

MACKENZIE.

January 27, 2021

Multnomah County Transportation Division
 Attention: Transportation Planning Specialist
 1600 SE 190th Avenue
 Portland, OR 97233

Re: **Skyline Stockpile**
Transportation Planning Review
 Project Number 2200357.00

Dear Transportation Planning Specialist:

Mackenzie has prepared this letter to provide Transportation Planning Review with supporting documentation for the proposed Oregon Department of Transportation (ODOT) stockpile site in Multnomah County, as part of Multnomah County Road Rules and County Code provisions MCC 29.500 and MCC 29.571. Specifically, we address access spacing, vehicle queuing from the Skyline Boulevard intersection with Cornelius Pass Road and sight distance availability at the proposed site driveway.

INTRODUCTION

ODOT is proposing a stockpile site on the undeveloped tax lots 2N1W31C - 02 0400 and 02 500 in Multnomah County. Both lots are zoned Exclusive Farm Use (EFU). They are located on the southeast corner of NW Skyline Boulevard/NW Cornelius Pass Road. The proposed use of this site will be storage of sandy gravel and deicer that will be used to support future maintenance and operations of NW Cornelius Pass Road. The stockpile yard will have 16,000 Square Foot (SF) graveled open pile materials storage area for sandy gravel, and a 3,876 SF combination equipment storage and deicer loader/storage building.

The site will operate as an unstaffed facility and will be accessed by three (3) different vehicle types; light fleet (sedans/light trucks), medium fleet (5-yd dump-trucks, sweepers, loaders), and heavy fleet (10-yd dump-trucks, tankers). All three (3) may access the site with the frequency of up to five (5) trips per month per vehicle type. The number of monthly trips will therefore be less than 30 on average. Access frequency may increase during the winter months.

Multnomah County's *Functional Classifications of Roadways: Findings and Recommendations Technical Report* indicates that NW Cornelius Pass Road is classified as Rural Arterial and NW Skyline Boulevard as a Rural Collector. The posted speed limit on NW Cornelius Pass Road is 45 Miles Per Hour (MPH). As per *Multnomah County Comprehensive Plan Update (09/29/2016)*, NW Skyline Boulevard does not have a posted speed and as such it is regulated under ORS 811.105 and has a maximum speed limit of 55 MPH. Further to the east, within the Portland City limits, the posted speed on Skyline Boulevard is 40 MPH.



ACCESS

The proposed paved 24 foot (ft) wide site access for the facility will have a setback spacing of 150 ft east from the end of effective curb radius of NW Skyline Boulevard. It will be located on the south side of NW Skyline Boulevard and 90 ft west of the adjacent site's access.

Spacing standards are set by *Multnomah County Design Standards Manual* section 1.2, Table 1.2.5, Minimum Private Access Driveway Spacing Standards based on a roadway's functional classification. Skyline Boulevard is classified as a rural collector, so we apply the major collector spacing standards. The minimum access driveway spacing for a major collector according to Table 1.2.5 in the design standards manual is 45 meters (m), or 135 ft, and the minimum intersection setback is 30 m, or 90 ft. The driveway must also be located beyond the maximum standing queue length at the intersection approach if near an intersection with a major collector or arterial. The proposed 150 ft intersection setback from NW Cornelius Pass Road conforms to Multnomah County design standards. The 90 ft distance from the nearby driveway to the east does not meet the 135 ft minimum requirement for driveway spacing. Standing queue was found to extend beyond the proposed driveway during the PM peak hour (see queueing section below).

We are requesting a variance to this standard based on the fact that the standards cannot be met given limited frontage on Skyline Boulevard and the presence of an existing driveway to the east. In addition, the infrequent use of the driveway does not necessitate mitigation for spacing. Moving the access to the NW Cornelius Pass Road is not considered a viable option due to the fact that it is a higher classification roadway with a significantly higher volume of traffic and would be located on the inside of a horizontal curve.

DATA COLLECTION

Speed, volume and vehicle classification tube counts were conducted on December 15, 2020, at two locations on NW Skyline Boulevard. The tubes were placed at 150 ft and 500 ft east of NW Cornelius Pass Road. These locations correspond to the proposed site access location and the limit of the sight distance east of the proposed site access. The purpose of the data collection is identifying an appropriate speed for determining sight distances, because of the proximity to the Cornelius Pass Road intersection and curve in Skyline Boulevard.

Table 1 presents a summary of tube count speed, volumes, and classification for eastbound vehicles at the site access and westbound at the approximate limit of sight distance.

TABLE 1 – SPEED, VOLUME & CLASS DATA					
Direction from Driveway (Travel direction)	Speeds at Sight Distance (MPH)		Volumes (Daily)	Classification Percentages	
	50th Percentile	85th Percentile		Cars	Heavy Vehicles
East (Westbound)	37	43	577	68%	32%
West (eastbound)	29	34	633	70%	30%

The data shows speeds less than the assumed maximum speed of 55 MPH, which are appropriate for addressing sight distance availability.

QUEUEING

In order to assess queue spill back from the Cornelius Pass Road intersection, we prepared capacity and queuing calculations using historic counts from November 2019 at NW Skyline Boulevard/NW Cornelius Pass Road and Synchro/SimTraffic software. As shown in the supporting synchro reports (attached), the eastbound AM peak hour queue is projected to be 50 ft and the PM peak hour queue is projected to be 250 ft, which is 100 ft past the proposed site access. Queues will regularly extend beyond the site driveway.

It should be noted that the site will predominately be accessed during and after snow and ice storms. As such, traffic volumes on the roadway are expected to be a fraction of the normal weekday traffic volumes. It is because the site will be mainly accessed at these times of lower than expected traffic volumes on NW Skyline Boulevard that we are asking for a standing queue variance.

SIGHT DISTANCE

As per *Multnomah county Road Rules* (Revised 03/2018) section 4.500 Sight Distance, “All new or altered access points to roads under the County’s jurisdiction must have a minimum sight distance equal to the standards in the Design and Construction Manual and AASHTO’s A Policy on Geometric Design of Highways and Streets.” Measurements for the available Stopping Sight Distance (SSD) was measured using recent survey data. Drawings showing the available sight distances are attached.

The American Association of State Highway and Transportation Officials’ (AASHTO) *A Policy on Geometric Design of Highways and Streets (Green Book)*, 7th Edition, provides recommendations for Intersection Sight Distance (ISD) based on roadway design speed (Table 9-9). At minimum, stopping sight distance (SSD) must be provided. The design speed is assumed to be 55 MPH.

Intersection sight distances for passenger vehicles and design speed of 55 MPH is 530 ft for right turns and 610 ft for left turns on a two-lane roadway. For single unit trucks, the ISD is 690 ft for right turns and 770 ft for left turns. Available ISD is effectively 191 ft to the west (to the Cornelius Pass Road intersection) and 292 ft to the east limited by a curve and vegetation along the roadway frontage (see Attached Drawing).

Stopping sight distance is affected by the approaching roadway grade, which is approximately 9% on Skyline Boulevard in the site vicinity. This is based on available survey for the site and roadway frontage. For westbound vehicles, the recommended SSD for 55 MPH and 9% downgrade is 593 ft for passenger vehicles. Eastbound vehicles are traveling uphill and have a reduced SSD of 433ft. These distances are not met for the design speed.

Multnomah County Design Standards section 2.3.7 Table 2.3.2 gives the minimum Corner Intersection Sight Distance (CISD) of 65 m, or 195 ft for a major street with a design speed of 80 Kilometers Per Hour (KPH), or 50 MPH. At 150 ft from the intersection, this distance is not met.

The sight distance evaluation is presented in Table 2.

TABLE 2 – SIGHT DISTANCE EVALUATION							
Access Location	Design Speed (mph)	Design Vehicle	Recommended ISD (feet)	Required SSD East/West (feet)	Required CISD (feet)	Available Sight Distance (feet)	
						To West	To East
NW Skyline Boulevard	55	Passenger Vehicles	530	593/433	195	191	292
		Single Trucks	685				

As presented in Table 2, the available ISD to the west extend through NW Cornelius Pass Road is 191 ft and to the east 292 ft, neither of which satisfy an assumed design speed along NW Skyline Boulevard.

Based on the speed survey, we know vehicles are traveling slower than the 55 MPH assumed design speed. Westbound vehicles were observed traveling 43 MPH at the limit of sight distance and slowing to 33 MPH at the proposed driveway location. Eastbound vehicles are traveling 34 MPH at the proposed driveway location, after turning from the NW Cornelius Pass Road intersection. We estimate these eastbound vehicles are traveling at 15 MPH when entering Skyline Boulevard, based on AASHTO guidance for intersection turning speeds for a radius of 50 ft. Because of the limited use of the site driveway and changing speed of approaching vehicles, we are focusing on meeting SSD based on the speed of approaching vehicles at a location where they will first see vehicles leaving the site driveway.

At 15 MPH for eastbound vehicles, this SSD is 73 ft, which accounts for 9% uphill grade.

At 43 MPH for westbound vehicles, this SSD is approximately 400 ft, accounting for 9% downgrade.

The available SSD to the east is short 108 ft to accommodate the 85th percentile speed of 43 MPH. The available SSD to the west is adequate to accommodate the estimated speed of 15 MPH.

As presented in Table 2, the available CISD is 190 ft which is 5 ft short of the required CISD of 195 ft.

CONCLUSION

Potential mitigation would include trimming vegetation along the south side of Skyline Boulevard, especially to the east of the driveway.

A posted speed of 35 MPH is recommended to allow for adequate stopping sight distances for vehicles approaching the proposed driveway. This slower speed is also appropriate with the fire station and school immediately east of the site and matches the speed limit for NW Skyline Boulevard on the western side of NW Cornelius Pass Road. Currently vehicle 85th percentile speeds are 43 MPH westbound and 39 MPH eastbound at 500 ft from Cornelius Pass Road. Thus, lower the speed limit is consistent with the observed travel speeds along the site frontage and other surrounding uses.

Posting a speed limit on NW Skyline Boulevard is preferred over moving the driveway location because there is no location on NW Skyline Boulevard which can accommodate Multnomah County access spacing or standing queue regulations. Additionally, moving access to NW Cornelius Pass Road is not a viable option because of its higher functional class, the driveway would be located on the inside of a horizontal curve, and significant grading would be required.

The adjacent residential driveway located 90 ft east of the proposed driveway and a regular standing queue during the PM peak hour should not pose a safety hazard. This is because traffic to the site will be less than 30 trips per month on average. During winter snow and ice events when the site will be accessed more frequently for maintenance of NW Cornelius Pass Road, traffic volumes are expected to be at lower than average on the adjacent streets.

Sincerely,



Brent Ahrend, PE
Traffic Engineer

Enclosure(s): Site Plan, Road Tube Data, Intersection Turning Movement Summary, Capacity & Queuing Calculations, Sight Distance Diagrams

c: Luis Umana, Mike Schweizer – Oregon Department of Transportation



Type of report: Tube Count - Volume Data

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd							QC JOB #: 15335401			
SPECIFIC LOCATION:							DIRECTION: EB			
CITY/STATE: Portland, OR							DATE: Dec 15 2020 - Dec 15 2020			
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
		15 Dec 20								
12:00 AM		1				1			1	
01:00 AM		2				2			2	
02:00 AM		2				2			2	
03:00 AM		3				3			3	
04:00 AM		1				1			1	
05:00 AM		13				13			13	
06:00 AM		28				28			28	
07:00 AM		47				47			47	
08:00 AM		48				48			48	
09:00 AM		25				25			25	
10:00 AM		41				41			41	
11:00 AM		20				20			20	
12:00 PM		39				39			39	
01:00 PM		42				42			42	
02:00 PM		47				47			47	
03:00 PM		50				50			50	
04:00 PM		76				76			76	
05:00 PM		58				58			58	
06:00 PM		41				41			41	
07:00 PM		23				23			23	
08:00 PM		12				12			12	
09:00 PM		10				10			10	
10:00 PM		3				3			3	
11:00 PM		1				1			1	
Day Total		633				633			633	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak Volume		8:00 AM 48				8:00 AM 48			8:00 AM 48	
PM Peak Volume		4:00 PM 76				4:00 PM 76			4:00 PM 76	

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd **QC JOB #:** 15335401
SPECIFIC LOCATION: **DIRECTION:** EB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 AM	0	7	3	0	3	0	0	0	0	0	0	0	0	0	13
06:00 AM	0	22	3	0	3	0	0	0	0	0	0	0	0	0	28
07:00 AM	2	29	10	0	6	0	0	0	0	0	0	0	0	0	47
08:00 AM	1	36	6	0	3	1	0	0	0	0	0	0	0	1	48
09:00 AM	0	18	4	0	2	0	0	1	0	0	0	0	0	0	25
10:00 AM	0	26	10	0	5	0	0	0	0	0	0	0	0	0	41
11:00 AM	0	16	2	0	2	0	0	0	0	0	0	0	0	0	20
12:00 PM	0	26	11	0	1	1	0	0	0	0	0	0	0	0	39
01:00 PM	0	23	13	0	5	0	0	1	0	0	0	0	0	0	42
02:00 PM	0	32	7	0	5	2	0	1	0	0	0	0	0	0	47
03:00 PM	0	38	5	0	6	0	0	1	0	0	0	0	0	0	50
04:00 PM	0	51	18	0	7	0	0	0	0	0	0	0	0	0	76
05:00 PM	1	40	12	0	4	1	0	0	0	0	0	0	0	0	58
06:00 PM	0	31	7	0	2	0	0	0	0	0	0	0	0	1	41
07:00 PM	0	17	4	0	1	0	0	1	0	0	0	0	0	0	23
08:00 PM	0	10	2	0	0	0	0	0	0	0	0	0	0	0	12
09:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
10:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
11:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Day Total	4	440	122	0	55	5	0	5	0	0	0	0	0	2	633
Percent	0.6%	69.5%	19.3%	0%	8.7%	0.8%	0%	0.8%	0%	0%	0%	0%	0%	0.3%	
ADT 633															
AM Peak	7:00 AM	8:00 AM	7:00 AM	12:00 AM	7:00 AM	8:00 AM	12:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	8:00 AM	8:00 AM
Volume	2	36	10	0	6	1	0	1	0	0	0	0	0	1	48
PM Peak	5:00 PM	4:00 PM	4:00 PM	12:00 PM	4:00 PM	2:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	6:00 PM	4:00 PM
Volume	1	51	18	0	7	2	0	1	0	0	0	0	0	1	76

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd **QC JOB #:** 15335401
SPECIFIC LOCATION: **DIRECTION:** EB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	4	440	122	0	55	5	0	5	0	0	0	0	0	2	633
Percent	0.6%	69.5%	19.3%	0%	8.7%	0.8%	0%	0.8%	0%	0%	0%	0%	0%	0.3%	
ADT 633															

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.



Type of report: Tube Count - Speed Data

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd														QC JOB #: 15335401			
SPECIFIC LOCATION:														DIRECTION: EB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020			
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
01:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26-35	2
02:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	26-35	2
03:00 AM	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3	21-30	2
04:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	21-30	1
05:00 AM	0	0	2	2	9	0	0	0	0	0	0	0	0	0	13	26-35	11
06:00 AM	0	1	5	9	9	3	1	0	0	0	0	0	0	0	28	26-35	18
07:00 AM	1	0	8	17	18	3	0	0	0	0	0	0	0	0	47	26-35	35
08:00 AM	2	0	6	22	14	4	0	0	0	0	0	0	0	0	48	26-35	36
09:00 AM	0	0	2	11	8	3	0	1	0	0	0	0	0	0	25	26-35	19
10:00 AM	0	0	5	14	18	3	1	0	0	0	0	0	0	0	41	26-35	32
11:00 AM	0	1	2	8	7	2	0	0	0	0	0	0	0	0	20	26-35	15
12:00 PM	0	0	5	15	17	1	1	0	0	0	0	0	0	0	39	26-35	32
01:00 PM	0	0	6	20	11	5	0	0	0	0	0	0	0	0	42	26-35	31
02:00 PM	2	0	5	21	15	3	1	0	0	0	0	0	0	0	47	26-35	36
03:00 PM	0	0	5	16	23	6	0	0	0	0	0	0	0	0	50	26-35	39
04:00 PM	0	0	5	39	22	9	1	0	0	0	0	0	0	0	76	26-35	61
05:00 PM	1	0	6	21	25	5	0	0	0	0	0	0	0	0	58	26-35	46
06:00 PM	2	1	2	20	10	6	0	0	0	0	0	0	0	0	41	26-35	30
07:00 PM	0	0	2	12	9	0	0	0	0	0	0	0	0	0	23	26-35	21
08:00 PM	0	0	1	7	3	1	0	0	0	0	0	0	0	0	12	26-35	10
09:00 PM	0	0	1	4	4	1	0	0	0	0	0	0	0	0	10	26-35	8
10:00 PM	0	0	1	0	1	1	0	0	0	0	0	0	0	0	3	31-40	2
11:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26-35	1
Day Total	8	3	70	261	228	57	5	1	0	0	0	0	0	0	633	26-35	489
Percent	1.3%	0.5%	11.1%	41.2%	36%	9%	0.8%	0.2%	0%	0%	0%	0%	0%	0%			
AM Peak Volume	8:00 AM	6:00 AM	7:00 AM	8:00 AM	7:00 AM	8:00 AM	6:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	8:00 AM		
	2	1	8	22	18	4	1	1	0	0	0	0	0	0	48		
PM Peak Volume	2:00 PM	6:00 PM	1:00 PM	4:00 PM	5:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
	2	1	6	39	25	9	1	0	0	0	0	0	0	0	76		

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Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	8	3	70	261	228	57	5	1	0	0	0	0	0	0	633	26-35	489
Percent	1.3%	0.5%	11.1%	41.2%	36%	9%	0.8%	0.2%	0%	0%	0%	0%	0%	0%			
Cumulative Percent	1.3%	1.7%	12.8%	54%	90%	99.1%	99.8%	100%	100%	100%	100%	100%	100%	100%			
ADT 633															85th Percentile: 34 MPH Mean Speed(Average): 29 MPH Median: 29 MPH Mode: 28 MPH		
<i>Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.</i>																	



Type of report: Tube Count - Volume Data

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SPECIFIC LOCATION:							DIRECTION: WB			
CITY/STATE: Portland, OR							DATE: Dec 15 2020 - Dec 15 2020			
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
		15 Dec 20								
12:00 AM		2				2			2	
01:00 AM		0				0			0	
02:00 AM		1				1			1	
03:00 AM		2				2			2	
04:00 AM		3				3			3	
05:00 AM		10				10			10	
06:00 AM		14				14			14	
07:00 AM		28				28			28	
08:00 AM		36				36			36	
09:00 AM		30				30			30	
10:00 AM		32				32			32	
11:00 AM		42				42			42	
12:00 PM		59				59			59	
01:00 PM		51				51			51	
02:00 PM		38				38			38	
03:00 PM		57				57			57	
04:00 PM		54				54			54	
05:00 PM		45				45			45	
06:00 PM		26				26			26	
07:00 PM		20				20			20	
08:00 PM		7				7			7	
09:00 PM		10				10			10	
10:00 PM		5				5			5	
11:00 PM		9				9			9	
Day Total		581				581			581	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak Volume		11:00 AM 42				11:00 AM 42			11:00 AM 42	
PM Peak Volume		12:00 PM 59				12:00 PM 59			12:00 PM 59	

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Type of report: Tube Count - Vehicle Classification Data

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QC JOB #: 15335401
DIRECTION: WB
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12:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
04:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00 AM	0	6	3	0	1	0	0	0	0	0	0	0	0	0	10
06:00 AM	0	7	3	0	3	1	0	0	0	0	0	0	0	0	14
07:00 AM	0	23	1	0	4	0	0	0	0	0	0	0	0	0	28
08:00 AM	0	27	2	0	5	1	0	0	0	0	1	0	0	0	36
09:00 AM	1	18	5	0	4	1	0	1	0	0	0	0	0	0	30
10:00 AM	0	20	7	1	4	0	0	0	0	0	0	0	0	0	32
11:00 AM	0	30	5	0	6	0	0	1	0	0	0	0	0	0	42
12:00 PM	1	37	13	0	6	1	0	0	0	0	0	0	0	1	59
01:00 PM	0	34	10	0	6	0	0	1	0	0	0	0	0	0	51
02:00 PM	0	26	8	0	2	0	0	1	0	0	0	0	0	1	38
03:00 PM	1	38	10	0	7	1	0	0	0	0	0	0	0	0	57
04:00 PM	0	37	11	0	6	0	0	0	0	0	0	0	0	0	54
05:00 PM	1	33	8	0	2	0	0	0	0	0	0	0	0	1	45
06:00 PM	0	17	6	0	1	0	0	1	0	0	0	0	0	1	26
07:00 PM	0	15	4	0	1	0	0	0	0	0	0	0	0	0	20
08:00 PM	0	5	1	0	1	0	0	0	0	0	0	0	0	0	7
09:00 PM	0	9	1	0	0	0	0	0	0	0	0	0	0	0	10
10:00 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
11:00 PM	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
Day Total	4	401	101	1	59	5	0	5	0	0	1	0	0	4	581
Percent	0.7%	69%	17.4%	0.2%	10.2%	0.9%	0%	0.9%	0%	0%	0.2%	0%	0%	0.7%	
ADT 581															
AM Peak	9:00 AM	11:00 AM	10:00 AM	10:00 AM	11:00 AM	6:00 AM	12:00 AM	9:00 AM	12:00 AM	12:00 AM	8:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM
Volume	1	30	7	1	6	1	0	1	0	0	1	0	0	0	42
PM Peak	12:00 PM	3:00 PM	12:00 PM	12:00 PM	3:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM
Volume	1	38	13	0	7	1	0	1	0	0	0	0	0	1	59

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd **QC JOB #:** 15335401
SPECIFIC LOCATION: **DIRECTION:** WB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	4	401	101	1	59	5	0	5	0	0	1	0	0	4	581
Percent	0.7%	69%	17.4%	0.2%	10.2%	0.9%	0%	0.9%	0%	0%	0.2%	0%	0%	0.7%	
ADT 581															

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.



Type of report: Tube Count - Speed Data

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd														QC JOB #: 15335401			
SPECIFIC LOCATION:														DIRECTION: WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020			
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26-35	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26-35	1
03:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26-35	2
04:00 AM	0	0	1	1	1	0	0	0	0	0	0	0	0	0	3	21-30	2
05:00 AM	0	0	1	5	4	0	0	0	0	0	0	0	0	0	10	26-35	9
06:00 AM	0	1	2	6	4	0	1	0	0	0	0	0	0	0	14	26-35	10
07:00 AM	0	0	5	10	10	2	1	0	0	0	0	0	0	0	28	26-35	20
08:00 AM	0	1	4	6	20	5	0	0	0	0	0	0	0	0	36	26-35	26
09:00 AM	0	0	4	15	10	1	0	0	0	0	0	0	0	0	30	26-35	25
10:00 AM	0	0	3	14	14	1	0	0	0	0	0	0	0	0	32	26-35	28
11:00 AM	1	1	4	17	16	3	0	0	0	0	0	0	0	0	42	26-35	33
12:00 PM	3	2	8	28	16	2	0	0	0	0	0	0	0	0	59	26-35	44
01:00 PM	0	1	7	21	18	4	0	0	0	0	0	0	0	0	51	26-35	39
02:00 PM	1	2	4	16	11	4	0	0	0	0	0	0	0	0	38	26-35	27
03:00 PM	2	1	7	20	25	2	0	0	0	0	0	0	0	0	57	26-35	45
04:00 PM	0	2	11	23	16	2	0	0	0	0	0	0	0	0	54	26-35	39
05:00 PM	2	3	9	17	10	3	1	0	0	0	0	0	0	0	45	26-35	27
06:00 PM	1	1	4	14	6	0	0	0	0	0	0	0	0	0	26	26-35	20
07:00 PM	0	0	0	10	8	2	0	0	0	0	0	0	0	0	20	26-35	18
08:00 PM	0	0	1	4	2	0	0	0	0	0	0	0	0	0	7	26-35	6
09:00 PM	0	0	1	3	5	1	0	0	0	0	0	0	0	0	10	26-35	8
10:00 PM	0	0	1	0	2	2	0	0	0	0	0	0	0	0	5	31-40	4
11:00 PM	0	0	0	3	4	1	1	0	0	0	0	0	0	0	9	26-35	7
Day Total	10	15	77	233	207	35	3	1	0	0	0	0	0	0	581	26-35	440
Percent	1.7%	2.6%	13.3%	40.1%	35.6%	6%	0.5%	0.2%	0%	0%	0%	0%	0%	0%			
AM Peak Volume	11:00 AM	6:00 AM	7:00 AM	11:00 AM	8:00 AM	8:00 AM	7:00 AM	6:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM		
	1	1	5	17	20	5	1	1	0	0	0	0	0	0	42		
PM Peak Volume	12:00 PM	5:00 PM	4:00 PM	12:00 PM	3:00 PM	1:00 PM	5:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM		
	3	3	11	28	25	4	1	0	0	0	0	0	0	0	59		

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd														QC JOB #: 15335401			
SPECIFIC LOCATION:														DIRECTION: WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020 -			
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	10	15	77	233	207	35	3	1	0	0	0	0	0	0	581	26-35	440
Percent	1.7%	2.6%	13.3%	40.1%	35.6%	6%	0.5%	0.2%	0%	0%	0%	0%	0%	0%			
Cumulative Percent	1.7%	4.3%	17.6%	57.7%	93.3%	99.3%	99.8%	100%	100%	100%	100%	100%	100%	100%			
ADT 581															85th Percentile: 33 MPH Mean Speed(Average): 29 MPH Median: 29 MPH Mode: 28 MPH		
<i>Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.</i>																	



Type of report: Tube Count - Volume Data

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd SPECIFIC LOCATION: CITY/STATE: Portland, OR							QC JOB #: 15335401 DIRECTION: EB, WB DATE: Dec 15 2020 - Dec 15 2020			
Start Time	Mon 15 Dec 20	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		3				3			3	
01:00 AM		2				2			2	
02:00 AM		3				3			3	
03:00 AM		5				5			5	
04:00 AM		4				4			4	
05:00 AM		23				23			23	
06:00 AM		42				42			42	
07:00 AM		75				75			75	
08:00 AM		84				84			84	
09:00 AM		55				55			55	
10:00 AM		73				73			73	
11:00 AM		62				62			62	
12:00 PM		98				98			98	
01:00 PM		93				93			93	
02:00 PM		85				85			85	
03:00 PM		107				107			107	
04:00 PM		130				130			130	
05:00 PM		103				103			103	
06:00 PM		67				67			67	
07:00 PM		43				43			43	
08:00 PM		19				19			19	
09:00 PM		20				20			20	
10:00 PM		8				8			8	
11:00 PM		10				10			10	
Day Total		1214				1214			1214	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak Volume		8:00 AM 84				8:00 AM 84			8:00 AM 84	
PM Peak Volume		4:00 PM 130				4:00 PM 130			4:00 PM 130	

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

Type of report: Tube Count - Vehicle Classification Data

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd
SPECIFIC LOCATION:
CITY/STATE: Portland, OR

QC JOB #: 15335401
DIRECTION: EB, WB
DATE: Dec 15 2020

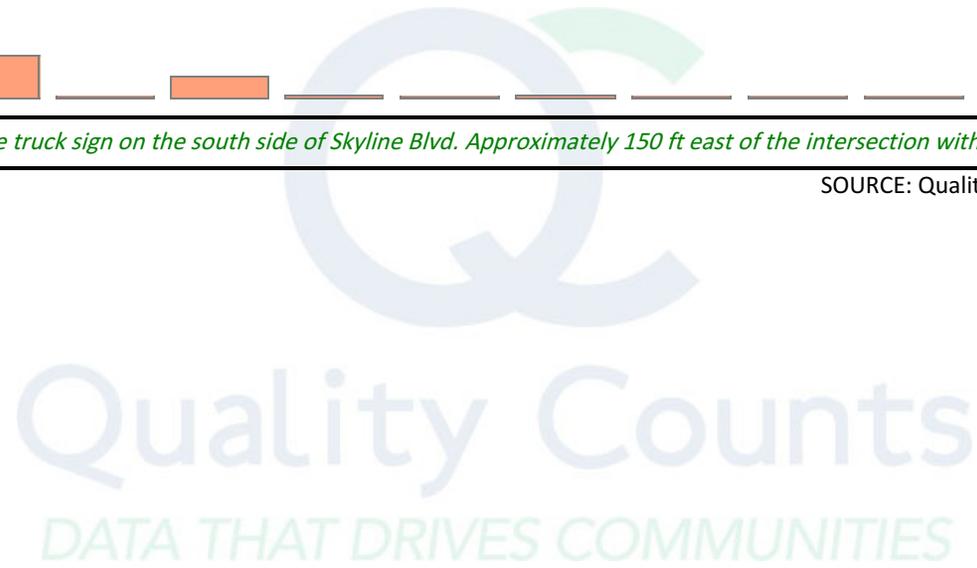
Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
01:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
03:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
04:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
05:00 AM	0	13	6	0	4	0	0	0	0	0	0	0	0	0	23
06:00 AM	0	29	6	0	6	1	0	0	0	0	0	0	0	0	42
07:00 AM	2	52	11	0	10	0	0	0	0	0	0	0	0	0	75
08:00 AM	1	63	8	0	8	2	0	0	0	0	1	0	0	1	84
09:00 AM	1	36	9	0	6	1	0	2	0	0	0	0	0	0	55
10:00 AM	0	46	17	1	9	0	0	0	0	0	0	0	0	0	73
11:00 AM	0	46	7	0	8	0	0	1	0	0	0	0	0	0	62
12:00 PM	1	63	24	0	7	2	0	0	0	0	0	0	0	1	98
01:00 PM	0	57	23	0	11	0	0	2	0	0	0	0	0	0	93
02:00 PM	0	58	15	0	7	2	0	2	0	0	0	0	0	1	85
03:00 PM	1	76	15	0	13	1	0	1	0	0	0	0	0	0	107
04:00 PM	0	88	29	0	13	0	0	0	0	0	0	0	0	0	130
05:00 PM	2	73	20	0	6	1	0	0	0	0	0	0	0	1	103
06:00 PM	0	48	13	0	3	0	0	1	0	0	0	0	0	2	67
07:00 PM	0	32	8	0	2	0	0	1	0	0	0	0	0	0	43
08:00 PM	0	15	3	0	1	0	0	0	0	0	0	0	0	0	19
09:00 PM	0	17	3	0	0	0	0	0	0	0	0	0	0	0	20
10:00 PM	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
11:00 PM	0	10	0	0	0	0	0	0	0	0	0	0	0	0	10
Day Total	8	841	223	1	114	10	0	10	0	0	1	0	0	6	1214
Percent	0.7%	69.3%	18.4%	0.1%	9.4%	0.8%	0%	0.8%	0%	0%	0.1%	0%	0%	0.5%	
ADT 1214															
AM Peak	7:00 AM	8:00 AM	10:00 AM	10:00 AM	7:00 AM	8:00 AM	12:00 AM	9:00 AM	12:00 AM	12:00 AM	8:00 AM	12:00 AM	12:00 AM	8:00 AM	8:00 AM
Volume	2	63	17	1	10	2	0	2	0	0	1	0	0	1	84
PM Peak	5:00 PM	4:00 PM	4:00 PM	12:00 PM	3:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	6:00 PM	4:00 PM
Volume	2	88	29	0	13	2	0	2	0	0	0	0	0	2	130

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd **QC JOB #:** 15335401
SPECIFIC LOCATION: **DIRECTION:** EB, WB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	8	841	223	1	114	10	0	10	0	0	1	0	0	6	1214
Percent	0.7%	69.3%	18.4%	0.1%	9.4%	0.8%	0%	0.8%	0%	0%	0.1%	0%	0%	0.5%	
ADT 1214															

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.



Type of report: Tube Count - Speed Data

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd														QC JOB #: 15335401			
SPECIFIC LOCATION:														DIRECTION: EB, WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020			
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	2	1	0	0	0	0	0	0	0	0	3	31-40	3
01:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	26-35	2
02:00 AM	0	0	0	1	2	0	0	0	0	0	0	0	0	0	3	26-35	3
03:00 AM	0	0	1	1	3	0	0	0	0	0	0	0	0	0	5	26-35	4
04:00 AM	0	0	1	2	1	0	0	0	0	0	0	0	0	0	4	26-35	3
05:00 AM	0	0	3	7	13	0	0	0	0	0	0	0	0	0	23	26-35	20
06:00 AM	0	2	7	15	13	3	1	1	0	0	0	0	0	0	42	26-35	28
07:00 AM	1	0	13	27	28	5	1	0	0	0	0	0	0	0	75	26-35	55
08:00 AM	2	1	10	28	34	9	0	0	0	0	0	0	0	0	84	26-35	62
09:00 AM	0	0	6	26	18	4	0	1	0	0	0	0	0	0	55	26-35	44
10:00 AM	0	0	8	28	32	4	1	0	0	0	0	0	0	0	73	26-35	60
11:00 AM	1	2	6	25	23	5	0	0	0	0	0	0	0	0	62	26-35	48
12:00 PM	3	2	13	43	33	3	1	0	0	0	0	0	0	0	98	26-35	76
01:00 PM	0	1	13	41	29	9	0	0	0	0	0	0	0	0	93	26-35	70
02:00 PM	3	2	9	37	26	7	1	0	0	0	0	0	0	0	85	26-35	63
03:00 PM	2	1	12	36	48	8	0	0	0	0	0	0	0	0	107	26-35	84
04:00 PM	0	2	16	62	38	11	1	0	0	0	0	0	0	0	130	26-35	100
05:00 PM	3	3	15	38	35	8	1	0	0	0	0	0	0	0	103	26-35	73
06:00 PM	3	2	6	34	16	6	0	0	0	0	0	0	0	0	67	26-35	50
07:00 PM	0	0	2	22	17	2	0	0	0	0	0	0	0	0	43	26-35	39
08:00 PM	0	0	2	11	5	1	0	0	0	0	0	0	0	0	19	26-35	16
09:00 PM	0	0	2	7	9	2	0	0	0	0	0	0	0	0	20	26-35	16
10:00 PM	0	0	2	0	3	3	0	0	0	0	0	0	0	0	8	31-40	6
11:00 PM	0	0	0	3	5	1	1	0	0	0	0	0	0	0	10	26-35	8
Day Total	18	18	147	494	435	92	8	2	0	0	0	0	0	0	1214	26-35	929
Percent	1.5%	1.5%	12.1%	40.7%	35.8%	7.6%	0.7%	0.2%	0%	0%	0%	0%	0%	0%			
AM Peak Volume	8:00 AM	6:00 AM	7:00 AM	8:00 AM	8:00 AM	8:00 AM	6:00 AM	6:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	8:00 AM		
	2	2	13	28	34	9	1	1	0	0	0	0	0	0	84		
PM Peak Volume	12:00 PM	5:00 PM	4:00 PM	4:00 PM	3:00 PM	4:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
	3	3	16	62	48	11	1	0	0	0	0	0	0	0	130		

Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.

LOCATION: NW Skyline Blvd ~150' east of Cornelius Pass Rd														QC JOB #: 15335401			
SPECIFIC LOCATION:														DIRECTION: EB, WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020 -			
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	18	18	147	494	435	92	8	2	0	0	0	0	0	0	1214	26-35	929
Percent	1.5%	1.5%	12.1%	40.7%	35.8%	7.6%	0.7%	0.2%	0%	0%	0%	0%	0%	0%			
Cumulative Percent	1.5%	3%	15.1%	55.8%	91.6%	99.2%	99.8%	100%	100%	100%	100%	100%	100%	100%			
ADT 1214															85th Percentile: 34 MPH Mean Speed(Average): 29 MPH Median: 29 MPH Mode: 28 MPH		
<i>Comments: Please place the tubes at the fire truck sign on the south side of Skyline Blvd. Approximately 150 ft east of the intersection with Cornelius Pass.</i>																	



Type of report: Tube Count - Volume Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd							QC JOB #: 15335402			
SPECIFIC LOCATION:							DIRECTION: EB			
CITY/STATE: Portland, OR							DATE: Dec 15 2020 - Dec 15 2020			
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
		15 Dec 20								
12:00 AM		1				1			1	
01:00 AM		2				2			2	
02:00 AM		2				2			2	
03:00 AM		3				3			3	
04:00 AM		1				1			1	
05:00 AM		13				13			13	
06:00 AM		28				28			28	
07:00 AM		47				47			47	
08:00 AM		47				47			47	
09:00 AM		26				26			26	
10:00 AM		41				41			41	
11:00 AM		19				19			19	
12:00 PM		41				41			41	
01:00 PM		42				42			42	
02:00 PM		49				49			49	
03:00 PM		49				49			49	
04:00 PM		76				76			76	
05:00 PM		56				56			56	
06:00 PM		41				41			41	
07:00 PM		23				23			23	
08:00 PM		13				13			13	
09:00 PM		9				9			9	
10:00 PM		4				4			4	
11:00 PM		0				0			0	
Day Total		633				633			633	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak Volume		7:00 AM 47				7:00 AM 47			7:00 AM 47	
PM Peak Volume		4:00 PM 76				4:00 PM 76			4:00 PM 76	

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd
SPECIFIC LOCATION:
CITY/STATE: Portland, OR

QC JOB #: 15335402
DIRECTION: EB
DATE: Dec 15 2020

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
01:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 AM	0	7	2	0	4	0	0	0	0	0	0	0	0	0	13
06:00 AM	0	22	2	0	4	0	0	0	0	0	0	0	0	0	28
07:00 AM	0	30	9	0	7	0	0	1	0	0	0	0	0	0	47
08:00 AM	0	36	6	0	3	1	0	1	0	0	0	0	0	0	47
09:00 AM	0	18	3	0	3	0	0	1	0	0	0	0	0	1	26
10:00 AM	0	26	5	0	10	0	0	0	0	0	0	0	0	0	41
11:00 AM	0	15	0	0	4	0	0	0	0	0	0	0	0	0	19
12:00 PM	0	28	9	0	3	1	0	0	0	0	0	0	0	0	41
01:00 PM	0	23	10	0	8	0	0	1	0	0	0	0	0	0	42
02:00 PM	0	33	8	0	5	2	0	1	0	0	0	0	0	0	49
03:00 PM	0	35	5	1	8	0	0	0	0	0	0	0	0	0	49
04:00 PM	0	48	18	0	10	0	0	0	0	0	0	0	0	0	76
05:00 PM	1	35	15	0	5	0	0	0	0	0	0	0	0	0	56
06:00 PM	0	32	5	0	4	0	0	0	0	0	0	0	0	0	41
07:00 PM	0	16	5	0	1	0	0	1	0	0	0	0	0	0	23
08:00 PM	0	9	3	0	1	0	0	0	0	0	0	0	0	0	13
09:00 PM	0	5	4	0	0	0	0	0	0	0	0	0	0	0	9
10:00 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Day Total	1	427	113	1	80	4	0	6	0	0	0	0	0	1	633
Percent	0.2%	67.5%	17.9%	0.2%	12.6%	0.6%	0%	0.9%	0%	0%	0%	0%	0%	0.2%	
ADT 633															
AM Peak Volume	12:00 AM	8:00 AM	7:00 AM	12:00 AM	10:00 AM	8:00 AM	12:00 AM	7:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	9:00 AM	7:00 AM
	0	36	9	0	10	1	0	1	0	0	0	0	0	1	47
PM Peak Volume	5:00 PM	4:00 PM	4:00 PM	3:00 PM	4:00 PM	2:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM
	1	48	18	1	10	2	0	1	0	0	0	0	0	0	76

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd **QC JOB #:** 15335402
SPECIFIC LOCATION: **DIRECTION:** EB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	1	427	113	1	80	4	0	6	0	0	0	0	0	1	633
Percent	0.2%	67.5%	17.9%	0.2%	12.6%	0.6%	0%	0.9%	0%	0%	0%	0%	0%	0.2%	
ADT 633															

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass



Type of report: Tube Count - Speed Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd															QC JOB #: 15335402		
SPECIFIC LOCATION:															DIRECTION: EB		
CITY/STATE: Portland, OR															DATE: Dec 15 2020		
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	41-50	1
01:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31-40	2
02:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	31-40	1
03:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	0	3	31-40	2
04:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	26-35	1
05:00 AM	0	0	0	2	3	6	2	0	0	0	0	0	0	0	13	31-40	9
06:00 AM	0	0	1	7	7	9	2	1	1	0	0	0	0	0	28	31-40	16
07:00 AM	0	0	3	4	19	15	6	0	0	0	0	0	0	0	47	31-40	34
08:00 AM	0	0	4	7	17	13	5	1	0	0	0	0	0	0	47	31-40	30
09:00 AM	1	0	0	4	9	8	4	0	0	0	0	0	0	0	26	31-40	17
10:00 AM	0	0	0	7	9	19	4	2	0	0	0	0	0	0	41	31-40	28
11:00 AM	0	0	0	2	8	5	4	0	0	0	0	0	0	0	19	31-40	13
12:00 PM	0	0	3	5	16	10	7	0	0	0	0	0	0	0	41	31-40	26
01:00 PM	0	0	1	7	17	8	5	4	0	0	0	0	0	0	42	31-40	25
02:00 PM	0	3	2	7	13	18	4	2	0	0	0	0	0	0	49	31-40	31
03:00 PM	0	0	0	6	17	19	5	2	0	0	0	0	0	0	49	31-40	36
04:00 PM	0	0	0	6	32	25	9	4	0	0	0	0	0	0	76	31-40	57
05:00 PM	0	1	1	4	27	18	5	0	0	0	0	0	0	0	56	31-40	45
06:00 PM	0	1	1	3	15	16	4	1	0	0	0	0	0	0	41	31-40	31
07:00 PM	0	0	1	6	8	7	1	0	0	0	0	0	0	0	23	31-40	15
08:00 PM	0	0	0	2	6	4	1	0	0	0	0	0	0	0	13	31-40	10
09:00 PM	0	0	1	0	4	3	0	1	0	0	0	0	0	0	9	31-40	7
10:00 PM	0	0	0	1	0	1	1	1	0	0	0	0	0	0	4	36-45	2
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
Day Total	1	5	19	80	229	208	69	21	1	0	0	0	0	0	633	31-40	437
Percent	0.2%	0.8%	3%	12.6%	36.2%	32.9%	10.9%	3.3%	0.2%	0%	0%	0%	0%	0%			
AM Peak Volume	9:00 AM	12:00 AM	8:00 AM	6:00 AM	7:00 AM	10:00 AM	7:00 AM	10:00 AM	6:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM		
	1	0	4	7	19	19	6	2	1	0	0	0	0	0	47		
PM Peak Volume	12:00 PM	2:00 PM	12:00 PM	1:00 PM	4:00 PM	4:00 PM	4:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
	0	3	3	7	32	25	9	4	0	0	0	0	0	0	76		

Report generated on 12/21/2020 4:02 PM

SOURCE: Quality Counts, LLC (<http://www.qualitycounts.net>)

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd														QC JOB #: 15335402			
SPECIFIC LOCATION:														DIRECTION: EB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020 -			
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	1	5	19	80	229	208	69	21	1	0	0	0	0	0	633	31-40	437
Percent	0.2%	0.8%	3%	12.6%	36.2%	32.9%	10.9%	3.3%	0.2%	0%	0%	0%	0%	0%			
Cumulative Percent	0.2%	0.9%	3.9%	16.6%	52.8%	85.6%	96.5%	99.8%	100%	100%	100%	100%	100%	100%			
ADT 633															85th Percentile: 39 MPH Mean Speed(Average): 34 MPH Median: 34 MPH Mode: 33 MPH		
<i>Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass</i>																	



Type of report: Tube Count - Volume Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd							QC JOB #: 15335402			
SPECIFIC LOCATION:							DIRECTION: WB			
CITY/STATE: Portland, OR							DATE: Dec 15 2020 - Dec 15 2020			
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
		15 Dec 20								
12:00 AM		2				2			2	
01:00 AM		0				0			0	
02:00 AM		1				1			1	
03:00 AM		2				2			2	
04:00 AM		3				3			3	
05:00 AM		10				10			10	
06:00 AM		14				14			14	
07:00 AM		28				28			28	
08:00 AM		36				36			36	
09:00 AM		30				30			30	
10:00 AM		33				33			33	
11:00 AM		40				40			40	
12:00 PM		59				59			59	
01:00 PM		50				50			50	
02:00 PM		37				37			37	
03:00 PM		56				56			56	
04:00 PM		54				54			54	
05:00 PM		45				45			45	
06:00 PM		28				28			28	
07:00 PM		18				18			18	
08:00 PM		7				7			7	
09:00 PM		10				10			10	
10:00 PM		5				5			5	
11:00 PM		9				9			9	
Day Total		577				577			577	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak Volume		11:00 AM 40				11:00 AM 40			11:00 AM 40	
PM Peak Volume		12:00 PM 59				12:00 PM 59			12:00 PM 59	

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

Type of report: Tube Count - Vehicle Classification Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd
SPECIFIC LOCATION:
CITY/STATE: Portland, OR

QC JOB #: 15335402
DIRECTION: WB
DATE: Dec 15 2020

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
03:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
04:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00 AM	0	6	3	0	1	0	0	0	0	0	0	0	0	0	10
06:00 AM	0	7	2	0	4	1	0	0	0	0	0	0	0	0	14
07:00 AM	0	21	2	0	5	0	0	0	0	0	0	0	0	0	28
08:00 AM	0	25	4	0	6	1	0	0	0	0	0	0	0	0	36
09:00 AM	1	18	3	0	6	1	0	1	0	0	0	0	0	0	30
10:00 AM	0	21	6	1	5	0	0	0	0	0	0	0	0	0	33
11:00 AM	0	29	4	0	6	0	0	1	0	0	0	0	0	0	40
12:00 PM	0	37	9	0	11	1	0	1	0	0	0	0	0	0	59
01:00 PM	0	33	9	0	6	0	0	2	0	0	0	0	0	0	50
02:00 PM	0	26	7	0	3	0	0	1	0	0	0	0	0	0	37
03:00 PM	0	37	9	0	8	2	0	0	0	0	0	0	0	0	56
04:00 PM	0	34	14	0	6	0	0	0	0	0	0	0	0	0	54
05:00 PM	0	33	5	0	4	0	0	0	0	0	0	0	0	3	45
06:00 PM	0	18	5	0	4	0	0	1	0	0	0	0	0	0	28
07:00 PM	0	14	4	0	0	0	0	0	0	0	0	0	0	0	18
08:00 PM	0	3	3	0	1	0	0	0	0	0	0	0	0	0	7
09:00 PM	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
10:00 PM	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
11:00 PM	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
Day Total	1	389	94	1	76	6	0	7	0	0	0	0	0	3	577
Percent	0.2%	67.4%	16.3%	0.2%	13.2%	1%	0%	1.2%	0%	0%	0%	0%	0%	0.5%	
ADT 577															
AM Peak	9:00 AM	11:00 AM	10:00 AM	10:00 AM	8:00 AM	6:00 AM	12:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM
Volume	1	29	6	1	6	1	0	1	0	0	0	0	0	0	40
PM Peak	12:00 PM	12:00 PM	4:00 PM	12:00 PM	12:00 PM	3:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	5:00 PM	12:00 PM
Volume	0	37	14	0	11	2	0	2	0	0	0	0	0	3	59

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd **QC JOB #:** 15335402
SPECIFIC LOCATION: **DIRECTION:** WB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	1	389	94	1	76	6	0	7	0	0	0	0	0	3	577
Percent	0.2%	67.4%	16.3%	0.2%	13.2%	1%	0%	1.2%	0%	0%	0%	0%	0%	0.5%	
ADT 577															

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass



Type of report: Tube Count - Speed Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd														QC JOB #: 15335402			
SPECIFIC LOCATION:														DIRECTION: WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020			
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31-40	2
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1-10	0
02:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31-40	1
03:00 AM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	36-45	2
04:00 AM	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	31-40	2
05:00 AM	0	0	0	0	1	6	3	0	0	0	0	0	0	0	10	36-45	9
06:00 AM	0	0	0	1	4	5	3	0	0	1	0	0	0	0	14	31-40	9
07:00 AM	0	0	0	0	5	14	5	2	2	0	0	0	0	0	28	31-40	19
08:00 AM	0	0	0	1	4	12	13	6	0	0	0	0	0	0	36	36-45	25
09:00 AM	0	0	0	1	8	13	6	1	1	0	0	0	0	0	30	31-40	21
10:00 AM	0	0	0	1	9	18	4	1	0	0	0	0	0	0	33	31-40	27
11:00 AM	0	0	0	1	12	18	8	1	0	0	0	0	0	0	40	31-40	30
12:00 PM	0	0	3	3	14	27	10	2	0	0	0	0	0	0	59	31-40	41
01:00 PM	0	0	0	2	11	18	14	5	0	0	0	0	0	0	50	36-45	32
02:00 PM	0	0	1	0	12	11	10	3	0	0	0	0	0	0	37	31-40	23
03:00 PM	0	0	1	3	14	20	17	0	1	0	0	0	0	0	56	36-45	37
04:00 PM	0	0	0	1	14	25	12	2	0	0	0	0	0	0	54	31-40	39
05:00 PM	3	0	0	5	11	14	10	2	0	0	0	0	0	0	45	31-40	25
06:00 PM	0	0	0	3	6	14	4	1	0	0	0	0	0	0	28	31-40	20
07:00 PM	0	0	0	1	5	6	4	2	0	0	0	0	0	0	18	31-40	11
08:00 PM	0	0	0	0	3	4	0	0	0	0	0	0	0	0	7	31-40	7
09:00 PM	0	0	1	0	0	5	3	1	0	0	0	0	0	0	10	36-45	8
10:00 PM	0	0	0	1	0	1	2	1	0	0	0	0	0	0	5	41-50	3
11:00 PM	0	0	0	0	1	4	3	0	1	0	0	0	0	0	9	36-45	7
Day Total	3	0	6	24	134	241	132	31	5	1	0	0	0	0	577	31-40	375
Percent	0.5%	0%	1%	4.2%	23.2%	41.8%	22.9%	5.4%	0.9%	0.2%	0%	0%	0%	0%			
AM Peak Volume	12:00 AM	12:00 AM	12:00 AM	6:00 AM	11:00 AM	10:00 AM	8:00 AM	8:00 AM	7:00 AM	6:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	11:00 AM		
	0	0	0	1	12	18	13	6	2	1	0	0	0	0	40		
PM Peak Volume	5:00 PM	12:00 PM	12:00 PM	5:00 PM	12:00 PM	12:00 PM	3:00 PM	1:00 PM	3:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM		
	3	0	3	5	14	27	17	5	1	0	0	0	0	0	59		

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd														QC JOB #: 15335402			
SPECIFIC LOCATION:														DIRECTION: WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020 -			
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	3	0	6	24	134	241	132	31	5	1	0	0	0	0	577	31-40	375
Percent	0.5%	0%	1%	4.2%	23.2%	41.8%	22.9%	5.4%	0.9%	0.2%	0%	0%	0%	0%			
Cumulative Percent	0.5%	0.5%	1.6%	5.7%	28.9%	70.7%	93.6%	99%	99.8%	100%	100%	100%	100%	100%			
ADT 577															85th Percentile: 43 MPH Mean Speed(Average): 37 MPH Median: 37 MPH Mode: 38 MPH		
<i>Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass</i>																	



Type of report: Tube Count - Volume Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd SPECIFIC LOCATION: CITY/STATE: Portland, OR							QC JOB #: 15335402 DIRECTION: EB, WB DATE: Dec 15 2020 - Dec 15 2020			
Start Time	Mon 15 Dec 20	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM		3				3			3	
01:00 AM		2				2			2	
02:00 AM		3				3			3	
03:00 AM		5				5			5	
04:00 AM		4				4			4	
05:00 AM		23				23			23	
06:00 AM		42				42			42	
07:00 AM		75				75			75	
08:00 AM		83				83			83	
09:00 AM		56				56			56	
10:00 AM		74				74			74	
11:00 AM		59				59			59	
12:00 PM		100				100			100	
01:00 PM		92				92			92	
02:00 PM		86				86			86	
03:00 PM		105				105			105	
04:00 PM		130				130			130	
05:00 PM		101				101			101	
06:00 PM		69				69			69	
07:00 PM		41				41			41	
08:00 PM		20				20			20	
09:00 PM		19				19			19	
10:00 PM		9				9			9	
11:00 PM		9				9			9	
Day Total		1210				1210			1210	
% Weekday Average		100%								
% Week Average		100%				100%				
AM Peak Volume		8:00 AM 83				8:00 AM 83			8:00 AM 83	
PM Peak Volume		4:00 PM 130				4:00 PM 130			4:00 PM 130	

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

Type of report: Tube Count - Vehicle Classification Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd
SPECIFIC LOCATION:
CITY/STATE: Portland, OR

QC JOB #: 15335402
DIRECTION: EB, WB
DATE: Dec 15 2020

Start Time	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
12:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
01:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
03:00 AM	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
04:00 AM	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
05:00 AM	0	13	5	0	5	0	0	0	0	0	0	0	0	0	23
06:00 AM	0	29	4	0	8	1	0	0	0	0	0	0	0	0	42
07:00 AM	0	51	11	0	12	0	0	1	0	0	0	0	0	0	75
08:00 AM	0	61	10	0	9	2	0	1	0	0	0	0	0	0	83
09:00 AM	1	36	6	0	9	1	0	2	0	0	0	0	0	1	56
10:00 AM	0	47	11	1	15	0	0	0	0	0	0	0	0	0	74
11:00 AM	0	44	4	0	10	0	0	1	0	0	0	0	0	0	59
12:00 PM	0	65	18	0	14	2	0	1	0	0	0	0	0	0	100
01:00 PM	0	56	19	0	14	0	0	3	0	0	0	0	0	0	92
02:00 PM	0	59	15	0	8	2	0	2	0	0	0	0	0	0	86
03:00 PM	0	72	14	1	16	2	0	0	0	0	0	0	0	0	105
04:00 PM	0	82	32	0	16	0	0	0	0	0	0	0	0	0	130
05:00 PM	1	68	20	0	9	0	0	0	0	0	0	0	0	3	101
06:00 PM	0	50	10	0	8	0	0	1	0	0	0	0	0	0	69
07:00 PM	0	30	9	0	1	0	0	1	0	0	0	0	0	0	41
08:00 PM	0	12	6	0	2	0	0	0	0	0	0	0	0	0	20
09:00 PM	0	13	6	0	0	0	0	0	0	0	0	0	0	0	19
10:00 PM	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
11:00 PM	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
Day Total	2	816	207	2	156	10	0	13	0	0	0	0	0	4	1210
Percent	0.2%	67.4%	17.1%	0.2%	12.9%	0.8%	0%	1.1%	0%	0%	0%	0%	0%	0.3%	
ADT 1210															
AM Peak	9:00 AM	8:00 AM	7:00 AM	10:00 AM	10:00 AM	8:00 AM	12:00 AM	9:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	9:00 AM	8:00 AM
Volume	1	61	11	1	15	2	0	2	0	0	0	0	0	1	83
PM Peak	5:00 PM	4:00 PM	4:00 PM	3:00 PM	3:00 PM	12:00 PM	12:00 PM	1:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	5:00 PM	4:00 PM
Volume	1	82	32	1	16	2	0	3	0	0	0	0	0	3	130

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd **QC JOB #:** 15335402
SPECIFIC LOCATION: **DIRECTION:** EB, WB
CITY/STATE: Portland, OR **DATE:** Dec 15 2020

	Motorcycles	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Not Classified	Total
Grand Total	2	816	207	2	156	10	0	13	0	0	0	0	0	4	1210
Percent	0.2%	67.4%	17.1%	0.2%	12.9%	0.8%	0%	1.1%	0%	0%	0%	0%	0%	0.3%	
ADT 1210															

Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass



Type of report: Tube Count - Speed Data

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd														QC JOB #: 15335402			
SPECIFIC LOCATION:														DIRECTION: EB, WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020			
Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	31-40	2
01:00 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	31-40	2
02:00 AM	0	0	0	0	0	2	0	1	0	0	0	0	0	0	3	31-40	2
03:00 AM	0	0	1	0	1	2	1	0	0	0	0	0	0	0	5	36-45	3
04:00 AM	0	0	0	0	1	2	0	1	0	0	0	0	0	0	4	31-40	3
05:00 AM	0	0	0	2	4	12	5	0	0	0	0	0	0	0	23	36-45	17
06:00 AM	0	0	1	8	11	14	5	1	1	1	0	0	0	0	42	31-40	25
07:00 AM	0	0	3	4	24	29	11	2	2	0	0	0	0	0	75	31-40	53
08:00 AM	0	0	4	8	21	25	18	7	0	0	0	0	0	0	83	31-40	46
09:00 AM	1	0	0	5	17	21	10	1	1	0	0	0	0	0	56	31-40	38
10:00 AM	0	0	0	8	18	37	8	3	0	0	0	0	0	0	74	31-40	55
11:00 AM	0	0	0	3	20	23	12	1	0	0	0	0	0	0	59	31-40	43
12:00 PM	0	0	6	8	30	37	17	2	0	0	0	0	0	0	100	31-40	67
01:00 PM	0	0	1	9	28	26	19	9	0	0	0	0	0	0	92	31-40	54
02:00 PM	0	3	3	7	25	29	14	5	0	0	0	0	0	0	86	31-40	54
03:00 PM	0	0	1	9	31	39	22	2	1	0	0	0	0	0	105	31-40	70
04:00 PM	0	0	0	7	46	50	21	6	0	0	0	0	0	0	130	31-40	96
05:00 PM	3	1	1	9	38	32	15	2	0	0	0	0	0	0	101	31-40	70
06:00 PM	0	1	1	6	21	30	8	2	0	0	0	0	0	0	69	31-40	51
07:00 PM	0	0	1	7	13	13	5	2	0	0	0	0	0	0	41	31-40	26
08:00 PM	0	0	0	2	9	8	1	0	0	0	0	0	0	0	20	31-40	17
09:00 PM	0	0	2	0	4	8	3	2	0	0	0	0	0	0	19	31-40	12
10:00 PM	0	0	0	2	0	2	3	2	0	0	0	0	0	0	9	38-47	5
11:00 PM	0	0	0	0	1	4	3	0	1	0	0	0	0	0	9	36-45	7
Day Total	4	5	25	104	363	449	201	52	6	1	0	0	0	0	1210	31-40	812
Percent	0.3%	0.4%	2.1%	8.6%	30%	37.1%	16.6%	4.3%	0.5%	0.1%	0%	0%	0%	0%			
AM Peak Volume	9:00 AM	12:00 AM	8:00 AM	6:00 AM	7:00 AM	10:00 AM	8:00 AM	8:00 AM	7:00 AM	6:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	8:00 AM		
	1	0	4	8	24	37	18	7	2	1	0	0	0	0	83		
PM Peak Volume	5:00 PM	2:00 PM	12:00 PM	1:00 PM	4:00 PM	4:00 PM	3:00 PM	1:00 PM	3:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	4:00 PM		
	3	3	6	9	46	50	22	9	1	0	0	0	0	0	130		

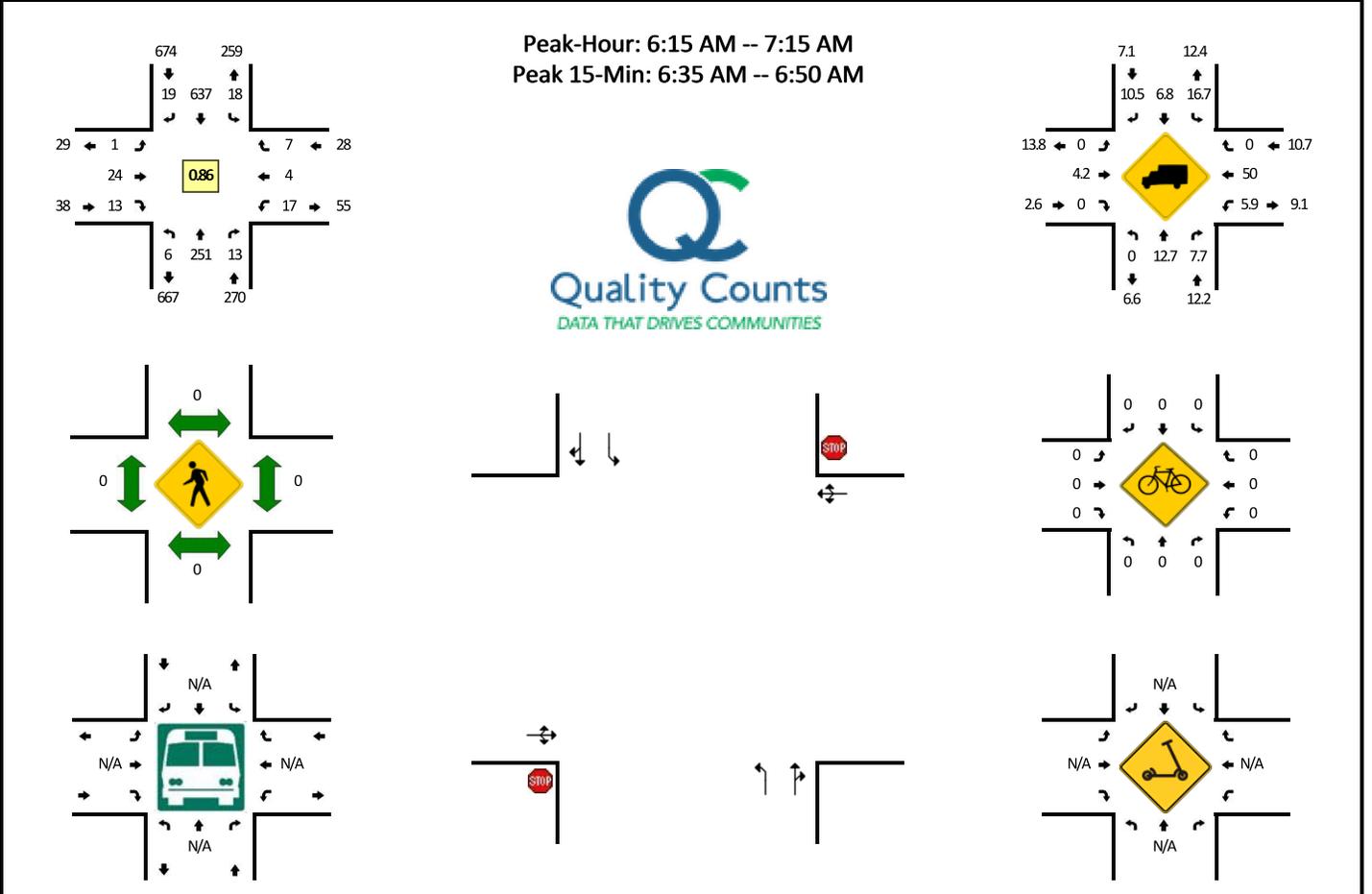
Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass

LOCATION: NW Skyline Blvd ~500' east of Cornelius Pass Rd														QC JOB #: 15335402			
SPECIFIC LOCATION:														DIRECTION: EB, WB			
CITY/STATE: Portland, OR														DATE: Dec 15 2020 -			
Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	4	5	25	104	363	449	201	52	6	1	0	0	0	0	1210	31-40	812
Percent	0.3%	0.4%	2.1%	8.6%	30%	37.1%	16.6%	4.3%	0.5%	0.1%	0%	0%	0%	0%			
Cumulative Percent	0.3%	0.7%	2.8%	11.4%	41.4%	78.5%	95.1%	99.4%	99.9%	100%	100%	100%	100%	100%			
ADT 1210															85th Percentile: 41 MPH Mean Speed(Average): 36 MPH Median: 36 MPH Mode: 38 MPH		
<i>Comments: Please place at the utility pole on the northside of Skyline Blvd approximately 500 ft east of the intersection with Cornelius Pass</i>																	



LOCATION: NW Cornelius Pass Rd -- NW Skyline Blvd
CITY/STATE: Multnomah, OR

QC JOB #: 15112861
DATE: Wed, Nov 13 2019

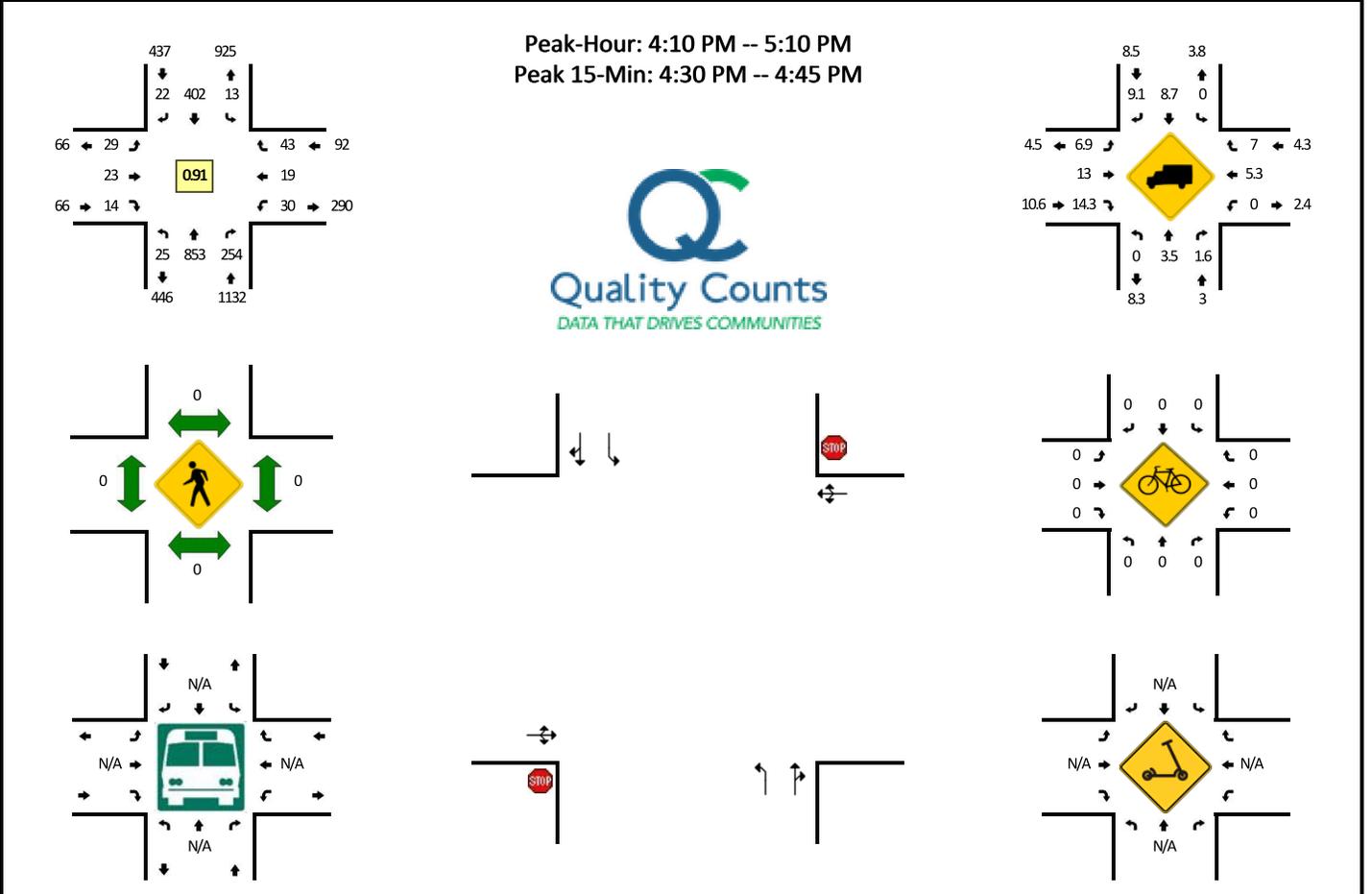


5-Min Count Period Beginning At	NW Cornelius Pass Rd (Northbound)				NW Cornelius Pass Rd (Southbound)				NW Skyline Blvd (Eastbound)				NW Skyline Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	12	0	0	0	54	0	0	0	1	1	0	1	0	1	0	70	
6:05 AM	0	8	0	0	2	28	1	0	0	0	1	0	1	0	1	0	42	
6:10 AM	1	19	4	0	3	55	1	0	0	0	1	0	0	0	0	0	84	
6:15 AM	1	15	0	0	2	63	2	0	0	0	2	0	0	0	0	0	85	
6:20 AM	1	21	1	0	3	51	0	0	0	1	1	0	2	0	1	0	82	
6:25 AM	0	15	0	0	2	52	3	0	0	2	0	0	1	0	1	0	76	
6:30 AM	0	22	2	0	1	35	0	0	0	0	3	0	1	1	0	0	65	
6:35 AM	1	26	2	0	0	80	2	0	0	2	1	0	0	0	2	0	116	
6:40 AM	0	18	2	0	2	36	2	0	1	4	1	0	1	0	0	0	67	
6:45 AM	0	21	1	0	3	74	2	0	0	4	3	0	3	0	0	0	111	
6:50 AM	0	28	0	0	2	31	0	0	0	1	0	0	2	1	1	0	66	
6:55 AM	0	18	2	0	1	57	3	0	0	3	0	0	1	0	0	0	85	949
7:00 AM	1	27	1	0	1	74	2	0	0	3	0	0	2	0	2	0	113	992
7:05 AM	2	22	1	0	1	22	3	0	0	2	0	0	3	0	0	0	56	1006
7:10 AM	0	18	1	0	0	62	0	0	0	2	2	0	1	2	0	0	88	1010
7:15 AM	0	22	0	0	0	46	0	0	0	1	2	0	0	1	0	0	72	997
7:20 AM	0	30	2	0	0	38	0	0	1	6	0	0	3	1	2	0	83	998
7:25 AM	0	20	0	0	0	40	4	0	0	1	1	0	4	0	2	0	72	994
7:30 AM	0	18	0	0	0	29	2	0	0	1	3	0	0	0	1	0	54	983
7:35 AM	1	28	3	0	1	68	5	0	0	4	0	0	1	1	0	0	112	979
7:40 AM	3	20	1	0	0	39	0	0	0	2	4	0	2	2	1	0	74	986
7:45 AM	1	26	1	0	0	38	0	0	1	2	4	0	1	4	0	0	78	953
7:50 AM	1	16	3	0	3	47	2	0	0	1	3	0	2	1	1	0	80	967
7:55 AM	0	12	1	0	0	31	2	0	1	1	1	0	2	0	0	0	51	933
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	4	260	20	0	20	760	24	0	4	40	20	0	16	0	8	0	1176	
Heavy Trucks	0	40	0		8	44	0		0	0	0		0	0	0		92	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

LOCATION: NW Cornelius Pass Rd -- NW Skyline Blvd
CITY/STATE: Multnomah, OR

QC JOB #: 15112862
DATE: Wed, Nov 13 2019



5-Min Count Period Beginning At	NW Cornelius Pass Rd (Northbound)				NW Cornelius Pass Rd (Southbound)				NW Skyline Blvd (Eastbound)				NW Skyline Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	70	11	0	1	27	2	0	1	2	0	0	3	1	2	0	121	
4:05 PM	0	67	9	0	1	22	0	0	2	2	0	0	3	1	2	0	109	
4:10 PM	5	76	24	0	0	33	3	0	0	2	2	0	2	0	4	0	151	
4:15 PM	4	67	11	0	1	24	0	0	4	7	1	0	0	3	6	0	128	
4:20 PM	3	73	20	0	0	41	4	0	2	1	2	0	1	2	5	0	154	
4:25 PM	1	73	22	0	0	21	0	0	4	0	1	0	2	0	3	0	127	
4:30 PM	3	84	17	0	2	51	4	0	2	2	1	0	5	2	4	0	177	
4:35 PM	0	61	36	0	1	31	1	0	0	2	0	0	6	4	1	0	143	
4:40 PM	1	87	31	0	1	26	0	0	4	0	1	0	1	0	3	0	155	
4:45 PM	3	71	22	0	2	40	2	0	1	2	0	0	2	0	2	0	147	
4:50 PM	1	68	20	0	1	27	3	0	4	2	3	0	4	3	5	0	141	
4:55 PM	0	63	9	0	1	43	4	0	4	2	1	0	3	1	4	0	135	1688
5:00 PM	1	63	21	0	0	34	1	0	2	1	0	0	0	1	4	0	128	1695
5:05 PM	3	67	21	0	4	31	0	0	2	2	2	0	4	3	2	0	141	1727
5:10 PM	5	60	26	0	1	38	2	0	0	3	0	0	0	0	2	0	137	1713
5:15 PM	1	57	23	0	3	26	0	0	0	6	1	0	2	1	4	0	124	1709
5:20 PM	1	63	21	0	2	27	2	0	3	3	2	0	4	1	0	0	129	1684
5:25 PM	3	76	14	0	1	35	1	0	2	1	3	0	1	1	2	0	140	1697
5:30 PM	1	58	10	0	2	44	0	0	2	6	3	0	4	0	5	0	135	1655
5:35 PM	1	59	27	0	3	31	0	0	1	5	1	0	2	1	1	0	132	1644
5:40 PM	1	72	29	0	1	26	2	0	1	1	1	0	3	0	1	0	138	1627
5:45 PM	2	48	30	0	1	34	0	0	1	2	0	0	2	0	1	0	121	1601
5:50 PM	4	60	35	0	0	16	0	0	2	1	1	0	4	1	2	0	126	1586
5:55 PM	1	56	24	0	0	21	1	0	0	3	2	0	2	1	1	0	112	1563
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	16	928	336	0	16	432	20	0	24	16	8	0	48	24	32	0	1900	
Heavy Trucks	0	32	4		0	60	0		0	0	4		0	4	4		108	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

HCM 6th TWSC
 1: NW Cornelius Pass Road & NW Skyline Boulevard

01/12/2021

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	1	24	13	17	4	7	6	251	13	18	637	19
Future Vol, veh/h	1	24	13	17	4	7	6	251	13	18	637	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	200	-	-	130	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	26	14	18	4	8	7	273	14	20	692	21

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1043	1044	703	1057	1047	280	713	0	0	287	0	0
Stage 1	743	743	-	294	294	-	-	-	-	-	-	-
Stage 2	300	301	-	763	753	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	207	229	438	203	228	759	887	-	-	1275	-	-
Stage 1	407	422	-	714	670	-	-	-	-	-	-	-
Stage 2	709	665	-	397	417	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	198	224	438	176	223	759	887	-	-	1275	-	-
Mov Cap-2 Maneuver	198	224	-	176	223	-	-	-	-	-	-	-
Stage 1	404	415	-	708	665	-	-	-	-	-	-	-
Stage 2	692	660	-	354	410	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	20.9		23.4		0.2		0.2	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	887	-	-	268	226	1275	-
HCM Lane V/C Ratio	0.007	-	-	0.154	0.135	0.015	-
HCM Control Delay (s)	9.1	-	-	20.9	23.4	7.9	-
HCM Lane LOS	A	-	-	C	C	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.5	0	-

HCM 6th TWSC
 1: NW Cornelius Pass Road & NW Skyline Boulevard

01/12/2021

Intersection												
Int Delay, s/veh	14.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Traffic Vol, veh/h	29	23	14	30	19	43	25	853	254	13	402	22
Future Vol, veh/h	29	23	14	30	19	43	25	853	254	13	402	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	-	-	-	-	200	-	-	130	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	25	15	33	21	47	27	927	276	14	437	24

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1630	1734	449	1616	1608	1065	461	0	0	1203	0	0
Stage 1	477	477	-	1119	1119	-	-	-	-	-	-	-
Stage 2	1153	1257	-	497	489	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	81	88	610	83	105	270	1100	-	-	580	-	-
Stage 1	569	556	-	251	282	-	-	-	-	-	-	-
Stage 2	240	243	-	555	549	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	54	84	610	60	100	270	1100	-	-	580	-	-
Mov Cap-2 Maneuver	54	84	-	60	100	-	-	-	-	-	-	-
Stage 1	555	543	-	245	275	-	-	-	-	-	-	-
Stage 2	179	237	-	504	536	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	167.9		140.7		0.2		0.3	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1100	-	-	79	108	580	-
HCM Lane V/C Ratio	0.025	-	-	0.908	0.926	0.024	-
HCM Control Delay (s)	8.4	-	-	167.9	140.7	11.4	-
HCM Lane LOS	A	-	-	F	F	B	-
HCM 95th %tile Q(veh)	0.1	-	-	4.8	5.6	0.1	-

Intersection: 1: NW Cornelius Pass Road & NW Skyline Boulevard

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	53	47	23	29
Average Queue (ft)	24	16	4	4
95th Queue (ft)	46	39	17	21
Link Distance (ft)	153	1995		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	130
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

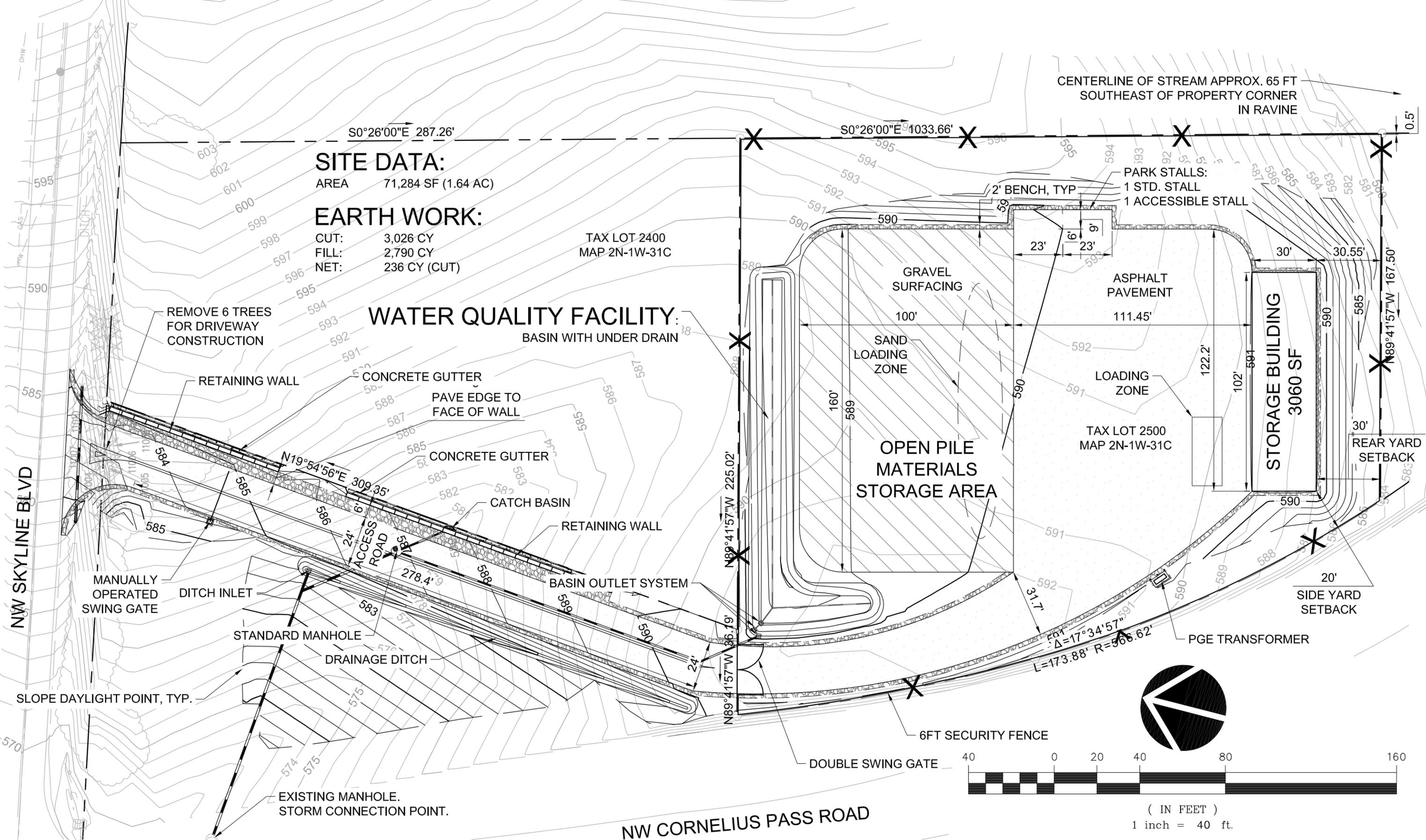
Network wide Queuing Penalty: 0

Intersection: 1: NW Cornelius Pass Road & NW Skyline Boulevard

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	161	276	42	27	34
Average Queue (ft)	65	101	8	2	10
95th Queue (ft)	138	240	29	13	32
Link Distance (ft)	153	1995		439	
Upstream Blk Time (%)	3				
Queuing Penalty (veh)	0				
Storage Bay Dist (ft)			200		130
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 0



SITE DATA:

AREA 71,284 SF (1.64 AC)

EARTH WORK:

CUT: 3,026 CY
 FILL: 2,790 CY
 NET: 236 CY (CUT)

TAX LOT 2400
 MAP 2N-1W-31C

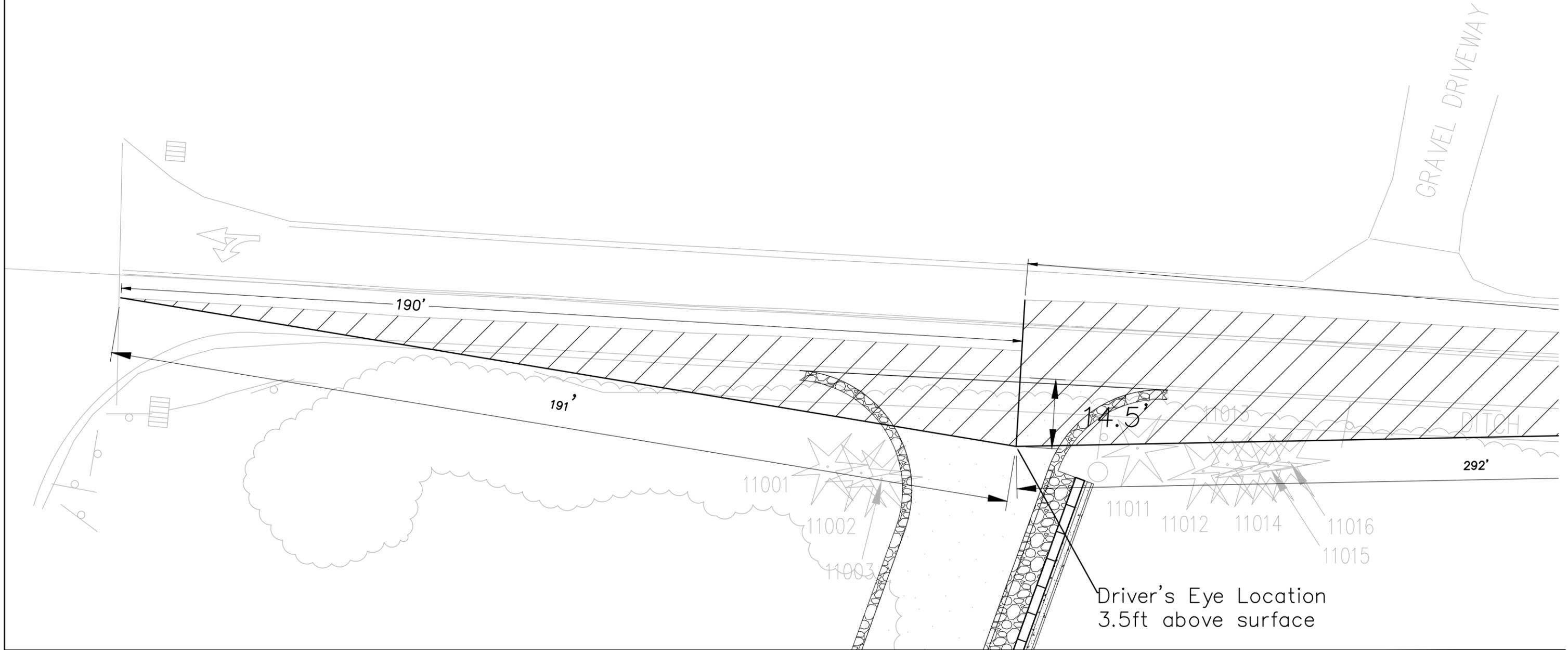
WATER QUALITY FACILITY:

BASIN WITH UNDER DRAIN

OPEN PILE MATERIALS STORAGE AREA

STORAGE BUILDING
 3060 SF





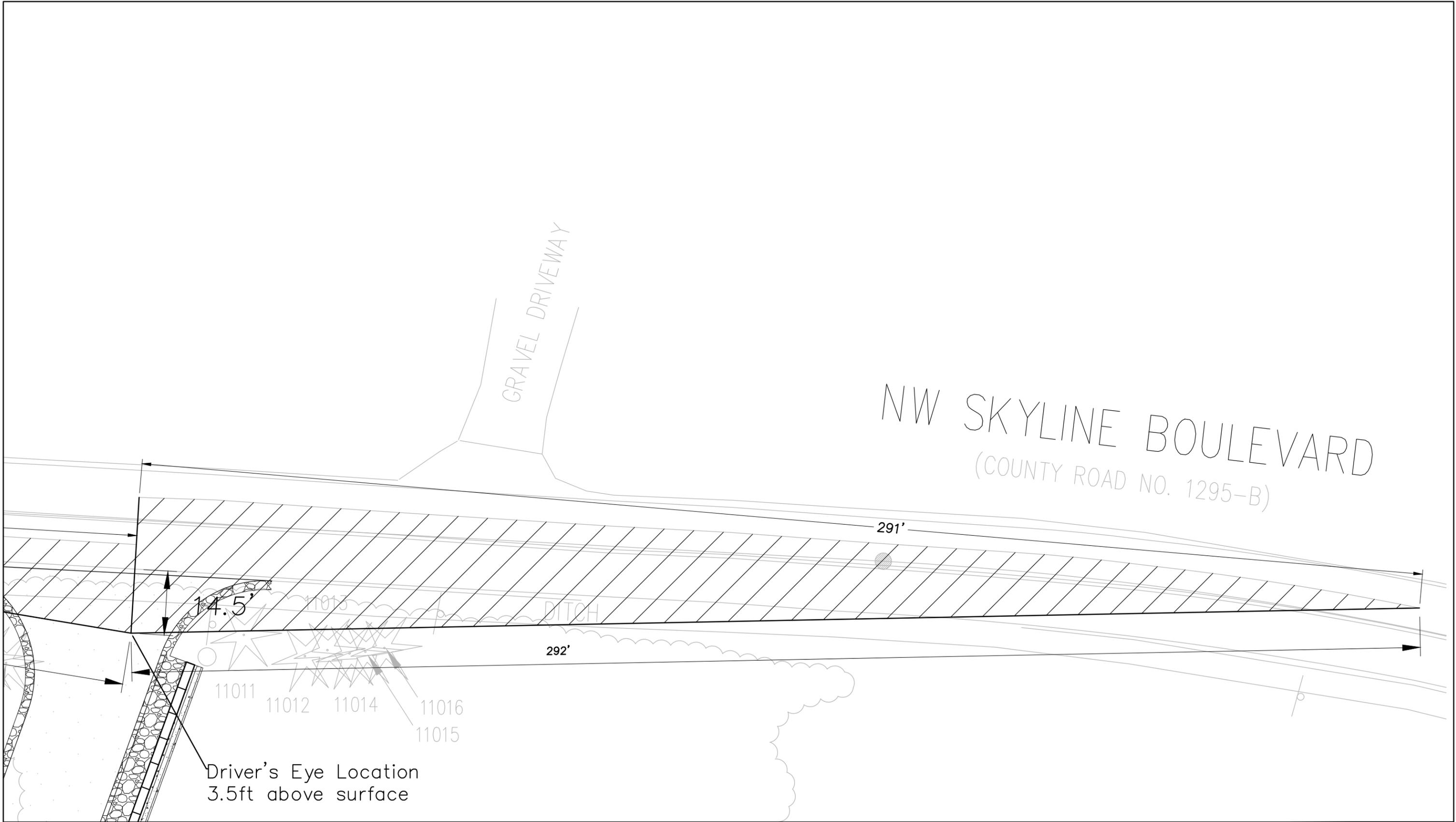
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MACKENZIE
 DATE: 01.19.2021
 DRAWN BY: JHA
 CHECKED BY: BTA
 JOB NO:
 220035700

**STOPPING SIGHT DISTANCE
 AVAILABLE TO THE WEST**
**ODOT SKYLINE STOCKPILE
 MULTNOMAH COUNTY**

**FIGURE
 1A**



Driver's Eye Location
3.5ft above surface

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**STOPPING SIGHT DISTANCE
 AVAILABLE TO THE EAST**
**ODOT SYKLINE STOCKPILE
 MULTNOMAH COUNTY**

**FIGURE
 1B**