TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - MAINLINE - AM PEAK

Freeway Segment	SOV						HOV						Total Volumes		
	Demand (vph)	Served (vph)	% Served	Speed (MPH)	Density (veh/ln/mi)	LOS (HCM	Demand (vph)	Served (vph)	% Served	Speed (MPH)	Density (veh/ln/mi)	LOS (HCM	Demand (vph)	Served (vph)	% Served
I-580 EB Mainline															
I-580 EB west of I-680 off-ramp (begin Network)	7,229	4,740	66%	7	142.7	F	801	519	65%	60	8.7	A	8,030	5,259	65%
I-680 off-ramp to Hopyard Rd off-ramp	5,085	3,783	74%	45	20.9	C	582	418	72%	62	6.7	A	5,667	4,201	74%
Hopyard Off to HOV Connector On	5,085	3,776	74%	57	15.6	B	582	423	73%	62	6.9	A	5,667	4,199	74%
HOV Connector to I-680 SB on-ramp	4,455	3,133	70%	61	14.2	B	522	154	29%	61	2.5	A	4,978	3,287	66%
I-680 SB on-ramp to I-680 NB on-ramp	6,333	4,790	76%	60	16.0	B	951	539	57%	62	8.7	A	7,284	5,329	73%
I-680 NB on-ramp to Hopyard Rd SB on-ramp	8,025	6,069	76%	60	16.7	B	951	949	100%	61	15.6	B	8,976	7,018	78%
Hopyard Rd SB on-ramp to Hopyard Rd NB on-ramp	8,641	6,576	76%	58	17.3	B	993	1,038	105%	61	17.1	B	9,634	7,614	79%
Hopyard Rd NB on-ramp to Hacienda Dr off-ramp	9,188	7,304	79%	61	17.2	B	1,042	919	88%	62	14.9	B	10,230	8,223	80%
Hacienda Dr off-ramp to Hacienda Dr SB on-ramp	7,464	5,492	74%	62	17.6	B	819	883	108%	61	14.5	B	8,283	6,375	77%
Hacienda Dr SB on-ramp to Hacienda Dr NB on-ramp	8,055	6,190	77%	60	17.1	B	863	780	90%	61	12.8	B	8,918	6,970	78%
Hacienda Dr NB on-ramp to Santa Rita Rd off-ramp	8,592	7,153	83%	58	18.4	C	912	753	83%	61	12.3	B	9,505	7,905	83%
Santa Rita Rd off-ramp to Santa Rita Rd SB on-ramp	7,160	5,349	75%	61	17.4	B	748	729	98%	61	12.0	B	7,907	6,078	77%
Santa Rita Rd SB on-ramp to Santa Rita Rd NB on-ramp	7,706	5,891	76%	58	19.5	C	819	783	96%	60	13.1	B	8,525	6,674	78%
Santa Rita Rd NB on-ramp to El Charro Rd off-ramp	8,291	6,535	79%	62	17.7	B	883	749	85%	61	12.3	B	9,174	7,284	79%
El Charro Rd off-ramp to El Charro Rd SB on-ramp	7,032	5,282	75%	62	17.2	B	724	714	99%	60	11.8	B	7,756	5,996	77%
El Charro Rd SB on-ramp to El Charro Rd NB on-ramp	7,563	5,837	77%	58	19.3	C	786	742	94%	60	12.4	B	8,349	6,579	79%
El Charro Rd NB on-ramp to Airway Blvd off-ramp	8,116	6,451	79%	62	17.5	B	852	743	87%	60	12.3	B	8,967	7,194	80%
Airway Blvd off-ramp to Airway Blvd on-ramp	6,755	5,118	76%	62	16.4	B	701	645	92%	60	10.7	A	7,456	5,763	77%
Airway Blvd on-ramp to Isabel Ave off-ramp	7,204	5,700	79%	61	15.6	B	757	572	75%	61	9.4	A	7,961	6,272	79%
Isabel Ave off-ramp to Isabel Ave SB on-ramp	5,824	4,430	76%	63	14.1	B	671	585	87%	61	9.7	A	6,495	5,015	77%
Isabel Ave SB on-ramp to Isabel Ave NB on-ramp	6,047	4,660	77%	61	14.7	B	700	606	87%	60	10.2	A	6,746	5,266	78%
Isabel Ave NB on-ramp to Livermore Ave off-ramp	6,940	5,530	80%	61	17.7	B	825	723	88%	60	12.0	B	7,765	6,253	81%
Livermore Ave off-ramp to Livermore Ave on-ramp	5,652	4,291	76%	62	13.7	B	680	605	89%	60	10.1	A	6,332	4,896	77%
Livermore Ave on-ramp to First St off-ramp	6,199	4,865	78%	62	15.6	B	748	643	86%	60	10.7	A	6,948	5,508	79%
First St off-ramp to First St SB on-ramp	4,926	3,788	77%	63	12.0	B	590	524	89%	60	8.7	A	5,517	4,312	78%
First St SB on-ramp to First St NB on-ramp	5,056	3,874	77%	62	12.1	B	605	529	87%	60	8.9	A	5,662	4,403	78%
First St NB on-ramp to Vasco Rd off-ramp	5,567	4,588	82%	62	12.4	B	671	440	66%	61	7.2	A	6,238	5,028	81%
Vasco Rd off-ramp to Vasco Rd SB on-ramp	3,933	3,062	78%	63	9.7	A	473	386	82%	61	6.3	A	4,405	3,448	78%
Vasco Rd SB on-ramp to Vasco Rd NB on-ramp	3,943	3,079	78%	63	9.3	A	473	387	82%	61	6.4	A	4,416	3,466	78%
Vasco Rd NB on-ramp to Greenville Rd off-ramp	4,437	3,663	83%	62	9.8	A	541	349	65%	62	5.6	A	4,978	4,012	81%
Greenville Rd off-ramp to Greenville Rd on-ramp	3,141	2,386	76%	64	7.5	A	369	320	87%	62	5.2	A	3,510	2,706	77%
Greenville Rd on-ramp to N. Flynn Rd	3,201	2,676	84%	61	8.2	A	374	106	28%	61	8.2	A	3,575	2,782	78%

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - MAINLINE - AM PEAK

Freeway Segment	SOV						HOV						Total Volumes		
	Demand (vph)	Served (vph)	% Served	Speed (MPH)	Density (veh/ln/mi)	LOS (HCM	Demand (vph)	Served (vph)	% Served	Speed (MPH)	Density (veh/ln/mi)	LOS (HCM	Demand (vph)	Served (vph)	% Served
I-580 WB Mainline															
N. Flynn Rd to Greenville Rd off-ramp (begin Network)	9,445	8,728	92%	57	38.3	E	-	-	-	-	-	-	9,445	8,728	92%
Greenville Rd off-ramp to Greenville Rd on-ramp	6,190	6,287	102%	61	23.8	C	1,815	1,354	75%	56	24.9	C	8,005	7,642	95%
Greenville Rd on-ramp to Vasco Rd off-ramp	6,796	6,350	93%	60	21.1	C	1,912	1,670	87%	58	28.8	D	8,708	8,020	92%
Vasco Rd off-ramp to Vasco Rd on-ramp	6,117	5,647	92%	61	23.2	C	1,807	1,583	88%	59	26.8	D	7,924	7,230	91%
Vasco Rd on-ramp to First St off-ramp	7,452	6,750	91%	60	22.6	C	2,085	1,668	80%	57	29.3	D	9,537	8,418	88%
First St off-ramp to First St NB on-ramp	6,919	6,156	89%	61	25.3	C	2,019	1,701	84%	59	28.9	D	8,938	7,858	88%
First St NB on-ramp to First St SB on-ramp	7,575	6,727	89%	61	22.2	C	2,100	1,739	83%	57	30.4	D	9,675	8,466	87%
First St SB on-ramp to Livermore Ave off-ramp	8,143	7,197	88%	57	25.0	C	2,218	1,863	84%	56	33.2	D	10,361	9,060	87%
Livermore Ave off-ramp to Livermore Ave on-ramp	8,030	7,102	88%	59	30.2	D	2,205	1,851	84%	58	32.0	D	10,234	8,953	87%
Livermore Ave on-ramp to Isabel Ave off-ramp	8,680	7,903	91%	52	31.5	D	2,311	1,653	72%	59	28.3	D	10,991	9,556	87%
Isabel Ave off-ramp to Isabel Ave NB on-ramp	6,699	5,810	87%	60	24.3	C	1,890	1,468	78%	59	25.0	C	8,589	7,278	85%
Isabel Ave NB on-ramp to Isabel Ave SB on-ramp	7,266	6,427	88%	57	27.0	D	2,240	1,866	83%	58	24.1	C	9,506	8,293	87%
Isabel Ave SB on-ramp to Airway Blvd off-ramp	7,847	6,952	89%	59	23.5	C	2,075	1,473	71%	57	25.8	C	9,923	8,425	85%
Airway Blvd off-ramp to Airway Blvd NB on-ramp	7,311	6,316	86%	59	26.6	D	2,002	1,482	74%	59	25.3	C	9,312	7,798	84%
Airway Blvd NB on-ramp to Airway Blvd SB on-ramp	7,903	6,883	87%	55	29.3	D	2,080	1,524	73%	57	26.7	D	9,983	8,407	84%
Airway Blvd SB on-ramp to Fallon Rd off-ramp	8,517	7,241	85%	45	37.4	E	2,156	1,553	72%	57	27.2	D	10,673	8,794	82%
Fallon Rd off-ramp to Fallon Rd NB on-ramp	7,675	5,956	78%	18	82.8	F	2,038	1,496	73%	58	25.8	C	9,713	7,452	77%
Fallon Rd NB on-ramp to Fallon Rd SB on-ramp	8,258	6,345	77%	18	82.8	F	2,110	1,525	72%	56	27.0	D	10,368	7,870	76%
Fallon Rd SB on-ramp to Tassajara off-ramp	8,800	6,744	77%	17	80.4	F	2,229	1,564	70%	55	28.4	D	11,029	8,307	75%
Tassajara off-ramp to Tassajara NB on-ramp	7,619	5,541	73%	12	112.5	F	2,073	1,488	72%	57	26.2	D	9,692	7,029	73%
Tassajara NB on-ramp to Tassajara SB on-ramp	8,165	6,104	75%	12	100.6	F	2,136	1,461	68%	60	24.3	C	10,301	7,565	73%
Tassajara SB on-ramp to Hacienda Dr off-ramp	8,683	6,518	75%	11	113.3	F	2,266	1,487	66%	48	32.6	D	10,948	8,005	73%
Hacienda Dr off-ramp to Hacienda Dr NB on-ramp	7,350	5,180	70%	9	143.8	F	2,066	1,448	70%	57	25.7	C	9,416	6,628	70%
Hacienda Dr NB on-ramp to Hacienda Dr SB on-ramp	7,883	5,678	72%	9	122.3	F	2,139	1,454	68%	51	28.3	D	10,022	7,132	71%
Hacienda Dr SB on-ramp to HOV Off	8,447	5,888	70%	8	138.9	F	2,219	1,518	68%	30	54.4	F	10,666	7,406	69%
HOV Off to Connector Off	8,447	5,959	71%	8	144.2	F	729	153	21%	46	3.3	A	9,176	6,112	67%
Connector off to Hopyard off	7,398	5,298	72%	10	107.7	F							7,523	5,298	70%
Hopyard Off to Hopyard Loop On	6,411	4,754	74%	14	87.8	F							6,410	4,754	74%
Hopyard Loop on to Hopyard Diagonal On	6,980	3,792	54%	5	157.4	F							7,047	4,726	67%
Hopyard Rd SB on-ramp to HOV on	7,441	4,717	63%	6	159.3	F							7,714	4,717	61%
HOV On to 680 Off Ramp	7,441	4,905	66%	8	127.9	F	1,764	1,271	72%	56	22.8	C	9,204	6,176	67%
I-680 off-ramp to I-680 NB on-ramp	4,436	3,546	80%	54	16.4	B	1,225	388	32%	62	6.3	A	5,661	3,934	69%
I-680 NB on-ramp to I-680 SB on-ramp	4,824	3,424	71%	61	13.9	B	1,285	772	60%	61	12.6	B	6,109	4,196	69%
I-580 WB west of I-680 SB on-ramp	6,094	5,029	83%	61	16.4	B	1,572	790	50%	61	12.9	B	7,666	5,819	76%

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - MAINLINE - AM PEAK

Freeway Segment	SOV						HOV						Total Volumes		
	Demand (vph)	Served (vph)	% Served	Speed (MPH)	Density (veh/ln/mi)	LOS (HCM	Demand (vph)	Served (vph)	% Served	Speed (MPH)	Density (veh/ln/mi)	LOS (HCM	Demand (vph)	Served (vph)	% Served
I-680 NB Mainline															
Andrade Road to Calaveras Rd off-ramp	5,881	5,452	93%	60	30.5	D	1,221	1,154	95%	59	19.4	C	7,102	6,606	93%
Calaveras Rd off-ramp to Calaveras Rd on-ramp	5,828	5,548	95%	57	32.3	D	1,214	1,018	84%	60	17.0	B	7,042	6,566	93%
Calaveras Rd on-ramp to Vallecitos Rd off-ramp	6,114	5,961	97%	54	27.4	D	1,245	915	73%	60	15.1	B	7,359	6,875	93%
Vallecitos Rd off-ramp to Vallecitos Rd on-ramp	4,607	4,319	94%	60	24.0	C	1,054	918	87%	60	15.3	B	5,661	5,238	93%
Vallecitos Rd on-ramp to Koopman Rd on-ramp	4,645	4,427	95%	59	24.1	C	1,061	953	90%	59	16.1	B	5,705	5,380	94%
Koopman Rd on-ramp to Sunol Blvd off-ramp	5,117	4,955	97%	58	27.9	D	1,137	973	86%	59	16.5	B	6,254	5,928	95%
Sunol Blvd off-ramp to Sunol Blvd on-ramp	4,338	4,242	98%	60	23.6	C	1,037	874	84%	59	14.8	B	5,375	5,115	95%
Sunol Blvd on-ramp to Bernal Ave off-ramp	4,848	4,796	99%	59	26.4	D	1,104	875	79%	59	14.9	B	5,952	5,671	95%
Bernal Ave off-ramp to Bernal Ave on-ramp	4,455	4,359	98%	60	24.2	C	1,039	841	81%	59	14.3	B	5,495	5,200	95%
Bernal Ave on-ramp to Stoneridge Dr off-ramp	5,075	4,926	97%	59	27.6	D	1,103	869	79%	58	14.9	B	6,177	5,795	94%
Stoneridge Dr off-ramp to Stoneridge Dr loop on-ramp	4,247	4,096	96%	60	17.0	B	947	737	78%	59	12.6	B	5,194	4,833	93%
Stoneridge Dr loop on-ramp to Stoneridge Dr diag on-ramp	4,798	4,927	103%	51	24.0	C							5,813	5,027	86%
Stoneridge Dr diag on-ramp to I-580 EB off-ramp	5,362	5,485	102%	54	23.9	C							6,438	5,607	87%
I-580 EB off-ramp to I-580 WB off-ramp	3,186	3,159	99%	61	16.8	B							4,198	3,265	78%
I-580 WB off-ramp to HOV Connector Off	2,799	2,762	99%	59	15.6	B							3,451	2,874	83%
Connector Off to 580 EB On	2,799	2,858	102%	57	22.0	C	652	364	56%	61	5.9	A	3,451	3,222	93%
I-580 EB on-ramp to I-580 WB on-ramp	3,435	3,160	92%	52	20.1	C	716	487	68%	61	8.0	A	4,151	3,647	88%
I-580 WB on-ramp to Dublin Blvd/Village Pkwy on-ramp	5,503	4,852	88%	60	16.2	B	1,187	544	46%	60	9.2	A	6,690	5,396	81%
I-680 NB north of Dublin Blvd/Village Pkwy on-ramp (end freev	6,106	5,011	82%	62	16.2	B	1,240	984	79%	61	16.1	B	7,346	5,996	82%
I-680 SB Mainline															
Alcosta Blvd to I-580 EB off-ramp	6,704	7,241	108%	19	75.4	F	1,616	1,027	64%	62	17	B	8,319	8,268	99%
I-580 EB off-ramp to I-580 WB off-ramp	4,025	4,761	118%	54	17.9	B	1,380	795	58%	62	13	B	5,405	5,556	103%
I-580 WB off-ramp to Dublin Blvd/Patrick Way on-ramp	2,754	3,262	118%	62	15.3	B	1,093	659	60%	61	11	A	3,848	3,921	102%
Dublin Blvd/Patrick Way on-ramp to I-580 on-ramp	3,273	3,861	118%	60	20.8	C	1,251	665	53%	62	11	A	4,525	4,525	100%
I-580 on-ramp to Stoneridge off-ramp	5,717	5,161	90%	58	22.4	C	1,473	812	55%	61	13	B	7,191	5,973	83%
Stoneridge off to HOV off	3,724	3,226	87%	62	16.2	B	1,285	916	71%	61	14	B	5,009	4,142	83%
HOV off to Connector on	3,724	3,045	82%	62	15.7	B							3,724	3,045	82%
Connector on to Stoneridge loop on-ramp	4,773	3,260	68%	58	14.0	B	604	353	58%	54	6	A	5,377	3,613	67%
Stoneridge Loop on Ramp to Stoneridge diagonal on-ramp	5,234	3,731	71%	55	15.9	B	752	475	63%	61	8	A	5,986	4,206	70%
Stoneridge Diagonal on to HOV On	5,695	4,114	72%	52	20.4	C	934	697	75%	62	11	B	6,629	4,811	73%
HOV on to Bernal off	5,696	4,817	85%	58	26.6	D	2,219	979	44%	60	16	B	7,915	5,796	73%
Bernal Ave off-ramp to Bernal Ave on-ramp	4,618	3,938	85%	60	21.8	C	2,088	854	41%	60	14.3	B	6,706	4,792	71%
Bernal Ave on-ramp to Sunol Blvd off-ramp	5,125	4,452	87%	60	24.2	C	2,238	945	42%	59	15.9	B	7,363	5,397	73%
Sunol Blvd off-ramp to Sunol Blvd on-ramp	4,840	4,192	87%	60	23.4	C	2,198	936	43%	59	15.8	B	7,038	5,128	73%
Sunol Blvd on-ramp to Koopman Rd off-ramp	5,308	4,618	87%	60	25.3	C	2,388	1,100	46%	59	18.8	C	7,695	5,718	74%
Koopman Rd off-ramp to Poloma Rd off-ramp	4,841	4,250	88%	61	23.2	C	2,313	1,031	45%	59	17.6	B	7,154	5,281	74%
Poloma Rd off-ramp to Valecitos Rd on-ramp	4,721	4,171	88%	59	23.8	C	2,299	1,017	44%	58	17.5	B	7,020	5,188	74%
Valecitos Rd on-ramp to Poloma Rd on-ramp	5,979	5,476	92%	41	35.4	E	2,686	1,063	40%	57	18.5	C	8,665	6,539	75%
Poloma Rd on-ramp to Andrade Rd off-ramp	6,287	5,605	89%	57	32.3	D	2,768	1,352	49%	58	23.3	C	9,055	6,958	77%

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - RAMPS - AM PEAK

Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 EB ON-RAMPS			
I-680 SB	2,006	1,752	87%
I-680 NB	1,692	1,682	99%
Hopyard Rd SB	658	601	91%
Hopyard Rd NB	596	595	100%
Hacienda Dr SB	635	599	94%
Hacienda Dr NB	587	587	100%
Santa Rita Rd SB	618	600	97%
Santa Rita Rd NB	649	601	93%
El Charro Rd SB	593	592	100%
El Charro Rd NB	618	600	97%
Airway Blvd	505	506	100%
Isabel Ave SB	251	246	98%
Isabel Ave NB	1,018	983	97%
Livermore Ave	616	598	97%
First St SB	145	145	100%
First St NB	576	575	100%
Vasco Rd SB	11	11	100%
Vasco Rd NB	562	562	100%
Greenville Rd	66	66	100%

Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 EB OFF-Ramps			
I-680	2,363	1,091	46%
Hopyard Rd	689	689	100%
Hacienda Dr	1,946	1,852	95%
Santa Rita Rd	1,597	1,479	93%
El Charro	1,418	1,307	92%
Airway Blvd	1,511	1,441	95%
Isabel Ave	1,466	1,258	86%
Livermore Ave	1,433	1,356	95%
First St	1,431	1,204	84%
Vasco Rd	1,832	1,598	87%
Greenville Rd	1,468	1,294	88%

Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 WB ON-RAMPS			
Greenville Rd	704	599	85%
Vasco Rd	1,613	1,200	74%
First St NB	737	600	81%
First St SB	685	600	88%
Livermore Ave	756	599	79%
Isabel Ave NB	664	563	85%
Isabel Ave SB	670	588	88%
Airway Blvd NB	670	601	90%
Airway Blvd SB	690	600	87%
El Charro NB	654	463	71%
El Charro SB	661	600	91%
Santa Rita NB	609	601	99%
Santa Rita SB	647	602	93%
Hacienda Dr NB	606	601	99%
Hacienda Dr SB	643	600	93%
Hopyard Rd NB	637	0	0%
Hopyard Rd SB	667	0	0%
HOV On	1,490	1,490	100%
I-680 NB	448	265	59%
I-680 SB	1,557	1,557	100%

Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 WB OFF-Ramps			
Greenville Rd	1,440	1,321	92%
Vasco Rd	784	784	100%
First St	598	569	95%
Livermore Ave	126	124	98%
Isabel Ave	2,402	2,268	94%
Airway Blvd	610	610	100%
El Charro	960	787	82%
Santa Rita	1,337	1,074	80%
Hacienda Dr	1,532	1,247	81%
HOV Off	1,490	1,490	100%
680 Connector Off	1,653	698	42%
Hopyard Off	1,112	607	55%
I-680 NB & SB Loop Ramp	3,543	2,405	68%

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - RAMPS - AM PEAK

Freeway Ramps	Demand (vph)	Served (vph)	% Served	Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-680 NB ON-RAMPS				**I-680 NB OFF-Ramps**			
Calaveras Rd	317	316	100%	Calaveres Rd	60	44	74%
Vallecitos	44	44	99%	Vallecitos	1,698	1,629	96%
Koopman Rd	548	548	100%	Sunol Blvd	879	826	94%
Sunol Blvd	577	578	100%	Bernal Ave	458	458	100%
Bernal Ave	683	599	88%	Stoneridge	983	934	95%
Stoneridge EB Loop	619	601	97%	I-580 EB	2,240	2,240	100%
Stoneridge Diagonal	626	601	96%	I-580 WB	448	392	88%
I-580 EB	700	425	61%				
I-580 WB	2,539	1,750	69%				
Dublin Blvd/Village Pkwy	656	597	91%				
I-680 SB ON-RAMPS				**I-680 SB OFF-Ramps**			
Dublin Blvd/Patrick Way	677	598	88%	I-580 EB	2,915	2,589	89%
I-580 EB & WB Loop	2,666	1,442	54%	I-580 WB	1,557	1,557	100%
Connector On	1,653	696	42%	Stoneridge	2,182	2,090	96%
Stoneridge WB Loop On	609	597	98%	HOV Off	1,285	970	75%
Stoneridge Diagonal	643	603	94%	Bernal Ave	1,209	1,030	85%
HOV On	1,285	971	76%	Sunol Blvd	325	267	82%
Bernal Ave	656	607	92%	Koopman rd	541	413	76%
Sunol Blvd	658	594	90%	Poloma Way	134	110	82%
Vallecitos	1,645	1,327	81%				
Calaveres Rd	390	389	100%				

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - MAINLINE - PM PEAK

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - RAMPS - PM PEAK

Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 EB ON-RAMPS			
I-680 SB	2,182	1,769	81%
I-680 NB	1,620	1,524	94%
Hopyard Rd SB	761	600	79%
Hopyard Rd NB	690	600	87%
Hacienda Dr SB	623	601	96%
Hacienda Dr NB	838	600	72%
Santa Rita Rd SB	657	598	91%
Santa Rita Rd NB	690	599	87%
El Charro Rd SB	331	332	100%
El Charro Rd NB	579	580	100%
Airway Blvd	672	599	89%
Isabel Ave SB	235	235	100%
Isabel Ave NB	1,447	1,238	86%
Livermore Ave	582	581	100%
First St SB	680	601	88%
First St NB	653	598	92%
Vasco Rd SB	0	0	#DIV/0!
Vasco Rd NB	76	75	99%
Greenville Rd	250	251	100%

Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 EB OFF-Ramps			
I-680	1,881	1,317	70%
Hopyard Rd	177	177	100%
Hacienda Dr	1,489	1,420	95%
Santa Rita Rd	1,011	1,011	100%
El Charro	987	950	96%
Airway Blvd	1,117	1,011	91%
Isabel Ave	850	821	97%
Livermore Ave	1,563	1,440	92%
First St	1,510	1,346	89%
Vasco Rd	2,082	1,891	91%
Greenville Rd	1,514	1,319	87%

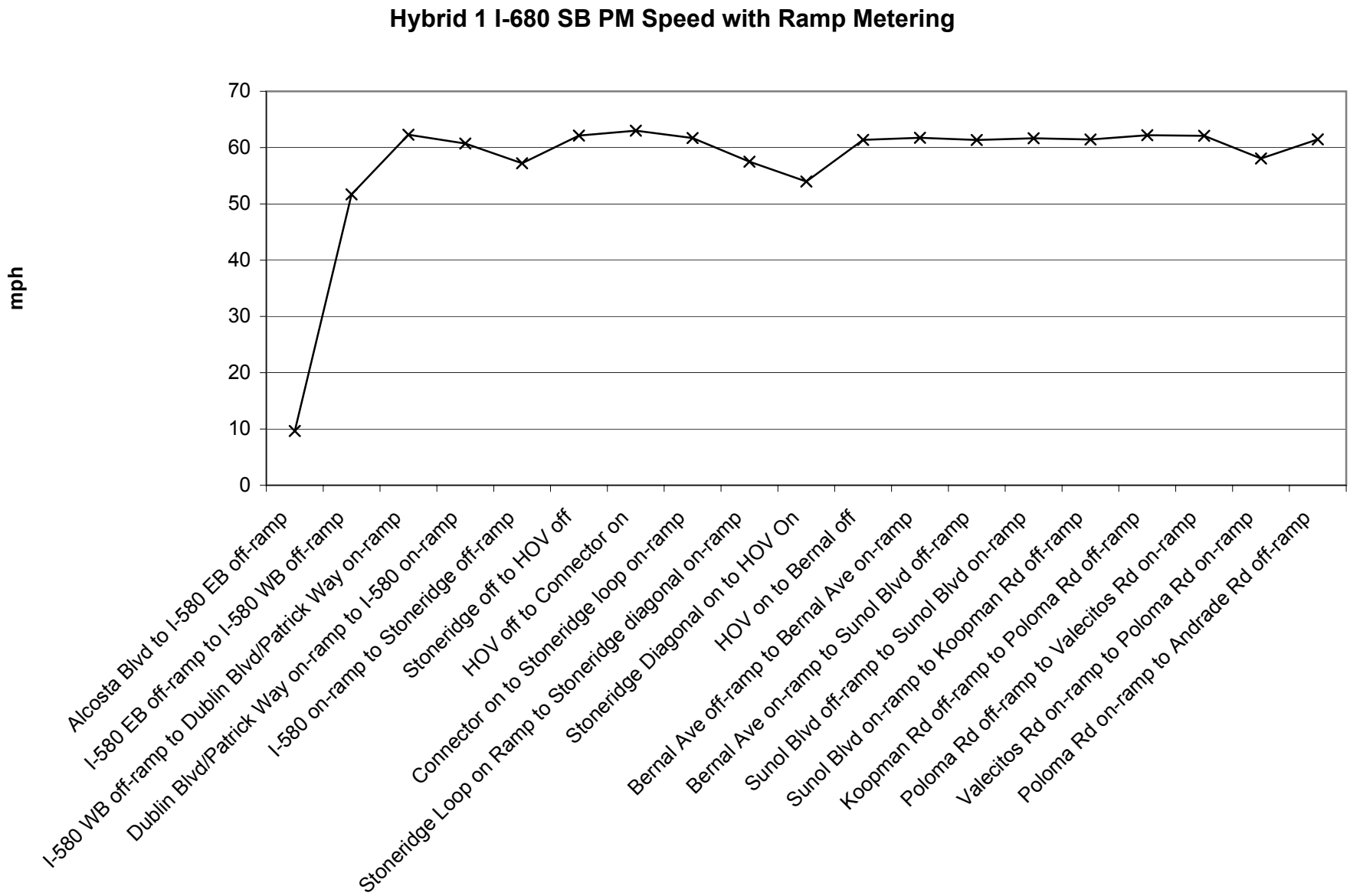
Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 WB ON-RAMPS			
Greenville Rd	683	601	88%
Vasco Rd	1,530	1,199	78%
First St NB	667	600	90%
First St SB	623	601	96%
Livermore Ave	698	600	86%
Isabel Ave NB	344	344	100%
Isabel Ave SB	652	504	77%
Airway Blvd NB	685	319	47%
Airway Blvd SB	674	565	84%
El Charro NB	654	0	0%
El Charro SB	688	0	0%
Santa Rita NB	673	269	40%
Santa Rita SB	695	54	8%
Hacienda Dr NB	698	221	32%
Hacienda Dr SB	715	103	14%
Hopyard Rd NB	712	456	64%
Hopyard Rd SB	744	129	17%
HOV On	895	744	83%
I-680 NB	1,117	754	67%
I-680 SB	1,557	1,557	100%

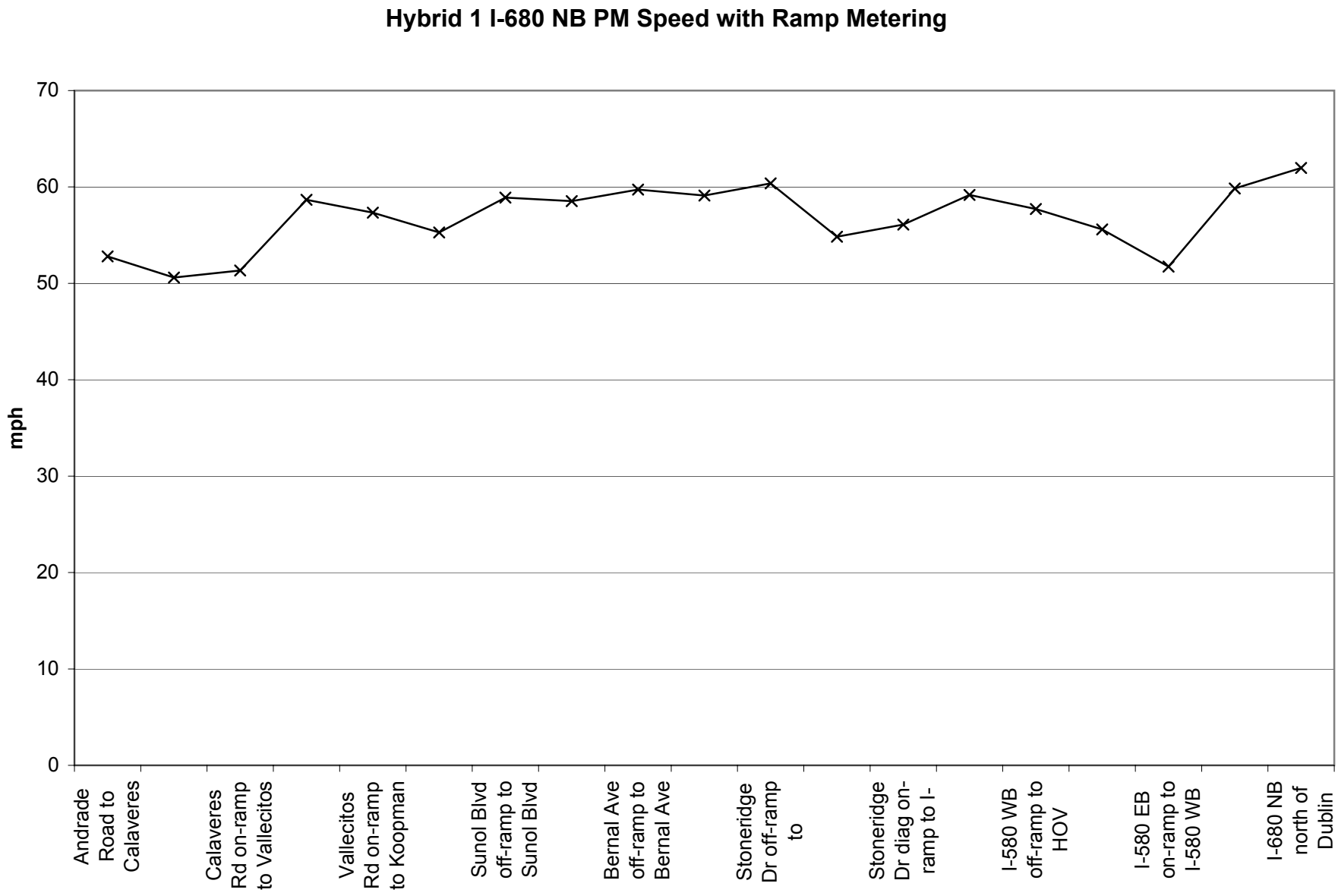
Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-580 WB OFF-Ramps			
Greenville Rd	196	182	93%
Vasco Rd	154	154	100%
First St	659	659	100%
Livermore Ave	455	420	92%
Isabel Ave	866	862	100%
Airway Blvd	107	107	100%
El Charro	261	173	66%
Santa Rita	1,341	680	51%
Hacienda Dr	522	295	57%
HOV Off	895	756	84%
680 Connector Off	675	83	12%
Hopyard Off	1,186	409	34%
I-680 NB & SB Loop Ramp	3,882	2,098	54%

TRIANGLE STUDY - TRAFFIC OPERATIONS ANALYSIS

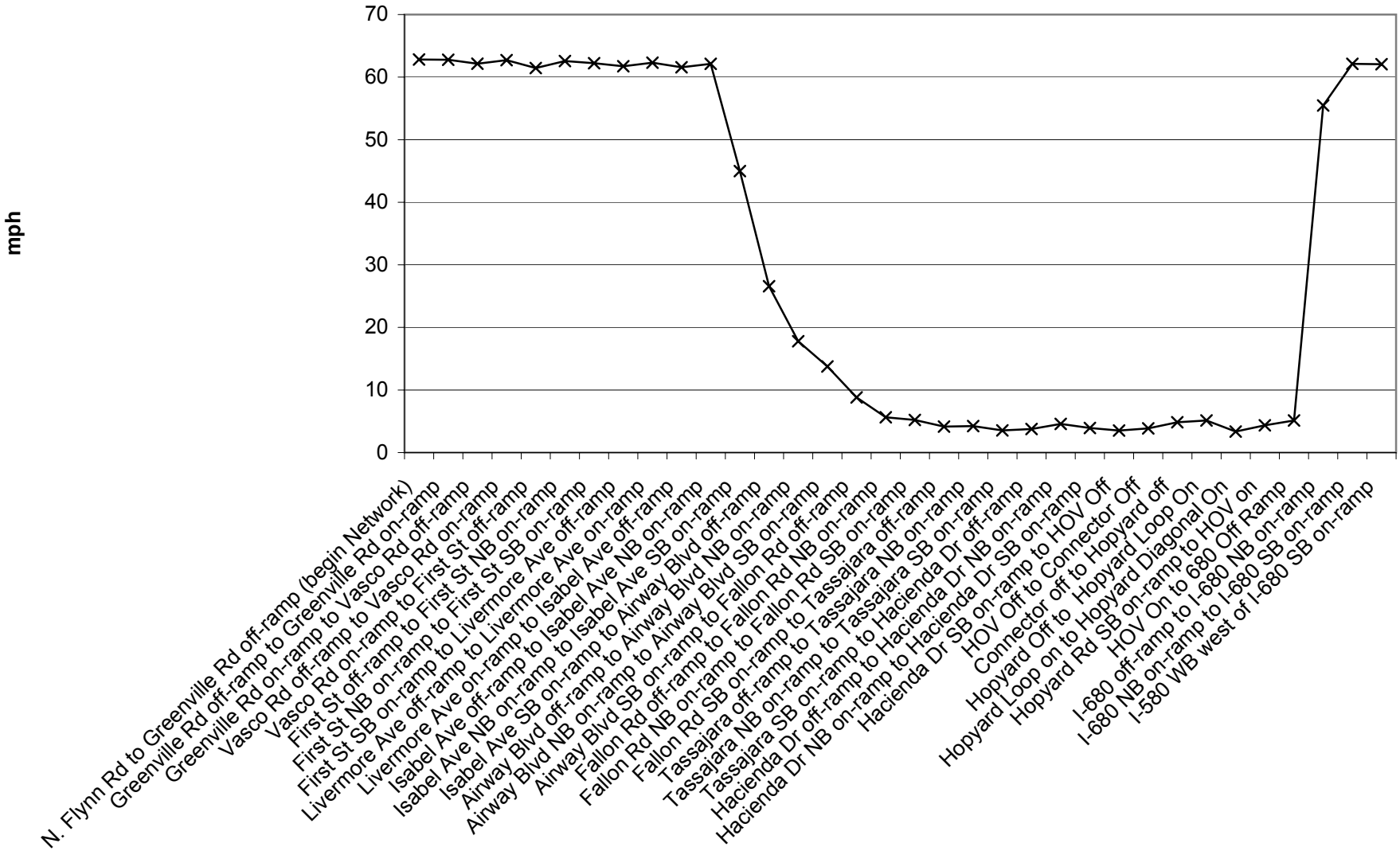
HYBRID ALTERNATIVE #1 (Ramp Meter @ I-580/I-680 I/C) - RAMPS - PM PEAK

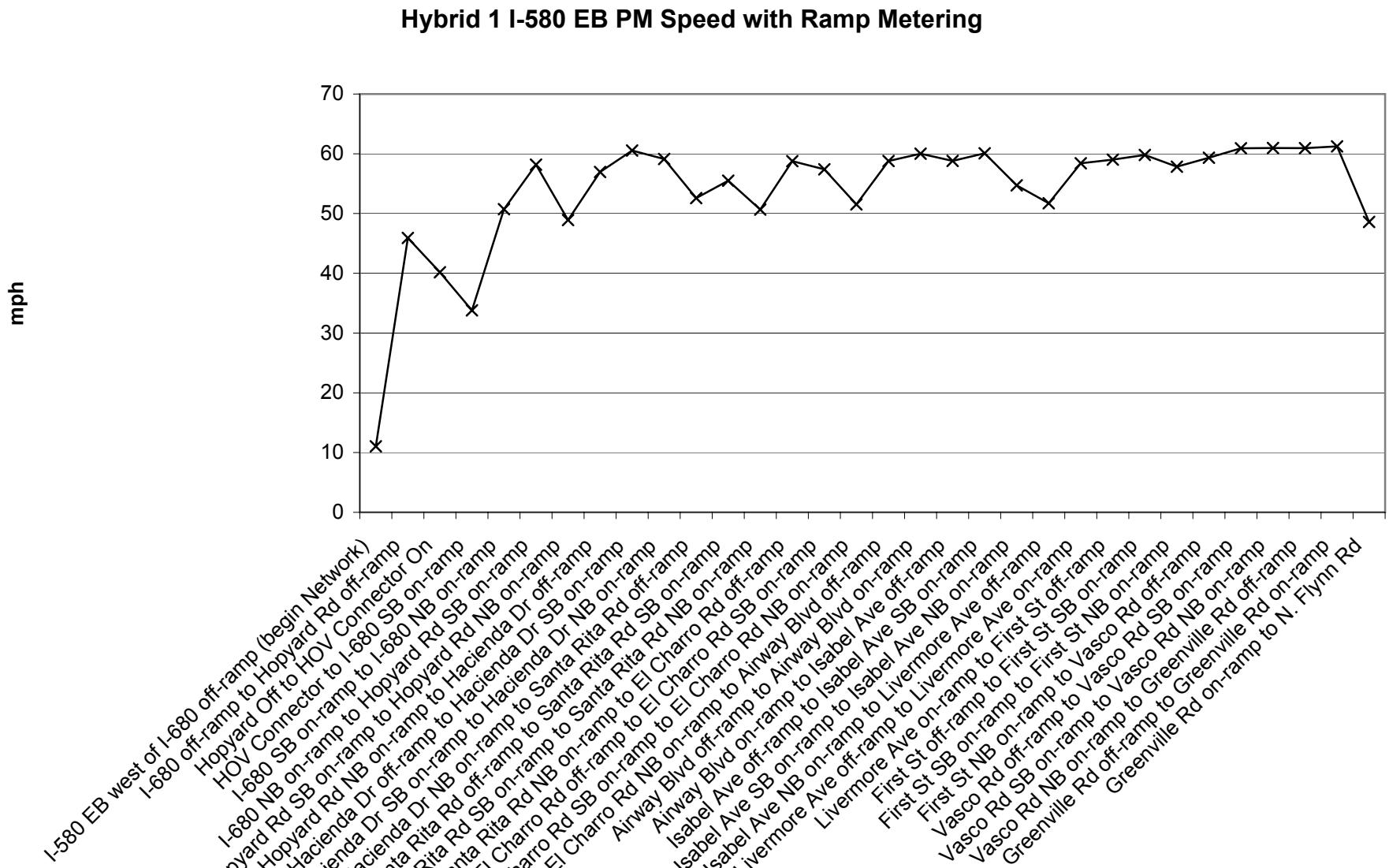
Freeway Ramps	Demand (vph)	Served (vph)	% Served	Freeway Ramps	Demand (vph)	Served (vph)	% Served
I-680 NB ON-RAMPS				**I-680 NB OFF-Ramps**			
Calaveras Rd	205	203	99%	Calaveres Rd	320	247	77%
Vallecitos	240	165	69%	Vallecitos	1,850	1,636	88%
Koopman Rd	405	404	100%	Sunol Blvd	1,451	1,309	90%
Sunol Blvd	659	597	91%	Bernal Ave	796	706	89%
Bernal Ave	737	603	82%	Stoneridge	643	570	89%
Stoneridge EB Loop	730	600	82%	I-580 EB	1,907	1,791	94%
Stoneridge Diagonal	719	602	84%	I-580 WB	1,101	943	86%
I-580 EB	468	396	85%				
I-580 WB	3,283	1,766	54%				
Dublin Blvd/Village Pkwy	737	599	81%				
I-680 SB ON-RAMPS				**I-680 SB OFF-Ramps**			
Dublin Blvd/Patrick Way	678	600	88%	I-580 EB	3,022	2,432	80%
I-580 EB & WB Loop	1,996	1,420	71%	I-580 WB	1,557	1,557	100%
Connector On	675	79	12%	Stoneridge	2,048	1,969	96%
Stoneridge WB Loop On	670	596	89%	HOV Off	938	714	76%
Stoneridge Diagonal	671	600	89%	Bernal Ave	945	748	79%
HOV On	938	718	77%	Sunol Blvd	476	406	85%
Bernal Ave	649	600	92%	Koopman rd	655	551	84%
Sunol Blvd	643	599	93%	Poloma Way	67	58	87%
Vallecitos	1,287	1,221	95%				
Calaveres Rd	44	44	100%				

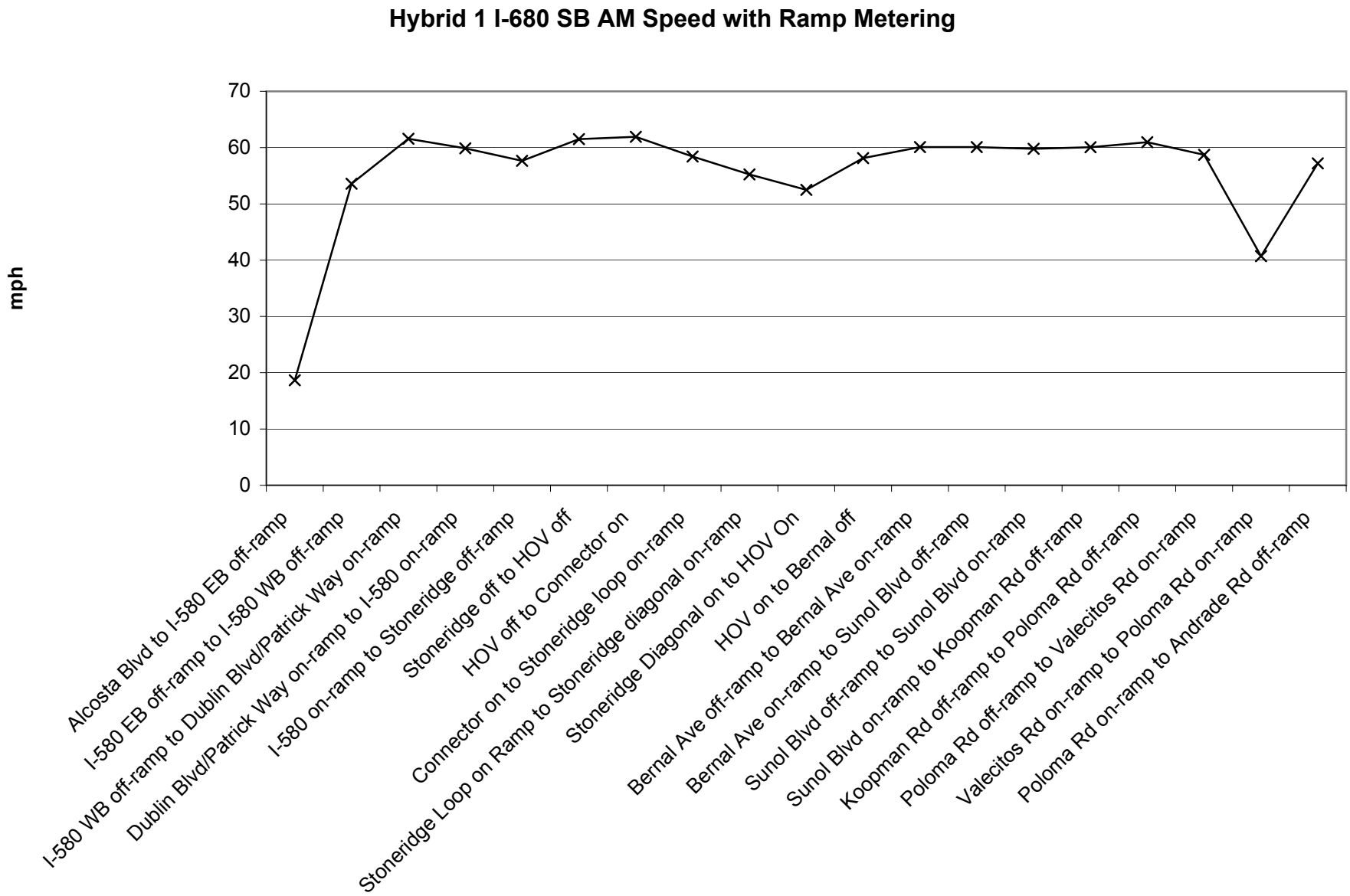

Hybrid 1 I-680 SB PM Speed with Ramp Metering
mph
70
60
50
40
30
20
10
0
Alcosta Blvd to I-580 EB off-ramp
I-580 EB off-ramp to I-580 WB off-ramp
I-580 WB off-ramp to Dublin Blvd/Patrick Way on-ramp
Dublin Blvd/Patrick Way on-ramp to I-580 on-ramp
I-580 on-ramp to Stoneridge off-ramp
Stoneridge off to HOV off
HOV off to Connector on
Connector on to Stoneridge loop on-ramp
Stoneridge Loop on Ramp to Stoneridge diagonal on-ramp
Stoneridge Diagonal on to HOV On
HOV on to Bernal off
Bernal Ave off-ramp to Bernal Ave on-ramp
Bernal Ave on-ramp to Sunol Blvd off-ramp
Sunol Blvd off-ramp to Sunol Blvd on-ramp
Sunol Blvd on-ramp to Koopman Rd off-ramp
Koopman Rd off-ramp to Poloma Rd off-ramp
Poloma Rd off-ramp to Valecitos Rd on-ramp
Valecitos Rd on-ramp to Poloma Rd on-ramp
Poloma Rd on-ramp to Andrade Rd off-ramp

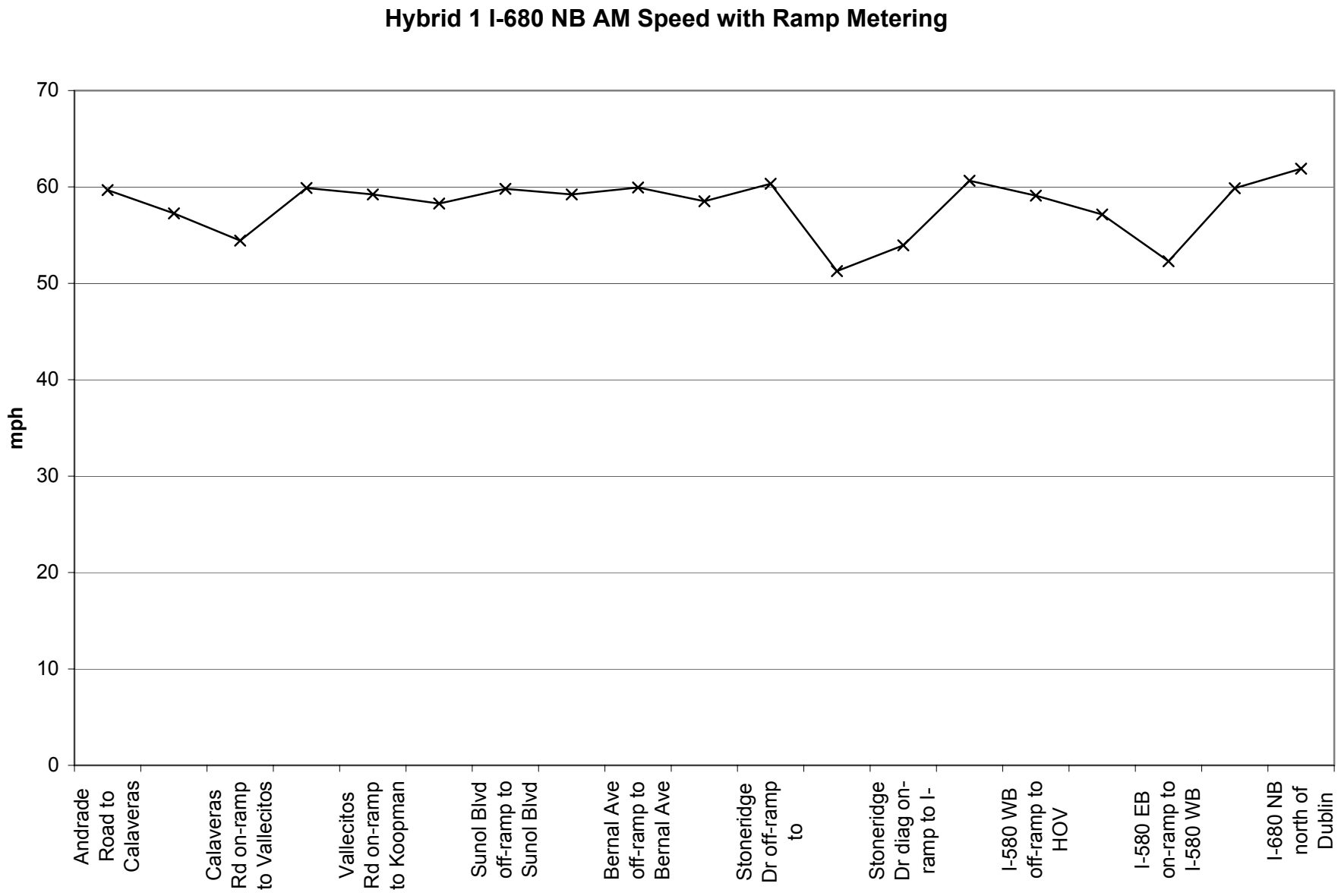

Hybrid 1 I-680 NB PM Speed with Ramp Metering
mph
70
60
50
40
30
20
10
0
Andrade Road to Calaveres
Calaveres Rd on-ramp to Vallecitos
Vallecitos Rd on-ramp to Koopman
Sunol Blvd off-ramp to Sunol Blvd
Bernal Ave off-ramp to Bernal Ave
Stoneridge Dr off-ramp to
Stoneridge Dr diag on-ramp to I-
I-580 WB off-ramp to HOV
I-580 EB on-ramp to I-580 WB
I-680 NB north of Dublin

Hybrid 1 I-580 WB PM Speed with Ramp Metering

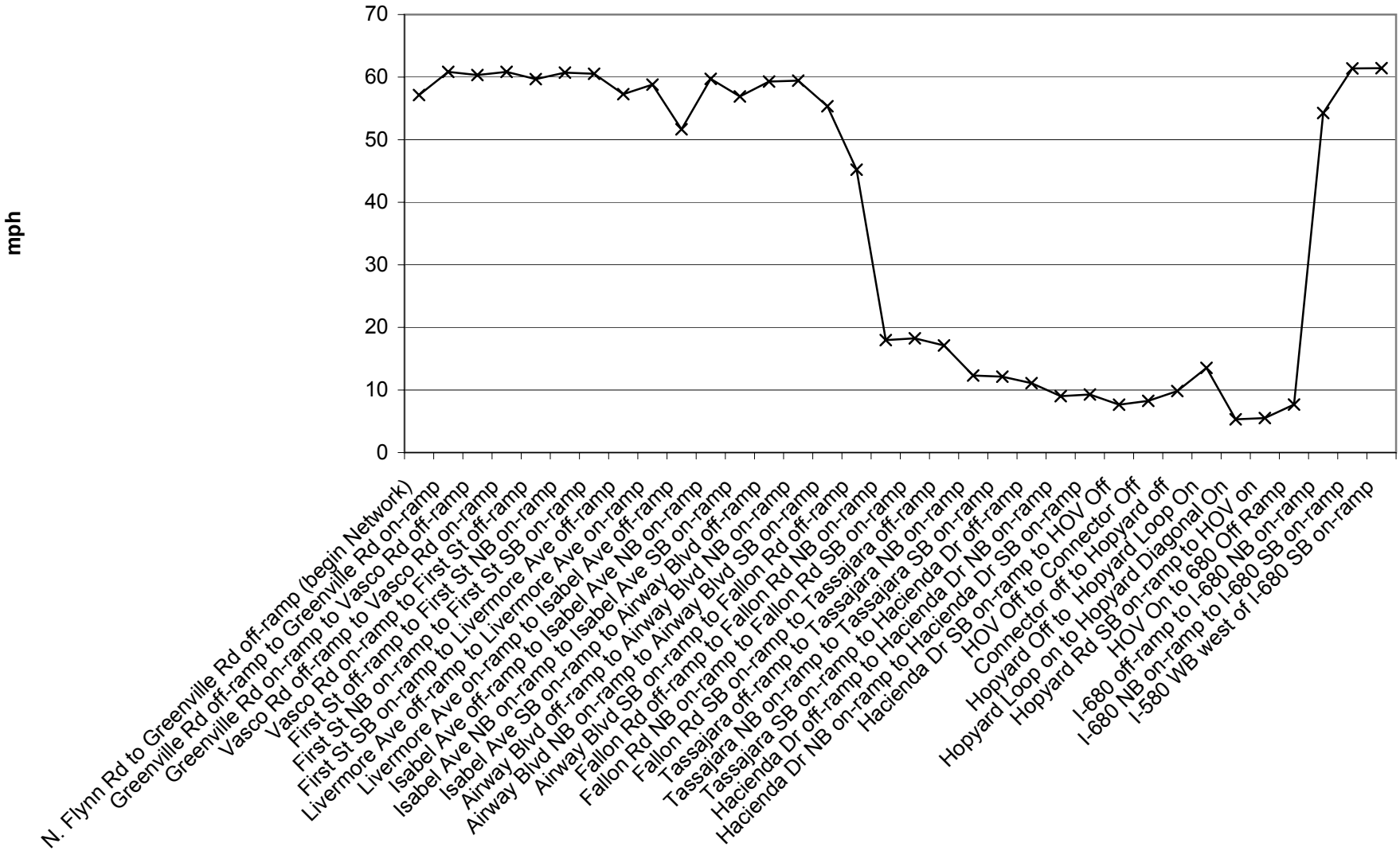
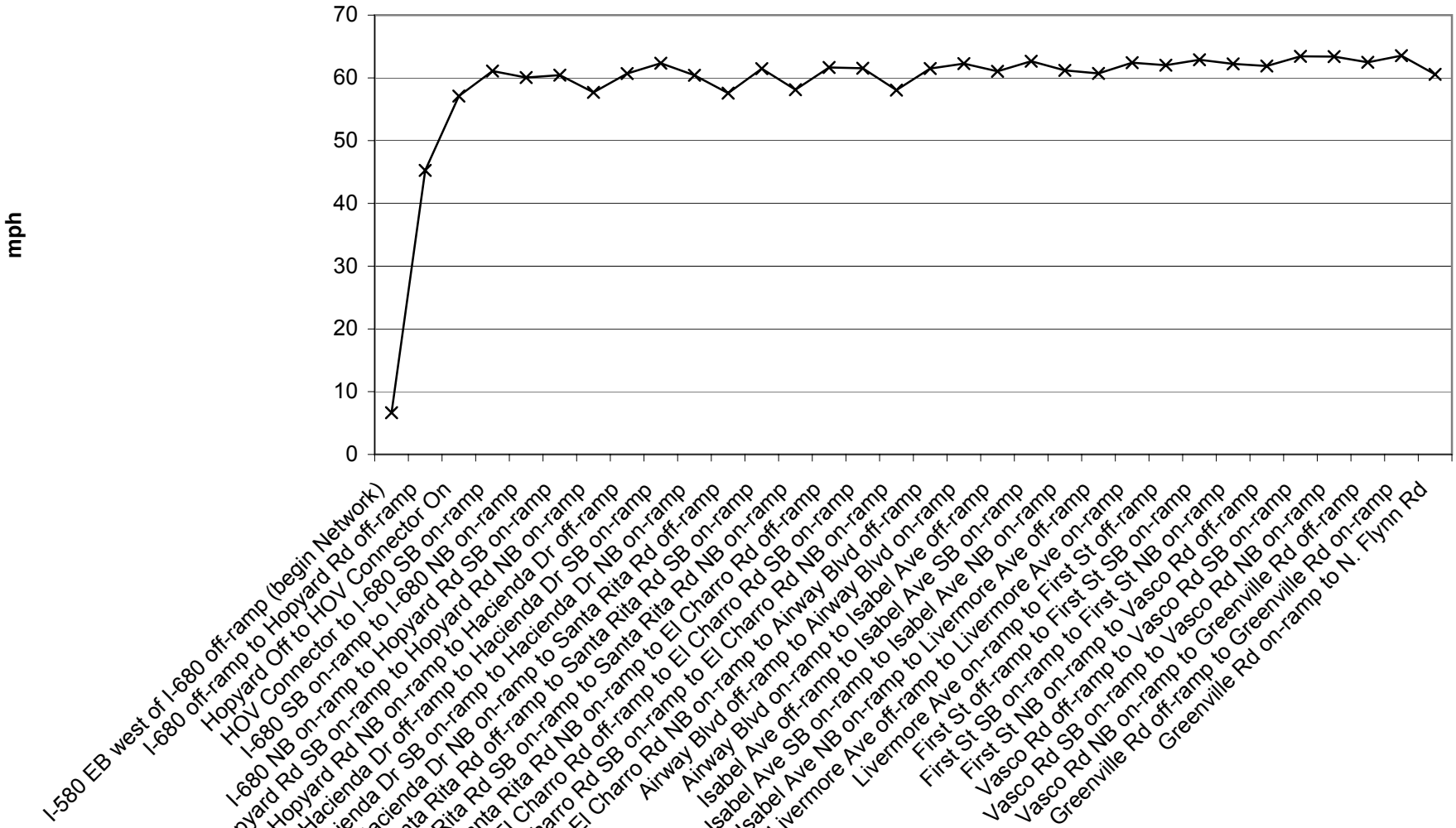



Hybrid 1 I-580 EB PM Speed with Ramp Metering
mph
70
60
50
40
30
20
10
0
I-580 EB west of I-680 off-ramp (begin Network)
I-680 off-ramp to Hopyard Rd off-ramp
Hopyard Off to HOV Connector On
HOV Connector to I-680 SB on-ramp
I-680 SB on-ramp to I-680 NB on-ramp
I-680 NB on-ramp to Hopyard Rd SB on-ramp
Hopyard Rd SB on-ramp to Hopyard Rd NB on-ramp
Hopyard Rd NB on-ramp to Hacienda Dr off-ramp
Hacienda Dr off-ramp to Hacienda Dr SB on-ramp
Hacienda Dr SB on-ramp to Hacienda Dr NB on-ramp
Hacienda Dr NB on-ramp to Santa Rita Rd off-ramp
Santa Rita Rd off-ramp to Santa Rita Rd SB on-ramp
Santa Rita Rd SB on-ramp to Santa Rita Rd NB on-ramp
Santa Rita Rd NB on-ramp to El Charro Rd off-ramp
El Charro Rd off-ramp to El Charro Rd SB on-ramp
El Charro Rd SB on-ramp to El Charro Rd NB on-ramp
El Charro Rd NB on-ramp to Airway Blvd off-ramp
Airway Blvd off-ramp to Airway Blvd on-ramp
Airway Blvd on-ramp to Isabel Ave off-ramp
Isabel Ave off-ramp to Isabel Ave SB on-ramp
Isabel Ave SB on-ramp to Isabel Ave NB on-ramp
Isabel Ave NB on-ramp to Livermore Ave off-ramp
Livermore Ave off-ramp to Livermore Ave on-ramp
Livermore Ave on-ramp to First St off-ramp
First St off-ramp to First St SB on-ramp
First St SB on-ramp to First St NB on-ramp
First St NB on-ramp to Vasco Rd off-ramp
Vasco Rd off-ramp to Vasco Rd SB on-ramp
Vasco Rd SB on-ramp to Vasco Rd NB on-ramp
Vasco Rd NB on-ramp to Greenville Rd off-ramp
Greenville Rd off-ramp to Greenville Rd on-ramp
Greenville Rd on-ramp to N. Flynn Rd


Hybrid 1 I-680 SB AM Speed with Ramp Metering
mph
70
60
50
40
30
20
10
0
Alcosta Blvd to I-580 EB off-ramp
I-580 EB off-ramp to I-580 WB off-ramp
I-580 WB off-ramp to Dublin Blvd/Patrick Way on-ramp
Dublin Blvd/Patrick Way on-ramp to I-580 on-ramp
I-580 on-ramp to Stoneridge off-ramp
Stoneridge off to HOV off
HOV off to Connector on
Connector on to Stoneridge loop on-ramp
Stoneridge Loop on Ramp to Stoneridge diagonal on-ramp
Stoneridge Diagonal on to HOV On
HOV on to Bernal off
Bernal Ave off-ramp to Bernal Ave on-ramp
Bernal Ave on-ramp to Sunol Blvd off-ramp
Sunol Blvd off-ramp to Sunol Blvd on-ramp
Sunol Blvd on-ramp to Koopman Rd off-ramp
Koopman Rd off-ramp to Poloma Rd off-ramp
Poloma Rd off-ramp to Valecitos Rd on-ramp
Valecitos Rd on-ramp to Poloma Rd on-ramp
Poloma Rd on-ramp to Andrade Rd off-ramp


Hybrid 1 I-680 NB AM Speed with Ramp Metering
mph
70
60
50
40
30
20
10
0
Andrade Road to Calaveras
Calaveras Rd on-ramp to Vallecitos
Vallecitos Rd on-ramp to Koopman
Sunol Blvd off-ramp to Sunol Blvd
Bernal Ave off-ramp to Bernal Ave
Stoneridge Dr off-ramp to
Stoneridge Dr diag on-ramp to I-
I-580 WB off-ramp to HOV
I-580 EB on-ramp to I-580 WB
I-680 NB north of Dublin

Hybrid 1 I-580 WB AM Speed with Ramp Metering



Hybrid 1 I-580 EB AM Speed with Ramp Metering