvd/I-580 ON Ramp	Lake Merrit Blvd	Oakland	1	AM	1.2	1.15	0.05	17.7	3.90	21.8	3.16	544	80% of length used	0.74
T10	T10	12th St - Lakeshore Ave-WB	MacArthur Blvd/I-580 ON Ramp	Lake Merrit Blvd	Oakland	1	PM	1.2	1.15	0.05	17.7	3.90	21.1	3.27	673	85% of length used	0.63
T11	T11	12th St - Lakeshore Ave-WB	Lake Merrit Blvd	Webster	Oakland	1	AM	0.61	0.64	-0.03	17.6	2.18				Insufficient TMC data	
T11	T11	12th St - Lakeshore Ave-WB	Lake Merrit Blvd	Webster	Oakland	1	PM	0.61	0.64	-0.03	24.3	1.58				Insufficient TMC data	
T12	T12	12th St - Lakeshore Ave-WB	Webster	I-980 OFF Ramp/Brush St	Oakland	1	AM	0.51	0.6	-0.09	19.2	1.88				Insufficient TMC data	
T12	T12	12th St - Lakeshore Ave-WB	Webster	I-980 OFF Ramp/Brush St	Oakland	1	PM	0.51	0.6	-0.09	14.2	2.54				Insufficient TMC data	
T13	T13	Telegraph Ave-NB	51st Street	Russell St	Oakland, Berkeley	1	AM	1.31	1.41	-0.1	16.4	5.16	22.9	3.69	461		1.47
T13	T13	Telegraph Ave-NB	51st Street	Russell St	Oakland, Berkeley	1	PM	1.31	1.41	-0.1	16.8	5.04	24.5	3.46	582	92% of length used	1.58
T14	T14	Telegraph Ave-NB	Russell St	Bancroft Way	Oakland, Berkeley	1	AM	0.81	0.77	0.04	19.9	2.32	22.5	2.05	379		0.27
T14	T14	Telegraph Ave-NB	Russell St	Bancroft Way	Oakland, Berkeley	1	PM	0.81	0.77	0.04	15.6	2.96	22.0	2.10	383	75% of length used	0.86
T15	T15	Telegraph Ave-SB	Bancroft Way	Russell St	Oakland, Berkeley	1	AM	0.75	0.9	-0.15	15.8	3.42				Insufficient TMC data	
T15	T15	Telegraph Ave-SB	Bancroft Way	Russell St	Oakland, Berkeley	1	PM	0.75	0.9	-0.15	10.4	5.19				Insufficient TMC data	
T16	T16	Telegraph Ave-SB	Russell St	51st Street	Oakland, Berkeley	1	AM	1.5	1.41	0.09	20.7	4.09	24.1	3.52	440	90% of length used	0.57
T16	T16	Telegraph Ave-SB	Russell St	51st Street	Oakland, Berkeley	1	PM	1.5	1.41	0.09	16	5.29	22.5	3.77	392		1.52

*Travel time difference is only shown for the CMP segments validated

APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey		Commercial Speed Data			Comparison △Travel Time (min)*		
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment	
T17	T17	Broadway-SB	Broadway/College Ave	Grand Ave	Oakland	1	AM	1.91	1.91	0	16.2	7.07	19.2	5.97	2807	1.11	
T17	T17	Broadway-SB	Broadway/College Ave	Grand Ave	Oakland	1	PM	1.91	1.91	0	14.3	8.01	17.2	6.67	1109	1.34	
T18	T18	Broadway-SB	Grand Ave	14th St	Oakland	1	AM	0.55	0.55	0	12.5	2.64	19.1	1.72	644	0.92	
T18	T18	Broadway-SB	Grand Ave	14th St	Oakland	1	PM	0.55	0.55	0	10.4	3.17	17.5	1.89	678	1.29	
T19	T19	Broadway-SB	14th St	5th St/Broadway	Oakland	1	AM	0.48	0.48	0	11.8	2.44	18.7	1.54	1323	0.90	
T19	T19	Broadway-SB	14th St	5th St/Broadway	Oakland	1	PM	0.48	0.48	0	8.3	3.47	16.8	1.72	1420	1.75	
T20	Broadway (Connection to I-880)-SB		5th St/Broadway	I-880 ON Ramp	Oakland	1	AM	0.06	0.21	-0.15	14.4	0.88	55.6	0.23	3725		
T20	Broadway (Connection to I-880)-SB		5th St/Broadway	I-880 ON Ramp	Oakland	1	PM	0.06	0.21	-0.15	11.3	1.12	18.7	0.67	3833		
T21	Broadway (Connection to I-880)-NB		I-880 OFF Ramp	5th St/Broadway	Oakland	1	AM	0.07	1.26	-1.19	23	3.29	Insufficient TMC data				
T21	Broadway (Connection to I-880)-NB		I-880 OFF Ramp	5th St/Broadway	Oakland	1	PM	0.07	1.26	-1.19	23	3.29	Insufficient TMC data				
T22	T22	Broadway-NB	5th St/Broadway	14th St	Oakland	1	AM	0.48	0.48	0	12.5	2.30	17.7	1.62	1442	0.68	
T22	T22	Broadway-NB	5th St/Broadway	14th St	Oakland	1	PM	0.48	0.48	0	12.5	2.30	17.2	1.67	1119	0.63	
T23	T23	Broadway-NB	14th St	Grand Ave	Oakland	1	AM	0.55	0.55	0	16	2.06	18.7	1.76	766	0.30	
T23	T23	Broadway-NB	14th St	Grand Ave	Oakland	1	PM	0.55	0.55	0	16	2.06	18.7	1.77	619	0.30	
T24	T24	Broadway-NB	Grand Ave	Broadway/College Ave	Oakland	1	AM	1.91	1.91	0	15.7	7.30	18.9	6.06	1223	1.24	
T24	T24	Broadway-NB	Grand Ave	Broadway/College Ave	Oakland	1	PM	1.91	1.91	0	15.7	7.30	18.6	6.16	1713	1.13	
T25	T25	Durant-EB	Shattuck	College Ave.	Berkeley	1	AM	0.73	0.73	0	14.4	3.04	Insufficient TMC data				
T25	T25	Durant-EB	Shattuck	College Ave.	Berkeley	1	PM	0.73	0.73	0	10.7	4.09	Insufficient TMC data				
T26	T26	College Avenue-SB	Bancroft Way/College Ave		Ashby Ave	Oakland	1	AM	0.79	0.85	-0.06	13.2	3.86	18.7	2.72	585	70% of length used
T26	T26	College Avenue-SB	Bancroft Way/College Ave		Ashby Ave	Oakland	1	PM	0.79	0.85	-0.06	10.3	4.95	16.1	3.18	570	1.78
T27	T27	College Avenue-SB	Ashby Ave	Miles Ave/SR 24 OFF Ramp	Oakland, Berkeley	1	AM	0.83	0.83	0	15.7	3.17	21.3	2.34	684	0.83	
T27	T27	College Avenue-SB	Ashby Ave	Miles Ave/SR 24 OFF Ramp	Oakland, Berkeley	1	PM	0.83	0.83	0	11.2	4.45	18.3	2.72	528	1.73	
T28	T28	College Avenue-SB	Miles Ave/SR 24 OFF Ramp	Broadway/College Ave	Berkeley	1	AM	0.6	0.61	-0.01	16	2.29	18.5	1.98	704	0.30	
T28	T28	College Avenue-SB	Miles Ave/SR 24 OFF Ramp	Broadway/College Ave	Berkeley	1	PM	0.6	0.61	-0.01	16.1	2.27	18.6	1.96	1342	0.31	
T29	T29	College Avenue-NB	Broadway/College Ave	Miles Ave/SR 24 OFF Ramp	Berkeley	1	AM	0.6	0.61	-0.01	16.1	2.27	19.5	1.88	1699	0.40	
T29	T29	College Avenue-NB	Broadway/College Ave	Miles Ave/SR 24 OFF Ramp	Berkeley	1	PM	0.6	0.61	-0.01	12.5	2.93	20.9	1.75	1286	1.18	
T30	T30	College Avenue-NB	Miles Ave/SR 24 OFF Ramp	Ashby Ave	Oakland, Berkeley	1	AM	0.83	0.83	0	12.5	3.98	20.5	2.43	986	1.55	
T30	T30	College Avenue-NB	Miles Ave/SR 24 OFF Ramp	Ashby Ave	Oakland, Berkeley	1	PM	0.83	0.83	0	15.9	3.13	19.1	2.61	468	95% of length used	
T31	T31	College Avenue-NB	Ashby Ave	Bancroft Way/College Ave	Oakland	1	AM	0.98	0.85	0.13	15.9	3.21	18.7	2.72	959		
T31	T31	College Avenue-NB	Ashby Ave	Bancroft Way/College Ave	Oakland	1	PM	0.98	0.85	0.13	16.1	3.17	18.7	2.73	570		
T32	T32	Bancroft-WB	College Ave.	Shattuck	Berkeley	1	AM	0.73	0.73	0	14.8	2.96	16.3	2.68	656	0.28	
T32	T32	Bancroft-WB	College Ave.	Shattuck	Berkeley	1	PM	0.73	0.73	0	14.8	2.96	16.0	2.74	900	0.22	
T33	T33	51st Street-EB	SR 24 Off Ramp/52nd St		Broadway	Oakland	1	AM	0.81	0.75	0.06	15.4	2.92	22.4	2.00	2014	0.92

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information						Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison △Travel Time (min)*
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment		
T33	T33	51st Street-EB	SR 24 Off Ramp/52nd St	Broadway	Oakland	1	PM	0.81	0.75	0.06	12.5	3.60	22.2	2.03	850		1.57	
T34	T34	51st Street-WB	Broadway	SR 24 Off Ramp/52nd St	Oakland	1	AM	0.75	0.75	0	16.9	2.66	23.8	1.89	1009	92% of length used	0.78	
T34	T34	51st Street-WB	Broadway	SR 24 Off Ramp/52nd St	Oakland	1	PM	0.75	0.75	0	10.7	4.21	23.9	1.88	496		2.32	
T35	T35	Shattuck Avenue-NB	51st	Alcatraz Ave.	Oakland, Berkeley	1	AM	0.81	0.81	0	22.4	2.17	23.3	2.09	1870		0.08	
T35	T35	Shattuck Avenue-NB	51st	Alcatraz Ave.	Oakland, Berkeley	1	PM	0.81	0.81	0	20.3	2.39	23.1	2.10	1720		0.29	
T36	T36	Shattuck Avenue-NB	Alcatraz Ave.	Adeline St.	Berkeley	1	AM	0.7	0.7	0	18.4	2.28	22.4	1.88	1398		0.41	
T36	T36	Shattuck Avenue-NB	Alcatraz Ave.	Adeline St.	Berkeley	1	PM	0.7	0.7	0	13.8	3.04	20.8	2.02	857		1.02	
T37	T37	Shattuck Avenue-SB	Adeline St.	Alcatraz Ave.	Berkeley	1	AM	0.7	0.7	0	18.8	2.23	25.0	1.68	446		0.56	
T37	T37	Shattuck Avenue-SB	Adeline St.	Alcatraz Ave.	Berkeley	1	PM	0.7	0.7	0	13.1	3.21	21.4	1.96	1367		1.25	
T38	T38	Shattuck Avenue-SB	Alcatraz Ave.	51st	Oakland, Berkeley	1	AM	0.81	0.81	0	14.5	3.35	24.1	2.02	1088		1.33	
T38	T38	Shattuck Avenue-SB	Alcatraz Ave.	51st	Oakland, Berkeley	1	PM	0.81	0.81	0	13.2	3.68	23.2	2.09	1739		1.59	
T39	T39	Powel Street-Stanford Avenue-EB	NB I-80 OFF Ramp	San Pablo Ave	Emeryville	1	AM	0.75	0.75	0	14.4	3.13	24.2	1.86	825	85% of length used	1.26	
T39	T39	Powel Street-Stanford Avenue-EB	NB I-80 OFF Ramp	San Pablo Ave	Emeryville	1	PM	0.75	0.75	0	14.3	3.15	24.0	1.87	563	85% of length used	1.27	
T40	T40	Powel Street-Stanford Avenue-EB	San Pablo Ave	MLK Jr Way	Emeryville, Berkeley	1	AM	0.76	0.76	0	17.8	2.56				Insufficient TMC data		
T40	T40	Powel Street-Stanford Avenue-EB	San Pablo Ave	MLK Jr Way	Emeryville, Berkeley	1	PM	0.76	0.76	0	16.1	2.83				Insufficient TMC data		
T41	T41	Powel Street-Stanford Avenue-WB	MLK Jr Way	San Pablo Ave	Emeryville, Berkeley	1	AM	0.76	0.76	0	16.7	2.73				Insufficient TMC data		
T41	T41	Powel Street-Stanford Avenue-WB	MLK Jr Way	San Pablo Ave	Emeryville, Berkeley	1	PM	0.76	0.76	0	17.2	2.65				Insufficient TMC data		
T42	T42	Powel Street-Stanford Avenue-WB	San Pablo Ave	NB I-80 OFF Ramp	Emeryville	1	AM	0.75	0.75	0	21.2	2.12	23.4	1.92	527	80% of length used	0.20	
T42	T42	Powel Street-Stanford Avenue-WB	San Pablo Ave	NB I-80 OFF Ramp	Emeryville	1	PM	0.75	0.75	0	17.6	2.56	21.8	2.06	1397	80% of length used	0.50	
T43	T43	40thStreet-Shellmound Avenue-EB	Shellmound Way (north of Powell St)	40th St	Emeryville	1	AM	0.82	0.73	0.09	26.8	1.63				Insufficient TMC data		
T43	T43	40thStreet-Shellmound Avenue-EB	Shellmound Way (north of Powell St)	40th St	Emeryville	1	PM	0.82	0.73	0.09	20.1	2.18				Insufficient TMC data		
T44	T44	40thStreet-Shellmound Avenue-EB	40th St	San Pablo Ave	Emeryville	1	AM	0.64	0.68	-0.04	16.9	2.41	19.4	2.10	3595	92% of length used	0.32	
T44	T44	40thStreet-Shellmound Avenue-EB	40th St	San Pablo Ave	Emeryville	1	PM	0.64	0.68	-0.04	12.4	3.29	15.2	2.68	3698	92% of length used	0.61	
T45	T45	40thStreet-Shellmound Avenue-WB	San Pablo Ave	40th St	Emeryville	1	AM	0.64	0.68	-0.04	25.2	1.62	22.4	1.82	3641	92% of length used	-0.21	
T45	T45	40thStreet-Shellmound Avenue-WB	San Pablo Ave	40th St	Emeryville	1	PM	0.64	0.68	-0.04	20.1	2.03	18.7	2.18	3688	92% of length used	-0.15	
T46	T46	40thStreet-Shellmound Avenue-WB	40th St	Shellmound Way (north of Powell St)	Emeryville	1	AM	0.82	0.73	0.09	28.3	1.55				Insufficient TMC data		
T46	T46	40thStreet-Shellmound Avenue-WB	40th St	Shellmound Way (north of Powell St)	Emeryville	1	PM	0.82	0.73	0.09	22.3	1.96				Insufficient TMC data		
T47	T47	International Boulevard-NB	42nd Ave	Fruitvale Ave	Oakland	1	AM	0.62	0.62	0	21.7	1.71	17.8	2.09	2648		-0.37	
T47	T47	International Boulevard-NB	42nd Ave	Fruitvale Ave	Oakland	1	PM	0.62	0.62	0	14.1	2.64	19.8	1.88	1352		0.76	
T48	T48	International Boulevard-NB	Fruitvale Ave	14th Ave	Oakland	1	AM	1.38	1.38	0	26.6	3.11	23.3	3.55	2352		-0.44	
T48	T48	International Boulevard-NB	Fruitvale Ave	14th Ave	Oakland	1	PM	1.38	1.38	0	21.5	3.85	24.5	3.39	811		0.47	
T49	T49	International Boulevard-NB	14th Ave	Lake Merritt Blvd	Oakland	1	AM	0.88	0.88	0	21.2	2.49	22.0	2.40	1943		0.09	

*Travel time difference is only shown for the CMP segments validated

APPENDIX E - TIER 2 ARTERIALS

CMP Information							Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison
ID	ID (2012 Report)	Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment	△Travel Time (min)*
T49	T49	International Boulevard-NB	14th Ave	Lake Merrit Blvd	Oakland	1	PM	0.88	0.88	0	17.5	3.02	22.8	2.32	981		0.70
T50	T50	International Boulevard-SB	Lake Merrit Blvd	14th Ave	Oakland	1	AM	0.88	0.88	0	20.8	2.54	23.2	2.27	644		0.26
T50	T50	International Boulevard-SB	Lake Merrit Blvd	14th Ave	Oakland	1	PM	0.88	0.88	0	22.5	2.35	22.5	2.34	870		0.00
T51	T51	International Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	AM	1.38	1.38	0	24.4	3.39	23.6	3.51	760		-0.12
T51	T51	International Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	PM	1.38	1.38	0	18.7	4.43	22.7	3.65	1259		0.78
T52	T52	International Boulevard-SB	Fruitvale Ave	42nd Ave	Oakland	1	AM	0.62	0.62	0	18.9	1.97	21.3	1.75	1150		0.22
T52	T52	International Boulevard-SB	Fruitvale Ave	42nd Ave	Oakland	1	PM	0.62	0.62	0	8	4.65	17.2	2.16	2240		2.49
T53	T53	Foothill Boulevard-NB	International Blvd/73rd Ave	73rd Ave/Foothill Blvd	Oakland	1	AM	1.07	1.07	0	18.4	3.49	24.5	2.62	1828		0.87
T53	T53	Foothill Boulevard-NB	International Blvd/73rd Ave	73rd Ave/Foothill Blvd	Oakland	1	PM	1.07	1.07	0	14	4.59	25.2	2.55	642		2.03
T54	T54	Foothill Boulevard-NB	73rd Ave/Foothill Blvd	Seminary Ave	Oakland	1	AM	1.01	1.02	-0.01	18.5	3.31	20.2	3.02	1108	95% of length used	0.28
T54	T54	Foothill Boulevard-NB	73rd Ave/Foothill Blvd	Seminary Ave	Oakland	1	PM	1.01	1.02	-0.01	19.1	3.20	21.3	2.87	1134	95% of length used	0.33
T55	T55	Foothill Boulevard-NB	Seminary Ave	High Street	Oakland	1	AM	1.22	1.22	0	20	3.66	23.1	3.17	663	70% of length used	0.49
T55	T55	Foothill Boulevard-NB	Seminary Ave	High Street	Oakland	1	PM	1.22	1.22	0	20.5	3.57	22.8	3.20	550		0.37
T56	T56	Foothill Boulevard-NB	High Street	Fruitvale Ave	Oakland	1	AM	0.89	0.9	-0.01	12.1	4.46	19.3	2.80	688	85% of length used	1.66
T56	T56	Foothill Boulevard-NB	High Street	Fruitvale Ave	Oakland	1	PM	0.89	0.9	-0.01	14	3.86	19.2	2.81	685	85% of length used	1.04
T57	T57	Foothill Boulevard-NB	Fruitvale Ave	14th Ave	Oakland	1	AM	1.32	1.32	0	20.9	3.79	22.0	3.61	469	95% of length used	0.18
T57	T57	Foothill Boulevard-NB	Fruitvale Ave	14th Ave	Oakland	1	PM	1.32	1.32	0	20.4	3.88	22.7	3.48	426	95% of length used	0.40
T58	T58	Foothill Boulevard-NB	14th Ave	1st Ave/Lake Shore Blvd	Oakland	1	AM	0.87	0.88	-0.01	16.2	3.26	20.6	2.56	448	95% of length used	0.70
T58	T58	Foothill Boulevard-NB	14th Ave	1st Ave/Lake Shore Blvd	Oakland	1	PM	0.87	0.88	-0.01	16.9	3.12	19.6	2.69	485	95% of length used	0.44
T60	T60	Foothill Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	AM	1.3	1.32	-0.02	18.6	4.26	21.4	3.70	416	95% of length used	0.55
T60	T60	Foothill Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	PM	1.3	1.32	-0.02	17.2	4.60				Insufficient TMC data	
T61	T61	Foothill Boulevard-SB	Fruitvale Ave	High Street	Oakland	1	AM	0.89	0.9	-0.01	15.8	3.42	19.9	2.72	487	85% of length used	0.70
T61	T61	Foothill Boulevard-SB	Fruitvale Ave	High Street	Oakland	1	PM	0.89	0.9	-0.01	14.1	3.83	19.7	2.74	483		1.09
T62	T62	Foothill Boulevard-SB	High Street	Seminary Ave	Oakland	1	AM	1.22	1.22	0	21	3.49	22.0	3.32	688		0.16
T62	T62	Foothill Boulevard-SB	High Street	Seminary Ave	Oakland	1	PM	1.22	1.22	0	18.2	4.02	21.8	3.35	755		0.67
T63	T63	Foothill Boulevard-SB	Seminary Ave	73rd Ave/Foothill Blvd	Oakland	1	AM	1.01	1.02	-0.01	21	2.91	20.3	3.02	947	95% of length used	-0.10
T63	T63	Foothill Boulevard-SB	Seminary Ave	73rd Ave/Foothill Blvd	Oakland	1	PM	1.01	1.02	-0.01	17.4	3.52	21.1	2.90	1458	95% of length used	0.62
T64	T64	Foothill Boulevard-SB	73rd Ave/Foothill Blvd	International Blvd/73rd Ave	Oakland	1	AM	1.04	1.07	-0.03	21.3	3.01	26.2	2.45	440		0.56
T64	T64	Foothill Boulevard-SB	73rd Ave/Foothill Blvd	International Blvd/73rd Ave	Oakland	1	PM	1.04	1.07	-0.03	21.2	3.03	24.8	2.59	720		0.44
T65	T65	E. 15th Street-SB	1st Avenue	14th Avenue	Oakland	1	AM	0.99	0.98	0.01	19.1	3.08				Insufficient TMC data	
T65	T65	E. 15th Street-SB	1st Avenue	14th Avenue	Oakland	1	PM	0.99	0.98	0.01	16.9	3.48				Insufficient TMC data	
T66	T66	High Street-EB	Otis Drive	Central Ave	Alameda	1	AM	0.58	0.58	0	18.2	1.91	21.3	1.64	356		0.28
T66	T66	High Street-EB	Otis Drive	Central Ave	Alameda	1	PM	0.58	0.58	0	21	1.66				Insufficient TMC data	
T67	T67	High Street-EB	Central Ave	Fernside Blvd	Alameda	1	AM	0.48	0.48	0	13.2	2.18	20.8	1.38	1046		0.80
T67	T67	High Street-EB	Central Ave	Fernside Blvd	Alameda	1	PM	0.48	0.48	0	16.4	1.76	23.3	1.24	818		0.52
T68	T68	High Street-EB	Fernside Blvd	NB I-880 OFF Ramp	Alameda, Oakland	1	AM	0.49	0.5	-0.01	12.5	2.40	18.7	1.60	491		0.80
T68	T68	High Street-EB	Fernside Blvd	NB I-880 OFF Ramp	Alameda, Oakland	1	PM	0.49	0.5	-0.01	13.3	2.26	20.5	1.46	421		0.79
T69	T69	High Street-EB	NB I-880 OFF Ramp	Foothill Blvd	Oakland	1	AM	0.62	0.61	0.01	11.5	3.18	18.5	1.98	1356		1.20
T69	T69	High Street-EB	NB I-880 OFF Ramp	Foothill Blvd	Oakland	1	PM	0.62	0.61	0.01	11.3	3.24	19.4	1.88	393		1.35
T70	T70	High Street-EB	Foothill Blvd	MacArthur Blvd/WB I-580 OFF Ramp	Oakland	1	AM	1.3	1.29	0.01	18.9	4.10	24.2	3.20	776		0.89
T70	T70	High Street-EB	Foothill Blvd	MacArthur Blvd/WB I-580 OFF Ramp	Oakland	1	PM	1.3	1.29	0.01	17.2	4.50	24.2	3.20	814	92% of length used	1.30

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	Route	CMP Information				Shape Information (mi)			Floating Car Survey		Commercial Speed Data				Comparison △Travel Time (min)*
			From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment
T71	T71	High Street-WB	MacArthur Blvd/WB I-580 OFF Ramp	Foothill Blvd	Oakland	1	AM	1.73	1.29	0.44	28.1	2.75	26.5	2.92	659	92% of length used
T71	T71	High Street-WB	MacArthur Blvd/WB I-580 OFF Ramp	Foothill Blvd	Oakland	1	PM	1.73	1.29	0.44	22.8	3.39	24.6	3.15	358	95% of length used
T72	T72	High Street-WB	Foothill Blvd	NB I-880 OFF Ramp	Oakland	1	AM	0.62	0.61	0.01	9.1	4.02	20.6	1.78	572	2.24
T72	T72	High Street-WB	Foothill Blvd	NB I-880 OFF Ramp	Oakland	1	PM	0.62	0.61	0.01	9.2	3.98	19.2	1.91	621	2.07
T73	T73	High Street-WB	NB I-880 OFF Ramp	Fernside Blvd	Alameda, Oakland	1	AM	0.49	0.5	-0.01	18.3	1.64	24.8	1.21	681	0.43
T73	T73	High Street-WB	NB I-880 OFF Ramp	Fernside Blvd	Alameda, Oakland	1	PM	0.49	0.5	-0.01	18.9	1.59	25.0	1.20	673	0.39
T74	T74	High Street-WB	Fernside Blvd	Central Ave	Alameda	1	AM	0.48	0.48	0	19.9	1.45	22.6	1.27	1272	0.17
T74	T74	High Street-WB	Fernside Blvd	Central Ave	Alameda	1	PM	0.48	0.48	0	19.5	1.48	24.9	1.16	1001	0.32
T75	T75	High Street-WB	Central Ave	Otis Drive	Alameda	1	AM	0.58	0.58	0	14.1	2.47	22.2	1.56	551	0.90
T75	T75	High Street-WB	Central Ave	Otis Drive	Alameda	1	PM	0.58	0.58	0	15.1	2.30	Insufficient TMC data			
T76	T77	Crow Canyon Road-NB	A Street/Redwood Road	EB I-580 ON Ramp/Grove Way	Alameda County	2	AM	0.93	0.95	-0.02	31.6	1.80	29.2	1.95	780	-0.15
T76	T77	Crow Canyon Road-NB	A Street/Redwood Road	EB I-580 ON Ramp/Grove Way	Alameda County	2	PM	0.93	0.95	-0.02	31.5	1.81	27.9	2.04	1320	-0.23
T77	T78	Crow Canyon Road-NB	EB I-580 ON Ramp/Grove Way	Cull Canyon	Alameda County	2	AM	0.83	0.81	0.02	20.3	2.39	29.7	1.64	625	0.76
T77	T78	Crow Canyon Road-NB	EB I-580 ON Ramp/Grove Way	Cull Canyon	Alameda County	2	PM	0.83	0.81	0.02	26	1.87	32.3	1.51	1172	0.36
T78	T79	Crow Canyon Road-NB	Cull Canyon	Cold Water Dr	Alameda County	2	AM	0.89	0.88	0.01	34.1	1.55	41.3	1.28	1328	0.27
T78	T79	Crow Canyon Road-NB	Cull Canyon	Cold Water Dr	Alameda County	2	PM	0.89	0.88	0.01	38.4	1.38	41.5	1.27	1693	0.10
T79	T80	Crow Canyon Road-NB	Cold Water Dr	0.43 miles north of Norris Canyon Rd	Alameda County	2	AM	1.48	2.41	-0.93	41.9	3.45	41.6	3.47	3417	
T79	T80	Crow Canyon Road-NB	Cold Water Dr	0.43 miles north of Norris Canyon Rd	Alameda County	2	PM	1.48	2.41	-0.93	40.8	3.54	41.4	3.49	3246	
T80	T81	Crow Canyon Road-NB	0.43 miles north of Norris Canyon Rd	County Line	Alameda County	2	AM	3.9	2.97	0.93	43.9	4.06	41.6	4.28	3417	
T80	T81	Crow Canyon Road-NB	0.43 miles north of Norris Canyon Rd	County Line	Alameda County	2	PM	3.9	2.97	0.93	45.1	3.95	41.4	4.31	3246	
T81	T82	Crow Canyon Road-SB	County Line	0.43 miles north of Norris Canyon Rd	Alameda County	2	AM	3.9	2.97	0.93	45.8	3.89	41.6	4.29	3259	
T81	T82	Crow Canyon Road-SB	County Line	0.43 miles north of Norris Canyon Rd	Alameda County	2	PM	3.9	2.97	0.93	41.7	4.27	41.1	4.33	3242	
T82	T83	Crow Canyon Road-SB	0.43 miles north of Norris Canyon Rd	Cold Water Dr	Alameda County	2	AM	1.48	2.4	-0.92	44.8	3.21	41.6	3.46	3259	
T82	T83	Crow Canyon Road-SB	0.43 miles north of Norris Canyon Rd	Cold Water Dr	Alameda County	2	PM	1.48	2.4	-0.92	30.9	4.66	41.1	3.50	3242	
T83	T84	Crow Canyon Road-SB	Cold Water Dr	Cull Canyon	Alameda County	2	AM	0.89	0.89	0	29.3	1.82	40.6	1.31	1314	0.51
T83	T84	Crow Canyon Road-SB	Cold Water Dr	Cull Canyon	Alameda County	2	PM	0.89	0.89	0	26.8	1.99	40.5	1.32	858	0.67
T84	T85	Crow Canyon Road-SB	Cull Canyon	EB I-580 ON Ramp/Grove Way	Alameda County	2	AM	0.83	0.82	0.01	22.8	2.16	31.6	1.56	778	0.60
T84	T85	Crow Canyon Road-SB	Cull Canyon	EB I-580 ON Ramp/Grove Way	Alameda County	2	PM	0.83	0.82	0.01	24.5	2.01	34.3	1.44	449	95% of length used
T85	T86	Crow Canyon Road-SB	EB I-580 ON Ramp/Grove Way	A Street/Redwood Road	Alameda County	2	AM	0.93	0.94	-0.01	21.6	2.61	29.7	1.90	742	0.71
T85	T86	Crow Canyon Road-SB	EB I-580 ON Ramp/Grove Way	A Street/Redwood Road	Alameda County	2	PM	0.93	0.94	-0.01	24.1	2.34	31.9	1.77	886	95% of length used
T86	T87	Winton Avenue - D Street-EB	Hesperian Blvd.	SB I-880 ON Ramp	Hayward	2	AM	0.41	0.39	0.02	25.8	0.91	21.9	1.07	3436	-0.16
T86	T87	Winton Avenue - D Street-EB	Hesperian Blvd.	SB I-880 ON Ramp	Hayward	2	PM	0.41	0.39	0.02	19.6	1.19	16.5	1.42	3351	-0.22
T87	T88	Winton Avenue - D Street-EB	SB I-880 ON Ramp	Santa Clara St	Hayward	2	AM	0.33	0.35	-0.02	18.7	1.12	30.4	0.69	2977	0.43
T87	T88	Winton Avenue - D Street-EB	SB I-880 ON Ramp	Santa Clara St	Hayward	2	PM	0.33	0.35	-0.02	21.7	0.97	21.3	0.98	3118	-0.02
T88	T89	Winton Avenue - D Street-EB	Santa Clara St	Soto Rd	Hayward	2	AM	0.55	0.55	0	19.4	1.70	24.7	1.34	3123	0.37

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information						Shape Information (mi)			Floating Car Survey			Commercial Speed Data				Comparison △Travel Time (min)*
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment		
T88	T89	Winton Avenue - D Street-EB	Santa Clara St	Soto Rd	Hayward	2	PM	0.55	0.55	0	13	2.54	23.5	1.40	3390		1.14	
T89	T90	Winton Avenue - D Street-EB	Soto Rd	Foothill Boulevard/D St	Hayward	2	AM	0.91	0.92	-0.01	10.7	5.16	23.8	2.32	1151		2.84	
T89	T90	Winton Avenue - D Street-EB	Soto Rd	Foothill Boulevard/D St	Hayward	2	PM	0.91	0.92	-0.01	8.8	6.27	22.1	2.49	990		3.78	
T90	T91	Winton Avenue - D Street-WB	Foothill Boulevard/D St	Soto Rd	Hayward	2	AM	0.91	0.92	-0.01	16	3.45	23.9	2.31	967		1.14	
T90	T91	Winton Avenue - D Street-WB	Foothill Boulevard/D St	Soto Rd	Hayward	2	PM	0.91	0.92	-0.01	16.2	3.41	24.9	2.21	981		1.19	
T91	T92	Winton Avenue - D Street-WB	Soto Rd	Santa Clara St	Hayward	2	AM	0.55	0.55	0	22.9	1.44	20.5	1.61	3304		-0.17	
T91	T92	Winton Avenue - D Street-WB	Soto Rd	Santa Clara St	Hayward	2	PM	0.55	0.55	0	22.6	1.46	22.8	1.44	3013		0.02	
T92	T93	Winton Avenue - D Street-WB	Santa Clara St	SB I-880 ON Ramp	Hayward	2	AM	0.33	0.35	-0.02	18.7	1.12	34.9	0.60	2778		0.52	
T92	T93	Winton Avenue - D Street-WB	Santa Clara St	SB I-880 ON Ramp	Hayward	2	PM	0.33	0.35	-0.02	39.6	0.53	35.2	0.60	1988		-0.07	
T93	T94	Winton Avenue - D Street-WB	SB I-880 ON Ramp	Hesperian Blvd.	Hayward	2	AM	0.41	0.39	0.02	25.5	0.92	19.0	1.23	3540		-0.32	
T93	T94	Winton Avenue - D Street-WB	SB I-880 ON Ramp	Hesperian Blvd.	Hayward	2	PM	0.41	0.39	0.02	11.1	2.11	23.4	1.00	3255		1.11	
T94	T95	A Street-EB	Foothill Boulevard/A St	Redwood Rd/Grove Way	Hayward	2	AM	0.8	0.8	0	17.3	2.77	27.7	1.74	1328		1.04	
T94	T95	A Street-EB	Foothill Boulevard/A St	Redwood Rd/Grove Way	Hayward	2	PM	0.8	0.8	0	20.5	2.34	28.2	1.70	1435		0.64	
T95	T96	A Street-EB	Redwood Rd/Grove Way	EB I-580 ON Ramp/Grove Way	Hayward	2	AM	0.41	0.42	-0.01	24.4	1.03	28.3	0.89	1323		0.14	
T95	T96	A Street-EB	Redwood Rd/Grove Way	EB I-580 ON Ramp/Grove Way	Hayward	2	PM	0.41	0.42	-0.01	23.2	1.09	28.9	0.87	1370		0.21	
T96	T97	A Street-WB	EB I-580 ON Ramp/Grove Way	Redwood Rd/Grove Way	Hayward	2	AM	0.41	0.42	-0.01	19.1	1.32	28.7	0.88	2135		0.44	
T96	T97	A Street-WB	EB I-580 ON Ramp/Grove Way	Redwood Rd/Grove Way	Hayward	2	PM	0.41	0.42	-0.01	25	1.01	28.9	0.87	1164		0.14	
T97	T98	A Street-WB	Redwood Rd/Grove Way	Foothill Boulevard/A St	Hayward	2	AM	0.8	0.8	0	8.9	5.39	21.8	2.20	2057		3.19	
T97	T98	A Street-WB	Redwood Rd/Grove Way	Foothill Boulevard/A St	Hayward	2	PM	0.8	0.8	0	16.6	2.89	25.8	1.86	1076		1.03	
T98	T99	Hesperian Boulevard-Union City Blvd-NB	Union City/Alvarado Blvd	Whipple Rd	Union City	3	AM	0.98	0.98	0	23.1	2.55	31.8	1.85	648		0.69	
T98	T99	Hesperian Boulevard-Union City Blvd-NB	Union City/Alvarado Blvd	Whipple Rd	Union City	3	PM	0.98	0.98	0	21.6	2.72	26.3	2.23	1889		0.49	
T99	T100	Hesperian Boulevard-Union City Blvd-NB	Whipple Rd	Hesperian/Union City Blvd/overbridge	Union City	3	AM	0.3	0.3	0	34.2	0.53	32.5	0.55	2453		-0.03	
T99	T100	Hesperian Boulevard-Union City Blvd-NB	Whipple Rd	Hesperian/Union City Blvd/overbridge	Union City	3	PM	0.3	0.3	0	22.9	0.79	28.4	0.63	3238		0.15	
T100	T101	Hesperian Boulevard-Union City Blvd-NB	Hesperian/Union City Blvd/overbridge	Industrial Blvd	Union City	3	AM	0.57	0.57	0	22.6	1.51	30.8	1.11	2181		0.40	
T100	T101	Hesperian Boulevard-Union City Blvd-NB	Hesperian/Union City Blvd/overbridge	Industrial Blvd	Union City	3	PM	0.57	0.57	0	14.4	2.38	25.1	1.36	3157		1.01	
T101	T102	Hesperian Boulevard-Union City Blvd-NB	Industrial Blvd	Tennyson/Hesperian	Union City	3	AM	1.04	1.05	-0.01	22.8	2.76	33.0	1.91	2031		0.86	

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey		Commercial Speed Data				Comparison △Travel Time (min)*
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment
T101	T102	Hesperian Boulevard-Union City Blvd-NB	Industrial Blvd	Tennyson/Hesperian	Union City	3	PM	1.04	1.05	-0.01	19.3	3.26	31.0	2.03	3247	1.23
T102	T103	Hesperian Boulevard-Union City Blvd-SB	Tennyson/Hesperian	Industrial Blvd	Union City	3	AM	1.03	1.05	-0.02	24.4	2.58	31.0	2.03	3147	0.55
T102	T103	Hesperian Boulevard-Union City Blvd-SB	Tennyson/Hesperian	Industrial Blvd	Union City	3	PM	1.03	1.05	-0.02	26.5	2.38	33.0	1.91	1628	0.47
T103	T104	Hesperian Boulevard-Union City Blvd-SB	Industrial Blvd	Hesperian/Union City Blvd/overbridge	Union City	3	AM	0.57	0.57	0	23.9	1.43				Insufficient TMC data
T103	T104	Hesperian Boulevard-Union City Blvd-SB	Industrial Blvd	Hesperian/Union City Blvd/overbridge	Union City	3	PM	0.57	0.57	0	17.6	1.94				Insufficient TMC data
T104	T105	Hesperian Boulevard-Union City Blvd-SB	Hesperian/Union City Blvd/overbridge	Whipple Rd	Union City	3	AM	0.3	0.3	0	26.9	0.67	32.0	0.56	3427	0.11
T104	T105	Hesperian Boulevard-Union City Blvd-SB	Hesperian/Union City Blvd/overbridge	Whipple Rd	Union City	3	PM	0.3	0.3	0	29.9	0.60	32.3	0.56	1880	0.04
T105	T106	Hesperian Boulevard-Union City Blvd-SB	Whipple Rd	Union City/Alvarado Blvd	Union City	3	AM	0.98	0.98	0	23.6	2.49	31.9	1.84	2257	0.65
T105	T106	Hesperian Boulevard-Union City Blvd-SB	Whipple Rd	Union City/Alvarado Blvd	Union City	3	PM	0.98	0.98	0	24	2.45	32.6	1.80	662	0.65
T106	T108	Alvarado Blvd.-NB	NB I-880 ON Ramp	Deep Creek Rd/SB I-880 OFF Ramp	Union City	3	AM	0.21	0.22	-0.01	26.5	0.50	29.8	0.44	2134	0.06
T106	T108	Alvarado Blvd.-NB	NB I-880 ON Ramp	Deep Creek Rd/SB I-880 OFF Ramp	Union City	3	PM	0.21	0.22	-0.01	25.8	0.51	33.0	0.40	1427	0.11
T107	T109	Alvarado Blvd.-NB	Deep Creek Rd/SB I-880 OFF Ramp	Fair Ranch Rd	Union City	3	AM	1.42	1.42	0	20.2	4.22	32.6	2.62	947	1.60
T107	T109	Alvarado Blvd.-NB	Deep Creek Rd/SB I-880 OFF Ramp	Fair Ranch Rd	Union City	3	PM	1.42	1.42	0	22.6	3.77	31.5	2.71	1477	1.06
T108	T110	Alvarado Blvd.-NB	Fair Ranch Rd	Union City/Alvarado Blvd	Union City	3	AM	0.52	0.51	0.01	16.2	1.89	31.6	0.97	1071	95% of length used
T108	T110	Alvarado Blvd.-NB	Fair Ranch Rd	Union City/Alvarado Blvd	Union City	3	PM	0.52	0.51	0.01	22.2	1.38	29.5	1.04	1647	95% of length used
T109	T111	Alvarado Blvd.-SB	Union City/Alvarado Blvd	Fair Ranch Rd	Union City	3	AM	0.52	0.51	0.01	19.1	1.60	26.8	1.14	1034	0.46
T109	T111	Alvarado Blvd.-SB	Union City/Alvarado Blvd	Fair Ranch Rd	Union City	3	PM	0.52	0.51	0.01	23.7	1.29	26.9	1.14	1340	0.15
T110	T112	Alvarado Blvd.-SB	Fair Ranch Rd	Deep Creek Rd/SB I-880 OFF Ramp	Union City	3	AM	1.43	1.42	0.01	21.3	4.00	30.4	2.80	953	1.20
T110	T112	Alvarado Blvd.-SB	Fair Ranch Rd	Deep Creek Rd/SB I-880 OFF Ramp	Union City	3	PM	1.43	1.42	0.01	21.7	3.93	29.7	2.87	1172	1.06
T111	T113	Alvarado Blvd.-SB	Deep Creek Rd/SB I-880 OFF Ramp	NB I-880 ON Ramp	Union City	3	AM	0.21	0.22	-0.01	29.8	0.44	32.9	0.40	1880	0.04
T111	T113	Alvarado Blvd.-SB	Deep Creek Rd/SB I-880 OFF Ramp	NB I-880 ON Ramp	Union City	3	PM	0.21	0.22	-0.01	23.4	0.56	30.4	0.43	1987	0.13
T112	T114	Fremont Boulevard-NB	NB I-880 OFF Ramp	Automall Parkway	Fremont	3	AM	1.27	1.28	-0.01	25.2	3.05	32.7	2.35	434	0.70
T112	T114	Fremont Boulevard-NB	NB I-880 OFF Ramp	Automall Parkway	Fremont	3	PM	1.27	1.28	-0.01	31.8	2.42	33.2	2.31	853	0.10
T113	T115	Fremont Boulevard-NB	Automall Parkway	Blacow Rd	Fremont	3	AM	0.9	0.91	-0.01	25.6	2.13	31.9	1.71	1135	0.42
T113	T115	Fremont Boulevard-NB	Automall Parkway	Blacow Rd	Fremont	3	PM	0.9	0.91	-0.01	32.7	1.67	33.4	1.63	1285	0.04
T114	T116	Fremont Boulevard-NB	Blacow Rd	Adams Ave	Fremont	3	AM	0.38	0.38	0	31.2	0.73	26.9	0.85	3490	-0.12
T114	T116	Fremont Boulevard-NB	Blacow Rd	Adams Ave	Fremont	3	PM	0.38	0.38	0	34.5	0.66	27.3	0.83	3099	-0.17
T115	T117	Fremont Boulevard-NB	Adams Ave	Stevenson Rd	Fremont	3	AM	1.17	1.17	0	22.5	3.12	26.2	2.68	2554	0.44
T115	T117	Fremont Boulevard-NB	Adams Ave	Stevenson Rd	Fremont	3	PM	1.17	1.17	0	13.5	5.20	26.8	2.62	1407	2.58
T116	T118	Fremont Boulevard-NB	Stevenson Rd	Mowry Ave	Fremont	3	AM	1	1	0	22.5	2.67	28.0	2.14	1540	0.53

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey		Commercial Speed Data			Comparison	
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment
T116	T118	Fremont Boulevard-NB	Stevenson Rd	Mowry Ave	Fremont	3	PM	1	1	0	23.2	2.59	29.7	2.02	449	0.56
T117	T119	Fremont Boulevard-NB	Mowry Ave	Peralta Blvd	Fremont	3	AM	1.21	1.21	0	22	3.30	27.6	2.63	1441	0.67
T117	T119	Fremont Boulevard-NB	Mowry Ave	Peralta Blvd	Fremont	3	PM	1.21	1.21	0	26.9	2.70	30.1	2.41	817	0.29
T118	T120	Fremont Boulevard-NB	Peralta Blvd	Thornton Ave	Fremont	3	AM	0.32	0.33	-0.01	15.6	1.27	24.0	0.83	1496	0.44
T118	T120	Fremont Boulevard-NB	Peralta Blvd	Thornton Ave	Fremont	3	PM	0.32	0.33	-0.01	19.8	1.00	25.8	0.77	1180	0.23
T119	T121	Fremont Boulevard-NB	Thornton Ave	Decoto Rd	Fremont	3	AM	1.34	1.33	0.01	20.2	3.95	30.3	2.63	823	1.32
T119	T121	Fremont Boulevard-NB	Thornton Ave	Decoto Rd	Fremont	3	PM	1.34	1.33	0.01	18.1	4.41	33.3	2.40	835	2.01
T120	T122	Fremont Boulevard-NB	Decoto Rd	Paseo Padre Pkwy	Fremont	3	AM	0.55	0.56	-0.01	30.1	1.12	32.2	1.05	897	0.07
T120	T122	Fremont Boulevard-NB	Decoto Rd	Paseo Padre Pkwy	Fremont	3	PM	0.55	0.56	-0.01	22.3	1.51	31.9	1.05	1377	0.45
T121	T123	Fremont Boulevard-NB	Paseo Padre Pkwy	NB I-880 OFF Ramp	Fremont	3	AM	0.61	0.39	0.22	33.2	0.70	31.3	0.75	1065	
T121	T123	Fremont Boulevard-NB	Paseo Padre Pkwy	NB I-880 OFF Ramp	Fremont	3	PM	0.61	0.39	0.22	26.6	0.88	31.3	0.75	1089	
T122	T124	Fremont Boulevard-SB	NB I-880 OFF Ramp	Paseo Padre Pkwy	Fremont	3	AM	0.4	0.39	0.01	23.6	0.99	32.1	0.73	857	0.26
T122	T124	Fremont Boulevard-SB	NB I-880 OFF Ramp	Paseo Padre Pkwy	Fremont	3	PM	0.4	0.39	0.01	19.1	1.23	32.9	0.71	926	0.51
T123	T125	Fremont Boulevard-SB	Paseo Padre Pkwy	Decoto Rd	Fremont	3	AM	0.55	0.56	-0.01	17.3	1.94	26.6	1.26	785	0.68
T123	T125	Fremont Boulevard-SB	Paseo Padre Pkwy	Decoto Rd	Fremont	3	PM	0.55	0.56	-0.01	19.7	1.71	28.4	1.18	955	0.52
T124	T126	Fremont Boulevard-SB	Decoto Rd	Thornton Ave	Fremont	3	AM	1.34	1.33	0.01	21.7	3.68	28.0	2.85	681	0.83
T124	T126	Fremont Boulevard-SB	Decoto Rd	Thornton Ave	Fremont	3	PM	1.34	1.33	0.01	30.2	2.64	28.5	2.80	1460	-0.16
T125	T127	Fremont Boulevard-SB	Thornton Ave	Peralta Blvd	Fremont	3	AM	0.32	0.32	0	20.9	0.92	25.1	0.77	1794	0.15
T125	T127	Fremont Boulevard-SB	Thornton Ave	Peralta Blvd	Fremont	3	PM	0.32	0.32	0	26.9	0.71	25.6	0.75	1889	-0.04
T126	T128	Fremont Boulevard-SB	Peralta Blvd	Mowry Ave	Fremont	3	AM	1.21	1.21	0	20.5	3.54	28.2	2.58	624	0.96
T126	T128	Fremont Boulevard-SB	Peralta Blvd	Mowry Ave	Fremont	3	PM	1.21	1.21	0	21.2	3.42	29.0	2.50	1133	0.92
T127	T129	Fremont Boulevard-SB	Mowry Ave	Stevenson Rd	Fremont	3	AM	1	1	0	34.9	1.72	33.3	1.80	473	-0.08
T127	T129	Fremont Boulevard-SB	Mowry Ave	Stevenson Rd	Fremont	3	PM	1	1	0	27.8	2.16	32.0	1.88	1071	0.28
T128	T130	Fremont Boulevard-SB	Stevenson Rd	Adams Ave	Fremont	3	AM	0.24	0.17	-0.93	29.1	2.41	26.9	2.61	1095	
T128	T130	Fremont Boulevard-SB	Stevenson Rd	Adams Ave	Fremont	3	PM	0.24	0.17	-0.93	23.4	3.00	26.6	2.64	2010	
T129	T131	Fremont Boulevard-SB	Adams Ave	Blacow Rd	Fremont	3	AM	0.38	0.38	0	20.1	1.13	27.0	0.85	2831	0.29
T129	T131	Fremont Boulevard-SB	Adams Ave	Blacow Rd	Fremont	3	PM	0.38	0.38	0	25.3	0.90	26.7	0.85	3287	0.05
T130	T132	Fremont Boulevard-SB	Blacow Rd	Automall Parkway	Fremont	3	AM	0.9	0.91	-0.01	18.8	2.90	32.2	1.70	546	1.21
T130	T132	Fremont Boulevard-SB	Blacow Rd	Automall Parkway	Fremont	3	PM	0.9	0.91	-0.01	26.5	2.06	34.4	1.59	1309	95% of length used
T131	T133	Fremont Boulevard-SB	Automall Parkway	NB I-880 OFF Ramp	Fremont	3	AM	1.25	1.28	-0.03	26.9	2.86	33.4	2.30	768	0.56
T131	T133	Fremont Boulevard-SB	Automall Parkway	NB I-880 OFF Ramp	Fremont	3	PM	1.25	1.28	-0.03	37.7	2.04	35.2	2.18	407	92% of length used
T132	T134	Automall Parkway-EB	NB I-880 OFF Ramp	Fremont Blvd	Fremont	3	AM	0.85	0.85	0	26.8	1.90	32.7	1.56	2140	0.34
T132	T134	Automall Parkway-EB	NB I-880 OFF Ramp	Fremont Blvd	Fremont	3	PM	0.85	0.85	0	25.2	2.02	32.0	1.60	3075	0.43
T133	T135	Automall Parkway-EB	Fremont Blvd	NB I-680 ON Ramp	Fremont	3	AM	0.75	0.74	0.01	28.2	1.57	27.5	1.62	2528	80% of length used
T133	T135	Automall Parkway-EB	Fremont Blvd	NB I-680 ON Ramp	Fremont	3	PM	0.75	0.74	0.01	29.4	1.51	26.0	1.71	3183	80% of length used
T134	T136	Automall Parkway-WB	NB I-680 ON Ramp	Fremont Blvd	Fremont	3	AM	0.75	0.75	0	27.4	1.64	27.2	1.65	3491	75% of length used
T134	T136	Automall Parkway-WB	NB I-680 ON Ramp	Fremont Blvd	Fremont	3	PM	0.75	0.75	0	23.5	1.91	28.8	1.56	3073	75% of length used
T135	T137	Automall Parkway-WB	Fremont Blvd	NB I-880 OFF Ramp	Fremont	3	AM	0.77	0.85	-0.08	28.1	1.81	32.5	1.57	2461	0.25
T135	T137	Automall Parkway-WB	Fremont Blvd	NB I-880 OFF Ramp	Fremont	3	PM	0.77	0.85	-0.08	28.3	1.80	31.8	1.60	1754	0.20
T136	T139	Vasco Road-NB	WB I-580 OFF Ramp	Scenic Ave	Livermore	4	AM	0.51	0.44	0.07	23.6	1.12	34.4	0.77	2311	0.35
T136	T139	Vasco Road-NB	WB I-580 OFF Ramp	Scenic Ave	Livermore	4	PM	0.51	0.44	0.07	27.3	0.97	27.1	0.98	3236	-0.01
T137	T140	Vasco Road-NB	Scenic Ave	Dalton Ave/City-County Line	Livermore	4	AM	0.69	0.68	0.01	35.5	1.15	35.4	1.15	2846	0.00
T137	T140	Vasco Road-NB	Scenic Ave	Dalton Ave/City-County Line	Livermore	4	PM	0.69	0.68	0.01	13.6	3.00	28.4	1.44	3515	1.56
T138	T141	Vasco Road-NB	Dalton Ave/City-County Line	N. Vasco Rd/Vasco Rd	Livermore	4	AM	1.75	3.11	-1.36	43.7	4.27	48.9	3.81	2780	
T138	T141	Vasco Road-NB	Dalton Ave/City-County Line	N. Vasco Rd/Vasco Rd	Livermore	4	PM	1.75	3.11	-1.36	45.1	4.14	45.0	4.15	3783	
T139	T142	Vasco Road-NB	N. Vasco Rd/Vasco Rd	Local Road underpass/County Line	Livermore	4	AM	2.8	2.25	0.55	53.3	2.53	48.9	2.76	2780	
T139	T142	Vasco Road-NB	N. Vasco Rd/Vasco Rd	Local Road underpass/County Line	Livermore	4	PM	2.8	2.25	0.55	54.9	2.46	45.0	3.00	3783	

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey		Commercial Speed Data				Comparison △Travel Time (min)*
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment
T140	T143	Vasco Road-SB	Local Road underpass/County Line	N. Vasco Rd/Vasco Rd	Livermore	4	AM	2.8	2.25	0.55	24.3	5.56	43.9	3.07	3690	
T140	T143	Vasco Road-SB	Local Road underpass/County Line	N. Vasco Rd/Vasco Rd	Livermore	4	PM	2.8	2.25	0.55	56.4	2.39	49.2	2.74	2620	
T141	T144	Vasco Road-SB	N. Vasco Rd/Vasco Rd	Dalton Ave/City-County Line	Livermore	4	AM	1.75	3.11	-1.36	23.9	7.81	43.9	4.25	3690	
T141	T144	Vasco Road-SB	N. Vasco Rd/Vasco Rd	Dalton Ave/City-County Line	Livermore	4	PM	1.75	3.11	-1.36	51.1	3.65	49.2	3.79	2620	
T142	T145	Vasco Road-SB	Dalton Ave/City-County Line	Scenic Ave	Livermore	4	AM	0.69	0.68	0.01	22	1.85	26.4	1.54	3367	0.31
T142	T145	Vasco Road-SB	Dalton Ave/City-County Line	Scenic Ave	Livermore	4	PM	0.69	0.68	0.01	30.4	1.34	35.6	1.15	2477	0.20
T143	T146	Vasco Road-SB	Scenic Ave	WB I-580 OFF Ramp	Livermore	4	AM	0.51	0.44	0.07	16.6	1.59	25.4	1.04	2631	0.55
T143	T146	Vasco Road-SB	Scenic Ave	WB I-580 OFF Ramp	Livermore	4	PM	0.51	0.44	0.07	24.1	1.10	35.1	0.75	1219	0.34
T144	T147	Dublin Blvd.-EB	San Ramon Road	Village Parkway	Dublin	4	AM	0.73	0.73	0	20.8	2.11	27.9	1.57	680	95% of length used
T144	T147	Dublin Blvd.-EB	San Ramon Road	Village Parkway	Dublin	4	PM	0.73	0.73	0	25.3	1.73	24.7	1.77	516	-0.04
T145	T148	Dublin Blvd.-EB	Village Parkway	Dougherty Rd	Dublin	4	AM	0.81	0.81	0	26.4	1.84	30.7	1.58	903	0.26
T145	T148	Dublin Blvd.-EB	Village Parkway	Dougherty Rd	Dublin	4	PM	0.81	0.81	0	16.3	2.98	30.0	1.62	1562	1.36
T146	T149	Dublin Blvd.-EB	Dougherty Rd	Hacienda Dr	Dublin	4	AM	1.2	1.21	-0.01	31.4	2.31	33.4	2.17	1154	0.14
T146	T149	Dublin Blvd.-EB	Dougherty Rd	Hacienda Dr	Dublin	4	PM	1.2	1.21	-0.01	29.8	2.44	31.8	2.29	1882	0.15
T147	T150	Dublin Blvd.-EB	Hacienda Dr	Tassajara Dr	Dublin	4	AM	0.88	0.89	-0.01	22.9	2.33	31.4	1.70	778	85% of length used
T147	T150	Dublin Blvd.-EB	Hacienda Dr	Tassajara Dr	Dublin	4	PM	0.88	0.89	-0.01	22.3	2.39	28.3	1.89	615	0.51
T148	T151	Dublin Blvd.-WB	Tassajara Dr	Hacienda Dr	Dublin	4	AM	0.88	0.89	-0.01	29.8	1.79	31.9	1.68	1313	95% of length used
T148	T151	Dublin Blvd.-WB	Tassajara Dr	Hacienda Dr	Dublin	4	PM	0.88	0.89	-0.01	26.2	2.04	30.3	1.76	1327	95% of length used
T149	T152	Dublin Blvd.-WB	Hacienda Dr	Dougherty Rd	Dublin	4	AM	1.2	1.21	-0.01			32.2	2.25	485	
T149	T152	Dublin Blvd.-WB	Hacienda Dr	Dougherty Rd	Dublin	4	PM	1.2	1.21	-0.01	23.1	3.14	32.3	2.25	432	0.90
T150	T153	Dublin Blvd.-WB	Dougherty Rd	Village Parkway	Dublin	4	AM	1.1	0.81	0.29	23.9	2.03	30.5	1.60	2891	
T150	T153	Dublin Blvd.-WB	Dougherty Rd	Village Parkway	Dublin	4	PM	1.1	0.81	0.29	22.1	2.20	29.7	1.63	2508	
T151	T154	Dublin Blvd.-WB	Village Parkway	San Ramon Road	Dublin	4	AM	0.73	0.73	0	22.2	1.97	26.5	1.65	793	0.32
T151	T154	Dublin Blvd.-WB	Village Parkway	San Ramon Road	Dublin	4	PM	0.73	0.73	0	15.9	2.75	26.3	1.67	362	1.09
T152	T155	San Ramon Road-NB	WB I-580 OFF ramp	Silvergate Dr	Dublin	4	AM	0.67	0.64	0.03	18	2.13	31.9	1.20	730	0.93
T152	T155	San Ramon Road-NB	WB I-580 OFF ramp	Silvergate Dr	Dublin	4	PM	0.67	0.64	0.03	22.7	1.69	32.4	1.19	561	0.51
T153	T156	San Ramon Road-NB	Silvergate Dr	Alcosta Blvd/Westside Dr/County Line	Dublin	4	AM	0.98	0.99	-0.01	28.8	2.06	36.5	1.63	1391	0.43
T153	T156	San Ramon Road-NB	Silvergate Dr	Alcosta Blvd/Westside Dr/County Line	Dublin	4	PM	0.98	0.99	-0.01	29.3	2.03	37.8	1.57	1515	0.46
T154	T157	San Ramon Road-SB	Alcosta Blvd/Westside Dr/County Line	Silvergate Dr	Dublin	4	AM	0.98	0.99	-0.01	33.9	1.75	36.1	1.65	1033	0.11
T154	T157	San Ramon Road-SB	Alcosta Blvd/Westside Dr/County Line	Silvergate Dr	Dublin	4	PM	0.98	0.99	-0.01	33.1	1.79	37.8	1.57	1077	0.22
T155	T158	San Ramon Road-SB	Silvergate Dr	WB I-580 OFF ramp	Dublin	4	AM	0.67	0.64	0.03	21.4	1.79	32.6	1.18	448	0.62
T155	T158	San Ramon Road-SB	Silvergate Dr	WB I-580 OFF ramp	Dublin	4	PM	0.67	0.64	0.03	18	2.13	31.9	1.20	472	85% of length used
T156	T159	Dougherty Road-NB	WB I-580 OFF ramp	Amador Valley Blvd on SB	Dublin	4	AM	1.15	1.12	0.03	38.5	1.75	33.1	2.03	2254	-0.28
T156	T159	Dougherty Road-NB	WB I-580 OFF ramp	Amador Valley Blvd on SB	Dublin	4	PM	1.15	1.12	0.03	20.3	3.31	34.0	1.97	1984	1.34
T157	T160	Dougherty Road-NB	Amador Valley Blvd on SB	Fallcreek Rd on SB/County Line	Dublin	4	AM	0.78	0.8	-0.02	44	1.09	44.9	1.07	1986	0.02

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey			Commercial Speed Data			Comparison △Travel Time (min)*
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment
T157	T160	Dougherty Road-NB	Amador Valley Blvd on SB	Fallcreek Rd on SB/County Line	Dublin	4	PM	0.78	0.8	-0.02	43	1.12	45.5	1.05	1402	0.06
T158	T161	Dougherty Road-SB	Fallcreek Rd on SB/County Line	Amador Valley Blvd on SB	Dublin	4	AM	0.78	0.8	-0.02	28.9	1.66	41.1	1.17	1836	0.49
T158	T161	Dougherty Road-SB	Fallcreek Rd on SB/County Line	Amador Valley Blvd on SB	Dublin	4	PM	0.78	0.8	-0.02	30.4	1.58	42.9	1.12	1743	0.46
T159	T162	Dougherty Road-SB	Amador Valley Blvd on SB	WB I-580 OFF ramp	Dublin	4	AM	1.15	1.12	0.03	21.3	3.15	30.8	2.18	1977	0.97
T159	T162	Dougherty Road-SB	Amador Valley Blvd on SB	WB I-580 OFF ramp	Dublin	4	PM	1.15	1.12	0.03	25.7	2.61	33.4	2.01	1743	0.60
T160	T163	Tassajara Road-NB	WB I-580 OFF ramp	Central Parkway	Dublin	4	AM	0.49	0.49	0	23.6	1.25				Insufficient TMC data
T160	T163	Tassajara Road-NB	WB I-580 OFF ramp	Central Parkway	Dublin	4	PM	0.49	0.49	0	24.9	1.18				Insufficient TMC data
T161	T164	Tassajara Road-NB	Central Parkway	Somerset Ln/N Dublin Ranch Dr	Dublin	4	AM	0.68	0.68	0	23.3	1.75				Insufficient TMC data
T161	T164	Tassajara Road-NB	Central Parkway	Somerset Ln/N Dublin Ranch Dr	Dublin	4	PM	0.68	0.68	0	34.9	1.17				Insufficient TMC data
T162	T165	Tassajara Road-NB	Somerset Ln/N Dublin Ranch Dr	Fallon Rd	Dublin	4	AM	1.05	1.04	0.01	35.1	1.78				Insufficient TMC data
T162	T165	Tassajara Road-NB	Somerset Ln/N Dublin Ranch Dr	Fallon Rd	Dublin	4	PM	1.05	1.04	0.01	36.3	1.72				Insufficient TMC data
T163	T166	Tassajara Road-NB	Fallon Rd	County Line	Alameda County	4	AM	0.5	0.51	-0.01	39.8	0.77				Insufficient TMC data
T163	T166	Tassajara Road-NB	Fallon Rd	County Line	Alameda County	4	PM	0.5	0.51	-0.01	38.9	0.79				Insufficient TMC data
T164	T167	Tassajara Road-SB	County Line	Fallon Rd	Alameda County	4	AM	0.5	0.51	-0.01	40.5	0.76				Insufficient TMC data
T164	T167	Tassajara Road-SB	County Line	Fallon Rd	Alameda County	4	PM	0.5	0.51	-0.01	39.3	0.78				Insufficient TMC data
T165	T168	Tassajara Road-SB	Fallon Rd	Somerset Ln/N Dublin Ranch Dr	Dublin	4	AM	1.05	1.04	0.01	35.4	1.76				Insufficient TMC data
T165	T168	Tassajara Road-SB	Fallon Rd	Somerset Ln/N Dublin Ranch Dr	Dublin	4	PM	1.05	1.04	0.01	37.5	1.66				Insufficient TMC data
T166	T169	Tassajara Road-SB	Somerset Ln/N Dublin Ranch Dr	Central Parkway	Dublin	4	AM	0.68	0.68	0	22.4	1.82				Insufficient TMC data
T166	T169	Tassajara Road-SB	Somerset Ln/N Dublin Ranch Dr	Central Parkway	Dublin	4	PM	0.68	0.68	0	26	1.57				Insufficient TMC data
T167	T170	Tassajara Road-SB	Central Parkway	WB I-580 OFF ramp	Dublin	4	AM	0.46	0.49	-0.03	16.7	1.76				Insufficient TMC data
T167	T170	Tassajara Road-SB	Central Parkway	WB I-580 OFF ramp	Dublin	4	PM	0.46	0.49	-0.03	16.5	1.78				Insufficient TMC data
T168	T171	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	SR 84/Isabel Ave	Murrita Blvd	Pleasanton, Alameda County	4	AM	0.98	0.91	0.07	20.4	2.68	32.6	1.68	1151	1.00
T168	T171	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	SR 84/Isabel Ave	Murrita Blvd	Pleasanton, Alameda County	4	PM	0.98	0.91	0.07	28.6	1.91	31.5	1.73	2308	0.17
T169	T172	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	Murrita Blvd	S Livermore Ave	Livermore	4	AM	1.07	1.07	0	21.9	2.93	27.7	2.32	397	85% of length used
T169	T172	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	Murrita Blvd	S Livermore Ave	Livermore	4	PM	1.07	1.07	0	23.1	2.78	27.9	2.30	786	0.48
T170	T173	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	S Livermore Ave	Inman St	Livermore	4	AM	0.46	0.46	0	14.2	1.94				Insufficient TMC data
T170	T173	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	S Livermore Ave	Inman St	Livermore	4	PM	0.46	0.46	0	22.2	1.24	25.5	1.08	541	0.16
T171	T174	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Inman St	S Livermore Ave	Livermore	4	AM	0.46	0.46	0	20.1	1.37	27.0	1.02	1007	0.35
T171	T174	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Inman St	S Livermore Ave	Livermore	4	PM	0.46	0.46	0	14.6	1.89				Insufficient TMC data
T172	T175	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	S Livermore Ave	Murrita Blvd	Livermore	4	AM	1.07	1.07	0	20.1	3.19	28.3	2.27	1056	0.92
T172	T175	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	S Livermore Ave	Murrita Blvd	Livermore	4	PM	1.07	1.07	0	17.4	3.69	27.9	2.30	505	85% of length used

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey		Commercial Speed Data			Comparison △Travel Time (min)*	
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment
T173	T176	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Murrita Blvd	SR 84/Isabel Ave	Pleasanton, Alameda County	4	AM	0.98	0.91	0.07	38.6	1.41	39.2	1.39	2621	0.02
T173	T176	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Murrita Blvd	SR 84/Isabel Ave	Pleasanton, Alameda County	4	PM	0.98	0.91	0.07	39.8	1.37	41.0	1.33	1161	0.04
T174	T177	Stoneridge Drive-EB	SB I-680 OFF Ramp	Hopyard Rd	Pleasanton	4	AM	0.93	0.93	0	19.7	2.83	33.9	1.65	1232	1.18
T174	T177	Stoneridge Drive-EB	SB I-680 OFF Ramp	Hopyard Rd	Pleasanton	4	PM	0.93	0.93	0	25.2	2.21	34.0	1.64	1783	0.57
T175	T178	Stoneridge Drive-EB	Hopyard Rd	Hacienda Dr	Pleasanton	4	AM	0.49	0.49	0	22.4	1.31	29.9	0.98	1941	0.33
T175	T178	Stoneridge Drive-EB	Hopyard Rd	Hacienda Dr	Pleasanton	4	PM	0.49	0.49	0	36.8	0.80	31.7	0.93	1454	-0.13
T176	T179	Stoneridge Drive-EB	Hacienda Dr	W. Las Positas Blvd	Pleasanton	4	AM	0.64	0.63	0.01	25.3	1.49	32.3	1.17	1426	0.32
T176	T179	Stoneridge Drive-EB	Hacienda Dr	W. Las Positas Blvd	Pleasanton	4	PM	0.64	0.63	0.01	25.9	1.46	33.1	1.14	1354	0.32
T177	T180	Stoneridge Drive-EB	W. Las Positas Blvd	Santa Rita Road	Pleasanton	4	AM	0.43	0.44	-0.01	14.6	1.81	34.4	0.77	603	1.04
T177	T180	Stoneridge Drive-EB	W. Las Positas Blvd	Santa Rita Road	Pleasanton	4	PM	0.43	0.44	-0.01	12	2.20	32.4	0.82	974	1.38
T178	T181	Stoneridge Drive-EB	Stoneridge Dr/Santa Rita Road	W. Los Positas Blvd	Pleasanton	4	AM	0.29	0.29	0	15.6	1.12	34.7	0.50	2586	0.61
T178	T181	Stoneridge Drive-EB	Stoneridge Dr/Santa Rita Road	W. Los Positas Blvd	Pleasanton	4	PM	0.29	0.29	0	15.2	1.14	34.6	0.50	2416	0.64
T179	T182	Stoneridge Drive-EB	W. Los Positas Blvd	WB I-580 OFF Ramp	Pleasanton	4	AM	0.88	0.88	0	34.5	1.53	33.4	1.58	2619	-0.05
T179	T182	Stoneridge Drive-EB	W. Los Positas Blvd	WB I-580 OFF Ramp	Pleasanton	4	PM	0.88	0.88	0	32.3	1.63	30.6	1.72	2383	-0.09
T180	T183	Stoneridge Drive-WB	WB I-580 OFF Ramp	W. Los Positas Blvd	Pleasanton	4	AM	0.92	0.88	0.04	25.5	2.07	33.4	1.58	1857	0.49
T180	T183	Stoneridge Drive-WB	WB I-580 OFF Ramp	W. Los Positas Blvd	Pleasanton	4	PM	0.92	0.88	0.04	32.6	1.62	33.4	1.58	1573	0.04
T181	T184	Stoneridge Drive-WB	W. Los Positas Blvd	Santa Rita Road	Pleasanton	4	AM	0.29	0.29	0	27.6	0.63	32.5	0.54	2201	0.10
T181	T184	Stoneridge Drive-WB	W. Los Positas Blvd	Santa Rita Road	Pleasanton	4	PM	0.29	0.29	0	35.2	0.49	35.6	0.49	2025	0.01
T182	T185	Stoneridge Drive-WB	Santa Rita Road	W. Los Positas Blvd	Pleasanton	4	AM	0.43	0.44	-0.01	25.5	1.04	31.9	0.83	843	95% of length used
T182	T185	Stoneridge Drive-WB	Santa Rita Road	W. Los Positas Blvd	Pleasanton	4	PM	0.43	0.44	-0.01	19.7	1.34	31.5	0.84	639	95% of length used
T183	T186	Stoneridge Drive-WB	W. Las Positas Blvd	Hacienda Dr	Pleasanton	4	AM	0.64	0.63	0.01	28.5	1.33	33.6	1.12	1410	0.20
T183	T186	Stoneridge Drive-WB	W. Las Positas Blvd	Hacienda Dr	Pleasanton	4	PM	0.64	0.63	0.01	24.9	1.52	32.3	1.17	846	0.35
T184	T187	Stoneridge Drive-WB	Hacienda Dr	Hopyard Rd	Pleasanton	4	AM	0.49	0.49	0	20.1	1.46	28.0	1.05	1708	0.41
T184	T187	Stoneridge Drive-WB	Hacienda Dr	Hopyard Rd	Pleasanton	4	PM	0.49	0.49	0	19.4	1.52	28.2	1.04	1064	0.47
T185	T188	Stoneridge Drive-WB	Hopyard Rd	SB I-680 OFF Ramp	Pleasanton	4	AM	0.66	0.93	-0.27	21.9	2.55	30.2	1.85	1432	
T185	T188	Stoneridge Drive-WB	Hopyard Rd	SB I-680 OFF Ramp	Pleasanton	4	PM	0.66	0.93	-0.27	29.2	1.91	31.3	1.78	1014	
T186	T189	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	NB I-680 OFF	Bernal Ave	Pleasanton	4	AM	1.22	1.23	-0.01	28.8	2.56	32.4	2.28	1097	0.28
T186	T189	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	NB I-680 OFF	Bernal Ave	Pleasanton	4	PM	1.22	1.23	-0.01	24.8	2.98	31.0	2.38	1240	0.60
T187	T190	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	Bernal Ave	Ray/Vineyard	Pleasanton	4	AM	0.64	0.63	0.01	19.5	1.94	26.3	1.44	1647	0.50
T187	T190	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	Bernal Ave	Ray/Vineyard	Pleasanton	4	PM	0.64	0.63	0.01	21.6	1.75	23.9	1.58	2983	0.17
T188	T191	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	Ray/Vineyard	Bernal Ave/Valley Ave	Pleasanton	4	AM	0.84	0.86	-0.02	26.1	1.98	32.9	1.57	477	0.41
T188	T191	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	Ray/Vineyard	Bernal Ave/Valley Ave	Pleasanton	4	PM	0.84	0.86	-0.02	26.1	1.98	30.7	1.68	1597	0.30
T189	T192	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	Bernal Ave/Valley Ave	SR 84/Isabel Ave	Pleasanton, Alameda County	4	AM	2.91	2.98	-0.07	46.7	3.83	40.6	4.41	2227	-0.58
T189	T192	Sunol Blvd.- 1st Street- Stanley Blvd.-NB	Bernal Ave/Valley Ave	SR 84/Isabel Ave	Pleasanton, Alameda County	4	PM	2.91	2.98	-0.07	43.5	4.11	44.3	4.03	3488	0.08
T190	T193	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	SR 84/Isabel Ave	Bernal Ave/Valley Ave	Pleasanton, Alameda County	4	AM	2.91	2.98	-0.07	38.3	4.67	43.5	4.11	3377	0.56
T190	T193	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	SR 84/Isabel Ave	Bernal Ave/Valley Ave	Pleasanton, Alameda County	4	PM	2.91	2.98	-0.07	44.6	4.01	45.3	3.95	2117	0.06
T191	T194	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Bernal Ave/Valley Ave	Ray/Vineyard	Pleasanton	4	AM	0.85	0.86	-0.01	31.1	1.66	31.2	1.65	1956	0.01
T191	T194	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Bernal Ave/Valley Ave	Ray/Vineyard	Pleasanton	4	PM	0.85	0.86	-0.01	24.9	2.07	33.4	1.54	398	0.53

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APPENDIX E - TIER 2 ARTERIALS

ID	ID (2012 Report)	CMP Information					Shape Information (mi)			Floating Car Survey			Commercial Speed Data			Comparison △Travel Time (min)*	
		Route	From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Average Speed (mph)	Travel Time (min)	Average Speed (mph)	Travel Time (min)	Sample Size	Comment	
T192	T195	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Ray/Vineyard	Bernal Ave	Pleasanton	4	AM	0.63	0.63	0	11.8	3.20	22.2	1.70	3007		1.50
T192	T195	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Ray/Vineyard	Bernal Ave	Pleasanton	4	PM	0.63	0.63	0	15.6	2.42	24.6	1.54	1285		0.89
T193	T196	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Bernal Ave	NB I-680 OFF	Pleasanton	4	AM	1.23	1.23	0	26.2	2.82	31.4	2.35	1678		0.47
T193	T196	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Bernal Ave	NB I-680 OFF	Pleasanton	4	PM	1.23	1.23	0	34.2	2.16	34.7	2.13	908	95% of length used	0.03
T194	SR 84	Airway	I-580 WB (Off)	Livermore	4	AM	0	0.52	-	Newly added						Insufficient TMC data	
T194	SR 84	Airway	I-580 WB (Off)	Livermore	4	PM	0	0.52	-	Newly added						Insufficient TMC data	
T195	SR 84	I-580 WB (Off)	Airway	Livermore	4	AM	0	0.53	-	Newly added						Insufficient TMC data	
T195	SR 84	I-580 WB (Off)	Airway	Livermore	4	PM	0	0.53	-	Newly added						Insufficient TMC data	

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APPENDIX F - TIER 1 FREEWAYS, SEGMENTS NOT VALIDATED

ID	Route	CMP Information			Shape Information (mi)			Validation		
		From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Yes/No
F2	I-80 - EB	Toll Plaza	I-580 SB Merge	Oak	1	AM	1.15	1.3	-0.15	No
F3	I-80 - EB	I-80/I-580 (Merge)	Powell	Emery - Berk	1	AM	0.79	0.54	0.25	No
F6	I-80 - EB	University	Jct I-580 (off)	Berk - Alb	1	AM	1.51	1.37	0.14	No
F7	I-80 - EB	Jct I-580 (off)	Central (County Line)	Berk - Alb	1	AM	1.12	0.84	0.28	No
F13	I-80 - WB	I-580 Split	Toll Plaza	Oak	1	AM	1.2	1.31	-0.11	No
F15	I-238 - EB	I-880	I-580	Uninc-San L	2	AM	2.28	2.59	-0.31	No
F16	I-238 - WB	I-580	I-880	Uninc-San L	2	AM	1.6	2.48	-0.88	No
F17	I-580 - EB	I-580/I-238 changed fm (I-238/Fthl Off)	Grove	Unincorp	2	AM	2.88	2.68	0.2	No
F21	I-580 EB	I-680	Hopyard	Plea	4	AM	0.76	0.87	-0.11	No
F24	I-580 EB	El Charro	SR 84/Airway Blvd.	Unincorp	4	AM	1.52	1.72	-0.2	No
F26	I-580 - EB	Portola	1st St	Liv	4	AM	2.7	2.56	0.14	No
F27	I-580 - EB	1st St	Greenville	Liv-Uninc	4	AM	1.98	2.13	-0.15	No
F28	I-580 - EB	Greenville	N.Flynn	Uninc	4	AM	1.5	2.73	-1.23	No
F29	I-580 - EB	N.Flynn	Grant Line	Uninc	4	AM	3.19	4.32	-1.13	No
F30	I-580 - EB	Grant Line	I-205 (SJ Co) Off	Uninc	4	AM	1.11	0.87	0.24	No
F31	I-580 - WB	I-205 (SJ Co)	Grant Line	Liv - Uninc	4	AM	0.89	0.72	0.17	No
F42	I-580 - WB	Eden Canyon	Center St	Plea - Uninc	4	AM	2.28	2.5	-0.22	No
F43	I-580 - WB	Center	I-580/238	Unincorp	2	AM	1.94	2.26	-0.32	No
F46	I-580 - EB	Harrison	Lakeshore	Oak	1	AM	0.69	0.84	-0.15	No
F50	I-580 - EB	MacArthur	I-580/238	SL - Hay	2	AM	4.33	3.78	0.55	No
F51	I-580 - WB	I-238	Foothill/MacArthur	Oak -SL	2	AM	4.42	3.86	0.56	No
F52	I-580 - WB	Foothill/MacArthur	SH 13 Off	Oak -SL	1	AM	3.89	4.04	-0.15	No
F53	I-580 - WB	SH 13 Off	Fruitvale	Oak	1	AM	2.36	2.63	-0.27	No
F54	I-580 - WB	Fruitvale	Harrison	Oak	1	AM	2.21	2.68	-0.47	No
F56	I-580 - WB	SH-24 On-ramp	I-80/580 Split	Oak	1	AM	0.69	1.17	-0.48	No
F57	I-580 - EB	Central (County Line)	I-80 Jct	Alb	1	AM	0.77	0.7	0.07	No
F58	I-580 - WB	I-80 Jct	Central (County Line)	Alb	1	AM	1.07	0.86	0.21	No
F60	I-680 - NB	Rt 262/Mission	Durham Rd	Fre	3	AM	1.34	1.62	-0.28	No
F61	I-680 - NB	Durham Rd	Washington Blvd	Fre	3	AM	1.54	1.3	0.24	No
F62	I-680 - NB	Washington Blvd	Rt 238/Mission	Fre	3	AM	0.89	1.14	-0.25	No
F63	I-680 NB	SR 238/Mission	Vargas Rd	Unincorp	3	AM	0.82	1.1	-0.28	No
F64	I-680 NB	Vargas Rd	Andrade Rd	Unincorp	3	AM	2.64	2.21	0.43	No
F69	I-680 NB	Bernal Ave	Stoneridge Dr	Plea	4	AM	2.39	2.53	-0.14	No
F75	I-680 SB	Bernal Ave.	Sunol Blvd	Unincorp	4	AM	1.31	1.49	-0.18	No
F76	I-680 SB	Sunol Blvd.	SR 84	Unincorp	4	AM	3.82	3.71	0.11	No
F82	I-680 - SB	Washington Blvd	Durham Rd	Fre	3	AM	1.52	1.35	0.17	No
F90	I-880 - NB	Alcarado Blvd	Alvarado-Niles Blvd	Fre- Uni Cty	3	AM	1.17	1.57	-0.4	No
F92	I-880 - NB	Tennyson	SR 92	Hay	2	AM	1.14	1.02	0.12	No
F93	I-880 - NB	SR 92	A St	Hay	2	AM	1.52	1.68	-0.16	No
F94	I-880 - NB	A St	I-238 (Marina before 06)	Oak -SL	2	AM	1.82	1.95	-0.13	No
F95	I-880 - NB	I-880/I238 (split)	Marina Blvd	Oak -SL	2	AM	2.66	2.54	0.12	No
F98	I-880 - NB	Hegenberger	High/42nd	Oak	1	AM	2.47	2.34	0.13	No
F99	I-880 - NB	High/42nd	23rd (1st on)	Oak	1	AM	1.06	1.25	-0.19	No
F103	I-880 - SB	I-880/I-80 split	I-880/I-80 merge	Oak	1	AM	1.63	1.28	0.35	No
F104	I-880 - SB	I-880/I-80 merge	Jct 980	Oak	1	AM	2.65	2.51	0.14	No
F106	I-880 - SB	23rd St	High/42nd	Oak	1	AM	1.35	1.1	0.25	No
F108	I-880 - SB	Hegenberger	SR 112/Davis	Oak - SL	1	AM	1.69	1.82	-0.13	No
F110	I-880 - SB	Marina Blvd	SR 238 WB (merge)	Oak - SL	1	AM	2.41	2.55	-0.14	No
F111	I-880 - SB	I-238 (Marina before 06)	A St	SL-Uninc	2	AM	2.03	1.91	0.12	No
F112	I-880 - SB	A St	Rt 92	Hay	2	AM	1.81	1.7	0.11	No
F114	I-880 - SB	Tennyson	Alv-Niles	Hay - UC	2	AM	2.49	2.6	-0.11	No
F115	I-880 - SB	Alvarado-Niles	Alvarado	UC - Fre	2	AM	1.37	1.56	-0.19	No
F118	I-880 - SB	Stevenson	AutoMall Pkwy	Fre	2	AM	1.26	1.52	-0.26	No
F119	I-880 - SB	AutoMall Pkwy	Rt 262/Mission	Fre	2	AM	3.04	2.83	0.21	No
F120	I-880 - SB	SR 262/Mission	Dix Landing(off)	Fre	3	AM	1.27	1.69	-0.42	No

APPENDIX F - TIER 1 FREEWAYS, SEGMENTS NOT VALIDATED

ID	Route	CMP Information			Shape Information (mi)			Validation			
		From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Yes/No	
F121	I-980 - WB	SR 24 @ 580	I-880	Oak	1	AM	2.27	2.49	-0.22	No	
F122	I-980 - EB	I-880	SR 24 @ 580	Oak	1	AM	2.32	2.44	-0.12	No	
F128	SR 13 - SB	Moraga Ave	Joa Miller/Linc	Oak	1	AM	2.04	1.85	0.19	No	
F129	SR 13 - SB	Joaq Miller/Lincoln	Redwood	Oak	1	AM	1.34	1.07	0.27	No	
F130	SR 13 - SB	Redwood	Jct I-580 (EB Merge)	Oak	1	AM	0.89	1.4	-0.51	No	
F131	SR 24 - EB	Jct I-580 (on)	Broadway/SR 13	Oak	1	AM	2.08	1.84	0.24	No	
F132	SR 24 - EB	Broadway	Broadway/SR 13	Caldecott (enter)	Oak	1	AM	1.41	1.65	-0.24	No
F136	SR 24 - WB	Broadway	Jct I-580 (on)	Oak	1	AM	2.19	1.86	0.33	No	
F137	SR 84 - EB	San M CL	Toll Plaza	Fremont	3	AM	2.97	3.29	-0.32	No	
F138	SR 84 - EB	Toll Plaza	Thornton	Fremont	3	AM	0.27	0.54	-0.27	No	
F140	SR 84 - EB	Newark Blvd/Ardenwood Blvd	I-880 NB (off)	Newark	3	AM	0.97	1.2	-0.23	No	
F141	SR 84 - WB	I-880 NB (off)	Ardenwood/Newark		3	AM	0.99	1.21	-0.22	No	
F143	SR 84 - WB	Paseo Padre Pkwy	Toll Gate		3	AM	0.75	0.54	0.21	No	
F144	SR 84 - WB	Toll Plaza	San M CL	Fremont	2	AM	3.17	3.29	-0.12	No	
F145	SR 92 - EB	San M CL	Toll Plaza	Uninc - Hay	2	AM	2.61	2.78	-0.17	No	
F146	SR 92 - EB	Toll Plaza	Clawitter	Uninc - Hay	2	AM	1.76	1.87	-0.11	No	
F150	SR 92 - WB	Toll Plaza	San M CL	Uninc - Hay	2	AM	2.61	2.79	-0.18	No	

APPENDIX F - TIER 1 RAMPS, SEGMENTS NOT VALIDATED

ID	Route	CMP Information					Shape File Info			Validation	
		From	To	Jurisdiction	Plan Area	Time Period	Original Length	Updated Length	△	Yes/No	Comment
R12	I-580 /I-238 Interchange	I-580 SB	I-238 EB	Hay	2	AM	0.35	0.7	-0.35	No	
R22	I-880/SR 260 Connection	I-880 SB	SR-260 WB	Oak	1	AM	0.99	0.99	0	No	Insufficient TMC data
R23	I-880/SR 260 Connection	SR-260 EB	I-880 NB	Oak	1	AM	0.36	0.41	-0.05	No	Insufficient TMC data

APPENDIX F - TIER 1 ARTERIALS, SEGMENTS NOT VALIDATED

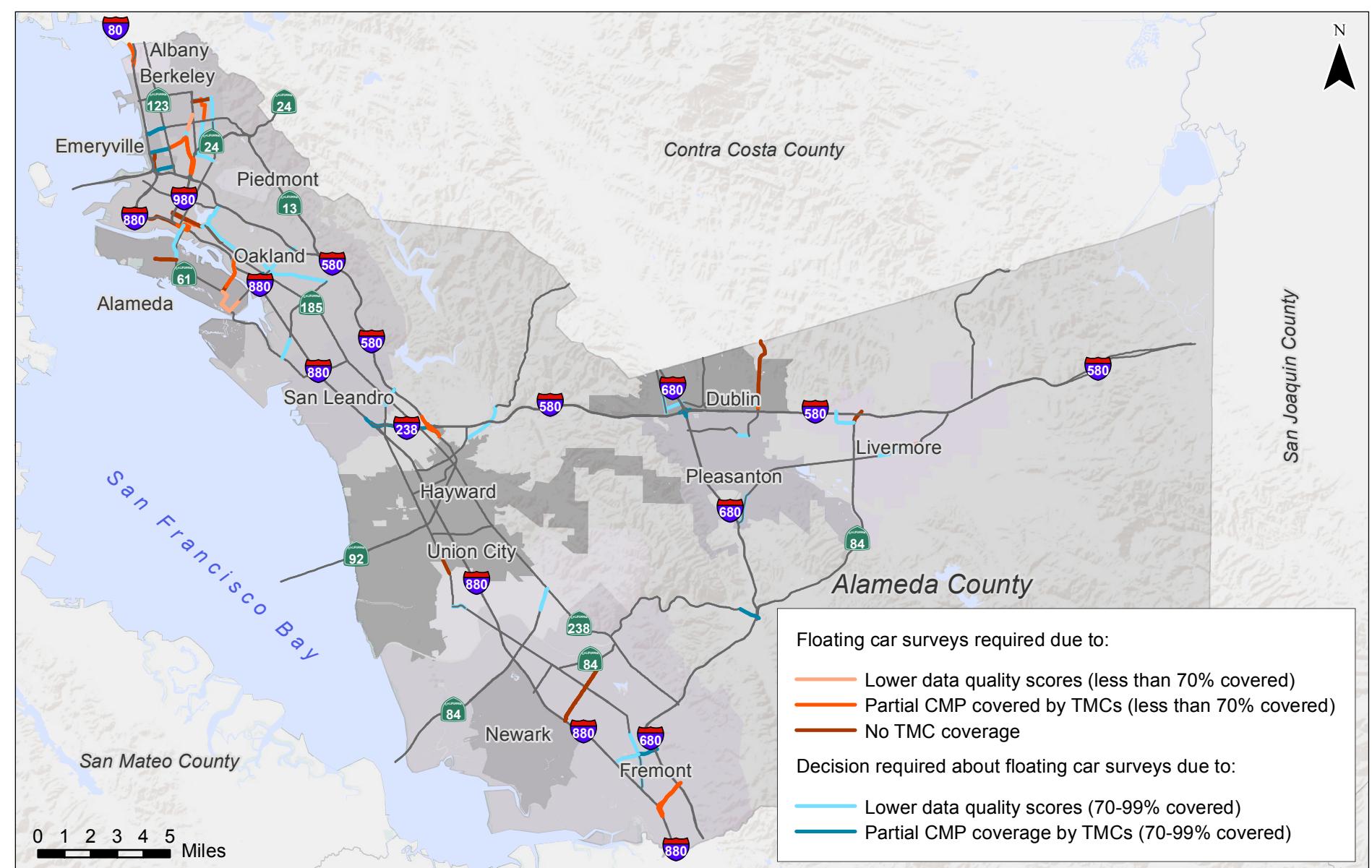
ID	Route	CMP Information					Shape Information (mi)			Validation	
		From	To	Class	Jurisdiction	Plan Area	Original Length	Updated Length	△	Yes/No	Comment
A7	Atlantic - EB	Main	Webster	II	Ala	1	0.8	0.81	-0.01	No	Insufficient TMC data
A8	Atlantic - WB	Webster	Main	II	Ala	1	0.8	0.81	-0.01	No	Insufficient TMC data
A35	Mowry - EB	I-880	Farwell	II	Fre	3	0.34	0.28	0.06	No	Insufficient TMC data
A36	Mowry - EB	Farwell	SH 84	II	Fre	3	2.63	2.48	0.15	No	Insufficient TMC data
A37	Mowry - WB	SH 84	Farwell	II	Fre	3	2.63	2.53	0.1	No	Insufficient TMC data
A38	Mowry - WB	Farwell	I-880	II	Fre	3	0.34	0.28	0.06	No	Insufficient TMC data
A39	Park/23rd - EB	Encinal	Santa Clara	III	Ala	1	0.23	0.23	0	No	Insufficient TMC data
A40	Park/23rd - EB	Santa Clara	Kennedy	III	Ala	1	0.66	0.68	-0.02	No	Insufficient TMC data
A44	Park/23rd - WB	Santa Clara	Encinal	III	Ala	1	0.23	0.23	0	No	Insufficient TMC data
A45	MLK Jr Way - NB	SH 24	Adeline	II	Oak	1	0.9	1.48	-0.58	No	Insufficient TMC data
A52	Adeline - SB	Shattuck	MLK Jr - North	II	Berk	1	0.63	0.61	0.02	No	Insufficient TMC data
A54	MLK Jr Way - SB	Adeline	SH 24	II	Oak	1	0.88	1.39	-0.51	No	Insufficient TMC data
A86	SR 61 - SB	Park	High/Otis	II	Ala	1	1.06	1.05	0.01	No	Insufficient TMC data
A95	SR 61 - NB	High/Otis	Park	II	Ala	1	1.06	1.05	0.01	No	Insufficient TMC data
A99	SR 77 (42nd) - EB	I-880 NB	E 14th	I	Oak	1	0.32	0.36	-0.04	No	No data collected due to construction
A100	SR 77 (42nd) - WB	E 14 th	I-880 NB	I	Oak	1	0.3	0.36	-0.06	No	No data collected due to construction
A121	SR 84 - EB	SR 238/Mission	Union City Limit	Rural	Fre	3	1.59	1.35	0.24	No	
A148	SR 84 - WB	Vallecitos Ln	SR 84/I-680 NB Off	Rural	Unin	3	0.21	0.86	-0.65	No	
A149	SR 84 - WB	SR 84/I-680 NB Off	Ple-Sunol Rd	Rural	Fre	3	1.27	0.62	0.65	No	
A152	SR 84 - WB	Niles Canyon Quarry	Fremont City Limit	Rural	Fre	3	1	2.44	-1.44	No	
A153	SR 84 - WB	Fremont City Limit	Union City Limit	Rural	Fre	3	2.1	0.59	1.51	No	
A154	SR 84 - WB	Union City Limit	SR 238	Rural	Fre	3	1.62	1.35	0.27	No	
A155	SR 92 - EB	I-880	Mission	II	Hay	2	1.59	1.71	-0.12	No	
A156	SR 92 - WB	Mission	I-880	II	Hay	2	1.59	1.71	-0.12	No	
A208	SR 185 (14th) - NB	73rd Ave	Seminary	II	Oak	1	0.6	0.8	-0.2	No	
A213	SR 238 (Foothill) - NB	I-580 Ramp	I-580 Merge	I	Unin	3	0.71	0.68	0.03	No	Insufficient TMC data
A214	SR 238 (Foothill) - SB	I-580	Cstro V Blvd	I	Unin	3	0.86	0.73	0.13	No	Insufficient TMC data
A217	SR 238 (Mission) - NB	680 NB Rmp	Stevenson	I	Fre	3	2.46	2.35	0.11	No	
A218	SR 238 (Mission) - NB	Stevenson	Nursery	I	Fre	3	2.57	2.43	0.14	No	
A219	SR 238 (Mission) - NB	Nursery	Tamarack	I	UC	3	2.1	2.63	-0.53	No	
A226	SR 238 (Mission) - SB	Tamarack	Nursery	I	UC	3	2.07	2.63	-0.56	No	
A227	SR 238 (Mission) - SB	Nursery	Stevenson	I	Fre	3	2.57	2.43	0.14	No	
A228	SR 238 (Mission) - SB	Stevenson	680 NB Rmp	I	Fre	3	2.46	2.35	0.11	No	
A230	SR 260 (Tubes) - SB	7th/Web	Atlantic	I	Oak	1	1.31	1.43	-0.12	No	
A231	SR 262 (Mission) - EB	I-880 NB	I-680 NB	I	Fre	3	1.33	1.48	-0.15	No	Insufficient TMC data
A232	SR 262 (Mission) - WB	I-680 NB	I-880 SB	I	Fre	3	1.11	1.67	-0.56	No	Insufficient TMC data

APPENDIX F - TIER 2 ARTERIALS, SEGMENTS NOT VALIDATED

ID	ID (2012 Report)	Route	CMP Information				Shape Information (mi)			Validation	
			From	To	Jurisdiction	Plan Area	Original Length	Updated Length	△	Yes/No	Comment
T1	T1	W.Grand Ave - Grand Ave -EB	I-80/Maritime St	San Pablo Ave	Oakland	1	1.09	1.63	-0.54	No	
T3	T3	W.Grand Ave - Grand Ave -EB	Broadway	I-580	Oakland	1	1.62	1.08	0.54	No	
T4	T4	W.Grand Ave - Grand Ave -WB	I-580	Broadway	Oakland	1	1.62	1.08	0.54	No	
T6	T6	W.Grand Ave - Grand Ave -WB	San Pablo Ave	I-80/Maritime St	Oakland	1	1.09	1.63	-0.54	No	
T7	T7	11th St - Lakeshore Ave-EB	I-980 ON Ramp/Brush St	Webster	Oakland	1	0.46	0.6	-0.14	No	Insufficient TMC data
T8	T8	11th St - Lakeshore Ave-EB	Webster	Lake Merrit Blvd	Oakland	1	0.59	0.66	-0.07	No	Insufficient TMC data
T11	T11	12th St - Lakeshore Ave-WB	Lake Merrit Blvd	Webster	Oakland	1	0.61	0.64	-0.03	No	Insufficient TMC data
T12	T12	12th St - Lakeshore Ave-WB	Webster	I-980 OFF Ramp/Brush St	Oakland	1	0.51	0.6	-0.09	No	Insufficient TMC data
T15	T15	Telegraph Ave-SB	Bancroft Way	Russell St	Oakland, Berkeley	1	0.75	0.9	-0.15	No	Insufficient TMC data
T20		Broadway (Connection to I-880)-SB	5th St/Broadway	I-880 ON Ramp	Oakland	1	0.06	0.21	-0.15	No	
T21		Broadway (Connection to I-880)-NB	I-880 OFF Ramp	5th St/Broadway	Oakland	1	0.07	1.26	-1.19	No	Insufficient TMC data
T25	T25	Durant-EB	Shattuck	College Ave.	Berkeley	1	0.73	0.73	0	No	Insufficient TMC data
T31	T31	College Avenue-NB	Ashby Ave	Bancroft Way/College Ave	Oakland	1	0.98	0.85	0.13	No	
T40	T40	Powel Street-Stanford Avenue-EB	San Pablo Ave	MLK Jr Way	Emeryville,Berkeley	1	0.76	0.76	0	No	Insufficient TMC data
T41	T41	Powel Street-Stanford Avenue-WB	MLK Jr Way	San Pablo Ave	Emeryville,Berkeley	1	0.76	0.76	0	No	Insufficient TMC data
T43	T43	40thStreet-Shellmound Avenue-EB	Shellmound Way (north of Powell St)	40th St	Emeryville	1	0.82	0.73	0.09	No	Insufficient TMC data
T46	T46	40thStreet-Shellmound Avenue-WB	40th St	Shellmound Way (north of Powell St)	Emeryville	1	0.82	0.73	0.09	No	Insufficient TMC data
T60	T60	Foothill Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	1.3	1.32	-0.02	No	Insufficient TMC data
T65	T65	E. 15th Street-SB	1st Avenue	14th Avenue	Oakland	1	0.99	0.98	0.01	No	Insufficient TMC data
T66	T66	High Street-EB	Otis Drive	Central Ave	Alameda	1	0.58	0.58	0	No	Insufficient TMC data
T71	T71	High Street-WB	MacArthur Blvd/WB I-580 OFF Ramp	Foothill Blvd	Oakland	1	1.73	1.29	0.44	No	
T75	T75	High Street-WB	Central Ave	Otis Drive	Alameda	1	0.58	0.58	0	No	Insufficient TMC data
T79	T80	Crow Canyon Road-NB	Cold Water Dr	0.43 miles north of Norris Canyon Rd	Alameda County	2	1.48	2.41	-0.93	No	
T80	T81	Crow Canyon Road-NB	0.43 miles north of Norris Canyon Rd	County Line	Alameda County	2	3.9	2.97	0.93	No	
T81	T82	Crow Canyon Road-SB	County Line	0.43 miles north of Norris Canyon Rd	Alameda County	2	3.9	2.97	0.93	No	
T82	T83	Crow Canyon Road-SB	0.43 miles north of Norris Canyon Rd	Cold Water Dr	Alameda County	2	1.48	2.4	-0.92	No	
T103	T104	Hesperian Boulevard-Union City Blvd-SB	Industrial Blvd	Hesperian/Union City Blvd/overbridge	Union City	3	0.57	0.57	0	No	Insufficient TMC data
T121	T123	Fremont Boulevard-NB	Paseo Padre Pkwy	NB I-880 OFF Ramp	Fremont	3	0.61	0.39	0.22	No	
T128	T130	Fremont Boulevard-SB	Stevenson Rd	Adams Ave	Fremont	3	0.24	1.17	-0.93	No	
T138	T141	Vasco Road-NB	Dalton Ave/City-County Line	N. Vasco Rd/Vasco Rd	Livermore	4	1.75	3.11	-1.36	No	
T139	T142	Vasco Road-NB	N. Vasco Rd/Vasco Rd	Local Road underpass/County Line	Livermore	4	2.8	2.25	0.55	No	
T140	T143	Vasco Road-SB	Local Road underpass/County Line	N. Vasco Rd/Vasco Rd	Livermore	4	2.8	2.25	0.55	No	
T141	T144	Vasco Road-SB	N. Vasco Rd/Vasco Rd	Dalton Ave/City-County Line	Livermore	4	1.75	3.11	-1.36	No	
T149	T152	Dublin Blvd.-WB	Hacienda Dr	Dougherty Rd	Dublin	4	1.2	1.21	-0.01	No	No AM Floating Car Survey
T150	T153	Dublin Blvd.-WB	Dougherty Rd	Village Parkway	Dublin	4	1.1	0.81	0.29	No	
T160	T163	Tassajara Road-NB	WB I-580 OFF ramp	Central Parkway	Dublin	4	0.49	0.49	0	No	Insufficient TMC data
T161	T164	Tassajara Road-NB	Central Parkway	Somerset Ln/N Dublin Ranch Dr	Dublin	4	0.68	0.68	0	No	Insufficient TMC data
T162	T165	Tassajara Road-NB	Somerset Ln/N Dublin Ranch Dr	Fallon Rd	Dublin	4	1.05	1.04	0.01	No	Insufficient TMC data
T163	T166	Tassajara Road-NB	Fallon Rd	County Line	Alameda County	4	0.5	0.51	-0.01	No	Insufficient TMC data
T164	T167	Tassajara Road-SB	County Line	Fallon Rd	Alameda County	4	0.5	0.51	-0.01	No	Insufficient TMC data
T165	T168	Tassajara Road-SB	Fallon Rd	Somerset Ln/N Dublin Ranch Dr	Dublin	4	1.05	1.04	0.01	No	Insufficient TMC data
T166	T169	Tassajara Road-SB	Somerset Ln/N Dublin Ranch Dr	Central Parkway	Dublin	4	0.68	0.68	0	No	Insufficient TMC data
T167	T170	Tassajara Road-SB	Central Parkway	WB I-580 OFF ramp	Dublin	4	0.46	0.49	-0.03	No	Insufficient TMC data
T170	T173	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	S Livermore Ave	Inman St	Livermore	4	0.46	0.46	0	No	Insufficient TMC data
T171	T174	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Inman St	S Livermore Ave	Livermore	4	0.46	0.46	0	No	Insufficient TMC data
T185	T188	Stoneridge Drive-WB	Hopyard Rd	SB I-680 OFF Ramp	Pleasanton	4	0.66	0.93	-0.27	No	
T194		SR 84	Airway	I-580 WB (Off)	Livermore	4	0	0.52	-	No	Insufficient TMC data
T195		SR 84	I-580 WB (Off)	Airway	Livermore	4	0	0.53	-	No	Insufficient TMC data

APPENDIX G - CMP Segments where Floating Car Surveys are recommended

Based on poor or no TMC coverage



Commercial Speed Data Coverage and Data Quality “CMP Segments Recommended for Floating Car Surveys”

APPENDIX G - TIER 1 FREEWAYS, FLOATING CAR SURVEYS REQUIRED

ID	Route	From	To	CMP Information			Shape Info (mi) Updated Length	Floating car surveys required?			Comment
				Jurisdiction	Plan Area	Time Period		Yes / No	Suitability of Commerical Speed Data		
F57	I-580 - EB	Central (County Line)	I-80 Jct	Alb	1	AM	0.7	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.		
F57	I-580 - EB	Central (County Line)	I-80 Jct	Alb	1	PM	0.7	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.		
F58	I-580 - WB	I-80 Jct	Central (County Line)	Alb	1	AM	0.86	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.		
F58	I-580 - WB	I-80 Jct	Central (County Line)	Alb	1	PM	0.86	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.		
F16	I-238 - WB	I-580	I-880	Uninc-San L	2	AM	2.48	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	85% of length used	
F16	I-238 - WB	I-580	I-880	Uninc-San L	2	PM	2.48	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	85% of length used	

APPENDIX G - TIER 1 RAMPS, FLOATING CAR SURVEYS REQUIRED

ID	Route	CMP information					Shape File Info (mi)	Updated Length	Yes / No	Suitability of Commercial Speed Data	Floating car surveys required?	Comment
		From	To	Jurisdiction	Plan Area	Time Period						
R22	I-880/SR 260 Connection	I-880 SB	SR-260 WB	Oak	1	AM	0.99	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.			
R22	I-880/SR 260 Connection	I-880 SB	SR-260 WB	Oak	1	PM	0.99	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.			
R23	I-880/SR 260 Connection	SR-260 EB	I-880 NB	Oak	1	AM	0.41	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.			
R23	I-880/SR 260 Connection	SR-260 EB	I-880 NB	Oak	1	PM	0.41	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.			
R8	I-880/I-238 Interchange	I-880 SB	I-238 EB	SL	2	AM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.		95% of length used	
R8	I-880/I-238 Interchange	I-880 SB	I-238 EB	SL	2	PM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.		95% of length used	
R17	I-580/I-680 Interchange	I-680 NB	I-580 WB	Pleas	4	AM	0.62	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.		75% of length used	
R17	I-580/I-680 Interchange	I-680 NB	I-580 WB	Pleas	4	PM	0.62	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.		75% of length used	
R19	I-580/I-680 Interchange	I-580 WB	I-680 SB	Pleas	4	AM	0.64	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.		85% of length used	
R19	I-580/I-680 Interchange	I-580 WB	I-680 SB	Pleas	4	PM	0.64	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.		85% of length used	

APPENDIX G - TIER 1 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

ID	Route	CMP Information				Shape Information (mi)		Floating car surveys required?			
		From	To	Class	Jurisdiction	Plan Area	Time Period	Updated Length	Yes / No	Suitability of Commerical Speed Data	Comment
A7	Atlantic - EB	Main	Webster	II	Ala	1	AM	0.81	Yes	No TMC coverage. Floating Car Surveys required.	
A7	Atlantic - EB	Main	Webster	II	Ala	1	PM	0.81	Yes	No TMC coverage. Floating Car Surveys required.	
A8	Atlantic - WB	Webster	Main	II	Ala	1	AM	0.81	Yes	No TMC coverage. Floating Car Surveys required.	
A8	Atlantic - WB	Webster	Main	II	Ala	1	PM	0.81	Yes	No TMC coverage. Floating Car Surveys required.	
A35	Mowry - EB	I-880	Farwell	II	Fre	3	AM	0.28	Yes	No TMC coverage. Floating Car Surveys required.	
A35	Mowry - EB	I-880	Farwell	II	Fre	3	PM	0.28	Yes	No TMC coverage. Floating Car Surveys required.	
A36	Mowry - EB	Farwell	SH 84	II	Fre	3	AM	2.48	Yes	No TMC coverage. Floating Car Surveys required.	
A36	Mowry - EB	Farwell	SH 84	II	Fre	3	PM	2.48	Yes	No TMC coverage. Floating Car Surveys required.	
A37	Mowry - WB	SH 84	Farwell	II	Fre	3	AM	2.53	Yes	No TMC coverage. Floating Car Surveys required.	
A37	Mowry - WB	SH 84	Farwell	II	Fre	3	PM	2.53	Yes	No TMC coverage. Floating Car Surveys required.	
A38	Mowry - WB	Farwell	I-880	II	Fre	3	AM	0.28	Yes	No TMC coverage. Floating Car Surveys required.	
A38	Mowry - WB	Farwell	I-880	II	Fre	3	PM	0.28	Yes	No TMC coverage. Floating Car Surveys required.	
A39	Park/23rd - EB	Encinal	Santa Clara	III	Ala	1	AM	0.23	Yes	No TMC coverage. Floating Car Surveys required.	
A39	Park/23rd - EB	Encinal	Santa Clara	III	Ala	1	PM	0.23	Yes	No TMC coverage. Floating Car Surveys required.	
A40	Park/23rd - EB	Santa Clara	Kennedy	III	Ala	1	AM	0.68	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A40	Park/23rd - EB	Santa Clara	Kennedy	III	Ala	1	PM	0.68	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A44	Park/23rd - WB	Santa Clara	Encinal	III	Ala	1	AM	0.23	Yes	No TMC coverage. Floating Car Surveys required.	
A44	Park/23rd - WB	Santa Clara	Encinal	III	Ala	1	PM	0.23	Yes	No TMC coverage. Floating Car Surveys required.	
A45	MLK Jr Way - NB	SH 24	Adeline	II	Oak	1	AM	1.48	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A45	MLK Jr Way - NB	SH 24	Adeline	II	Oak	1	PM	1.48	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A54	MLK Jr Way - SB	Adeline	SH 24	II	Oak	1	AM	1.39	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A54	MLK Jr Way - SB	Adeline	SH 24	II	Oak	1	PM	1.39	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A86	SR 61 - SB	Park	High/Otis	II	Ala	1	AM	1.05	Yes	Lower data quality scores. Floating car surveys required.	
A86	SR 61 - SB	Park	High/Otis	II	Ala	1	PM	1.05	Yes	Lower data quality scores. Floating car surveys required.	
A95	SR 61 - NB	High/Otis	Park	II	Ala	1	AM	1.05	Yes	Lower data quality scores. Floating car surveys required.	
A95	SR 61 - NB	High/Otis	Park	II	Ala	1	PM	1.05	Yes	Lower data quality scores. Floating car surveys required.	
A213	SR 238 (Foothill) - NB	I-580 Ramp	I-580 Merge	I	Unin	3	AM	0.68	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A213	SR 238 (Foothill) - NB	I-580 Ramp	I-580 Merge	I	Unin	3	PM	0.68	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A214	SR 238 (Foothill) - SB	I-580	Cstro V Blvd	I	Unin	3	AM	0.73	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A214	SR 238 (Foothill) - SB	I-580	Cstro V Blvd	I	Unin	3	PM	0.73	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A231	SR 262 (Mission) - EB	I-880 NB	I-680 NB	I	Fre	3	AM	1.48	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A231	SR 262 (Mission) - EB	I-880 NB	I-680 NB	I	Fre	3	PM	1.48	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A232	SR 262 (Mission) - WB	I-680 NB	I-880 SB	I	Fre	3	AM	1.67	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A232	SR 262 (Mission) - WB	I-680 NB	I-880 SB	I	Fre	3	PM	1.67	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
A1	150th Ave - EB	Hesperian	I-580	II	SL	2	AM	0.49	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	85% of length used
A1	150th Ave - EB	Hesperian	I-580	II	SL	2	PM	0.49	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	85% of length used
A2	150th Ave - WB	I-580	Hesperian	II	SL	2	AM	0.49	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
A2	150th Ave - WB	I-580	Hesperian	II	SL	2	PM	0.49	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	80% of length used
A14	Hegenberger - WB	Edgewater	SR 61	I	Oak	1	AM	0.77	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
A14	Hegenberger - WB	Edgewater	SR 61	I	Oak	1	PM	0.77	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
A24	Hesperian - NB	Fairmont	14th	II	San Leandro	2	PM	0.31	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
A25	Hesperian - SB	14th	Fairmont	II	SL	2	AM	0.31	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
A41	Park/23rd - EB	Kennedy	E 11th	II	Ala - Oak	1	AM	0.45	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	85% of length used
A41	Park/23rd - EB	Kennedy	E 11th	II	Ala - Oak	1	PM	0.45	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	70% of length used

APPENDIX G - TIER 1 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

ID	Route	CMP Information				Shape Information (mi)		Yes / No	Floating car surveys required?	
		From	To	Class	Jurisdiction	Plan Area	Time Period		Suitability of Commercial Speed Data	Comment
A42	Park/23rd - WB	E 11th	Kennedy	II	Ala - Oak	1	AM	0.45	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A42	Park/23rd - WB	E 11th	Kennedy	II	Ala - Oak	1	PM	0.45	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A43	Park/23rd - WB	Kennedy	Santa Clara	III	Ala	1	AM	0.68	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A43	Park/23rd - WB	Kennedy	Santa Clara	III	Ala	1	PM	0.68	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A52	Adeline - SB	Shattuck	MLK Jr - North	II	Berk	1	AM	0.61	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A52	Adeline - SB	Shattuck	MLK Jr - North	II	Berk	1	PM	0.61	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A53	Adeline - SB	MLK Jr - North	MLK Jr - South	II	Berk	1	AM	0.29	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A53	Adeline - SB	MLK Jr - North	MLK Jr - South	II	Berk	1	PM	0.29	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A75	SR 13 Ashby - WB	San Pablo	I-80 Ramps	II	Berk	1	AM	0.64	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A75	SR 13 Ashby - WB	San Pablo	I-80 Ramps	II	Berk	1	PM	0.64	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A76	SR 13 Ashby - EB	I-80	San Pablo	II	Berk	1	AM	0.62	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A76	SR 13 Ashby - EB	I-80	San Pablo	II	Berk	1	PM	0.62	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A99	SR 77 (42nd) - EB	I-880 NB	E 14th	I	Oak	1	AM	0.36	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A99	SR 77 (42nd) - EB	I-880 NB	E 14th	I	Oak	1	PM	0.36	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A100	SR 77 (42nd) - WB	E 14 th	I-880 NB	I	Oak	1	AM	0.36	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A100	SR 77 (42nd) - WB	E 14 th	I-880 NB	I	Oak	1	PM	0.36	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A108	Decoto - EB	Union Square	SH 238/Mission	II	UC	3	AM	0.85	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A108	Decoto - EB	Union Square	SH 238/Mission	II	UC	3	PM	0.85	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A126	SR 84 - EB	Ple-Sunol Rd	SR 84 (Off)/I-680	Rural	Unin	4	AM	0.8	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A126	SR 84 - EB	Ple-Sunol Rd	SR 84 (Off)/I-680	Rural	Unin	4	PM	0.8	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.
A137	SR 84 (Liv) - NB	Airway/Kitty	I-580	I	Liv	4	AM	1.06	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A137	SR 84 (Liv) - NB	Airway/Kitty	I-580	I	Liv	4	PM	1.06	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A230	SR 260 (Tubes) - SB	7th/Web	Atlantic	I	Oak	1	AM	1.43	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.
A230	SR 260 (Tubes) - SB	7th/Web	Atlantic	I	Oak	1	PM	1.43	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.

APPENDIX G - TIER 2 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

ID	ID (2012 Report)	CMP Information				Shape Information (mi)			Floating car surveys required?		
		Route	From	To	Jurisdiction	Plan Area	Time Period	Updated Length	Yes / No	Suitability of Commercial Speed Data	Comment
T7	T7	11th St - Lakeshore Ave-EB	I-980 ON Ramp/Brush St	Webster	Oakland	1	AM	0.6	Yes	No TMC coverage. Floating Car Surveys required.	
T7	T7	11th St - Lakeshore Ave-EB	I-980 ON Ramp/Brush St	Webster	Oakland	1	PM	0.6	Yes	No TMC coverage. Floating Car Surveys required.	
T8	T8	11th St - Lakeshore Ave-EB	Webster	Lake Merrit Blvd	Oakland	1	AM	0.66	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T8	T8	11th St - Lakeshore Ave-EB	Webster	Lake Merrit Blvd	Oakland	1	PM	0.66	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T11	T11	12th St - Lakeshore Ave-WB	Lake Merrit Blvd	Webster	Oakland	1	AM	0.64	Yes	No TMC coverage. Floating Car Surveys required.	
T11	T11	12th St - Lakeshore Ave-WB	Lake Merrit Blvd	Webster	Oakland	1	PM	0.64	Yes	No TMC coverage. Floating Car Surveys required.	
T12	T12	12th St - Lakeshore Ave-WB	Webster	I-980 OFF Ramp/Brush St	Oakland	1	AM	0.6	Yes	No TMC coverage. Floating Car Surveys required.	
T12	T12	12th St - Lakeshore Ave-WB	Webster	I-980 OFF Ramp/Brush St	Oakland	1	PM	0.6	Yes	No TMC coverage. Floating Car Surveys required.	
T15	T15	Telegraph Ave-SB	Bancroft Way	Russell St	Oakland, Berkeley	1	AM	0.9	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T15	T15	Telegraph Ave-SB	Bancroft Way	Russell St	Oakland, Berkeley	1	PM	0.9	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T21		Broadway (Connection to I-880)-NB	I-880 OFF Ramp	5th St/Broadway	Oakland	1	AM	1.26	Yes	No TMC coverage. Floating Car Surveys required.	
T21		Broadway (Connection to I-880)-NB	I-880 OFF Ramp	5th St/Broadway	Oakland	1	PM	1.26	Yes	No TMC coverage. Floating Car Surveys required.	
T25	T25	Durant-EB	Shattuck	College Ave.	Berkeley	1	AM	0.73	Yes	No TMC coverage. Floating Car Surveys required.	
T25	T25	Durant-EB	Shattuck	College Ave.	Berkeley	1	PM	0.73	Yes	No TMC coverage. Floating Car Surveys required.	
T40	T40	Powel Street-Stanford Avenue-EB	San Pablo Ave	MLK Jr Way	Emeryville,Berkeley	1	AM	0.76	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T40	T40	Powel Street-Stanford Avenue-EB	San Pablo Ave	MLK Jr Way	Emeryville,Berkeley	1	PM	0.76	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T41	T41	Powel Street-Stanford Avenue-WB	MLK Jr Way	San Pablo Ave	Emeryville,Berkeley	1	AM	0.76	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T41	T41	Powel Street-Stanford Avenue-WB	MLK Jr Way	San Pablo Ave	Emeryville,Berkeley	1	PM	0.76	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T43	T43	40thStreet-Shellmound Avenue-EB	Shellmound Way (north of Powell St)	40th St	Emeryville	1	AM	0.73	Yes	No TMC coverage. Floating Car Surveys required.	
T43	T43	40thStreet-Shellmound Avenue-EB	Shellmound Way (north of Powell St)	40th St	Emeryville	1	PM	0.73	Yes	No TMC coverage. Floating Car Surveys required.	
T46	T46	40thStreet-Shellmound Avenue-WB	40th St	Shellmound Way (north of Powell St)	Emeryville	1	AM	0.73	Yes	No TMC coverage. Floating Car Surveys required.	
T46	T46	40thStreet-Shellmound Avenue-WB	40th St	Shellmound Way (north of Powell St)	Emeryville	1	PM	0.73	Yes	No TMC coverage. Floating Car Surveys required.	
T60	T60	Foothill Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	AM	1.32	Yes	Lower data quality scores. Floating car surveys required.	
T60	T60	Foothill Boulevard-SB	14th Ave	Fruitvale Ave	Oakland	1	PM	1.32	Yes	Lower data quality scores. Floating car surveys required.	
T65	T65	E. 15th Street-SB	1st Avenue	14th Avenue	Oakland	1	AM	0.98	Yes	No TMC coverage. Floating Car Surveys required.	
T65	T65	E. 15th Street-SB	1st Avenue	14th Avenue	Oakland	1	PM	0.98	Yes	No TMC coverage. Floating Car Surveys required.	
T66	T66	High Street-EB	Otis Drive	Central Ave	Alameda	1	AM	0.58	Yes	Lower data quality scores. Floating car surveys required.	
T66	T66	High Street-EB	Otis Drive	Central Ave	Alameda	1	PM	0.58	Yes	Lower data quality scores. Floating car surveys required.	
T75	T75	High Street-WB	Central Ave	Otis Drive	Alameda	1	AM	0.58	Yes	Lower data quality scores. Floating car surveys required.	
T75	T75	High Street-WB	Central Ave	Otis Drive	Alameda	1	PM	0.58	Yes	Lower data quality scores. Floating car surveys required.	
T103	T104	Hesperian Boulevard-Union City Blvd-SB	Industrial Blvd	Hesperian/Union City Blvd/overbridge	Union City	3	AM	0.57	Yes	No TMC coverage. Floating Car Surveys required.	
T103	T104	Hesperian Boulevard-Union City Blvd-SB	Industrial Blvd	Hesperian/Union City Blvd/overbridge	Union City	3	PM	0.57	Yes	No TMC coverage. Floating Car Surveys required.	
T160	T163	Tassajara Road-NB	WB I-580 OFF ramp	Central Parkway	Dublin	4	AM	0.49	Yes	No TMC coverage. Floating Car Surveys required.	
T160	T163	Tassajara Road-NB	WB I-580 OFF ramp	Central Parkway	Dublin	4	PM	0.49	Yes	No TMC coverage. Floating Car Surveys required.	

APPENDIX G - TIER 2 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

ID	ID (2012 Report)	CMP Information				Shape Information (mi)			Floating car surveys required?		
		Route	From	To	Jurisdiction	Plan Area	Time Period	Updated Length	Yes / No	Suitability of Commercial Speed Data	Comment
T161	T164	Tassajara Road-NB	Central Parkway	Somerset Ln/N Dublin Ranch Dr	Dublin	4	AM	0.68	Yes	No TMC coverage. Floating Car Surveys required.	
T161	T164	Tassajara Road-NB	Central Parkway	Somerset Ln/N Dublin Ranch Dr	Dublin	4	PM	0.68	Yes	No TMC coverage. Floating Car Surveys required.	
T162	T165	Tassajara Road-NB	Somerset Ln/N Dublin Ranch Dr	Fallon Rd	Dublin	4	AM	1.04	Yes	No TMC coverage. Floating Car Surveys required.	
T162	T165	Tassajara Road-NB	Somerset Ln/N Dublin Ranch Dr	Fallon Rd	Dublin	4	PM	1.04	Yes	No TMC coverage. Floating Car Surveys required.	
T163	T166	Tassajara Road-NB	Fallon Rd	County Line	Alameda County	4	AM	0.51	Yes	No TMC coverage. Floating Car Surveys required.	
T163	T166	Tassajara Road-NB	Fallon Rd	County Line	Alameda County	4	PM	0.51	Yes	No TMC coverage. Floating Car Surveys required.	
T164	T167	Tassajara Road-SB	County Line	Fallon Rd	Alameda County	4	AM	0.51	Yes	No TMC coverage. Floating Car Surveys required.	
T164	T167	Tassajara Road-SB	County Line	Fallon Rd	Alameda County	4	PM	0.51	Yes	No TMC coverage. Floating Car Surveys required.	
T165	T168	Tassajara Road-SB	Fallon Rd	Somerset Ln/N Dublin Ranch Dr	Dublin	4	AM	1.04	Yes	No TMC coverage. Floating Car Surveys required.	
T165	T168	Tassajara Road-SB	Fallon Rd	Somerset Ln/N Dublin Ranch Dr	Dublin	4	PM	1.04	Yes	No TMC coverage. Floating Car Surveys required.	
T166	T169	Tassajara Road-SB	Somerset Ln/N Dublin Ranch Dr	Central Parkway	Dublin	4	AM	0.68	Yes	No TMC coverage. Floating Car Surveys required.	
T166	T169	Tassajara Road-SB	Somerset Ln/N Dublin Ranch Dr	Central Parkway	Dublin	4	PM	0.68	Yes	No TMC coverage. Floating Car Surveys required.	
T167	T170	Tassajara Road-SB	Central Parkway	WB I-580 OFF ramp	Dublin	4	AM	0.49	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T167	T170	Tassajara Road-SB	Central Parkway	WB I-580 OFF ramp	Dublin	4	PM	0.49	Yes	Partial CMP covered by TMCs. Floating Car Surveys required.	
T170	T173	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	S Livermore Ave	Inman St	Livermore	4	AM	0.46	Yes	Lower data quality scores. Floating car surveys required.	
T170	T173	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	S Livermore Ave	Inman St	Livermore	4	PM	0.46	Yes	Lower data quality scores. Floating car surveys required.	
T171	T174	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Inman St	S Livermore Ave	Livermore	4	AM	0.46	Yes	Lower data quality scores. Floating car surveys required.	
T171	T174	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	Inman St	S Livermore Ave	Livermore	4	PM	0.46	Yes	Lower data quality scores. Floating car surveys required.	
T194	SR 84	Airway	I-580 WB (Off)	Livermore	4	AM	0.52	Yes	No TMC coverage. Floating Car Surveys required.		
T194	SR 84	Airway	I-580 WB (Off)	Livermore	4	PM	0.52	Yes	No TMC coverage. Floating Car Surveys required.		
T195	SR 84	I-580 WB (Off)	Airway	Livermore	4	AM	0.53	Yes	No TMC coverage. Floating Car Surveys required.		
T195	SR 84	I-580 WB (Off)	Airway	Livermore	4	PM	0.53	Yes	No TMC coverage. Floating Car Surveys required.		
T9	T9	12th St - Lakeshore Ave-EB	Lake Merrit Blvd	MacArthur Blvd/I-580 ON Ramp	Oakland	1	AM	1.15	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T9	T9	12th St - Lakeshore Ave-EB	Lake Merrit Blvd	MacArthur Blvd/I-580 ON Ramp	Oakland	1	PM	1.15	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T10	T10	12th St - Lakeshore Ave-WB	MacArthur Blvd/I-580 ON Ramp	Lake Merrit Blvd	Oakland	1	AM	1.15	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	80% of length used
T10	T10	12th St - Lakeshore Ave-WB	MacArthur Blvd/I-580 ON Ramp	Lake Merrit Blvd	Oakland	1	PM	1.15	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T13	T13	Telegraph Ave-NB	51st Street	Russell St	Oakland, Berkeley	1	AM	1.41	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T13	T13	Telegraph Ave-NB	51st Street	Russell St	Oakland, Berkeley	1	PM	1.41	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T14	T14	Telegraph Ave-NB	Russell St	Bancroft Way	Oakland, Berkeley	1	AM	0.77	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	

APPENDIX G - TIER 2 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

ID	ID (2012 Report)	CMP Information			Shape Information (mi)			Floating car surveys required?			
		Route	From	To	Jurisdiction	Plan Area	Time Period	Updated Length	Yes / No	Suitability of Commercial Speed Data	Comment
T14	T14	Telegraph Ave-NB	Russell St	Bancroft Way	Oakland, Berkeley	1	PM	0.77	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	75% of length used
T16	T16	Telegraph Ave-SB	Russell St	51st Street	Oakland, Berkeley	1	AM	1.41	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	90% of length used
T16	T16	Telegraph Ave-SB	Russell St	51st Street	Oakland, Berkeley	1	PM	1.41	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T26	T26	College Avenue-SB	Bancroft Way/College Ave	Ashby Ave	Oakland	1	AM	0.85	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	70% of length used
T26	T26	College Avenue-SB	Bancroft Way/College Ave	Ashby Ave	Oakland	1	PM	0.85	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T30	T30	College Avenue-NB	Miles Ave/SR 24 OFF Ramp	Ashby Ave	Oakland, Berkeley	1	AM	0.83	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T30	T30	College Avenue-NB	Miles Ave/SR 24 OFF Ramp	Ashby Ave	Oakland, Berkeley	1	PM	0.83	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T34	T34	51st Street-WB	Broadway	SR 24 Off Ramp/52nd St	Oakland	1	AM	0.75	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T34	T34	51st Street-WB	Broadway	SR 24 Off Ramp/52nd St	Oakland	1	PM	0.75	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T39	T39	Powel Street-Stanford Avenue-EB	NB I-80 OFF Ramp	San Pablo Ave	Emeryville	1	AM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	85% of length used
T39	T39	Powel Street-Stanford Avenue-EB	NB I-80 OFF Ramp	San Pablo Ave	Emeryville	1	PM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	
T42	T42	Powel Street-Stanford Avenue-WB	San Pablo Ave	NB I-80 OFF Ramp	Emeryville	1	AM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	80% of length used
T42	T42	Powel Street-Stanford Avenue-WB	San Pablo Ave	NB I-80 OFF Ramp	Emeryville	1	PM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	
T44	T44	40thStreet-Shellmound Avenue-EB	40th St	San Pablo Ave	Emeryville	1	AM	0.68	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	92% of length used
T44	T44	40thStreet-Shellmound Avenue-EB	40th St	San Pablo Ave	Emeryville	1	PM	0.68	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	
T45	T45	40thStreet-Shellmound Avenue-WB	San Pablo Ave	40th St	Emeryville	1	AM	0.68	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	92% of length used
T45	T45	40thStreet-Shellmound Avenue-WB	San Pablo Ave	40th St	Emeryville	1	PM	0.68	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	
T54	T54	Foothill Boulevard-NB	73rd Ave/Foothill Blvd	Seminary Ave	Oakland	1	AM	1.02	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T54	T54	Foothill Boulevard-NB	73rd Ave/Foothill Blvd	Seminary Ave	Oakland	1	PM	1.02	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T55	T55	Foothill Boulevard-NB	Seminary Ave	High Street	Oakland	1	AM	1.22	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	70% of length used
T55	T55	Foothill Boulevard-NB	Seminary Ave	High Street	Oakland	1	PM	1.22	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T56	T56	Foothill Boulevard-NB	High Street	Fruitvale Ave	Oakland	1	AM	0.9	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T56	T56	Foothill Boulevard-NB	High Street	Fruitvale Ave	Oakland	1	PM	0.9	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T57	T57	Foothill Boulevard-NB	Fruitvale Ave	14th Ave	Oakland	1	AM	1.32	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T57	T57	Foothill Boulevard-NB	Fruitvale Ave	14th Ave	Oakland	1	PM	1.32	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T58	T58	Foothill Boulevard-NB	14th Ave	1st Ave/Lake Shore Blvd	Oakland	1	AM	0.88	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T58	T58	Foothill Boulevard-NB	14th Ave	1st Ave/Lake Shore Blvd	Oakland	1	PM	0.88	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	

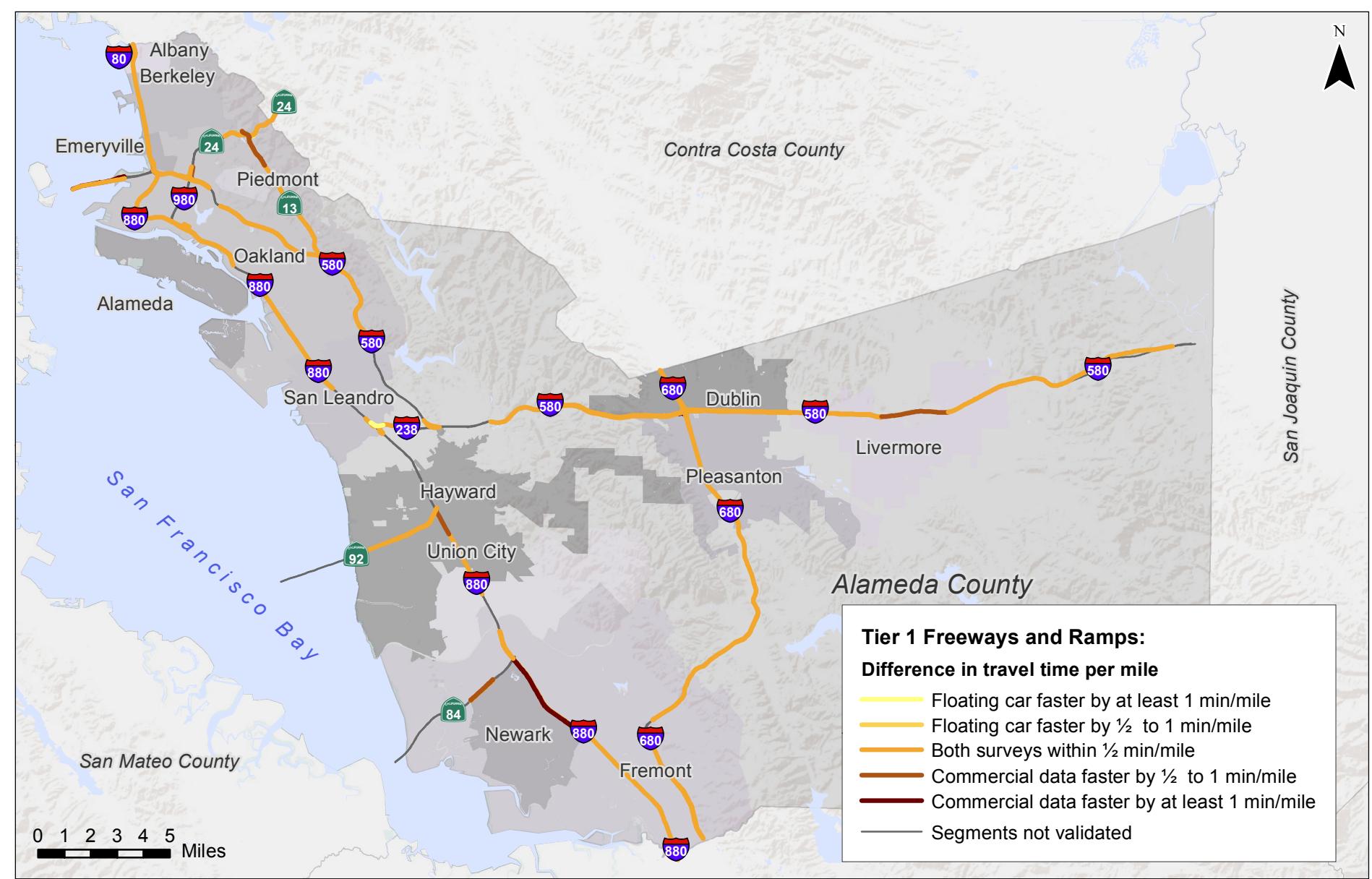
APPENDIX G - TIER 2 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

ID	ID (2012 Report)	CMP Information				Shape Information (mi)		Floating car surveys required?			
		Route	From	To	Jurisdiction	Plan Area	Time Period	Updated Length	Yes / No	Suitability of Commercial Speed Data	Comment
T61	T61	Foothill Boulevard-SB	Fruitvale Ave	High Street	Oakland	1	AM	0.9	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T61	T61	Foothill Boulevard-SB	Fruitvale Ave	High Street	Oakland	1	PM	0.9	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T63	T63	Foothill Boulevard-SB	Seminary Ave	73rd Ave/Foothill Blvd	Oakland	1	AM	1.02	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T63	T63	Foothill Boulevard-SB	Seminary Ave	73rd Ave/Foothill Blvd	Oakland	1	PM	1.02	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T70	T70	High Street-EB	Foothill Blvd	MacArthur Blvd/WB I-580 OFF Ramp	Oakland	1	AM	1.29	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T70	T70	High Street-EB	Foothill Blvd	MacArthur Blvd/WB I-580 OFF Ramp	Oakland	1	PM	1.29	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T71	T71	High Street-WB	MacArthur Blvd/WB I-580 OFF Ramp	Foothill Blvd	Oakland	1	AM	1.29	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T71	T71	High Street-WB	MacArthur Blvd/WB I-580 OFF Ramp	Foothill Blvd	Oakland	1	PM	1.29	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T84	T85	Crow Canyon Road-SB	Cull Canyon	EB I-580 ON Ramp/Grove Way	Alameda County	2	AM	0.82	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T84	T85	Crow Canyon Road-SB	Cull Canyon	EB I-580 ON Ramp/Grove Way	Alameda County	2	PM	0.82	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T85	T86	Crow Canyon Road-SB	EB I-580 ON Ramp/Grove Way	A Street/Redwood Road	Alameda County	2	AM	0.94	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T85	T86	Crow Canyon Road-SB	EB I-580 ON Ramp/Grove Way	A Street/Redwood Road	Alameda County	2	PM	0.94	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T108	T110	Alvarado Blvd.-NB	Fair Ranch Rd	Union City/Alvarado Blvd	Union City	3	AM	0.51	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T108	T110	Alvarado Blvd.-NB	Fair Ranch Rd	Union City/Alvarado Blvd	Union City	3	PM	0.51	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T130	T132	Fremont Boulevard-SB	Blacow Rd	Automall Parkway	Fremont	3	AM	0.91	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T130	T132	Fremont Boulevard-SB	Blacow Rd	Automall Parkway	Fremont	3	PM	0.91	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T131	T133	Fremont Boulevard-SB	Automall Parkway	NB I-880 OFF Ramp	Fremont	3	PM	1.28	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	92% of length used
T132	T134	Automall Parkway-EB	NB I-880 OFF Ramp	Fremont Blvd	Fremont	3	AM	0.85	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T133	T135	Automall Parkway-EB	Fremont Blvd	NB I-680 ON Ramp	Fremont	3	AM	0.74	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	80% of length used
T133	T135	Automall Parkway-EB	Fremont Blvd	NB I-680 ON Ramp	Fremont	3	PM	0.74	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	80% of length used
T134	T136	Automall Parkway-WB	NB I-680 ON Ramp	Fremont Blvd	Fremont	3	AM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	75% of length used
T134	T136	Automall Parkway-WB	NB I-680 ON Ramp	Fremont Blvd	Fremont	3	PM	0.75	Not likely	Partial CMP coverage by TMCs (70-99% covered). Decision required about floating car surveys.	75% of length used
T144	T147	Dublin Blvd.-EB	San Ramon Road	Village Parkway	Dublin	4	AM	0.73	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T144	T147	Dublin Blvd.-EB	San Ramon Road	Village Parkway	Dublin	4	PM	0.73	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T147	T150	Dublin Blvd.-EB	Hacienda Dr	Tassajara Dr	Dublin	4	AM	0.89	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T147	T150	Dublin Blvd.-EB	Hacienda Dr	Tassajara Dr	Dublin	4	PM	0.89	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T148	T151	Dublin Blvd.-WB	Tassajara Dr	Hacienda Dr	Dublin	4	AM	0.89	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used

APPENDIX G - TIER 2 ARTERIALS, FLOATING CAR SURVEYS REQUIRED

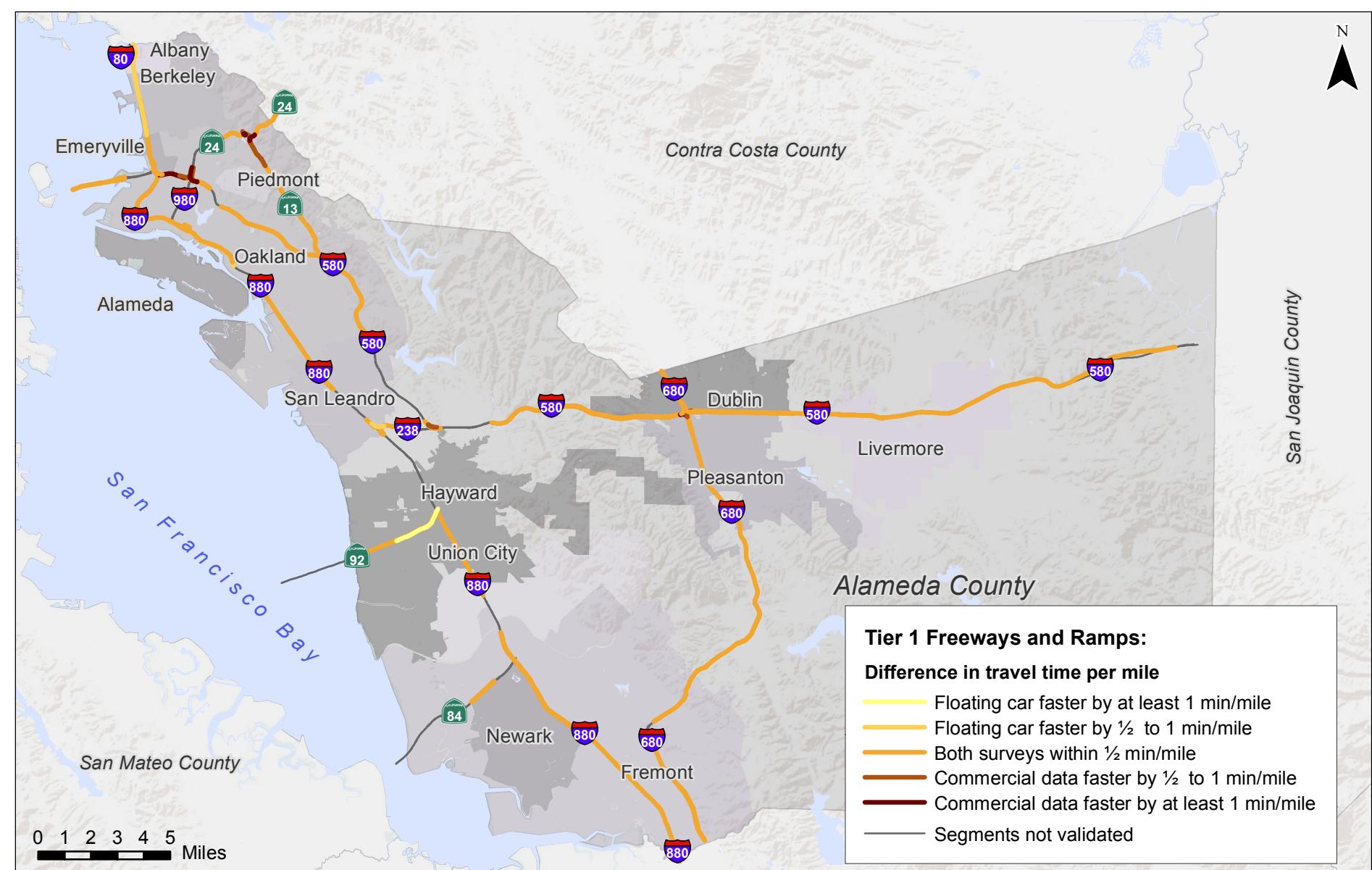
ID	ID (2012 Report)	CMP Information				Shape Information (mi)		Floating car surveys required?			
		Route	From	To	Jurisdiction	Plan Area	Time Period	Updated Length	Yes / No	Suitability of Commercial Speed Data	Comment
T148	T151	Dublin Blvd.-WB	Tassajara Dr	Hacienda Dr	Dublin	4	PM	0.89	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T155	T158	San Ramon Road-SB	Silvgate Dr	WB I-580 OFF ramp	Dublin	4	AM	0.64	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T155	T158	San Ramon Road-SB	Silvgate Dr	WB I-580 OFF ramp	Dublin	4	PM	0.64	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T169	T172	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	Murrita Blvd	S Livermore Ave	Livermore	4	AM	1.07	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T169	T172	E. Stanley Blvd - Railroad Avenue - 1st Street-NB	Murrita Blvd	S Livermore Ave	Livermore	4	PM	1.07	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T172	T175	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	S Livermore Ave	Murrita Blvd	Livermore	4	AM	1.07	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T172	T175	E. Stanley Blvd - Railroad Avenue - 1st Street-SB	S Livermore Ave	Murrita Blvd	Livermore	4	PM	1.07	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	85% of length used
T182	T185	Stoneridge Drive-WB	Santa Rita Road	W. Las Positas Blvd	Pleasanton	4	AM	0.44	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T182	T185	Stoneridge Drive-WB	Santa Rita Road	W. Las Positas Blvd	Pleasanton	4	PM	0.44	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used
T193	T196	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Bernal Ave	NB I-680 OFF	Pleasanton	4	AM	1.23	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	
T193	T196	Sunol Blvd.- 1st Street- Stanley Blvd.-SB	Bernal Ave	NB I-680 OFF	Pleasanton	4	PM	1.23	Not likely	Lower data quality scores (79-99% covered). Decision required about floating car surveys.	95% of length used

APPENDIX H – Maps and Graphs comparing Travel Time

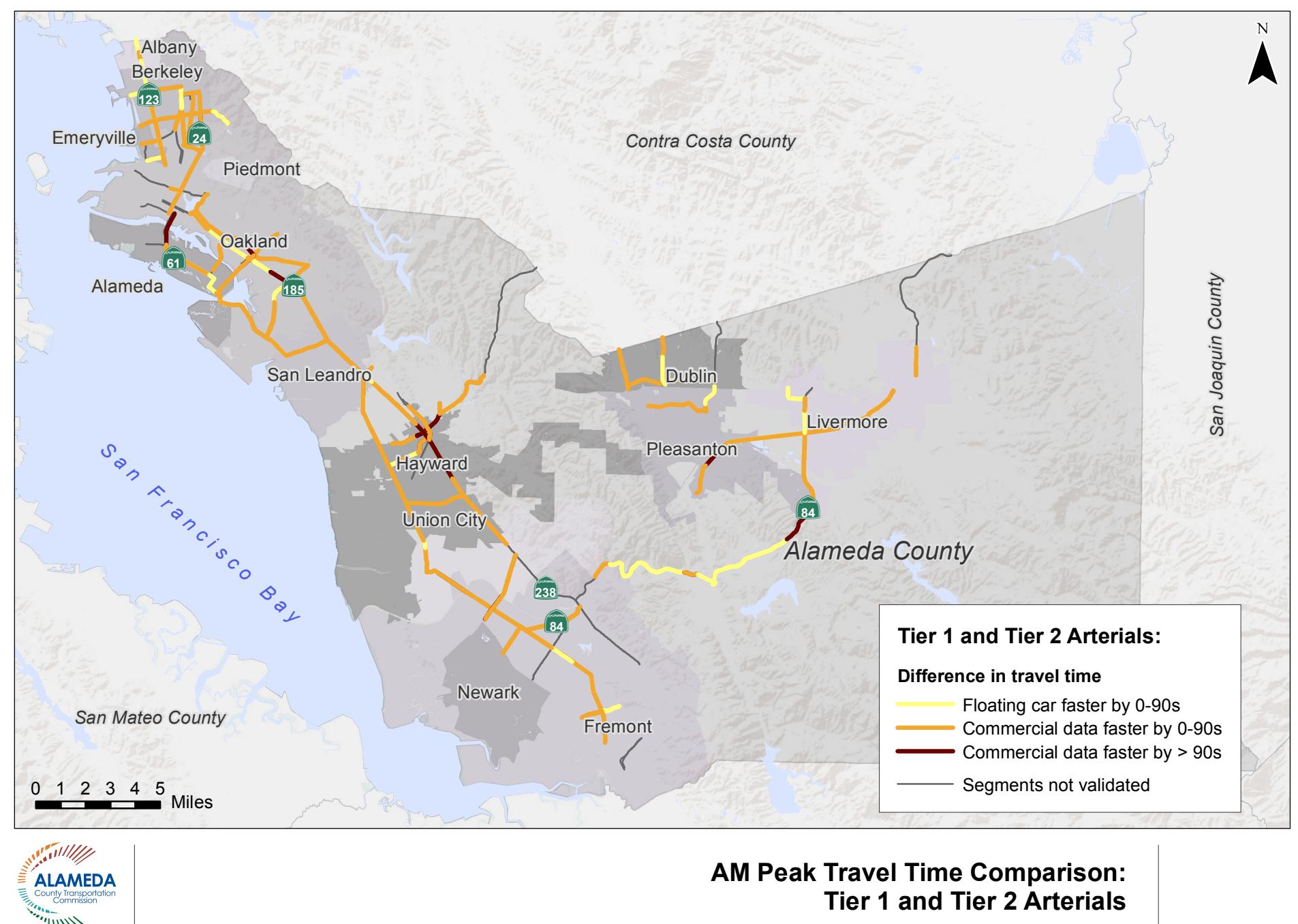


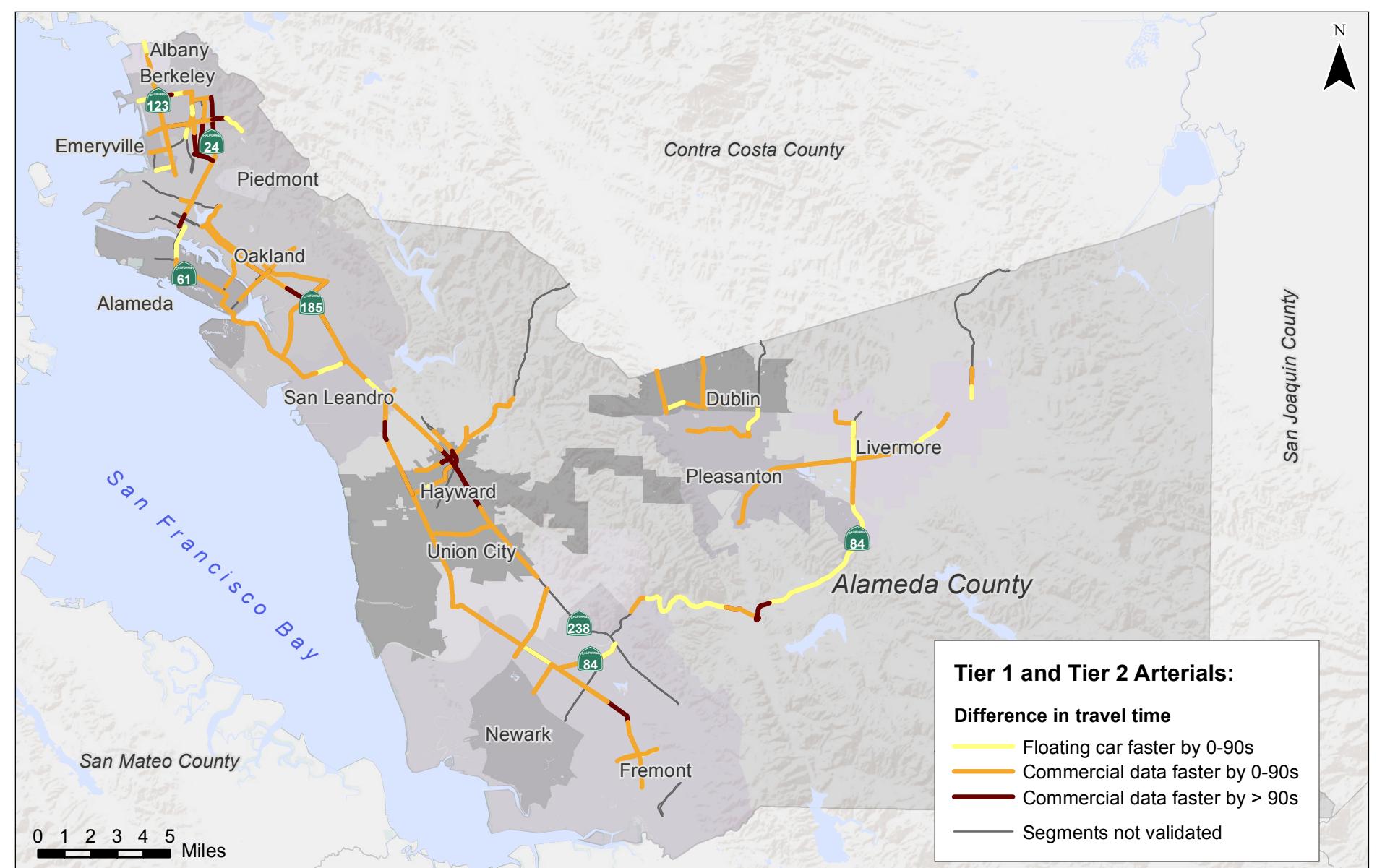
AM Peak Travel Time Comparison: Tier 1 Freeways and Ramp Segments





PM Peak Travel Time Comparison: Tier 1 Freeways and Ramp Segments





PM Peak Travel Time Comparison: Tier 1 and Tier 2 Arterials



APPENDIX H – (cont)

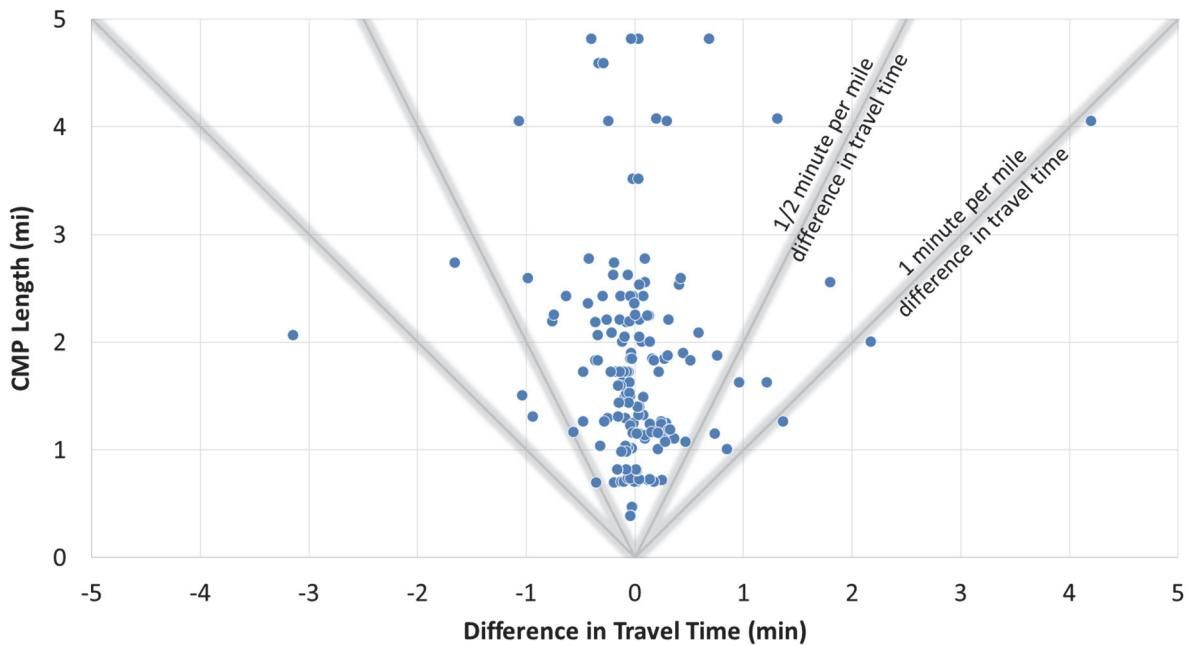


Figure H1: Tier 1 Freeways Travel Time Comparison

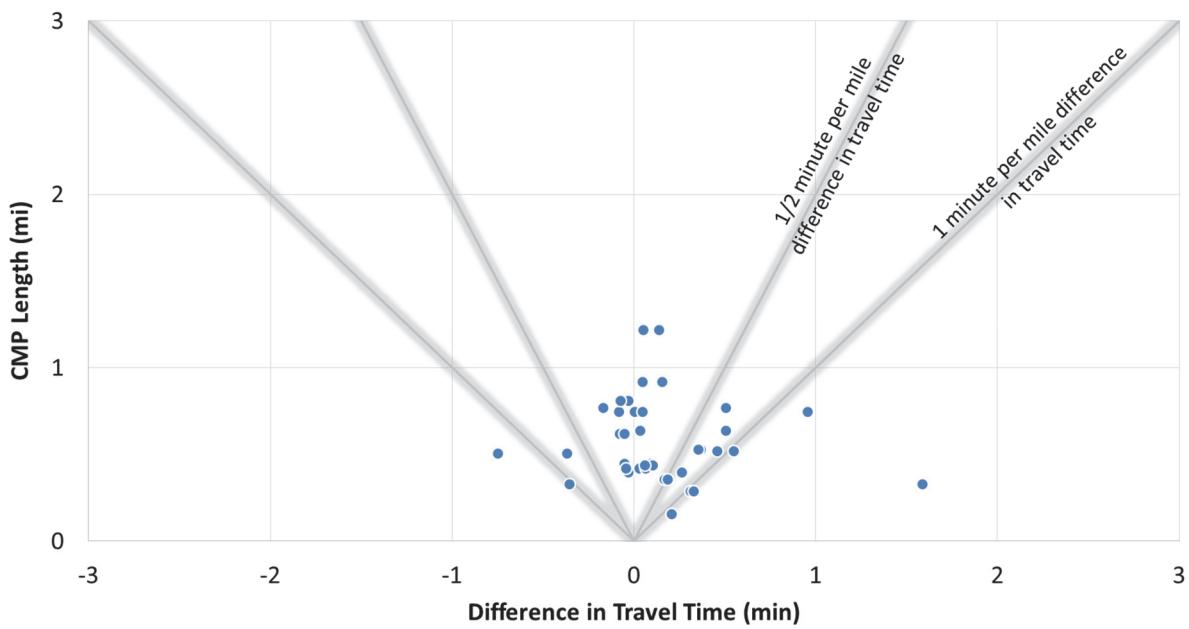


Figure H2: Tier 1 Ramps Travel Time Comparison

On the graphs for uninterrupted facilities (Figure H1 & H2) there are four diagonal lines, which start at zero and extend upwards. The slope of these lines represents one or $\frac{1}{2}$ a minute of difference in travel time per mile. For the interrupted facilities (Figure H3 & H4), the grey lines represent a difference in travel time of 90 seconds.

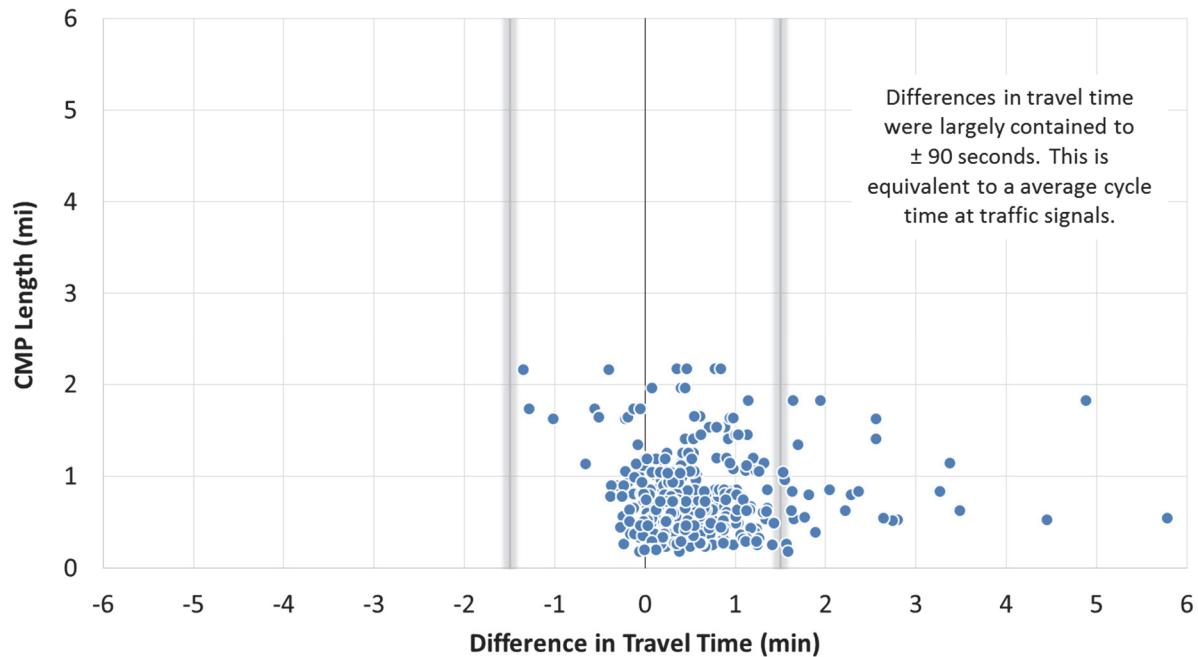


Figure H3: Tier 1 Arterials – Travel Time Comparison

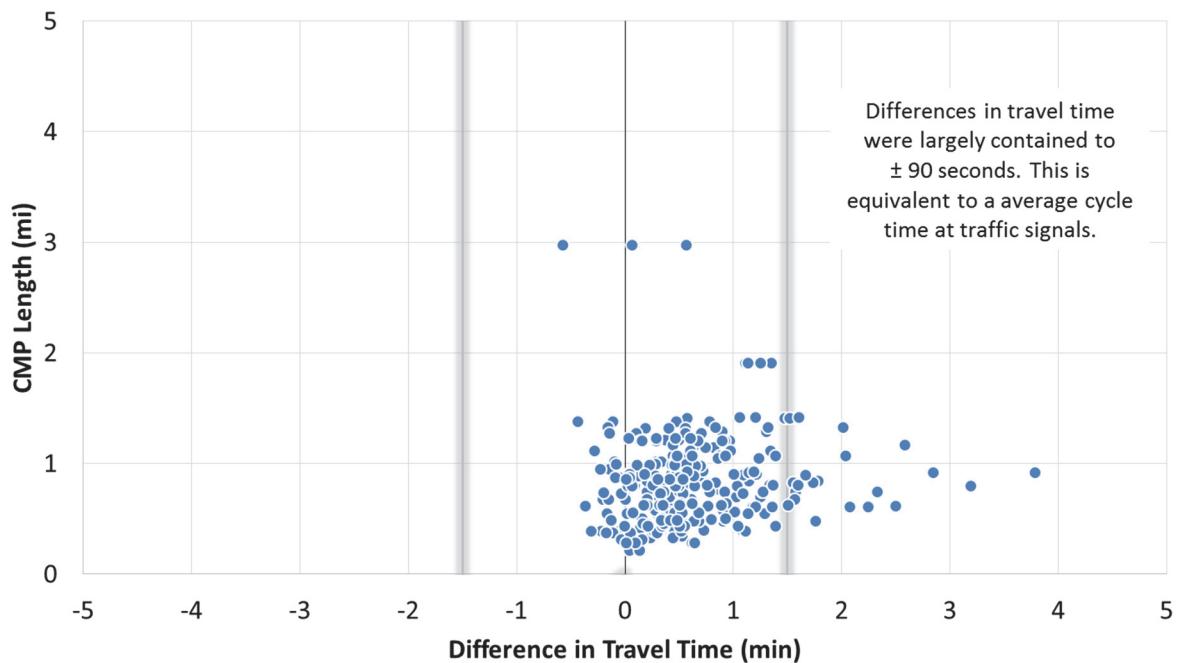


Figure H4: Tier 2 Arterials Travel Time Comparison