EXHIBIT 3.12

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

Received
Planning Division
8/26/2022

MEMORANDUM

Date:	June 14, 2022	Project #: 26659
To:	Jabra Khasho, PE, & Kate McQuillan, AICP, City of Beaverton Aaron Holm, Trammell Crow	
From:	Julia Kuhn, PE	
Project:	Cedar Hills Center Redevelopment	
Subject:	Updated Trip Generation Comparison for Proposed Change in Use	

Subsequent to our April 2022 memo related to the trip generation comparison for the proposed redevelopment of the Cedar Hills Center, Trammell Crow has made some minor updates to the site plan and is proposing 400 apartments (instead of the 401 units previously studied) and 4,500 square feet of supportive retail. They are still intending to leave the DMV in-place. This memorandum provides an update to the trip generation comparison. As discussed herein, we continue to conclude that the change in vehicular trip generation does not trigger the need for an updated Traffic Impact Analysis (TIA) per City of Beaverton Development Code Section (BDC) 60.55.20. We also conclude that this change does not trigger the need for a new TIA for review by the Oregon Department of Transportation (ODOT) nor an Access Report for review by Washington County. Further details are provided below.

Prior Study Estimated Change in Trip Generation

For reference purposes and as documented in our April 2022 memo, Table 1 shows the trip generation for the previously approved redevelopment and compares it to the existing uses on-site. The information from Table 1 is from the 2019 Traffic Impact Analysis (TIA) and Access Report performed for the redevelopment of the overall site.

Table 1. 2019 TIA Change in Trip Generation

Land Use	ITE Code	Size	Total Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total Trips	In	Out	Total Trips	In	Out
Existing Retail Center									
Commercial	820	113,361 sq ft	6,548	208	129	79	596	286	310
Less pass-by (34%)			*2,226*	*70*	*44*	*26*	*202*	*98*	*104*
Total Net New Trips			4,322	138	85	53	394	188	206
Proposed Redevelopment									
Midrise Apartments	221	509 units	2,772	169	44	125	211	129	82
Commercial	820	56,388 sq ft	4,072	180	112	68	356	171	185
Less Internal (12% daily, 1% AM, 23% PM)			*808*	*4*	*2*	*2*	*130*	*69*	*61*
Less pass-by (34%)			*1,246*	*60*	*30*	*30*	*98*	*49*	*49*
Total Net New Trips			4,790	285	124	161	339	182	157
Change in Total Trips (Redevelopment - Existing)			468	147	39	108	-55	-6	-49

As discussed above, the new proposal will eliminate the DMV portion of the site (i.e., 23,510 square feet of the existing retail uses) and instead replace the remaining 89,851 square feet of retail with 400 apartments in four buildings, each five stories tall, and 4,500 square feet of retail.

Estimated Change in Trip Generation for Updated Site Plan

The anticipated change in trip generation associated with the re-development of the eastern portion of the site is shown in Table 2. The trip generation estimates for the existing and proposed uses were prepared based on rates included in the *Trip Generation Manual*, 11th Edition (Institute of Transportation Engineers, ITE, 2021). Further, the trip generation midrise rates for units not close to rail transit to remain consistent with our 2019 TIA.[1]

[1]We used these rates to remain consistent with the past study and given the limited number of data points for those rates close to transit. We do note that the Sunset Transit Center is available via a convenient walking path connection from the site and is anticipated to be an asset to future residents.

Table 2. Estimated Change in Trip Generation for Current Proposal

Land Use	ITE Code	Size	Total Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total Trips	In	Out	Total Trips	In	Out
Proposed Use									
Mid-Rise Apartments	221	400 units	1,862	164	37	127	156	95	61
Retail	822	4,500 sq ft	420	11	6	5	30	15	15
*Less pass-by (34%)**			*144*	*4*	*2*	*2*	*10*	*5*	5
Total Net New Retail Trips			276	7	4	3	20	10	10
Total Trips Proposed			2,282	175	43	132	186	110	76
Total Net New Proposed			2,138	171	41	130	176	105	71
Existing Uses									
Retail	821	89,851 sq ft	6,068	155	96	59	466	228	238
pass-by (34%)*			2,063	53	33	20	158	78	80
Net New Retail Trips			4,005	102	63	39	308	150	158
Proposed Use - Existing Uses									
Change in Total Trips			-3,786	20	-53	73	-280	-118	-162
Change in Net New Trips			-1,867	69	-22	91	-132	-45	-87

*We note that the 11th Edition of the Trip Generation Manual recommends a 40 percent pass-by rate for retail uses of this size but we applied a 34 percent pass-by rate consistent with the previous analysis and to present a conservative comparison in the above table.

Compliance with Beaverton Development Code Section 60.55.20

Based on the trip generation shown in Table 2, the redevelopment scenario currently proposed results in a decrease in daily trip making. As such, a TIA is not required per BDC Section 60.55.20. Further, in comparing Tables 1 and 2, we note that the change in weekday AM and PM trips associated with the redevelopment is far less than previously studied and approved on-site. Accordingly, no additional analyses or studies are needed.

Please let us know if you need any additional information as part of your review of the redevelopment proposal.

EXPIRES: 06/30/24

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

June 22, 2022 Project #: 26659

WASHINGTON COUNTY, OREGON
Department of Land Use and Transportation, Current Planning Services
155 North First Avenue, Suite 350 – MS13, Hillsboro, Oregon 97124
(503) 846-8761 FAX: (503) 846-2908
http://www.co.washington.or.us

Attn: Assurances

RE: Cedar Hills Apartments SW Park Way Access – **PRELIMINARY** Sight Distance Certification (City of Beaverton PA 2021-0046)

The proposed northern access for the Cedar Hills Apartment is located 120 feet east of the site's west property line on SW Park Way. The posted speed limit along SW Park Way is 30 miles per hour, requiring 300 feet of sight distance in both directions, in accord with Washington County Code Section 501-8.5.F(4).

Table 1 summarizes the intersection sight distance analysis results for the east and west directions, respectively.

Table 1: Intersection Sight Distance from Site Driveway onto SW Park Way

Speed used for sight Distance	30 mph	Source: *posted*
Intersection Sight Distance Requirement	300 feet	Source: *Washington County Code Section 501-8.5*
Height used for measurement	Object Height: 4.25 feet Driver Eye Height: 3.5 feet	Source: *Washington County Code Section 501-8.5*
Setback Measurement	15 feet	From: *edge of traveled way*
Intersection Sight Distance Measurement	>300 feet	Direction: looking *west* from the access
Intersection Sight Distance Measurement	>300 feet	Direction: looking *east* from the access

Exhibit 1 reflects the view to the west whereas Exhibit 2 reflects the view to the east.

Exhibit 1. View to the West of the SW Park Way Access

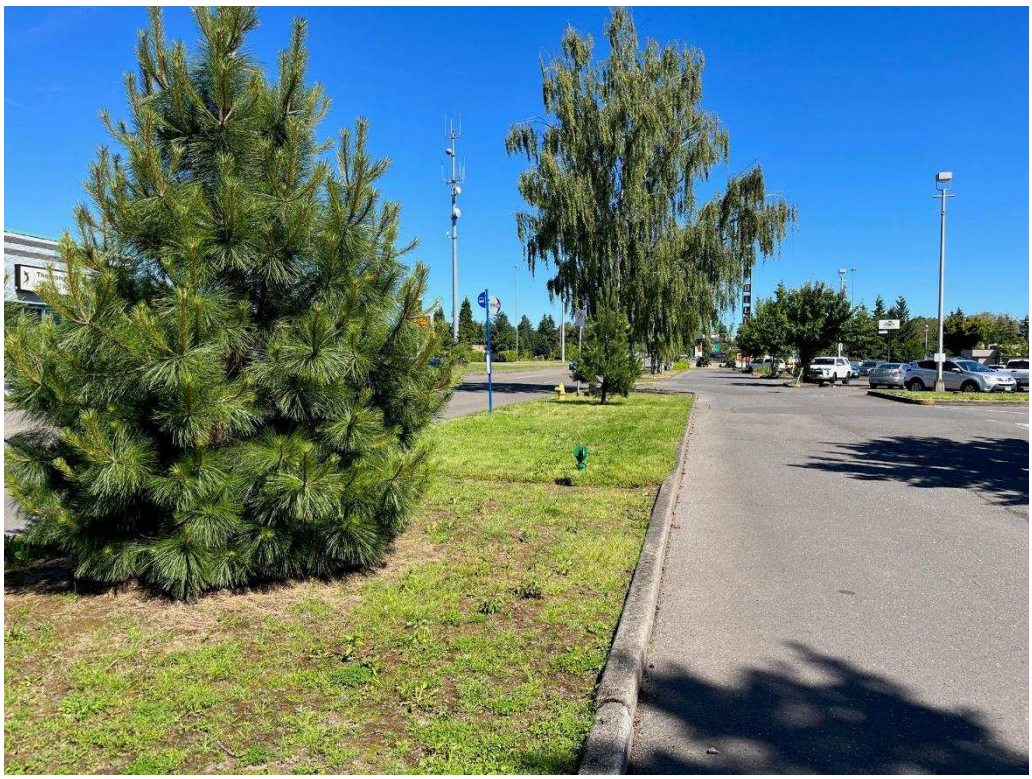


Exhibit 2. View to the East of the SW Park Way Access (note: existing street trees to be removed)

As shown in these exhibits, there is an existing street tree currently obstructing sight distance looking to the east of the driveway. However, this tree is anticipated to be removed as part of the site redevelopment plan. No other obstructions to sight distance were observed in the field.

In conclusion, I hereby certify that the intersection sight distance at the proposed access on SW Park Way for the proposed Cedar Hills Apartments conforms to the requirements as set forth in the Washington County Community Development Code, subject to the following improvements:

a. The existing street tree on SW Park Way immediately east of the proposed driveway shall be removed.

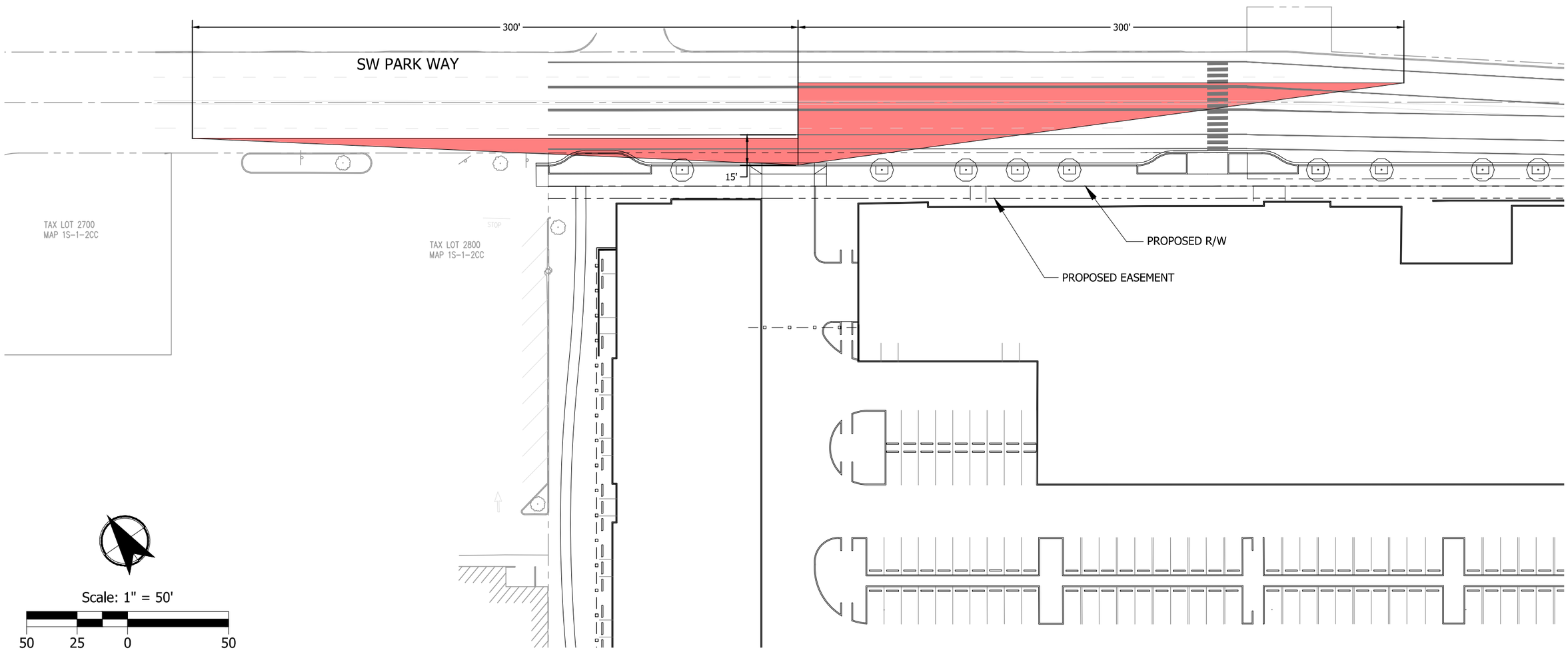
b. On-street parking along SW Park Way should be restricted within the area of the sight triangles shown on the attached Figure 1.

c. Any new landscaping placed within the sight triangles should be limited to low-growing materials. Street trees within the sight triangles should be limbed up to maintain sight lines for drivers.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Wade Scarbrough, P.E.
Principal Engineer

Enclosures: Figure 1 (Plan Sheet)



Intersection Sight Distance Requirements
SW Park Way Access

Figure
1

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

June 22, 2022 Project #: 26659

WASHINGTON COUNTY, OREGON
Department of Land Use and Transportation, Current Planning Services
155 North First Avenue, Suite 350 – MS13, Hillsboro, Oregon 97124
(503) 846-8761 FAX: (503) 846-2908
http://www.co.washington.or.us

Attn: Assurances

RE: Cedar Hills Apartments SW Wilshire Street Access – **PRELIMINARY** Sight Distance Certification (City of Beaverton PA 2021-0046)

The proposed southern access for the Cedar Hills Apartment is located 370 feet east of the site's west property line on SW Wilshire Street. The posted speed limit along SW Wilshire Street is 25 miles per hour, requiring 250 feet of sight distance in both directions, in accord with Washington County Code Section 501-8.5.F(4).

Table 1 summarizes the intersection sight distance analysis results for the east and west directions, respectively.

Table 1: Intersection Sight Distance from Site Driveway onto SW Wilshire Street

Speed used for sight Distance	25 mph	Source: *posted*
Intersection Sight Distance Requirement	250 feet	Source: *Washington County Code Section 501-8.5*
Height used for measurement	Object Height: 4.25 feet Driver Eye Height: 3.5 feet	Source: *Washington County Code Section 501-8.5*
Setback Measurement	15 feet	From: *edge of traveled way*
Intersection Sight Distance Measurement	>250 feet	Direction: looking *west* from the access
Intersection Sight Distance Measurement	>250 feet	Direction: looking *east* from the access

Exhibit 1 reflects the view to the west whereas Exhibit 2 reflects the view to the east.

Exhibit 1. View to the West of the SW Wilshire Street Access

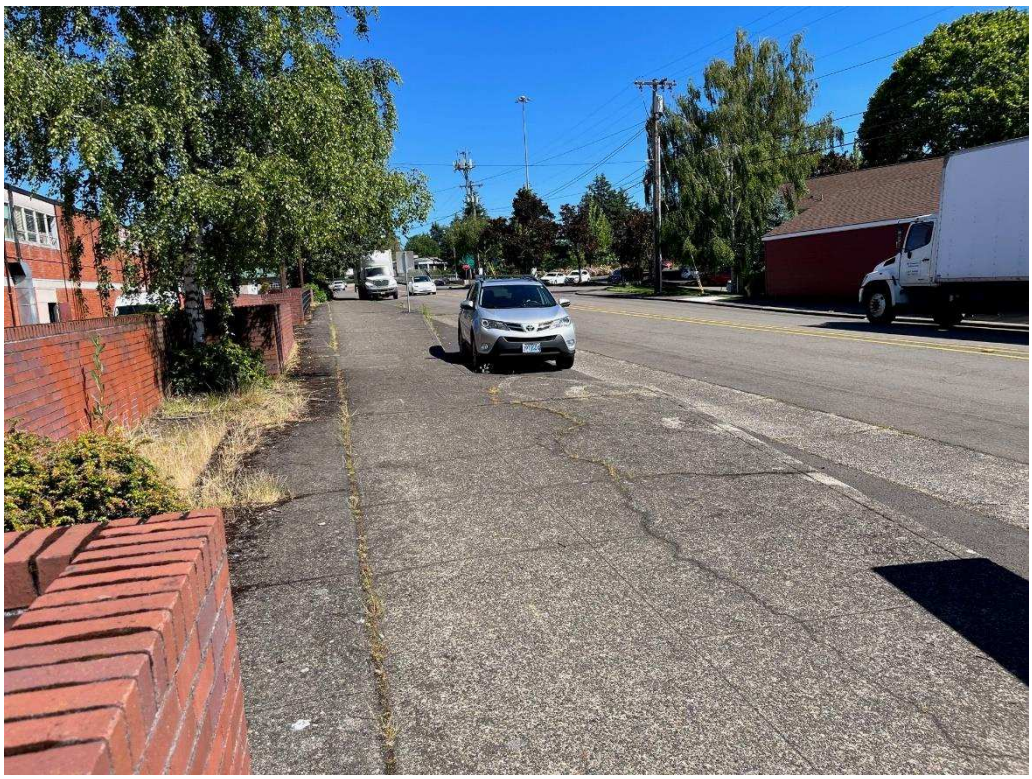


Exhibit 2. View to the East of the SW Wilshire Street Access

As shown in these exhibits, no obstructions to sight distance were observed in the field.

In conclusion, I hereby certify that the intersection sight distance at the proposed access on SW Wilshire Street for the proposed Cedar Hills Apartments conforms to the requirements as set forth in the Washington County Community Development Code, subject to the following improvements:

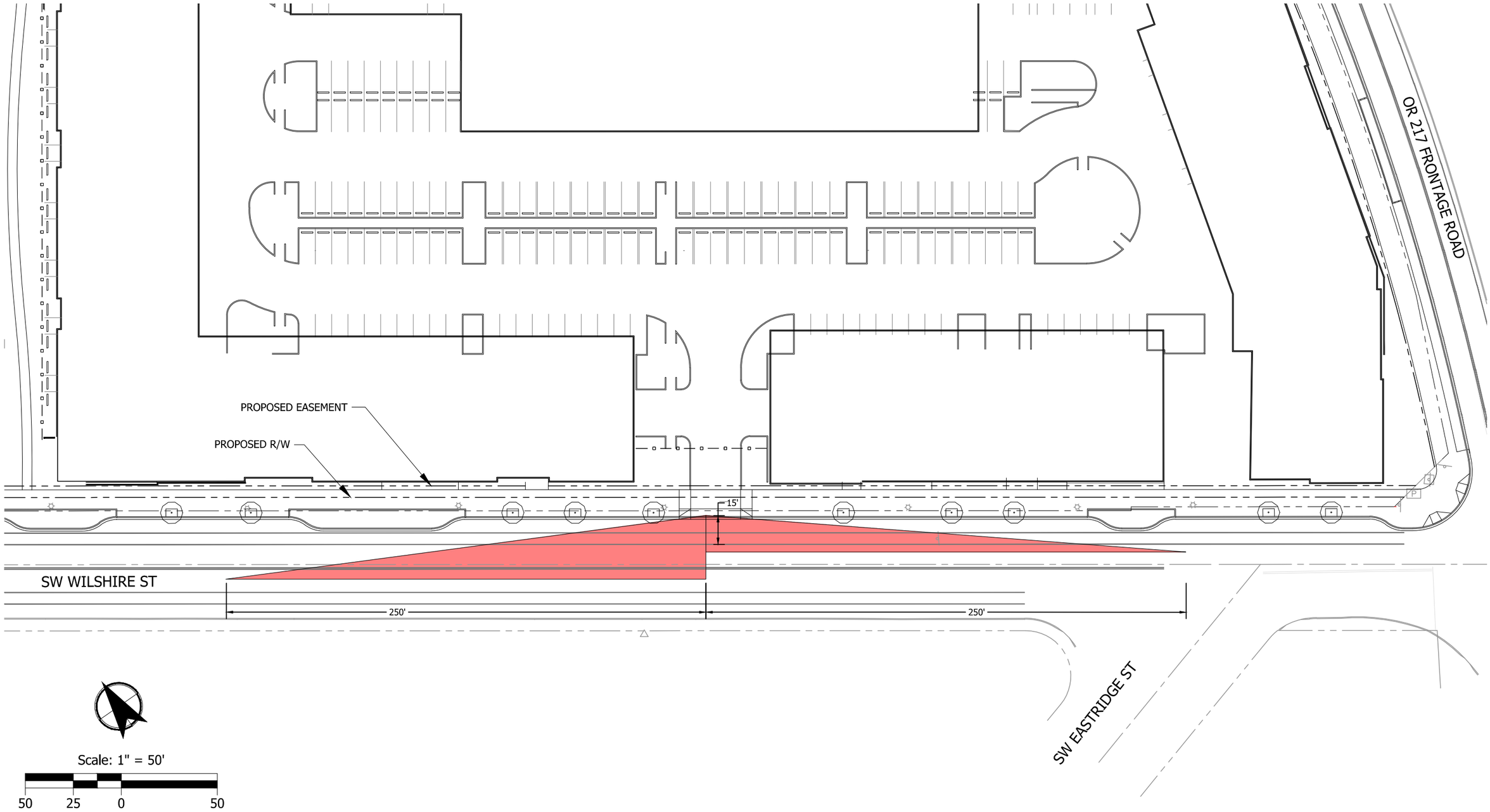
a. On-street parking along SW Wilshire Street should be restricted within the area of the sight triangles shown on the attached Figure 2.

b. Any new landscaping placed within the sight triangles should be limited to low-growing materials. Street trees within the sight triangles should be limbed up to maintain sight lines for drivers.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Wade Scarbrough, P.E.
Principal Engineer

Enclosures: Figure 2 (Plan Sheet)



Intersection Sight Distance Requirements
SW Wilshire Street Access

Figure
2

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date:	August 25, 2022	Project #: 26659
To:	Naomi Vogel & Jinde Zhu, Washington County Jabra Khasho, PE, & Kate McQuillan, AICP, City of Beaverton Aaron Holm, Trammell Crow Trish Nixon, LRS Architects	
From:	Julia Kuhn, PE	
Project:	Cedar Hills Apartments	
Subject:	Supplemental Memo on SW Park Way and SW Wilshire Street Accesses	

This memo provides supplemental information requested by Washington County related to the redevelopment of the Cedar Hills shopping center located between SW Park Way and SW Wilshire Street to the east of SW Marlow Avenue. The proposed apartments and small retail area are part of a larger proposal that was approved by the City and County for redevelopment in 2019 (as analyzed by Kittelson in the *Cedar Hills Town Center Traffic Impact Analysis* (TIA), September 2019). In response to recent discussions with County staff regarding the current proposal, this memorandum includes the following information:

- Clarification on the SW Park Way site access
- Spacing of the SW Park Way access relative to the County's Spacing Standards
- Potential Garage Queuing at the SW Wilshire Street access

Function of the SW Park Way Access

To address security needs of the future apartment residents, Trammell Crow intends to install garage gates within the site at both the SW Wilshire Street access and at the south end of the access to SW Park Way. Apartment residents will only have vehicle access to their designated parking area via SW Wilshire Street. The proposed access on SW Park Way will serve the retail parking only and will not be gated near SW Park Way. Instead, a gate will be installed on-site between the retail parking and the residential building that can only be opened by the Fire Department and other emergency services vehicles, if needed. Based on the location, the emergency gate should have no operational impact on the retail parking area or SW Park Way.

We note that per our June 2022 trip generation memo for the current project, the retail uses are estimated to generate only 11 trips in the weekday AM peak hour and 30 trips in the weekday PM peak hour. Given the traffic volumes on SW Park Way (as documented in our previous TIA), the 4,500 square feet of retail at this location is not anticipated to generate a queue of more than one vehicle making a left-turn in or a left-turn out of the site at the SW Park Way access.

ACCESS MANAGEMENT ALONG SW PARK WAY

Washington County *Community Development Code* Section 501 provides standards for access spacing along collector streets (i.e., SW Park Way). Per the code, accesses to collector streets should be spaced at least 150 feet apart. As proposed, Trammell Crow will close four existing accesses on SW Park Way serving their property and replace with only one vehicular access point to serve the proposed development. This new access will be located approximately 50 feet to the east of an existing Shell gas station access and approximately 105 feet west of a small (approximately six space parking lot) serving a dental care clinic. We note that the Oregon Department of Transportation (ODOT) maintains access control on SW Park Way approximately 215 feet to the east of the proposed SW Park Way access serving the retail uses.

With the existing accesses provided on the north side of the street and considering ODOT's access control lines, we note that no access location would meet the County's 150 feet standard; however, by closing four accesses and replacing with only one access point along the frontage, the plan moves toward meeting the County standards. Therefore, per Washington County CDC Section 501-8.5.C, we conclude the County can grant an exception for the proposed SW Park Way access point. A summary of relevant provisions of the CDC is shown below in italics and our response follows. *Appendix 1 provides the influence area map.*

C. Exception to Access Criteria

(1) Alternate points of access may be allowed if an access management plan which maintains the classified function and integrity of the applicable facility is reviewed and approved by the Review Authority after considering the applicant's compliance with this Article.

(2) An application for an Access Management Plan shall explain the need for the modification and demonstrate that the modification maintains the classified function and integrity of the facility. References to standards or publications used to prepare the Access Management Application shall be included with the application.

Response: Access to both SW Park Way and SW Wilshire Street was previously approved in 2019 for the overall redevelopment site by the City, County and ODOT. As proposed the SW Park Way access will now only serve access to the retail uses whereas in 2019, residents were shown to access SW Park Way and two locations on SW Wilshire Street. As proposed, the consolidation of access points on the site frontage on SW Park Way from four existing access points to one proposed access on SW Park Way helps to reduce the interruptions to the flow of through traffic and is consistent with the County's Transportation System Plan Strategy related to access consideration.

Further, we note that the proposed access point is located to the east of the Shell station driveway, which provides for a "positive offset" of the eastbound left-turns into the gas station and westbound left-turns into the retail parking for the site (thereby not sharing the same space).

We also note that the proposed access into the small dental care parking lot is approximately 105 feet to the east of the proposed access. With only six spaces within the dental parking lot and the volumes on SW Park Way, it is reasonable to conclude that the eastbound left-turn queue for the dental lot is one vehicle or less and as noted above (and documented in 2019), the westbound left-turn queue for the retail area is also one vehicle or less. With approximately 105 feet between the two access points, the configuration would provide approximately 55 feet between the turning movements.

(3) An access management plan shall address the safety and operational problems which would be encountered should a modification to the access spacing standards be granted.

Response: The 2019 TIA addressed the safety and operations at the study intersections and access points. With the smaller development size proposed at this time, no updates to the 2019 analyses are needed.

(c) The access management plan shall include a comparison of all alternatives examined. At a minimum, the access management plan shall evaluate the proposed modification to the access spacing standard and the impacts of a plan utilizing the county standard for access spacing. Specifically, the access management plan shall identify any impacts on the operations and/or safety of the various alternatives.

Response: As noted above, there are no alternatives that can provide access to the site along the frontage of SW Park Way conforming to the County's minimum spacing standard given the existing accesses on the north side and the ODOT access control. Rather, the proposed plan moves toward meeting the standards through the reduction of access points.

(d) The access management plan shall include a list of improvements and recommendations necessary to implement the proposed access modification, specifically addressing all safety and operational concerns identified.

Response: As noted, we recommend that the SW Park Way access will be limited to only retail users (4,500 square feet of retail proposed) as well as emergency vehicles. Apartment residents will access the residential parking via SW Wilshire Street.

Based on the spacing provided and existing and future access configurations, very few left-turn queue interactions are anticipated on SW Park Way related to the proposed site access. Therefore, the findings of the 2019 TIA remain unchanged.

Parking Garage Access Queuing

As noted above, apartment residents will be provided gated access to the residential parking areas via SW Wilshire Street. Only residents will be provided with access at this location and the garage gate will remain in closed position unless activated by a resident using a remote transponder.

Although not specified yet, the garage gate is expected to be either a swing or slide gate that would open at speeds of 10 seconds or less when the garage gate is activated.

A vehicle queuing analysis was prepared to assess whether the gated parking access would pose queuing interaction with other people walking, riding bikes or driving on SW Wilshire Street. For the analysis, queues were estimated using a methodology outlined in the Institute of Transportation Engineers (ITE) *Traffic Engineering Handbook*. The analysis is based on the physical characteristics of the proposed access, expected traffic demand, and garage gate performance specifications. This analysis considers the arrival rate of vehicles (using a Poisson distribution to account for random arrivals and departures) and the rate that vehicles can be served. Finally, the analysis calculates expected probabilities of vehicle queues lengths.

The estimated traffic demand associated with the proposed parking garage access is directly related to the number of apartment units within the building. As documented in our June 2022 memo, the trip generation for the apartments was calculated using the mid-rise multifamily housing rate for an urban/suburban context that is not adjacent to rail within the *Trip Generation Manual* (11th Edition, as published by ITE in 2021). This is shown in Table 1.

Table 1. Trip Generation Estimate

Land Use	ITE Code	Size	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Total Trips	In	Out	Total Trips	In	Out
Mid-Rise Apartments	221	399 units	148	34	114	156	95	61

Table 2 summarizes the results of the queuing analysis for the proposed gated access on SW Wilshire Street. These estimates are based on the trip generation shown in Table 1 and the assumed garage gate operating specifications outlined above. *Appendix 2 provides the queuing calculation worksheets.*

Table 2. Potential Garage Access Vehicle Queues

Queue Length (Number of vehicles beyond the vehicle being served at the gate)	Cumulative Probability of Queue	
	Entering from SW Wilshire Street	Exiting from Parking Area
0 Vehicles	57%	49%
1 vehicle or less	82%	74%
2 vehicles or less	92%	86%
3 vehicles or less	97%	93%
4 vehicles or less	99%	96%

Note: cumulative queue results reflect the queue behind the vehicle being served.

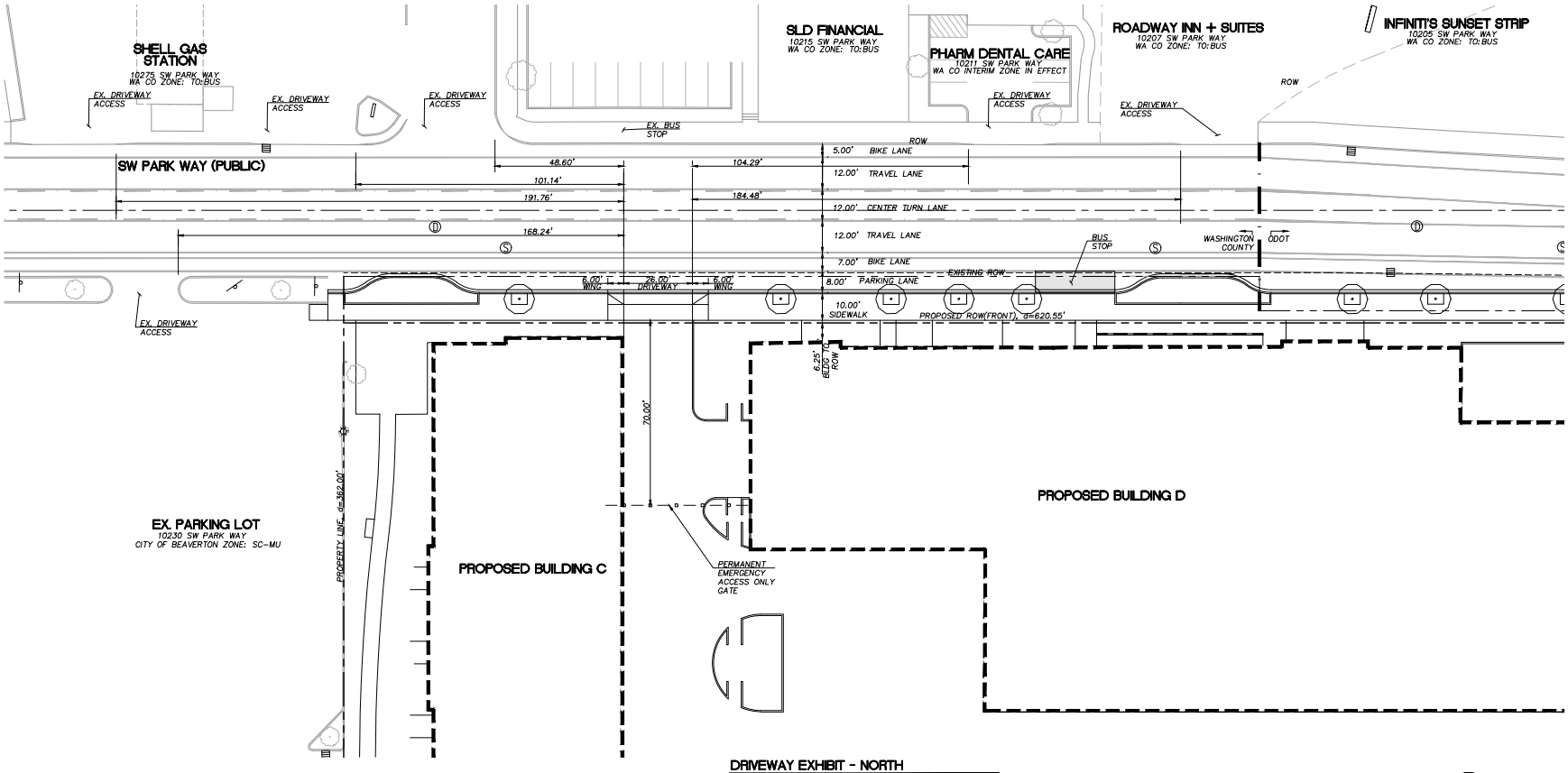
Based on the results in the above table, the 95th percentile queues entering the SW Wilshire Street access are estimated to be approximately four vehicles or less during the critical peak hour of a weekday, accounting for both the vehicle being served as well as the potential for additional vehicles behind the entering vehicle. Further, the peak inbound queue is anticipated in the PM peak hour whereas the peak outbound queues are expected in the AM peak hour and these outbound queues will be contained behind the gate prior to opening. Based on this analysis, the SW Wilshire Street access will be designed

such that the garage gate will be placed 100 feet beyond the back of the sidewalk to accommodate the potential vehicle queues.

We trust that this memorandum provides the supplemental information requested by County staff regarding the two access points. Please let us know if you need any further information.

Appendix 1 Influence Area Map

DRIVEWAY EXHIBIT – NORTH



DRIVEWAY EXHIBIT - NORTH
SCALE: 1"=20'

GRAPHIC SCALE
0 20 40
1 inch = 20 ft.

PROJECT NORTH

Scale:

LRS ARCHITECTS 221141 | TC CEDAR HILLS APARTMENTS | 01/19/22

Humber Design Group, Inc.
Portland, OR ▪ 503.946.6690 ▪ hdgpdx.com

NOT FOR CONSTRUCTION

HIGHSTREET RESIDENTIAL

Appendix 2 Garage Queueing

KITTELSON & ASSOCIATES, INC.
851 SW 6th Avenue, Ste 600
Portland, Oregon 97204
(503) 228-5230

Project: Cedar Hills Shopping Center
Project #: 26659
Scenario: Queue Analysis for Security Gate
Analyst: JAK

Entry Gate Operational Parameters

Gate Speed:		FEET/SECOND	(vertical lift-gate speed)
Gate Height:		FEET	(total clearance height)
Opening Time:		SECONDS	(time to fully open/close)
Transponder Use For Entry?	No	FOOT RADIUS	
		SECONDS	(advanced opening time due to transponder w/ 10 mph speed)
Pedestrian Presence?	Yes	yes SECONDS	(additional time delay due to crossing pedestrians)
Net Entering Service Frequency:		10.00 SECONDS	(opening time - transponder time + ped crossing time)
Net Exiting Service Frequency:		10.00 SECONDS	(opening time + ped crossing time)

Queuing Analysis

95	Peak Hour Entering Volume	114	Peak Hour Exiting Volume
222	Peak Hour Entering Service Rate (vph)*	222	Peak Hour Exiting Service Rate (vph)**

Entering Inputs		Exiting Inputs	
1.58	ARRIVAL RATE (VEH/MINUTE)	1.90	ARRIVAL RATE (VEH/MINUTE)
16.22	SERVICE TIME(SECONDS/VEH)	16.22	SERVICE TIME(SECONDS/VEH)
3.70	SERVICE RATE (VEH/MINUTE)	3.70	SERVICE RATE (VEH/MINUTE)
0.43	INTENSITY (Arrival Rate/Service Rate)	0.51	INTENSITY (Arrival Rate/Service Rate)
25	FEET PER VEHICLE	25	FEET PER VEHICLE

Average Queuing Conditions

	Entering Queue		Exiting Queue
	1 gate		1 gate
E(M)	0.32	E(M)	0.54
E(N)	0.75	E(N)	1.06
E(W)	12.13	E(W)	17.12
E(V)	28.35	E(V)	33.33

Where…

E(M) = average number waiting for service
E(N) = average number in the system (includes vehicles being served)
E(W) = Average waiting time (seconds)
E(V) = Average time in the system (seconds) (includes time being served)

Cumulative Queuing Probabilities

Queue	1 gate	Queue	1 gate
0	57%	0	49%
1	82%	1	74%
2	92%	2	86%
3	97%	3	93%
4	99%	4	96%
5	99%	5	98%
6	100%	6	99%
7	100%	7	100%
8	100%	8	100%
9	100%	9	100%
10	100%	10	100%
11	100%	11	100%
12	100%	12	100%
13	100%	13	100%
14	100%	14	100%

Note: cumulative queue results reflect the queue behind the vehicle being served.

File: H:\26\26659 - CH Shopping Center Redevelopment\excel\[26659 wilshire security gate 10 seconds.xlsx]Lane Reqs