



Memorandum

Date: June 20, 2018

To: Mr. Richard James, EMC Planning Group

From: Gary Black
Ling Jin

Subject: Traffic Analysis for the New Hillview Community Center

Hexagon Transportation Consultants, Inc. has completed a traffic study for the proposed new Hillview community center in Los Altos, California. The size of the proposed new community center would be 24,500 gross square feet (GSF) and would replace the existing 30,500 GSF (approximate) community center. Access to the site is currently provided via four driveways along Hillview Avenue. The site plan shows that the new proposed community center would be accessed by two driveways along Hillview Avenue.

Summary

Because the project would not increase the size of the community center and would not add services, it is not expected to generate any net new trips. Therefore, a regular traffic study is not required. The purpose of this traffic study is to document the project trip generation and provide an assessment of site access and onsite circulation.

Existing Trip Generation

The trips generated by the existing community center on the site were surveyed on three typical weekdays at the end of January in 2018 (Wednesday 1/31/2018; Thursday 2/1/2018; and Friday 2/2/2018) (see Appendix A). The hourly inbound and outbound trips were counted at each driveway by cameras. The trip generation survey results show that the existing community center generates 1,444 daily vehicle trips on average. The driveway counts show that the highest hourly volume occurred during the typical AM commute hour (8:15 – 9:15 AM) when there were 174 vehicles entering/exiting the site (104 inbound trips and 70 outbound trips) and during the PM commute hour (5:00 – 6:00 PM) when there were 172 vehicle trips entering/exiting the site (67 inbound trips and 105 outbound trips) (see Figure 1). On average, less than three vehicles are entering/exiting the site per minute.

It should be noted that the community center parking lot is joined to the remainder of the Civic Center with a drive aisle. Thus, it is possible that some vehicles using the Hillview driveways and the community center parking lot could be generated by other uses on the site. This same connection will be maintained with the new community center, so it is likely that the driveway volumes will not change.

Hexagon compared the programs and activities (total number of persons in each program) on site for January/February 2018 versus August 2017 (a typical summer month). Among the three days in 2018, February 1, 2018 was the busiest day, and August 16, 2017 was the busiest day among the three days in August 2017. Tables 1 and 2 show the hourly and total persons in each room on

February 1, 2018 and on August 16, 2017. On February 1, 2018, there were 173 persons during the AM peak commute hour (8:15-9:10 AM) and 220 persons during the PM peak commute hour (5:00 – 6:00 PM). On August 16, 2017, there were 60 persons during the AM peak commute hour (8:15-9:10 AM) and 205 persons during the PM peak commute hour (5:00 – 6:00 PM). The comparison also shows that the daily activities (total number persons in all programs) were much higher on February 1, 2018. Therefore, January/February can be considered a busy period of the year.

**Table 1
Activity Summary on February 1, 2018**

1-Feb-18													
Time of Day	Room 2	Room 4	Room 12	Room 13	Room 14	Room 15	Room 16	Room 17	Room 18	Social Hall	Multi-Purpose Room	Hillview Soccer Field	Total
8:00-9:00 AM	40		20	15	18			30	30	20			173
9:00-10:00 AM	40		20	15	18		30	30	30	20			203
10:00-11:00 AM		10	20	15	18		30	30	30	20	10		183
11:00-Noon AM		10	20	15	18		30	30	30	20	10		183
Noon-1:00 PM		10	20	15		30				20	20		115
1:00-2:00 PM		10	20			30					20		80
2:00-3:00 PM			20	20		30					20		90
3:00-4:00 PM		10	20	20		30	30	30	30		20		190
4:00-5:00 PM		20		40		30	30	30	30		50		230
5:00-6:00 PM		10		20		30	30	30	30	20	50		220
6:00-7:00 PM		10								20			30
7:00-8:00 PM		10				30							40
8:00-9:00 PM						30							30
9:00-10:00 PM						30							30
10:00-11:00 PM						30							30
Total	80	100	160	175	72	300	180	210	210	140	200	0	1827

**Table 2
Activity Summary on August 16, 2017**

16-Aug-17													
Time of Day	Room 2	Room 4	Room 12	Room 13	Room 14	Room 15	Room 16	Room 17	Room 18	Social Hall	Multi-Purpose Room	Hillview Soccer Field	Total
8:00-9:00 AM										30	30		60
9:00-10:00 AM										30	30	20	80
10:00-11:00 AM					30							20	50
11:00-Noon AM		10			30						20	20	80
Noon-1:00 PM	30	10		30							20		90
1:00-2:00 PM	30			30		30							90
2:00-3:00 PM				30		30							60
3:00-4:00 PM				30		30	30	30	30				150
4:00-5:00 PM	5			30		30	30	30	30			75	230
5:00-6:00 PM	5			30		30	30	30	30			50	205
6:00-7:00 PM	20					30						50	100
7:00-8:00 PM	15					30							45
8:00-9:00 PM	15					30							45
9:00-10:00 PM	15					30							45
10:00-11:00 PM	15					30							45
Total	150	20	0	180	60	300	90	90	90	60	100	235	1375

Potential Trip Generation

Appendix C shows a breakdown by room size of the existing and proposed uses of the community center. Some existing programs, such as the Children's Corner Program (in rooms 5, 6, and c), would not be carried forward under the proposed new community center. As discussed under the existing trip generation section, January was found to be a busy period of the year. However, the soccer fields were not in use in January. The traffic generated by the soccer field was estimated based on the rates published for "Soccer Complex" (Land Use: 488) by the Institute of Transportation Engineers (ITE) manual entitled Trip Generation, 10th Edition. Based on these rates, the existing soccer field is generating 71 daily trips with only 1 trip during the AM peak hour and 17 trips during the PM peak hour. If trips generated by soccer fields were added to the January/February driveway counts, the total number of vehicle trips is estimated to be 175 during the AM peak hour (9:00-10:00 AM) and 189 during the PM peak hour (5:00-6:00 PM).

Site Access and On-Site Circulation

A review of the new project site plan was performed to determine whether adequate site access and on-site circulation would be provided. This review was based on the site plan provided by Noll & Tam Architects dated March 1, 2018 (see Figure 2).

Site Access

The site access was evaluated to determine the adequacy of the site's driveways with regard to the following: traffic volume, delays, vehicle queues, truck access, pedestrian and bicycle access.

The site plan shows that the new proposed community center would be accessed by two full-access driveways on Hillview Avenue. The two driveways would serve a maximum of 175 vehicles during the AM peak hour and 189 vehicles during the PM peak hour generated by the new community center. That is approximately three cars every minute entering or exiting at these two driveways. The project traffic would be accommodated easily with the proposed driveways.

Hexagon conducted 24-hour traffic counts on Hillview Avenue east of San Antonio Road near the project site for seven consecutive days from 1/27/2018 (Saturday) to 2/2/2018 (Friday) (see Appendix B). The average daily volume was about 1,246 vehicles with an average peak hour volume of 132 vehicles for both directions, which is way below the capacity of the road, which is between 1,500 and 1,800 vehicles per hour. Vehicle queuing issues are not expected to occur at the driveways based on the relatively low number of project trips at the driveways and low traffic volume on Hillview Avenue. The existing pedestrian transition onto the driveways seems not to comply with the requirements of the Americans with Disabilities Act (ADA). The sidewalk needs to be widened at the location of the driveway to provide at least a 4-foot wide flat sidewalk behind the driveway.

The project driveway should be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on Hillview Avenue. Any landscaping, parking, and signage should be located in such a way to ensure an unobstructed view for drivers entering and exiting the site.

Sight distance generally should be provided in accordance with Caltrans design standards. Sight distance requirements vary depending on the roadway speeds. The speed limit on Hillview Avenue is 25 mph. The Caltrans recommended stopping sight distance is 150 feet. This means that a driver must be able to see 150 feet down Hillview Avenue to locate a sufficient gap to turn out of the driveways. There are no sharp roadway curves or landscaping features shown on the site plan that

would obstruct the vision of exiting drivers. However, street parking is allowed on Hillview Avenue and could obstruct the vision of exiting drivers if there are cars parked next the driveways. To aid sight distance, it is recommended to install red curbs within 25 feet left of the driveways to prohibit street parking.

The roadways in the vicinity of the project site include sidewalks that provide adequate access for pedestrians walking to and from the site. The proposed project would add a new pedestrian path connecting the sidewalk along Hillview Avenue and the building entrance. The project also proposes to add two crosswalks, which would provide pedestrian connections between the community center and Hillview Park and other public facilities nearby. In-street “yield to pedestrian” signs should be considered at the new pedestrian path and these crosswalks to provide an additional measure of safety by encouraging drivers to yield to pedestrians.

Currently, there are four driveways serving the community center on Hillview Avenue: two full-access driveways, and one inbound and one outbound driveway serving a drop-off area. The proposed project would remove the two existing one-way driveways along Hillview Avenue, which would enhance pedestrian safety on the sidewalk. However, the existing pedestrian transition onto the driveways does not appear to be ADA-compliant. If the driveways are to be replaced, the design should insure at least a four-foot wide flat sidewalk area.

Emergency Vehicles, Truck Access and Circulation

Emergency response vehicles would be able to access the project site from either driveway on Hillview Avenue. The minimum width of the internal drive aisle through the project site would be 24 feet wide which would be adequate for emergency vehicle access and circulation. Site access and circulation for delivery/trash trucks were evaluated with vehicle turning movement templates. SU-30 trucks, representing medium-size trash and recycling pick up trucks, would be able to access, circulate, and exit the loading/pick-up areas within the project site.

On-Site Circulation

The proposed site plan shows that 90 degree parking spaces would be provided throughout the parking area with minimum 24-foot wide drive aisles, which are adequate for two-way circulation and would provide sufficient room for vehicles to back out of the parking spaces. The site plan shows good circulation through the parking area. The current site plan shows that there would be a drop-off/pick-up area on the northwest corner of the project site. The drive aisle beside the drop-off area is shown to 28 feet, which is adequate for two-way circulation and would allow a vehicle to maneuver and turn around without operational issues.

Parking

The Institute of Transportation Engineers (ITE) publication *Parking Generation, 4th Edition* (2010) provides the results of parking surveys conducted throughout the country for numerous popular land uses. ITE *Parking Generation* rates for land use 195, Recreational Community Center, were used to estimate the peak parking demand generated by the proposed project. The ITE peak parking demand rate is 3.2 spaces per 1,000 square footage of the gross floor area (GSF). Based on the ITE data, the project (24,500 GSF) is estimated to experience a peak parking demand of 79 spaces during weekday peak period between 6:00 PM and 8:00 PM. The project proposes to provide 155 spaces, which would exceed the peak parking demand.

Hexagon also estimated the existing parking demand during the peak period between 6:00 PM and 8:00 PM based on the programs and activities on site in January 2018. The results show that the peak parking demand would be around 133 spaces when assuming a vehicle occupancy rate at 1.5

persons/vehicle. Currently, there are 144 parking spaces on site with 6 accessible spaces. Thus, it appears that the existing peak parking demand is being accommodated in the existing parking lot. It should be noted that the parking lot is also used by other campus buildings and nearby public facilities such as Hillview Park, the Los Altos History Museum, and the Los Altos Library. The project proposes to provide 155 spaces in total on the surface parking lot with 6 accessible spaces. This is expected to be adequate since it is more spaces than existing conditions, and the activities are not expected to change.

Conclusions

The trip generation survey results show that the existing community center generates 1,444 daily vehicle trips on average with the highest hourly volume of 174 trips occurred during the typical AM commute hour (8:15 – 9:15 AM) and 172 trips during the PM commute hour (5:00 – 6:00 PM). The new community center is estimated to generate 175 trips during the AM peak hour (9:00-10:00 AM) and 189 trips during the PM peak hour (5:00-6:00 PM) by adding the trips generated by soccer fields to the January/February driveway counts.

The project trips generated by the proposed project would be able to be accommodated by the two proposed driveways.

The currently site plan is conceptual. Prior to final design, the driveway widths and radii should be measured to confirm that they comply with City of Los Altos standards and are adequate to handle truck traffic. The driveway design should comply with ADA standards. The design should consider in-street “yield to pedestrian” signs in the shorter crosswalks and in the new pedestrian path through the large parking area.

In order to ensure there would be sufficient sight distance at the project driveways, any landscaping, parking, and signage should be located in such a way to ensure an unobstructed view for drivers exiting the site. It is recommended to install red curbs within 25 feet left of the driveways to prohibit street parking.

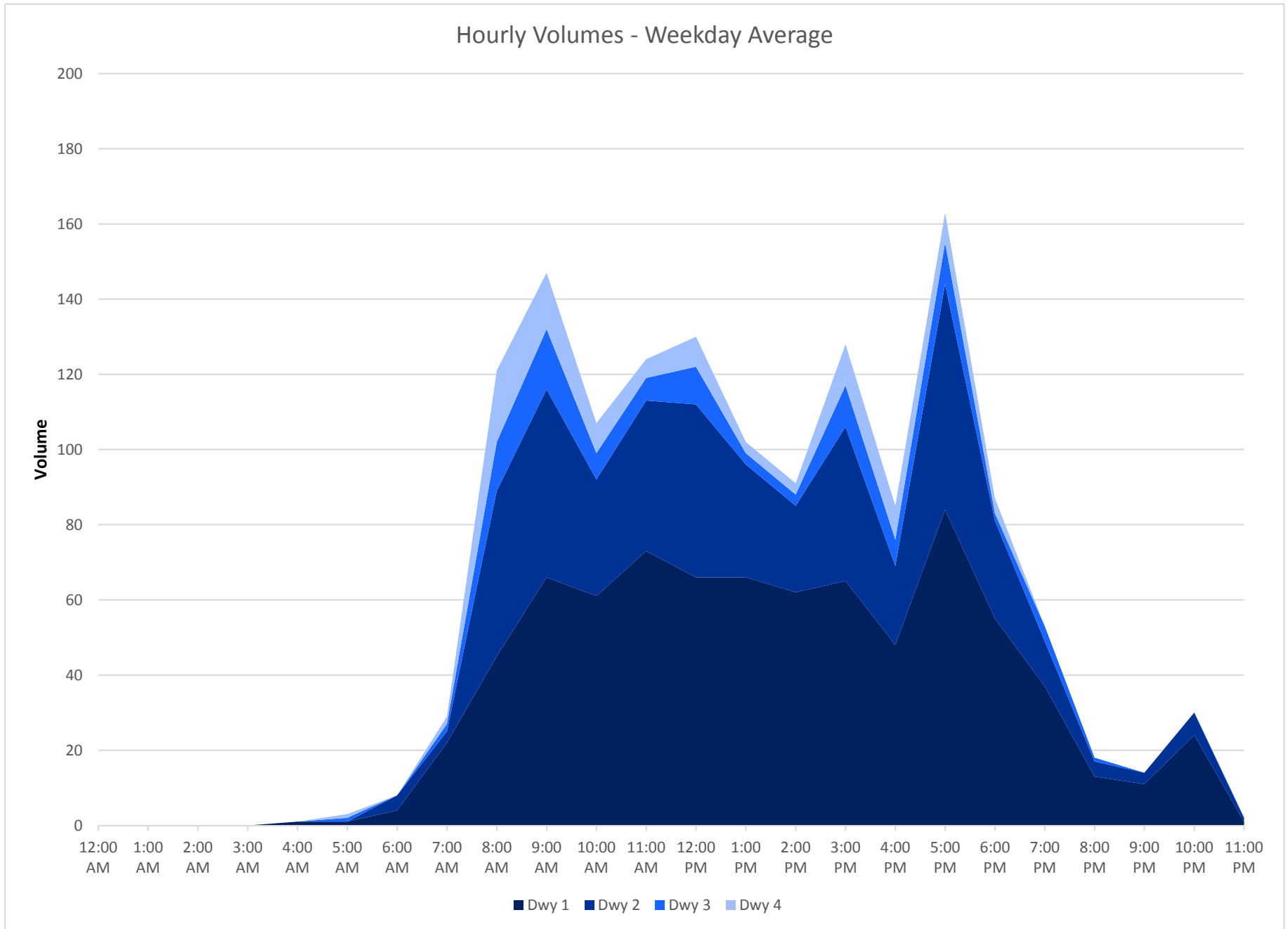


AM Peak Hour: 8:15 AM - 9:15 AM
PM Peak Hour: 5:00 PM - 6:00 PM

Figure 1
Peak Hour Volumes

Appendix A

Driveway Counts



Appendix B

Roadway Counts

ALL TRAFFIC DATA SERVICES

9660 W. 44TH AVE
WHEAT RIDGE, CO 80033
www.ALLTRAFFICDATA.NET

Untitled Vo
Date Start: 27-Jan-18
Date End: 02-Feb-18
Site Code: 1
HILLVIEW AVE E.O SAN ANTONIO RD

Start Time	22-Jan-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	*	*	*	*	*	*	1	0	2	3	2	2
01:00	*	*	*	*	*	*	*	*	*	*	1	0	0	1	0	0
02:00	*	*	*	*	*	*	*	*	*	*	0	0	1	0	0	0
03:00	*	*	*	*	*	*	*	*	*	*	1	0	0	0	0	0
04:00	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0
05:00	*	*	*	*	*	*	*	*	*	*	1	4	1	2	1	3
06:00	*	*	*	*	*	*	*	*	*	*	1	5	0	3	0	4
07:00	*	*	*	*	*	*	*	*	*	*	9	11	1	6	5	8
08:00	*	*	*	*	*	*	*	*	*	*	14	15	14	12	14	14
09:00	*	*	*	*	*	*	*	*	*	*	20	28	32	16	26	22
10:00	*	*	*	*	*	*	*	*	*	*	24	22	22	20	23	21
11:00	*	*	*	*	*	*	*	*	*	*	26	23	24	30	25	26
12:00 PM	*	*	*	*	*	*	*	*	*	*	24	30	23	34	24	32
01:00	*	*	*	*	*	*	*	*	*	*	58	63	31	50	44	56
02:00	*	*	*	*	*	*	*	*	*	*	64	66	75	36	70	51
03:00	*	*	*	*	*	*	*	*	*	*	44	56	69	37	56	46
04:00	*	*	*	*	*	*	*	*	*	*	40	46	42	47	41	46
05:00	*	*	*	*	*	*	*	*	*	*	22	23	32	110	27	66
06:00	*	*	*	*	*	*	*	*	*	*	17	18	22	18	20	18
07:00	*	*	*	*	*	*	*	*	*	*	29	11	17	18	23	14
08:00	*	*	*	*	*	*	*	*	*	*	12	15	9	8	10	12
09:00	*	*	*	*	*	*	*	*	*	*	6	6	6	2	6	4
10:00	*	*	*	*	*	*	*	*	*	*	8	34	0	1	4	18
11:00	*	*	*	*	*	*	*	*	*	*	2	2	1	0	2	1
Lane Day	0	0	0	0	0	0	0	0	0	0	424	478	424	454	423	464
AM Peak	-	-	-	-	-	-	-	-	-	-	11:00	09:00	09:00	11:00	09:00	11:00
Vol.	-	-	-	-	-	-	-	-	-	-	26	28	32	30	26	26
PM Peak	-	-	-	-	-	-	-	-	-	-	14:00	14:00	14:00	17:00	14:00	17:00
Vol.	-	-	-	-	-	-	-	-	-	-	64	66	75	110	70	66

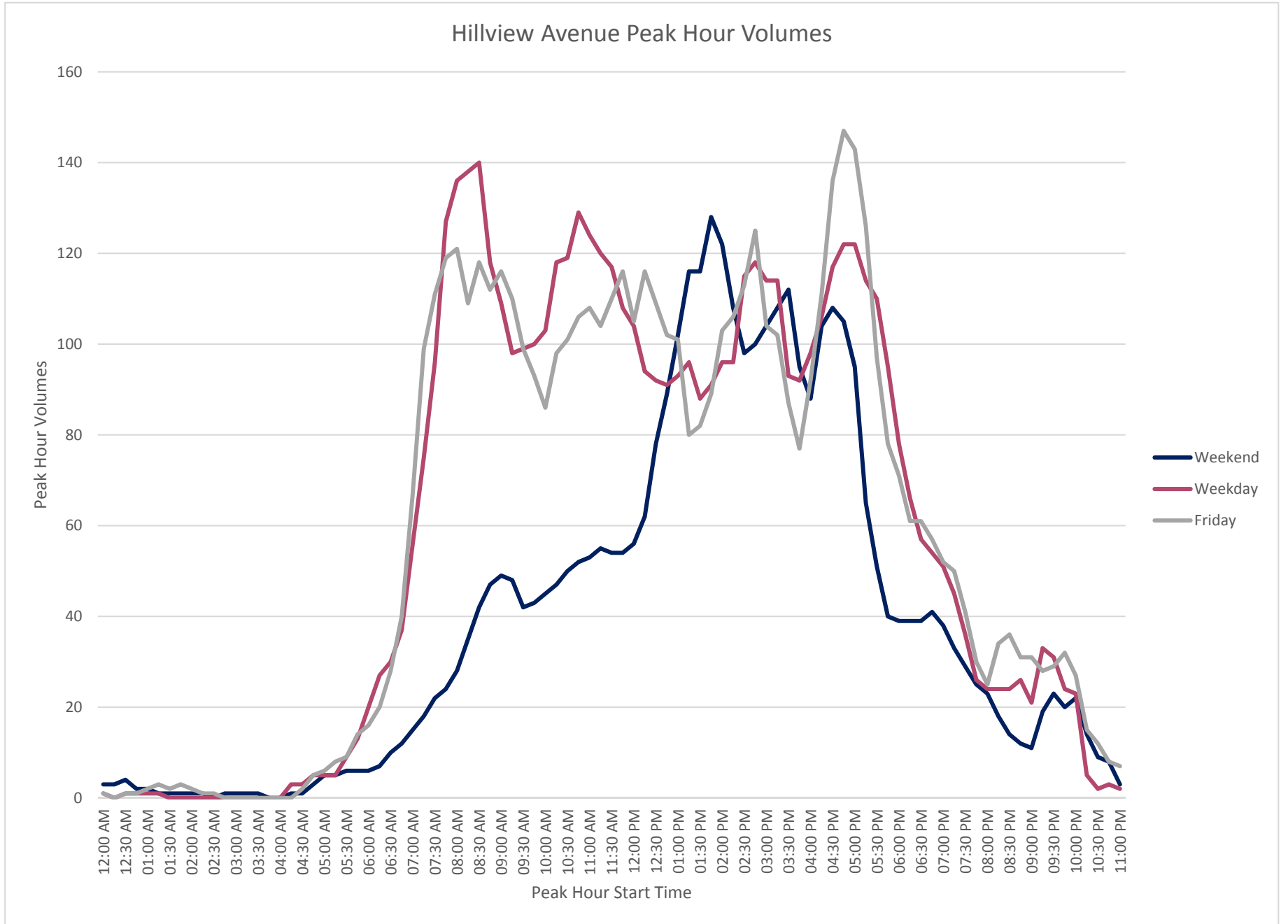
ALL TRAFFIC DATA SERVICES

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Untitled Vo
Date Start: 27-Jan-18
Date End: 02-Feb-18
Site Code: 1
HILLVIEW AVE E.O SAN ANTONIO RD

Start Time	29-Jan-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	0	0	2	1	0	0	1	0	1	0	*	*	*	*	1	0
01:00	1	0	1	0	1	0	1	0	1	1	*	*	*	*	1	0
02:00	0	0	0	0	0	0	0	1	1	1	*	*	*	*	0	0
03:00	0	0	0	0	0	1	0	0	0	0	*	*	*	*	0	0
04:00	2	1	0	0	1	1	0	0	0	0	*	*	*	*	1	0
05:00	0	3	1	4	2	4	2	3	3	3	*	*	*	*	2	3
06:00	6	8	14	10	6	14	8	8	7	9	*	*	*	*	8	10
07:00	26	44	22	39	17	36	28	25	26	41	*	*	*	*	24	37
08:00	63	54	58	61	76	73	71	72	70	51	*	*	*	*	68	62
09:00	52	67	61	49	45	52	68	52	68	48	*	*	*	*	59	54
10:00	39	39	39	49	60	59	62	39	39	47	*	*	*	*	48	47
11:00	38	67	58	62	54	81	61	53	45	63	*	*	*	*	51	65
12:00 PM	63	49	61	58	50	47	47	49	54	51	*	*	*	*	55	51
01:00	41	61	39	46	36	60	43	53	45	56	*	*	*	*	41	55
02:00	36	46	30	65	43	54	51	44	51	52	*	*	*	*	42	52
03:00	79	71	59	54	60	58	66	48	50	54	*	*	*	*	63	57
04:00	52	55	56	46	46	51	52	43	54	38	*	*	*	*	52	47
05:00	80	54	74	55	70	53	73	43	77	66	*	*	*	*	75	54
06:00	51	33	47	34	37	34	45	37	43	28	*	*	*	*	45	33
07:00	29	26	21	21	35	21	39	17	34	18	*	*	*	*	32	21
08:00	8	7	11	8	18	17	10	12	20	5	*	*	*	*	13	10
09:00	13	28	6	8	17	11	7	9	18	13	*	*	*	*	12	14
10:00	4	2	4	2	11	19	4	30	1	26	*	*	*	*	5	16
11:00	1	1	2	1	1	1	3	0	4	3	*	*	*	*	2	1
Lane Day	684	716	666	673	686	747	742	638	712	674	0	0	0	0	700	689
AM Peak	08:00	09:00	09:00	11:00	08:00	11:00	08:00	08:00	08:00	11:00	-	-	-	-	08:00	11:00
Vol.	63	67	61	62	76	81	71	72	70	63	-	-	-	-	68	65
PM Peak	17:00	15:00	17:00	14:00	17:00	13:00	17:00	13:00	17:00	17:00	-	-	-	-	17:00	15:00
Vol.	80	71	74	65	70	60	73	53	77	66	-	-	-	-	75	57

Comb. Total	1400	1339	1433	1380	1386	902	878	2276
ADT	ADT 1,246	AADT 1,246						



Appendix C

Hillview Community Center – Space Comparison

*Below under 'new space' is the assigned space in the Schematic Design Phase. Note that as we move forward in design, some spaces may be adjusted up/down for circulation/bldg services (mech, elec.), etc.; however, most of these spaces will not vary widely.

HILLVIEW COMMUNITY CENTER - SPACE COMPARISON

3/12/2018

EXISTING			NEW		
Hillview Community Center Existing	NET SF of (E) rooms	Room Description		NET SF of (N) rooms	"Equivalent" New Spaces - Room Name
None				4,564.00	Lobby Space/public gathering
None				307.00	Café
None				152.00	Meeting Room
None				152.00	Meeting Room
None				222.00	Staff / public conference room
Room 2	740.00	Meeting Room		750.00	Multi-Purpose 3
Room 4	945.00	Dance room with Mirrors and dance bar		1,217.00	Movement Room (also a Multi-Purpose Rm)
Room 8	938.00	Computer stations for training		-	more efficient MP room programming
Room 10	936.00	Senior Center Lounge		1,143.00	Senior Lounge (incl 58 sq. ft. storage)
Room 11	937.00	Primary Senior Program or classes or meetings		1,143.00	Senior Program (incl 10 sq. ft. stor)
Room 12	936.00	Activity room for City Programs, MVLA Adult Ed or rentals		-	more efficient MP room programming
Room 13	939.00	Art Room		844.00	Arts and Crafts (also a Multi-Purpose Rm)
Room 14	939.00	Preschool room		1,056.00	Kinder Prep
Room 15	939.00	Activity Room for City Programs,(youth specific)		969.00	Teen Room (incl storage)
Room 16	904.00	Activity Room for City Programs MVLA Adult Ed		780.00	Multi-Purpose 2
Room 17	904.00	Activity Room for City Programs MVLA Adult Ed		1,238.00	Multi Purpose 1
Room 18	904.00	Activity Room for City Programs MVLA Adult Ed		-	more efficient MP room programming
Multi Purpose Room	2,368.00	Youth Theatre, special events private parties		0.00	use Community Rm, Lobby, or Courtyard
Kitchen	322.00	Kitchen		698.00	Kitchen
Social Hall	2,123.00	Exercise classes, yoga classes, martial arts, MVLA adult		3,014.00	Community room (also a Multi-Purpose Rm)
Admin	1,103.00	Registration desk and offices		204.00	reception
Room A	1,198.00	Staff work areas		1,493.00	Admin work areas, offices
TOTAL NET SF	18,075.00		Total Net SF	19,946.00	

OTHER SPACES NOT CARRIED FORWARD					
EXISTING					
Room 5	928.00	Children's Corner program		-	N/A
Room 6	929.00	Children's Corner program		-	N/A
Room 7	937.00	Friends of the library storage		-	N/A
Room 9	938.00	Los Altos Youth Theatre Storage		-	N/A
Room C	1,116.00	Childrens Corner program		-	N/A
CC Office	0.00	Children's Corner office		-	N/A
Chinese School	232.00	Rental		-	N/A
Chinese Office	202.00	Rental		-	N/A
LWV	232.00	League of Women Voters		-	N/A
TOTAL NET SF OTHER	5,514.00			-	N/A

SUMMARY COMPARISON OF EXISTING TO NEW					
Total Building	18,075.00			19,946.00	
Total Others	5,514.00			0.00	
Total NET SF	23,589.00		Total NET SF	19,946.00	
	6,773.00	Circulation & Bldg Services (Elec, Mech, Janitor Closets)		4,554.00	Circulation & Bldg Services
TOTAL GROSS SF	30,362.00		TOTAL GROSS SF	24,500.00	

EXTERIOR SPACES					
EXISTING			NEW		
None	2,883.00	WHISTLE STOP		5,000.00	COURTYARD - DECK/HARDSURFACE
None	1,644.00	KINDERPREP		1,400.00	COMMUNITY ROOM TERRACE
None	29,875.00	REMAINDER		850.00	SENIOR TERRACE
None				750.00	CAFÉ
None				1,050.00	ARTS/TEEN
				3,000.00	BOCCI
				2,000.00	KINDERPREP
	34,402.00	TOTAL EXTERIOR SPACES		14,050.00	TOTAL EXTERIOR SPACES