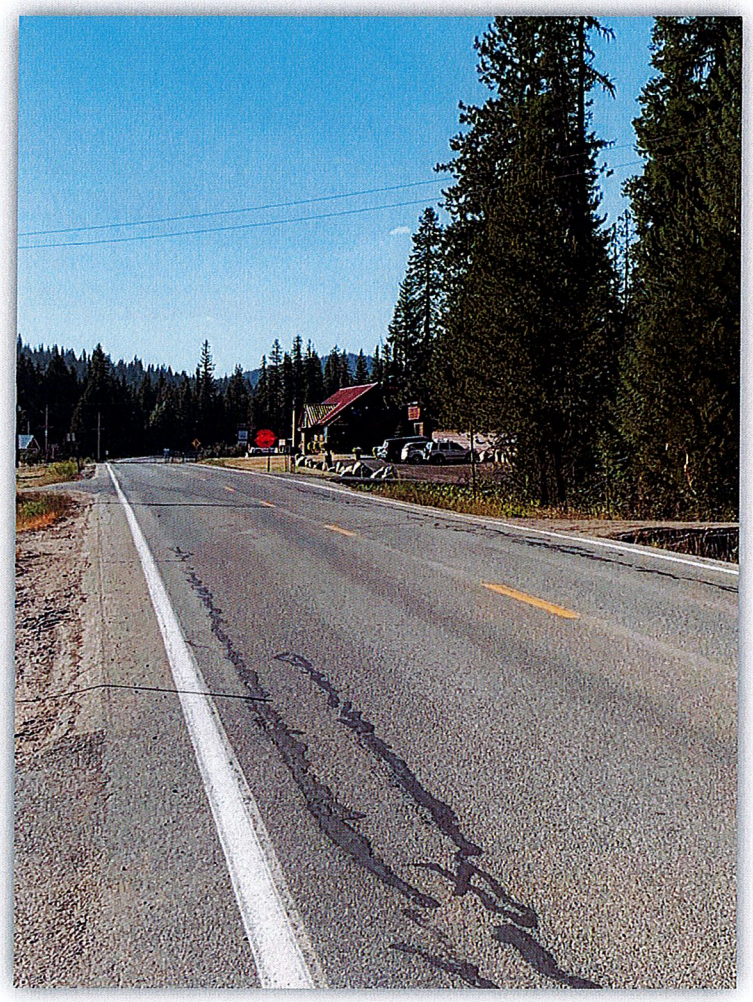
DIVISION 02

Access Information

TRAFFIC IMPACT STUDY

Millie's Development & Eagle PUD Subdivision

Priest Lake, Idaho



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Introduction

The Millie's Development and Eagle PUD Subdivision is a proposed 40-acre housing development located at MP 28.2 on the east side of Highway 57 in Priest Lake, Idaho. The development will be accessed via an existing access approach directly off of Highway 57 and an existing access encroachment currently serving the Millie's restaurant. The existing encroachment serving the Millie's restaurant will continue to serve the restaurant as well as one 8-unit multi-family housing apartment and one 4-unit multi-family housing apartment. The 40-acre parcel will primarily be served via the existing encroachment off of Highway 57 located just south of the restaurant. The overall development is planned for 150 equivalent residential units. Ten (10) of those units will access off of Luby Bay Road to the north, twelve (12) multifamily units plus the restaurant will access off of the current Millie's approach and the remainder will access off of the existing approach located south of the current Millie's restaurant. The development is currently zoned as rural service center. Please refer to Appendix A for a vicinity and site maps.

The extent of this Traffic Impact Study (TIS) is limited to the section of Highway 57 immediately adjacent to the proposed location of the housing development entrance. The TIS is limited to expected traffic impacts and growth that may occur during the next 20 years.

The scope of this report is limited to and based on the known general and specific conditions at the site, information obtained from the Idaho Transportation Department (ITD), and the 10th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.

Project Description

The housing development is located along the Highway 57 corridor at Lamb Creek near the outlet of Priest Lake. The area consists of residential and commercial development. The Eagle PUD Subdivision site is located on the east side of Highway 57 and sits between the Millie's Restaurant and the Priest Lake Golf Course. On the west side of Highway 57 is a strip mall and coffee stand. There are 5 retail locations in the strip mall including a brewery, auto shop/service station, trading store, workout studio, and convenience store. The Millie's restaurant, parking lot, proposed 4-plex and existing 8-plex are accessed off the east side of Highway 57 by the northernmost approach. The main access to the Eagle Subdivision is an existing approach located just south of the Millie's Restaurant and on the east side of the highway. Along the west side of the highway, the strip mall and coffee stand can be accessed by three approaches varying in width.

The Millie's Development and Eagle PUD subdivision will include a total of 150 equivalent residential units which will consist of commercial use, single-family residential detached homes, and multi-family residential 4-plexes and 8-plexes. A third access approach to the subdivision is located off of Luby Bay Road and it will access ten (10) residential homes in that location. These ten (10) homes are separated from the main subdivision by a wetland that bisects the property.

Priest Lake is a tourist destination and a lot of the homes owned around the lake are considered vacation homes. The intent of the proposed subdivision is to develop work-force housing. This housing is less expensive than the properties available on the golf course or the lake. The monthly need for work-force housing coincides with the tourist season beginning in May and being very busy during the summer and slowing down after the Labor Day holiday. The proposed development will provide work-force housing

for employees at the local restaurants, resorts, and commercial developments. For this analysis, it is assumed that the houses and apartments will contain full-time residents.

Assumptions

A number of general assumptions were made in order to process the data and perform calculations. These assumptions are based on general engineering knowledge and local experience. Assumptions were made regarding the following items:

Time Frame – it is expected that the housing development will begin construction in the Summer of 2023 and is expected be fully operational by Fall of 2025. This is based on information provided by the owner / developer.

Trip Generation – trip generation rates are generally based on a combination of local data and ITE generation rates. More information regarding actual generation rates can be found below in the Projected Traffic Volumes section.

Directional Traffic – based on traffic count data from ITD, the directional split of the DHV is 60/40. It is assumed that during the weekdays the larger portion will be traveling towards Priest River during the AM peak hours and towards Priest Lake during the PM peak hours with an 60/40 traffic split. It is also assumed that because the subdivision is located near Priest Lake, there will be more vehicles traveling northbound on Highway 57 to the lake starting Friday afternoon into Sunday. On Sunday afternoon there will be more vehicles heading southbound on Highway 57 back towards Priest River.

Traffic Splits – vehicles entering the proposed development will enter through one of two entrances off of Highway 57 or a third entrance off of Luby Bay road. The Luby Bay Road entrance will serve 10 single family residential units. Because of the subdivision design and a natural wetland, the Luby Bay units can only be accessed via Luby Bay Rd. For analysis purposes it was assumed that vehicles will exit the development in the same way they entered and have the option of turning either north or south onto Highway 57.

To adequately model the effect that the proposed approach has on Highway 57 traffic, it will be assumed for calculation purposes that 100% of traffic will enter and exit at the proposed approaches. There is an interconnection at the east end of the subdivision with the Priest Lake Golf Course Road system. The report and associated analysis assume that all new traffic will enter the highway directly from the development. This will assume a “worst case” scenario by placing all the trips at the two approaches instead of assuming a percentage of the vehicles exit through the Priest Lake Golf Course.

For purposes of this TIS, the traffic splits will be as follows for the total trips made during the day:

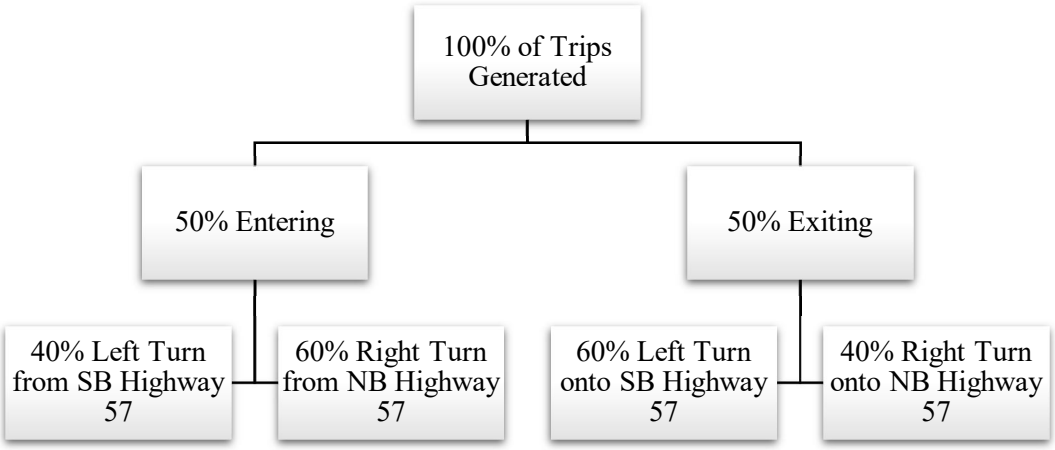

Figure 1 - Traffic Splits

It should be noted that the traffic splits will vary during the peak hours of the day. During the AM Peak Hour, there will be more vehicles exiting the subdivision onto Highway 57. During the PM Peak Hour, there will be more vehicles entering the subdivision off of Highway 57. However, it is assumed that the total trips during the day will equal out to 50% entering and 50% existing.

Roadway Inventory

U.S. Highway 57 is a major arterial that serves as the primary roadway to the Priest Lake area. At the project site, Highway 57 consists of a single travel lane in each direction and no turn lanes or deceleration lanes. The roadway is approximately 24 feet in width with 2-foot-wide shoulders and the speed limit on Highway 57 at the project site is 45 mph. The speed limit increases to 60 mph approximately ½ mile north of the proposed project site entrance. There is not a center shared turn lane or right hand turn lanes serving businesses on either side of the road.

Vehicles traveling north on Highway 57 past the project site can be going towards the Hills Resort, Elkins Resort, recreational destinations, and other residential houses. Vehicles traveling south on Highway 57 from the project site either are destined for Priest River or the east side of the lake. Directly next to the project site is the Priest Lake Golf Course.

Traffic Counts and Projected Volumes

Traffic counts and projected volumes have been provided by the Idaho Transportation Department (ITD) for Highway 57 for the years 2019 through 2041. The traffic counts and projections for both 2021 and 2041 are based on yearly history of traffic count data compiled by ITD. The average daily traffic projection can be seen in Table 1 and the design hourly volume can be seen in Table 2.

Table 1 - Traffic Counts and Projected Volumes (Average Daily Traffic - ADT)

Roadway	From ITD		
	ADT 2019	ADT 2022	Projected ADT 2041
U.S. Highway 57 (BM 22.47 – EM 28.60)	2,000	2,060	2,460
Luby Bay Road (BM 0.00 – EM 1.395)	620	620	650

Table 2 - Traffic Counts and Projected Volumes (Design Hourly Volume - DHV)

Roadway	From ITD		
	DHV 2019	DHV 2021	Projected DHV
U.S. Highway 57	510	520	610
Luby Bay Rd.	90	90	90

*The design hour volume (DHV) is split 60/40 for directional traffic

Accident Histories

Accident data for Highway 57 was obtained from the Office of Highway Operations and Safety at ITD. Accident data was obtained for the period from 2016 through 2019 and consists of the last three years of current records. Official data from 2020 has not yet been recorded. Accident data for U.S. Highway 57 is from MP 0-29 which is from the intersection of Highway 2 and Highway 57 in Priest River to approximately ½ mile north of the proposed development approach. Detailed accident data listing the probable causes of the crashes was not collected.

Table 3 - Accident Data Summary

Accident Type	**U.S. Highway 57**
Fatal Crashes	3
Serious Injury Crashes	6
Moderate Injury Crashes	10
Possible Injury Crashes	20
Property Damage Only	36
Total	75

Programmed Improvements

It is not known if there are any proposed improvements planned for Highway 57 in the project vicinity.

Projected Traffic Volumes

Within the ITE Trip Generation Manual, the generation rates used for the proposed development come from the following Land Use codes listed below. Access to the development is split into three areas. The first and northernmost areas is access to 10 single family detached residential homes located off of Luby Bay Road. The second access point is the existing access off of Highway 57 to the Millie's restaurant, the existing 8-plex apartment building and an existing mobile home. The use at this access point will be modified in the future with the mobile home being removed and then replaced with a 4-plex apartment

building. The buildout traffic use for this approach will include 12 apartment units and the Millie's restaurant. The third access point is off of Highway 57 and is existing and located just south of the Millie's Restaurant. The southernmost access location will be the main access to the development and will serve 32 apartment units, 59 single family detached residential homes, and a future commercial area adjacent to highway 57. The future commercial area has been modeled as a High-Turnover (Sit Down) Restaurant per the ITE Trip Generation Manual. A map of the proposed development is shown below.

- Land Use 210 – Single-Family Detached Housing code
- Land Use 220 – Apartment code
- Land Use 270 – Residential PUD code
- Land Use 932 – High Turnover (Sit Down) Restaurant.

The ITE manual specifies that apartments are rental dwelling units that are located within the same building with at least three other dwelling units. For the purpose of this report, the 4-plexes and 8-plexes are considered an apartment. Single-family homes have been considered for the 8 estate lots located adjacent to the Priest Lake Golf Course. These are shown along the east boundary of the subdivision as larger tan building location. The Residential PUD use has been used for the small cluster home sites throughout the subdivision. These are small lots with a very limited exterior accessory. They are detached units where the access is common to multiple units. The highway frontage land use was analyzed as commercial use to model commercial development along the Highway 57 frontage. The separate generation rates were calculated and combined together to determine the total number of vehicles. Complete results for the trip ends are included in Appendix B. The following Table 4 provides the trip ends generated by the proposed development during the weekday for the northernmost access to highway 57. This access is associated with the Millie's restaurant site.

Table 4 - Summary of Projected Trip Data, Access Point 2 Millie's Restaurant - Weekday

Use	Number of Units	Average Weekday (Total No. of Vehicles)	Weekday AM Peak Hour (Total No. of Vehicles)	Weekday PM Peak Hour (Total No. of Vehicles)
Restaurant (932 – High Turnover, sit down) *seats*	94	454	56	77
Apartment (220) *dwelling*	12	222	11	25
Totals		676	67	102

**Total No. of Vehicles are the vehicles entering and exiting the site (i.e. each vehicle is counted twice, once when it enters and once when it exits), generation rates were taken from ITE Trip Generation equations for noted use.*

Table 5 provides the trip ends generated by the proposed development during the weekday for the southernmost access to Highway 57. This access is associated with the main entrance to the Eagle subdivision.

Table 5 - Summary of Projected Trip Data, Access Point 3 Eagle Subdivision - Weekday

Use	Number of Units	Average Weekday (Total No. of Vehicles)	Weekday AM Peak Hour (Total No. of Vehicles)	Weekday PM Peak Hour (Total No. of Vehicles)
Commercial Use - Restaurant (932 – High Turnover, sit down) *seats*	94	454	56	77
Residential PUD (270) *dwelling*	43	459	34	40
Single Family Residential Housing (210) *dwelling*	8	102	18	12
Apartment (220) *dwelling*	32	343	21	37
Totals		1,358	129	166

**Total No. of Vehicles are the vehicles entering and exiting the site (i.e. each vehicle is counted twice, once when it enters and once when it exits), generation rates were taken from ITE Trip Generation equations for noted use.*

The Priest Lake area provides an abundance of recreational opportunities and a significant amount of public land. Throughout the summer months, a large population of tourists and vacationers travel up along Highway 57. The volume of traffic in the summer is greater than in the winter even though there is still a large population of people visiting in the winter months for the winter activities. Traffic volumes also increase during the weekends and holidays for recreational use. It is expected that during the summer months, weekends and holidays the traffic volume going to Priest Lake on Highway 57 will increase. The ITE manual provides generation rates for single-family housing, apartments, restaurant and PUD subdivision units on both Saturday and Sunday. The following Table 6 provides the trip ends generated by the proposed development during the weekend at the Millie's restaurant access location.

Table 6 - Summary of Projected Trip Data, Access Point 2, Millie's Restaurant - Weekend

Use	Number of Units	Average Saturday (Total No. of Vehicles)	Saturday Peak Hour (Total No. of Vehicles)	Average Sunday (Total No. of Vehicles)	Sunday Peak Hour (Total No. of Vehicles)
Restaurant (932 – High Turnover, sit down) *seats*	94	584	83	486	61
Apartment (220) *dwelling*	12	No Generation Rate	24	No Generation Rate	6
Totals		584	107	486	67

**Total No. of Vehicles are the vehicles entering and exiting the site (i.e. each vehicle is counted twice, once when it enters and once when it exits), generation rates were taken from ITE Trip Generation equations for noted use.*

Table 7 provides the trip ends generated by the proposed development during the weekend for the southernmost access to Highway 57. This access is associated with the main entrance to the Eagle subdivision.

Table 7 - Summary of Projected Trip Data, Access Point 3, Eagle Subdivision - Weekend

Use	Number of Units	Average Saturday (Total No. of Vehicles)	Saturday Peak Hour (Total No. of Vehicles)	Average Sunday (Total No. of Vehicles)	Sunday Peak Hour (Total No. of Vehicles)
Restaurant (932 – High Turnover, sit down) *seats*	94	584	83	486	61
Residential PUD (270) *dwelling*	43	312	26	306	66
Single Family Residential Housing (210) *dwelling*	8	98	18	61	10
Apartment (220) *dwelling*	32	cannot compute	32	104	16
Totals		994	159	958	153

**Total No. of Vehicles are the vehicles entering and exiting the site (i.e. each vehicle is counted twice, once when it enters and once when it exits), generation rates were taken from ITE Trip Generation equations for noted use.*

The ITE Trip Generation Manual calculates the actual trips at the entrance / exit to the site. For a residential subdivision, the number of trips to the development is about equal to the number of trips leaving the site. There are two types of trips generated by a site, Pass-By and Non-Pass-By trips. Non-Pass-By trips are further divided into primary trips and diverted linked trips. Primary trips are trips that go from the origin to the destination and then back to the origin.

The proposed subdivision will create Non-Pass-By primary trips from vehicles traveling to and from their dwelling.

Traffic Operations

Traffic operations and flow were analyzed using McTrans™HCS+™ for Weekday AM Peak Hour and Weekday PM Peak Hour. Level of Service (LOS) calculations were performed for current and design year traffic volumes. A separate analysis was completed for both entrances off of Highway 57. No LOS analysis was completed for the expected increase of traffic on Luby Bay road.

Detailed results of the analysis are located in Appendix C and are summarized below.

Table 8 - LOS Summary – Millie's Entrance – Access Point #2

Year	Calculated 2022 LOS				Projected 2041 LOS			
	SB Hwy 57 - Left Turn into Millie's		Left and Right Turns from Millie's onto Hwy 57		SB Hwy 57 - Left Turn into Millie's		Left and Right Turns from Millie's onto Hwy 57	
	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)
AM Peak Hour	A	7.7	B	11.6	A	7.8	B	12.4
PM Peak Hour	A	8.0	B	11.6	A	7.2	B	12.9

Table 9 - LOS Summary – Eagle PUD Subdivision Entrance – Access Point #3

Year	Calculated 2022 LOS				Projected 2041 LOS			
	SB Hwy 57 - Left Turn into Eagle Subdivision		Left and Right Turns from Eagle Subdivision onto Hwy 57		SB Hwy 57 - Left Turn into Eagle Subdivision		Left and Right Turns from Eagle Subdivision onto Hwy 57	
	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)	LOS	Delay (seconds)
AM Peak Hour	A	7.8	B	12.1	A	7.8	B	12.9
PM Peak Hour	A	8.1	B	11.7	A	8.2	B	12.3

In 2022, vehicles turning left into the Millie's Development or Eagle Subdivision from southbound Highway 57 experience little to no delay. Vehicles exiting the development will have a delay of about 11.8 seconds. In 2041, it is projected that the average delay for vehicles entering the Millie's Development or Eagle Subdivision southbound on Highway 57 will have about the same delay as 2021. However, vehicles leaving the project will experience a slight increase (0.8 seconds) in 2041 with a total delay of 12.6 seconds. Based off of the results, there is a slight increase in delays leaving the subdivision, however it still maintains a LOS of B. Complete LOS criteria can be found in Appendix D.

Turn Lane Warrants

ITD provides guidance regarding turn lane warrants. Turn lanes may be warranted based on the volume of through traffic and the volume of turning traffic. These traffic volumes are directly related to the delay caused by a vehicle making a turning movement. ITD criteria is found in Appendix E.

Left Turn Lane – Currently, there are no existing turn lanes off of Highway 57 within the stretch of the proposed project. As mentioned, Highway 57 consists only of single driving lanes in each direction and no shared center turning lane. For the Millie's Development intersection, the highway Design Hourly Volume (DHV) per lane for the current year is 312 vehicles per hour (vph), the speed limit of the highway is 45 mph, and 20 vehicles are turning left at the approach at the AM peak hour, a left turn lane is warranted. Similarly for the Eagle Subdivision intersection the DHV is 312 vehicles per hour, the speed limit of the highway is 45 mph, and 39 vehicles are turning left at the intersection during the AM peak hour, a left turn lane is warranted.

Right Turn Lane – For the intersection to the Millie's development the DHV per lane is 312 vph, the highway speed limit is 45 mph, and 31 vehicles turning right at the PM peak hour, a right turn lane is warranted. The Eagle Subdivision intersection includes a DHV per lane of 312 vph, a highway speed limit of 45 mph, and 50 vehicles turning right at the PM peak hour, a right turn lane is warranted.

Traffic Signal Warrants

The need for the installation of a traffic signal at an intersection is based on guidelines found in Section 4 of the Manual on Uniform Traffic Control Devices (MUTCD). There are nine warrants that include the following:

1 - Eight-Hour Vehicular Volume
2 - Four-Hour Vehicular Volume
3 - Peak Hour
4 - Pedestrian Volume
5 - School Crossing
6 - Coordinated Signal System
7 - Crash Experience
8 - Roadway Network
9 - Intersection near a Grade Crossing (Railroad)

The warrants are further discussed below and detailed analysis guidelines are located in Appendix F. It should be noted that Warrants 5, 6, 8, and 9 are not applicable to the intersections within the project area.

Warrant 1 – Eight-Hour Vehicular Volume

Traffic volume data has not been compiled for an eight-hour period. For purposes of the analysis, the DHV was used as the average volume of vehicles during an eight-hour period. The volume of traffic for Highway 57 does not exceed the major street volume and the minor-street approach, the development entrances, do not exceed the volume so it does not warrant a traffic signal.

Warrant 2 – Four-Hour Vehicular Volume

For purposes of the analysis, the DHV (610) was used as the average hourly volume of vehicles during a four-hour period. The traffic volume at the approach in one direction (51 vph – Millie's, 83 vph - Eagle) with the DHV fall under the 1 lane & 1 lane curve (60 vph) since the community is less than 10,000 population. Therefore, a traffic signal is not warranted based on the four-hour vehicle volume.

Warrant 3 – Peak Hour

For purposes of the analysis, the DHV (610) was used as the average volume of vehicles during the peak hour period. The traffic volume at the approach in one direction (51 vph – Millie's, 83 vph - Eagle) with the DHV fall under the 1 lane & 1 lane curve (75 vph). Therefore, a traffic signal is not warranted.

Warrant 4 – Pedestrian Volume

No pedestrian volume data was gathered for this TIS. In general, the observed volume of pedestrians is very low and is not expected to increase significantly. Due to the limited number of stores and retailers, there is a low number of pedestrians crossing Highway 57. There are not currently any sidewalks along the side of the highway and since most of the businesses are further away from each other along the highway, most pedestrians appear to drive. The proposed subdivision should not increase the number of pedestrians crossing a major approach. The proposed approach will not create a pedestrian crossing on Highway 57 and the traffic volume at the approach is less than the threshold; therefore, a traffic signal is not warranted.

Warrant 7 – Crash Experience

Based on the accident data provided earlier in the report, detailed crash data was not provided whether or not the crashes could have been prevented by the installation of a traffic signal. However, based off the top contributing circumstances provided (i.e., animals in roadway, failed to maintain lane, and speed too fast for conditions), it is assumed that a traffic signal would not have prevented these accidents. A traffic signal is only warranted if all of the following are met: adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce crashes, five or more accidents have occurred in a twelve-month period that could have been prevented by a traffic signal, and traffic volumes are similar to those within the 8-Hour Vehicular Volume criteria. Since none of these are met, a traffic signal is not warranted based on crash experience.

Traffic Signal Warrant Summary

Based on the above warrants, a traffic signal is not warranted for the approach.

Queuing Analysis

The HCS+ computer program calculates the 95% queue length as a number of vehicles expected to be in a queue at an intersection. The analysis, as shown in Appendix C, shows that the 95% queue length for AM and PM Peak Hours in 2021 are less than 1. This means that there should not be a queue of more than 1 car turning left southbound off Highway 57 or turning right or left out of the subdivision onto Highway

57. Between the years 2021 and 2041, the 95% queue length did not change significantly which means there should not be a queue.

Summary and Conclusion

The proposed Eagle Subdivision and Millie's Development off of Highway 57 will increase vehicle traffic on Highway 57; however, it does not have significant adverse effects to the traffic flow patterns. The LOS calculations show the improved entrance to Millie's and the Eagle subdivision both cause little to no delay when entering and exiting off Highway 57. The estimated volume of vehicles turning right and left at the approach warrants both a right hand and left-hand turn lanes per ITD guidelines. To facilitate those additional turn lanes a concept map has been included in Appendix G showing right turn/deceleration lanes serving both entrances, a shared left turn lane/center turn bay, and a southbound bypass lane added to the west side of the existing highway. The existing highway right-of-way varies in width throughout this project with the narrowest areas being close to 100-feet in width. There is sufficient right-of-way for the proposed improvements. All new lanes are proposed at 12-feet wide. The transition taper sections have been proposed with a 10:1 length to width ratio and the highway shoulder has been increased from 2-feet to 4-feet within the improved area.

Appendix B

Traffic Volume Backup Data

Project number: NA Key number: NA Location: Dickensheet Rd to Luby Bay Rd (W 350)
Route: SH-57 RouteID: 01620ASH057 FromMeasure: 22.470 ToMeasure: 28.601
Truck Density = 4 Light/Heavy Last year with data: 2019 Cumulating ESALs up to: 2041 Starting to Cumulate in: 2021

Year	ADTS			Rigid Pavement ESALs (In 1000s)				Flexible Pavement ESALs (In 1000s)			
				Both Directions		50% Dir of Travel		Both Directions		50% Dir of Travel	
	Total	Pass	Comm	Year Value	Cumulative	50% Year	50% Cum	Year Value	Cumulative	50% Year	50% Cum
2019	2000	1890	110								
2021	2040	1930	110	120	120	60	60	78	78	39	39
2022	2060	1950	120	124	244	62	122	81	159	40	79
2023	2080	1970	120	128	372	64	186	83	242	41	121
2024	2110	1980	120	132	505	66	252	86	328	43	164
2025	2130	2000	120	136	641	68	321	88	416	44	208
2026	2150	2020	130	140	781	70	391	91	507	45	253
2027	2170	2040	130	145	926	72	463	94	600	47	300
2028	2190	2060	130	149	1075	74	537	96	697	48	348
2029	2210	2080	130	153	1228	77	614	99	796	49	398
2030	2230	2100	130	157	1385	79	693	102	898	51	449
2031	2250	2120	140	162	1547	81	774	105	1002	52	501
2032	2270	2140	140	167	1714	83	857	107	1110	54	555
2033	2300	2150	140	171	1885	86	943	110	1220	55	610
2034	2320	2170	140	176	2061	88	1030	113	1333	56	666
2035	2340	2190	150	180	2241	90	1121	116	1449	58	725
2036	2360	2210	150	185	2426	93	1213	119	1568	60	784
2037	2380	2230	150	190	2617	95	1308	122	1690	61	845
2038	2400	2250	150	195	2811	97	1406	125	1815	63	908
2039	2420	2270	150	200	3011	100	1505	128	1944	64	972
2040	2440	2290	160	205	3216	102	1608	131	2075	66	1038
2041	2460	2310	160	210	3426	105	1713	135	2210	67	1105

Project number: NA Key number: NA Location: Luby Bay Rd (W 350) to Kalispell Bay Rd
Route: SH-57 RouteID: 01620ASH057 FromMeasure: 28.601 ToMeasure: 31.399
Truck Density = 4 Light/Heavy Last year with data: 2019 Cumulating ESALs up to: 2041 Starting to Cumulate in: 2021

Year	ADTS			Rigid Pavement ESALs (In 1000s)				Flexible Pavement ESALs (In 1000s)			
				Both Directions		50% Dir of Travel		Both Directions		50% Dir of Travel	
	Total	Pass	Comm	Year Value	Cumulative	50% Year	50% Cum	Year Value	Cumulative	50% Year	50% Cum
2019	1400	1290	110								
2021	1430	1320	110	120	120	60	60	78	78	39	39
2022	1450	1330	120	124	244	62	122	81	159	40	79
2023	1460	1340	120	128	372	64	186	83	242	41	121
2024	1480	1350	120	132	504	66	252	86	327	43	164
2025	1490	1370	120	136	641	68	320	88	416	44	208
2026	1510	1380	130	140	781	70	390	91	506	45	253
2027	1520	1390	130	144	925	72	463	94	600	47	300
2028	1540	1410	130	149	1074	74	537	96	696	48	348
2029	1550	1420	130	153	1228	77	614	99	795	49	398
2030	1570	1430	130	157	1385	79	692	102	897	51	449
2031	1580	1440	140	162	1547	81	773	105	1002	52	501
2032	1600	1460	140	167	1713	83	857	107	1109	54	555
2033	1610	1470	140	171	1885	86	942	110	1219	55	610
2034	1630	1480	140	175	2060	88	1030	113	1332	56	666
2035	1640	1500	150	180	2240	90	1120	116	1448	58	724
2036	1660	1510	150	185	2426	93	1213	119	1567	60	784
2037	1670	1520	150	190	2616	95	1308	122	1689	61	845
2038	1690	1540	150	195	2810	97	1405	125	1815	63	907
2039	1700	1550	150	200	3010	100	1505	128	1943	64	971
2040	1720	1560	160	205	3215	102	1607	131	2074	66	1037
2041	1730	1570	160	210	3425	105	1712	135	2209	67	1104

Project number: NA Key number: NA Location: Dickensheet Rd to Kalispell Bay Rd
Route: SH-57 RouteID: 01620ASH057 FromMeasure: 22.470 ToMeasure: 31.399
Truck Density = 4 Light/Heavy Last year with data: 2019 Cumulating ESALs up to: 2041 Starting to Cumulate in: 2021

Year	ADTS			Rigid Pavement ESALs (In 1000s)				Flexible Pavement ESALs (In 1000s)			
				Both Directions		50% Dir of Travel		Both Directions		50% Dir of Travel	
	Total	Pass	Comm	Year Value	Cumulative	50% Year	50% Cum	Year Value	Cumulative	50% Year	50% Cum
2019	1810	1700	110								
2021	1850	1740	110	120	120	60	60	78	78	39	39
2022	1870	1750	120	124	244	62	122	81	159	40	79
2023	1890	1770	120	128	372	64	186	83	242	41	121
2024	1910	1790	120	132	505	66	252	86	328	43	164
2025	1930	1800	120	136	641	68	320	88	416	44	208
2026	1950	1820	130	140	781	70	391	91	507	45	253
2027	1970	1840	130	145	926	72	463	94	600	47	300
2028	1980	1860	130	149	1075	74	537	96	697	48	348
2029	2000	1870	130	153	1228	77	614	99	796	49	398
2030	2020	1890	130	157	1385	79	693	102	898	51	449
2031	2040	1910	140	162	1547	81	774	105	1002	52	501
2032	2060	1920	140	167	1714	83	857	107	1110	54	555
2033	2080	1940	140	171	1885	86	943	110	1220	55	610
2034	2100	1960	140	176	2061	88	1030	113	1333	56	666
2035	2120	1970	150	180	2241	90	1120	116	1449	58	724
2036	2140	1990	150	185	2426	93	1213	119	1568	60	784
2037	2160	2010	150	190	2616	95	1308	122	1690	61	845
2038	2180	2030	150	195	2811	97	1405	125	1815	63	908
2039	2200	2040	150	200	3011	100	1505	128	1943	64	972
2040	2220	2060	160	205	3215	102	1608	131	2075	66	1037
2041	2230	2080	160	210	3426	105	1713	135	2210	67	1105

Projected Traffic Volumes

Project No: NA **Key No:** NA
Route: SH-57 **Location:** Dickensheet Rd to Kalispell Bay Rd
RouteID: 01620ASH057 **Measures:** 22.470 31.399 **County:** Bonner

From:		Dickensheet Rd to Luby Bay Rd (W 350)		Luby Bay Rd (W 350) to Kalispell Bay Rd		Weighted Average	
To:							
RouteID:		01620ASH057		01620ASH057		01620ASH057	
FromMeasure:		22.470		28.601		22.470	
ToMeasure:		28.601		31.399		31.399	
AADT	2019	2,000		1,400		1,810	
AADT	2021	2,040		1,430		1,850	
AADT	2041	2,460		1,730		2,230	
DHV	2019	510	25.4%	380	26.9%	470	25.8%
DHV	2021	520	25.4%	380	26.8%	480	25.7%
DHV	2041	610	24.8%	450	26.0%	560	25.1%
Commercial:							
AADT	2019	110	5.5%	110	7.9%	110	6.1%
AADT	2021	110	5.6%	110	8.0%	110	6.2%
AADT	2041	160	6.4%	160	9.1%	160	7.1%
DHV	2019	20	3.9%	20	5.5%	20	4.3%
DHV	2021	20	3.9%	20	5.6%	20	4.3%
DHV	2041	30	4.5%	30	6.4%	30	5.0%
Direction:		60/40%		60/40%		60/40%	
Trk Density:		Light-Heavy		Light-Heavy		Light-Heavy	

Remarks: Based on 2019 data

Requested by: Kimberly Laverty **Prepared by:** Vicky Calderon
Phone number: klaverty@jasewell.com **District:** 2

James A Sewell & Associates, LLC

Project: Millie's 40 Bren-Burk, LLC
Date: 10/19/2022
Completed By: KAK

Traffic Impact Study

Average Daily Traffic

Road	2019	2021	2022	2041
Highway 57	2,000	2,040	2060	2,460

Design Hourly Volume

	2021			2041		
Road	Total	60%	40%	Total	60%	40%
Highway 57	520	312	208	610	366	244

Traffic Trip Data - Millie's Entrance

			Traffic Volumes																	
			Typical Weekday						Weekday Peak AM						Weekday Peak PM					
			Total		Entering		Exiting		Total		Entering		Exiting		Total		Entering		Exiting	
No.	Use	Independent Variable	(Rate)	(#)	(%)	(#)	(%)	(#)	(Rate)	(#)	(%)	(#)	(%)	(#)	(Rate)	(#)	(%)	(#)	(%)	(#)
Average	Restaurant	seats	From Eq.	454	50%	227	50%	227	From Eq.	56	50%	28	50%	28	From Eq.	77	50%	38.5	50%	38.5
Average	Apartment	dwelling unit	From Eq.	222	50%	111	50%	111	From Eq.	11	50%	6	50%	6	From Eq.	25	50%	12.5	50%	12.5
		Totals		676		338		338		67		34		34		102		51		51

Traffic Trip Data - Eagle Subdivision

			Traffic Volumes																	
			Typical Weekday						Weekday Peak AM						Weekday Peak PM					
			Total		Entering		Exiting		Total		Entering		Exiting		Total		Entering		Exiting	
No.	Use	Independent Variable	(Rate)	(#)	(%)	(#)	(%)	(#)	(Rate)	(#)	(%)	(#)	(%)	(#)	(Rate)	(#)	(%)	(#)	(%)	(#)
Average	Restaurant	seats	From Eq.	454	50%	227	50%	227	From Eq.	56	50%	28	50%	28	From Eq.	77	50%	38.5	50%	38.5
Average	PUD	dwelling unit	From Eq.	459	50%	229.5	50%	229.5	From Eq.	34	50%	17	50%	17	From Eq.	40	50%	20	50%	20
Average	Single Family	dwelling unit	From Eq.	102	50%	51	50%	51	From Eq.	18	50%	9	50%	9	From Eq.	12	50%	6	50%	6
Average	Apartment	dwelling unit	From Eq.	343	50%	172	50%	172	From Eq.	21	50%	11	50%	11	From Eq.	37	50%	18.5	50%	18.5
		Totals		1358		679		679		129		65		65		166		83		83

The proposed subdivision will have a single entrance off Highway 57. It is assumed that 50% of the vehicles entering is equal to 50% of the vehicles exiting, but it's also assumed that traffic is split directionally 60% eastbound(south) and 40% westbound (north).

Assignation of Traffic Trips - Millies

				Average Weekday				Weekday Peak AM				Weekday Peak PM	
	Traffic Split		Total	Entering	Exiting	Traffic Split	Total	Entering	Exiting	Traffic Split	Total	Entering	Exiting
Highway 57 SB	60%			203	203	60%		20	20	40%		20	20
SB LT				203				20				20	
Millies to SB					203				20				20
Highway 57 NB	40%			135	135	40%		13	13	60%		31	31
NB RT				135				13				31	
Millies to NB					135				13				31
Totals			676	676	676		67	67	67		102	102	102

Assignation of Traffic Trips - Eagle

				Average Weekday				Weekday Peak AM				Weekday Peak PM	
	Traffic Split		Total	Entering	Exiting	Traffic Split	Total	Entering	Exiting	Traffic Split	Total	Entering	Exiting
Highway 57 SB	60%			407	407	60%		39	39	40%		33	33
SB LT				407				39				33	
Millies to SB					407				39				33
Highway 57 NB	40%			272	272	40%		26	26	60%		50	50
NB RT				272				26				50	
Millies to NB					272				26				50
Totals			1358	1358	1358		129	129	129		166	166	166

Appendix C

LOS Calculations

TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Kevin Koesel*	Intersection	*Hwy 57 and Millie's, 2*
Agency/Co.	*ITD*	Jurisdiction	*ITD*
Date Performed	*10/14/2022*	Analysis Year	*2022*
Analysis Time Period	*AM Peak Hour*		

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Millie's Restaurant* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*208*	*13*	*20*	*312*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*20*	*0*	*13*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*20*	*0*	*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*20*	*312*	*0*	*0*	*208*	*13*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LTR*				
v (veh/h)		*20*		*33*				
C (m) (veh/h)		*1360*		*578*				
v/c		*0.01*		*0.06*				
95% queue length		*0.04*		*0.18*				
Control Delay (s/veh)		*7.7*		*11.6*				
LOS		*A*		*B*				
Approach Delay (s/veh)	--	--	*11.6*					
Approach LOS	--	--	*B*					

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TWO-WAY STOP CONTROL SUMMARY

General Information		Site Information	
Analyst	*Kevin Koesel*	Intersection	*Hwy 57 and Millie's, 2*
Agency/Co.	*ITD*	Jurisdiction	*ITD*
Date Performed	*10/14/2022*	Analysis Year	*2022*
Analysis Time Period	*PM Peak Hour*		

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Millie's Restaurant* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*312*	*31*	*20*	*208*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*20*	*0*	*31*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*20*	*0*	*31*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*20*	*208*	*0*	*0*	*312*	*31*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*1*	*0*
Configuration					*LTR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LTR*				
v (veh/h)		*20*		*51*				
C (m) (veh/h)		*1227*		*597*				
v/c		*0.02*		*0.09*				
95% queue length		*0.05*		*0.28*				
Control Delay (s/veh)		*8.0*		*11.6*				
LOS		*A*		*B*				
Approach Delay (s/veh)	--	--	*11.6*					
Approach LOS	--	--	*B*					

TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kevin Koesel*
Agency/Co.	*ITD*
Date Performed	*10/14/2022*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Hwy 57 and Eagle Subdivision 3*
Jurisdiction	*ITD*
Analysis Year	*2041*

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Millie's Restaurant* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*244*	*13*	*20*	*366*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*20*	*0*	*13*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*20*		*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*20*	*366*	*0*	*0*	*244*	*13*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration					*LR*	

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*		*LR*				
v (veh/h)		*20*		*33*				
C (m) (veh/h)		*1320*		*521*				
v/c		*0.02*		*0.06*				
95% queue length		*0.05*		*0.20*				
Control Delay (s/veh)		*7.8*		*12.4*				
LOS		*A*		*B*				
Approach Delay (s/veh)	--	--	*12.4*					
Approach LOS	--	--	*B*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kevin Koesel*
Agency/Co.	*ITD*
Date Performed	*10/14/2022*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Hwy 57 and Eagle Subdivision 3*
Jurisdiction	*ITD*
Analysis Year	*2041*

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Millie's Restaurant* | North/South Street: *Highway 57*

Intersection Orientation: *East-West* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Eastbound			Westbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)				*20*		*13*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*20*	*0*	*13*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*0*	*0*	*0*
Configuration				*LTR*	*LR*	
Upstream Signal		*0*			*0*	

Minor Street	Northbound			Southbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)		*366*	*31*	*20*	*244*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*366*	*31*	*20*	*244*	*0*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		

Delay, Queue Length, and Level of Service

Approach	Eastbound	Westbound	Northbound			Southbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LTR*			*TR*	*LT*		
v (veh/h)		*20*			*397*	*264*		
C (m) (veh/h)		*1636*			*848*	*788*		
v/c		*0.01*			*0.47*	*0.34*		
95% queue length		*0.04*			*2.53*	*1.48*		
Control Delay (s/veh)		*7.2*			*12.9*	*11.9*		
LOS		*A*			*B*	*B*		
Approach Delay (s/veh)	--	--	*12.9*			*11.9*		
Approach LOS	--	--	*B*			*B*		

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kevin Koesel*
Agency/Co.	*ITD*
Date Performed	*10/14/2022*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Hwy 57 and Eagle Subdivision 3*
Jurisdiction	*ITD*
Analysis Year	*2022*

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Eagle Subdivision* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*208*	*26*	*39*	*312*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*39*	*0*	*26*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*39*		*26*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*39*	*312*	*0*	*0*	*208*	*26*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*	*L*		*R*			
v (veh/h)		*39*	*39*		*26*			
C (m) (veh/h)		*1345*	*447*		*824*			
v/c		*0.03*	*0.09*		*0.03*			
95% queue length		*0.09*	*0.29*		*0.10*			
Control Delay (s/veh)		*7.8*	*13.8*		*9.5*			
LOS		*A*	*B*		*A*			
Approach Delay (s/veh)	--	--	*12.1*					
Approach LOS	--	--	*B*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kevin Koesel*
Agency/Co.	*ITD*
Date Performed	*10/14/2022*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Hwy 57 and Eagle Subdivision 3*
Jurisdiction	*ITD*
Analysis Year	*2022*

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Eagle Subdivision* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*312*	*50*	*33*	*208*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*33*	*0*	*50*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*33*		*50*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*33*	*208*	*0*	*0*	*312*	*50*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*	*L*		*R*			
v (veh/h)		*33*	*33*		*50*			
C (m) (veh/h)		*1208*	*447*		*710*			
v/c		*0.03*	*0.07*		*0.07*			
95% queue length		*0.08*	*0.24*		*0.23*			
Control Delay (s/veh)		*8.1*	*13.7*		*10.5*			
LOS		*A*	*B*		*B*			
Approach Delay (s/veh)	--	--	*11.7*					
Approach LOS	--	--	*B*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kevin Koesel*
Agency/Co.	*ITD*
Date Performed	*10/14/2022*
Analysis Time Period	*AM Peak Hour*

Site Information

Intersection	*Hwy 57 and Eagle Subdivision 3*
Jurisdiction	*ITD*
Analysis Year	*2041*

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Eagle Subdivision* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*244*	*26*	*39*	*366*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*39*	*0*	*26*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*39*		*26*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*39*	*366*	*0*	*0*	*244*	*26*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*	*L*		*R*			
v (veh/h)		*39*	*39*		*26*			
C (m) (veh/h)		*1305*	*396*		*787*			
v/c		*0.03*	*0.10*		*0.03*			
95% queue length		*0.09*	*0.33*		*0.10*			
Control Delay (s/veh)		*7.8*	*15.1*		*9.7*			
LOS		*A*	*C*		*A*			
Approach Delay (s/veh)	--	--	*12.9*					
Approach LOS	--	--	*B*					

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TWO-WAY STOP CONTROL SUMMARY

General Information

Analyst	*Kevin Koesel*
Agency/Co.	*ITD*
Date Performed	*10/14/2022*
Analysis Time Period	*PM Peak Hour*

Site Information

Intersection	*Hwy 57 and Eagle Subdivision 3*
Jurisdiction	*ITD*
Analysis Year	*2041*

Project Description *Millie's Development & Eagle Subdivision*

East/West Street: *Eagle Subdivision* | North/South Street: *Highway 57*

Intersection Orientation: *North-South* | Study Period (hrs): *0.25*

Vehicle Volumes and Adjustments

Major Street	Northbound			Southbound		
Movement	1	2	3	4	5	6
	L	T	R	L	T	R
Volume (veh/h)		*366*	*50*	*33*	*208*	
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*0*	*0*	*0*	*33*	*0*	*50*
Percent Heavy Vehicles	*0*	--	--	*0*	--	--
Median Type	*Undivided*					
RT Channelized			*0*			*0*
Lanes	*0*	*1*	*0*	*0*	*1*	*0*
Configuration			*TR*	*LT*		
Upstream Signal		*0*			*0*	

Minor Street	Eastbound			Westbound		
Movement	7	8	9	10	11	12
	L	T	R	L	T	R
Volume (veh/h)				*33*		*50*
Peak-Hour Factor, PHF	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Hourly Flow Rate, HFR (veh/h)	*33*	*208*	*0*	*0*	*366*	*50*
Percent Heavy Vehicles	*0*	*0*	*0*	*0*	*0*	*0*
Percent Grade (%)		*0*			*0*	
Flared Approach		*N*			*N*	
Storage		*0*			*0*	
RT Channelized			*0*			*0*
Lanes	*0*	*0*	*0*	*1*	*0*	*1*
Configuration				*L*		*R*

Delay, Queue Length, and Level of Service

Approach	Northbound	Southbound	Westbound			Eastbound		
Movement	1	4	7	8	9	10	11	12
Lane Configuration		*LT*	*L*		*R*			
v (veh/h)		*33*	*33*		*50*			
C (m) (veh/h)		*1154*	*416*		*662*			
v/c		*0.03*	*0.08*		*0.08*			
95% queue length		*0.09*	*0.26*		*0.24*			
Control Delay (s/veh)		*8.2*	*14.4*		*10.9*			
LOS		*A*	*B*		*B*			
Approach Delay (s/veh)	--	--	*12.3*					
Approach LOS	--	--	*B*					

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Appendix D

LOS Definitions

Signalized Intersection level of service (LOS) is defined in terms of the average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several factors, including driver discomfort, frustration, and lost travel time. LOS criteria are measured in terms of average delay per vehicle during a specified time period. The average delay of a vehicle is dependent on many variables including traffic volumes and signal cycle length. Table K-1 lists LOS criteria for signalized intersections, as described in the Highway Capacity Manual (Transportation Research Board, Special Report 209, 2000).

Table K-1 - Level of Service (LOS) Criteria for Signalized Intersections

Level of Service	Average Vehicle Delay (Seconds)	General Description
A	≤ 10	Free Flow
B	> 10 - 20	Stable flow (slight delays)
C	> 20 - 35	Stable flow (acceptable delays)
D	> 35 - 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before processing)
E	> 55 - 80	Unstable flow (intolerable delay)
F	> 80	Forced Flow

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way-stop-controlled and two-way-stop-controlled. All-way, stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all the movements, similar to a signalized intersection. Two-way stop-controlled intersection LOS is defined in terms of the average delay of an individual movement or movements. The performance of a two-way, stop-controlled intersection is directly related to individual movements, rather than overall performance. Table K-2 lists LOS criteria for unsignalized intersections (both all-way and two-way, stop controlled).

Table K-2 - Level of Service (LOS) Criteria for Unsignalized Intersections

Level of Service	Average Vehicle Delay (Seconds)
A	≤ 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

Appendix E

ITD Turn Lane Warrants

SECTION 450.00 – HIGHWAY APPROACHES

Each District will monitor right-of-way use on state highways within their respective Districts in conformance with the provisions of Department policy and applicable state and federal regulations. Access control on other transportation systems is the responsibility of the public highway agency having jurisdiction of that roadway.

Uncontrolled encroachments can nullify carefully planned safety and maintenance features; therefore, modifications of existing encroachments or any new encroachments must be covered by a permit. It is essential that those in the field (maintenance foreman, maintenance technician, etc.) control these encroachments. A permit to use the right-of-way must be completed and approved before installation of any encroachment begins.

Field personnel that have contact with those owning property adjoining the highway should be knowledgeable of the policies and procedures regarding encroachment permits and be willing to explain and assist those that plan changes or improvements.

The state policy controlling right-of-way encroachments is covered in Rule 39.03.42, "Rules Governing Use of Right-of-Way Encroachments on State Highway Rights-of-Way", Administrative Policy A-12-01 and the ITD documents "Access Management: Standards and Procedures for Highway Right of Way Encroachments" and "A Policy for the Accommodation of Utilities within the Right of Way of the State Highway System in the State of Idaho."

SECTION 451.00 – TURN LANES FOR NEW APPROACHES

451.01 Determining Needs. The need for turn lanes on State Highways shall be addressed during the Concept Review of any proposed new construction. All public-use approaches to the State Highway System, including private approaches to subdivisions and/or adjacent businesses, shall be reviewed for the need to provide turn lanes on the State highway.

Justification for each turn lane shall be supported by an engineering study approved by the Highway Operations and Safety Engineer that considers at least the following factors:

- Operating speed of the highway,
- Traffic volumes,
- Number of anticipated turning moves,
- Availability of passing opportunities,
- Sight distance, and
- Past collision history and/or potential for collisions.

Turn lanes shall not be constructed to enhance an existing roadside business, unless the applicant is willing to participate in the cost. However, when the safety of the traveling public is a significant factor, the participation requirement may be waived. If the engineering study does not support justification for a turn lane, the turn lane may not be approved even when requested by the applicant.

When the need for a turn lane is the result of a planned commercial development(s), and the requirements for a turn lane are met, the turn lane shall be paid for by the developer(s).

451.02 Left-Turn Lanes. The chart below provides warrants for a left-turn lane based on the portion of the current year design hourly volume (DHV) on the highway carried in a single lane, the peak-hour volume of vehicles turning left, and the posted speed. A left-turn lane is warranted when the single-lane portion of the DHV of the highway and the DHV of left turns intersect at a point on or above the curve for the posted speed. In most cases, left-turn lanes should be provided where there are more than 12 left turns per peak hour.

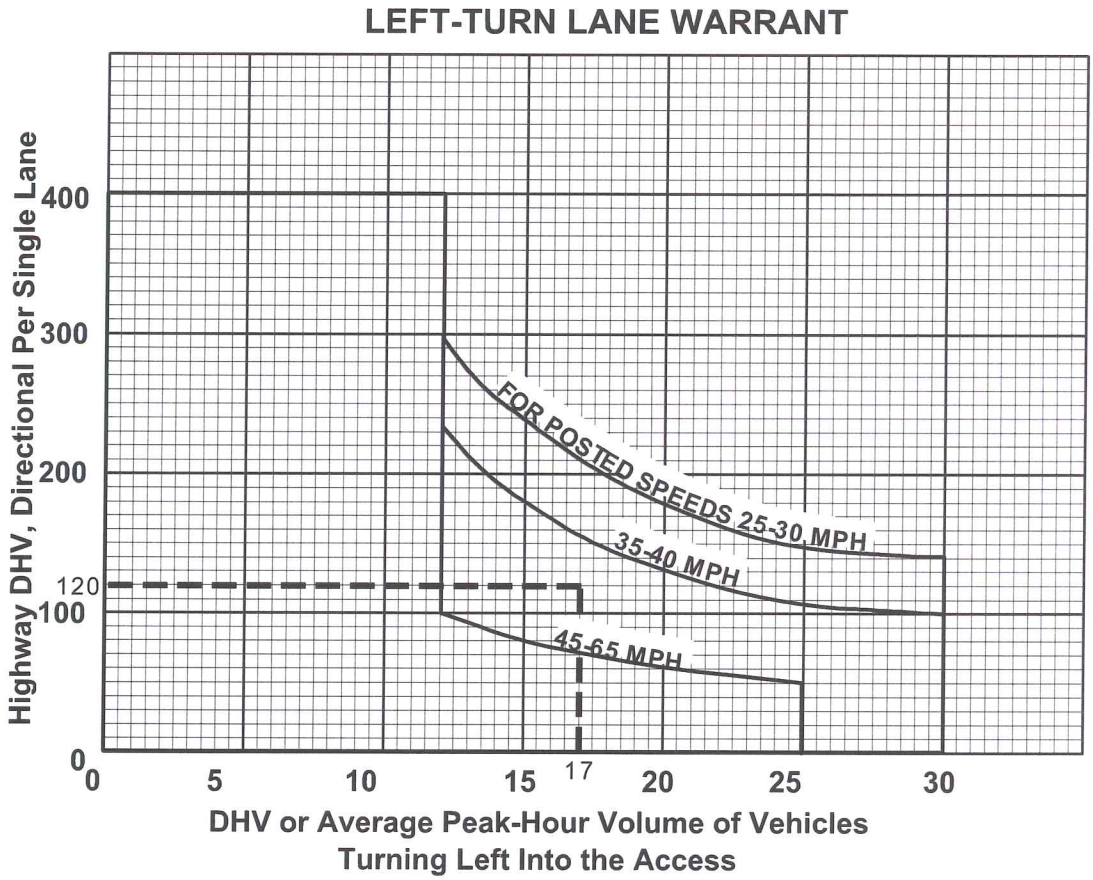
Where the DHV of the left turn into the access is more than 12 vph and the highway's inside lane volume exceeds 250 vph on 45 to 65 mph highways or 400 vph on 25 to 40 mph highways, a left-turn lane may be required due to the high traffic volumes or other unique site-specific safety considerations.

Left-turn lanes should also be considered if there have been four accidents per year at an existing approach, or if that number of accidents could be expected to occur as a result of a new approach without turn lanes.

The effect that a left-turn lane will have on restricting passing opportunities must be weighed against the safety benefit the left-turn lane may provide. On a highway section where passing opportunities are critical, the adverse effect that construction of a left-turn lane would have on the capacity of that roadway section may be more significant than the safety benefit from the left-turn lane. At T-intersections, a possible alternative to constructing a left-turn lane is to widen the right shoulder for an adequate distance on both sides of the intersection to permit through traffic to pass a left-turning vehicle on the right, thus making a no-passing zone unnecessary.

Example:

A highway with a posted speed of 55 mph has a current year DHV of 200 vehicles per hour and a directional distribution of 60/40. At an intersection the left-turning DHV is 17 vehicles per hour.



The highest single-lane DHV is 0.6 x 200 = 120 vph. Entering the left-turn warrant chart with 17 vph on the horizontal axis and 120 vph on the vertical axis gives a point of intersection above the 45-65 mph curve. A left-turn lane should be considered at this intersection after evaluation of all the above factors.

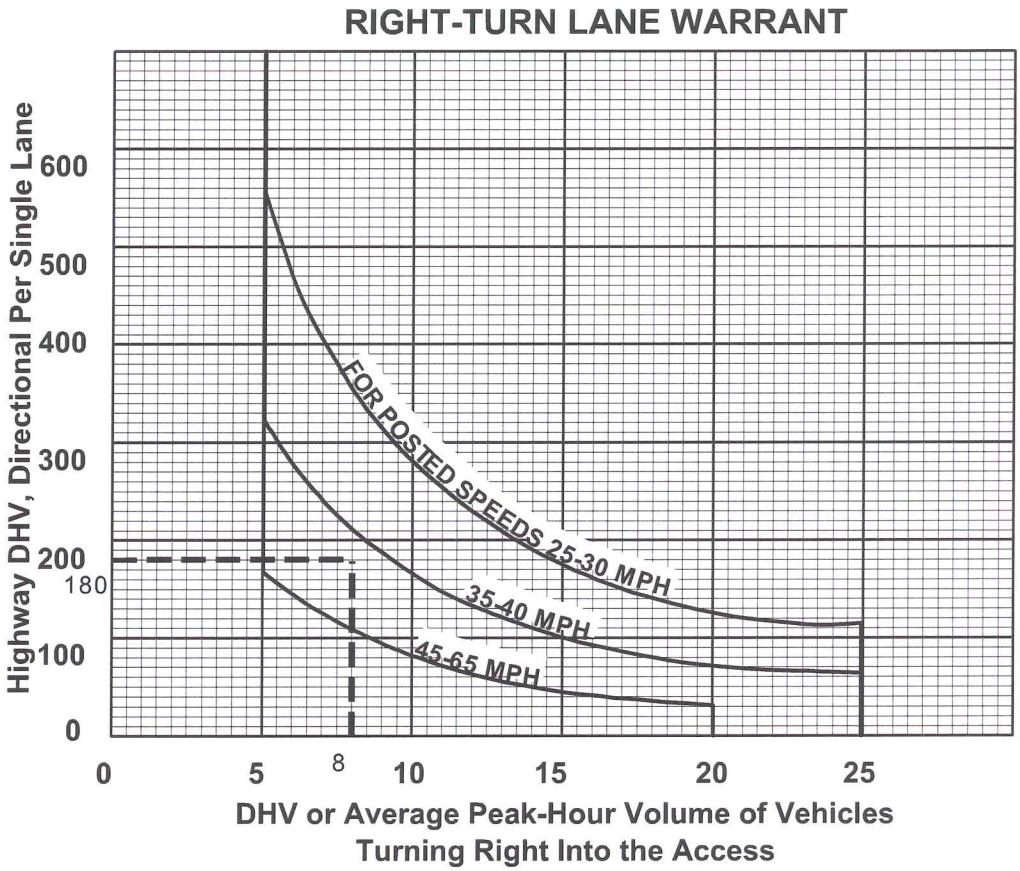
451.03 Right-Turn Lanes. The chart below provides warrants for a right- turn lane based on the current year design hourly volume on the highway, the peak-hour volume of vehicles turning right, and the posted speed. A right-turn lane is warranted when the single-lane portion of the DHV of the highway and the DHV of right turns intersect at a point on or above the curve for the posted speed.

Where the DHV of the right turn into the access is less than 5 vph and the highway's outside lane volume exceeds 250 vph on 45 to 65 mph highways or 450 vph on a 35 to 40 mph highway, or 600 vph on a 25 to 30 mph highway, a right-turn lane may be required due to the high traffic volumes or other unique site-specific safety considerations.

Where the existing shoulder is of adequate width, it may be possible to adjust the pavement markings to provide a sufficient right-turn lane without widening the road.

Example:

A highway with a posted speed of 40 mph has a current year DHV of 360 vehicles per hour and a directional distribution of 50/50. At an intersection the right-turning DHV is 8 vehicles per hour.



The single-lane DHV is 0.5 x 360 = 180 vph. Entering the right-turn warrant chart with 8 vph on the horizontal axis and 180 vph on the vertical axis gives a point of intersection below the 35-40 mph curve. A right-turn lane should not be considered at the intersection.

Appendix F

Traffic Signal Warrants

CHAPTER 4C. TRAFFIC CONTROL SIGNAL NEEDS STUDIES

Section 4C.01 Studies and Factors for Justifying Traffic Control Signals

Standard:

01 **An engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether installation of a traffic control signal is justified at a particular location.**

02 **The investigation of the need for a traffic control signal shall include an analysis of factors related to the existing operation and safety at the study location and the potential to improve these conditions, and the applicable factors contained in the following traffic signal warrants:**

Warrant 1, Eight-Hour Vehicular Volume
Warrant 2, Four-Hour Vehicular Volume
Warrant 3, Peak Hour
Warrant 4, Pedestrian Volume
Warrant 5, School Crossing
Warrant 6, Coordinated Signal System
Warrant 7, Crash Experience
Warrant 8, Roadway Network
Warrant 9, Intersection Near a Grade Crossing

03 **The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.**

Support:

04 Sections 8C.09 and 8C.10 contain information regarding the use of traffic control signals instead of gates and/or flashing-light signals at highway-rail grade crossings and highway-light rail transit grade crossings, respectively.

Guidance:

05 *A traffic control signal should not be installed unless one or more of the factors described in this Chapter are met.*

06 *A traffic control signal should not be installed unless an engineering study indicates that installing a traffic control signal will improve the overall safety and/or operation of the intersection.*

07 *A traffic control signal should not be installed if it will seriously disrupt progressive traffic flow.*

08 *The study should consider the effects of the right-turn vehicles from the minor-street approaches. Engineering judgment should be used to determine what, if any, portion of the right-turn traffic is subtracted from the minor-street traffic count when evaluating the count against the signal warrants listed in Paragraph 2.*

09 *Engineering judgment should also be used in applying various traffic signal warrants to cases where approaches consist of one lane plus one left-turn or right-turn lane. The site-specific traffic characteristics should dictate whether an approach is considered as one lane or two lanes. For example, for an approach with one lane for through and right-turning traffic plus a left-turn lane, if engineering judgment indicates that it should be considered a one-lane approach because the traffic using the left-turn lane is minor, the total traffic volume approaching the intersection should be applied against the signal warrants as a one-lane approach. The approach should be considered two lanes if approximately half of the traffic on the approach turns left and the left-turn lane is of sufficient length to accommodate all left-turn vehicles.*

10 *Similar engineering judgment and rationale should be applied to a street approach with one through/left-turn lane plus a right-turn lane. In this case, the degree of conflict of minor-street right-turn traffic with traffic on the major street should be considered. Thus, right-turn traffic should not be included in the minor-street volume if the movement enters the major street with minimal conflict. The approach should be evaluated as a one-lane approach with only the traffic volume in the through/left-turn lane considered.*

11 *At a location that is under development or construction and where it is not possible to obtain a traffic count that would represent future traffic conditions, hourly volumes should be estimated as part of an engineering study for comparison with traffic signal warrants. Except for locations where the engineering study uses the satisfaction of Warrant 8 to justify a signal, a traffic control signal installed under projected conditions should have an engineering study done within 1 year of putting the signal into stop-and-go operation to determine if the signal is justified. If not justified, the signal should be taken out of stop-and-go operation or removed.*

12 *For signal warrant analysis, a location with a wide median, even if the median width is greater than 30 feet, should be considered as one intersection.*

Option:

13 At an intersection with a high volume of left-turn traffic from the major street, the signal warrant analysis may be performed in a manner that considers the higher of the major-street left-turn volumes as the "minor-street" volume and the corresponding single direction of opposing traffic on the major street as the "major-street" volume.

14 For signal warrants requiring conditions to be present for a certain number of hours in order to be satisfied, any four sequential 15-minute periods may be considered as 1 hour if the separate 1-hour periods used in the warrant analysis do not overlap each other and both the major-street volume and the minor-street volume are for the same specific one-hour periods.

15 For signal warrant analysis, bicyclists may be counted as either vehicles or pedestrians.

Support:

16 When performing a signal warrant analysis, bicyclists riding in the street with other vehicular traffic are usually counted as vehicles and bicyclists who are clearly using pedestrian facilities are usually counted as pedestrians.

Option:

17 Engineering study data may include the following:

A. The number of vehicles entering the intersection in each hour from each approach during 12 hours of an average day. It is desirable that the hours selected contain the greatest percentage of the 24-hour traffic volume.
B. Vehicular volumes for each traffic movement from each approach, classified by vehicle type (heavy trucks, passenger cars and light trucks, public-transit vehicles, and, in some locations, bicycles), during each 15-minute period of the 2 hours in the morning and 2 hours in the afternoon during which total traffic entering the intersection is greatest.
C. Pedestrian volume counts on each crosswalk during the same periods as the vehicular counts in Item B and during hours of highest pedestrian volume. Where young, elderly, and/or persons with physical or visual disabilities need special consideration, the pedestrians and their crossing times may be classified by general observation.
D. Information about nearby facilities and activity centers that serve the young, elderly, and/or persons with disabilities, including requests from persons with disabilities for accessible crossing improvements at the location under study. These persons might not be adequately reflected in the pedestrian volume count if the absence of a signal restrains their mobility.
E. The posted or statutory speed limit or the 85th-percentile speed on the uncontrolled approaches to the location.
F. A condition diagram showing details of the physical layout, including such features as intersection geometrics, channelization, grades, sight-distance restrictions, transit stops and routes, parking conditions, pavement markings, roadway lighting, driveways, nearby railroad crossings, distance to nearest traffic control signals, utility poles and fixtures, and adjacent land use.
G. A collision diagram showing crash experience by type, location, direction of movement, severity, weather, time of day, date, and day of week for at least 1 year.

18 The following data, which are desirable for a more precise understanding of the operation of the intersection, may be obtained during the periods described in Item B of Paragraph 17:

A. Vehicle-hours of stopped time delay determined separately for each approach.
B. The number and distribution of acceptable gaps in vehicular traffic on the major street for entrance from the minor street.
C. The posted or statutory speed limit or the 85th-percentile speed on controlled approaches at a point near to the intersection but unaffected by the control.
D. Pedestrian delay time for at least two 30-minute peak pedestrian delay periods of an average weekday or like periods of a Saturday or Sunday.
E. Queue length on stop-controlled approaches.

Section 4C.02 Warrant 1, Eight-Hour Vehicular Volume

Support:

01 The Minimum Vehicular Volume, Condition A, is intended for application at locations where a large volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

02 The Interruption of Continuous Traffic, Condition B, is intended for application at locations where Condition A is not satisfied and where the traffic volume on a major street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict in entering or crossing the major street.

03 It is intended that Warrant 1 be treated as a single warrant. If Condition A is satisfied, then Warrant 1 is satisfied and analyses of Condition B and the combination of Conditions A and B are not needed. Similarly, if Condition B is satisfied, then Warrant 1 is satisfied and an analysis of the combination of Conditions A and B is not needed.

Standard:

04 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 100 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; or

B. The vehicles per hour given in both of the 100 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

In applying each condition the major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of these 8 hours.

Option:

05 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 70 percent columns in Table 4C-1 may be used in place of the 100 percent columns.

Guidance:

06 *The combination of Conditions A and B is intended for application at locations where Condition A is not satisfied and Condition B is not satisfied and should be applied only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems.*

Standard:

07 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following conditions exist for each of any 8 hours of an average day:**

A. The vehicles per hour given in both of the 80 percent columns of Condition A in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection; and

B. The vehicles per hour given in both of the 80 percent columns of Condition B in Table 4C-1 exist on the major-street and the higher-volume minor-street approaches, respectively, to the intersection.

These major-street and minor-street volumes shall be for the same 8 hours for each condition; however, the 8 hours satisfied in Condition A shall not be required to be the same 8 hours satisfied in Condition B. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

[a] Basic minimum hourly volume

[b] Used for combination of Conditions A and B after adequate trial of other remedial measures

[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Option:

08 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.03 Warrant 2, Four-Hour Vehicular Volume

Support:

01 The Four-Hour Vehicular Volume signal warrant conditions are intended to be applied where the volume of intersecting traffic is the principal reason to consider installing a traffic control signal.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that, for each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) all fall above the applicable curve in Figure 4C-1 for the existing combination of approach lanes. On the minor street, the higher volume shall not be required to be on the same approach during each of these 4 hours.**

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-2 may be used in place of Figure 4C-1.

Section 4C.04 Warrant 3, Peak Hour

Support:

01 The Peak Hour signal warrant is intended for use at a location where traffic conditions are such that for a minimum of 1 hour of an average day, the minor-street traffic suffers undue delay when entering or crossing the major street.

Standard:

02 **This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time.**

03 **The need for a traffic control signal shall be considered if an engineering study finds that the criteria in either of the following two categories are met:**

A. If all three of the following conditions exist for the same 1 hour (any four consecutive 15-minute periods) of an average day:

1. The total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equals or exceeds: 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach; and

2. The volume on the same minor-street approach (one direction only) equals or exceeds 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes; and

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with three approaches or 800 vehicles per hour for intersections with four or more approaches.

B. The plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the higher-volume minor-street approach (one direction only) for 1 hour (any four consecutive 15-minute periods) of an average day falls above the applicable curve in Figure 4C-3 for the existing combination of approach lanes.

Option:

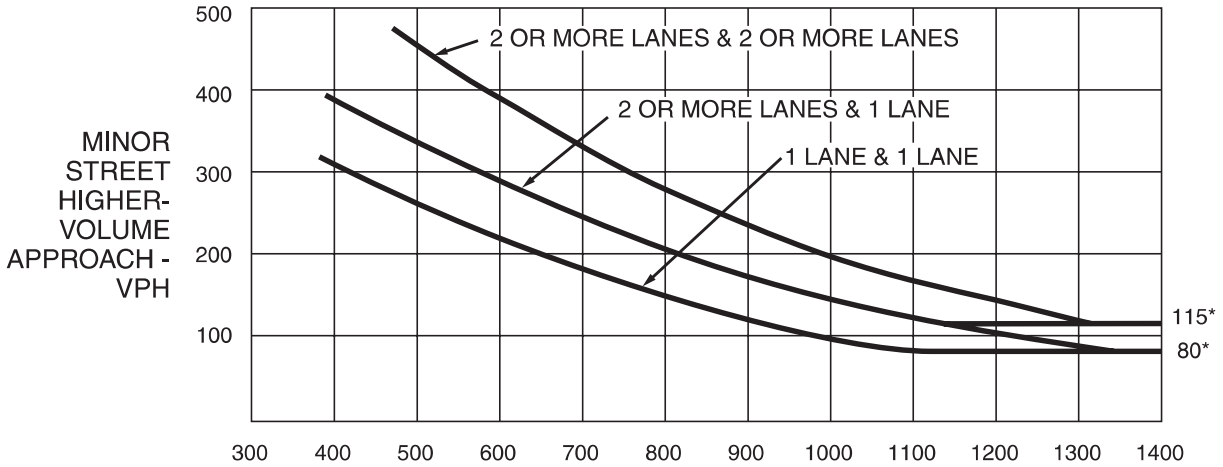
04 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-4 may be used in place of Figure 4C-3 to evaluate the criteria in the second category of the Standard.

05 If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal may be operated in the flashing mode during the hours that the volume criteria of this warrant are not met.

Guidance:

06 *If this warrant is the only warrant met and a traffic control signal is justified by an engineering study, the traffic control signal should be traffic-actuated.*

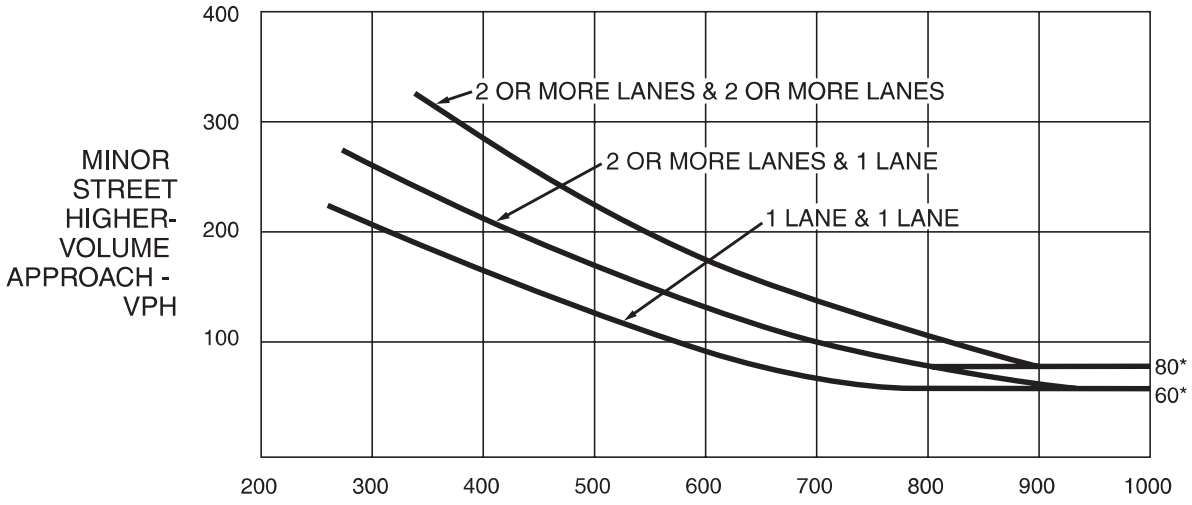
Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

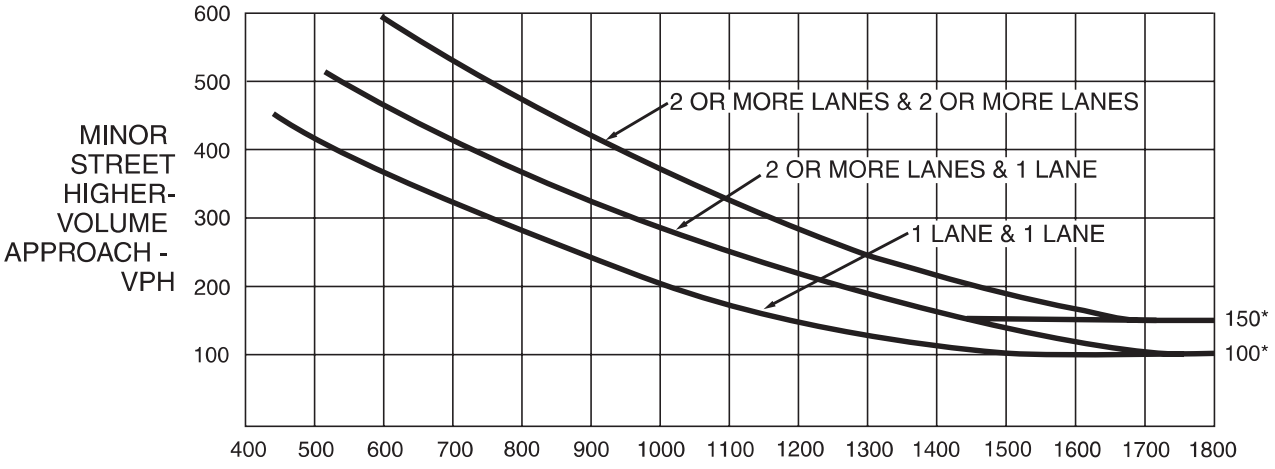
Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

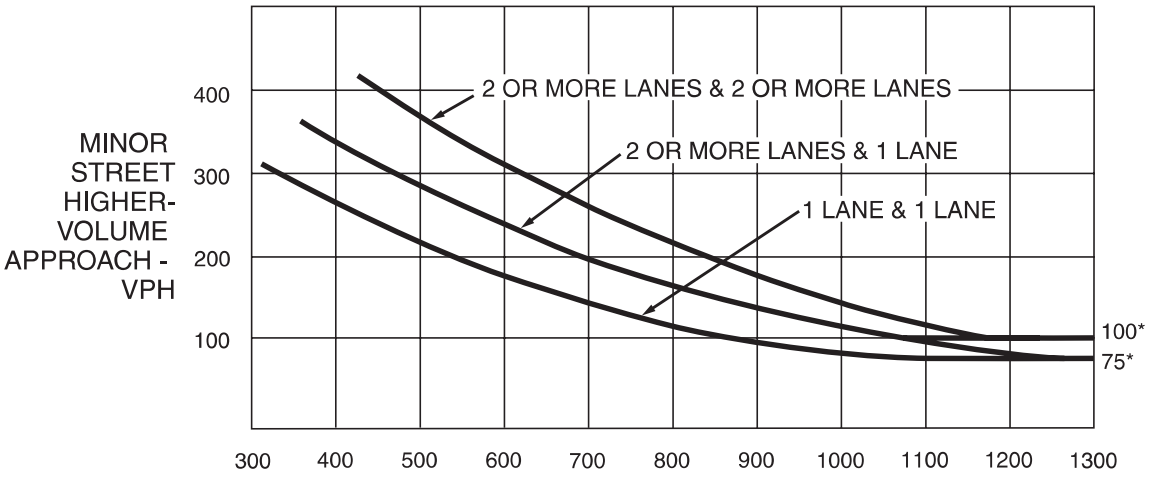
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Section 4C.05 Warrant 4, Pedestrian Volume

Support:

01 The Pedestrian Volume signal warrant is intended for application where the traffic volume on a major street is so heavy that pedestrians experience excessive delay in crossing the major street.

Standard:

02 **The need for a traffic control signal at an intersection or midblock crossing shall be considered if an engineering study finds that one of the following criteria is met:**

- **A. For each of any 4 hours of an average day, the plotted points representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) all fall above the curve in Figure 4C-5; or**
- **B. For 1 hour (any four consecutive 15-minute periods) of an average day, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding pedestrians per hour crossing the major street (total of all crossings) falls above the curve in Figure 4C-7.**

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 35 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, Figure 4C-6 may be used in place of Figure 4C-5 to evaluate Criterion A in Paragraph 2, and Figure 4C-8 may be used in place of Figure 4C-7 to evaluate Criterion B in Paragraph 2.

Standard:

04 **The Pedestrian Volume signal warrant shall not be applied at locations where the distance to the nearest traffic control signal or STOP sign controlling the street that pedestrians desire to cross is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

05 **If this warrant is met and a traffic control signal is justified by an engineering study, the traffic control signal shall be equipped with pedestrian signal heads complying with the provisions set forth in Chapter 4E.**

Guidance:

06 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*

- *A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.*
- *B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.*
- *C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.*

Option:

07 The criterion for the pedestrian volume crossing the major street may be reduced as much as 50 percent if the 15th-percentile crossing speed of pedestrians is less than 3.5 feet per second.

08 A traffic control signal may not be needed at the study location if adjacent coordinated traffic control signals consistently provide gaps of adequate length for pedestrians to cross the street.

Section 4C.06 Warrant 5, School Crossing

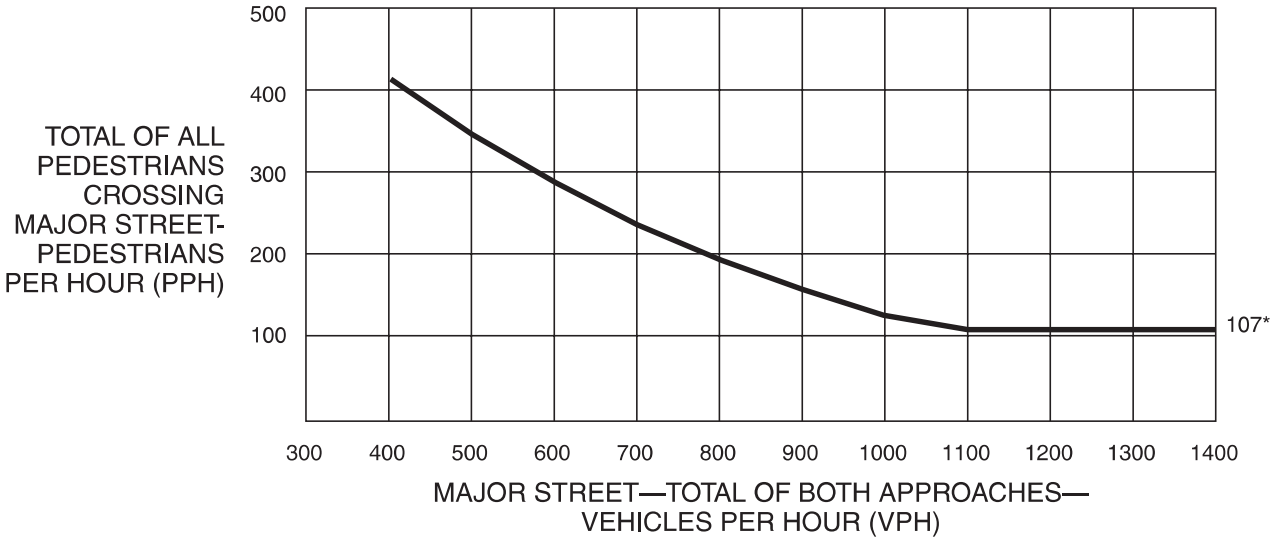
Support:

01 The School Crossing signal warrant is intended for application where the fact that schoolchildren cross the major street is the principal reason to consider installing a traffic control signal. For the purposes of this warrant, the word “schoolchildren” includes elementary through high school students.

Standard:

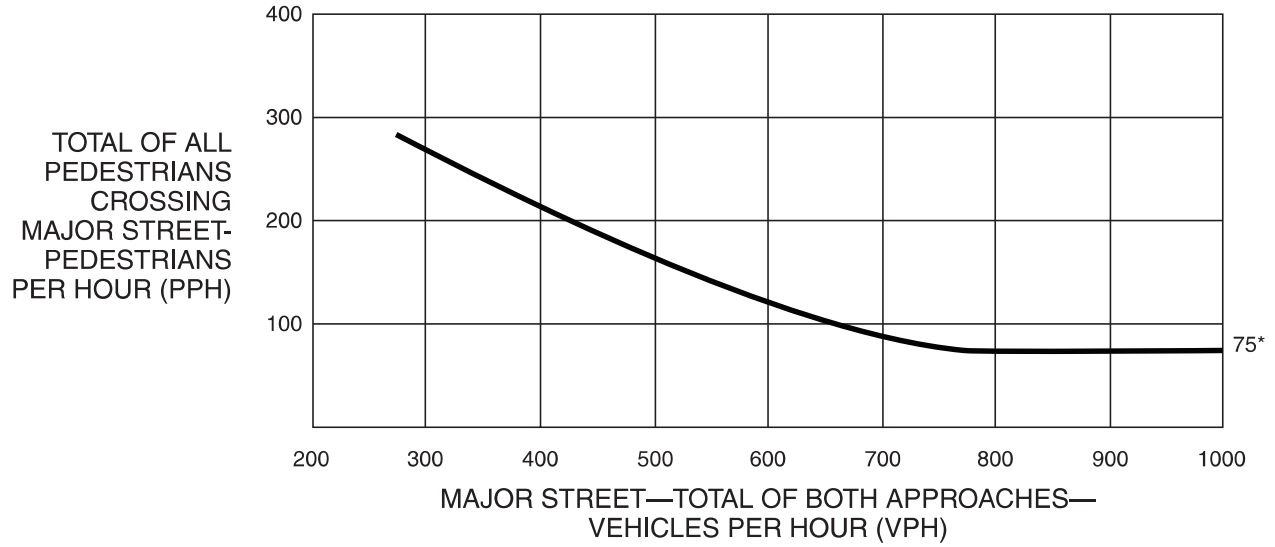
02 **The need for a traffic control signal shall be considered when an engineering study of the frequency and adequacy of gaps in the vehicular traffic stream as related to the number and size of groups of schoolchildren at an established school crossing across the major street shows that the number of adequate gaps in the traffic stream during the period when the schoolchildren are using the crossing is less than the number of minutes in the same period (see Section 7A.03) and there are a minimum of 20 schoolchildren during the highest crossing hour.**

Figure 4C-5. Warrant 4, Pedestrian Four-Hour Volume



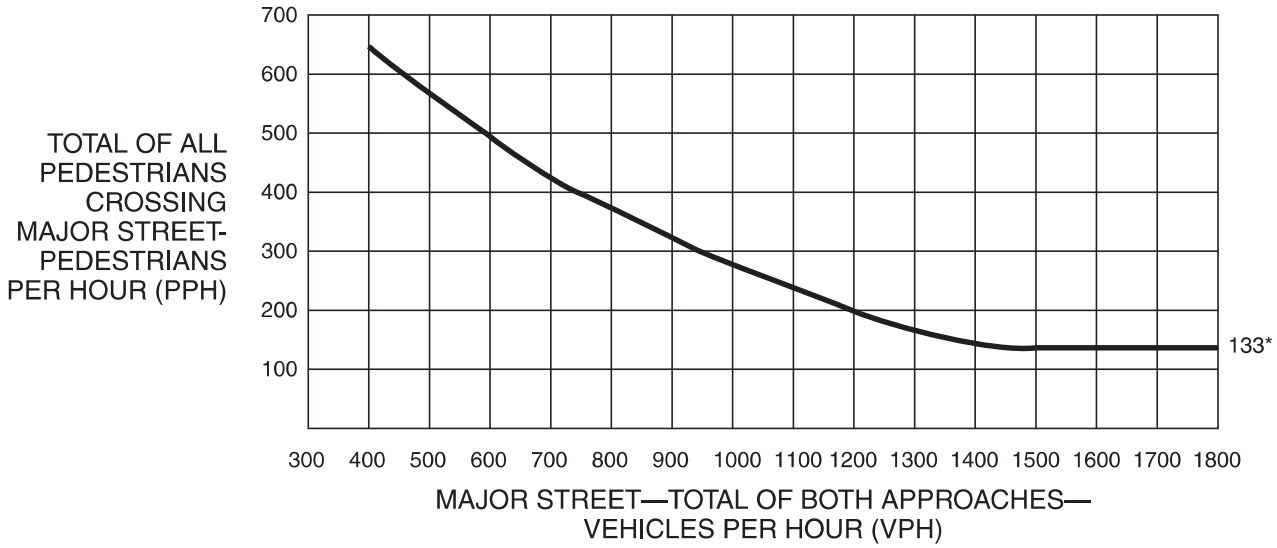
*Note: 107 pph applies as the lower threshold volume.

Figure 4C-6. Warrant 4, Pedestrian Four-Hour Volume (70% Factor)



*Note: 75 pph applies as the lower threshold volume.

Figure 4C-7. Warrant 4, Pedestrian Peak Hour



*Note: 133 pph applies as the lower threshold volume.

Figure 4C-8. Warrant 4, Pedestrian Peak Hour (70% Factor)

*Note: 93 pph applies as the lower threshold volume.

03 **Before a decision is made to install a traffic control signal, consideration shall be given to the implementation of other remedial measures, such as warning signs and flashers, school speed zones, school crossing guards, or a grade-separated crossing.**

04 **The School Crossing signal warrant shall not be applied at locations where the distance to the nearest traffic control signal along the major street is less than 300 feet, unless the proposed traffic control signal will not restrict the progressive movement of traffic.**

Guidance:

05 *If this warrant is met and a traffic control signal is justified by an engineering study, then:*

A. If it is installed at an intersection or major driveway location, the traffic control signal should also control the minor-street or driveway traffic, should be traffic-actuated, and should include pedestrian detection.

B. If it is installed at a non-intersection crossing, the traffic control signal should be installed at least 100 feet from side streets or driveways that are controlled by STOP or YIELD signs, and should be pedestrian-actuated. If the traffic control signal is installed at a non-intersection crossing, at least one of the signal faces should be over the traveled way for each approach, parking and other sight obstructions should be prohibited for at least 100 feet in advance of and at least 20 feet beyond the crosswalk or site accommodations should be made through curb extensions or other techniques to provide adequate sight distance, and the installation should include suitable standard signs and pavement markings.

C. Furthermore, if it is installed within a signal system, the traffic control signal should be coordinated.

Section 4C.07 Warrant 6, Coordinated Signal System

Support:

01 Progressive movement in a coordinated signal system sometimes necessitates installing traffic control signals at intersections where they would not otherwise be needed in order to maintain proper platooning of vehicles.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that one of the following criteria is met:**

A. On a one-way street or a street that has traffic predominantly in one direction, the adjacent traffic control signals are so far apart that they do not provide the necessary degree of vehicular platooning.

B. On a two-way street, adjacent traffic control signals do not provide the necessary degree of platooning and the proposed and adjacent traffic control signals will collectively provide a progressive operation.

Guidance:

03 *The Coordinated Signal System signal warrant should not be applied where the resultant spacing of traffic control signals would be less than 1,000 feet.*

Section 4C.08 Warrant 7, Crash Experience

Support:

01 The Crash Experience signal warrant conditions are intended for application where the severity and frequency of crashes are the principal reasons to consider installing a traffic control signal.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that all of the following criteria are met:**

A. Adequate trial of alternatives with satisfactory observance and enforcement has failed to reduce the crash frequency; and

B. Five or more reported crashes, of types susceptible to correction by a traffic control signal, have occurred within a 12-month period, each crash involving personal injury or property damage apparently exceeding the applicable requirements for a reportable crash; and

C. For each of any 8 hours of an average day, the vehicles per hour (vph) given in both of the 80 percent columns of Condition A in Table 4C-1 (see Section 4C.02), or the vph in both of the 80 percent columns of Condition B in Table 4C-1 exists on the major-street and the higher-volume minor-street approach, respectively, to the intersection, or the volume of pedestrian traffic is not less than 80 percent of the requirements specified in the Pedestrian Volume warrant. These major-street and minor-street volumes shall be for the same 8 hours. On the minor street, the higher volume shall not be required to be on the same approach during each of the 8 hours.

Option:

03 If the posted or statutory speed limit or the 85th-percentile speed on the major street exceeds 40 mph, or if the intersection lies within the built-up area of an isolated community having a population of less than 10,000, the traffic volumes in the 56 percent columns in Table 4C-1 may be used in place of the 80 percent columns.

Section 4C.09 Warrant 8, Roadway Network

Support:

01 Installing a traffic control signal at some intersections might be justified to encourage concentration and organization of traffic flow on a roadway network.

Standard:

02 **The need for a traffic control signal shall be considered if an engineering study finds that the common intersection of two or more major routes meets one or both of the following criteria:**

- **A. The intersection has a total existing, or immediately projected, entering volume of at least 1,000 vehicles per hour during the peak hour of a typical weekday and has 5-year projected traffic volumes, based on an engineering study, that meet one or more of Warrants 1, 2, and 3 during an average weekday; or**
- **B. The intersection has a total existing or immediately projected entering volume of at least 1,000 vehicles per hour for each of any 5 hours of a non-normal business day (Saturday or Sunday).**

03 **A major route as used in this signal warrant shall have at least one of the following characteristics:**

- **A. It is part of the street or highway system that serves as the principal roadway network for through traffic flow.**
- **B. It includes rural or suburban highways outside, entering, or traversing a city.**
- **C. It appears as a major route on an official plan, such as a major street plan in an urban area traffic and transportation study.**

Section 4C.10 Warrant 9, Intersection Near a Grade Crossing

Support:

01 The Intersection Near a Grade Crossing signal warrant is intended for use at a location where none of the conditions described in the other eight traffic signal warrants are met, but the proximity to the intersection of a grade crossing on an intersection approach controlled by a STOP or YIELD sign is the principal reason to consider installing a traffic control signal.

Guidance:

02 *This signal warrant should be applied only after adequate consideration has been given to other alternatives or after a trial of an alternative has failed to alleviate the safety concerns associated with the grade crossing. Among the alternatives that should be considered or tried are:*

- *A. Providing additional pavement that would enable vehicles to clear the track or that would provide space for an evasive maneuver, or*
- *B. Reassigning the stop controls at the intersection to make the approach across the track a non-stopping approach.*

Standard:

03 **The need for a traffic control signal shall be considered if an engineering study finds that both of the following criteria are met:**

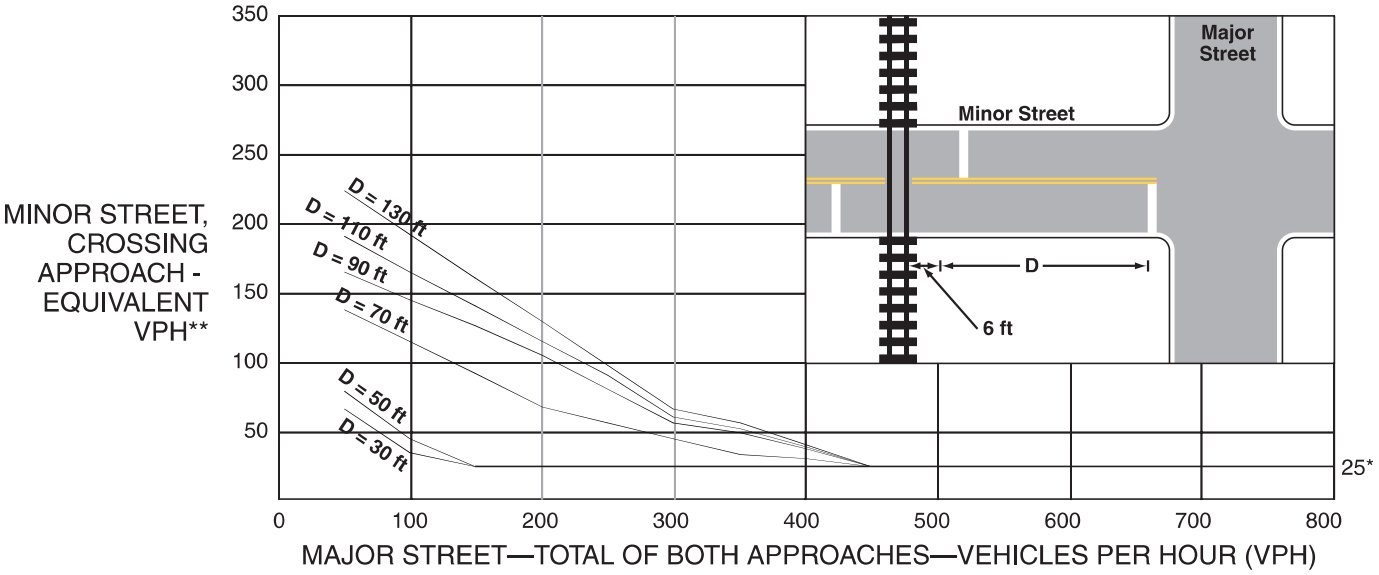
- **A. A grade crossing exists on an approach controlled by a STOP or YIELD sign and the center of the track nearest to the intersection is within 140 feet of the stop line or yield line on the approach; and**
- **B. During the highest traffic volume hour during which rail traffic uses the crossing, the plotted point representing the vehicles per hour on the major street (total of both approaches) and the corresponding vehicles per hour on the minor-street approach that crosses the track (one direction only, approaching the intersection) falls above the applicable curve in Figure 4C-9 or 4C-10 for the existing combination of approach lanes over the track and the distance D, which is the clear storage distance as defined in Section 1A.13.**

Guidance:

04 *The following considerations apply when plotting the traffic volume data on Figure 4C-9 or 4C-10:*

- *A. Figure 4C-9 should be used if there is only one lane approaching the intersection at the track crossing location and Figure 4C-10 should be used if there are two or more lanes approaching the intersection at the track crossing location.*

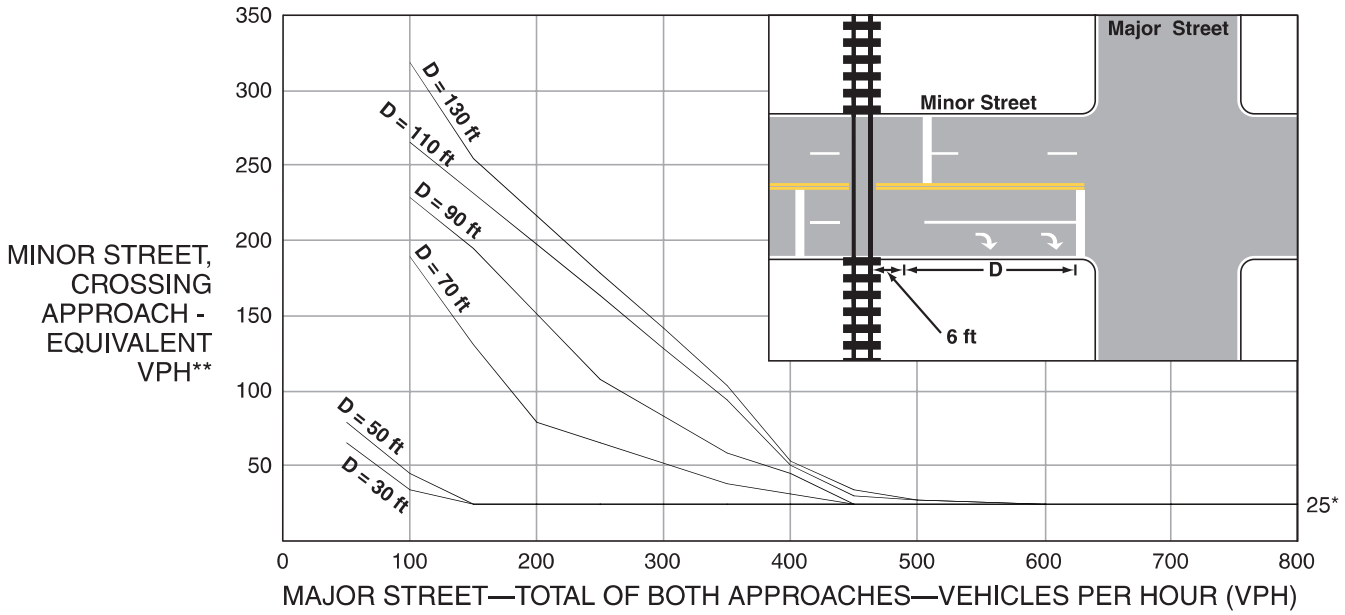
Figure 4C-9. Warrant 9, Intersection Near a Grade Crossing (One Approach Lane at the Track Crossing)



* 25 vph applies as the lower threshold volume

** VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

Figure 4C-10. Warrant 9, Intersection Near a Grade Crossing (Two or More Approach Lanes at the Track Crossing)



* 25 vph applies as the lower threshold volume

** VPH after applying the adjustment factors in Tables 4C-2, 4C-3, and/or 4C-4, if appropriate

B. After determining the actual distance D, the curve for the distance D that is nearest to the actual distance D should be used. For example, if the actual distance D is 95 feet, the plotted point should be compared to the curve for D = 90 feet.

C. If the rail traffic arrival times are unknown, the highest traffic volume hour of the day should be used.

Option:

05 The minor-street approach volume may be multiplied by up to three adjustment factors as provided in Paragraphs 6 through 8.

06 Because the curves are based on an average of four occurrences of rail traffic per day, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-2 for the appropriate number of occurrences of rail traffic per day.

07 Because the curves are based on typical vehicle occupancy, if at least 2% of the vehicles crossing the track are buses carrying at least 20 people, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-3 for the appropriate percentage of high-occupancy buses.

08 Because the curves are based on tractor-trailer trucks comprising 10% of the vehicles crossing the track, the vehicles per hour on the minor-street approach may be multiplied by the adjustment factor shown in Table 4C-4 for the appropriate distance and percentage of tractor-trailer trucks.

Standard:

09 **If this warrant is met and a traffic control signal at the intersection is justified by an engineering study, then:**

A. The traffic control signal shall have actuation on the minor street;

B. Preemption control shall be provided in accordance with Sections 4D.27, 8C.09, and 8C.10; and

C. The grade crossing shall have flashing-light signals (see Chapter 8C).

Guidance:

10 *If this warrant is met and a traffic control signal at the intersection is justified by an engineering study, the grade crossing should have automatic gates (see Chapter 8C).*

Table 4C-2. Warrant 9, Adjustment Factor for Daily Frequency of Rail Traffic

Rail Traffic per Day	Adjustment Factor
1	0.67
2	0.91
3 to 5	1.00
6 to 8	1.18
9 to 11	1.25
12 or more	1.33

Table 4C-3. Warrant 9, Adjustment Factor for Percentage of High-Occupancy Buses

% of High-Occupancy Buses* on Minor-Street Approach	Adjustment Factor
0%	1.00
2%	1.09
4%	1.19
6% or more	1.32

* A high-occupancy bus is defined as a bus occupied by at least 20 people.

Table 4C-4. Warrant 9, Adjustment Factor for Percentage of Tractor-Trailer Trucks

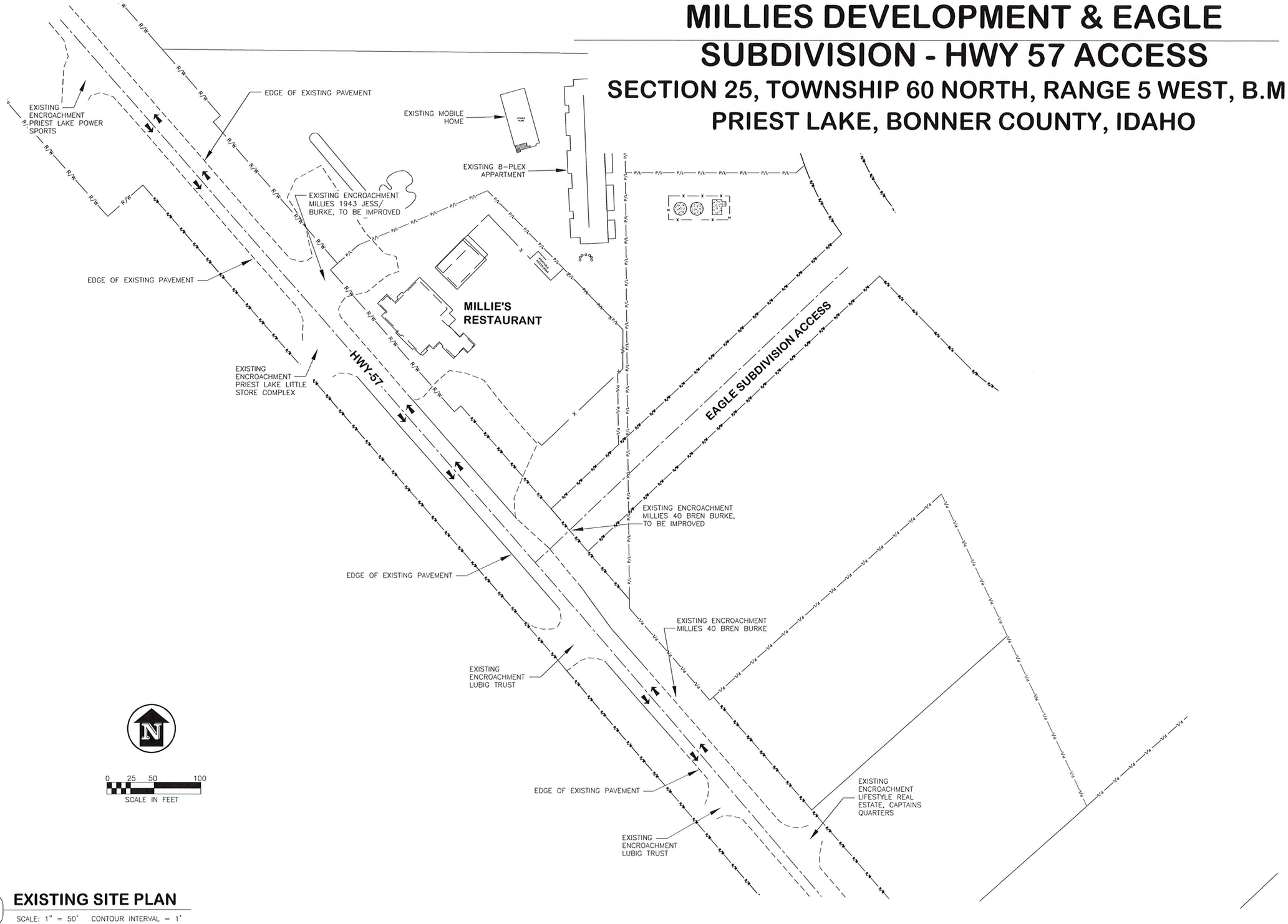
% of Tractor-Trailer Trucks on Minor-Street Approach	Adjustment Factor	
	D less than 70 feet	D of 70 feet or more
0% to 2.5%	0.50	0.50
2.6% to 7.5%	0.75	0.75
7.6% to 12.5%	1.00	1.00
12.6% to 17.5%	2.30	1.15
17.6% to 22.5%	2.70	1.35
22.6% to 27.5%	3.28	1.64
More than 27.5%	4.18	2.09

Appendix G

Traffic Revision Concept Drawing

MILLIES DEVELOPMENT & EAGLE SUBDIVISION - HWY 57 ACCESS

SECTION 25, TOWNSHIP 60 NORTH, RANGE 5 WEST, B.M., PRIEST LAKE, BONNER COUNTY, IDAHO



4.1 **EXISTING SITE PLAN**

SCALE: 1" = 50' CONTOUR INTERVAL = 1'

PROFESSIONAL ENGINEER LICENSED 14... STATE OF IDAHO KEVIN KOESEL 10-18-22

ENGINEER'S STAMP

No.	DATE	REVISION	DRN/CHK'D

James A. Sewell and Associates, LLC
CONSULTING ENGINEERS
NEWPORT, WASHINGTON, 99156
(509) 447-3626

SHEET TITLE: EXISTING PLAN
TRAFFIC IMPACT SUBMITTAL TO ITD

PROJECT: MILLIES DEVELOPMENT - EAGLE SUBDIVISION
HIGHWAY-57 ACCESS, PRIEST RIVER, ID 83856
BONNER COUNTY, ID

DATE:	10-18-22
SCALE:	AS SHOWN
DRAWN BY:	KAK
CHECKED BY:	KAK
FILE NAME.:	HIGHWAY 57 INT
DATA No.:	13420-20-001

CENTER TURN BAY LANE WIDTH = 12-FEET
TAPER RATIO = 10:1
RIGHT TURN LANE WIDTH = 12-FEET
BYPASS LANE WIDTH = 12-FEET
HIGHWAY SHOULDER WIDTH = 4-FEET

FUTURE 4-PLEX RESIDENTIAL DEVELOPMENT
EXISTING 8-PLEX STRUCTURE
FUTURE 4-PLEX RESIDENTIAL DEVELOPMENT
FUTURE 8-PLEX RESIDENTIAL DEVELOPMENT
EXISTING ENCROACHMENT PRIEST LAKE POWER SPORTS
EXISTING ENCROACHMENT MILLIES 1943 JESS/ BURKE, TO BE IMPROVED
MILLIE'S RESTAURANT
EAGLE SUBDIVISION ACCESS
EXISTING ENCROACHMENT PRIEST LAKE LITTLE STORE COMPLEX
HWY-57
EXISTING ENCROACHMENT MILLIES 40 BREN BURKE, TO BE IMPROVED
EXISTING ENCROACHMENT MILLIES 40 BREN BURKE
EXISTING ENCROACHMENT LUBIG TRUST
EXISTING ENCROACHMENT LIFESTYLE REAL ESTATE, CAPTAINS QUARTERS
EXISTING ENCROACHMENT LUBIG TRUST

0 25 50 100
SCALE IN FEET

4.1 **PROPOSED SITE PLAN**
SCALE: 1" = 50' CONTOUR INTERVAL = 1'

PROFESSIONAL ENGINEER LICENSED STATE OF IDAHO KEVIN KOESEL
10-18-22
ENGINEER'S STAMP

No.	DATE	REVISION	DRN/CHK'D

James A. Sewell and Associates, LLC
CONSULTING ENGINEERS
NEWPORT, WASHINGTON, 99156
(509) 447-3626

SHEET TITLE: PROPOSED HIGHWAY 57 ACCESS CONCEPT TRAFFIC IMPACT SUBMITTAL TO ITD
PROJECT: MILLIES RESTAURANT & EAGLE SUBDIVISION HIGHWAY-57 ACCESS, PRIEST RIVER, ID 83856 BONNER COUNTY, ID

DATE:	10-18-22
SCALE:	AS SHOWN
DRAWN BY:	KAK
CHECKED BY:	KAK
FILE NAME.:	HIGHWAY 57 INT
DATA No.:	13420-20-001

SHEET 2 OF 2

IDAHO TRANSPORTATION DEPARTMENT
600 W. Prairie Ave.
Coeur d'Alene, ID 83815-8764

(208) 772-1200
itd.idaho.gov

October 24, 2023

Kevin Koesel obo Todd Burke
Attn: Kevin Koesel
600 4th St West
Newport, WA 99156
kkoesel@jasewell.com

RE: PERMIT 1-23-120
SH-57, MP 28.430 40' Commercial Approach for Millie's restaurant, replaces 1-19-214.

Dear Kevin Koesel,

Enclosed is a right-of-way encroachment permit for the above referenced location. All contents including this letter and any special provisions that accompany the permit become part of the approved permit.

A copy of this permit **must** be with the person at which time work is being done inside the right-of-way. Contact ITD maintenance foreman, Jamie Miller, for inspection both 2 weeks prior to your work and at the conclusion. Jamie can be reached at (208) 699-2356. Failure to contact the maintenance foreman will result in voidance of the permit. Please review the Code of Federal Regulations safety clothing requirements for working in the right of way (Exhibit A) and also General Provisions on the second page of the ITD 2110.

Special provisions are as follows:

- *Permittee shall use appropriate Best Management Practices to control erosion and reseed disturbed ground*
- *MUTCD traffic control shall be in place before work begins and removed from the roadway at the end of every shift. When no work is taking place, traffic control devices shall be removed.*
- *Traffic control devices and operations will be prohibited on all paved surfaces in the event of snow and/or ice storms.*
- *Must comply with ITD Standard for culvert, paving, and use. See attached pages for specs.*
- *This permit is only approved for the uses specified in the attached documentation. Any future commercial, industrial or residential developments, or divisions of land will require a new permit and could trigger the need for a traffic impact study for improvements to the highway; ie. Turn lanes. Any future changes in use of the access approved in this permit requires a review by ITD and the existing permit is subject to become VOID.*
- *Permittee shall have written permission from parcel owners RP60N05W255530A and RP60N05W255631A to remove and regrade approaches per sheet R3 and R4. Parcel owners must have full knowledge of and approve of the date and duration of construction.*
- *Yellow laminated permit must be posted visibly at the job site.*

Buried utility facilities owned by the State could be located within the project limits and may or may not be shown on the project plans. State owned utility facilities include but are not limited to traffic signals, illumination, traffic recording sites, weather monitoring sites, video detection systems, and electronic message signs. The contractor is to request locates of buried utility facilities owned by the State by contacting the District Traffic Signal Foreman at (208) 772-1299.

If the permitted work is not completed within one (1) year of issuance of permit, the permit shall be considered void. Once work begins, it must be completed within 30 days. At the discretion of the District Engineer, a one-time extension, not to exceed six (6) months, may be granted if a written request is received from the permittee prior to the expiration date.

If you have any questions pertaining to the permit, please contact me at symone.legg@itd.idaho.gov or (208) 772-8073.

Sincerely,

Symone Legg

Permit Coordinator
District 1 Traffic

cc: DTE/file
MTNCE/Miller

Permit Approval Exhibit A

Idaho Statute Title 55, Chapter 22, Section 55-2201 through 55-2210 requires that if excavation is involved, the applicant must notify the One-Call Service by calling 8-1-1 at least two business days and not more than 10 business days before the start of excavation. Please go to http://www.digline.com/index.php for more information.

Construction traffic control devices shall be crashworthy and meet the requirements of NCHRP-350 as follows:

Category 1 Work Zone Safety Devices; including cones, drums, tubular markers, and delineators shall meet the requirements.

Category 2 Work Zone Safety Devices; including barricades, portable sign stands with signs, vertical panels, Category 1 devices with auxiliary lights and/or signs, and devices under 100 lbs (45 kg) shall meet the requirements.

Category 3 Work Zone Safety Devices; including portable signs with hard (plywood, aluminum) substrate, temporary portable concrete barrier, and all devices exceeding 100 lbs (45 kg) and/or "expected to cause significant occupant velocity change" shall meet the NCHRP-350 requirements with the following exception:

Crash Cushions and Truck Mounted Attenuators shall meet NCHRP-350 requirements if purchased AFTER October 1, 1998. All crash cushions and truck mounted attenuators purchased PRIOR to October 1, 1998 may continue to be used until they complete their normal service life if they meet NCHRP-230 requirements.

Category 4 Work Zone Safety Devices; including portable changeable message signs, arrow panels, and other trailer mounted devices may be used without attenuation. These devices may be placed behind crashworthy barriers or shielded with TMA's or crash cushions providing the attenuation does not impair their functionality or create a hazardous condition

The permittee shall submit proof of compliance with NCHRP-350 requirements upon request from an Idaho Transportation Department representative.

MUTCD Section 6E.02 High-Visibility Safety Apparel Standard:

For daytime and nighttime activity, flaggers shall wear safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 2 risk exposure. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined in the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.

For nighttime activity, safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 3 risk exposure should be considered for flagger wear (instead of the Class 2 safety apparel in the Standard above).

IDAHO TRANSPORTATION DEPARTMENT
600 W. Prairie Ave.
Coeur d'Alene, ID 83815-8764

(208) 772-1200
itd.idaho.gov

October 24, 2023

Kevin Koesel obo Todd Burke
Attn: Kevin Koesel
600 4th St West
Newport, WA 99156
kkoesel@jasewell.com

RE: PERMIT 1-23-121
SH-57, MP 28.470 40' Commercial Approach for subdivision for 32 apartment units and 59 SFRs

Dear Kevin Koesel,

Enclosed is a right-of-way encroachment permit for the above referenced location. All contents including this letter and any special provisions that accompany the permit become part of the approved permit.

A copy of this permit **must** be with the person at which time work is being done inside the right-of-way. Contact ITD maintenance foreman, Jamie Miller, for inspection both 2 weeks prior to your work and at the conclusion. Jamie can be reached at (208) 699-2356. Failure to contact the maintenance foreman will result in voidance of the permit. Please review the Code of Federal Regulations safety clothing requirements for working in the right of way (Exhibit A) and also General Provisions on the second page of the ITD 2110.

Special provisions are as follows:

- *Permittee shall use appropriate Best Management Practices to control erosion and reseed disturbed ground*
- *MUTCD traffic control shall be in place before work begins and removed from the roadway at the end of every shift. When no work is taking place, traffic control devices shall be removed.*
- *Traffic control devices and operations will be prohibited on all paved surfaces in the event of snow and/or ice storms.*
- *Must comply with ITD Standard for culvert, paving, and use. See attached pages for specs.*
- *This permit is only approved for the uses specified in the attached documentation. Any future commercial, industrial or residential developments, or divisions of land will require a new permit and could trigger the need for a traffic impact study for improvements to the highway; ie. Turn lanes. Any future changes in use of the access approved in this permit requires a review by ITD and the existing permit is subject to become VOID.*
- *Permittee shall have written permission from parcel owners RP60N05W255530A and RP60N05W255631A to remove and regrade approaches per sheet R3 and R4. Parcel owners must have full knowledge of and approve of the date and duration of construction.*
- *Yellow laminated permit must be posted visibly at the job site.*

Buried utility facilities owned by the State could be located within the project limits and may or may not be shown on the project plans. State owned utility facilities include but are not limited to traffic signals, illumination, traffic recording sites, weather monitoring sites, video detection systems, and electronic message signs. The contractor is to request locates of buried utility facilities owned by the State by contacting the District Traffic Signal Foreman at (208) 772-1299.

If the permitted work is not completed within one (1) year of issuance of permit, the permit shall be considered void. Once work begins, it must be completed within 30 days. At the discretion of the District Engineer, a one-time extension, not to exceed six (6) months, may be granted if a written request is received from the permittee prior to the expiration date.

If you have any questions pertaining to the permit, please contact me at symone.legg@itd.idaho.gov or (208) 772-8073.

Sincerely,

Symone Legg

Permit Coordinator
District 1 Traffic

cc: DTE/file
MTNCE/Miller

Permit Approval Exhibit A

Idaho Statute Title 55, Chapter 22, Section 55-2201 through 55-2210 requires that if excavation is involved, the applicant must notify the One-Call Service by calling 8-1-1 at least two business days and not more than 10 business days before the start of excavation. Please go to http://www.digline.com/index.php for more information.

Construction traffic control devices shall be crashworthy and meet the requirements of NCHRP-350 as follows:

Category 1 Work Zone Safety Devices; including cones, drums, tubular markers, and delineators shall meet the requirements.

Category 2 Work Zone Safety Devices; including barricades, portable sign stands with signs, vertical panels, Category 1 devices with auxiliary lights and/or signs, and devices under 100 lbs (45 kg) shall meet the requirements.

Category 3 Work Zone Safety Devices; including portable signs with hard (plywood, aluminum) substrate, temporary portable concrete barrier, and all devices exceeding 100 lbs (45 kg) and/or "expected to cause significant occupant velocity change" shall meet the NCHRP-350 requirements with the following exception:

Crash Cushions and Truck Mounted Attenuators shall meet NCHRP-350 requirements if purchased AFTER October 1, 1998. All crash cushions and truck mounted attenuators purchased PRIOR to October 1, 1998 may continue to be used until they complete their normal service life if they meet NCHRP-230 requirements.

Category 4 Work Zone Safety Devices; including portable changeable message signs, arrow panels, and other trailer mounted devices may be used without attenuation. These devices may be placed behind crashworthy barriers or shielded with TMA's or crash cushions providing the attenuation does not impair their functionality or create a hazardous condition

The permittee shall submit proof of compliance with NCHRP-350 requirements upon request from an Idaho Transportation Department representative.

MUTCD Section 6E.02 High-Visibility Safety Apparel Standard:

For daytime and nighttime activity, flaggers shall wear safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 2 risk exposure. The apparel background (outer) material color shall be either fluorescent orange-red or fluorescent yellow-green as defined in the standard. The retroreflective material shall be orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 300 m (1,000 ft). The retroreflective safety apparel shall be designed to clearly identify the wearer as a person.

For nighttime activity, safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel" (see Section 1A.11) and labeled as meeting the ANSI 107-1999 standard performance for Class 3 risk exposure should be considered for flagger wear (instead of the Class 2 safety apparel in the Standard above).