



June 3, 2021

Mr. Michael Vroman, TE  
Town of Los Gatos  
41 Miles Avenue  
Los Gatos, CA 95030

## Hillbrook School 2020-2021 Fall Trimester Monitoring

Dear Mr. Vroman;

As requested, W-Trans has prepared a summary of the Fall Trimester traffic monitoring of Hillbrook School in Los Gatos for the 2020-2021 school year. The purpose of this memo is to summarize the 2020 Fall Trimester daily vehicle trips and to note any discrepancies in the data collection. Hillbrook School exceeded the maximum number of daily trips on one occurrence during the Fall Trimester due to trips generated by a neighboring estate sale just outside of the school property.

### Existing Conditions

The Hillbrook School is located at 300 Marchmont Drive in the Town of Los Gatos. According to Condition 17 of the School's Conditional Use Permit, "the maximum number of daily vehicle trips shall not exceed 880." The School can identify up to 10 exception days where they are permitted to exceed the maximum number of daily trips, however, the total number of trips on these exception days shall not exceed 960. During the summer trimester "the maximum number of daily vehicle trips shall not exceed 300." The school maintains two Sensys magnetometer traffic counters embedded in the pavement of the exit lane outside the school's gate, approximately 30 feet apart. These magnetometers (Sensys counters) are calibrated to detect the presence of vehicles and motorcycles, but not bicycles or other non-motorized means of transportation.

Hillbrook School and Sensys staff continuously monitor the functionality of the system. The magnetometers are self-calibrating, self-tuning, and are upgraded remotely as new software is released. The sensors are to be calibrated and validated each trimester. Sensys staff have previously conducted an independent validation of the county system and concluded the daily counts are showing between 97% and 99.75% accuracy. Hillbrook School has implemented traffic control measures to improve the flow of vehicles over the sensors in order to maintain data accuracy, such as lane delineators along Marchmont Drive.

Hillbrook School has only one vehicular access point, and because of this it is assumed that all exit trips also made an entrance trip through this location. For reporting purposes, the maximum of either Exit A or Exit B is used to determine the number of daily trips. During previous trimesters, construction activity at adjacent properties has been detected by the Sensys system and parked vehicles have interfered with data collection. Since construction activity has ended, normal daily vehicle trips from the houses located adjacent to Hillbrook School on Marchmont Drive now have the potential to also be detected by the Sensys counters. The trips have the potential to be detected by one or both sensors, and thus could possibly increase in the number of days where the difference between sensors is larger than five percent.

The Conditional Use Permit also outlines the requirements of manual data collection in Condition 19 and "the school shall be considered out of compliance if any mechanical readings exceed the Sensys counts by more than five percent and where the readings are above the maximum number of daily vehicle trips."

A permanent backup pneumatic tube counter, a MetroCount MC56000 Vehicle Classifier System, is located in both the entrance and exit lanes just outside of the School's gate. Pneumatic tube systems utilize rubber tubes placed across traffic lanes in specific configurations. When a vehicle travels over the tube the air pressure in the tube is compressed and this compression triggers an event recording. The system is programmed to classify vehicles based on the distance between the front and rear axle. The School's MetroCount system counts the total number of trips,

both entrance and exit trips. While the Sensys system can be accessed remotely online, the MetroCount system is local to the School's network. The School has agreed to, and continues to, actively provide W-Trans with backup data directly from the MetroCount system when necessary.

## **24-hour Manual Counts and Observations**

Ordinarily, new traffic counts are conducted on Marchmont Drive to cover a variety of on-campus events. However, 2020 traffic counts were not conducted for the Fall trimester because the study area and surrounding region were, at the time of the analysis, observing a "shelter-in-place" order in response to the COVID-19 global pandemic. Hillbrook School, however, hosted students on campus between September 23 and November 19, 2020, and from December 14 through December 18, 2020.

## **2020 Fall Trimester Summary**

- During the 2020 Fall Trimester, Hillbrook School exceeded the maximum number of daily trips (880) on one occasion. On November 6, 2020 the house adjacent to the school gate hosted an estate sale. The two Sensys magnetometer traffic counters embedded in the pavement of the exit lane outside the school's gate recorded midday trips that were not associated with the school. It was determined that the data discrepancy and out-of-compliance count date were due to drivers accessing the estate sale and not the school. Enclosed, in Table 1, is the daily summary of Sensys counts for the 2020 Fall Trimester.
- The highest number of daily vehicle trips was 1,142 trips and occurred on November 6, 2020 due to the neighboring estate sale.
- The average number of school day vehicle trips for the 2020 Fall Trimester was approximately 480 trips, which is fewer trips than the daily maximum of 880 trips allowed by the Conditional Use Permit.
- Excluding weekends and school holidays, there were 19 instances where the difference between Sensor A and Sensor B was greater than five percent (5%). The average difference between the Sensor A and Sensor B counts was seven vehicles.
- The cumulative percent difference between Sensor A and Sensor B for the 2020 Fall Trimester was 2.95%, which is within the allowable five percent outlined in the Conditional Use Permit.
- The largest daily difference between Sensor A and Sensor B was 35 vehicles on October 28, 2020. In August 2020 the average daily difference between Sensor A and Sensor B was four vehicles. The difference was approximately eight vehicles in September, nine vehicles in October, nine vehicles in November, and five vehicles in December.

## **Conclusions**

Overall, Hillbrook School was out of compliance with Condition 17 of the School's Conditional Use Permit on one occasion for the school year 2020-2021 Fall Trimester due to trips recorded for a neighboring estate sale not associated with the Hillbrook School. All other days during the Fall Trimester were in compliance, as the average number of school day vehicle trips was approximately 480 trips. Additionally, the cumulative percent difference for the Fall Trimester was 2.95% which is within the allowable threshold as stated in the Conditional Use Permit.

The next monitoring report is the Spring Trimester Counts anticipated to be completed in June 2021, prior to the conclusion of Hillbrook School's Spring Trimester. We will continue to provide monthly downloads of Sensys data during the first week of each month.

Mr. Michael Vroman, TE

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Thank you for giving W-Trans the opportunity to provide these services. Please call if you have any questions.

Sincerely,



Allison Woodworth, EIT  
Assistant Engineer



Mark Spencer, PE  
Senior Principal



MES/akw/LGA004-12.L1

Enclosures: Fall Trimester Count Summary



**Table 1 – Daily Sensys Count Summary – 2020 Fall Trimester**

Date	Day of the Week	Sensys Counts (# of Vehicles)		Summary of Sensys Counts		Notes
		Exit A	Exit B	Percent Difference	Daily Trips	
08/31/20	Monday	95	91	4.3%	190	First Day of School
09/01/20	Tuesday	90	89	1.1%	180	
09/02/20	Wednesday	92	83	10.3%	184	
09/03/20	Thursday	87	86	1.2%	174	
09/04/20	Friday	93	94	1.1%	188	
09/05/20	Saturday	12	13	8.0%	26	
09/06/20	Sunday	18	18	0.0%	36	
09/07/20	Monday	14	16	13.3%	32	Labor Day – Campus Closed
09/08/20	Tuesday	102	94	8.2%	204	
09/09/20	Wednesday	107	102	4.8%	214	
09/10/20	Thursday	99	91	8.4%	198	
09/11/20	Friday	94	89	5.5%	188	
09/12/20	Saturday	19	22	14.6%	44	
09/13/20	Sunday	16	21	27.0%	42	
09/14/20	Monday	107	104	2.8%	214	
09/15/20	Tuesday	93	92	1.1%	186	
09/16/20	Wednesday	108	99	8.7%	216	
09/17/20	Thursday	123	120	2.5%	246	
09/18/20	Friday	142	139	2.1%	284	
09/19/20	Saturday	19	13	37.5%	38	
09/20/20	Sunday	17	17	0.0%	34	
09/21/20	Monday	116	108	7.1%	232	
09/22/20	Tuesday	112	110	1.8%	224	
09/23/20	Wednesday	345	331	4.1%	690	
09/24/20	Thursday	314	294	6.6%	628	
09/25/20	Friday	326	312	4.4%	652	
09/26/20	Saturday	13	15	14.3%	30	
09/27/20	Sunday	18	17	5.7%	36	
09/28/20	Monday	336	315	6.5%	672	
09/29/20	Tuesday	332	318	4.3%	664	
09/30/20	Wednesday	317	315	0.6%	634	
10/01/20	Thursday	94	90	4.3%	188	

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Date	Day of the Week	Sensys Counts (# of Vehicles)		Summary of Sensys Counts		Notes
		Exit A	Exit B	Percent Difference	Daily Trips	
10/02/20	Friday	74	75	1.3%	150	
10/03/20	Saturday	32	34	6.1%	68	
10/04/20	Sunday	9	12	28.6%	24	
10/05/20	Monday	47	47	0.0%	94	
10/06/20	Tuesday	342	343	0.3%	686	
10/07/20	Wednesday	328	316	3.7%	656	
10/08/20	Thursday	296	290	2.0%	592	
10/09/20	Friday	255	246	3.6%	510	
10/10/20	Saturday	16	20	22.2%	40	
10/11/20	Sunday	14	16	13.3%	32	
10/12/20	Monday	382	367	4.0%	764	
10/13/20	Tuesday	374	376	0.5%	752	
10/14/20	Wednesday	358	352	1.7%	716	
10/15/20	Thursday	346	347	0.3%	694	
10/16/20	Friday	339	336	0.9%	678	
10/17/20	Saturday	18	18	0.0%	36	
10/18/20	Sunday	25	24	4.1%	50	
10/19/20	Monday	361	359	0.6%	722	
10/20/20	Tuesday	374	355	5.2%	748	
10/21/20	Wednesday	359	347	3.4%	718	
10/22/20	Thursday	376	366	2.7%	752	
10/23/20	Friday	365	359	1.7%	730	
10/24/20	Saturday	16	12	28.6%	32	
10/25/20	Sunday	19	20	5.1%	40	
10/26/20	Monday	359	344	4.3%	718	
10/27/20	Tuesday	349	346	0.9%	698	
10/28/20	Wednesday	395	360	9.3%	790	
10/29/20	Thursday	368	345	6.5%	736	
10/30/20	Friday	383	379	1.0%	766	
10/31/20	Saturday	22	23	4.4%	46	
11/01/20	Sunday	21	19	10.0%	42	
11/02/20	Monday	102	102	0.0%	204	
11/03/20	Tuesday	123	116	5.9%	246	
11/04/20	Wednesday	366	357	2.5%	732	
11/05/20	Thursday	384	376	2.1%	768	

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Date	Day of the Week	Sensys Counts (# of Vehicles)		Summary of Sensys Counts		Notes
		Exit A	Exit B	Percent Difference	Daily Trips	
11/06/20	Friday	571	563	1.4%	1142	Data discrepancy due to neighboring estate sale
11/07/20	Saturday	104	104	0.0%	208	
11/08/20	Sunday	18	20	10.5%	40	
11/09/20	Monday	375	350	6.9%	750	
11/10/20	Tuesday	380	357	6.2%	760	
11/11/20	Wednesday	379	376	0.8%	758	
11/12/20	Thursday	364	356	2.2%	728	
11/13/20	Friday	362	345	4.8%	724	
11/14/20	Saturday	8	8	0.0%	16	
11/15/20	Sunday	20	21	4.9%	42	
11/16/20	Monday	381	373	2.1%	762	
11/17/20	Tuesday	399	395	1.0%	798	
11/18/20	Wednesday	396	386	2.6%	792	
11/19/20	Thursday	413	413	0.0%	826	In-person classes end
11/20/20	Friday	52	50	3.9%	104	
11/21/20	Saturday	28	29	3.5%	58	
11/22/20	Sunday	15	13	14.3%	30	
11/23/20	Monday	24	22	8.7%	48	Thanksgiving Break – Campus Closed
11/24/20	Tuesday	17	14	19.4%	34	Thanksgiving Break – Campus Closed
11/25/20	Wednesday	20	22	9.5%	44	Thanksgiving Break – Campus Closed
11/26/20	Thursday	8	7	13.3%	16	Thanksgiving Break – Campus Closed
11/27/20	Friday	6	4	40.0%	12	Thanksgiving Break – Campus Closed
11/28/20	Saturday	14	11	24.0%	28	
11/29/20	Sunday	12	12	0.0%	24	
11/30/20	Monday	30	32	6.5%	64	
12/01/20	Tuesday	94	89	5.5%	188	
12/02/20	Wednesday	107	105	1.9%	214	
12/03/20	Thursday	56	56	0.0%	112	
12/04/20	Friday	26	25	3.9%	52	
12/05/20	Saturday	18	20	10.5%	40	

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		Exit A	Exit B	Percent Difference	Daily Trips	
12/06/20	Sunday	11	16	37.0%	32	
12/07/20	Monday	43	42	2.4%	86	
12/08/20	Tuesday	35	35	0.0%	70	
12/09/20	Wednesday	39	32	19.7%	78	
12/10/20	Thursday	36	40	10.5%	80	
12/11/20	Friday	40	39	2.5%	80	
12/12/20	Saturday	20	22	9.5%	44	
12/13/20	Sunday	17	13	26.7%	34	
12/14/20	Monday	309	289	6.7%	618	In-person classes resume
12/15/20	Tuesday	305	301	1.3%	610	
12/16/20	Wednesday	324	323	0.3%	648	
12/17/20	Thursday	341	328	3.9%	682	
12/18/20	Friday	354	344	2.9%	708	In-person classes end

Note: Allowable percent difference less than five percent; daily trip cap 880 trips during school year. Red = value exceeds conditional use permit threshold

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