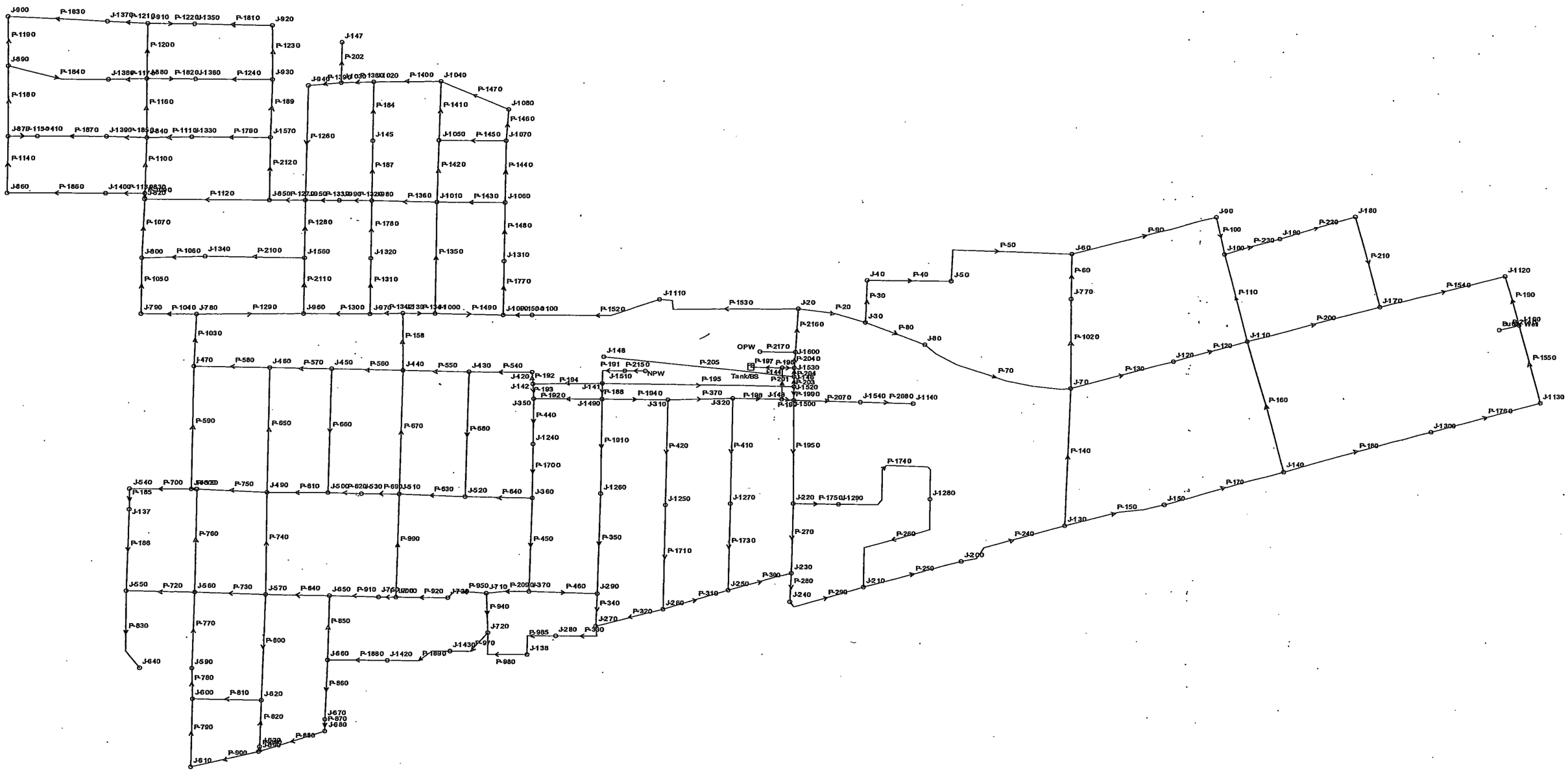
Appendix D

Hydraulic Analysis Documentation

Scenario: Existing MDD



Title: Millwood Hydraulic Analysis
e:\...\wcd-hydro-analysis.wcd
04/29/02 03:00:45 PM

Varela & Associates
© Haestad Methods, Inc. 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Dan Buller
WaterCAD v3.1 [071c]

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

COMMERCIAL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-690	2,001.72	2,301.89	20.00	39.12	J-630
J-610	2,001.72	2,428.53	20.00	32.96	J-600
J-1300	2,010.32	3,640.66	20.00	21.99	J-1130
J-240	2,003.44	4,000.00	20.00	41.29	J-180
J-250	2,013.76	4,000.00	20.00	45.30	J-180
J-360	2,013.76	4,000.00	20.00	46.86	J-180
J-510	2,017.82	4,000.00	20.00	46.53	J-180
J-310	2,014.62	4,000.00	20.00	47.23	J-180
J-1100	2,000.00	4,000.00	20.00	43.18	J-1090
J-320	2,015.48	4,000.00	20.00	47.29	J-180
J-1310	2,012.90	4,000.00	20.00	40.45	J-1060
J-270	2,005.16	4,000.00	20.00	46.31	J-280
J-200	2,001.72	4,000.00	20.00	35.49	J-180
J-1240	2,006.02	4,000.00	20.00	46.99	J-180
J-210	2,007.74	4,000.00	20.00	38.99	J-180
J-260	2,014.62	4,000.00	20.00	46.45	J-180
J-490	2,022.36	4,000.00	20.00	38.55	J-630
J-1010	2,016.34	4,000.00	20.00	36.50	J-1050
J-440	2,021.50	4,000.00	20.00	46.32	J-630
J-680	2,001.72	4,000.00	20.00	21.81	J-670
J-660	2,006.88	4,000.00	20.00	29.44	J-670
J-370	2,006.02	4,000.00	20.00	46.79	J-180
J-1070	2,007.74	4,000.00	20.00	32.76	J-1050
J-420	2,009.46	4,000.00	20.00	47.05	J-180
J-1060	2,012.90	4,000.00	20.00	37.62	J-1050
J-1430	2,000.00	4,000.00	20.00	39.01	J-670
J-130	2,014.62	4,000.00	20.00	31.61	J-180
J-1490	2,018.06	4,000.00	20.00	47.18	J-180
J-138	2,002.58	4,000.00	20.00	42.90	J-280
J-140	2,015.48	4,000.00	20.00	24.21	J-1300

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report
ALL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1140	1,004.30	441.15	20.00	41.43	J-1540
J-1540	1,006.02	598.80	20.00	20.56	J-1140
J-640	1,010.61	1,259.25	20.00	47.57	J-180
J-148	1,000.00	1,635.28	20.00	47.74	J-180
J-900	1,006.88	2,114.46	20.00	33.36	J-1370
J-190	1,001.72	2,115.07	20.00	35.80	J-180
J-890	1,009.46	2,228.41	20.00	38.55	J-1380
J-690	1,001.72	2,252.14	20.00	38.37	J-630
J-610	1,001.72	2,375.53	20.00	32.55	J-600
J-1350	1,010.32	2,386.02	20.00	34.23	J-920
J-920	1,007.74	2,445.37	20.00	29.34	J-1350
J-1260	1,016.34	2,483.98	20.00	47.08	J-180
J-1410	1,008.60	2,502.82	20.00	28.57	J-870
J-1360	1,012.04	2,517.33	20.00	33.29	J-930
J-1370	1,010.32	2,519.66	20.00	20.90	J-900
J-1380	1,010.32	2,521.38	20.00	29.61	J-890
J-1280	1,016.34	2,526.67	20.00	44.44	J-180
J-860	1,004.30	2,591.32	20.00	34.93	J-870
J-180	1,004.30	2,607.85	20.00	31.50	J-190
J-870	1,003.44	2,624.40	20.00	24.04	J-1410
J-1390	1,010.32	2,654.01	20.00	29.34	J-1410
J-930	1,011.18	2,705.90	20.00	28.52	J-920
J-1330	1,010.32	2,738.24	20.00	34.63	J-1570
J-600	1,006.88	2,744.01	20.00	20.00	J-610
J-590	1,008.60	2,778.34	20.00	25.93	J-610
J-910	1,010.32	2,791.23	20.00	20.00	J-1370
J-550	1,009.46	2,921.74	20.00	20.00	J-640
J-630	1,000.00	2,926.27	20.00	24.11	J-690
J-1570	1,006.02	3,009.03	20.00	27.03	J-930
J-1250	1,018.92	3,038.35	20.00	46.67	J-180
J-1340	1,011.18	3,046.02	20.00	45.82	J-860
J-1400	1,006.02	3,093.70	20.00	22.19	J-860
J-880	1,010.32	3,112.01	20.00	20.45	J-1370
J-1270	1,016.34	3,186.74	20.00	46.11	J-180
Butler Well	1,000.00	3,200.29	20.00	22.31	J-160
J-1290	1,010.32	3,283.87	20.00	41.59	J-1280
J-620	1,015.48	3,322.65	20.00	20.00	J-630
J-137	1,000.00	3,346.59	20.00	20.00	J-640
J-160	1,007.84	3,354.00	20.00	20.04	Butler We
J-1120	1,012.04	3,412.32	20.00	21.05	J-160
J-840	1,012.90	3,412.60	20.00	20.19	J-1390
J-540	1,010.22	3,421.71	20.00	21.43	J-640
J-1130	1,008.60	3,423.81	20.00	21.48	J-160
J-1320	1,006.88	3,497.12	20.00	42.28	J-980
J-750	1,011.49	3,507.31	20.00	40.43	J-700
J-90	1,007.74	3,544.84	20.00	25.57	J-100
J-1300	1,010.32	3,586.73	20.00	21.92	J-1130
J-850	1,011.18	3,608.29	20.00	27.26	J-1570
J-170	1,024.08	3,634.06	20.00	20.00	J-180
J-560	1,018.92	3,657.68	20.00	29.04	J-590
J-830	1,002.58	3,678.28	20.00	20.00	J-860

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-100	1,004.30	3,716.37	20.00	22.64	J-90
J-650	1,003.44	3,739.44	20.00	38.39	J-750
J-820	1,008.60	3,752.53	20.00	20.00	J-860
J-1050	1,012.90	3,766.68	20.00	38.16	J-1010
J-990	1,001.72	3,806.69	20.00	35.84	J-980
J-680	1,001.72	3,870.77	20.00	21.42	J-670
J-670	1,004.30	3,943.19	20.00	20.29	J-680
J-790	1,003.44	4,000.00	20.00	31.78	J-800
J-510	1,017.82	4,000.00	20.00	44.63	J-700
J-580	1,013.76	4,000.00	20.00	22.22	J-480
J-60	1,018.92	4,000.00	20.00	28.38	J-90
J-240	1,003.44	4,000.00	20.00	40.35	J-180
J-350	1,003.44	4,000.00	20.00	46.12	J-180
J-360	1,013.76	4,000.00	20.00	45.93	J-180
J-250	1,013.76	4,000.00	20.00	44.39	J-180
J-440	1,021.50	4,000.00	20.00	43.84	J-630
J-1500	1,009.46	4,000.00	20.00	46.24	J-180
NPW	1,000.00	4,000.00	20.00	46.20	J-180
J-1520	1,000.00	4,000.00	20.00	46.65	J-180
J-430	1,021.50	4,000.00	20.00	45.79	J-180
J-420	1,009.46	4,000.00	20.00	46.08	J-180
J-520	1,011.18	4,000.00	20.00	45.79	J-180
J-490	1,022.36	4,000.00	20.00	36.05	J-630
J-500	1,015.48	4,000.00	20.00	37.16	J-530
J-950	1,015.48	4,000.00	20.00	35.08	J-850
J-450	1,018.06	4,000.00	20.00	40.29	J-630
J-700	1,004.80	4,000.00	20.00	33.51	J-750
J-730	1,000.00	4,000.00	20.00	42.97	J-670
J-530	1,006.85	4,000.00	20.00	39.17	J-500
J-460	1,019.78	4,000.00	20.00	38.74	J-630
J-50	1,022.36	4,000.00	20.00	32.65	J-180
J-141	1,005.16	4,000.00	20.00	46.20	J-180
J-142	1,000.00	4,000.00	20.00	46.10	J-180
J-139	1,000.00	4,000.00	20.00	44.16	J-630
J-20	1,006.88	4,000.00	20.00	39.38	J-180
J-145	1,011.18	4,000.00	20.00	33.50	J-980
J-144	1,000.00	4,000.00	20.00	47.22	J-180
J-146	1,024.85	4,000.00	20.00	46.75	J-180
J-138	1,002.58	4,000.00	20.00	40.31	J-280
J-143	1,001.72	4,000.00	20.00	46.51	J-180
J-147	1,005.16	4,000.00	20.00	25.62	J-940
J-120	1,014.62	4,000.00	20.00	25.43	J-180
OPW	1,000.00	4,000.00	20.00	41.45	J-180
J-1110	1,068.80	4,000.00	20.00	42.59	J-180
J-1100	1,000.00	4,000.00	20.00	41.22	J-1090
J-1600	1,000.00	4,000.00	20.00	41.45	J-180
J-1530	1,000.00	4,000.00	20.00	46.74	J-180
J-80	1,012.04	4,000.00	20.00	33.27	J-180
J-30	1,002.58	4,000.00	20.00	34.80	J-180
J-1510	1,000.00	4,000.00	20.00	46.20	J-180
J-1560	1,012.04	4,000.00	20.00	37.24	J-950

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-770	1,008.60	4,000.00	20.00	29.25	J-180
J-150	1,006.88	4,000.00	20.00	27.59	J-160
J-40	1,008.60	4,000.00	20.00	33.39	J-180
J-1490	1,018.06	4,000.00	20.00	46.17	J-180
J-290	1,008.60	4,000.00	20.00	44.46	J-270
J-370	1,006.02	4,000.00	20.00	45.86	J-180
J-1240	1,006.02	4,000.00	20.00	46.03	J-180
J-270	1,005.16	4,000.00	20.00	43.73	J-280
J-320	1,015.48	4,000.00	20.00	46.32	J-180
J-230	1,012.04	4,000.00	20.00	41.19	J-180
J-260	1,014.62	4,000.00	20.00	45.52	J-180
J-310	1,014.62	4,000.00	20.00	46.23	J-180
J-710	1,000.00	4,000.00	20.00	41.47	J-720
J-1430	1,000.00	4,000.00	20.00	36.38	J-670
J-280	1,002.58	4,000.00	20.00	44.62	J-270
J-1420	1,000.00	4,000.00	20.00	31.25	J-670
J-570	1,014.62	4,000.00	20.00	26.69	J-630
J-660	1,006.88	4,000.00	20.00	26.82	J-670
J-480	1,005.16	4,000.00	20.00	22.20	J-580
J-780	1,005.16	4,000.00	20.00	37.49	J-790
J-800	1,005.16	4,000.00	20.00	25.69	J-860
j-470	1,009.46	4,000.00	20.00	39.42	J-630
J-720	1,001.72	4,000.00	20.00	40.14	J-670
J-1090	1,005.16	4,000.00	20.00	39.97	J-1310
J-1000	1,006.88	4,000.00	20.00	43.94	J-1310
J-1310	1,012.90	4,000.00	20.00	38.34	J-1060
J-1080	1,007.74	4,000.00	20.00	29.64	J-1050
J-1070	1,007.74	4,000.00	20.00	30.59	J-1050
J-1060	1,012.90	4,000.00	20.00	35.45	J-1050
J-140	1,015.48	4,000.00	20.00	23.32	J-1300
J-980	1,011.18	4,000.00	20.00	32.42	J-990
J-960	1,007.74	4,000.00	20.00	40.41	J-1560
J-970	1,002.58	4,000.00	20.00	42.05	J-1320
J-1010	1,016.34	4,000.00	20.00	34.33	J-1050
J-1040	1,012.90	4,000.00	20.00	30.60	J-1050
J-70	1,030.96	4,000.00	20.00	29.17	J-180
J-130	1,014.62	4,000.00	20.00	30.73	J-180
J-210	1,007.74	4,000.00	20.00	38.09	J-180
J-220	1,014.62	4,000.00	20.00	42.42	J-180
J-200	1,001.72	4,000.00	20.00	34.60	J-180
J-1020	1,010.32	4,000.00	20.00	29.81	J-940
J-1030	1,006.88	4,000.00	20.00	25.62	J-940
J-110	1,028.38	4,000.00	20.00	22.61	J-180
J-940	1,011.18	4,000.00	20.00	30.04	J-1030

Scenario: Existing PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-180	1,994.80	Demand	7.22	Fixed	7.22	2,104.99	47.65
J-160	1,992.10	Demand	7.22	Fixed	7.22	2,104.99	48.82
Butler	1,992.00	Demand	0.00	Fixed	0.00	2,104.99	48.86
J-170	1,991.70	Demand	40.41	Fixed	40.41	2,104.99	48.99
J-1120	1,991.40	Demand	20.21	Fixed	20.21	2,104.99	49.12
J-190	1,989.70	Demand	2.89	Fixed	2.89	2,104.99	49.86
J-1130	1,989.50	Demand	14.43	Fixed	14.43	2,104.99	49.94
J-1300	1,987.80	Demand	17.32	Fixed	17.32	2,104.99	50.68
J-90	1,986.58	Demand	12.99	Fixed	12.99	2,105.01	51.21
J-100	1,986.30	Demand	7.22	Fixed	7.22	2,105.00	51.33
J-120	1,985.40	Demand	24.54	Fixed	24.54	2,105.02	51.73
J-110	1,978.30	Demand	47.63	Fixed	47.63	2,105.00	54.79
J-140	1,974.93	Demand	25.98	Fixed	25.98	2,105.01	56.25
J-60	1,974.30	Demand	31.75	Fixed	31.75	2,105.04	56.54
J-770	1,973.60	Demand	14.43	Fixed	14.43	2,105.04	56.84
J-690	1,969.40	Demand	2.89	Fixed	2.89	2,103.04	57.79
J-630	1,969.10	Demand	0.00	Fixed	0.00	2,103.04	57.92
J-670	1,970.00	Demand	7.22	Fixed	7.22	2,104.22	58.04
J-50	1,970.50	Demand	37.52	Fixed	37.52	2,105.09	58.20
J-680	1,969.40	Demand	2.89	Fixed	2.89	2,104.22	58.30
J-720	1,968.40	Demand	2.89	Fixed	2.89	2,104.41	58.82
J-70	1,969.00	Demand	51.96	Fixed	51.96	2,105.06	58.84
J-620	1,966.70	Demand	25.98	Fixed	25.98	2,103.03	58.95
J-610	1,966.50	Demand	2.89	Fixed	2.89	2,102.95	59.01
J-700	1,967.20	Demand	2.89	Fixed	2.89	2,103.82	59.08
J-750	1,966.60	Demand	0.00	Fixed	0.00	2,103.80	59.33
J-1430	1,966.90	Demand	0.00	Fixed	0.00	2,104.36	59.44
J-710	1,966.80	Demand	0.00	Fixed	0.00	2,104.42	59.51
J-270	1,966.90	Demand	8.66	Fixed	8.66	2,104.69	59.59
J-370	1,966.80	Demand	10.10	Fixed	10.10	2,104.63	59.60
J-280	1,966.70	Demand	4.33	Fixed	4.33	2,104.60	59.63
J-660	1,966.30	Demand	11.55	Fixed	11.55	2,104.23	59.64
J-1420	1,966.30	Demand	0.00	Fixed	0.00	2,104.29	59.67
J-730	1,966.30	Demand	0.00	Fixed	0.00	2,104.32	59.69
J-650	1,965.00	Demand	5.77	Fixed	5.77	2,103.76	60.00
J-290	1,965.40	Demand	14.43	Fixed	14.43	2,104.69	60.23
J-260	1,965.30	Demand	24.54	Fixed	24.54	2,104.89	60.36
J-40	1,965.17	Demand	14.43	Fixed	14.43	2,105.17	60.54
J-510	1,963.10	Demand	25.98	Fixed	25.98	2,103.74	60.82
J-360	1,964.00	Demand	23.09	Fixed	23.09	2,104.68	60.83
J-530	1,962.50	Demand	0.00	Fixed	0.00	2,103.27	60.88
J-520	1,963.40	Demand	18.76	Fixed	18.76	2,104.19	60.88
J-1240	1,963.00	Demand	10.10	Fixed	10.10	2,104.96	61.39
J-1260	1,962.40	Demand	27.42	Fixed	27.42	2,104.99	61.66
J-1250	1,962.30	Demand	31.75	Fixed	31.75	2,105.12	61.76
J-250	1,962.50	Demand	23.09	Fixed	23.09	2,105.33	61.77
J-600	1,960.00	Demand	11.55	Fixed	11.55	2,102.95	61.82
J-570	1,959.80	Demand	24.54	Fixed	24.54	2,103.05	61.95
J-590	1,959.00	Demand	14.43	Fixed	14.43	2,102.92	62.24
J-500	1,959.20	Demand	25.98	Fixed	25.98	2,103.17	62.26
J-240	1,961.40	Demand	5.77	Fixed	5.77	2,105.51	62.32

Scenario: Existing PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-640	1,958.50	Demand	8.66	Fixed	8.66	2,102.84	62.42
J-230	1,961.00	Demand	20.21	Fixed	20.21	2,105.55	62.51
J-560	1,958.10	Demand	31.75	Fixed	31.75	2,102.88	62.61
J-490	1,958.00	Demand	37.52	Fixed	37.52	2,103.05	62.72
J-1270	1,960.30	Demand	27.42	Fixed	27.42	2,105.51	62.79
J-80	1,959.90	Demand	20.21	Fixed	20.21	2,105.16	62.82
J-150	1,959.00	Demand	11.55	Fixed	11.55	2,105.06	63.16
J-550	1,956.70	Demand	15.88	Fixed	15.88	2,102.84	63.20
J-210	1,959.00	Demand	12.99	Fixed	12.99	2,105.41	63.31
J-480	1,955.60	Demand	8.66	Fixed	8.66	2,102.85	63.67
J-220	1,958.50	Demand	24.54	Fixed	24.54	2,105.76	63.68
J-580	1,955.50	Demand	23.09	Fixed	23.09	2,102.85	63.72
J-30	1,957.80	Demand	4.33	Fixed	4.33	2,105.22	63.75
J-1290	1,958.00	Demand	17.32	Fixed	17.32	2,105.66	63.85
J-200	1,957.40	Demand	2.89	Fixed	2.89	2,105.27	63.94
J-540	1,954.80	Demand	7.22	Fixed	7.22	2,102.84	64.02
J-450	1,955.00	Demand	30.31	Fixed	30.31	2,103.17	64.08
J-460	1,954.62	Demand	33.19	Fixed	33.19	2,103.02	64.17
J-1490	1,956.50	Demand	30.31	Fixed	30.31	2,105.40	64.39
J-350	1,955.10	Demand	5.77	Fixed	5.77	2,105.21	64.91
J-470	1,952.50	Demand	15.88	Fixed	15.88	2,102.80	65.00
J-310	1,954.70	Demand	24.54	Fixed	24.54	2,105.63	65.27
J-420	1,953.10	Demand	15.88	Fixed	15.88	2,105.12	65.74
J-1280	1,953.40	Demand	27.42	Fixed	27.42	2,105.45	65.75
J-1050	1,949.70	Demand	21.65	Fixed	21.65	2,102.56	66.10
J-430	1,951.20	Demand	36.08	Fixed	36.08	2,104.19	66.16
J-780	1,949.60	Demand	8.66	Fixed	8.66	2,102.61	66.17
J-980	1,949.50	Demand	18.76	Fixed	18.76	2,102.53	66.17
J-1100	1,950.20	Demand	0.00	Fixed	0.00	2,103.24	66.18
J-950	1,949.20	Demand	25.98	Fixed	25.98	2,102.42	66.26
J-1310	1,949.60	Demand	21.65	Fixed	21.65	2,102.84	66.26
J-960	1,949.20	Demand	12.99	Fixed	12.99	2,102.61	66.34
J-790	1,948.70	Demand	5.77	Fixed	5.77	2,102.44	66.48
J-990	1,948.70	Demand	2.89	Fixed	2.89	2,102.48	66.50
J-139	1,949.20	Demand	0.00	Fixed	0.00	2,103.01	66.51
J-970	1,948.90	Demand	4.33	Fixed	4.33	2,102.80	66.55
J-1010	1,948.70	Demand	27.42	Fixed	27.42	2,102.62	66.56
J-320	1,952.00	Demand	25.98	Fixed	25.98	2,105.94	66.57
J-1000	1,948.90	Demand	11.55	Fixed	11.55	2,103.00	66.64
J-1090	1,948.60	Demand	8.66	Fixed	8.66	2,103.04	66.78
J-850	1,947.60	Demand	18.76	Fixed	18.76	2,102.13	66.82
J-440	1,948.90	Demand	36.08	Fixed	36.08	2,103.43	66.83
J-1110	1,948.90	Demand	30.02	Fixed	30.02	2,104.13	67.13
J-1500	1,951.00	Demand	15.88	Fixed	15.88	2,106.28	67.15
J-1570	1,946.30	Demand	10.10	Fixed	10.10	2,101.91	67.29
J-940	1,946.50	Demand	18.76	Fixed	18.76	2,102.44	67.43
J-1320	1,946.70	Demand	11.55	Fixed	11.55	2,102.64	67.44
J-930	1,945.70	Demand	18.76	Fixed	18.76	2,101.83	67.52
J-860	1,945.80	Demand	7.22	Fixed	7.22	2,101.95	67.53
J-1560	1,945.85	Demand	20.21	Fixed	20.21	2,102.47	67.73
J-1360	1,944.80	Demand	20.21	Fixed	20.21	2,101.83	67.90

Scenario: Existing PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1340	1,945.20	Demand	18.76	Fixed	18.76	2,102.32	67.94
J-1400	1,944.60	Demand	10.10	Fixed	10.10	2,102.00	68.06
J-1390	1,944.10	Demand	17.32	Fixed	17.32	2,101.88	68.23
NPW	1,947.60	Demand	0.00	Fixed	0.00	2,105.40	68.24
J-800	1,944.40	Demand	8.66	Fixed	8.66	2,102.28	68.27
J-1510	1,947.50	Demand	0.00	Fixed	0.00	2,105.40	68.28
J-830	1,944.10	Demand	4.33	Fixed	4.33	2,102.02	68.29
J-820	1,944.10	Demand	14.43	Fixed	14.43	2,102.05	68.30
J-130	1,947.00	Demand	24.54	Fixed	24.54	2,105.11	68.37
J-880	1,943.70	Demand	17.32	Fixed	17.32	2,101.83	68.38
J-1410	1,943.60	Demand	14.43	Fixed	14.43	2,101.88	68.44
J-1370	1,943.30	Demand	17.32	Fixed	17.32	2,101.80	68.54
J-1060	1,944.00	Demand	21.65	Fixed	21.65	2,102.66	68.61
J-870	1,943.20	Demand	5.77	Fixed	5.77	2,101.88	68.62
J-20	1,946.70	Demand	11.55	Fixed	11.55	2,105.39	68.62
J-910	1,943.10	Demand	17.32	Fixed	17.32	2,101.81	68.63
J-840	1,943.10	Demand	21.65	Fixed	21.65	2,101.90	68.67
J-1350	1,942.60	Demand	17.32	Fixed	17.32	2,101.81	68.85
J-890	1,942.60	Demand	15.88	Fixed	15.88	2,101.83	68.86
J-1330	1,942.50	Demand	17.32	Fixed	17.32	2,101.90	68.93
J-1520	1,946.80	Demand	0.00	Fixed	0.00	2,106.32	68.98
J-1380	1,942.20	Demand	17.32	Fixed	17.32	2,101.83	69.03
OPW	1,945.60	Demand	0.00	Fixed	0.00	2,105.82	69.28
J-900	1,941.30	Demand	11.55	Fixed	11.55	2,101.80	69.41
J-1600	1,944.80	Demand	0.00	Fixed	0.00	2,105.82	69.63
J-1530	1,945.30	Demand	0.00	Fixed	0.00	2,106.58	69.74
J-1540	1,943.80	Demand	10.10	Fixed	10.10	2,106.12	70.19
J-1140	1,942.50	Demand	7.22	Fixed	7.22	2,106.10	70.75
J-1030	1,936.70	Demand	11.55	Fixed	11.55	2,102.45	71.68
J-1070	1,935.50	Demand	12.99	Fixed	12.99	2,102.58	72.25
J-920	1,934.70	Demand	12.99	Fixed	12.99	2,101.81	72.26
J-1020	1,932.20	Demand	17.32	Fixed	17.32	2,102.47	73.63
J-1040	1,931.10	Demand	21.65	Fixed	21.65	2,102.52	74.13
J-1080	1,929.40	Demand	12.99	Fixed	12.99	2,102.55	74.88

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

COMMERCIAL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-690	2,002.15	2,217.93	20.00	37.82	J-630
J-610	2,002.15	2,336.00	20.00	32.25	J-600
J-1300	2,012.90	3,525.82	20.00	21.82	J-1130
J-240	2,004.30	4,000.00	20.00	39.55	J-180
J-250	2,017.20	4,000.00	20.00	43.84	J-180
J-360	2,017.20	4,000.00	20.00	45.52	J-180
J-510	2,022.27	4,000.00	20.00	43.48	J-700
J-310	2,018.28	4,000.00	20.00	45.88	J-180
J-1100	2,000.00	4,000.00	20.00	39.64	J-1090
J-320	2,019.35	4,000.00	20.00	45.98	J-180
J-1310	2,016.13	4,000.00	20.00	36.57	J-1060
J-270	2,006.45	4,000.00	20.00	43.04	J-280
J-200	2,002.15	4,000.00	20.00	33.70	J-180
J-1240	2,007.53	4,000.00	20.00	45.63	J-180
J-210	2,009.68	4,000.00	20.00	37.24	J-180
J-260	2,018.28	4,000.00	20.00	45.09	J-180
J-490	2,027.95	4,000.00	20.00	34.49	J-630
J-1010	2,020.43	4,000.00	20.00	32.50	J-1050
J-440	2,026.88	4,000.00	20.00	42.42	J-630
J-680	2,002.15	3,815.67	20.00	21.38	J-670
J-660	2,008.60	4,000.00	20.00	25.83	J-670
J-370	2,007.53	4,000.00	20.00	45.45	J-180
J-1070	2,009.68	4,000.00	20.00	28.70	J-1050
J-420	2,011.83	4,000.00	20.00	45.69	J-180
J-1060	2,016.13	4,000.00	20.00	33.60	J-1050
J-1430	2,000.00	4,000.00	20.00	35.44	J-670
J-130	2,018.28	4,000.00	20.00	29.79	J-180
J-1490	2,022.58	4,000.00	20.00	45.80	J-180
J-138	2,003.23	4,000.00	20.00	39.58	J-280
J-140	2,019.35	4,000.00	20.00	22.34	J-1300

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

ALL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1140	1,005.38	438.79	20.00	41.32	J-1540
J-1540	1,007.53	595.58	20.00	20.56	J-1140
J-640	1,013.27	1,242.78	20.00	47.30	J-180
J-148	1,000.00	1,635.15	20.00	47.49	J-180
J-900	1,008.60	2,071.72	20.00	32.86	J-1370
J-190	1,002.15	2,088.75	20.00	35.38	J-180
J-890	1,011.83	2,182.93	20.00	37.87	J-1380
J-690	1,002.15	2,217.93	20.00	37.82	J-630
J-1350	1,012.90	2,333.47	20.00	33.82	J-920
J-610	1,002.15	2,336.01	20.00	32.25	J-600
J-920	1,009.68	2,394.76	20.00	28.85	J-1350
J-1410	1,010.75	2,448.41	20.00	28.25	J-870
J-1360	1,015.05	2,459.83	20.00	32.74	J-930
J-1370	1,012.90	2,461.48	20.00	20.90	J-900
J-1380	1,012.90	2,465.23	20.00	29.23	J-890
J-1280	1,020.43	2,510.76	20.00	43.92	J-180
J-860	1,005.38	2,535.11	20.00	34.34	J-870
J-870	1,004.30	2,566.01	20.00	23.86	J-1410
J-180	1,005.38	2,567.29	20.00	31.25	J-190
J-1390	1,012.90	2,593.75	20.00	28.96	J-1410
J-930	1,013.98	2,641.11	20.00	28.30	J-1360
J-1330	1,012.90	2,676.54	20.00	34.01	J-1570
J-600	1,008.60	2,693.75	20.00	20.00	J-610
J-1260	1,020.43	2,704.53	20.00	46.63	J-180
J-910	1,012.90	2,722.56	20.00	20.00	J-1370
J-590	1,010.75	2,730.39	20.00	25.66	J-610
J-550	1,011.83	2,866.03	20.00	20.00	J-640
J-630	1,000.00	2,871.48	20.00	23.99	J-690
J-1570	1,007.53	2,935.65	20.00	26.65	J-930
J-1340	1,013.98	2,985.25	20.00	44.76	J-860
J-1250	1,023.65	3,015.24	20.00	46.34	J-180
J-1400	1,007.53	3,019.63	20.00	22.06	J-860
J-880	1,012.90	3,031.03	20.00	20.42	J-1370
Butler Well	1,000.00	3,145.36	20.00	22.24	J-160
J-1270	1,020.43	3,167.44	20.00	45.72	J-180
J-620	1,019.35	3,254.17	20.00	20.00	J-630
J-1290	1,012.90	3,262.91	20.00	41.31	J-1280
J-137	1,000.00	3,276.96	20.00	20.00	J-640
J-160	1,009.80	3,294.49	20.00	20.04	Butler We
J-840	1,016.13	3,322.14	20.00	20.14	J-1390
J-1120	1,015.05	3,351.67	20.00	21.00	J-160
J-540	1,012.77	3,353.18	20.00	21.30	J-640
J-1130	1,010.75	3,364.99	20.00	21.39	J-160
J-1320	1,008.60	3,429.67	20.00	41.41	J-980
J-750	1,014.36	3,453.57	20.00	39.88	J-700
J-90	1,009.68	3,489.14	20.00	25.40	J-100
J-850	1,013.98	3,517.88	20.00	26.79	J-1570
J-1300	1,012.90	3,525.80	20.00	21.82	J-1130
J-170	1,030.10	3,563.89	20.00	20.00	J-180
J-830	1,003.23	3,577.83	20.00	20.00	J-860
J-560	1,023.65	3,581.33	20.00	28.71	J-590

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-820	1,010.75	3,649.54	20.00	20.00	J-860
J-100	1,005.38	3,655.81	20.00	22.56	J-90
J-650	1,004.30	3,680.66	20.00	37.87	J-750
J-1050	1,016.13	3,684.24	20.00	37.52	J-1010
J-990	1,002.15	3,722.59	20.00	35.22	J-980
J-680	1,002.15	3,815.66	20.00	21.38	J-670
J-670	1,005.38	3,886.15	20.00	20.29	J-680
J-940	1,013.98	3,967.13	20.00	28.71	J-1030
J-580	1,017.20	3,979.40	20.00	20.90	J-480
J-480	1,006.45	3,990.39	20.00	20.67	J-580
J-120	1,018.28	4,000.00	20.00	24.46	J-180
J-310	1,018.28	4,000.00	20.00	45.88	J-180
J-200	1,002.15	4,000.00	20.00	33.70	J-180
J-220	1,018.28	4,000.00	20.00	41.73	J-180
J-260	1,018.28	4,000.00	20.00	45.09	J-180
J-290	1,010.75	4,000.00	20.00	43.87	J-270
J-270	1,006.45	4,000.00	20.00	43.04	J-280
J-450	1,022.58	4,000.00	20.00	38.78	J-630
J-1090	1,006.45	4,000.00	20.00	38.33	J-1310
J-130	1,018.28	4,000.00	20.00	29.79	J-180
J-770	1,010.75	4,000.00	20.00	28.34	J-180
J-40	1,010.75	4,000.00	20.00	32.56	J-180
J-1490	1,022.58	4,000.00	20.00	45.80	J-180
J-780	1,006.45	4,000.00	20.00	35.60	J-790
J-141	1,006.45	4,000.00	20.00	45.83	J-180
J-147	1,006.45	4,000.00	20.00	23.68	J-940
J-720	1,002.15	4,000.00	20.00	39.21	J-670
J-143	1,002.15	4,000.00	20.00	46.20	J-180
J-570	1,018.28	4,000.00	20.00	25.13	J-630
J-800	1,006.45	4,000.00	20.00	23.41	J-860
J-440	1,026.88	4,000.00	20.00	42.42	J-630
J-430	1,026.88	4,000.00	20.00	45.36	J-180
J-146	1,031.07	4,000.00	20.00	46.43	J-180
J-138	1,003.23	4,000.00	20.00	39.58	J-280
J-1500	1,011.83	4,000.00	20.00	45.89	J-180
J-420	1,011.83	4,000.00	20.00	45.69	J-180
J-730	1,000.00	4,000.00	20.00	42.04	J-670
J-20	1,008.60	4,000.00	20.00	38.63	J-180
J-50	1,027.95	4,000.00	20.00	31.80	J-180
J-700	1,006.00	4,000.00	20.00	32.35	J-750
J-520	1,013.98	4,000.00	20.00	45.36	J-180
J-510	1,022.27	4,000.00	20.00	43.48	J-700
J-530	1,008.56	4,000.00	20.00	37.70	J-500
J-240	1,004.30	4,000.00	20.00	39.55	J-180
J-30	1,003.23	4,000.00	20.00	33.95	J-180
J-150	1,008.60	4,000.00	20.00	26.61	J-160
J-80	1,015.05	4,000.00	20.00	32.41	J-180
J-142	1,000.00	4,000.00	20.00	45.72	J-180
J-139	1,000.00	4,000.00	20.00	42.78	J-630
J-145	1,013.98	4,000.00	20.00	31.64	J-980
J-1510	1,000.00	4,000.00	20.00	45.83	J-180

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1560	1,015.05	4,000.00	20.00	35.30	J-950
J-1100	1,000.00	4,000.00	20.00	39.64	J-1090
J-1530	1,000.00	4,000.00	20.00	46.45	J-180
NPW	1,000.00	4,000.00	20.00	45.83	J-180
J-1520	1,000.00	4,000.00	20.00	46.33	J-180
J-1600	1,000.00	4,000.00	20.00	40.77	J-180
J-144	1,000.00	4,000.00	20.00	46.95	J-180
J-1110	1,086.00	4,000.00	20.00	41.99	J-180
OPW	1,000.00	4,000.00	20.00	40.77	J-180
J-320	1,019.35	4,000.00	20.00	45.98	J-180
J-250	1,017.20	4,000.00	20.00	43.84	J-180
J-230	1,015.05	4,000.00	20.00	40.42	J-180
J-350	1,004.30	4,000.00	20.00	45.74	J-180
J-70	1,038.70	4,000.00	20.00	28.25	J-180
J-110	1,035.48	4,000.00	20.00	21.63	J-180
J-140	1,019.35	4,000.00	20.00	22.34	J-1300
J-210	1,009.68	4,000.00	20.00	37.24	J-180
J-280	1,003.23	4,000.00	20.00	43.98	J-270
J-710	1,000.00	4,000.00	20.00	40.60	J-720
J-660	1,008.60	4,000.00	20.00	25.83	J-670
J-1420	1,000.00	4,000.00	20.00	30.28	J-670
J-1430	1,000.00	4,000.00	20.00	35.44	J-670
J-370	1,007.53	4,000.00	20.00	45.45	J-180
J-470	1,011.83	4,000.00	20.00	37.92	J-630
J-790	1,004.30	4,000.00	20.00	29.68	J-800
J-1240	1,007.53	4,000.00	20.00	45.63	J-180
J-360	1,017.20	4,000.00	20.00	45.52	J-180
J-60	1,023.65	4,000.00	20.00	27.45	J-90
J-970	1,003.23	4,000.00	20.00	40.30	J-1320
J-980	1,013.98	4,000.00	20.00	30.54	J-990
J-1010	1,020.43	4,000.00	20.00	32.50	J-1050
J-960	1,009.68	4,000.00	20.00	38.56	J-1560
J-490	1,027.95	4,000.00	20.00	34.49	J-630
J-500	1,019.35	4,000.00	20.00	35.74	J-530
J-950	1,019.35	4,000.00	20.00	33.02	J-850
J-1020	1,012.90	4,000.00	20.00	27.87	J-940
J-1040	1,016.13	4,000.00	20.00	28.73	J-1050
J-1030	1,008.60	4,000.00	20.00	23.68	J-940
J-1080	1,009.68	4,000.00	20.00	27.76	J-1050
J-1000	1,008.60	4,000.00	20.00	42.30	J-1310
J-1310	1,016.13	4,000.00	20.00	36.57	J-1060
J-1070	1,009.68	4,000.00	20.00	28.70	J-1050
J-1060	1,016.13	4,000.00	20.00	33.60	J-1050
J-460	1,024.73	4,000.00	20.00	37.22	J-630

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-180	1,994.80	Demand	9.02	Fixed	9.02	2,103.96	47.20
J-160	1,992.10	Demand	9.02	Fixed	9.02	2,103.96	48.37
Butler	1,992.00	Demand	0.00	Fixed	0.00	2,103.96	48.41
J-170	1,991.70	Demand	50.51	Fixed	50.51	2,103.96	48.54
J-1120	1,991.40	Demand	25.26	Fixed	25.26	2,103.96	48.67
J-190	1,989.70	Demand	3.61	Fixed	3.61	2,103.97	49.41
J-1130	1,989.50	Demand	18.04	Fixed	18.04	2,103.96	49.50
J-1300	1,987.80	Demand	21.65	Fixed	21.65	2,103.97	50.24
J-90	1,986.58	Demand	16.24	Fixed	16.24	2,103.99	50.77
J-100	1,986.30	Demand	9.02	Fixed	9.02	2,103.98	50.89
J-120	1,985.40	Demand	30.67	Fixed	30.67	2,104.01	51.29
J-110	1,978.30	Demand	59.53	Fixed	59.53	2,103.98	54.35
J-140	1,974.93	Demand	32.47	Fixed	32.47	2,104.00	55.81
J-60	1,974.30	Demand	39.69	Fixed	39.69	2,104.03	56.10
J-770	1,973.60	Demand	18.04	Fixed	18.04	2,104.04	56.41
J-690	1,969.40	Demand	3.61	Fixed	3.61	2,101.02	56.92
J-630	1,969.10	Demand	0.00	Fixed	0.00	2,101.02	57.05
J-670	1,970.00	Demand	9.02	Fixed	9.02	2,102.79	57.42
J-680	1,969.40	Demand	3.61	Fixed	3.61	2,102.79	57.68
J-50	1,970.50	Demand	46.91	Fixed	46.91	2,104.11	57.78
J-620	1,966.70	Demand	32.47	Fixed	32.47	2,101.00	58.08
J-610	1,966.50	Demand	3.61	Fixed	3.61	2,100.88	58.11
J-720	1,968.40	Demand	3.61	Fixed	3.61	2,103.09	58.25
J-700	1,967.20	Demand	3.61	Fixed	3.61	2,102.19	58.37
J-70	1,969.00	Demand	64.95	Fixed	64.95	2,104.07	58.41
J-750	1,966.60	Demand	0.00	Fixed	0.00	2,102.17	58.62
J-1430	1,966.90	Demand	0.00	Fixed	0.00	2,103.02	58.86
J-710	1,966.80	Demand	0.00	Fixed	0.00	2,103.10	58.94
J-660	1,966.30	Demand	14.43	Fixed	14.43	2,102.81	59.03
J-1420	1,966.30	Demand	0.00	Fixed	0.00	2,102.91	59.07
J-270	1,966.90	Demand	10.82	Fixed	10.82	2,103.51	59.08
J-370	1,966.80	Demand	12.63	Fixed	12.63	2,103.42	59.08
J-730	1,966.30	Demand	0.00	Fixed	0.00	2,102.95	59.09
J-280	1,966.70	Demand	5.41	Fixed	5.41	2,103.37	59.10
J-650	1,965.00	Demand	7.22	Fixed	7.22	2,102.10	59.29
J-290	1,965.40	Demand	18.04	Fixed	18.04	2,103.51	59.72
J-260	1,965.30	Demand	30.67	Fixed	30.67	2,103.81	59.90
J-530	1,962.50	Demand	0.00	Fixed	0.00	2,101.37	60.05
J-510	1,963.10	Demand	32.47	Fixed	32.47	2,102.07	60.09
J-40	1,965.17	Demand	18.04	Fixed	18.04	2,104.23	60.13
J-520	1,963.40	Demand	23.45	Fixed	23.45	2,102.76	60.26
J-360	1,964.00	Demand	28.86	Fixed	28.86	2,103.49	60.32
J-600	1,960.00	Demand	14.43	Fixed	14.43	2,100.88	60.92
J-1240	1,963.00	Demand	12.63	Fixed	12.63	2,103.92	60.94
J-570	1,959.80	Demand	30.67	Fixed	30.67	2,101.03	61.07
J-1260	1,962.40	Demand	34.28	Fixed	34.28	2,103.96	61.21
J-590	1,959.00	Demand	18.04	Fixed	18.04	2,100.83	61.33
J-1250	1,962.30	Demand	39.69	Fixed	39.69	2,104.17	61.35
J-250	1,962.50	Demand	28.86	Fixed	28.86	2,104.48	61.40
J-500	1,959.20	Demand	32.47	Fixed	32.47	2,101.22	61.41
J-640	1,958.50	Demand	10.82	Fixed	10.82	2,100.71	61.50

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-560	1,958.10	Demand	39.69	Fixed	39.69	2,100.78	61.70
J-490	1,958.00	Demand	46.91	Fixed	46.91	2,101.03	61.85
J-240	1,961.40	Demand	7.22	Fixed	7.22	2,104.75	61.99
J-230	1,961.00	Demand	25.26	Fixed	25.26	2,104.81	62.19
J-550	1,956.70	Demand	19.84	Fixed	19.84	2,100.72	62.28
J-80	1,959.90	Demand	25.26	Fixed	25.26	2,104.23	62.41
J-1270	1,960.30	Demand	34.28	Fixed	34.28	2,104.74	62.46
J-150	1,959.00	Demand	14.43	Fixed	14.43	2,104.07	62.73
J-480	1,955.60	Demand	10.82	Fixed	10.82	2,100.72	62.76
J-580	1,955.50	Demand	28.86	Fixed	28.86	2,100.73	62.80
J-210	1,959.00	Demand	16.24	Fixed	16.24	2,104.59	62.96
J-540	1,954.80	Demand	9.02	Fixed	9.02	2,100.72	63.10
J-450	1,955.00	Demand	37.88	Fixed	37.88	2,101.22	63.23
J-460	1,954.62	Demand	41.49	Fixed	41.49	2,100.98	63.29
J-30	1,957.80	Demand	5.41	Fixed	5.41	2,104.31	63.36
J-220	1,958.50	Demand	30.67	Fixed	30.67	2,105.13	63.41
J-1290	1,958.00	Demand	21.65	Fixed	21.65	2,104.97	63.55
J-200	1,957.40	Demand	3.61	Fixed	3.61	2,104.38	63.56
J-1490	1,956.50	Demand	37.88	Fixed	37.88	2,104.58	64.04
j-470	1,952.50	Demand	19.84	Fixed	19.84	2,100.66	64.07
J-350	1,955.10	Demand	7.22	Fixed	7.22	2,104.30	64.52
J-310	1,954.70	Demand	30.67	Fixed	30.67	2,104.93	64.97
J-1050	1,949.70	Demand	27.06	Fixed	27.06	2,100.29	65.12
J-980	1,949.50	Demand	23.45	Fixed	23.45	2,100.24	65.19
J-780	1,949.60	Demand	10.82	Fixed	10.82	2,100.37	65.20
J-950	1,949.20	Demand	32.47	Fixed	32.47	2,100.09	65.25
J-420	1,953.10	Demand	19.84	Fixed	19.84	2,104.15	65.32
J-1310	1,949.60	Demand	27.06	Fixed	27.06	2,100.71	65.34
J-1100	1,950.20	Demand	0.00	Fixed	0.00	2,101.32	65.35
J-960	1,949.20	Demand	16.24	Fixed	16.24	2,100.37	65.37
J-1280	1,953.40	Demand	34.28	Fixed	34.28	2,104.65	65.41
J-790	1,948.70	Demand	7.22	Fixed	7.22	2,100.11	65.47
J-990	1,948.70	Demand	3.61	Fixed	3.61	2,100.16	65.50
J-430	1,951.20	Demand	45.10	Fixed	45.10	2,102.76	65.54
J-1010	1,948.70	Demand	34.28	Fixed	34.28	2,100.37	65.59
J-970	1,948.90	Demand	5.41	Fixed	5.41	2,100.65	65.62
J-139	1,949.20	Demand	0.00	Fixed	0.00	2,100.97	65.63
J-850	1,947.60	Demand	23.45	Fixed	23.45	2,099.64	65.75
J-1000	1,948.90	Demand	14.43	Fixed	14.43	2,100.96	65.76
J-1090	1,948.60	Demand	10.82	Fixed	10.82	2,101.01	65.91
J-440	1,948.90	Demand	45.10	Fixed	45.10	2,101.61	66.04
J-1570	1,946.30	Demand	12.63	Fixed	12.63	2,099.32	66.17
J-320	1,952.00	Demand	32.47	Fixed	32.47	2,105.39	66.33
J-930	1,945.70	Demand	23.45	Fixed	23.45	2,099.19	66.37
J-860	1,945.80	Demand	9.02	Fixed	9.02	2,099.37	66.41
J-940	1,946.50	Demand	23.45	Fixed	23.45	2,100.11	66.43
J-1320	1,946.70	Demand	14.43	Fixed	14.43	2,100.42	66.47
J-1110	1,948.90	Demand	37.52	Fixed	37.52	2,102.67	66.49
J-1560	1,945.85	Demand	25.26	Fixed	25.26	2,100.15	66.73
J-1360	1,944.80	Demand	25.26	Fixed	25.26	2,099.18	66.76
J-1340	1,945.20	Demand	23.45	Fixed	23.45	2,099.93	66.91

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1400	1,944.60	Demand	12.63	Fixed	12.63	2,099.44	66.96
J-1500	1,951.00	Demand	19.84	Fixed	19.84	2,105.92	66.99
J-1390	1,944.10	Demand	21.65	Fixed	21.65	2,099.26	67.10
J-830	1,944.10	Demand	5.41	Fixed	5.41	2,099.48	67.19
J-820	1,944.10	Demand	18.04	Fixed	18.04	2,099.52	67.21
J-800	1,944.40	Demand	10.82	Fixed	10.82	2,099.86	67.23
J-880	1,943.70	Demand	21.65	Fixed	21.65	2,099.19	67.24
J-1410	1,943.60	Demand	18.04	Fixed	18.04	2,099.26	67.31
J-1370	1,943.30	Demand	21.65	Fixed	21.65	2,099.15	67.39
J-910	1,943.10	Demand	21.65	Fixed	21.65	2,099.16	67.48
J-870	1,943.20	Demand	7.22	Fixed	7.22	2,099.26	67.48
J-840	1,943.10	Demand	27.06	Fixed	27.06	2,099.29	67.54
J-1060	1,944.00	Demand	27.06	Fixed	27.06	2,100.44	67.65
J-1350	1,942.60	Demand	21.65	Fixed	21.65	2,099.15	67.70
J-890	1,942.60	Demand	19.84	Fixed	19.84	2,099.19	67.71
J-1330	1,942.50	Demand	21.65	Fixed	21.65	2,099.29	67.80
J-1380	1,942.20	Demand	21.65	Fixed	21.65	2,099.18	67.89
NPW	1,947.60	Demand	0.00	Fixed	0.00	2,104.59	67.89
J-1510	1,947.50	Demand	0.00	Fixed	0.00	2,104.59	67.93
J-130	1,947.00	Demand	30.67	Fixed	30.67	2,104.15	67.96
J-900	1,941.30	Demand	14.43	Fixed	14.43	2,099.15	68.26
J-20	1,946.70	Demand	14.43	Fixed	14.43	2,104.57	68.27
J-1520	1,946.80	Demand	0.00	Fixed	0.00	2,105.97	68.83
OPW	1,945.60	Demand	0.00	Fixed	0.00	2,105.21	69.02
J-1600	1,944.80	Demand	0.00	Fixed	0.00	2,105.21	69.37
J-1530	1,945.30	Demand	0.00	Fixed	0.00	2,106.37	69.65
J-1540	1,943.80	Demand	12.63	Fixed	12.63	2,105.68	70.00
J-1140	1,942.50	Demand	9.02	Fixed	9.02	2,105.64	70.55
J-1030	1,936.70	Demand	14.43	Fixed	14.43	2,100.13	70.67
J-920	1,934.70	Demand	16.24	Fixed	16.24	2,099.16	71.12
J-1070	1,935.50	Demand	16.24	Fixed	16.24	2,100.32	71.27
J-1020	1,932.20	Demand	21.65	Fixed	21.65	2,100.16	72.63
J-1040	1,931.10	Demand	27.06	Fixed	27.06	2,100.23	73.14
J-1080	1,929.40	Demand	16.24	Fixed	16.24	2,100.28	73.90

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

COMMERCIAL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-690	2,002.15	2,217.93	20.00	37.82	J-630
J-610	2,002.15	2,336.00	20.00	32.25	J-600
J-1300	2,012.90	3,525.82	20.00	21.82	J-1130
J-240	2,004.30	4,000.00	20.00	39.55	J-180
J-250	2,017.20	4,000.00	20.00	43.84	J-180
J-360	2,017.20	4,000.00	20.00	45.52	J-180
J-510	2,022.27	4,000.00	20.00	43.48	J-700
J-310	2,018.28	4,000.00	20.00	45.88	J-180
J-1100	2,000.00	4,000.00	20.00	39.64	J-1090
J-320	2,019.35	4,000.00	20.00	45.98	J-180
J-1310	2,016.13	4,000.00	20.00	36.57	J-1060
J-270	2,006.45	4,000.00	20.00	43.04	J-280
J-200	2,002.15	4,000.00	20.00	33.70	J-180
J-1240	2,007.53	4,000.00	20.00	45.63	J-180
J-210	2,009.68	4,000.00	20.00	37.24	J-180
J-260	2,018.28	4,000.00	20.00	45.09	J-180
J-490	2,027.95	4,000.00	20.00	34.49	J-630
J-1010	2,020.43	4,000.00	20.00	32.50	J-1050
J-440	2,026.88	4,000.00	20.00	42.42	J-630
J-680	2,002.15	3,815.67	20.00	21.38	J-670
J-660	2,008.60	4,000.00	20.00	25.83	J-670
J-370	2,007.53	4,000.00	20.00	45.45	J-180
J-1070	2,009.68	4,000.00	20.00	28.70	J-1050
J-420	2,011.83	4,000.00	20.00	45.69	J-180
J-1060	2,016.13	4,000.00	20.00	33.60	J-1050
J-1430	2,000.00	4,000.00	20.00	35.44	J-670
J-130	2,018.28	4,000.00	20.00	29.79	J-180
J-1490	2,022.58	4,000.00	20.00	45.80	J-180
J-138	2,003.23	4,000.00	20.00	39.58	J-280
J-140	2,019.35	4,000.00	20.00	22.34	J-1300

© Haestad Methods, Inc.
Varela & Associates
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

ALL NODES

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1140	1,005.38	438.79	20.00	41.32	J-1540
J-1540	1,007.53	595.58	20.00	20.56	J-1140
J-640	1,013.27	1,242.78	20.00	47.30	J-180
J-148	1,000.00	1,635.15	20.00	47.49	J-180
J-900	1,008.60	2,071.72	20.00	32.86	J-1370
J-190	1,002.15	2,088.75	20.00	35.38	J-180
J-890	1,011.83	2,182.93	20.00	37.87	J-1380
J-690	1,002.15	2,217.93	20.00	37.82	J-630
J-1350	1,012.90	2,333.47	20.00	33.82	J-920
J-610	1,002.15	2,336.01	20.00	32.25	J-600
J-920	1,009.68	2,394.76	20.00	28.85	J-1350
J-1410	1,010.75	2,448.41	20.00	28.25	J-870
J-1360	1,015.05	2,459.83	20.00	32.74	J-930
J-1370	1,012.90	2,461.48	20.00	20.90	J-900
J-1380	1,012.90	2,465.23	20.00	29.23	J-890
J-1280	1,020.43	2,510.76	20.00	43.92	J-180
J-860	1,005.38	2,535.11	20.00	34.34	J-870
J-870	1,004.30	2,566.01	20.00	23.86	J-1410
J-180	1,005.38	2,567.29	20.00	31.25	J-190
J-1390	1,012.90	2,593.75	20.00	28.96	J-1410
J-930	1,013.98	2,641.11	20.00	28.30	J-1360
J-1330	1,012.90	2,676.54	20.00	34.01	J-1570
J-600	1,008.60	2,693.75	20.00	20.00	J-610
J-1260	1,020.43	2,704.53	20.00	46.63	J-180
J-910	1,012.90	2,722.56	20.00	20.00	J-1370
J-590	1,010.75	2,730.39	20.00	25.66	J-610
J-550	1,011.83	2,866.03	20.00	20.00	J-640
J-630	1,000.00	2,871.48	20.00	23.99	J-690
J-1570	1,007.53	2,935.65	20.00	26.65	J-930
J-1340	1,013.98	2,985.25	20.00	44.76	J-860
J-1250	1,023.65	3,015.24	20.00	46.34	J-180
J-1400	1,007.53	3,019.63	20.00	22.06	J-860
J-880	1,012.90	3,031.03	20.00	20.42	J-1370
Butler Well	1,000.00	3,145.36	20.00	22.24	J-160
J-1270	1,020.43	3,167.44	20.00	45.72	J-180
J-620	1,019.35	3,254.17	20.00	20.00	J-630
J-1290	1,012.90	3,262.91	20.00	41.31	J-1280
J-137	1,000.00	3,276.96	20.00	20.00	J-640
J-160	1,009.80	3,294.49	20.00	20.04	Butler We
J-840	1,016.13	3,322.14	20.00	20.14	J-1390
J-1120	1,015.05	3,351.67	20.00	21.00	J-160
J-540	1,012.77	3,353.18	20.00	21.30	J-640
J-1130	1,010.75	3,364.99	20.00	21.39	J-160
J-1320	1,008.60	3,429.67	20.00	41.41	J-980
J-750	1,014.36	3,453.57	20.00	39.88	J-700
J-90	1,009.68	3,489.14	20.00	25.40	J-100
J-850	1,013.98	3,517.88	20.00	26.79	J-1570
J-1300	1,012.90	3,525.80	20.00	21.82	J-1130
J-170	1,030.10	3,563.89	20.00	20.00	J-180
J-830	1,003.23	3,577.83	20.00	20.00	J-860
J-560	1,023.65	3,581.33	20.00	28.71	J-590

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-820	1,010.75	3,649.54	20.00	20.00	J-860
J-100	1,005.38	3,655.81	20.00	22.56	J-90
J-650	1,004.30	3,680.66	20.00	37.87	J-750
J-1050	1,016.13	3,684.24	20.00	37.52	J-1010
J-990	1,002.15	3,722.59	20.00	35.22	J-980
J-680	1,002.15	3,815.66	20.00	21.38	J-670
J-670	1,005.38	3,886.15	20.00	20.29	J-680
J-940	1,013.98	3,967.13	20.00	28.71	J-1030
J-580	1,017.20	3,979.40	20.00	20.90	J-480
J-480	1,006.45	3,990.39	20.00	20.67	J-580
J-120	1,018.28	4,000.00	20.00	24.46	J-180
J-310	1,018.28	4,000.00	20.00	45.88	J-180
J-200	1,002.15	4,000.00	20.00	33.70	J-180
J-220	1,018.28	4,000.00	20.00	41.73	J-180
J-260	1,018.28	4,000.00	20.00	45.09	J-180
J-290	1,010.75	4,000.00	20.00	43.87	J-270
J-270	1,006.45	4,000.00	20.00	43.04	J-280
J-450	1,022.58	4,000.00	20.00	38.78	J-630
J-1090	1,006.45	4,000.00	20.00	38.33	J-1310
J-130	1,018.28	4,000.00	20.00	29.79	J-180
J-770	1,010.75	4,000.00	20.00	28.34	J-180
J-40	1,010.75	4,000.00	20.00	32.56	J-180
J-1490	1,022.58	4,000.00	20.00	45.80	J-180
J-780	1,006.45	4,000.00	20.00	35.60	J-790
J-141	1,006.45	4,000.00	20.00	45.83	J-180
J-147	1,006.45	4,000.00	20.00	23.68	J-940
J-720	1,002.15	4,000.00	20.00	39.21	J-670
J-143	1,002.15	4,000.00	20.00	46.20	J-180
J-570	1,018.28	4,000.00	20.00	25.13	J-630
J-800	1,006.45	4,000.00	20.00	23.41	J-860
J-440	1,026.88	4,000.00	20.00	42.42	J-630
J-430	1,026.88	4,000.00	20.00	45.36	J-180
J-146	1,031.07	4,000.00	20.00	46.43	J-180
J-138	1,003.23	4,000.00	20.00	39.58	J-280
J-1500	1,011.83	4,000.00	20.00	45.89	J-180
J-420	1,011.83	4,000.00	20.00	45.69	J-180
J-730	1,000.00	4,000.00	20.00	42.04	J-670
J-20	1,008.60	4,000.00	20.00	38.63	J-180
J-50	1,027.95	4,000.00	20.00	31.80	J-180
J-700	1,006.00	4,000.00	20.00	32.35	J-750
J-520	1,013.98	4,000.00	20.00	45.36	J-180
J-510	1,022.27	4,000.00	20.00	43.48	J-700
J-530	1,008.56	4,000.00	20.00	37.70	J-500
J-240	1,004.30	4,000.00	20.00	39.55	J-180
J-30	1,003.23	4,000.00	20.00	33.95	J-180
J-150	1,008.60	4,000.00	20.00	26.61	J-160
J-80	1,015.05	4,000.00	20.00	32.41	J-180
J-142	1,000.00	4,000.00	20.00	45.72	J-180
J-139	1,000.00	4,000.00	20.00	42.78	J-630
J-145	1,013.98	4,000.00	20.00	31.64	J-980
J-1510	1,000.00	4,000.00	20.00	45.83	J-180

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1560	1,015.05	4,000.00	20.00	35.30	J-950
J-1100	1,000.00	4,000.00	20.00	39.64	J-1090
J-1530	1,000.00	4,000.00	20.00	46.45	J-180
NPW	1,000.00	4,000.00	20.00	45.83	J-180
J-1520	1,000.00	4,000.00	20.00	46.33	J-180
J-1600	1,000.00	4,000.00	20.00	40.77	J-180
J-144	1,000.00	4,000.00	20.00	46.95	J-180
J-1110	1,086.00	4,000.00	20.00	41.99	J-180
OPW	1,000.00	4,000.00	20.00	40.77	J-180
J-320	1,019.35	4,000.00	20.00	45.98	J-180
J-250	1,017.20	4,000.00	20.00	43.84	J-180
J-230	1,015.05	4,000.00	20.00	40.42	J-180
J-350	1,004.30	4,000.00	20.00	45.74	J-180
J-70	1,038.70	4,000.00	20.00	28.25	J-180
J-110	1,035.48	4,000.00	20.00	21.63	J-180
J-140	1,019.35	4,000.00	20.00	22.34	J-1300
J-210	1,009.68	4,000.00	20.00	37.24	J-180
J-280	1,003.23	4,000.00	20.00	43.98	J-270
J-710	1,000.00	4,000.00	20.00	40.60	J-720
J-660	1,008.60	4,000.00	20.00	25.83	J-670
J-1420	1,000.00	4,000.00	20.00	30.28	J-670
J-1430	1,000.00	4,000.00	20.00	35.44	J-670
J-370	1,007.53	4,000.00	20.00	45.45	J-180
j-470	1,011.83	4,000.00	20.00	37.92	J-630
J-790	1,004.30	4,000.00	20.00	29.68	J-800
J-1240	1,007.53	4,000.00	20.00	45.63	J-180
J-360	1,017.20	4,000.00	20.00	45.52	J-180
J-60	1,023.65	4,000.00	20.00	27.45	J-90
J-970	1,003.23	4,000.00	20.00	40.30	J-1320
J-980	1,013.98	4,000.00	20.00	30.54	J-990
J-1010	1,020.43	4,000.00	20.00	32.50	J-1050
J-960	1,009.68	4,000.00	20.00	38.56	J-1560
J-490	1,027.95	4,000.00	20.00	34.49	J-630
J-500	1,019.35	4,000.00	20.00	35.74	J-530
J-950	1,019.35	4,000.00	20.00	33.02	J-850
J-1020	1,012.90	4,000.00	20.00	27.87	J-940
J-1040	1,016.13	4,000.00	20.00	28.73	J-1050
J-1030	1,008.60	4,000.00	20.00	23.68	J-940
J-1080	1,009.68	4,000.00	20.00	27.76	J-1050
J-1000	1,008.60	4,000.00	20.00	42.30	J-1310
J-1310	1,016.13	4,000.00	20.00	36.57	J-1060
J-1070	1,009.68	4,000.00	20.00	28.70	J-1050
J-1060	1,016.13	4,000.00	20.00	33.60	J-1050
J-460	1,024.73	4,000.00	20.00	37.22	J-630

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-180	1,994.80	Demand	9.02	Fixed	9.02	2,103.96	47.20
J-160	1,992.10	Demand	9.02	Fixed	9.02	2,103.96	48.37
Butler	1,992.00	Demand	0.00	Fixed	0.00	2,103.96	48.41
J-170	1,991.70	Demand	50.51	Fixed	50.51	2,103.96	48.54
J-1120	1,991.40	Demand	25.26	Fixed	25.26	2,103.96	48.67
J-190	1,989.70	Demand	3.61	Fixed	3.61	2,103.97	49.41
J-1130	1,989.50	Demand	18.04	Fixed	18.04	2,103.96	49.50
J-1300	1,987.80	Demand	21.65	Fixed	21.65	2,103.97	50.24
J-90	1,986.58	Demand	16.24	Fixed	16.24	2,103.99	50.77
J-100	1,986.30	Demand	9.02	Fixed	9.02	2,103.98	50.89
J-120	1,985.40	Demand	30.67	Fixed	30.67	2,104.01	51.29
J-110	1,978.30	Demand	59.53	Fixed	59.53	2,103.98	54.35
J-140	1,974.93	Demand	32.47	Fixed	32.47	2,104.00	55.81
J-60	1,974.30	Demand	39.69	Fixed	39.69	2,104.03	56.10
J-770	1,973.60	Demand	18.04	Fixed	18.04	2,104.04	56.41
J-690	1,969.40	Demand	3.61	Fixed	3.61	2,101.02	56.92
J-630	1,969.10	Demand	0.00	Fixed	0.00	2,101.02	57.05
J-670	1,970.00	Demand	9.02	Fixed	9.02	2,102.79	57.42
J-680	1,969.40	Demand	3.61	Fixed	3.61	2,102.79	57.68
J-50	1,970.50	Demand	46.91	Fixed	46.91	2,104.11	57.78
J-620	1,966.70	Demand	32.47	Fixed	32.47	2,101.00	58.08
J-610	1,966.50	Demand	3.61	Fixed	3.61	2,100.88	58.11
J-720	1,968.40	Demand	3.61	Fixed	3.61	2,103.09	58.25
J-700	1,967.20	Demand	3.61	Fixed	3.61	2,102.19	58.37
J-70	1,969.00	Demand	64.95	Fixed	64.95	2,104.07	58.41
J-750	1,966.60	Demand	0.00	Fixed	0.00	2,102.17	58.62
J-1430	1,966.90	Demand	0.00	Fixed	0.00	2,103.02	58.86
J-710	1,966.80	Demand	0.00	Fixed	0.00	2,103.10	58.94
J-660	1,966.30	Demand	14.43	Fixed	14.43	2,102.81	59.03
J-1420	1,966.30	Demand	0.00	Fixed	0.00	2,102.91	59.07
J-270	1,966.90	Demand	10.82	Fixed	10.82	2,103.51	59.08
J-370	1,966.80	Demand	12.63	Fixed	12.63	2,103.42	59.08
J-730	1,966.30	Demand	0.00	Fixed	0.00	2,102.95	59.09
J-280	1,966.70	Demand	5.41	Fixed	5.41	2,103.37	59.10
J-650	1,965.00	Demand	7.22	Fixed	7.22	2,102.10	59.29
J-290	1,965.40	Demand	18.04	Fixed	18.04	2,103.51	59.72
J-260	1,965.30	Demand	30.67	Fixed	30.67	2,103.81	59.90
J-530	1,962.50	Demand	0.00	Fixed	0.00	2,101.37	60.05
J-510	1,963.10	Demand	32.47	Fixed	32.47	2,102.07	60.09
J-40	1,965.17	Demand	18.04	Fixed	18.04	2,104.23	60.13
J-520	1,963.40	Demand	23.45	Fixed	23.45	2,102.76	60.26
J-360	1,964.00	Demand	28.86	Fixed	28.86	2,103.49	60.32
J-600	1,960.00	Demand	14.43	Fixed	14.43	2,100.88	60.92
J-1240	1,963.00	Demand	12.63	Fixed	12.63	2,103.92	60.94
J-570	1,959.80	Demand	30.67	Fixed	30.67	2,101.03	61.07
J-1260	1,962.40	Demand	34.28	Fixed	34.28	2,103.96	61.21
J-590	1,959.00	Demand	18.04	Fixed	18.04	2,100.83	61.33
J-1250	1,962.30	Demand	39.69	Fixed	39.69	2,104.17	61.35
J-250	1,962.50	Demand	28.86	Fixed	28.86	2,104.48	61.40
J-500	1,959.20	Demand	32.47	Fixed	32.47	2,101.22	61.41
J-640	1,958.50	Demand	10.82	Fixed	10.82	2,100.71	61.50

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-560	1,958.10	Demand	39.69	Fixed	39.69	2,100.78	61.70
J-490	1,958.00	Demand	46.91	Fixed	46.91	2,101.03	61.85
J-240	1,961.40	Demand	7.22	Fixed	7.22	2,104.75	61.99
J-230	1,961.00	Demand	25.26	Fixed	25.26	2,104.81	62.19
J-550	1,956.70	Demand	19.84	Fixed	19.84	2,100.72	62.28
J-80	1,959.90	Demand	25.26	Fixed	25.26	2,104.23	62.41
J-1270	1,960.30	Demand	34.28	Fixed	34.28	2,104.74	62.46
J-150	1,959.00	Demand	14.43	Fixed	14.43	2,104.07	62.73
J-480	1,955.60	Demand	10.82	Fixed	10.82	2,100.72	62.76
J-580	1,955.50	Demand	28.86	Fixed	28.86	2,100.73	62.80
J-210	1,959.00	Demand	16.24	Fixed	16.24	2,104.59	62.96
J-540	1,954.80	Demand	9.02	Fixed	9.02	2,100.72	63.10
J-450	1,955.00	Demand	37.88	Fixed	37.88	2,101.22	63.23
J-460	1,954.62	Demand	41.49	Fixed	41.49	2,100.98	63.29
J-30	1,957.80	Demand	5.41	Fixed	5.41	2,104.31	63.36
J-220	1,958.50	Demand	30.67	Fixed	30.67	2,105.13	63.41
J-1290	1,958.00	Demand	21.65	Fixed	21.65	2,104.97	63.55
J-200	1,957.40	Demand	3.61	Fixed	3.61	2,104.38	63.56
J-1490	1,956.50	Demand	37.88	Fixed	37.88	2,104.58	64.04
j-470	1,952.50	Demand	19.84	Fixed	19.84	2,100.66	64.07
J-350	1,955.10	Demand	7.22	Fixed	7.22	2,104.30	64.52
J-310	1,954.70	Demand	30.67	Fixed	30.67	2,104.93	64.97
J-1050	1,949.70	Demand	27.06	Fixed	27.06	2,100.29	65.12
J-980	1,949.50	Demand	23.45	Fixed	23.45	2,100.24	65.19
J-780	1,949.60	Demand	10.82	Fixed	10.82	2,100.37	65.20
J-950	1,949.20	Demand	32.47	Fixed	32.47	2,100.09	65.25
J-420	1,953.10	Demand	19.84	Fixed	19.84	2,104.15	65.32
J-1310	1,949.60	Demand	27.06	Fixed	27.06	2,100.71	65.34
J-1100	1,950.20	Demand	0.00	Fixed	0.00	2,101.32	65.35
J-960	1,949.20	Demand	16.24	Fixed	16.24	2,100.37	65.37
J-1280	1,953.40	Demand	34.28	Fixed	34.28	2,104.65	65.41
J-790	1,948.70	Demand	7.22	Fixed	7.22	2,100.11	65.47
J-990	1,948.70	Demand	3.61	Fixed	3.61	2,100.16	65.50
J-430	1,951.20	Demand	45.10	Fixed	45.10	2,102.76	65.54
J-1010	1,948.70	Demand	34.28	Fixed	34.28	2,100.37	65.59
J-970	1,948.90	Demand	5.41	Fixed	5.41	2,100.65	65.62
J-139	1,949.20	Demand	0.00	Fixed	0.00	2,100.97	65.63
J-850	1,947.60	Demand	23.45	Fixed	23.45	2,099.64	65.75
J-1000	1,948.90	Demand	14.43	Fixed	14.43	2,100.96	65.76
J-1090	1,948.60	Demand	10.82	Fixed	10.82	2,101.01	65.91
J-440	1,948.90	Demand	45.10	Fixed	45.10	2,101.61	66.04
J-1570	1,946.30	Demand	12.63	Fixed	12.63	2,099.32	66.17
J-320	1,952.00	Demand	32.47	Fixed	32.47	2,105.39	66.33
J-930	1,945.70	Demand	23.45	Fixed	23.45	2,099.19	66.37
J-860	1,945.80	Demand	9.02	Fixed	9.02	2,099.37	66.41
J-940	1,946.50	Demand	23.45	Fixed	23.45	2,100.11	66.43
J-1320	1,946.70	Demand	14.43	Fixed	14.43	2,100.42	66.47
J-1110	1,948.90	Demand	37.52	Fixed	37.52	2,102.67	66.49
J-1560	1,945.85	Demand	25.26	Fixed	25.26	2,100.15	66.73
J-1360	1,944.80	Demand	25.26	Fixed	25.26	2,099.18	66.76
J-1340	1,945.20	Demand	23.45	Fixed	23.45	2,099.93	66.91

Scenario: Future PHD
Steady State Analysis
Junction Report

Node Label	Elevation (ft)	Demand Type	Demand (gpm)	Demand Pattern	Calculated Demand (gpm)	Calculated Hydraulic Grade (ft)	Pressure (psi)
J-1400	1,944.60	Demand	12.63	Fixed	12.63	2,099.44	66.96
J-1500	1,951.00	Demand	19.84	Fixed	19.84	2,105.92	66.99
J-1390	1,944.10	Demand	21.65	Fixed	21.65	2,099.26	67.10
J-830	1,944.10	Demand	5.41	Fixed	5.41	2,099.48	67.19
J-820	1,944.10	Demand	18.04	Fixed	18.04	2,099.52	67.21
J-800	1,944.40	Demand	10.82	Fixed	10.82	2,099.86	67.23
J-880	1,943.70	Demand	21.65	Fixed	21.65	2,099.19	67.24
J-1410	1,943.60	Demand	18.04	Fixed	18.04	2,099.26	67.31
J-1370	1,943.30	Demand	21.65	Fixed	21.65	2,099.15	67.39
J-910	1,943.10	Demand	21.65	Fixed	21.65	2,099.16	67.48
J-870	1,943.20	Demand	7.22	Fixed	7.22	2,099.26	67.48
J-840	1,943.10	Demand	27.06	Fixed	27.06	2,099.29	67.54
J-1060	1,944.00	Demand	27.06	Fixed	27.06	2,100.44	67.65
J-1350	1,942.60	Demand	21.65	Fixed	21.65	2,099.15	67.70
J-890	1,942.60	Demand	19.84	Fixed	19.84	2,099.19	67.71
J-1330	1,942.50	Demand	21.65	Fixed	21.65	2,099.29	67.80
J-1380	1,942.20	Demand	21.65	Fixed	21.65	2,099.18	67.89
NPW	1,947.60	Demand	0.00	Fixed	0.00	2,104.59	67.89
J-1510	1,947.50	Demand	0.00	Fixed	0.00	2,104.59	67.93
J-130	1,947.00	Demand	30.67	Fixed	30.67	2,104.15	67.96
J-900	1,941.30	Demand	14.43	Fixed	14.43	2,099.15	68.26
J-20	1,946.70	Demand	14.43	Fixed	14.43	2,104.57	68.27
J-1520	1,946.80	Demand	0.00	Fixed	0.00	2,105.97	68.83
OPW	1,945.60	Demand	0.00	Fixed	0.00	2,105.21	69.02
J-1600	1,944.80	Demand	0.00	Fixed	0.00	2,105.21	69.37
J-1530	1,945.30	Demand	0.00	Fixed	0.00	2,106.37	69.65
J-1540	1,943.80	Demand	12.63	Fixed	12.63	2,105.68	70.00
J-1140	1,942.50	Demand	9.02	Fixed	9.02	2,105.64	70.55
J-1030	1,936.70	Demand	14.43	Fixed	14.43	2,100.13	70.67
J-920	1,934.70	Demand	16.24	Fixed	16.24	2,099.16	71.12
J-1070	1,935.50	Demand	16.24	Fixed	16.24	2,100.32	71.27
J-1020	1,932.20	Demand	21.65	Fixed	21.65	2,100.16	72.63
J-1040	1,931.10	Demand	27.06	Fixed	27.06	2,100.23	73.14
J-1080	1,929.40	Demand	16.24	Fixed	16.24	2,100.28	73.90

IMPROVEMENTS

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report
ALL NODES

with the follow improvements
- 6" PVC on Trent from Laura to Dale
- 6" PVC on Frederick from Locust to hydrant

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1140	1,004.30	657.31	20.00	48.01	J-180
J-640	1,010.61	1,267.39	20.00	47.60	J-180
J-148	1,000.00	1,635.16	20.00	47.79	J-180
J-190	1,001.72	2,117.54	20.00	35.83	J-180
J-900	1,006.88	2,121.50	20.00	33.45	J-1370
J-890	1,009.46	2,236.49	20.00	38.67	J-1380
J-1540	1,006.02	2,273.77	20.00	20.56	J-1140
J-1350	1,010.32	2,395.58	20.00	34.31	J-920
J-920	1,007.74	2,454.82	20.00	29.43	J-1350
J-1410	1,008.60	2,513.69	20.00	28.64	J-870
J-1280	1,016.34	2,527.92	20.00	44.50	J-180
J-1360	1,012.04	2,528.47	20.00	33.40	J-930
J-1370	1,010.32	2,530.69	20.00	20.90	J-900
J-1380	1,010.32	2,532.29	20.00	29.69	J-890
J-860	1,004.30	2,603.41	20.00	35.05	J-870
J-180	1,004.30	2,612.20	20.00	31.53	J-190
J-870	1,003.44	2,636.60	20.00	24.08	J-1410
J-1390	1,010.32	2,666.65	20.00	29.42	J-1410
J-930	1,011.18	2,719.31	20.00	28.55	J-920
J-1260	1,016.34	2,723.23	20.00	46.96	J-180
J-1330	1,010.32	2,751.61	20.00	34.78	J-1570
J-910	1,010.32	2,805.47	20.00	20.00	J-1370
J-550	1,009.46	2,996.44	20.00	20.00	J-640
J-1570	1,006.02	3,026.52	20.00	27.10	J-930
J-1250	1,018.92	3,034.28	20.00	46.68	J-180
J-1340	1,011.18	3,063.69	20.00	46.11	J-860
J-610	1,001.72	3,103.88	20.00	31.08	J-600
J-1400	1,006.02	3,112.42	20.00	22.22	J-860
J-880	1,010.32	3,130.87	20.00	20.45	J-1370
J-590	1,008.60	3,137.48	20.00	32.48	J-610
J-1270	1,016.34	3,182.89	20.00	46.14	J-180
Butler Well	1,000.00	3,207.11	20.00	22.32	J-160
J-1290	1,010.32	3,286.44	20.00	41.62	J-1280
J-160	1,007.84	3,361.69	20.00	20.04	Butler We
J-1120	1,012.04	3,420.29	20.00	21.05	J-160
J-1130	1,008.60	3,431.64	20.00	21.49	J-160
J-840	1,012.90	3,436.36	20.00	20.19	J-1390
J-137	1,000.00	3,452.29	20.00	20.00	J-640
J-600	1,006.88	3,469.36	20.00	20.42	J-610
J-750	1,011.49	3,498.20	20.00	40.35	J-700
J-1320	1,006.88	3,517.54	20.00	42.54	J-980
J-540	1,010.22	3,523.88	20.00	21.70	J-640
J-90	1,007.74	3,553.63	20.00	25.59	J-100
J-1300	1,010.32	3,595.25	20.00	21.93	J-1130
J-850	1,011.18	3,635.67	20.00	27.37	J-1570
J-170	1,024.08	3,644.04	20.00	20.00	J-180
J-830	1,002.58	3,707.99	20.00	20.00	J-860
J-100	1,004.30	3,725.98	20.00	22.65	J-90
J-650	1,003.44	3,728.78	20.00	38.28	J-750
J-820	1,008.60	3,783.84	20.00	20.00	J-860
J-1050	1,012.90	3,790.25	20.00	38.36	J-1010

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-990	1,001.72	3,833.33	20.00	36.03	J-980
J-690	1,001.72	3,836.35	20.00	20.74	J-630
J-630	1,000.00	3,838.46	20.00	20.60	J-690
J-560	1,018.92	3,870.41	20.00	31.20	J-640
J-790	1,003.44	4,000.00	20.00	32.58	J-800
J-510	1,017.82	4,000.00	20.00	44.56	J-700
J-250	1,013.76	4,000.00	20.00	44.45	J-180
J-580	1,013.76	4,000.00	20.00	24.87	J-480
J-360	1,013.76	4,000.00	20.00	45.95	J-180
J-240	1,003.44	4,000.00	20.00	40.44	J-180
J-60	1,018.92	4,000.00	20.00	28.55	J-90
J-350	1,003.44	4,000.00	20.00	46.12	J-180
J-141	1,005.16	4,000.00	20.00	46.21	J-180
J-1110	1,068.80	4,000.00	20.00	42.75	J-180
J-1240	1,006.02	4,000.00	20.00	46.04	J-180
J-140	1,015.48	4,000.00	20.00	23.47	J-1300
J-1100	1,000.00	4,000.00	20.00	41.67	J-1090
NPW	1,000.00	4,000.00	20.00	46.21	J-180
OPW	1,000.00	4,000.00	20.00	41.68	J-180
J-1080	1,007.74	4,000.00	20.00	30.20	J-1050
J-1090	1,005.16	4,000.00	20.00	40.44	J-1310
J-1000	1,006.88	4,000.00	20.00	44.44	J-1310
J-1010	1,016.34	4,000.00	20.00	34.89	J-1050
J-970	1,002.58	4,000.00	20.00	42.65	J-1320
J-960	1,007.74	4,000.00	20.00	41.12	J-1560
J-980	1,011.18	4,000.00	20.00	33.03	J-990
J-1040	1,012.90	4,000.00	20.00	31.16	J-1050
J-1070	1,007.74	4,000.00	20.00	31.15	J-1050
J-1060	1,012.90	4,000.00	20.00	36.00	J-1050
J-1020	1,010.32	4,000.00	20.00	30.41	J-940
J-1030	1,006.88	4,000.00	20.00	26.22	J-940
J-1490	1,018.06	4,000.00	20.00	46.18	J-180
J-1500	1,009.46	4,000.00	20.00	46.38	J-180
J-1420	1,000.00	4,000.00	20.00	35.37	J-670
J-30	1,002.58	4,000.00	20.00	34.98	J-180
J-1430	1,000.00	4,000.00	20.00	39.21	J-670
J-20	1,006.88	4,000.00	20.00	39.59	J-180
J-1530	1,000.00	4,000.00	20.00	47.13	J-180
J-1560	1,012.04	4,000.00	20.00	37.93	J-950
J-1510	1,000.00	4,000.00	20.00	46.21	J-180
J-1520	1,000.00	4,000.00	20.00	46.73	J-180
J-120	1,014.62	4,000.00	20.00	25.59	J-180
J-130	1,014.62	4,000.00	20.00	30.88	J-180
J-1600	1,000.00	4,000.00	20.00	41.68	J-180
J-110	1,028.38	4,000.00	20.00	22.77	J-180
J-139	1,000.00	4,000.00	20.00	45.16	J-180
J-138	1,002.58	4,000.00	20.00	40.67	J-280
J-50	1,022.36	4,000.00	20.00	32.83	J-180
J-70	1,030.96	4,000.00	20.00	29.33	J-180
J-40	1,008.60	4,000.00	20.00	33.58	J-180
J-80	1,012.04	4,000.00	20.00	33.45	J-180

Scenario: Existing MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-1310	1,012.90	4,000.00	20.00	38.85	J-1060
J-530	1,006.85	4,000.00	20.00	40.24	J-500
J-320	1,015.48	4,000.00	20.00	46.31	J-180
J-520	1,011.18	4,000.00	20.00	45.84	J-180
J-490	1,022.36	4,000.00	20.00	39.99	J-690
J-500	1,015.48	4,000.00	20.00	38.17	J-530
J-570	1,014.62	4,000.00	20.00	34.41	J-620
J-620	1,015.48	4,000.00	20.00	22.99	J-630
J-280	1,002.58	4,000.00	20.00	44.82	J-270
J-310	1,014.62	4,000.00	20.00	46.22	J-180
J-290	1,008.60	4,000.00	20.00	44.66	J-270
J-430	1,021.50	4,000.00	20.00	45.85	J-180
J-440	1,021.50	4,000.00	20.00	45.30	J-690
J-370	1,006.02	4,000.00	20.00	45.88	J-180
J-420	1,009.46	4,000.00	20.00	46.09	J-180
j-470	1,009.46	4,000.00	20.00	42.24	J-690
J-480	1,005.16	4,000.00	20.00	24.85	J-580
J-450	1,018.06	4,000.00	20.00	42.84	J-690
J-460	1,019.78	4,000.00	20.00	41.84	J-690
J-270	1,005.16	4,000.00	20.00	43.93	J-280
J-146	1,024.85	4,000.00	20.00	46.93	J-180
J-145	1,011.18	4,000.00	20.00	34.09	J-980
J-147	1,005.16	4,000.00	20.00	26.22	J-940
J-210	1,007.74	4,000.00	20.00	38.20	J-180
J-200	1,001.72	4,000.00	20.00	34.74	J-180
J-150	1,006.88	4,000.00	20.00	27.74	J-160
J-144	1,000.00	4,000.00	20.00	47.23	J-180
J-940	1,011.18	4,000.00	20.00	30.64	J-1030
J-950	1,015.48	4,000.00	20.00	35.77	J-850
J-143	1,001.72	4,000.00	20.00	46.50	J-180
J-142	1,000.00	4,000.00	20.00	46.11	J-180
J-220	1,014.62	4,000.00	20.00	42.51	J-180
J-700	1,004.80	4,000.00	20.00	33.29	J-750
J-710	1,000.00	4,000.00	20.00	42.29	J-720
J-720	1,001.72	4,000.00	20.00	41.69	J-1430
J-680	1,001.72	4,000.00	20.00	27.23	J-670
J-260	1,014.62	4,000.00	20.00	45.55	J-180
J-660	1,006.88	4,000.00	20.00	31.96	J-670
J-670	1,004.30	4,000.00	20.00	27.29	J-680
J-730	1,000.00	4,000.00	20.00	43.61	J-710
J-800	1,005.16	4,000.00	20.00	26.46	J-860
J-230	1,012.04	4,000.00	20.00	41.27	J-180
J-780	1,005.16	4,000.00	20.00	38.39	J-790
J-770	1,008.60	4,000.00	20.00	29.41	J-180

MODELING OF IMPROVEMENTS

Scenario: Future MDD

Fire Flow Analysis

Fire Flow Report

ALL NODES

with the following improvements
- 6" PVC on Trent from Laura to [illegible]
- 6" PVC on Frederick from Locust dead end

	Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
	J-640	1,013.27	1,251.47	20.00	47.33	J-180
	J-148	1,000.00	1,635.03	20.00	47.55	J-180
*	J-1140	1,005.38	1,675.77	20.00	41.37	J-1540
	J-900	1,008.60	2,079.27	20.00	32.95	J-1370
	J-190	1,002.15	2,091.49	20.00	35.42	J-180
	J-890	1,011.83	2,191.56	20.00	38.00	J-1380
*	J-1540	1,007.53	2,267.07	20.00	20.56	J-1140
	J-1350	1,012.90	2,343.60	20.00	33.91	J-920
	J-920	1,009.68	2,404.76	20.00	28.94	J-1350
	J-1410	1,010.75	2,459.85	20.00	28.32	J-870
	J-1360	1,015.05	2,471.53	20.00	32.86	J-930
	J-1370	1,012.90	2,473.08	20.00	20.90	J-900
	J-1380	1,012.90	2,476.75	20.00	29.31	J-890
	J-1280	1,020.43	2,512.11	20.00	43.98	J-180
	J-860	1,005.38	2,547.84	20.00	34.46	J-870
	J-180	1,005.38	2,571.91	20.00	31.28	J-190
	J-870	1,004.30	2,578.78	20.00	23.90	J-1410
	J-1390	1,012.90	2,606.98	20.00	29.04	J-1410
	J-930	1,013.98	2,655.11	20.00	28.36	J-920
	J-1330	1,012.90	2,690.52	20.00	34.16	J-1570
	J-1260	1,020.43	2,700.23	20.00	46.65	J-180
	J-910	1,012.90	2,737.40	20.00	20.00	J-1370
	J-550	1,011.83	2,941.38	20.00	20.00	J-640
	J-1570	1,007.53	2,953.76	20.00	26.72	J-930
	J-1340	1,013.98	3,003.63	20.00	45.06	J-860
	J-1250	1,023.65	3,009.88	20.00	46.36	J-180
	J-1400	1,007.53	3,038.97	20.00	22.09	J-860
*	J-610	1,002.15	3,049.50	20.00	30.80	J-600
	J-880	1,012.90	3,050.44	20.00	20.43	J-1370
	J-590	1,010.75	3,084.36	20.00	32.05	J-610
	Butler Well	1,000.00	3,152.59	20.00	22.24	J-160
	J-1270	1,020.43	3,162.93	20.00	45.75	J-180
	J-1290	1,012.90	3,265.54	20.00	41.34	J-1280
	J-160	1,009.80	3,302.55	20.00	20.04	Butler We
	J-840	1,016.13	3,346.41	20.00	20.15	J-1390
	J-1120	1,015.05	3,360.05	20.00	21.01	J-160
	J-1130	1,010.75	3,373.14	20.00	21.40	J-160
	J-137	1,000.00	3,382.75	20.00	20.00	J-640
	J-600	1,008.60	3,407.59	20.00	20.32	J-610
	J-750	1,014.36	3,442.49	20.00	39.78	J-700
	J-1320	1,008.60	3,450.80	20.00	41.67	J-980
	J-540	1,012.77	3,455.54	20.00	21.56	J-640
	J-90	1,009.68	3,498.34	20.00	25.43	J-100
	J-1300	1,012.90	3,534.68	20.00	21.83	J-1130
	J-850	1,013.98	3,545.85	20.00	26.90	J-1570
	J-170	1,030.10	3,574.23	20.00	20.00	J-180
	J-830	1,003.23	3,607.97	20.00	20.00	J-860
	J-100	1,005.38	3,665.88	20.00	22.57	J-90
	J-650	1,004.30	3,667.34	20.00	37.75	J-750
	J-820	1,010.75	3,681.26	20.00	20.00	J-860
	J-1050	1,016.13	3,708.45	20.00	37.72	J-1010

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
J-990	1,002.15	3,749.88	20.00	35.41	J-980
J-690	1,002.15	3,759.31	20.00	20.71	J-630
J-630	1,000.00	3,761.41	20.00	20.58	J-690
J-560	1,023.65	3,791.63	20.00	30.72	J-640
J-620	1,019.35	3,943.97	20.00	22.45	J-630
J-940	1,013.98	3,998.08	20.00	28.77	J-1030
J-260	1,018.28	4,000.00	20.00	45.12	J-180
J-120	1,018.28	4,000.00	20.00	24.63	J-180
J-270	1,006.45	4,000.00	20.00	43.04	J-280
J-1490	1,022.58	4,000.00	20.00	45.81	J-180
J-290	1,010.75	4,000.00	20.00	43.82	J-270
J-770	1,010.75	4,000.00	20.00	28.52	J-180
J-130	1,018.28	4,000.00	20.00	29.95	J-180
J-1090	1,006.45	4,000.00	20.00	38.83	J-1310
J-40	1,010.75	4,000.00	20.00	32.76	J-180
J-310	1,018.28	4,000.00	20.00	45.88	J-180
J-200	1,002.15	4,000.00	20.00	33.84	J-180
J-220	1,018.28	4,000.00	20.00	41.83	J-180
J-141	1,006.45	4,000.00	20.00	45.85	J-180
J-480	1,006.45	4,000.00	20.00	23.23	J-580
J-570	1,018.28	4,000.00	20.00	32.97	J-620
J-680	1,002.15	4,000.00	20.00	26.04	J-670
J-450	1,022.58	4,000.00	20.00	41.47	J-690
J-143	1,002.15	4,000.00	20.00	46.20	J-180
J-147	1,006.45	4,000.00	20.00	24.31	J-940
J-800	1,006.45	4,000.00	20.00	24.21	J-860
J-720	1,002.15	4,000.00	20.00	40.65	J-1430
J-780	1,006.45	4,000.00	20.00	36.54	J-790
J-430	1,026.88	4,000.00	20.00	45.43	J-180
J-1520	1,000.00	4,000.00	20.00	46.42	J-180
J-1500	1,011.83	4,000.00	20.00	46.07	J-180
J-420	1,011.83	4,000.00	20.00	45.70	J-180
J-510	1,022.27	4,000.00	20.00	43.37	J-700
J-700	1,006.00	4,000.00	20.00	32.08	J-750
J-520.	1,013.98	4,000.00	20.00	45.42	J-180
J-730	1,000.00	4,000.00	20.00	42.60	J-710
J-530	1,008.56	4,000.00	20.00	38.81	J-500
J-440	1,026.88	4,000.00	20.00	43.99	J-690
J-60	1,023.65	4,000.00	20.00	27.63	J-90
J-50	1,027.95	4,000.00	20.00	31.99	J-180
J-20	1,008.60	4,000.00	20.00	38.85	J-180
J-145	1,013.98	4,000.00	20.00	32.27	J-980
J-142	1,000.00	4,000.00	20.00	45.73	J-180
J-1510	1,000.00	4,000.00	20.00	45.85	J-180
J-1560	1,015.05	4,000.00	20.00	36.02	J-950
J-139	1,000.00	4,000.00	20.00	43.62	J-970
J-146	1,031.07	4,000.00	20.00	46.63	J-180
J-138	1,003.23	4,000.00	20.00	39.78	J-280
J-144	1,000.00	4,000.00	20.00	46.96	J-180
J-30	1,003.23	4,000.00	20.00	34.14	J-180
J-1600	1,000.00	4,000.00	20.00	41.02	J-180

Scenario: Future MDD
Fire Flow Analysis
Fire Flow Report

Node Label	Total Needed Flow (gpm)	Available Fire Flow (gpm)	Residual Pressure (psi)	Calculated Minimum Zone Pressure (psi)	Minimum Zone Junction
OPW	1,000.00	4,000.00	20.00	41.02	J-180
NPW	1,000.00	4,000.00	20.00	45.85	J-180
J-1530	1,000.00	4,000.00	20.00	46.85	J-180
J-150	1,008.60	4,000.00	20.00	26.77	J-160
J-240	1,004.30	4,000.00	20.00	39.65	J-180
J-1110	1,086.00	4,000.00	20.00	42.16	J-180
J-1100	1,000.00	4,000.00	20.00	40.12	J-1090
J-80	1,015.05	4,000.00	20.00	32.60	J-180
J-350	1,004.30	4,000.00	20.00	45.74	J-180
J-320	1,019.35	4,000.00	20.00	45.97	J-180
J-370	1,007.53	4,000.00	20.00	45.47	J-180
J-360	1,017.20	4,000.00	20.00	45.54	J-180
J-1240	1,007.53	4,000.00	20.00	45.65	J-180
J-250	1,017.20	4,000.00	20.00	43.90	J-180
J-70	1,038.70	4,000.00	20.00	28.42	J-180
J-230	1,015.05	4,000.00	20.00	40.52	J-180
J-210	1,009.68	4,000.00	20.00	37.36	J-180
J-1430	1,000.00	4,000.00	20.00	38.08	J-670
J-280	1,003.23	4,000.00	20.00	43.99	J-270
J-580	1,017.20	4,000.00	20.00	23.24	J-480
J-670	1,005.38	4,000.00	20.00	26.10	J-680
J-660	1,008.60	4,000.00	20.00	30.80	J-670
J-1420	1,000.00	4,000.00	20.00	34.22	J-670
J-790	1,004.30	4,000.00	20.00	30.52	J-800
J-710	1,000.00	4,000.00	20.00	41.28	J-720
j-470	1,011.83	4,000.00	20.00	40.87	J-690
J-110	1,035.48	4,000.00	20.00	21.80	J-180
J-970	1,003.23	4,000.00	20.00	40.93	J-1320
J-140	1,019.35	4,000.00	20.00	22.50	J-1300
J-980	1,013.98	4,000.00	20.00	31.18	J-990
J-1010	1,020.43	4,000.00	20.00	33.08	J-1050
J-960	1,009.68	4,000.00	20.00	39.31	J-1560
J-490	1,027.95	4,000.00	20.00	38.58	J-690
J-500	1,019.35	4,000.00	20.00	36.78	J-530
J-950.	1,019.35	4,000.00	20.00	33.75	J-850
J-1020	1,012.90	4,000.00	20.00	28.50	J-940
J-1040	1,016.13	4,000.00	20.00	29.33	J-1050
J-1030	1,008.60	4,000.00	20.00	24.31	J-940
J-1080	1,009.68	4,000.00	20.00	28.35	J-1050
J-1000	1,008.60	4,000.00	20.00	42.83	J-1310
J-1310	1,016.13	4,000.00	20.00	37.12	J-1060
J-1070	1,009.68	4,000.00	20.00	29.29	J-1050
J-1060	1,016.13	4,000.00	20.00	34.18	J-1050
J-460	1,024.73	4,000.00	20.00	40.46	J-690