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Brickyard Ridge
Updated Traffic Impact Analysis

Prepared For: Brickyard Ridge, LLC
Jurisdiction: City of Woodinville
City File Number: PPA 13002/SEP13019

September 2013

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CITY OF WOODINVILLE
DEVELOPMENT SERVICES

GTC #13-065

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1. DEVELOPMENT IDENTIFICATION

Gibson Traffic Consultants, Inc. (GTC) has been retained by Brickyard Ridge, LLC to provide an updated traffic impact analysis for the proposed Brickyard Ridge development to address the City of Woodinville comments in the August 12, 2013 Comment Letter. Matthew Palmer, responsible for this report and traffic analysis, is a licensed professional engineer (Civil) in the State of Washington and member of the Washington State section of ITE.

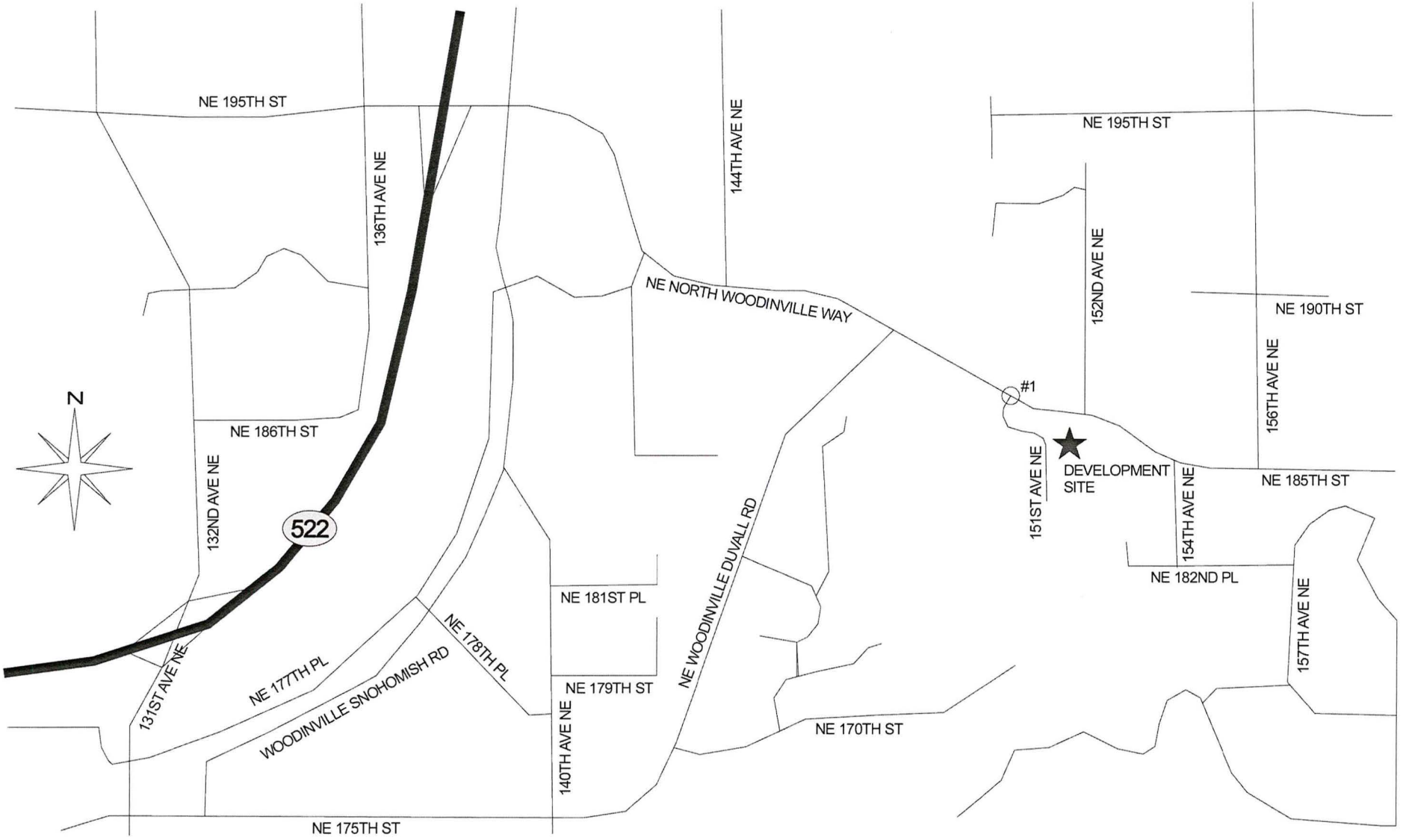
The Brickyard Ridge development is located on the south side of NE Woodinville-Duvall Rd east of 151st Avenue NE and is proposed to consist of 14 single-family detached residential units. There are 2 existing single-family detached residential units on the site that will be removed from the site and creditable to the development; therefore this report has been completed for 12 new single-family residential units. The proposed residential development is expected to be fully constructed and occupied by the end of 2014. Therefore, 2014 was utilized as the developments horizon year for future analysis. Site access would be provided through an adjacent property to 151st Avenue NE and then onto NE Woodinville-Duvall Rd. A site vicinity map has been included in Figure 1.

2. METHODOLOGY

Trip generation calculations for the Brickyard Ridge have been performed according to the methodology from City of Woodinville Department of Public Works (DPW) Rule 4220, *Presubmittal Conferences and Traffic Studies*. Data contained in the Institute of Transportation Engineers' (ITE) *Trip Generation, 9th Edition (2012)* has been used for the proposed and existing uses. The distribution of trips generated by the site is based on approved distributions for adjacent developments.

According to guidelines for previous traffic studies in the City of Woodinville, this traffic study contains the following elements: trip generation, trip distribution, level of service analysis and mitigation determination for the proposed residential development. The level of service analysis was completed for intersections impacted with 10 or more PM peak-hour trips. Additional analysis was conducted per the direction of the City.

The peak-hour level of service (LOS) analysis calculations were completed using the *Synchro 7,* software. This software applies the operational analysis methodology of the current *Highway Capacity Manual (HCM)*. Traffic congestion is generally measured in terms of level of service. In accordance with the 2010 HCM, road facilities and intersections are rated between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The level of service criteria is summarized in Table 1. The level of service at two-way stop-controlled intersections is based on the average delay of the worst approach. The level of service at signalized and all-way stop-controlled intersections is based on the average delay for all approaches. Geometric characteristics and conflicting traffic movements are taken into consideration when determining level of service values.



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★ DEVELOPMENT SITE

○## STUDY INTERSECTION

FIGURE 1
SITE VICINITY MAP

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Table 1: Level of Service Criteria for Intersections

Level of [1] Service	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	**Signalized** Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	Extreme Delays[2]	>50	>80

The acceptable level of service for intersections within the City of Woodinville is LOS E.

The only intersection that will be impacted with 10 or more PM peak-hour trips and will need to be analyzed as part of this report is the unsignalized intersection of NE Woodinville-Duvall Road and 151st Avenue NE. In addition, AM peak-hour level of service was included for the intersection of 151st Avenue NE at NE Woodinville-Duvall Road per City comments.

The analysis has been performed for the existing conditions, 2014 baseline conditions, and 2014 future with development conditions during the AM peak-hour and PM peak-hour. Existing counts were collected by Traffic Data Gathering (TDG) on April 23, 2013 for the PM peak-hour and AM peak-hour counts were collected by TDG on September 5, 2013. The 2014 baseline turning movements were calculated by applying an annually compounding growth rate to the existing turning volumes based on the growth calculated from previous counts at the intersection. The 2014 future with development turning movements have been calculated by adding the development's trips to the 2014 baseline turning movements.

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[1] **Source:** *Highway Capacity Manual* 2010.
LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).
LOS B: Generally stable traffic flow conditions.
LOS C: Occasional back-ups may develop, but delay to vehicles is short term and still tolerable.
LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).
LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.
LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

[2] When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

3. TRIP GENERATION

The trip generation calculations for the Brickyard Ridge are based on the average trip generation rates for ITE Land Use Code 210, single-family detached housing. The trip generation of the Brickyard Ridge development is summarized in Table 2.

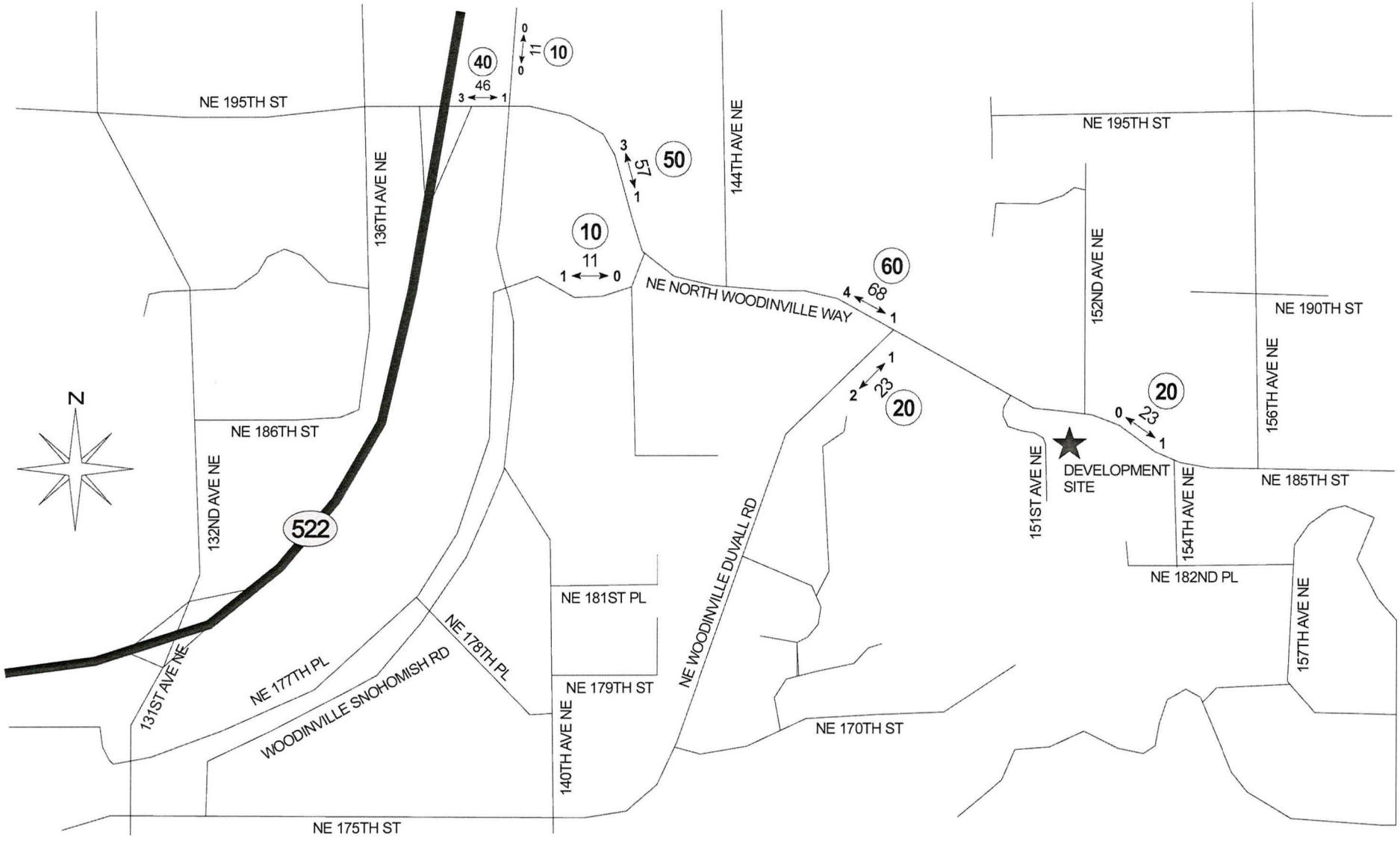
Table 2: Trip Generation Summary

Use	Units	Average Daily Trips	AM Peak-Hour Trips			PM Peak-Hour Trips		
			Inbound	Outbound	Total	Inbound	Outbound	Total
Single-Family Residential	14	133.28	2.63	7.87	10.50	8.82	5.18	14.00
Single-Family Residential	-2	-19.04	-0.38	-1.12	-1.50	-1.26	-0.74	-2.00
TOTAL		**114.24**	**2.25**	**6.75**	**9.00**	**7.56**	**4.44**	**12.00**

The 12 new units of the Brickyard Ridge development are anticipated to generate 114.24 new average daily trips with 9.00 new AM peak-hour trips and 12.00 new PM peak-hour trips. The trip generation calculations are included in the attachments.

4. TRIP DISTRIBUTION

The distribution of trips generated by the Brickyard Ridge development is based on a previously submitted traffic study conducted for this site. It is estimated that 20% of the development's traffic will travel to and from the east along NE Woodinville-Duvall Road and 80% of the development's traffic will travel to and from the west along NE Woodinville-Duvall Road. The eighty percent would split at the intersection of NE Woodinville-Duvall Road and NE North Woodinville Way with twenty percent of the development's traffic traveling to and from the south and the remaining sixty percent continuing to and from the west along NE North Woodinville Way. A detailed trip distribution showing the AM peak-hour trips and the PM peak-hour trips are included in Figure 2 and Figure 3, respectively.



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AWDT
AM ↔ PEAK — NEW SITE TRAFFIC (DAILY/PEAK HOUR)
(25) — TRIP DISTRIBUTION %

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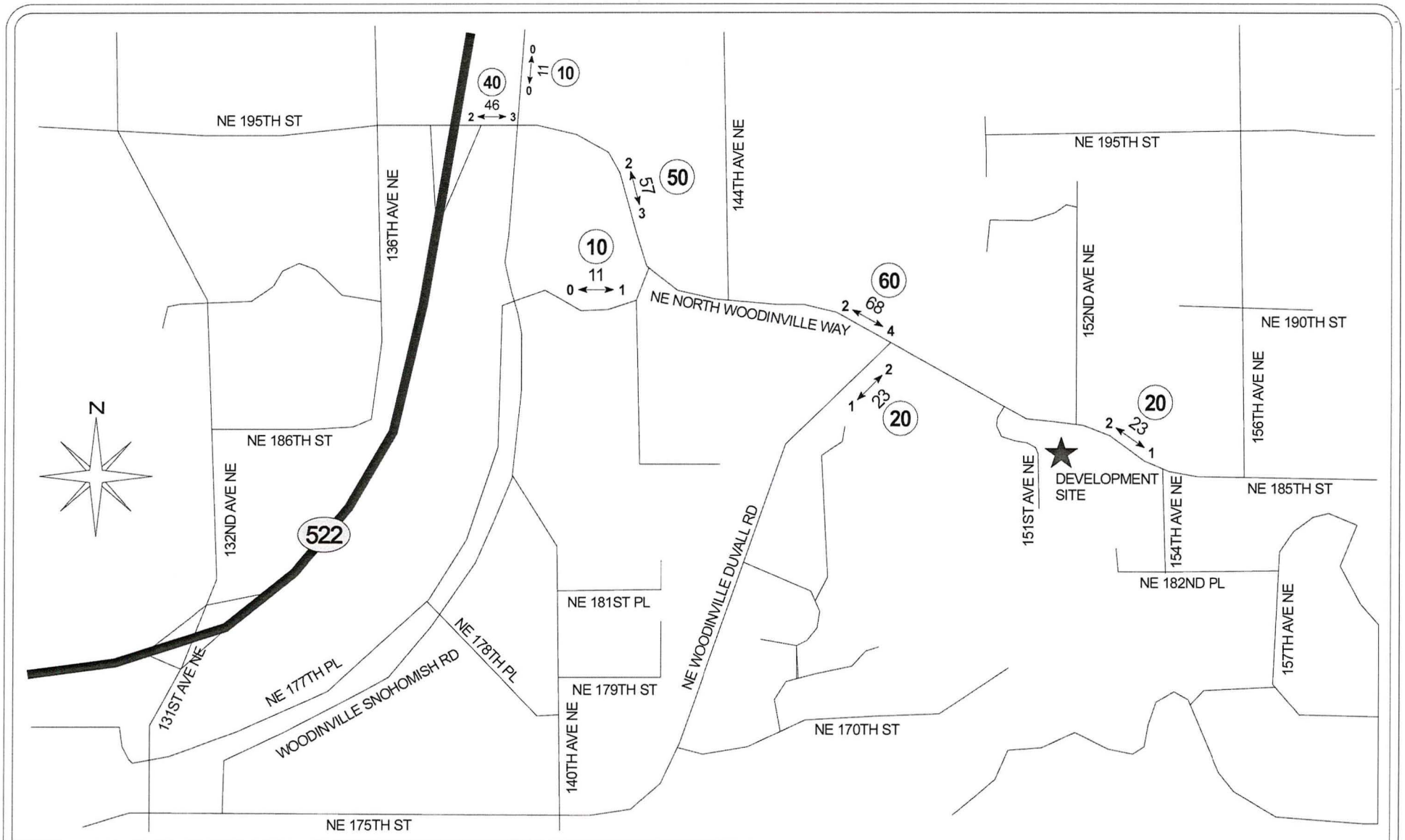
FIGURE 2
DEVELOPMENT AM PEAK-HOUR TRIPDISTRIBUTION



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AWDT
PM ↔ PEAK — NEW SITE TRAFFIC (DAILY/PEAK HOUR)

(25) — TRIP DISTRIBUTION %

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FIGURE 3
DEVELOPMENT PM PEAK-HOUR TRIPDISTRIBUTION

5. INTERSECTION LEVEL OF SERVICE ANALYSIS

The intersection level of service analysis has been performed using the *Synchro 7* software. The system includes the existing channelization at the study intersections as well as the existing peak-hour factors and heavy-vehicle factors. The 2014 baseline and 2014 future with development level of service analysis have been performed using the same parameters.

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5.1 Turning Movement Volumes

5.1.1. Existing Turning Movements

The existing PM peak-hour turning movement volumes are based on count data from Traffic Data Gathering (TDG) collected on April 23, 2013 and the AM volumes were collected on September 5, 2013 at the following intersection:

1. NE Woodinville-Duvall Road and 151st Avenue NE - Unsignalized

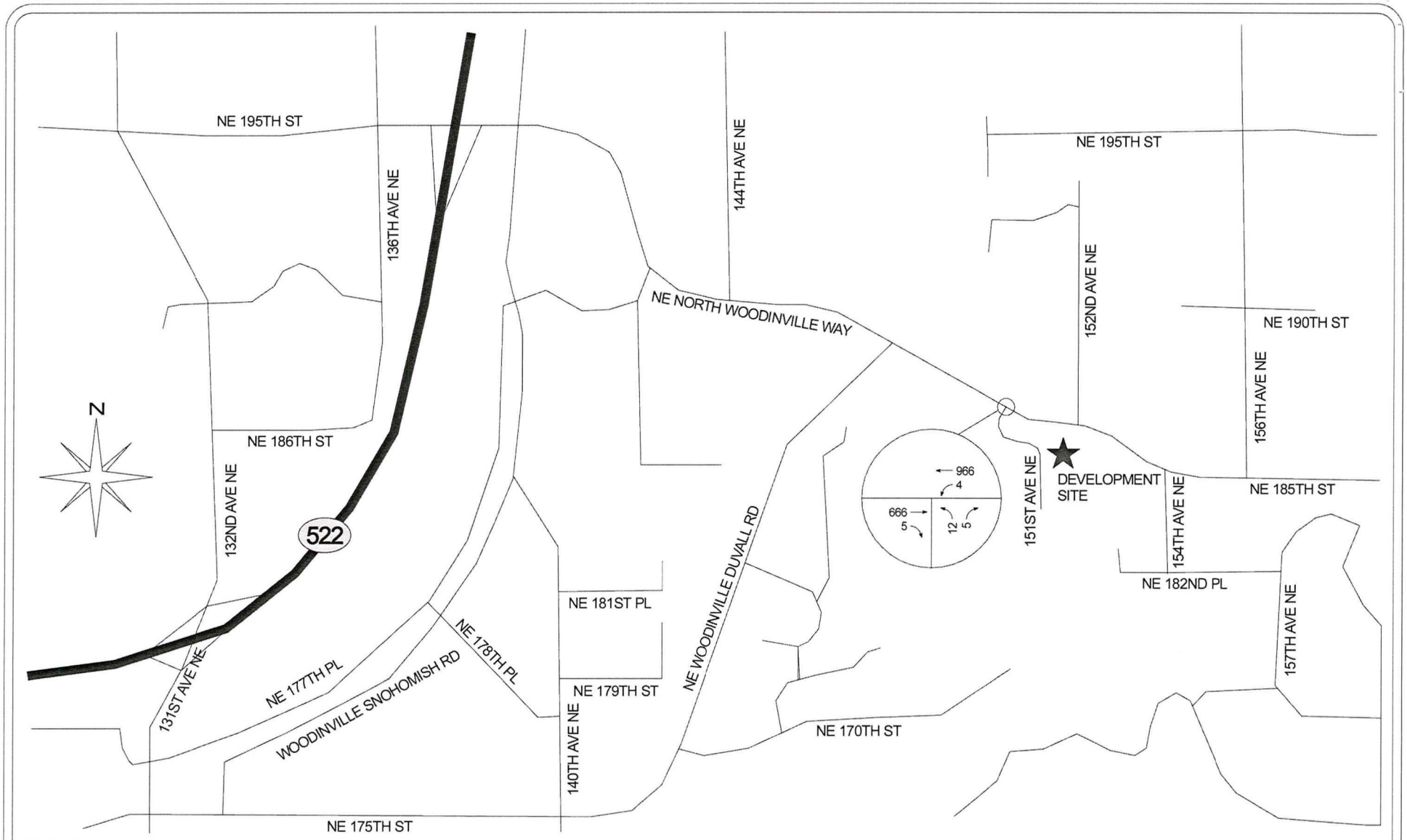
The existing turning movement volumes at the study intersection are shown in Figure 4 for the AM peak-hour and Figure 5 for the PM peak-hour. Also, the count data is included in the attachments. GTC also recorded how many vehicles were utilizing the two-way left-turn lane (TWLTL) to make a two-stage left-turn. During the AM peak-hours (7 to 9 AM) only 2 vehicles waited to make the left-turn while 9 vehicles used the TWLTL. During the PM peak-hours (4 to 6 PM) only 2 vehicles again waited to make the left-turn while 8 vehicles used the TWLTL. The remaining vehicles during the time periods found acceptable gaps without having to wait. As the number of vehicles using the TWLTL is much higher than those waiting the analysis should be able to use the two-stage criteria when determining future level of service.

5.1.2. 2014 Baseline Turning Movements

The 2014 baseline turning movements have been calculated by applying a 2% annually compounding growth rate to the existing turning movements. This growth rate is conservative considering that the total intersection volume has declined from September 2007 which showed 2,254 vehicles to 2,227 vehicles in the current count. Also included in the pipeline traffic was the projected traffic from the proposed plat of Woodridge that Brickyard Ridge will connect through to access 151st Avenue NE. The plat of Woodridge is a 12 lot development and it was assumed that the trip distribution would be the same as the proposed distribution for Brickyard Ridge. The 2014 baseline turning movements at the study intersection are shown in Figure 6 for the AM peak-hour and Figure 7 for the PM peak-hour.

5.1.3. 2014 Future with Development Turning Movements

The 2014 future with development turning movements have been calculated by adding the development's new trips to the 2014 baseline turning movements. The 2014 future with development turning movements are shown in Figure 8 for the AM peak-hour and Figure 9 for the PM peak-hour.



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238 → AM PEAK HOUR TURNING MOVEMENT VOLUMES

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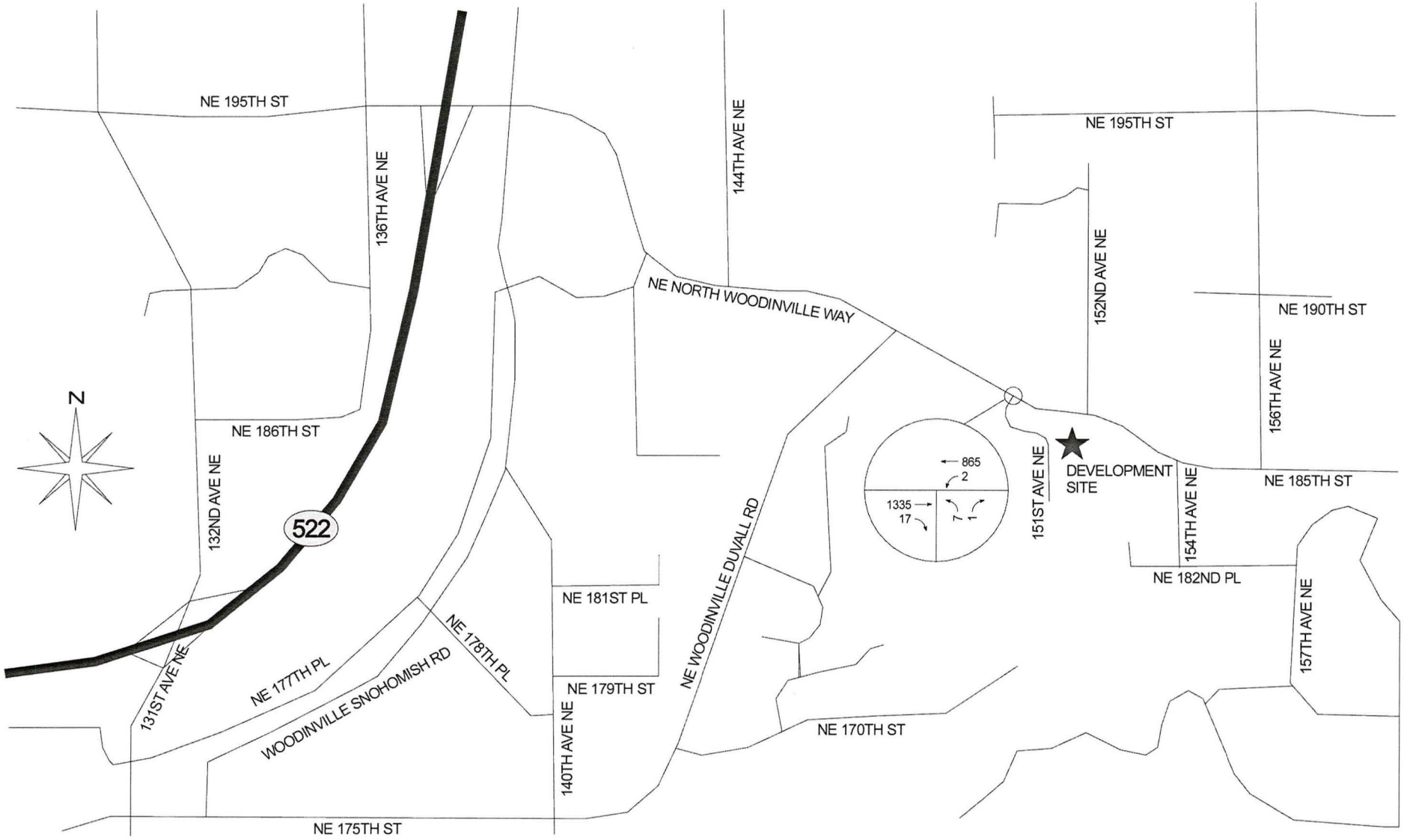
FIGURE 4
EXISTING AM PEAK-HOUR TRAFFIC VOLUMES



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238 → PM PEAK HOUR TURNING MOVEMENT VOLUMES

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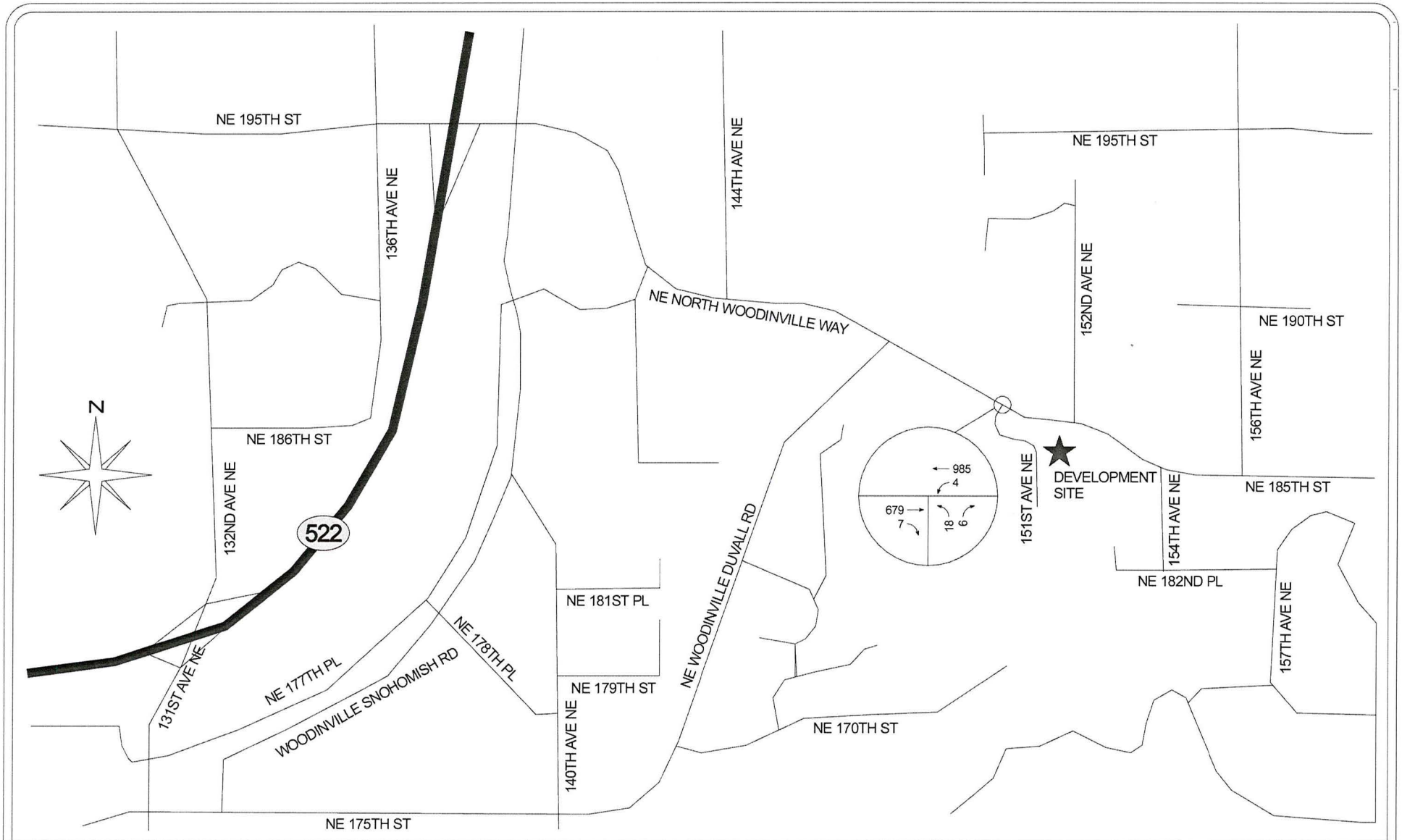
FIGURE 5
EXISTING PM PEAK-HOUR TRAFFIC VOLUMES



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252 → AM PEAK HOUR TURNING MOVEMENT VOLUMES

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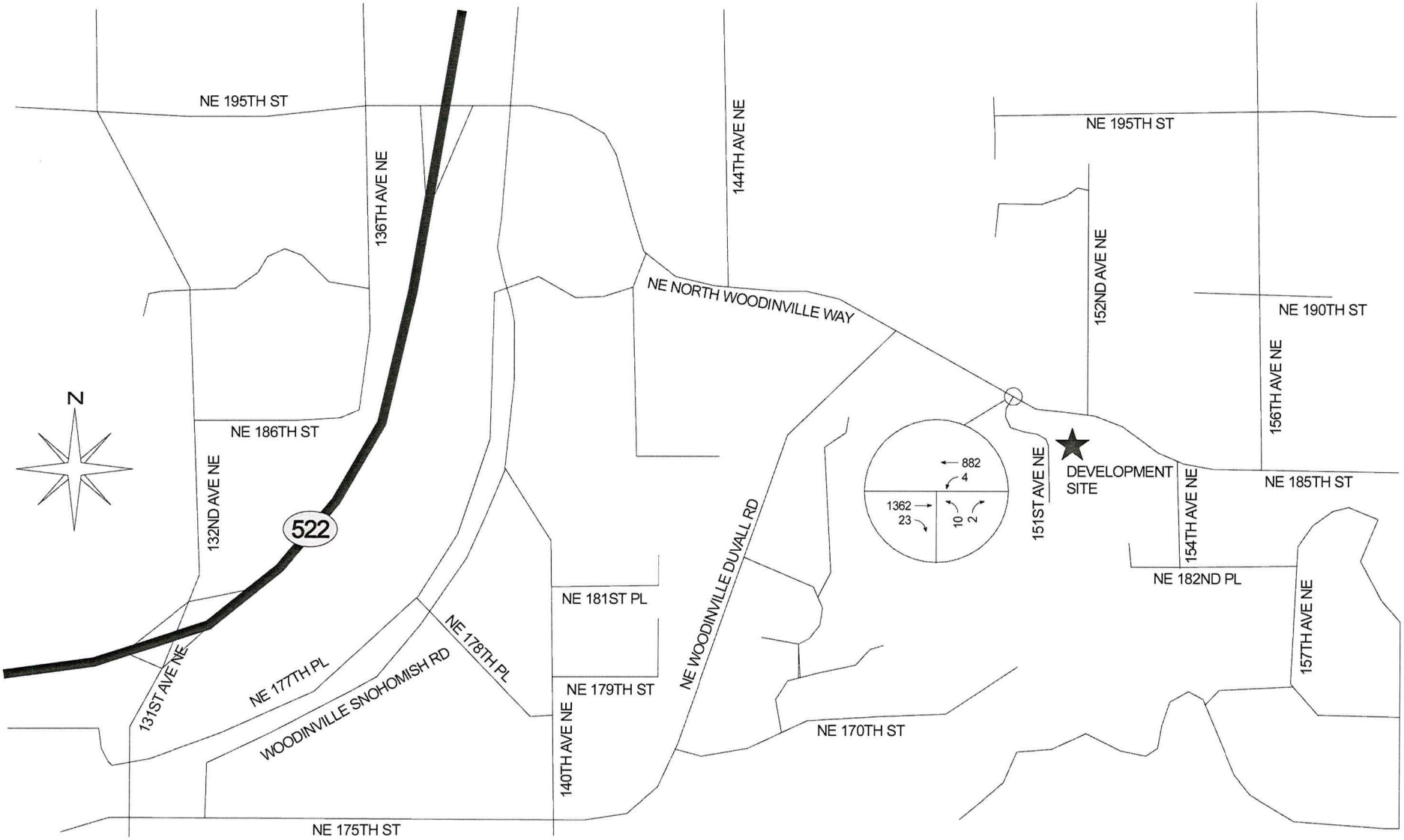
FIGURE 6

BASELINE 2014
WITHOUT DEVELOPMENT
AM PEAK-HOUR
TRAFFIC VOLUMES



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252 → PM PEAK HOUR TURNING MOVEMENT VOLUMES

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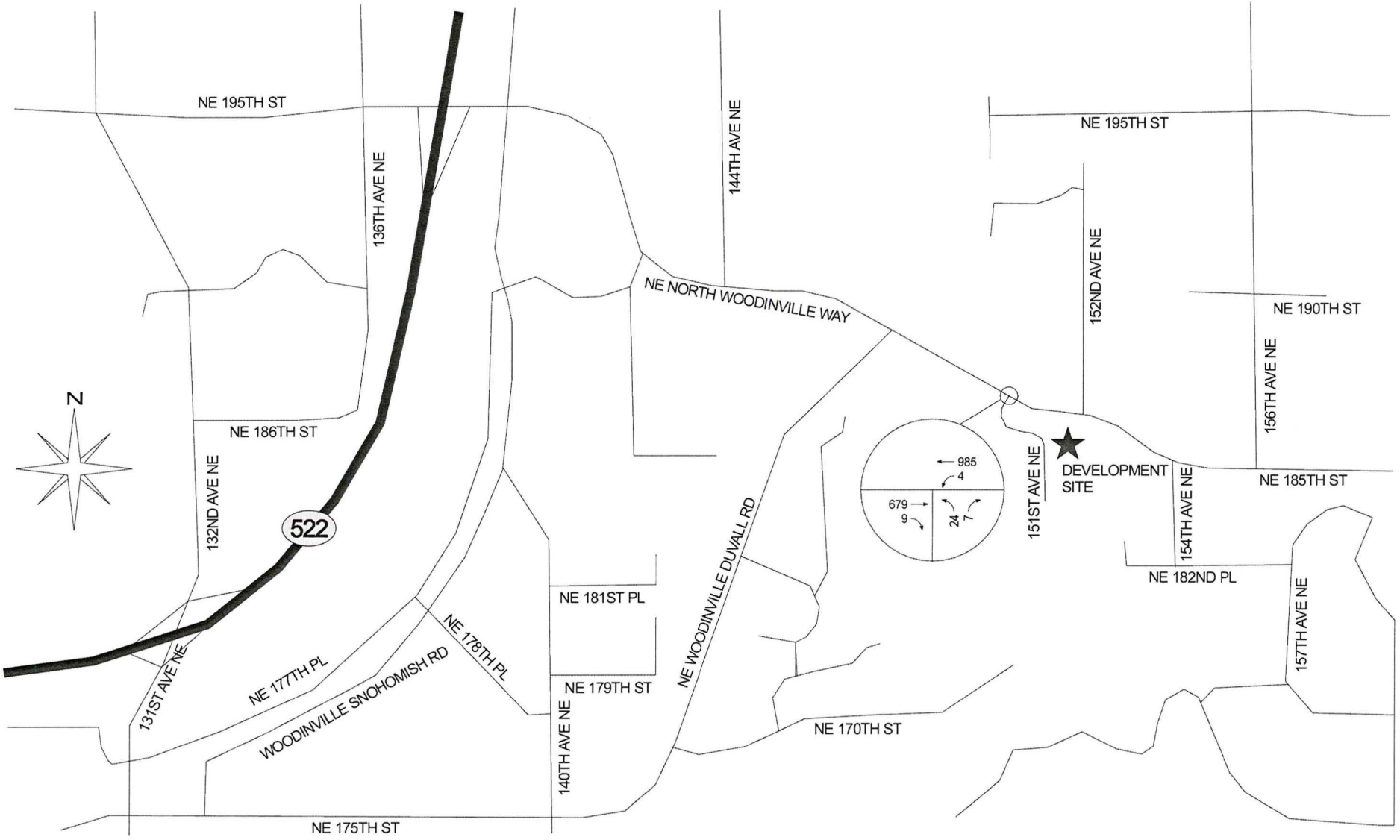
FIGURE 7

BASELINE 2014
WITHOUT DEVELOPMENT
PM PEAK-HOUR
TRAFFIC VOLUMES



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253 → AM PEAK HOUR TURNING MOVEMENT VOLUMES

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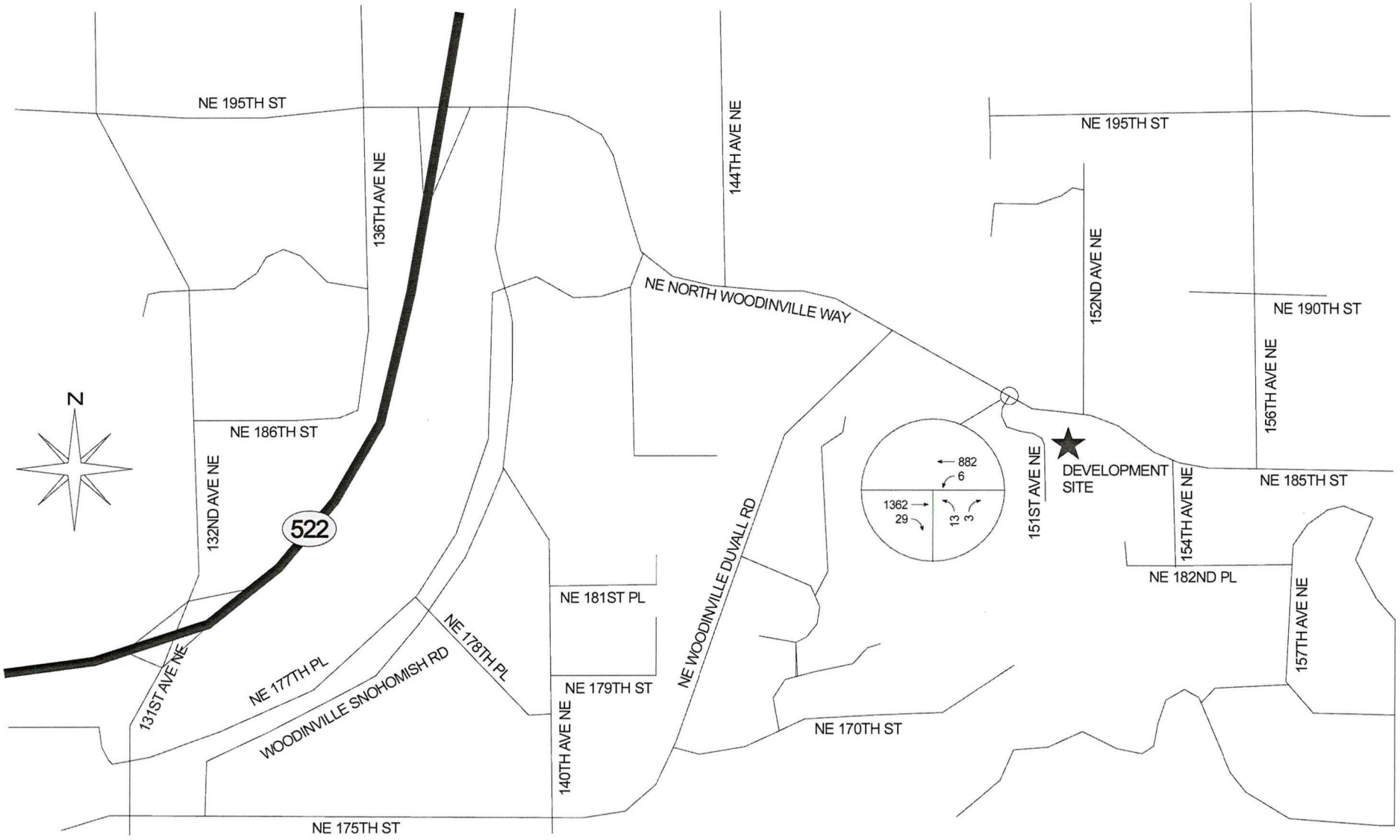
FIGURE 8

FUTURE 2014
WITH DEVELOPMENT
AM PEAK-HOUR
TRAFFIC VOLUMES



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253 → PM PEAK HOUR TURNING MOVEMENT VOLUMES

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FIGURE 9

FUTURE 2014
WITH DEVELOPMENT
PM PEAK-HOUR
TRAFFIC VOLUMES

5.2 Intersection Level of Service Analysis Summary

The level of service reported below is for the combined approach of 151st Avenue NE as there is no separate channelization for northbound left and right turns. Also, the use of the TWLTL to make a two-stage gap left-turn in the analysis is a valid assumption based on field observations.

The AM Peak-hour level of service analysis for the existing, 2014 baseline and 2014 future with development conditions is summarized in Table 3.

Table 3: Intersection Level of Service Summary – AM Peak-hour

Intersection	Existing Conditions		2014 Baseline Conditions		2014 Future with Development Conditions	
	LOS	Delay	LOS	Delay	LOS	Delay
1. NE Woodinville-Duvall Rd at 151st Avenue NE	C	21.1 sec	C	23.2 sec	C	24.3 sec

The PM Peak-hour level of service analysis for the existing, 2014 baseline and 2014 future with development conditions is summarized in Table 4.

Table 4: Intersection Level of Service Summary – PM Peak-hour

Intersection	Existing Conditions		2014 Baseline Conditions		2014 Future with Development Conditions	
	LOS	Delay	LOS	Delay	LOS	Delay
1. NE Woodinville-Duvall Rd at 151st Avenue NE	D	27.5 sec	D	28.5 sec	D	29.0 sec

The level of service analysis shows that development is not anticipated to change the level of service of the off-site study intersection and it will continue to operate at acceptable LOS D.

6. TRAFFIC MITIGATION FEES

6.1 Development-Specific Off-Site Mitigation

The development will not cause the LOS of the impacted off-site intersection to drop below the City's LOS E threshold during either the AM or PM peak-hours. The development should therefore not have to construct or contribute additional improvements other than required site frontage improvements and its traffic mitigation fee.

6.2 City Mitigation Fee

The development is to pay the calculated fee in Ordinance No. 527 which updated Chapter 3.39, Transportation Impact Fees, of the Woodinville Municipal Code. The fees increase annually and have an effective date as shown below:

- Effective Date of Ordinance 527: $290/ADT
- 1/1/2014 $320/ADT
- 1/1/2015 $355/ADT
- 1/1/2016 $395/ADT
- 1/1/2017 $440/ADT

The development is proposed to consist of 14 single-family detached residential units. There are 2 existing single-family detached residential units on the site that will be removed from the site and there trips are creditable to the developments mitigation fee at time of removal. Each single-family detached residential unit generates 9.52 ADT which will require mitigation fees to be paid at the time of pulling the building permit. The mitigation fees will be determined at the time the building permit is pulled and will correspond with the effective dates shown above for the fee per ADT.

7. CONCLUSIONS

The Brickyard Ridge development is proposed to consist of 14 single-family residential units that will replace 2 existing single-family units. The 12 new units will generate 114.24 average daily trips with 9.00 AM peak-hour trips and 12.00 PM peak-hour trips. The development is not anticipated to significantly impact any City of Woodinville intersections other than the intersection of NE Woodinville-Duvall Road at 151st Avenue NE which will operate at LOS D with the development.

The total traffic mitigation fees for the development will be $33,129.60, which is equivalent to $2,366.40 per unit for each of the 14 units in the development.

Trip Generation Calculations

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Trip Generation for: Development Peak Weekday
(a.k.a.): Average Weekday Daily Trips (AWDT)

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detatched	14 units	210	9.52	50%	50%	133.28	0%	0	133.28	0%	0	0%	0	133.28	0	0	0	0	66.64	66.64
Single-Family Detatched	-2 units	210	9.52	50%	50%	-19.04	0%	0	-19.04	0%	0	0%	0	-19.04	0	0	0	0	-9.52	-9.52
TOTAL						114.24		0	114.24		0		0	114.24	0	0	0	0	57.12	57.12

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Trip Generation for: **Development Peak Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 7 and 9 AM**
(a.k.a.): **Weekday AM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detatched	14 units	210	0.75	25%	75%	10.50	0%	0	10.50	0%	0	0%	0	10.50	0	0	0	0	2.63	7.87
Single-Family Detatched	-2 units	210	0.75	25%	75%	-1.50	0%	0	-1.50	0%	0	0%	0	-1.50	0	0	0	0	-0.38	-1.12
TOTAL						9.00		0	9.00		0		0	9.00	0	0	0	0	2.25	6.75

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Trip Generation for: Development Peak Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 4 and 6 PM
(a.k.a.): Weekday PM Peak Hour

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detatched	14 units	210	1.00	63%	37%	14.00	0%	0	14.00	0%	0	0%	0	14.00	0	0	0	0	8.82	5.18
Single-Family Detatched	-2 units	210	1.00	63%	37%	-2.00	0%	0	-2.00	0%	0	0%	0	-2.00	0	0	0	0	-1.26	-0.74
TOTAL						12.00		0	12.00		0		0	12.00	0	0	0	0	7.56	4.44

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AM Peak-Hour

%	New ADT	New AM Peak Hour Trips		
		In	Out	Total
100%	114.24	2.25	6.75	9.00
1%	1.14	0.02	0.07	0.09
2%	2.28	0.05	0.14	0.18
3%	3.43	0.07	0.20	0.27
4%	4.57	0.09	0.27	0.36
5%	**5.71**	**0.11**	**0.34**	**0.45**
6%	6.85	0.14	0.41	0.54
7%	8.00	0.16	0.47	0.63
8%	9.14	0.18	0.54	0.72
9%	10.28	0.20	0.61	0.81
10%	**11.42**	**0.23**	**0.68**	**0.90**
11%	12.57	0.25	0.74	0.99
12%	13.71	0.27	0.81	1.08
13%	14.85	0.29	0.88	1.17
14%	15.99	0.32	0.95	1.26
15%	**17.14**	**0.34**	**1.01**	**1.35**
16%	18.28	0.36	1.08	1.44
17%	19.42	0.38	1.15	1.53
18%	20.56	0.41	1.22	1.62
19%	21.71	0.43	1.28	1.71
20%	**22.85**	**0.45**	**1.35**	**1.80**
21%	23.99	0.47	1.42	1.89
22%	25.13	0.50	1.49	1.98
23%	26.28	0.52	1.55	2.07
24%	27.42	0.54	1.62	2.16
25%	**28.56**	**0.56**	**1.69**	**2.25**
26%	29.70	0.59	1.76	2.34
27%	30.84	0.61	1.82	2.43
28%	31.99	0.63	1.89	2.52
29%	33.13	0.65	1.96	2.61
30%	**34.27**	**0.68**	**2.03**	**2.70**
31%	35.41	0.70	2.09	2.79
32%	36.56	0.72	2.16	2.88
33%	37.70	0.74	2.23	2.97
34%	38.84	0.77	2.30	3.06
35%	**39.98**	**0.79**	**2.36**	**3.15**
36%	41.13	0.81	2.43	3.24
37%	42.27	0.83	2.50	3.33
38%	43.41	0.86	2.57	3.42
39%	44.55	0.88	2.63	3.51
40%	**45.70**	**0.90**	**2.70**	**3.60**
41%	46.84	0.92	2.77	3.69
42%	47.98	0.95	2.84	3.78
43%	49.12	0.97	2.90	3.87
44%	50.27	0.99	2.97	3.96
45%	**51.41**	**1.01**	**3.04**	**4.05**
46%	52.55	1.04	3.11	4.14
47%	53.69	1.06	3.17	4.23
48%	54.84	1.08	3.24	4.32
49%	55.98	1.10	3.31	4.41
50%	**57.12**	**1.13**	**3.38**	**4.50**

%	New ADT	New AM Peak Hour Trips		
		In	Out	Total
100%	114.24	2.25	6.75	9.00
51%	58.26	1.15	3.44	4.59
52%	59.40	1.17	3.51	4.68
53%	60.55	1.19	3.58	4.77
54%	61.69	1.22	3.65	4.86
55%	**62.83**	**1.24**	**3.71**	**4.95**
56%	63.97	1.26	3.78	5.04
57%	65.12	1.28	3.85	5.13
58%	66.26	1.31	3.92	5.22
59%	67.40	1.33	3.98	5.31
60%	**68.54**	**1.35**	**4.05**	**5.40**
61%	69.69	1.37	4.12	5.49
62%	70.83	1.40	4.19	5.58
63%	71.97	1.42	4.25	5.67
64%	73.11	1.44	4.32	5.76
65%	**74.26**	**1.46**	**4.39**	**5.85**
66%	75.40	1.49	4.46	5.94
67%	76.54	1.51	4.52	6.03
68%	77.68	1.53	4.59	6.12
69%	78.83	1.55	4.66	6.21
70%	**79.97**	**1.58**	**4.73**	**6.30**
71%	81.11	1.60	4.79	6.39
72%	82.25	1.62	4.86	6.48
73%	83.40	1.64	4.93	6.57
74%	84.54	1.67	5.00	6.66
75%	**85.68**	**1.69**	**5.06**	**6.75**
76%	86.82	1.71	5.13	6.84
77%	87.96	1.73	5.20	6.93
78%	89.11	1.76	5.27	7.02
79%	90.25	1.78	5.33	7.11
80%	**91.39**	**1.80**	**5.40**	**7.20**
81%	92.53	1.82	5.47	7.29
82%	93.68	1.85	5.54	7.38
83%	94.82	1.87	5.60	7.47
84%	95.96	1.89	5.67	7.56
85%	**97.10**	**1.91**	**5.74**	**7.65**
86%	98.25	1.94	5.81	7.74
87%	99.39	1.96	5.87	7.83
88%	100.53	1.98	5.94	7.92
89%	101.67	2.00	6.01	8.01
90%	**102.82**	**2.03**	**6.08**	**8.10**
91%	103.96	2.05	6.14	8.19
92%	105.10	2.07	6.21	8.28
93%	106.24	2.09	6.28	8.37
94%	107.39	2.12	6.35	8.46
95%	**108.53**	**2.14**	**6.41**	**8.55**
96%	109.67	2.16	6.48	8.64
97%	110.81	2.18	6.55	8.73
98%	111.96	2.21	6.62	8.82
99%	113.10	2.23	6.68	8.91
100%	**114.24**	**2.25**	**6.75**	**9.00**

Brickyard Ridge
GTC #13-065

EXHIBIT 17
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PM Peak-Hour

%	New ADT	New PM Peak Hour Trips		
		In	Out	Total
100%	114.24	7.56	4.44	12.00
1%	1.14	0.08	0.04	0.12
2%	2.28	0.15	0.09	0.24
3%	3.43	0.23	0.13	0.36
4%	4.57	0.30	0.18	0.48
5%	**5.71**	**0.38**	**0.22**	**0.60**
6%	6.85	0.45	0.27	0.72
7%	8.00	0.53	0.31	0.84
8%	9.14	0.60	0.36	0.96
9%	10.28	0.68	0.40	1.08
10%	**11.42**	**0.76**	**0.44**	**1.20**
11%	12.57	0.83	0.49	1.32
12%	13.71	0.91	0.53	1.44
13%	14.85	0.98	0.58	1.56
14%	15.99	1.06	0.62	1.68
15%	**17.14**	**1.13**	**0.67**	**1.80**
16%	18.28	1.21	0.71	1.92
17%	19.42	1.29	0.75	2.04
18%	20.56	1.36	0.80	2.16
19%	21.71	1.44	0.84	2.28
20%	**22.85**	**1.51**	**0.89**	**2.40**
21%	23.99	1.59	0.93	2.52
22%	25.13	1.66	0.98	2.64
23%	26.28	1.74	1.02	2.76
24%	27.42	1.81	1.07	2.88
25%	**28.56**	**1.89**	**1.11**	**3.00**
26%	29.70	1.97	1.15	3.12
27%	30.84	2.04	1.20	3.24
28%	31.99	2.12	1.24	3.36
29%	33.13	2.19	1.29	3.48
30%	**34.27**	**2.27**	**1.33**	**3.60**
31%	35.41	2.34	1.38	3.72
32%	36.56	2.42	1.42	3.84
33%	37.70	2.49	1.47	3.96
34%	38.84	2.57	1.51	4.08
35%	**39.98**	**2.65**	**1.55**	**4.20**
36%	41.13	2.72	1.60	4.32
37%	42.27	2.80	1.64	4.44
38%	43.41	2.87	1.69	4.56
39%	44.55	2.95	1.73	4.68
40%	**45.70**	**3.02**	**1.78**	**4.80**
41%	46.84	3.10	1.82	4.92
42%	47.98	3.18	1.86	5.04
43%	49.12	3.25	1.91	5.16
44%	50.27	3.33	1.95	5.28
45%	**51.41**	**3.40**	**2.00**	**5.40**
46%	52.55	3.48	2.04	5.52
47%	53.69	3.55	2.09	5.64
48%	54.84	3.63	2.13	5.76
49%	55.98	3.70	2.18	5.88
50%	**57.12**	**3.78**	**2.22**	**6.00**

%	New ADT	New PM Peak Hour Trips		
		In	Out	Total
100%	114.24	7.56	4.44	12.00
51%	58.26	3.86	2.26	6.12
52%	59.40	3.93	2.31	6.24
53%	60.55	4.01	2.35	6.36
54%	61.69	4.08	2.40	6.48
55%	**62.83**	**4.16**	**2.44**	**6.60**
56%	63.97	4.23	2.49	6.72
57%	65.12	4.31	2.53	6.84
58%	66.26	4.38	2.58	6.96
59%	67.40	4.46	2.62	7.08
60%	**68.54**	**4.54**	**2.66**	**7.20**
61%	69.69	4.61	2.71	7.32
62%	70.83	4.69	2.75	7.44
63%	71.97	4.76	2.80	7.56
64%	73.11	4.84	2.84	7.68
65%	**74.26**	**4.91**	**2.89**	**7.80**
66%	75.40	4.99	2.93	7.92
67%	76.54	5.07	2.97	8.04
68%	77.68	5.14	3.02	8.16
69%	78.83	5.22	3.06	8.28
70%	**79.97**	**5.29**	**3.11**	**8.40**
71%	81.11	5.37	3.15	8.52
72%	82.25	5.44	3.20	8.64
73%	83.40	5.52	3.24	8.76
74%	84.54	5.59	3.29	8.88
75%	**85.68**	**5.67**	**3.33**	**9.00**
76%	86.82	5.75	3.37	9.12
77%	87.96	5.82	3.42	9.24
78%	89.11	5.90	3.46	9.36
79%	90.25	5.97	3.51	9.48
80%	**91.39**	**6.05**	**3.55**	**9.60**
81%	92.53	6.12	3.60	9.72
82%	93.68	6.20	3.64	9.84
83%	94.82	6.27	3.69	9.96
84%	95.96	6.35	3.73	10.08
85%	**97.10**	**6.43**	**3.77**	**10.20**
86%	98.25	6.50	3.82	10.32
87%	99.39	6.58	3.86	10.44
88%	100.53	6.65	3.91	10.56
89%	101.67	6.73	3.95	10.68
90%	**102.82**	**6.80**	**4.00**	**10.80**
91%	103.96	6.88	4.04	10.92
92%	105.10	6.96	4.08	11.04
93%	106.24	7.03	4.13	11.16
94%	107.39	7.11	4.17	11.28
95%	**108.53**	**7.18**	**4.22**	**11.40**
96%	109.67	7.26	4.26	11.52
97%	110.81	7.33	4.31	11.64
98%	111.96	7.41	4.35	11.76
99%	113.10	7.48	4.40	11.88
100%	**114.24**	**7.56**	**4.44**	**12.00**

Counts

EXHIBIT 17
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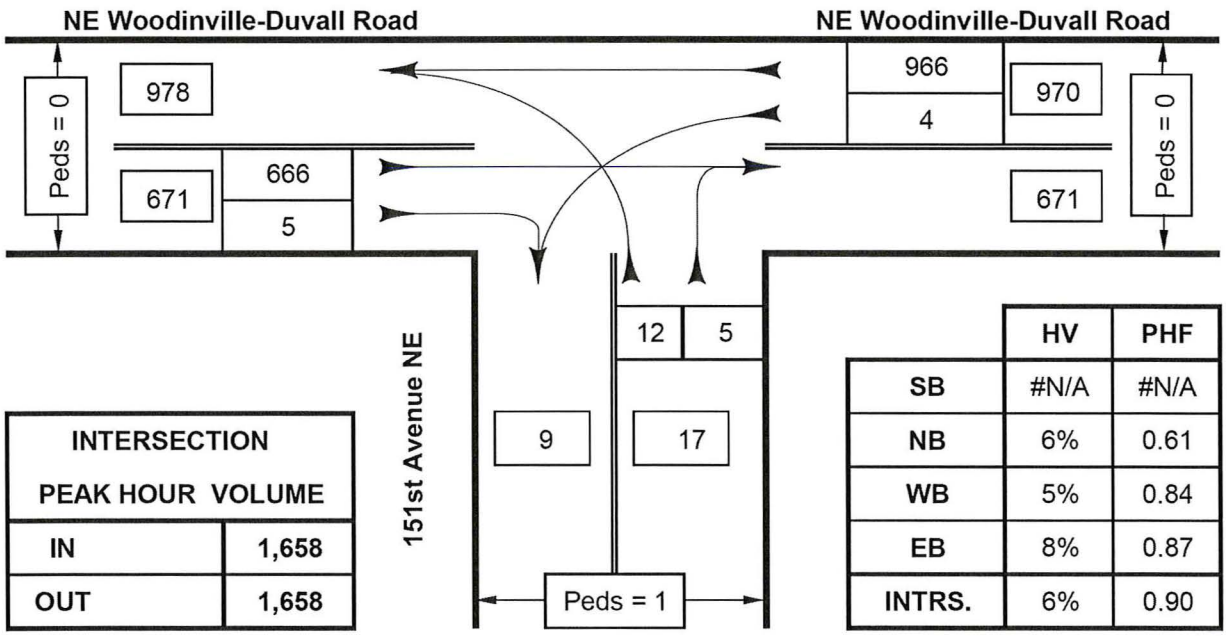
TRAFFIC DATA GATHERING

TURNING MOVEMENTS DIAGRAM

7:00 AM - 9:00 AM PEAK HOUR: 8:00 AM TO 9:00 AM



INTERSECTION PEAK HOUR VOLUME	
IN	1,658
OUT	1,658

	HV	PHF
SB	#N/A	#N/A
NB	6%	0.61
WB	5%	0.84
EB	8%	0.87
INTRS.	6%	0.90

HV = HEAVY VEHICLES

PHF = PEAK HOUR FACTOR

NE Woodinville-Duvall Road @ 151st Avenue NE

Woodinville, WA

COUNTED BY:	CN	DATE OF COUNT:	Thu. 9/5/13
REDUCED BY:	CN	TIME OF COUNT:	7:00 AM - 9:00 AM
DATE OF REDUCTION:	Thu. 9/5/13	WEATHER:	Rainy

EXHIBIT 17
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TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS REDUCTION SHEET

LOCATION: NE Woodinville-Duvall Road @ 151st Avenue NE
Woodinville, WA

DATE OF COUNT: Thu. 9/5/13
TIME OF COUNT: 7:00 AM - 9:00 AM

COUNTED BY: CN
WEATHER: Rainy

TIME INTERVAL ENDING AT	FROM NORTH ON					FROM SOUTH ON 151st Avenue NE					FROM EAST ON NE Woodinville-Duvall Road					FROM WEST ON NE Woodinville-Duvall Road					INTERVAL TOTALS
	Peds	HV	Left	Thru	Right	Peds	HV	Left	Thru	Right	Peds	HV	Left	Thru	Right	Peds	HV	Left	Thru	Right	
05:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	2	0	0	0	11	0	226	0	0	14	0	143	4	375
07:30 AM	0	0	0	0	0	0	0	3	0	0	0	6	0	199	0	0	12	0	112	1	315
07:45 AM	0	0	0	0	0	0	0	5	0	2	0	6	1	261	0	0	13	0	185	1	455
08:00 AM	0	0	0	0	0	0	0	3	0	1	0	14	0	208	0	0	12	0	123	1	336
08:15 AM	0	0	0	0	0	0	0	4	0	1	0	14	1	220	0	0	12	0	152	4	382
08:30 AM	0	0	0	0	0	1	1	2	0	1	0	8	0	210	0	0	22	0	193	0	406
08:45 AM	0	0	0	0	0	0	0	4	0	3	0	7	1	248	0	0	11	0	151	1	408
09:00 AM	0	0	0	0	0	0	0	2	0	0	0	15	2	288	0	0	8	0	170	0	462
PEAK HOUR TOTALS	0	0	0	0	0	1	1	12	0	5	0	44	4	966	0	0	53	0	666	5	INTERSECTION
ALL MOVEMENTS	0					17					970					671					1658
% HV	#N/A					6%					5%					8%					6%
PEAK HOUR FACTOR	#N/A					0.61					0.84					0.87					0.90

PHF = Peak Hour Factor

7:00 AM - 9:00 AM PEAK HOUR: 8:00 AM TO 9:00 AM

REDUCED BY: CN

DATE OF REDUCTION: 9/5/2013

EXHIBIT 17
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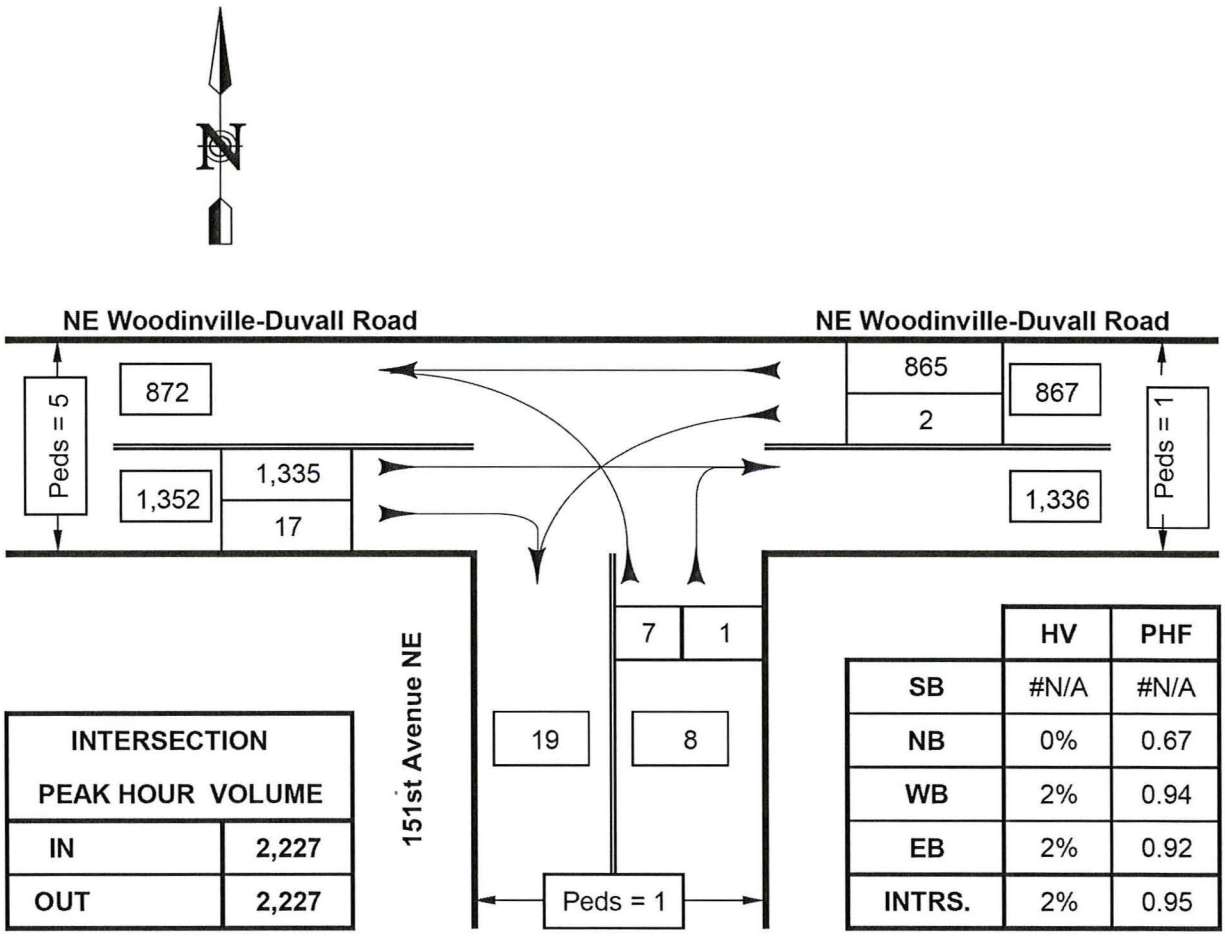
TRAFFIC DATA GATHERING

TURNING MOVEMENTS DIAGRAM

4:00 PM - 6:00 PM PEAK HOUR: 4:30 PM TO 5:30 PM



INTERSECTION PEAK HOUR VOLUME	
IN	2,227
OUT	2,227

	HV	PHF
SB	#N/A	#N/A
NB	0%	0.67
WB	2%	0.94
EB	2%	0.92
INTRS.	2%	0.95

HV = HEAVY VEHICLES

PHF = PEAK HOUR FACTOR

NE Woodinville-Duvall Road @ 151st Avenue NE

Marysville, WA

COUNTED BY:	WW	DATE OF COUNT:	Tue. 4/23/13
REDUCED BY:	CN	TIME OF COUNT:	4:00 PM - 6:00 PM
DATE OF REDUCTION:	Tue. 4/23/13	WEATHER:	Sunny

EXHIBIT 17
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TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS REDUCTION SHEET

LOCATION: NE Woodinville-Duvall Road @ 151st Avenue NE
Marysville, WA

DATE OF COUNT: Tue. 4/23/13
TIME OF COUNT: 4:00 PM - 6:00 PM

COUNTED BY: WW
WEATHER: Sunny

TIME INTERVAL ENDING AT	FROM NORTH ON					FROM SOUTH ON 151st Avenue NE					FROM EAST ON NE Woodinville-Duvall Road					FROM WEST ON NE Woodinville-Duvall Road					INTERVAL TOTALS
	Peds	HV	Left	Thru	Right	Peds	HV	Left	Thru	Right	Peds	HV	Left	Thru	Right	Peds	HV	Left	Thru	Right	
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	5	0	0	0	14	0	219	0	0	4	0	308	6	538
04:30 PM	0	0	0	0	0	0	0	1	0	1	0	10	1	248	0	2	5	0	310	3	564
04:45 PM	0	0	0	0	0	1	0	2	0	0	0	5	1	230	0	1	5	0	284	4	521
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	9	0	216	0	2	8	0	362	6	584
05:15 PM	0	0	0	0	0	0	0	2	0	1	0	5	1	213	0	1	8	0	328	3	548
05:30 PM	0	0	0	0	0	0	0	3	0	0	0	1	0	206	0	1	5	0	361	4	574
05:45 PM	0	0	0	0	0	0	0	1	0	0	0	8	1	207	0	0	2	0	304	5	518
06:00 PM	0	0	0	0	0	0	0	5	0	1	1	6	0	221	0	1	4	0	287	2	516
PEAK HOUR TOTALS	0	0	0	0	0	1	0	7	0	1	1	20	2	865	0	5	26	0	1335	17	INTERSECTION
ALL MOVEMENTS	0					8					867					1352					2227
% HV	#N/A					0%					2%					2%					2%
PEAK HOUR FACTOR	#N/A					0.67					0.94					0.92					0.95

PHF = Peak Hour Factor

4:00 PM - 6:00 PM PEAK HOUR: 4:30 PM TO 5:30 PM

REDUCED BY: CN

DATE OF REDUCTION: 4/23/2013

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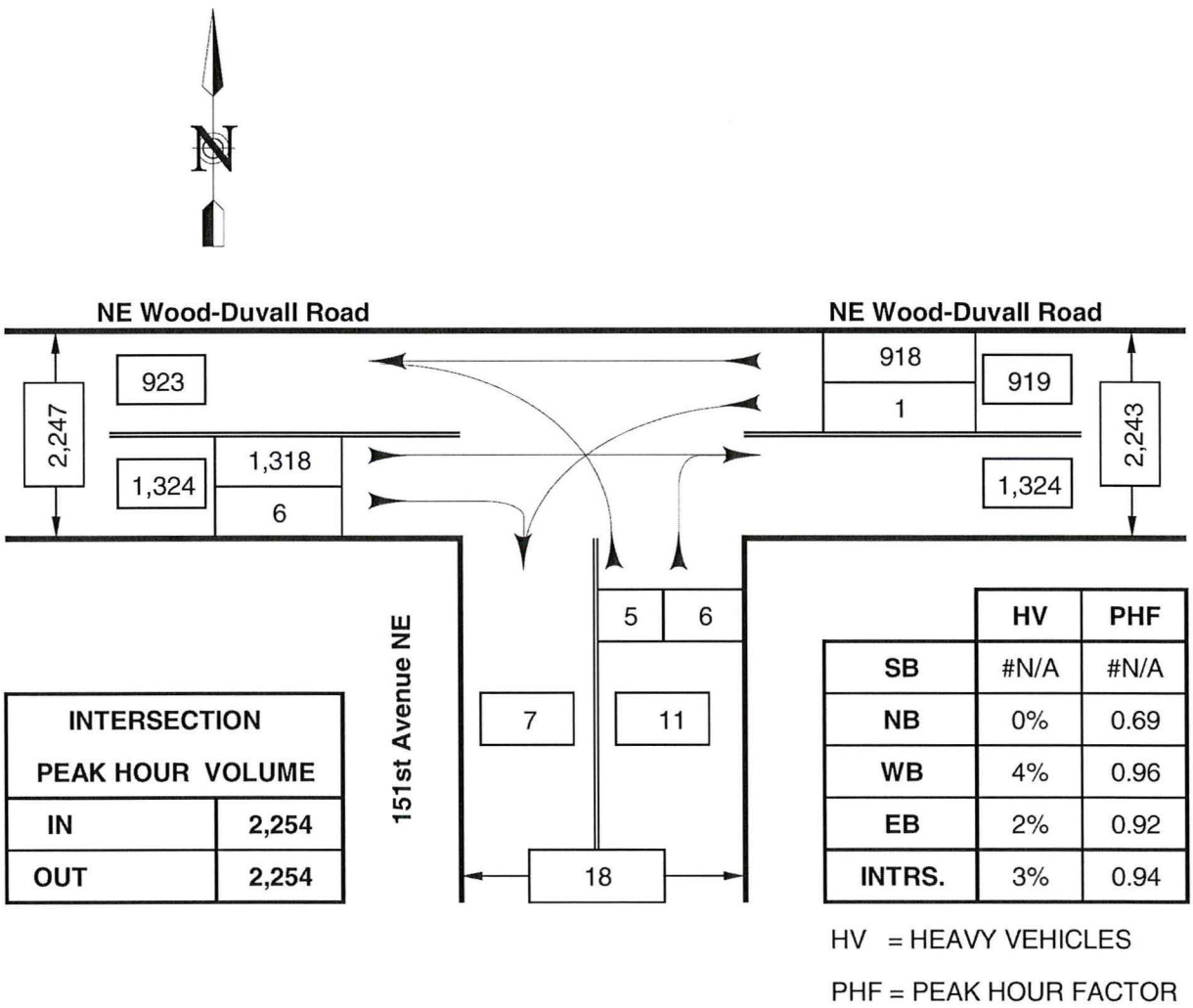
TRAFFIC DATA GATHERING

TURNING MOVEMENTS DIAGRAM

4:00 - 6:00 PM PEAK HOUR: 5:00 PM TO 6:00 PM



INTERSECTION PEAK HOUR VOLUME	
IN	2,254
OUT	2,254

	HV	PHF
SB	#N/A	#N/A
NB	0%	0.69
WB	4%	0.96
EB	2%	0.92
INTRS.	3%	0.94

HV = HEAVY VEHICLES

PHF = PEAK HOUR FACTOR

NE Wood-Dyvall Rd @ 151st Ave NE

Woodinville, WA

COUNTED BY:	TV	DATE OF COUNT:	Wed. 9/19/07
REDUCED BY:	CN	TIME OF COUNT:	4:00 - 6:00 PM
DATE OF REDUCTION:	Fri. 9/21/07	WEATHER:	Sunny

TRAFFIC DATA GATHERING

INTERSECTION TURNING MOVEMENTS REDUCTION SHEET

EXHIBIT 17
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LOCATION: NE Wood-Dyvall Rd @ 151st Ave NE
Woodinville, WA

DATE OF COUNT: Wed. 9/19/07
TIME OF COUNT: 4:00 - 6:00 PM

COUNTED BY: TV
WEATHER: Sunny

TIME INTERVAL ENDING	FROM NORTH ON 0				FROM SOUTH ON 151st Avenue NE				FROM EAST ON NE Wood-Duvall Road				FROM WEST ON NE Wood-Duvall Road				INTERVAL TOTALS
AT	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	HV	Left	Thru	Right	
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	0	16	0	223	0	10	0	308	0	532
04:30 PM	0	0	0	0	0	1	0	0	8	0	204	0	12	0	286	1	492
04:45 PM	0	0	0	0	0	1	0	3	13	1	223	0	21	0	318	1	547
05:00 PM	0	0	0	0	0	1	0	0	5	0	198	0	8	0	248	0	447
05:15 PM	0	0	0	0	0	0	0	2	8	0	222	0	8	0	330	3	557
05:30 PM	0	0	0	0	0	1	0	1	10	0	239	0	5	0	359	1	601
05:45 PM	0	0	0	0	0	2	0	2	6	0	232	0	7	0	316	1	553
06:00 PM	0	0	0	0	0	2	0	1	11	1	225	0	7	0	313	1	543
PEAK HOUR TOTALS	0	0	0	0	0	5	0	6	35	1	918	0	27	0	1318	6	INTERSECTION
ALL MOVEMENTS	0				11				919				1324				2254
% HV	#N/A				0%				4%				2%				3%
PEAK HOUR FACTOR	#N/A				0.69				0.96				0.92				0.94

HV = Heavy Vehicles
PHF = Peak Hour Factor

4:00 - 6:00 PM PEAK HOUR: 5:00 PM TO 6:00 PM

REDUCED BY: CN

DATE OF REDUCTION: 9/21/2007

Data Collected on Thursday September 5, 2013 by Traffic Data Gathering

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AM Start 7:00 AM

7:03 gap	gap = 13
7:13 gap	waited for gap = 2
7:16 waited for gap	2-stage = 9
7:25 2-stage	
7:27 U-turn	
7:38 2-stage	
7:39 2-stage	
7:39 gap	
7:40 gap	
7:43 2-stage	
7:52 gap	
7:53 gap	
7:56 gap	
8:03 gap	
8:07 2-stage	
8:12 gap	
8:14 2-stage	
8:17 gap	
8:19 waited for gap	
8:33 gap	
8:40 gap	
8:44 2-stage	
8:45 2-stage	
8:49 2-stage	
8:50 gap	

PM Start 4:08 PM

16:08 gap	gap = 13
16:09 2-stage	waited for gap = 2
16:18 gap	2-stage = 8
16:27 2-stage	
16:28 gap	
16:28 gap	
16:28 gap	
16:34 2-stage	
16:42 gap	
16:43 2-stage	
16:51 2-stage	
16:55 waited for gap	
16:58 gap	
17:10 gap	
17:18 2-stage	
17:21 2-stage	
17:23 gap	
17:24 gap	
17:27 waited for gap	
17:30 gap	
17:34 2-stage	
17:46 gap	
17:56 gap	

EXHIBIT 17
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Turning Movements

C

EXHIBIT 17
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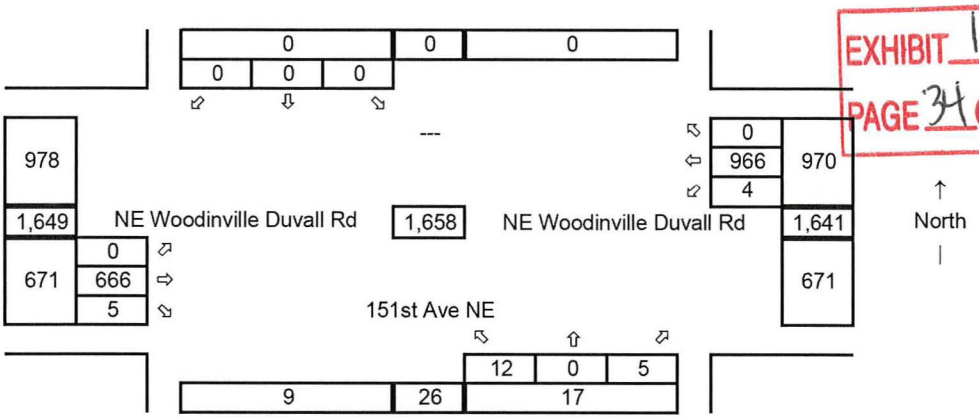
Synchro ID: 1
Existing
Average Weekday
AM Peak Hour

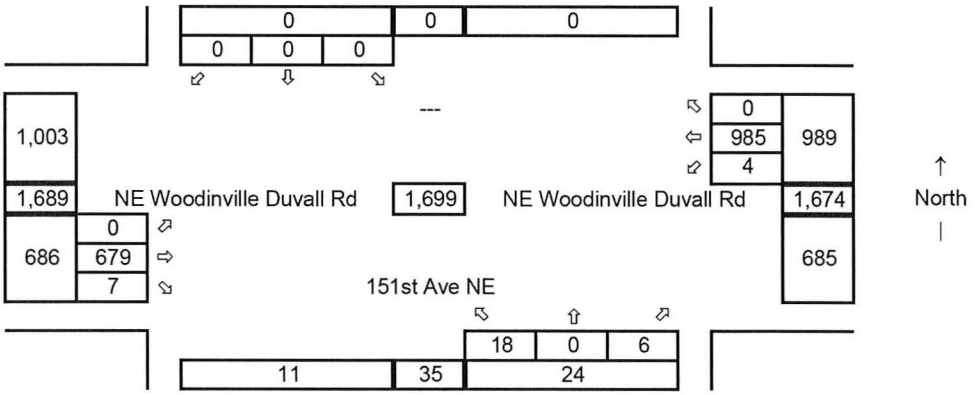
Year: **9/5/13**

Data Source: TDG

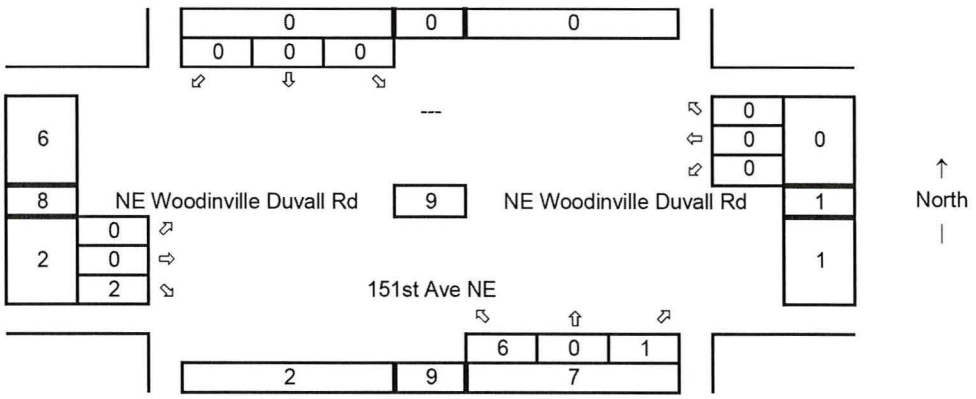


Future without Project
Average Weekday
AM Peak Hour

Year: 2014
Growth Rate = 2.0%
Years of Growth = 1
Total Growth = 1.0200



Total Project Trips
Average Weekday
AM Peak Hour



Future with Project
Average Weekday
AM Peak Hour

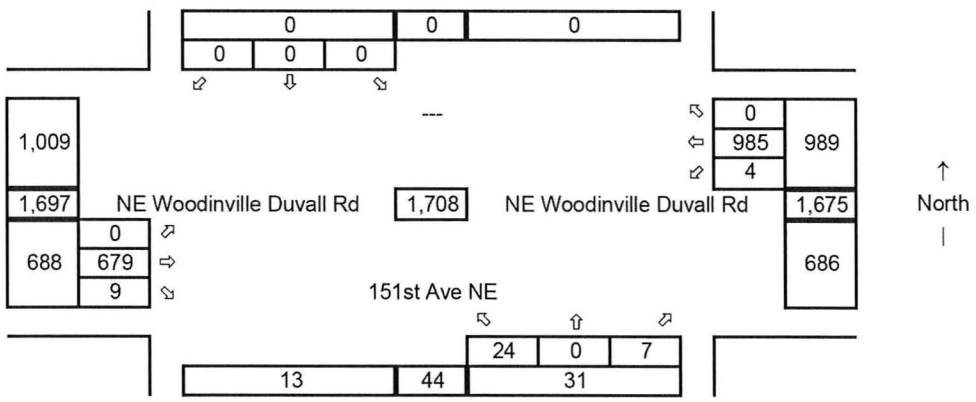


EXHIBIT 17
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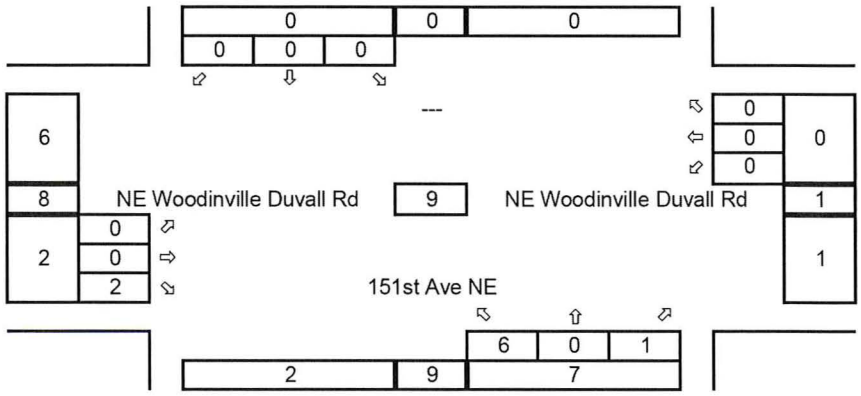
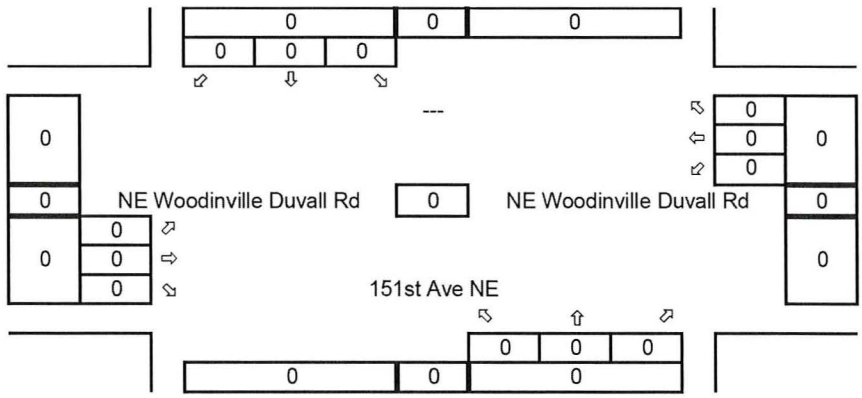
Total Pipeline Project Trips
Average Weekday
AM Peak Hour

Access through the
Proposed Plat of Woodridge
12 SFD Lots



Pass-By Project Trips
Average Weekday
AM Peak Hour

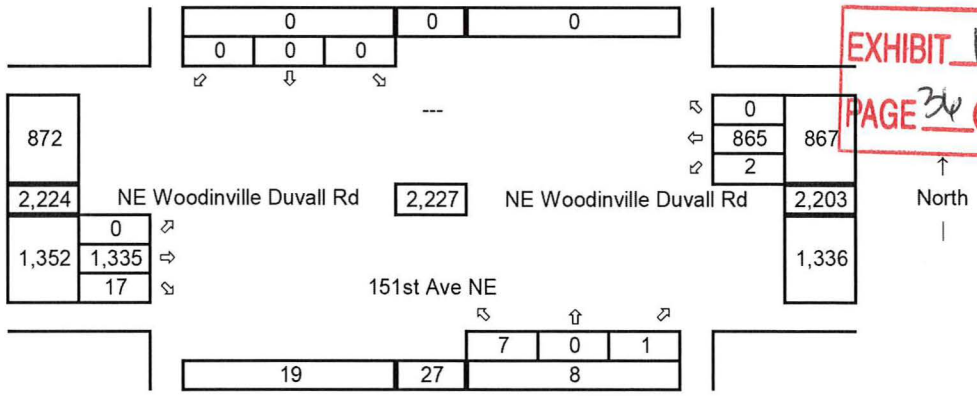


Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

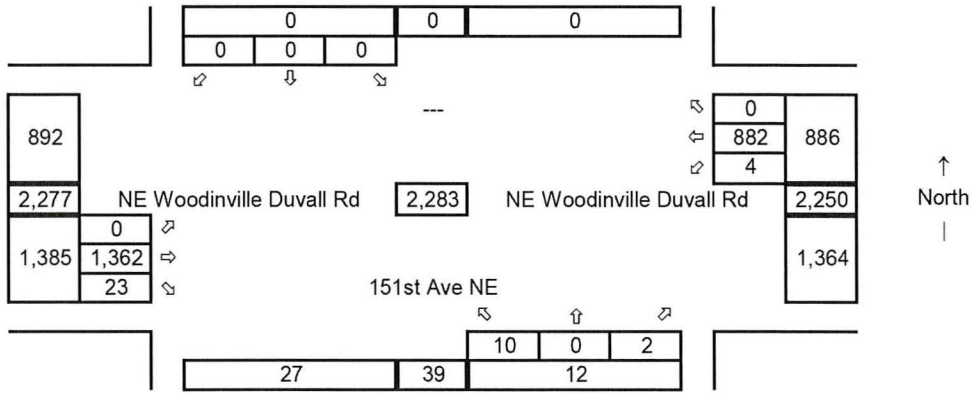
Year: **4/23/13**

Data Source: TDG

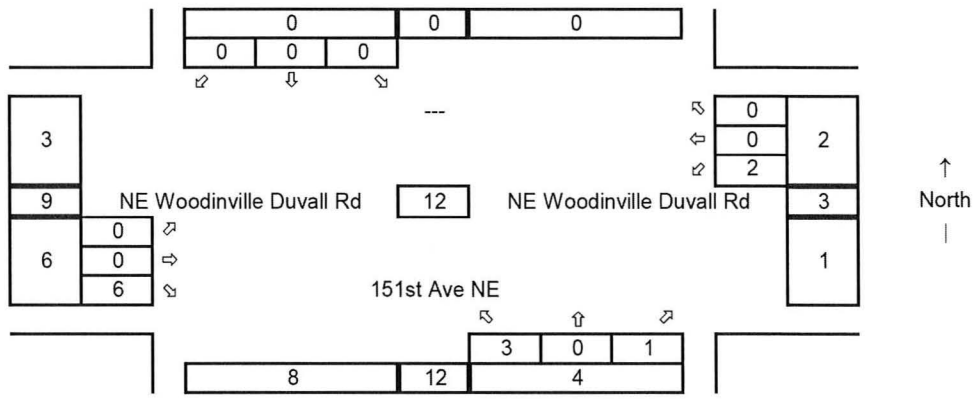


Future without Project
Average Weekday
PM Peak Hour

Year: 2014
Growth Rate = 2.0%
Years of Growth = 1
Total Growth = 1.0200



Total Project Trips
Average Weekday
PM Peak Hour



Future with Project
Average Weekday
PM Peak Hour

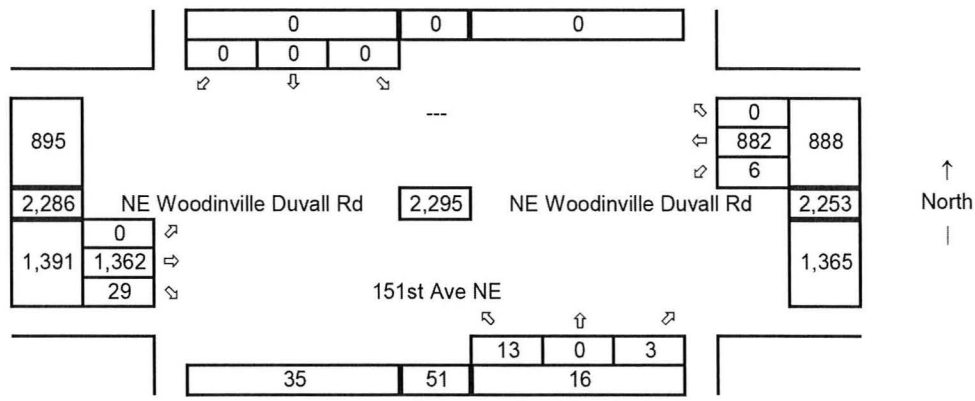


EXHIBIT 17
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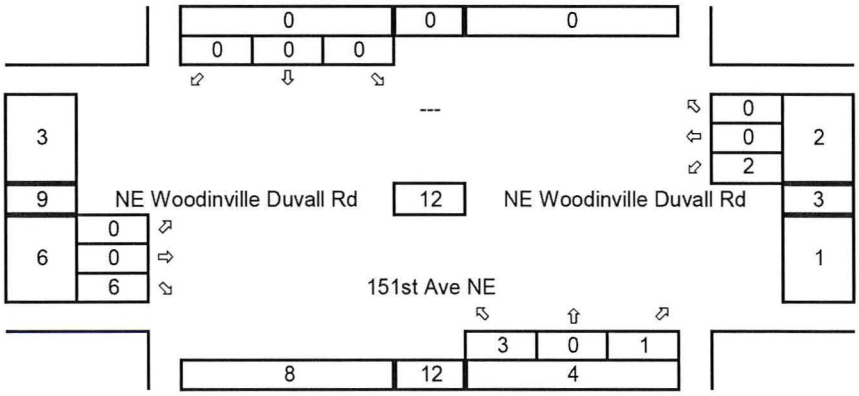
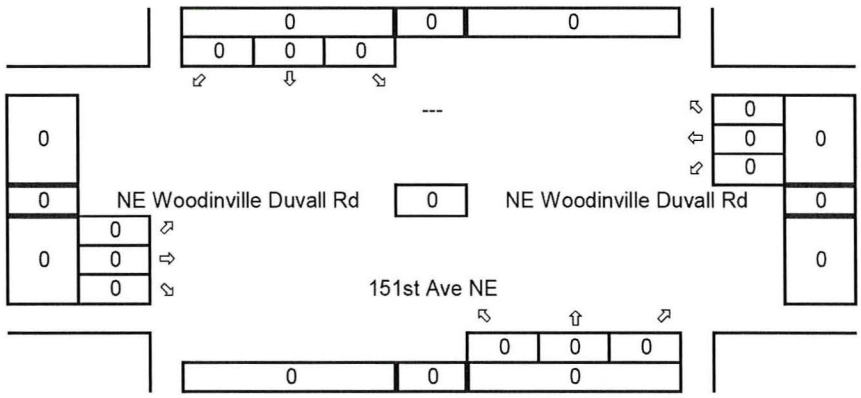
Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Access through the
Proposed Plat of Woodridge
12 SFD Lots



Pass-By Project Trips
Average Weekday
PM Peak Hour



Level of Service

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	666	5	4	966	12	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	740	6	4	1073	13	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)				1180		
pX, platoon unblocked					0.53	
vC, conflicting volume			746		1825	373
vC1, stage 1 conf vol					743	
vC2, stage 2 conf vol					1082	
vCu, unblocked vol			746		2109	373
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)					5.9	
tF (s)			2.3		3.6	3.4
p0 queue free %			99		93	99
cM capacity (veh/h)			832		194	613

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	493	252	4	1073	19
Volume Left	0	0	4	0	13
Volume Right	0	6	0	0	6
cSH	1700	1700	832	1700	243
Volume to Capacity	0.29	0.15	0.01	0.63	0.08
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	9.3	0.0	21.1
Lane LOS			A		C
Approach Delay (s)	0.0		0.0		21.1
Approach LOS					C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

EXHIBIT 17
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	679	7	4	985	18	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	754	8	4	1094	20	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)				1180		
pX, platoon unblocked					0.53	
vC, conflicting volume			762		1862	381
vC1, stage 1 conf vol					758	
vC2, stage 2 conf vol					1103	
vCu, unblocked vol			762		2178	381
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)					5.9	
tF (s)			2.3		3.6	3.4
p0 queue free %			99		89	99
cM capacity (veh/h)			820		186	606

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	503	259	4	1094	27
Volume Left	0	0	4	0	20
Volume Right	0	8	0	0	7
cSH	1700	1700	820	1700	225
Volume to Capacity	0.30	0.15	0.01	0.64	0.12
Queue Length 95th (ft)	0	0	0	0	10
Control Delay (s)	0.0	0.0	9.4	0.0	23.2
Lane LOS			A		C
Approach Delay (s)	0.0		0.0		23.2
Approach LOS					C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

EXHIBIT 17
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	679	9	4	985	24	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	754	10	4	1094	27	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)				1180		
pX, platoon unblocked					0.53	
vC, conflicting volume			764		1863	382
vC1, stage 1 conf vol					759	
vC2, stage 2 conf vol					1103	
vCu, unblocked vol			764		2180	382
tC, single (s)			4.2		6.9	7.0
tC, 2 stage (s)					5.9	
tF (s)			2.3		3.6	3.4
p0 queue free %			99		86	99
cM capacity (veh/h)			819		186	605

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	503	261	4	1094	34
Volume Left	0	0	4	0	27
Volume Right	0	10	0	0	8
cSH	1700	1700	819	1700	220
Volume to Capacity	0.30	0.15	0.01	0.64	0.16
Queue Length 95th (ft)	0	0	0	0	14
Control Delay (s)	0.0	0.0	9.4	0.0	24.3
Lane LOS			A		C
Approach Delay (s)	0.0		0.0		24.3
Approach LOS					C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		

EXHIBIT 17
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1335	17	2	865	7	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1405	18	2	911	7	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)				1180		
pX, platoon unblocked					0.56	
vC, conflicting volume			1423		2329	712
vC1, stage 1 conf vol					1414	
vC2, stage 2 conf vol					915	
vCu, unblocked vol			1423		2973	712
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			100		95	100
cM capacity (veh/h)			474		156	375

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	937	486	2	911	8
Volume Left	0	0	2	0	7
Volume Right	0	18	0	0	1
cSH	1700	1700	474	1700	168
Volume to Capacity	0.55	0.29	0.00	0.54	0.05
Queue Length 95th (ft)	0	0	0	0	4
Control Delay (s)	0.0	0.0	12.6	0.0	27.5
Lane LOS			B		D
Approach Delay (s)	0.0		0.0		27.5
Approach LOS					D

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

EXHIBIT 17
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1362	23	4	882	10	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1434	24	4	928	11	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)				1180		
pX, platoon unblocked					0.56	
vC, conflicting volume			1458		2383	729
vC1, stage 1 conf vol					1446	
vC2, stage 2 conf vol					937	
vCu, unblocked vol			1458		3088	729
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	99
cM capacity (veh/h)			460		149	365

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	956	502	4	928	13
Volume Left	0	0	4	0	11
Volume Right	0	24	0	0	2
cSH	1700	1700	460	1700	166
Volume to Capacity	0.56	0.30	0.01	0.55	0.08
Queue Length 95th (ft)	0	0	1	0	6
Control Delay (s)	0.0	0.0	12.9	0.0	28.5
Lane LOS			B		D
Approach Delay (s)	0.0		0.1		28.5
Approach LOS					D

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

EXHIBIT 17
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	1362	29	6	882	13	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1434	31	6	928	14	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	TWLTL			TWLTL		
Median storage veh)	2			2		
Upstream signal (ft)				1180		
pX, platoon unblocked					0.56	
vC, conflicting volume			1464		2390	732
vC1, stage 1 conf vol					1449	
vC2, stage 2 conf vol					941	
vCu, unblocked vol			1464		3101	732
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)			2.2		3.5	3.3
p0 queue free %			99		91	99
cM capacity (veh/h)			457		148	364

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	956	508	6	928	17
Volume Left	0	0	6	0	14
Volume Right	0	31	0	0	3
cSH	1700	1700	457	1700	167
Volume to Capacity	0.56	0.30	0.01	0.55	0.10
Queue Length 95th (ft)	0	0	1	0	8
Control Delay (s)	0.0	0.0	13.0	0.0	29.0
Lane LOS			B		D
Approach Delay (s)	0.0		0.1		29.0
Approach LOS					D

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

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Site Plan

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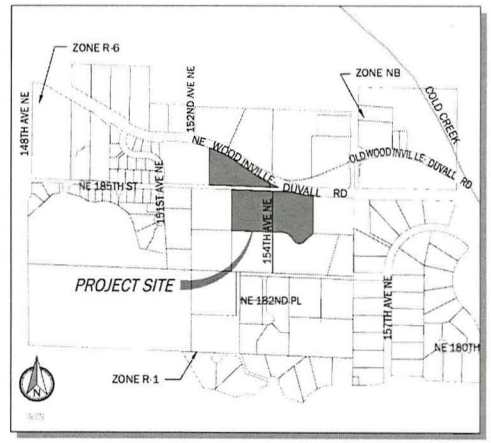
BRICKYARD RIDGE

WOODINVILLE KING COUNTY, WA



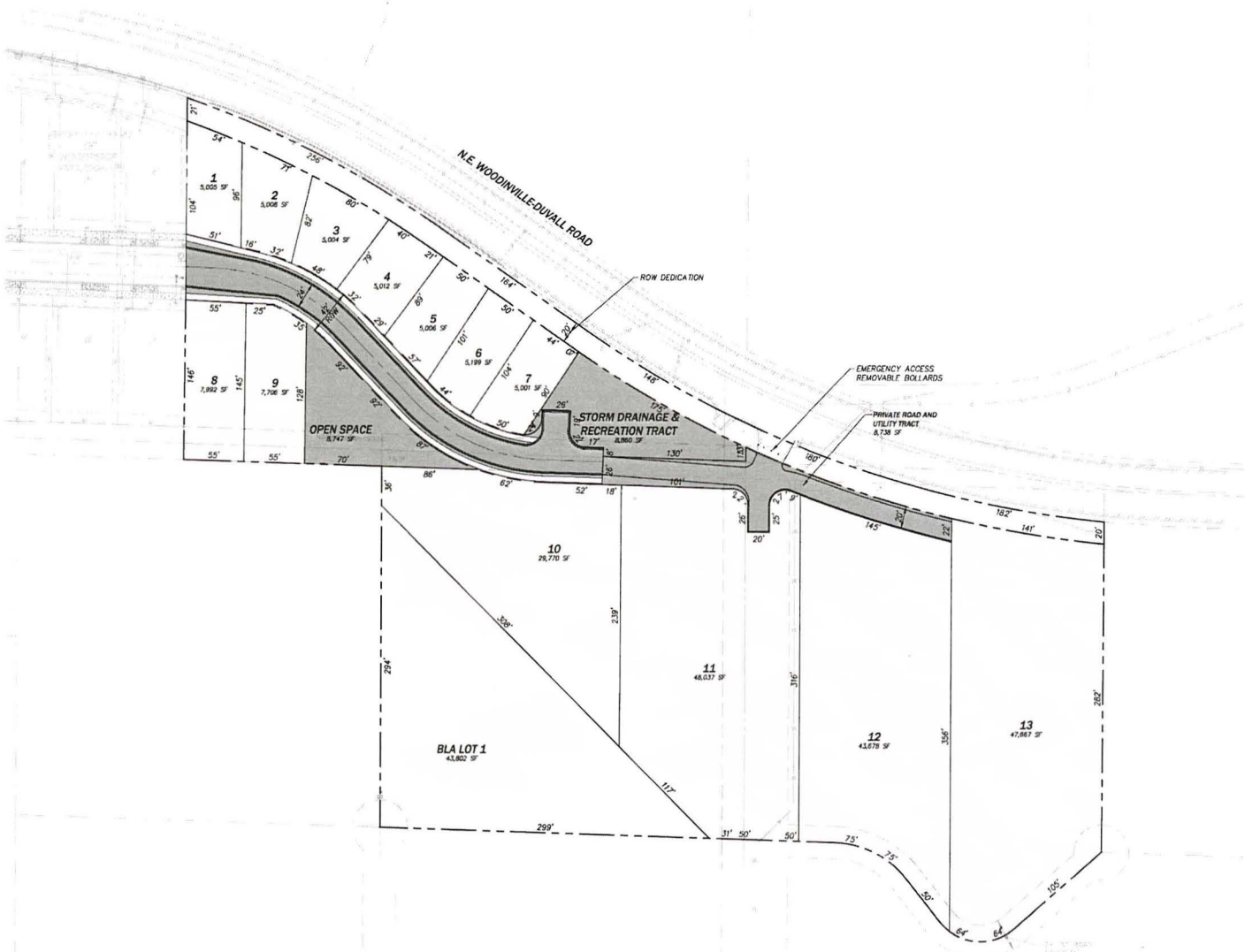


EXHIBIT 17
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0 50 100
PLAN IN FEET

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April 3, 2013