SILVER CREEK APARTMENTS
TRAFFIC IMPACT ANALYSIS

PIERCE COUNTY, WA

9/17/14

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I. INTRODUCTION

This report summarizes traffic impacts related to the Silver Creek Apartments project. The general goals of this impact study concentrate on 1) the assessment of existing roadway conditions and intersection congestion, 2) forecasts of newly generated project traffic, 3) estimations of future delay, and 4) recommendations for mitigation. Preliminary tasks include the detailed collection of roadway information, road improvement information, and peak hour traffic counts. A level of service analysis for existing traffic conditions is then made to determine the present degree of intersection congestion. Based on this analysis, forecasts of future traffic levels on the surrounding street system are found. Following this forecast, the future service levels for the key intersections are investigated. As a final step, applicable conclusions and possible on-site or off-site mitigation measures are defined. The findings of this study are intended to ensure safe and efficient progression of vehicular and non-motorist traffic near the site.

II. PROJECT DESCRIPTION

The proposed project is 182 unit apartment complex in the Gem Heights area of unincorporated Pierce County on parcel 0419336002. The project is located on the southwest corner of the 176th Street & Gem Heights Drive intersection. Access to the site will be provided by a right-in/right-out driveway on 176th Street as well as a full movement driveway on Gem Heights Drive. Most development surrounding the site is residential, with some retail use immediately to the east of the site. Figure 1 shows the site location and primary arterials serving the site. The general configuration of the project is shown on the site plan in Figure 2.

III. EXISTING CONDITIONS

A. Surrounding Roadways

The street network serving the proposed project consists of a variety of roadways. Streets near the site mainly consist of two-lane and major arterials. Characteristics for these roadways vary with respect to lane widths, grades, speeds, and function. Differences are based on specific designations and proximity to major employment areas in the region. The major roadways and arterials surrounding the site are listed and described on page 6.

SILVER CREEK APARTMENTS

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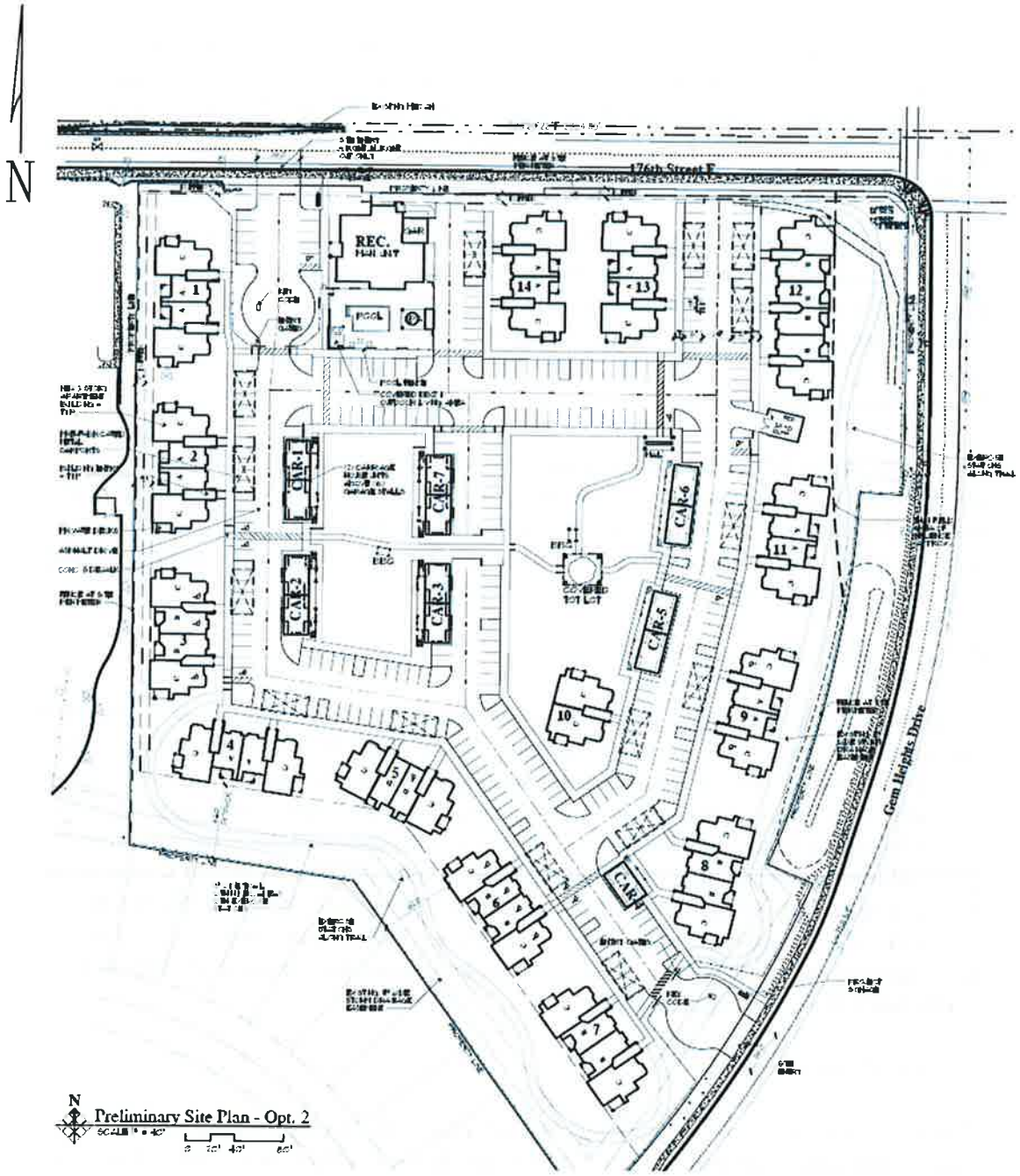
VICINITY MAP & ROADWAY SYSTEM

FIGURE 1



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SITE PLAN

FIGURE 2

176th Street E is an east-west, multi-lane major arterial that borders the north side of the site. The posted speed limit varies from 35 mph to 45 mph. The pavement surface primarily consists of asphalt concrete and lane widths are 12 feet. Shoulders are curb, gutter, and sidewalks. For a majority of the road's length there are center raised median islands with turn-lanes and U-turn areas provided.

Gem Heights Drive E is a north-south secondary arterial that borders the east side of the site. A section of the road along the site frontage has two southbound travel lanes merging to one lane. One northbound lane is typically provided, as well as a center two-way left turn lane. The speed limit is posted at 35 mph.

B. Roadway Improvements

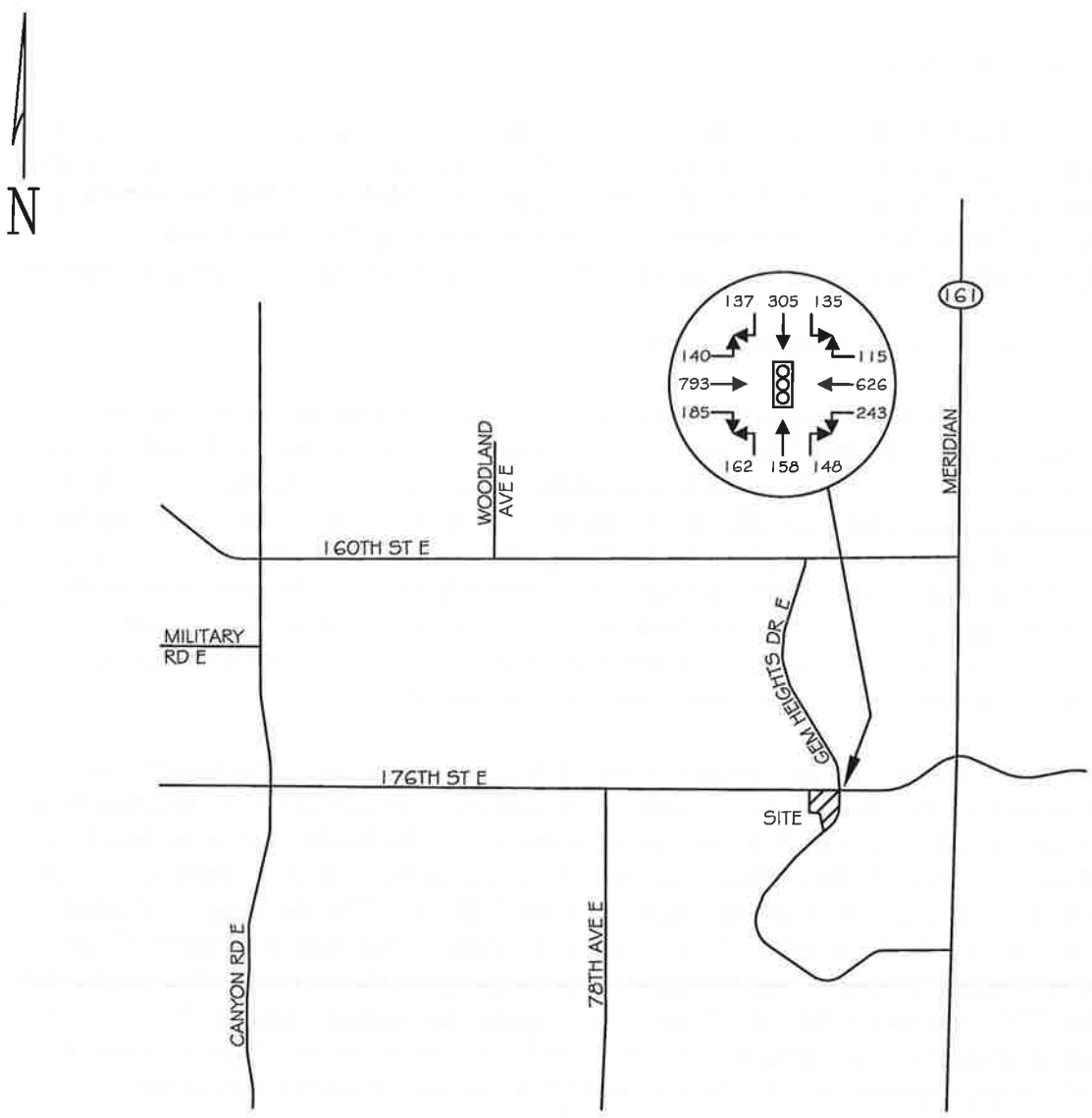
Improvements to 176th Street E have recently been completed, providing two travel lanes per direction with some sections of raised center median for access management. Left turn pockets and u-turn openings are provided. The project access onto 176th Street E will be a right-in/right-out configuration as such. Some minor extension of the existing raised center median may be required at this access point.

C. Peak Hour Volumes

Field data for this study was taken in July of 2014. The evening traffic count was taken during the PM peak period between the hours of 4 PM and 6 PM. This specific peak period was targeted for analysis purposes since it generally represents a worst case scenario for roadways with respect to traffic conditions for commercial projects. This is primarily due to the common 8 AM to 5 PM work schedule and the greater number of personal trips occurring after work hours. Most commuters return to their dwellings at the same time of day which translates to a natural peak in intersection traffic loads, especially when combined with the relatively large number of personal trips. Figure 3 on the following page shows the weekday PM peak volumes for the adjacent intersection of 176th Street & Gem Heights Drive.

D. Non-Motorist Traffic

Based on the location of the proposed development with respect to major residential areas, some pedestrian and bicycle traffic would be expected in the vicinity of the site. The growing availability of sidewalks in the area provide excellent pedestrian facilities and provisions to accommodate non-motorized vehicle traffic on Pierce County roads. Sidewalks are already provided across the project frontage. An internal exercise trail is to be provided on site. Crosswalks are provided across all legs of the 176th Street & Gem Heights Drive intersection. No additional mitigation for non-motorized trips would likely be required outside of any frontage improvements required by the applicable jurisdiction.



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EXISTING PM PEAK HOUR VOLUMES

FIGURE 3

E. Transit Service

A review of the Pierce Transit regional bus schedule indicates the nearest transit service is provided by Route 402. Route 402 serves Meridian to the Federal Way Transit Center between 5:43 AM and 8:58 PM. The nearest stop is provided near 176th Street & Gem Heights Drive. While there is potential for some transit usage by Silver Creek Apartments residents or visitors, no trip reductions were made for a conservative analysis.

F. Sight Distance at Access Driveways

Assessments of the project access driveway locations were made to establish whether sufficient Entering Sight Distance (ESD) is available. Measurements are based on a 3.5 foot eye height and a 14.5 foot setback from the main drive lane. The access on 176th Street is to be in a right-in/right out configuration. The posted speed limit on 176th Street is 45 mph at the access, transitioning to 35 mph shortly to the east. The Pierce County ESD minimum requirement for a 45 mph speed limit is 530 feet. Measurements at the proposed project access point on 176th Street indicate this minimum is met, with available sight to the west well over 600 feet. Sight to the west is excellent as well, although not an issue since left turns out will be restricted.

The access on Gem Heights Drive is to be a full movement access. The posted speed limit on Gem Heights Drive is 35 mph. A minimum of 415 feet of ESD is required for a 35 mph speed limit. The proposed access location is on the inside of a horizontal curve of the road. Sight to the north is limited by this horizontal curvature coupled with some trees as well as a shrub wall and a series of roughly 8 foot tall landscaping shrubs that serve as a barrier between the sidewalk and a drainage area all within the right-of-way. Some grading, clearance, and reduction of the landscaping shrubs could allow for the 415 foot ESD minimum to be met. Silver Creek Apartments signage and especially fencing would also need to be situated so as not to hinder sight to the north. Measurements of sight to the south indicate that the 415 foot ESD minimum would be met, before the horizontal curvature plus trees become a limiting factor.

IV. FUTURE TRAFFIC CONDITIONS

A. Trip Generation

Trip generation is used to determine the magnitude of project impacts on the surrounding street system. Data presented in this report was taken from the Institute of Transportation Engineer's publication *Trip Generation*, 9th Edition. The designated land use for this project is defined as Apartments (LUC 220). Data for the 4 PM to 6 PM peak hour was used for future traffic estimations. Table 1 on the following page shows the trip generation values used for this study. Included are the average weekday daily volume and the AM and PM peak hour generation volumes for proposed 182 apartment units.

TABLE 2
Project Trip Generation
182 Apartment Units

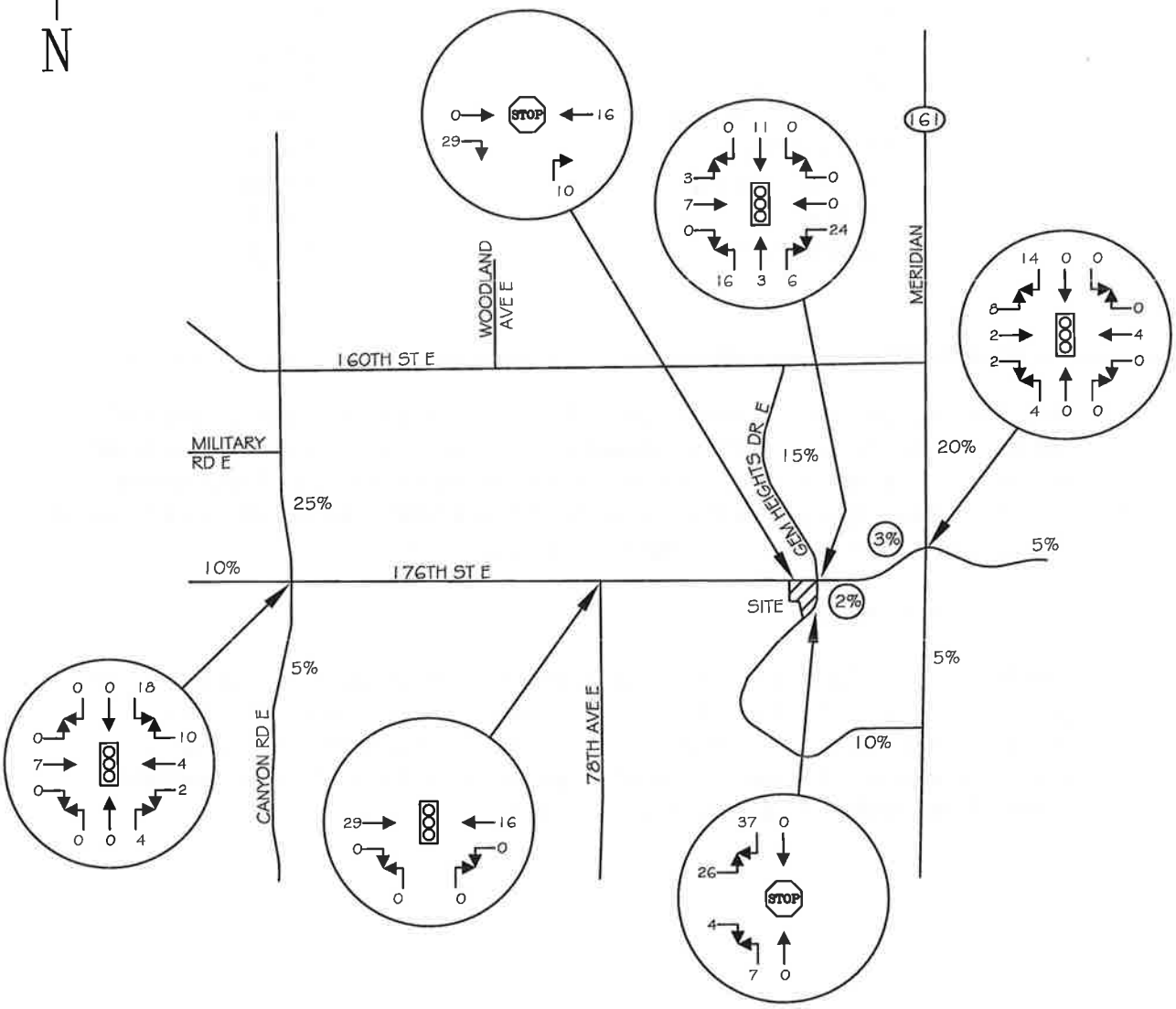
Time Period	*Volume*
AWDT	1210 vpd
AM Peak Inbound	18 vph
AM Peak Outbound	75 vph
AM Peak Total	93 vph
PM Peak Inbound	73 vph
PM Peak Outbound	40 vph
PM Peak Total	113 vph

B. Distribution & Assignment

Trip distribution and assignment describes the process by which project generated trips are dispersed on the street network surrounding the site. Site generated trips are expected to follow the trip pattern shown in Figure 4. This figure reflects work-based and other-based trips taken by project traffic during the PM peak hour. This distribution is based on other projects in the area and existing travel patterns.

C. Peak Hour Volumes

2019 was used as the horizon study year in order to assess future impacts at a five-year junction. Future 2019 traffic volumes for the studied intersections were derived by applying a 3 percent growth rate over 5 years to the existing volumes of Figure 3. Figure 5 represents 2019 traffic without the project, while Figure 6 shows cumulative 2019 volumes with project-generated trips added.



PM PEAK HOUR TRIPS
INBOUND: 73 VPH
OUTBOUND: 40 VPH

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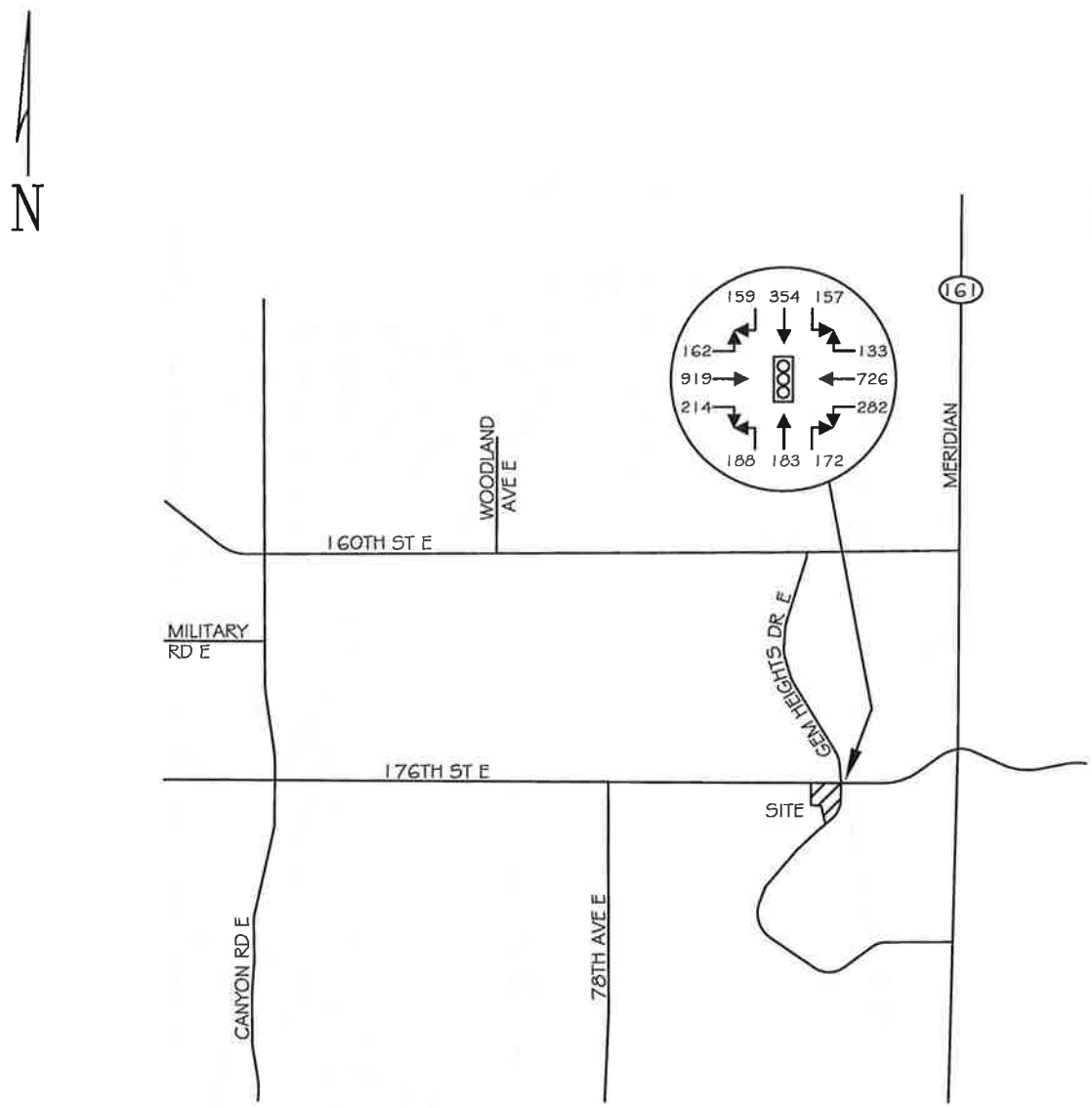
TRIP DISTRIBUTION & ASSIGNMENT

FIGURE 4



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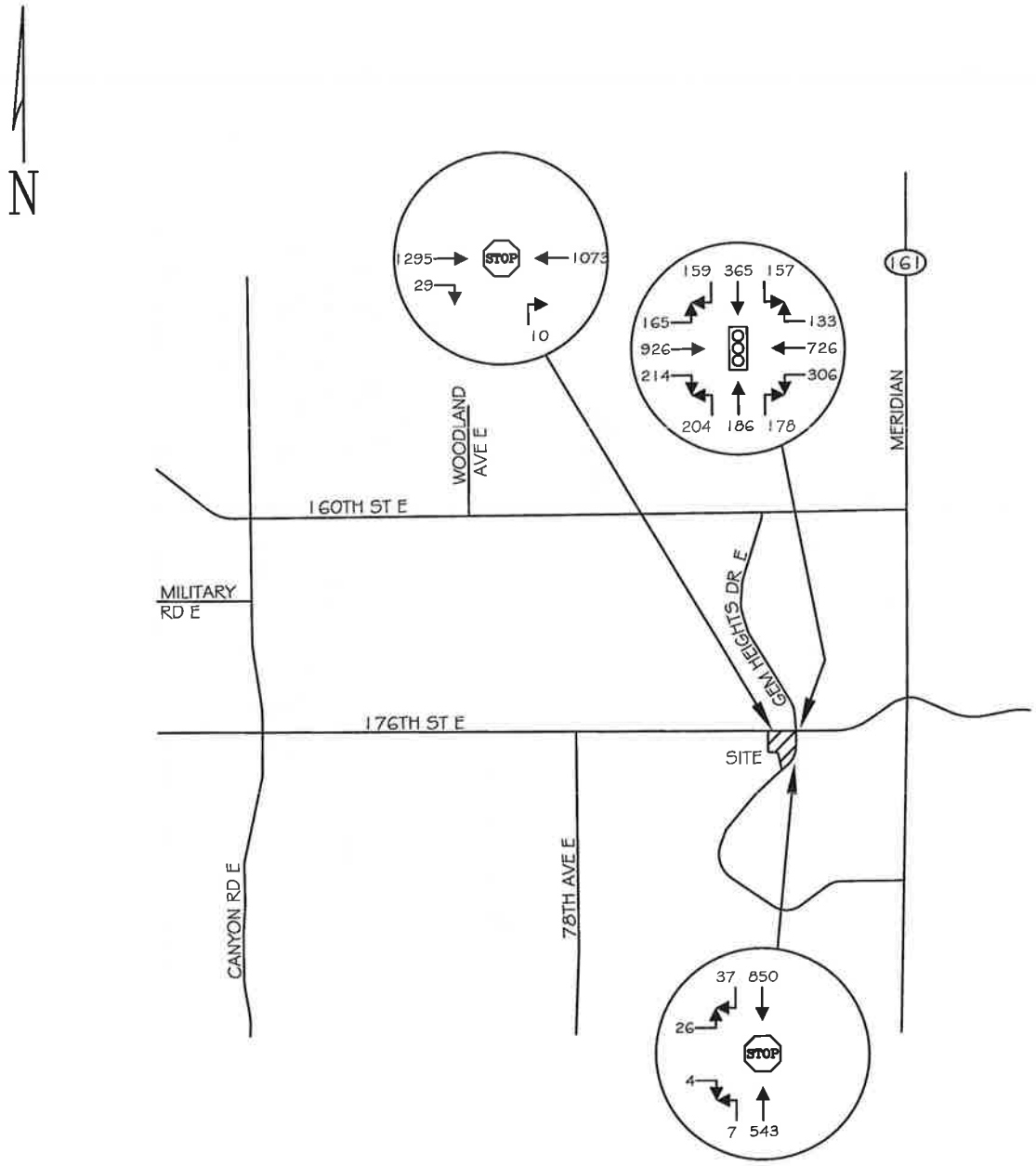
2019 PM PEAK HOUR VOLUMES WITHOUT PROJECT

FIGURE 5



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2019 PM PEAK HOUR VOLUMES WITH PROJECT

FIGURE 6

D. Future Level of Service

Future peak hour delays were determined through the use of the *Highway Capacity Manual 2010*. Capacity analysis is used to determine level of service (LOS) which is an established measure of congestion for transportation facilities. LOS is defined for a variety of facilities including intersections, freeways, arterials, etc. A complete definition of level of service and related criteria can be found in the HCM.

The methodology for determining the LOS at signalized intersections strives to determine the volume to capacity (v/c) ratios for the various intersection movements as well as the average stopped delay for those movements. *Delay* is generally used to measure the degree of driver discomfort, frustration, fuel consumption, and lost time. *Stopped delay*, in particular, is defined as the amount of time a vehicle, on average, spends not in motion at an intersection. Aside from the overall quantity of traffic, three specific factors influence signalized intersection LOS. These include the type of signal operation provided, the signal phasing pattern, and the specific allocation of green time.

The methodology for determining the LOS at unsignalized intersections strives to determine the potential capacities for the various vehicle movements and ultimately determines the average total delay for each movement. *Potential Capacity* represents the number of additional vehicles that could effectively utilize a particular movement, which is essentially the equivalent of the difference between the movement capacity and the existing movement volume. *Total delay* is described as the elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. *Average total delay* is simply the mean total delay over the entire stream. A number of factors influence potential capacity and total delay including the availability/usefulness of gaps.

The range for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating the worst conditions with heavy control delays. Detailed descriptions of intersection LOS are given in the 2010 Highway Capacity Manual. Level of service calculations were made through the use of the computer analysis program Synchro, which follows procedures of the HCM for signalized and unsignalized intersections. Refer to the HCM for a description of the analysis. Level of service results and accompanying approach delays are shown in Table 2 on the following page. These results reflect 2019 future traffic conditions with project trips added to the street system.

TABLE 2
2019 Level of Service With Project
Delays given in Seconds Per Vehicle

Intersection	*Control*	*Geometry*	*LOS*	*Delay*
176th St/Entrance	Stop	Northbound RT	C	15.1
Gem Heights/Entrance	Stop	Eastbound	C	20.8
		Northbound LT	B	10.1

As the table shows, future delays at the project entrances are expected to be mild at LOS B to LOS C. Overall, the Silver Creek Apartments project should have minor impacts on 176th Street and the surrounding roadway system.

V. SUMMARY & MITIGATION

The Silver Creek Apartments project proposes 182 multi-family units on the southwest corner of 176th Street & Gem Heights Drive. On a daily basis, roughly 1,210 total trip movements into and out of the site would be expected. Of this total daily traffic, 93 trips would be associated with the AM peak hour while 113 trips would occur during the PM peak hour.

Pedestrian and bicyclist volumes are mild on the roads, and pedestrian facilities are available in the area and across the project frontages. Entering sight distance is adequate at the 176th Street right-in/right-out project entrance. Entering sight distance at the Gem Heights Drive project entrance is hindered by some trees and landscaping shrubs to the north, coupled with horizontal curvature of the road. Level of Service conditions for the project accesses are outlined in Table 2. Results show that the project entrances should operate in the LOS B to C range under future 2019 traffic conditions. The Silver Creek Apartments project is not expected to have a significant impact on the local roadway system.

Proposed mitigation for the Silver Creek Apartments project is as follows:

1. Pay traffic impact fees as defined in TSA zone 4 which would be $1,998.37 per multi-family unit. The TIF for the project is calculated at:

   182 x $1,998.37 = **$363,703.34**

2. Ensure that adequate Entering Sight Distance of at least 415 feet is provided at the project access on Gem Heights Drive. Landscaping to the north of the entrance may need to be altered, specifically the shrub wall and tall shrubs, although these are in the right-of-way and a delineation for a drainage area. In addition, project fencing may

need to be pushed back within the site so as not to hinder sight to the north of the entrance.

3. Extend the existing C-curb on 176th Street near the proposed access in order to prevent illegal turns and ensure the access operates as right-in/right-out only.

No other mitigations are identified at this time.

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APPENDIX

LEVEL OF SERVICE

The following are excerpts from the *2010 Highway Capacity Manual - Transportation Research Board Special Report 209.*

Quality of service requires quantitative measures to characterize operational conditions within a traffic stream. Level of service (LOS) is a quality measure describing operational conditions within a traffic stream, generally in terms of such service measures as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six LOS are defined for each type of facility that has analysis procedures available. Letters designate each level, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions and the driver's perception of those conditions.

Level-of-Service definitions

The following definitions generally define the various levels of service for arterials.

Level of service A represents primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are seldom impeded in their ability to maneuver in the traffic stream. Delay at signalized intersections is minimal.

Level of service B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver in the traffic stream is only slightly restricted and delays are not bothersome.

Level of service C represents stable operations; however, ability to maneuver and change lanes in midblock locations may be more restricted than in LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average travel speeds of about 50 percent of the average free-flow speed for the arterial classification.

Level of service D borders on a range in which small increases in flow may cause substantial increases in approach delay and hence decreases in arterial speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these. Average travel speeds are about 40 percent of free-flow speed.

Level of service E is characterized by significant delays and average travel speeds of one-third the free-flow speed or less. Such operations are caused by some combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.

Level of service F characterizes arterial flow at extremely low speeds, from less than one-third to one-quarter of the free-flow speed. Intersection congestion is likely at critical signalized locations, with long delays and extensive queuing.

These definitions are general and conceptual in nature, and they apply primarily to uninterrupted flow. Levels of service for interrupted flow facilities vary widely in terms of both the user's perception of service quality and the operational variables used to describe them.

For each type of facility, levels of service are defined based on one or more operational parameters that best describe operating quality for the subject facility type. While the concept of level of service attempts to address a wide range of operating conditions, limitations on data collection and availability make it impractical to treat the full range of operational parameters for every type of facility. The parameters selected to define levels of service for each facility type are called "measures of effectiveness" or "MOE's", and represent available measures that best describe the quality of operation on the subject facility type.

Each level of service represents a range of conditions, as defined by a range in the parameters given. Thus, a level of service is not a discrete condition, but rather a range of conditions for which boundaries are established.

The following tables describe levels of service for signalized and unsignalized intersections. Level of service for signalized intersections is defined in terms of average control delay. Delay is a measure of driver discomfort, frustration, fuel consumption and lost travel time, as well as time from movements at slower speeds and stops on intersection approaches as vehicles move up in queue position or slow down upstream of an intersection. Level of service for unsignalized intersections is determined by the computed or measured control delay and is determined for each minor movement.

Signalized Intersections - Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Unsignalized Intersections - Level of Service

Level of Service	Average Total Delay per Vehicle (sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

As described in the 2010 Highway Capacity Manual, level of service breakpoints for all-way stop controlled (AWSC) intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from distinct kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an AWSC intersection. Thus a higher level of control delay is acceptable at a signalized intersection for the same level of service.

AWSC Intersections - Level of Service

Level of Service	Average Total Delay per Vehicle (sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Detailed Average Rate Trip Calculations
For 182 Dwelling Units of Apartments(220) - [R]

Project: Silvercreek Apartments
Phase:

Open Date:
Analysis Date:

Description:

	Average Rate	Standard Deviation	Adjustment Factor	Driveway Volume
Avg. Weekday 2-Way Volume	6.65	3.07	1.00	1210
7-9 AM Peak Hour Enter	0.10	0.00	1.00	18
7-9 AM Peak Hour Exit	0.41	0.00	1.00	75
7-9 AM Peak Hour Total	0.51	0.73	1.00	93
4-6 PM Peak Hour Enter	0.40	0.00	1.00	73
4-6 PM Peak Hour Exit	0.22	0.00	1.00	40
4-6 PM Peak Hour Total	0.62	0.82	1.00	113
AM Pk Hr, Generator, Enter	0.16	0.00	1.00	29
AM Pk Hr, Generator, Exit	0.39	0.00	1.00	71
AM Pk Hr, Generator, Total	0.55	0.76	1.00	100
PM Pk Hr, Generator, Enter	0.41	0.00	1.00	75
PM Pk Hr, Generator, Exit	0.26	0.00	1.00	47
PM Pk Hr, Generator, Total	0.67	0.85	1.00	122
Saturday 2-Way Volume	6.39	2.99	1.00	1163
Saturday Peak Hour Enter	0.00	0.00	1.00	0
Saturday Peak Hour Exit	0.00	0.00	1.00	0
Saturday Peak Hour Total	0.52	0.74	1.00	95
Sunday 2-Way Volume	5.86	2.73	1.00	1067
Sunday Peak Hour Enter	0.00	0.00	1.00	0
Sunday Peak Hour Exit	0.00	0.00	1.00	0
Sunday Peak Hour Total	0.51	0.75	1.00	93

Note: A zero indicates no data available.
Source: Institute of Transportation Engineers
Trip Generation Manual, 9th Edition, 2012

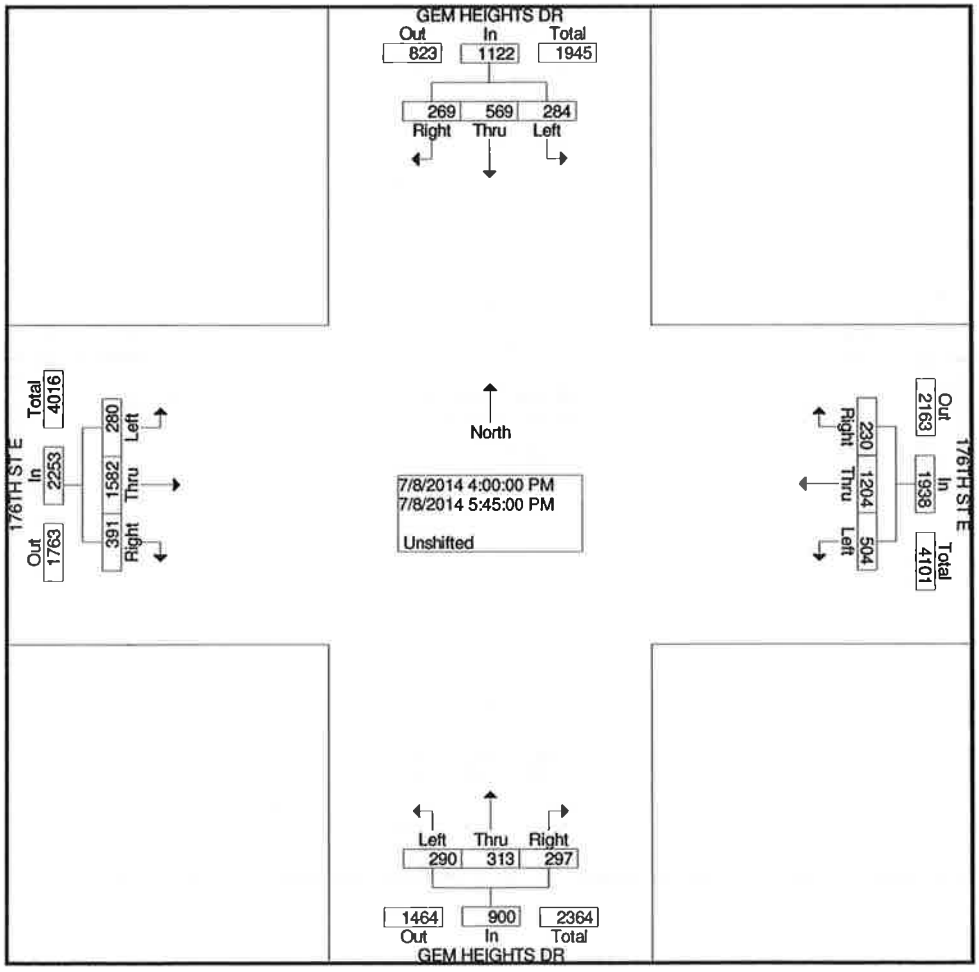
TRIP GENERATION 2013, TRAFFICWARE, LLC

Heath & Associates, Inc.
2214 Tacoma Road
Puyallup, WA 98371

File Name : 3532a
Site Code : 00003532
Start Date : 7/8/2014
Page No : 1

Groups Printed- Unshifted

	GEM HEIGHTS DR Southbound			176TH ST E Westbound			GEM HEIGHTS DR Northbound			176TH ST E Eastbound			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
04:00 PM	31	63	36	37	147	50	35	34	32	37	208	25	735
04:15 PM	36	70	34	36	173	64	31	32	43	51	198	35	803
04:30 PM	32	78	25	30	149	51	26	45	32	45	223	37	773
04:45 PM	35	82	38	25	134	66	43	43	42	41	177	33	759
Total	134	293	133	128	603	231	135	154	149	174	806	130	3070
05:00 PM	34	75	38	24	170	62	48	38	45	48	195	35	812
05:15 PM	34	64	41	35	134	74	39	36	32	55	190	38	772
05:30 PM	35	63	34	19	145	74	39	42	33	48	199	41	772
05:45 PM	32	74	38	24	152	63	36	43	31	66	192	36	787
Total	135	276	151	102	601	273	162	159	141	217	776	150	3143
Grand Total	269	569	284	230	1204	504	297	313	290	391	1582	280	6213
Apprch %	24.0	50.7	25.3	11.9	62.1	26.0	33.0	34.8	32.2	17.4	70.2	12.4	
Total %	4.3	9.2	4.6	3.7	19.4	8.1	4.8	5.0	4.7	6.3	25.5	4.5	



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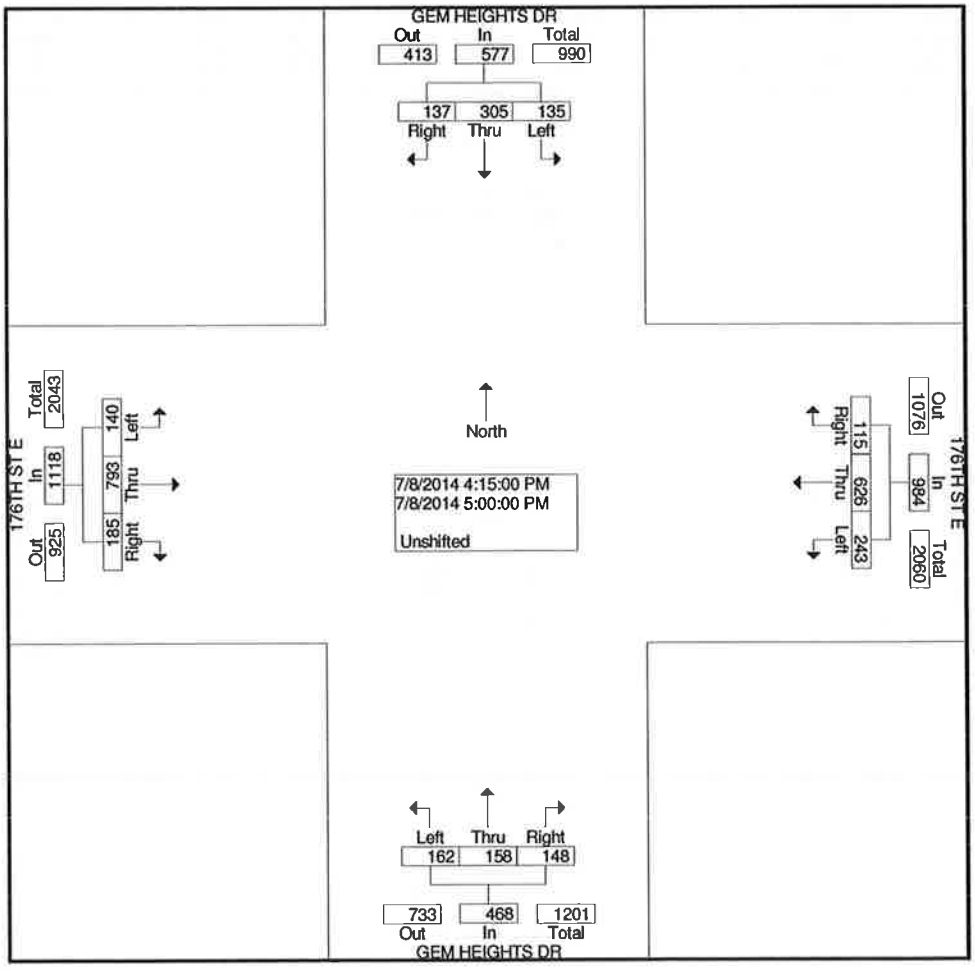
Puyallup, WA 98371

File Name : 3532a
Site Code : 00003532
Start Date : 7/8/2014
Page No : 2

	GEM HEIGHTS DR Southbound				176TH ST E Westbound				GEM HEIGHTS DR Northbound				176TH ST E Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection	04:15 PM																
Volume	137	305	135	577	115	626	243	984	148	158	162	468	185	793	140	1118	3147
Percent	23.7	52.9	23.4		11.7	63.6	24.7		31.6	33.8	34.6		16.5	70.9	12.5		
05:00 Volume	34	75	38	147	24	170	62	256	48	38	45	131	48	195	35	278	812
Peak Factor																	0.969
High Int.	04:45 PM				04:15 PM				05:00 PM				04:30 PM				
Volume	35	82	38	155	36	173	64	273	48	38	45	131	45	223	37	305	
Peak Factor				0.931				0.901				0.893				0.916	



Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	1295	29	0	1073	0	10
Conflicting Peds, #/hr	0	0	0	0	0	10
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	1408	32	0	1166	0	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1449	0	2016	730
Stage 1	-	-	-	-	1433	-
Stage 2	-	-	-	-	583	-
Critical Hdwy	-	-	4.1	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	474	-	52	369
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	527	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	474	-	52	366
Mov Cap-2 Maneuver	-	-	-	-	52	-
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	527	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	366	-	-	474	-
HCM Lane V/C Ratio	0.03	-	-	-	-
HCM Control Delay (s)	15.1	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Vol, veh/h	26	4	7	543	850	37
Conflicting Peds, #/hr	10	10	10	0	0	10
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	0	-	-	-
Veh in Median Storage, #	1	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	28	4	8	590	924	40

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1559	964	974	0	-	0
Stage 1	954	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	125	312	716	-	-	-
Stage 1	377	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	122	307	710	-	-	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	374	-	-	-	-	-
Stage 2	538	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.8	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	710	-	261	-	-
HCM Lane V/C Ratio	0.011	-	0.125	-	-
HCM Control Delay (s)	10.1	-	20.8	-	-
HCM Lane LOS	B	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Gem Heights Entrance Looking North

North of Gem Heights Entrance Looking South