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June 22, 2021

Mr. Chris Nelson  
32-36 Iron Horse LLC  
75 West Street  
Simsbury, CT 06070

**RE: Traffic Impact Study  
Barber Cove  
Residential Development  
32 & 36 Iron Horse Boulevard  
Simsbury, Connecticut  
SLR #17216.00001**

Dear Mr. Nelson:

At your request, we have undertaken this study to evaluate traffic impacts associated with the proposed residential development, Barber Cove, to be located at 32 & 36 Iron Horse Boulevard in Simsbury, Connecticut. The proposed development is to be comprised of five multifamily residential buildings, totaling 175 units, as well as a club house building for residents. Site access is to be provided via two site driveways on Iron Horse Boulevard, one opposite Pent Road and one approximately 300 feet north. The work comprising the study consisted of several tasks including field reconnaissance, data collection, review of roadway and traffic conditions, estimation of site-development-generated traffic volumes, and assessment of future traffic operations near the site. **Figure 1** shows the site location and surrounding roadway network.

### **EXISTING CONDITIONS**

The proposed development is to be located on the east side of Iron Horse Boulevard. The site was formerly a contractors' lot. The key intersections that have been analyzed as part of this study are as follows:

1. Hopmeadow Street (Route 10/202) at Iron Horse Boulevard/Owens Brook Boulevard (signalized)
2. Iron Horse Boulevard at proposed north site driveway (unsignalized)
3. Hopmeadow Street at Pent Road (unsignalized)
4. Iron Horse Boulevard at Pent Road/main site driveway (unsignalized)
5. Iron Horse Boulevard at Drake Hill Road (unsignalized)

**Hopmeadow Street (Route 10/202)** runs approximately north/south with one travel lane in each direction and additional turning lanes at key intersections. The posted speed limit is 35 miles per hour (mph) near the site.

**Iron Horse Boulevard** runs approximately north/south parallel to Route 10/202 with one travel lane in each direction and a center median separating the northbound and southbound travel lanes. There are additional turning lanes at key intersections; the posted speed limit is 35 mph. There are bike lanes present along either side of Iron Horse Boulevard.

**Drake Hill Road** runs east/west with one travel lane in each direction, connecting Riverside Road to Hopmeadow Street (Route 10/202). The posted speed limit is 25 mph.

There are also several east-west streets between Iron Horse Boulevard and Hopmeadow Street. Many of these are best characterized as through commercial driveways with sporadic one-way restrictions and access to commercial parking areas. For purposes of this study, we assumed that use of these roads, while possible, would be minimal. We instead assumed east-west traffic would largely use Pent Road and Drake Hill Road, the most likely roads for through traffic between the two main north-south arterials.

Lane use in this area of Simsbury is largely a mix of commercial and outdoor recreational space. The Simsbury Meadows outdoor performing arts center is located at 22 Iron Horse Boulevard, 0.2 miles south of the proposed site. The Farmington Canal Heritage Trail runs adjacent to the east side of Iron Horse Boulevard from Route 10/202 to Drake Hill Road, then continues along the south side of Drake Hill Road in both directions. Consequently, Iron Horse Boulevard is frequented by pedestrians and cyclists; there are several entry points to trailheads along Iron Horse Boulevard near the site.

**Crash Data Summary**

Data on traffic crashes near the site for the recent 3-year period of March 1, 2017, through February 29, 2020 (pre-COVID-19), was obtained via the Connecticut Crash Data Repository. This data is summarized in Table 1 by location, crash severity, and collision type.

**TABLE 1**  
**Crash Data Summary**

LOCATION:	CRASH SEVERITY					TYPE OF COLLISION						
	SERIOUS INJURY	SUSPECTED MINOR INJURY	POSSIBLE INJURY	PROPERTY DAMAGE ONLY	TOTAL	ANGLE	SIDESWIPE, SAME DIRECTION	REAR-END	FIXED-OBJECT	BICYCLIST	HEAD-ON	TOTAL
Hopmeadow Street at Iron Horse Boulevard/Owens Brook Boulevard		1	2	8	<b>11</b>	3	2	5		1		<b>11</b>
Iron Horse Boulevard between Hopmeadow Street and Pent Road				2	<b>2</b>			1	1			<b>2</b>
Iron Horse Boulevard at Pent Road				1	<b>1</b>				1			<b>1</b>
Hopmeadow Street at Pent Road					<b>0</b>							<b>0</b>
Iron Horse Boulevard at Wilcox Street				3	<b>3</b>	2			1			<b>3</b>
Iron Horse Boulevard at Drake Hill Road		1	1	4	<b>6</b>	2	1	2			1	<b>6</b>
<b>TOTAL</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>18</b>	<b>23</b>	<b>7</b>	<b>3</b>	<b>8</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>23</b>

Source: University of Connecticut Crash Data Repository from March 1, 2017 to February 29, 2020

A total of 23 crashes were reported within the study area during this period, 11 of which occurred at the intersection of Hopmeadow Street at Iron Horse Boulevard/Owens Brook Boulevard. Seventy-eight percent of all reported crashes resulted in property damage only. No crashes resulted in serious injury or fatality. The most common collision type was the rear-end collision, comprising 35% of reported crashes, followed by angle collisions at 30%. There do not appear to be any unusual trends in the crash data.

Crash history following the COVID-19 outbreak was also separately investigated for the study area. Four crashes occurred within the study area, three of which occurred at the intersection of Hopmeadow Street at Iron Horse Boulevard/Owens Brook Boulevard. Two of the crashes were rear-end collisions and resulted in property damage only; the remaining crash was an angle-type collision resulting in possible injury. The last collision occurred at the intersection of Iron Horse Boulevard and an unnamed access road just north of 836 Hopmeadow Street when a box truck hit a signpost when turning right out of the shopping plaza driveway, resulting in property damage only. There were no unusual trends in the crash data for this period.

### **Existing Traffic Volumes**

Traffic counts were conducted at the study intersections on Wednesday, March 31, 2021, during the morning and afternoon peak periods. The peak hours were found to be 7:45 a.m. to 8:45 a.m. and 4:30 p.m. to 5:30 p.m. for the weekday morning and afternoon, respectively. **Figure 2** shows the existing peak-hour traffic volumes.

Due to the COVID-19 pandemic and its overall effect on reducing current travel, the traffic volumes shown in Figure 2 were adjusted to better reflect typical traffic levels in the area. The adjusted volumes were approved by the Connecticut Department of Transportation (CTDOT) Bureau of Policy and Planning and can be seen on **Figure 3**.

### **PROPOSED DEVELOPMENT**

The proposed Barber Cove residential development will comprise five multifamily apartment buildings totaling 175 units, as well as a clubhouse for residents. Surface parking will be available throughout the site adjacent to the apartment buildings; there will also be three small free-standing parking garages and garage parking within each apartment building.

Site access will be provided via two unsignalized driveways. The main site driveway will be in the same location as the existing site driveway, opposite Pent Road at Iron Horse Boulevard. The intersection will remain an all-way stop. An additional site driveway will be added approximately 330 feet north of the main site driveway and will be right-in, right-out only. No modification of the center island on Iron Horse Boulevard is proposed.

Sight lines were reviewed from both points of driver egress. At the main site driveway, drivers can see clearly to all other stop-controlled approaches. It is recommended that stop signs be added to the medians adjacent to the northbound and southbound approaches of Iron Horse Boulevard, particularly since these

approaches are multilane and vehicles stopped at the intersection in the through/right lanes could potentially block the existing stop signs for drivers in the left turn lanes.

For a right-turning driver egressing the north site driveway, the sight line looking left extends through to the all-way-stop-controlled intersection at the main site driveway, meeting the CTDOT guideline for the 35 mph speed limit on Iron Horse Boulevard. Furthermore, all northbound approaching vehicles will be coming from the all-way stop and are not expected to be traveling in excess of the speed limit.

It is also recommended that the Farmington Canal trail be level across the site driveways—similar to the entrance of the Simsbury Meadows performing arts center, south of the site—which will act as minor traffic calming whereby vehicles entering the site will slow down as they drive over what is effectively a speed table at the development entrances.

### SITE-GENERATED TRAFFIC

The amount of new peak-hour site traffic that is estimated to be generated by the proposed development was estimated using statistical data published by the Institute of Transportation Engineers (ITE<sup>1</sup>). ITE Land Use Code (LUC) #221, Multifamily Housing (Mid-Rise) was used to estimate the site traffic volumes, which are shown in Table 2.

**TABLE 2**  
**Site Development Traffic Estimates**

LAND USE	ITE LAND USE #	NUMBER OF VEHICLE TRIPS					
		WEEKDAY MORNING PEAK HOUR			WEEKDAY AFTERNOON PEAK HOUR		
		IN	OUT	TOTAL	IN	OUT	TOTAL
Multifamily Housing, Mid-Rise (175 units)	221	16	47	63	47	30	77

*Trip Generation, 10th Edition.* Institute of Transportation Engineers, 2017

The geographic distribution of the net new site-generated traffic was estimated based on review of the roadway traffic patterns in the vicinity of the site and Journey-to-Work census data<sup>2</sup>. It is estimated that approximately 15% of new site traffic will be oriented to/from the north via Hopmeadow Street (Route 10/202); 50% to/from the south and east via Drake Hill Road; and 35% to/from the south and west via Hopmeadow Street (Route 10/202). The site traffic distribution can be seen on **Figure 4**. **Figure 5** shows the estimated site-generated traffic based on this route distribution for the weekday morning and afternoon peak hours.

As noted above, there are several minor roads that run perpendicular to Pent Road and connect Hopmeadow Street (Route 10/202) to Iron Horse Boulevard south of the site. It is expected that some

<sup>1</sup> *Trip Generation, 10<sup>th</sup> Edition*, Institute of Transportation Engineers, 2017

<sup>2</sup> *Commuting Flows (Journey To Work)* – U.S. Census Bureau - <https://www.census.gov/topics/employment/commuting/guidance/flows.html>

drivers approaching the site from Route 10/202 will stay on Route 10/202 for as long as possible before turning onto one of the minor connecting roads close to the site and continuing to Iron Horse Boulevard and the site. Similarly, some drivers exiting the site are expected to turn left onto Iron Horse Boulevard and take one of the minor connecting streets to Route 10/202 and continue toward their destination from there. For the purposes of this study, it was conservatively assumed that all future site traffic will be routed through the study intersections; drivers who would take one of the minor connecting roads are routed as though they are entering/exiting via Drake Hill Road and Pent Road.

## **FUTURE TRAFFIC VOLUMES**

Future roadway traffic volumes were estimated both with and without the proposed residential development in place to determine possible traffic impacts. This proposed development is anticipated to open in year 2023.

The background traffic scenario is reflective of future conditions before Barber Cove is built and was estimated by expanding the 2021 adjusted traffic volumes to the estimated opening year of 2023 using an annual growth rate of 0.9%, per input from CTDOT. Correspondence with the Town of Simsbury and CTDOT finds that there are no approved upcoming developments that are expected to add notable traffic through the study area. The resultant 2023 estimated traffic volumes reflect conditions just before the proposed development would open and can be seen on **Figure 6** as the background traffic volumes.

The combined traffic scenario is reflective of future conditions after the proposed development is built and opened and was estimated by adding the anticipated site traffic generated by the proposed residential development to the future background traffic. The resultant estimated 2023 future combined traffic volumes are also shown on **Figure 7**.

## **Intersection Capacity Analysis**

The future background and combined traffic scenarios were evaluated by means of capacity analysis techniques. These analyses were used to determine the quality of operations at the study intersections, and a comparison of background versus combined traffic operations allows for a determination of possible traffic impacts from the proposed development. The quality of operations is measured and expressed as a level of service (LOS). LOS is defined as a measure of inconvenience that motorists experience. The levels are expressed with letter designations of A through F. In most communities, LOS D or better during peak hours is considered acceptable. Table 3 summarizes the results of the capacity analysis.

**TABLE 3**  
**Capacity Analysis Summary**

MOVEMENTS	WEEKDAY MORNING PEAK HOUR		WEEKDAY AFTERNOON PEAK HOUR	
	BACKGROUND	COMBINED	BACKGROUND	COMBINED
<b>Signalized</b>				
<b>Hopmeadow Street (Route 10 &amp; 202) at Iron Horse Boulevard/Owens Brook Boulevard</b>				
Eastbound Left/Through	E	E	E	E
Eastbound Right	A	A	A	A
Westbound Left/Through	D	D	E	E
Westbound Right	A	A	B	B
Northbound Left	A	A	A	A
Northbound Through/Right	A	A	A	A
Southbound Left	A	A	A	A
Southbound Through/Right	A	A	A	A
<b>OVERALL</b>	<b>A</b>	<b>A</b>	<b>A</b>	<b>B</b>
<b>Unsignalized</b>				
<b>Hopmeadow Street (Route 10 &amp; 202) at Pent Road</b>				
Westbound Left/Right	C	C	D	D
<b>Iron Horse Boulevard at north site driveway</b>				
Westbound Right	--	A	--	A
<b>Iron Horse Boulevard at Pent Road/south site driveway</b>				
Northbound Left	A	A	A	A
Northbound Through/Right	A	A	A	A
Eastbound Left/Right	A	A	A	A
Westbound Left/Right	A	A	A	A
Southbound Left	A	A	A	A
Southbound Through/Right	A	A	A	A
<b>Iron Horse Boulevard at Drake Hill Road</b>				
Eastbound Left/Through	A	A	A	A
Southbound Left	B	B	B	B
Southbound Right	A	A	B	B

As can be seen, traffic conditions are expected to remain largely the same with the proposed residential development in place. No individual movements experience a decrease in LOS due to the addition of the proposed development traffic. It is noted that the overall LOS for the intersection of Hopmeadow Street at Iron Horse Boulevard/Owens Brook Boulevard experiences a decrease from LOS A to B. However, this movement is noted to already be at the tipping point threshold with LOS B under background conditions and the intersection delay only increases by 0.4 seconds.

Also, note that poor LOS during peak hours for the minor street approaches at the signalized intersection of Hopmeadow Street (Route 10/202) will occur with or without new traffic from the proposed development. The eastbound left/through movement during both peak hours, for example, will remain LOS E between background and combined conditions with no additional delay caused by the proposed development. The minor street delays are a function of the way the signal is programmed to give most of the signal time to the northbound and southbound artery to serve the higher vehicle volumes along Route 10/202. These findings indicate that the proposed residential development will *not* cause significant traffic impact to area roadways. No traffic mitigation is necessary as part of this development.

## CONCLUSION

This study was conducted to assess the traffic impact of the proposed residential development of Barber Cove to be located at 32 & 36 Iron Horse Boulevard in Simsbury. To determine a profile of existing conditions, detailed field reconnaissance and data assembly efforts were undertaken. The traffic that will be generated by the proposed development was estimated based on industry statistical data, and intersection capacity analyses were performed comparing existing and future conditions at the two site driveways and nearby offsite intersections. Analysis of the new traffic that is estimated to be added from this proposed development finds that it will be accommodated with little to no perceptible impact. No movements experience a decrease in LOS due to the addition of the proposed development.

It is recommended that stop signs be added to the medians adjacent to the northbound and southbound approaches of Iron Horse Boulevard, since these approaches are multilane and vehicles stopped at the intersection in the through/right lanes could potentially block the existing stop signs for drivers in the left turn lanes. Additionally, the developer should consider keeping the Farmington Canal trail level across the site driveways, which will elevate the point of eye for egressing drivers, allowing them to see further down Iron Horse Boulevard, and will act as minor traffic calming whereby vehicles entering the site will slow down as they turn into the site driveways.

We hope this report is useful to you and the Town of Simsbury. If you have any questions or need anything further, please do not hesitate to contact either of the undersigned.

Sincerely,

### SLR International Corporation



David G. Sullivan, PE  
U.S. Manager of Traffic & Transportation Planning



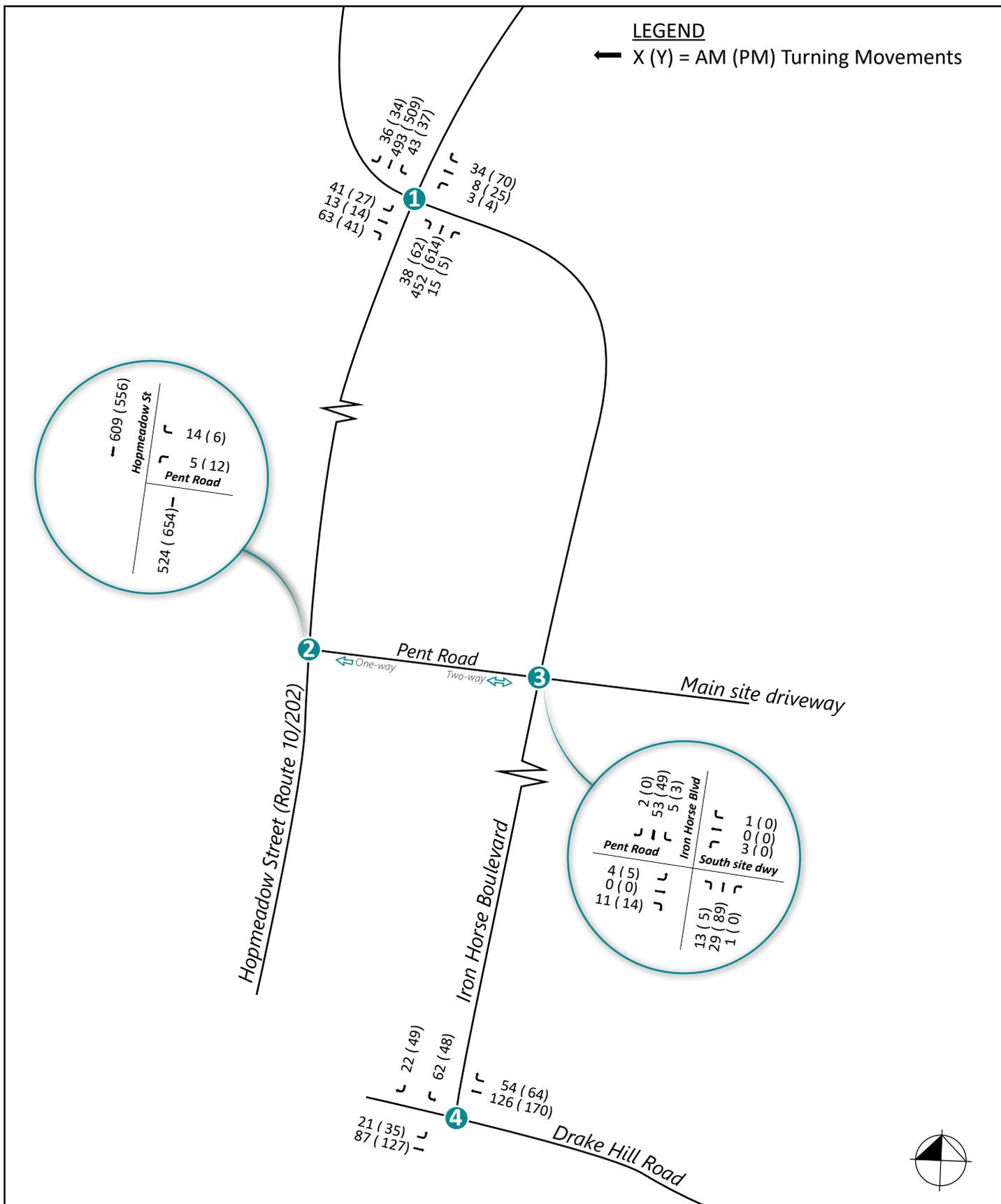
Neil C. Olinski, MS, PTP  
Senior Transportation Planner

Enclosures

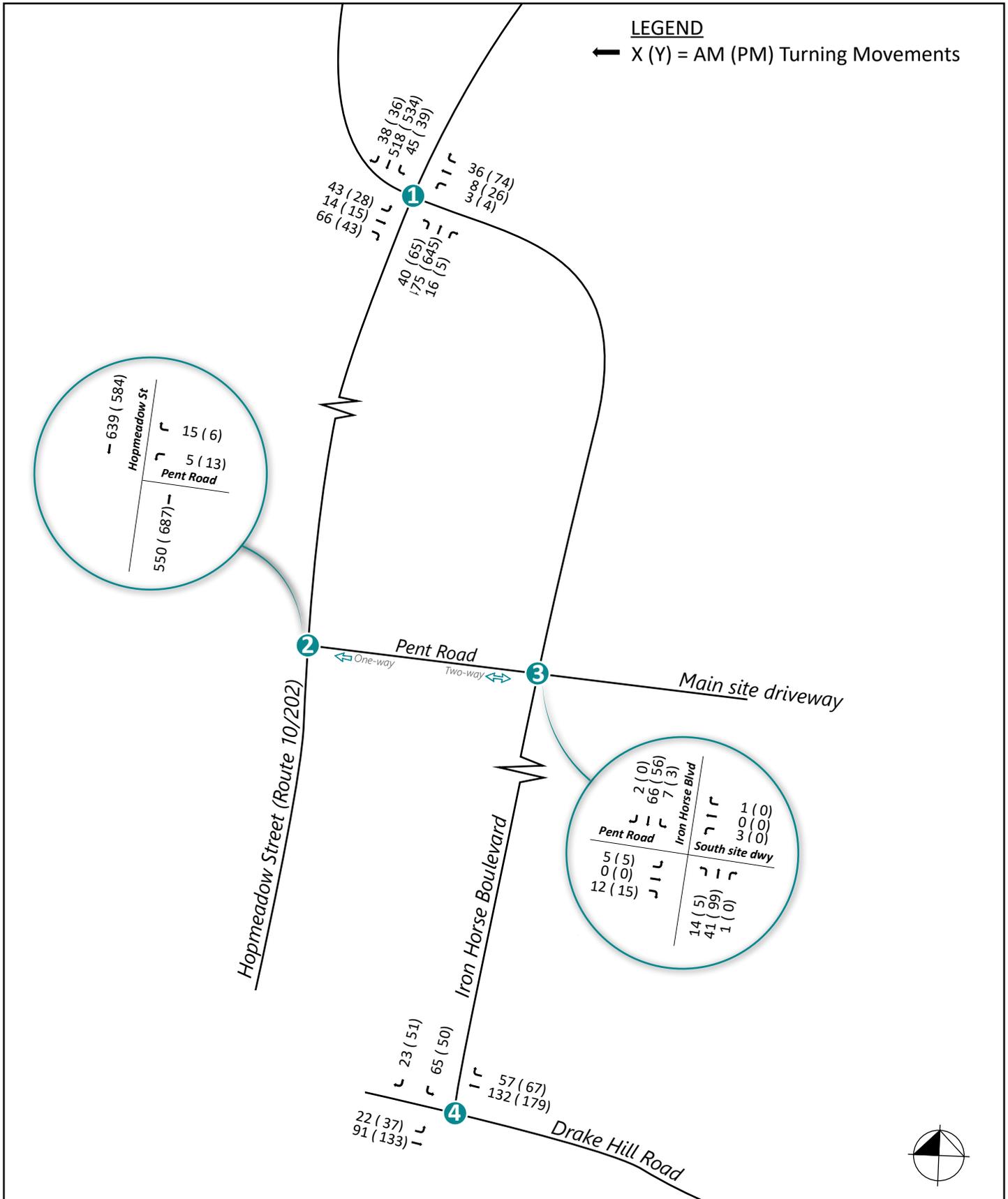
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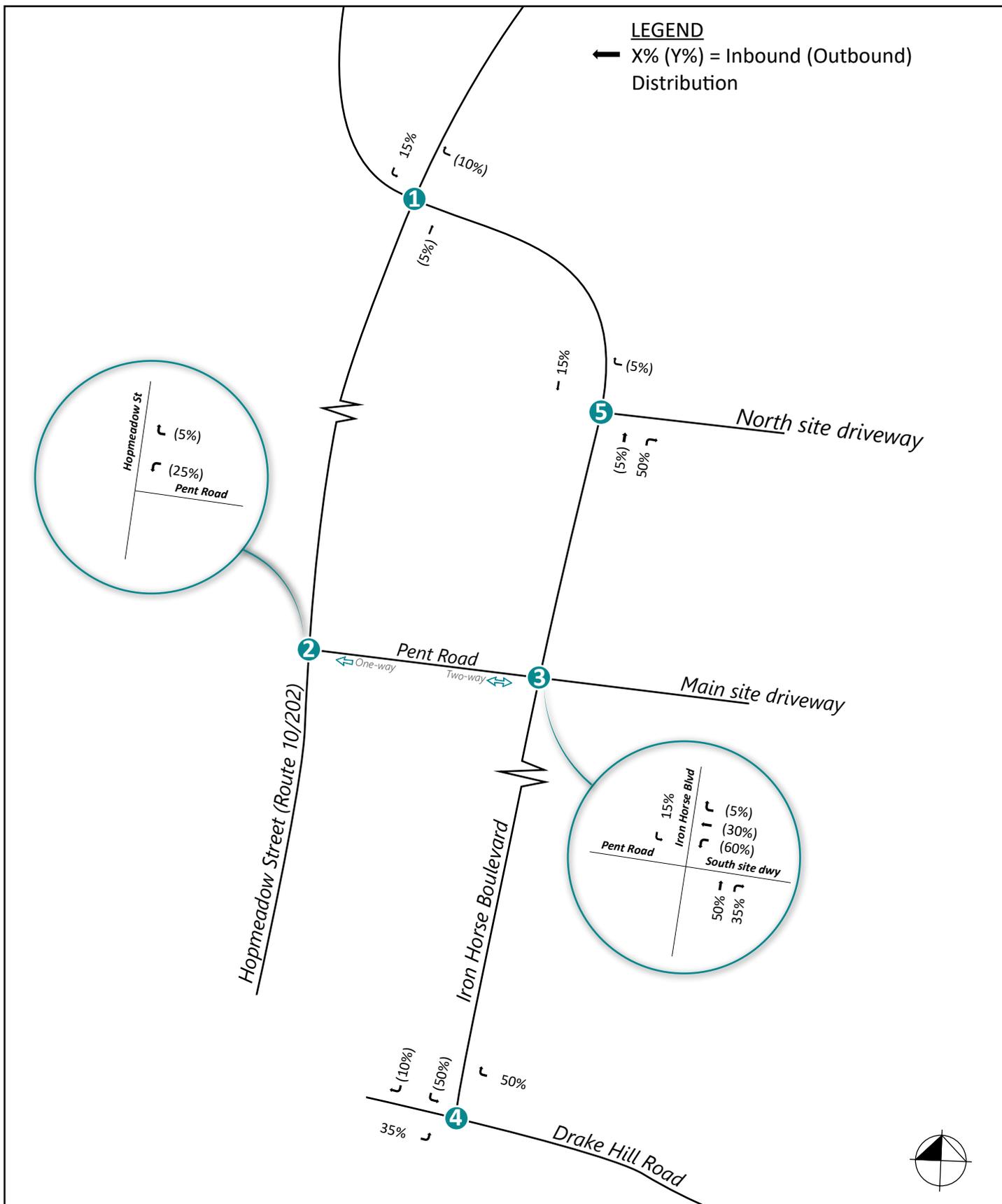
**FIGURE 1**  
SITE LOCATION AND SURROUNDING ROADWAY AREA



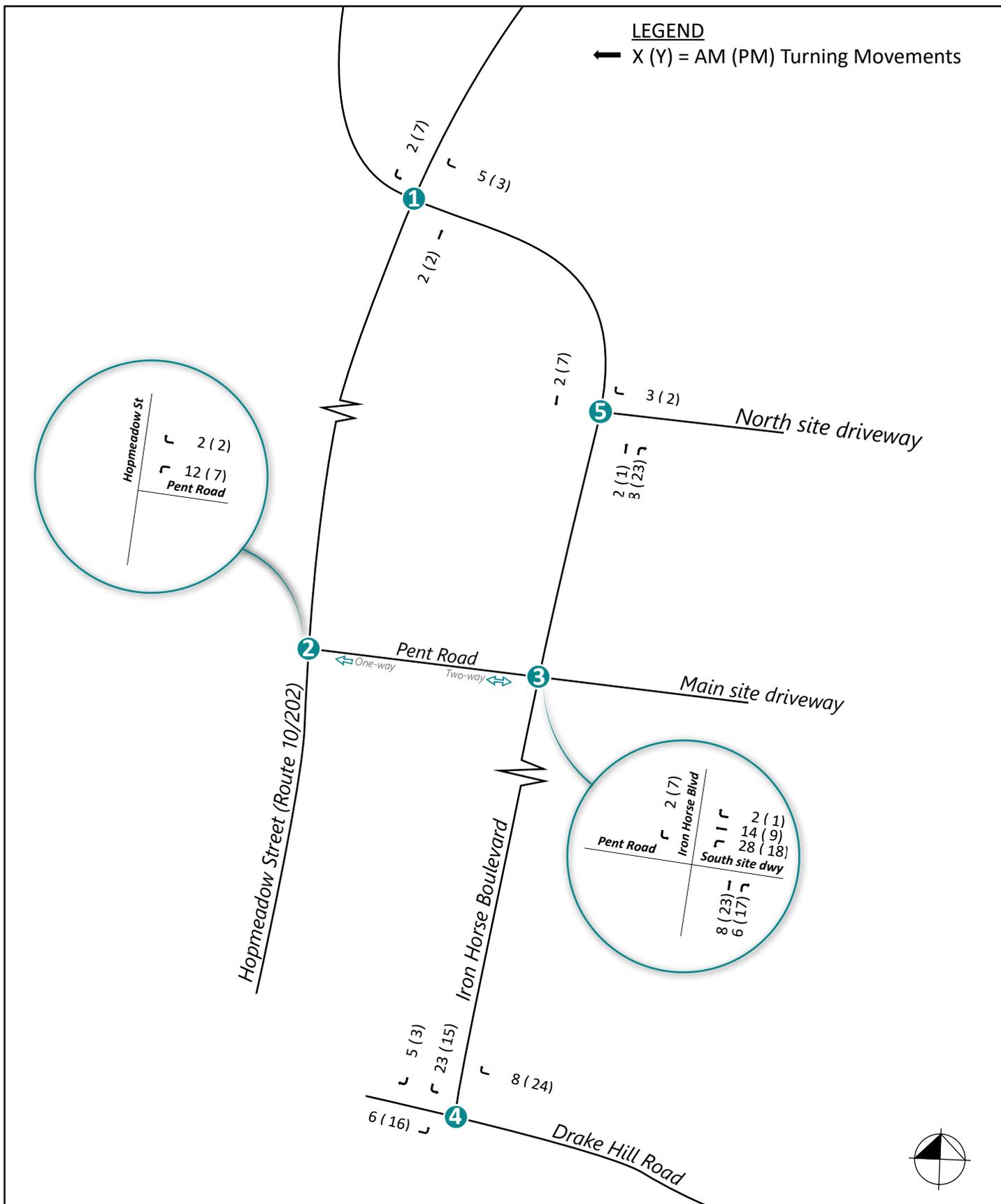
**FIGURE 2**  
BASELINE TRAFFIC VOLUMES



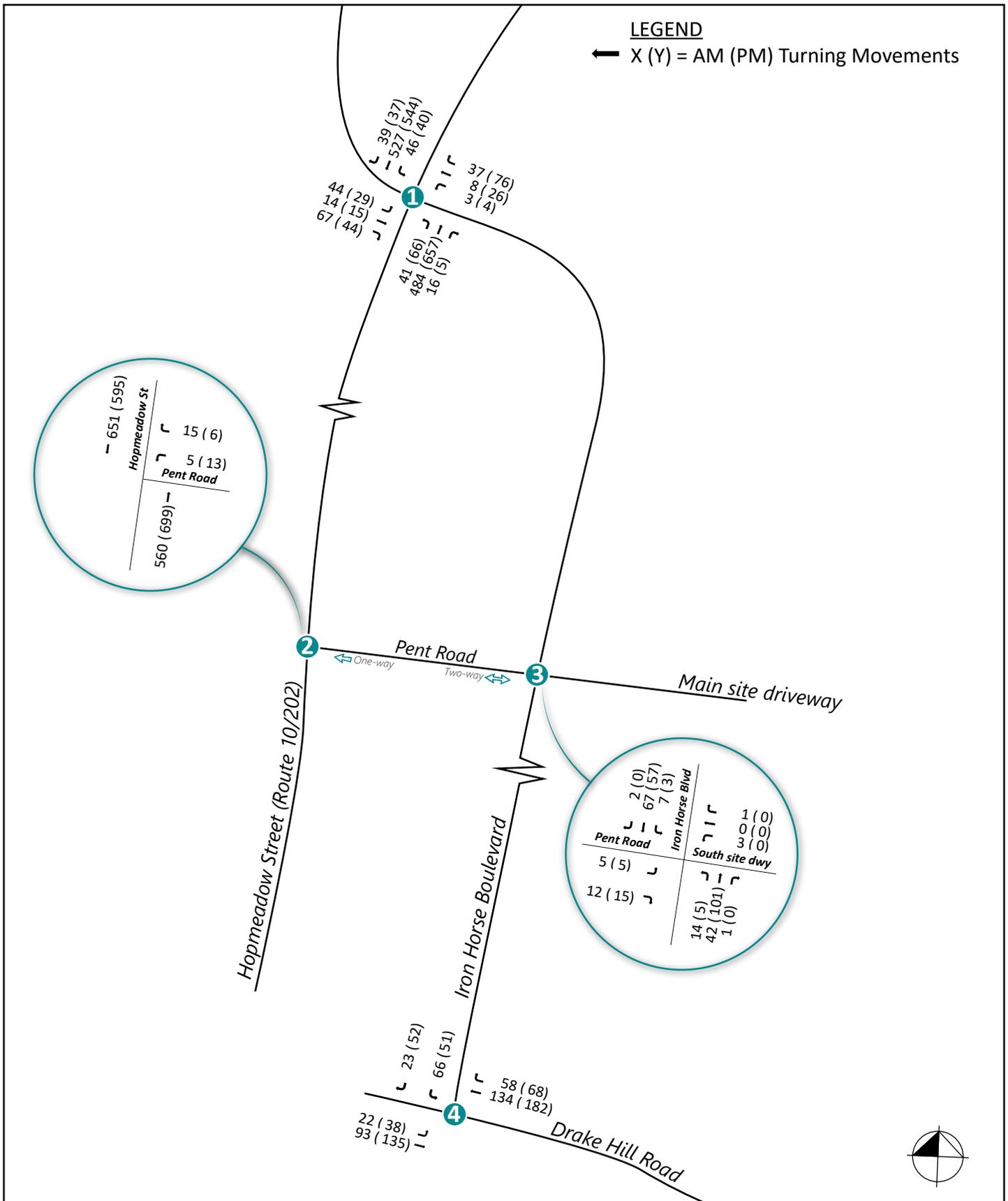
**FIGURE 3**  
ADJUSTED TRAFFIC VOLUMES



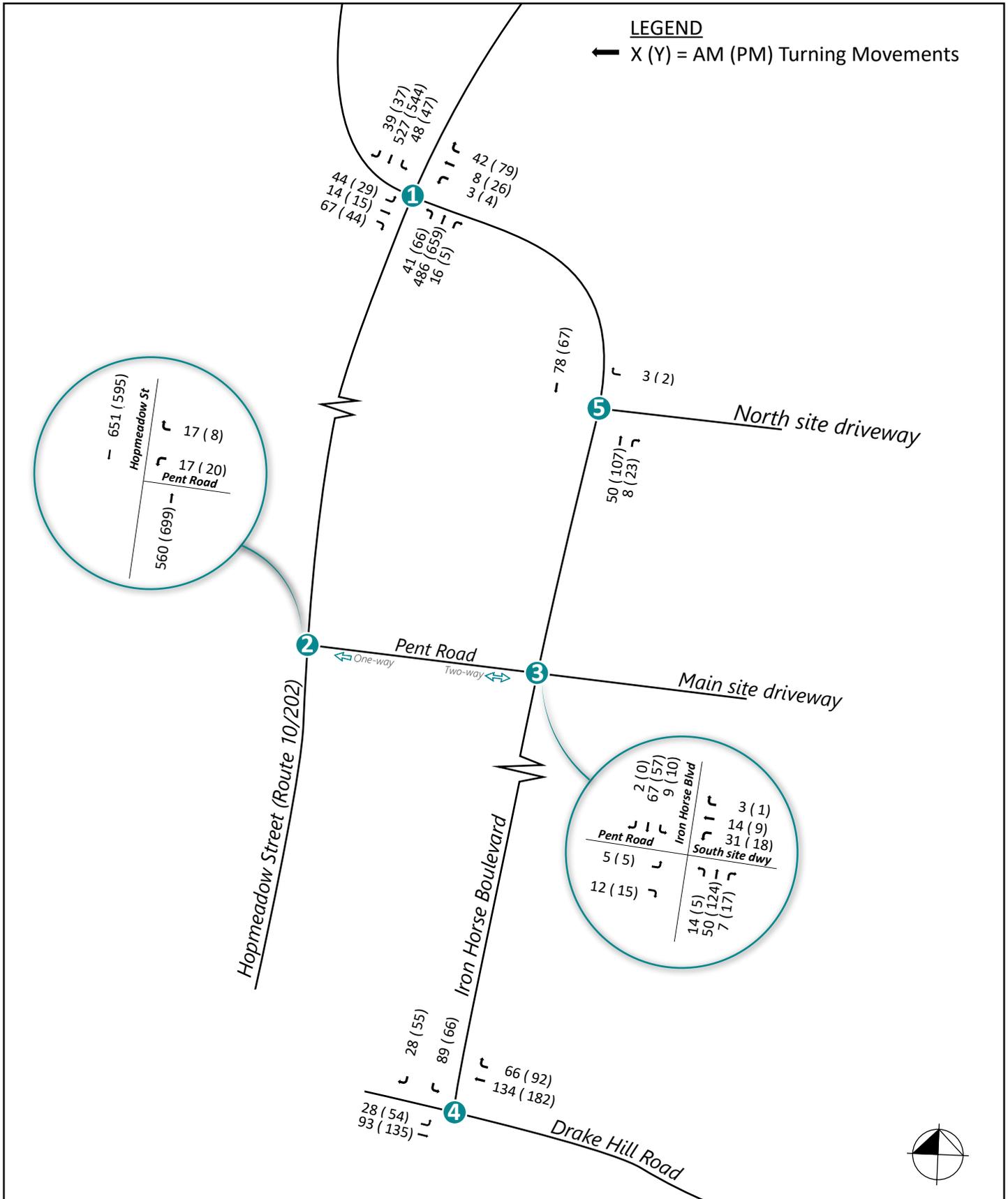
**FIGURE 4**  
SITE TRAFFIC DISTRIBUTION



**FIGURE 5**  
SITE-GENERATED TRAFFIC VOLUMES



**FIGURE 6**  
BACKGROUND TRAFFIC VOLUMES



**FIGURE 7**  
COMBINED TRAFFIC VOLUMES

# **APPENDIX**

# LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS (MOTORIZED VEHICLE MODE)

Level of service for signalized intersections is defined in terms of control delay, which is a measure of driver discomfort, frustration, fuel consumption, and increased travel time. The delay experienced by a motorist is made up of a number of factors that relate to control, geometrics, traffic, and incidents. Total delay is the difference between the travel time actually experienced and the reference travel time that would result during base conditions: in the absence of traffic control, geometric delay, any incidents, and any other vehicles. Specifically, LOS criteria for traffic signals are stated in terms of the average control delay per vehicle, typically for a 15-min analysis period. Delay is a complex measure and depends on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group. The criteria are given below.

<b>LEVEL-OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS MOTORIZED VEHICLE MODE</b>		
<b>LOS By Volume-to-Capacity Ratio<sup>1</sup></b>		<b>CONTROL DELAY (s/veh)</b>
<b>v/c ≤ 1.0</b>	<b>v/c &gt; 1.0</b>	
<b>A</b>	<b>F</b>	<b>≤ 10</b>
<b>B</b>	<b>F</b>	<b>&gt; 10 AND ≤ 20</b>
<b>C</b>	<b>F</b>	<b>&gt; 20 AND ≤ 35</b>
<b>D</b>	<b>F</b>	<b>&gt; 35 AND ≤ 55</b>
<b>E</b>	<b>F</b>	<b>&gt; 55 AND ≤ 80</b>
<b>F</b>	<b>F</b>	<b>&gt; 80</b>

<sup>1</sup> For approach-based and intersection-wide assessments, LOS is defined solely by control delay.

Specific descriptions of each LOS for signalized intersections are provided below:

**Level of Service A** describes operations with a control delay of 10 s/veh and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If LOS A is the result of favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

**Level of Service B** describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

**Level of Service C** describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

**Level of Service D** describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

**Level of Service E** describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

**Level of Service F** describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Reference: Highway Capacity Manual 6, Transportation Research Board, 2016.

# LEVEL OF SERVICE FOR UNSIGNALIZED INTERSECTIONS ALL-WAY STOP-CONTROL (AWSC)

The criteria for AWSC intersections have different threshold values than do those for signalized intersections primarily because drivers expect different levels of performance from distinct types of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection. Thus a higher level of control delay is acceptable at a signalized intersection for the same LOS. The level-of-service criteria are given below.

<b>LEVEL-OF SERVICE CRITERIA FOR AWSC INTERSECTIONS</b>	
<b>LOS<sup>1</sup></b>	<b>CONTROL DELAY (s/veh)</b>
<b>A</b>	<b><math>\leq 10</math></b>
<b>B</b>	<b><math>&gt; 10 \text{ AND } \leq 15</math></b>
<b>C</b>	<b><math>&gt; 15 \text{ AND } \leq 25</math></b>
<b>D</b>	<b><math>&gt; 25 \text{ AND } \leq 35</math></b>
<b>E</b>	<b><math>&gt; 35 \text{ AND } \leq 50</math></b>
<b>F</b>	<b><math>&gt; 50</math></b>

<sup>1</sup> For approaches and intersection-wide assessment, LOS is defined solely by control delay.

Note: LOS F is assigned to a movement if the volume-to-capacity ratio exceeds 1.0, regardless of the control delay.

Reference: Highway Capacity Manual Version 6.0, Transportation Research Board, 2016.

# LEVEL OF SERVICE FOR TWO-WAY STOP SIGN CONTROLLED INTERSECTIONS

The level of service for a TWSC (two-way stop controlled) intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. LOS criteria are given in the Table. LOS criteria are given below:

<b>LEVEL-OF SERVICE CRITERIA FOR AWSC INTERSECTIONS</b>	
<b>LOS<sup>1</sup></b>	<b>CONTROL DELAY (s/veh)</b>
<b>A</b>	<b><math>\leq 10</math></b>
<b>B</b>	<b><math>&gt; 10 \text{ AND } \leq 15</math></b>
<b>C</b>	<b><math>&gt; 15 \text{ AND } \leq 25</math></b>
<b>D</b>	<b><math>&gt; 25 \text{ AND } \leq 35</math></b>
<b>E</b>	<b><math>&gt; 35 \text{ AND } \leq 50</math></b>
<b>F</b>	<b><math>&gt; 50</math></b>

Note: LOS criteria apply to each lane on a given approach and to each approach on the minor street.  
 LOS is not calculated for major-street approaches or for the intersection as a whole.  
 LOS F is assigned to a movement if the volume-to-capacity ratio exceeds 1.0, regardless of the control delay

Reference: Highway Capacity Manual Version 6.0, Transportation Research Board, 2016.

Lanes, Volumes, Timings  
1: Route 10 & 202 & Owens Brook/Iron Horse Blvd

Background - AM Peak Hour  
06/10/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations		↕	↕		↕	↕	↕	↕		↕	↕		
Traffic Volume (vph)	44	14	67	3	8	37	41	484	16	46	527	39	
Future Volume (vph)	44	14	67	3	8	37	41	484	16	46	527	39	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	80		80	0		150	350		0	230		0	
Storage Lanes	0		0	0		1	1		0	1		0	
Taper Length (ft)	25			25			100			200			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frnt			0.850			0.850		0.995			0.990		
Flt Protected		0.963			0.988		0.950			0.950			
Satd. Flow (prot)	0	1794	1583	0	1840	1583	1770	1853	0	1770	1844	0	
Flt Permitted		0.770			0.904		0.386			0.426			
Satd. Flow (perm)	0	1434	1583	0	1684	1583	719	1853	0	794	1844	0	
Right Turn on Red			Yes			Yes		Yes			Yes		Yes
Satd. Flow (RTOR)			106			106		2			4		
Link Speed (mph)		35			35		35			35		35	
Link Distance (ft)		394			765		695			386		386	
Travel Time (s)		7.7			14.9		13.5			7.5		7.5	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	48	15	74	3	9	41	45	532	18	51	579	43	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	63	74	0	12	41	45	550	0	51	622	0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		
Protected Phases		4			4		1	6		5	2		3
Permitted Phases	4		4	4		4	6			2			
Detector Phase	4	4	4	4	4	4	1	6		5	2		
Switch Phase													
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0		5.0	15.0		1.0
Minimum Split (s)	12.3	12.3	12.3	12.3	12.3	12.3	9.0	21.7		9.0	21.7		30.0
Total Split (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	56.0		15.0	56.0		30.0
Total Split (%)	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	12.5%	46.7%		12.5%	46.7%		25%
Maximum Green (s)	12.7	12.7	12.7	12.7	12.7	12.7	11.0	49.3		11.0	49.3		26.0
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	3.0	4.3		3.0	4.3		4.0
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	1.0	2.4		1.0	2.4		0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		6.3	6.3		6.3	6.3	4.0	6.7		4.0	6.7		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes		Yes	Yes		Yes							
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.5		2.0	3.5		0.2
Recall Mode	None	C-Min		None	C-Min		None						
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		9.8	9.8		9.8	9.8	99.2	93.5		99.1	93.5		
Actuated g/C Ratio		0.08	0.08		0.08	0.08	0.83	0.78		0.83	0.78		
v/c Ratio		0.54	0.33		0.09	0.18	0.07	0.38		0.07	0.43		
Control Delay		68.9	7.4		50.3	1.8	2.4	6.8		2.4	7.4		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay		68.9	7.4		50.3	1.8	2.4	6.8		2.4	7.4		
LOS		E	A		D	A	A	A		A	A		
Approach Delay		35.7			12.7			6.5			7.0		
Approach LOS		D			B			A			A		
Stops (vph)		53	5		11	0	7	164		9	197		
Fuel Used(gal)		1	0		0	0	0	4		0	4		
CO Emissions (g/hr)		95	23		18	15	19	310		15	273		
NOx Emissions (g/hr)		19	4		3	3	4	60		3	53		
VOC Emissions (g/hr)		22	5		4	4	5	72		4	63		
Dilemma Vehicles (#)		2	0		0	0	0	18		0	20		
Queue Length 50th (ft)		48	0		9	0	4	138		5	167		
Queue Length 95th (ft)		93	22		28	0	13	234		14	279		
Internal Link Dist (ft)		314			685			615			306		
Turn Bay Length (ft)			80			150	350			230			
Base Capacity (vph)		155	266		182	266	709	1444		766	1438		
Starvation Cap Reductn		0	0		0	0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0	0		0	0		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Storage Cap Reductn		0	0		0	0	0	0		0	0		
Reduced v/c Ratio		0.41	0.28		0.07	0.15	0.06	0.38		0.07	0.43		

**Intersection Summary**

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 9.7

Intersection LOS: A

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Route 10 & 202 & Owens Brook/Iron Horse Blvd





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations		↕	↕		↕	↕	↕	↕		↕	↕		
Traffic Volume (vph)	44	14	67	3	8	42	41	486	16	48	527	39	
Future Volume (vph)	44	14	67	3	8	42	41	486	16	48	527	39	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	80		80	0		150	350		0	230		0	
Storage Lanes	0		0	0		1	1		0	1		0	
Taper Length (ft)	25			25			100			200			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frnt			0.850			0.850		0.995			0.990		
Flt Protected		0.963			0.988		0.950			0.950			
Satd. Flow (prot)	0	1794	1583	0	1840	1583	1770	1853	0	1770	1844	0	
Flt Permitted		0.770			0.904		0.386			0.425			
Satd. Flow (perm)	0	1434	1583	0	1684	1583	719	1853	0	792	1844	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			106			106		2			4		
Link Speed (mph)		35			35			35			35		
Link Distance (ft)		394			417			695			386		
Travel Time (s)		7.7			8.1			13.5			7.5		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	48	15	74	3	9	46	45	534	18	53	579	43	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	63	74	0	12	46	45	552	0	53	622	0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		
Protected Phases		4			4		1	6		5	2		3
Permitted Phases	4		4	4		4	6			2			
Detector Phase	4	4	4	4	4	4	1	6		5	2		
Switch Phase													
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0		5.0	15.0		1.0
Minimum Split (s)	12.3	12.3	12.3	12.3	12.3	12.3	9.0	21.7		9.0	21.7		30.0
Total Split (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	56.0		15.0	56.0		30.0
Total Split (%)	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	12.5%	46.7%		12.5%	46.7%		25%
Maximum Green (s)	12.7	12.7	12.7	12.7	12.7	12.7	11.0	49.3		11.0	49.3		26.0
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	3.0	4.3		3.0	4.3		4.0
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	1.0	2.4		1.0	2.4		0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		6.3	6.3		6.3	6.3	4.0	6.7		4.0	6.7		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes		Yes	Yes		Yes							
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.5		2.0	3.5		0.2
Recall Mode	None	C-Min		None	C-Min		None						
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		9.8	9.8		9.8	9.8	99.1	93.5		99.2	93.5		
Actuated g/C Ratio		0.08	0.08		0.08	0.08	0.83	0.78		0.83	0.78		
v/c Ratio		0.54	0.33		0.09	0.20	0.07	0.38		0.08	0.43		
Control Delay		68.9	7.4		50.3	2.0	2.4	6.9		2.4	7.4		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay		68.9	7.4		50.3	2.0	2.4	6.9		2.4	7.4		
LOS		E	A		D	A	A	A		A	A		
Approach Delay		35.7			12.0			6.5			7.0		
Approach LOS		D			B			A			A		
Stops (vph)		53	5		11	0	7	166		9	197		
Fuel Used(gal)		1	0		0	0	0	4		0	4		
CO Emissions (g/hr)		95	23		16	10	19	312		16	273		
NOx Emissions (g/hr)		19	4		3	2	4	61		3	53		
VOC Emissions (g/hr)		22	5		4	2	5	72		4	63		
Dilemma Vehicles (#)		2	0		0	0	0	18		0	20		
Queue Length 50th (ft)		48	0		9	0	4	140		5	167		
Queue Length 95th (ft)		93	22		28	0	13	237		15	279		
Internal Link Dist (ft)		314			337			615			306		
Turn Bay Length (ft)			80			150	350			230			
Base Capacity (vph)		155	266		182	266	709	1444		765	1438		
Starvation Cap Reductn		0	0		0	0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0	0		0	0		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Storage Cap Reductn		0	0		0	0	0	0		0	0		
Reduced v/c Ratio		0.41	0.28		0.07	0.17	0.06	0.38		0.07	0.43		

**Intersection Summary**

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 9.7

Intersection LOS: A

Intersection Capacity Utilization 58.3%

ICU Level of Service B

Analysis Period (min) 15

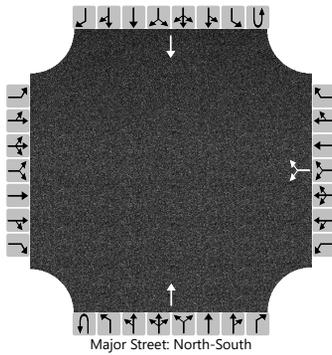
Splits and Phases: 1: Route 10 & 202 & Owens Brook/Iron Horse Blvd



# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF	Intersection	Hopmeadow at Pent				
Agency/Co.	SLR	Jurisdiction	Simsbury				
Date Performed	5/20/2021	East/West Street	Pent Road				
Analysis Year	2023	North/South Street	Hopmeadow Street				
Time Analyzed	AM	Peak Hour Factor	0.94				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Background AM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR				T				T	
Volume (veh/h)						5		15			560					651
Percent Heavy Vehicles (%)						3		3								
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized																
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2								
Critical Headway (sec)						6.43		6.23								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.53		3.33								

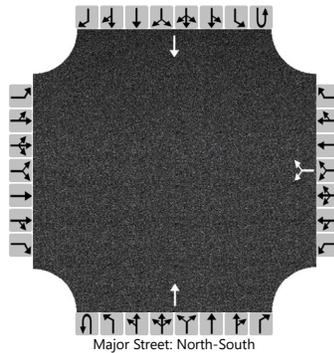
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21										
Capacity, c (veh/h)						347										
v/c Ratio						0.06										
95% Queue Length, Q <sub>95</sub> (veh)						0.2										
Control Delay (s/veh)						16.1										
Level of Service (LOS)						C										
Approach Delay (s/veh)					16.1											
Approach LOS					C											

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF	Intersection	Hopmeadow at Pent				
Agency/Co.	SLR	Jurisdiction	Simsbury				
Date Performed	5/20/2021	East/West Street	Pent Road				
Analysis Year	2023	North/South Street	Hopmeadow Street				
Time Analyzed	AM	Peak Hour Factor	0.94				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Combined, AM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR				T				T	
Volume (veh/h)						17		17			560				651	
Percent Heavy Vehicles (%)						3		3								
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type   Storage						Undivided										

## Critical and Follow-up Headways

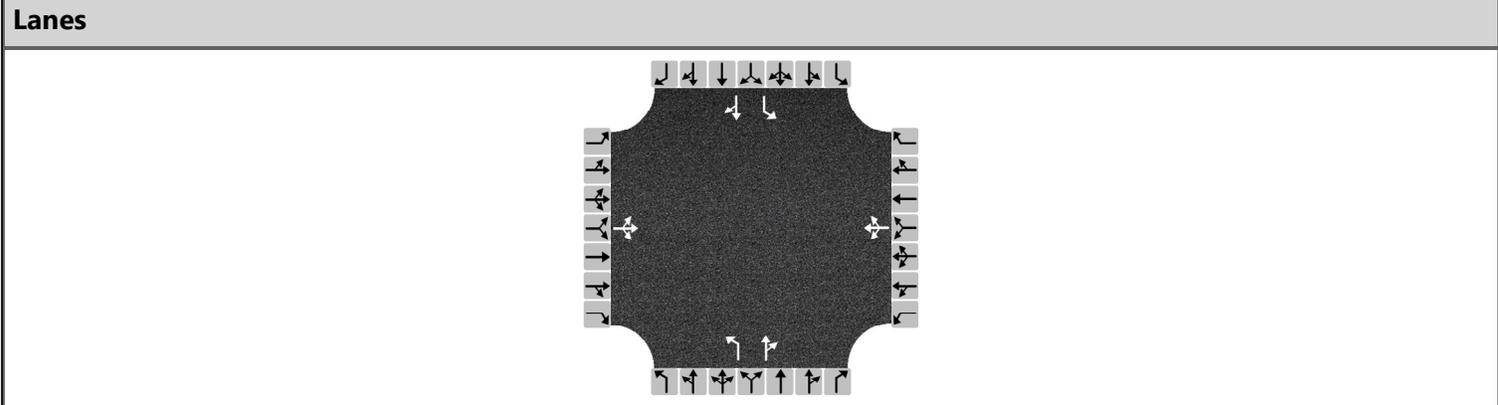
Base Critical Headway (sec)						7.1		6.2								
Critical Headway (sec)						6.43		6.23								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.53		3.33								

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						36										
Capacity, c (veh/h)						265										
v/c Ratio						0.14										
95% Queue Length, Q <sub>95</sub> (veh)						0.5										
Control Delay (s/veh)						20.7										
Level of Service (LOS)						C										
Approach Delay (s/veh)						20.7										
Approach LOS						C										

# HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	FMF	Intersection	Iron Horse at Pent/dwy
Agency/Co.	SLR	Jurisdiction	Simsbury
Date Performed	5/20/2021	East/West Street	Pent Road/South site dwy
Analysis Year	2023	North/South Street	Iron Horse Boulevard
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.80
Time Analyzed	AM		
Project Description	Background AM Peak Hour		



**Vehicle Volume and Adjustments**

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	5	0	12	3	0	1	14	42	1	7	67	2
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			L	TR		L	TR	
Flow Rate, v (veh/h)	21			5			18	54		9	86	
Percent Heavy Vehicles	2			2			2	2		2	2	

**Departure Headway and Service Time**

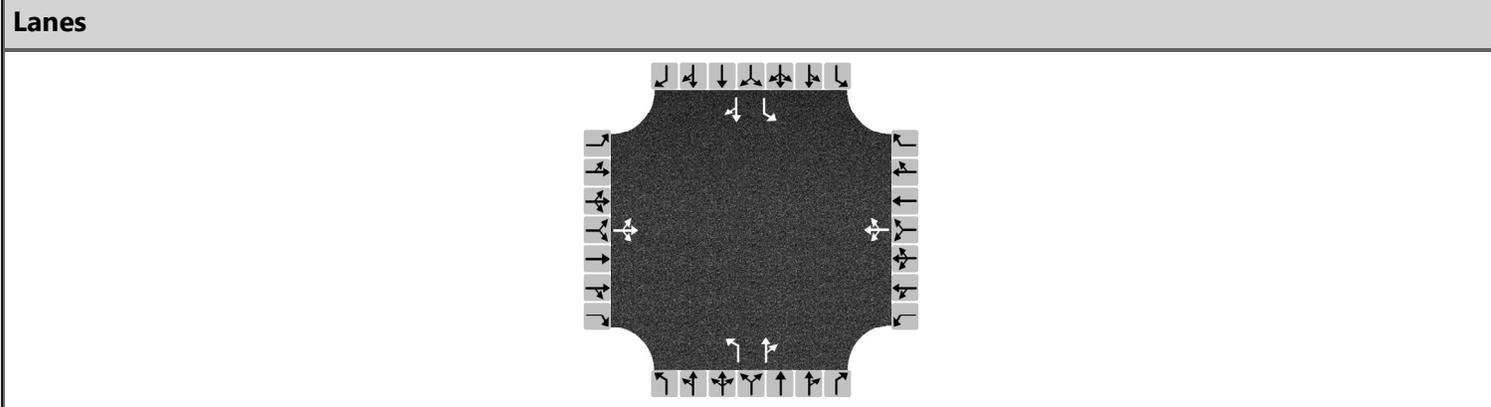
Initial Departure Headway, hd (s)	3.20			3.20			3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.019			0.004			0.016	0.048		0.008	0.077	
Final Departure Headway, hd (s)	3.96			4.34			5.16	4.64		5.14	4.62	
Final Degree of Utilization, x	0.023			0.006			0.025	0.069		0.012	0.111	
Move-Up Time, m (s)	2.0			2.0			2.3	2.3		2.3	2.3	
Service Time, ts (s)	1.96			2.34			2.86	2.34		2.84	2.32	

**Capacity, Delay and Level of Service**

Flow Rate, v (veh/h)	21			5			18	54		9	86	
Capacity	910			830			698	776		700	779	
95% Queue Length, Q <sub>95</sub> (veh)	0.1			0.0			0.1	0.2		0.0	0.4	
Control Delay (s/veh)	7.1			7.4			8.0	7.7		7.9	7.9	
Level of Service, LOS	A			A			A	A		A	A	
Approach Delay (s/veh)	7.1			7.4			7.8			7.9		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh   LOS	7.7						A					

# HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	FMF	Intersection	Iron Horse at Pent/dwy
Agency/Co.	SLR	Jurisdiction	Simsbury
Date Performed	5/20/2021	East/West Street	Pent Road/South site dwy
Analysis Year	2023	North/South Street	Iron Horse Boulevard
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.80
Time Analyzed	AM		
Project Description	Combined AM Peak Hour		



**Vehicle Volume and Adjustments**

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	5	0	12	31	14	3	14	50	7	9	67	2
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			L	TR		L	TR	
Flow Rate, v (veh/h)	21			60			18	71		11	86	
Percent Heavy Vehicles	2			2			2	2		2	2	

**Departure Headway and Service Time**

Initial Departure Headway, hd (s)	3.20			3.20			3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.019			0.053			0.016	0.063		0.010	0.077	
Final Departure Headway, hd (s)	4.07			4.48			5.30	4.72		5.30	4.78	
Final Degree of Utilization, x	0.024			0.075			0.026	0.093		0.017	0.114	
Move-Up Time, m (s)	2.0			2.0			2.3	2.3		2.3	2.3	
Service Time, ts (s)	2.07			2.48			3.00	2.42		3.00	2.48	

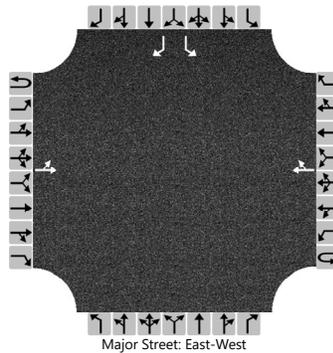
**Capacity, Delay and Level of Service**

Flow Rate, v (veh/h)	21			60			18	71		11	86	
Capacity	884			804			679	763		680	754	
95% Queue Length, Q <sub>95</sub> (veh)	0.1			0.2			0.1	0.3		0.1	0.4	
Control Delay (s/veh)	7.2			7.8			8.1	7.9		8.1	8.1	
Level of Service, LOS	A			A			A	A		A	A	
Approach Delay (s/veh)	7.2			7.8			7.9			8.1		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh   LOS	7.9						A					

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF			Intersection	Iron Horse at Drake Hill		
Agency/Co.	SLR			Jurisdiction	Simsbury		
Date Performed	5/20/2021			East/West Street	Drake Hill Road		
Analysis Year	2023			North/South Street	Iron Horse Boulevard		
Time Analyzed	AM			Peak Hour Factor	0.88		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Background AM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume (veh/h)		22	93				134	58						66		23
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

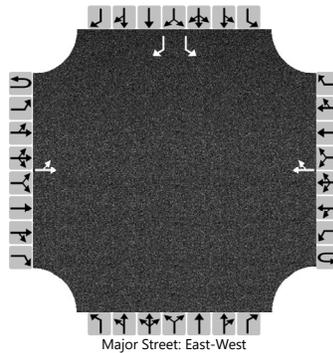
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		25												75		26	
Capacity, c (veh/h)		1345												640		854	
v/c Ratio		0.02												0.12		0.03	
95% Queue Length, Q <sub>95</sub> (veh)		0.1												0.4		0.1	
Control Delay (s/veh)		7.7												11.4		9.3	
Level of Service (LOS)		A												B		A	
Approach Delay (s/veh)		1.6												10.8			
Approach LOS														B			

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF			Intersection	Iron Horse at Drake Hill		
Agency/Co.	SLR			Jurisdiction	Simsbury		
Date Performed	5/20/2021			East/West Street	Drake Hill Road		
Analysis Year	2023			North/South Street	Iron Horse Boulevard		
Time Analyzed	AM			Peak Hour Factor	0.88		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Combined AM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume (veh/h)		28	93				134	66						88		28
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

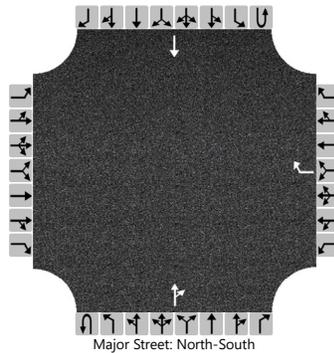
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		32												100		32
Capacity, c (veh/h)		1335												621		849
v/c Ratio		0.02												0.16		0.04
95% Queue Length, Q <sub>95</sub> (veh)		0.1												0.6		0.1
Control Delay (s/veh)		7.8												11.9		9.4
Level of Service (LOS)		A												B		A
Approach Delay (s/veh)		1.9												11.3		
Approach LOS														B		

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF			Intersection	Iron Horse at North dwy		
Agency/Co.	SLR			Jurisdiction	Simsbury		
Date Performed	5/20/2021			East/West Street	North site driveway		
Analysis Year	2023			North/South Street	Iron Horse Boulevard		
Time Analyzed	AM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Combined AM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound				
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R	
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6	
Number of Lanes		0	0	0		0	0	1		0	0	1	0	0	0	1	0
Configuration								R				TR				T	
Volume (veh/h)								3			50	8				78	
Percent Heavy Vehicles (%)								3									
Proportion Time Blocked																	
Percent Grade (%)					0												
Right Turn Channelized					No												
Median Type   Storage	Undivided																

## Critical and Follow-up Headways

Base Critical Headway (sec)								6.2									
Critical Headway (sec)								6.23									
Base Follow-Up Headway (sec)								3.3									
Follow-Up Headway (sec)								3.33									

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								3									
Capacity, c (veh/h)								1004									
v/c Ratio								0.00									
95% Queue Length, Q <sub>95</sub> (veh)								0.0									
Control Delay (s/veh)								8.6									
Level of Service (LOS)								A									
Approach Delay (s/veh)					8.6												
Approach LOS					A												

Lanes, Volumes, Timings  
1: Route 10 & 202 & Owens Brook/Iron Horse Blvd

Background - PM Peak Hour  
06/10/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations		↕	↕		↕	↕	↕	↕		↕	↕		
Traffic Volume (vph)	29	15	44	4	26	76	66	657	5	40	544	37	
Future Volume (vph)	29	15	44	4	26	76	66	657	5	40	544	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	80		80	0		150	350		0	230		0	
Storage Lanes	0		0	0		1	1		0	1		0	
Taper Length (ft)	25			25			100			200			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frnt			0.850			0.850		0.999			0.990		
Flt Protected		0.968			0.994		0.950			0.950			
Satd. Flow (prot)	0	1803	1583	0	1852	1583	1770	1861	0	1770	1844	0	
Flt Permitted		0.781			0.948		0.370			0.327			
Satd. Flow (perm)	0	1455	1583	0	1766	1583	689	1861	0	609	1844	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			106			106						4	
Link Speed (mph)		35			35			35			35		
Link Distance (ft)		394			744			695			386		
Travel Time (s)		7.7			14.5			13.5			7.5		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	33	17	49	4	29	85	74	738	6	45	611	42	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	50	49	0	33	85	74	744	0	45	653	0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		
Protected Phases		4			4		1	6		5	2		3
Permitted Phases	4		4	4		4	6			2			
Detector Phase	4	4	4	4	4	4	1	6		5	2		
Switch Phase													
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0		5.0	15.0		1.0
Minimum Split (s)	12.3	12.3	12.3	12.3	12.3	12.3	9.0	21.7		9.0	21.7		30.0
Total Split (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	56.0		15.0	56.0		30.0
Total Split (%)	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	12.5%	46.7%		12.5%	46.7%		25%
Maximum Green (s)	12.7	12.7	12.7	12.7	12.7	12.7	11.0	49.3		11.0	49.3		26.0
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	3.0	4.3		3.0	4.3		4.0
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	1.0	2.4		1.0	2.4		0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		6.3	6.3		6.3	6.3	4.0	6.7		4.0	6.7		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes		Yes	Yes		Yes							
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.5		2.0	3.5		0.2
Recall Mode	None	C-Min		None	C-Min		None						
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		8.8	8.8		8.8	8.8	100.5	94.6		99.8	94.2		
Actuated g/C Ratio		0.07	0.07		0.07	0.07	0.84	0.79		0.83	0.78		
v/c Ratio		0.47	0.23		0.26	0.40	0.12	0.51		0.08	0.45		
Control Delay		66.8	2.5		56.2	11.3	2.3	7.9		2.3	7.3		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay		66.8	2.5		56.2	11.3	2.3	7.9		2.3	7.3		
LOS		E	A		E	B	A	A		A	A		
Approach Delay		35.0			23.8			7.4			7.0		
Approach LOS		C			C			A			A		
Stops (vph)		41	0		27	8	10	246		7	201		
Fuel Used(gal)		1	0		1	1	0	6		0	4		
CO Emissions (g/hr)		72	10		48	45	31	436		13	279		
NOx Emissions (g/hr)		14	2		9	9	6	85		2	54		
VOC Emissions (g/hr)		17	2		11	10	7	101		3	65		
Dilemma Vehicles (#)		1	0		1	0	0	23		0	21		
Queue Length 50th (ft)		38	0		25	0	7	211		4	174		
Queue Length 95th (ft)		76	0		56	32	17	341		12	286		
Internal Link Dist (ft)		314			664			615			306		
Turn Bay Length (ft)			80			150	350			230			
Base Capacity (vph)		153	262		186	262	692	1467		631	1448		
Starvation Cap Reductn		0	0		0	0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0	0		0	0		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Storage Cap Reductn		0	0		0	0	0	0		0	0		
Reduced v/c Ratio		0.33	0.19		0.18	0.32	0.11	0.51		0.07	0.45		

**Intersection Summary**

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 11 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.51

Intersection Signal Delay: 9.9

Intersection LOS: A

Intersection Capacity Utilization 62.3%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 1: Route 10 & 202 & Owens Brook/Iron Horse Blvd



Lanes, Volumes, Timings  
1: Route 10 & 202 & Owens Brook/Iron Horse Blvd

Combined - PM Peak Hour  
06/10/2021



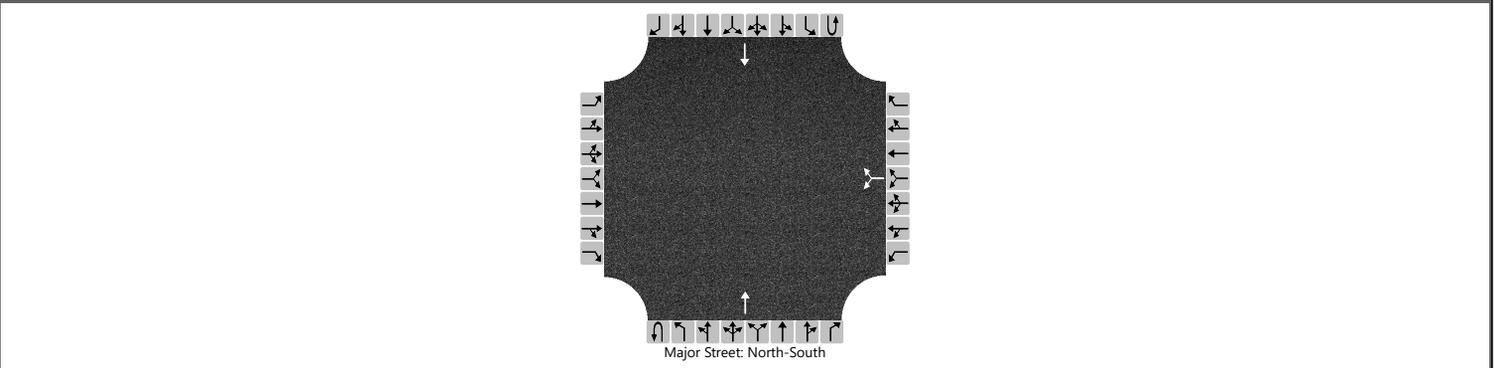
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø3
Lane Configurations		↕	↕		↕	↕	↕	↕		↕	↕		
Traffic Volume (vph)	29	15	44	4	26	79	66	659	5	47	544	37	
Future Volume (vph)	29	15	44	4	26	79	66	659	5	47	544	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	80		80	0		150	350		0	230		0	
Storage Lanes	0		0	0		1	1		0	1		0	
Taper Length (ft)	25			25			100			200			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frnt			0.850			0.850		0.999			0.990		
Flt Protected		0.968			0.994		0.950			0.950			
Satd. Flow (prot)	0	1803	1583	0	1852	1583	1770	1861	0	1770	1844	0	
Flt Permitted		0.781			0.952		0.367			0.322			
Satd. Flow (perm)	0	1455	1583	0	1773	1583	684	1861	0	600	1844	0	
Right Turn on Red			Yes			Yes		Yes			Yes		Yes
Satd. Flow (RTOR)			106			106							4
Link Speed (mph)		35			35			35			35		
Link Distance (ft)		394			766			695			386		
Travel Time (s)		7.7			14.9			13.5			7.5		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Adj. Flow (vph)	33	17	49	4	29	89	74	740	6	53	611	42	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	50	49	0	33	89	74	746	0	53	653	0	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		
Protected Phases		4			4		1	6		5	2		3
Permitted Phases	4		4	4		4	6			2			
Detector Phase	4	4	4	4	4	4	1	6		5	2		
Switch Phase													
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0	6.0	5.0	15.0		5.0	15.0		1.0
Minimum Split (s)	12.3	12.3	12.3	12.3	12.3	12.3	9.0	21.7		9.0	21.7		30.0
Total Split (s)	19.0	19.0	19.0	19.0	19.0	19.0	15.0	56.0		15.0	56.0		30.0
Total Split (%)	15.8%	15.8%	15.8%	15.8%	15.8%	15.8%	12.5%	46.7%		12.5%	46.7%		25%
Maximum Green (s)	12.7	12.7	12.7	12.7	12.7	12.7	11.0	49.3		11.0	49.3		26.0
Yellow Time (s)	4.1	4.1	4.1	4.1	4.1	4.1	3.0	4.3		3.0	4.3		4.0
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	1.0	2.4		1.0	2.4		0.0
Lost Time Adjust (s)		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Lost Time (s)		6.3	6.3		6.3	6.3	4.0	6.7		4.0	6.7		
Lead/Lag	Lag	Lag	Lag	Lag	Lag	Lag	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes		Yes	Yes		Yes							
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	3.5		2.0	3.5		0.2
Recall Mode	None	C-Min		None	C-Min		None						
Walk Time (s)													7.0
Flash Dont Walk (s)													19.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		8.8	8.8		8.8	8.8	98.0	90.7		97.4	90.4		
Actuated g/C Ratio		0.07	0.07		0.07	0.07	0.82	0.76		0.81	0.75		
v/c Ratio		0.47	0.23		0.25	0.42	0.12	0.53		0.10	0.47		
Control Delay		66.8	2.5		56.1	12.5	2.3	8.4		2.3	7.7		
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay		66.8	2.5		56.1	12.5	2.3	8.4		2.3	7.7		
LOS		E	A		E	B	A	A		A	A		
Approach Delay		35.0			24.3			7.9			7.3		
Approach LOS		C			C			A			A		
Stops (vph)		41	0		27	10	10	266		8	215		
Fuel Used(gal)		1	0		1	1	0	6		0	4		
CO Emissions (g/hr)		72	10		49	50	31	452		15	290		
NOx Emissions (g/hr)		14	2		9	10	6	88		3	56		
VOC Emissions (g/hr)		17	2		11	12	7	105		3	67		
Dilemma Vehicles (#)		1	0		1	0	0	28		0	24		
Queue Length 50th (ft)		38	0		25	0	7	212		5	174		
Queue Length 95th (ft)		76	0		56	36	17	344		13	285		
Internal Link Dist (ft)		314			686			615			306		
Turn Bay Length (ft)			80			150	350			230			
Base Capacity (vph)		153	262		187	262	674	1407		611	1390		
Starvation Cap Reductn		0	0		0	0	0	0		0	0		
Spillback Cap Reductn		0	0		0	0	0	0		0	0		



# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF	Intersection	Hopmeadow at Pent				
Agency/Co.	SLR	Jurisdiction	Simsbury				
Date Performed	5/20/2021	East/West Street	Pent Road				
Analysis Year	2023	North/South Street	Hopmeadow Street				
Time Analyzed	PM	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Background PM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR				T				T	
Volume (veh/h)						13		6			699					595
Percent Heavy Vehicles (%)						3		3								
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type   Storage							Undivided									

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2								
Critical Headway (sec)						6.43		6.23								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.53		3.33								

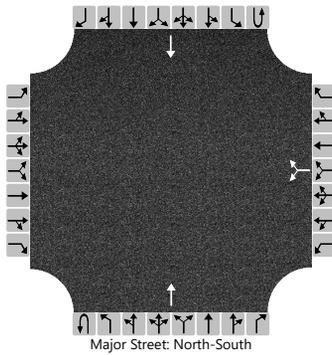
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						21										
Capacity, c (veh/h)						190										
v/c Ratio						0.11										
95% Queue Length, Q <sub>95</sub> (veh)						0.4										
Control Delay (s/veh)						26.3										
Level of Service (LOS)						D										
Approach Delay (s/veh)						26.3										
Approach LOS						D										

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF	Intersection	Hopmeadow at Pent				
Agency/Co.	SLR	Jurisdiction	Simsbury				
Date Performed	5/20/2021	East/West Street	Pent Road				
Analysis Year	2023	North/South Street	Hopmeadow Street				
Time Analyzed	PM	Peak Hour Factor	0.92				
Intersection Orientation	North-South	Analysis Time Period (hrs)	0.25				
Project Description	Combined PM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement																
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0		0	1	0		0	1	0
Configuration							LR				T				T	
Volume (veh/h)						20		8			699					595
Percent Heavy Vehicles (%)						3		3								
Proportion Time Blocked																
Percent Grade (%)							0									
Right Turn Channelized																
Median Type   Storage							Undivided									

## Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2								
Critical Headway (sec)						6.43		6.23								
Base Follow-Up Headway (sec)						3.5		3.3								
Follow-Up Headway (sec)						3.53		3.33								

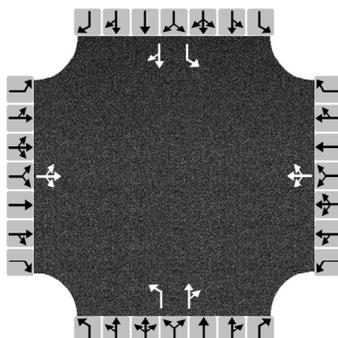
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						30										
Capacity, c (veh/h)						186										
v/c Ratio						0.16										
95% Queue Length, Q <sub>95</sub> (veh)						0.6										
Control Delay (s/veh)						28.2										
Level of Service (LOS)						D										
Approach Delay (s/veh)						28.2										
Approach LOS						D										

# HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	FMF	Intersection	Iron Horse at Pent/dwy
Agency/Co.	SLR	Jurisdiction	Simsbury
Date Performed	5/20/2021	East/West Street	Pent Road/South site dwy
Analysis Year	2023	North/South Street	Iron Horse Boulevard
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.70
Time Analyzed	PM		
Project Description	Background PM Peak Hour		

## Lanes



## Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	5	0	15	0	0	0	5	101	0	3	57	0
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			L	TR		L	TR	
Flow Rate, v (veh/h)	29			0			7	144		4	81	
Percent Heavy Vehicles	2			2			2	2		2	2	

## Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.025			0.000			0.006	0.128		0.004	0.072	
Final Departure Headway, hd (s)	4.07			4.51			5.16	4.66		5.20	4.70	
Final Degree of Utilization, x	0.032			0.000			0.010	0.187		0.006	0.106	
Move-Up Time, m (s)	2.0			2.0			2.3	2.3		2.3	2.3	
Service Time, ts (s)	2.07			2.51			2.86	2.36		2.90	2.40	

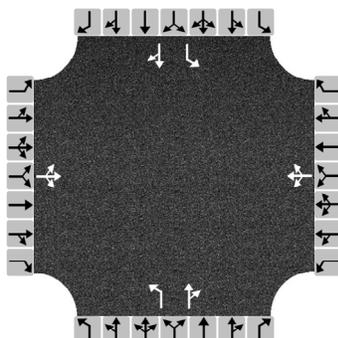
## Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	29			0			7	144		4	81	
Capacity	884			0			698	773		692	766	
95% Queue Length, Q <sub>95</sub> (veh)	0.1			0.0			0.0	0.7		0.0	0.4	
Control Delay (s/veh)	7.2			7.5			7.9	8.4		7.9	8.0	
Level of Service, LOS	A						A	A		A	A	
Approach Delay (s/veh)	7.2			0.0			8.4			8.0		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh   LOS	8.1						A					

# HCS7 All-Way Stop Control Report

General Information		Site Information	
Analyst	FMF	Intersection	Iron Horse at Pent/dwy
Agency/Co.	SLR	Jurisdiction	Simsbury
Date Performed	5/20/2021	East/West Street	Pent Road/South site dwy
Analysis Year	2023	North/South Street	Iron Horse Boulevard
Analysis Time Period (hrs)	0.25	Peak Hour Factor	0.70
Time Analyzed	PM		
Project Description	Combined PM Peak Hour		

## Lanes



## Vehicle Volume and Adjustments

Approach	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Movement												
Volume	5	0	15	18	9	1	5	124	17	10	57	0
% Thrus in Shared Lane												
Lane	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
Configuration	LTR			LTR			L	TR		L	TR	
Flow Rate, v (veh/h)	29			40			7	201		14	81	
Percent Heavy Vehicles	2			2			2	2		2	2	

## Departure Headway and Service Time

Initial Departure Headway, hd (s)	3.20			3.20			3.20	3.20		3.20	3.20	
Initial Degree of Utilization, x	0.025			0.036			0.006	0.179		0.013	0.072	
Final Departure Headway, hd (s)	4.28			4.77			5.28	4.69		5.36	4.86	
Final Degree of Utilization, x	0.034			0.053			0.010	0.263		0.021	0.110	
Move-Up Time, m (s)	2.0			2.0			2.3	2.3		2.3	2.3	
Service Time, ts (s)	2.28			2.77			2.98	2.39		3.06	2.56	

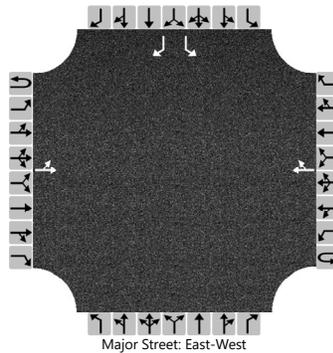
## Capacity, Delay and Level of Service

Flow Rate, v (veh/h)	29			40			7	201		14	81	
Capacity	841			755			682	767		672	741	
95% Queue Length, Q <sub>95</sub> (veh)	0.1			0.2			0.0	1.1		0.1	0.4	
Control Delay (s/veh)	7.4			8.0			8.0	9.1		8.2	8.2	
Level of Service, LOS	A			A			A	A		A	A	
Approach Delay (s/veh)	7.4			8.0			9.0			8.2		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh   LOS	8.6						A					

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF			Intersection	Iron Horse at Drake Hill		
Agency/Co.	SLR			Jurisdiction	Simsbury		
Date Performed	5/20/2021			East/West Street	Drake Hill Road		
Analysis Year	2023			North/South Street	Iron Horse Boulevard		
Time Analyzed	PM			Peak Hour Factor	0.83		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Background PM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume (veh/h)		38	135				182	68						51		52
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

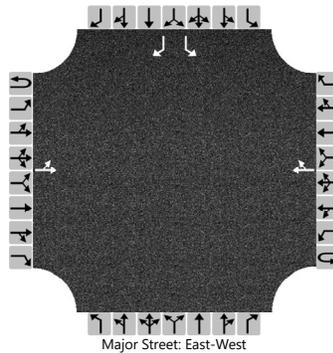
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		46												61		63
Capacity, c (veh/h)		1254												498		776
v/c Ratio		0.04												0.12		0.08
95% Queue Length, Q <sub>95</sub> (veh)		0.1												0.4		0.3
Control Delay (s/veh)		8.0												13.3		10.0
Level of Service (LOS)		A												B		B
Approach Delay (s/veh)		2.0												11.6		
Approach LOS														B		

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF			Intersection	Iron Horse at Drake Hill		
Agency/Co.	SLR			Jurisdiction	Simsbury		
Date Performed	5/20/2021			East/West Street	Drake Hill Road		
Analysis Year	2023			North/South Street	Iron Horse Boulevard		
Time Analyzed	PM			Peak Hour Factor	0.83		
Intersection Orientation	East-West			Analysis Time Period (hrs)	0.25		
Project Description	Combined PM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Movement	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Priority																
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		1	0	1
Configuration		LT						TR						L		R
Volume (veh/h)		54	135				182	92						66		55
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized														No		
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

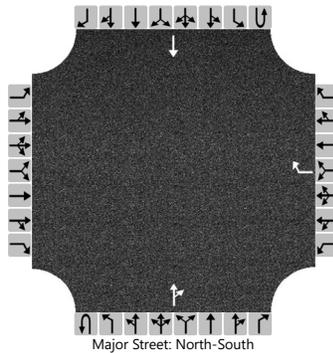
## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		65												80		66
Capacity, c (veh/h)		1224												455		762
v/c Ratio		0.05												0.17		0.09
95% Queue Length, Q <sub>95</sub> (veh)		0.2												0.6		0.3
Control Delay (s/veh)		8.1												14.6		10.2
Level of Service (LOS)		A												B		B
Approach Delay (s/veh)		2.7												12.6		
Approach LOS														B		

# HCS7 Two-Way Stop-Control Report

General Information				Site Information			
Analyst	FMF			Intersection	Iron Horse at North dwy		
Agency/Co.	SLR			Jurisdiction	Simsbury		
Date Performed	5/20/2021			East/West Street	North site driveway		
Analysis Year	2023			North/South Street	Iron Horse Boulevard		
Time Analyzed	PM			Peak Hour Factor	0.92		
Intersection Orientation	North-South			Analysis Time Period (hrs)	0.25		
Project Description	Combined PM Peak Hour						

## Lanes



## Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	0	1	0	0	1	0	0	0	1	0
Configuration								R				TR			T	
Volume (veh/h)								2			107	23			67	
Percent Heavy Vehicles (%)								3								
Proportion Time Blocked																
Percent Grade (%)					0											
Right Turn Channelized					No											
Median Type   Storage	Undivided															

## Critical and Follow-up Headways

Base Critical Headway (sec)								6.2								
Critical Headway (sec)								6.23								
Base Follow-Up Headway (sec)								3.3								
Follow-Up Headway (sec)								3.33								

## Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)								2								
Capacity, c (veh/h)								918								
v/c Ratio								0.00								
95% Queue Length, Q <sub>95</sub> (veh)								0.0								
Control Delay (s/veh)								8.9								
Level of Service (LOS)								A								
Approach Delay (s/veh)					8.9											
Approach LOS					A											