

ATTACHMENT H

Memorandum

Flex your power!

Be energy efficient!

To: JOY PINNE
Project Manager

Date: June 16, 2008

File: 10-SJ-99 PM 15.0/18.6
EA 3A100_

From: VU H NGUYEN
Chief, Traffic Operations Branch

Subject: SR-99 South Stockton Widening Traffic Operations Analysis Report (Supplement)

Additional analyses for the South Stockton Widening project were performed at the request of the Project Development Team (PDT), Traffic Focus Team, and Value Analysis Team after the final Traffic Operations Report (Final Report) was prepared on November 1, 2006. Other analyses were completed as the project developed and more was known about the project. These analyses have been put together in this Supplemental Traffic Report (Supplemental Report) for your reference. The results of the analyses have been included Tables 7S and Table 9S, contained within this supplement.

Since the Final Report was completed, two of the original five Alternatives have been dropped through the PDT process. The following Alternatives are moving forward for further evaluation:

- Alternative 1 (Interchange at Mariposa Road with Martin Luther King (MLK) JR Blvd/Charter Way ramps closed. SR-4 to be re-aligned through Stagecoach Road.)
- Alternative 2* (Interchange at Mariposa Road and Golden Gate Avenue (MLK JR Blvd) and realign SR 4 Farmington Road)
- Alternative 3 (Couplet System between Farmington Road and Mariposa Road with MLK JR Blvd/Charter Way ramps closed)

In addition to the above Alternatives, the results of the "No build" Alternative were added to the Supplemental Report in order to compare the results of the effects of the South Stockton Widening Project (Project) to the local street system. These results are shown in Tables 7S and 9S, these results will override any previous results reported in the Final Report

The purpose of this Supplemental Report is to document the results of the Design Hour traffic operations analyses for the South Stockton SR 99 Widening project for the additional requests that occurred after the Final Report had been completed. All agencies were given an opportunity to provide their input and all comments received were addressed and documented in this Supplemental

* Alternative 2 was chosen as the Preferred Alternative by the PDT team on May 12, 2008

Report. The traffic data used for the analyses does not include the recently proposed Mariposa Lakes Development located northeast of the Mariposa Road interchange.

The contents of the Supplemental Report are described below:

1. No Build Alternative:

This portion of the analyses identifies the intersections that are affected by the South Stockton Widening Project and will recommend improvements to bring the intersections to "No Build" conditions. The Alternative that causes the most disruption to local streets is Alternative 1. Recommendations have been made for intersections that will drop to LOS lower than "No Build" conditions.

2. Alternative 3: Farmington Road/Mariposa Road – 3/2008

This intersection was not analyzed as part of Alternative 3 in the Final Report. After further reviewing the Alternative, it was determined that the South Stockton Widening Project was going to cause an impact on this intersection. Proposed lane configuration consists of an exclusive left turn lane, one through lane, and one right turn lane, in the northbound direction of Mariposa Road. In the southbound direction an exclusive left turn lane with a shared through/right lane. On westbound Farmington Road, an exclusive left turn lane with a shared through/right lane. In the westbound direction of Farmington Road, an exclusive left turn lane, a shared right/through lane and an exclusive right turn lane.

3. All Alternatives: Ramp Metering Table – 12/2007

A supplemental table showing the effects of ramp metering has been completed. The analysis uses 2034 volumes and shows the effects of ramp metering for all Alternatives with min and max flow rates. The table shows that traffic may exceed the capacity of some ramps by the year 2034. The Ramp Metering Table provides further results and information regarding assumptions. The only Alternative that does not cause a backup onto local streets is Alternative 2.

4. Alternative 2: MLK Jr Blvd (Charter Way)/Main Street to include overcrossing – 10/2007

Keeping the overcrossing for all the Alternatives was decided after a couple of Traffic Focus meetings with our local emergency responders, which included the California Highway Patrol, San Joaquin Sheriff Department, Stockton Police Department and Stockton Fire Department. As a result of their input and further evaluation it was determined that in order to keep the response time to 4 minutes or below, the two-way overcrossing would have to be in place at Charter Way/Main Street. Please see the results of this intersection on Table 9S. In order to keep the intersection of MLK Jr Blvd (Charter Way) and Main Street operating at acceptable Level of Service (LOS), it was necessary to convert the intersection of Main Street and Anteros Ave. as a right-in/right-out. This would very slightly affect the operations of this intersection; it would mainly affect the left-in movements, which would have less than a vehicle per minute making a left turn. These vehicles will have to use the Main Street/Hinkley Ave intersection; the effects of these vehicles would be insignificant to this intersection.

5. All Alternatives: Mariposa Road/Munford Road – 9/2007

This analysis was performed per the recommendation/request of the Value Analysis Team. The frontage road would be re-aligned from just west of Stagecoach Road (on Mariposa Road) to east of Stagecoach Road (through Munford Road). This would improve the operations of the Mariposa Interchange between the northbound off-ramp intersection and the Mariposa Road/Stagecoach Road intersection.

6. Alternative 2: Farmington Road/Stagecoach Road & Farmington Road/Golden Gate Ave – 9/2007

This analysis was performed as a result of the request of the PDT to reconfigure this portion of the Alternative to minimize right of way impact. This alternative was modified by bringing Golden Gate Ave. closer to the Railroad tracks (shifted in the southwest direction) Farmington will connect to Golden Gate Ave. forming a “T” intersection. This connection will keep the connectivity between Stagecoach Road and Golden Gate Ave.

7. Alternative 2: Martin Luther King Jr. (Golden Gate Ave)/Guernsey Road – 5/2008

Alternative 2 would increase traffic through the Martin Luther King Jr. Blvd/Guernsey Road intersection. It is suggested to add a northbound and a southbound left turn channelization on Martin Luther King Jr. Blvd.

**Table 7S (Supplement)
Intersection Level of Service and Delay
Year 2014 Conditions - Design Hour**

Updated 5/9/2008		Alternative					
		No Build	ALT1 - MPA	ALT2 – GG (MLK JR Blvd)	ALT3 - Couplet	ALT4 Braided ramps	ALT2a - Alt MLK JR/GG
		Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹
1	Mariposa Road / Stagecoach Rd	70.0 sec/ E	17.7 sec/ B	16.7 sec/ B	19.7 sec/ C	20.6 sec/ C	See Alt 2 result
2	Mariposa Road / East Frontage Rd/(NB ON*)	32.0 sec/ C	22.4 sec/ C	15.3 sec/ B	14.0 sec/ B	26.7 sec/ C	See Alt 2 result
3	Mariposa Road / SR 99 NB ramp Int	n/a ²	15.9 sec/ B	12.5 sec/ B	11.3 sec/ B	13.7 sec/ B	See Alt 2 result
4	Mariposa Road / SR 99 SB ramp int./	31.6 sec/ C	9.1 sec/ A	9.8 sec/ B	10.9 sec/ B	12.4 sec/ B	See Alt 2 result
5	Mariposa Road / West Frontage Rd	57.8 sec/ E	15.8 sec/ B	16.8 sec/ B	20.8 sec/ C	17.3 sec/ B	See Alt 2 result
6	Mariposa Road / Farmington Road	54.1 sec/ D	70.6 sec/ E	64.5 sec/ E	48.6 sec / D	64.5 sec/ E	See Alt 2 result
7	Farmington Road / Golden Gate Ave	n/a ²	n/a ²	19.6 sec/ C	n/a ²	n/a ²	See Alt 2 result
8	Farmington Road / Stagecoach Rd.	62.6 sec/ E	26.4 sec/ C	3.9 sec/ A	14.6 sec/ B	39.6 sec/ D	See Alt 2 result
9	Farmington Road / east couplet	n/a ²	n/a ²	n/a ²	21.1 sec/ C	n/a ²	n/a ²
10	Farmington Road / west couplet	n/a ²	n/a ²	n/a ²	21.1 sec/ C	n/a ²	n/a ²
11	Farmington Road / Netherton Ave/(SB ramp intersection*)	263.7 sec/ F	10.7 sec/ B	11.5 sec/ B	n/a ²	11.4 sec/ B	See Alt 2 result
12	Farmington Road/ South Adelbert Ave	n/a ²	n/a ²	15.0 sec/ B	n/a ²	15.0 sec/ B	See Alt 2 result
13	Golden Gate Ave / SR 99 NB ramp int.	n/a ²	n/a ²	17.2 sec/ B	n/a ²	n/a ²	See Alt 2 result
14	Golden Gate Ave / SR 99 SB ramp int.	n/a ²	n/a ²	16.4 sec/ B	n/a ²	n/a ²	See Alt 2 result
15	Golden Gate Ave / MLK JR Blvd (Charter Way)	59.8 sec/ E	14.5 sec/ B	21.5 sec/ C	21.3 sec / C	39.1 sec/ D	See Alt 2 result
16	Golden Gate Ave / SR 99 Single Ramp Int.	n/a ²	n/a ²	n/a ²	n/a ²	n/a ²	16.1 sec / B
17	Main St /MLK JR Blvd (Charter Way)	10.5 sec/ B	20.9 sec / C	20.4 sec/ C	See Alt 1 result	20.4 sec/ C	See Alt 2 result
18	Filbert St/ SR 4 WB Ramps	16.4 sec/ B	10.9 sec/ B	22.0 sec / C	27.1 sec / C	22.0 sec / C	See Alt 2 result
19	Filbert St/ SR 4 EB Ramps	17.2 sec/ B	8.2 sec/ A	10.4 sec/ B	27.2 sec / C	10.4 sec/ B	See Alt 2 result
20	Filbert St/ Lafayette St	10.0 sec/ B	8.6 sec/ A	9.8 sec/ A	10.7 sec / B	9.8 sec/ A	See Alt 2 result
21	Filbert St/ Main St	25.3 sec/ C	24.7 sec/ C	16.5 sec/ B	23.1 sec / C	16.5 sec/ B	See Alt 2 result
22	Main St / Golden Gate Ave	20.4 sec/ C	14.8 sec/ B	24.5 sec/ C	See Alt 1 result	24.5 sec/ C	See Alt 2 result
23	Wilson Way /SR 4 WB Ramps	19.0 sec/ B	41.4 sec/ D	34.2 sec/ C	See Alt 1 result	34.2 sec/ C	See Alt 2 result
24	Wilson Way /SR 4 EB Ramps	22.0 sec/ C	42.5 sec/ D	32.3 sec/ C	See Alt 1 result	32.3 sec/ C	See Alt 2 result
25	Mariposa Rd/ MLK JR Blvd (Charter Way)	41.7 sec/ D	45.2 sec/ D	48.3 sec/ D	See Alt 1 result	48.3 sec/ D	See Alt 2 result
26	Wilson Way / Hazelton Ave	20.3 sec/ C	19.5 sec/ C	14.9 sec/ B	See Alt 1 result	14.9 sec/ B	See Alt 2 result
27	Wilson Way / MLK JR Blvd (Charter Way)	33.6 sec/ C	45.0 sec/ D	46.6 sec/ D	See Alt 1 result	46.6 sec/ D	See Alt 2 result

(1) Average Control delay and corresponding LOS for signalized intersections

(2) n/a - not applicable or not analyzed in this alternative

(3) Includes improvements as part of the South Stockton Widening Heavy right turn movements will need to be converted to "free right movements" (heavy right turn movements are movements that require two lanes – see attached SimTraffic output files)

Results in **Bold** represent intersections that are significantly impacted due to the redistribution of traffic as a result of the South Stockton Widening Project TEXT indicates Alternatives that were dropped including associated intersections

No project scenario ONLY/** Unsignalized intersection LOS criteria

Table 9S (Supplement)
Intersection Level of Service and Delay
Year 2034 Conditions - Design Hour

Updated 5/9/2008		Alternative					
		No Build	ALT1 - MPA	ALT2 – GG (MLK JR Blvd)	ALT3 - Couplet	ALT4 Braided ramps	ALT 2a - GG (MLK JR Blvd)
		Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹	Delay/LOS ¹
1	Mariposa Road / Stagecoach Rd	580.2 sec/ F**	26.3 sec/ C	19.6 sec/ C	22.1 sec/ C	28.6 sec/ C	See Alt 2 result
2	Mariposa Road / East Frontage Rd/(NB ON*)	36.1 sec / D	20.0 sec/ C	18.0 sec/ B	20.9 sec/ C	31.3 sec/ C	See Alt 2 result
3	Mariposa Road / SR 99 NB ramp Int	n/a ²	22.5 sec/ C	9.4 sec/ B	30.1 sec/ C	22.8 sec/ C	See Alt 2 result
4	Mariposa Road / SR 99 SB ramp int./	48.1sec / D	42.7 sec/ D	25.6 sec/ C	13.1 sec/ B	12.2 sec/ B	See Alt 2 result
5	Mariposa Road / West Frontage Rd	66.7sec / E	37.1 sec/ D	44.2 sec/ D	24.3 sec/ C	19.0 sec/ B	See Alt 2 result
6	Mariposa Road / Farmington Road	107.9 sec / F	83.8 sec/ F***	88.2 sec/ F	87.8 sec / F***	88.2 sec/ F	See Alt 2 result
7	Farmington Road / Golden Gate Ave	n/a ²	n/a ²	31.8 sec/ C	n/a ²	n/a ²	See Alt 2 result
8	Farmington Road / Stagecoach Rd.	72.4 sec / E	46.9 sec/ D ³	7.7 sec/ A	14.8 sec/ B	41.9 sec/ D ³	See Alt 2 result
9	Farmington Road / east couplet	n/a ²	n/a ²	n/a ²	21.8 sec/ C	n/a ²	n/a ²
10	Farmington Road / west couplet	n/a ²	n/a ²	n/a ²	34.8 sec/ C	n/a ²	n/a ²
11	Farmington Road / Netherton Ave/(SB ramp intersection*)	460.4 sec / F**	12.2 sec/ B	13.5 sec/ B	n/a ²	12.9 sec/ B	See Alt 2 result
12	Farmington Road/ South Adelbert Ave	n/a ²	n/a ²	52.3 sec/ D	n/a ²	52.3 sec/ D	See Alt 2 result
13	Golden Gate Ave / SR 99 NB ramp int.	n/a ²	n/a ²	34.3 sec/ D	n/a ²	n/a ²	See Alt 2 result
14	Golden Gate Ave / SR 99 SB ramp int.	n/a ²	n/a ²	35.6 sec/ D	n/a ²	n/a ²	See Alt 2 result
15	Golden Gate Ave / MLK JR Blvd (Charter Way)	92.6 sec / F	24.1 sec / C	38.4 sec/ D	23.0 sec / C	81.0 sec / F	See Alt 2 result
16	Golden Gate Ave / SR 99 Single Ramp Int.	n/a ²	n/a ²	n/a ²	n/a ²	n/a ²	37.9 sec / D
17	Main St /MLK JR Blvd (Charter Way)	19.9 sec / B	22.2 sec / C	42.0 sec / D	See Alt 1 result	21.0 sec / C	See Alt 2 result
18	Filbert St/ SR 4 WB Ramps	28.7 sec / C	28.3 sec / C	26.2 sec / C	23.7 sec / C	26.2 sec / C	See Alt 2 result
19	Filbert St/ SR 4 EB Ramps	46.6 sec / D	48.9 sec / D	47.8 sec / D	50.1 sec / D	47.8 sec / D	See Alt 2 result
20	Filbert St/ Lafayette St	14.0 sec / B	29.5 sec / C	26.7 sec / C	22.6 sec / C	26.7 sec / C	See Alt 2 result
21	Filbert St/ Main St	53.6 sec / D	68.0 sec / E	46.5 sec / D	52.8 sec / D	66.8 sec / E	See Alt 2 result
22	Main St / Golden Gate Ave	24.5 sec / C	42.4 sec / D	31.0 sec / C	See Alt 1 result	27.7 sec / C	See Alt 2 result
23	Wilson Way /SR 4 WB Ramps	120.4 sec / F	145.3 sec / F	109.1 sec / F	See Alt 1 result	109.1 sec / F	See Alt 2 result
24	Wilson Way /SR 4 EB Ramps	88.0 sec / F	96.7 sec / F	146.1 sec / F	See Alt 1 result	146.1 sec / F	See Alt 2 result
25	Mariposa Rd/ MLK JR Blvd (Charter Way)	47.4 sec / D	43.5 sec / D	47.9 sec / D	See Alt 1 result	47.9 sec / D	See Alt 2 result
26	Wilson Way / Hazelton Ave	31.7 sec / C	22.4 sec/ C	19.3 sec / B	See Alt 1 result	19.3 sec / B	See Alt 2 result
27	Wilson Way / MLK JR Blvd (Charter Way)	95.5 sec / F	65.7 sec / E***	83.8 sec / F	See Alt 1 result	83.8 sec / F	See Alt 2 result

(1) Average Control delay and corresponding LOS for signalized intersections
(2) n/a - not applicable or not analyzed in this alternative
(3) Includes improvements as part of the South Stockton Widening Heavy right turn movements will need to be converted to 'free right movements' (heavy right turn movements are movements that require two lanes - see attached SimTraffic output files)
Results in **Bold** represent intersections that are significantly impacted due to the redistribution of traffic as a result of the South Stockton Widening Project.
TEXT indicates Alternatives that were dropped including associated intersections
No project scenario ONLY/** Unsignalized intersection LOS criteria
***Improvements and/or signal adjustment will bring this intersection to 'No Build' project conditions or better

The results of the supplemental analyses have already been provided to the PDI team through the various PDI meetings. The results have been incorporated to the project which provided some of the justification for choosing Alternative 2 as the Preferred Alternative. After completing the "No Build" analysis, the following intersections will need to be improved in order to ensure that the local roadways operate at or above "No Build" conditions. Out of the three alternatives, Alternative 1 was the only one with needed improvements outside the project footprint due to significant re-routing of traffic.

Alternative 1:

Filbert Street/Lafayette Street, Filbert Street/Main Street, Main Street/Golden Gate:

The results of the analysis show that proper signal adjustment and coordination of these signals will provide acceptable LOS in the year 2034.

SR-4 Wilson Way Ramps:

EB Ramp intersection:

Add exclusive right turn lane from NB Wilson Way to EB on-ramp

WB Ramp intersection:

Add exclusive WB right (onto NB Wilson Way). Convert lane #1 to exclusive left and convert lane #2 to a shared left/through lane

Wilson Way/MLK JR Blvd

Extend EB left turn channelization to 440' (approx. 100' longer than existing), this causes S. Sierra Nevada Street to be converted to Right-in/Right-out.

Alternative 2:

Intersections that are to be affected as part of this Alternative already fall within the project's footprint. The results of the supplemental analysis for this Alternative have been forwarded to our design team and will be incorporated as part of the project.

Alternative 3:

Intersections that are to be affected as part of this Alternative already fall within the project's footprint. The results of the supplemental analysis for this Alternative have been forwarded to our design team and will be incorporated as part of the project.

If you have any questions, please contact Armando Soria of my staff at (209) 948-7184 or me at (209) 603-5126.

Sincerely,



Vu H Nguyen

Traffic Operations Branch, Chief