

March 14, 2016
#01472

Mr. Rick Martin
VP of Construction and Real Estate
St. Charles Health System, Inc.
2500 NE Neff Rd.
Bend, OR 97701

re: TPR Assessment FOR ST. CHARLES MEDICAL CLINIC- LA PINE, OR

INTRODUCTION

The purpose of this letter-report is to present an assessment of a proposed comprehensive plan map change in the City of La Pine. The Transportation Planning Rule (TPR) requires an assessment of potential impacts to the transportation system when such changes are made to the comprehensive plan map or to the underlying zoning.

The 5.6 acre site, as shown in Figure 1, is currently designated as PF (Public Facilities) in the comprehensive plan and the current zoning is F (Forest). The plan is to change the plan-map designation to CMX in an initial process. This will be followed by a change in the zoning to match the CMX designation.

This letter-report presents:

1. Land use assumptions for the zone change. It includes an estimate of building sizes as well as a forecast of the highest trip-generation with outright permitted land uses for the existing zoning (PF, Public Facilities) and for the proposed zoning (CMX, Mixed-use Commercial).
2. An assessment of traffic impacts with the proposed zone change.
3. An assessment of whether the proposed change complies with the TPR.

It is of note, that while the current zoning is F (Forest), the land uses permitted under F (Forest) and those permitted under PF (Public Facilities) are identical. As such, the impact of changing from an F zone to a CMX zone would be identical to the changes from a PF zone to a CMX zone. As such, this study would be adequate to address both the proposed change in the comprehensive plan map (FP to CMX) as well as the change in zoning (F to CMX).

Finally, the study assumes that a portion of the site would be developed as a medical clinic by St. Charles. This building would be up to 11,500 square feet.

OUTRIGHT PERMITTED USES

Accepted guidance for a TPR assessment is that the change in plan designation (or zone change) must consider the difference in impacts between scenarios using a reasonable worst-case scenario with outright permitted land uses. Outright-permitted uses in the PF Zone and the CMX Zone are summarized in Table 1.

TABLE 1 -- OUTRIGHT PERMITTED USES IN CMX AND PF ZONES

OUTRIGHT PERMITTED USES IN PF ZONE	OUTRIGHT PERMITTED USES IN CMX ZONE
All I zone principal uses*	All uses in the RSF**, RMF**, and RMP*** zones
Public utilities, facilities, and structures that do not contain point of service offices open to the general public	Retail sales and/or product service, including show rooms
Wildfire interface and wildfire prevention activities	Personal & health service establishments
Energy production facilities that do not contain point of service offices open to the general public	Eating and drink establishments
Forestry activities, including but not limited to timber harvesting	Business, professional &, government offices including business parks
*Industrial establishments for assembly, fabrication, manufacturing, processing, packing & bottling;	Passenger transportation terminals Parking lots and structures
*Industrial research & development, computer sciences, software, and other related establishments	Motels and hotels
*Call Centers	Clubs, lodges & fraternal organizations
*Wholesale and warehousing; Storage and distribution facilities	Commercial recreation and amusement
*Sawmills	Funeral homes
*Agricultural processing establishments	Veterinary clinic
*Truck transportation and loading terminals	Government buildings & services
*Personal storage units	Forestry activities, including but not limited to timber harvesting
*Government buildings & services	Essential services
*Power and/or Energy generation facilities	**Single-family & multi-family dwellings; Mobile home parks; Public, non-commercial parks & recreation; Public & private schools; Bed & breakfast establishments
	*** Retail sales and/or product service Establishments; Commercial recreation Day care centers & nursing homes; Trails and pathways

SELECTION OF LAND USE CATEGORIES AND TRIP GENERATION RATES

The highest generating land uses within the PF zone would be uses such as government office buildings and call centers. Government office buildings include high generating uses such as post offices, State Motor Vehicle Departments, and government office complexes. The ITE trip rates for these uses are shown in Table 2. These land uses and trip rates were considered for the Existing Zoning Scenario.

TABLE 2 -- TRIP GENERATION RATES FOR HIGH GENERATING PF LAND USES

ITE Land Use & Code	Ind. variable	Trip Ends Rate (trips per t.s.f)		In/Out Split (percent)		Passby Percent
		PM Peak Hour	Daily	PM Peak Hour	Daily	
		State Motor Vehicles Dept. 731	t.s.f.	17.09	166.02	
US Post Office 732	t.s.f.	11.22	108.19	51/49	50/50	0%
Gov. Office Complex 733	t.s.f.	2.85	27.92	31/69	50/50	0%

The highest generating land uses for the proposed CMX zone would be uses such as fast-food restaurants, gas stations, convenience stores, and drive-in banks. The ITE trip generation rates for these uses, along with the proposed medical clinic, are shown in Table 3.

TABLE 3 -- TRIP GENERATION RATES FOR HIGH GENERATING CMX LAND USES

ITE Land Use & Code	Ind. variable	Trip Ends Rate (trips per t.s.f)		In/Out Split (percent)		Passby Percent
		PM Peak Hour	Daily	PM Peak Hour	Daily	
		Medical Dental Office 720	t.s.f.	3.57	36.13	
Fast Food with Drive Thru 934	t.s.f.	32.65	496.12	52/48	50/50	50%
Drive-in Bank 912	t.s.f.	24.30	148.15	50/50	50/50	47%
Convenience. Mkt. (Open 24 hrs) 851	t.s.f.	52.41	737.99	51/49	50/50	61%
Gasoline/Service Station 944	Fuel. Position	13.87	168.56	50/50	50/50	42%
High Turnover/Sit Down Rest 932	t.s.f.	9.85	127.15	60/40	50/50	43%

LAND USE INTENSITY

The Floor Area Ratio (FAR) is the ratio of the floor area of buildings in a development to the total size of the lot, including parking and other open space. For the purposes of this report, uses such as offices, clinics and government buildings were assumed to be single story buildings with a FAR in

the vicinity of 0.30. The medical clinic was assumed to have a slightly smaller FAR. Retail was also assumed to be single story buildings but the FAR was assumed to be in the vicinity of 0.20, or a bit lower (0.15) for fast-food restaurants. Gas stations and fast food restaurants were based on the typical lot size for these types of developments.

To calculate the amount of developable land in the 5.6 acre site, it was assumed that 20 percent of the land would be consumed by streets, easements or other non-developable uses such as swales. Thus, the amount of developable land for the five acre site would be 4.48 acres. With a FAR of 0.3, buildings on the fully developed site would occupy 58,545 square feet. For the purpose of this report, the size was rounded to 59,000 square feet. Based on these guidelines, a land use scenario for the existing PF zoning was developed, as shown in Table 4, which includes a mix of uses from Table 2.

TABLE 4 -- LAND USE ASSUMPTIONS FOR MAXIMUM TRIP GENERATION SCENARIO FOR PF ZONING

LAND USE (ITE LAND USE CODE)	SIZE (T.S.F.)*
State Motor Vehicles Dept. 731	25
US Post Office 732	14
Gov. Office Complex 733	20
TOTAL	59

* t.s.f. - thousands of square feet

For the CMX zone, it was assumed that proposed medical clinic would be up to 11,500 square feet and that one (1) acre would be used for this development, with a resulting FAR of 0.26. The remaining land was assumed to be a mix of uses shown in Table 3, resulting in the assumed building sizes shown in Table 5.

TABLE 5 -- LAND USE ASSUMPTIONS FOR MAXIMUM TRIP GENERATION SCENARIO FOR CMX ZONING

LAND USE (ITE LAND USE CODE)	SIZE	FAR	LAND AREA (ACRES)
Medical Dental Office 720	11.5 t.s.f.*	0.26	1.0
Fast Food with Drive Thru 934	3.5 t.s.f.	0.15	0.54
Drive-in Bank 912	4.0 t.s.f.	0.20	0.46
Convenience. Mkt. (Open 24 hrs) 851	5.5 t.s.f.	0.15	0.84
Gasoline/Service Station 944	8 fueling positions	na	0.73
High Turnover/Sit Down Restaurant 932	6.0 t.s.f.	0.15	0.92
TOTAL			4.5

* t.s.f. - thousands of square feet

TRIP GENERATION

Future trips generated by the worst-case PF scenario are shown in Table 6. The results for the worst-case CMX scenario are shown in Table 7. And the difference between the two is summarized in Table 8.

TABLE 6 -- TRIP GENERATION FORECAST FOR PF SCENARIO

ITE Land Use	Size	PM Peak Hour Trip Ends			Daily
		In	Out	Total	
State Motor Vehicles Dept. 731	28 t.s.f.	214	214	427	4,151
US Post Office 732	10 t.s.f.	80	77	157	1,515
Gov. Office Complex 733	20 t.s.f.	18	39	57	558
TOTAL	59 t.s.f.	311	330	641	6,224

TABLE 7 -- TRIP GENERATION FORECAST FOR CMX SCENARIO

ITE Land Use	Size (units)	PM Peak Hour Trip Ends			Daily
		In	Out	Total	
Medical Dental Office 720	11.5 t.s.f.	11	30	41	415
Fast Food with Drive Thru 934	3.5 t.s.f.	59	55	114	1,736
Passby Trips (50 percent)		29	29	57	868
Drive-in Bank 912	4 t.s.f.	49	49	97	593
Passby Trips (47 percent)		23	23	46	279
Convenience. Mkt. (Open 24 hrs) 851	5.5 t.s.f.	147	141	288	4,059
Passby Trips (61 percent)		88	88	176	2,476
Gasoline/Service Station 944	8 Fuel. Position	55	55	111	1,348
Passby Trips (42 percent)		23	23	47	566
High Turnover/Sit Down Rest 932	6 t.s.f.	35	24	59	763
Passby Trips (43 percent)		13	13	25	328
TOTALS					
Passby		175	175	351	4,517
Non Passby		182	178	360	4,398
Total		357	353	711	8,915

TABLE 8 -- TRIP GENERATION FORECAST -- CHANGE FROM PF TO CMX

ITE Land Use	PM Peak Hour Trip Ends			
	In	Out	Total	Daily
Passby	175	175	351	4,517
Non Passby	-129	-152	-281	-1,826
Total	46	26	70	2,691

SUMMARY OF TRIP GENERATION FINDINGS

While the total trip generation for the site would be higher with the proposed change from F to CMX, after subtracting pass by trips, the resulting trip generation would be lower with the change. As such:

- The impact of the change would be limited to the frontage of the site.
- For TPR compliance, it is necessary to demonstrate that there would be sufficient capacity at the site access to accommodate the proposed change.

- The appropriate horizon year is that of the TPR. Traffic forecasts were not available in the TPR; therefore, a 20 year horizon was assumed with a 3 percent average annual growth rate.

TPR ASSESSMENT

The impact of the proposed amendment would have a "significant effect" if any of the following TPR criteria are met:

- "(A) Types or levels of travel or access that is inconsistent with the functional classification of an existing or planned transportation facility;*
- (B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or*
- (C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan."*

Criterion A is not met, since the level of travel and access is consistent with that of an arterial street. The proposed change would not have a significant effect under this criterion.

Criteria B and C are not met, since the access point would operate at acceptable standards as shown below in this report with planned improvements. Accordingly, the proposed change would not have a significant effect under this criterion.

Since none of these three criteria are met, no further action is required and the requirements of the TPR would be met with the planned 3-lane cross-section of Huntington Road.

TRAFFIC ANALYSIS

This section presents an assessment of the site access on Huntington Road to determine if the proposed change in the comprehensive plan map would have a significant effect.

As shown in Figure 2, Huntington Road is currently a two-lane road in front of the site. Huntington Road is designated in the La Pine Transportation System Plan as an arterial. Arterial streets in La Pine include 12-foot travel lanes, 14 foot turn lanes, as well as sidewalks, planted strips, and bike lanes. The assumed future lane configuration is also illustrated in Figure 2. The TSP shows Huntington Road as a future upgrade project, improving the cross-section to arterial standards on a 3.26 mile segment to the north of 1st Street

(See Table 4-5 in the TSP). The estimated cost was \$12.4 million. The TSP does not indicate that this is a funded project; however, when the site develops, the City would require that the frontage be upgraded to a standard cross-section, which would allow for the inclusion of a left-turn lane. Since the upgrading of Huntington Road in front of the site would be development driven, it can be considered a funded project for the purposes of the TPR assessment.

Existing p.m. peak hour traffic flow in front of the site is illustrated in Figure 3. Traffic was assigned to the intersection using the trip generation forecast shown in Table 7. Non passby trips are illustrated in Figure 4 and passby trip are illustrated in Figure 5. The sum of existing traffic, plus project traffic are shown in Figure 6.

Future growth in the area was estimated by assuming a 3 percent growth rate over 20 years. The current p.m. peak hour flow on Huntington Road is 520 vehicles per hour (sum of both directions) in the vicinity of the site. A 3 percent growth rate would amount to a 60 percent increase in traffic, or an increase of 312 vehicles during the p.m. peak hour. The proposed project would increase non-passby traffic by 360 vehicles per hour during the p.m. peak hour (Table 7). Traffic generated by in PF scenario (Table 6) would be even higher (641 p.m. peak hour trips). Since the traffic forecast to be generated by the site is part of the future growth, it can be said that under either scenario, the traffic generated by the site would account for all future growth.

The reality is that it is unlikely that La Pine would absorb this intensity of growth on a single site and that the growth will likely be spread out in the community and that not all of these highest generating uses would occur on a single site. A more realistic land-use scenario on site would include more specialty retail uses that generate significantly less traffic than assumed in this study. Nevertheless, it can be said that this assessment presents a reasonably conservative scenario for the purposes of assessing the TPR.

The La Pine Transportation System Plan was used as guidance on intersection operations:

- "Intersection performance standards for intersections within La Pine are as follows:*
- *Volume-to-capacity ratio less than 0.90 and Level of Service "D" for signalized and all-way stop-controlled intersections.*
 - *Volume-to-capacity ratio less than 0.90 and Level of Service "E" for the critical movement at unsignalized and roundabout-controlled intersections."*

An operations analysis was conducted at the project driveway (see attached calculation sheet.) It was found that left-turns from driveway would operate at Level of Service E for the overall approach, with a level of service F for left-

turns (volume-capacity ratio of 0.86) from the site. This would not meet La Pine TSP standards.

It was also found that if traffic was reduced at the site driveway by 15 percent, La Pine level of service standards would be met, with the left-turn outbound movement operating at Level of Service E (volume-capacity ratio of 0.63). This reduction could be accomplished by limiting development on the site by 15 percent (to 604 p.m. peak hour trips), after which time secondary access would need to be provided. This could take place at a potential future extension of Caldwell Drive, by providing a second access driveway to Huntington Road, or in the longer term there may be a connection to Coach Road. The most likely scenario would be to add a second access point. A second access point would likely carry 30 to 50 percent of the total traffic. As long as one of the driveways carried at least 15 percent of the total traffic, La Pine standards would be met.

SUMMARY AND CONCLUSIONS

1. As shown in Table 8, there would be a net decrease in non-passby trips and a net increase in total trips. Accordingly, the change would not have a significant effect on the transportation system except at the entrance to the site.
2. To address the TPR, an analysis was conducted assuming that there would be a single sight access point. With a single access point, the site could develop up to 604 p.m. peak hour trips before needing additional access. Additional access could be provided through a second driveway on Huntington or a future connection to Caldwell Drive.
3. It was also noted that the forecast trip generation assumes a mix of very high trip-generating land uses. It is unlikely that this intensity of development would ever be reached on the site.
4. It was concluded that the proposed change from PF to CMX would not significantly affect the transportation system as per TPR criteria.

* * * * *

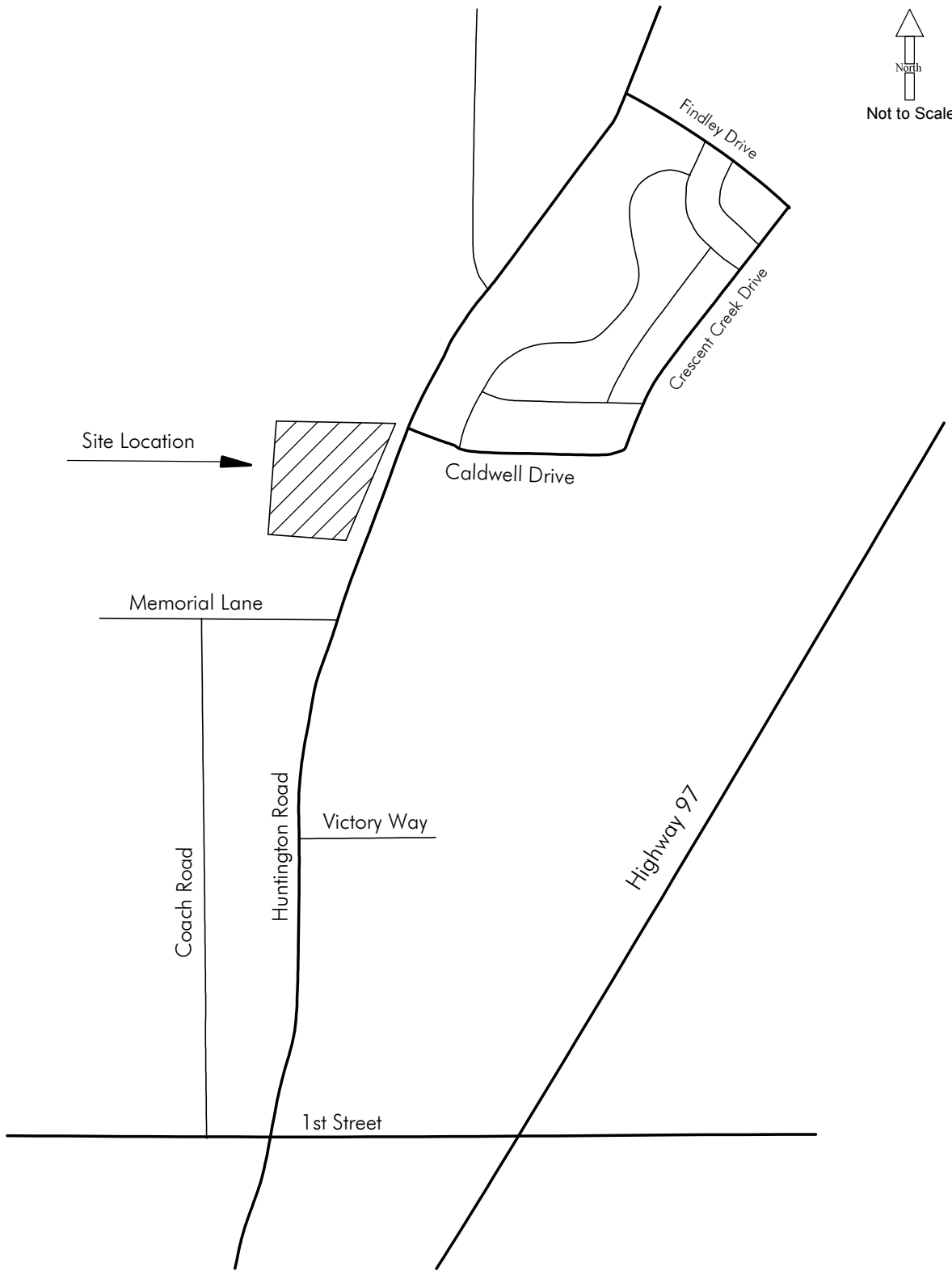
Please feel free to call at your convenience if you would like to discuss any elements of this letter-report.

Very truly yours,
FERGUSON & ASSOCIATES, INC.

Scott Ferguson, PE

Attachments: Figures 1-6
Level of Service Calculations



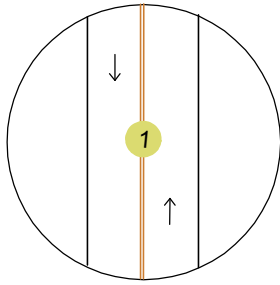


Site Location
 St. Charles Clinic - La Pine Oregon

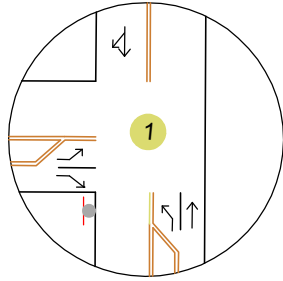
Figure 1

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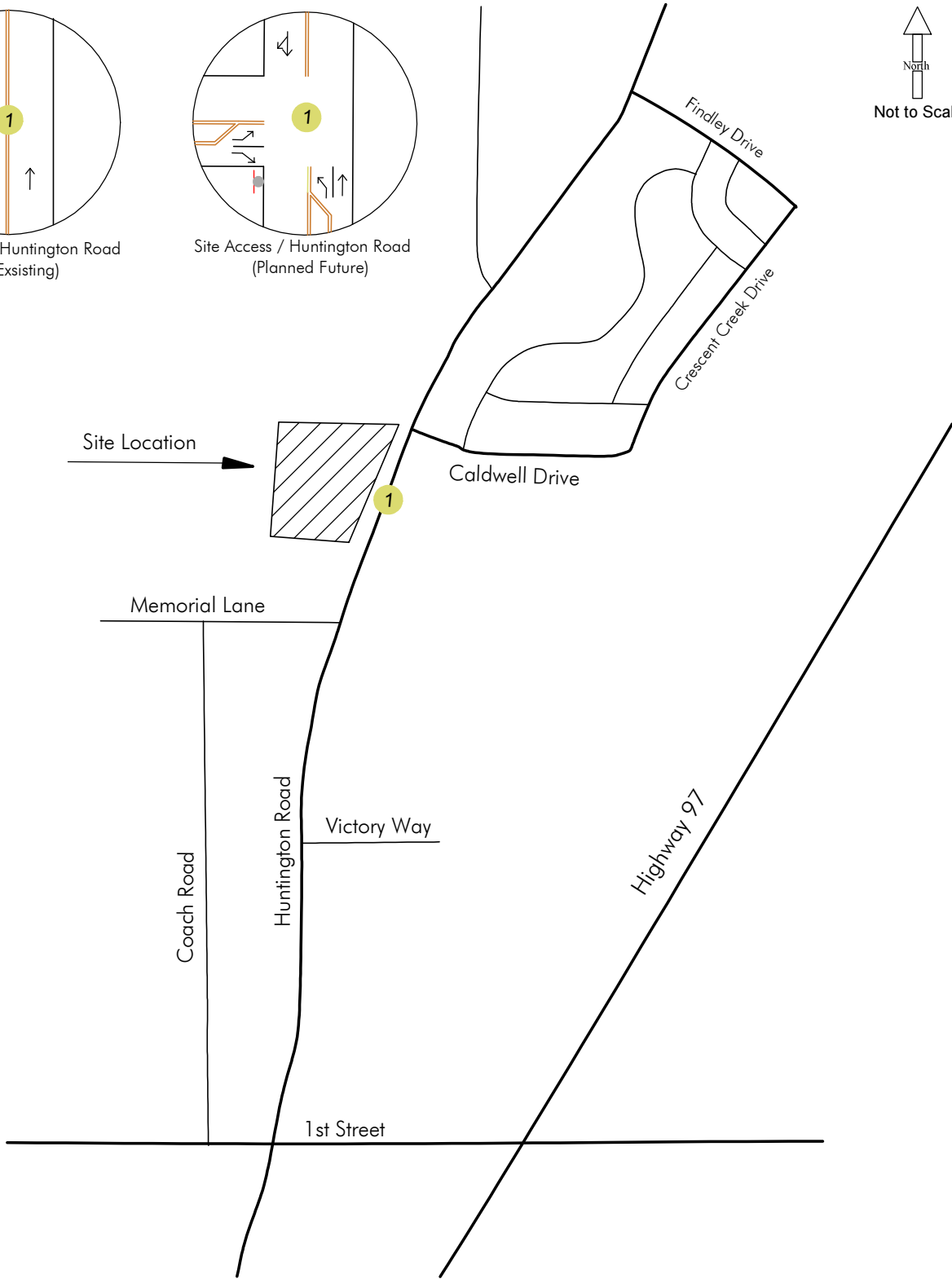
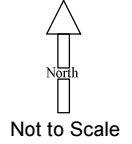
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Site Access / Huntington Road
(Existing)



Site Access / Huntington Road
(Planned Future)

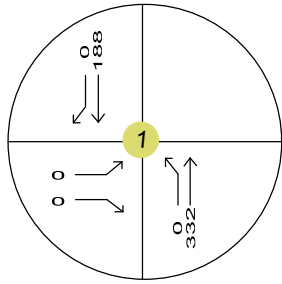


Lane Configuration
St. Charles Clinic - La Pine Oregon

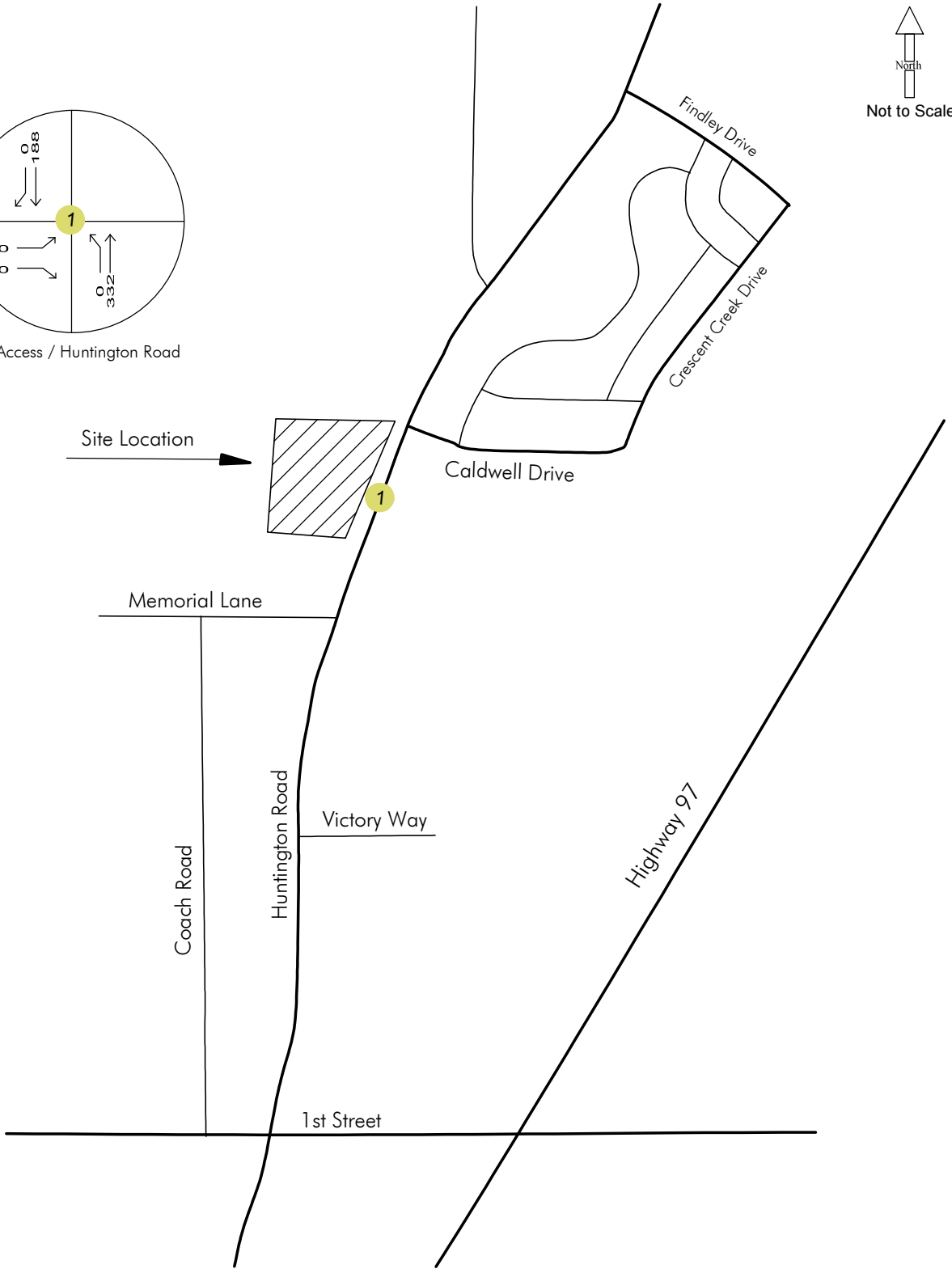
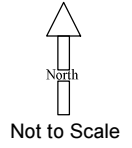
Figure 2

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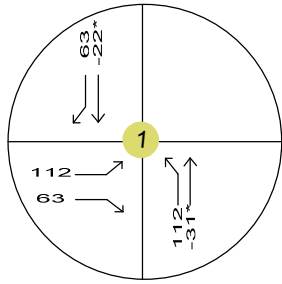


Site Access / Huntington Road

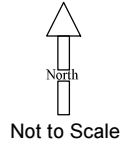


Existing PM Peak Hour Traffic
 St. Charles Clinic - La Pine Oregon

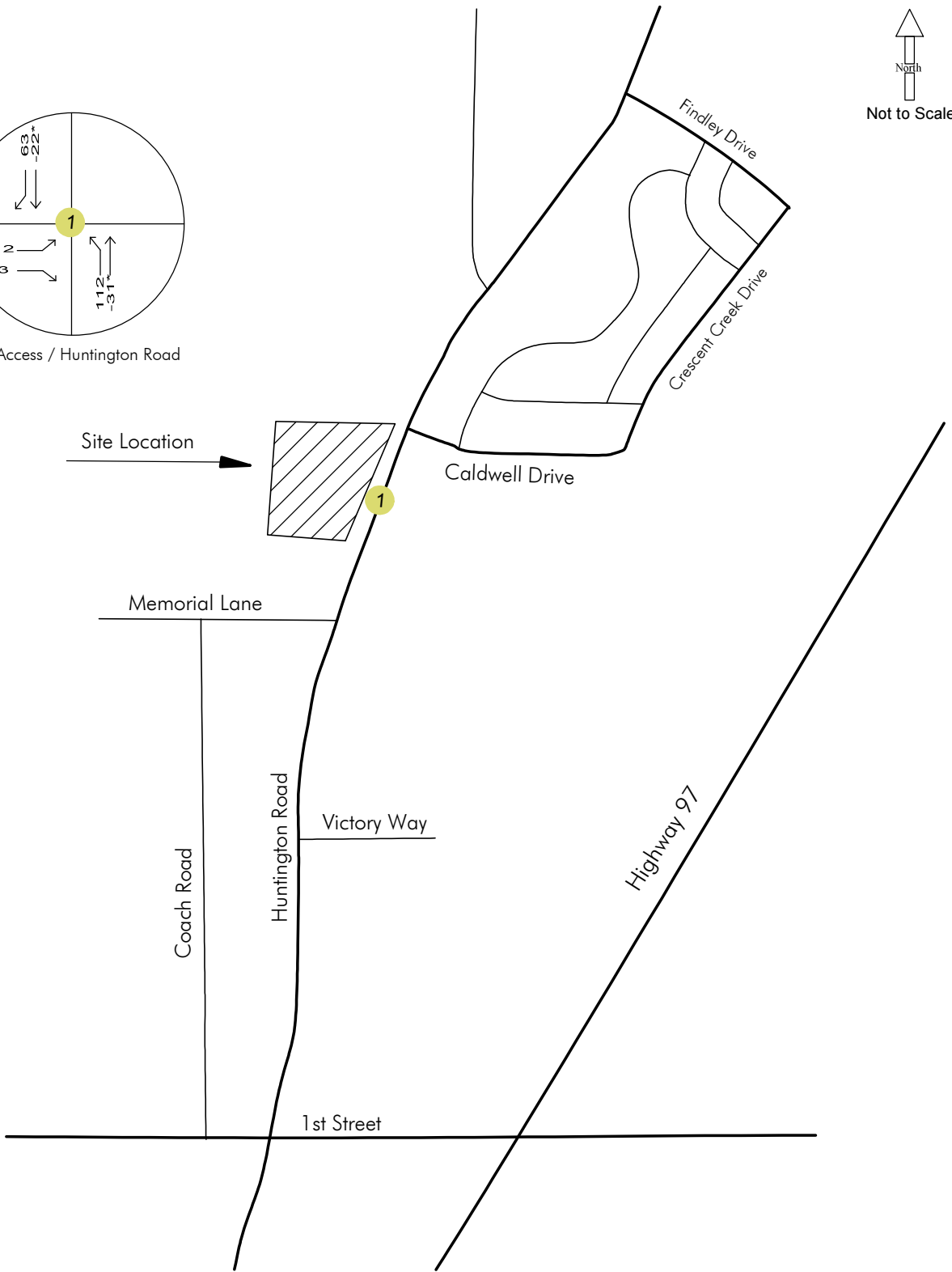
Figure 3



Site Access / Huntington Road



Not to Scale



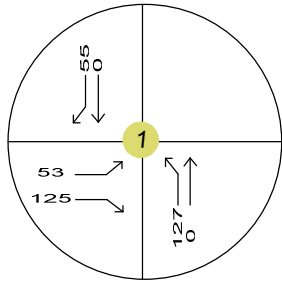
* Passby trip reductions were limited to 10% of PM Peak Hour Traffic

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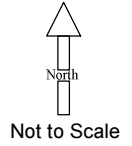
PM Peak Hour Passby Trips
St. Charles Clinic - La Pine Oregon

Figure 4

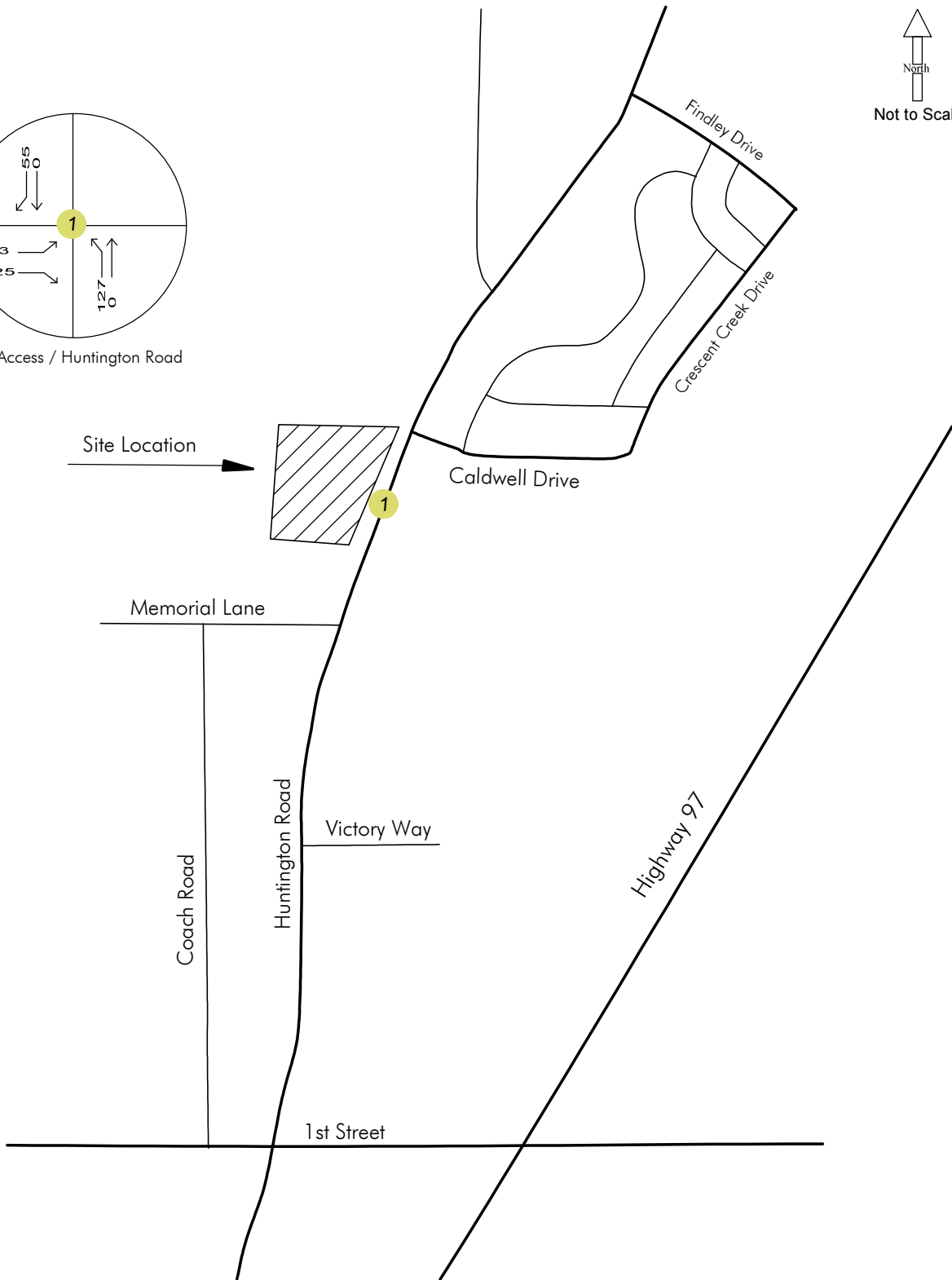
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Site Access / Huntington Road

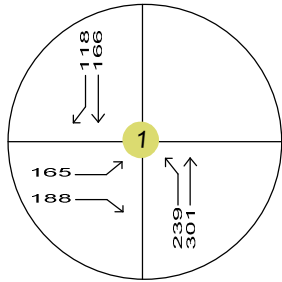


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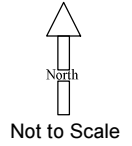


PM Peak Hour Non-Passby Trips
 St. Charles Clinic - La Pine Oregon

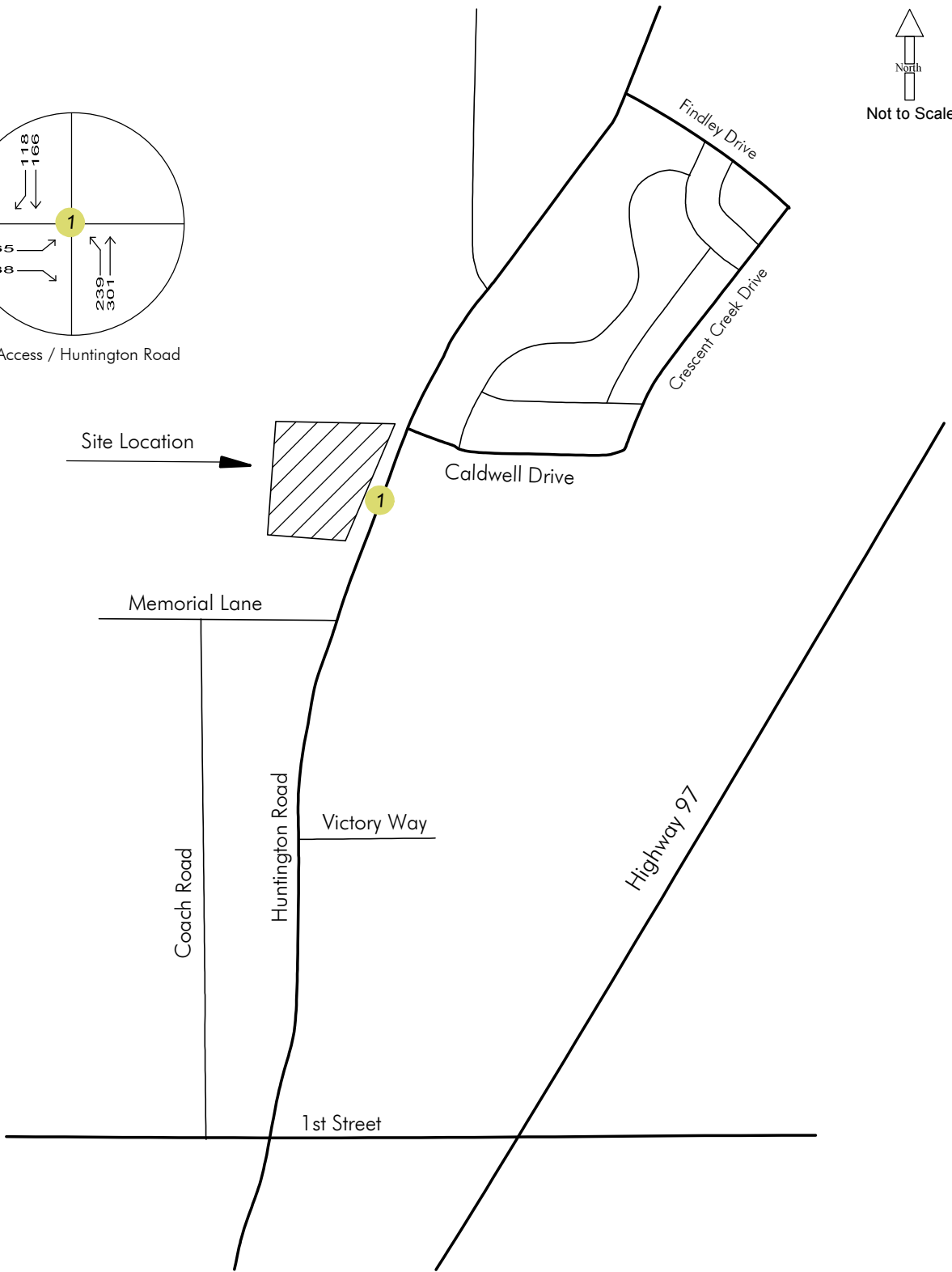
Figure 5



Site Access / Huntington Road



Not to Scale



PM Peak Hour Trips - Future Traffic With Project
 St. Charles Clinic - La Pine Oregon

Figure 6

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Huntington Road/Site Entry

Average Delay (sec/veh): 8.7 Worst Case Level Of Service: D [25.8]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume adjustments. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

Critical Gap Module: Table with 13 columns for gap and follow-up times. Rows include Critical Gp and FollowUpTim.

Capacity Module: Table with 13 columns for capacity metrics. Rows include Cnflct Vol, Potent Cap., Move Cap., and Volume/Cap.

Level Of Service Module: Table with 13 columns for LOS metrics. Rows include 2Way95thQ, Control Del, LOS by Move, Movement, Shared Cap., SharedQueue, Shrd ConDel, Shared LOS, ApproachDel, and ApproachLOS.

Note: Queue reported is the number of cars per lane.

Level Of Service Computation Report

2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Huntington Road/Site Entry

Average Delay (sec/veh): 14.6 Worst Case Level Of Service: E[43.1]

Table with 4 columns: North Bound, South Bound, East Bound, West Bound. Rows include Movement, Control, Rights, and Lanes.

Volume Module: Table with 13 columns for volume adjustments. Rows include Base Vol, Growth Adj, Initial Bse, Added Vol, PasserByVol, Initial Fut, User Adj, PHF Adj, PHF Volume, Reduct Vol, and FinalVolume.

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