

Legend

Percentage of Required Fire Flow Available

- Model Convergence Not Achieved
- 0% - 50%
- 50% - 75%
- 75% - 100%
- 100 - 125%
- 125% - 200%
- Greater than 200%

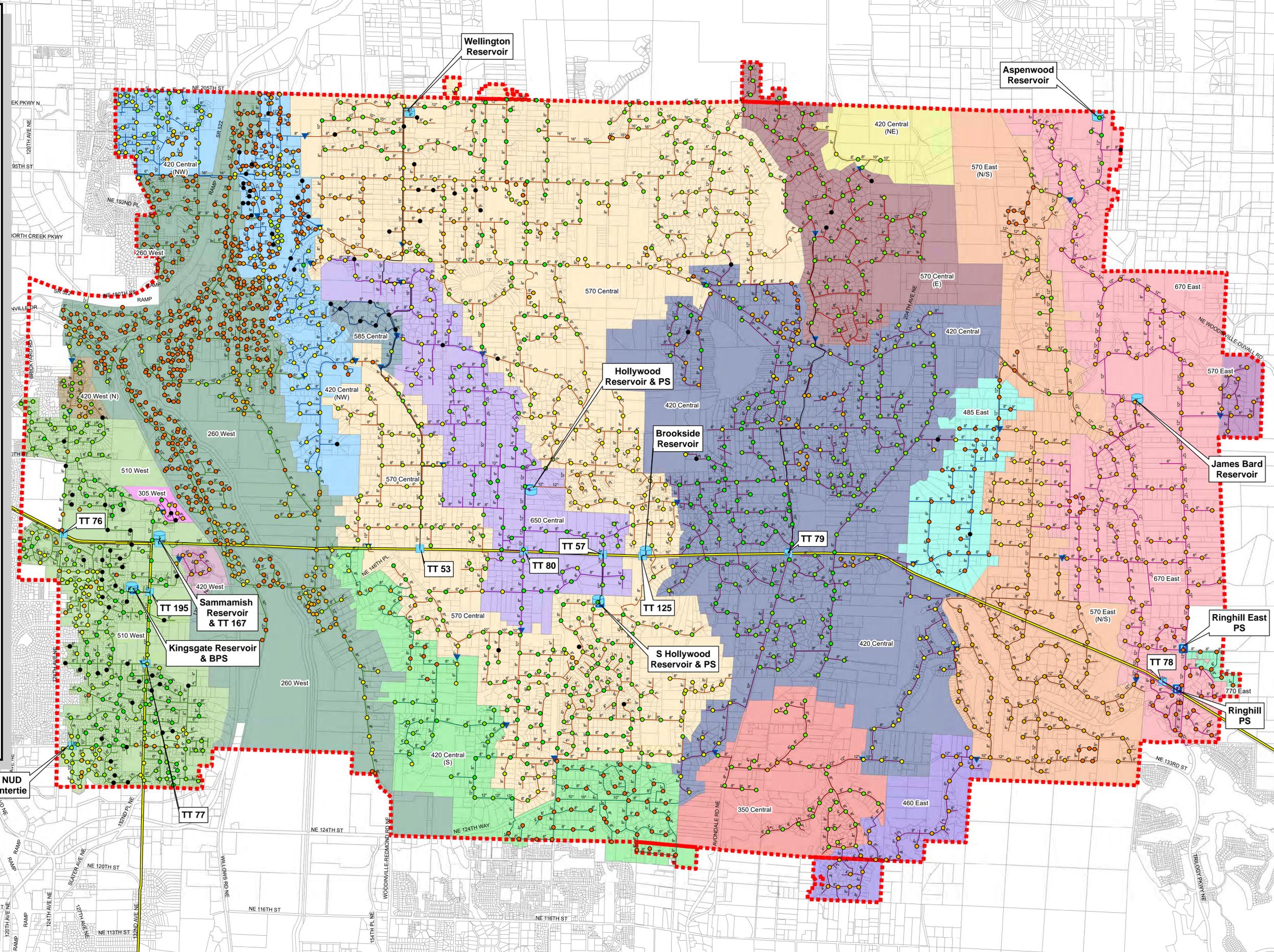
- District Boundary
- Tank
- Pump Station
- Tolt Tap/Intertie
- Tolt Pipeline

Pressure Zones

- 260 West
- 305 West
- 350 Central
- 420 Central
- 420 Central (NE)
- 420 Central (NW)
- 420 Central (S)
- 420 Central (N)
- 420 West
- 420 West (N)
- 460 East
- 485 East
- 510 West
- 570 Central
- 570 Central (E)
- 570 East
- 570 East (N/S)
- 585 Central
- 650 Central
- 670 East
- 770 East

NUD Intertie

NE 128TH ST
NE 124TH ST
NE 118TH ST
NE 114TH ST
NE 110TH ST
NE 106TH ST
NE 102TH ST
NE 98TH ST
NE 94TH ST
NE 90TH ST
NE 86TH ST
NE 82TH ST
NE 78TH ST
NE 74TH ST
NE 70TH ST
NE 66TH ST
NE 62TH ST
NE 58TH ST
NE 54TH ST
NE 50TH ST
NE 46TH ST
NE 42TH ST
NE 38TH ST
NE 34TH ST
NE 30TH ST
NE 26TH ST
NE 22TH ST
NE 18TH ST
NE 14TH ST
NE 10TH ST
NE 6TH ST
NE 2ND ST



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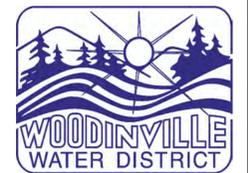
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Vicinity Map



Figure 4
Percentage of Required Fire Flow
Woodinville Water District
Hydraulic Model Development



1 inch = 1,500 feet
0 750 1,500 3,000 Feet

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"



J:\DATA\WWD\116-057\GIS\MAPS\PERCENTAGE OF REQD FIRE FLOW.MXD BY: ZSCHREMP PLOT DATE: AUG 3, 2017 COORDINATE SYSTEM: NAD 1983 HARN STATEPLANE WASHINGTON NORTH FIPS 4601 FEET

Legend

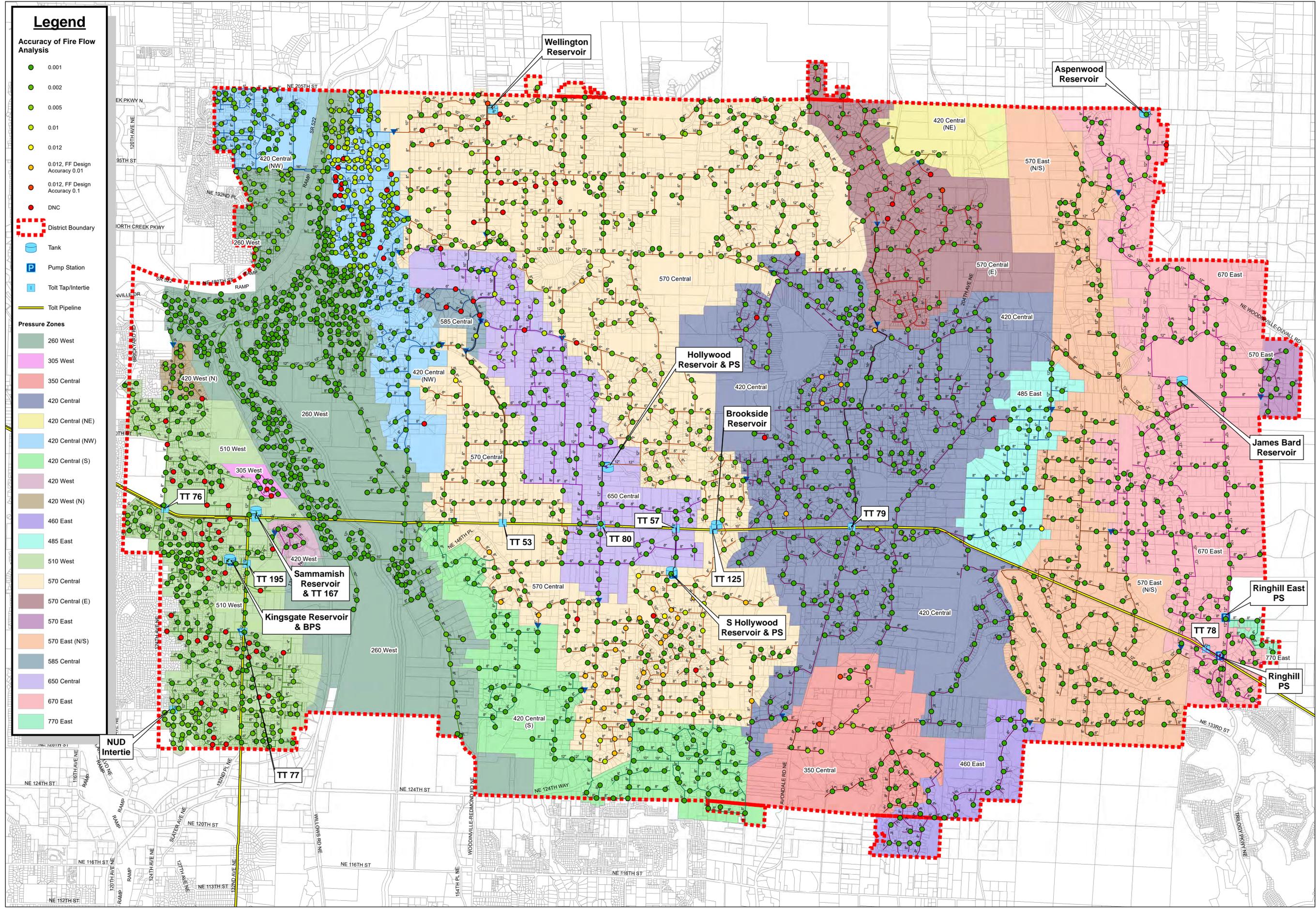
Accuracy of Fire Flow Analysis

- 0.001
- 0.002
- 0.005
- 0.01
- 0.012
- 0.012, FF Design Accuracy 0.01
- 0.012, FF Design Accuracy 0.1
- DNC

- ▭ District Boundary
- Tank
- Pump Station
- Tolt Tap/Intertie
- Tolt Pipeline

Pressure Zones

- 260 West
- 305 West
- 350 Central
- 420 Central
- 420 Central (NE)
- 420 Central (NW)
- 420 Central (S)
- 420 West
- 420 West (N)
- 420 West (N)
- 460 East
- 485 East
- 510 West
- 570 Central
- 570 Central (E)
- 570 Central (E)
- 570 East
- 570 East (N/S)
- 585 Central
- 650 Central
- 670 East
- 770 East



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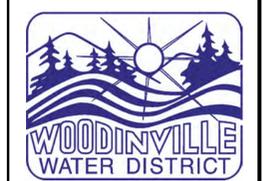
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Vicinity Map



Figure 5
Model Accuracy for Fire Flow Analysis
Woodinville Water District
Hydraulic Model Development



1 inch = 1,500 feet
 0 750 1,500 3,000 Feet

DRAWING IS FULL SCALE WHEN BAR MEASURES 2"



J:\DATA\WWD\116-057\GIS\MAPS\FF ACCURACY.MXD BY: ZSCHREMPPE PLOT DATE: AUG 3, 2017 COORDINATE SYSTEM: NAD 1983 HARN STATEPLANE WASHINGTON NORTH FIPS 4601 FEET

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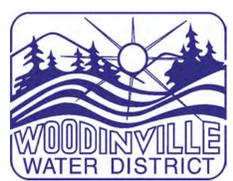
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Vicinity Map



Figure 6 Existing Water Age Woodinville Water District Hydraulic Model Development



1 inch = 1,500 feet
0 750 1,500 3,000 Feet

DRAWING IS FULL SCALE
WHEN BAR MEASURES 2"



Legend

Water Age

- 0 - 2 days
- 2 - 4 days
- 4 - 7 days
- 7 - 14 days
- Greater than 14 days

Infrastructure

- District Boundary
- Tank
- Pump Station
- Tolt Tap/Intertie
- Tolt Pipeline

Pressure Zones

- 260 West
- 305 West
- 350 Central
- 420 Central
- 420 Central (NE)
- 420 Central (NW)
- 420 Central (S)
- 420 West
- 420 West (N)
- 460 East
- 485 East
- 510 West
- 570 Central
- 570 Central (E)
- 570 East
- 570 East (N/S)
- 585 Central
- 650 Central
- 670 East
- 770 East



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TABLES

**Woodinville Water District
Hydraulic Model Calibration Data**

First Round of Testing																														
Test No.	Pressure Zone	Date	Time	Duration of Test (mins)	Hydrant Flow Tested				Hydrant for Pressure Measurements					Field		Model Results			Static Difference		Residual Difference		SCADA							
					Location	F1 Model Node No.	F1 Flow Calc (gpm)	F2 Flow Calc (gpm)	Location	F1 Model Node No.	F1 Static Pressure (psi)	F1 Residual Pressure (psi)	Static Minus Residual (psi)	F1 Static Pressure (psi)	F1 Residual Pressure (psi)	Static Minus Residual (psi)	(psi)	% Error	(psi)	% Error	Sammamish Reservoir Level (feet)	Kingsgate Reservoir Level (feet)	Wellington Reservoir Level (feet)	James Bard Reservoir Level (feet)	Aspenwood Reservoir Level (feet)	Hollywood Reservoir Level (feet)	S Hollywood Reservoir Level (feet)	Brookside Reservoir Level (feet)		
1A	420 Central (NW)	9/14/2016	1128.5	1	Hydrant 2800	J7452	521	0	Hydrant 0083	J17458	63	58	5	63	59	4	0	0%	-1	-2%	28.5525	90.8394	72.9850	18.8775	113.6325	23.2875	84.8125	12.0613		
1B			1130.5	1			521	436			54	9	52		11	2			3%	28.5525	90.8394	72.9950	18.8788	113.7375	23.2875	84.9375	12.0650			
2A	260 West	9/14/2016	1146	1.25	Hydrant 1768	J2476	571	0	Hydrant 0069	J8792	60	55	5	61	54	7	-1	-1%	1	2%	28.5375	91.1133	73.0700	18.9188	114.3075	23.3063	84.5625	12.0850		
2B			1148.5	1.25			521	547			51	9	50		11	1			2%	28.5300	91.1998	73.0850	18.9238	114.3975	23.3063	84.5000	12.0900			
3A	420 Central (NW)	9/14/2016	1316	1.25	Hydrant 1266	J860	547	0	Hydrant 0768	J19746	57	49	8	57	51	5	0	1%	-2	-4%	28.4575	92.5838	74.0050	19.1300	111.7650	23.5313	82.4688	12.2038		
3B			1318.5	1.25			466	404			45	12	46		10	-1			-3%	28.4575	92.6271	74.0000	19.1363	111.6375	23.5313	82.6250	12.2063			
4A	585 Central	9/14/2016	1333	1	Hydrant 1326	J2342	521	0	Hydrant 1270	J2360	56	43	13	57	45	12	-1	-2%	-2	-5%	28.4475	92.8477	74.0900	19.1650	110.8650	23.5688	82.8750	12.2325		
4B			1334	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
5A	420 West (N)	9/15/2016	1122.5	1.5	Hydrant 2404	J5170	547	0	Hydrant 2403	J15558	62	56	6	62	56	7	0	0%	0	0%	28.8025	88.4773	74.3500	19.2700	112.8225	25.9406	83.7500	13.0563		
5B			1124	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
6A	510 West	9/15/2016	1019	1	Hydrant 1757	J5156	718	0	Hydrant 1758	J4306	83	77	6	82	76	6	1	1%	1	1%	28.7700	89.6443	73.7100	19.1013	110.0625	25.6688	83.2500	12.9838		
6B			1021	1			659	638			69	14	65		17	4			6%	28.7700	88.2870	73.7300	19.1088	110.0625	25.6688	83.2813	12.9863			
7A	305 West	9/15/2016	945	1	Hydrant 2612	J15674	718	0	Hydrant 2611	J15670	84	69	15	88	74	14	-4	-5%	-5	-7%	28.7525	90.3507	73.4350	19.0200	108.1275	25.5281	83.0000	12.9675		
7B			947	1			594	594			45	39	53		36	-8			-14%	28.7525	88.5731	73.4350	19.0263	108.2625	25.5281	83.0625	12.9675			
8A	420 West	9/15/2016	910	-	Nothing suitable to flow in this zone. Took static reading only.	N/A	-	-	Hydrant 1611 (Static only)	J15808	68	-	-	68	-	-	0	0%	-	-	-	-	-	-	-	-	-	-	-	
8B			-	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
9A	510 West	9/15/2016	830.5	1.25	Hydrant 0495	J2706	737	0	Hydrant 0494	J3902	92	90	2	95	89	6	-3	-4%	1	1%	28.7975	90.9670	73.2750	18.8713	103.3050	25.3031	82.7188	12.9075		
9B			833	1.25			617	547			82	10	82		13	0			0%	28.7975	88.2668	73.2700	18.8713	103.4400	25.3031	82.7188	12.9063			
10A	260 West	9/15/2016	806.5	1.5	Hydrant 2898	J9668	773	0	Hydrant 2882	J9662	94	86	8	93	86	8	1	1%	0	0%	28.8600	90.8394	73.3400	18.8675	101.4450	25.3219	82.6250	12.9075		
10B			809.5	1.5			699	659			80	14	81		13	-1			-1%	28.8400	90.9692	73.3150	18.8663	101.6700	25.3031	82.6250	12.9075			
11A	260 West	9/14/2016	1107.5	1.25	Hydrant 1344	J18692	494	0	Hydrant 1339	J18752	50	41	9	50	43	7	0	0%	-2	-4%	28.5850	90.4841	72.8100	18.8338	112.9875	23.2219	84.3750	12.0363		
11B			1110?	1.25			466	466			36	14	38		12	-2			-5%	28.5775	90.5244	72.8250	18.8400	112.9875	23.2500	84.4063	12.0375			
12A	260 West	9/15/2016	743	1.25	Hydrant 2955	J16404	718	0	Hydrant 0406	J16398	84	77	7	84	76	9	0	-1%	1	1%	28.8875	91.1566	73.5400	18.8813	99.6075	25.3406	82.3438	12.9238		
12B			745.5	1.25			659	617			71	13	70		15	1			2%	28.8800	91.0578	73.5050	18.8800	99.8775	25.3219	82.3438	12.9188			
13A	420 Central (NW)	9/14/2016	1430.5	1	Hydrant 1044	J18254	773	0	Hydrant 0380	J18250	96	71	25	94	70	24	2	2%	1	1%	28.4275	93.6074	74.6400	19.3963	106.8750	23.5688	83.5625	12.2975		
13B			???	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
15A	420 Central (S)	9/13/2016	1051	1.25	Hydrant 1767	J3388	617	0	Hydrant 1766	J3404	66	49	17	65	46	19	1	1%	3	5%	28.6175	90.1763	73.8500	18.3663	111.5700	21.5344	82.8438	15.2900		
15B			1053.5	1.25			521	494			39	27	40		25	-1			-3%	28.6150	90.2628	73.8700	18.3700	111.6675	21.5344	82.7188	15.2900			
17A	570 Central	9/14/2016	809	0.75	Hydrant 2628	J6984	466	0	Hydrant 0334	J9548	46	43	3	47	43	4	-1	-1%	0	0%	28.7825	90.7839	72.8200	18.5813	104.6625	23.0906	81.0000	11.9463		
17B			810.5	0.75			404	494			40	6	42		5	-2			-5%	28.7825	90.8265	72.8000	18.5800	104.6625	23.0906	81.1250	11.9425			
18A	650 Central	9/14/2016	838	1.25	Hydrant 2095	J7080	494	0	Hydrant 2094	J7078	61	46	15	62	49	13	-1	-1%	-3	-6%	28.7650	91.6388	72.6650	18.5863	106.1700	23.0531	81.2500	11.9425		
18B			840.5	1.25			466	521			41	20	36		25	5			13%	28.7625	91.8162	72.6600	18.5888	106.3950	23.0531	81.4375	11.9400			

**Woodinville Water District
Hydraulic Model Calibration Data**

First Round of Testing																														
Test No.	Pressure Zone	Date	Time	Duration of Test (mins)	Hydrant Flow Tested				Hydrant for Pressure Measurements					Field		Model Results			Static Difference		Residual Difference		SCADA							
					Location	F1 Model Node No.	F1 Flow Calc (gpm)	F2 Flow Calc (gpm)	Location	F1 Model Node No.	F1 Static Pressure (psi)	F1 Residual Pressure (psi)	Field Static Minus Residual (psi)	F1 Static Pressure (psi)	F1 Residual Pressure (psi)	Field Static Minus Residual (psi)	Static Difference (psi)	% Error	Residual Difference (psi)	% Error	Sammamish Reservoir Level (feet)	Kingsgate Reservoir Level (feet)	Wellington Reservoir Level (feet)	James Bard Reservoir Level (feet)	Aspenwood Reservoir Level (feet)	Hollywood Reservoir Level (feet)	S Hollywood Reservoir Level (feet)	Brookside Reservoir Level (feet)		
19A	570 Central	9/14/2016	1026	1	Hydrant 1659	J2502	521	0	Hydrant 1658	J2504	44	41	3	43	41	3	1	2%	0	1%	28.6150	89.7675	72.5250	18.7413	111.4425	23.1469	83.4688	12.0000		
19B			1028	1			494	466			38	6	6		35	8			3	7%	28.6150	89.8591	72.5150	18.7463	111.4425	23.1469	83.3438	12.0025		
20A	570 Central	9/14/2016	1008?	1.25	Hydrant 2992	J18676	755	0	Hydrant 0131	J2450	86	84	2	87	84	3	-1	-1%	0	0%	28.6300	89.4987	72.4900	18.7088	110.6700	23.1094	83.0938	11.9838		
20B			1009.5	1.25			659	659			79	7	7		80	7			-1	-1%	28.6300	89.5016	72.4600	18.7100	110.7675	23.1094	83.1875	11.9875		
21A	650 Central	9/13/2016	1408.5	1.75	Hydrant 1587	J6014	617	0	Hydrant 0368	J7328	72	64	8	71	65	7	1	1%	-1	-1%	28.5675	92.9810	74.9400	18.6438	110.3850	21.9000	84.6250	14.8150		
21B			1412	1.75			571	547			60	12	12		66	5			-6	-9%	28.5675	93.0279	74.9700	18.6488	110.2575	21.9000	84.5625	14.8063		
22A	570 Central	9/13/2016	1152	1.25	Hydrant 2275	J5924	547	0	Hydrant 1623	J5918	59	52	7	58	50	7	1	2%	2	3%	28.5675	91.0557	74.1950	18.4588	114.1800	21.6281	83.6875	15.1600		
22B			1154.5	1.25			466	494			41	18	18		41	17			0	0%	28.5650	91.1566	74.2200	18.4613	114.3075	21.6281	83.6563	15.1375		
23A	420 Central (S)	9/13/2016	1019.5	1.5	Hydrant 1426	J3708	547	0	Hydrant 1427	J3734	52	38	14	52	37	14	0	1%	1	1%	28.6275	89.7192	73.6350	18.3225	109.9950	21.4969	82.4688	15.3675		
23B			1021	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
25A	420 Central	9/13/2016	933.5	1	Hydrant 1538	J13946	594	0	Hydrant 1034	J13938	70	60	10	70	61	9	0	1%	-1	-1%	28.6650	89.3257	73.4950	18.2825	107.3250	21.4594	81.9688	15.5025		
25B			935.5	1			494	404			52	18	18		52	18			0	0%	28.6625	89.3704	73.5050	18.2838	107.4600	21.4594	81.9688	15.5025		
26A	420 Central	9/13/2016	908	2	Hydrant 0861	J14352	436	0	Hydrant 0858	J14346	60	58	2	60	58	3	0	0%	0	1%	28.7200	89.1527	73.4300	18.2700	105.6225	21.4594	81.7188	15.5725		
26B			910	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
27A	350 Central	9/13/2016	823	1.25	Hydrant 2078	J12062	824	0	Hydrant 2077	J12066	100	73	27	100	78	22	0	0%	-5	-6%	28.7775	89.3689	73.7150	18.2838	102.5400	21.4594	81.3750	15.7313		
27B			825.5	1.25			699	494			58	42	42		56	44			2	3%	28.7750	89.4569	73.7100	18.2788	102.6675	21.4594	81.3125	15.7313		
28A	460 East	9/13/2016	808	2	Hydrant 2256	J15138	773	0	Hydrant 2255	J15142	105	69	36	104	70	34	1	1%	-1	-2%	28.7975	89.5434	73.8150	18.3075	101.4750	21.4594	81.1875	15.7938		
28B			810	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
29A	570 Central (E)	9/12/2016	1320.5	1	Hydrant 2183	J10060	755	0	Hydrant 1898	J10062	66	59	7	66	58	8	0	0%	1	2%	27.9375	90.7962	72.9500	18.4100	114.1725	23.6344	82.5938	16.0600		
29B			1322.5	1			659	494			51	15	15		48	18			3	6%	27.9350	90.7962	72.9650	18.4125	114.2550	23.6344	82.6250	16.0638		
30A	420 Central (NE)	9/12/2016	1249	1.25	Hydrant 0635	J13592	718	0	Hydrant 0633	J12030	80	65	15	80	66	14	0	0%	-1	-1%	27.9650	90.3500	72.7250	18.3625	113.0775	23.6906	82.4375	16.0013		
30B			1251.5	1.25			659	659			60	20	20		57	23			3	5%	27.9600	90.3082	72.7400	18.3650	113.1750	23.6906	82.4375	16.0063		
31A	570 Central (E)	9/12/2016	1353	1.25	Hydrant 0642	J13532	638	0	Hydrant 0640	J10448	64	61	3	64	62	2	0	-1%	-1	-2%	27.9475	91.1566	73.1900	18.4600	114.9450	23.5688	82.6563	16.1213		
31B			1355.5	1.25			571	494			59	5	5		58	6			1	1%	27.9500	91.1566	73.2100	18.4625	114.9525	23.5688	82.6875	16.1288		
32A	485 East	9/12/2016	1120	1.5	Hydrant 0832	J11314	547	0	Hydrant 0833	J13264	66	50	16	64	47	17	2	3%	3	7%	28.0475	89.4871	72.4450	18.2663	108.9975	23.8219	82.0938	15.8675		
32B			1121.5	-			-	-			-	-	-		-	-			-	-	-	-	-	-	-	-	-	-	-	-
33A	570 East (N/S)	9/12/2016	1421.5	1.25	Hydrant 2281	J11596	679	0	Hydrant 1955	J13138	64	56	8	64	57	7	0	1%	-1	-2%	28.0025	91.4305	73.3200	18.4950	113.9175	23.5500	82.9375	16.1738		
33B			1424	1.25			594	494			50	14	14		50	14			0	0%	28.0125	91.3851	73.3300	18.4963	113.8200	23.5313	82.9063	16.1863		
34A	570 East (N/S)	9/12/2016	1024	1.5	Hydrant 2372: gate valve not installed on 1st port	J12806	773	0	Hydrant 2371	J12836	54	50	4	53	49	4	1	1%	1	2%	28.1575	89.1959	72.2050	18.2788	106.6200	23.9156	81.7188	15.8100		
34B			1027	1.5			699	521			47	7	7		45	8			2	4%	28.1525	89.1094	72.2100	18.2713	106.7175	23.9156	81.7813	15.8125		
35A	670 East	9/12/2016	~1000	1	Hydrant 2231	J10572	679	0	Hydrant 2148	J10038	82	75	7	80	71	8	2	3%	4	5%	28.1975	89.1469	72.1250	18.3538	105.4650	23.9531	81.4063	15.7913		
35B			1	571			617	64			18	18	58		21	6			10%	28.1975	89.1469	72.1250	18.3538	105.4650	23.9531	81.4063	15.7913			
36A	485 East	9/12/2016	1100	1.75	Hydrant 2449A	J13232	718	0	Hydrant 0825	J15044	95	66	29	94	73	22	1	1%	-7	-9%	28.0825	89.3257	72.3850	18.2638	107.8425	23.8406	82.0313	15.8475		
36B			1103.5	1.75			594	547			44	51	51		59	35			-15	-26%	28.0775	89.3257	72.4000	18.2638	108.0675	23.8406	82.0000	15.8513		

**Woodinville Water District
Hydraulic Model Calibration Data**

First Round of Testing																												
Test No.	Pressure Zone	Date	Time	Duration of Test (mins)	Hydrant Flow Tested Field Measurements				Hydrant for Pressure Measurements Field Measurements				Field Static Minus Residual (psi)	Model Results		Static Difference (psi)	% Error	Residual Difference		SCADA								
					Location	F1 Model Node No.	F1 Flow Calc (gpm)	F2 Flow Calc (gpm)	Location	F1 Model Node No.	F1 Static Pressure (psi)	F1 Residual Pressure (psi)		F1 Static Pressure (psi)	F1 Residual Pressure (psi)			Static Minus Residual (psi)	Static Minus Residual (psi)	Static Minus Residual (psi)	Static Difference (psi)	% Error	Static Difference (psi)	% Error	Sammamish Reservoir Level (feet)	Kingsgate Reservoir Level (feet)	Wellington Reservoir Level (feet)	James Bard Reservoir Level (feet)
37A	570 East	9/12/2016	821	1.25	Hydrant 2298	J12292	947	0	Hydrant 2299	J10560	68	60	8	68	59	9	0	0%	1	1%	28.3400	88.9797	72.4800	18.4375	97.6500	24.2625	80.3750	15.7063
37B			823.5	1.25			617	594				55	13		56	12			-1	-1%	28.3375	88.9220	72.4600	18.4338	97.7850	24.2625	80.4063	15.7075
38A	570 East (N/S)	9/12/2016	1149	2	Hydrant 2355	J13072	856	0	Hydrant 2354; residual gauge acting strangely. 20 psi when installed, climbed to 45. Removed and flushed hydrant before conducting test.	J13070	76	68	8	75	69	6	1	1%	-1	-2%	28.0125	89.7553	72.5250	18.2988	110.4150	23.7656	82.1875	15.9138
38B			1153	2			755	737				61	15		60	15			1	1%	28.0100	89.7293	72.5400	18.2875	110.7075	23.7656	82.2500	15.9200
39A	670 East	9/12/2016	-930	1	Hydrant 2262	J12484	699	0	Hydrant 2261	J12482	54	48	6	53	49	3	1	3%	-1	-3%	28.2275	89.0200	72.1200	18.4413	103.2525	24.0375	81.0313	15.7588
39B			906	-			659	594				41	13		45	8			-4	-9%								
40A	770 East	9/12/2016	905	1	Hydrant 2580	J11522	330	0	Hydrant 2579	J11520	69	22	47	60	60	1	9	14%	-38	-63%	28.2650	88.9681	72.1600	18.4263	101.2875	24.1125	80.7188	15.7400
40B			906	-			-	-				-	-		-	-			-	-								
41A	420 Central	9/13/2016	950.5	1.25	Hydrant 3010	J17890	679	0	Hydrant 0220	J17858	87	82	5	86	83	3	1	1%	-1	-1%	28.6425	89.4122	73.6250	18.2975	108.3225	21.4594	82.1563	15.4675
41B			953	1.25			638	617				78	9		79	8			-1	-1%	28.6375	89.5275	73.6350	18.3000	108.5550	21.4781	82.1875	15.4400
42A	510 West	9/15/2016	9247	1	Hydrant 0467	J418	521	0	Hydrant 0466	J776	72	69	3	69	67	2	3	4%	2	2%	28.7650	90.4004	73.3500	18.9675	106.7925	25.4531	83.0000	12.9538
42B			926	1			521	436				64	8		64	6			0	1%	28.7650	89.2493	73.3500	18.9738	107.0025	25.4531	83.0000	12.9538
43A	570 Central	9/15/2016	1208.5	1.25	Hydrant 1772	J13686	571	0	Hydrant 1691	J13678	55	53	2	55	51	3	0	1%	2	3%	28.8150	88.8355	74.7550	19.3700	114.6300	26.1469	84.0938	13.1300
43B			1211	1.25			494	521				50	5		47	8			3	7%	28.8150	88.8355	74.7500	19.3700	114.7650	26.1656	84.0625	13.1325
44A	260 West	9/15/2016	1312	1.25	Hydrant 1573; Hose Monsters got completely submerged in ditch	J6720	718	0	Hydrant 1572	J6722	106	98	8	104	96	8	2	2%	2	2%	28.8100	90.0898	74.7900	19.2538	114.6000	26.2406	84.4375	13.2275
44B			1314.5	1.25			638	638				89	17		91	13			-2	-2%	28.7975	90.1330	74.8150	19.2538	114.5400	26.2406	84.4688	13.2300

Second Round of Testing

Test No.	Pressure Zone	Date	Time	Duration of Test (mins)	Hydrant Flow Tested				Hydrant for Pressure Measurements						Static Difference		Residual Difference		SCADA									
					Field Measurements				Field Measurements			Model Results			(psi)	%	(psi)	%	Sammamish Reservoir Level (feet)	Kingsgate Reservoir Level (feet)	Wellington Reservoir Level (feet)	James Bard Reservoir Level (feet)	Aspenwood Reservoir Level (feet)	Hollywood Reservoir Level (feet)	S Hollywood Reservoir Level (feet)	Brookside Reservoir Level (feet)		
					Location	F1 Model Node No.	F1 Flow Calc (gpm)	F2 Flow Calc (gpm)	Location	F1 Model Node No.	F1 Static Pressure (psi)	F1 Residual Pressure (psi)	Field Static Minus Residual (psi)	F1 Static Pressure (psi)													F1 Residual Pressure (psi)	Field Static Minus Residual (psi)
2-1A	670 East	4/10/2017	803	5	Hydrant 2200	J16486	571	0	Hydrant 2199	J11166	74	69	5	73	66	7	1	1%	3	5%	29.8875	90.9721	76.7000	15.7300	114.7350	26.51438	83.13125	15.5188
2-1B			808	2			547	436			61	13	57		16	4			8%									
2-2A	485 East	4/10/2017	848	2	Hydrant 0819	J13228	494	0	Hydrant 0821	J11136	85	61	24	83	71	11	2	3%	-10	-14%	29.6500	90.6574	76.2250	15.6538	113.8350	26.51438	83.20625	15.4925
2-2B			-	-			-	-			-	-	-		-	-			-									
2-3A	485 East	4/10/2017	901	3	Hydrant 0826	J13252	699	0	Hydrant 0822	J13240	75	44	31	71	48	22	4	6%	-4	-9%	29.5575	90.5693	75.9750	15.6175	113.5800	26.51438	83.21875	15.4800
2-3B			-	-			-	-			-	-	-		-	-			-									
2-4A	585 Central	4/10/2017	1006	2	Hydrant 1268	J2330	773	0	Hydrant 1269	J2356	84	65	19	83	61	22	1	1%	4	7%	29.1225	90.1745	74.6950	15.5263	112.9350	26.51625	83.24375	15.4363
2-4B			-	-			-	-			-	-	-		-	-			-									
2-5A	650 Central	4/10/2017	1038	2	Hydrant 2785	J6922	659	0	Hydrant 0101	J7344	90	70	20	90	65	24	0	0%	5	7%	29.0475	90.0800	74.1550	15.4713	112.5825	26.42250	83.27500	15.4188
2-5B			-	-			-	-			-	-	-		-	-			-									
2-6A	650 Central	4/10/2017	1055	1	Hydrant 0332	J6972	594	0	Hydrant 0331	J6966	64	50	14	64	55	9	0	0%	-5	-10%	29.0125	90.1766	73.9300	15.4488	112.4175	26.36438	83.30625	15.4125
2-6B			1057	1			571	494			51	13	53		11	-2			-4%									
2-7A	650 Central	4/10/2017	1117	1	Hydrant 0347	J5902	659	0	Hydrant 0360	J5898	82	74	8	84	75	10	-2	-3%	-1	-1%	28.9850	90.1766	73.8300	15.4250	112.1925	26.28750	83.36250	15.4050
2-7B			1119	1			547	521			72	10	74		10	-2			-3%									
2-8A	650 Central	4/10/2017	1132	2	Hydrant 1379	J2826	659	-	Hydrant 1378	J2824	83	67	16	82	70	12	1	2%	-3	-4%	28.9625	90.2633	73.8200	15.4125	112.0875	26.22750	83.42500	15.4000
2-8B			-	-			594	521			61	22	64		18	-3			-5%									
2-9A	305 West	4/10/2017	1220	2	Hydrant 2615	J4900	755	0	Hydrant 2616	J4910	83	66	17	78	69	8	5	7%	-3	-5%	28.8950	90.3968	73.5550	15.3475	111.6750	26.07375	83.53125	15.3850
2-9B			-	-			679	638			59	24	56		22	3			6%									

Woodinville Water District
 Calibrated Hydraulic Model PRV Setpoints

PRV Number	Elevation (ft)	Valve Diameter (in)	Setting (psi)
PRV1	318.3	6	72
PRV10	337.8	6	59
PRV10A	335	3	65
PRV11	199	12	227
PRV12	280	6	60
PRV12A	280	3	65
PRV13	298.8	8	48
PRV13A	298.5	4	53
PRV14	179.4	8	30
PRV14A	179.2	4	35
PRV15	296	8	47
PRV15A	293	4	53
PRV16	381.6	6	47
PRV16A	378.8	3	50
PRV17	144.6	6	46
PRV17A	141.7	3	51
PRV18	210.7	6	22
PRV18A	210.3	3	22
PRV19	285.9	8	53
PRV1A	315.6	3	77
PRV2	310.7	6	42
PRV21	345	6	42
PRV21A	342.3	3	47
PRV21B	345	1	52
PRV22	342.6	6	31
PRV22A	339.9	3	39
PRV23	328.8	6	25
PRV23A	326	3	31
PRV24	303.5	6	46
PRV24A	301.4	3	51
PRV25	449.6	8	48
PRV25A	449.6	3	53
PRV26A	471.8	4	40
PRV26B	471.8	3	40
PRV26C	474.3	6	34
PRV27	342.3	6	35
PRV28	168.8	6	35
PRV28A	168.5	3	40
PRV29	324.9	6	28
PRV29A	325	3	32
PRV2A	308	3	48
PRV3	183.9	6	28

PRV Number	Elevation (ft)	Valve Diameter (in)	Setting (psi)
PRV30	325.2	6	35
PRV30A	325.3	3	39
PRV31	361.5	6	6
PRV31A	361.4	3	10
PRV32	162.2	6	72
PRV32A	161.9	3	76
PRV33	438.5	6	53
PRV33A	436.4	3	58
PRV34	503.2	6	60
PRV35	383.1	6	78
PRV35A	383	4	83
PRV35B	381	3	0
PRV36	267.9	6	62
PRV36A	267.4	3	63
PRV37	222	6	82
PRV37A	222.4	3	86
PRV38	135.6	6	85
PRV38A	135.4	3	91
PRV39	448.8	8	50
PRV39A	448.7	3	54
PRV3A	181.2	3	34
PRV4	185	6	28
PRV40	277.6	6	56
PRV40A	277.4	3	59
PRV41	494.3	12	35
PRV41A	494.8	4	40
PRV42	438.2	6	55
PRV42A	437.9	3	58
PRV44	210.2	6	45
PRV44A	210.6	4	60
PRV45	338	6	50
PRV45A	338	3	55
PRV4A	182.2	3	34
PRV5	451	6	43
PRV5A	451	3	47
PRV6	482.5	6	21
PRV6A	479.5	4	26
PRV7	465	6	63
PRV7A	462.3	3	72
PRV7B	467	12	45
PRV8	320.9	6	39
PRV8A	318.1	3	44

PRV Number	Elevation (ft)	Valve Diameter (in)	Setting (psi)
PRV9	447.7	6	48
PRV9A	444.9	3	53
PRV_SAMM_INLET_1	265	8	90
PRV_SAMM_INLET_2	265	6	90
PRV_SAMM_OUT_1	265	10	2
PRV_SAMM_OUTLET_2	265	4	6
RINGHILL EAST DUMMY PRV	568	N/A	70
RINGHILL PRV	522	12	68
S HOLLYWOOD PS PRV	491.68	10	38
CLOSED S HOLLYWOOD PRV	468	8	49
HOLLYWOOD PS GRAVITY PRV	545	12	55
HOLLYWOOD PS PRV #1	545	12	72
HOLLYWOOD PS PRV #2	545	12	64
KINGSGATE_PRV	419	16	35

