TRIANGLE TRAFFIC STUDY

Presentation
to
Policy Advisory Committee

9 June 2006

Agenda

- 3-24-06 PAC Meeting Minutes
- Alternatives Analysis Study Findings
  - Quantitative Analysis
  - Quantitative MOE Summary
  - Qualitative MOE Summary
- Schedule
- Other Business
- Next Meeting: Joint PAC / TAC Hybrid Alternative Workshop – 6-30-06, 10:00 AM

Requested PAC Actions

- Approval of 3-24-06 Meeting Minutes
- Identify any outstanding issues on evaluation results
- Qualitative MOEs
  - Input on “obstacles”
  - Are changes needed?

Quantitative Analysis

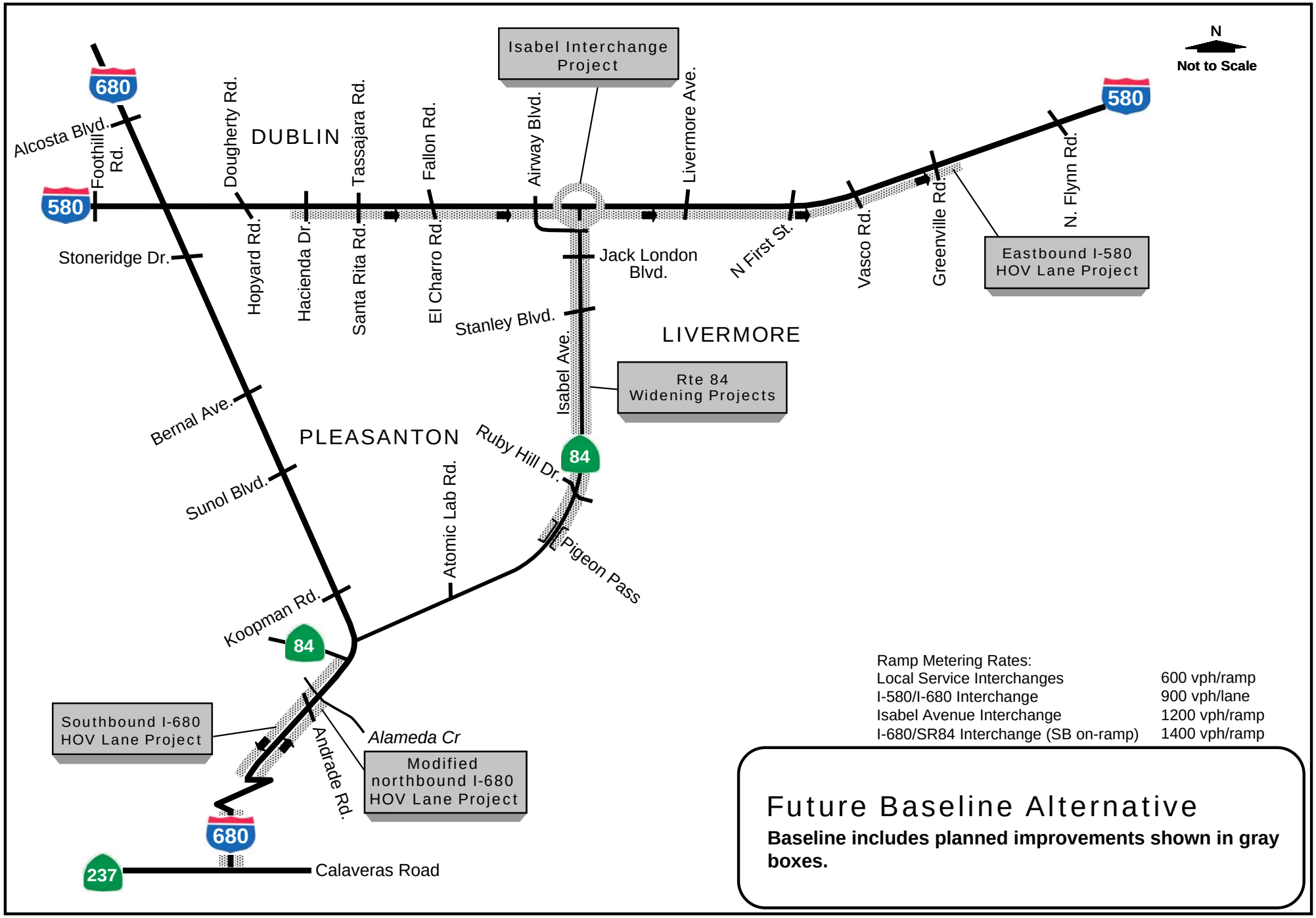
Order of Presentation

- Baseline
- Alternative 1
- Alternative 5
- Alternative 4
- Alternative 6
- Alternative 3
- Alternative 2A
- Alternative 2B

Information Presented

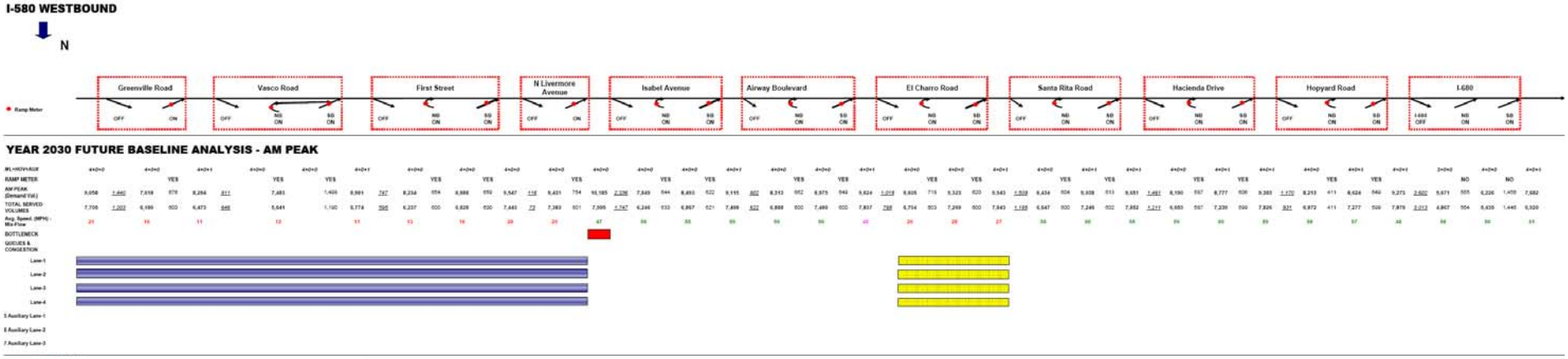
- Alternative Improvements
- Bottleneck & Queue Diagrams by Route and Peak Period
- Bottleneck and Queue Summary
- Difference Plots - AM and PM Peaks
- MOE Comparison Summary

Baseline Alternative

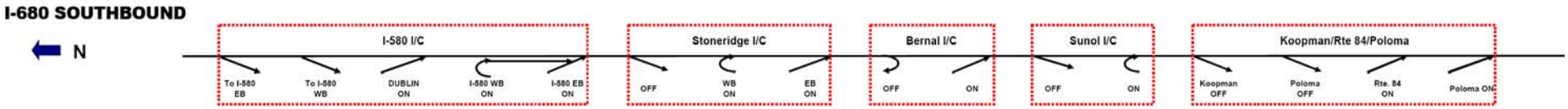


TRIANGLE TRAFFIC STUDY
ALTERNATIVE DESCRIPTION & OPERATIONS SUMMARY

Bottlenecks and Queues
I-580 Westbound – AM Peak



Bottlenecks and Queues
I-680 Southbound – AM Peak



YEAR 2030 FUTURE BASELINE ANALYSIS - AM PEAK

ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*	*3+0+0*	
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO	
AM PEAK (Demand Vol.)	7,822	2,921	4,901	1,456	3,445	1,132	4,577		2,891	7,468	2,076	5,392	416	5,808	248	6,056	1,093	4,963	857	5,820	560	5,260	1,223	6,483	485	5,998	119	5,879	1,766	7,645	481	8,126
TOTAL SERVED VOLUMES	7,280	2,536	4,644	1,455	3,150	1,134	4,277		2,078	6,338	1,975	4,416	416	4,830	247	5,070	876	4,199	857	5,080	428	4,643	1,222	5,838	473	5,083	90	4,891	1,386	6,253	480	6,729
Avg. Speed. (MPH) - Mix-Flow	14		55		62		50			36		54		51		58		60		59		60		46		17		13		17		55
BOTTLENECK																																
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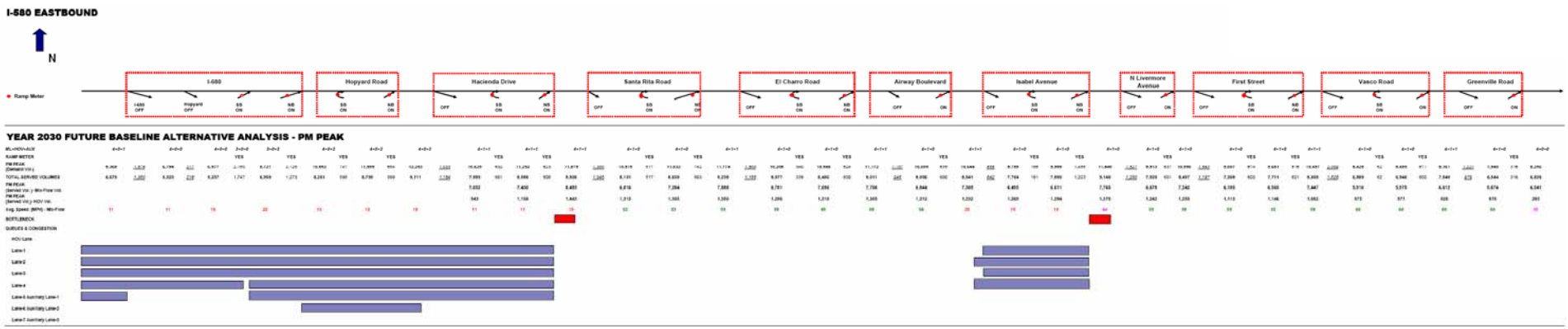
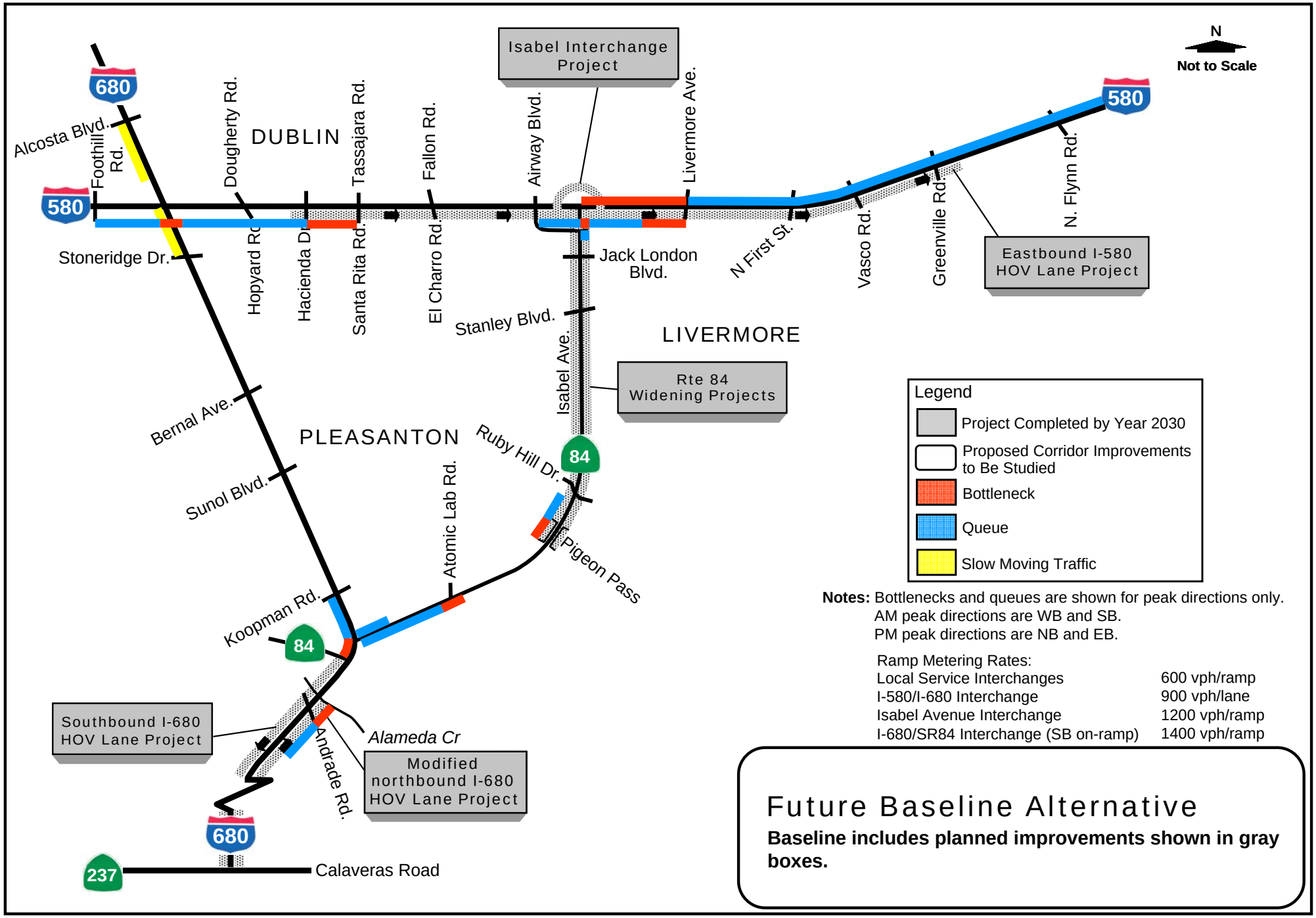
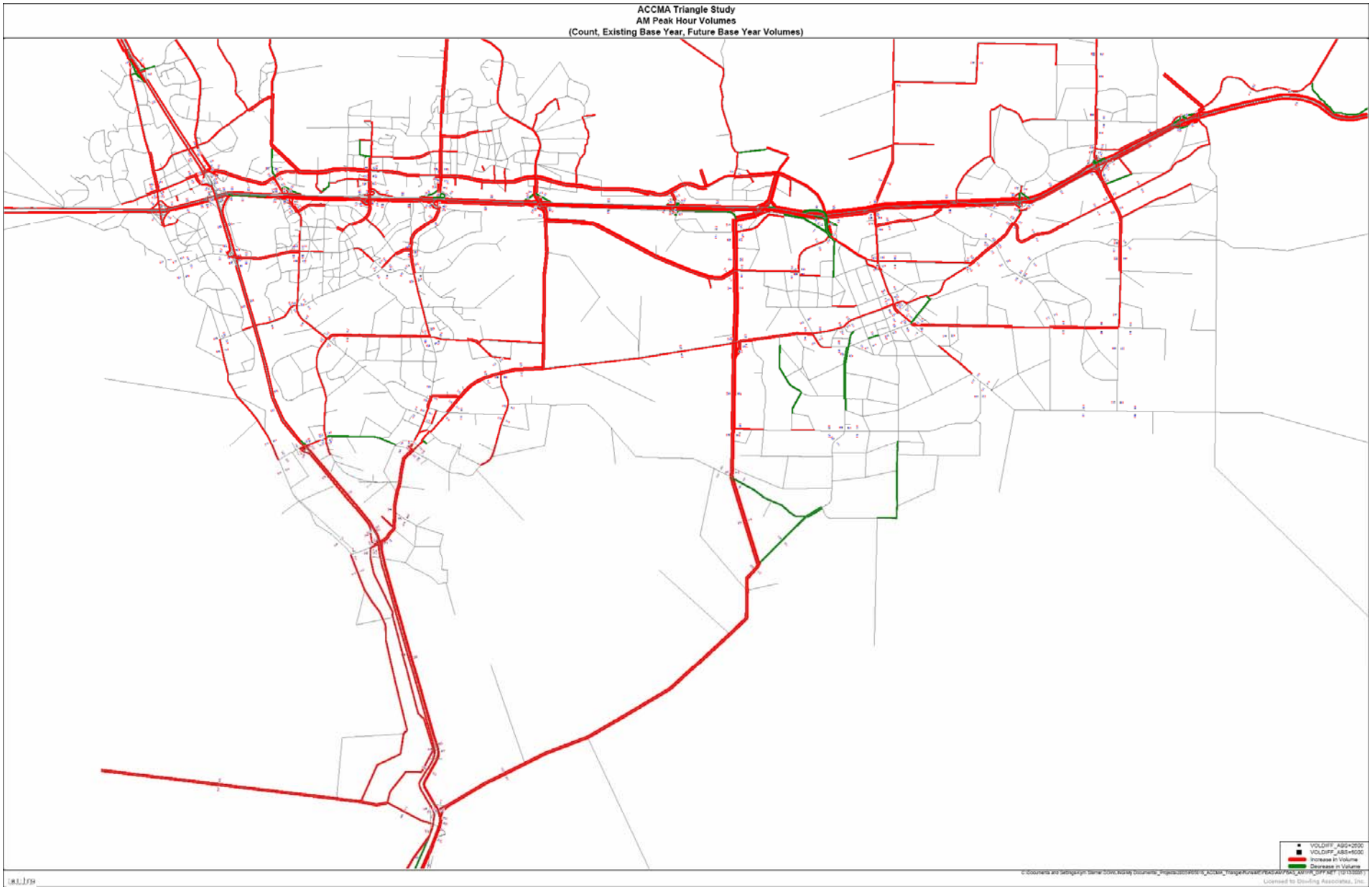
Bottlenecks and Queues
I-580 Eastbound – PM Peak



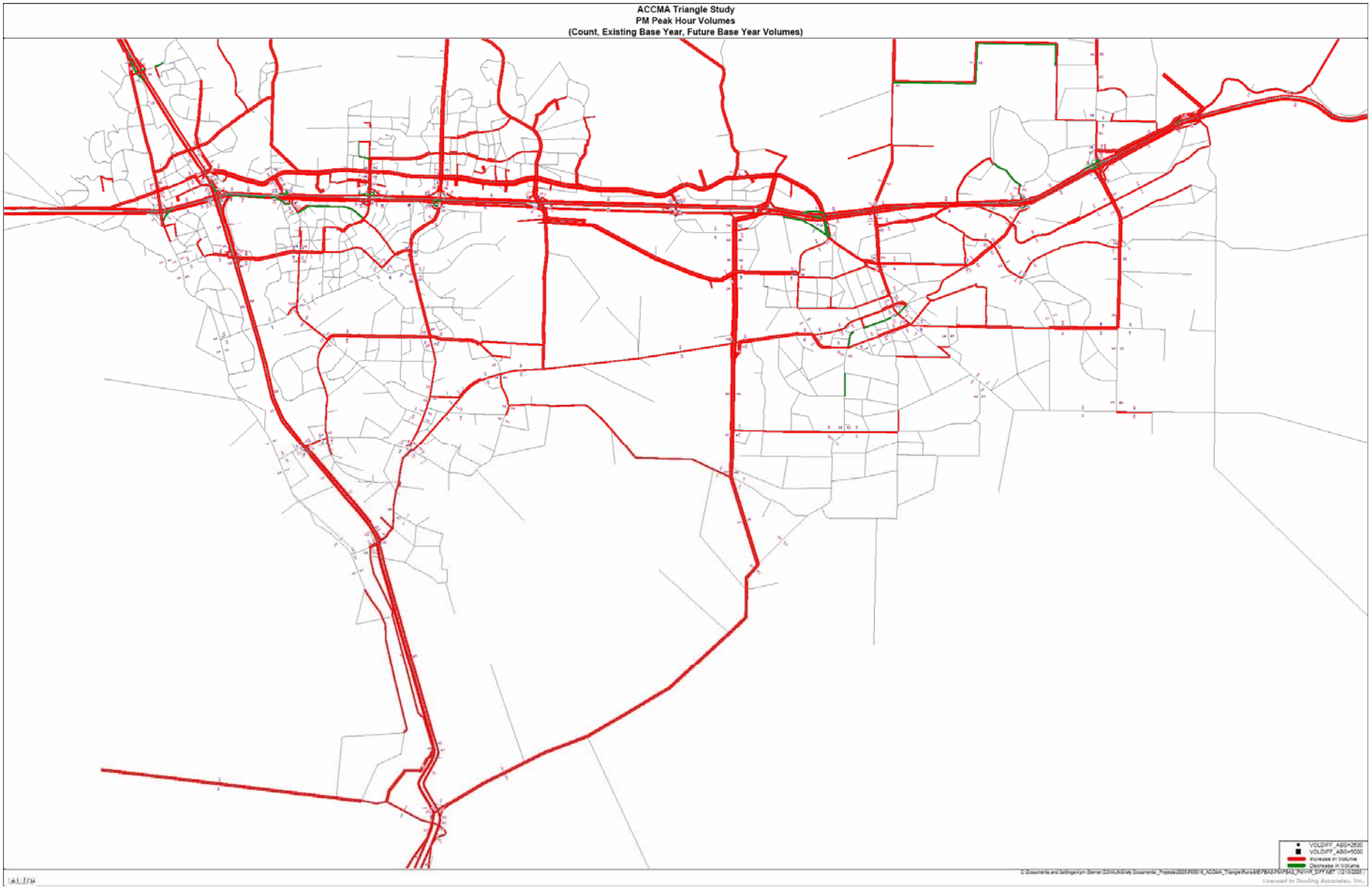


TRIANGLE TRAFFIC STUDY
ALTERNATIVE DESCRIPTION & OPERATIONS SUMMARY

Difference Plot – 2001_{AM} vs 2030_{AM}



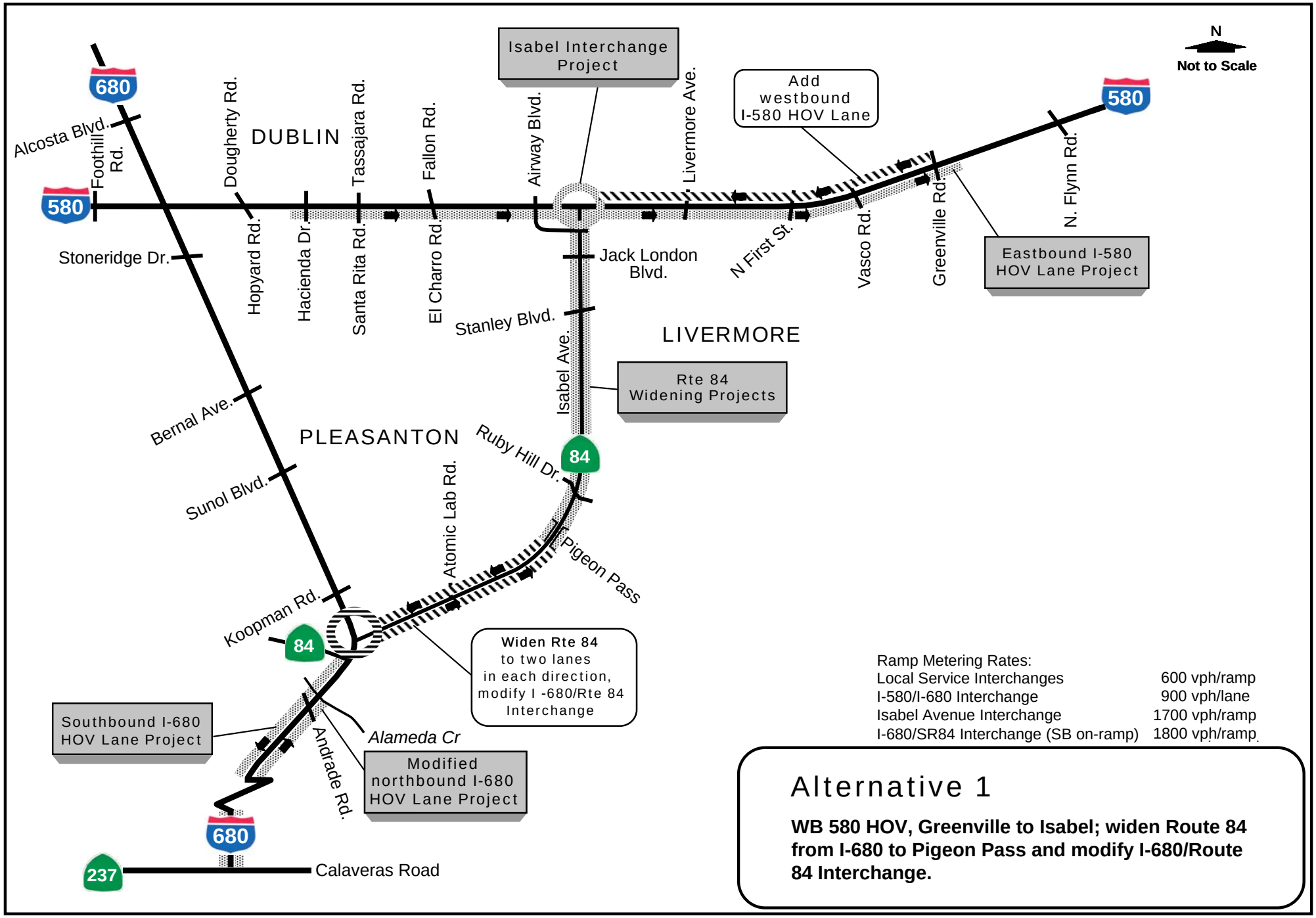
Difference Plot – 2001_{PM} vs 2030_{PM}



Hybrid Alternative

- Based upon findings of Alternatives 1 – 6, Hybrid Alternative is recommended.
- No alternative studied provides a complete solution.
- The study imposed artificial constraints that should be reconsidered based upon study findings to date.

Alternative 1



Ramp Metering Rates:

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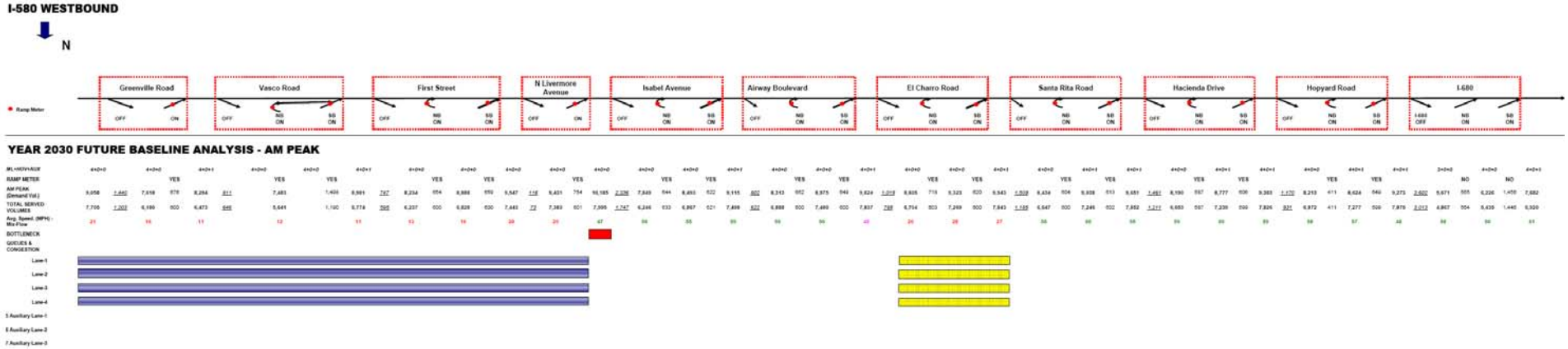
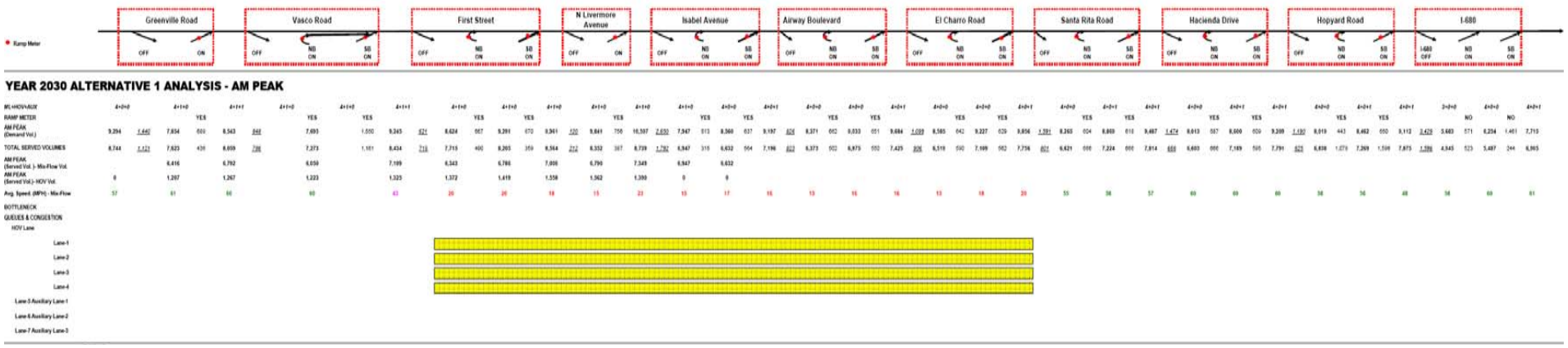
I-680/SR84 Interchange (SB on-ramp)	1800 vph/ramp

Alternative 1

WB 580 HOV, Greenville to Isabel; widen Route 84 from I-680 to Pigeon Pass and modify I-680/Route 84 Interchange.

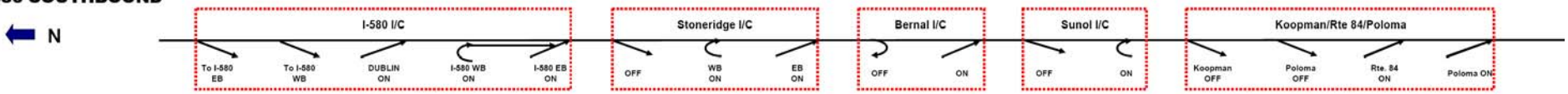
Bottlenecks and Queues
I-580 Westbound – AM Peak





Bottlenecks and Queues
I-680 Southbound – AM Peak

I-680 SOUTHBOUND



YEAR 2030 FUTURE BASELINE ANALYSIS - AM PEAK

ML+HOV+AUX	4+0+2		4+0+1		3+0+0		3+0+0			3+0+1		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0	
RAMP METER						NO		NO	NO				NO		NO				NO										NO		NO	
AM PEAK (Demand Vol.)	7,822	2,921	4,901	1,456	3,445	1,132	4,577		2,891	7,468	2,076	5,392	416	5,808	248	6,056	1,093	4,963	857	5,820	560	5,260	1,223	6,483	485	5,998	119	5,879	1,766	7,645	481	8,126
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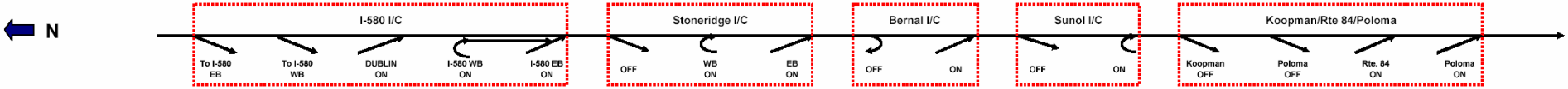
I-680 SOUTHBOUND



YEAR 2030 ALTERNATIVE 1 ANALYSIS - AM PEAK

ML+HOV+AUX	4+0+2		4+0+1		3+0+0		3+0+0			3+0+1		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0	
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO	
AM PEAK (Demand Vol.)	7,825	2,913	4,912	1,461	3,451	1,186	4,637		2,699	7,336	2,060	5,276	443	5,719	259	5,978	1,109	4,869	923	5,792	601	5,191	1,225	6,416	528	5,888	129	5,759	1,954	7,713	505	8,218
TOTAL SERVED VOLUMES	7,826	2,845	4,985	1,425	3,558	1,186	4,744		1,939	6,537	1,893	4,741	443	5,155	259	5,416	601	4,453	922	5,297	577	4,521	1,225	5,469	479	4,874	65	4,806	1,811	6,663	505	7,168
Avg. Speed. (MPH) - Mix-Flow	15		59		61		31			25		45		46		56		60		42		18		18		12		11		16		56
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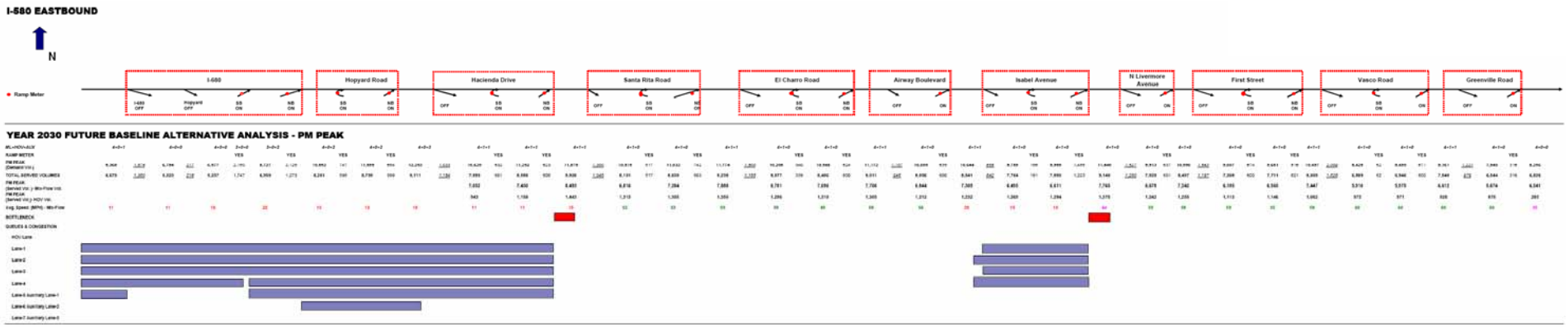
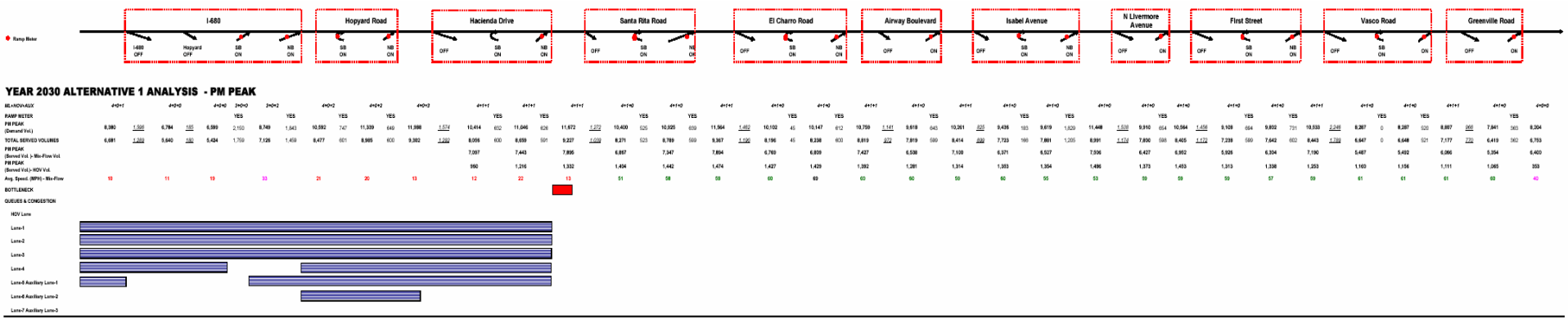
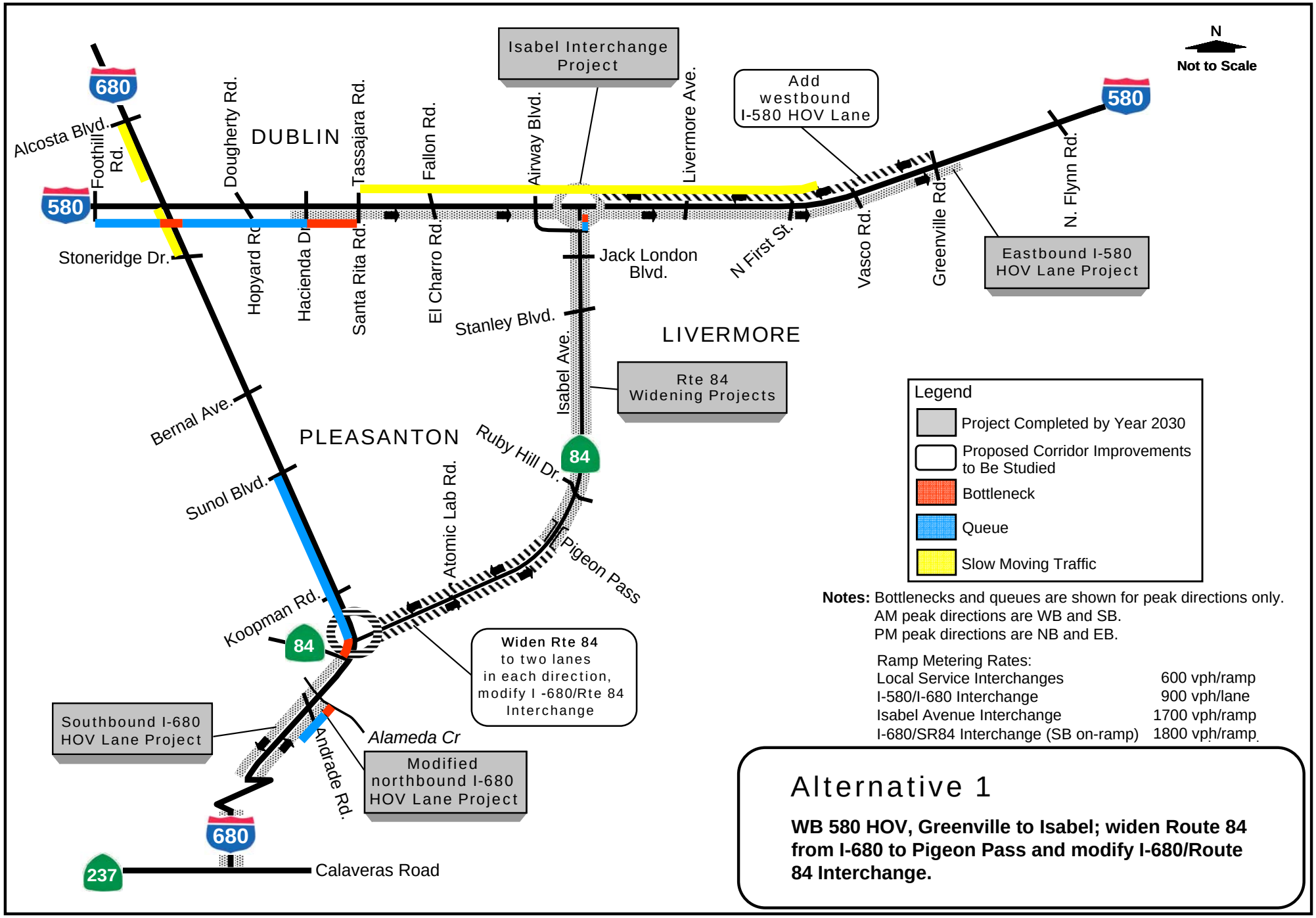
I-580 Eastbound – PM Peak







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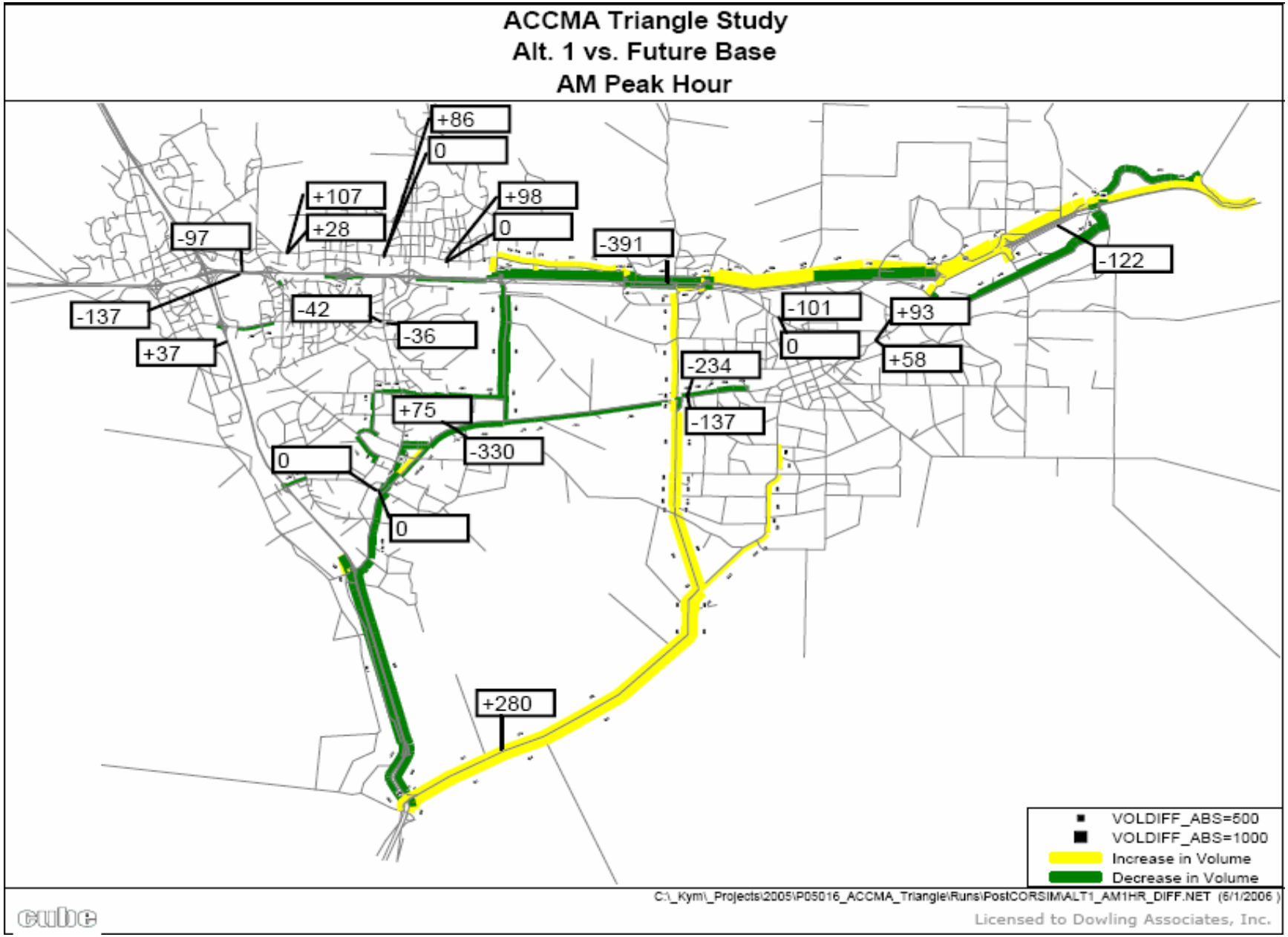
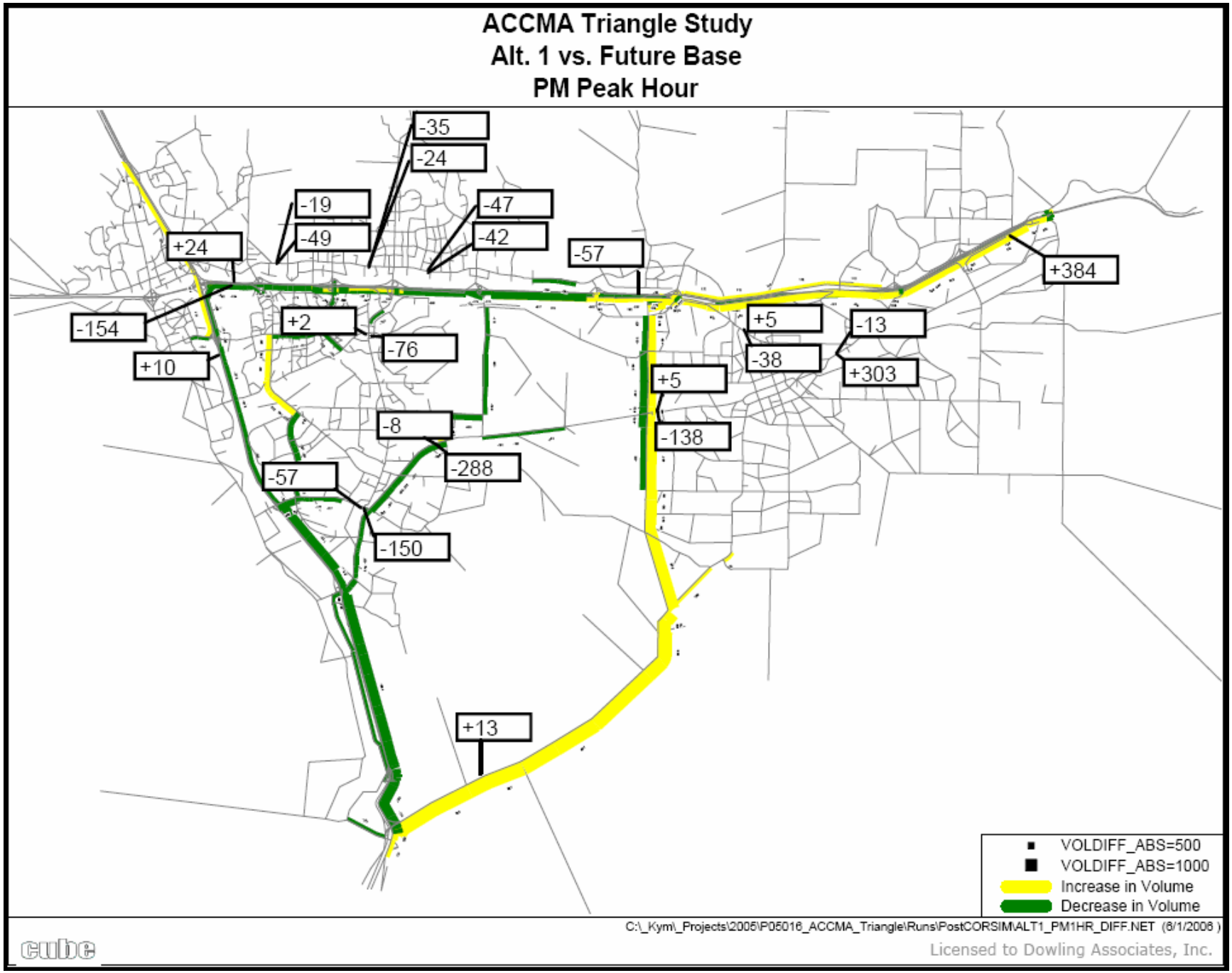
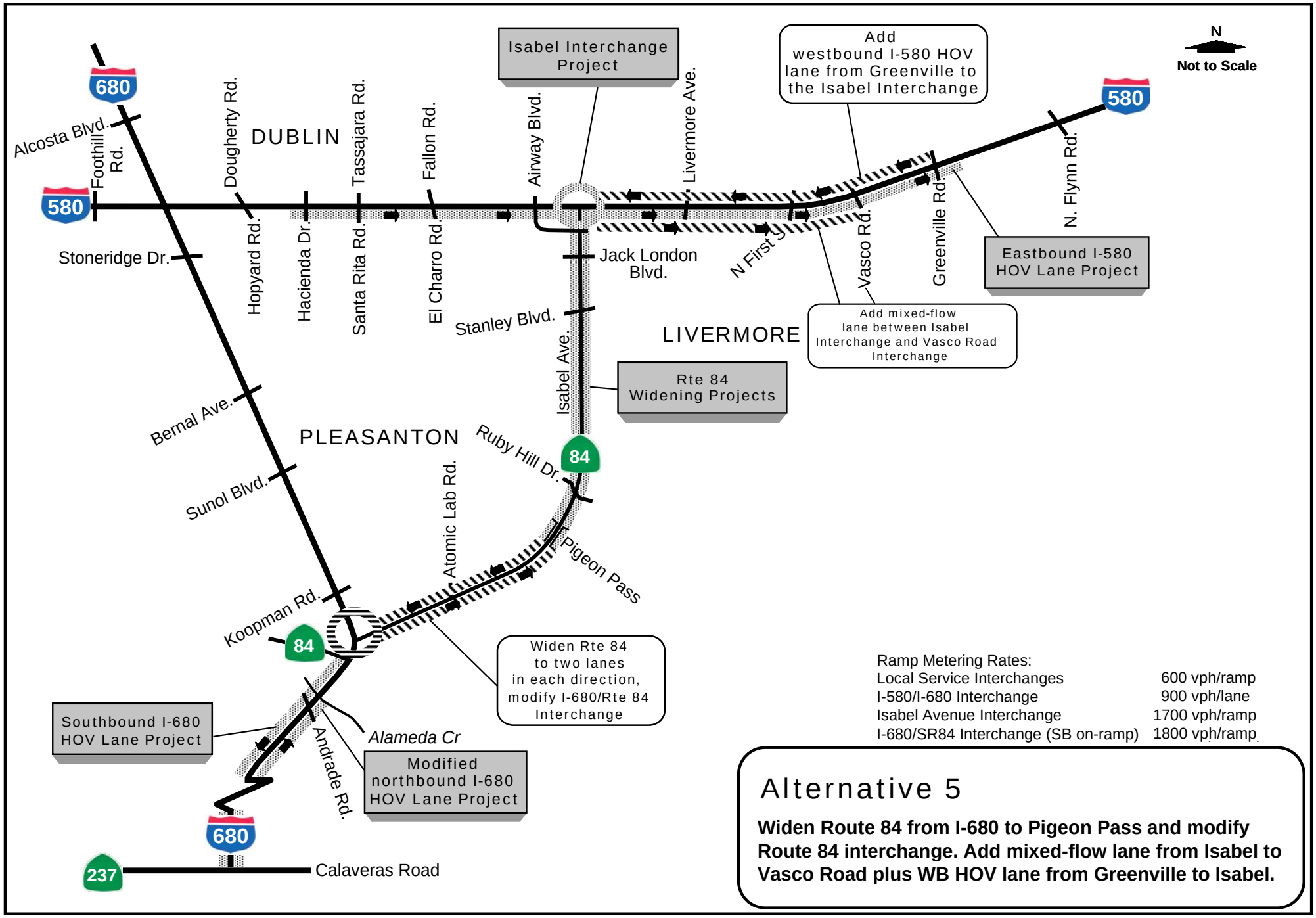


Difference Plot



Alternative 5



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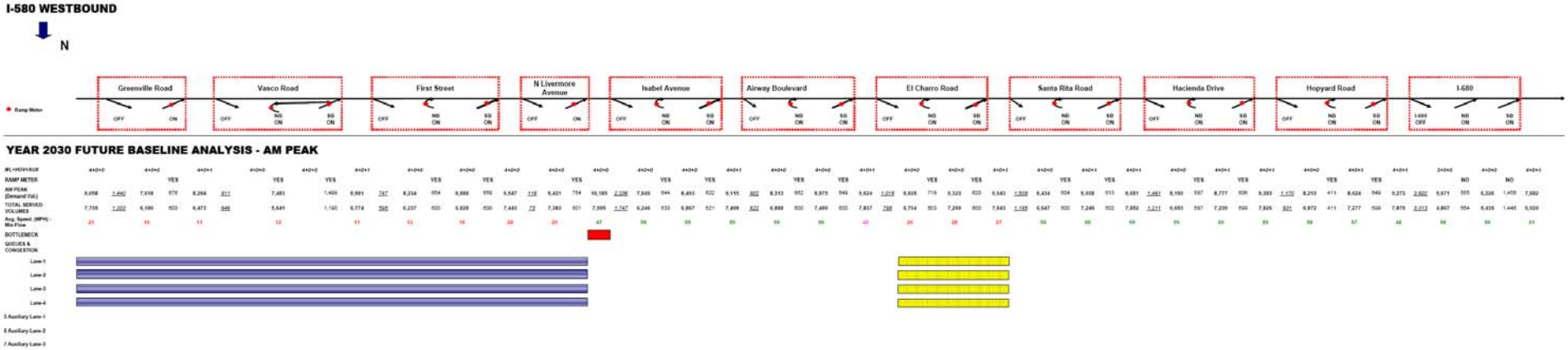
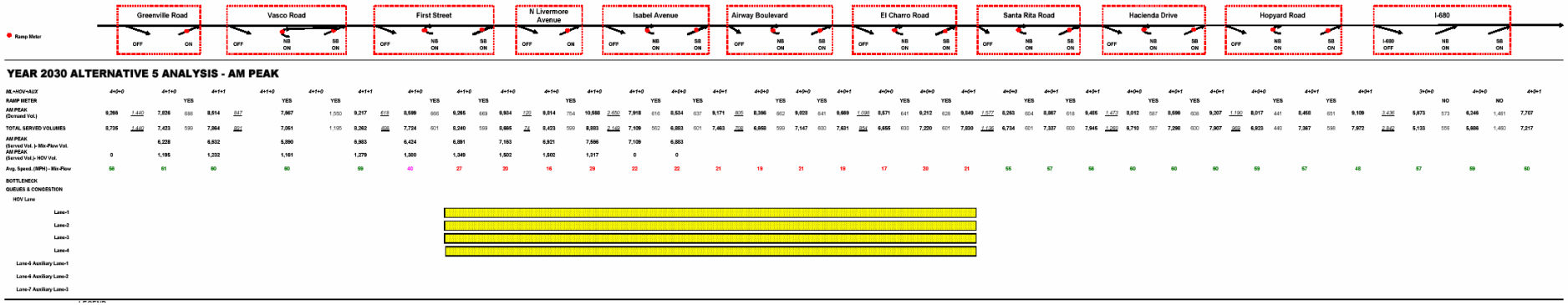
Alternative 5

Widen Route 84 from I-680 to Pigeon Pass and modify Route 84 interchange. Add mixed-flow lane from Isabel to Vasco Road plus WB HOV lane from Greenville to Isabel.

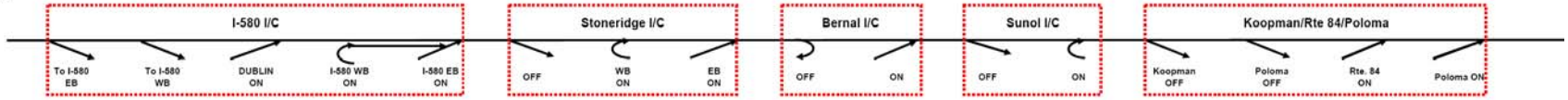
Bottlenecks and Queues
I-580 Westbound – AM Peak





Bottlenecks and Queues
I-680 Southbound – AM Peak

I-680 SOUTHBOUND



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RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO	
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TOTAL SERVED VOLUMES	7,280	2,536	4,644	1,455	3,150	1,134	4,277		2,078	6,338	1,975	4,416	416	4,830	247	5,070	876	4,199	857	5,080	428	4,643	1,222	5,838	473	5,083	90	4,891	1,386	6,253	480	6,729
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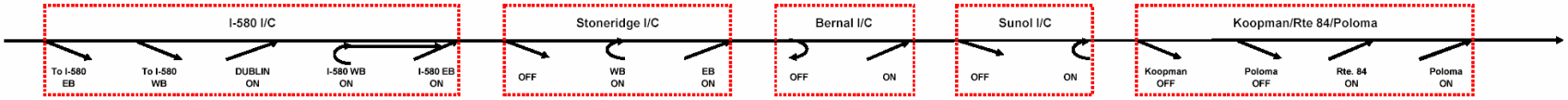

YEAR 2030 ALTERNATIVE 5 ANALYSIS - AM PEAK

ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*	*3+0+0*	
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO	
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TOTAL SERVED VOLUMES	7,576	2,589	4,878	1,452	3,331	1,184	4,523		2,017	6,461	1,873	4,661	443	5,100	257	5,371	985	4,403	937	5,182	518	4,368	1,221	5,250	418	4,603	72	4,526	1,791	6,317	476	6,799
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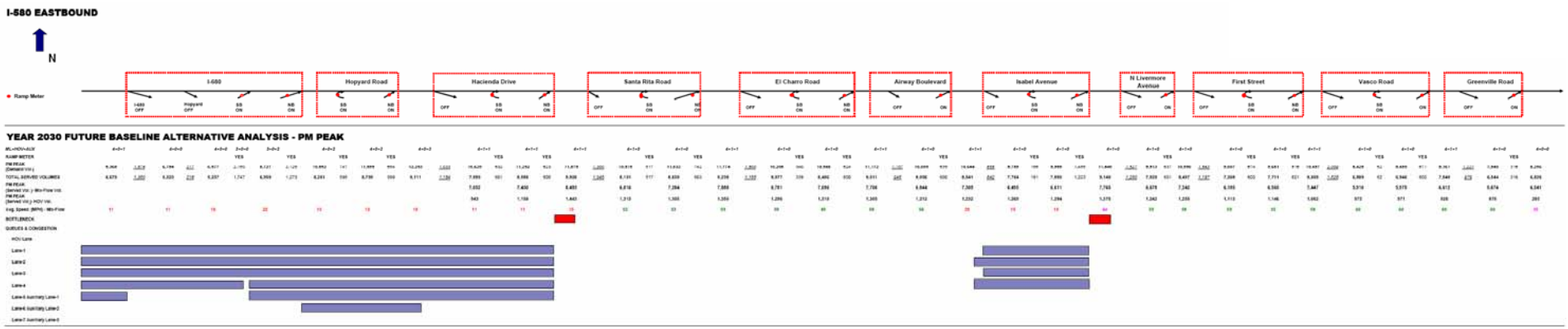

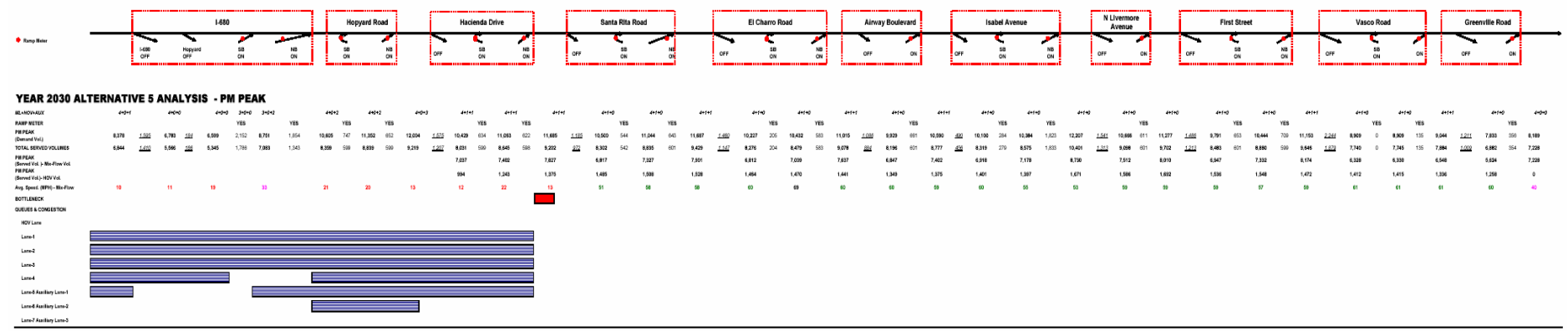

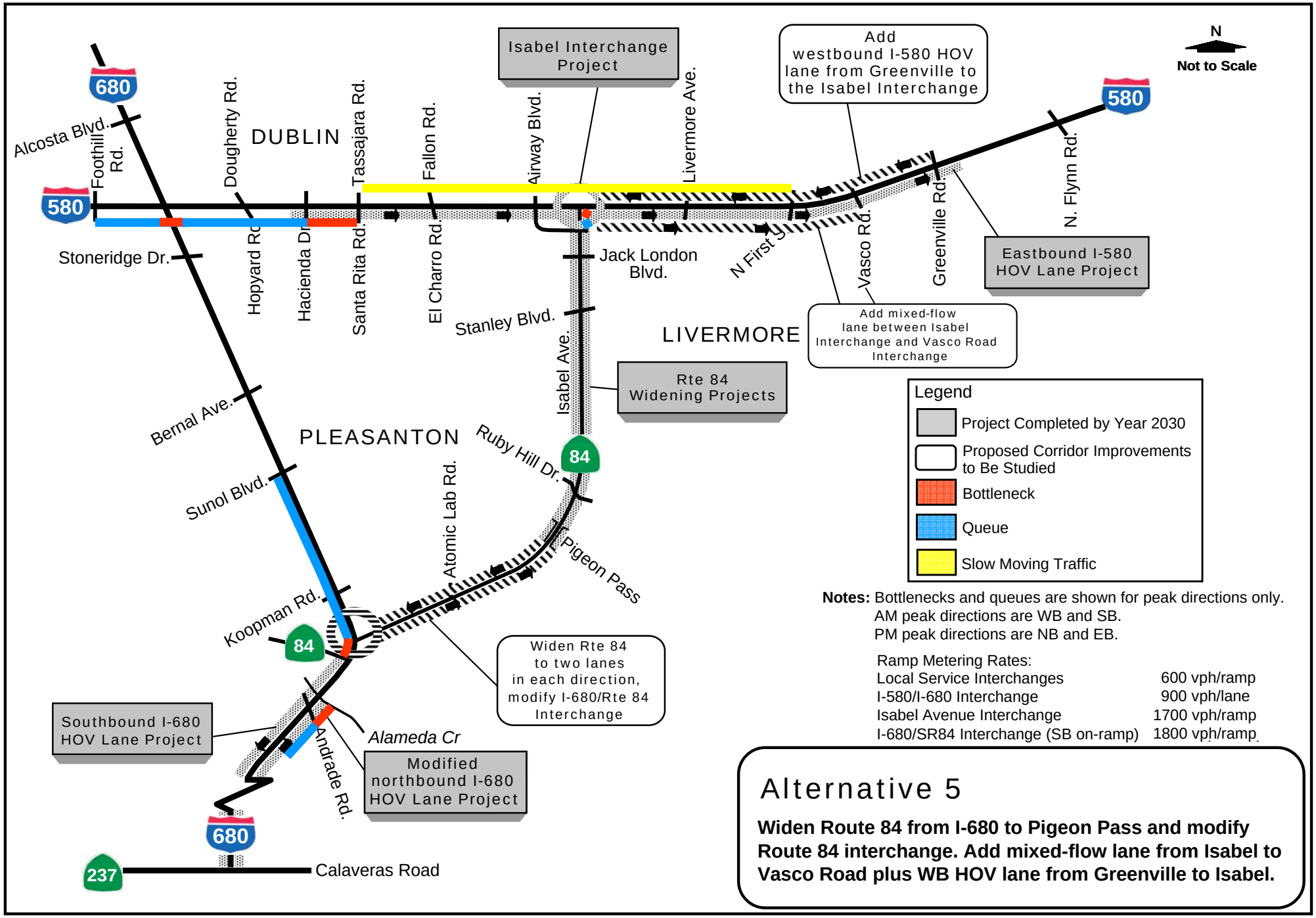

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Alternative 5

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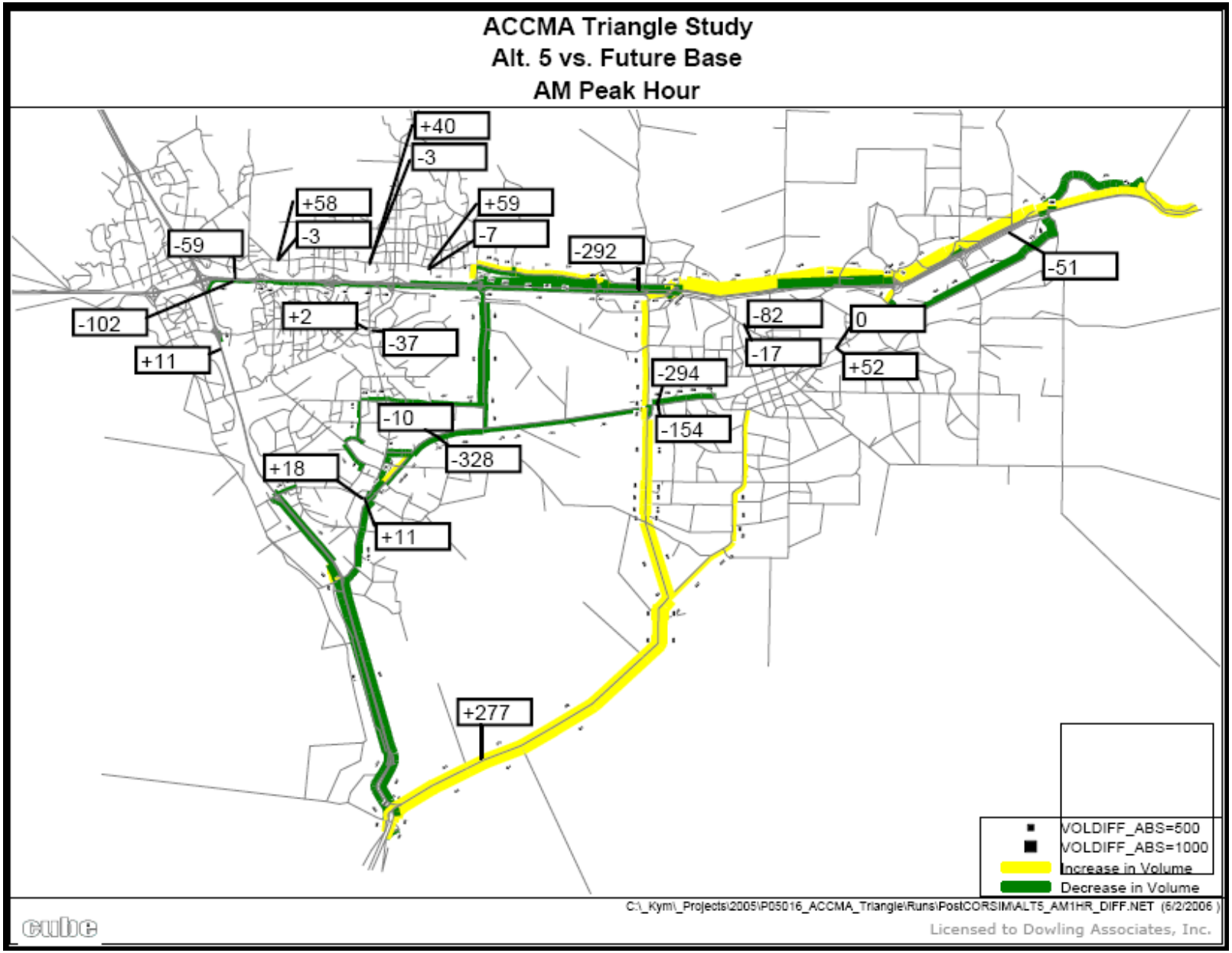
Difference Plot



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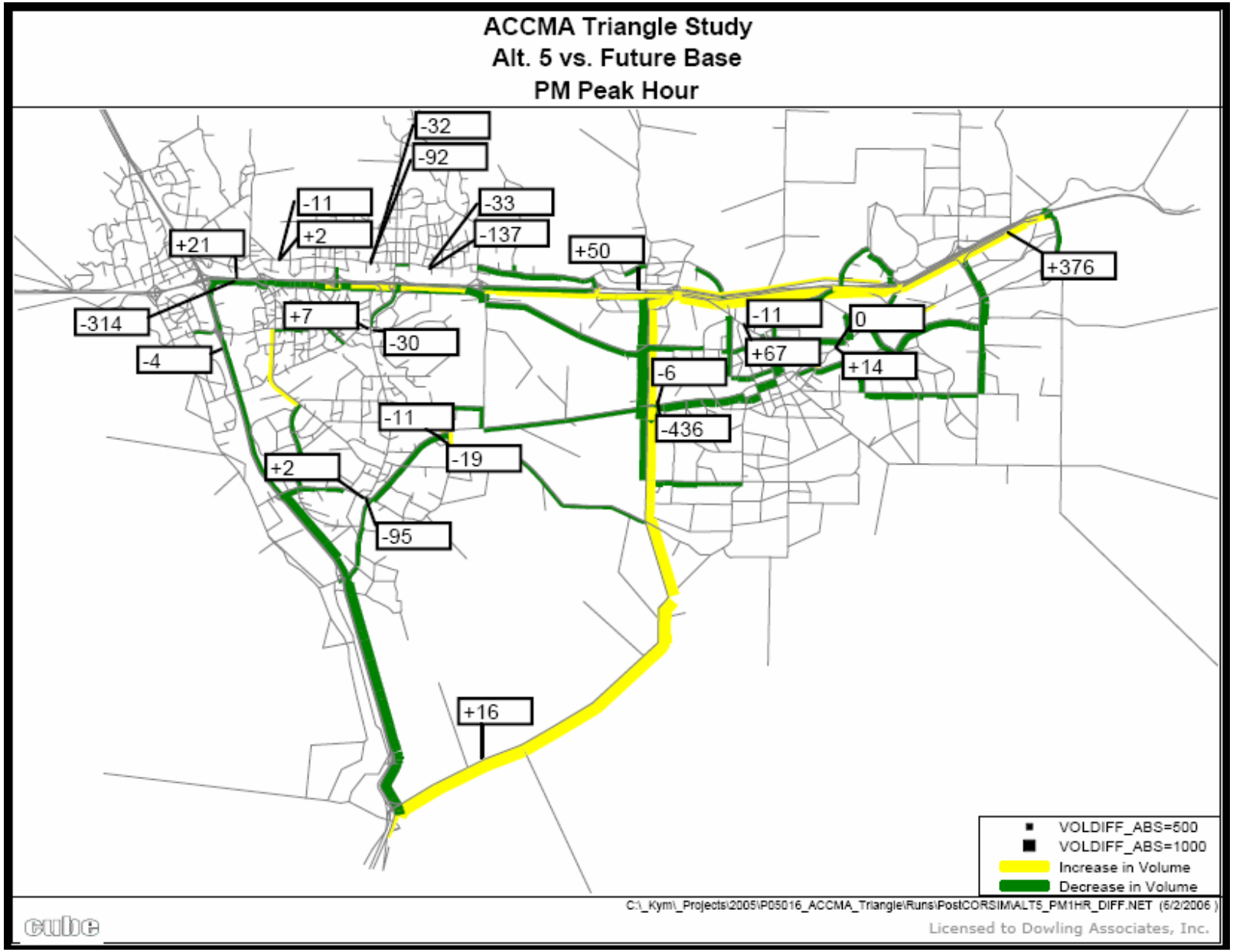
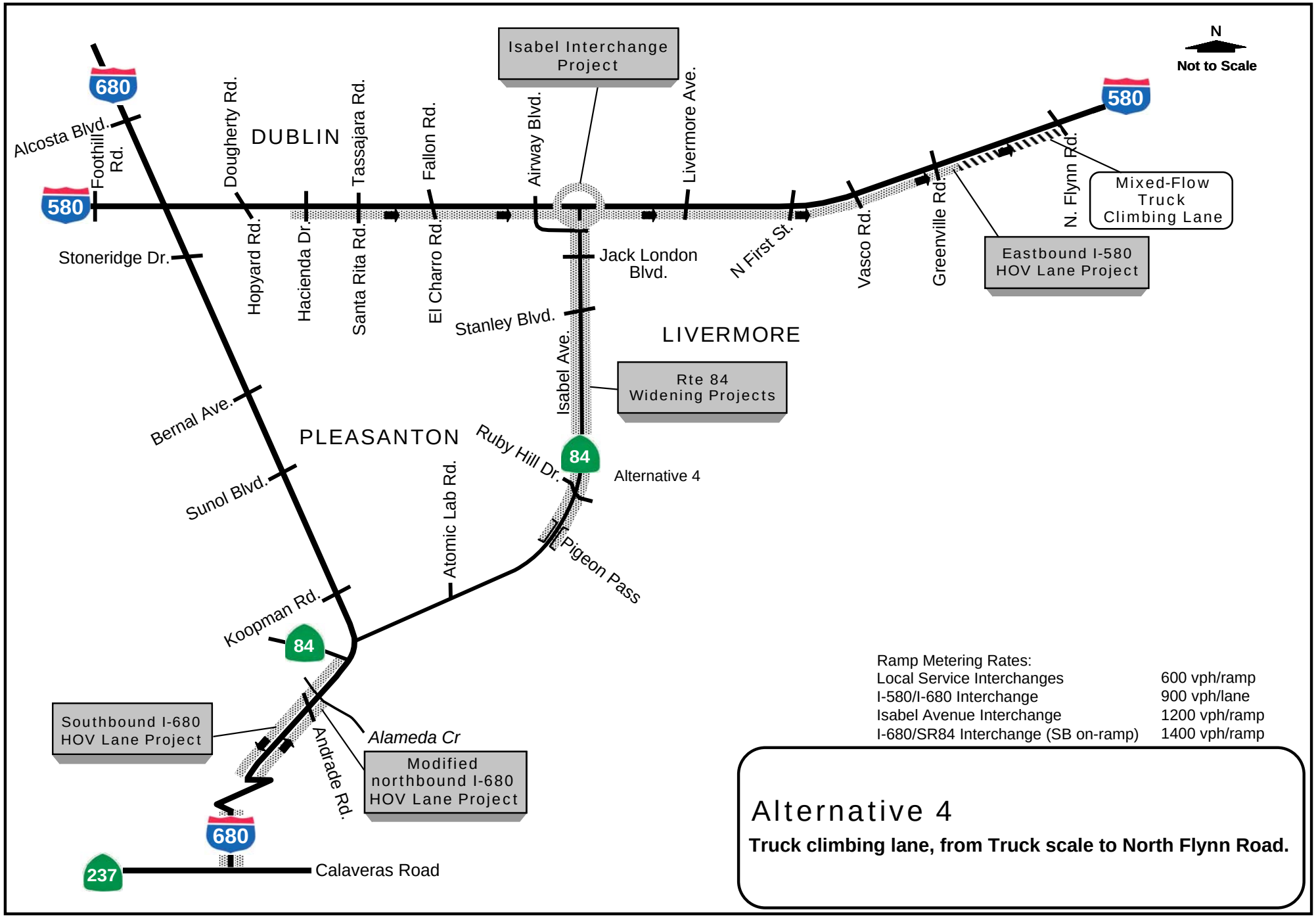


Alternative 4



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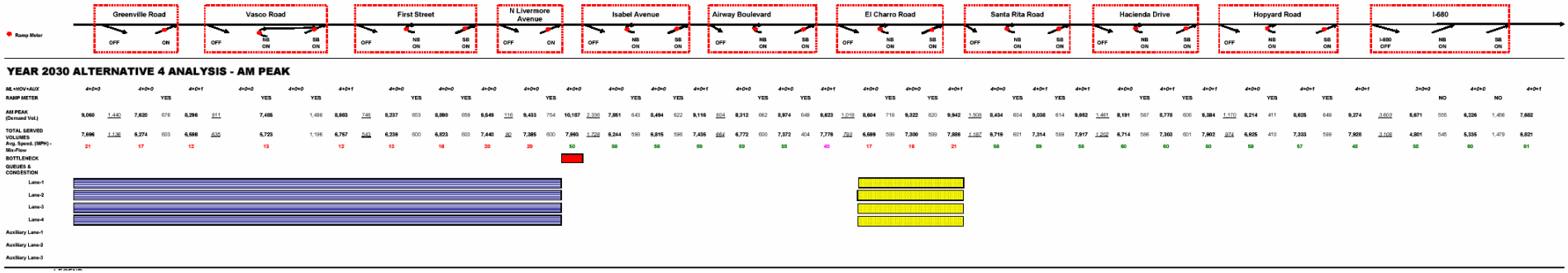
Alternative 4

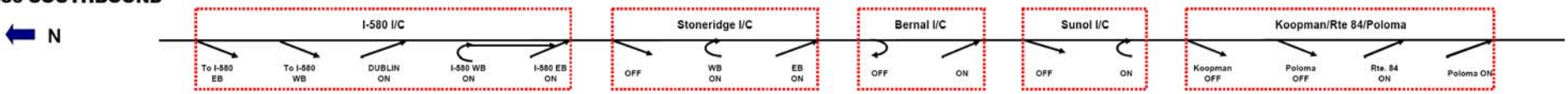
Truck climbing lane, from Truck scale to North Flynn Road.

Bottlenecks and Queues
I-580 Westbound – AM Peak



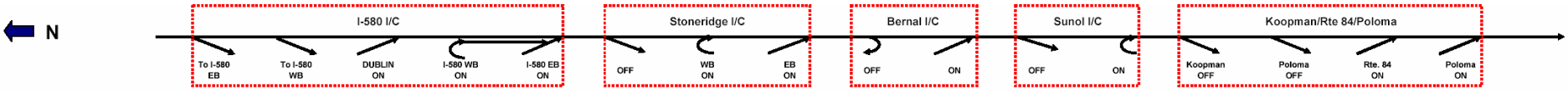
Bottlenecks and Queues
I-680 Southbound – AM Peak

I-680 SOUTHBOUND



YEAR 2030 FUTURE BASELINE ANALYSIS - AM PEAK

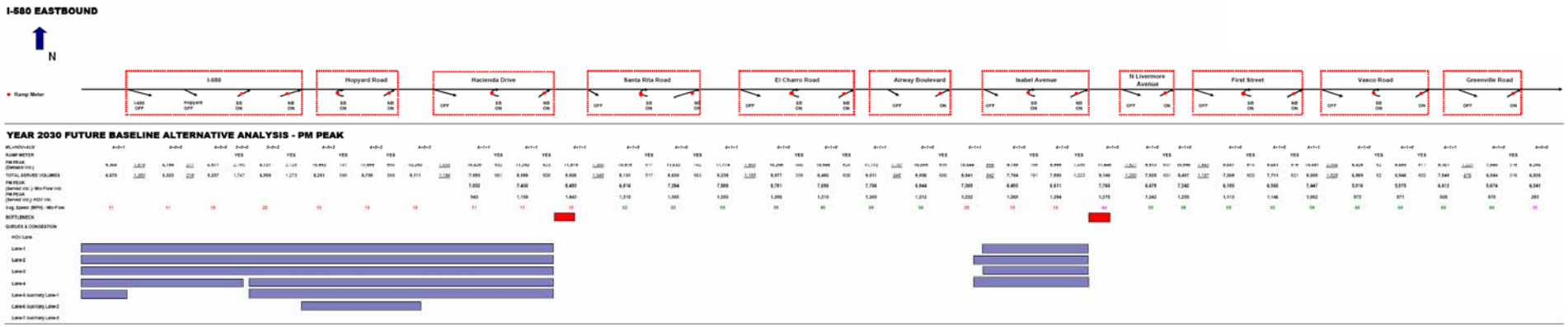
ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*	*3+0+0*
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO
AM PEAK (Demand Vol.)	7,822	2,921	4,901	1,456	3,445	1,132	4,577		2,891	7,468	2,076	5,392	416	5,808	248	6,056	1,093	4,963	857	5,820	560	5,260	1,223	6,483	485	5,998	119	5,879	1,766	7,645	481	8,126
TOTAL SERVED VOLUMES	7,280	2,536	4,644	1,455	3,150	1,134	4,277		2,078	6,338	1,975	4,416	416	4,830	247	5,070	876	4,199	857	5,080	428	4,643	1,222	5,838	473	5,083	90	4,891	1,386	6,253	480	6,729
Avg. Speed. (MPH) - Mix-Flow	14		55		62		50			36		54		51		58		60		59		60		46		17		13		17		55
BOTTLENECK																																
QUEUES & CONGESTION																																
Lane-1																																
Lane-2																																
Lane-3																																
Lane-4																																
Lane-5 Auxiliary Lane-1																																
Lane-6 Auxiliary Lane-2																																
Lane-7 Auxiliary Lane-3																																

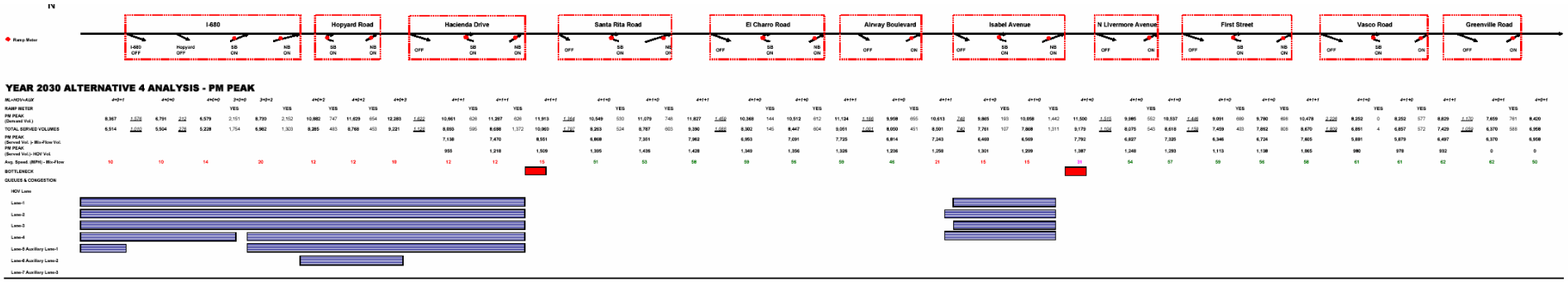


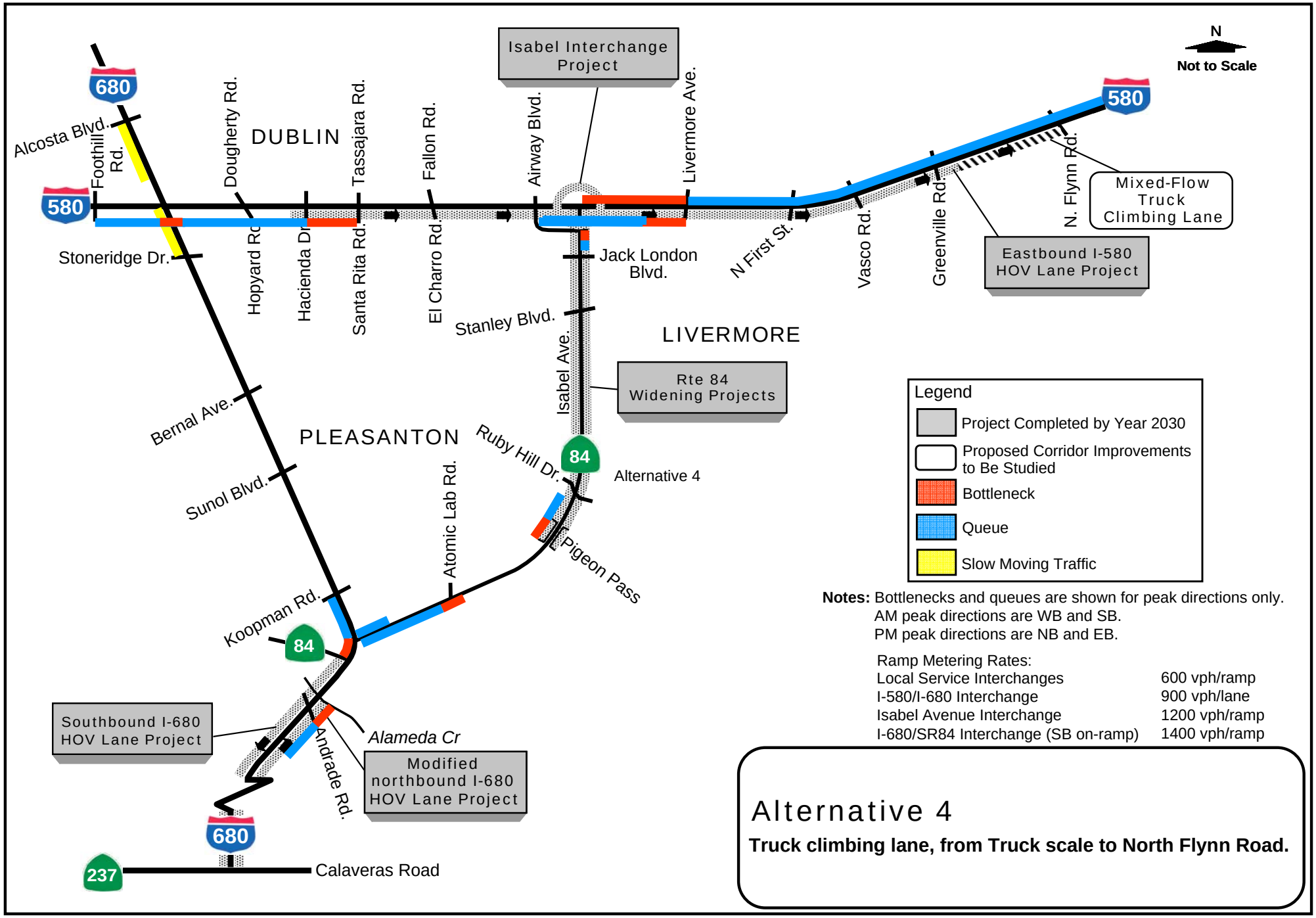
YEAR 2030 ALTERNATIVE 4 ANALYSIS - AM PEAK

ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*	*3+0+0*
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO
AM PEAK (Demand Vol.)	7,822	2,921	4,901	1,456	3,445	1,132	4,577		2,891	7,468	2,076	5,392	416	5,808	248	6,056	1,093	4,963	857	5,820	560	5,260	1,223	6,483	485	5,998	119	5,879	1,767	7,646	482	8,128
TOTAL SERVED VOLUMES	7,200	2,478	4,649	1,452	3,183	1,132	4,344		2,012	6,301	1,942	4,448	416	4,860	240	5,080	914	4,165	850	5,020	512	4,480	1,222	5,649	438	4,889	73	4,712	1,390	6,326	401	6,800
Avg. Speed. (MPH) - Mix-Flow	13		53		62		50			35		52		52		57		60		59		60		47		17		12		18		55
BOTTLENECK																																
QUEUES & CONGESTION																																
Lane-1																																
Lane-2																																
Lane-3																																
Lane-4																																
Lane-5 Auxiliary Lane-1																																
Lane-6 Auxiliary Lane-2																																
Lane-7 Auxiliary Lane-3																																

Bottlenecks and Queues
I-580 Eastbound – PM Peak

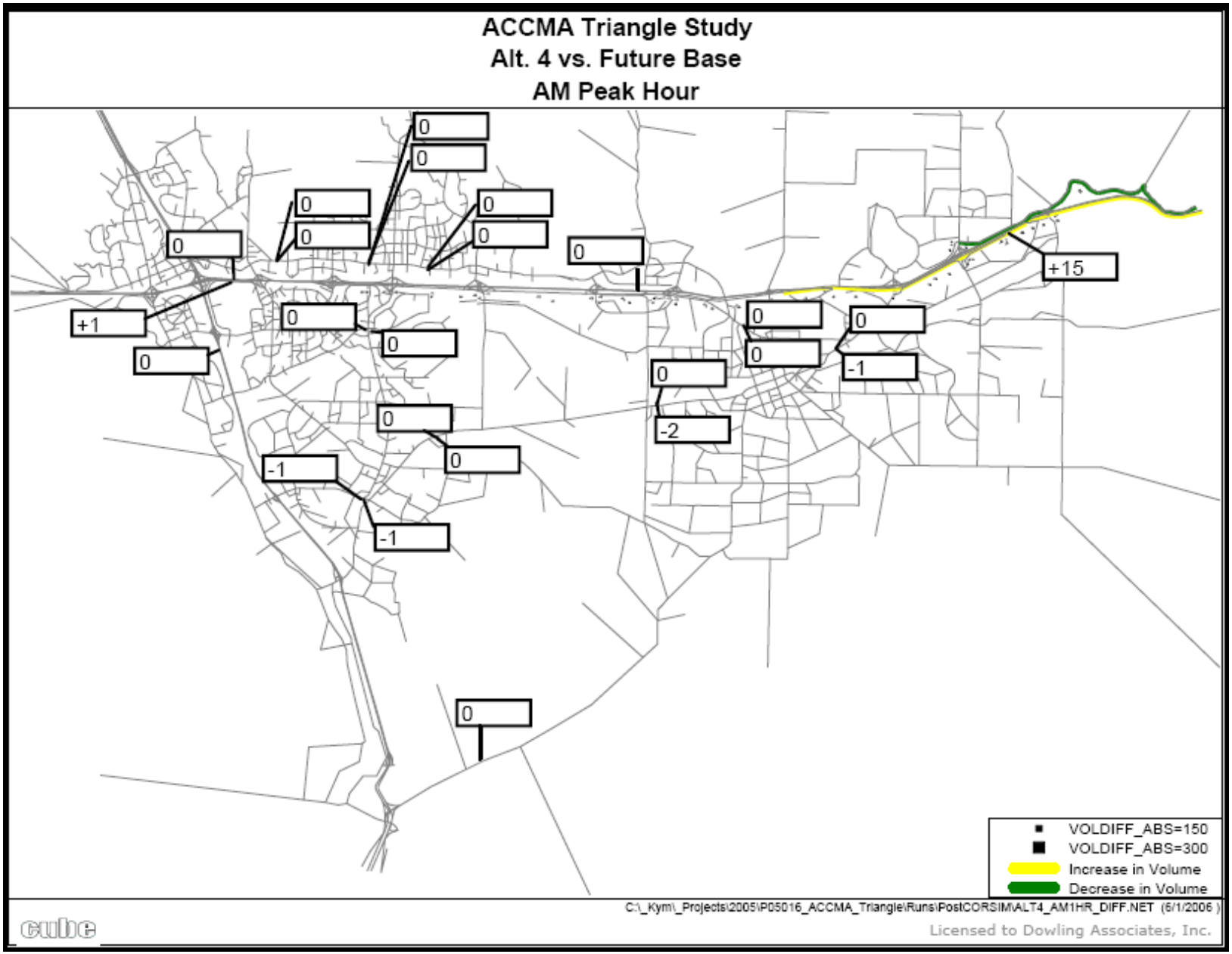




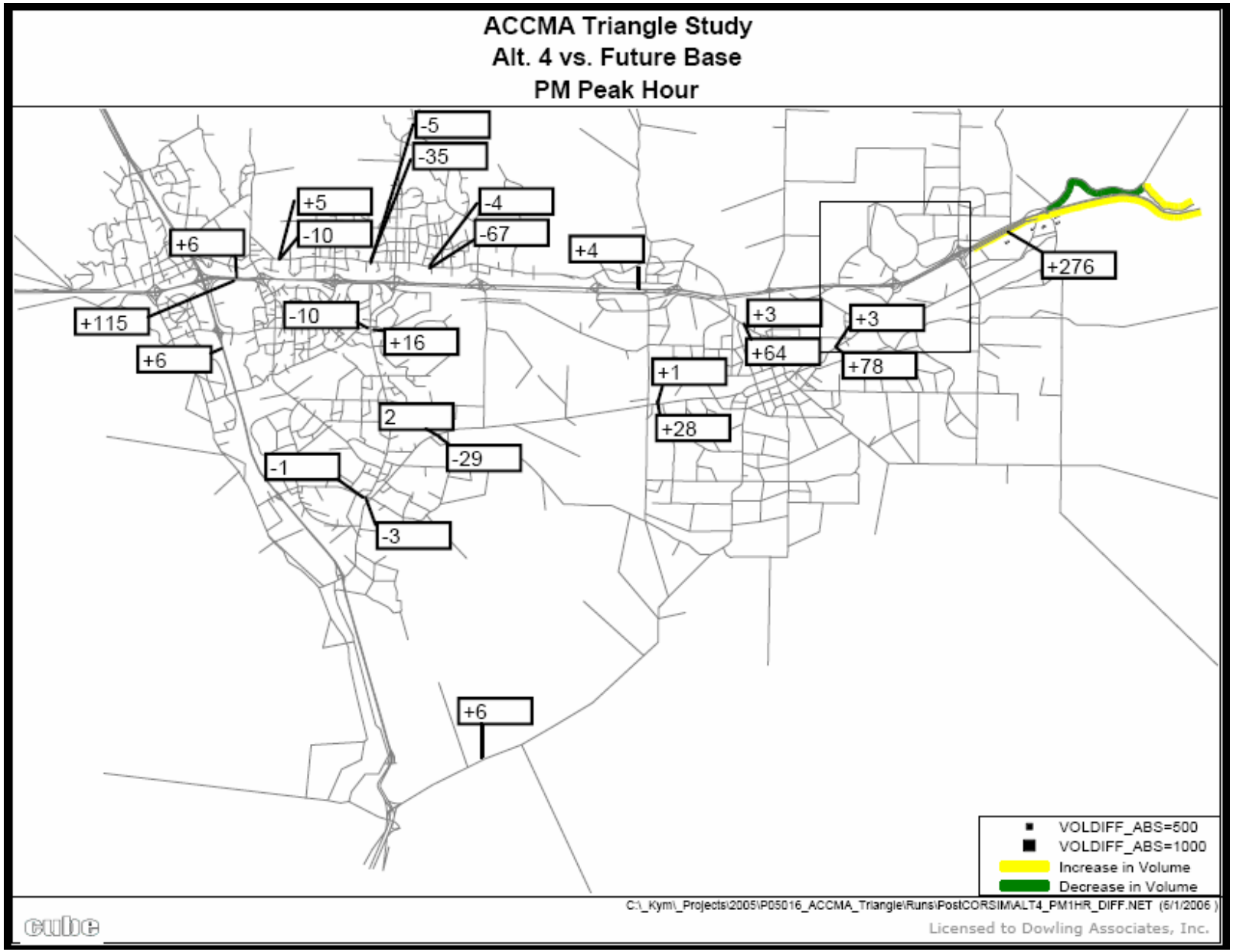


TRIANGLE TRAFFIC STUDY
ALTERNATIVE DESCRIPTION & OPERATIONS SUMMARY

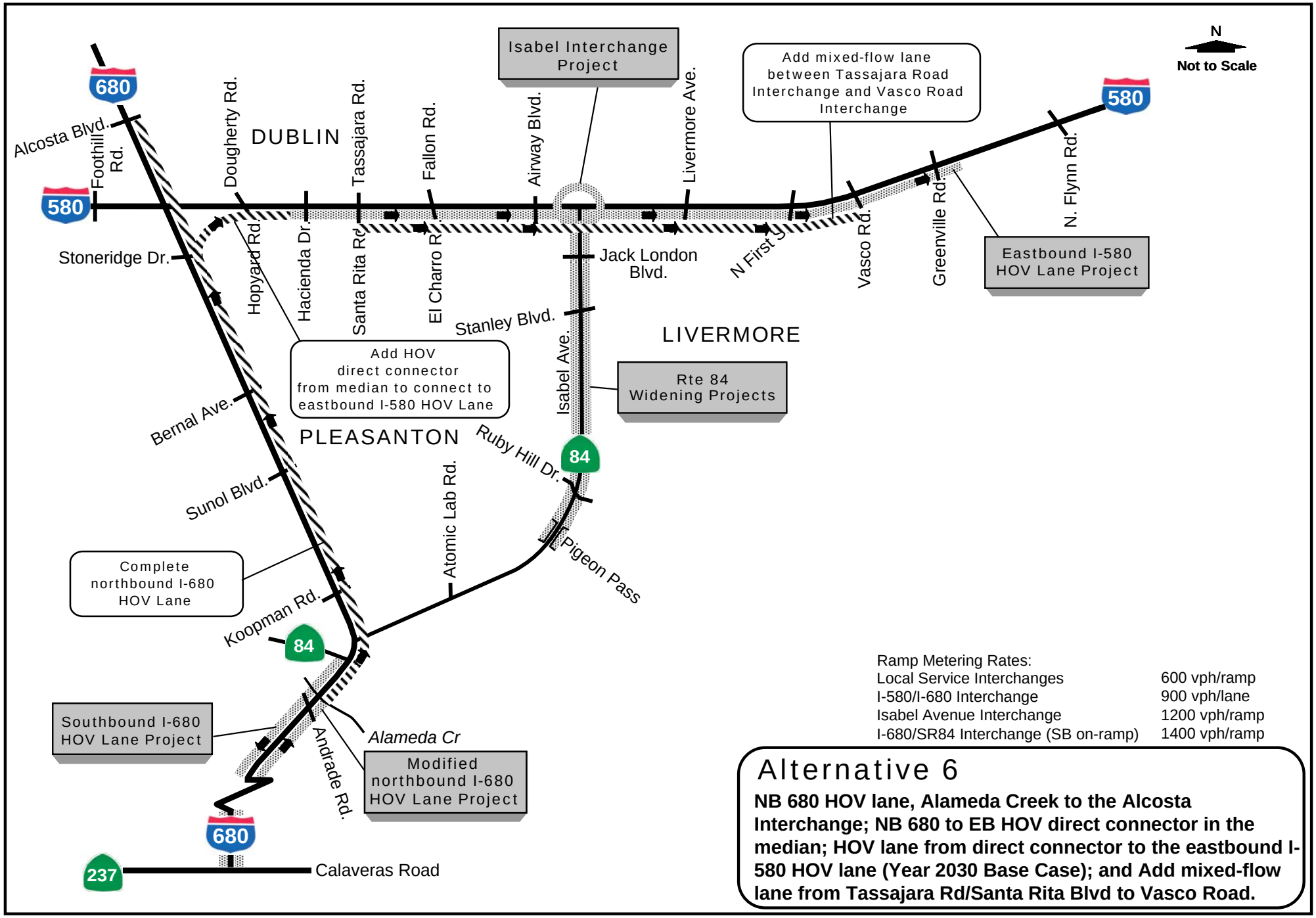
Difference Plot



Difference Plot



Alternative 6



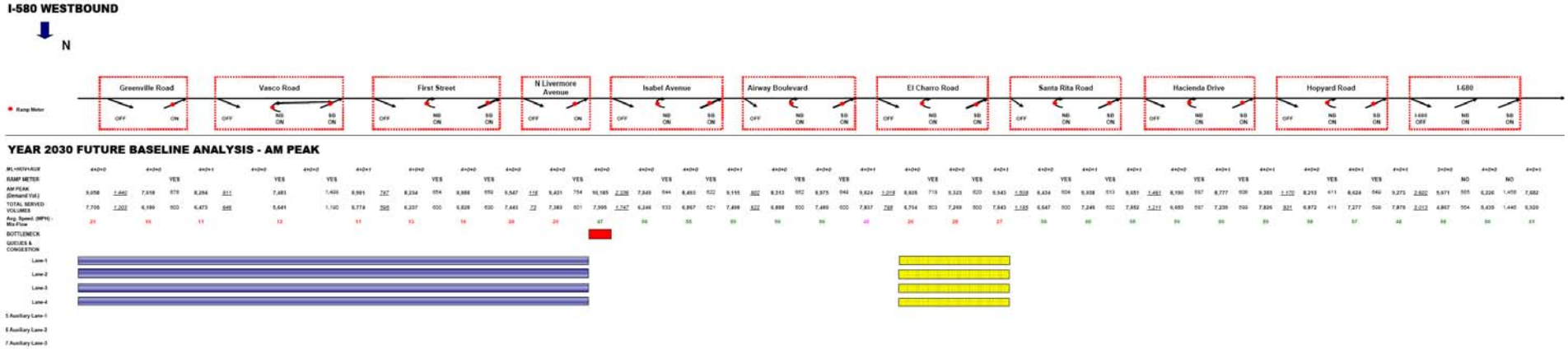
Ramp Metering Rates:

Local Service Interchanges	600 vph/ramp
I-580/I-680 Interchange	900 vph/lane
Isabel Avenue Interchange	1200 vph/ramp
I-680/SR84 Interchange (SB on-ramp)	1400 vph/ramp

Alternative 6

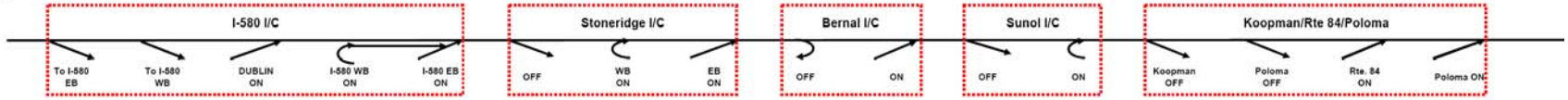
NB 680 HOV lane, Alameda Creek to the Alcosta Interchange; NB 680 to EB HOV direct connector in the median; HOV lane from direct connector to the eastbound I-580 HOV lane (Year 2030 Base Case); and Add mixed-flow lane from Tassajara Rd/Santa Rita Blvd to Vasco Road.

Bottlenecks and Queues
I-580 Westbound – AM Peak



Bottlenecks and Queues
I-680 Southbound – AM Peak

I-680 SOUTHBOUND



YEAR 2030 FUTURE BASELINE ANALYSIS - AM PEAK

ML+HOV+AUX	4+0+2		4+0+1		3+0+0		3+0+0			3+0+1		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0	
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO	
AM PEAK (Demand Vol.)	7,822	2,921	4,901	1,456	3,445	1,132	4,577		2,891	7,468	2,076	5,392	416	5,808	248	6,056	1,093	4,963	857	5,820	560	5,260	1,223	6,483	485	5,998	119	5,879	1,766	7,645	481	8,126
TOTAL SERVED VOLUMES	7,280	2,536	4,644	1,455	3,150	1,134	4,277		2,078	6,338	1,975	4,416	416	4,830	247	5,070	876	4,199	857	5,080	428	4,643	1,222	5,838	473	5,083	90	4,891	1,386	6,253	480	6,729
Avg. Speed. (MPH) - Mix-Flow	14		55		62		50			36		54		51		58		60		59		60		46		17		13		17		55
BOTTLENECK																																
QUEUES & CONGESTION																																
Lane-1																																
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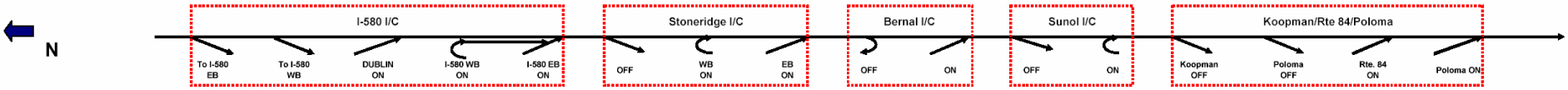

YEAR 2030 ALTERNATIVE 6 ANALYSIS - AM PEAK

ML+HOV+AUX	4+0+2		4+0+1		3+0+0		3+0+0			3+0+1		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0		3+0+0	
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO	
AM PEAK (Demand Vol.)	7,787	2,926	4,861	1,471	3,390	1,158		4,548	2,898	7,446	2,082	5,364	416	5,780	250	6,030	1,089	4,941	861	5,802	559	5,243	1,225	6,468	485	5,983	125	5,858	1,769	7,627	516	8,143
TOTAL SERVED VOLUMES	7,238	2,585	4,621	1,424	3,199	1,159		4,367	2,066	6,422	1,945	4,526	416	4,937	250	5,187	948	4,241	861	5,085	489	4,583	1,225	5,794	464	5,189	42	5,001	1,400	6,367	514	6,879
Avg. Speed. (MPH) - Mix-Flow	13		54		62		47			39		56		48		58		60		59		60		56		31		15		17		55
BOTTLENECK																																
QUEUES & CONGESTION																																
Lane-1																																
Lane-2																																
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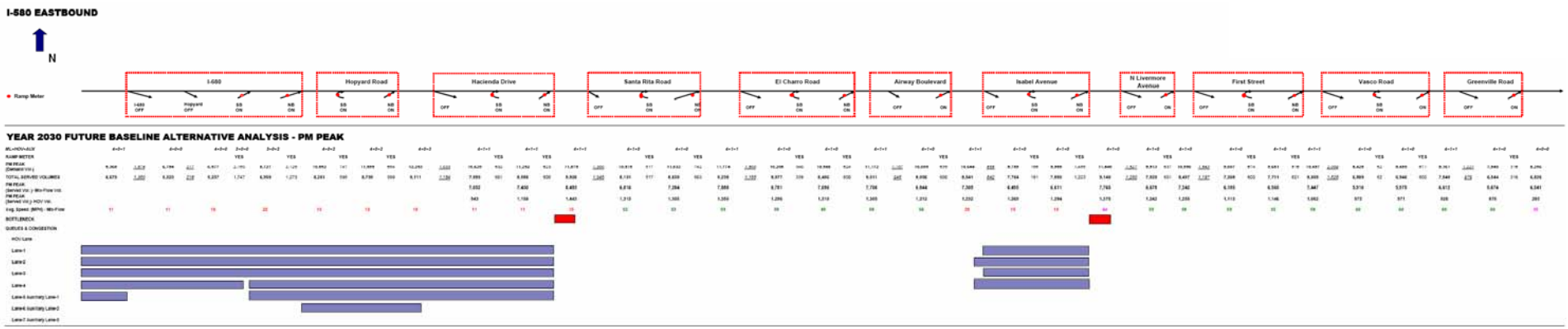
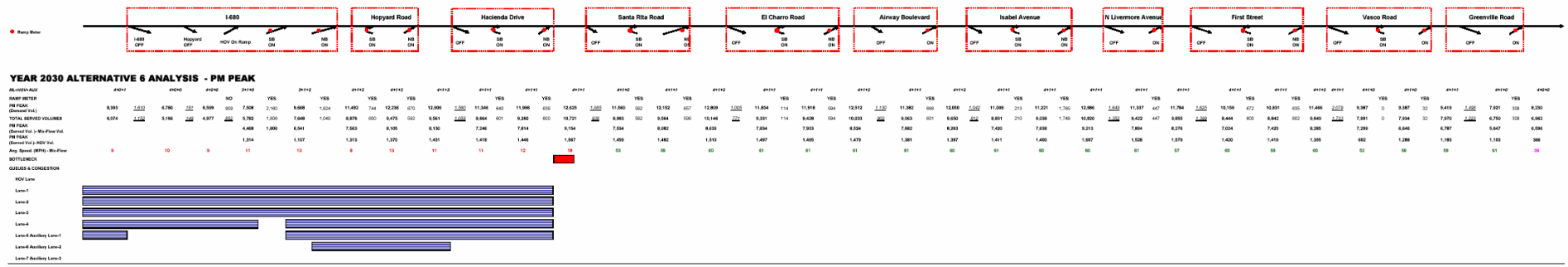
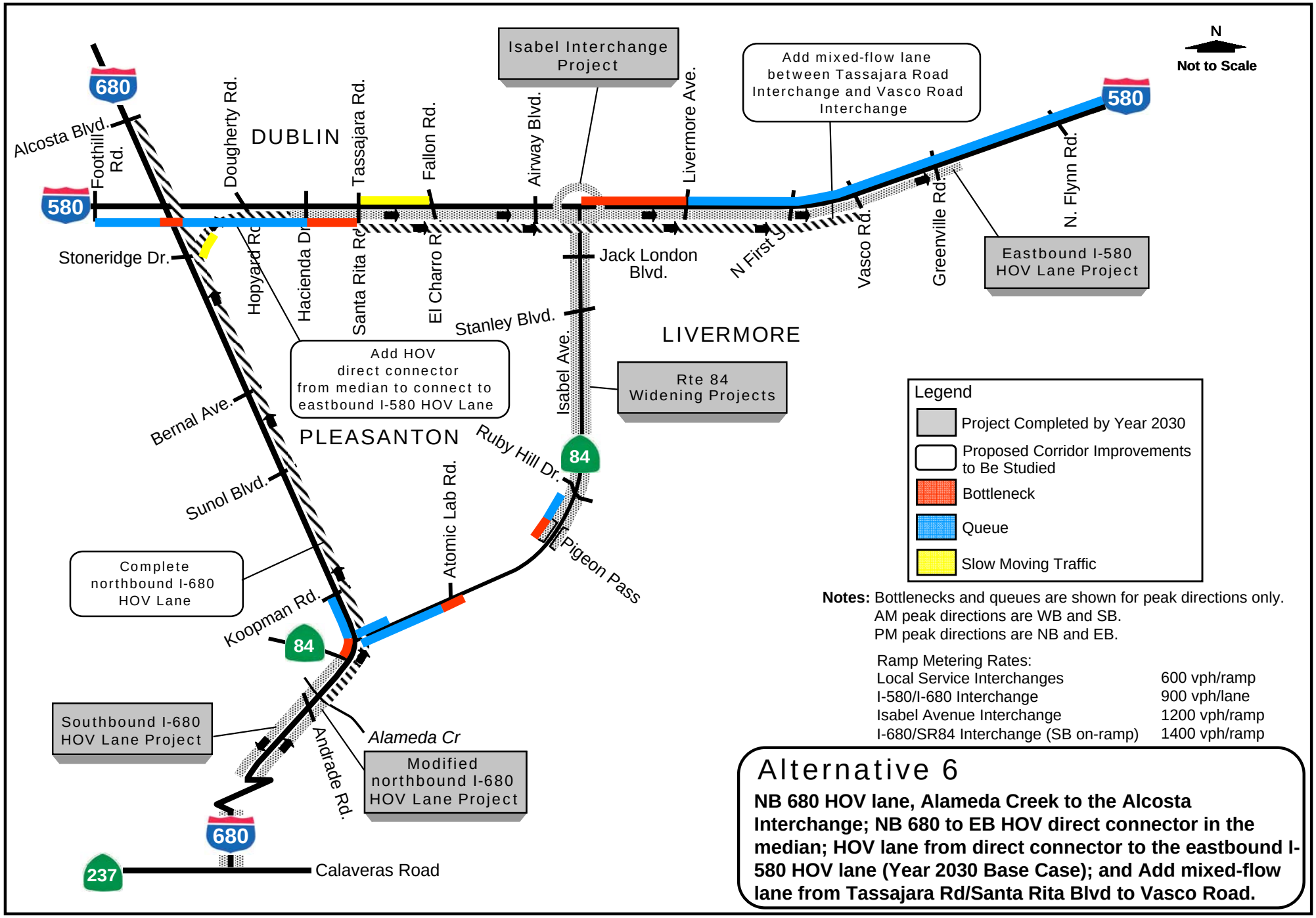
Lane-7 Auxiliary Lane-3																																

Bottlenecks and Queues
I-580 Eastbound – PM Peak







Notes: Bottlenecks and queues are shown for peak directions only.
AM peak directions are WB and SB.
PM peak directions are NB and EB.

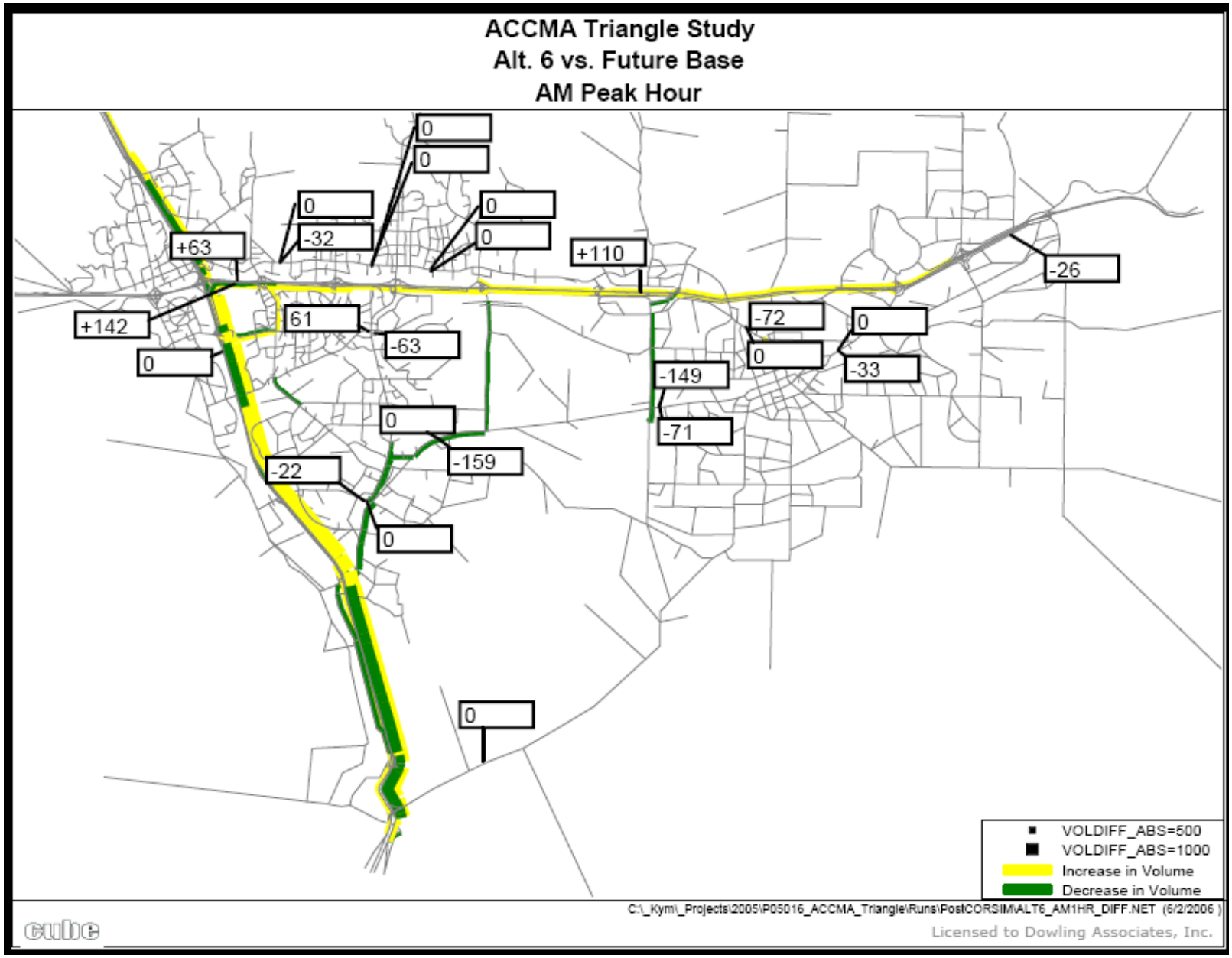
Ramp Metering Rates:

Local Service Interchanges	600 vph/ramp
I-580/I-680 Interchange	900 vph/lane
Isabel Avenue Interchange	1200 vph/ramp
I-680/SR84 Interchange (SB on-ramp)	1400 vph/ramp

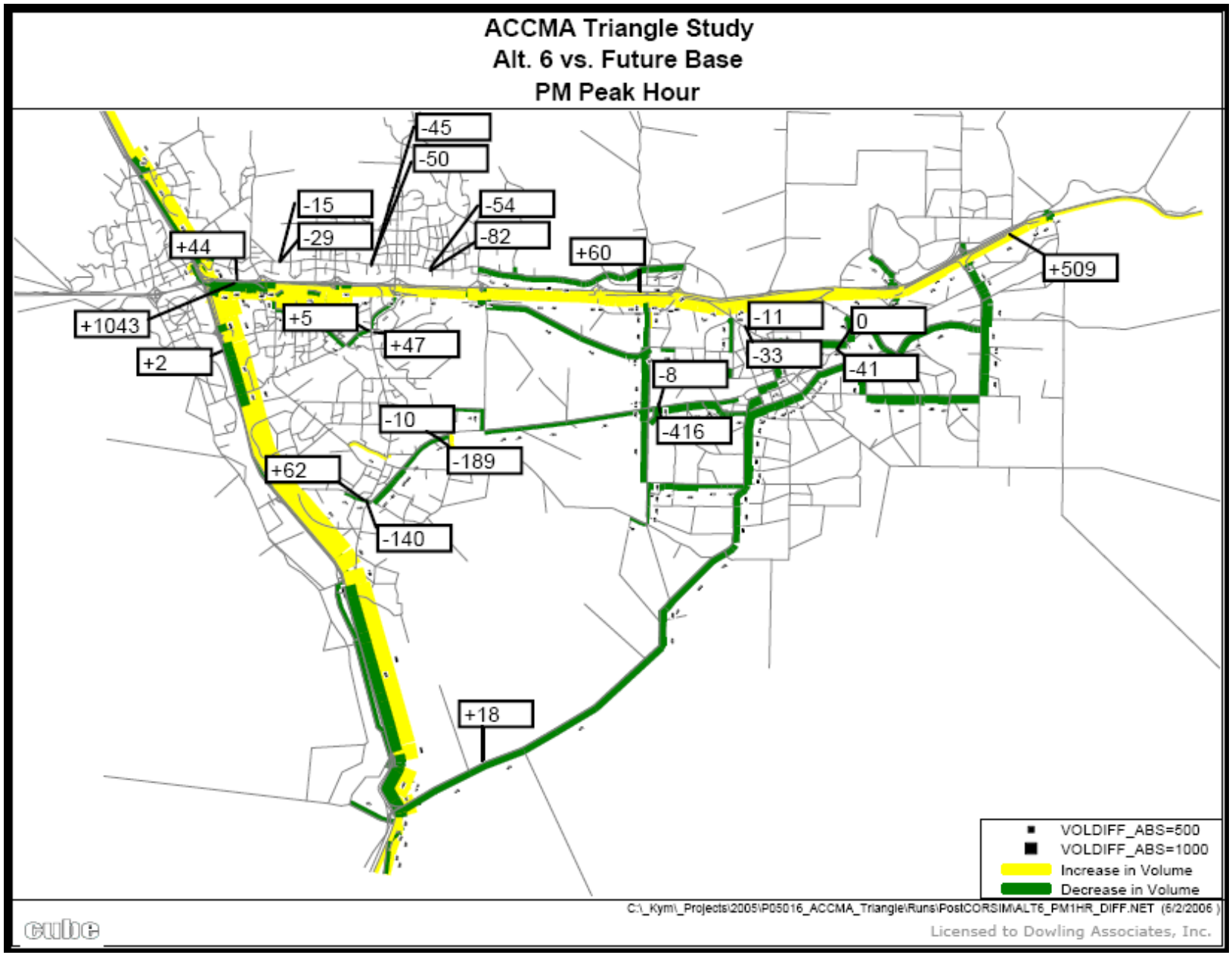
Alternative 6

NB 680 HOV lane, Alameda Creek to the Alcosta Interchange; NB 680 to EB HOV direct connector in the median; HOV lane from direct connector to the eastbound I-580 HOV lane (Year 2030 Base Case); and Add mixed-flow lane from Tassajara Rd/Santa Rita Blvd to Vasco Road.

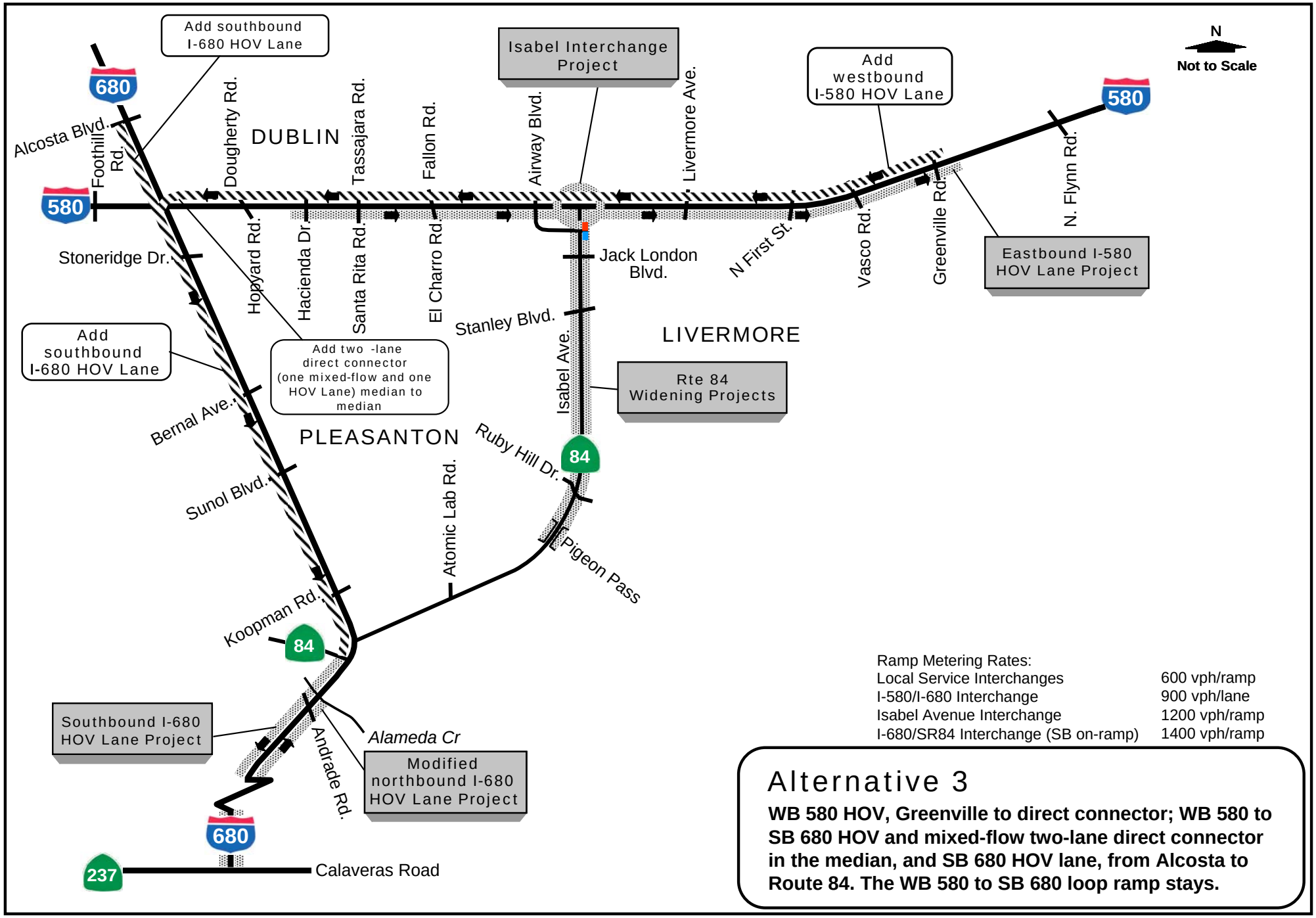
Difference Plot



Difference Plot

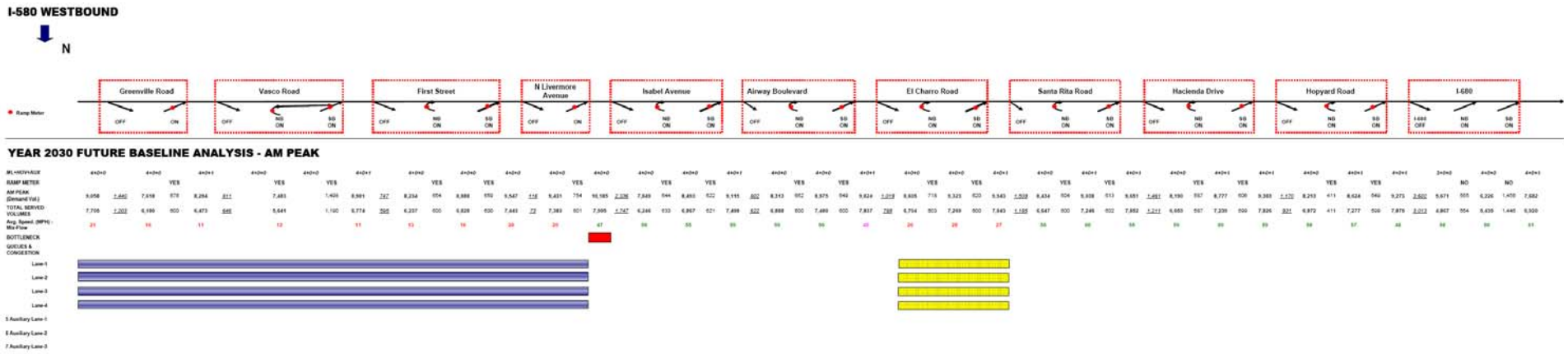


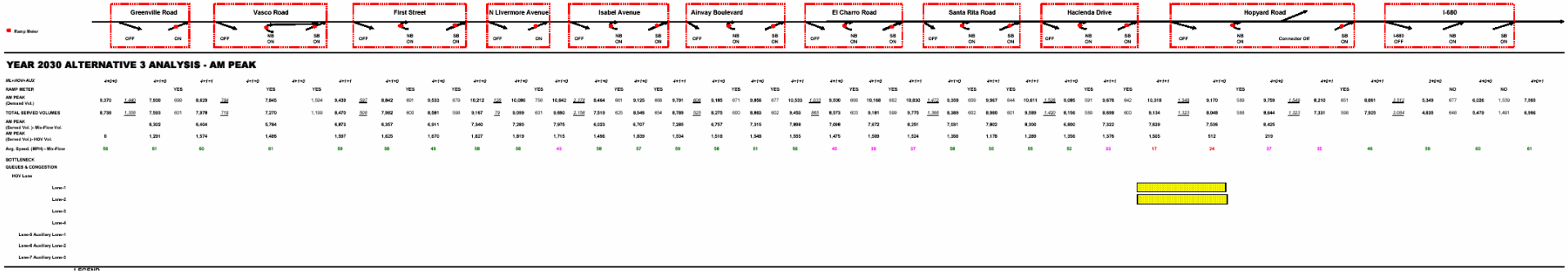
Alternative 3



TRIANGLE TRAFFIC STUDY
ALTERNATIVE DESCRIPTION & OPERATIONS SUMMARY

Bottlenecks and Queues
I-580 Westbound – AM Peak

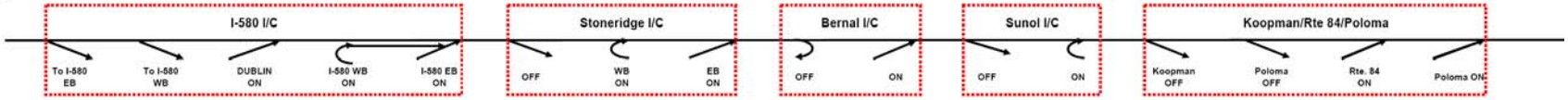




Bottlenecks and Queues
I-680 Southbound – AM Peak

I-680 SOUTHBOUND

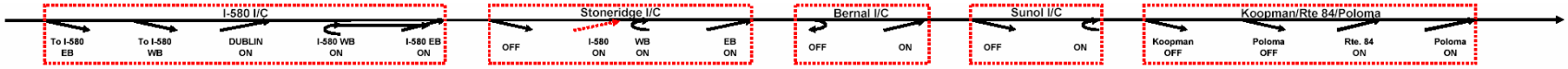
N



YEAR 2030 FUTURE BASELINE ANALYSIS - AM PEAK

ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO
AM PEAK (Demand Vol.)	7,822	*2,921*	4,901	*1,456*	3,445	1,132	4,577		2,891	7,468	*2,076*	5,392	416	5,808	248	6,056	*1,093*	4,963	857	5,820	*560*	5,260	1,223	6,483	*485*	5,998	*119*	5,879	1,766	7,645	481	8,126
TOTAL SERVED VOLUMES	7,280	*2,536*	4,644	*1,455*	3,150	1,134	4,277		2,078	6,338	*1,975*	4,416	416	4,830	247	5,070	*876*	4,199	857	5,080	*428*	4,643	1,222	5,838	*473*	5,083	*90*	4,891	1,386	6,253	480	6,729
Avg. Speed. (MPH) - Mix-Flow	14		55		62		50			36		54		51		58		60		59		60		46		17		13		17		55
BOTTLENECK																															
QUEUES & CONGESTION																															
Lane-1																															
Lane-2																															
Lane-3																															
Lane-4																															
Lane-5 Auxiliary Lane-1																															
Lane-6 Auxiliary Lane-2																															
Lane-7 Auxiliary Lane-3																															

N

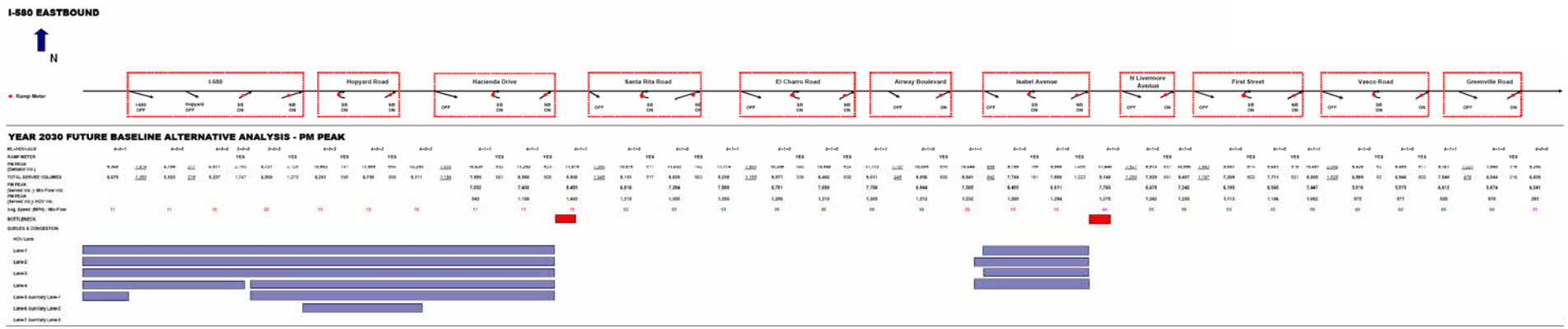


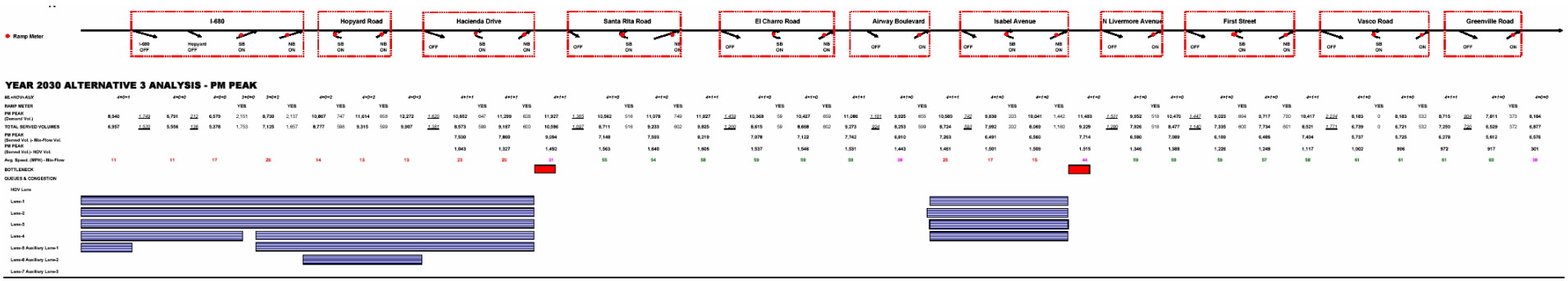
YEAR 2030 ALTERNATIVE 3 ANALYSIS - AM PEAK

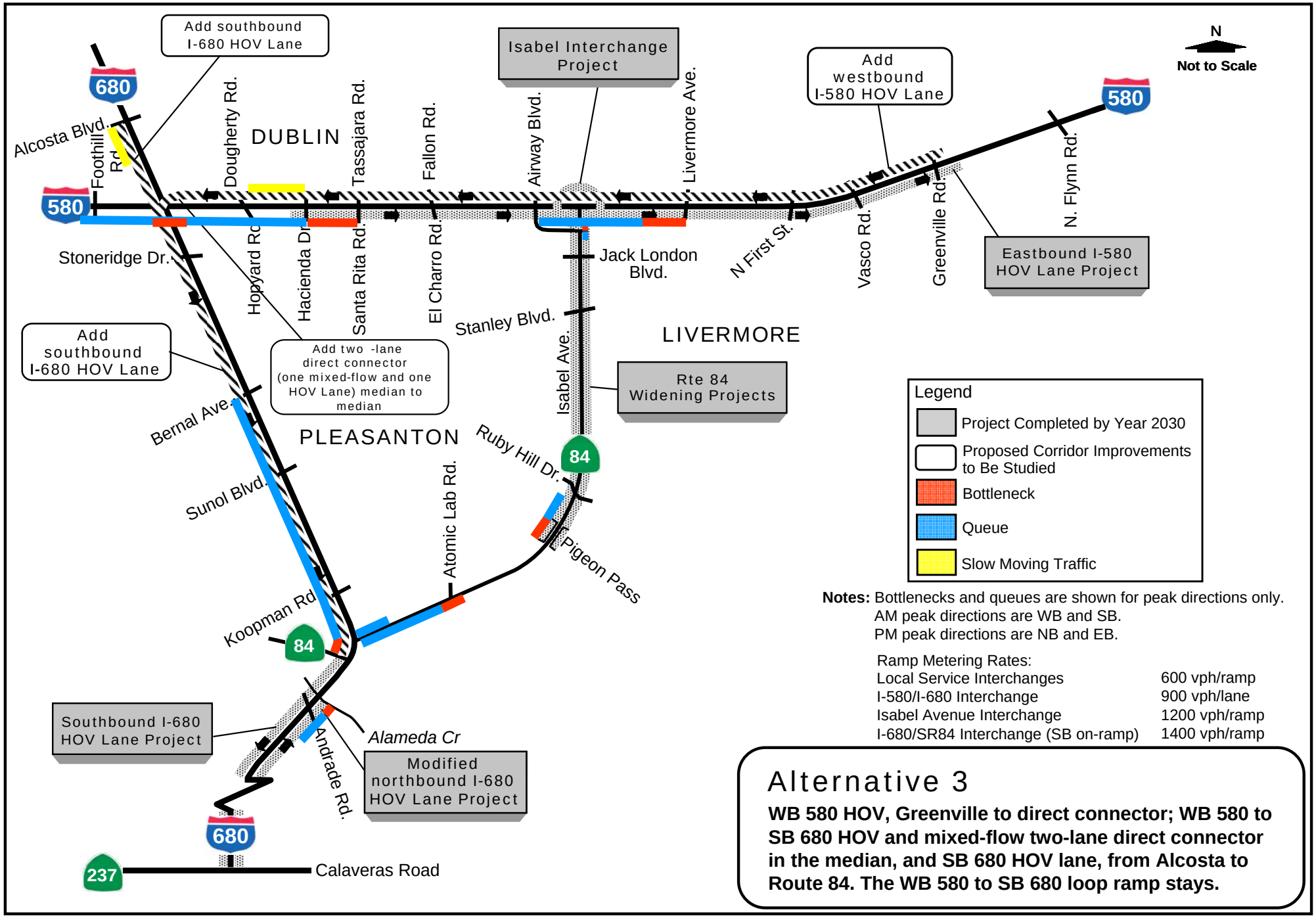
ML+HOV+AUX	*4+1+2*		*4+1+1*		*3+1+0*		*3+1+0*			*3+1+1*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*		*3+1+0*
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO
AM PEAK (Demand Vol.)	8,439	*2,893*	5,546	*1,539*	4,007	1,233	5,240		2,586	7,826	*2,452*	5,374	1,549	462	7,385	309	7,694	*1,237*	6,457	785	7,242	*491*	6,751	1,179	7,930	*574*	7,356	*127*	7,229	1,643	8,872	300	9,172
TOTAL SERVED VOLUMES	7,866	*2,549*	5,315	*1,489*	3,828	1,232	5,060		2,068	7,135	*2,247*	4,142	1,318	462	6,015	308	6,922	*944*	5,828	786	6,368	*452*	5,834	917	6,778	*451*	6,104	*71*	6,042	1,427	7,484	300	*7,784*
AM PEAK (Served Vol.)- Mix-Flow Vol.	6,331		4,144		2,923		4,133			6,211		3,226			4,648		5,213		4,163		4,629		4,243		5,227		4,555		4,501		5,754		6,077
AM PEAK (Served Vol.)- HOV Vol.	1,535		1,171		905		927			924		916			1,367		1,709		1,665		1,739		1,591		1,551		1,549		1,541		1,730		1,707
Avg. Speed. (MPH) - Mix-Flow	10		52		62		59			58		60			51		56		32		16		11		19		11		12		18		34
BOTTLENECK																															
QUEUES & CONGESTION																															
Lane-1																															
Lane-2																															
Lane-3																															
Lane-4																															
Lane-5 Auxiliary Lane-1																															
Lane-6 Auxiliary Lane-2																															
Lane-7 Auxiliary Lane-3																															

LEGEND

Bottlenecks and Queues
I-580 Eastbound – PM Peak

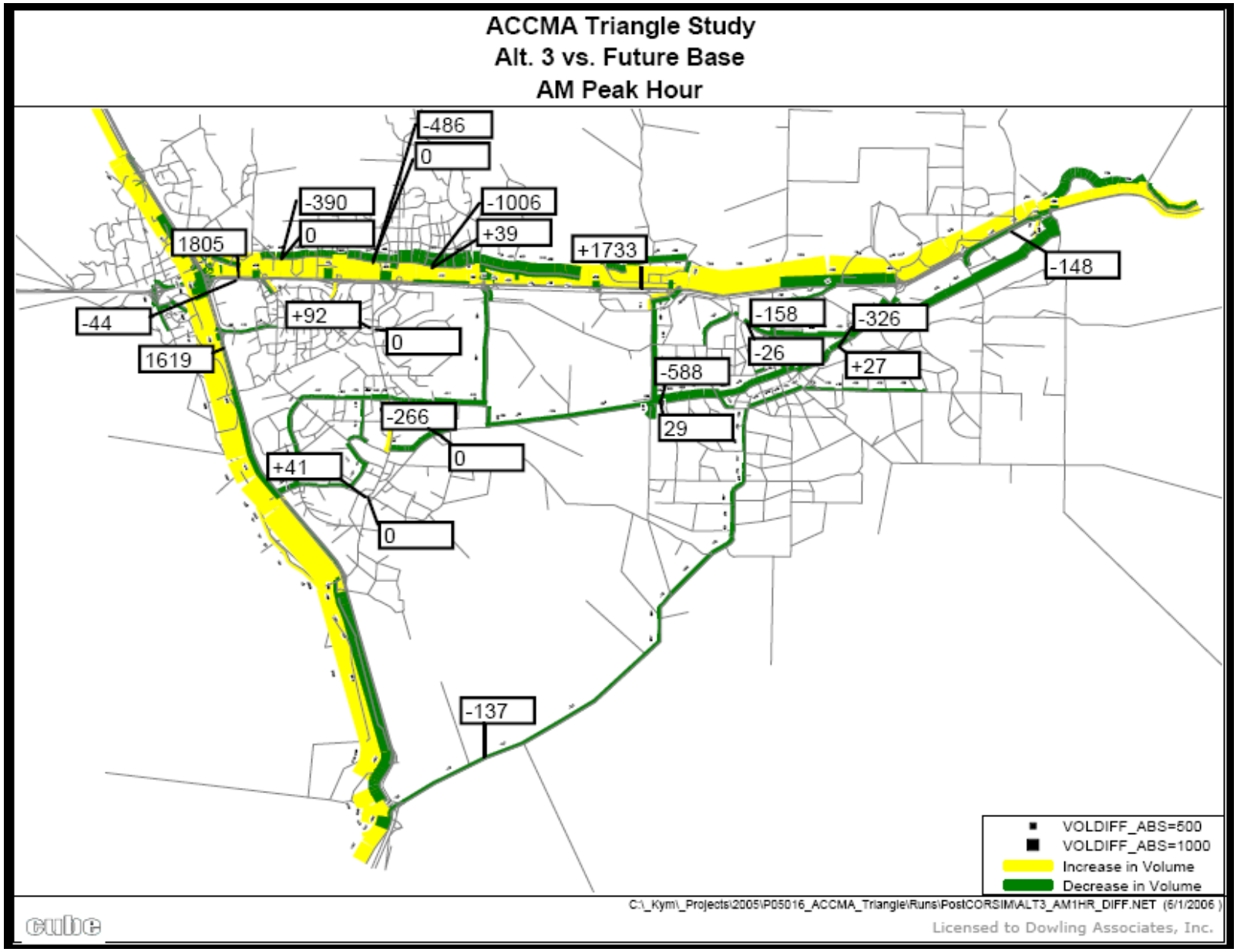




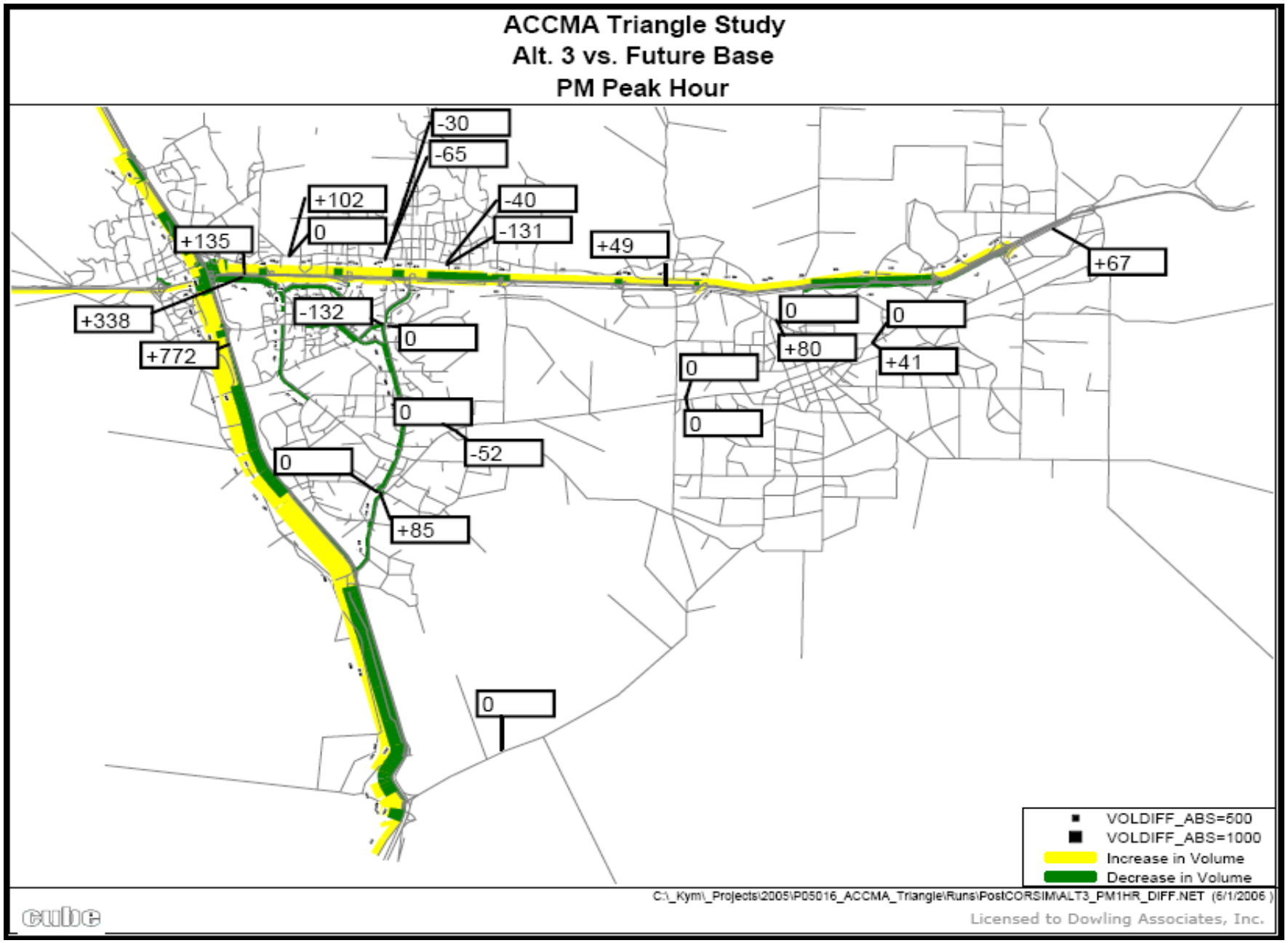


TRIANGLE TRAFFIC STUDY
ALTERNATIVE DESCRIPTION & OPERATIONS SUMMARY

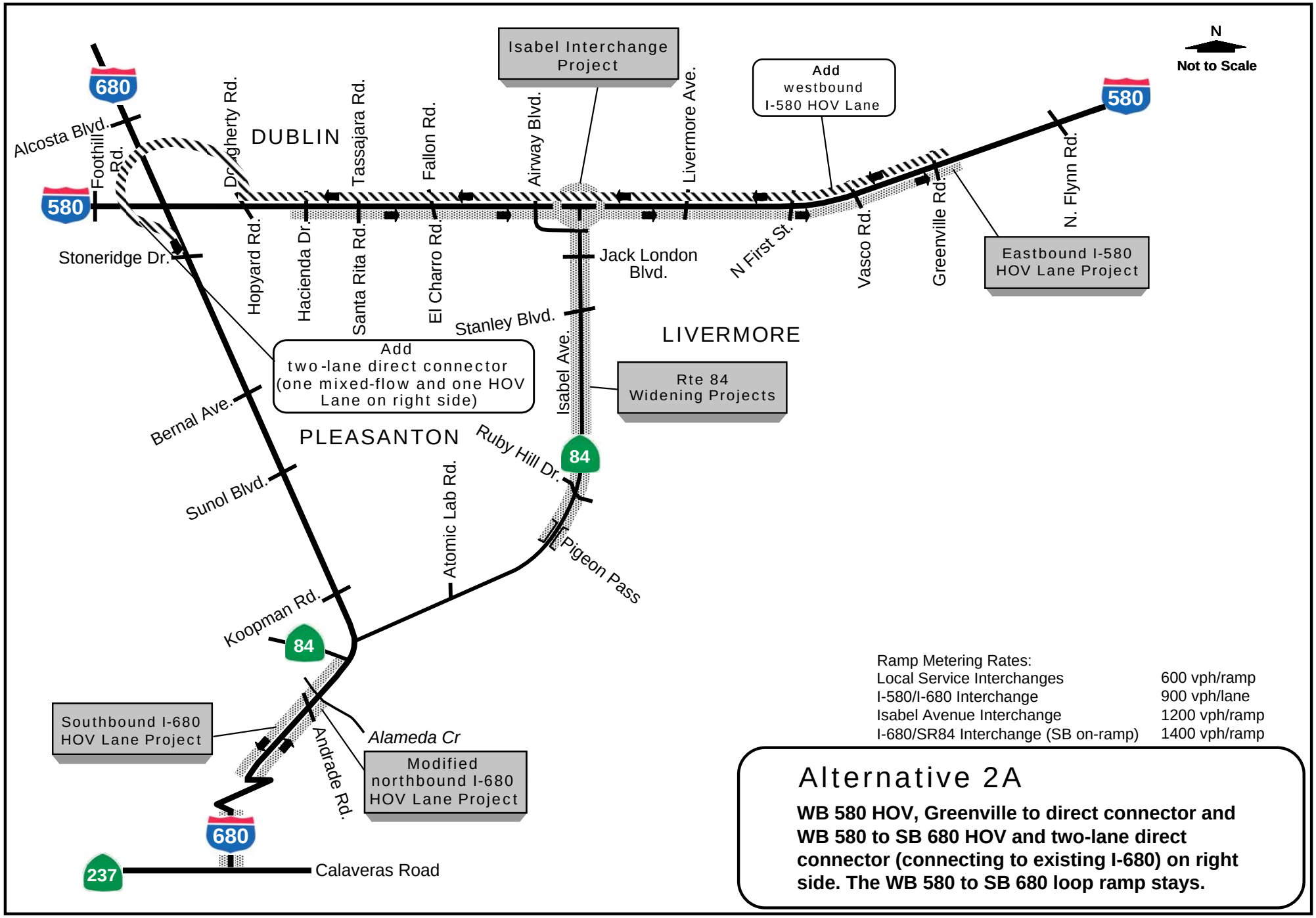
Difference Plot



Difference Plot



Alternative 2A



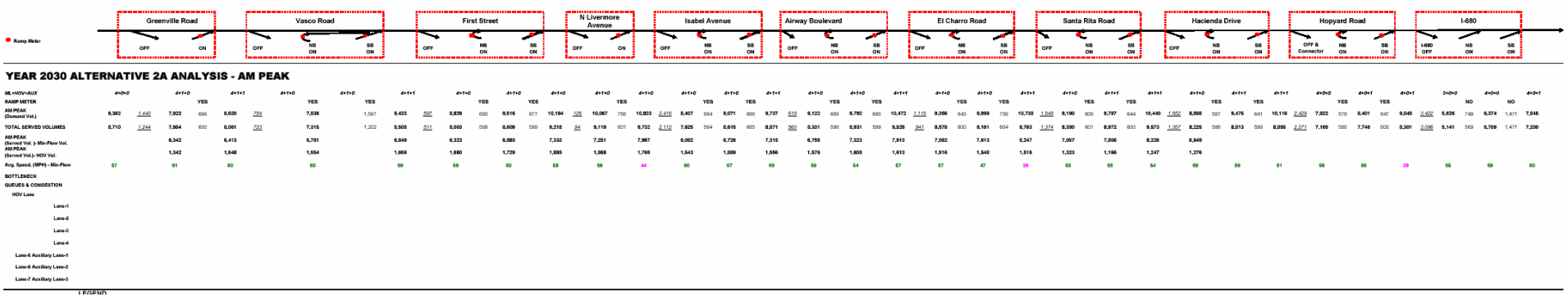
Ramp Metering Rates:

Local Service Interchanges	600 vph/ramp
I-580/I-680 Interchange	900 vph/lane
Isabel Avenue Interchange	1200 vph/ramp
I-680/SR84 Interchange (SB on-ramp)	1400 vph/ramp

Alternative 2A

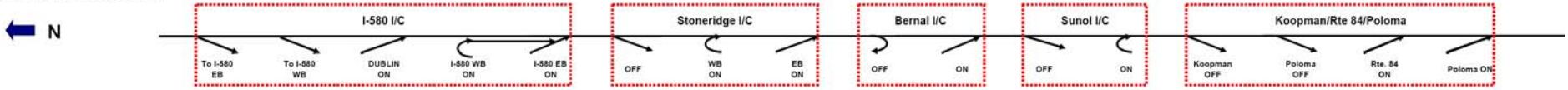
WB 580 HOV, Greenville to direct connector and WB 580 to SB 680 HOV and two-lane direct connector (connecting to existing I-680) on right side. The WB 580 to SB 680 loop ramp stays.

Bottlenecks and Queues
I-580 Westbound – AM Peak



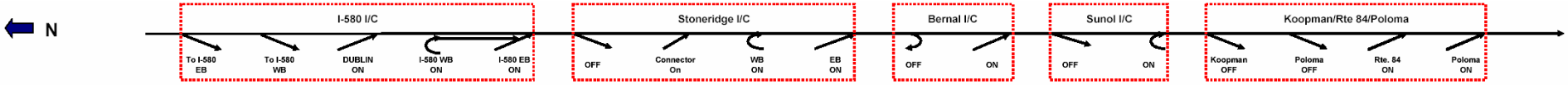
Bottlenecks and Queues
I-680 Southbound – AM Peak

I-680 SOUTHBOUND



YEAR 2030 FUTURE BASELINE ANALYSIS - AM PEAK

ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*	
RAMP METER						NO		NO	NO				NO		NO				NO				NO						NO		NO	
AM PEAK (Demand Vol.)	7,822	2,921	4,901	1,456	3,445	1,132	4,577		2,891	7,468	2,076	5,392	416	5,808	248	6,056	1,093	4,963	857	5,820	560	5,260	1,223	6,483	485	5,998	119	5,879	1,766	7,645	481	8,126
TOTAL SERVED VOLUMES	7,280	2,536	4,644	1,455	3,150	1,134	4,277		2,078	6,338	1,975	4,416	416	4,830	247	5,070	876	4,199	857	5,080	428	4,643	1,222	5,838	473	5,083	90	4,891	1,386	6,253	480	6,729
Avg. Speed. (MPH) - Mix-Flow	14		55		62		50			36		54		51		58		60		59		60		46		17		13		17		55
BOTTLENECK																																
QUEUES & CONGESTION																																
Lane-1																																
Lane-2																																
Lane-3																																
Lane-4																																
Lane-5 Auxiliary Lane-1																																
Lane-6 Auxiliary Lane-2																																
Lane-7 Auxiliary Lane-3																																



YEAR 2030 ALTERNATIVE 2A ANALYSIS - AM PEAK

ML+HOV+AUX	*4+0+2*		*4+0+1*		*3+0+0*		*3+0+0*			*3+0+1*				*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*		*3+0+0*	
RAMP METER						NO		NO	NO						NO		NO				NO				NO				NO		NO	
AM PEAK (Demand Vol.)	7,785	2,933	4,851	1,471	3,380	913	4,294		2,480	6,774	2,542	4,232	1,269	5,501	385	5,887	253	6,140	1,101	5,040	838	5,878	428	5,449	1,119	6,568	487	6,081	119	5,962	1,678	7,640	527	8,167
TOTAL SERVED VOLUMES	7,195	2,495	4,572	1,489	3,093	915	4,021		2,054	5,957	2,270	3,594	875	4,691	387	5,053	254	4,818	823	3,486	780	3,971	254	3,464	699	4,433	339	4,120	65	4,034	1,467	6,219	527	6,749
Avg. Speed. (MPH) - Mix-Flow	14		54		62		60			53		59		56		45		28		10		10		7		11		9		9		16		55
BOTTLENECK																																
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Lane-1																																
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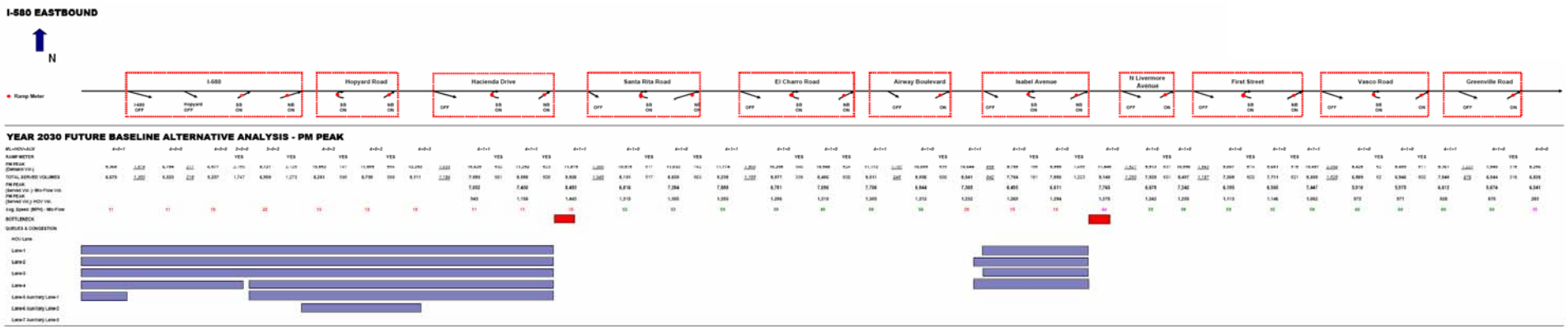
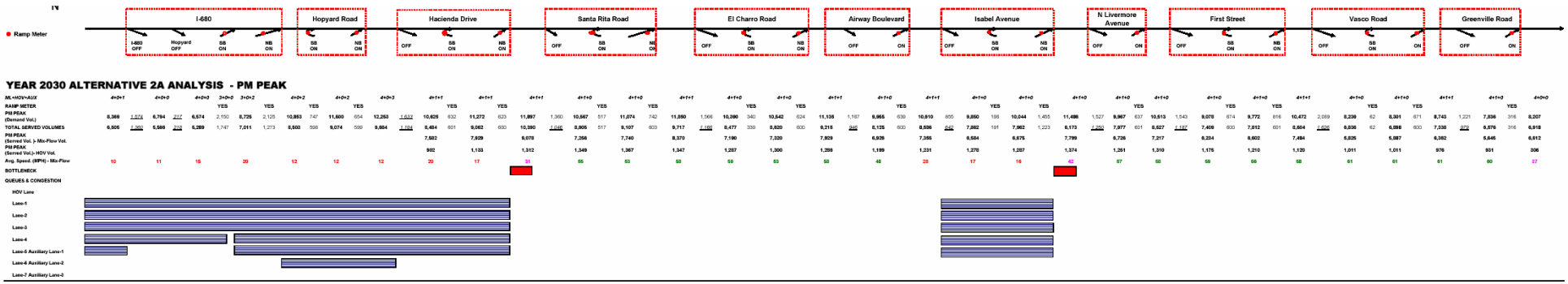
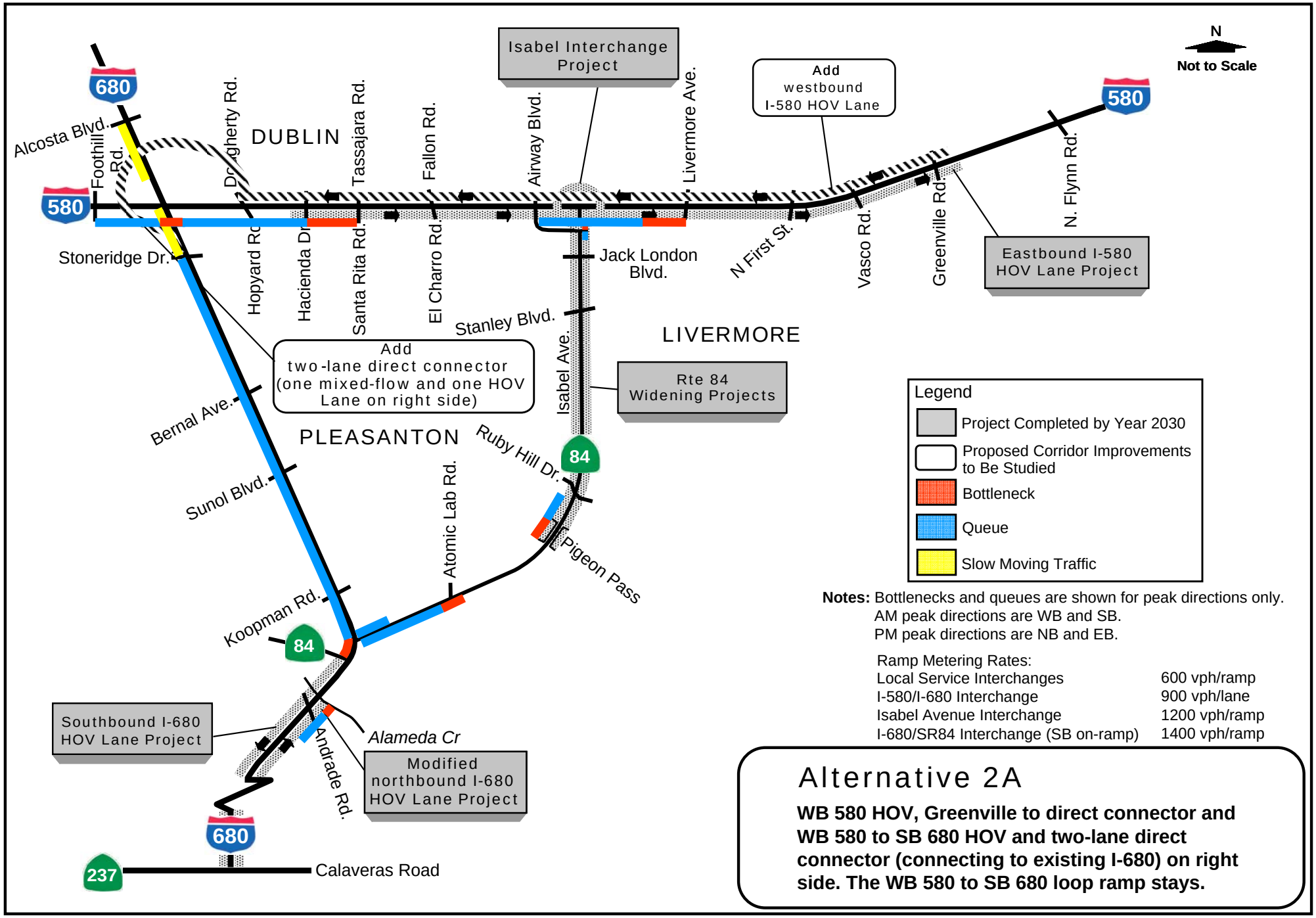
Bottlenecks and Queues
I-580 Eastbound – PM Peak

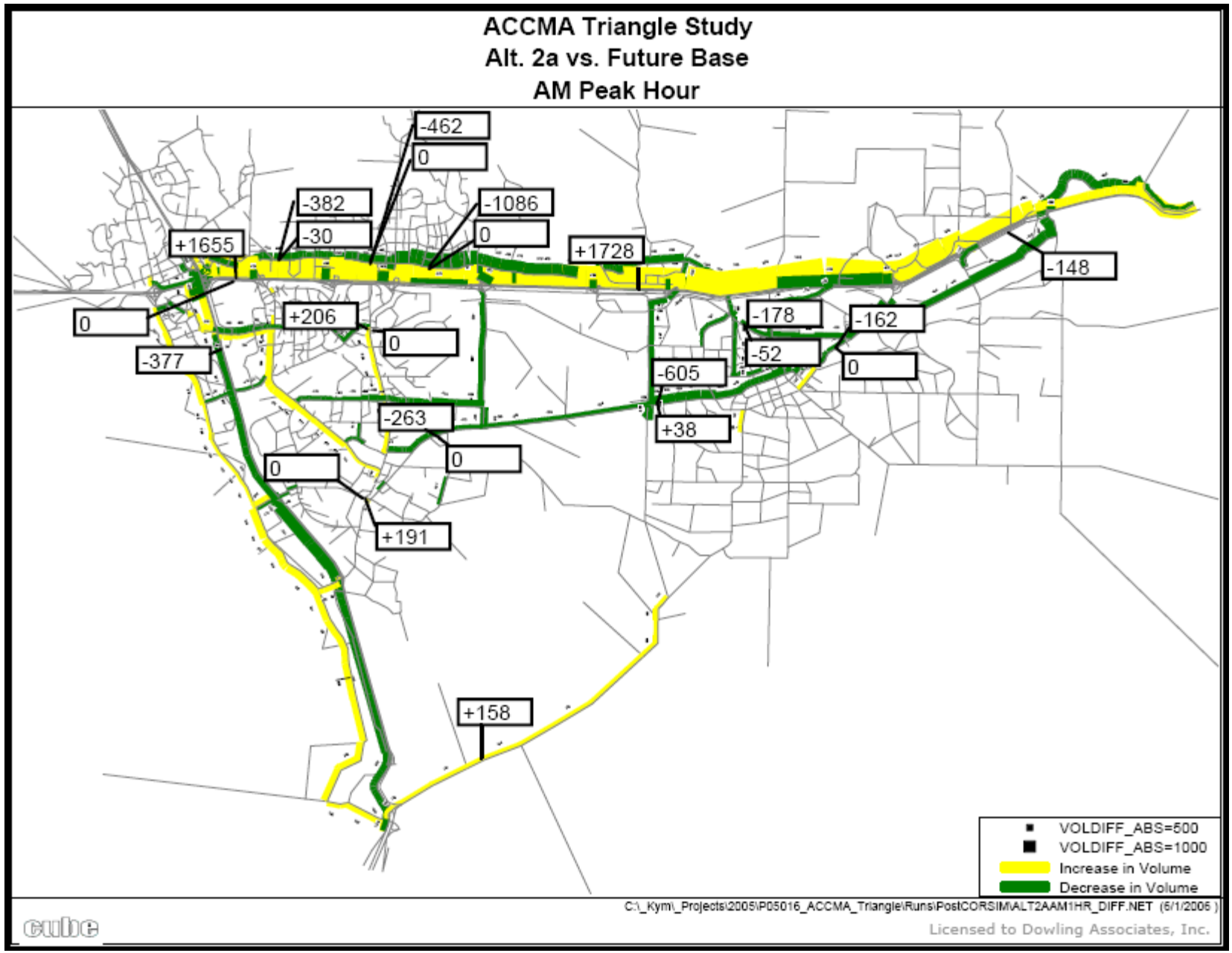




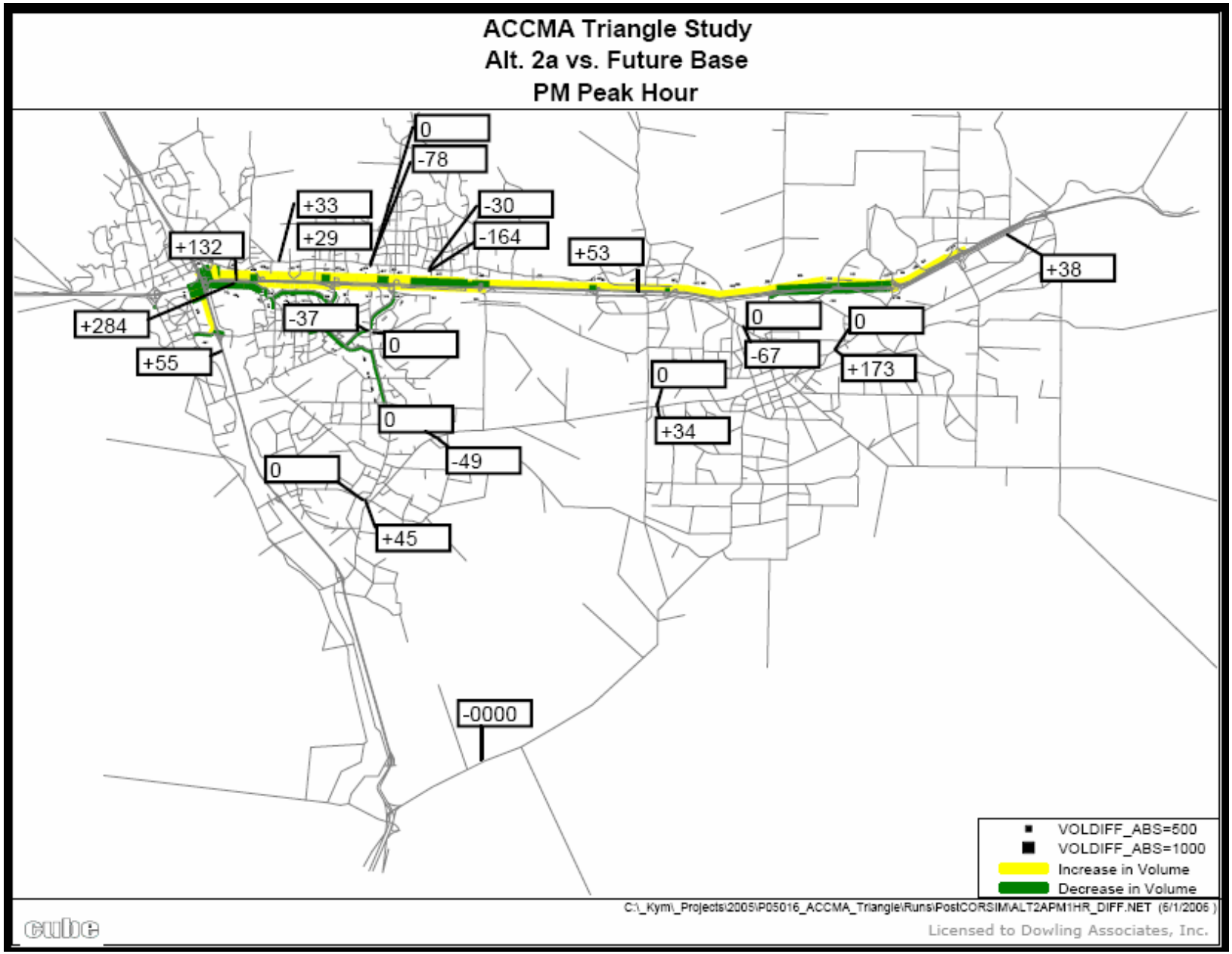


TRIANGLE TRAFFIC STUDY
ALTERNATIVE DESCRIPTION & OPERATIONS SUMMARY

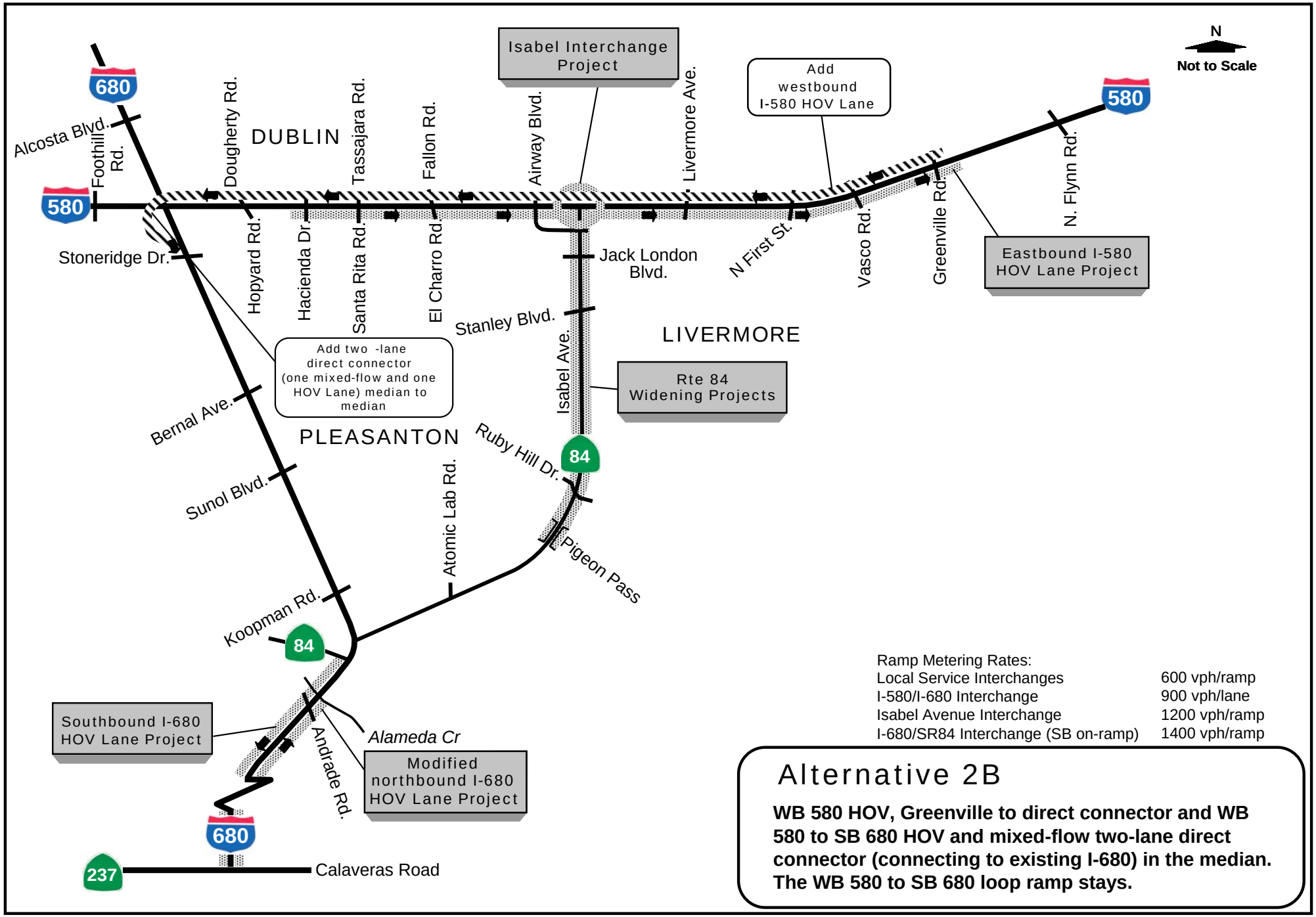
Difference Plot



Difference Plot



Alternative 2B



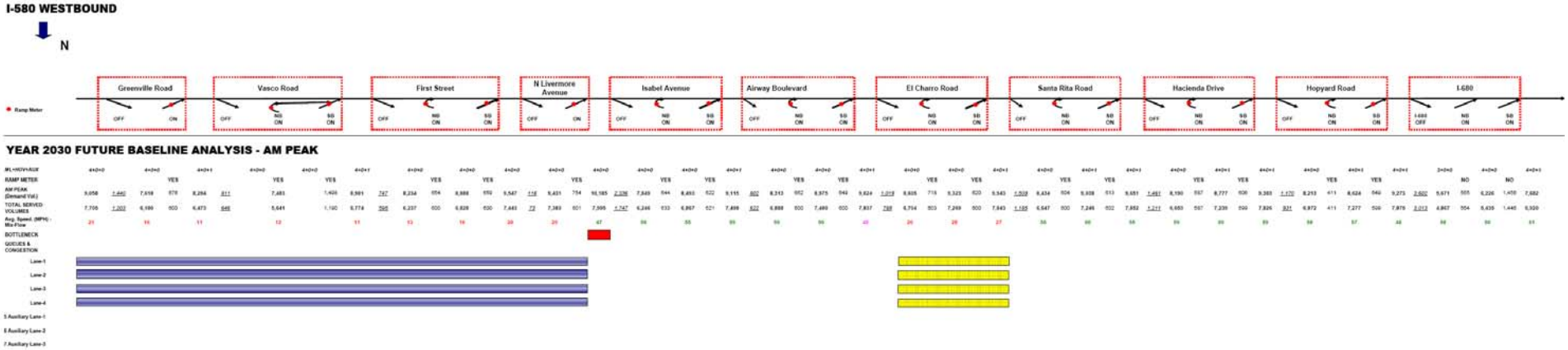
Ramp Metering Rates:

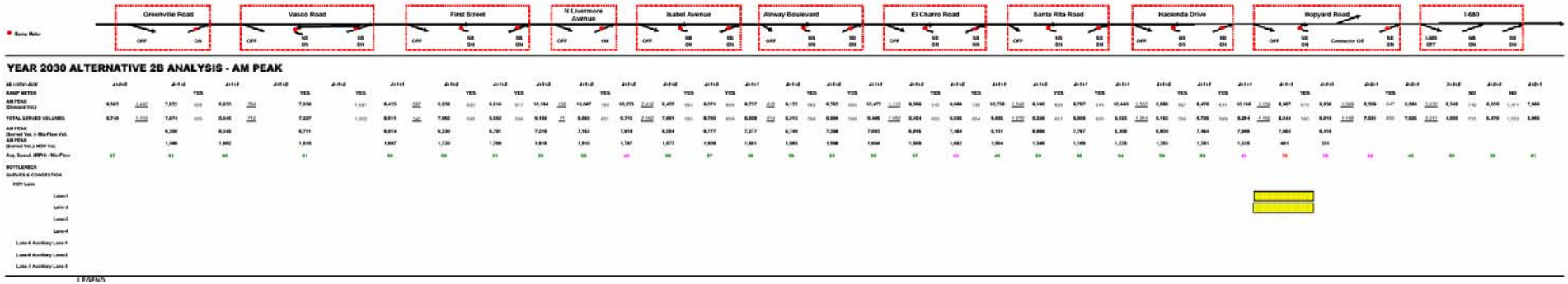
Local Service Interchanges	600 vph/ramp
I-580/I-680 Interchange	900 vph/lane
Isabel Avenue Interchange	1200 vph/ramp
I-680/SR84 Interchange (SB on-ramp)	1400 vph/ramp

Alternative 2B

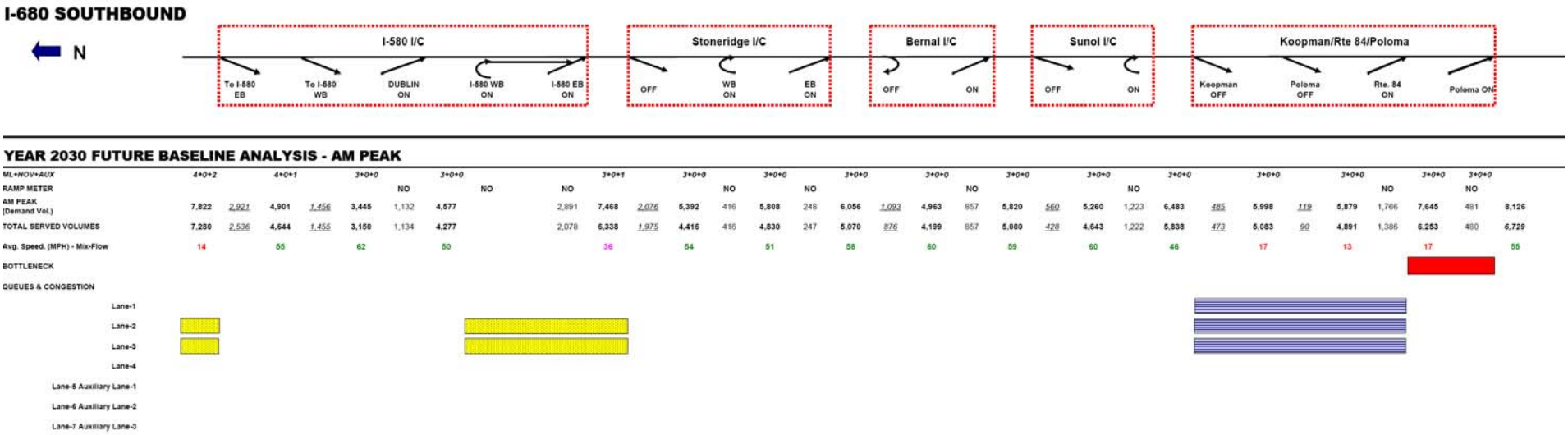
WB 580 HOV, Greenville to direct connector and WB 580 to SB 680 HOV and mixed-flow two-lane direct connector (connecting to existing I-680) in the median. The WB 580 to SB 680 loop ramp stays.

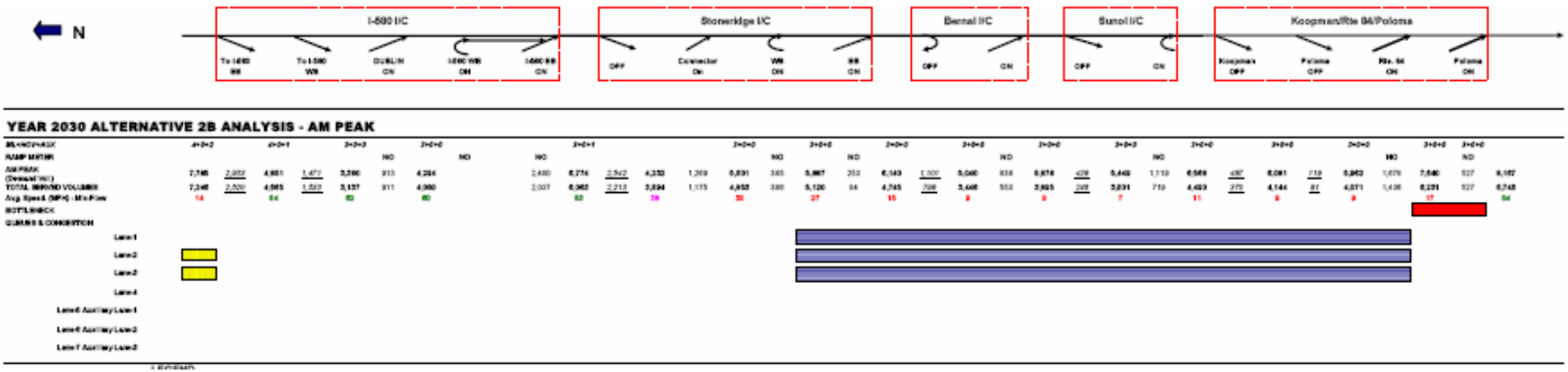
Bottlenecks and Queues
I-580 Westbound – AM Peak



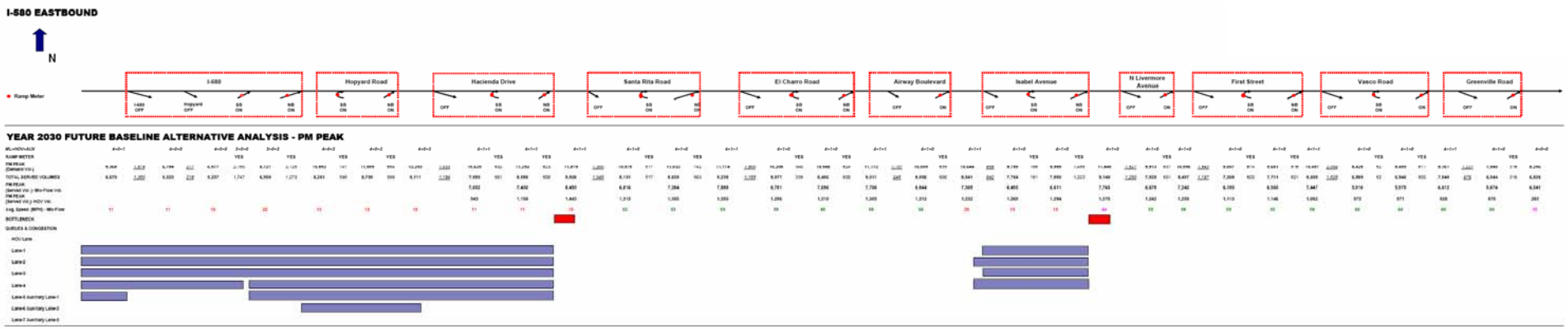


Bottlenecks and Queues
I-680 Southbound – AM Peak

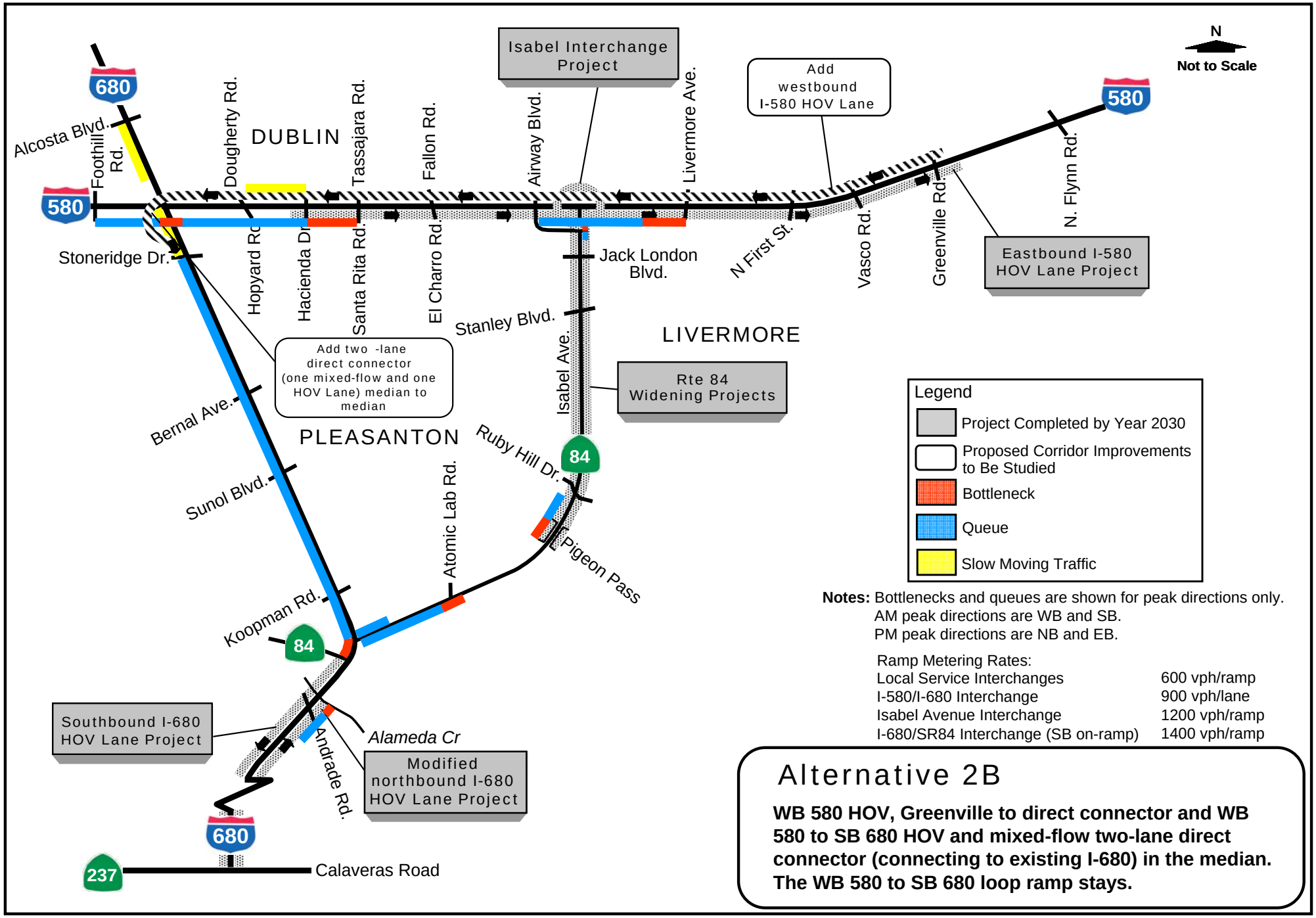




Bottlenecks and Queues
I-580 Eastbound – PM Peak



RESULTS WOULD BE SIMILAR TO ALT #2A



Notes: Bottlenecks and queues are shown for peak directions only.
AM peak directions are WB and SB.
PM peak directions are NB and EB.

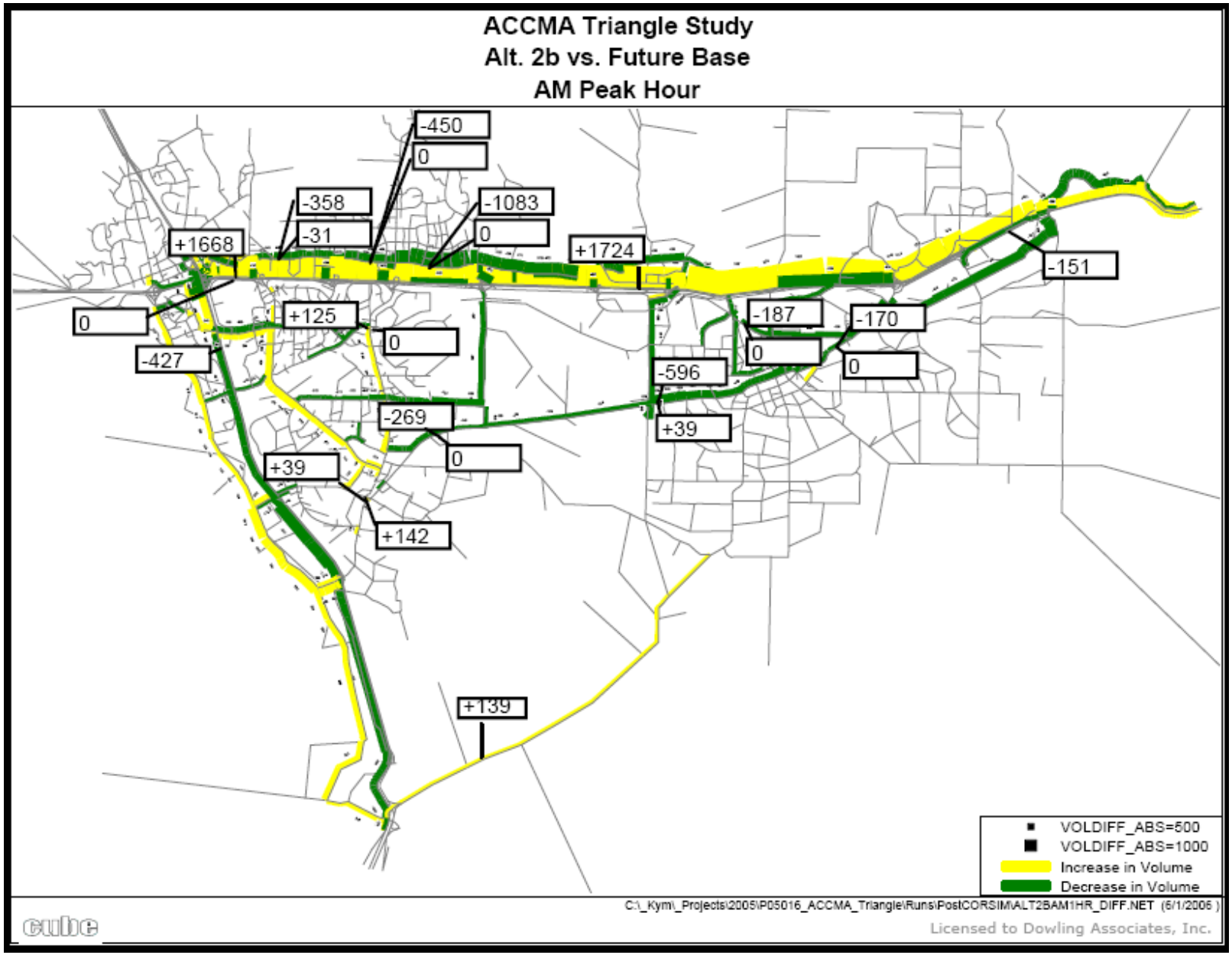
Ramp Metering Rates:

Local Service Interchanges	600 vph/ramp
I-580/I-680 Interchange	900 vph/lane
Isabel Avenue Interchange	1200 vph/ramp
I-680/SR84 Interchange (SB on-ramp)	1400 vph/ramp

Alternative 2B

WB 580 HOV, Greenville to direct connector and WB 580 to SB 680 HOV and mixed-flow two-lane direct connector (connecting to existing I-680) in the median. The WB 580 to SB 680 loop ramp stays.

Difference Plot



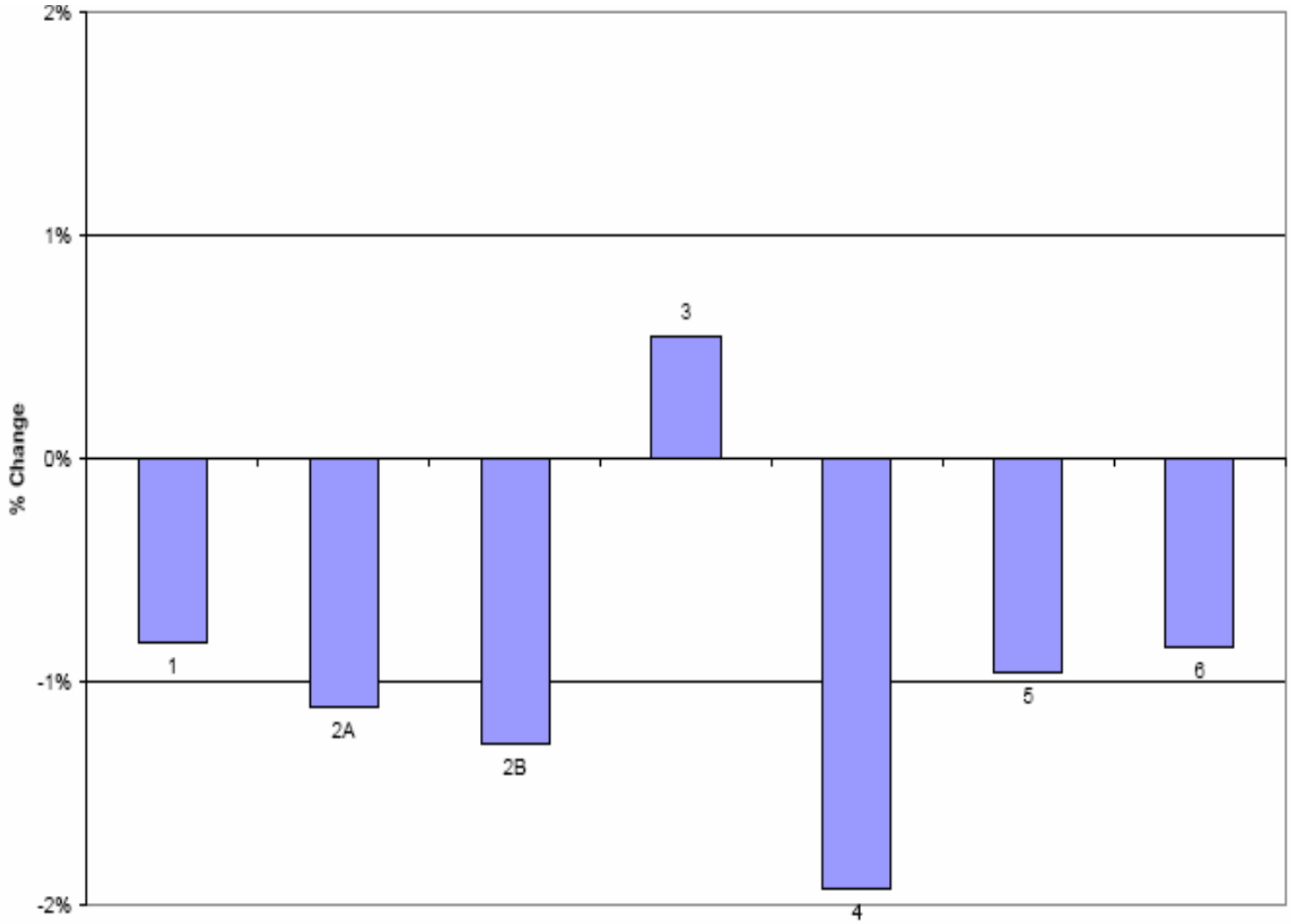
Difference Plot

Alternative $2B_{PM}$ Similar to Alternative $2A_{PM}$

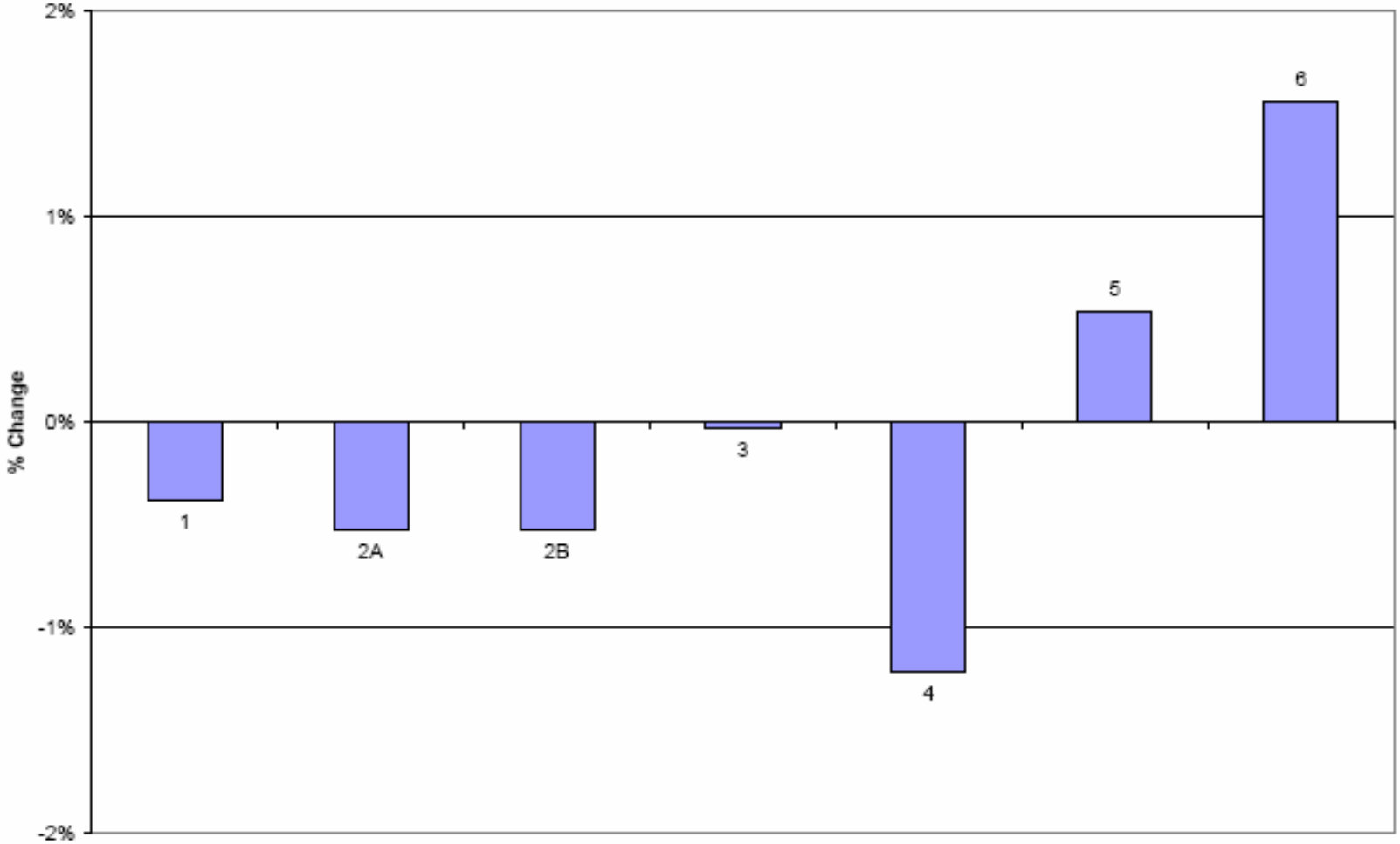
Quantitative MOEs

- MOEs reported are those approved by the PAC
- MOEs for each alternative are compared to the Future Baseline condition
- TDM model generates data for local jurisdiction MOEs, and CORSIM model generates data for state route MOEs.

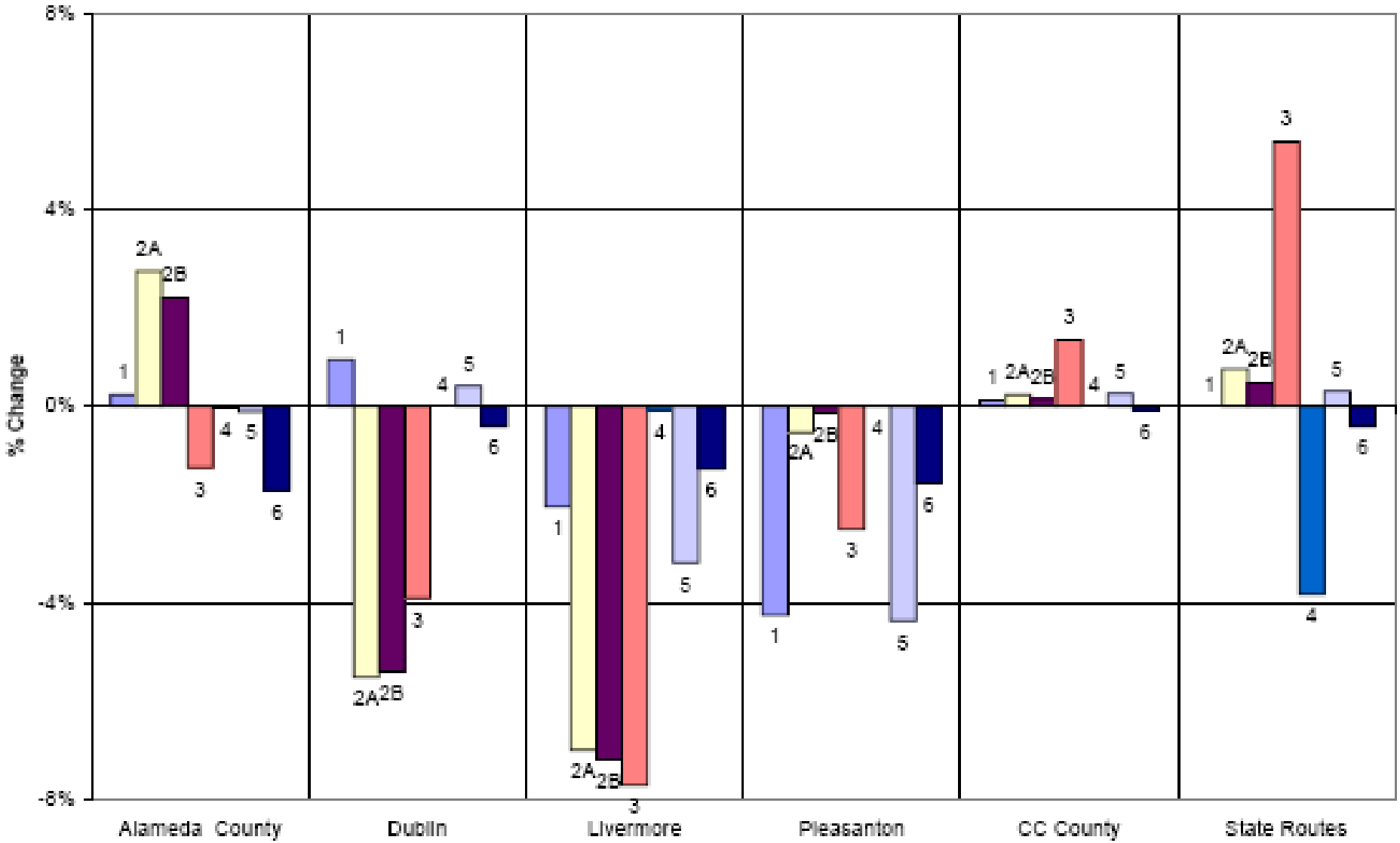
Change in Total VMT_{AM} by Alternative



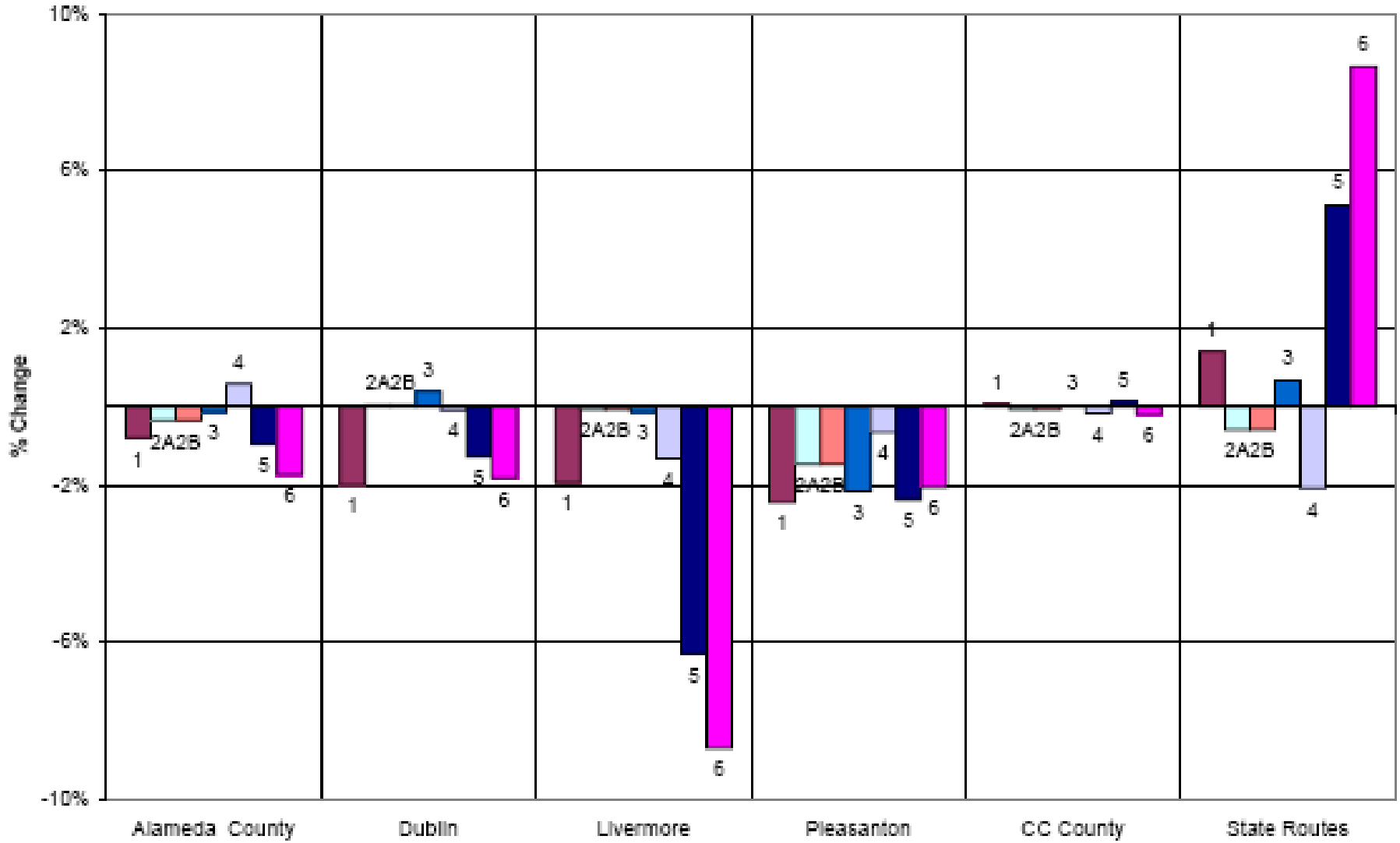
Change in Total VMT_{PM} by Alternative



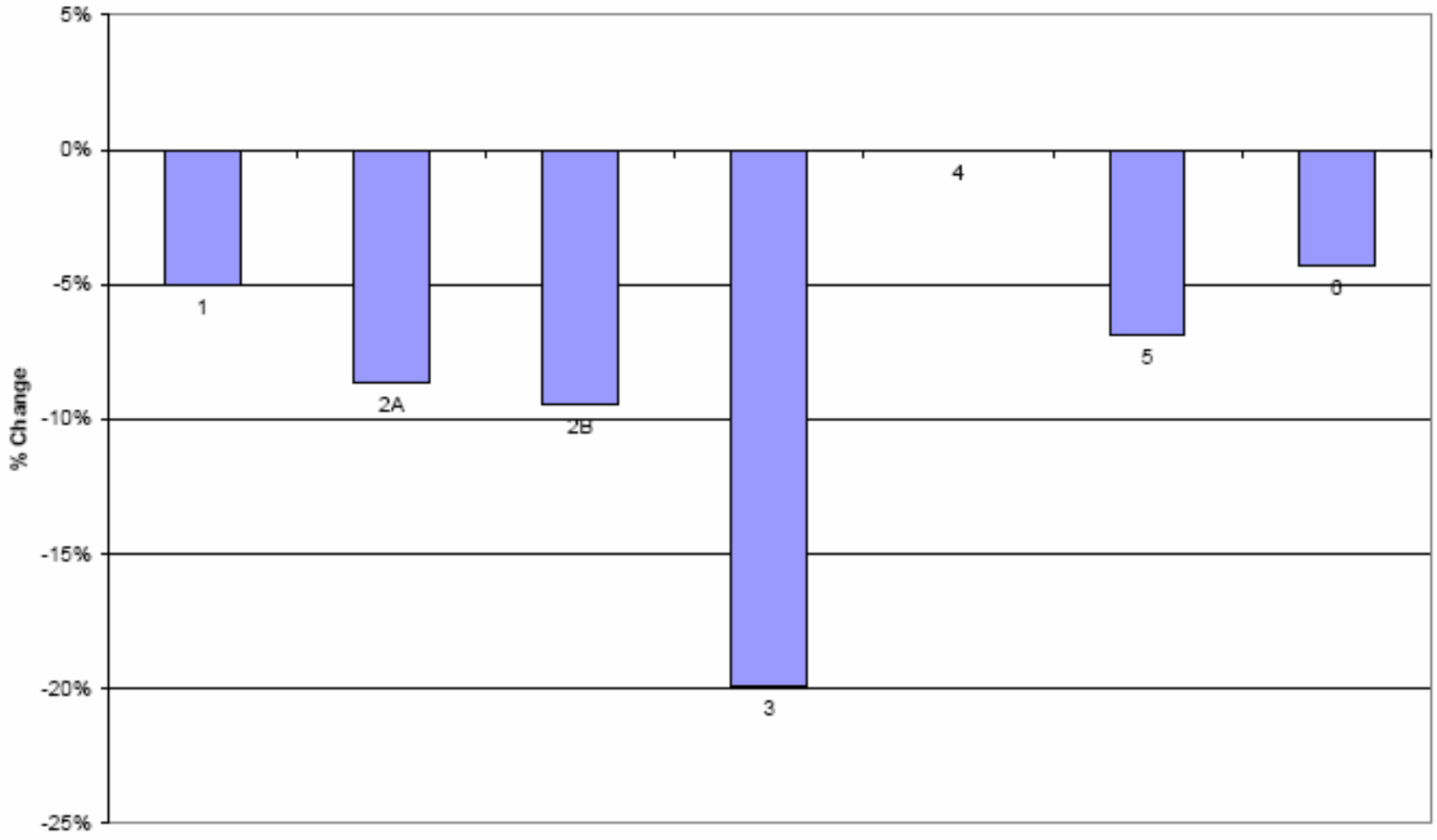
Change in VMT_{AM} by Jurisdiction & Alternative



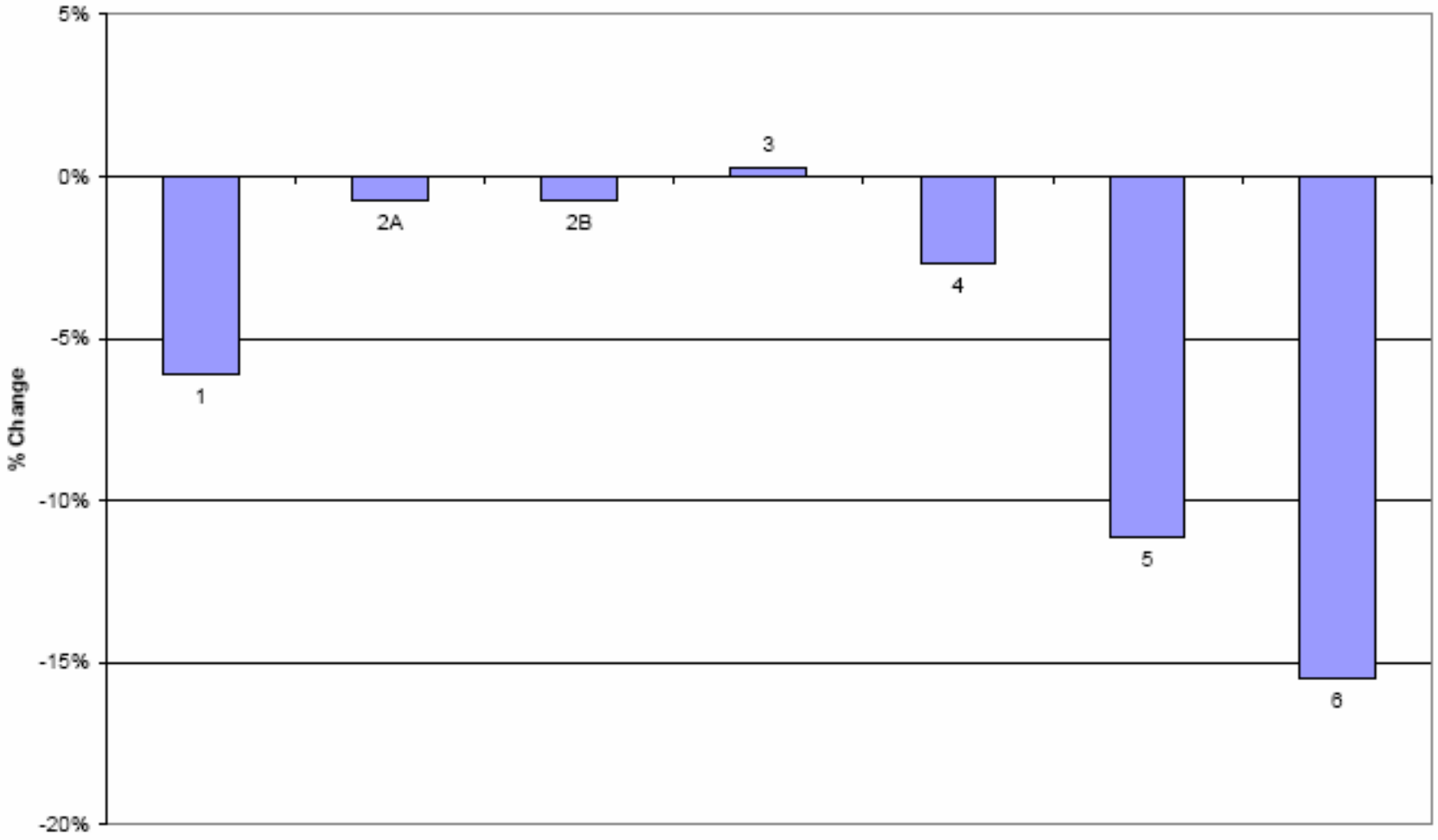
Change in VMT_{PM} by Jurisdiction & Alternative



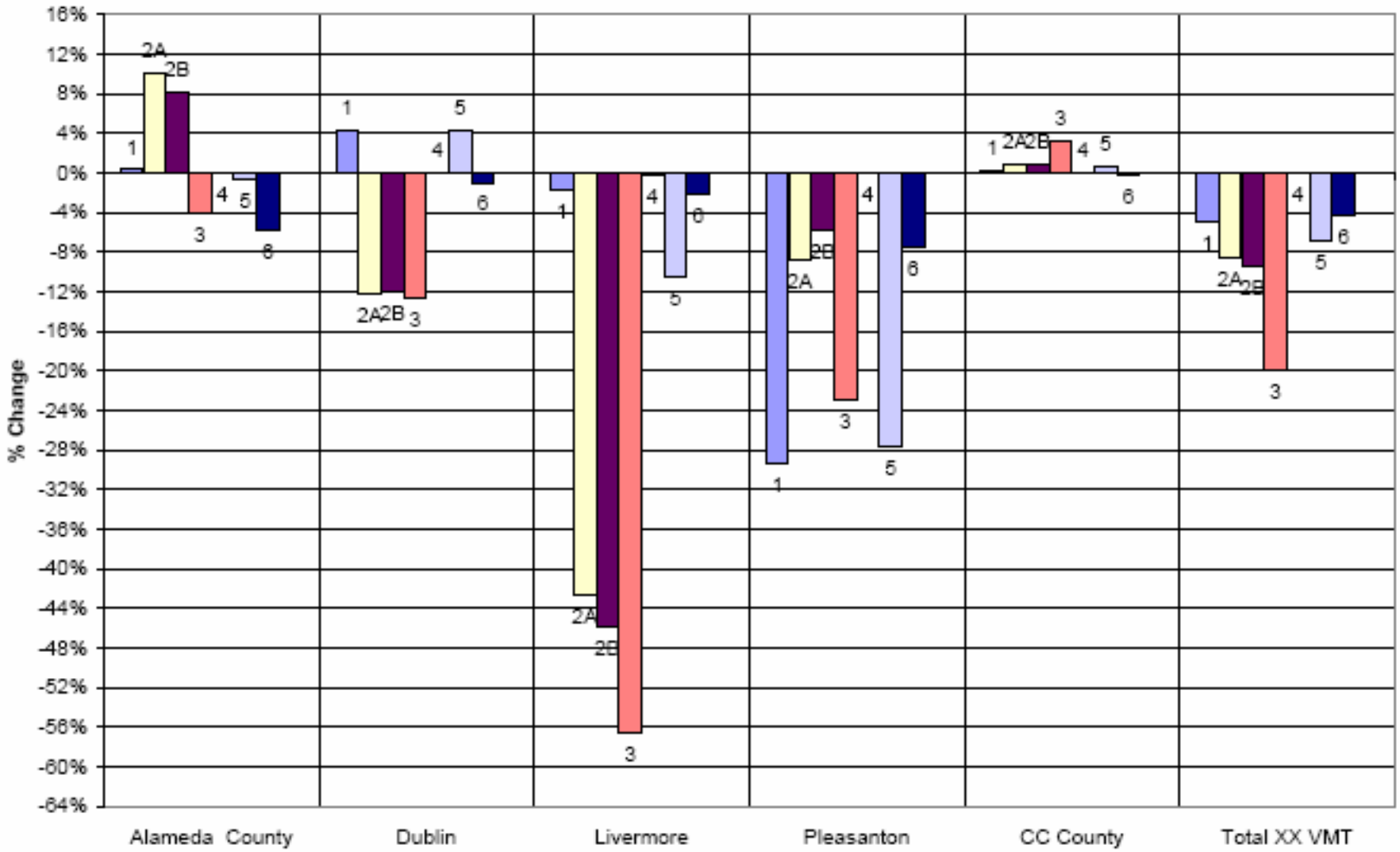
Change in $Total_{AM}$ XX (Cut Through) by Alternative



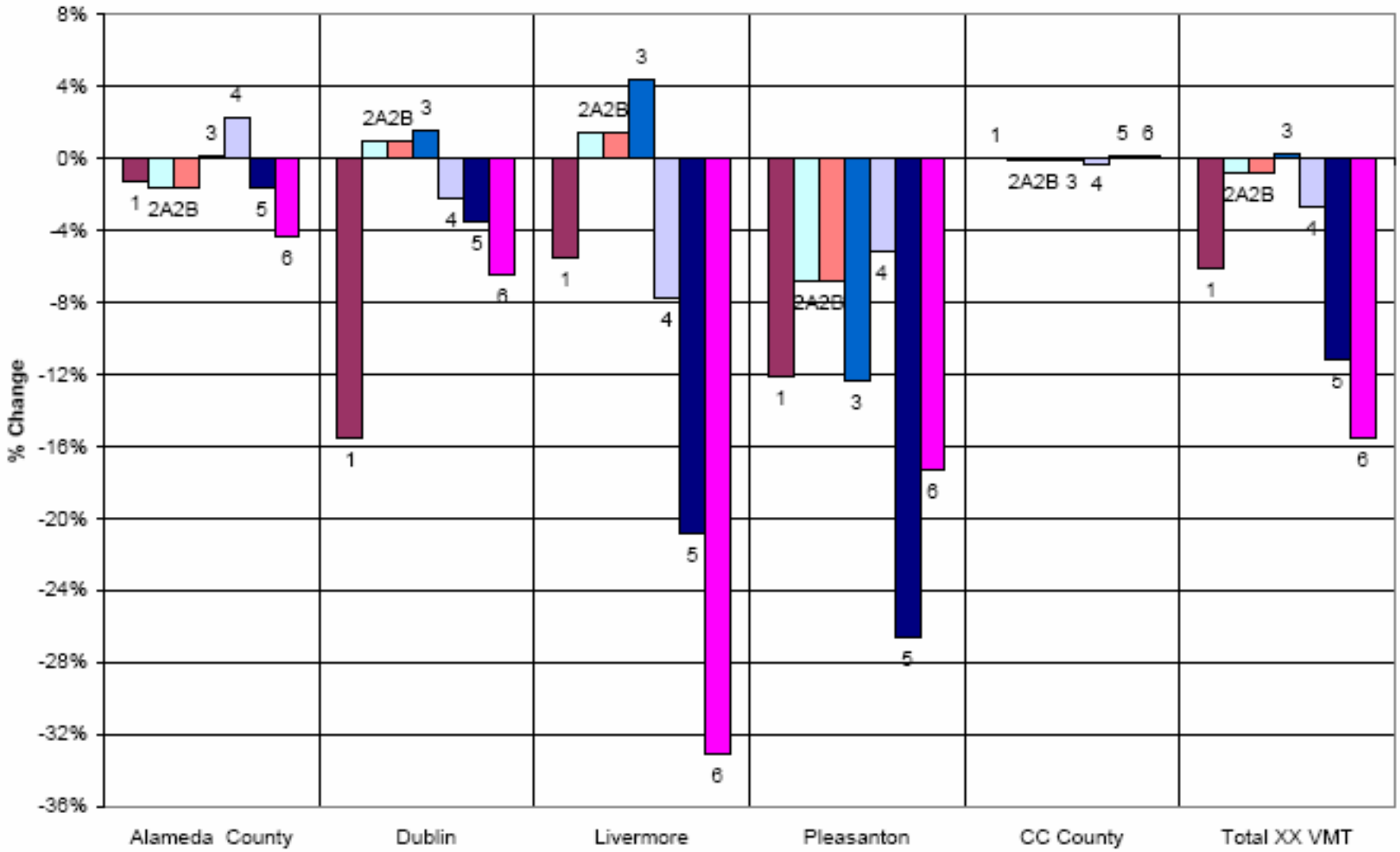
Change in $Total_{PM}$ XX (Cut Through) by Alternative



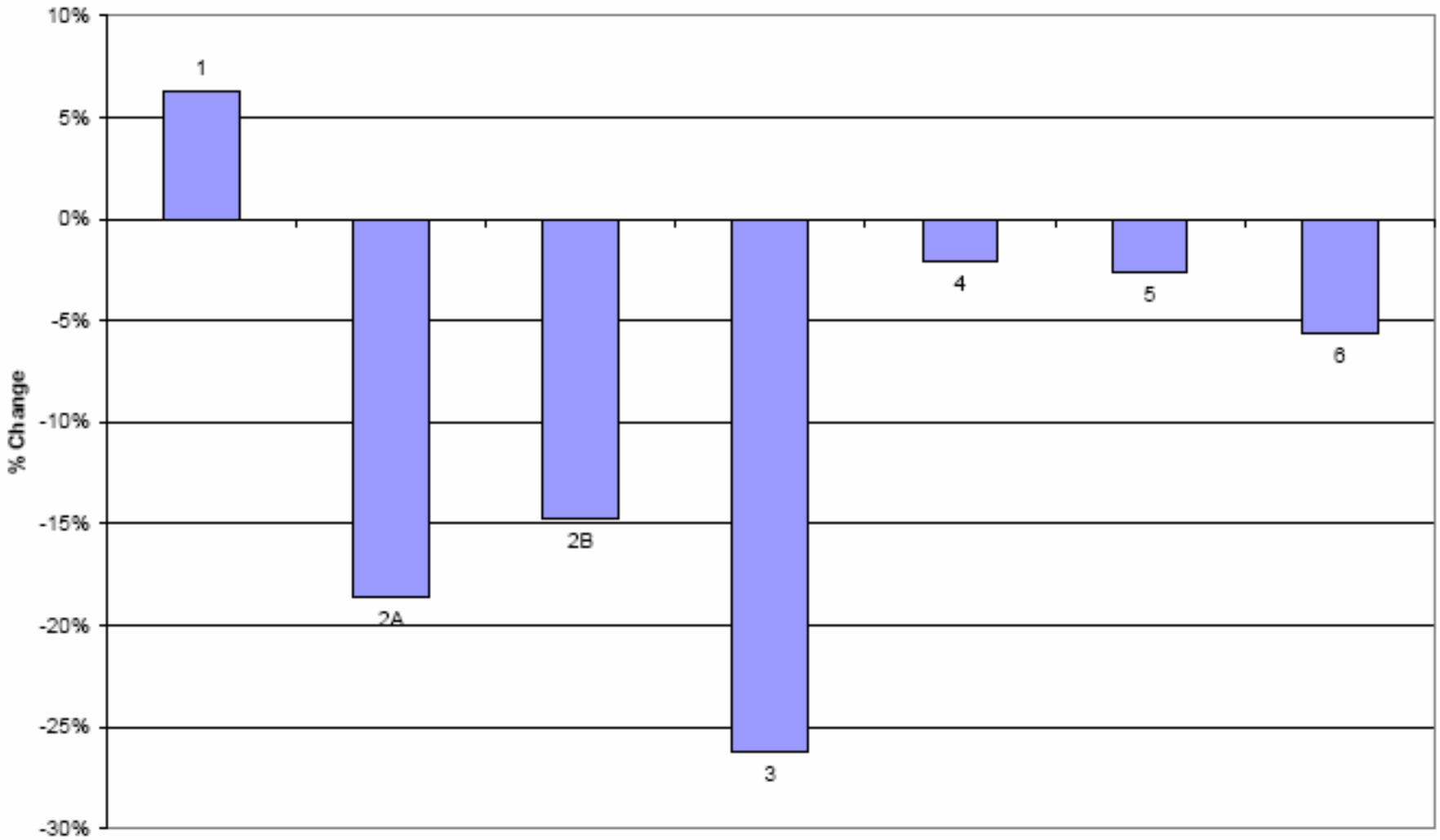
Change in VMT_{AM} XX (Cut Through) by Alternative & Jurisdiction



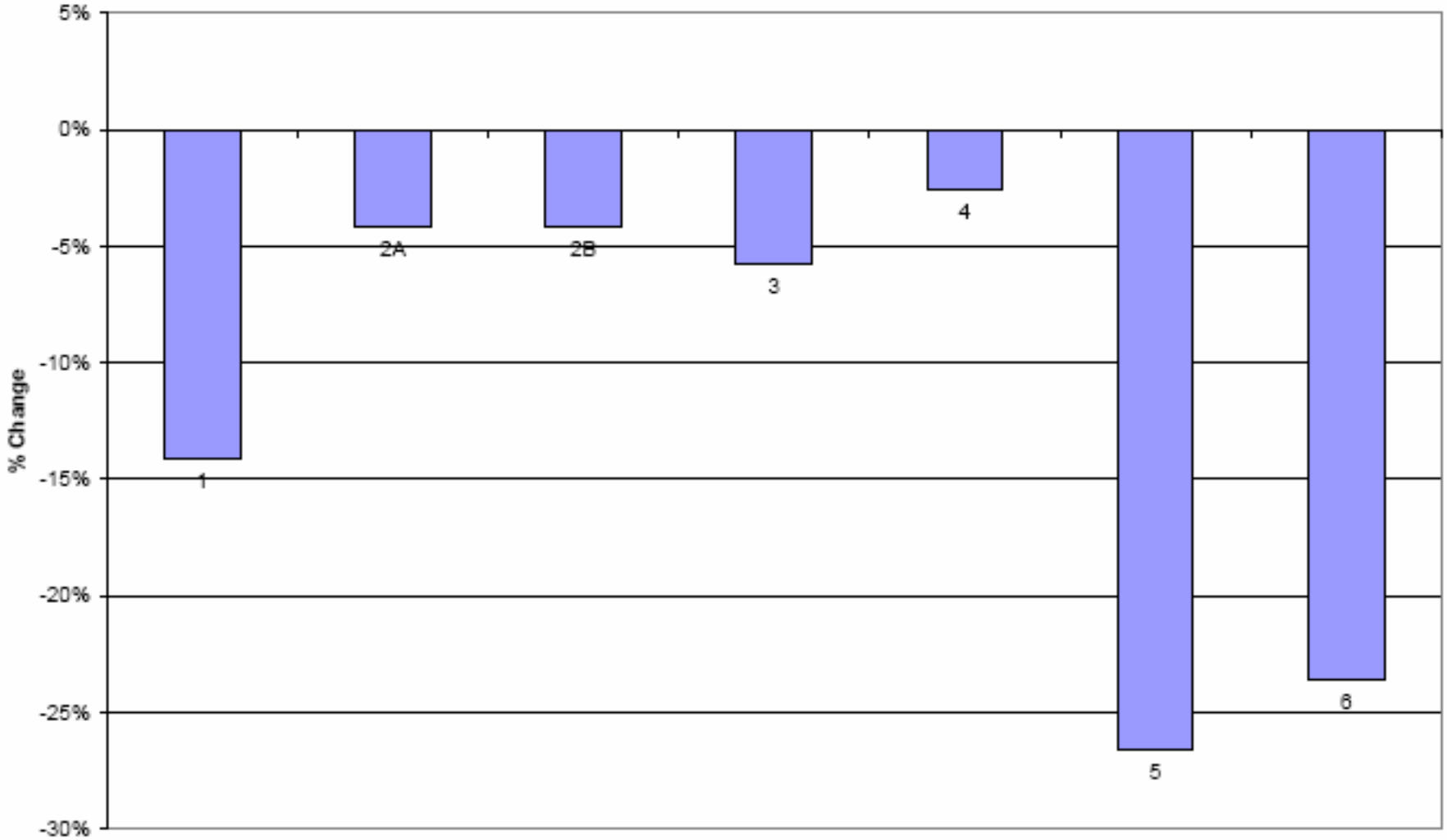
Change in VMT_{PM} XX (Cut Through) by Jurisdiction & Alternative



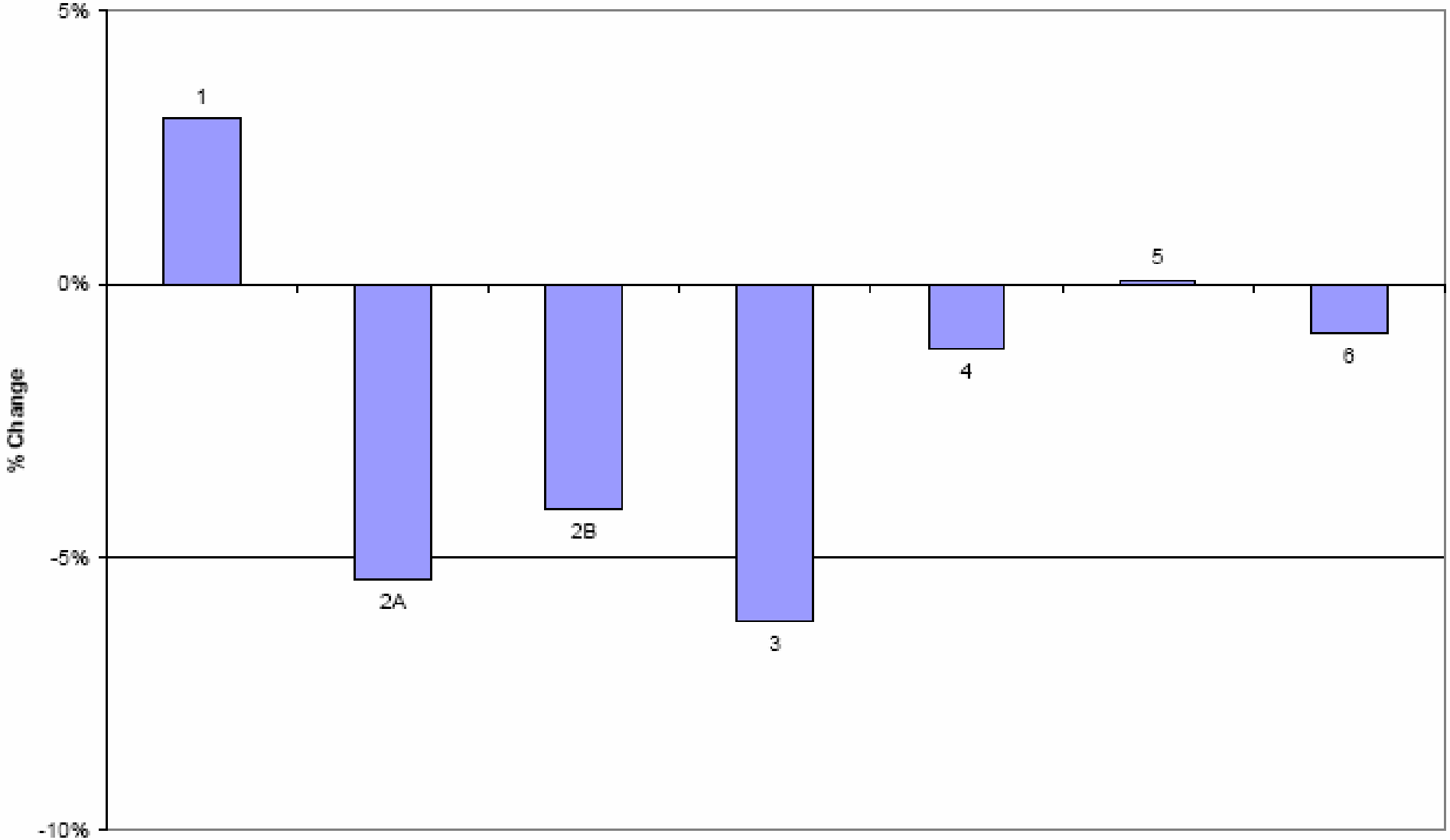
Change in Total Vehicle Hours of $Delay_{AM}$ by Alternative



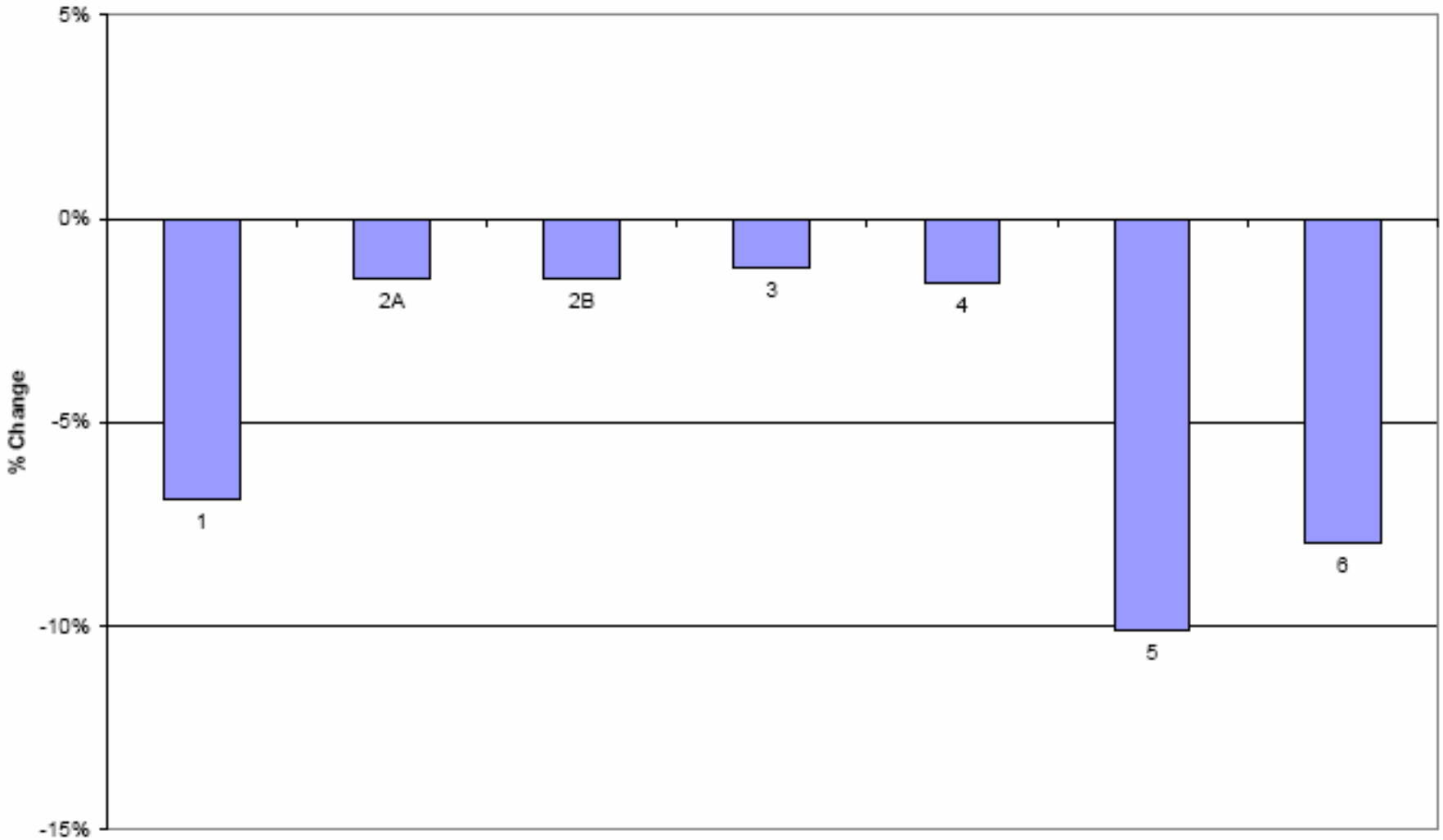
Change in Total Vehicle Hours of $Delay_{PM}$ by Alternative



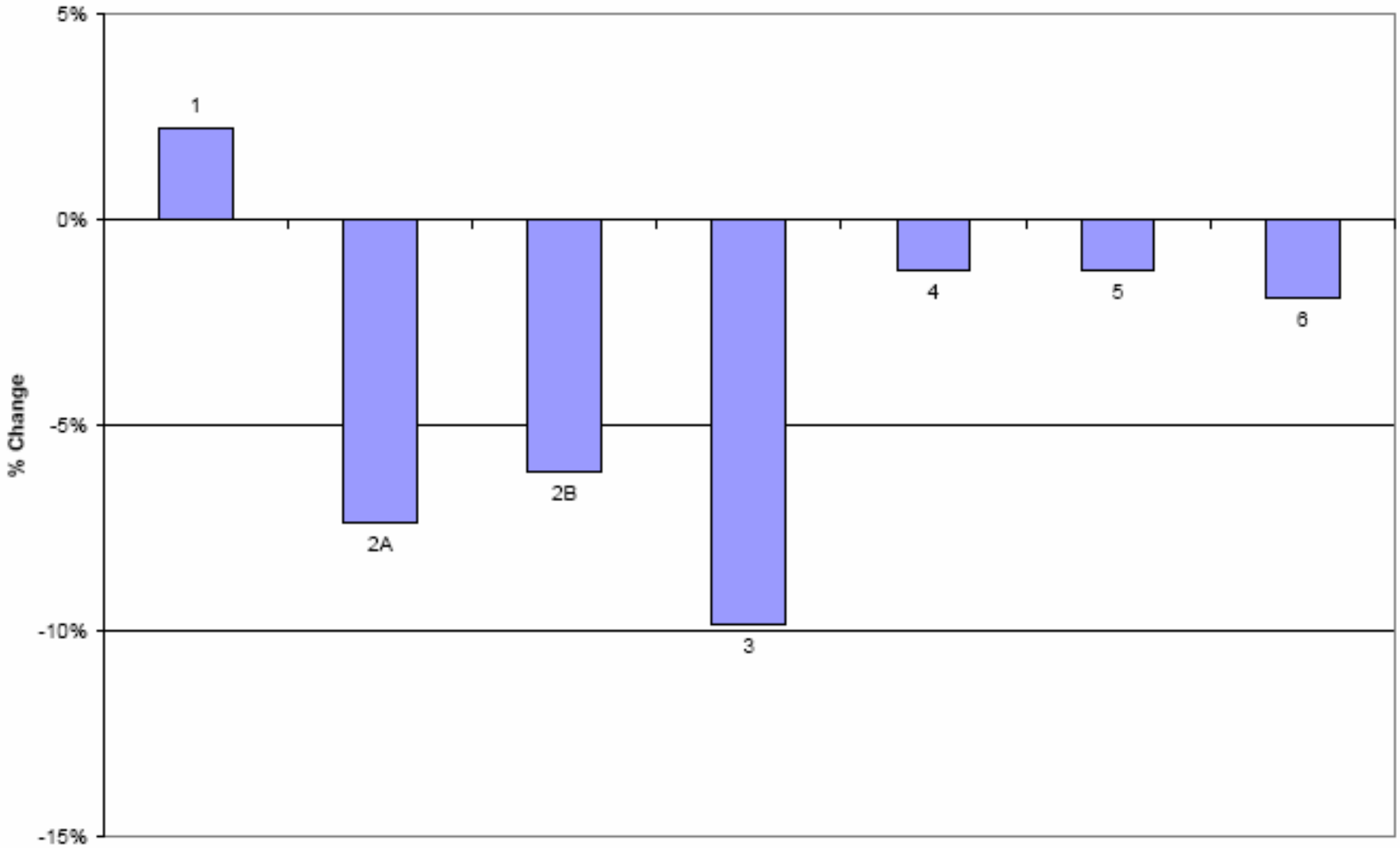
Change in Total Person Hours of $Travel_{AM}$ by Alternative



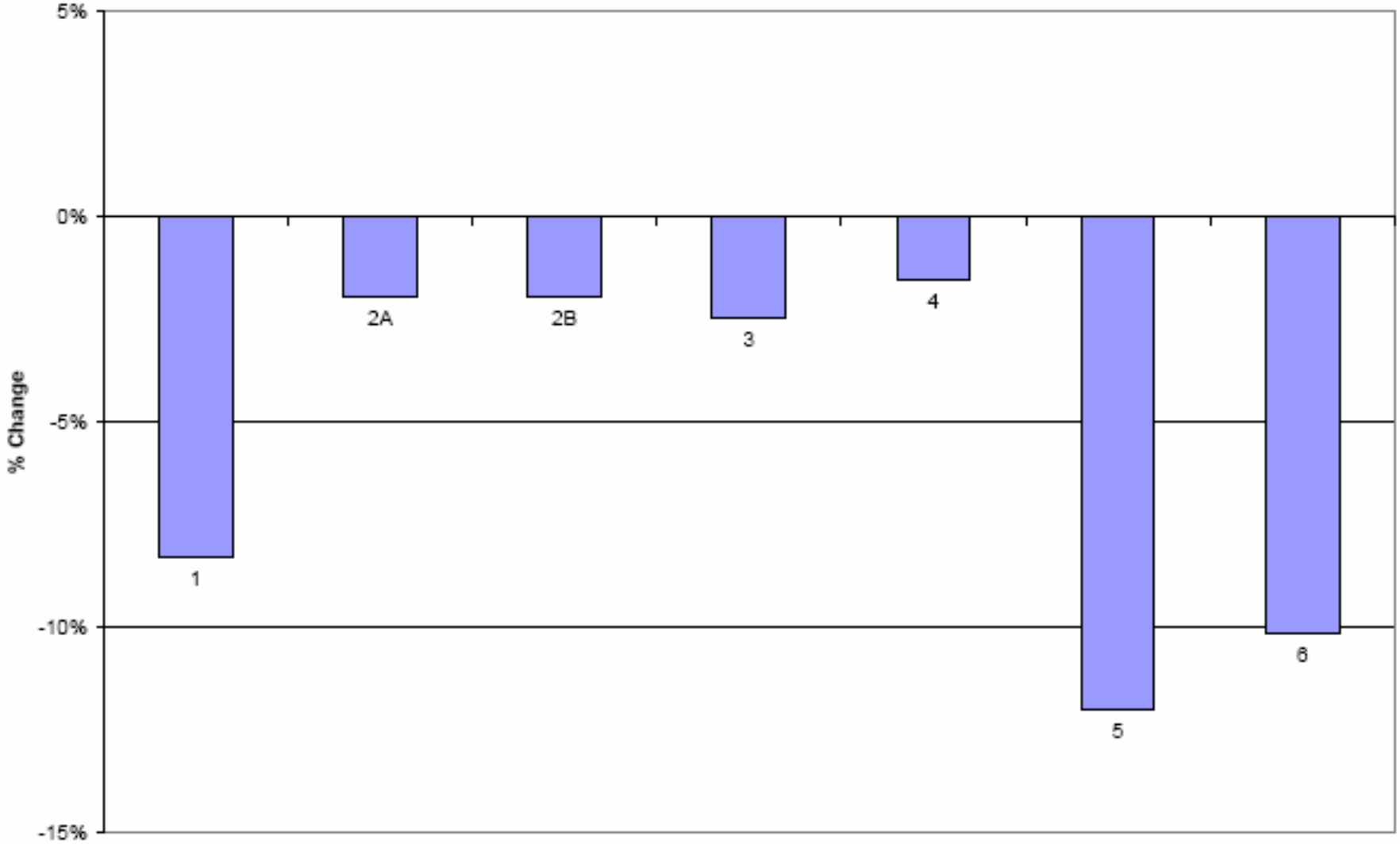
Change in Total Person Hours of $Travel_{PM}$ by Alternative



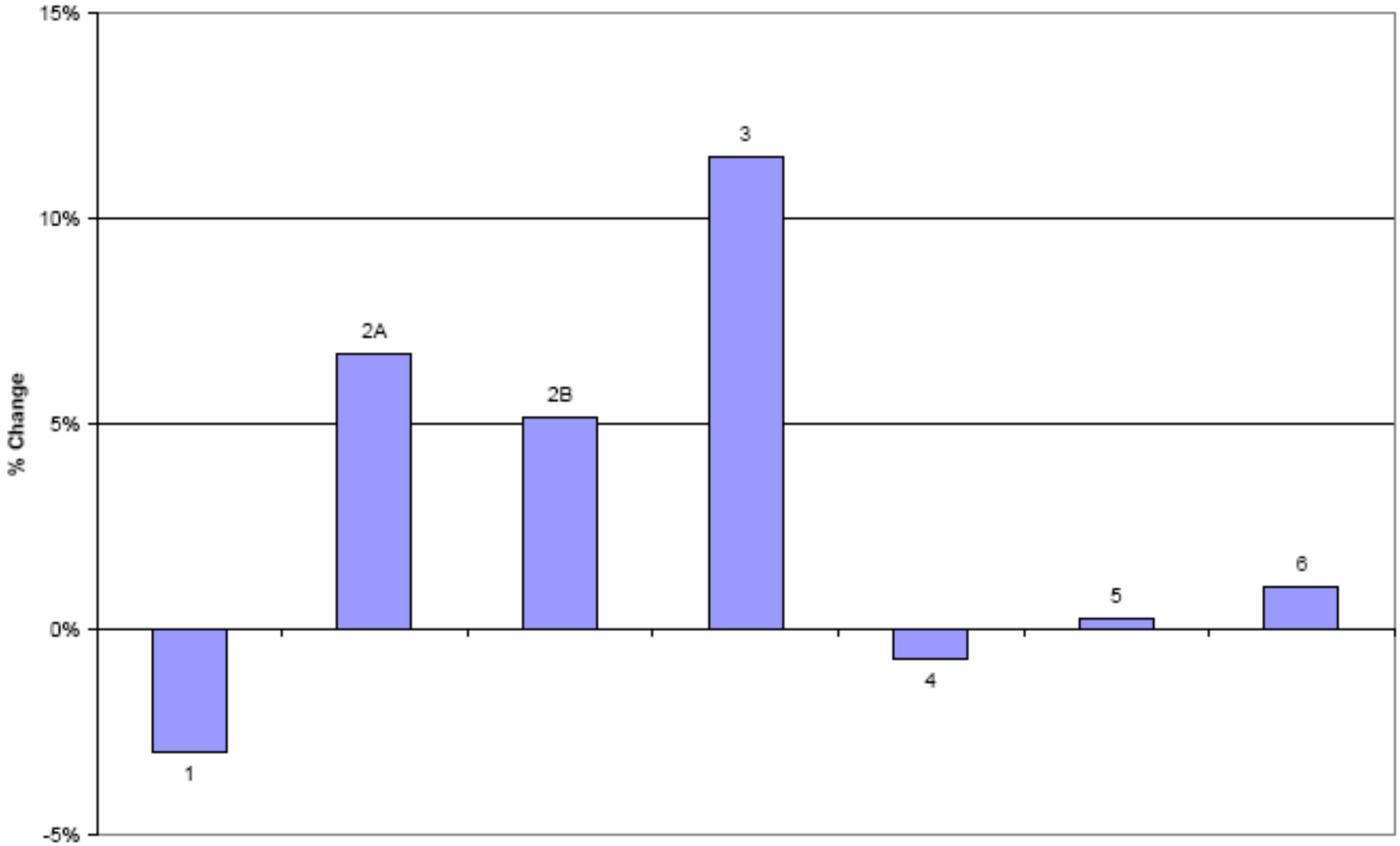
Change in Total Travel Time$_{AM}$ by Alternative



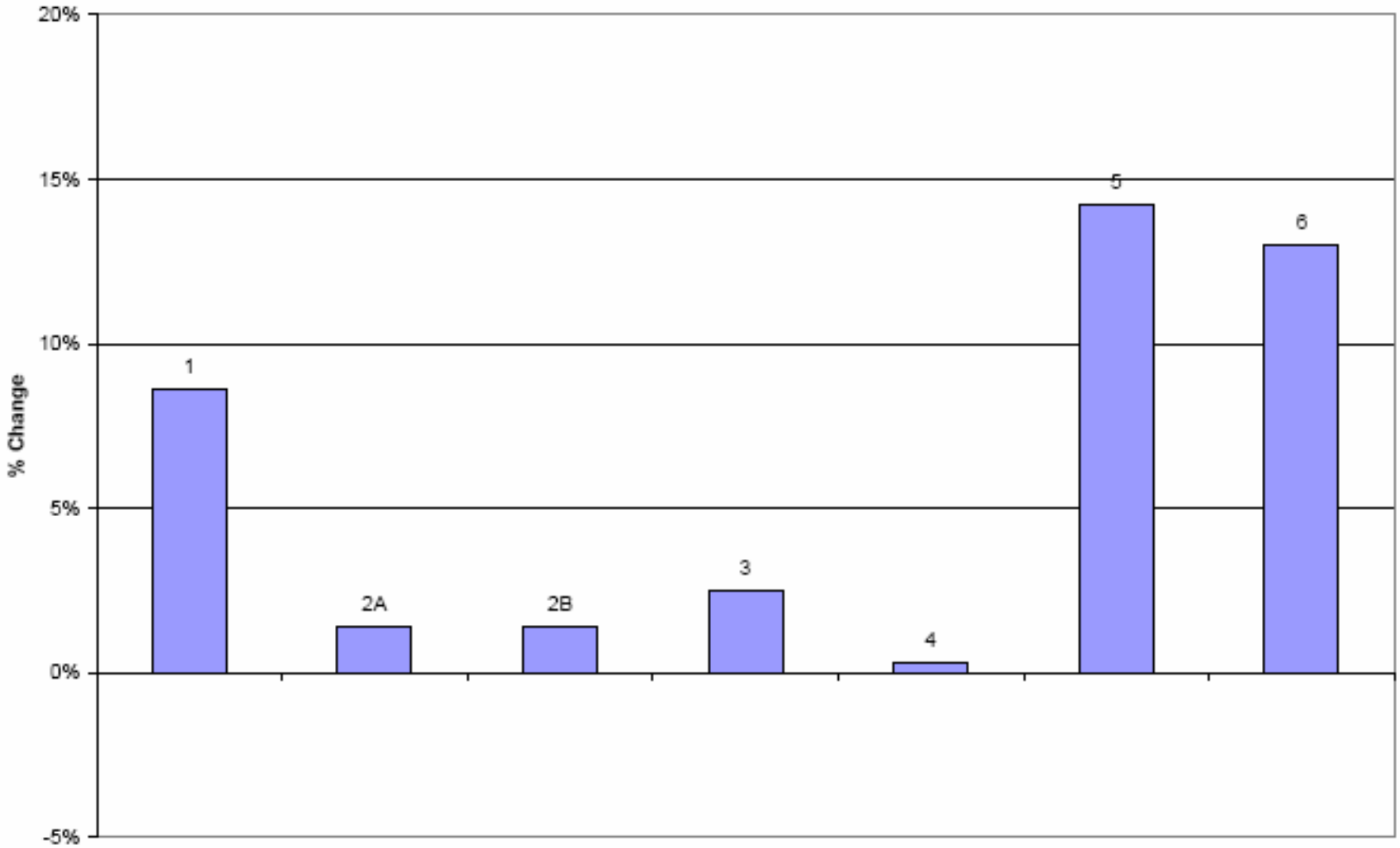
Change in Total Travel Time$_{PM}$ by Alternative



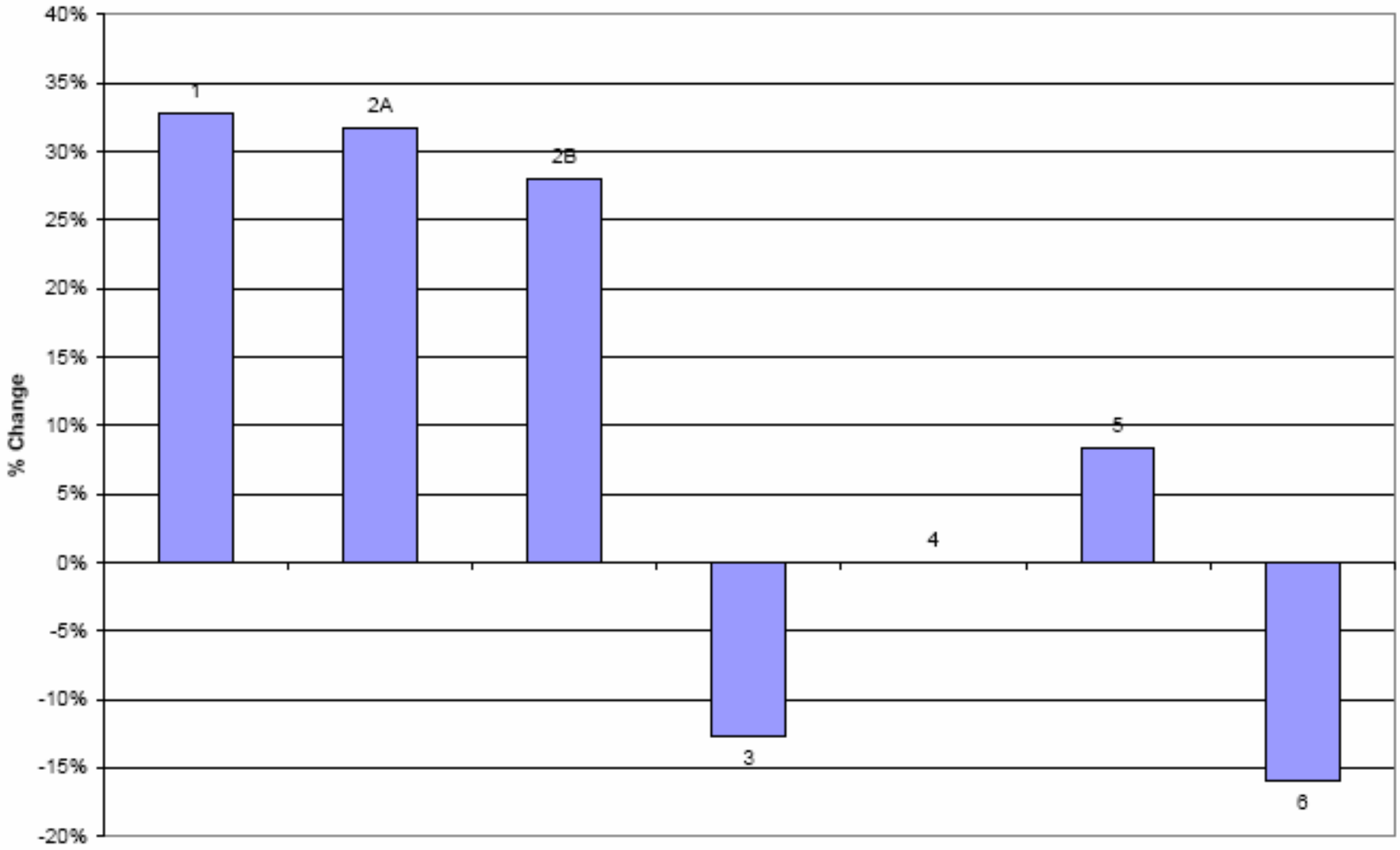
Change in Total $Speed_{AM}$ by Alternative



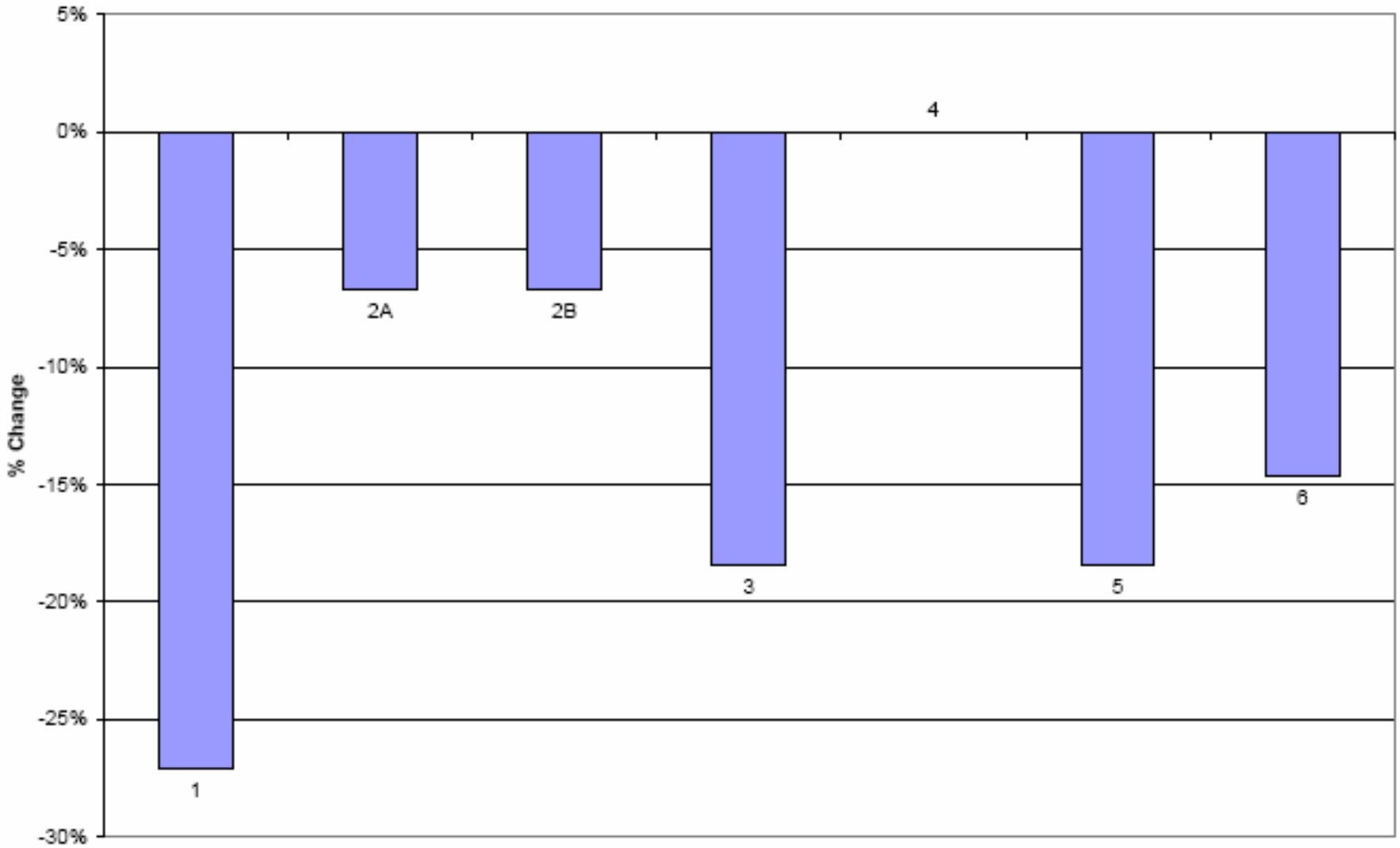
Change in Total $Speed_{PM}$ by Alternative



Change in Total Queuing$_{AM}$ by Alternative



Change in Total Queuing$_{PM}$ by Alternative



Qualitative Analysis

- Severity and location of bottlenecks and traffic queues in the corridor (maximum 5 points)
- Project readiness—PAC input needed (maximum 10 points)
- Compatibility with other planned improvements (maximum 10 points)
- Connectivity and access (maximum 5 points)

Qualitative MOE Summary Sheet

Table 1: Qualitative Data Sheet for Alternatives								
		Alternatives						
Qualitative Measures - Factors to be Considered in Scoring	Maximum Points	1	2A	2B	3	4	5	6
Location of bottlenecks and queues (a)	**5 Total**							
Does the overall number of bottlenecks and length of queues increase, stay the same, or decrease?	1	Decrease	Neutral	Neutral	Decrease	Neutral	Decrease	Decrease
Is the effect positive within the Alameda County jurisdiction?	1	YES	Neutral	Neutral	YES	Neutral	YES	Neutral
Is the effect positive within the City of Dublin jurisdiction?	1	NO	YES	YES	YES	Neutral	NO	Neutral
Is the effect positive within the City of Livermore jurisdiction?	1	YES	YES	YES	YES	YES	YES	YES
Is the effect positive within the City of Pleasanton jurisdiction?	1	YES	NO	NO	NO	Neutral	YES	YES
Project readiness	**10 Total**							
Have environmental studies begun?	2.5	NO	NO	NO	NO	NO	NO	NO
Is the project free from potential obstacles that could impede its delivery?	2.5	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Is there a PSR supporting the project?	2.5	Yes (c)	YES (d)	YES (d)	67% (d,e)	Yes (f)	YES (c)	NO
Funding - Is it in the financially constrained part of the RTP or in the countywide plan?	2.5	TBD (g)	TBD (g)	TBD (g)	TBD (g)	TBD (g)	TBD (g)	TBD (g)
Compatibility with other planned improvements	**10 Total**							
Does the project function well without requiring other necessary improvements?	5	YES (h)	NO (i)	NO (i)	YES	YES	YES (h)	YES
Are the other necessary improvements likely to be constructed within project time frame?	5	N/A	NO	NO	N/A	N/A	N/A	N/A
Connectivity and access	**5 Total**							
Does the project close HOV Lane gaps in the transportation system?	2.5	NO	NO	NO	YES	NO	NO	YES
Does the project improve access on regional facilities through the Tri-Valley area for through trips?	2.5	YES	YES	YES	YES	YES	YES	YES

Schedule

Critical Schedule Milestones and Critical Decision Points

Major PAC Milestones	Critical TAC Decisions and Actions	PAC Meetings and Actions	Schedule Constraints and Notes
Approve Scope of Work	Completed	Completed	
Approve Selection of Traffic Forecast Model	Completed - Changed Scope to use CCTA Tri-Valley Travel Forecast Model	Approved Changes in Scope	Scope Change, Additional traffic analysis, and final decision on the use of models have delayed schedule
Approve Selection of Traffic Operations Model	Completed	Completed	Decision on selection of traffic model have delayed schedule
Approve Alternatives to be Tested	Completed	Completed	Completed as scheduled
Approve Quantitative Measure Evaluation Methodology and Qualitative Measure Factors	Completed	Completed	Additional traffic analysis and fine tuning of the traffic models have delayed schedule
Approve Traffic Analysis Results for Base Case and Alternatives	Completed	June 9, 2006 PAC Meeting. PAC to approve TAC's recommendations	Late decision delays schedule
Develop and Test Hybrid Alternative	TAC and PAC to meet in workshop setting on June 30, 2006 to develop a hybrid concept for testing.	TAC and PAC to meet in workshop setting on June 30, 2006 to develop a hybrid concept for testing.	Late decision delays schedule
Report Hybrid Alternative Results	Report Hybrid analysis results to TAC for review and input in early August 2006.	Mid-August 2006 PAC Meeting; PAC to approve TAC's recommendations on Hybrid Alternative results.	Late decision or change delays schedule
Approve Recommendations in Draft Report including Phasing and Implementation Strategy Recommendations	Requires TAC's review and comment in early to mid-September 2006	October 2006 PAC Meeting. PAC to approve TAC's recommendations	Late decision delays schedule
Final Report	TBD if TAC's needs to review before finalizing	TBD if PAC's needs to review before finalizing	Final - Late October 2006

Next Meeting

Joint PAC / TAC Workshop to Develop Hybrid Alternative

- Date: June 30, 2006
- Time: 10:00 AM (lunch will be provided.)
- Place: Dublin City Hall, Multi-Purpose Room