ALAMEDA COUNTY
CONGESTION MANAGEMENT AGENCY

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Tri-Valley Triangle Study
Technical Advisory Committee

Meeting Notice

Thursday, June 16, 2005
9:30 AM
Dublin City Offices
100 Civic Plaza
Dublin, CA 94568

Agenda

1. Introductions

2. Minutes of May 17, 2005* **Action**

3. Travel Demand Modeling* **Action**

The enclosed memo from Dowling Associates identifies the following modeling issues on which the consultant team needs your input. Please note that each issue has a request for specific action items.

a. Highway Network Review
b. Altamont Pass Gateway Assumptions
c. Validation Targets

4. Operations Model* **Action**

The TAC is requested to provide direction on how to address is which hour of the peak period to simulate. The realism of the simulations of I-580-I-680 conditions will depend in part upon which hour of the peak period is simulated. Congestion and queues continue to build over the peak period. A simulation of the first hour, i.e., starting with relatively free flow conditions, yields a different result than simulating the second or third hour of the peak period. Alternatives that perform well in the first hour may not perform as well in later hours, or vice versa. As discussed in the attached memo, the TAC is requested to consider the following questions: Should the current and future simulations be run for two or three hours to achieve more realistic conditions, with only the last hour being reported? Should congested initial conditions be set for a one-hour analysis some other way?

5. Policy Advisory Committee Meeting

It appears that there will be no new information or items needing action by the Policy Committee on July 1. Therefore, it is staff's recommendation that the July meeting be canceled and that the PAC meets on August on Friday August 5. The TAC is requested to concur with this suggestion.

6. Next Steps

It is expected that a second meeting in July will be needed to develop the alternative packages for consideration by the Policy Advisory Committee. The consultants agreed to do some sensitivity analyses for the major projects to provide information on which projects when grouped together are logical and mutually beneficial. Please bring your calendars to the meeting.

7. Next Meeting

8. Adjourn

* Materials attached
** Materials to be distributed at meeting

PARSONS
100 Park Center Plaza, Suite 450 • San Jose, California 95113
(408) 280-6600 • Fax (408) 280-7533

Date: May 25, 2005 645176/224.01

Project: Tri-Valley Triangle Study

Subject: Triangle Technical Advisory Committee Meeting Minutes

To: All who attended meeting, see attached sign-in sheet

From: Gui Shearin Parsons

Enclosed are the minutes for the Triangle TAC meeting held on May 17, 2005. If you have any questions, comments, or changes to the minutes, please contact me before the next TAC meeting on June 16, 2005.

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PARSONS RECORD OF MINUTES

645176/224.01

PROJECT: Tri-Valley Triangle Study

SUBJECT: Triangle TAC Meeting

DATE: May 17, 2005; 9:30 AM

LOCATION: Dublin City Hall, Regional Room
100 Civic Plaza
Dublin CA 94568

ATTENDEES: See attached sign-in sheet, Agenda, and attachments

MINUTES BY: Parsons

The purpose of the meeting was to discuss the study performance measures (including weighting and recommendations to the PAC) and base case definition.

The following is a summary of the meeting. Action items are shown in **bold** and critical path items are in ***bold and italicized***. Action items subsequently completed are in *italics.*

DISCUSSION	ACTION
Welcome and Introductions: Ben Strumwasser of Circle Point started off the meeting and everyone introduced themselves to the group.	
Minutes of April 21, 2005 Meeting: In discussion of the minutes, David Seriani of Caltrans said that the queue length and location in the qualitative is somewhat duplicative of the average speed in the quantitative. This overlap will be sorted out later, but how the bottlenecks and queues shift with alternative packages is an important consideration for all. Jeff Knowles of Pleasanton reiterated his point regarding upcoming potential changes to the City of Pleasanton's General Plan and requested that the strength of his comments at the April 21st meeting be appropriately reflected in the minutes. The protocol in the minutes will be to use names to identify the speakers rather than just the organization. The minutes were approved as amended.	
Study Purpose: Jean Hart of ACCMA presented the study purpose as clarified in the May 6 PAC meeting. Discussion of the purpose centered on limiting the study to the freeways, not the arterials, plus a reference to the regional purpose. Ben Strumwasser said that he could add some language to that effect, which will then go before the PAC and TAC again.	**Jean Hart will revise statement of study purpose prior to the next PAC meeting.**

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Review Future Base Case Scenario: Jean Hart stated that the PAC engaged in considerable discussion regarding the future base case scenario, which had been approved at the previous TAC meeting. She cited the conflict over the inclusion of all of the City of Pleasanton highway improvements as currently defined in their General Plan. Jeff Knowles gave more detail, and said that there is currently no political support of West Las Positas interchange or the Stoneridge Drive extension. The Pleasanton City Council would meet that night and vote on the issue. Jeff Knowles pointed out that the PAC and TAC have different representation, and raised the question for whether Caltrans should have a vote on the PAC. Jean noted that it is not unusual for TACs and PACs to have different representation and that this is only an issue when there is dissent. She stated that since Caltrans owns and operates the roadways for which improvements will be analyzed, they will be included in any decision-making. Bob Vinn of Livermore said that as a result of Pleasanton's action, there was a possibility that the local arterial extensions on both sides of I-580 would be removed from the future base case, leading to needing a different set of I-580 improvements that would be more expensive than if improvements were made on the arterials. Kym Sterner of Dowling handed out and presented the results of sample alternatives that show the potential sensitivity of traffic impacts of removing one or more parallel arterial extensions (Stoneridge Drive and Dublin Boulevard) from the future network. She pointed out that the timing of arterial improvements and extensions might affect the recommended sequencing of I-580, I-680, and even SR 84 improvements. Bob Vinn thought that if the arterial extensions are not included in our analyses, then the alternatives will have to include more improvements to I-580. Jeff Knowles said that the City would like to see alternatives to Stoneridge improvement in the alternative packages. He suggested using a simplified travel demand model sensitivity analysis to help determine the improvement packages to be analyzed as part of this study.	***TAC needs to await direction from city managers and PAC representatives on issue of base case alternative.*** ***Kym Sterner to send sample problem graphics and summary MOE tables to the TAC.***
Selection of Traffic Operations Model Kevin Chen of Parsons presented the CORSIM analysis. Based on this review, the TAC recommended that the calibration of the model be improved east of Vasco Road since the model shows less congestion through Livermore and up the grade than what happens in the field. Bob Vinn would like the model to include the weaving on Vasco Road between the eastbound loop off-ramp and the westbound loop on-ramp. Jeff Knowles also recommended better representation of truck traffic up the Altamont Pass grade. To improve the calibration, Kevin will post the CORSIM analyses on the Parsons ftp site to allow the TAC to review and comment on model calibration. Assumed metering rates will play an important role in the project analyses. The Cities and Caltrans will need to meet and determine acceptable metering rates. Alan Huang of Dowling presented a VISSIM simulation of the "existing" condition EB on I-580 between Tassajara Road and Santa	***Kevin Chen will post the CORSIM analyses on Parsons ftp site for review by the TAC.*** ***The Cities and Caltrans will review the CORSIM analyses and provide comments to Parsons.*** ***The Cities and Caltrans will meet to determine acceptable metering rates along***

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Rita. He explained that except for lane control parameters, the two model software packages are comparable in capabilities for analyzing freeway weaving and congestion. Jeff Georgevich wanted to know how the two model software packages deal with HOT/HOV lanes. Neither consultant had used CORSIM or VISSIM for this type of analysis. Ray wanted to know if the VISSIM could do the task within the budget presented at the working group meeting on May 16th; Kym Sterner responded "yes" but that the budget assumed a certain level of validation effort that may not be acceptable to the TAC. The biggest issue with using VISSIM for this study would be the impact on project schedule. Bob Vinn wanted to know if there was a recommendation, since the two models seem about the same. Kym Sterner said that VISSIM's simulation graphics that could be used for public presentation are better, but that this type of presentation preparation was not in the current proposed budget estimate. The vote: Bob Vinn voted for using CORSIM. Ray Kuzbari of Dublin does not see the advantage of VISSIM for freeway-only analyses. Jeff Knowles said that the advantages of VISSIM for a freeway-only analysis were not worth the extra cost and schedule requirements. Phil Cox of Caltrans said that without the VISUM/VISSIM combination and dynamic assignment not being used, CORSIM seems like the better choice. David Seriani agreed on CORSIM as well. The consensus of the TAC was that CORSIM should be used in the proposed analyses.	***the I-580 corridor.*** ***Kym Sterner to provide modeled truck percentages for TAC review.***
<u>Alternatives to be Tested Memo</u>: Gui Shearin of Parsons introduced the memo on alternatives to be tested. There were questions about whether Alternative #6 (construction of a westbound I-580 to southbound I-680 and northbound I-680 to eastbound I-580 direct connectors to improve connectivity between the two interstate freeways) was addressing mixed flow or HOV facilities for the westbound I-580 to southbound I-680 connector. Additionally, the northbound I-680 to eastbound I-580 already exists for mixed flow and the HOV connector is in Alternative #3, as is the west end of the eastbound I-580 HOV lane. Bob Vinn suggested combinations of the alternative packages, such as: • #3 with and without #5 to see the effect on the Greenville Road bottleneck; • #4 with and without #3 or #5; or • #4 plus improvements from Route 84 east. Jeff Knowles recommended using the travel demand model to "screen" affects of each proposed project improvement to assist in the development of alternative improvement packages. Kym Sterner said that it would be about a month after receipt of the validation database, clarification of the ramp metering rates, and review of truck percentages before the model would be ready for this type of sensitivity analyses. Since the determination of the future base case assumptions is up	***Once the future base case is determined and Dowling has receipt of all validation data, Dowling Associates will perform sensitivity analyses of the individual project improvements and will prepare volume difference plots for the TAC's use in developing alternative improvement packages.***

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in the air, Ray Kuzbari suggested that this discussion be tabled until future meetings. Bob Vinn pointed out that there might be more than six alternatives. TAC agreed to first do a series of runs in the travel demand forecast model for all the independent elements, and then decide how to package the alternatives together.	
Next Steps/Next Meeting – June 16, 9:30 am, Location: Dublin City Hall. The future metering rate was 600 vph in the I-580 HOV study. Jeff Knowles requested an interim meeting with the Cities and Caltrans to collectively decide on the Triangle Study future base case metering rates. Jean Hart will give the ramp count information to the cities. Dowling Associates will provide future model results showing ramp volume demands. Kym Sterner would like input from the cities on validation of the simulation model and capacity issues. The limits of the simulation model were stated to be I-580 from west of Foothill Road to east of N. Flynn Road and I-680 from north of Alcosta Blvd. to south of SR 84.	***All – Review minutes and provide any comments/changes by next meeting.*** ***Dowling Associates will provide future model results showing ramp volume demands.*** ***The cities will provide input on validation issues and capacity for the forecast and simulation models. This should include but not be limited to locations where ramp intersections and freeway overcrossings are important to simulation analyses (e.g., Vasco Road) and other bottleneck locations.*** ***Parsons will provide the limits of simulation model.*** ***The cities and Caltrans will meet to finalize future metering rate assumptions.***

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Dowling Associates, Inc.

Date: June 9, 2005
P05016

Memorandum

To: Tri-Valley Triangle Study TAC

From: Kym Sterner - Dowling Associates (ksterner@dowlinginc.com)

Subject: Travel Demand Model Status and Action Items

Highway Network Review

The Triangle model "master" network has been updated to reflect PAC decisions regarding removal of W. Las Positas interchange and the Stoneridge Extension from the future base assumptions. Plots showing existing base and future base lane assumptions were distributed via email on June 9th 2005 for final review from the TAC.

Action Items – All TAC Members [Due Thursday, June 16th]

- Review and comment on network assumptions
- Define and approve future base ramp metering (location, rates, AM/PM, etc.)
    - EB I-580: not to exceed 600 vph for all jurisdictions
    - WB I-580: not to exceed 900 vph

Action Items – Caltrans [Due Thursday, June 16th]

- Future base I-580/I-680 interchange ramp metering rates (AM/PM)

Development of Altamont Pass Gateway Assumptions

The MTC and thus the CCTA travel demand models have fixed vehicle AM and PM peak 4-hour period and peak 1-hour trip tables. Presently the CCTA distribution does not reflect Altamont Pass survey data and are held constant for future conditions. Additionally, neither the MTC nor the CCTA model separate out truck trips at the model gateways.

Dowling Associates proposes to manually modify the existing Altamont Pass gateway vehicle trip distribution and mode assumptions based on survey data. Survey data for the Altamont Pass was distributed in form via email on June 9th 2005.

Auto Modes

Survey data from Caltrans and the San Joaquin Council of Governments indicate that about 10 to 11 percent of the vehicles at the Altamont Pass are trucks for daily as well as for the AM peak period. AM peak period data provide a mode split. We do not currently have data for the PM peak period or hour.

We propose the following:

- use 10.6% trucks for both the AM and PM.
- Altamont Pass survey results for remaining auto mode shares for both the AM and PM.
    - 82.3% DA auto mode pct.
    - 16.2% SR2 auto mode pct.
    - 1.5% SR3+ auto mode pct.

Trip Distribution

Year 2000 Census Transportation Planning Package (CTPP) data and Altamont Pass survey data for jurisdiction to jurisdiction worker flows were distributed to the TAC via email on June 9th 2005. Since work trips are over 98% of the AM peak period vehicle trips on the Altamont Pass, this survey data will be the basis for vehicle trip distribution. The transpose of this table will be used for the PM peak hour work trip table. Since we expect there to be more non-work trips over the Altamont Pass in the PM, the difference between the CCTA AM transpose and PM trip tables will be assumed to be the PM peak period non-work vehicle trips at the Altamont Pass.

Future distribution will be based on evaluation of the relative change in jobs and housing between the San Joaquin Valley and the Bay Area with particular attention to the Tri-Valley area.

Action Items – All TAC Members [Due Thursday, June 16th]

- Approve process to develop Altamont Pass Gateway trip distribution and mode
- Identify available PM peak hour truck percentages at the Altamont Pass

Validation Targets

Our proposed validation procedure will ensure that the model provides reasonable estimates of traffic and travel patterns at a level acceptable for comparing alternatives. Validation will include comparison with FHWA system based targets, review of cut-through travel, and travel on specific origin-destination paths. The base year model will be validated using a link-based matrix estimator process in conjunction with the base year AM and PM peak hour traffic counts provided by ACTIA as part of their SR 84 traffic work. Incremental origin-destination trip table adjustments will be stored for application in future alternatives. We will not validate to the intersection level and actual LOS from the validation run may vary from LOS estimated using counts.

Validation Database

Plots of AM and PM peak hour counts were distributed to the TAC on June 9th 2005. These plots show the turning movement volumes that will be used for model validation. Turning movements will be combined to provide link level counts.

Sample Modified FHWA Validation Targets

TULARE COUNTY ASSOCIATION OF GOVERNMENTS
2002/3 DAILY MODEL VALIDATION

Count/ Model Volume Comparison by Facility Type

Facility	Facility Code	Counts	Volume	Links	Difference	Percent Difference	FHWA % Diff. Target	%RMSE	FHWA % RMSE Target
Freeways	1	211,333	209,880	11	(1,453)	-0.7%	+-7%	10.8%	20%
Highways	2	72,198	71,918	4	(280)	-0.4%	+-10%	9.1%	30%
Arterials	3	230,871	216,271	21	(14,600)	-6.3%	+-15%	28.1%	35%
Collectors	4	11,560	10,472	3	(1,088)	-9.4%	+-25%	56.5%	Depends on
Rural Roads	5	279,020	317,047	92	38,027	13.6%	+-20%	54.9%	volumes
Sum		**804,982**	**825,588**	**131**	**20,606**	**2.6%**	**+-10%**	**32%**	**<50%**

Count/ Model Volume Comparison by Volume Range

Volume Range	Counts	Volume	Links	Difference	Percent Difference	%RMSE	FHWA % RMSE Target
1-4,999	186,867	239,555	87	52,688	28.2%	79.9%	<70%
5,000-9,999	150,103	138,344	20	(11,759)	-7.8%	23.9%	52%
10,000-14,999	90,878	80,617	8	(10,261)	-11.3%	24.3%	34%
15,000-19,999	131,668	132,728	7	1,060	0.8%	8.8%	27%
20,000-24,999	160,101	160,446	7	345	0.2%	10.9%	25%
25,000-44,999	89,849	78,096	3	(11,753)	-13.1%	34.2%	22%
Sum	**809,466**	**829,786**	**132**	**20,320**	**2.5%**	**32%**	

Coefficient of Determination (R^2) Calculation

X=	809,466	
Y=	829,786	
X2=	11,685,972,432	
Y2=	11,544,896,254	
XY=	11,363,695,806	FHWA
N=	132	Target
R^2=	**0.962**	**>0.88**

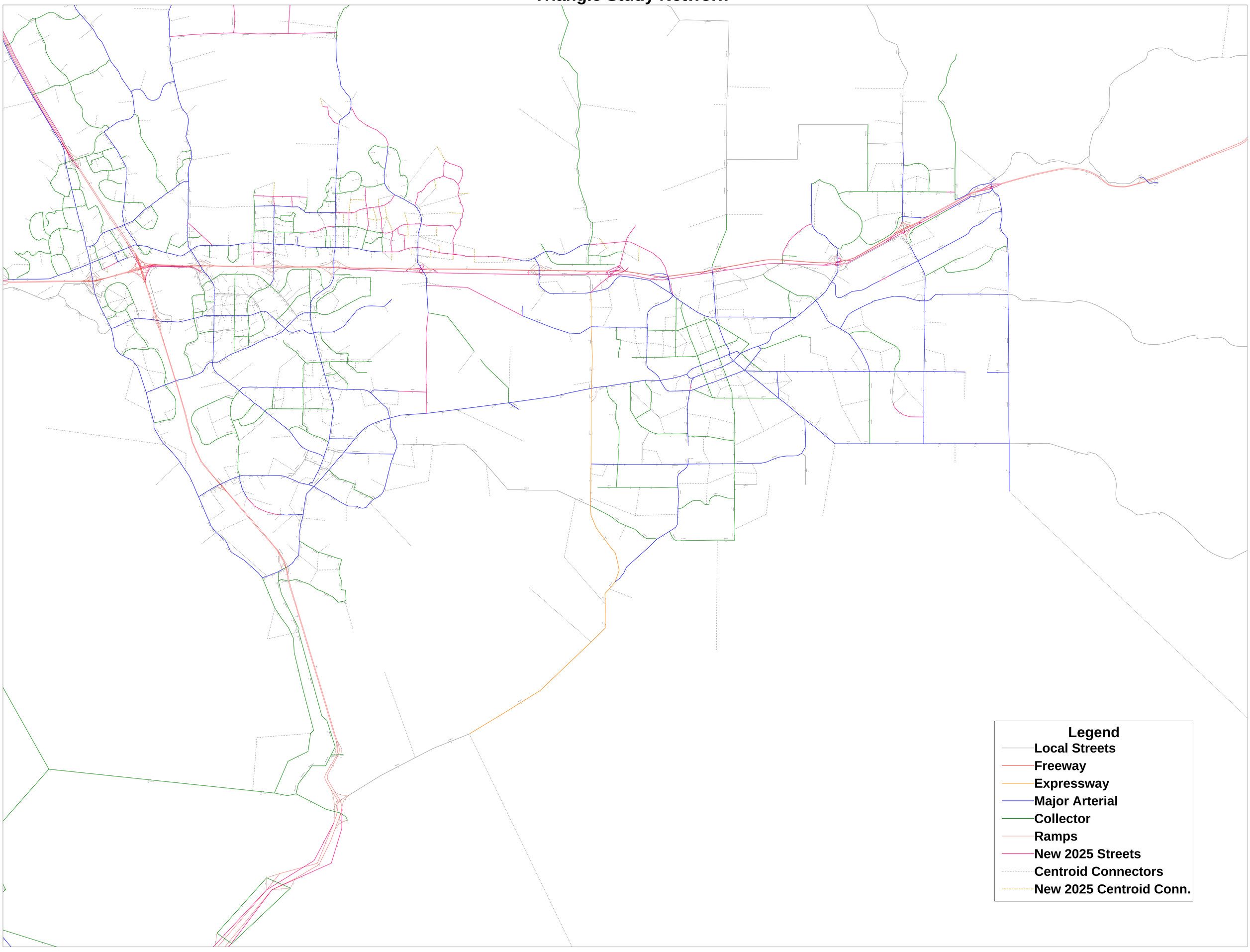
Origin-Destination Travel Routes

Dowling Associates will focus on an identified set of origin-destination travel routes as defined with the TAC. We will report validation statistics such as travel time and percent through travel on these routes for review by the TAC. For example, the TAC will likely want to see select link plots for WB I-580 at the Altamont Pass during the AM peak hour and for NB I-680 s/o Sunol during the PM peak hour.

Action Items – All TAC Members [Due Thursday, June 23rd]

- Review and provide comments on the validation database counts
- Identify origin-destination travel routes for validation
- Identify "hot spot" locations for capacity constraint

Triangle Study Network



ACCMA Triangle Study

Altamont Pass Survey Data

2003 Average Annual Daily Truck Traffic on California State Highway System

Caltrans, Nov. 2004

Truck percentages, pg 324

w/o Junction w/SR 205	12.5%
e/o Greenville	10.4%

Altamont Pass Commuter Survey

San Joaquin Council of Governments, Oct. 2000

AM westbound survey data

Truck percentages, pg 2-5

Total vehicles	29,708
Trucks	3,148
	10.6%

Trip purpose for autos, pg 3-14

Work	96.9%		
Other work	1.4%	98.3%	Total work related
School	0.4%		
Shopping	0.1%		
SocRec	0.2%		
Other	1.0%	1.7%	Total non-work related
	100.0%	100.0%	

Trip mode, pg 3-16

Drive alone	3,397	79.2%	82.3%	DA auto mode pct.
Carpool	669	15.6%	16.2%	SR2 auto mode pct.
Vanpool	60	1.4%	1.5%	SR3+ auto mode pct.
ACE train	94	2.2%		
Bus	55	1.3%		
Other	14	0.3%	3.8%	Total non-auto
	4,289	100.0%		

ACCMA Triangle Study

2000 Census CTPP Work Flow Data

Sum of Total Workers	Work_Juris										
Res_Juris	Dublin	Livermore	Pleasanton	Alameda	Contra Costa	San Francisco	San Mateo	Santa Clara	San Joaquin	Stanislaus	Grand Total
Dublin	2,315	585	2,040	1,860	1,680	420	105	470	0	0	9,475
Livermore	1,260	14,190	4,980	3,795	1,230	85	25	1,150	24	0	26,739
Pleasanton	1,345	1,960	10,670	3,300	2,135	760	310	2,775	20	0	23,275
Alameda	920	2,860	7,020	394,815	30,470	70,770	33,060	65,275	1,371	340	606,901
Contra Costa	1,840	3,400	7,735	82,965	254,750	49,525	9,280	10,145	1,640	175	421,455
San Francisco	0	0	65	20,770	4,570	322,010	43,305	15,870	30	65	406,685
San Mateo	15	20	80	14,670	1,790	71,700	206,095	55,475	50	30	349,925
Santa Clara	0	80	175	36,760	2,825	7,945	40,665	727,915	240	170	816,775
San Joaquin	545	4,424	2,015	12,971	3,670	1,195	1,435	7,045			33,300
Stanislaus	20	965	275	5,580	995	750	900	3,820			13,305
Grand Total	8,260	28,484	35,055	577,486	304,115	525,160	335,180	889,940	3,375	780	2,707,835

Percent of Origin

Sum of Total Workers	Work_Juris										
Res_Juris	Dublin	Livermore	Pleasanton	Alameda	Contra Costa	San Francisco	San Mateo	Santa Clara	San Joaquin	Stanislaus	Grand Total
Dublin	24.4%	6.2%	21.5%	19.6%	17.7%	4.4%	1.1%	5.0%	0.0%	0.0%	100.0%
Livermore	4.7%	53.1%	18.6%	14.2%	4.6%	0.3%	0.1%	4.3%	0.1%	0.0%	100.0%
Pleasanton	5.8%	8.4%	45.8%	14.2%	9.2%	3.3%	1.3%	11.9%	0.1%	0.0%	100.0%
Alameda	0.2%	0.5%	1.2%	65.1%	5.0%	11.7%	5.4%	10.8%	0.2%	0.1%	100.0%
Contra Costa	0.4%	0.8%	1.8%	19.7%	60.4%	11.8%	2.2%	2.4%	0.4%	0.0%	100.0%
San Francisco	0.0%	0.0%	0.0%	5.1%	1.1%	79.2%	10.6%	3.9%	0.0%	0.0%	100.0%
San Mateo	0.0%	0.0%	0.0%	4.2%	0.5%	20.5%	58.9%	15.9%	0.0%	0.0%	100.0%
Santa Clara	0.0%	0.0%	0.0%	4.5%	0.3%	1.0%	5.0%	89.1%	0.0%	0.0%	100.0%
San Joaquin	1.6%	13.3%	6.1%	39.0%	11.0%	3.6%	4.3%	21.2%	0.0%	0.0%	100.0%
Stanislaus	0.2%	7.3%	2.1%	41.9%	7.5%	5.6%	6.8%	28.7%	0.0%	0.0%	100.0%
Grand Total	0.3%	1.1%	1.3%	21.3%	11.2%	19.4%	12.4%	32.9%	0.1%	0.0%	100.0%
Altamont Survey	***4%***	***16%***	***14%***	***26%***	***8%***	***3%***	***3%***	***21%***			

Percent of Destination

Sum of Total Workers	Work_Juris										
Res_Juris	Dublin	Livermore	Pleasanton	Alameda	Contra Costa	San Francisco	San Mateo	Santa Clara	San Joaquin	Stanislaus	Grand Total
Dublin	28.0%	2.1%	5.8%	0.3%	0.6%	0.1%	0.0%	0.1%	0.0%	0.0%	0.3%
Livermore	15.3%	49.8%	14.2%	0.7%	0.4%	0.0%	0.0%	0.1%	0.7%	0.0%	1.0%
Pleasanton	16.3%	6.9%	30.4%	0.6%	0.7%	0.1%	0.1%	0.3%	0.6%	0.0%	0.9%
Alameda	11.1%	10.0%	20.0%	68.4%	10.0%	13.5%	9.9%	7.3%	40.6%	43.6%	22.4%
Contra Costa	22.3%	11.9%	22.1%	14.4%	83.8%	9.4%	2.8%	1.1%	48.6%	22.4%	15.6%
San Francisco	0.0%	0.0%	0.2%	3.6%	1.5%	61.3%	12.9%	1.8%	0.9%	8.3%	15.0%
San Mateo	0.2%	0.1%	0.2%	2.5%	0.6%	13.7%	61.5%	6.2%	1.5%	3.8%	12.9%
Santa Clara	0.0%	0.3%	0.5%	6.4%	0.9%	1.5%	12.1%	81.8%	7.1%	21.8%	30.2%
San Joaquin	6.6%	15.5%	5.7%	2.2%	1.2%	0.2%	0.4%	0.8%	0.0%	0.0%	1.2%
Stanislaus	0.2%	3.4%	0.8%	1.0%	0.3%	0.1%	0.3%	0.4%	0.0%	0.0%	0.5%
Grand Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

ACCMA Triangle Study - Altamont Pass Assumptions

	SF	*SM*	*SC*	*ALA*	*CC*	*Solano*	*Napa*	*Sonoma*	*Marin*	*Dublin*	*Pleasanton*	*Livermore*	*Other Gateways*	*Total*
Households %														
Triangle Model '02-'04	13%	10%	23%	19%	14%	5%	2%	7%	4%	0%	1%	1%	0%	100%
ABAG P'05 2000	13%	10%	23%	19%	14%	5%	2%	7%	4%	0%	1%	1%	0%	100%
Triangle Model Buildout	11%	10%	23%	17%	15%	7%	2%	8%	4%	1%	1%	1%	0%	100%
ABAG P'05 2025	13%	10%	24%	18%	14%	6%	2%	7%	4%	1%	1%	1%	0%	100%
Employment %														
Triangle Model '02-'04	17%	10%	29%	16%	10%	4%	2%	6%	3%	1%	1%	1%	0%	100%
ABAG P'05 2000	17%	10%	28%	17%	10%	4%	2%	6%	4%	0%	2%	1%	0%	100%
Triangle Model Buildout	15%	10%	27%	16%	11%	5%	2%	7%	3%	1%	2%	2%	0%	100%
ABAG P'05 2030	16%	10%	26%	17%	11%	4%	2%	6%	3%	1%	2%	2%	0%	100%

Parsons

100 Park Center Plaza, Suite 450 • San Jose, California 95113 • (408) 280-6600 • Fax: (408) 280-7533 • www.parsons.com

Memorandum

TO: Jean Hart, ACCMA

FROM: Parsons

DATE: June 9, 2005

SUBJECT: Tri-Valley Triangle Study – CORSIM Simulation Issue

An issue that the TAC for the Triangle Traffic Study needs to address is which hour of the peak period to simulate (or do you want to simulate three or more hours?). As some TAC members are aware, the realism of the CORSIM (or any simulation software) simulations of I-580-I-680 conditions will depend in part upon which hour of the peak period is simulated. In reality, congestion and queues continue to build over the peak period. So a simulation of the first hour, i.e., starting with relatively free flow conditions, yields a different result than simulating the second or third hour of the peak period. Alternatives that perform well in the first hour may not perform as well in later hours, or vice versa.

For example, in a recent test simulation of Highway 101 in the Santa Rosa area, Parsons and Dowling ran CORSIM for two hours and compared the results of the second hour with those of the first hour. Queues lengths, mixed-flow delay, and HOV time savings were much greater in the second hour than in the first hour. Some bottlenecks emerged in the second hour that were not apparent in the first hour. The second hour simulation gave a much more realistic view of what the need and utility of the proposed HOV lane project.

It would be helpful for the CORSIM simulation to have some direction from the TAC on this issue. Should the current and future simulations be run for two or three hours to achieve more realistic conditions, with only the last hour being reported? Should congested initial conditions be set for a one-hour analysis some other way?