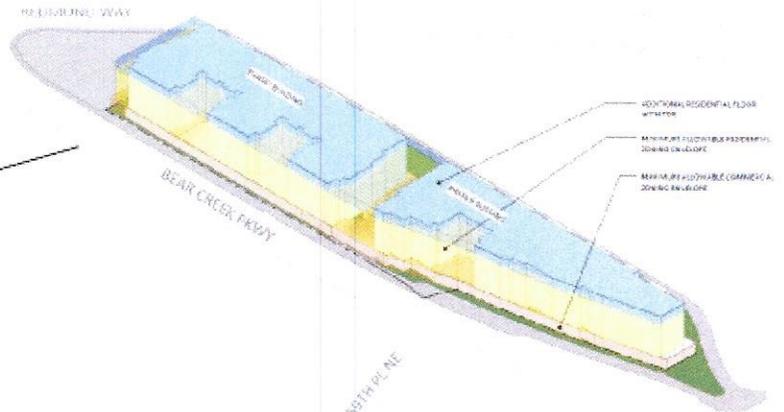


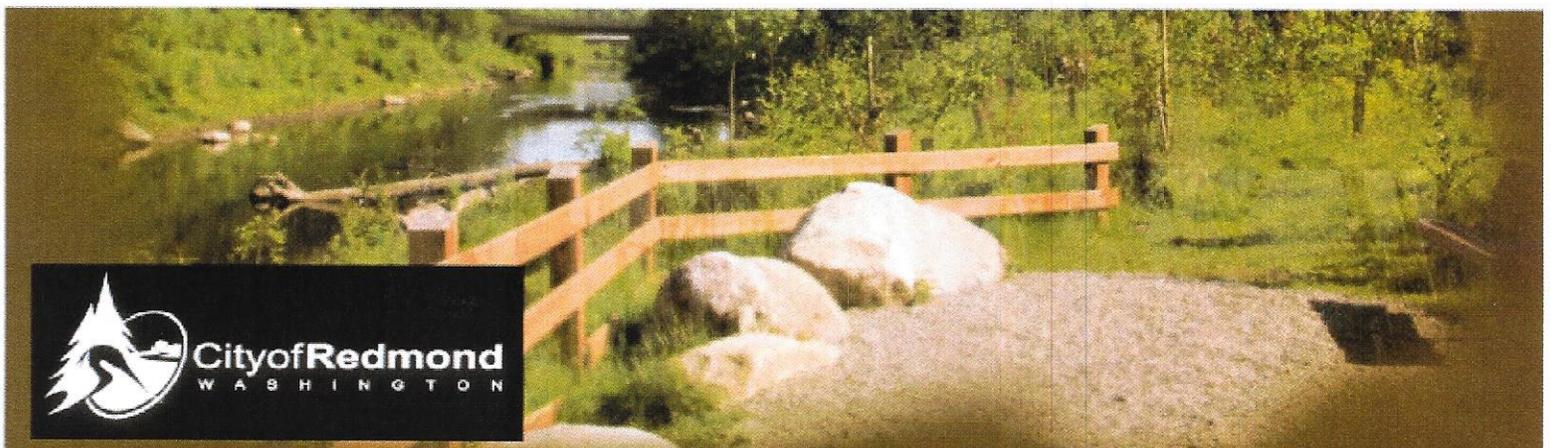
Redmond

BEAR CREEK MIXED USE TRIP GENERATION STUDY/TRANSPORTATION CONCURRENCY - UPDATE

December 30, 2015



JTE . Jake Traffic Engineering, Inc.
Mark J. Jacobs, PE (WA and OR), PTOE, President
2614 39th Ave. SW - Seattle, WA 98116 - 2503
Tel. 206.762.1978 - Cell 206.799.5692
E-mail jaketraffic@comcast.net





December 30, 2015

NW PACIFIC DEVELOPMENT, LLC

Attn: Gary Noyes, Member

5612 South Mohawk Dr.

Spokane, WA 98206

Re: Bear Creek Mixed Use – Redmond
Trip Generation Study/Transportation Concurrency - Update

Dear Mr. Noyes,

I have prepared this Phase 1 Trip Generation Study/Transportation Concurrency – Update for the proposed Bear Creek Mixed Use project generally located on the north side of Bear Creek Parkway between NE Redmond Way (1-lot e/o) and 161st Ave. NE on parcel numbers, 92707000 - 10, 20, 25, 30, 35 40 (portion) and 1125059026 (portion). The update incorporate City feedback received December, 11, 2015, attached.

The project is to be constructed in phases with Phase 1 provided 190 apartment units, 3 – live/work and 211 garage parking stalls. Phase 2 comprises 164 apartment units (including 9 loft units), 3 – L/W units and 154 garage parking stalls. In addition, about 6 parallel street parking stalls about the Phase 2 east of 159th Place Northeast. Access to the project is via a driveway on Bear Creek Parkway aligned with the alley on the south side of the street. In addition 2-emergence fire/safety accesses are proposed.

This letter has been prepared to identify the delta trip generation, per the City of Redmond Phase 1 Trip Generation Study/Transportation Concurrency. Additionally, I reviewed the site Parking Requirements and the site proposed site driveway access on Bear Creek Parkway. The **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS** begin on page 10 of this letter.

PROJECT INFORMATION

Figure 1 is a vicinity map which shows the location of the site and the surrounding street system.

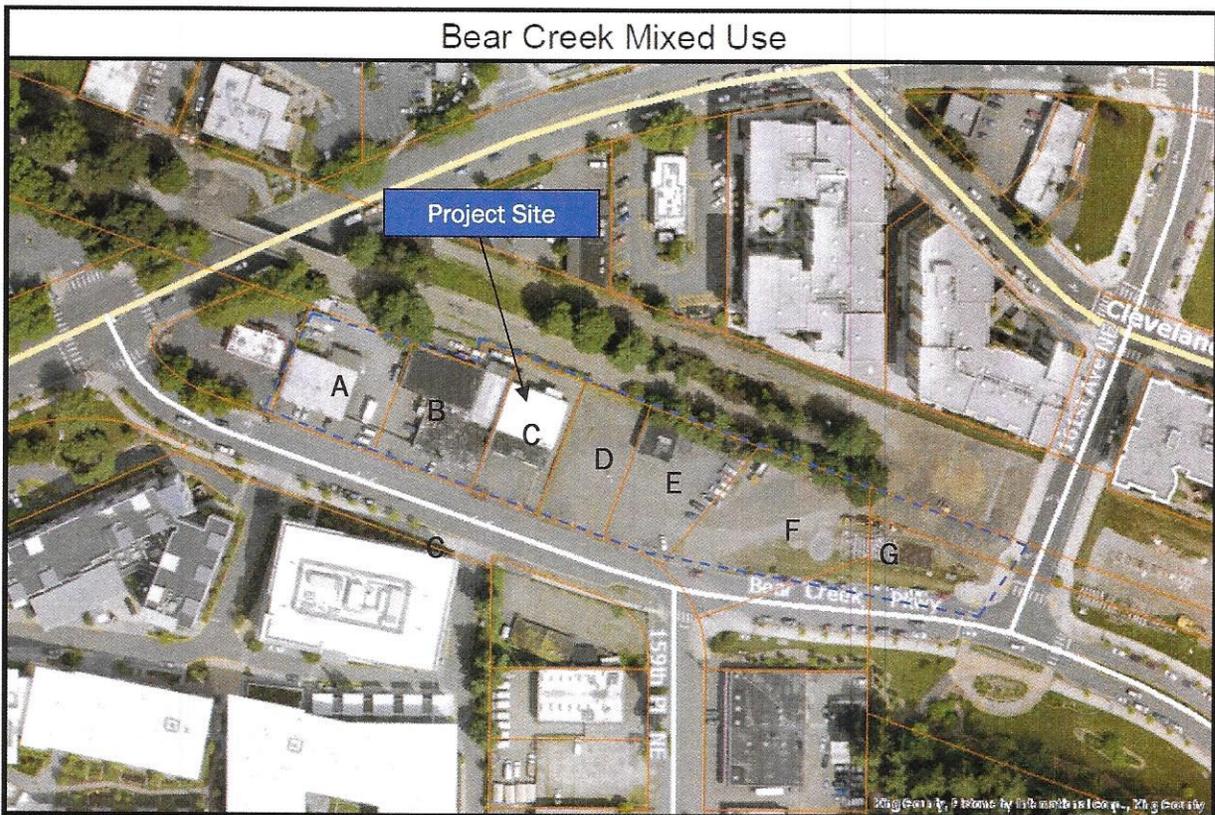
Figure 2 shows the preliminary site plan provided to me by Veer Architecture. The site plan, dated 10.29.2015, shows a two phase 5 – story apartment facilities, Phase 1 is the western building and Phase 2 is the eastern building. In addition to the garage parking there are about 6 parallel street parking stalls abutting the Phase 2 site. Access to the site is via a proposed driveway on Bear Creek Parkway aligned with an alley on the south side of the street.

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EXISTING ENVIRONMENT

Project Site

The site is presently developed. An aerial image of the project site obtained from King County iMap is generally depicted. The IMap lot line data has not been updated to reflect recent revisions) below.



The structures are used (per Google and King County IMap data) as follows:

- | | |
|--|---|
| <p>A. <u>Strip Retail</u>
 15806 Bear Creek Pkwy 98052
 3,528 sf</p> <p>B. <u>Retail Store</u>
 15810 Bear Creek Pkwy 98052
 9,384 sf</p> <p>C. <u>Warehouse</u>
 7840 159th Pl. NE 98052
 6,222 sf</p> | <p>D. <u>Vacant (Commercial)</u>
 159th Pl. NE</p> <p>E. <u>Service Building</u>
 15810 Bear Creek Pkwy 98052
 1,728 sf</p> <p>F. <u>Vacant (Commercial)</u></p> <p>G. <u>Vacant (Commercial)</u></p> |
|--|---|

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The above letters correspond with the lettering shown on the site aerial. The square feet depicted above are per King County records. The sf shown on the Site Plan – Existing Conditions dated 07.31.2015 are slightly different. The County data is used for analysis purposes.

Street System

The primary streets and their classifications in the site vicinity per the City of Redmond Transportation Master Plan Roadway Functional Master Plan Figure 5D.12 are shown below:



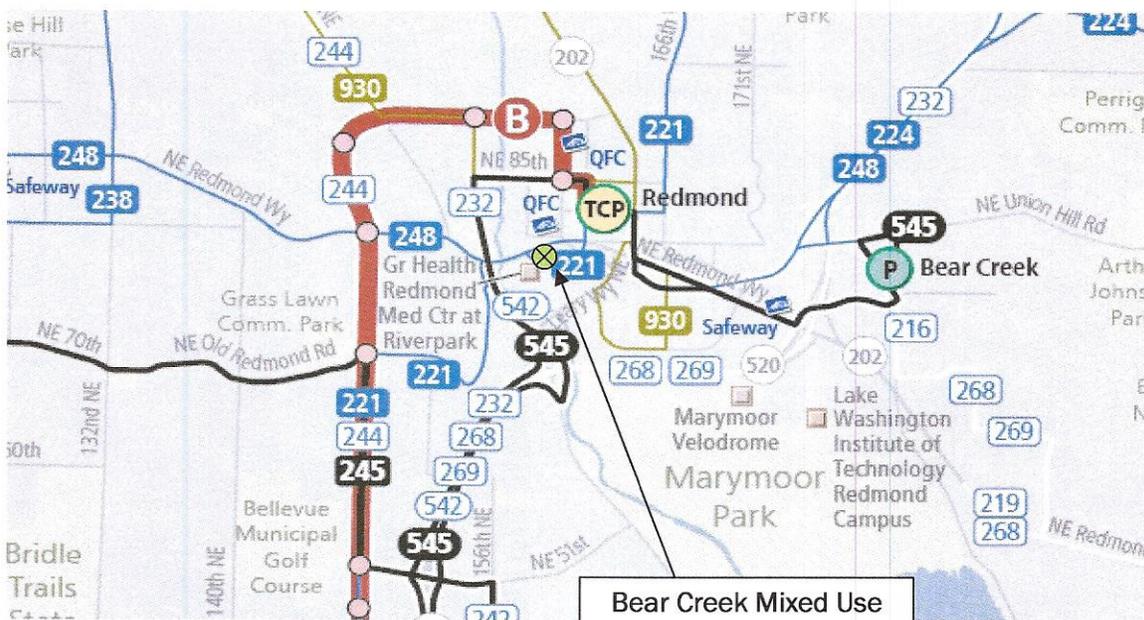
Pedestrian/Bicycle/Commercial Activities

The site abuts the Redmond Central Connector that is a part of the City's extensive trail system. This trail provides easy access to a QFC anchored shopping center; less ¼ mile away from the site. Additionally other commercial businesses such as restaurants and retailing are in easy walking distance to the site.

Alternative Transportation

I have reviewed the Metro Transit website (transit.metrokc.gov) for bus services in the vicinity of the proposed development. The pertinent section of the Metro Transit System Map, Effective June 2015 is depicted below:

NW PACIFIC DEVELOPMENT, LLC
 Attn: Gary Noyes, Member
 December 30, 2015
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As shown in the above map good transit service is provided in the site vicinity. Further information on transit service can be obtained from the Metro website.

In the future the site would be served by Light Rail service.

TRIP GENERATION

Definitions

A vehicle trip is defined as a single or one direction vehicle movement with either the origin or destination (exiting or entering) inside the proposed development.

Traffic generated by development projects consists of the following types:

- Pass-By Trips: Trips made as intermediate stops on the way from an origin to a primary trip destination.
- Diverted Link Trips: Trips attracted from the traffic volume on a roadway within the vicinity of the generator but which require a diversion from that roadway to another roadway in order to gain access to the site.
- Captured Trips: Site trips shared by more than one land use in a multi-use development.
- Primary (New) Trips: Trips made for the specific purpose of using the services of the project.

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Trip Generation

The proposed Redmond Multi-family project is expected to generate the vehicular trips during the average weekday, street traffic AM and PM peak hours as shown in Table 1. The trip generation for the project is calculated using trip rates and equations (per City) from the Institute of Transportation Engineers (ITE) Trip Generation, 9th Edition, for Mid-Rise Apartment (ITE Land Use Code 223). All site trips made by all vehicles for all purposes, including commuter, visitor, and service and delivery vehicle trips are included in the trip generation values. In addition the City of Redmond PM peak hour trip generation rates from Table 7 'Development Mobility Unit Calculator' in City of Redmond Multimodel Plan-Based Concurrency System dated June 2009 are also depicted.

Traffic generated by the existing site development is also depicted in Table 1 based on ITE data. The existing site development includes a Strip Retail, a Storage Facility and an Auto Sales (used). These land uses correspond to ITE LUC's 826, 150 and 841, respectively. I have used the trip equations as dictated by the City that increased the existing site traffic. ITE data is used for existing and proposed development to be consistent.

No ITE specific data exists for Live/Work units, the types of uses I have seen are: Professional Office (Attorney, Accountant, Engineer, and Architect), barber/hair style salon, florist, artist studio and the like. The 6 live/work units have 5,000 sf of space, as taken from ground floor site plan. Not all this space would be available for commercial use; the 50% value noted is used to project the site traffic based on past **JTE, Inc.** project experience. The ITE Specialty Retail LUC trip data is used to project the traffic from the Live/Work units; this LUC has a higher traffic generation rate than Office and/or treated as a living unit thus ensures a conservative projection

The ITE just published the 3rd Edition of the Trip Generation Handbook, August 2014. This report adds new information regarding Trip Generation for Infill/Redevelopment (Section 7). Infill projects generate fewer vehicular trips, the more urban the site the fewer the trips.

Tables D.1, D.2 and D.3 in the Trip Generation Handbook provide information on mode split; aka car, transit, walk and bike. The data, attached in the appendix, indicates a high proportion of site trips would not be by car; but instead would be via walking, transit and bike.

Traffic generated by the existing site development is also depicted in Table 1. The existing site development includes Strip Retail, Storage and used car sales.

Retailing and commercial activities include pass-by traffic. The pass-by rates noted in Table 1 are per Table 7 'Development Mobility Unit Calculator' Multimodel Plan-Based Concurrency System. The City noted that their pass-by rates are used for mobility unit calculation purposes and were not intended for trip generation. The 25% rate applied to Specialty Retail is a common rate applied for trip generation purposes. The other pass-by rates are also reasonable to use for trip generation purposes. Not accounting for pass-by traffic results in the site generating less new trips since the land uses affected are primarily existing uses..

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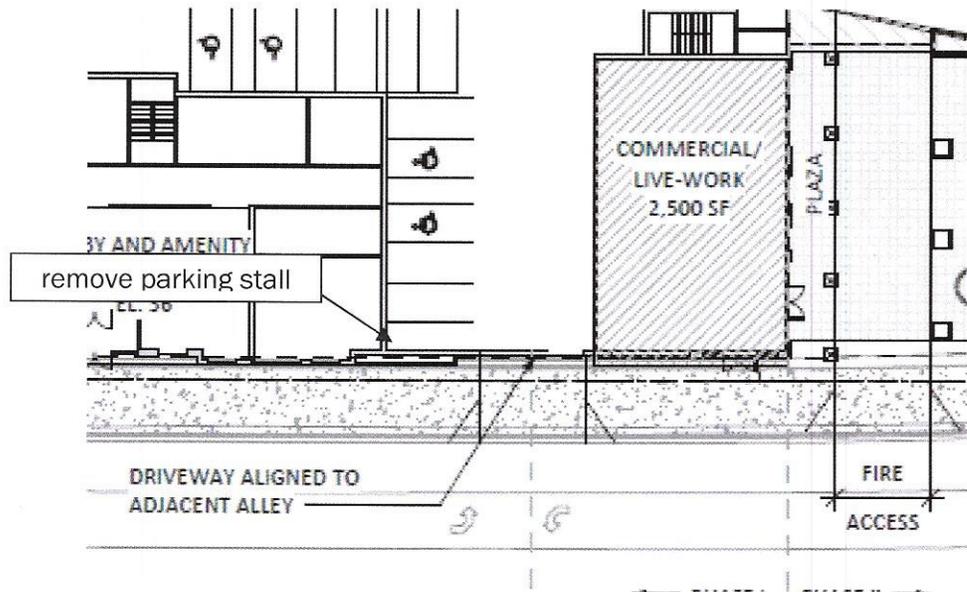
The projected vehicular trips of the infill redevelopment during the critical PM peak time period per ITE data is 71 vehicular trips, not adjusting for pass-by trips. A substantial portion of the site trips, 55, would be via other travel mode. This makes intuitive sense since people living within the project can readily walk to numerous commercial services including a QFC anchored shopping center and abundant restaurants and retailing in the vicinity of the site. Additionally, work opportunities exist in the area. The site is also well served by transit and a pedestrian trail system.

Trip Distribution

Figure 1 shows the site generated traffic assigned to the street system. Trips to and from the site were distributed to the surrounding street network based on the characteristics of the network, existing traffic volume patterns and the location of likely trip origins and destinations (residential, business, shopping (comparison shoppers), social and recreational opportunities).

SITE ACCESS REVIEW

I have reviewed the site, the site access and the streets in the site vicinity. Access to the site is proposed on Bear Creek Parkway a 3 – lane street with parking on south side west of 159th Pl. NE and on both sides to the east. Good sight lines exist at the proposed access.



In addition to the site access there are 2-fire/safety accesses, one of which is depicted in the above diagram and the other via a fire access easement on the west side of the site. Review of the parking access driveway indicates a potential for conflict with the driveway operation. Removing the parking stall in the SW corner is recommended to provide sufficient driveway throat length (25' minimum) for a car to turn in and clear Bear Creek is needed.

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Sight Lines

Table 1 – F and 1 – I in the City of Redmond Exhibit E Appendix: Construction Specifications and Design Standards for Streets and Access – v4 provide sight line criteria for the stopping and entering sight distance, respectively. The City’s design criterion uses the posted speed limit + 10 MPH. The City’s Tables are noted below:

Table 1-F

Design Speed (mph)	Stopping Sight Distance (ft)*
25	155
30	200
35	250
40	305
45	360
50	425
55	495

Table 1-I

Design Speed (mph)	Entering Sight Distance (ft)*
25	280
30	335
35	390
40	445
45	500
50	555
55	610

Below are photographs at the proposed access looking to the west and east, respectively:



With site development the sight lines would not be affected by parked cars/utility poles. Vegetation and landscaping is to be installed in a manner to avoid impacting sight lines.

The posted speed limit on Bear Creek Parkway is 30 MPH. Over 300’ of SSD exists, the more critical sight line value in urban setting. The ESD with street frontage improvements would be about 335’ to the east and about 400’ to the west. The available SSD are sufficient for traffic speeds of 40 MPH and the ESD to the east for a speed of 30 MPH and to the west a speed of about 35 MPH. Appropriate sight lines would exist at the proposed access driveway. Note: The City has requested that the SSD and ESD be depicted on a plan sheet with City standards included.

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Traffic Operational Review

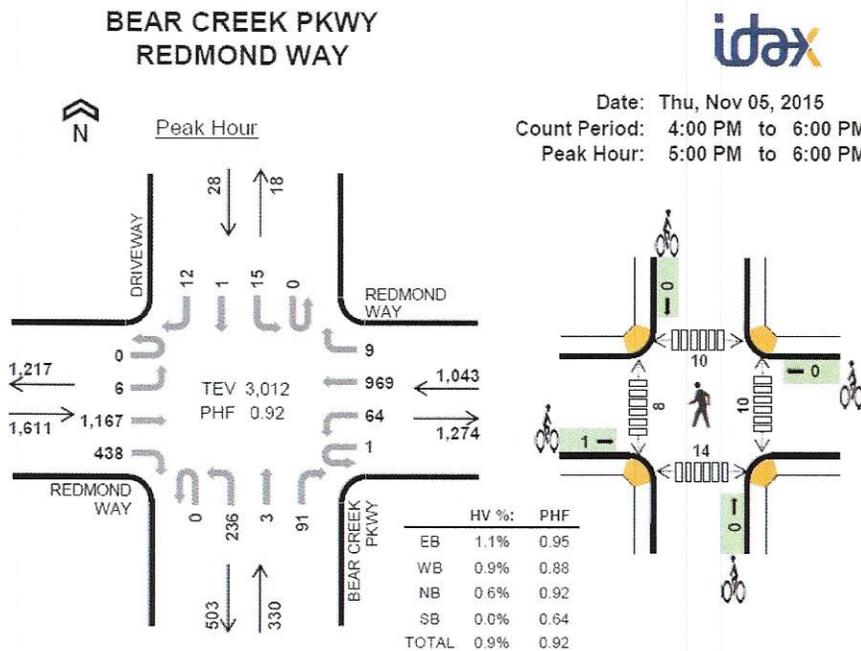
Traffic engineers have developed criteria for intersection operations called level of service (LOS). The LOS's are A to F with A and B being very good and E and F being more congested. LOS C and D correlate to busy traffic conditions with some restrictions to the ability to choose travel speed, change lanes and the general convenience comfort and safety.

The procedures in the Transportation Research Board Highway Capacity Manual, 2010 were used to calculate the level of service at the study intersections. The following table depicts the LOS and corresponding average delay in seconds at signalized and stop control intersections:

Intersection Type	Level of Service					
	A	B	C	D	E	F
Signalized	<10	>10 and <20	>20 and <35	>35 and <55	>55 and <80	>80
Stop Control	<10	>10 and <15	>15 and <25	>25 and <35	>35 and <50	>50

The LOS of the site access intersection is calculated using the Synchro software program.

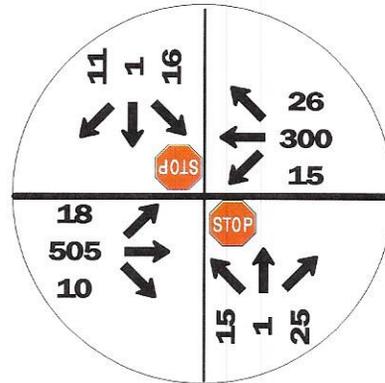
The City provided a PM peak hour traffic turning movement count for the Redmond Way/Bear Creek Parkway intersection to the west of the site, data depicted below:



NW PACIFIC DEVELOPMENT, LLC
 Attn: Gary Noyes, Member
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The City data notes Bear Creek Parkway traffic as NB and SB, however on a map at the site traffic operates more EB and westbound. This is a semantic item that is moot regarding traffic operational analysis.

From the City data there are about 330 westbound vehicles and 505 eastbound vehicles at the site driveway on Bear Creek Parkway. South of the site driveway there is an existing low volume alley. The projected turning traffic at the site access is to the right. I included nominal trips NB and SB for analysis purposes.



**Bear Creek Parkway at
 Site Access - Alley**

I conducted traffic operational analysis at the site access for the above noted traffic volume. The LOS for the southbound traffic movement is B with an average delay of 14.7 seconds. I also looked at traffic operations with a 50% increase in traffic, the SB LOS would drop to C with an average delay of 22.4 seconds. Egress queuing is typically the motorist waiting to egress the site.

PARKING ANALYSIS

The City of Redmond Ordinance No. 2302, Exhibit C identifies parking requirements. The site is located in the Downtown District. The minimum parking required is 1 stall per unit plus one guest space per four units. Thus the required parking for the 360 unit project is 450 parking stalls. The code also identifies the maximum parking rate at 2.25 stalls per unit; 810 parking stalls.

The project development proposes 365 garage parking stalls. The City code also allows curbside parking along the site to be counted up to 25% of the required off-street parking. About 7 to 8 abutting on-street parking stalls are projected; thus with street parking 372 to 373 stalls are provided.

The site is located in the Downtown area with good transit, pedestrian facilities, and commercial activities and in the future a light rail station. These factors reduce the need for parking.

A Parking Reduction Request letter for the project dated November 17, 2015 by JTE, Inc. has been submitted to the City identified to provide 0.95 stall/unit based on the urban location of the facility and the King County Apartment Calculator. The current plan notes 365 parking stalls for 360 units, thus a ratio of about 1.01 stall/unit.

NW PACIFIC DEVELOPMENT, LLC
Attn: Gary Noyes, Member
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CITY OF REDMOND TRAFFIC IMPACT STUDY REQUIREMENTS

The City of Redmond has a phased approach to Traffic Study.

PHASE ONE - Trip Generation Study/Traffic Modeling

In Phase One of the traffic analysis process, the traffic consultant is required to submit a technical memorandum summarizing the forecasted trip generation for the proposed project, along with justification for the methodology used in the forecast. This memorandum is then reviewed by the City and possibly by other affected public agencies. Upon approval of the trip generation estimate a determination will be made if the project is subject to transportation concurrency review in accordance with section 20D.210.10 of the Redmond Community Development Guide. If applicable, the applicant shall submit a request for a certificate of concurrency. The project applicant will be required to pay for the traffic modeling that is part of the concurrency evaluation.

This traffic letter provides the Phase 1 data. In addition, I conducted a review of the site access and parking for the project. A copy of the City of Redmond Transportation Concurrency Application is attached to this letter.

PHASE TWO - Formal Scoping/Preparation of Traffic Impact Analysis

Phase Two of the transportation impact analysis process entails scoping of the analysis and preparation of the report by the transportation consultant. Once the traffic modeling is complete, the applicant's consultant should contact the City to set up a meeting to formally scope the transportation impact analysis. The analysis will be based primarily on the outline presented on the following pages. The specific list of intersections that will need to be reviewed in the transportation impact analysis will be developed from the trip assignment for the project. Depending upon the size and character of the proposed project, certain elements of this outline may be reduced in scope or eliminated. However, other items may also be added if special issues relating to transportation exist on the project.

The City's typical TIA thresholds is 20 or more project generated trips PM peak hour one way trips through a signalized intersection; see below:

A. Definition of Study Area for Analysis

1. All signalized intersections impacted by 20 or more project generated trips in the PM peak hour (total one-way trips through the intersection).
2. Intersection of site accesses with street system.
3. Unsignalized intersections as directed by the City.

Based on the delta trip analysis the site is projected to add 71 PM peak hour car trips on Bear Creek Parkway at the site driveway that disperse to the east and west. No City signalized intersection is projected to be affected by 20 or more peak hour one-way trips; see Figure 1. Review of the City criteria indicates that further traffic study for the project should not be necessary.

NW PACIFIC DEVELOPMENT, LLC
Attn: Gary Noyes, Member
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The City provided me 2015 turning traffic data at the NE Redmond Way/Bear Creek Parkway and the Bear Creek Parkway/161st Ave. NE signalized intersections, data attached.

In my preparation of the Synchro Traffic Model to model the site access, I added in the two signalized intersections and conducted operational analysis. Both intersections operate at LOS B based on 2015 traffic volumes. I also conducted analyses with 50% more traffic. The NE Redmond Way/Bear Creek intersection LOS drops to C and the Bear Creek Parkway/161st Ave. NE intersection would continue to operate at LOS B.

The LOS calculations are included in the appendix.

TRAFFIC MITIGATION

The City of Redmond has a Traffic Impact Fee program. City staff were provided initial traffic information and identified to conduct an Independent Fee Calculation per RMC 3.10.120. The IFC is to be submitted as a stand alone document.

In addition to payment of the TIF, appropriate street frontage and the site access would need to be constructed per applicable City requirements.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This letter has identified the delta trip generation for the proposed Bear Creek Mixed Use project comprising 354 apartment units and 6 live/work units. The delta trips are 71 PM peak hour trips on Bear Creek Parkway at the site driveway. The proposed 365 parking stalls are appropriate.

I conducted operational review of the site access and the two nearby signalized intersections. The site access works and the two nearby signalized intersections operate well under existing and 50% growth scenarios.

A City of Redmond Transportation Concurrency Application is included with this letter, per City Traffic Impact Analysis Phase One criteria. The site is a re-development and the projected delta change in traffic and the operational conducted indicates that further traffic study should not be necessary.

Based on my further Traffic Review, I would recommend that the Bear Creek Mixed Use project be allowed with the following traffic impact mitigation measures.

1. Construct site in accordance with applicable City requirements.
2. The site Civil engineer needs to provide a site access sight line exhibit.
3. Conduct an IFC to request that the City adjust the TIF rate to better reflect the urban Mid-Rise Apartment use, the City rate is based on LUC 220 Apartment that is not appropriate.

JTE, Inc.

NW PACIFIC DEVELOPMENT, LLC
Attn: Gary Noyes, Member
December 30, 2015
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4. Pay the appropriate City traffic impact fee.

If you have any questions you can contact me at 206.762.1978 or email me at jaketraffic@comcast.com.



MJJ: mjj

EXPIRES 4/3/2016

Very truly yours,

Mark J. Jacobs, PE, PTOE, President
JAKE TRAFFIC ENGINEERING, INC.

12.30.2015

BEAR CREEK MIXED USE - REDMOND

TABLE 1 - TRIP GENERATION

TRIP GENERATION STUDY/TRANSPORTATION CONCURRENCY - UPDATE

Time Period	Size	TG Rate/Equation	Enter %	Enter Trips	Exit %	Exit Trips	Trip Total	Car Trip %	Car Trips	Pass-by %	New Car Trips	Transit/Walk/Bike %	Transit/Walk/Bike Trips
Proposed: Mid Rise Apartment (ITE LUC 223; 354-units)													
Weekday*	354	4.25	50%	752.3	50%	752.3	1504.5	65%	977.9	0%	977.9	35%	526.6
AM peak hour	354	0.41(X) - 13.06	31%	40.9	69%	91.1	132.1	62.5%	82.6	0%	82.6	37.5%	49.5
PM peak hour	354	0.48(X) - 11.07	58%	92.1	42%	66.7	158.9	56.8%	90.2	0%	90.2	43.2%	68.6
PMPH (City)	354	0.56	58%	115.0	42%	83.3	198.2	56.8%	112.6	0%	112.6	43.2%	85.6
Proposed Live/Work: Specialty (Miscellaneous) Retail (ITE LUC 826; 2,500 sf (in 6 - L/W units))													
Weekday	2,500	44.32	50%	55.4	50%	55.4	110.8	75%	83.1	25%	62.3	25%	27.7
AM peak hour**	2,500	0.96	62%	1.5	38%	0.9	2.4	72.5%	1.7	25%	1.3	27.5%	0.7
PM peak hour	2,500	2.71	44%	3.0	56%	3.8	6.8	52.4%	3.6	25%	2.7	47.6%	3.2
PMPH (City)	2,500	3.75	44%	4.1	56%	5.3	9.4	52.4%	4.9	25%	3.7	47.6%	4.5
Existing: Strip Retail (ITE LUC 826; 12,912 sf)													
Weekday	12,912	44.32	50%	286	50%	286	572.3	75%	429.2	25%	321.9	25%	143.1
AM peak hour**	12,912	0.96	62%	8	38%	5	12.4	72.5%	9.0	25%	6.7	27.5%	3.4
PM peak hour	12,912	2.71	44%	15	54%	19	35.0	52.4%	18.3	25%	13.8	47.6%	16.7
PMPH (City)	12,912	3.75	44%	21	54%	26	48.4	52.4%	25.4	25%	19.0	47.6%	23.0
Existing: Warehouse (ITE LUC 150; 6,222 sf)													
Weekday	6,222	3.56	50%	11	50%	11	22.2	95.0%	21.0	10%	18.9	5.0%	1.1
AM peak hour	6,222	0.55Ln(X) + 1.88	79%	14	21%	4	17.9	95.0%	17.0	10%	15.3	5.0%	0.9
PM peak hour	6,222	0.64Ln(X) + 1.14	25%	3	75%	8	10.1	95.0%	9.6	10%	8.6	5.0%	0.5
PMPH (City)	6,222	0.47	25%	0.7	75%	2.2	2.9	95.0%	2.8	10%	2.5	5.0%	0.1
Existing: Automobile Sales (ITE LUC 841; 1,728 sf)													
Weekday	1,728	32.3	50%	28	50%	28	55.8	95.0%	53.0	10%	47.7	5.0%	2.8
AM peak hour	1,728	1.92	75%	2	25%	1	3.3	95.0%	3.2	20%	2.5	5.0%	0.2
PMPH (generator)	1,728	2.8	47%	2	53%	3	4.8	95.0%	4.6	20%	3.7	5.0%	0.2
PMPH (City)	1,728	2.64	40%	2	60%	3	4.6	95.0%	4.3	20%	3.5	5.0%	0.2
Proposed - Existing:													
Weekday	--	--	--	493.6	--	493.6	987.2	--	578.8	--	670.6	--	408.4
AM peak hour	--	--	--	32.3	--	86.5	118.8	--	72.2	--	74.6	--	46.6
PM peak hour	--	--	--	77.4	--	49.1	125.8	--	70.8	--	75.5	--	55.0
PMPH (City)	--	--	--	96.0	--	59.6	154.6	--	87.8	--	93.8	--	66.8

* - The identified daily trip rate is determined by applying the ratio of daily/PM peak rates of other residential LUC's; about 10.9/1

** - The identified AM peak hour trip rate is per LUC Shopping Center, no data is noted for LUC 826



10%, 6/4
NORTH

LEGEND

PM Peak Hour Trips : 71
Enter 44
Exit 27

xx% distribution,
Enter/Exit PMPHT's

Image obtained from
King County IMap



BEAR CREEK MIXED USE - REDMOND
TRIP GENERATION STUDY/TRANSPORTATION CONCURRENCY - UPDATE
PROJECT GENERATED PM PEAK HOUR TRAFFIC VOLUME DISTRIBUTION

CITY OF REDMOND TRANSPORTATION CONCURRENCY APPLICATION

This application provides the City of Redmond with the information needed to issue a certificate of concurrency for a development. Please complete the entire form and return it to the Redmond Engineering Services Division. After agreement is reached on the mobility unit demand for a development based on the land use type, size of development and table on the back of this application, the City will, if necessary, determine if enough mobility unit supply is available to issue a certificate of concurrency. If determining the mobility unit demand for a development requires an independent calculation a fee for the review will be required, payable at the City Hall Permit Center.

1. Applicant name and address: Gery Noyes
5612 S. Mohawk Dr.
Spokane, WA 99206
2. Property location:
 - a. Property address: N/O Bear Creek Pkwy 1101 e/o 161th Ave NE
 - b. Development name: Bear Creek Mixed Use
 - c. Assessor's Parcel Number(s): 9270700-10, 20, 25, 30, 35, 40 (portion)
and 1125059826 (portion)
3. Type of development permit to be requested: Commercial

	Land Use Type (ITE Land Use Code)	Development Units	Mobility Unit Rate (see table on back)	Mobility Unit Demand	Notes
Proposed	Multi-family Miscellaneous Retail	354	1.28	453.12	MidRise (LUL 223)
		*2,500	3.38	8.45	
Total Proposed:				461.57	
Existing	Miscellaneous Retail	*12,912	3.38	43.64	
	Warehouse	*6,222	1.50	9.33	
	Automobile Sales	*1,728	7.64	13.20	
Total Existing:				66.17	
Net New Mobility Unit Demand (Total Proposed minus Total Existing)				395.40	

Signature of Applicant: _____ Date: _____

For Official Use Only:

Mobility Unit Demand calculation reviewed: _____		
	Initials	Date
Concurrency certificate required: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Mobility Units available: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Application number: _____		

Development Mobility Unit Calculator

Land Uses	Standard of Measure ¹	Mobility Units/Land Use Unit		
		Citywide	Urban Centers	
			Downtown	Overlake
Residential				
Single Family	dwelling	2.78	2.78	2.78
Multiple Family	dwelling	1.71	1.28	1.59
Retirement Community	dwelling	0.62	0.62	0.62
Nursing Home	bed	0.48	0.48	0.48
Congregate Care/Asst Living	dwelling	0.37	0.37	0.37
Hotel/Motel	room	1.86	1.86	1.86
Commercial - Services				
Bank/Savings & Loan	sq ft/GFA	26.98	24.28	25.90
Day Care	sq ft/GFA	15.55	15.55	15.55
Library	sq ft/GFA	7.11	6.40	6.82
Post Office	sq ft/GFA	10.92	9.83	10.48
Service Station	fuel position	7.41	7.41	7.41
Service Station/Minimart	fuel position	5.37	5.37	5.37
Movie Theater	seat	0.11	0.10	0.10
Carwash	stall	4.53	4.53	4.53
Health Club/Racquet Club	sq ft/GFA	7.40	7.40	7.40
Commercial - Institutional				
Elementary School	student	0.35	0.35	0.35
High School	student	0.21	0.21	0.21
Church	sq ft/GFA	1.92	1.92	1.92
Hospital	sq ft/GFA	3.94	3.94	3.94
Commercial - Restaurant				
Restaurant	sq ft/GFA	16.02	14.42	15.38
Fast Food Restaurant	sq ft/GFA	27.24	24.51	26.15
Commercial - Retail Shopping Center				
up to 99,999	sq ft/GLA	4.87	4.38	4.67
100,000-199,999	sq ft/GLA	4.54	4.09	4.36
200,000-299,999	sq ft/GLA	4.09	3.68	3.93
300,000 and over	sq ft/GLA	4.81	4.33	4.62
Supermarket	sq ft/GFA	12.94	11.65	12.42
Convenience Market	sq ft/GFA	24.11	21.70	23.14
Free Standing Discount Store	sq ft/GFA	5.24	4.71	5.03
Miscellaneous Retail	sq ft/GFA	3.76	3.38	3.61
Furniture Store	sq ft/GFA	0.37	0.33	0.35
Car Sales - New/Used	sq ft/GFA	7.64	6.88	7.33
Commercial - Administrative Office				
up to 99,999	sq ft/GFA	7.22	6.93	7.15
100,000-199,999	sq ft/GFA	6.03	5.79	5.97
200,000-299,999	sq ft/GFA	5.27	5.06	5.22
300,000 and over	sq ft/GFA	4.66	4.47	4.61
Medical Office/Clinic	sq ft/GFA	10.53	10.11	10.43
Industrial				
Light Industry/Manufacturing	sq ft/GFA	3.14	3.14	3.14
Industrial Park	sq ft/GFA	2.75	2.75	2.75
Warehousing/Storage	sq ft/GFA	1.50	1.50	1.50
Mini Warehouse	sq ft/GFA	0.75	0.75	0.75

¹ For uses with Standard of Measure in sq ft, mobility units are given per 1000 sq ft.

APPENDIX - UPDATE
City Comments
Traffic Counts
LOS Calculations

Mark J Jacobs, PE, PTO

From: Min Luo [mluo@redmond.gov]
Sent: Friday, December 11, 2015 7:49 AM
To: Mark J Jacobs, PE, PTO
Subject: RE: 2015.044 - Bear Creek Mixed Use
Attachments: LAND-2015-02200 Traffic Study Comments.pdf; BearCreek-TripGenerationandConcurrency-Signed_Min's Comments.pdf

Mark,

Please see the comments matrix for traffic study comments at the end of the table and some redline comments pages in the attached files.

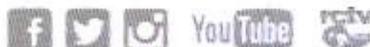
Let me know if you have any questions.

Thanks,



Min Luo, P.E., PTOE, PTP

Senior Engineer, Transportation | City of Redmond
☎: 425.556.2881 | 📧: mluo@redmond.gov | Redmond.gov
MS: 2SPL | 15670 NE 85th St | Redmond, WA 98052



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From: Mark J Jacobs, PE, PTO [mailto:JakeTraffic@comcast.net]
Sent: Thursday, December 10, 2015 3:00 PM
To: Min Luo
Subject: RE: 2015.044 - Bear Creek Mixed Use

Min

Ok, thank you.

Mark

From: Min Luo [mailto:mluo@redmond.gov]
Sent: Thursday, December 10, 2015 2:43 PM
To: Mark J Jacobs, PE, PTO
Subject: RE: 2015.044 - Bear Creek Mixed Use

Mark,

I got your voice mail but I have a lot of back to back meetings today. I will send our traffic study review comments to you later today or tomorrow and we can talk after you get a chance to look at that.

12/23/2015

Thanks,



Min Luo, P.E., PTOE, PTP
Senior Engineer, Transportation | City of Redmond
☎: 425.556.2881 | ✉: mluo@redmond.gov | Redmond.gov
MS: 2SPL | 15670 NE 85th St | Redmond, WA 98052



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From: Mark J Jacobs, PE, PTO [<mailto:JakeTraffic@comcast.net>]
Sent: Wednesday, November 18, 2015 10:34 AM
To: Min Luo
Cc: Patrick B. McGrath
Subject: RE: 2015.044 - Bear Creek Mixed Use

Min

Is the attached the most current Concurrency Report? If not please send me the current report.

Mark

From: Min Luo [<mailto:mluo@redmond.gov>]
Sent: Wednesday, November 04, 2015 2:03 PM
To: Mark J Jacobs, PE, PTO
Cc: 'Paul Krakow'; Patrick B. McGrath
Subject: RE: 2015.044 - Bear Creek Mixed Use

Mark,

First of all, the City has the updated impact fee schedule for 2015 here:
<http://www.redmond.gov/common/pages/UserFile.aspx?fileId=150699>

Secondarily, I believe TIF counts for the different mode splits in the downtown, rest of city and Overlake area. You could contact Patrick, cc in this email to get a better sense how the mode splits was incorporated into the impact fee calculation.

Thanks,

Min Luo, P.E., PTOE, PTP
Senior Engineer, Transportation | City of Redmond
☎: 425.556.2881 | ✉: mluo@redmond.gov | Redmond.gov
MS: 2SPL | 15670 NE 85th St | Redmond, WA 98052

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From: Mark J Jacobs, PE, PTO [<mailto:JakeTraffic@comcast.net>]
Sent: Wednesday, November 04, 2015 11:04 AM
To: Min Luo

12/23/2015

Cc: 'Paul Krakow'

Subject: 2015.044 - Bear Creek Mixed Use

Min

Attached is the City of Redmond Impact Fees Schedule that I obtained on-line today. Has the schedule been updated to 2015?

The project I am working on is mixed use in the downtown area of the City off of Bear Creek Parkway. The project is infill with new ITE data as noted below:

The ITE just published the 3rd Edition of the [Trip Generation Handbook](#), August 2014. This report adds new information regarding Trip Generation for Infill/Redevelopment (Section 7). Infill projects generate fewer vehicular trips, the more urban the site the fewer the trips. Tables D.1, D.2 and D.3 in the [Trip Generation Handbook](#) provide information on mode split; aka car, transit, walk and bike.

Review of the City's TIF, I do not believe that the downtown TIF fully accounts for fewer vehicular trips being generated. These trips are replaced with walking, transit and bicycle trips that are significantly less expensive to provide for.

Mark

Mark J Jacobs, PE, PTOE
JAKE TRAFFIC ENGINEERING, INC
2614 39th Ave. SW
Seattle, WA 98116-2503
206.762.1978
206.799.5692 c

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12/23/2015

TRANSPORTATION

LAND-2015-2200 BEAR CREEK MIXED USE

Review staff:	Min Luo	Notes: The applicant should contact the Project Lead or staff reviewer if discrepancies are noted between these comments and the red-lined plans.		Status	Applicant Response
Sheet #	Staff initials	Date of Issue Identification	Issues & Comments	P/L/A	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 2. Clearly call out the ROW Dedication and easement on the north side of the property.	C	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 2. Show the ROW Dedication and easement along Bear Creek Pkwy to accommodate 14' urban walkway.	C	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 2. Please clarify the ROW dedications in Phase 2 in Parcel# 927070-0035, 0040, 0045 and 112505-9026.	C	
P2	ML	12/1/2015	Show existing and proposed roadway improvements, including intersection, driveway, sidewalk, curb and gutter, lepers and street lights within 150 feet of the subject property, along Bear Creek Parkway.	C	
P2	ML	12/1/2015	Driveway location should be lined up with the existing driveway in the opposite site per RZC Appendix 2.	C	
P2	ML	12/1/2015	Provide street light analysis report.	C	
P2	ML	12/1/2015	Show entering sight distance at driveway per RZC Appendix 2.	C	
P2	ML	12/1/2015	Min. 150' driveway separation from the intersection. Measure from nearest side edge to edge.	C	
P2	ML	12/1/2015	Sidewalk cross slope target 1.5%	C	
P2	ML	12/1/2015	Call out curb radius	C	
P2	ML	12/1/2015	Is the driveway lined up with opposite driveway? Show driveway entrance width	C	
P2	ML	12/1/2015	Call out parking dimension	C	
P2	ML	12/1/2015	Per Per RZC 21.52.040 and Standard and Specifications and Details DG03, sight distance triangle 20'x100' is required.	C	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 8.e and Per COR STD SPEC Details 202, pavement grind and overlay area each side 25' min and to the edge of lane line	C	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 8.e and Per COR STD SPEC Details 202, Overlay the edge of lane line to include the full one lane width	C	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 3 and Appendix 2, D.4. number of access (one percol per access), 2 accesses for more than 100 units, access from lower classification	C	
P2	ML	12/1/2015	Per RZC Appendix 2, A, 3 and 11. All power and telecommunication facilities shall be placed underground in accordance with RZC 21.17.020. All street light wiring, conduit, and service connections shall be located underground.	C	
P2	ML	12/1/2015	Provide truck loading and unloading circulation	C	
P2	ML	12/1/2015	Use scale 1" to 20' for horizontal and 1" to 5' for vertical in the civil drawings	C	
P2	ML	12/1/2015	Show horizontal datum Washington Coordinate System NAD 83/91; Vertical Datum NAVD 88	C	
P2	ML	12/5/2015	Fire access is very close the proposed driveway, need to design as unattractive to general traffic.	R	
Traffic Report	ML	12/1/2015	Show the SSD and ESD on the plan and check against the City's Standards.	C	
Traffic Report	ML	12/5/2015	Traffic Study Comments: Conduct trip generation based on ITE procedure and guidelines and update Ph. 1 traffic study. See redline in Table 1. Applying the pass-by trip discounts from the mobility unit table to do the trip generation is not acceptable. These pass-by trip discounts were used in mobility unit calculation for certain land use category as a whole for impact fee purpose and are not intended for trip generation. Please update the trip generation study and provide site trip distribution map for city to identify impacted intersections and determine if phase 2 study is needed. If needed, in phase 2 traffic study, the City's Traffic Operations would like to see the LOS at Bear Creek Parkway, the driveway access and Redmond Way and maybe a signal warrant check at 159th and Bear Creek Parkway. The City's Traffic Operations also feel the existing strip retail trip generation is high. Please cross check with the traffic counts data.	C	<i>Civil to prepare sight line exhibit</i> <i>Updated TB per City. Trip distribution not prepared. The TB used for existing and proposed</i> <i>IFC to be prepared</i>
Traffic Report	ML	12/5/2015	Impact fee reduction request should be separated from traffic study as a stand-alone document.	C	

Legend:

- Status: R/C/A
- R-Recommended
- C-Conversion
- A-Accessory

NW PACIFIC DEVELOPMENT, LLC
 Attn: Gary Noyes, Member
 November 19, 2015
 Page -7-

Table 1-F

Design Speed (mph)	Stopping Sight Distance (ft)*
25	155
30	200
35	250
40	305
45	360
50	425
55	495

Table 1-I

Design Speed (mph)	Entering Sight Distance (ft)*
25	280
30	335
35	390
40	445
45	500
50	555
55	610

Below are photographs at the proposed access looking to the west and east, respectively:



With site development the sight lines would not be affected by parked cars/utility poles. Vegetation and landscaping is to be installed in a manner to avoid impacting sight lines.

The posted speed limit on Bear Creek Parkway is 30 MPH. Over 300' of SSD exists, the more critical sight line value in urban setting. The ESD with street frontage improvements would be about 335' to the east and about 400' to the west. The available SSD are sufficient for traffic speeds of 40 MPH and the ESD to the east for a speed of 30 MPH and to the west a speed of about 35 MPH. Appropriate sight lines would exist at the proposed access

driveway.

Civil engineer to provide sight line exhibit

PARKING ANALYSIS

Show the SSD and ESD on the plan and check against the City's Standards. ESD for 40mph is 445'

A Parking Reduction Request letter for the project dated November 17, 2015 by JTE, Inc. identified to provide 0.95 stall/unit based on the urban location of the facility and the King County Apartment Calculator. The current plan notes 365 parking stalls for 360 units, thus a ratio of about 1.01 stall/unit

what is the City's required parking stalls number? *added*

Use fitted curve equation based on ITE procedure and guidelines *done*

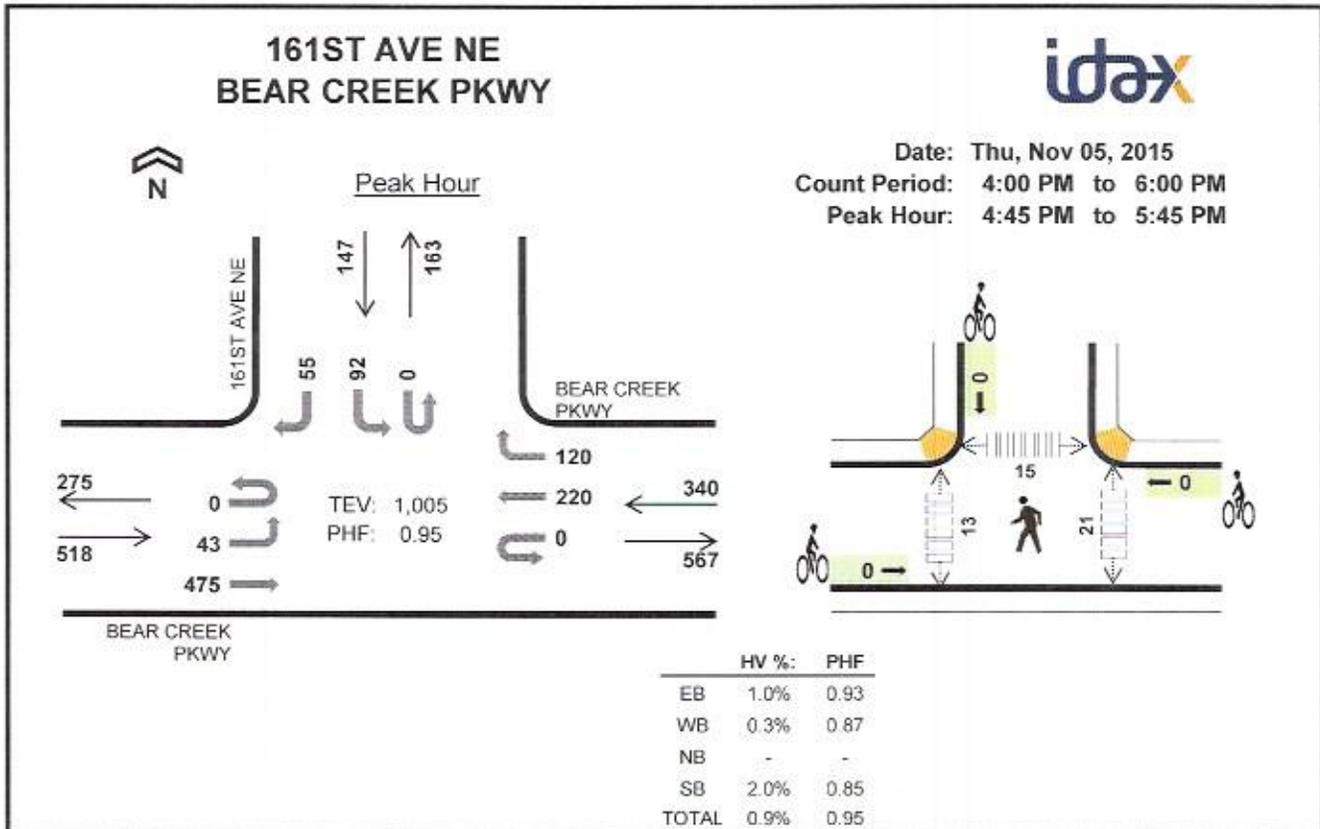
BEAR CREEK MIXED USE - REDMOND
TABLE 1 - TRIP GENERATION
TRIP GENERATION STUDY/TRANSPORTATION CONCURRENCY

Time Period	Size	TG Rate	Enter %	Enter Trips	Exit %	Exit Trips	Trip Total	Car Trip %	Car Trips	Pass-by %	New Car Trips	Transit/Walk/ Bike %	Transit/Walk/ Bike Trips
Proposed: Mid Rise Apartment (ITE LUC 223; 354-units)													
Weekday*	384	4.25	50%	752.3	50%	752.3	1504.5	65%	977.9	0%	977.9	35%	526.6
AM peak hour	354	0.3	31%	32.9	69%	73.3	106.2	62.5%	66.4	0%	66.4	37.5%	39.8
PM peak hour	354	0.39	58%	80.1	42%	58.0	138.1	56.8%	78.4	0%	78.4	43.2%	59.6
PMPH (City)	354	0.56	58%	115.0	42%	83.3	198.2	56.8%	112.6	0%	112.6	43.2%	85.6
Proposed Live/Work: Specialty (Miscellaneous) Retail (ITE LUC 826; 2,500 sf (in 6 - L/W units))													
Weekday	2,500	44.32	50%	55.4	50%	55.4	110.8	75%	83.1	25%	62.3	25%	27.7
AM peak hour**	2,500	0.96	62%	1.5	38%	0.9	2.4	72.5%	1.7	25%	1.3	27.5%	0.7
PM peak hour	2,500	2.71	44%	3.0	56%	3.8	6.8	52.4%	3.6	25%	2.7	47.6%	3.2
PMPH (City)	2,500	3.75	44%	4.1	56%	5.3	9.4	52.4%	4.9	25%	3.7	47.6%	4.5
Existing: Strip Retail (ITE LUC 826; 12,912 sf)													
Weekday	12,912	44.32	50%	286	50%	286	572	75%	429.2	25%	321.9	25%	143.1
AM peak hour**	12,912	0.96	62%	8	38%	5	12	72.5%	9.0	25%	6.7	27.5%	3.4
PM peak hour	12,912	2.71	44%	15	54%	19	35	52.4%	18.3	25%	13.8	47.6%	16.7
PMPH (City)	12,912	3.75	44%	21	54%	26	48	52.4%	25.4	25%	19.0	47.6%	23.0
Existing: Warehouse (ITE LUC 150; 6,222 sf)													
Weekday	6,222	3.56	50%	11	50%	11	22	95.0%	21.0	10%	18.9	5.0%	1.1
AM peak hour	6,222	0.3	79%	1	21%	0	2	95.0%	1.8	10%	1.6	5.0%	0.1
PM peak hour	6,222	0.32	25%	0	75%	1	2	95.0%	1.9	10%	1.7	5.0%	0.1
PMPH (City)	6,222	0.47	25%	0.7	75%	2.2	3	95.0%	2.8	10%	2.5	5.0%	0.1
Existing: Automobile Sales (ITE LUC 841; 1,728 sf)													
Weekday	1,728	32.3	50%	28	50%	28	56	95.0%	53.0	10%	47.7	5.0%	2.8
AM peak hour	1,728	1.92	75%	2	25%	1	3	95.0%	3.2	20%	2.5	5.0%	0.2
PM peak hour	1,728	2.62	40%	2	60%	3	5	95.0%	4.3	20%	3.4	5.0%	0.2
PMPH (City)	1,728	2.64	40%	2	60%	3	5	95.0%	4.3	20%	3.5	5.0%	0.2
Proposed - Existing:													
Weekday	-	-	-	493.6	-	493.6	987.2	-	578.8	-	670.6	-	408.4
AM peak hour	-	-	-	24.2	-	68.7	92.9	-	56.0	-	58.4	-	36.9
PM peak hour	-	-	-	65.8	-	40.2	105.3	-	59.3	-	63.9	-	46.0
PMPH (City)	-	-	-	96.0	-	59.6	154.6	-	87.8	-	93.8	-	66.8

* - The identified daily trip rate is determined by applying the ratio of daily/PM peak rates of other residential LUC's; about 10.9/1
 ** - The identified AM peak hour trip rate is per LUC Shopping Center, no data is noted for LUC 826

the size is outside ITE data range, alternatively use the rate of PM peak hour of generator *ok, done*

These pass-by trip discounts were used in mobility unit calculation for certain land use category as a whole for impact fee purpose and are not intended for trip generation. *discussed further*



Two-Hour Count Summaries

Interval Start	BEAR CREEK PKWY				BEAR CREEK PKWY				0				161ST AVE NE				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	10	104	0	0	0	72	25	0	0	0	0	0	23	0	13	247	0
4:15 PM	0	10	87	0	0	0	53	28	0	0	0	0	0	20	0	9	207	0
4:30 PM	0	12	117	0	0	0	73	17	0	0	0	0	0	21	0	4	244	0
4:45 PM	0	6	124	0	0	0	42	26	0	0	0	0	0	18	0	11	227	925
5:00 PM	0	12	128	0	0	0	52	27	0	0	0	0	0	24	0	13	256	934
5:15 PM	0	12	119	0	0	0	63	32	0	0	0	0	0	24	0	14	264	991
5:30 PM	0	13	104	0	0	0	63	35	0	0	0	0	0	26	0	17	258	1,005
5:45 PM	0	10	104	0	0	0	50	24	0	0	0	0	0	19	0	15	222	1,000
Count Total	0	85	887	0	0	0	468	214	0	0	0	0	0	175	0	96	1,925	0
Peak Hour	0	43	475	0	0	0	220	120	0	0	0	0	0	92	0	55	1,005	0

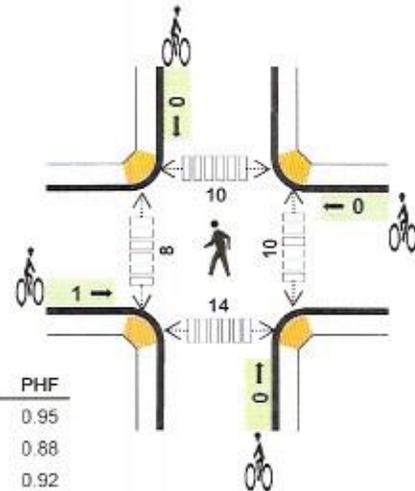
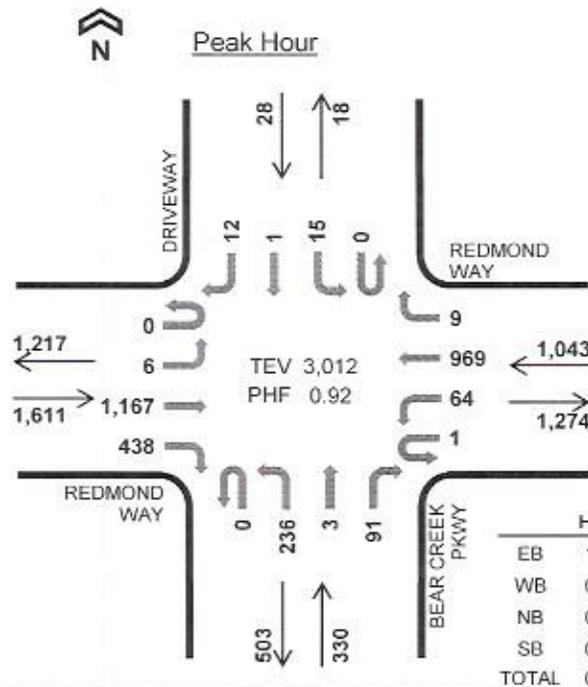
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	3	1	0	0	4	0	0	0	0	0	3	4	2	0	9
4:15 PM	1	1	0	1	3	0	0	0	0	0	3	3	0	0	6
4:30 PM	5	0	0	0	5	0	0	0	0	0	3	0	2	0	5
4:45 PM	1	0	0	1	2	0	0	0	0	0	5	4	4	0	13
5:00 PM	4	1	0	0	5	0	0	0	0	0	10	3	5	0	18
5:15 PM	0	0	0	1	1	0	0	0	0	0	5	4	4	0	13
5:30 PM	0	0	0	1	1	0	0	0	0	0	1	2	2	0	5
5:45 PM	1	0	0	1	2	0	0	0	0	0	3	3	2	0	8
Count Total	15	3	0	5	23	0	0	0	0	0	33	23	21	0	77
Peak Hr	5	1	0	3	9	0	0	0	0	0	21	13	15	0	49

BEAR CREEK PKWY REDMOND WAY



Date: Thu, Nov 05, 2015
Count Period: 4:00 PM to 6:00 PM
Peak Hour: 5:00 PM to 6:00 PM



	HV %:	PHF
EB	1.1%	0.95
WB	0.9%	0.88
NB	0.6%	0.92
SB	0.0%	0.64
TOTAL	0.9%	0.92

Two-Hour Count Summaries

Interval Start	REDMOND WAY				REDMOND WAY				BEAR CREEK PKWY				DRIVEWAY				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
4:00 PM	0	2	203	84	0	18	295	2	0	76	1	28	0	10	4	6	729	0
4:15 PM	0	1	234	82	0	17	277	3	0	48	1	27	0	3	0	1	694	0
4:30 PM	0	0	262	107	0	15	248	2	0	72	0	19	0	8	0	2	735	0
4:45 PM	0	2	251	107	0	23	224	2	0	35	0	20	0	2	1	2	669	2,827
5:00 PM	0	2	274	124	0	17	229	1	0	55	1	32	0	5	1	5	746	2,844
5:15 PM	0	1	313	111	0	17	277	3	0	63	0	23	0	4	0	5	817	2,967
5:30 PM	0	1	308	109	1	16	234	3	0	69	0	21	0	4	0	2	768	3,000
5:45 PM	0	2	272	94	0	14	229	2	0	49	2	15	0	2	0	0	681	3,012
Count Total	0	11	2,117	818	1	137	2,013	18	0	467	5	185	0	38	6	23	5,839	0
Peak Hour	0	6	1,167	438	1	64	969	9	0	236	3	91	0	15	1	12	3,012	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
4:00 PM	5	5	0	0	10	0	0	0	0	0	3	1	1	2	7
4:15 PM	4	3	1	0	8	0	0	0	0	0	3	2	2	3	10
4:30 PM	6	2	1	0	9	0	0	0	0	0	0	2	4	2	8
4:45 PM	6	3	1	0	10	0	0	0	0	0	1	4	4	2	11
5:00 PM	8	4	0	0	12	0	0	0	0	0	3	5	4	4	16
5:15 PM	3	1	1	0	5	0	0	0	0	0	5	1	3	3	12
5:30 PM	2	4	0	0	6	0	0	0	0	0	2	0	3	1	6
5:45 PM	4	0	1	0	5	1	0	0	0	1	0	2	0	6	8
Count Total	38	22	5	0	65	1	0	0	0	1	17	17	21	23	78
Peak Hour	17	9	2	0	28	1	0	0	0	1	10	8	10	14	42

Intersection												
Int Delay, s/veh	1.4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	505	10	15	300	26	15	1	25	16	1	11
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	20	549	11	16	326	28	16	1	27	17	1	12

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	364	0	0	570	0	0	992	1000	574	1001	992	360
Stage 1	-	-	-	-	-	-	603	603	-	383	383	-
Stage 2	-	-	-	-	-	-	389	397	-	618	609	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1195	-	-	1002	-	-	225	243	518	222	246	684
Stage 1	-	-	-	-	-	-	486	488	-	640	612	-
Stage 2	-	-	-	-	-	-	635	603	-	477	485	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1185	-	-	994	-	-	211	231	509	201	234	673
Mov Cap-2 Maneuver	-	-	-	-	-	-	334	340	-	316	340	-
Stage 1	-	-	-	-	-	-	474	476	-	624	597	-
Stage 2	-	-	-	-	-	-	607	588	-	439	473	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	14.5	14.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	423	1185	-	-	994	-	-	400
HCM Lane V/C Ratio	0.105	0.017	-	-	0.016	-	-	0.076
HCM Control Delay (s)	14.5	8.1	-	-	8.7	-	-	14.7
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2

Lanes, Volumes, Timings
2: Bear Creek Parkway & Redmond Way

Baseline Traffic Volumes
12/23/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1167	438	65	969	9	236	3	91	15	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		200	200		0	150		0	50		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor			0.94		1.00		0.98	0.97		0.98	0.97	
Frt			0.850		0.999			0.915			0.861	
Flt Protected	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3534	0	1681	1556	0	1770	1553	0
Flt Permitted	0.194			0.093			0.950	0.980		0.950		
Satd. Flow (perm)	361	3539	1493	173	3534	0	1644	1542	0	1738	1553	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			367		1			50			13	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		363			536			188			122	
Travel Time (s)		7.1			10.4			4.3			2.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	7	1268	476	71	1053	10	257	3	99	16	1	13
Shared Lane Traffic (%)							28%					
Lane Group Flow (vph)	7	1268	476	71	1063	0	185	174	0	16	14	0
Enter Blocked Intersection	No											
Lane Alignment	Left	Left	Right									
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA		Split	NA	
Protected Phases	7	4		3	8		2	2		6	6	

Lanes, Volumes, Timings
 2: Bear Creek Parkway & Redmond Way

Baseline Traffic Volumes
 12/23/2015

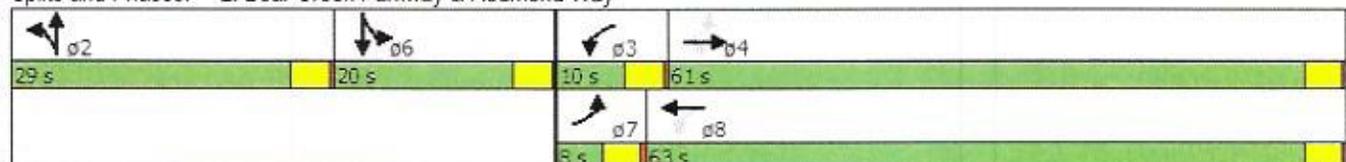


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8								
Detector Phase	7	4	4	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	8.0	61.0	61.0	10.0	63.0		29.0	29.0		20.0	20.0	
Total Split (%)	6.7%	50.8%	50.8%	8.3%	52.5%		24.2%	24.2%		16.7%	16.7%	
Maximum Green (s)	4.0	57.0	57.0	6.0	59.0		25.0	25.0		16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max		None	None	
Walk Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effct Green (s)	48.6	45.6	45.6	52.7	51.7		26.5	26.5		6.8	6.8	
Actuated g/C Ratio	0.52	0.49	0.49	0.56	0.55		0.28	0.28		0.07	0.07	
v/c Ratio	0.03	0.74	0.52	0.35	0.55		0.39	0.37		0.13	0.11	
Control Delay	9.5	22.7	6.2	13.9	14.9		36.4	26.9		50.6	26.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	9.5	22.7	6.2	13.9	14.9		36.4	26.9		50.6	26.6	
LOS	A	C	A	B	B		D	C		D	C	
Approach Delay		18.2			14.8			31.8				39.4
Approach LOS		B			B			C				D

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 93.8
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.74
 Intersection Signal Delay: 18.7
 Intersection Capacity Utilization 62.2%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 2: Bear Creek Parkway & Redmond Way





Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	43	475	220	120	92	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	125
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98		0.98		0.96	0.94
Frt			0.952			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1738	0	1770	1583
Flt Permitted	0.403				0.950	
Satd. Flow (perm)	737	1863	1738	0	1703	1493
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			53			60
Link Speed (mph)		30	30		30	
Link Distance (ft)		353	399		317	
Travel Time (s)		8.0	9.1		7.2	
Confl. Peds. (#/hr)	10			10	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	516	239	130	100	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	516	369	0	100	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		4	8		6	



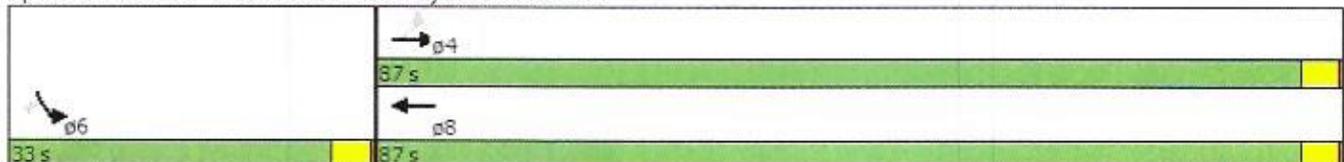
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	87.0	87.0	87.0		33.0	33.0
Total Split (%)	72.5%	72.5%	72.5%		27.5%	27.5%
Maximum Green (s)	83.0	83.0	83.0		29.0	29.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		Max	Max
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	21.9	21.9	21.9		29.2	29.2
Actuated g/C Ratio	0.37	0.37	0.37		0.49	0.49
v/c Ratio	0.17	0.75	0.55		0.11	0.08
Control Delay	13.6	23.6	15.4		10.2	3.8
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	13.6	23.6	15.4		10.2	3.8
LOS	B	C	B		B	A
Approach Delay		22.7	15.4		7.8	
Approach LOS		C	B		A	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 59.2
 Natural Cycle: 40
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 18.1
 Intersection Capacity Utilization 45.9%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 3: Bear Creek Parkway & 161st Ave. NE



Intersection												
Int Delay, s/veh	1.9											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	18	505	10	15	300	26	15	1	25	16	1	11
Conflicting Peds, #/hr	10	0	10	10	0	10	10	0	10	10	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None									
Storage Length	25	-	-	25	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	1	-
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	29	823	16	24	489	42	24	2	41	26	2	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	850	0	0	1479	1490	852	1490	1477	530
Stage 1	-	-	-	-	-	-	900	900	-	569	569	-
Stage 2	-	-	-	-	-	-	579	590	-	921	908	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1027	-	-	788	-	-	104	124	359	102	126	549
Stage 1	-	-	-	-	-	-	333	357	-	507	506	-
Stage 2	-	-	-	-	-	-	501	495	-	324	354	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1018	-	-	781	-	-	94	115	353	84	117	540
Mov Cap-2 Maneuver	-	-	-	-	-	-	210	229	-	185	225	-
Stage 1	-	-	-	-	-	-	321	344	-	488	486	-
Stage 2	-	-	-	-	-	-	464	476	-	275	341	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.4	21.8	22.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	280	1018	-	-	781	-	-	252
HCM Lane V/C Ratio	0.239	0.029	-	-	0.031	-	-	0.181
HCM Control Delay (s)	21.8	8.6	-	-	9.8	-	-	22.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.1	-	-	0.6

Lanes, Volumes, Timings
2: Bear Creek Parkway & Redmond Way

Baseline Traffic Volumes x 1.5
12/23/2015

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	1167	438	65	969	9	236	3	91	15	1	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		200	200		0	150		0	50		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor			0.94		1.00		0.98	0.97		0.98	0.97	
Frt			0.850		0.999			0.915			0.864	
Flt Protected	0.950			0.950			0.950	0.980		0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3534	0	1681	1556	0	1770	1560	0
Flt Permitted	0.076			0.062			0.950	0.980		0.950		
Satd. Flow (perm)	142	3539	1493	115	3534	0	1644	1542	0	1742	1560	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			366		1			50			20	
Link Speed (mph)		35			35			30			30	
Link Distance (ft)		363			536			188			122	
Travel Time (s)		7.1			10.4			4.3			2.8	
Confl. Peds. (#/hr)	10		10	10		10	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	150%	150%	150%	150%	150%	150%	150%	150%	150%	150%	150%	150%
Adj. Flow (vph)	10	1903	714	106	1580	15	385	5	148	24	2	20
Shared Lane Traffic (%)							28%					
Lane Group Flow (vph)	10	1903	714	106	1595	0	277	261	0	24	22	0
Enter Blocked Intersection	No	No	No	No	No							
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		CI+Ex			CI+Ex			CI+Ex			CI+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Split	NA		Split	NA	

Lanes, Volumes, Timings
2: Bear Creek Parkway & Redmond Way

Baseline Traffic Volumes x 1.5
12/23/2015

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	7	4		3	8		2	2		6	6	
Permitted Phases	4		4	8								
Detector Phase	7	4	4	3	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	8.0	20.0	20.0	8.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	8.0	61.0	61.0	10.0	63.0		29.0	29.0		20.0	20.0	
Total Split (%)	6.7%	50.8%	50.8%	8.3%	52.5%		24.2%	24.2%		16.7%	16.7%	
Maximum Green (s)	4.0	57.0	57.0	6.0	59.0		25.0	25.0		16.0	16.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5		0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		Max	Max		None	None	
Walk Time (s)		5.0	5.0		5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)		11.0	11.0		11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0		0	0		0	0	
Act Effect Green (s)	61.2	57.2	57.2	66.9	65.7		25.1	25.1		7.0	7.0	
Actuated g/C Ratio	0.57	0.53	0.53	0.62	0.61		0.23	0.23		0.07	0.07	
v/c Ratio	0.07	1.01	0.74	0.65	0.74		0.70	0.65		0.21	0.18	
Control Delay	10.4	49.0	14.9	35.0	18.9		49.8	39.3		53.1	25.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.4	49.0	14.9	35.0	18.9		49.8	39.3		53.1	25.1	
LOS	B	D	B	C	B		D	D		D	C	
Approach Delay		39.6			19.9			44.7			39.7	
Approach LOS		D			B			D			D	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 107.2
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.01
 Intersection Signal Delay: 33.3
 Intersection Capacity Utilization 84.8%
 Analysis Period (min) 15
 Intersection LOS: C
 ICU Level of Service E

Splits and Phases: 2: Bear Creek Parkway & Redmond Way

p2	p6	p3	p4
29 s	20 s	10 s	61 s
		p7	p8
		8 s	63 s

Lanes, Volumes, Timings
 3: Bear Creek Parkway & 161st Ave. NE

Baseline Traffic Volumes x 1.5
 12/23/2015



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	43	475	220	120	92	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125			0	0	125
Storage Lanes	1			0	1	1
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99		0.98		0.96	0.94
Frt			0.952			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1863	1738	0	1770	1583
Flt Permitted	0.300				0.950	
Satd. Flow (perm)	553	1863	1738	0	1703	1493
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			53			90
Link Speed (mph)		30	30		30	
Link Distance (ft)		353	399		317	
Travel Time (s)		8.0	9.1		7.2	
Confl. Peds. (#/hr)	10			10	10	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	150%	150%	150%	150%	150%	150%
Adj. Flow (vph)	70	774	359	196	150	90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	774	555	0	150	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Number of Detectors	1	2	2		1	1
Detector Template	Left	Thru	Thru		Left	Right
Leading Detector (ft)	20	100	100		20	20
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	6	6		20	20
Detector 1 Type	CI+Ex	CI+Ex	CI+Ex		CI+Ex	CI+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)		94	94			
Detector 2 Size(ft)		6	6			
Detector 2 Type		CI+Ex	CI+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			
Turn Type	Perm	NA	NA		Prot	Perm



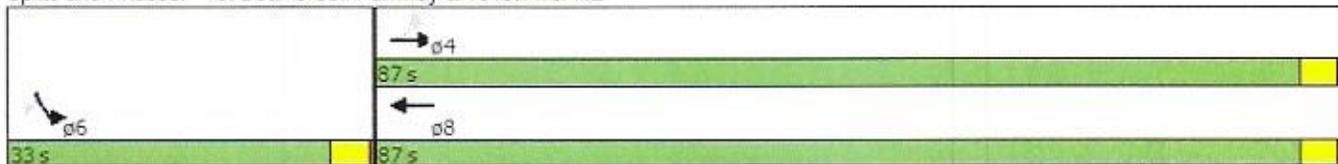
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Protected Phases		4	8		6	
Permitted Phases	4					6
Detector Phase	4	4	8		6	6
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	87.0	87.0	87.0		33.0	33.0
Total Split (%)	72.5%	72.5%	72.5%		27.5%	27.5%
Maximum Green (s)	83.0	83.0	83.0		29.0	29.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0		4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	None	None	None		Max	Max
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	37.1	37.1	37.1		29.6	29.6
Actuated g/C Ratio	0.50	0.50	0.50		0.40	0.40
v/c Ratio	0.26	0.84	0.62		0.21	0.14
Control Delay	12.6	24.9	15.1		19.1	5.7
Queue Delay	0.0	0.1	0.0		0.0	0.0
Total Delay	12.6	25.0	15.1		19.1	5.7
LOS	B	C	B		B	A
Approach Delay		24.0	15.1		14.1	
Approach LOS		C	B		B	

Intersection Summary

Area Type: Other
 Cycle Length: 120
 Actuated Cycle Length: 74.8
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.84
 Intersection Signal Delay: 19.5
 Intersection Capacity Utilization 57.5%
 Analysis Period (min) 15

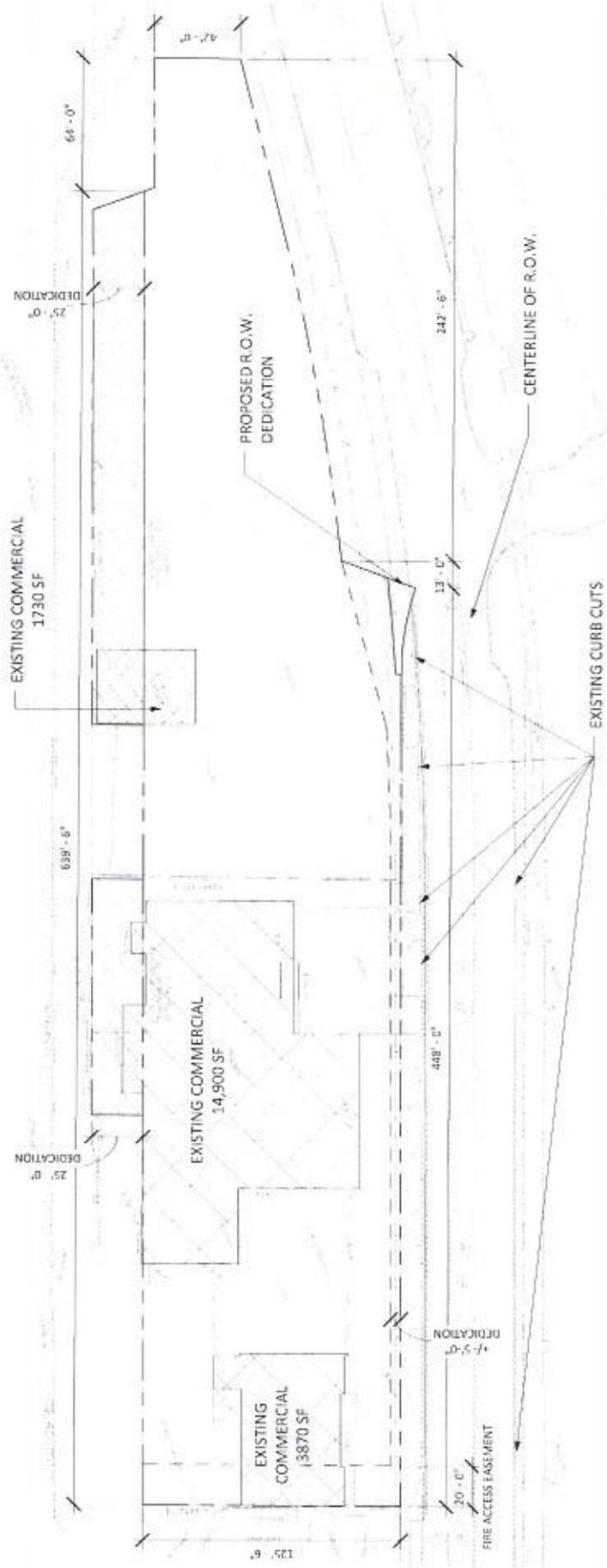
Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 3: Bear Creek Parkway & 161st Ave. NE



APPENDIX
Existing Conditions
Site Aerial
Existing Uses

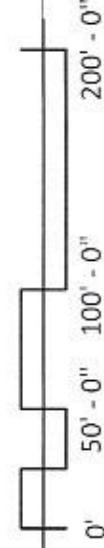
APPLICANT:
 NORTHWEST PACIFIC DEVELOPMENT, LLC
 P.O. BOX 1964 WENATCHEE WA 98807
 206-999-6269



NOTE: SEE CIVIL SITE PLAN FOR ADDITION
 INFORMATION AND EXISTING UTILITIES

SITE PLAN - EXISTING CONDITIONS

1" = 50'-0"



BEAR CREEK MIXED-USE

07/31/15

iMAP

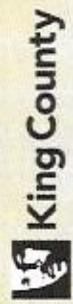


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COMMENTS: site aerial

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PARCEL

Table with 2 columns: Field Name (Parcel Number, Name, Site Address, Legal) and Value (16797160010, NDC RUI TRNG LLC, 15606 BEAR CREEK PKWY 98067, W/1/2 REDMOND ADD ALL 2 & W 1/2 OF 3)

BUILDING 1

Table with 2 columns: Field Name (Year Built, Building Net Square Footage, Construction Class, Building Quality, Lot Size, Present Use, Views, Waterfront) and Value (1958, 3528, WOOD FRAME, LOWAVERAGE, 14687, Retail(wh/Ship), No)



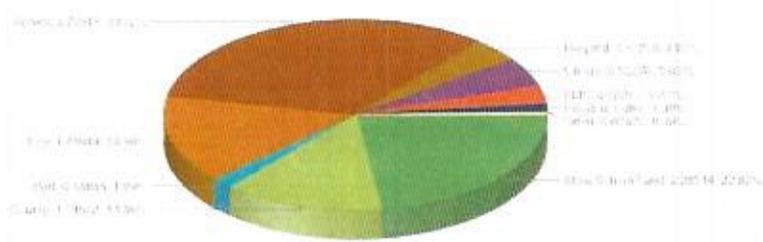
Reference Links:

- King County Taxing Districts Codes and Levies (PDF) King County Tax Links Property Tax Advisory Washington State Department of Revenue (External link) Washington State Board of Tax Appeals (External link)

- Board of Appeals Qualification Districts Report iMap Recorder's Office Scanned images of surveys and other map documents Scanned images of bills Notice mailing date: 07/30/2015

TOTAL LEVY RATE DISTRIBUTION

Tax Year: 2015 Levy Code: 2020 Total Levy Rate: \$8,99166 Total Senior Rate: \$6,43376



Click here to see levy distribution comparison by year.

TAX ROLL HISTORY

Table with 8 columns: Valued Year, Tax Year, Appraised Land Value (\$), Appraised Imps Value (\$), Appraised Total (\$), Taxable Land Value (\$), Taxable Imps Value (\$), Taxable Total (\$). Rows show data from 2001 to 2014.



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PARCEL

Parcel Number	027070-0020
Name	FLOOR CRAFT BUILDING LLC
Site Address	15610 BEAR CREEK PKWY 98052
Legal	WEST REDMOND ADD E 12 OF 3 & ALL 4

BUILDING 1

Year Built	1990
Building Net Square Footage	9384
Construction Class	MASONRY
Building Quality	AVERAGE
Lot Size	15062
Present Use	Retail Store
Views	No
Waterfront	



Reference Links:

[King County Taxing Districts Codes and Taxes \(PDF\)](#)

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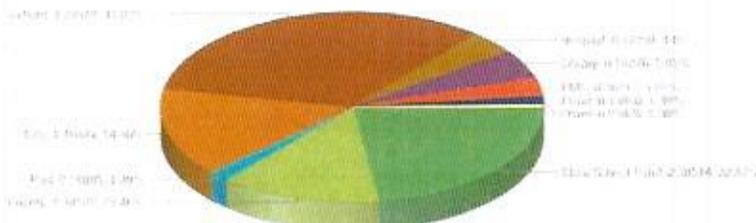
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Notice mailing date: 07/30/2015

TOTAL LEVY RATE DISTRIBUTION

Tax Year: 2015 Levy Code: 2020 Total Levy Rate: \$9.09156 Total Senior Rate: \$6.43376



35.81% Voter Approved

[Click here to see levy distribution comparison by year.](#)

TAX ROLL HISTORY

Valued Year	Tax Year	Appraised Land Value (\$)	Appraised Imps Value (\$)	Appraised Total (\$)	Taxable Land Value (\$)	Taxable Imps Value (\$)	Taxable Total (\$)
2014	2015	948,900	172,900	1,121,800	948,900	172,900	1,121,800
2013	2014	829,400	167,600	996,000	829,400	167,600	996,000
2012	2013	768,100	122,400	890,500	768,100	122,400	890,500
2011	2012	858,500	155,300	1,013,800	858,500	155,300	1,013,800
2010	2011	903,700	110,100	1,013,800	903,700	110,100	1,013,800
2009	2010	903,700	114,600	1,018,300	903,700	114,600	1,018,300
2008	2009	768,100	155,400	923,500	768,100	155,400	923,500
2007	2008	587,400	321,600	909,000	587,400	321,600	909,000
2006	2007	557,200	308,800	866,000	557,200	308,800	866,000
2005	2006	451,800	392,800	844,600	451,800	392,800	844,600
2004	2005	376,500	345,600	722,100	376,500	345,600	722,100
2003	2004	376,500	342,300	718,800	376,500	342,300	718,800
2002	2003	301,200	330,900	632,100	301,200	330,900	632,100
2001	2002	210,800	388,200	599,000	210,800	388,200	599,000



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PARCEL

Parcel Number	927070-0025
Name	FREY REED BUILDING LLC
Site Address	7849 158TH PL NE 98052
Legal	WEST REDMOND ADD

BUILDING 1

Year Built	1978
Building Net Square Footage	6222
Construction Class	MASONRY
Building Quality	AVERAGE
Lot Size	11250
Present Use	Warehouse
Views	No
Waterfront	



Reference Links:

[King County Taxing Districts Codes and Levies \(LDR\)](#)

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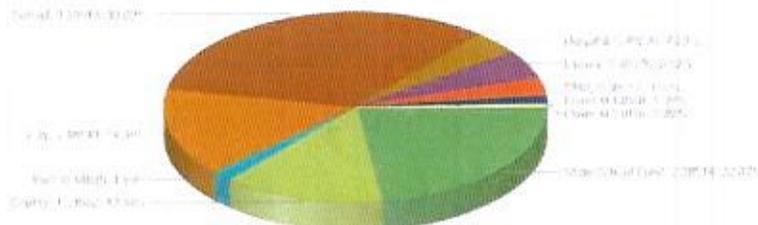
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Notice mailing date: 07/30/2015

TOTAL LEVY RATE DISTRIBUTION

Tax Year: 2015 Levy Code: 2020 Total Levy Rate: \$9.99156 Total Senior Rate: \$6.43376



35.51% Voter Approved

Click here to see levy distribution comparison by year.

TAX ROLL HISTORY

Valued Year	Tax Year	Appraised Land Value (\$)	Appraised Imps Value (\$)	Appraised Total (\$)	Taxable Land Value (\$)	Taxable Imps Value (\$)	Taxable Total (\$)
2014	2015	675,000	196,000	871,000	675,000	196,000	871,000
2013	2014	585,000	223,800	808,800	585,000	223,800	808,800
2012	2013	685,000	223,800	908,800	585,000	223,800	808,800
2011	2012	641,200	198,700	839,900	641,200	198,700	839,900
2010	2011	675,000	164,900	839,900	675,000	164,900	839,900
2009	2010	675,000	276,500	951,500	675,000	276,500	951,500
2008	2009	585,000	316,500	901,500	585,000	316,500	901,500
2007	2008	495,000	318,600	813,600	495,000	318,600	813,600
2006	2007	416,200	236,012	652,212	416,200	236,012	652,212
2005	2006	337,500	196,100	533,600	337,500	196,100	533,600
2004	2005	281,200	203,200	484,400	281,200	203,200	484,400
2003	2004	261,200	193,300	454,500	261,200	193,300	454,500
2002	2003	225,000	233,800	458,800	225,000	233,800	458,800
2001	2002	157,500	301,300	458,800	157,500	301,300	458,800



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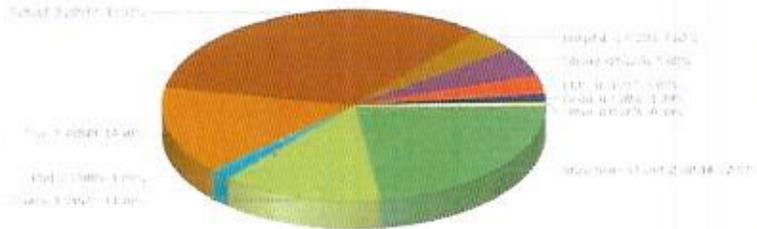
Table with 2 columns: Field Name, Value. Fields include Parcel Number, Name, Site Address, Legal.

BUILDING 1

Table with 2 columns: Field Name, Value. Fields include Year Built, Building Net Square Footage, Construction Class, Building Quality, Lot Size, Present Use, Views, Waterfront.

TOTAL LEVY RATE DISTRIBUTION

Tax Year: 2015 Levy Code: 0020 Total Levy Rate: \$8,99156 Total Senior Rate: \$6,43376



35.61% Voter Approved

Click here to see levy distribution comparison by year.

TAX ROLL HISTORY

This is a government owned parcel. Change to state law (RCW 84.40.045 and 84.40.170) by the 2013 Legislature eliminated revaluation of government owned parcels.

Updated: April 29, 2015

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Reference Links:

- King County Taxing Districts Codes and Levies (PDF)
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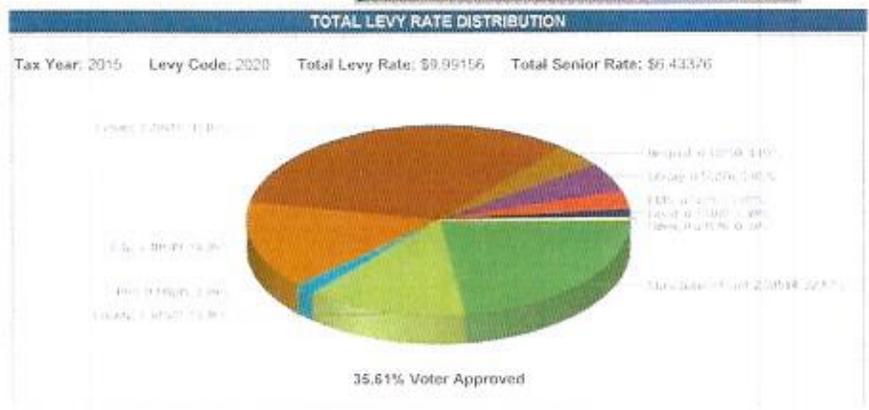
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PARCEL	
Parcel Number	927070-0035
Name	CAR LOT LLC
Site Address	15004 BEAR CREEK PKWY 98052
Legal	WEST REDMOND ADD

BUILDING 1	
Year Built	1973
Building Net Square Footage	1,728
Construction Class	MANUFACT
Building Quality	LOWAVERAGE
Lot Size	14511
Present Use	Service Building
Views	No
Waterfront	

[Click here to see levy distribution comparison by year.](#)

TAX ROLL HISTORY

Valued Year	Tax Year	Appraised Land Value (\$)	Appraised Imps Value (\$)	Appraised Total (\$)	Taxable Land Value (\$)	Taxable Imps Value (\$)	Taxable Total (\$)
2014	2015	856,100	1,000	857,100	856,100	1,000	857,100
2013	2014	740,000	1,000	741,000	740,000	1,000	741,000
2012	2013	740,000	1,000	741,000	740,000	1,000	741,000
2011	2012	827,100	1,000	828,100	827,100	1,000	828,100
2010	2011	870,600	1,000	871,600	870,600	1,000	871,600
2009	2010	870,600	1,000	871,600	870,600	1,000	871,600
2008	2009	754,500	22,300	776,800	754,500	22,300	776,800
2007	2008	638,400	22,300	660,700	638,400	22,300	660,700
2006	2007	536,900	20,900	557,800	536,900	20,900	557,800
2005	2006	435,300	20,900	456,200	435,300	20,900	456,200
2004	2005	362,700	20,500	383,200	362,700	20,500	383,200
2003	2004	362,700	21,500	384,200	362,700	21,500	384,200
2002	2003	290,200	23,800	314,000	290,200	23,800	314,000
2001	2002	203,100	64,300	267,400	203,100	64,300	267,400

- Reference Links:**
- [King County Taxing Districts Codes and Levels \(LISE\)](#)
 - [King County Tax Links](#)
 - [Property Tax Advisor](#)
 - [Washington State Department of Revenue \(External link\)](#)
 - [Washington State Board of Tax Appeals \(External link\)](#)
 - [Board of Appeals/Equalization](#)
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 - [Scanned images of bills](#)
 - Notice mailing date: 07/30/2015**



King County Department of Assessments

Fair, Equitable, and Understandable Property Valuations

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Department of Assessments

500 Fourth Avenue, Suite AD61-AS-0206, Seattle, WA 98104

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PARCEL

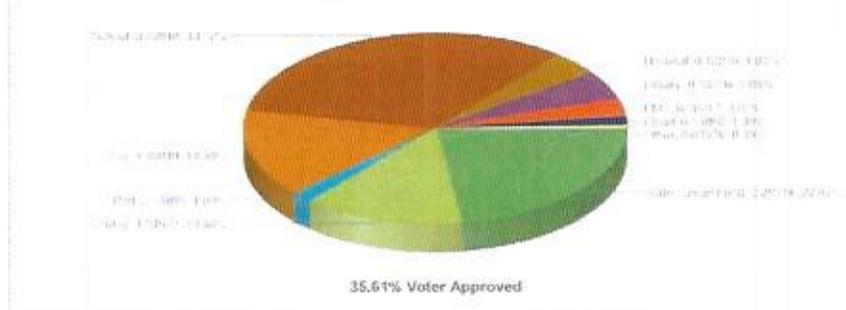
Parcel Number	527070-0040
Name	REDMOND CITY OF
Site Address	
Legal	W/ST REDMOND ADD SUBJ TO AN ESGMT PER DEED REC# 20100317000119

BUILDING 1

Year Built	
Building Net Square Footage	
Construction Class	
Building Quality	
Lot Size	24400
Present Use	Vacant(Commercial)
Views	No
Waterfront	

TOTAL LEVY RATE DISTRIBUTION

Tax Year: 2015 Levy Code: 2020 Total Levy Rate: \$9.99156 Total Senior Rate: \$6.43376



Click here to see levy distribution comparison by year.

TAX ROLL HISTORY

This is a government owned parcel. Change to state law (RCW 84, 40.045 and 84.40.175) by the 2013 Legislature eliminated reevaluation of government owned parcels.

Updated: April 22, 2015.

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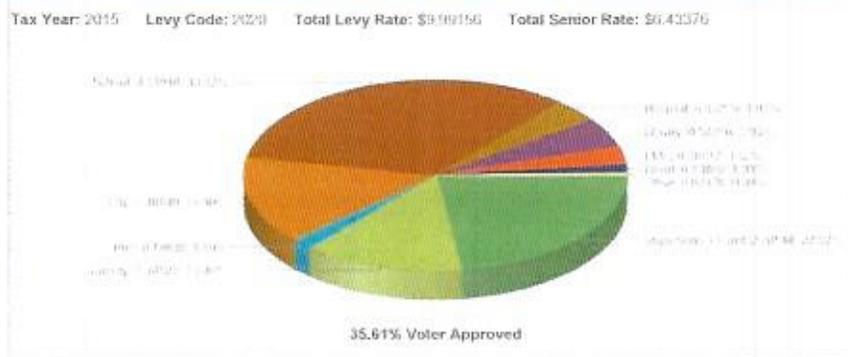
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Table with columns: Parcel Number (112505-9025), Name (REDMOND CITY OF), Site Address, Legal description.

Table with columns: Year Built, Building Net Square Footage, Construction Class, Building Quality, Lot Size (131594), Present Use (Vacant/Commercial), Views (No), Waterfront.

TOTAL LEVY RATE DISTRIBUTION



Click here to see levy distribution comparison by year.

TAX ROLL HISTORY

This is a government owned parcel. Change to state law (RCW 84 40 045 and 84 40 175) by the 2013 legislature eliminated revaluation of government owned parcels.

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