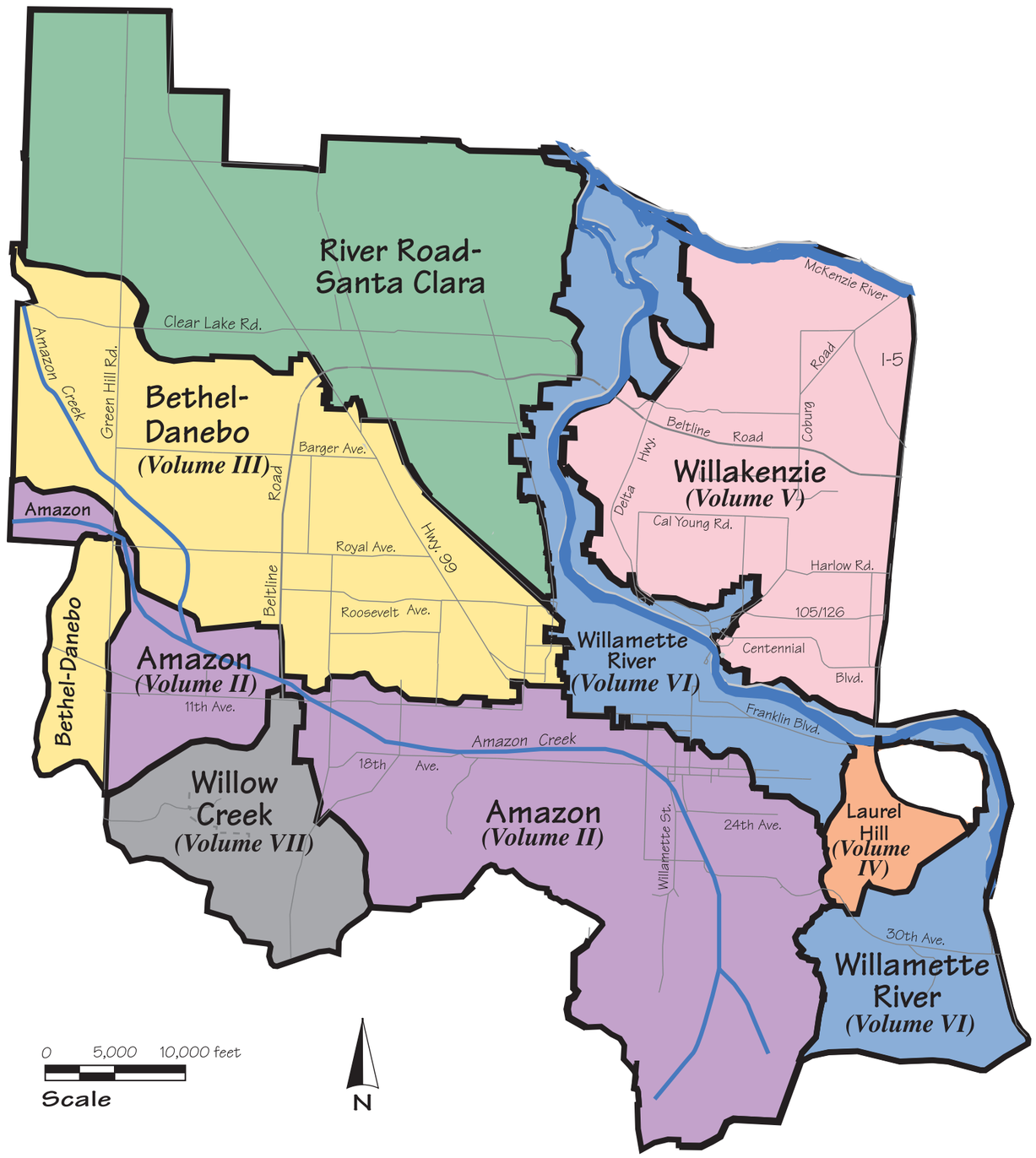
City of Eugene



Stormwater Basin Master Plan

Study Methodology and Summary

Volume I of VII

Appendix E

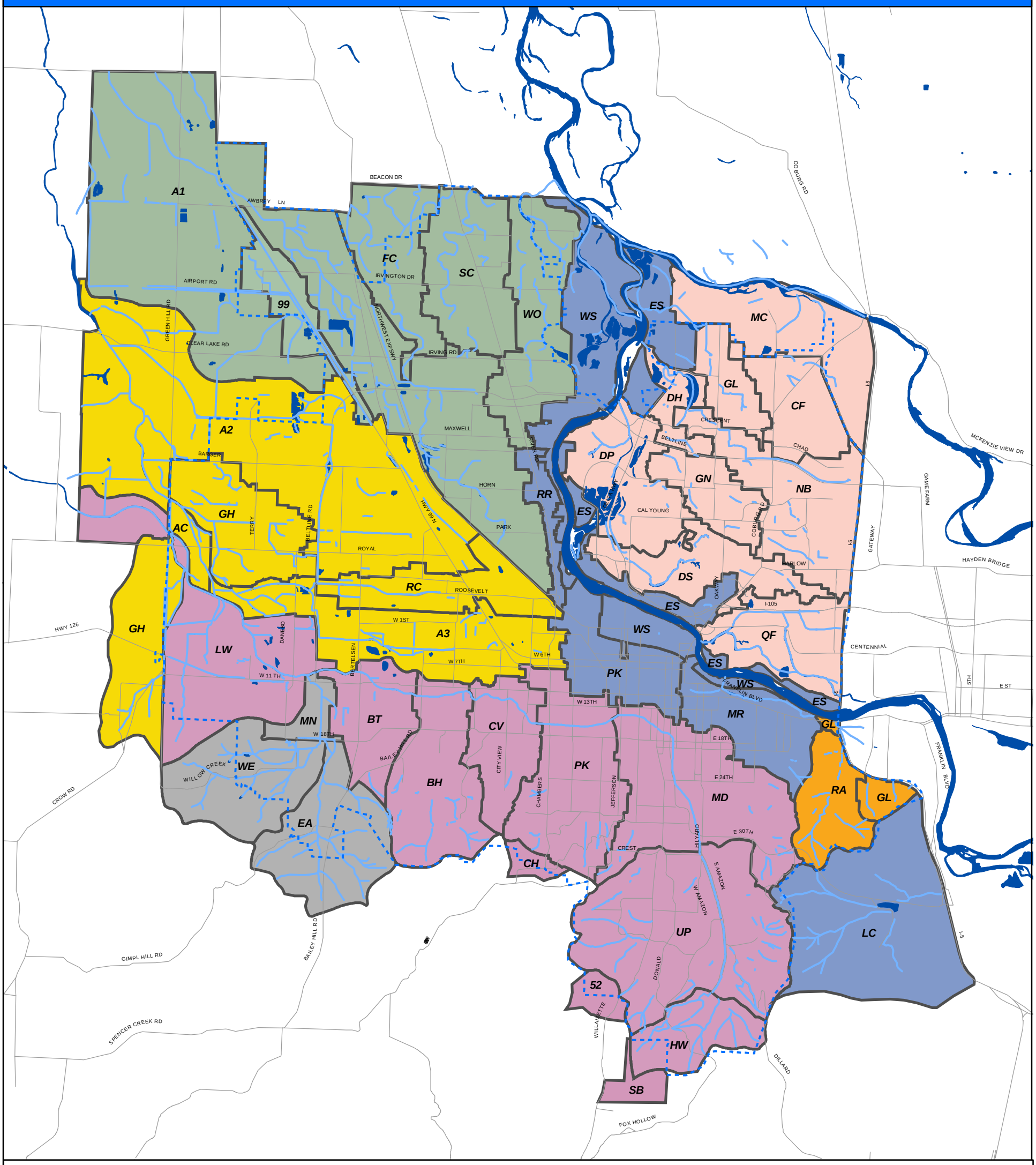
CITY OF EUGENE
STORMWATER
MANAGEMENT PROGRAM

August 2002
Prepared by:
City of Eugene
URS Corporation
Lane Council of Governments

Local Stormwater Planning Can Make a World of Difference

City of Eugene Stormwater Plans

Drainage System Study Area



Amazon
Major Subbasins:
- BH = Bailey Hill
- BT = Bertelsen
- CV = City View
- HW = Headwaters
- LW = Lower Amazon
- MD = Middle Amazon
- PK = Polk Street
- UP = Upper Amazon
- 52 = 52nd Avenue*
- CH = Chambers*
- SB = Spencer Butte*

*Ridgeline major subbasins not modeled as they drain away from Amazon Basin and into Spencer Creek drainage system to the South.

Bethel Danebo
Major Subbasins:
- A2 = A2 Channel
- A3 = A3 Channel
- AC = A Channel
- GH = Green Hill
- RC = Roosevelt Channel

Laurel Hill
Major Subbasins:
- GL = Glenwood
- RA = Riverview-Augusta

River Road/ Santa Clara
Major Subbasins:
- 99 = Highway 99
- A1 = A1 Channel
- FC = Flat Creek
- SC = Spring Creek
- WO = Willamette Overflow

Willow Creek
Major Subbasins:
- EA = East Branch
- MN = Main Stem
- WE = West Branch

Willakenzie
Major Subbasins:
- CF = County Farm
- DH = Delta Highway
- DP = Delta Pond
- DS = Debrick Slough
- GL = Gilham Norkenzie
- GN = Gilham North
- MC = McKenzie River
- NB = North Beltline
- QF = Q Street Floodway

Willamette River
Major Subbasins:
- ES = East Side
- LC = Lane College
- MR = Mill Race
- PK = Polk
- RR = River Road
- WS = West Side

0 0.5 1 1.5 2 Miles

- Eugene Master Plan Boundary
- Urban Growth Boundary
- Open Waterway

Produced by LCOG
August 2002
g:\projects\basins\drainage_maps\major_subbasins.mxd

Figure 1-1

APPENDIX E

HYDROLOGIC/HYDRAULIC MODEL INPUT AND OUTPUT TABLES FOR EACH BASIN

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE AMAZON CREEK STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
Amazon - Bailey Hill															
AMBH-010	54741	128.8	53.0	45.1	58.0	49.3	0.014	11222	0.012	0.45	0.05	0.15	7.84	0.39	0.13
AMBH-015	54854	68.6	36.0	30.6	48.0	40.8	0.047	3983	0.014	0.45	0.05	0.15	6.54	0.39	0.19
AMBH-020 & AMBH-030	71086	36.2	45.8	38.9	56.0	47.6	0.003	3000	0.012	0.45	0.05	0.15	7.68	0.41	0.24
AMBH-040	54772	97.5	42.0	35.7	46.0	39.1	0.115	1973	0.012	0.45	0.05	0.15	5.80	0.40	0.26
AMBH-050	54815	31.8	38.0	32.3	48.9	41.6	0.016	1790	0.012	0.45	0.05	0.15	6.22	0.42	0.41
AMBH-060	54773	61.9	36.0	30.6	47.1	40.0	0.137	1146	0.012	0.40	0.05	0.15	5.82	0.27	0.14
AMBH-070	52255	95.5	40.0	34.0	44.0	37.4	0.083	3329	0.012	0.45	0.05	0.15	8.26	0.37	0.14
AMBH-080	66465	90.9	32.0	27.2	42.0	35.7	0.138	19798	0.012	0.40	0.05	0.15	9.01	0.35	0.07
AMBH-090	52167	213.9	8.0	6.8	42.0	35.7	0.203	3442	0.012	0.40	0.05	0.15	8.21	0.32	0.04
AMBH-100	52214	230.0	14.0	11.9	41.1	34.9	0.189	3665	0.012	0.40	0.05	0.15	8.70	0.33	0.04
AMBH-110	52145	61.0	20.0	17.0	44.0	37.4	0.250	1394	0.012	0.40	0.05	0.15	8.00	0.32	0.06
AMBH-120	67805	96.6	27.0	23.0	42.9	36.5	0.205	2082	0.012	0.40	0.05	0.15	7.66	0.30	0.04
Amazon - Bertelsen Sub-Basin															
AMBT-010	63173	79.8	19.0	16.2	33.1	28.1	0.031	1982	0.012	0.45	0.05	0.15	9.34	0.38	0.06
AMBT-020	54522	73.9	37.0	31.5	67.1	57.0	0.005	7429	0.012	0.40	0.05	0.15	9.59	0.39	0.06
AMBT-030	63127	75.6	46.0	39.1	57.1	48.5	0.004	8232	0.012	0.40	0.05	0.15	8.06	0.41	0.21
AMBT-040	54747	39.1	30.0	25.5	57.1	48.5	0.004	5674	0.012	0.40	0.05	0.15	9.47	0.39	0.06
AMBT-050	71091	102.2	33.0	28.1	58.9	50.1	0.034	4023	0.012	0.40	0.05	0.15	9.60	0.39	0.06
AMBT-060	54909	48.3	44.0	37.4	47.1	40.0	0.004	1900	0.012	0.45	0.05	0.15	9.17	0.39	0.10
AMBT-070	54898	77.4	45.0	38.3	46.0	39.1	0.078	2000	0.012	0.45	0.05	0.15	6.58	0.37	0.29
AMBT-080	51995	50.0	9.0	7.7	41.1	34.9	0.149	1967	0.012	0.40	0.05	0.15	8.29	0.32	0.07
AMBT-090	68843	106.5	43.0	36.6	46.0	39.1	0.038	5060	0.012	0.45	0.05	0.15	7.42	0.31	0.12
AMBT-100	66971	91.1	12.0	10.2	52.0	44.2	0.005	2179	0.012	0.45	0.05	0.15	7.09	0.36	0.14
Amazon - City View Sub-Basin															
AMCV-010	71084	26.4	55.0	46.8	67.1	57.0	0.003	1325	0.012	0.45	0.05	0.15	9.62	0.38	0.06
AMCV-020	55283	41.0	61.0	51.9	65.1	55.3	0.000	2103	0.012	0.45	0.05	0.15	9.63	0.38	0.06
AMCV-030	55272	68.9	53.0	45.1	56.0	47.6	0.020	4500	0.012	0.45	0.05	0.15	9.63	0.39	0.07
AMCV-040	71004	80.1	44.0	37.4	47.1	40.0	0.080	1785	0.012	0.45	0.05	0.15	7.33	0.41	0.31
AMCV-050	55274	90.2	43.0	36.6	48.0	40.8	0.056	3854	0.012	0.45	0.05	0.15	7.43	0.41	0.28
AMCV-060	71081	55.2	40.0	34.0	45.1	38.3	0.084	974	0.012	0.45	0.05	0.15	8.32	0.41	0.19
AMCV-070	55294	95.0	41.0	34.9	46.0	39.1	0.032	3649	0.012	0.45	0.05	0.15	7.15	0.41	0.26
AMCV-080	55365	108.8	39.0	33.2	46.0	39.1	0.132	2707	0.012	0.40	0.05	0.15	9.22	0.39	0.09
AMCV-090	52730	39.8	40.0	34.0	46.0	39.1	0.155	1400	0.012	0.40	0.05	0.15	9.81	0.38	0.05
AMCV-100	52573	123.4	32.0	27.2	42.9	36.5	0.182	2179	0.012	0.40	0.05	0.15	9.54	0.38	0.06
Amazon - Headwaters Sub-Basin															
AMHW-010	67175	249.6	14.0	11.9	32.0	27.2	0.311	2765	0.012	0.40	0.05	0.15	9.21	0.37	0.06
AMHW-020	65344	214.1	14.0	11.9	35.1	29.8	0.270	3887	0.012	0.40	0.05	0.15	8.05	0.32	0.05
AMHW-030	65392	157.7	9.0	7.7	32.0	27.2	0.277	3873	0.012	0.40	0.05	0.15	8.38	0.33	0.05
Amazon - Lower Sub-Basin															
AMLW-010	71114	565.6	5.0	4.3	33.1	28.1	0.157	3422	0.012	0.40	0.05	0.15	7.95	0.41	0.19
AMLW-020	71113	189.3	2.0	1.7	9.1	7.7	0.016	4325	0.012	0.40	0.05	0.15	6.53	0.41	0.10
AMLW-030	63178	251.4	14.0	11.9	28.0	23.8	0.017	5299	0.012	0.40	0.05	0.15	9.37	0.39	0.06

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE AMAZON CREEK STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
AMLW-040	71110	137.0	10.0	8.5	36.9	31.4	0.115	2772	0.012	0.40	0.05	0.15	9.53	0.39	0.06
AMLW-050	71105	224.5	12.0	10.2	48.0	40.8	0.077	3535	0.012	0.40	0.05	0.15	9.42	0.39	0.07
AMLW-060	71122	68.5	18.0	15.3	31.1	26.4	0.014	3551	0.012	0.40	0.05	0.15	9.63	0.38	0.06
Amazon - Middle Sub-Basin															
AMMD-010	51437	121.7	32.0	27.2	42.0	35.7	0.225	3313	0.012	0.40	0.05	0.15	9.42	0.37	0.06
AMMD-020	54260	196.9	26.0	22.1	32.0	27.2	0.196	6597	0.012	0.40	0.05	0.15	8.73	0.33	0.05
AMMD-030	54295	97.6	43.0	36.6	46.0	39.1	0.249	1904	0.012	0.45	0.05	0.15	9.94	0.38	0.05
AMMD-040	54330	165.1	41.0	34.9	44.0	37.4	0.108	13488	0.012	0.45	0.05	0.15	9.81	0.37	0.05
AMMD-050	54174	119.9	39.0	33.2	41.1	34.9	0.070	3013	0.012	0.45	0.05	0.15	10.30	0.37	0.04
AMMD-060	51751	130.9	44.0	37.4	46.0	39.1	0.082	3420	0.012	0.45	0.05	0.15	10.00	0.38	0.05
AMMD-070	71052	33.4	42.0	35.7	42.9	36.5	0.014	4848	0.012	0.45	0.05	0.15	10.30	0.37	0.04
AMMD-080	51303	85.0	51.0	43.4	52.9	45.0	0.120	4442	0.012	0.45	0.05	0.15	9.65	0.38	0.06
AMMD-090	51344	165.5	33.0	28.1	42.0	35.7	0.146	3546	0.012	0.43	0.05	0.15	8.96	0.35	0.06
AMMD-100	71053	135.1	44.0	37.4	47.1	40.0	0.084	3532	0.012	0.45	0.05	0.15	10.00	0.38	0.05
AMMD-110	66967	28.0	54.0	45.9	57.1	48.5	0.043	2154	0.012	0.45	0.05	0.15	10.40	0.37	0.04
AMMD-120	54175	15.3	39.0	33.2	44.0	37.4	0.011	4999	0.012	0.45	0.05	0.15	10.80	0.36	0.03
AMMD-130	57163	55.3	31.0	26.4	45.1	38.3	0.011	2580	0.012	0.45	0.05	0.15	11.20	0.34	0.02
AMMD-135	57428	122.7	51.0	43.4	54.0	45.9	0.034	2865	0.012	0.45	0.05	0.15	10.00	0.37	0.05
AMMD-140	57400	30.0	54.0	45.9	62.0	52.7	0.003	1400	0.012	0.45	0.05	0.15	9.62	0.38	0.07
AMMD-145	57427	46.5	47.0	40.0	55.1	46.8	0.035	1382	0.014	0.45	0.05	0.15	9.17	0.36	0.06
AMMD-150	71059	56.2	61.0	51.9	68.0	57.8	0.017	3340	0.012	0.45	0.05	0.15	9.63	0.39	0.07
AMMD-160	71063	52.0	56.0	47.6	58.9	50.1	0.058	1618	0.012	0.45	0.05	0.15	8.53	0.40	0.18
AMMD-165	56284	44.8	50.0	42.5	54.0	45.9	0.108	1330	0.012	0.45	0.05	0.15	9.59	0.38	0.10
AMMD-170	71075	171.0	47.0	40.0	50.0	42.5	0.077	4859	0.012	0.45	0.05	0.15	9.30	0.39	0.11
Amazon - Polk Street Sub-Basin															
AMPK-010	55432	71.6	55.0	46.8	61.1	51.9	0.001	2270	0.012	0.45	0.05	0.15	9.62	0.38	0.06
AMPK-020	66991	87.3	57.0	48.5	61.1	51.9	0.013	2654	0.012	0.45	0.05	0.15	9.63	0.38	0.07
AMPK-030	71080	81.6	45.0	38.3	51.1	43.4	0.013	1953	0.012	0.45	0.05	0.15	9.63	0.38	0.07
AMPK-040	56048	68.1	45.0	38.3	48.9	41.6	0.026	2021	0.012	0.45	0.05	0.15	9.53	0.39	0.08
AMPK-050	71079	66.9	46.0	39.1	47.1	40.0	0.026	1457	0.012	0.45	0.05	0.15	9.47	0.39	0.08
AMPK-060	52687	78.1	35.0	29.8	36.9	31.4	0.011	6183	0.012	0.45	0.05	0.15	7.89	0.41	0.24
AMPK-070	55256	36.7	33.0	28.1	36.0	30.6	0.006	2395	0.012	0.45	0.05	0.15	7.74	0.41	0.26
AMPK-080	71003	110.5	50.0	42.5	52.0	44.2	0.058	2982	0.012	0.45	0.05	0.15	8.19	0.41	0.22
AMPK-090	52685	33.7	46.0	39.1	47.1	40.0	0.115	2900	0.012	0.45	0.05	0.15	7.53	0.41	0.28
AMPK-100	52707	142.1	40.0	34.0	45.1	38.3	0.184	2920	0.012	0.40	0.05	0.15	9.15	0.36	0.06
AMPK-110	53441	121.0	38.0	32.3	44.0	37.4	0.171	2195	0.012	0.40	0.05	0.15	9.26	0.39	0.10
AMPK-120	53422	118.0	40.0	34.0	44.0	37.4	0.166	2773	0.012	0.40	0.05	0.15	9.65	0.38	0.06
AMPK-130	53408	106.0	32.0	27.2	42.0	35.7	0.181	2270	0.012	0.40	0.05	0.15	9.68	0.38	0.06
AMPK-140	53390	103.4	38.0	32.3	45.1	38.3	0.153	2371	0.012	0.45	0.05	0.15	9.69	0.38	0.06
AMPK-150	53358	47.6	46.0	39.1	47.1	40.0	0.126	1195	0.012	0.45	0.05	0.15	9.85	0.38	0.05
AMPK-160	53448	71.1	44.0	37.4	45.1	38.3	0.072	2214	0.012	0.45	0.05	0.15	9.68	0.38	0.06
AMPK-170	68813	70.3	45.0	38.3	46.0	39.1	0.032	19131	0.012	0.45	0.05	0.15	8.44	0.40	0.19
Amazon - Upper Sub-Basin															
AMUP-010	65582	172.4	20.0	17.0	40.0	34.0	0.242	4173	0.012	0.40	0.05	0.15	8.93	0.35	0.05
AMUP-020	65398	197.3	38.0	32.3	45.1	38.3	0.136	3224	0.012	0.45	0.05	0.15	9.81	0.38	0.06
AMUP-030	65396	182.7	25.0	21.3	42.9	36.5	0.258	4341	0.012	0.43	0.05	0.15	9.50	0.36	0.05

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE AMAZON CREEK STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
AMUP-040	65370	218.9	19.0	16.2	38.9	33.1	0.274	7945	0.012	0.43	0.05	0.15	6.80	0.28	0.06
AMUP-050	67978	76.4	34.0	28.9	44.0	37.4	0.260	4076	0.012	0.43	0.05	0.15	9.62	0.37	0.06
AMUP-060	50653	97.0	41.0	34.9	45.1	38.3	0.159	6674	0.012	0.45	0.05	0.15	9.65	0.38	0.06
AMUP-070	50200	126.1	43.0	36.6	45.1	38.3	0.192	6863	0.012	0.45	0.05	0.15	9.32	0.37	0.06
AMUP-080	50090	114.8	33.0	28.1	40.0	34.0	0.295	4168	0.012	0.40	0.05	0.15	9.63	0.39	0.07
AMUP-090	50739	122.6	20.0	17.0	42.9	36.5	0.224	3641	0.012	0.40	0.05	0.15	8.81	0.35	0.06
AMUP-100	50109	151.9	27.0	23.0	40.0	34.0	0.302	2683	0.012	0.40	0.05	0.15	9.46	0.38	0.06
AMUP-110	99479	93.1	19.0	16.2	42.0	35.7	0.237	2482	0.012	0.40	0.05	0.15	9.41	0.38	0.06
AMUP-120	50660	181.3	33.0	28.1	42.9	36.5	0.100	3037	0.012	0.40	0.05	0.15	9.04	0.36	0.06
AMUP-130	50671	42.6	43.0	36.6	45.1	38.3	0.071	3198	0.012	0.45	0.05	0.15	9.62	0.38	0.06
AMUP-140	51763	101.6	34.0	28.9	42.9	36.5	0.120	3793	0.012	0.45	0.05	0.15	9.18	0.35	0.05
AMUP-150	50544	179.9	35.0	29.8	42.9	36.5	0.264	6186	0.012	0.45	0.05	0.15	10.30	0.37	0.04
AMUP-160	51757	150.7	39.0	33.2	46.0	39.1	0.238	3939	0.012	0.45	0.05	0.15	9.95	0.38	0.05
AMUP-170	51729	64.1	47.0	40.0	48.0	40.8	0.090	1102	0.012	0.45	0.05	0.15	9.95	0.38	0.05
AMUP-180	51841	93.7	42.0	35.7	45.1	38.3	0.150	9414	0.012	0.45	0.05	0.15	9.48	0.37	0.06
AMUP-190[1]	51239	49.4	32.0	27.2	42.0	35.7	0.214	5376	0.012	0.45	0.05	0.15	8.46	0.33	0.06
AMUP-200[1]	50163	92.9	23.0	19.6	42.9	36.5	0.203	2427	0.012	0.40	0.05	0.15	7.14	0.28	0.04

1. Modeling data for these subbasins have recently been updated and are available by contacting the City of Eugene Public Works Department, Engineering Division.

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE BETHEL DANEBO STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
Bethel Danebo - A2 Channel															
BDA2-010	58209	61.6	17.0	14.5	25.1	21.3	0.007	8050	0.012	0.450	0.05	0.15	9.23	0.39	0.14
BDA2-020	58709	37.5	40.0	34.0	42.0	35.7	0.003	1880	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA2-030	58689	84.0	38.0	32.3	45.1	38.3	0.000	2290	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA2-040	58205	39.2	33.0	28.1	38.9	33.1	0.008	2840	0.012	0.450	0.05	0.15	9.84	0.38	0.08
BDA2-050	58207	113.1	0.0	0.0	10.9	9.3	0.005	3080	0.012	0.450	0.05	0.15	9.35	0.39	0.13
BDA2-060	58673	40.7	44.0	37.4	45.1	38.3	0.005	2220	0.012	0.450	0.05	0.15	9.36	0.39	0.10
BDA2-070	58680	40.1	43.0	36.6	47.1	40.0	0.010	4030	0.012	0.450	0.05	0.15	9.42	0.39	0.09
BDA2-080	66164	110.7	38.0	32.3	38.9	33.1	0.003	4260	0.012	0.450	0.05	0.15	9.53	0.39	0.08
BDA2-090	58950	70.3	45.0	38.3	45.1	38.3	0.004	3530	0.012	0.450	0.05	0.15	9.37	0.39	0.12
BDA2-100	60245	56.1	45.0	38.3	47.1	40.0	0.005	1410	0.012	0.450	0.05	0.15	8.99	0.39	0.17
BDA2-110	58645	78.5	38.0	32.3	41.1	34.9	0.002	1600	0.012	0.450	0.05	0.15	8.66	0.40	0.17
BDA2-120	80004	51.4	14.0	11.9	23.1	19.6	0.009	5600	0.012	0.450	0.05	0.15	8.72	0.40	0.15
BDA2-130	80007	109.8	18.0	15.3	28.0	23.8	0.006	5980	0.012	0.450	0.05	0.15	5.63	0.23	0.06
BDA2-140	58946	68.0	35.0	29.8	45.1	38.3	0.001	2340	0.012	0.450	0.05	0.15	9.03	0.37	0.10
BDA2-150	58875	56.6	50.0	42.5	51.1	43.4	0.008	1060	0.012	0.450	0.05	0.15	9.72	0.38	0.10
BDA2-160	80009	70.4	41.0	34.9	60.0	51.0	0.001	1920	0.012	0.450	0.05	0.15	9.58	0.39	0.07
BDA2-170	80010	28.5	33.0	28.1	48.0	40.8	0.001	1330	0.012	0.450	0.05	0.15	9.12	0.39	0.12
BDA2-180	80015	13.5	32.0	27.2	46.0	39.1	0.003	740	0.012	0.450	0.05	0.15	9.63	0.39	0.07
BDA2-190	58894	56.3	37.0	31.5	48.0	40.8	0.001	3070	0.012	0.450	0.05	0.15	8.60	0.40	0.17
BDA2-200	58893	58.6	50.0	42.5	55.1	46.8	0.005	2130	0.012	0.450	0.05	0.15	8.03	0.41	0.23
BDA2-210	58853	49.2	16.0	13.6	60.0	51.0	0.003	2470	0.012	0.450	0.05	0.15	8.28	0.39	0.17
BDA2-220	80017	85.3	20.0	17.0	62.9	53.5	0.006	4640	0.012	0.450	0.05	0.15	7.04	0.34	0.18
BDA2-230	69700	13.9	40.0	34.0	54.0	45.9	0.000	1130	0.012	0.450	0.05	0.15	8.00	0.41	0.23
BDA2-240	69714	34.1	53.0	45.1	61.1	51.9	0.001	2230	0.012	0.450	0.05	0.15	9.61	0.38	0.06
BDA2-250	69732	211.5	34.0	28.9	62.0	52.7	0.001	3840	0.012	0.450	0.05	0.15	9.56	0.39	0.07
BDA2-260	80018	69.6	4.0	3.4	58.0	49.3	0.001	1890	0.012	0.450	0.05	0.15	8.65	0.40	0.17
BDA2-270	80022	26.3	59.0	50.2	58.9	50.1	0.001	2870	0.012	0.450	0.05	0.15	6.87	0.42	0.35
BDA2-280	66548	42.2	46.0	39.1	48.9	41.6	0.000	2510	0.012	0.450	0.05	0.15	9.14	0.39	0.12
BDA2-290	58883	77.9	38.0	32.3	44.0	37.4	0.001	3180	0.012	0.450	0.05	0.15	9.51	0.39	0.08
BDA2-300	60488	65.4	30.0	25.5	40.0	34.0	0.001	2850	0.012	0.450	0.05	0.15	9.33	0.37	0.06
BDA2-310	60565	60.7	40.0	34.0	45.1	38.3	0.001	1890	0.012	0.450	0.05	0.15	9.63	0.38	0.06
BDA2-320	60238	39.9	45.0	38.3	47.1	40.0	0.001	3260	0.012	0.450	0.05	0.15	8.12	0.40	0.26
BDA2-330	60216	56.9	44.0	37.4	45.1	38.3	0.002	1240	0.012	0.450	0.05	0.15	9.26	0.39	0.11
BDA2-340	60123	39.7	45.0	38.3	45.1	38.3	0.002	1080	0.012	0.450	0.05	0.15	8.00	0.41	0.25
BDA2-350	80025	12.6	41.0	34.9	42.9	36.5	0.002	2740	0.012	0.450	0.05	0.15	8.53	0.40	0.20
BDA2-360	60107	33.9	38.0	32.3	40.0	34.0	0.002	2770	0.012	0.450	0.05	0.15	8.85	0.40	0.14
BDA2-370	67069	54.5	35.0	29.8	45.1	38.3	0.000	3560	0.012	0.450	0.05	0.15	9.62	0.39	0.07
BDA2-380	66573	139.9	43.0	36.6	44.0	37.4	0.001	2280	0.012	0.450	0.05	0.15	9.63	0.39	0.07
BDA2-390	60461	41.1	44.0	37.4	44.0	37.4	0.002	3360	0.012	0.450	0.05	0.15	9.63	0.39	0.06
BDA2-395	60454	67.1	49.0	41.7	52.9	45.0	0.001	3370	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA2-400	68451	66.1	46.0	39.1	47.1	40.0	0.001	6170	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA2-405	60541	21.5	65.0	55.3	70.0	59.5	0.003	1560	0.012	0.450	0.05	0.15	9.63	0.39	0.06
BDA2-408	69935	63.8	52.0	44.2	58.9	50.1	0.001	1810	0.012	0.450	0.05	0.15	9.63	0.38	0.06
BDA2-410	80027	21.7	37.0	31.5	46.0	39.1	0.001	1010	0.012	0.450	0.05	0.15	9.63	0.39	0.07

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE BETHEL DANEBO STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
BDA2-420	60101	37.6	43.0	36.6	47.1	40.0	0.001	1450	0.012	0.450	0.05	0.15	9.60	0.39	0.07
BDA2-430	61733	61.2	40.0	34.0	44.0	37.4	0.001	1540	0.012	0.450	0.05	0.15	9.06	0.36	0.06
Bethel Danebo - A3 Channel															
BDA3-010	61607	71.8	1.0	0.9	4.0	3.4	0.002	2345	0.012	0.450	0.05	0.15	8.12	0.40	0.23
BDA3-020	61608	137.4	22.0	18.7	48.0	40.8	0.007	4079	0.012	0.450	0.05	0.15	9.14	0.39	0.12
BDA3-030	61694	67.0	19.0	16.2	38.0	32.3	0.003	2734	0.012	0.400	0.05	0.15	7.68	0.31	0.05
BDA3-040	80050	157.9	26.0	22.1	62.9	53.5	0.064	7369	0.012	0.400	0.05	0.15	8.32	0.35	0.09
BDA3-050	modpt	43.5	49.0	41.7	64.0	54.4	0.003	1291	0.012	0.400	0.05	0.15	9.01	0.40	0.13
BDA3-060	63147	36.3	65.0	55.3	68.9	58.6	0.008	2961	0.012	0.400	0.05	0.15	8.64	0.40	0.17
BDA3-070	63207	36.0	32.0	27.2	56.0	47.6	0.000	1177	0.012	0.400	0.05	0.15	9.62	0.39	0.07
BDA3-080	63129	105.9	14.0	11.9	22.0	18.7	0.008	3300	0.012	0.400	0.05	0.15	9.39	0.38	0.08
BDA3-090	67158	103.3	23.0	19.6	36.0	30.6	0.024	3555	0.012	0.450	0.05	0.15	9.23	0.39	0.11
BDA3-100	63276	63.4	18.0	15.3	58.0	49.3	0.001	5180	0.012	0.450	0.05	0.15	9.63	0.38	0.06
BDA3-110	63359	72.1	43.0	36.6	66.0	56.1	0.001	1890	0.012	0.450	0.05	0.15	9.63	0.38	0.06
BDA3-120	63326	73.0	30.0	25.5	44.0	37.4	0.038	1710	0.012	0.450	0.05	0.15	9.33	0.39	0.10
BDA3-130	63364	39.2	42.0	35.7	66.0	56.1	0.001	6450	0.012	0.450	0.05	0.15	9.37	0.37	0.06
BDA3-150	63349	76.8	54.0	45.9	67.1	57.0	0.004	1320	0.012	0.450	0.05	0.15	9.00	0.36	0.06
BDA3-160	66631	95.5	29.0	24.7	62.9	53.5	0.005	1485	0.012	0.450	0.05	0.15	6.90	0.27	0.04
BDA3-180	63369	67.9	52.0	44.2	66.0	56.1	0.001	3690	0.012	0.450	0.05	0.15	9.61	0.39	0.07
BDA3-190	63811	85.7	55.0	46.8	67.1	57.0	0.001	1560	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA3-200	63822	43.8	40.0	34.0	65.1	55.3	0.003	3585	0.012	0.450	0.05	0.15	8.37	0.33	0.05
BDA3-210	63826	59.7	61.0	51.9	68.0	57.8	0.002	2595	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA3-220	63800	88.9	60.0	51.0	68.9	58.6	0.001	2415	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDA3-230	63795	75.8	41.0	34.9	65.1	55.3	0.002	2070	0.012	0.450	0.05	0.15	7.31	0.29	0.05
Bethel Danebo - Greenhill Tributary															
BDGH-010[1&2]		38.9	2.6	2.2	4.3	3.7	0.001								
BDGH-020[2]	80029	110.9	4.0	3.4	42.4	36.0	0.001	1340	0.012	0.450	0.05	0.15	9.63	0.38	0.06
BDGH-030[2]	80031	182.9	1.0	0.9	41.2	35.0	0.001	1730	0.012	0.450	0.05	0.15	9.74	0.38	0.06
BDGH-040[2]	80033	26.5	2.0	1.7	41.2	35.0	0.003	910	0.012	0.450	0.05	0.15	9.63	0.39	0.07
BDGH-050	80037	45.2	0.0	0.0	41.2	35.0	0.000	4922	0.012	0.450	0.05	0.15	9.62	0.38	0.06
BDGH-060	80071	39.1	3.0	2.6	41.2	35.0	0.001	2129	0.012	0.450	0.05	0.15	9.62	0.39	0.07
BDGH-062	70559	72.1	3.0	2.6	41.2	35.0	0.001	1892	0.012	0.450	0.05	0.15	9.62	0.39	0.07
BDGH-064	80064	38.4	1.4	1.2	41.2	35.0	0.001	1673	0.012	0.450	0.05	0.15	9.62	0.39	0.07
BDGH-066	70560	5.7	54.1	46.0	54.1	46.0	0.003	553	0.012	0.450	0.05	0.15	9.74	0.38	0.06
BDGH-068	70539	15.8	54.1	46.0	54.1	46.0	0.003	457	0.012	0.450	0.05	0.15	9.74	0.38	0.06
BDGH-070	59949	18.1	34.0	28.9	37.6	32.0	0.001	917	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDGH-075	80069	39.3	34.0	28.9	41.2	35.0	0.001	1712	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDGH-080	70177	50.5	23.0	19.6	37.6	32.0	0.003	1650	0.012	0.450	0.05	0.15	9.20	0.39	0.11
BDGH-090	59945	80.8	29.0	24.7	43.5	37.0	0.003	4400	0.012	0.450	0.05	0.15	9.61	0.39	0.07
BDGH-100	60212	40.3	40.0	34.0	43.5	37.0	0.004	1550	0.012	0.450	0.05	0.15	8.64	0.40	0.17
BDGH-110	60196	108.3	28.0	23.8	49.4	42.0	0.002	2360	0.012	0.450	0.05	0.15	9.62	0.38	0.07
BDGH-120	80041	137.1	4.0	3.4	24.7	21.0	0.002	4480	0.012	0.450	0.05	0.15	8.41	0.40	0.18
BDGH-130	69068	54.3	36.0	30.6	41.2	35.0	0.004	1420	0.012	0.450	0.05	0.15	9.63	0.39	0.07
Bethel Danebo - Roosevelt Channel															
BDRC-010	61727	94.9	21.0	17.9	60.0	51.0	0.002	8861	0.012	0.450	0.05	0.15	8.94	0.35	0.06
BDRC-020	61741	54.6	44.0	37.4	62.9	53.5	0.001	1115	0.012	0.450	0.05	0.15	8.04	0.32	0.05

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE BETHEL DANEBO STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
BDRC-030	61743	38.9	35.0	29.8	47.1	40.0	0.002	4236	0.012	0.450	0.05	0.15	9.63	0.38	0.06
BDRC-040	61959	168.9	42.0	35.7	50.0	42.5	0.001	6897	0.012	0.450	0.05	0.15	9.61	0.38	0.06
BDRC-050	61977	63.3	40.0	34.0	58.0	49.3	0.001	4133	0.012	0.450	0.05	0.15	8.43	0.33	0.06
BDRC-055	69952	224.8	27.0	23.0	58.9	50.1	0.002	3264	0.012	0.450	0.05	0.15	9.63	0.39	0.06
BDRC-060	66603	28.2	54.0	45.9	64.0	54.4	0.001	3070	0.012	0.450	0.05	0.15	9.63	0.38	0.07
BDRC-070	62329	38.4	48.0	40.8	57.1	48.5	0.001	4181	0.012	0.450	0.05	0.15	9.62	0.38	0.06
BDRC-080	62317	92.2	53.0	45.1	65.1	55.3	0.011	1586	0.012	0.450	0.05	0.15	9.63	0.38	0.06
Bethel Danebo - A Channel															
BDAC-010[1]		176.8	2.0	1.7	28.0	23.8	0.0								

1. These subbasins were not included in the detailed model.
2. Subbasins have been refined in this area and updated hydrologic information is available by contacting the City of Eugene Public Works Department, Engineering Division.

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE LAUREL HILL STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
Laurel Hill - Glenwood															
LHGL-010	72143	20.7	71.1	60.4	71.1	60.4	0.300	2255	0.012	0.40	0.05	0.15	6.91	0.41	0.36
LHGL-020[3]	72596	60.5	28.2	24.0	58.0	49.3	0.220	2824	0.012	0.42	0.05	0.15	8.35	0.38	0.23
LHGL-030[3]	56387	35.9	36.5	31.0	62.9	53.5	0.160	2342	0.012	0.43	0.05	0.15	7.25	0.38	0.37
LHGL-040[3]	72587	76.2	43.5	37.0	55.1	46.8	0.110	2075	0.012	0.45	0.05	0.15	8.52	0.38	0.22
LHGL-050[3]	56390	69.4	49.4	42.0	64.0	54.4	0.250	4533	0.012	0.44	0.05	0.15	8.89	0.35	0.06
LHGL-070[3]	72591	44.7	43.5	37.0	61.1	51.9	0.010	1082	0.012	0.33	0.05	0.15	5.44	0.37	0.60
LHGL-080[3]	72589	101.7	27.1	23.0	54.0	45.9	0.230	3021	0.012	0.35	0.05	0.15	7.19	0.38	0.38
LHGL-090	53485	89.4	8.2	7.0	48.9	41.6	0.220	2434	0.012	0.41	0.05	0.15	9.01	0.35	0.06
LHGL-060[3] & LHGL-100[2]	72585	91.8	21.2	18.0	53.1	45.1	0.170	1874	0.012	0.41	0.05	0.15	9.47	0.38	0.07
Laurel Hill - Riverview/Augusta															
LHRA-010	72139	39.5	37.6	32.0	45.1	38.3	0.230	1518	0.012	0.42	0.05	0.15	6.13	0.39	0.20
LHRA-020[3]	56522	40.3	43.5	37.0	62.0	52.7	0.120	1318	0.012	0.43	0.05	0.15	8.56	0.40	0.18
LHRA-030	53635	39.6	36.5	31.0	41.1	34.9	0.180	1231	0.012	0.42	0.05	0.15	3.90	0.38	0.25
LHRA-040	75473	56.2	28.2	24.0	49.1	41.7	0.120	2160	0.012	0.40	0.05	0.15	8.39	0.40	0.19
LHRA-050	53752	32.4	30.6	26.0	43.1	36.6	0.160	1176	0.012	0.43	0.05	0.15	7.61	0.40	0.20
LHRA-051	75484	26.6	30.6	26.0	43.5	37.0	0.160	1390	0.012	0.43	0.05	0.15	7.61	0.40	0.20
LHRA-060	53777	53.0	18.8	16.0	32.0	27.2	0.270	1385	0.012	0.42	0.05	0.15	6.94	0.36	0.14
LHRA-070	53783	23.9	24.7	21.0	42.0	35.7	0.140	1644	0.012	0.42	0.05	0.15	7.91	0.34	0.10
LHRA-071	75486	39.7	24.7	21.0	42.4	36.0	0.140	1853	0.012	0.42	0.05	0.15	7.91	0.34	0.10
LHRA-080	51387	106.6	0.0	0.0	32.0	27.2	0.230	2487	0.012	0.40	0.05	0.15	7.51	0.29	0.05
LHRA-090	53704	38.4	22.4	19.0	36.9	31.4	0.190	965	0.012	0.40	0.05	0.15	8.21	0.32	0.06
LHRA-100	99796	158.6	16.5	14.0	38.0	32.3	0.260	3239	0.012	0.40	0.05	0.15	6.77	0.29	0.06

Note.
1. Shading indicates that these subbasins are now under City of Springfield jurisdiction and have been excluded from this basin planning process.
2. Subbasins LHGL-060 and LHGL-100 were combined in the model. Subbasin LHGL-060 is under City of Springfield jurisdiction and subbasin LHGL-100 is under City of Eugene jurisdiction.
3. The drainage system originally modeled for this basin included Laurel Hill (south of I-5) and Glenwood (north of I-5). The Glenwood area has since been transferred to the City of Springfield. Users of this Plan should contact the City of Springfield for drainage information in the Glenwood area. The information provided here is for context purposes only.

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
Willakenzie North - County Farm															
WKCF-020	58172	85.5	11.1	9.4	43.1	36.6	0.016	1862	0.012	0.20	0.05	0.15	9.60	0.38	0.07
WKCF-030	66533	98.9	13.1	11.1	43.1	36.6	0.012	2307	0.012	0.20	0.05	0.15	9.63	0.38	0.06
WKCF-040[1]	58356	154.5	13.1	11.1	43.1	36.6	0.002	4205	0.012	0.20	0.05	0.15	9.62	0.39	0.07
WKCF-050[1]	66196	96.4	5.1	4.3	42.0	35.7	0.002	2625	0.012	0.20	0.05	0.15	9.10	0.39	0.13
WKCF-060	59489	47.7	26.0	22.1	33.1	28.1	0.008	1733	0.012	0.20	0.05	0.15	9.92	0.38	0.07
WKCF-070	59511	75.8	41.1	34.9	58.0	49.3	0.002	6188	0.012	0.20	0.05	0.15	8.71	0.40	0.16
Willakenzie Noth - Gilham Road															
WKGL-010	71280	65.9	9.0	7.7	39.0	33.2	0.042	3600	0.012	0.45	0.05	0.15	8.95	0.38	0.33
WKGL-020	71281	110.4	18.0	15.3	49.1	41.7	0.017	6009	0.012	0.45	0.05	0.15	7.90	0.41	0.24
WKGL-030	58454	66.6	17.1	14.5	43.1	36.6	0.005	3108	0.012	0.33	0.05	0.15	8.30	0.41	0.21
WKGL-040	58511	50.9	33.1	28.1	44.0	37.4	0.018	2080	0.012	0.45	0.05	0.15	7.50	0.41	0.28
WKGL-050	58499	43.1	28.0	23.8	45.1	38.3	0.004	1761	0.012	0.45	0.05	0.15	8.10	0.41	0.23
WKGL-060	58463	93.6	38.0	32.3	46.0	39.1	0.013	2185	0.012	0.45	0.05	0.15	9.00	0.39	0.13
Willakenzie North - Delta Highway															
WKDH-020	58447	83.3	25.1	21.3	42.0	35.7	0.087	4537	0.012	0.45	0.05	0.15	4.02	0.27	1.16
WKDH-030	58450	71.6	32.6	27.7	53.9	45.8	0.024	1559	0.012	0.45	0.05	0.15	4.10	0.37	0.77
WKDH-050	59799	99.2	43.1	36.6	50.8	43.2	0.067	2025	0.012	0.45	0.05	0.15	7.17	0.41	0.34
Willakenzie North - North Beltline															
WKNB-010	58442	92.8	41.1	34.9	42.0	35.7	0.079	3791	0.012	0.45	0.05	0.15	8.30	0.39	0.50
WKNB-020	59755	63.1	48.0	40.8	48.0	40.8	0.008	2576	0.012	0.45	0.05	0.15	9.15	0.39	0.12
WKNB-030	69005	67.2	46.0	39.1	46.0	39.1	0.002	4393	0.012	0.45	0.05	0.15	8.46	0.40	0.19
WKNB-040	59772	83.7	50.0	42.5	51.1	43.4	0.003	3416	0.012	0.45	0.05	0.15	9.50	0.39	0.08
WKNB-050	59519	66.3	51.1	43.4	53.1	45.1	0.000	3610	0.012	0.45	0.05	0.15	8.60	0.40	0.17
WKNB-060	59426	61.9	54.0	45.9	55.1	46.8	0.005	2887	0.012	0.45	0.05	0.15	9.20	0.39	0.11
WKNB-070	59497	95.1	6.0	5.1	17.1	14.5	0.002	2588	0.012	0.20	0.05	0.15	9.60	0.38	0.06
WKNB-080	71239	253.3	43.1	36.6	47.1	40.0	0.010	3761	0.012	0.45	0.05	0.15	9.40	0.39	0.09
WKNB-090	61140	36.5	39.1	33.2	45.1	38.3	0.002	3977	0.012	0.45	0.05	0.15	7.50	0.41	0.29
WKNB-100	59462	29.0	51.1	43.4	56.0	47.6	0.006	4740	0.012	0.45	0.05	0.15	9.00	0.40	0.14
WKNB-110	59476	22.3	39.1	33.2	46.0	39.1	0.002	3635	0.012	0.45	0.05	0.15	9.40	0.39	0.09
WKNB-120	61133	32.1	38.0	32.3	43.1	36.6	0.003	10471	0.012	0.45	0.05	0.15	6.30	0.43	0.41
WKNB-130	69048	29.2	41.1	34.9	43.1	36.6	0.002	1194	0.012	0.45	0.05	0.15	7.40	0.41	0.30
WKNB-140	61213	59.0	52.0	44.2	55.1	46.8	0.002	1929	0.012	0.45	0.05	0.15	8.10	0.41	0.23
WKNB-150	66590	59.5	38.0	32.3	46.0	39.1	0.001	1766	0.012	0.45	0.05	0.15	8.90	0.40	0.14
WKNB-160	99575	38.6	38.0	32.3	43.1	36.6	0.001	3155	0.012	0.45	0.05	0.15	7.00	0.42	0.33
WKNB-170	61142	125.5	25.1	21.3	44.0	37.4	0.001	2928	0.012	0.45	0.05	0.15	7.30	0.41	0.31
WKNB-180	61199	40.2	44.0	37.4	45.1	38.3	0.001	4372	0.012	0.45	0.05	0.15	7.30	0.41	0.31
WKNB-190	61086	59.1	39.1	33.2	40.0	34.0	0.001	4829	0.012	0.45	0.05	0.15	8.20	0.41	0.21
WKNB-200	62750	110.9	45.1	38.3	46.0	39.1	0.003	3019	0.012	0.45	0.05	0.15	6.70	0.42	0.37
WKNB-210	61235	72.5	39.1	33.2	44.0	37.4	0.001	1973	0.012	0.45	0.05	0.15	6.70	0.42	0.37
Willakenzie South - Delta Ponds															
WKDP-080	66556	20.8	46.0	39.1	46.0	39.1	0.067	3403	0.012	0.45	0.05	0.15	5.40	0.41	2.27
WKDP-090	60844	26.2	40.0	34.0	42.0	35.7	0.040	2858	0.012	0.45	0.05	0.15	6.60	0.42	0.38
WKDP-100	59197	41.6	30.0	25.5	46.0	39.1	0.075	1132	0.012	0.45	0.05	0.15	6.16	0.43	0.42
WKDP-110	60771	37.1	36.0	30.6	45.1	38.3	0.016	1010	0.012	0.45	0.05	0.15	5.94	0.44	0.44

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
WKDP-120	60804	38.9	40.0	34.0	44.0	37.4	0.035	2544	0.012	0.45	0.05	0.15	6.96	0.42	0.34
WKDP-130	60760	55.4	35.1	29.8	51.1	43.4	0.033	3618	0.012	0.45	0.05	0.15	9.62	0.38	0.06
WKDP-140	60828	48.0	32.0	27.2	42.0	35.7	0.196	1959	0.012	0.42	0.05	0.15	6.85	0.42	0.33
WKDP-150	60811	29.9	39.1	33.2	42.9	36.5	0.076	1629	0.012	0.45	0.05	0.15	9.44	0.39	0.09
WKDP-160	61595	47.7	43.1	36.6	46.0	39.1	0.072	2596	0.012	0.45	0.05	0.15	8.79	0.40	0.15
Willakenzie South - Debrick Slough															
WKDS-010	60786	76.9	68.0	57.8	71.1	60.4	0.015	3140	0.012	0.45	0.05	0.15	4.38	0.36	0.72
WKDS-020	60730	48.4	58.0	49.3	64.0	54.4	0.066	3164	0.012	0.45	0.05	0.15	8.10	0.40	0.21
WKDS-030	62474	68.6	29.1	24.7	61.1	51.9	0.105	2801	0.012	0.45	0.05	0.15	6.87	0.40	0.36
WKDS-040	99058	214.3	14.0	11.9	26.0	22.1	0.080	6364	0.012	0.45	0.05	0.15	8.65	0.39	0.14
WKDS-050	62914	78.7	27.1	23.0	33.1	28.1	0.025	2143	0.012	0.45	0.05	0.15	8.86	0.38	0.16
WKDS-060	62978	55.2	36.0	30.6	38.0	32.3	0.002	2253	0.012	0.45	0.05	0.15	4.69	0.38	0.68
WKDS-070	62946	75.2	41.1	34.9	42.9	36.5	0.014	4097	0.012	0.45	0.05	0.15	5.15	0.37	0.64
WKDS-080	62989	139.5	51.1	43.4	52.9	45.0	0.022	7596	0.012	0.45	0.05	0.15	5.49	0.38	0.43
WKDS-090	62713	44.5	43.1	36.6	43.1	36.6	0.003	2425	0.012	0.45	0.05	0.15	6.52	0.38	0.16
WKDS-100	71101	47.2	41.1	34.9	42.9	36.5	0.016	1102	0.012	0.45	0.05	0.15	6.06	0.41	0.30
Willakenzie South - Gilham-Norkenzie															
WKGN-010	59134	52.9	43.1	36.6	47.1	40.0	0.106	2880	0.012	0.45	0.05	0.15	6.56	0.42	0.38
WKGN-020	68175	41.2	44.0	37.4	44.0	37.4	0.169	1346	0.012	0.45	0.05	0.15	7.16	0.42	0.32
WKGN-030	59868	53.9	46.0	39.1	47.1	40.0	0.008	8808	0.012	0.45	0.05	0.15	7.40	0.41	0.30
WKGN-040	59878	37.8	41.1	34.9	42.0	35.7	0.003	1766	0.012	0.45	0.05	0.15	8.26	0.41	0.21
WKGN-050	59859	41.5	42.0	35.7	44.0	37.4	0.001	1508	0.012	0.45	0.05	0.15	6.13	0.43	0.42
WKGN-060	59889	61.9	42.0	35.7	42.9	36.5	0.005	2527	0.012	0.45	0.05	0.15	9.20	0.39	0.11
WKGN-070	61562	91.4	42.0	35.7	45.1	38.3	0.001	7462	0.012	0.45	0.05	0.15	7.43	0.41	0.30
WKGN-080	72432	53.8	38.0	32.3	56.0	47.6	0.002	2511	0.012	0.45	0.05	0.15	9.43	0.39	0.08
WKGN-090	99498	48.0	41.1	34.9	42.0	35.7	0.011	3921	0.012	0.45	0.05	0.15	7.46	0.41	0.29
WKGN-100	61423	54.6	44.0	37.4	45.1	38.3	0.001	1621	0.012	0.45	0.05	0.15	8.31	0.41	0.20

Note.
1. Modeling data for these subbasins has recently been updated and is available by contacting the City of Eugene Public Works Department, Engineering Division.

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE WILLAMETTE RIVER STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
WRRR-010	59087	14.8	40.0	34.0	48.0	40.8	0.016	1205	0.012	0.450	0.05	0.15	7.23	0.38	1.12
WRRR-020	66178	40.9	40.0	34.0	50.0	42.5	0.005	2671	0.012	0.450	0.05	0.15	8.96	0.38	0.14
WRRR-030	59120	14.0	28.0	23.8	44.0	37.4	0.007	1141	0.012	0.450	0.05	0.15	8.03	0.38	0.68
WRRR-040	60606	27.8	38.0	32.3	48.0	40.8	0.000	1818	0.012	0.450	0.05	0.15	9.62	0.38	0.07
WRRR-050	60617	37.0	43.0	36.6	50.0	42.5	0.002	2838	0.012	0.450	0.05	0.15	8.96	0.38	0.09
WRRR-060	67889	34.8	35.0	29.8	41.1	34.9	0.023	3162	0.012	0.430	0.05	0.15	5.55	0.38	0.71
WRRR-070 & WRRR-080[1]	60580	49.5	49.1	41.7	59.5	50.6	0.009	5860	0.012	0.400	0.05	0.15	7.42	0.37	0.19
WRRR-090	60647	9.7	41.0	34.9	44.0	37.4	0.000	2121	0.012	0.450	0.05	0.15	9.62	0.38	0.06
WRRR-100	62222	14.6	50.0	42.5	60.0	51.0	0.004	4753	0.012	0.450	0.05	0.15	9.27	0.38	0.08

Note.
1. Subbasins WRRR-070 and WRRR-080 are combined into one subbasin.

APPENDIX E
TABLE E-1
MAJOR HYDROLOGIC INPUT DATA FOR THE WILLOW CREEK STORM DRAINAGE SYSTEM

Subbasin Name	Inlet Node	Subbasin Area (acres)	Impervious Area (%)				Average Subbasin Slope (ft/ft)	Subbasin Width (ft)	Overland Flow Roughness Coefficient		Depression Storage (inch)		Green-Ampt Infiltration Parameters		
			Existing Land Use		Future Land Use								Average Capillary Suction (in)	Initial Moisture Deficit (ft/ft)	Saturated Hydraulic Conductivity (inch/hour)
			Mapped	Effective	Mapped	Effective			Impervious	Pervious	Impervious	Pervious			
Willow Creek - East Branch															
WCEA-005	76015	12.4	0.0	0.0	0.0	0.0	0.003	1540	0.012	0.400	0.05	0.25	6.41	0.25	0.05
WCEA-010	73500	80.7	1.2	1.0	6.0	5.1	0.011	3514	0.014	0.300	0.05	0.25	4.82	0.23	0.03
WCEA-020	51998	134.2	4.7	4.0	39.1	33.2	0.200	1826	0.014	0.400	0.05	0.15	4.67	0.20	0.05
WCEA-030	71041	193.0	8.2	7.0	6.0	5.1	0.144	5189	0.014	0.300	0.05	0.25	3.40	0.22	0.03
WCEA-040	71016	37.7	16.5	14.0	37.1	31.5	0.240	1081	0.014	0.450	0.05	0.15	2.66	0.20	0.13
WCEA-050	71014	141.9	16.5	14.0	22.0	18.7	0.240	1627	0.014	0.400	0.05	0.15	4.35	0.18	0.04
WCEA-060	71044	67.9	18.8	16.0	32.0	27.2	0.110	1479	0.014	0.420	0.05	0.15	5.17	0.23	0.08
WCEA-070	71012	308.3	5.9	5.0	17.1	14.5	0.240	2919	0.014	0.400	0.05	0.15	5.51	0.22	0.05
WCEA-080	71008	229.4	9.4	8.0	17.1	14.5	0.223	2629	0.014	0.400	0.05	0.15	4.76	0.20	0.05
Willow Creek - Main Stem															
WCMN-010	71037	192.5	7.1	6.0	63.1	53.6	0.008	6350	0.014	0.200	0.05	0.25	5.48	0.23	0.02
WCMN-020	54495	31.0	36.5	31.0	37.1	31.5	0.057	485	0.014	0.200	0.05	0.15	6.43	0.26	0.05
Willow Creek - West Branch															
WCWE-010	76010	86.5	7.1	6.0	6.0	5.1	0.005	3365	0.014	0.400	0.05	0.25	5.62	0.25	0.03
WCWE-030	71030	247.2	3.5	3.0	12.0	10.2	0.230	2025	0.014	0.350	0.05	0.20	5.05	0.22	0.03
WCWE-040	71028	84.7	10.6	9.0	35.1	29.8	0.150	2426	0.014	0.200	0.05	0.15	4.96	0.23	0.09
WCWE-050	71024	88.7	2.4	2.0	15.1	12.8	0.270	986	0.014	0.400	0.05	0.15	5.84	0.24	0.05
WCWE-070	71020	339.4	10.6	9.0	18.0	15.3	0.224	3214	0.014	0.350	0.05	0.15	6.17	0.25	0.05
WCWE-020&60	71032	292.0	1.2	1.0	11.8	10.0	0.119	2355	0.014	0.200	0.05	0.20	4.48	0.24	0.03

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE AMAZON CREEK BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
Amazon - Bailey Hill												
AMBH-010	54741	128.8	51	52	68	124	147	55	55	74	134	158
AMBH-015	54854	68.6	14	18	24	44	55	19	22	32	57	69
AMBH-020 & AMBH-030	71086	36.2	9	9	16	26	30	11	11	20	31	35
AMBH-040	54772	97.5	23	23	40	65	76	25	25	44	71	83
AMBH-050	54815	31.8	7	7	12	19	21	9	9	15	24	27
AMBH-060	54773	61.9	20	21	24	44	54	24	24	31	54	65
AMBH-070	52255	95.5	29	31	38	71	85	31	33	41	76	92
AMBH-080	66465	90.9	49	50	65	124	147	51	51	71	132	155
AMBH-090	52167	213.9	72	80	53	106	134	101	101	121	209	247
AMBH-100	52214	230.0	82	89	66	128	160	107	107	125	217	256
AMBH-110	52145	61.0	25	24	22	43	54	30	30	36	64	76
AMBH-120	67805	96.6	43	43	47	82	99	48	48	61	103	121
Amazon - Bertelsen Sub-Basin												
AMBT-010	63173	79.8	23	27	18	36	44	28	31	29	52	63
AMBT-020	54522	73.9	31	31	32	59	71	39	38	53	89	104
AMBT-030	63127	75.6	20	20	34	56	65	24	24	42	68	79
AMBT-040	54747	39.1	16	16	15	29	36	20	20	25	44	52
AMBT-050	71091	102.2	42	42	41	77	93	52	51	66	114	134
AMBT-060	54909	48.3	15	17	21	33	38	16	18	22	34	40
AMBT-070	54898	77.4	20	20	34	55	63	20	20	35	56	64
AMBT-080	51995	50.0	18	18	13	29	38	23	24	28	52	62
AMBT-090	68843	106.5	41	41	49	91	109	42	43	52	96	114
AMBT-100	66971	91.1	10	12	11	20	25	30	31	46	65	75
Amazon - City View Sub-Basin												
AMCV-010	71084	26.4	11	12	15	22	26	13	13	18	26	30
AMCV-020	55283	41.0	16	17	23	29	34	17	18	24	30	35
AMCV-030	55272	68.9	32	32	40	71	84	33	33	42	74	87
AMCV-040	71004	80.1	20	20	34	55	62	21	21	37	58	66
AMCV-050	55274	90.2	22	22	38	62	72	24	24	42	68	80
AMCV-060	71081	55.2	12	13	21	35	41	14	15	24	39	46

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE AMAZON CREEK BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
AMCV-070	55294	95.0	22	22	38	61	71	25	25	42	68	80
AMCV-080	55365	108.8	42	44	44	87	105	45	46	52	98	117
AMCV-090	52730	39.8	19	19	22	40	48	20	20	24	43	52
AMCV-100	52573	123.4	50	51	48	91	111	56	55	61	111	133
Amazon - Headwaters Sub-Basin												
AMHW-010	67175	249.6	77	86	52	111	142	97	102	95	178	216
AMHW-020	65344	214.1	82	83	64	131	163	99	96	106	195	233
AMHW-030	65392	157.7	63	60	45	95	121	74	73	79	146	176
Amazon - Lower Sub-Basin												
AMLW-010	71114	565.6	16	23	27	52	70	105	112	181	282	331
AMLW-020	71113	189.3	22	34	6	23	34	29	40	19	44	57
AMLW-030	63178	251.4	59	75	42	87	108	77	90	77	137	165
AMLW-040	71110	137.0	41	45	23	52	69	57	58	59	108	131
AMLW-050	71105	224.5	58	67	35	77	97	94	99	114	192	228
AMLW-060	71122	68.5	23	25	17	36	45	27	28	26	49	59
Amazon - Middle Sub-Basin												
AMMD-010	51437	121.7	55	52	54	103	127	59	57	65	121	146
AMMD-020	54260	196.9	90	90	90	172	209	94	94	101	188	226
AMMD-030	54295	97.6	46	45	51	93	111	47	46	54	97	115
AMMD-040	54330	165.1	87	88	104	189	226	89	89	109	195	233
AMMD-050	54174	119.9	52	54	58	102	122	53	54	60	106	126
AMMD-060	51751	130.9	59	59	66	120	143	61	60	69	124	147
AMMD-070	71052	33.4	17	17	21	37	43	17	17	21	37	44
AMMD-080	51303	85.0	44	44	54	98	117	44	44	56	100	119
AMMD-090	51344	165.5	69	69	69	129	156	75	74	83	150	180
AMMD-100	71053	135.1	62	61	69	124	148	63	63	73	130	154
AMMD-110	66967	28.0	15	15	20	34	40	15	16	21	36	41
AMMD-120	54175	15.3	9	9	13	20	23	9	9	13	21	24
AMMD-130	57163	55.3	23	25	25	44	52	26	27	32	54	63
AMMD-135	57428	122.7	54	57	67	112	132	56	58	70	117	138
AMMD-140	57400	30.0	12	13	16	25	29	13	14	19	27	32
AMMD-145	57427	46.5	20	21	24	41	49	22	22	28	46	55

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE AMAZON CREEK BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
AMMD-150	71059	56.2	27	28	36	62	73	29	29	40	68	79
AMMD-160	71063	52.0	16	18	28	47	55	17	19	30	49	58
AMMD-165	56284	44.8	19	19	23	42	50	19	20	24	44	53
AMMD-170	71075	171.0	64	66	80	145	173	66	68	85	153	182
Amazon - Polk Street Sub-Basin												
AMPK-010	55432	71.6	27	30	38	50	59	29	31	42	54	63
AMPK-020	66991	87.3	37	40	51	80	94	39	41	54	84	99
AMPK-030	71080	81.6	29	32	37	60	70	31	35	42	66	77
AMPK-040	56048	68.1	25	28	31	54	64	27	29	34	58	69
AMPK-050	71079	66.9	24	27	31	52	61	24	27	31	52	62
AMPK-060	52687	78.1	15	15	27	44	52	16	16	28	47	55
AMPK-070	55256	36.7	7	7	12	19	22	7	7	13	21	24
AMPK-080	71003	110.5	31	31	54	88	101	32	32	56	91	105
AMPK-090	52685	33.7	9	9	15	25	30	9	9	15	25	31
AMPK-100	52707	142.1	64	63	69	127	153	67	65	76	137	164
AMPK-110	53441	121.0	43	46	47	89	108	46	49	54	100	120
AMPK-120	53422	118.0	54	52	57	106	128	55	54	62	112	135
AMPK-130	53408	106.0	45	44	43	82	100	49	47	53	97	117
AMPK-140	53390	103.4	45	44	46	86	104	48	47	53	97	116
AMPK-150	53358	47.6	23	22	26	46	55	23	22	26	47	56
AMPK-160	53448	71.1	32	32	36	65	77	32	32	36	66	79
AMPK-170	68813	70.3	18	21	31	60	77	18	22	31	61	79
Amazon - Upper Sub-Basin												
AMUP-010	65582	172.4	73	70	62	123	154	84	83	94	173	206
AMUP-020	65398	197.3	79	83	84	152	182	85	88	97	171	204
AMUP-030	65396	182.7	79	76	71	139	171	89	88	102	186	222
AMUP-040	65370	218.9	98	100	103	189	228	110	114	141	244	286
AMUP-050	67978	76.4	38	38	42	79	96	40	41	49	89	107
AMUP-060	50653	97.0	50	50	58	107	130	51	51	61	112	135
AMUP-070	50200	126.1	64	65	77	141	168	65	66	79	144	172
AMUP-080	50090	114.8	50	50	53	104	129	52	53	60	115	141
AMUP-090	50739	122.6	52	49	44	88	111	60	60	70	128	153

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE AMAZON CREEK BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
AMUP-100	50109	151.9	62	61	55	108	134	69	67	74	137	165
AMUP-110	99479	93.1	38	36	29	61	78	45	44	50	92	111
AMUP-120	50660	181.3	69	74	70	128	155	77	80	87	154	184
AMUP-130	50671	42.6	21	21	24	45	55	21	21	25	47	56
AMUP-140	51763	101.6	47	46	49	92	111	50	49	58	105	125
AMUP-150	50544	179.9	88	89	103	181	217	92	94	116	200	236
AMUP-160	51757	150.7	72	69	77	143	172	75	73	86	158	188
AMUP-170	51729	64.1	28	29	33	57	68	28	29	34	58	69
AMUP-180	51841	93.7	51	51	63	115	138	52	52	65	118	141
AMUP-190[3]	51239	49.4	27	27	34	61	72	28	28	37	66	78
AMUP-200[3]	50163	92.9	42	42	46	80	96	48	48	63	104	121

Note.
1. W = Winter
2. S = Summer
3. Modeling data for these subbasins have recently been updated and are available by contacting the City of Eugene Public Works Department, Engineering Division.

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE BETHEL DANEBO BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
Bethel Danebo - A2 Channel												
BDA2-010	58209	61.6	12	9	10	23	30	15	11	15	31	38
BDA2-020	58709	37.5	12	12	15	26	30	12	13	16	26	31
BDA2-030	58689	84.0	19	20	29	35	41	22	23	33	39	46
BDA2-040	58205	39.2	12	12	14	26	32	13	13	16	30	36
BDA2-050	58207	113.1	3	2	0	3	6	10	9	12	23	28
BDA2-060	58673	40.7	13	13	18	30	35	13	13	18	30	36
BDA2-070	58680	40.1	16	15	18	34	41	17	16	19	37	44
BDA2-080	66164	110.7	31	32	42	67	79	31	32	43	68	80
BDA2-090	58950	70.3	22	21	31	50	59	22	21	31	50	59
BDA2-100	60245	56.1	15	15	24	34	40	16	16	25	36	41
BDA2-110	58645	78.5	17	18	29	37	43	19	19	31	40	46
BDA2-120	80004	51.4	8	6	7	16	21	11	8	11	23	30
BDA2-130	80007	109.8	34	35	30	58	71	39	40	40	74	88
BDA2-140	58946	68.0	16	16	23	34	40	20	20	30	41	48
BDA2-150	58875	56.6	18	19	28	39	46	19	19	28	40	47
BDA2-160	80009	70.4	19	19	28	36	42	25	26	38	46	54
BDA2-170	80010	28.5	6	6	9	13	15	8	8	13	17	20
BDA2-180	80015	13.5	4	4	5	8	9	5	5	6	10	12
BDA2-190	58894	56.3	13	12	20	30	34	16	16	26	37	42
BDA2-200	58893	58.6	17	17	28	42	48	18	19	31	45	52
BDA2-210	58853	49.2	5	5	8	13	16	18	18	29	41	48
BDA2-220	80017	85.3	13	12	17	30	36	33	33	52	81	94
BDA2-230	69700	13.9	3	3	5	7	9	4	4	7	9	11
BDA2-240	69714	34.1	13	13	18	25	29	14	14	20	27	32
BDA2-250	69732	211.5	47	48	69	91	107	77	79	114	135	158
BDA2-260	80018	69.6	2	2	3	5	6	23	23	36	43	49
BDA2-270	80022	26.3	9	9	15	21	24	9	9	15	21	24
BDA2-280	66548	42.2	12	12	18	24	28	13	13	20	25	29
BDA2-290	58883	77.9	21	21	29	44	52	23	24	34	49	58
BDA2-300	60488	65.4	17	17	20	33	39	20	21	26	40	47
BDA2-310	60565	60.7	17	17	23	32	37	18	19	26	34	40

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE BETHEL DANEBO BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
BDA2-320	60238	39.9	10	11	17	25	29	11	11	18	26	30
BDA2-330	60216	56.9	15	16	24	31	36	16	16	24	31	37
BDA2-340	60123	39.7	10	11	17	22	25	10	11	17	22	25
BDA2-350	80025	12.6	3	3	5	9	10	3	3	5	9	11
BDA2-360	60107	33.9	9	8	13	20	24	9	9	13	21	25
BDA2-370	67069	54.5	13	13	19	26	31	16	16	24	31	37
BDA2-380	66573	139.9	37	38	55	69	81	38	39	56	70	82
BDA2-390	60461	41.1	15	15	19	32	38	15	15	19	32	38
BDA2-395	60454	67.1	22	23	32	44	51	23	24	35	46	54
BDA2-400	68451	66.1	23	24	31	51	60	24	24	32	52	61
BDA2-405	60541	21.5	10	10	14	23	26	11	11	15	24	28
BDA2-408	69935	63.8	21	21	30	36	43	23	23	33	39	46
BDA2-410	80027	21.7	6	6	8	12	14	7	7	10	14	16
BDA2-420	60101	37.6	11	12	16	23	27	12	12	17	25	29
BDA2-430	61733	61.2	17	17	23	30	36	18	18	25	32	38
Bethel Danebo - A3 Channel												
BDA3-010	61607	71.8	0	0	1	1	2	2	2	3	5	6
BDA3-020	61608	137.4	23	22	30	52	62	43	43	64	98	114
BDA3-030	61694	67.0	17	17	15	29	35	24	24	27	45	53
BDA3-040	80050	157.9	56	52	50	107	134	83	81	106	192	227
BDA3-050	modpt	43.5	13	13	21	29	34	17	17	27	36	41
BDA3-060	63147	36.3	15	14	23	38	44	16	15	24	40	47
BDA3-070	63207	36.0	7	7	11	13	16	11	12	16	19	23
BDA3-080	63129	105.9	18	18	16	33	42	22	23	24	46	56
BDA3-090	67158	103.3	22	21	24	46	57	29	28	37	67	80
BDA3-100	63276	63.4	13	13	12	23	28	26	27	37	53	62
BDA3-110	63359	72.1	21	21	29	38	45	29	29	42	50	59
BDA3-120	63326	73.0	19	18	22	40	49	24	24	32	55	65
BDA3-130	63364	39.2	15	15	18	31	37	19	19	27	44	51
BDA3-150	63349	76.8	28	28	40	52	61	33	34	48	60	70
BDA3-160	66631	95.5	28	27	30	49	57	43	44	59	77	90
BDA3-180	63369	67.9	23	24	35	48	56	28	30	43	57	66

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE BETHEL DANEBO BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
BDA3-190	63811	85.7	28	28	41	49	57	33	34	47	55	65
BDA3-200	63822	43.8	18	17	21	35	42	23	23	31	49	57
BDA3-210	63826	59.7	24	25	36	50	59	26	27	40	54	63
BDA3-220	63800	88.9	33	34	49	61	72	37	38	56	67	78
BDA3-230	63795	75.8	26	26	32	48	57	35	35	49	65	75
Bethel Danebo - Greenhill Tributary												
BDGH-010[3&4]		38.9										
BDGH-020[4]	80029	110.9	5	5	5	9	12	26	28	35	42	49
BDGH-030[4]	80031	182.9	6	5	2	8	12	44	45	61	72	85
BDGH-040[4]	80033	26.5	2	2	1	3	4	8	8	11	17	20
BDGH-050	80037	45.2	3	3	1	3	5	13	14	18	26	30
BDGH-060	80071	39.1	3	3	2	4	6	11	12	16	23	28
BDGH-062	70559	72.1	4	4	3	7	9	19	20	28	38	44
BDGH-064	80064	38.4	2	3	1	3	5	11	11	16	23	27
BDGH-066	70560	5.7	2	2	3	5	6	2	2	3	5	6
BDGH-068	70539	15.8	6	6	8	12	14	6	6	8	12	14
BDGH-070	59949	18.1	5	5	6	10	12	5	5	7	11	13
BDGH-075	80069	39.3	10	10	13	21	25	12	12	16	24	29
BDGH-080	70177	50.5	9	9	11	19	23	13	13	19	28	33
BDGH-090	59945	80.8	20	21	25	43	52	27	28	36	59	69
BDGH-100	60212	40.3	10	10	16	24	28	11	11	17	26	30
BDGH-110	60196	108.3	22	22	30	45	53	34	35	51	66	77
BDGH-120	80041	137.1	4	3	5	10	13	20	20	33	51	59
BDGH-130	69068	54.3	14	15	20	31	36	16	17	22	34	40
Bethel Danebo - Roosevelt Channel												
BDRC-010	61727	94.9	27	27	24	48	58	45	44	60	98	115
BDRC-020	61741	54.6	17	17	23	30	35	22	22	31	37	44
BDRC-030	61743	38.9	14	13	15	28	33	16	16	20	34	40
BDRC-040	61959	168.9	52	53	71	102	120	59	60	83	115	135
BDRC-050	61977	63.3	21	22	26	42	50	27	28	37	55	64
BDRC-055	69952	224.8	44	44	60	85	100	81	82	117	141	165

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE BETHEL DANEBO BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
BDRC-060	66603	28.2	11	11	16	25	29	13	13	18	28	33
BDRC-070	62329	38.4	15	15	19	31	37	16	17	23	36	42
BDRC-080	62317	92.2	35	36	49	71	84	41	42	59	82	96
Bethel Danebo - A Channel												
BDAC-010[3]		176.8										

Note.
1. W = Winter
2. S = Summer
3. These subbasins were not included in the detailed model.
4. Subbasins have been refined in this area and updated hydrologic information is available by contacting the City of Eugene Public Works Department, Engineering Division.

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE LAUREL HILL BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions				Subbasin Peak Flow (cfs) Future Land Use Conditions			
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year
Laurel Hill - Glenwood										
LHGL-010	72143	20.7	8	9	12	24	8	9	12	24
LHGL-020[3]	72596	60.5	10	10	13	30	20	21	27	58
LHGL-030[3]	56387	35.9	7	8	10	21	13	13	18	36
LHGL-040[3]	72587	76.2	19	20	26	54	24	25	33	67
LHGL-050[3]	56390	69.4	39	38	34	91	41	41	42	103
LHGL-070[3]	72591	44.7	11	12	15	28	15	16	21	37
LHGL-080[3]	72589	101.7	16	16	22	44	31	33	43	87
LHGL-090	53485	89.4	34	29	11	47	45	45	39	99
LHGL-060[3] & LHGL-100[4]	72585	91.8	33	26	17	52	45	41	40	95
Laurel Hill - Riverview/Augusta										
LHRA-010	72139	39.5	8	10	12	28	10	12	14	32
LHRA-020[3]	56522	40.3	10	11	14	30	14	15	20	42
LHRA-030	53635	39.6	8	10	11	26	9	11	13	29
LHRA-040	75473	56.2	9	9	12	28	16	16	22	47
LHRA-050	53752	32.4	6	6	8	18	8	8	11	24
LHRA-051	75484	26.6	5	5	6	15	7	7	9	21
LHRA-060	53777	53.0	13	12	8	25	17	16	13	36
LHRA-070	53783	23.9	9	9	5	19	11	11	9	25
LHRA-071	75486	39.7	15	14	8	28	17	17	14	39
LHRA-080	51387	106.6	39	37	12	52	50	51	38	100
LHRA-090	53704	38.4	16	15	9	28	18	18	14	36
LHRA-100	99796	158.6	64	63	35	108	75	77	61	156

Note.
1. W = Winter
2. S = Summer
3. The drainage system originally modeled for this basin included Laurel Hill (south of I-5) and Glenwood (north of I-5). The Glenwood area has since been transferred to the City of Springfield. Users of this Plan should contact the City of Springfield for drainage information in the Glenwood area. The information provided here is for context purposes only.
4. Subbasins LHGL-060 and LHGL-100 were combined in the model. Subbasin LHGL-060is under City of Springfield jurisdiction and subbasin LHGL-100 is under City of Eugene jurisdiction.

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE WILLAKENZIE BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
Willakenzie North - County Farm												
WKCF-020	58172	85.5	23	18	16	30	39	35	32	41	67	81
WKCF-030	66533	98.9	28	23	21	38	49	41	38	48	78	93
WKCF-040[3]	58356	154.5	31	26	25	44	55	54	51	67	95	114
WKCF-050[3]	66196	96.4	7	5	5	12	16	26	26	38	56	66
WKCF-060	59489	47.7	17	14	16	28	35	18	16	19	33	40
WKCF-070	59511	75.8	20	19	29	50	60	27	27	41	67	79
Willakenzie North - Gilham Road												
WKGL-010	71280	65.9	3	4	6	9	11	15	15	24	41	46
WKGL-020	71281	110.4	11	12	19	33	40	31	32	51	85	99
WKGL-030	58454	66.6	6	7	11	19	22	16	17	27	43	50
WKGL-040	58511	50.9	10	10	16	26	31	13	13	21	35	40
WKGL-050	58499	43.1	7	7	11	18	21	11	12	18	28	32
WKGL-060	58463	93.6	24	23	34	56	65	28	28	41	65	76
Willakenzie North - Delta Highway												
WKDH-020	58447	83.3	12	12	20	33	38	20	21	33	56	63
WKDH-030	58450	71.6	13	14	22	36	40	22	23	36	56	63
WKDH-050	59799	99.2	24	25	40	66	74	28	30	48	77	87
Willakenzie North - North Beltline												
WKNB-010	58442	92.8	22	23	36	61	68	22	23	37	62	70
WKNB-020	59755	63.1	20	20	29	48	56	20	20	29	48	56
WKNB-030	69005	67.2	17	18	29	45	52	17	18	29	45	52
WKNB-040	59772	83.7	30	30	41	63	74	31	30	42	64	75
WKNB-050	59519	66.3	19	20	30	39	45	19	20	31	40	47
WKNB-060	59426	61.9	22	23	32	52	61	23	23	33	53	62
WKNB-070	59497	95.1	18	15	11	21	27	23	21	20	35	44
WKNB-080	71239	253.3	75	75	105	154	180	80	80	114	164	192
WKNB-090	61140	36.5	8	9	13	22	25	9	10	16	25	29
WKNB-100	59462	29.0	11	10	14	27	32	11	11	16	29	34

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE WILLAKENZIE BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
WKNB-110	59476	22.3	8	7	9	16	20	9	8	11	19	22
WKNB-120	61133	32.1	7	7	12	19	22	8	8	13	22	25
WKNB-130	69048	29.2	7	7	11	16	19	7	7	12	17	20
WKNB-140	61213	59.0	17	18	28	38	44	18	19	30	40	46
WKNB-150	66590	59.5	13	14	21	29	34	16	16	25	34	39
WKNB-160	99575	38.6	8	9	14	20	23	9	10	16	23	26
WKNB-170	61142	125.5	18	19	29	42	47	31	32	50	64	74
WKNB-180	61199	40.2	10	11	17	27	30	10	11	17	27	31
WKNB-190	61086	59.1	13	14	22	34	39	13	14	22	35	40
WKNB-200	62750	110.9	28	30	47	65	74	29	30	48	66	75
WKNB-210	61235	72.5	16	17	26	34	39	18	19	29	37	42
Willakenzie South - Delta Ponds												
WKDP-080	66556	20.8	5	6	9	15	17	5	6	9	15	17
WKDP-090	60844	26.2	6	6	10	17	19	6	7	10	18	20
WKDP-100	59197	41.6	7	7	12	20	22	11	11	18	30	34
WKDP-110	60771	37.1	8	8	13	20	23	9	10	16	25	28
WKDP-120	60804	38.9	9	9	15	25	28	10	10	16	27	31
WKDP-130	60760	55.4	25	22	26	47	57	28	26	33	59	71
WKDP-140	60828	48.0	9	9	15	25	28	11	12	19	32	37
WKDP-150	60811	29.9	12	11	14	26	31	13	12	15	27	33
WKDP-160	61595	47.7	15	14	19	37	46	16	15	21	40	48
Willakenzie South - Debrick Slough												
WKDS-010	60786	76.9	30	31	49	77	88	31	33	52	80	91
WKDS-020	60730	48.4	16	17	27	47	55	18	19	29	52	60
WKDS-030	62474	68.6	11	12	19	32	36	24	25	40	66	75
WKDS-040	99058	214.3	32	26	30	66	87	46	41	54	107	132
WKDS-050	62914	78.7	13	13	20	36	43	16	16	25	43	51
WKDS-060	62978	55.2	11	12	19	28	32	12	13	20	30	34
WKDS-070	62946	75.2	17	18	29	48	54	18	19	31	50	57

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE WILLAKENZIE BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
WKDS-080	62989	139.5	40	43	67	111	126	42	44	70	115	130
WKDS-090	62713	44.5	12	13	18	30	35	12	13	18	30	35
WKDS-100	71101	47.2	11	12	18	29	33	11	12	19	30	34
Willakenzie South - Gilham-Norkenzie												
WKGN-010	59134	52.9	13	14	22	36	41	14	15	24	40	45
WKGN-020	68175	41.2	10	11	17	29	33	10	11	17	29	33
WKGN-030	59868	53.9	14	15	23	39	45	14	15	24	40	46
WKGN-040	59878	37.8	9	9	15	23	26	9	9	15	23	27
WKGN-050	59859	41.5	10	10	16	22	25	10	11	17	23	26
WKGN-060	59889	61.9	19	18	25	41	49	19	19	26	42	50
WKGN-070	61562	91.4	22	23	36	55	63	23	25	39	59	67
WKGN-080	72432	53.8	16	15	21	33	38	21	21	30	43	51
WKGN-090	99498	48.0	11	12	19	31	36	11	12	19	32	36
WKGN-100	61423	54.6	13	14	22	29	33	14	14	22	29	34

Note.

1. W = Winter
2. S = Summer
3. Modeling data for these subbasins has recently been updated and is available by contacting the City of Eugene Public Works Department, Engineering Division.

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS FOR THE WILLAMETTE RIVER BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions			Subbasin Peak Flow (cfs) Future Land Use Conditions		
			10-Year	25-Year-W[1]	25-Year-S[2]	10-Year	25-Year-W[1]	25-Year-S[2]
WRRR-010	59087	14.8	3	3	6	4	4	7
WRRR-020	66178	40.9	11	12	16	13	14	20
WRRR-030	59120	14.0	2	2	4	3	3	6
WRRR-040	60606	27.8	7	8	10	8	9	12
WRRR-050	60617	37.0	13	14	16	14	15	18
WRRR-060	67889	34.8	7	7	12	8	8	14
WRRR-070 & WRRR-080[3]	60580	49.5	14	16	24	17	19	29
WRRR-090	60647	9.7	4	4	4	4	4	5
WRRR-100	62222	14.6	7	7	8	7	8	10

Note.

1. W = Winter
2. S = Summer
3. Subbasins WRRR-070 and WRRR-080 are combined into one subbasin.

APPENDIX E
TABLE E-2
HYDROLOGIC MODEL OUTPUT DATA UNDER EXISTING AND FUTURE CONDITIONS
FOR THE WILLOW CREEK BASIN

Subbasin Name	Inlet Node	Subbasin Area (acres)	Subbasin Peak Flow (cfs) Existing Land Use Conditions					Subbasin Peak Flow (cfs) Future Land Use Conditions				
			10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year	10-Year	25-Year-W[1]	25-Year-S[2]	50-Year	100-Year
Willow Creek - East Branch												
WCEA-005	76015	12.4	3	4	2	5	6	3	4	2	5	6
WCEA-010	73500	80.7	26	32	16	38	47	28	33	20	44	53
WCEA-020	51998	134.2	42	51	33	66	82	61	63	77	129	151
WCEA-030	71041	193.0	87	91	90	158	186	86	90	86	153	180
WCEA-040	71016	37.7	13	13	14	26	32	16	16	21	37	44
WCEA-050	71014	141.9	51	60	52	97	115	55	62	59	107	126
WCEA-060	71044	67.9	23	26	20	42	52	27	29	29	55	66
WCEA-070	71012	308.3	88	112	64	131	164	103	123	96	182	220
WCEA-080	71008	229.4	73	88	63	122	149	80	93	79	147	177
Willow Creek - Main Stem												
WCMN-010	71037	192.5	72	81	51	112	134	108	108	151	227	262
WCMN-020	54495	31.0	14	14	16	28	33	14	14	16	28	33
Willow Creek - West Branch												
WCWE-010	76010	86.5	24	32	14	32	40	23	31	13	31	38
WCWE-030	71030	247.2	77	95	48	109	135	85	101	68	140	168
WCWE-040	71028	84.7	34	36	33	67	82	40	43	51	93	110
WCWE-050	71024	88.7	26	32	17	36	46	30	35	28	53	64
WCWE-070	71020	339.4	106	128	86	168	208	116	135	110	205	249
WCWE-COMP	71032	292.0	94	114	61	135	167	105	122	90	179	214

Note.
1. W = Winter
2. S = Summer

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Amazon Main channel																						
SPRR-B	71110	71111	bridge	95	25	2740	3297	1498	2914	3444	372.0	372.0	382.4	382.3	382.9	382.7	380.9	380.8	382.6	382.5	382.9	382.8
SPRR-rd	71110	71111	Roadway	95		0	0	0	0	0	387.0	387.0	382.3	382.3	382.7	382.7	380.8	380.8	382.5	382.5	382.8	382.8
MainLW020E	71123	71110	Natural	978	25	2726	3284	1519	2897	3424	371.9	372.0	383.6	382.4	384.2	382.9	381.5	380.9	383.8	382.6	384.4	382.9
MainLW020F	63032	71123	Natural	300	25	2730	3286	1538	2899	3425	372.3	371.9	383.7	383.6	384.4	384.2	381.6	381.5	384.0	383.8	384.5	384.4
MainLW030A	71107	63032	Natural	1252	25	2700	3253	1557	2865	3386	374.0	372.3	384.8	383.7	385.8	384.4	382.4	381.6	385.2	384.0	385.9	384.5
SPB	71106	71107	bridge	118	25	2703	3253	1569	2869	3387	374.0	374.0	385.0	384.8	386.0	385.8	382.6	382.4	385.4	385.2	386.1	385.9
SPBrd	71106	71107	Roadway	118		0	0	0	0	0	388.0	388.0	384.8	384.8	385.8	385.8	382.4	382.4	385.2	385.2	385.9	385.9
MainLW030B	71105	71106	Natural	935	25	2705	3253	1576	2871	3388	373.8	374.0	385.9	385.0	387.2	386.0	383.4	382.6	386.6	385.4	387.4	386.1
MainLW030C	71104	71105	Natural	1300	25	2680	3227	1590	2846	3358	376.3	373.8	386.9	385.9	388.2	387.2	384.5	383.4	387.7	386.6	388.3	387.4
MainLW030D	71103	71104	Natural	240	25	2684	3229	1598	2847	3360	376.5	376.3	387.1	386.9	388.3	388.2	384.7	384.5	387.9	387.7	388.5	388.3
Danebo	71122	71103	bridge	75	25	2685	3229	1600	2848	3360	376.5	376.5	387.3	387.1	388.5	388.3	384.9	384.7	388.0	387.9	388.6	388.5
Danebord	71122	71103	Roadway	75		0	0	0	0	0	388.7	388.7	387.1	387.1	388.3	388.3	384.7	384.7	387.9	387.9	388.5	388.5
MainLW050A	71120	71122	Natural	1079	25	2677	3221	1605	2837	3349	376.5	376.5	388.4	387.3	389.8	388.5	386.0	384.9	388.9	388.0	390.0	388.6
MainLW060A	71100	71120	Natural	297	25	2201	2455	1435	2357	2548	377.5	376.5	388.5	388.4	389.9	389.8	386.1	386.0	389.1	388.9	390.1	390.0
Beltline	71099	71100	bridge	97	50	2203	2463	1437	2359	2554	377.5	377.5	388.6	388.5	390.0	389.9	386.2	386.1	389.1	389.1	390.1	390.1
Beltlinerd	71099	71100	Roadway	96		0	0	0	0	0	390.3	390.3	388.5	388.5	389.9	389.9	386.1	386.1	389.1	389.1	390.1	390.1
MainLW060B	71098	71099	Natural	205	25	2205	2468	1440	2360	2558	377.5	377.5	388.7	388.6	390.0	390.0	386.3	386.2	389.2	389.1	390.2	390.1
MainLW060C	63126	71098	Natural	1620	25	2237	2522	1458	2371	2595	380.4	377.5	389.5	388.7	390.6	390.0	387.0	386.3	390.0	389.2	390.7	390.2
MainBT020C	71097	63126	Natural	245	25	2230	2516	1479	2358	2583	380.8	380.4	389.8	389.5	390.9	390.6	387.6	387.0	390.3	390.0	391.1	390.7
MainBT020D	71096	71097	Natural	255	25	2232	2518	1482	2358	2585	380.8	380.8	390.2	389.8	391.2	390.9	388.1	387.6	390.6	390.3	391.4	391.1
MainBT030A	71095	71096	Natural	490	25	2234	2521	1487	2359	2588	381.0	380.8	391.1	390.2	392.0	391.2	389.1	388.1	391.5	390.6	392.2	391.4
Bertlesn	63127	71095	bridge	90	25	2133	2374	1489	2209	2438	381.0	381.0	391.2	391.1	392.1	392.0	389.3	389.1	391.6	391.5	392.3	392.2
Bertlesnrd	63127	71095	Roadway	90		108	155	0	153	161	390.3	390.3	391.2	391.1	392.1	392.0	389.1	389.1	391.6	391.5	392.3	392.2
MainBT010B	71094	63127	Natural	970	25	2192	2466	1485	2315	2523	381.5	381.0	392.8	391.2	393.4	392.1	390.8	389.3	393.0	391.6	393.6	392.3
W11th	54748	71094	bridge	162	50	2193	2468	1489	2315	2526	381.5	381.5	393.0	392.8	393.6	393.4	391.0	390.8	393.3	393.0	393.8	393.6
W11thrd	54748	71094	Roadway	162		0	0	0	0	0	395.4	395.4	392.8	392.8	393.4	393.4	390.8	390.8	393.0	393.0	393.6	393.6
MainBT050A	71093	54748	Natural	284	25	2176	2448	1489	2294	2497	381.0	381.5	393.2	393.0	393.9	393.6	391.2	391.0	393.5	393.3	394.0	393.8
MainBT050B	71092	71093	Natural	500	25	2178	2449	1502	2294	2501	381.1	380.9	393.2	393.2	393.9	393.9	391.3	391.2	393.5	393.5	394.1	394.0
MainBT050C	71091	71092	Natural	100	25	2181	2450	1513	2295	2505	381.1	381.1	393.3	393.2	394.0	393.9	391.3	391.3	393.6	393.5	394.1	394.1
MainBT050D	71090	71091	Natural	115	25	2160	2429	1513	2276	2477	381.1	381.1	393.4	393.3	394.1	394.0	391.5	391.3	393.7	393.6	394.3	394.1
MainBT050E	71089	71090	Natural	685	25	2162	2429	1518	2276	2479	382.2	381.1	394.1	393.4	394.8	394.1	392.1	391.5	394.4	393.7	394.9	394.3
MainBT050F	71088	71089	Natural	705	25	2165	2430	1528	2277	2483	383.4	382.2	394.5	394.1	395.3	394.8	392.6	392.1	394.9	394.4	395.5	394.9
MainBH030A	71087	71088	Natural	400	25	2168	2432	1538	2277	2487	384.5	383.4	395.2	394.5	396.2	395.3	393.3	392.6	395.6	394.9	396.3	395.5
MainBH030B	71086	71087	Natural	218	25	2169	2433	1542	2277	2488	385.5	384.5	395.5	395.2	396.5	396.2	393.6	393.3	395.9	395.6	396.6	396.3
BaileyHl	71085	71086	bridge	64	25	1964	2238	1480	2099	2265	385.5	385.5	395.5	395.5	396.5	396.5	393.7	393.6	395.9	395.9	396.6	396.6
BaileyHlrd	71085	71086	Roadway	64		0	0	0	0	0	400.0	400.0	395.5	395.5	396.5	396.5	393.6	393.6	395.9	395.9	396.6	396.6
MainBH010A	54741	71085	Natural	1275	25	2008	2235	1487	2109	2266	387.6	385.5	397.8	395.5	397.9	396.5	394.9	393.7	397.8	395.9	397.9	396.6
MainBH010B	54745	54741	Natural	725	25	1936	2216	1494	2093	2247	388.8	387.6	398.1	397.8	398.2	397.9	395.8	394.9	398.2	397.8	398.2	397.9
MainBH015A	71006	54745	Natural	550	25	1909	2206	1497	2087	2240	389.7	388.8	398.6	398.1	398.8	398.2	396.7	395.8	398.7	398.2	398.9	398.2
AcornPk	71007	71006	bridge	25	25	1907	2206	1499	2087	2239	390.0	389.7	398.7	398.6	399.0	398.8	396.9	396.7	398.9	398.7	399.0	398.9
MainBH010C	71124	71007	Natural	498	25	1907	2207	1502	2087	2240	391.4	390.0	399.3	398.7	399.7	399.0	397.8	396.9	399.5	398.9	399.7	399.0
MainBH010D	71084	71124	Natural	486	25	1906	2207	1504	2087	2241	392.8	391.4	400.1	399.3	400.6	399.7	398.9	397.8	400.4	399.5	400.6	399.7
OakPatch	71083	71084	bridge	52	25	1900	2199	1502	2082	2234	392.8	392.8	400.3	400.1	400.8	400.6	399.2	398.9	400.6	400.4	400.9	400.6

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
MainCV010	55294	71083	Natural	800	25	1899	2200	1504	2082	2236	393.8	392.8	401.7	400.3	402.3	400.8	400.7	399.2	402.1	400.6	402.4	400.9
MainCV070	55283	55294	Natural	800	25	1878	2159	1504	2054	2203	394.8	393.8	402.9	401.7	403.5	402.3	401.9	400.7	403.3	402.1	403.8	402.4
MainCV020	71082	55283	Natural	600	25	1871	2153	1497	2047	2196	395.5	394.8	403.7	402.9	404.5	403.5	402.8	401.9	404.1	403.3	405.4	403.8
CityView	71081	71082	bridge	58	25	1870	2150	1499	2047	2242	395.5	395.5	403.8	403.7	404.6	404.5	402.8	402.8	404.2	404.1	406.4	405.4
MainCV060	55272	71081	Natural	680	25	1868	2152	1500	2043	2262	395.3	395.5	404.5	403.8	405.3	404.6	403.5	402.8	405.0	404.2	406.6	406.4
MainCV050A	55274	55272	Natural	400	25	1845	2145	1485	2027	2328	395.4	395.3	405.0	404.5	406.2	405.3	403.9	403.5	406.0	405.0	406.9	406.6
MainCV050B	71005	55274	Natural	500	25	1805	2091	1465	2014	2301	395.4	395.4	405.8	405.0	406.7	406.2	404.2	403.9	406.5	406.0	407.2	406.9
Garfield	71004	71005	bridge	59	25	1808	2093	1467	2026	2316	394.7	395.4	405.9	405.8	406.8	406.7	404.4	404.2	406.7	406.5	407.3	407.2
MainCV040	71003	71004	Natural	1600	25	1838	2090	1489	2060	2349	398.9	394.7	407.1	405.9	407.7	406.8	406.3	404.4	407.5	406.7	408.0	407.3
Chambers#1	71002	71003	10'x9' CSP culvert	45	25	609	707	522	698	804	399.1	398.9	407.6	407.1	408.3	407.7	406.7	406.3	408.1	407.5	408.7	408.0
Chambers#2	71002	71003	10'x9' CSP culvert	45	25	609	707	522	698	804	399.1	398.9	407.6	407.1	408.3	407.7	406.7	406.3	408.1	407.5	408.7	408.0
Chamb-bike	71002	71003	13.3'x8' CSP culvert	45	25	615	661	512	661	737	400.0	400.0	407.6	407.1	408.3	407.7	406.7	406.3	408.1	407.5	408.7	408.0
MainPK080	55256	71002	Natural	500	25	1834	2076	1580	2058	2347	400.4	399.1	408.2	407.6	408.8	408.3	407.3	406.7	408.7	408.1	409.3	408.7
MainPK060	71080	55256	Natural	1000	25	1621	1835	1295	1875	2236	403.0	400.4	409.6	408.2	410.2	408.8	408.8	407.3	410.2	408.7	412.4	409.3
Polk	71079	71080	bridge	70	25	1610	1812	1288	1860	2066	403.0	403.0	410.2	409.6	410.8	410.2	409.4	408.8	410.8	410.2	412.7	412.4
Polkrd	71079	71080	Roadway	33		0	0	0	0	168	411.5	411.5	409.6	409.6	410.2	410.2	408.8	408.8	410.2	410.2	412.7	412.4
MainPK050	66991	71079	Natural	700	25	1601	1793	1283	1848	2091	403.8	403.0	411.3	410.2	411.8	410.8	410.4	409.4	411.9	410.8	413.3	412.7
MainPK020B	71128	66991	Natural	500	25	1589	1767	1267	1829	2085	404.4	403.8	411.9	411.3	412.4	411.8	411.1	410.4	412.5	411.9	413.7	413.3
MainPK020A	56048	71128	Natural	800	25	1588	1767	1277	1830	2106	405.4	404.4	413.0	411.9	413.5	412.4	412.1	411.1	413.6	412.5	414.6	413.7
MainPK040C	71127	56048	Natural	120	25	1580	1748	1271	1817	2096	405.5	405.4	413.3	413.0	413.8	413.5	412.5	412.1	413.9	413.6	414.8	414.6
MainPK040B	71125	71127	Natural	680	25	1580	1748	1277	1817	2100	406.1	405.5	414.8	413.3	415.3	413.8	413.9	412.5	415.4	413.9	416.2	414.8
MainPK040A	71078	71125	Natural	500	25	1580	1748	1286	1818	2114	406.6	406.1	414.9	414.8	415.3	415.3	414.0	413.9	415.5	415.4	416.4	416.2
Jefrsn#1	71077	71078	10.67' x 9.83' CSP culvert	46	25	790	874	648	909	1063	406.7	406.6	415.6	414.9	416.1	415.3	414.6	414.0	416.3	415.5	417.3	416.4
Jefrsn#2	71077	71078	10.67' x 9.83' CSP culvert	46	25	790	874	648	909	1063	406.7	406.6	415.6	414.9	416.1	415.3	414.6	414.0	416.3	415.5	417.3	416.4
Jefrsnrd	71077	71078	Roadway	46		0	0	0	0	0	418.0	418.0	414.9	414.9	415.3	415.3	414.0	414.0	415.5	415.5	416.4	416.4
MainMD170A	71076	71077	Natural	327	25	1581	1749	1299	1821	2133	407.0	406.7	416.7	415.6	416.9	416.1	414.9	414.6	416.9	416.3	417.6	417.3
Wash#1	71075	71076	7.9'x 10.67' CSP culvert	40	25	742	774	651	795	801	407.1	407.0	417.4	416.7	417.6	416.9	415.4	414.9	417.7	416.9	418.1	417.6
Wash#2	71075	71076	7.9'x 10.67' CSP culvert	40	25	742	774	651	795	801	407.1	407.0	417.4	416.7	417.6	416.9	415.4	414.9	417.7	416.9	418.1	417.6
Washngtnrd	71075	71076	Roadway	40		147	202	0	241	837	416.4	416.4	417.4	417.1	417.6	417.3	414.9	414.9	417.7	417.5	418.1	417.7
MainMD170B	71074	71075	Natural	332	25	1562	1707	1257	1792	2103	407.3	407.1	417.6	417.4	417.8	417.6	415.7	415.4	417.9	417.7	418.2	418.1
Lawren#1	71073	71074	9.7'x10.67' CSP culvert	46	25	781	854	628	896	1028	407.3	407.3	418.0	417.6	418.3	417.8	416.1	415.7	418.5	417.9	418.9	418.2
Lawren#2	71073	71074	9.7'x10.67' CSP culvert	46	25	781	854	628	896	1028	407.3	407.3	418.0	417.6	418.3	417.8	416.1	415.7	418.5	417.9	418.9	418.2
Lawrencerd	71073	71074	Roadway	46		0	0	0	1	51	418.4	418.4	417.6	417.6	417.8	417.8	415.7	415.7	418.5	418.4	418.9	418.8

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
MainMD170C	71072	71073	Natural	337	25	1562	1708	1258	1794	2109	407.7	407.3	418.3	418.0	418.6	418.3	416.3	416.1	418.8	418.5	419.3	418.9
Lincoln#1	71071	71072	9.4'x 10.67' CSP culvert	47	25	782	843	629	871	944	407.8	407.7	418.7	418.3	419.1	418.6	416.7	416.3	419.3	418.8	420.1	419.3
Lincoln#2	71071	71072	9.4'x 10.67' CSP culvert	47	25	782	843	629	871	944	407.8	407.7	418.7	418.3	419.1	418.6	416.7	416.3	419.3	418.8	420.1	419.3
Lincolnrd	71071	71072	Roadway	47		0	21	0	57	234	418.8	418.7	418.3	418.3	419.1	418.9	416.3	416.3	419.3	419.1	420.1	419.8
MainMD150A	71070	71071	Natural	363	25	1570	1709	1265	1800	2114	408.1	407.8	419.2	418.7	419.6	419.1	417.0	416.7	419.9	419.3	421.0	420.1
Charn#1	71069	71070	10.8'x 10.67' CSP culvert	60	25	789	855	631	903	985	408.2	408.1	419.6	419.2	420.1	419.6	417.4	417.0	420.4	419.9	421.5	421.0
Charn#2	71069	71070	10.8'x 10.67' CSP culvert	60	25	789	855	631	903	985	408.2	408.1	419.6	419.2	420.1	419.6	417.4	417.0	420.4	419.9	421.5	421.0
Charnltnrd	71069	71070	Roadway	60		0	0	0	0	190	420.4	420.3	419.2	419.2	419.6	419.6	417.0	417.0	419.9	419.9	421.5	421.2
MainMD150B	71068	71069	Natural	126	25	1583	1711	1270	1808	2126	408.4	408.2	419.6	419.6	420.1	420.1	418.0	417.4	420.4	420.4	421.5	421.5
15th	71067	71068	9.8'x22' CSP culvert	87	25	1587	1712	1280	1811	2110	408.4	408.4	419.7	419.6	420.2	420.1	418.1	418.0	420.5	420.4	421.6	421.5
15thrd	71067	71068	Roadway	87		0	0	0	0	40	421.2	421.1	419.6	419.6	420.1	420.1	418.0	418.0	420.4	420.4	421.6	421.5
MainMD150C	71066	71067	Natural	145	25	1593	1713	1285	1815	2144	408.7	408.4	419.7	419.7	420.2	420.2	418.1	418.1	420.5	420.5	421.7	421.6
Olive#1	71065	71066	10'x 10.67' CSP culvert	50	25	798	824	642	872	908	408.7	408.7	420.1	419.7	420.7	420.2	418.5	418.1	420.9	420.5	422.0	421.7
Olive#2	71065	71066	10'x 10.67' CSP culvert	50		798	824	642	872	908	408.7	408.7	420.1	419.7	420.7	420.2	418.5	418.1	420.9	420.5	422.0	421.7
Oliverd	71065	71066	Roadway	50		3	76	0	153	836	420.0	420.0	420.1	420.1	420.7	420.5	418.1	418.1	420.9	420.8	422.0	421.7
MainMD150D	71064	71065	Natural	376	25	1603	1716	1286	1829	2166	409.0	408.7	421.0	420.1	421.2	420.7	418.6	418.5	421.4	420.9	422.2	422.0
16th#1	71063	71064	10'x 10.67' CSP culvert	120	25	779	765	645	819	836	409.0	409.0	421.4	421.0	421.6	421.2	419.0	418.6	421.8	421.4	422.5	422.2
16th#2	71063	71064	10'x 10.67' CSP culvert	120	25	779	765	645	819	836	409.0	409.0	421.4	421.0	421.6	421.2	419.0	418.6	421.8	421.4	422.5	422.2
16thrd	71063	71064	Roadway	120		131	192	0	252	926	420.3	420.3	421.4	421.0	421.6	421.2	418.6	418.6	421.8	421.5	422.5	422.2
MainMD150E	71062	71063	Natural	423	25	1613	1708	1285	1834	2182	409.3	409.0	421.6	421.4	421.8	421.6	419.2	419.0	422.0	421.8	422.6	422.5
Oak#1	71061	71062	9.6'x 10.67' CSP culvert	54	25	692	668	643	732	735	409.5	409.3	421.8	421.6	422.0	421.8	419.6	419.2	422.2	422.0	422.8	422.6
Oak#2	71061	71062	9.6'x 10.67' CSP culvert	54	25	692	668	643	732	735	409.5	409.3	421.8	421.6	422.0	421.8	419.6	419.2	422.2	422.0	422.8	422.6
Oakrd	71061	71062	Roadway	54		496	655	0	800	1299	420.1	420.0	421.8	421.6	422.0	421.8	419.2	419.2	422.2	422.0	422.8	422.6
MainMD150F	71060	71061	Natural	350	25	1629	1710	1287	1842	2198	409.6	409.5	422.0	421.8	422.2	422.0	419.9	419.6	422.3	422.2	422.9	422.8
Pearl#1	71059	71060	8.4'x 10.67' CSP culvert	80	25	646	648	643	656	640	409.6	409.6	422.2	422.0	422.3	422.2	420.5	419.9	422.5	422.3	423.0	422.9
Pearl#2	71059	71060	8.4'x 10.67' CSP culvert	80	25	646	648	643	656	640	409.6	409.6	422.2	422.0	422.3	422.2	420.5	419.9	422.5	422.3	423.0	422.9
Pearlrd	71059	71060	Roadway	80		896	1049	24	1202	1666	420.1	420.0	422.2	422.0	422.3	422.2	420.5	420.2	422.5	422.3	423.0	422.9
MainMD150G	66998	71059	Natural	510	25	1639	1694	1339	1838	2198	410.2	409.6	422.3	422.2	422.5	422.3	421.3	420.5	422.6	422.5	423.1	423.0
18th#1	71057	66998	10.8'x 10.67' CSP culvert	50	25	793	798	677	870	919	410.2	410.2	422.8	422.3	423.0	422.5	421.6	421.3	423.2	422.6	423.7	423.1

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
18th#2	71057	66998	10.8'x 10.67' CSP culvert	50	25	793	798	677	870	919	410.2	410.2	422.8	422.3	423.0	422.5	421.6	421.3	423.2	422.6	423.7	423.1
18thrd	71057	66998	Roadway	50		116	170	0	189	560	422.1	422.0	422.8	422.6	423.0	422.8	421.3	421.3	423.2	422.9	423.7	423.4
MainMD030	57188	71057	Natural	350	25	1681	1681	1360	1927	2340	410.8	410.2	423.1	422.8	423.2	423.0	421.8	421.6	423.4	423.2	423.9	423.7
19th	57163	57188	10.5'x22' CSP culvert	53	25	1643	1668	1439	1842	2074	410.8	410.8	423.2	423.1	423.3	423.2	421.8	421.8	423.5	423.4	424.0	423.9
19thrd	57163	57188	Roadway	53		68	89	0	129	297	422.5	422.5	423.2	423.1	423.3	423.2	421.8	421.8	423.5	423.4	424.0	423.9
MainMD100A	71054	57163	Natural	1975	25	1660	1621	1414	2043	2488	414.7	410.8	424.7	423.2	424.9	423.3	423.2	421.8	425.9	423.5	428.2	424.0
24th#1	71053	71054	7'x9.68' CSP culverts	46	25	833	814	710	1034	1082	417.2	417.2	425.8	424.7	425.9	424.9	424.4	423.2	426.9	425.9	428.5	428.2
24th#2	71053	71054	7'x9.68' CSP culvert	46	25	833	814	710	1034	1082	417.2	417.2	425.8	424.7	425.9	424.9	424.4	423.2	426.9	425.9	428.5	428.2
24thrd	71053	71054	Roadway	46		0	0	0	0	1466	427.2	427.2	424.7	424.7	424.9	424.9	423.2	423.2	425.9	425.9	428.5	428.2
MainMD100B	54172	71053	Natural	650	25	1624	1578	1406	2032	2486	418.9	417.2	427.6	425.8	427.5	425.9	426.8	424.4	429.4	426.9	430.2	428.5
MainMD040	66967	54172	Natural	1300	25	1392	1365	1197	1811	2126	420.0	418.9	428.3	427.6	428.2	427.5	427.6	426.8	430.0	429.4	431.0	430.2
MainMD110	54174	66967	Natural	150	25	1314	1287	1129	1756	2009	420.2	420.0	428.4	428.3	428.3	428.2	427.7	427.6	430.1	430.0	431.1	431.0
MainUP050	65370	67978	Natural	1400	25	497	491	415	681	869	457.0	446.8	461.5	454.9	461.5	454.8	461.1	453.9	462.4	456.8	463.2	457.5
MainMD120	71052	54175	Natural	700	25	1257	1227	1092	1712	1921	422.2	421.0	429.1	428.5	429.1	428.4	428.5	427.8	430.6	430.1	431.6	431.2
29th	71051	71052	7.5'x15' CMP M baskhnd culvert	80	25	1236	1206	1075	1692	1847	425.0	425.0	432.5	431.0	432.4	430.9	431.9	430.4	434.2	432.3	434.7	432.8
29thrd	71051	71052	Roadway	80		0	0	0	0	64	434.5	434.5	429.1	429.1	429.1	429.1	428.5	428.5	430.6	430.6	434.7	434.5
MainMD060A	71001	71051	Natural	725	25	1236	1206	1077	1694	1931	426.7	425.0	434.0	432.5	433.9	432.4	433.5	431.9	435.4	434.2	436.0	434.7
30th	71000	71001	bridge	79	25	1237	1207	1081	1698	1933	426.8	426.7	434.4	434.0	434.3	433.9	433.9	433.5	435.7	435.4	436.3	436.0
MainMD060B	51750	71000	Natural	335	25	1237	1207	1083	1702	1938	427.5	426.8	435.0	434.4	434.9	434.3	434.5	433.9	436.3	435.7	436.9	436.3
31st	51751	51750	7.5'x15' CMP M baskhnd culvert	84	25	1238	1207	1086	1704	1936	427.5	427.5	435.9	435.0	435.8	434.9	435.3	434.5	437.5	436.3	438.2	436.9
31strd	51751	51750	Roadway	84		0	0	0	0	2	438.1	438.1	435.0	435.0	434.9	434.9	434.5	434.5	436.3	436.3	438.2	438.1
MainUP160A	51757	51751	Natural	415	25	1189	1158	1040	1647	1915	428.8	427.5	436.4	435.9	436.3	435.8	435.9	435.3	438.0	437.5	439.8	438.2
MainUP160B	51730	51757	Natural	268	25	1132	1102	1001	1573	1925	429.6	428.8	436.9	436.4	436.8	436.3	436.3	435.9	438.3	438.0	440.2	439.8
33rd	51729	51730	8'x15' CMP M baskhnd culvert	220	25	1034	1010	899	1408	1711	431.1	429.6	438.0	436.9	437.9	436.8	437.4	436.3	439.7	438.3	441.5	440.2
33rdrd	51729	51730	8'x15' CMP M baskhnd culvert	220	25	0	0	0	0	64	440.9	440.5	436.9	436.9	436.8	436.8	436.3	436.3	438.3	438.3	441.5	440.9
MainUP170	66944	51729	Natural	1390	25	1012	987	880	1389	1879	434.9	431.1	442.5	438.0	442.4	437.9	442.0	437.4	443.9	439.7	445.2	441.5
MainUP150A	50544	66944	Natural	1240	25	912	890	792	1274	1696	441.3	434.9	447.5	442.5	447.4	442.4	447.1	442.0	448.5	443.9	449.7	445.2
MainUP150B	50517	50544	Natural	1340	25	838	823	726	1169	1490	446.5	441.3	452.9	447.5	452.8	447.4	452.5	447.1	453.9	448.5	454.7	449.7
FoxHolw#1	67978	50517	72" CSP culverts	225	25	261	257	209	308	318	447.5	446.5	454.9	452.9	454.8	452.8	453.9	452.5	456.8	453.9	457.5	454.7

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
FoxHolw#2	67978	50517	72" CSP culvert	225	25	259	258	213	308	318	446.8	446.5	454.9	452.9	454.8	452.8	453.9	452.5	456.8	453.9	457.5	454.7
FoxHolwrd	67978	50517	Roadway	225		0	0	0	102	306	455.8	455.8	452.9	452.9	452.8	452.8	452.5	452.5	456.8	456.4	457.5	457.0
MainMD050	54175	54174	Natural	175	25	1274	1243	1108	1718	1954	421.0	420.2	428.5	428.4	428.4	428.3	427.8	427.7	430.1	430.1	431.2	431.1
MainUP020	65398	65370	Natural	1050	25	358	362	287	464	595	467.0	457.0	471.1	461.5	471.1	461.5	470.6	461.1	471.7	462.4	472.4	463.2
Snell	65396	65398	72" CSP culvert	37	25	290	292	215	349	356	467.0	467.0	473.2	471.1	473.3	471.1	472.4	470.6	474.5	471.7	474.9	472.4
Snellrd	65396	65398	Roadway	37		0	0	0	24	124	474.1	474.1	471.1	471.1	471.1	471.1	470.6	470.6	474.5	474.4	474.9	474.8
MainUP030	65379	65396	Natural	2100	25	221	225	162	275	353	502.4	467.0	506.3	473.2	506.4	473.3	505.8	472.4	506.7	474.5	507.2	474.9
Amazon - Lower Sub-Basin																						
AMLW030E	63042	63032	66" CSP	425	10	50	65	40	74	79	375.5	375.0	383.8	383.7	384.5	384.4	381.6	381.6	384.0	384.0	384.7	384.5
AMLW030Erd	63042	63032	Roadway	425		0	0	0	0	0	388.1	386.5	383.7	383.7	384.4	384.4	381.6	381.6	384.0	384.0	384.5	384.5
AMLW030F	69111	63042	60" CSP	1038	10	50	65	41	74	79	376.3	375.5	384.1	383.8	385.2	384.5	381.6	381.6	384.3	384.0	385.0	384.7
AMLW030Frd	69111	63042	Roadway	1038		0	0	0	0	0	385.2	385.1	383.8	383.8	384.5	384.5	381.6	381.6	384.0	384.0	384.7	384.7
AMLW030G	63178	69111	54" CSP	1351	10	50	54	42	75	79	377.2	376.3	385.2	384.1	385.8	385.2	381.7	381.6	384.9	384.3	385.6	385.0
AMLW030Grd	63178	69111	Roadway	1351		0	28	0	0	9	385.4	384.2	384.1	384.1	385.8	385.2	381.6	381.6	384.3	384.3	385.6	385.0
Amazon - Bertelsen Sub-basin																						
AMBT020A	54522	63126	48" CSP	1239	10	34	35	43	70	75	383.6	381.7	389.8	389.5	391.0	390.6	387.1	387.0	390.2	390.0	391.1	390.7
AMBT020Ard	54522	63126	Roadway	1239		0	0	0	0	0	391.0	394.8	389.8	389.8	391.0	391.0	387.1	387.1	390.2	390.2	391.1	391.1
AMBT020B	66971	54522	42" CSP	761	10	8	10	11	19	24	387.6	383.7	389.8	389.8	391.1	391.0	388.6	387.1	390.3	390.2	392.7	391.1
AMBT020Brd	66971	54522	Roadway	761		0	0	0	0	0	395.0	391.0	389.8	389.8	391.0	391.0	387.1	387.1	390.2	390.2	391.1	391.1
AMBT010A	63173	63127	36" CSP	77	10	20	24	18	32	40	383.2	383.0	391.3	391.2	392.3	392.1	389.3	389.3	391.7	391.6	392.4	392.3
AMBT030A	54486	63127	66" CSP	2250	10	50	49	59	87	94	386.7	384.4	391.4	391.2	392.5	392.1	389.9	389.3	391.8	391.6	392.7	392.3
AMBT030B	54488	54486	60" CSP	2208	10	51	50	57	97	98	389.8	386.7	392.6	391.4	393.3	392.5	392.9	389.9	394.3	391.8	395.7	392.7
AMBT030Brd	54488	54486	Roadway	2208		0	0	0	0	0	397.3	393.6	391.4	391.4	392.5	392.5	389.9	389.9	391.8	391.8	392.7	392.7
AMBT030C	54489	54488	54" CSP	358	10	52	51	58	98	104	391.3	389.8	393.4	392.6	393.6	393.3	393.5	392.9	395.2	394.3	396.8	395.7
AMBT030Crd	54489	54488	Roadway	358		0	0	0	0	0	400.1	397.3	392.6	392.6	393.3	393.3	392.9	392.9	394.3	394.3	395.7	395.7
AMBT030D	68843	54489	42" CSP	508	10	52	52	59	100	102	393.4	391.3	396.4	393.4	396.4	393.6	397.0	393.5	401.6	395.2	401.8	396.8
AMBT030Drd	68843	54489	Roadway	508		0	0	0	0	13	401.6	400.1	393.4	393.4	393.6	393.6	393.5	393.5	401.6	400.1	401.8	400.2
AMBT090A	54809	68843	30" CSP	1144	10	17	17	13	28	32	406.0	394.6	407.2	396.4	407.2	396.4	407.0	397.0	407.8	401.6	410.6	401.8
AMBT090Ard	54809	68843	Roadway	1144		0	0	0	0	0	410.6	401.6	396.4	396.4	396.4	396.4	397.0	397.0	401.6	401.6	410.6	401.8
AMBT090B	51993	54809	27" CSP	978	10	17	17	13	25	34	420.0	406.3	421.2	407.4	421.2	407.4	421.0	407.2	421.5	407.8	424.4	410.6
AMBT090Brd	51993	54809	Roadway	978		0	0	0	0	0	427.0	410.6	407.2	407.2	407.2	407.2	407.0	407.0	407.8	407.8	410.6	410.6
AMBT090C	51995	51993	24" CSP	690	10	17	18	13	26	35	444.4	420.6	445.4	421.5	445.4	421.5	445.2	421.4	445.7	421.8	446.0	424.4
AMBT090Crd	51995	51993	Roadway	690		0	0	0	0	0	452.2	427.0	421.2	421.2	421.2	421.2	421.0	421.0	421.5	421.5	424.4	424.4
AMBT040A	54747	54748	54" CSP	445	10	43	43	68	91	93	386.6	383.0	393.1	393.0	393.8	393.6	391.0	391.0	393.4	393.3	393.9	393.8
AMBT040Ard	54747	54748	Roadway	445		0	0	0	0	0	394.0	395.4	393.1	393.1	393.8	393.8	391.0	391.0	393.4	393.4	393.9	393.9
AMBT040B	66976	54747	Natural	500	10	33	31	55	68	68	387.6	386.6	393.1	393.1	393.8	393.8	391.3	391.0	393.4	393.4	394.0	393.9
AMBT040C	54813	66976	54" CSP	13	10	33	32	55	72	71	384.3	387.6	393.1	393.1	393.9	393.8	391.4	391.3	393.4	393.4	394.0	394.0
AMBT040Crd	54813	66976	Roadway	13		0	0	0	0	1	394.0	393.9	393.1	393.1	393.8	393.8	391.3	391.3	393.4	393.4	394.0	394.0
AMBT040D	54811	54813	54" CSP	596	10	33	32	55	72	71	384.9	384.3	393.2	393.1	394.0	393.9	392.0	391.4	393.9	393.4	394.9	394.0
AMBT040Drd	54811	54813	Roadway	596		0	0	0	0	0	395.9	394.0	393.1	393.1	393.9	393.9	391.4	391.4	393.4	393.4	394.0	394.0
AMBT040E	54909	54811	48" CSP	980	10	33	32	55	73	70	386.9	385.3	393.5	393.2	394.3	394.0	393.9	392.0	396.6	393.9	396.9	394.9

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMBT040Erd	54909	54811	Roadway	980		0	0	0	2	12	396.5	395.9	393.2	393.2	394.0	394.0	392.0	392.0	396.6	395.9	396.9	396.0
AMBT060A	54898	54909	48" CSP	604	10	20	20	34	55	63	388.7	386.9	393.6	393.5	394.4	394.3	394.4	393.9	397.8	396.6	398.3	396.9
Amazon Bailey Hill																						
AMBH020A	54773	71086	72" CSP	2886	25	156	162	166	228	228	392.7	386.2	399.8	395.5	401.2	396.5	397.6	393.6	404.5	395.9	405.0	396.6
AMBH020Ard	54773	71086	Roadway	2886		0	0	0	0	7	404.8	400.0	395.5	395.5	396.5	396.5	393.6	393.6	395.9	395.9	405.0	400.1
AMBH020B	54772	71086	72" CSP	2884	25	150	156	158	226	221	392.7	386.2	399.5	395.5	400.9	396.5	397.3	393.6	404.0	395.9	404.3	396.6
AMBH020Brd	54772	71086	Roadway	2884		0	0	0	0	13	404.0	400.0	395.5	395.5	396.5	396.5	393.6	393.6	404.0	400.0	404.3	400.1
AMBH050A	54815	54773	66" CSP	320	25	139	147	153	200	210	393.2	392.8	400.6	399.8	402.0	401.2	398.4	397.6	405.9	404.5	406.7	405.0
AMBH050Ard	54815	54773	Roadway	320		0	0	0	0	0	407.5	404.8	399.8	399.8	401.2	401.2	397.6	397.6	404.5	404.5	405.0	405.0
AMBH020C	54815	54772	66" CSP	312	25	133	139	130	176	203	393.2	392.7	400.6	399.5	402.0	400.9	398.4	397.3	405.9	404.0	406.7	404.3
AMBH020Crd	54815	54772	Roadway	312		0	0	0	0	0	407.5	404.0	399.5	399.5	400.9	400.9	397.3	397.3	404.0	404.0	404.3	404.3
AMBH050B	68846	54815	84" CSP	132	25	268	279	274	356	407	393.9	393.2	401.0	400.6	402.5	402.0	399.1	398.4	406.5	405.9	407.7	406.7
AMBH050Brd	68846	54815	Roadway	132		0	0	0	0	0	408.5	407.5	400.6	400.6	402.0	402.0	398.4	398.4	405.9	405.9	406.7	406.7
AMBH050C	52255	68846	72" CSP	528	25	267	279	274	361	346	397.3	394.7	403.4	401.0	405.1	402.5	402.3	399.3	410.2	406.5	411.5	407.7
AMBH050Crd	52255	68846	Roadway	528		0	0	0	0	83	411.0	408.5	401.0	401.0	402.5	402.5	399.1	399.1	406.5	406.5	411.5	409.0
AMBH070C	52243	52255	36" CSP	595	10	49	50	61	83	81	411.8	405.6	414.0	407.5	414.0	407.6	414.5	407.9	420.2	410.2	420.3	411.5
AMBH070Crd	52243	52255	Roadway	595		0	0	0	37	68	420.0	411.0	403.4	403.4	405.1	405.1	402.3	402.3	420.2	411.2	420.3	411.5
AMBH070D	52248	52243	33" CSP	515	10	49	50	61	72	72	421.8	413.6	423.7	415.4	423.7	415.4	424.1	415.8	427.3	420.2	427.4	420.3
AMBH070Drd	52248	52243	Roadway	515		0	0	0	62	86	427.0	420.0	414.0	414.0	414.0	414.0	414.5	414.5	427.3	420.3	427.4	420.4
AMBH070E	52240	52248	30" CSP	442	10	49	50	60	60	60	432.7	423.9	435.0	425.7	435.1	425.7	438.2	426.2	438.4	427.3	438.5	427.4
AMBH070Erd	52240	52248	Roadway	442		0	0	2	66	90	438.2	427.0	423.7	423.7	423.7	423.7	438.2	427.0	438.4	427.3	438.5	427.4
AMBH070F	66465	52240	27" CSP	290	10	49	50	57	58	61	445.3	434.2	447.8	435.8	447.9	435.8	451.9	438.2	452.0	438.4	452.1	438.5
AMBH070Frd	66465	52240	Roadway	290		0	0	9	68	91	451.8	438.2	435.0	435.0	435.1	435.1	451.9	438.3	452.0	438.4	452.1	438.5
AMBH070A	52163	52255	66" CSP	515	10	212	220	182	269	259	400.4	397.7	405.8	403.4	407.9	405.1	404.4	402.3	411.7	410.2	412.2	411.5
AMBH070Ard	52163	52255	Roadway	515		0	0	0	92	201	410.4	411.0	405.8	405.8	407.9	407.9	404.4	404.4	411.7	411.5	412.2	411.9
AMBH070B	67805	52163	54" CSP	1272	10	207	220	184	225	224	416.6	400.4	421.9	405.8	427.0	407.9	419.9	404.4	427.4	411.7	427.6	412.2
AMBH070Brd	67805	52163	Roadway	1272		0	0	0	106	179	427.0	410.4	405.8	405.8	427.0	410.4	404.4	404.4	427.4	411.7	427.6	412.2
AMBH120A	52213	67805	54" CSP	311	10	170	182	140	234	234	423.1	416.6	426.1	421.9	431.0	427.0	425.4	419.9	434.1	427.4	434.2	427.6
AMBH120Ard	52213	67805	Roadway	311		0	0	0	7	62	434.0	427.0	421.9	421.9	427.0	427.0	419.9	419.9	434.1	427.4	434.2	427.6
AMBH120E	52216	52213	36" CSP	170	10	24	25	22	44	50	428.9	423.1	429.8	426.1	431.3	431.0	429.8	425.4	435.4	434.1	435.5	434.2
AMBH120Erd	52216	52213	Roadway	170		0	0	0	0	1	435.5	434.0	426.1	426.1	431.0	431.0	425.4	425.4	434.1	434.1	435.5	434.2
AMBH120F	52217	52216	30" CSP	230	10	24	24	22	43	51	433.0	428.8	434.3	429.8	434.4	431.3	434.3	429.8	438.8	435.4	440.0	435.5
AMBH120Frd	52217	52216	Roadway	230		0	0	0	0	0	440.0	435.5	429.8	429.8	431.3	431.3	429.8	429.8	435.4	435.4	435.5	435.5
AMBH120G	52145	52217	27" CSP	372	10	24	24	22	46	51	459.0	434.0	459.9	434.9	459.9	434.9	459.9	434.8	460.2	438.8	460.2	440.0
AMBH120Grd	52145	52217	Roadway	372		0	0	0	0	0	466.0	440.0	434.3	434.3	434.4	434.4	434.3	434.3	438.8	438.8	440.0	440.0
AMBH120B	68649	52213	48" CSP	430	10	147	159	118	207	207	436.1	424.1	438.5	426.5	438.8	431.0	438.2	426.2	444.6	434.1	444.8	434.2
AMBH120Brd	68649	52213	Roadway	430		0	0	0	1	43	444.6	434.0	426.1	426.1	431.0	431.0	425.4	425.4	444.6	434.1	444.8	434.2
AMBH120C	52167	68649	36" CSP	1057	10	70	77	52	93	114	479.5	438.1	481.3	439.7	481.5	439.8	481.0	439.5	481.6	444.6	487.0	444.8
AMBH120Crd	52167	68649	Roadway	1057		0	0	0	0	4	487.0	444.6	438.5	438.5	438.8	438.8	438.2	438.2	444.6	444.6	487.0	444.8
AMBH120D	52214	68649	36" CSP	321	10	77	83	66	122	146	465.3	438.1	466.7	439.5	466.8	439.5	466.6	439.4	467.0	444.6	467.4	444.8
AMBH120Drd	52214	68649	Roadway	321		0	0	0	0	0	471.6	444.6	438.5	438.5	438.8	438.8	438.2	438.2	444.6	444.6	444.8	444.8
AMBH015A	54776	54745	36" CSP	13	10	14	15	24	42	48	390.7	392.0	398.1	398.1	398.2	398.2	395.8	395.8	398.2	398.2	398.2	398.2
AMBH015Ard	54776	54745	Roadway	13		3	7	0	4	8	398.0	398.0	398.1	398.1	398.2	398.2	395.8	395.8	398.2	398.2	398.2	398.2

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMBH015B	54867	54776	36" CSP	384	10	14	15	24	43	48	391.6	390.7	398.2	398.1	398.4	398.2	395.8	395.8	398.2	398.2	398.9	398.2
AMBH015Brd	54867	54776	Roadway	384		0	0	0	0	0	399.2	398.0	398.1	398.1	398.2	398.2	395.8	395.8	398.2	398.2	398.2	398.2
AMBH015C	54854	54867	30" CSP	278	10	14	15	24	43	42	393.7	391.0	398.3	398.2	398.7	398.4	395.9	395.8	400.8	398.2	401.1	398.9
AMBH015Crd	54854	54867	Roadway	278		0	0	0	0	14	401.0	399.2	398.2	398.2	398.4	398.4	395.8	395.8	398.2	398.2	401.1	399.3
Amazon - City View Sub-Basin																						
AMCV070A	68093	55294	48" CSP	766	10	41	42	42	72	68	396.8	395.2	402.5	401.7	403.2	402.3	400.8	400.7	402.9	402.1	403.5	402.4
AMCV070Ard	68093	55294	Roadway	766		0	0	0	0	6	403.2	403.0	401.7	401.7	403.2	403.0	400.7	400.7	402.1	402.1	403.5	403.1
AMCV070B	55344	68093	42" CSP	420	10	40	41	42	72	68	398.2	397.0	403.4	402.5	404.1	403.2	401.1	400.8	405.0	402.9	405.1	403.5
AMCV070Brd	55344	68093	Roadway	420		0	0	0	2	20	404.9	403.2	402.5	402.5	403.2	403.2	400.8	400.8	405.0	403.2	405.1	403.5
AMCV070C	55365	55344	36" CSP	1238	10	41	41	44	70	70	413.4	398.4	415.0	403.4	415.0	404.1	415.2	401.1	421.8	405.0	421.9	405.1
AMCV070Crd	55365	55344	Roadway	1238		0	0	0	4	23	421.7	404.9	403.4	403.4	404.1	404.1	401.1	401.1	421.8	405.0	421.9	405.1
AMCV030A	55432	55272	42" CSP	1773	10	19	20	30	37	36	399.1	396.2	405.0	404.5	405.9	405.3	404.9	403.5	406.4	405.0	406.6	406.6
AMCV030Ard	55432	55272	Roadway	1773		0	0	0	0	6	406.4	404.9	404.5	404.5	405.3	405.3	403.5	403.5	406.4	405.0	406.6	406.6
AMCV030B	55446	55272	30" CSP	440	10	5	7	8	9	15	398.6	395.3	404.5	404.5	405.3	405.3	403.6	403.5	405.1	405.0	406.6	406.6
AMCV030Brd	55446	55272	Roadway	440		0	4	0	0	35	405.2	404.9	404.5	404.5	405.3	405.3	403.5	403.5	405.0	405.0	406.6	406.6
AMCV030C	55432	55446	24" CSP	1540	10	5	5	8	9	9	400.6	398.6	405.0	404.5	405.9	405.3	404.9	403.6	406.4	405.1	406.6	406.6
AMCV030Crd	55432	55446	Roadway	1540		0	0	0	0	6	406.4	405.2	404.5	404.5	405.3	405.3	403.6	403.6	406.4	405.2	406.6	406.6
AMCV050A	55395	55274	48" CSP	650	10	62	63	64	92	103	400.3	396.0	406.3	405.0	407.2	406.2	405.2	403.9	407.9	406.0	409.5	406.9
AMCV050Ard	55395	55274	Roadway	650		0	0	0	0	6	409.2	409.0	405.0	405.0	406.2	406.2	403.9	403.9	406.0	406.0	409.5	409.1
AMCV050B	55396	55395	42" CSP	256	10	62	63	64	92	92	404.9	400.8	407.5	406.3	408.4	407.2	407.1	405.2	410.9	407.9	411.2	409.5
AMCV050Brd	55396	55395	Roadway	256		0	0	0	0	45	410.9	409.2	406.3	406.3	407.2	407.2	405.2	405.2	410.9	409.2	411.2	409.5
AMCV050C	55369	55396	36" CSP	11	10	25	26	26	29	33	405.0	404.9	407.6	407.5	408.5	408.4	407.3	407.1	411.0	410.9	411.4	411.2
AMCV050Crd	55369	55396	Roadway	11		0	0	0	0	6	411.3	410.9	407.5	407.5	408.4	408.4	407.1	407.1	410.9	410.9	411.4	411.2
AMCV050D	55382	55369	30" CSP	621	10	25	26	27	30	30	409.6	405.0	411.2	407.6	411.3	408.5	411.3	407.3	414.1	411.0	415.1	411.4
AMCV050Drd	55382	55369	Roadway	621		0	0	0	0	7	415.0	411.3	407.6	407.6	408.5	408.5	407.3	407.3	411.0	411.0	415.1	411.4
AMCV050H	55382	55396	42" CSP	613	10	37	38	40	66	75	409.6	404.9	411.2	407.5	411.3	408.4	411.3	407.1	414.1	410.9	415.1	411.2
AMCV050Hrd	55382	55396	Roadway	613		0	0	0	0	8	415.0	410.9	407.5	407.5	408.4	408.4	407.1	407.1	410.9	410.9	415.1	411.2
AMCV050I	68794	55382	36" CSP	1203	10	45	45	46	59	59	419.7	409.6	422.2	411.6	422.2	411.6	422.3	411.7	425.2	414.1	425.3	415.1
AMCV050Ird	68794	55382	Roadway	1203		0	0	0	9	33	425.1	415.0	411.2	411.2	411.3	411.3	411.3	411.3	425.2	415.1	425.3	415.2
AMCV050J	52716	68794	30" CSP	884	10	45	46	48	51	52	429.0	419.7	434.1	422.2	434.7	422.2	436.1	422.3	437.4	425.2	437.5	425.3
AMCV050Jrd	52716	68794	Roadway	884		0	0	0	27	50	437.2	425.1	422.2	422.2	422.2	422.2	422.3	422.3	437.4	425.3	437.5	425.4
AMCV050K	52713	52716	27" CSP	872	10	46	47	48	55	55	461.8	429.1	463.3	434.1	463.3	434.7	463.5	436.1	469.3	437.4	469.4	437.5
AMCV050Krd	52713	52716	Roadway	872		0	0	0	27	49	469.2	437.2	434.1	434.1	434.7	434.7	436.1	436.1	469.3	437.4	469.4	437.5
AMCV050L	52573	52713	30" CSP	115	10	45	46	48	85	86	470.0	463.0	471.3	464.2	471.4	464.2	471.4	464.3	476.1	469.3	476.3	469.4
AMCV050Lrd	52573	52713	Roadway	115		0	0	0	0	19	476.2	469.2	463.3	463.3	463.3	463.3	463.5	463.5	469.3	469.3	476.3	469.4
AMCV050E	52736	55382	30" CSP	1053	10	18	19	20	33	38	419.2	409.6	420.5	411.2	420.5	411.3	420.5	411.3	421.2	414.1	426.0	415.1
AMCV050Erd	52736	55382	Roadway	1053		0	0	0	0	1	426.0	415.0	411.2	411.2	411.3	411.3	411.3	411.3	414.1	414.1	426.0	415.1
AMCV050F	52733	52736	24" CSP	940	10	18	19	20	30	31	436.4	422.8	437.7	424.1	437.8	424.1	437.9	424.2	444.2	424.7	444.3	426.0
AMCV050Frd	52733	52736	Roadway	940		0	0	0	3	13	444.2	426.0	420.5	420.5	420.5	420.5	420.5	420.5	444.2	426.0	444.3	426.1
AMCV050G	52730	52733	18" CSP	617	10	18	19	21	21	21	462.5	436.6	463.7	437.7	463.7	437.8	466.2	437.9	467.1	444.2	467.1	444.3
AMCV050Grd	52730	52733	Roadway	617		0	0	0	19	27	467.0	444.2	437.7	437.7	437.8	437.8	437.9	437.9	467.1	444.3	467.1	444.3
Amazon - Polk Street Sub-Basin																						
AMPK070A	55289	55256	66" CSP	1262	10	131	133	148	175	178	406.1	401.1	410.1	408.2	410.5	408.8	410.0	407.3	411.2	408.7	412.2	409.3

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMPK070Ard	55289	55256	Roadway	1262		0	0	0	0	0	414.0	414.0	408.2	408.2	408.8	408.8	407.3	407.3	408.7	408.7	409.3	409.3
AMPK070B	52686	55289	60" CSP	905	10	131	136	151	181	184	408.5	406.1	413.0	410.1	413.2	410.5	414.0	410.0	415.6	411.2	416.7	412.2
AMPK070Brd	52686	55289	Roadway	905		0	0	0	0	8	416.5	414.1	410.1	410.1	410.5	410.5	410.0	410.0	411.2	411.2	416.7	414.2
AMPK070C	52685	52686	66" CSP	1555	10	131	138	151	181	193	413.7	408.5	417.2	413.0	417.3	413.2	417.9	414.0	421.1	415.6	422.7	416.7
AMPK070Crd	52685	52686	Roadway	1555		0	0	0	0	0	429.8	416.5	413.0	413.0	413.2	413.2	414.0	414.0	415.6	415.6	416.7	416.7
AMPK090A	52707	52685	36" CSP	1550	10	57	61	69	86	85	443.4	413.7	445.2	417.2	445.3	417.3	445.4	417.9	452.2	421.1	452.3	422.7
AMPK090Ard	52707	52685	Roadway	1550		0	0	0	25	53	452.0	429.8	417.2	417.2	417.3	417.3	417.9	417.9	452.2	430.0	452.3	430.1
AMPK060A	55290	55256	66" CSP	1263	10	79	82	105	158	162	405.9	400.7	408.8	408.2	409.4	408.8	408.8	407.3	410.8	408.7	411.8	409.3
AMPK060Ard	55290	55256	Roadway	1263		0	0	0	0	0	413.9	414.0	408.8	408.8	409.4	409.4	408.8	408.8	410.8	410.8	411.8	411.8
AMPK060B	52689	55290	60" CSP	1354	10	79	87	107	164	175	411.4	405.9	414.0	408.8	414.1	409.4	414.7	408.8	416.4	410.8	417.7	411.8
AMPK060C#1	66476	52689	48" CSP	1092	10	64	67	75	84	83	413.6	411.4	417.7	414.0	417.8	414.1	418.3	414.7	420.6	416.4	422.1	417.7
AMPK060C#2	66476	52689	60" CSP	855	10	92	98	121	167	169	414.5	411.4	417.7	414.0	417.8	414.1	418.3	414.7	420.6	416.4	422.1	417.7
AMPK060Crd	66476	52689	Roadway	1092		0	0	0	0	0	424.1	419.0	414.0	414.0	414.1	414.1	414.7	414.7	416.4	416.4	417.7	417.7
AMPK060D	52687	55256	54" CSP	1589	25	91	94	115	122	123	407.7	401.5	411.6	408.2	411.9	408.8	412.4	407.3	414.1	408.7	415.4	409.3
AMPK060Drd	52687	55256	Roadway	1589		0	0	0	0	0	416.0	413.0	408.2	408.2	408.8	408.8	407.3	407.3	408.7	408.7	409.3	409.3
AMPK060E	52689	52687	48" CSP	573	10	79	81	88	88	92	411.4	407.7	414.0	411.6	414.1	411.9	414.7	412.4	416.4	414.1	417.7	415.4
AMPK060Erd	52689	52687	Roadway	573		0	0	0	0	0	419.0	416.0	411.6	411.6	411.9	411.9	412.4	412.4	414.1	414.1	415.4	415.4
AMPK170A	53474	66476	60" CSP	256	10	94	96	110	157	155	415.0	414.5	418.6	417.7	418.7	417.8	419.1	418.3	421.8	420.6	423.1	422.1
AMPK090B	53474	52685	48" CSP	391	10	68	69	72	79	83	416.0	413.7	418.6	417.2	418.7	417.3	419.1	417.9	421.8	421.1	423.1	422.7
AMPK170B	53457	53474	48" CSP	28	10	162	165	180	219	220	416.2	416.1	421.5	419.8	421.6	419.8	422.0	419.9	424.4	421.8	425.5	423.1
AMPK170Brd	53457	53474	Roadway	28		0	0	0	0	0	426.0	426.0	418.6	418.6	418.7	418.7	419.1	419.1	421.8	421.8	423.1	423.1
AMPK170C	53441	53457	54" CSP	766	10	137	139	150	191	191	422.8	416.2	426.6	421.5	426.8	421.6	428.7	422.0	434.6	424.4	434.7	425.5
AMPK170Crd	53441	53457	Roadway	766		0	0	0	4	25	434.5	426.0	421.5	421.5	421.6	421.6	422.0	422.0	434.6	426.1	434.7	426.2
AMPK170D	53415	53441	54" CSP	1374	10	101	104	108	133	130	430.7	422.8	433.6	426.6	433.6	426.8	434.0	428.7	441.9	434.6	442.1	434.7
AMPK170Drd	53415	53441	Roadway	1374		0	0	0	0	0	443.3	434.5	426.6	426.6	426.8	426.8	428.7	428.7	434.6	434.6	434.7	434.7
AMPK170E	53405	53415	54" CSP	659	10	78	80	84	104	98	435.5	430.7	437.8	433.6	437.8	433.6	437.9	434.0	443.1	441.9	443.3	442.1
AMPK170Erd	53405	53415	Roadway	659		0	0	0	0	0	443.0	443.3	437.8	437.8	437.8	437.8	437.9	437.9	443.1	443.1	443.3	443.3
AMPK170F	53388	53405	54" CSP	779	10	40	42	46	92	97	438.8	435.2	440.6	437.8	440.6	437.8	440.7	437.9	446.9	443.1	447.8	443.3
AMPK170Frd	53388	53405	Roadway	779		0	0	0	0	0	447.8	443.0	437.8	437.8	437.8	437.8	437.9	437.9	443.1	443.1	443.3	443.3
AMPK170G	53390	53388	48" CSP	361	10	40	42	46	91	97	440.7	439.2	442.9	441.1	442.9	441.1	443.1	441.2	448.2	446.9	448.2	447.8
AMPK170Grd	53390	53388	Roadway	361		0	0	0	0	0	448.2	447.8	440.6	440.6	440.6	440.6	440.7	440.7	448.2	447.8	448.2	447.8
AMPK170H	53416	53415	54" CSP	26	10	23	24	26	49	60	430.7	430.7	433.6	433.6	433.6	433.6	434.0	434.0	442.0	441.9	442.2	442.1
AMPK170I	53422	53416	24" CSP	459	10	23	24	26	38	38	452.2	438.6	453.5	439.8	453.5	439.8	453.6	439.9	456.6	442.0	456.6	442.2
AMPK170Ird	53422	53416	Roadway	459		0	0	0	14	25	456.5	444.2	433.6	433.6	433.6	433.6	434.0	434.0	456.6	444.3	456.6	444.3
AMPK170J	68811	53457	36" CSP	358	10	25	26	30	51	58	417.5	416.3	422.1	421.5	422.3	421.6	422.9	422.0	424.8	424.4	425.8	425.5
AMPK170Jrd	68811	53457	Roadway	358		0	0	0	0	0	424.4	426.0	422.1	422.1	422.3	422.3	422.9	422.9	424.8	424.8	425.8	425.8
AMPK170K	53426	68811	27" CSP	1528	10	25	26	30	33	33	438.7	418.0	440.0	422.1	440.1	422.3	440.6	422.9	444.5	424.8	444.6	425.8
AMPK170Krd	53426	68811	Roadway	1528		0	0	0	10	23	444.4	424.4	422.1	422.1	422.3	422.3	422.9	422.9	444.5	424.8	444.6	425.8
AMPK170L	53422	53426	24" CSP	422	10	25	26	31	37	35	452.2	438.9	453.5	440.1	453.5	440.1	453.6	440.6	456.6	444.5	456.6	444.6
AMPK170Lrd	53422	53426	Roadway	422		0	0	0	14	26	456.5	444.4	440.0	440.0	440.1	440.1	440.6	440.6	456.6	444.5	456.6	444.6
AMPK170M	68813	66476	48" CSP	452	10	64	70	87	100	124	415.4	413.6	418.7	417.7	419.0	417.8	420.2	418.3	423.0	420.6	426.2	422.1
AMPK170N	53447	68813	42" CSP	1262	10	49	52	63	66	66	419.6	415.4	422.4	418.7	422.8	419.0	425.1	420.2	426.1	423.0	426.5	426.2
AMPK170Nrd	53447	68813	Roadway	1262		0	0	0	16	80	425.0	425.7	422.4	422.4	422.8	422.8	425.1	425.1	426.1	425.9	426.5	426.2
AMPK170O	53400	53447	30" CSP	290	10	8	10	18	18	18	421.4	419.6	422.5	422.4	423.0	422.8	425.8	425.1	426.1	426.1	426.5	426.5

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMPK170Ord	53400	53447	Roadway	290		0	0	0	18	45	425.8	425.0	422.4	422.4	422.8	422.8	425.8	425.1	426.1	426.1	426.5	426.5
AMPK170P	53401	53400	24" CSP	311	10	8	10	18	24	24	423.5	421.4	424.5	422.5	424.6	423.0	428.3	425.8	430.1	426.1	430.2	426.5
AMPK170Prd	53401	53400	Roadway	311		0	0	0	4	30	430.0	425.8	422.5	422.5	423.0	423.0	425.8	425.8	430.1	426.1	430.2	426.5
AMPK170Q	53405	53401	24" CSP	888	10	2	2	10	26	26	437.4	423.6	437.8	424.5	437.8	424.6	437.9	428.3	443.1	430.1	443.3	430.2
AMPK170Qrd	53405	53401	Roadway	888		0	0	0	16	59	443.0	430.0	424.5	424.5	424.6	424.6	428.3	428.3	443.1	430.1	443.3	430.3
AMPK170R	53408	53405	24" CSP	430	10	40	41	41	42	42	451.3	437.4	456.6	439.2	458.3	439.4	458.3	439.4	458.5	443.1	458.5	443.3
AMPK170Rrd	53408	53405	Roadway	430		0	0	1	38	57	458.3	443.0	437.8	437.8	458.3	443.0	458.3	443.0	458.5	443.2	458.5	443.3
AMPK170S	53448	53447	30" CSP	180	10	41	43	49	54	54	422.3	419.8	424.6	422.4	425.1	422.8	428.3	425.1	428.8	426.1	428.9	426.5
AMPK170Srd	53448	53447	Roadway	180		0	0	0	44	81	428.6	425.0	422.4	422.4	422.8	422.8	425.1	425.1	428.8	426.1	428.9	426.5
AMPK170U	53358	53448	36" CSP	580	10	14	14	18	16	17	423.8	422.3	425.2	424.6	425.5	425.1	428.6	428.3	429.2	428.8	429.4	428.9
AMPK170Urd	53358	53448	Roadway	580		0	0	0	29	52	428.6	428.6	424.6	424.6	425.1	425.1	428.6	428.6	429.2	428.9	429.4	429.0
AMPK170T	53358	53401	21" CSP	197	10	6	8	12	19	18	423.6	423.5	425.2	424.5	425.5	424.6	428.6	428.3	429.2	430.1	429.4	430.2
AMPK170Trd	53358	53401	Roadway	197		0	0	0	3	22	428.6	430.0	425.2	425.2	425.5	425.5	428.6	428.6	430.1	429.2	430.2	429.4
Amazon - Middle Sub-Basin																						
AMMD140A	57400	66998	48" CSP	575	10	59	57	55	51	48	413.0	412.6	422.3	422.3	422.5	422.5	421.3	421.3	422.6	422.6	423.1	423.1
AMMD140Ard	57400	66998	Roadway	575		53	57	3	63	97	421.2	420.8	422.3	422.3	422.5	422.5	421.3	421.3	422.6	422.6	423.1	423.1
AMMD140B	57422	57400	42" CSP	608	10	57	54	54	43	42	413.8	413.4	422.3	422.3	422.5	422.5	421.3	421.3	422.6	422.6	423.1	423.1
AMMD140Brd	57422	57400	Roadway	608		41	46	5	50	68	420.5	421.2	422.3	422.3	422.5	422.5	421.3	421.3	422.6	422.6	423.1	423.1
AMMD145A	57427	57422	36" CSP	767	10	21	21	24	31	27	415.5	414.2	422.3	422.3	422.5	422.5	421.8	421.3	422.6	422.6	423.1	423.1
AMMD145Ard	57427	57422	Roadway	767		15	17	0	21	28	421.8	420.5	422.3	422.3	422.5	422.5	421.8	421.3	422.6	422.6	423.1	423.1
AMMD165A	57436	57188	27" CSP	216	10	31	30	36	25	25	411.6	410.8	423.1	423.1	423.2	423.2	421.8	421.8	423.4	423.4	423.9	423.9
AMMD165Ard	57436	57188	Roadway	216		107	112	108	187	179	419.7	420.8	423.1	423.1	423.2	423.2	421.8	421.8	423.4	423.4	423.9	423.9
AMMD165B	56284	57436	24" CSP	294	10	15	14	22	18	14	413.6	411.6	423.1	423.1	423.2	423.2	421.8	421.8	423.4	423.4	423.9	423.9
AMMD165Brd	56284	57436	Roadway	294		38	38	40	80	77	420.0	419.7	423.1	423.1	423.2	423.2	421.8	421.8	423.4	423.4	423.9	423.9
AMMD135A	57433	57163	30" CSP	72	10	35	37	52	46	41	413.7	413.8	423.2	423.2	423.3	423.3	421.8	421.8	423.5	423.5	424.0	424.0
AMMD135Ard	57433	57163	Roadway	72		164	162	47	288	324	420.8	420.7	423.2	423.2	423.3	423.3	421.8	421.8	423.5	423.5	424.0	424.0
AMMD135B	57431	57433	30" CSP	704	10	29	27	31	28	26	415.4	413.7	423.2	423.2	423.3	423.3	421.9	421.8	423.5	423.5	424.0	424.0
AMMD135Brd	57431	57433	Roadway	704		111	111	56	219	240	421.2	420.8	423.2	423.2	423.3	423.3	421.8	421.9	423.5	423.5	424.0	424.0
AMMD135C	57428	57431	30" CSP	808	10	25	24	28	24	23	417.0	415.4	423.2	423.2	423.3	423.3	422.5	421.9	423.6	423.5	424.0	424.0
AMMD135Crd	57428	57431	Roadway	808		42	44	57	96	110	421.8	421.2	423.2	423.2	423.3	423.3	422.5	421.9	423.6	423.5	424.0	424.0
AMMD040A#1	54353	54172	60" CSP	961	10	110	111	113	129	123	421.0	419.5	429.6	427.6	429.4	427.5	429.0	426.8	430.3	429.4	430.8	430.2
AMMD040A#2	54353	54172	60" CSP	961	10	110	111	113	129	123	421.0	419.5	429.6	427.6	429.4	427.5	429.0	426.8	430.3	429.4	430.8	430.2
AMMD040Ard	54353	54172	Roadway	961		24	12	0	136	231	429.0	428.8	429.6	429.0	429.4	428.9	429.0	428.8	430.3	429.5	430.8	430.2
AMMD040B#1	54330	54353	83.04" elliptical CSP	486	10	161	161	161	176	169	422.9	422.1	430.5	429.6	430.4	429.4	430.3	429.0	431.1	430.3	431.3	430.8
AMMD040B#2	54330	54353	42" CSP	451	10	63	63	70	68	63	423.5	422.7	430.5	429.6	430.4	429.4	430.3	429.0	431.1	430.3	431.3	430.8
AMMD040Brd	54330	54353	Roadway	486		86	57	42	191	319	429.8	429.0	430.5	429.6	430.4	429.4	430.3	429.3	431.1	430.3	431.3	430.8
AMMD040C	54335	54330	83.04" CSP	646	10	131	132	131	138	134	422.9	421.9	431.1	430.5	431.1	430.4	431.0	430.3	431.6	431.1	431.7	431.3
AMMD040Crd	54335	54330	Roadway	646		24	17	10	91	99	430.8	429.8	431.1	430.5	431.1	430.4	431.0	430.3	431.6	431.1	431.7	431.3
AMMD040D	66486	54335	54" CSP	1157	10	141	146	147	191	197	435.7	423.9	439.1	431.1	439.3	431.1	439.3	431.0	445.5	431.6	446.4	431.7
AMMD040Drd	66486	54335	Roadway	1157		0	0	0	0	0	449.2	430.8	431.1	431.1	431.1	431.1	431.0	431.0	431.6	431.6	431.7	431.7
AMMD040L	54315	54330	42" CSP	612	10	31	31	30	41	40	424.8	423.5	431.4	430.5	431.2	430.4	431.1	430.3	432.3	431.1	432.7	431.3

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMMD040Lrd	54315	54330	Roadway	612		0	0	0	42	107	432.0	429.8	430.5	430.5	430.4	430.4	430.3	430.3	432.3	431.1	432.7	431.3
AMMD040M	66485	54315	36" CSP	836	10	31	31	30	55	55	431.8	424.8	433.8	431.4	433.7	431.2	433.6	431.1	439.0	432.3	439.3	432.7
AMMD040Mrd	66485	54315	Roadway	836		0	0	0	29	104	438.8	432.0	431.4	431.4	431.2	431.2	431.1	431.1	439.0	432.3	439.3	432.7
AMMD040N	54295	66485	30" CSP	777	10	31	31	31	43	44	437.4	431.8	440.0	433.8	440.3	433.7	440.4	433.6	446.3	439.0	446.5	439.3
AMMD040Nrd	54295	66485	Roadway	777		0	0	0	51	124	446.0	438.8	433.8	433.8	433.7	433.7	433.6	433.6	446.3	439.1	446.5	439.3
AMMD040H	54295	66486	42" CSP	384	10	40	43	46	73	67	438.0	435.7	440.0	439.1	440.3	439.3	440.4	439.3	446.3	445.5	446.5	446.4
AMMD040Hrd	54295	66486	Roadway	384		0	0	0	0	0	446.0	449.2	440.0	440.0	440.3	440.3	440.4	440.4	446.3	446.3	446.5	446.5
AMMD040I	54267	54295	30" CSP	1499	10	29	30	29	35	34	445.5	438.0	451.1	440.0	451.3	440.3	451.4	440.4	454.3	446.3	454.5	446.5
AMMD040Ird	54267	54295	Roadway	1499		0	0	0	43	81	454.0	446.0	440.0	440.0	440.3	440.3	440.4	440.4	454.3	446.3	454.5	446.5
AMMD040J	54271	54267	24" CSP	482	10	29	30	29	30	31	457.0	450.0	460.9	451.8	461.3	451.9	461.0	451.8	462.9	454.3	462.9	454.5
AMMD040Jrd	54271	54267	Roadway	482		0	0	0	60	92	462.6	454.0	451.1	451.1	451.3	451.3	451.4	451.4	462.9	454.3	462.9	454.5
AMMD040E	54325	66486	48" CSP	481	10	103	105	103	151	151	444.2	436.4	446.5	439.1	446.5	439.3	446.4	439.3	452.3	445.5	452.5	446.4
AMMD040Erd	54325	66486	Roadway	481		0	0	0	2	40	452.2	449.2	439.1	439.1	439.3	439.3	439.3	439.3	452.3	449.2	452.5	449.5
AMMD040F	54271	54325	42" CSP	712	10	103	105	103	126	126	455.1	444.2	460.9	446.5	461.3	446.5	461.0	446.4	462.9	452.3	462.9	452.5
AMMD040Frd	54271	54325	Roadway	712		0	0	0	54	83	462.6	452.2	446.5	446.5	446.5	446.5	446.4	446.4	462.9	452.5	462.9	452.5
AMMD040G#1	54254	54271	42" CSP	232	10	101	101	101	104	107	458.0	455.1	465.3	460.9	465.4	461.3	465.4	461.0	465.8	462.9	465.9	462.9
AMMD040G#2	54254	54271	24" CSP	166	10	31	31	31	32	32	458.0	457.0	465.3	460.9	465.4	461.3	465.4	461.0	465.8	462.9	465.9	462.9
AMMD040Grd	54254	54271	Roadway	232		2	10	3	142	201	465.3	462.6	465.3	462.6	465.4	462.7	465.4	462.6	465.8	463.1	465.9	463.2
AMMD040K	54260	54254	42" CSP	639	10	133	136	136	136	140	476.1	458.3	482.1	465.3	482.8	465.4	482.8	465.4	483.1	465.8	483.2	465.9
AMMD040Krd	54260	54254	Roadway	639		0	2	1	114	173	482.8	465.3	465.3	465.3	482.8	465.4	482.8	465.4	483.1	465.8	483.2	465.9
AMMD020A	66702	54260	42" CSP	475	10	51	52	53	96	111	483.7	476.2	485.3	482.1	485.5	482.8	485.5	482.8	488.5	483.1	490.3	483.2
AMMD020Ard	66702	54260	Roadway	475		0	0	0	0	0	490.3	482.8	482.1	482.1	482.8	482.8	482.8	482.8	483.1	483.1	490.3	483.2
AMMD020B	51411	66702	36" CSP	1442	10	50	52	53	98	109	530.0	483.7	531.4	485.3	531.4	485.5	531.5	485.5	532.1	488.5	534.9	490.3
AMMD020Brd	51411	66702	Roadway	1442		0	0	0	0	4	534.9	490.3	485.3	485.3	485.5	485.5	485.5	485.5	488.5	488.5	534.9	490.3
AMMD020C	51437	51411	30" CSP	526	10	50	52	54	81	82	551.3	530.0	552.9	531.4	553.0	531.4	553.0	531.5	557.6	532.1	557.7	534.9
AMMD020Crd	51437	51411	Roadway	526		0	0	0	15	44	557.5	534.9	531.4	531.4	531.4	531.4	531.5	531.5	557.6	535.0	557.7	535.1
AMMD110A	54362	66967	42" CSP	1291	10	63	63	67	65	64	423.4	420.0	433.7	428.3	433.7	428.2	433.6	427.6	434.1	430.0	434.3	431.0
AMMD110Ard	54362	66967	Roadway	1291		12	11	7	37	62	433.1	433.2	433.7	433.3	433.7	433.3	433.6	433.3	434.1	433.5	434.3	433.6
AMMD110B	66460	54362	36" CSP	772	10	49	48	55	48	48	428.5	423.4	435.4	433.7	435.5	433.7	435.5	433.6	435.8	434.1	435.9	434.3
AMMD110Brd	66460	54362	Roadway	772		48	50	59	121	175	435.0	433.1	435.4	433.7	435.5	433.7	435.5	433.6	435.8	434.1	435.9	434.3
AMMD080L	51307	66460	30" CSP	164	10	48	47	51	46	45	433.6	429.0	437.2	435.4	437.2	435.5	437.3	435.5	437.5	435.8	437.5	435.9
AMMD080Lrd	51307	66460	Roadway	164		40	45	53	122	163	437.0	435.0	437.2	435.4	437.2	435.5	437.3	435.5	437.5	435.8	437.5	435.9
AMMD080K#1	51306	51307	2-24" CSP	278	10	23	23	24	22	22	435.5	433.6	440.2	437.2	440.2	437.2	440.3	437.3	440.4	437.5	440.5	437.5
AMMD080K#2	51306	51307	24" CSP	235	10	25	25	26	24	24	435.5	433.6	440.2	437.2	440.2	437.2	440.3	437.3	440.4	437.5	440.5	437.5
AMMD080Krd	51306	51307	Roadway	278		31	35	43	112	153	440.0	437.0	440.2	437.2	440.2	437.2	440.3	437.3	440.4	437.5	440.5	437.5
AMMD080J#1	51305	51306	36" CSP	251	10	34	34	35	34	35	436.0	435.5	440.9	440.2	441.0	440.2	441.0	440.3	441.3	440.4	441.4	440.5
AMMD080J#2	51305	51306	27" CSP	250	10	16	16	17	16	17	436.0	435.5	440.9	440.2	441.0	440.2	441.0	440.3	441.3	440.4	441.4	440.5
AMMD080Jrd	51305	51306	Roadway	251		28	32	40	106	145	440.6	440.0	440.9	440.3	441.0	440.3	441.0	440.3	441.3	440.6	441.4	440.7
AMMD080I	51303	51305	48" CSP	473	10	61	63	65	65	63	436.7	436.0	442.2	440.9	442.2	441.0	442.3	441.0	442.6	441.3	442.7	441.4
AMMD080Ird	51303	51305	Roadway	473		14	19	27	96	136	442.0	440.6	442.2	440.9	442.2	441.0	442.3	441.0	442.6	441.3	442.7	441.4
AMMD080H	51344	51302	30" CSP	710	10	47	47	47	46	47	449.3	439.3	455.1	445.1	455.1	445.1	455.2	445.1	455.3	445.4	455.4	445.4
AMMD080Hrd	51344	51302	Roadway	710		18	20	23	76	103	455.0	445.0	455.1	445.1	455.1	445.1	455.2	445.2	455.3	445.4	455.4	445.4
AMMD080G	51302	51303	36" CSP	288	10	57	57	57	57	57	438.6	437.4	445.1	442.2	445.1	442.2	445.1	442.3	445.4	442.6	445.4	442.7
AMMD080Grd	51302	51303	Roadway	288		5	7	10	61	89	445.0	443.0	445.1	443.1	445.1	443.1	445.1	443.1	445.4	443.4	445.4	443.4

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMMD080F	51303	51309	36" CSP	32	10	24	27	31	50	57	437.4	437.3	442.2	442.1	442.2	442.1	442.3	442.1	442.6	442.2	442.7	442.2
AMMD080Frd	51303	51309	Roadway	32		0	0	0	0	0	443.0	442.0	442.1	442.1	442.1	442.1	442.1	442.1	442.2	442.2	442.2	442.2
AMMD080E	51309	51311	18" CSP	106	10	13	14	14	14	13	437.3	437.0	442.1	440.2	442.1	440.2	442.1	440.3	442.2	440.4	442.2	440.4
AMMD080Erd	51309	51311	Roadway	106		12	14	18	38	45	442.0	440.0	442.1	440.2	442.1	440.2	442.1	440.3	442.2	440.4	442.2	440.4
AMMD080D#1	51311	51313	18" CSP	489	10	6	6	6	6	6	437.0	435.9	440.2	439.7	440.2	439.6	440.3	439.7	440.4	439.8	440.4	439.9
AMMD080D#2	51311	51313	18" CSP	339	10	7	7	7	7	7	437.0	435.9	440.2	439.7	440.2	439.6	440.3	439.7	440.4	439.8	440.4	439.9
AMMD080Drd	51311	51313	Roadway	489		17	18	23	42	49	440.0	438.9	440.2	439.7	440.2	439.6	440.3	439.7	440.4	439.8	440.4	439.9
AMMD080C#1	51313	51314	18" CSP	31	10	10	10	10	10	10	435.9	436.0	439.7	439.5	439.6	439.4	439.7	439.6	439.8	439.7	439.9	439.7
AMMD080C#2	51313	51314	18" CSP	35	10	10	10	10	10	10	435.9	436.0	439.7	439.5	439.6	439.4	439.7	439.6	439.8	439.7	439.9	439.7
AMMD080Crd	51313	51314	Roadway	31		14	9	21	38	46	438.9	439.5	439.7	439.7	439.6	439.6	439.7	439.7	439.8	439.8	439.9	439.8
AMMD080B#1	51314	68667	18" CSP	182	10	11	11	11	11	11	436.0	435.4	439.5	437.2	439.4	437.0	439.6	437.8	439.7	438.0	439.7	438.0
AMMD080B#2	51314	68667	18" CSP	182	10	11	11	11	11	11	436.0	435.4	439.5	437.2	439.4	437.0	439.6	437.8	439.7	438.0	439.7	438.0
AMMD080Brd	51314	68667	Roadway	182		2	0	11	29	38	439.5	437.8	439.5	437.8	437.0	437.0	439.6	437.9	439.7	438.0	439.7	438.0
AMMD080A	68667	51963	27" CSP	150	10	24	21	29	35	36	435.4	433.2	437.2	434.3	437.0	434.2	437.8	434.4	438.0	434.8	438.0	435.2
AMMD080Ard	68667	51963	Roadway	150		0	0	0	13	20	437.8	437.0	434.3	434.3	434.2	434.2	437.8	437.0	438.0	437.1	438.0	437.2
AMMD080M	51963	51961	30" CSP	388	10	14	12	17	30	36	433.3	428.0	434.3	429.5	434.2	429.3	434.4	429.4	434.8	430.7	435.2	432.5
AMMD080Mrd	51963	51961	Roadway	388		0	0	0	0	0	437.0	435.0	429.5	429.5	429.3	429.3	429.4	429.4	430.7	430.7	432.5	432.5
AMMD120A	51961	54175	42" CSP	2445	10	13	13	16	24	32	428.0	421.0	429.5	428.5	429.3	428.4	429.4	427.8	430.7	430.1	432.5	431.2
AMMD120Ard	51961	54175	Roadway	2445		0	0	0	0	0	435.0	434.1	428.5	428.5	428.4	428.4	427.8	427.8	430.1	430.1	431.2	431.2
AMMD070B	51963	51964	27" CSP	731	10	10	9	12	19	21	433.2	428.8	434.3	430.2	434.2	430.0	434.4	430.2	434.8	431.5	435.2	432.7
AMMD070Brd	51963	51964	Roadway	731		0	0	0	0	0	437.0	433.5	430.2	430.2	430.0	430.0	430.2	430.2	431.5	431.5	432.7	432.7
AMMD070A	51964	71052	30" CSP	1051	10	10	9	12	16	18	428.8	426.0	430.2	429.1	430.0	429.1	430.2	428.5	431.5	430.6	432.7	431.6
AMMD070Ard	51964	71052	Roadway	1051		0	0	0	0	0	433.5	435.9	430.2	430.2	430.0	430.0	430.2	430.2	431.5	431.5	432.7	432.7
Amazon - Upper Sub-Basin																						
AMUP180A	51841	51730	36" CSP	1314	10	65	65	65	65	65	444.7	432.4	450.1	436.9	450.1	436.8	450.1	436.3	450.4	438.3	450.5	440.2
AMUP180Ard	51841	51730	Roadway	1314		45	48	55	135	191	449.8	440.5	450.1	440.8	450.1	440.8	450.1	440.8	450.4	441.1	450.5	441.2
AMUP180B	68653	51841	36" CSP	214	10	58	58	59	59	59	447.0	444.7	452.0	450.1	452.1	450.1	452.1	450.1	452.3	450.4	452.4	450.5
AMUP180Brd	68653	51841	Roadway	214		2	3	4	59	95	452.0	449.8	452.0	450.1	452.1	450.1	452.1	450.1	452.3	450.4	452.4	450.5
AMUP180C	51296	68653	30" CSP	1254	10	61	62	62	62	62	480.9	447.5	483.3	452.0	486.0	452.1	486.0	452.1	486.2	452.3	486.3	452.4
AMUP180Crd	51296	68653	Roadway	1254		0	1	3	60	95	486.0	452.0	452.0	452.0	486.0	452.1	486.0	452.1	486.2	452.3	486.3	452.4
AMUP180D	66447	51296	36" CSP	146	10	61	66	67	88	89	485.0	481.9	486.9	483.7	487.7	486.0	487.8	486.0	489.4	486.2	489.5	486.3
AMUP180Drd	66447	51296	Roadway	146		0	0	0	38	70	489.2	486.0	483.3	483.3	486.0	486.0	486.0	486.0	489.4	486.2	489.5	486.3
AMUP180E	51285	66447	30" CSP	321	10	61	67	67	92	92	499.0	485.4	500.8	487.1	500.8	487.7	500.8	487.8	509.1	489.4	509.2	489.5
AMUP180Erd	51285	66447	Roadway	321		0	0	0	36	67	509.0	489.2	486.9	486.9	487.7	487.7	487.8	487.8	509.1	489.4	509.2	489.5
AMUP180F	68670	51285	36" CSP	185	10	61	65	67	93	92	508.1	499.9	509.9	501.4	510.0	501.4	510.1	501.5	514.9	509.1	514.9	509.2
AMUP180Frd	68670	51285	Roadway	185		0	0	0	38	68	514.7	509.0	500.8	500.8	500.8	500.8	500.8	500.8	514.9	509.2	514.9	509.2
AMUP180G	68668	68670	30" CSP	41	10	61	65	67	89	89	510.0	508.1	512.1	509.9	512.2	510.0	512.3	510.1	515.3	514.9	515.4	514.9
AMUP180Grd	68668	68670	Roadway	41		0	0	0	97	126	514.0	514.7	512.1	512.1	512.2	512.2	512.3	512.3	515.3	515.3	515.4	515.4
AMUP180H	51271	68668	27" CSP	102	10	61	65	67	82	82	514.7	510.0	517.1	512.1	518.4	512.2	518.9	512.3	523.2	515.3	523.2	515.4
AMUP180Hrd	51271	68668	Roadway	102		0	0	0	59	87	523.0	514.0	512.1	512.1	512.2	512.2	512.3	512.3	523.2	515.3	523.2	515.4
AMUP180I	51284	51271	36" CSP	283	10	61	65	67	99	99	523.5	517.2	525.8	519.0	526.0	519.1	526.0	519.1	533.2	523.2	533.2	523.2
AMUP180Ird	51284	51271	Roadway	283		0	0	0	35	62	533.0	523.0	517.1	517.1	518.4	518.4	518.9	518.9	533.2	523.2	533.2	523.2
AMUP180J	51256	51284	33" CSP	178	10	61	65	68	93	93	531.2	523.9	532.8	525.8	532.8	526.0	532.9	526.0	540.2	533.2	540.2	533.2

APPENDIX E
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HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMUP180Jrd	51256	51284	Roadway	178		0	0	0	47	74	540.0	533.0	525.8	525.8	526.0	526.0	526.0	526.0	540.2	533.2	540.2	533.2
AMUP180K	51239	51256	30" CSP	92	10	61	65	67	94	93	543.0	531.9	544.8	533.1	544.9	533.1	545.0	533.1	546.2	540.2	546.2	540.2
AMUP180Krd	51239	51256	Roadway	92		0	0	0	65	92	546.0	540.0	532.8	532.8	532.8	532.8	532.9	532.9	546.2	540.2	546.2	540.2
AMUP190A	51204	51239	Natural	675	10	39	41	38	75	91	586.9	543.0	588.1	544.8	588.1	544.9	588.1	545.0	588.5	546.2	588.7	546.2
AMUP190B	50107	51204	24" CSP culvert	320	10	37	37	37	44	45	600.0	586.9	606.0	588.1	606.0	588.1	606.0	588.1	606.1	588.5	606.2	588.7
AMUP190Brd	50107	51204	Roadway	320		3	5	3	32	47	606.0	589.9	606.0	589.9	606.0	589.9	606.0	589.9	606.1	590.0	606.2	590.1
AMUP190C	50115	50107	Natural	75	10	39	42	44	76	92	601.6	600.0	606.2	606.0	606.2	606.0	606.2	606.0	606.8	606.1	607.1	606.2
AMUP190D	50163	50115	36" CSP culvert	655	10	39	42	46	76	92	621.2	601.6	622.5	606.2	622.5	606.2	622.6	606.2	623.4	606.8	627.8	607.1
AMUP190Drd	50163	50115	Roadway	655		0	0	0	0	0	630.4	608.6	606.2	606.2	606.2	606.2	606.2	606.2	606.8	606.8	607.1	607.1
AMUP140A	51469	66944	54" CSP	61	10	102	103	100	115	116	434.4	434.9	442.9	442.5	442.8	442.4	442.5	442.0	443.9	443.9	445.2	445.2
AMUP140Ard	51469	66944	Roadway	61		0	0	0	80	202	443.2	443.1	442.5	442.5	442.4	442.4	442.0	442.0	443.9	443.9	445.2	445.2
AMUP140B	51850	51469	54" CSP	582	10	102	103	100	132	133	436.7	434.7	444.8	442.9	444.8	442.8	444.3	442.5	446.7	443.9	447.0	445.2
AMUP140Brd	51850	51469	Roadway	582		0	0	0	29	76	446.5	443.2	442.9	442.9	442.8	442.8	442.5	442.5	446.7	443.9	447.0	445.2
AMUP140C	66678	51850	30" CSP	80	10	79	79	79	79	80	440.4	438.4	448.2	444.8	448.2	444.8	448.2	444.3	448.4	446.7	448.5	447.0
AMUP140Crd	66678	51850	Roadway	80		36	37	31	112	156	448.0	446.5	448.2	446.7	448.2	446.7	448.2	446.7	448.4	446.9	448.5	447.0
AMUP140D	51853	66678	36" CSP	125	10	72	72	74	71	71	443.2	442.0	448.6	448.2	448.6	448.2	448.6	448.2	448.9	448.4	449.1	448.5
AMUP140Drd	51853	66678	Roadway	125		67	68	65	121	156	448.0	447.9	448.6	448.3	448.6	448.3	448.6	448.3	448.9	448.6	449.1	448.7
AMUP140E	51763	51853	36" CSP	11	10	84	84	84	84	84	446.0	443.2	450.1	448.6	450.1	448.6	450.1	448.6	450.3	448.9	450.3	449.1
AMUP140Erd	51763	51853	Roadway	11		19	20	17	77	126	450.0	448.0	450.1	448.6	450.1	448.6	450.1	448.6	450.3	448.9	450.3	449.1
AMUP140F	50531	51763	Natural	1550	10	60	63	67	102	120	484.1	446.0	485.9	450.1	486.0	450.1	486.0	450.1	486.5	450.3	486.7	450.3
AMUP120A	50660	50531	36" CSP	314	10	61	64	70	117	120	493.8	484.1	495.5	485.9	495.6	486.0	495.7	486.0	501.2	486.5	501.3	486.7
AMUP120Ard	50660	50531	Roadway	314		0	0	0	2	25	501.2	491.5	485.9	485.9	486.0	486.0	486.0	486.0	501.2	491.5	501.3	491.6
AMUP060A	50629	50517	60" CSP	64	10	305	306	304	318	320	448.2	448.0	455.3	452.9	455.3	452.8	455.2	452.7	456.2	453.9	456.5	454.7
AMUP060Ard	50629	50517	Roadway	64		21	21	6	190	392	455.0	454.9	455.3	455.1	455.3	455.1	455.2	455.0	456.2	455.8	456.5	456.2
AMUP060B	50653	50629	54" CSP	623	10	322	329	320	388	388	473.0	448.3	476.9	455.3	477.6	455.3	476.8	455.2	487.8	456.2	488.0	456.5
AMUP060Brd	50653	50629	Roadway	623		0	0	0	123	284	487.5	455.0	455.3	455.3	455.3	455.3	455.2	455.2	487.8	456.2	488.0	456.5
AMUP060C	50671	50653	54" CSP	2580	10	257	260	256	260	260	521.4	473.0	530.9	476.9	531.0	477.6	530.9	476.8	531.4	487.8	531.6	488.0
AMUP060Crd	50671	50653	Roadway	2580		22	27	15	204	347	530.8	487.5	530.9	487.6	531.0	487.7	530.9	487.6	531.4	488.1	531.6	488.3
AMUP130A	50200	50671	54" CSP	882	10	215	215	214	229	229	533.8	521.4	542.3	530.9	542.3	531.0	542.3	530.9	542.6	531.4	542.8	531.6
AMUP130Ard	50200	50671	Roadway	882		69	75	64	216	360	542.0	530.8	542.3	531.1	542.3	531.1	542.3	531.1	542.6	531.4	542.8	531.6
AMUP070A	65601	50200	42" CSP	547	10	68	69	60	110	110	545.2	534.2	547.2	542.3	547.2	542.3	546.9	542.3	550.8	542.6	550.9	542.8
AMUP070Ard	65601	50200	Roadway	547		0	0	0	0	15	550.8	542.0	542.3	542.3	542.3	542.3	542.3	542.3	550.8	542.6	550.9	542.8
AMUP070B	65582	65601	36" CSP	2041	10	68	69	61	113	145	623.4	545.2	625.0	547.2	625.1	547.2	624.9	546.9	625.8	550.8	660.2	550.9
AMUP070Brd	65582	65601	Roadway	2041		0	0	0	0	0	662.0	550.8	547.2	547.2	547.2	547.2	546.9	546.9	550.8	550.8	550.9	550.9
AMUP070C	50238	50200	48" CSP	1133	10	139	139	132	172	172	551.7	534.2	555.5	542.3	555.4	542.3	555.0	542.3	563.7	542.6	563.9	542.8
AMUP070Crd	50238	50200	Roadway	1133		0	0	0	37	119	563.5	543.0	542.3	542.3	542.3	542.3	542.3	542.3	563.7	543.2	563.9	543.4
Willamte	50090	50238	42" CSP	128	10	140	139	132	145	144	558.0	551.7	561.6	555.5	561.6	555.4	561.0	555.0	564.8	563.7	565.0	563.9
Willamterd	50090	50238	Roadway	128		0	0	0	172	241	564.0	563.5	555.5	555.5	555.4	555.4	555.0	555.0	564.8	564.3	565.0	564.5
AMUP080A	50110	50090	Natural	950	10	98	97	84	145	181	590.0	558.0	594.6	561.6	594.6	561.6	594.5	561.0	594.7	564.8	595.0	565.0
Brooksd#1	50109	50110	48" CSP culverts	114	10	48	47	43	74	92	594.0	590.0	595.3	594.6	595.3	594.6	595.2	594.5	596.0	594.7	596.6	595.0

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Brooksd#2	50109	50110	48" CSP culvert	114	10	48	47	43	74	92	594.0	590.0	595.3	594.6	595.3	594.6	595.2	594.5	596.0	594.7	596.6	595.0
AMUP100A	66910	50109	Natural	350	10	39	38	30	56	70	617.0	594.0	618.7	595.3	618.8	595.3	618.7	595.2	618.8	596.0	619.0	596.6
BraeBurn	50108	66910	36" CSP culvert	59	10	39	38	32	56	70	619.0	618.0	621.1	619.5	621.1	619.5	620.8	619.3	621.8	619.8	622.6	620.2
BraeBurnrd	50108	66910	Roadway	59		0	0	0	0	0	624.0	624.0	618.7	618.7	618.8	618.8	618.7	618.7	618.8	618.8	619.0	619.0
AMUP100C	71047	50108	Natural	460	10	39	39	32	58	75	650.4	619.0	651.8	621.1	651.8	621.1	651.7	620.8	652.1	621.8	652.3	622.6
AMUP100D	50130	71047	Natural	140	10	39	39	32	59	75	660.0	650.4	662.3	651.8	662.3	651.8	662.1	651.7	662.7	652.1	663.0	652.3
AMUP100E	50129	50130	36" CSP culvert	148	10	39	39	32	59	75	668.0	660.0	669.1	662.3	669.1	662.3	669.0	662.1	669.4	662.7	670.0	663.0
AMUP100Erd	50129	50130	Roadway	148		0	0	0	0	0	672.0	672.0	662.3	662.3	662.3	662.3	662.1	662.1	662.7	662.7	663.0	663.0
AMUP110A	99479	50129	Natural	600	10	35	35	28	55	72	703.5	668.0	707.0	669.1	707.0	669.1	706.6	669.0	707.6	669.4	707.9	670.0
AMUP040A#1	65533	65370	48" CSP	401	10	47	48	42	68	75	461.7	457.0	463.3	461.5	463.3	461.5	463.2	461.1	463.8	462.4	464.2	463.2
AMUP040A#2	65533	65370	36" CSP	382	10	1	1	0	11	27	463.0	457.8	463.3	461.5	463.3	461.5	463.2	461.1	463.8	462.4	464.2	463.2
AMUP040Ard	65533	65370	Roadway	401		0	0	0	0	0	473.0	464.1	461.5	461.5	461.5	461.5	461.1	461.1	462.4	462.4	463.2	463.2
AMUP040B	65310	65533	48" CSP	19	10	48	49	42	79	102	462.2	461.7	463.7	463.3	463.7	463.3	463.6	463.2	464.3	463.8	464.7	464.2
AMUP040C	50602	65310	48" CSP	1966	10	48	49	43	81	103	510.0	461.9	511.3	463.7	511.3	463.7	511.2	463.6	511.7	464.3	512.0	464.7
AMUP040D	50739	50602	36" CSP	845	10	49	49	44	82	105	542.4	510.0	543.8	511.3	543.8	511.3	543.7	511.2	544.5	511.7	545.1	512.0
AMUP040Drd	50739	50602	Roadway	845		0	0	0	0	0	550.0	518.0	511.3	511.3	511.3	511.3	511.2	511.2	511.7	511.7	512.0	512.0
Amazon - Headwaters Sub-Basin																						
Martin	66656	65379	48" CSP	45	10	222	226	169	282	322	504.8	502.4	511.9	506.3	512.1	506.4	509.1	505.8	515.4	506.7	518.2	507.2
Martinrd	66656	65379	Roadway	45		0	0	0	0	37	517.8	517.8	506.3	506.3	506.4	506.4	505.8	505.8	506.7	506.7	518.2	518.1
AMHW010A	67175	66656	36" CSP	79	10	75	83	55	99	106	510.7	506.6	513.8	511.9	514.2	512.1	512.0	509.1	517.8	515.4	518.5	518.2

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Bethel Danebo - A2 Channel																						
BDA2010A	58209	80001	Natural	840	100	413	482	214	580	699	359.6	357.4	364.9	360.9	365.1	361.1	363.797	360.41	365.5	361.3	365.9	361.6
BDA2010E	58709	58209	48" CSP	1029	10	29	29	44	55	64	362.0	360.7	365.0	364.9	365.4	365.1	365.0	363.8	366.5	365.5	367.4	365.9
BDA2010Erd	58709	58209	Roadway	1029		0	0	0	0	0	374.0	372.0	364.9	364.9	365.1	365.1	363.8	363.8	365.5	365.5	365.9	365.9
BDA2020A	58689	58709	42" CSP	830	10	19	19	29	33	39	366.1	362.0	367.4	365.0	367.4	365.4	367.7	365.0	367.9	366.5	368.8	367.4
BDA2020Ard	58689	58709	Roadway	830		0	0	0	0	0	375.0	374.0	365.0	365.0	365.4	365.4	365.0	365.0	366.5	366.5	367.4	367.4
BDA2010B	80002	58209	Natural	1540	100	391	456	213	549	659	361.9	359.6	367.4	364.9	367.8	365.1	366.2	363.8	368.3	365.5	368.8	365.9
BDA2040A	58205	80002	60" CSP	390	10	13	12	11	23	32	362.0	361.9	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.8	368.8
BDA2040Ard	80002	58205	Roadway	390		0	0	0	0	0	376.3	376.2	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.8	368.8
BDA2040B	58204	58205	60" CSP	665	10	3	2	3	3	6	362.7	362.0	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.8	368.8
BDA2040Brd	58204	58205	Roadway	665		0	0	0	0	0	376.2	371.9	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.8	368.8
BDA2040C	58207	58204	48" CSP	250	10	3	2	1	3	6	363.5	362.7	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.9	368.8
BDA2040Crd	58207	58204	Roadway	250		0	0	0	0	0	371.9	371.9	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.8	368.8
BDA2060A	58673	80002	60" CSP	725	10	108	100	155	193	198	364.2	363.0	368.4	367.4	368.7	367.8	370.0	366.5	373.4	368.3	374.6	368.8
BDA2060Ard	58673	80002	Roadway	725		0	0	0	0	0	376.9	376.3	367.4	367.4	367.8	367.8	366.2	366.2	368.3	368.3	368.8	368.8
BDA2060B	58680	58673	72" CSP	884	10	96	89	138	165	165	367.4	364.2	370.4	368.4	370.3	368.7	372.9	370.0	377.7	373.4	377.8	374.6
BDA2060Brd	58680	58673	Roadway	884		0	0	0	0	0	377.8	376.9	368.4	368.4	368.7	368.7	370.0	370.0	373.4	373.4	377.8	376.9
BDA2110A	58658	58680	54" CSP	973	10	17	17	28	36	38	368.0	367.4	370.6	370.4	370.5	370.3	373.1	372.9	376.7	377.7	376.8	377.8
BDA2110Ard	58680	58658	Roadway	973		0	0	0	0	0	377.8	376.7	370.6	370.6	370.5	370.5	373.1	373.1	376.7	376.7	377.8	376.8
BDA2110B	58658	58645	24" CSP	166	10	17	18	29	35	9	369.0	371.4	370.6	372.5	370.5	372.6	373.1	376.1	376.7	377.3	396.6	396.3
BDA2110Brd	58658	58645	Roadway	166		0	0	0	20	29	376.7	377.0	370.6	370.6	370.5	370.5	373.1	373.1	376.9	377.3	396.6	396.5
BDA2070A	58683	58680	60' CSP	1641	10	64	60	94	130	130	369.4	367.4	372.9	370.4	372.8	370.3	375.7	372.9	380.0	377.7	380.1	377.8
BDA2070Ard	58683	58680	Roadway	1641		0	0	0	0	0	380.7	377.8	370.4	370.4	370.3	370.3	372.9	372.9	377.7	377.7	377.8	377.8
BDA2080A	66164	58683	48" CSP	40	10	64	60	96	136	143	372.8	372.4	374.9	374.4	374.8	374.3	376.0	375.7	380.2	380.0	380.4	380.1
BDA2080Ard	66164	58683	Roadway	40		0	0	0	0	0	380.7	380.7	372.9	372.9	372.8	372.8	375.7	375.7	380.0	380.0	380.1	380.1
BDA2080B	58668	66164	60" CSP	280	10	36	35	55	78	29	369.8	368.8	375.0	374.9	374.9	374.8	376.1	376.0	380.2	379.8	395.6	395.5
BDA2080Brd	58668	66164	Roadway	280		0	0	0	0	21	379.7	380.7	375.0	374.9	374.9	374.8	376.1	376.0	380.2	379.8	395.6	395.5
BDA2080C	68474	58668	60" CSP	1272	10	36	34	55	78	29	371.9	369.0	375.3	375.0	375.1	374.9	376.8	376.1	380.9	379.8	396.3	396.3
BDA2080Crd	68474	58668	Roadway	1272		0	0	0	0	14	381.6	379.7	375.0	375.0	374.9	374.9	376.1	376.1	379.8	379.8	396.3	396.3
BDA2080D	58950	68474	54" CSP	501	10	36	34	55	77	79	371.8	372.0	375.5	375.3	375.4	375.1	377.2	376.8	381.6	380.9	381.7	381.3
BDA2080Drd	58950	68474	Roadway	501		0	0	0	0	0	381.7	381.6	375.3	375.3	375.1	375.1	376.8	376.8	380.9	380.9	381.7	381.6
BDA2090A	60231	58950	42" CSP	960	10	15	16	24	35	36	373.1	371.8	375.8	375.5	375.7	375.4	377.9	377.2	382.2	381.6	382.6	381.7
BDA2090Ard	60231	58950	Roadway	960		0	0	0	0	0	383.2	381.7	375.5	375.5	375.4	375.4	377.2	377.2	381.6	381.6	381.7	381.7
BDA2090B	60245	60231	36" CSP	1068	10	15	15	24	35	36	375.2	373.3	377.0	375.8	377.0	375.7	380.0	377.9	383.3	382.2	383.5	382.6
BDA2090Brd	60245	60231	Roadway	1068		0	0	0	1	4	383.2	383.2	375.8	375.8	375.7	375.7	377.9	377.9	383.3	383.2	383.5	383.3
BDA2010C	80003	80002	Natural	56	100	324	376	206	455	536	361.7	361.9	367.5	367.4	367.8	367.8	366.3	366.2	368.3	368.3	368.8	368.8
BDA2010D	80004	80003	Natural	480	100	324	376	206	455	535	361.6	361.7	367.5	367.5	367.9	367.8	366.3	366.3	368.4	368.3	368.9	368.8
BDA2120A	80007	80004	Natural	2050	100	319	373	207	450	524	362.7	361.6	367.9	367.5	368.3	367.9	366.7	366.3	368.8	368.4	369.4	368.9
BDA2130B	80009	80007	Natural	1050	10	17	17	23	26	30	378.2	374.6	379.3	375.3	379.3	375.3	379.4	375.4	379.4	375.4	379.5	375.5
BDA2140A	58235	80007	Natural	200	10	33	32	51	71	82	369.4	365.7	370.7	367.9	370.7	368.3	370.9	367.2	371.2	368.8	371.2	369.4
BDA2140B	58946	58235	42" CSP	350	10	33	31	51	71	180	370.1	366.3	372.9	371.9	372.8	371.9	374.1	372.3	375.5	372.8	382.7	380.9
BDA2140Brd	58946	58235	Roadway	350		0	0	0	0	0	378.4	378.0	370.7	370.7	370.7	370.7	370.9	370.9	371.2	371.2	380.9	380.9
BDA2140C	58875	58946	42" CSP	1690	10	18	17	28	38	44	370.2	366.3	373.5	372.9	373.3	372.8	375.6	374.1	378.5	375.5	380.0	376.2
BDA2140Crd	58875	58946	Roadway	1690		0	0	0	0	0	380.0	378.4	372.9	372.9	372.8	372.8	374.1	374.1	375.5	375.5	380.0	378.4
BDA2130A	80010	80007	Natural	2000	100	281	328	225	398	463	366.7	364.6	371.1	367.9	371.4	368.3	370.9	366.7	371.7	368.8	372.0	369.4
BDA2170A	80014	80010	Natural	700	100	275	323	237	393	457	368.3	366.7	372.3	371.1	372.6	371.4	372.0	370.9	373.0	371.7	373.3	372.0

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA2170B	80015	80014	Bridge	135	100	275	323	238	393	457	368.7	368.3	372.5	372.3	372.8	372.6	372.2	372.0	373.2	373.0	373.5	373.3
BDA2180A	58854	80015	Natural	550	100	273	321	238	390	454	367.4	368.7	372.7	372.5	373.0	372.8	372.4	372.2	373.4	373.2	373.7	373.5
BDA2190B	58894	58854	84" CSP	445	10	64	77	48	100	118	368.5	367.4	372.7	372.7	373.0	373.0	372.4	372.4	373.5	373.4	373.8	373.7
BDA2190Brd	58894	58854	Roadway	445		0	0	0	0	0	381.8	381.8	372.7	372.7	373.0	373.0	372.4	372.4	373.4	373.4	373.7	373.7
BDA2190C	58893	58894	84" CSP	2163	10	55	66	37	81	95	370.8	368.5	373.5	372.7	373.9	373.0	372.8	372.4	374.3	373.5	374.6	373.8
BDA2190Crd	58893	58894	Roadway	2163		0	0	0	0	0	384.6	381.8	372.7	372.7	373.0	373.0	372.4	372.4	373.5	373.5	373.8	373.8
BDA2200A	58853	58893	84" CSP	469	10	46	52	20	61	180	371.3	370.8	373.8	373.5	374.1	373.9	372.9	372.8	374.5	374.3	384.0	382.7
BDA2200Ard	58853	58893	Roadway	469		0	0	0	0	0	385.4	384.6	373.5	373.5	373.9	373.9	372.8	372.8	374.3	374.3	382.7	382.7
BDA2200B	72463	58853	72" CSP	590	10	43	50	19	57	57	372.7	372.3	375.2	374.0	375.4	374.1	374.4	373.4	375.6	374.5	380.0	378.1
BDA2200Brd	72463	58853	Roadway	590		0	0	0	0	0	385.6	385.4	373.8	373.8	374.1	374.1	372.9	372.9	374.5	374.5	378.1	378.1
BDA2200C	72470	72463	72" CSP	705	10	43	50	19	57	35	373.7	372.9	376.2	375.2	376.4	375.4	375.3	374.4	376.6	375.6	377.4	376.8
BDA2200Crd	72470	72463	Roadway	705		0	0	0	0	29	386.7	385.6	375.2	375.2	375.4	375.4	374.4	374.4	375.6	375.6	377.4	377.0
BDA2200D	72474	72470	72" CSP	440	10	43	50	20	57	79	374.2	373.7	376.6	376.2	376.8	376.4	375.8	375.3	377.1	376.6	381.3	380.1
BDA2200Drd	72470	72474	Roadway	440		0	0	0	0	0	386.7	385.2	376.6	376.6	376.8	376.8	375.8	375.8	377.1	377.1	380.1	380.1
BDA2210A1	72515	72474	36" CSP	20	10	22	25	10	29	81	377.1	382.9	377.6	383.5	377.7	383.6	377.5	383.3	377.7	383.6	380.1	380.4
BDA2210A2	72515	72474	36" CSP	20	10	22	25	10	29	0	382.9	377.1	383.5	377.6	383.6	377.7	383.3	377.5	383.6	377.7	380.1	380.1
BDA2210Ard	72515	72474	Roadway	20		0	0	0	0	69	386.1	385.6	376.6	376.6	376.8	376.8	375.8	375.8	377.1	377.1	374.8	374.6
BDA2210B1	58997	72515	36" CSP	40	10	22	25	10	29	32	382.7	382.9	385.5	383.5	385.8	383.6	384.5	383.3	386.2	383.6	386.7	383.7
BDA2210B2	58997	72515	36" CSP	40	10	22	25	10	29	32	382.7	382.9	385.5	383.5	385.8	383.6	384.5	383.3	386.2	383.6	386.7	383.7
BDA2210Brd	58997	72515	Roadway	40		0	0	0	0	0	388.1	388.1	383.5	383.5	383.6	383.6	383.3	383.3	383.6	383.6	383.7	383.7
BDA2210C	69700	58997	Natural	900	10	54	57	56	90	108	380.5	382.7	385.5	385.5	385.8	385.8	384.5	384.5	386.2	386.2	386.7	386.7
BDA2220A	80017	69700	36" CSP	146	10	13	11	17	29	34	385.9	384.0	386.7	385.5	386.7	385.8	386.9	385.0	387.3	386.2	387.4	386.7
BDA2220Ard	80017	69700	Roadway	146		0	0	0	0	0	392.2	392.2	385.5	385.5	385.8	385.8	384.5	384.5	386.2	386.2	386.7	386.7
BDA2230A	69714	69700	60" CSP	869	10	55	54	84	105	125	381.5	380.5	385.8	385.5	386.2	385.8	385.7	384.5	387.5	386.2	388.7	386.7
BDA2230Ard	69714	69700	Roadway	869		0	0	0	0	0	393.0	392.0	385.5	385.5	385.8	385.8	384.5	384.5	386.2	386.2	386.7	386.7
BDA2240A	69732	69714	60" CSP	809	10	44	43	68	83	98	382.4	381.5	386.2	385.8	386.5	386.2	386.6	385.7	388.7	387.5	390.5	388.7
BDA2240Ard	69732	69714	Roadway	809		0	0	0	0	0	394.0	393.0	385.8	385.8	386.2	386.2	385.7	385.7	387.5	387.5	388.7	388.7
BDA2260A	80018	58854	Natural	1160	25	213	247	217	306	357	369.8	367.4	373.5	372.7	373.9	373.0	373.5	372.4	374.3	373.4	374.7	373.7
BDA2260B	80019	80018	Natural	260	25	212	246	219	306	357	368.5	369.8	373.8	373.5	374.2	373.9	373.8	373.5	374.6	374.3	375.0	374.7
BDA2260C	80020	80019	15x24 M baskhnd culvert	110	25	212	247	219	306	357	368.5	368.5	373.9	373.8	374.2	374.2	373.8	373.8	374.7	374.6	375.1	375.0
BDA2260D	80021	80020	Trapezoid	400	25	213	247	220	307	358	368.4	368.5	374.1	373.9	374.5	374.2	374.1	373.8	375.0	374.7	375.4	375.1
BDA2270A	80022	80021	13x26 M baskhnd culvert	129	25	213	247	221	307	359	368.4	368.4	374.1	374.1	374.5	374.5	374.1	374.1	375.0	375.0	375.5	375.4
BDA2280A	66548	80022	66" CSP	776	10	60	57	85	108	124	371.3	368.4	374.4	374.1	374.8	374.5	374.6	374.1	375.7	375.0	376.3	375.5
BDA2280Ard	66548	80022	Roadway	776		0	0	0	0	0	383.1	382.0	374.1	374.1	374.5	374.5	374.1	374.1	375.0	375.0	375.5	375.5
BDA2280B	58883	66548	60" CSP	1303	10	50	47	71	89	101	372.9	371.3	375.7	374.4	375.7	374.8	376.4	374.6	377.2	375.7	378.1	376.3
BDA2280Brd	58883	66548	Roadway	1303		0	0	0	0	0	384.0	383.1	374.4	374.4	374.8	374.8	374.6	374.6	375.7	375.7	376.3	376.3
BDA2290A	69242	58883	60" CSP	27	10	31	29	43	53	3	379.2	372.9	379.8	375.7	379.8	375.7	379.9	376.4	380.0	377.2	398.3	396.6
BDA2290Ard	69242	58883	Roadway	27		0	0	0	0	9	384.0	384.0	375.7	375.7	375.7	375.7	376.4	376.4	377.2	377.2	396.6	396.3
BDA2290B	69021	69242	Natural	1500	10	31	29	43	53	58	382.2	379.2	385.5	379.8	385.4	379.8	385.9	379.9	386.3	380.0	386.4	380.0
BDA2290C	60488	69021	54" CSP	12	10	32	29	44	60	69	379.5	382.2	385.5	385.5	385.4	385.4	385.9	385.9	386.3	386.3	386.5	386.4
BDA2290Crd	60488	69021	Roadway	12		0	0	0	0	1	386.4	386.4	385.5	385.5	385.4	385.4	385.9	385.9	386.3	386.3	386.5	386.4
BDA2300A	68209	60488	48" CSP	1121	10	16	15	23	30	35	380.4	379.5	385.7	385.5	385.6	385.4	386.3	386.0	386.8	386.3	387.3	386.5

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA2300Ard	68209	60488	Roadway	1121		0	0	0	0	0	388.4	386.4	385.5	385.5	385.4	385.4	386.0	386.0	386.3	386.3	386.5	386.5
BDA2300B	60565	68209	42"CSP	634	10	16	15	23	30	35	381.3	380.6	385.9	385.7	385.8	385.6	386.8	386.3	387.5	386.8	388.2	387.3
BDA2300Brd	60565	68209	Roadway	634		0	0	0	0	0	389.7	388.4	385.7	385.7	385.6	385.6	386.3	386.3	386.8	386.8	387.3	387.3
BDA2270B	80023	80022	Trapezoid	500	25	162	187	171	229	261	368.4	368.4	374.3	374.1	374.7	374.5	374.3	374.1	375.2	375.0	375.7	375.5
BDA2270C	80024	80023	15x24 M baskhnd culvert	90	25	162	186	170	228	260	368.4	368.4	374.3	374.3	374.7	374.7	374.3	374.3	375.2	375.2	375.7	375.7
BDA2270D	60115	80024	Natural	1300	25	162	186	166	226	256	371.9	368.4	375.9	374.3	376.1	374.7	375.9	374.3	376.4	375.2	376.7	375.7
BDA2320A	60238	60115	36" CSP	154	10	25	25	41	52	60	374.1	373.8	376.2	375.9	376.4	376.1	376.9	375.9	377.4	376.4	377.8	376.7
BDA2320Ard	60238	60115	Roadway	154		0	0	0	0	0	380.8	380.0	375.9	375.9	376.1	376.1	375.9	375.9	376.4	376.4	376.7	376.7
BDA2320B	60216	60238	36" CSP	1353	10	15	15	24	29	33	378.5	374.1	379.9	376.2	379.9	376.4	380.3	376.9	380.7	377.4	381.6	377.8
BDA2320Brd	60216	60238	Roadway	1353		0	0	0	0	0	384.5	380.8	376.2	376.2	376.4	376.4	376.9	376.9	377.4	377.4	377.8	377.8
BDA2320C	60123	60115	Natural	1290	25	146	165	155	203	228	372.7	371.9	378.3	375.9	378.5	376.1	378.4	375.9	378.8	376.4	379.1	376.7
BDA2340A	80025	60123	Natural	630	10	141	156	151	194	218	373.8	372.7	378.6	378.3	378.8	378.5	378.7	378.4	379.2	378.8	379.5	379.1
BDA2350A	60118	80025	Natural	840	10	119	128	141	164	180	375.9	373.8	380.0	378.6	380.1	378.8	380.3	378.7	380.7	379.2	380.9	379.5
BDA2350B	59972	60118	66" CSP	512	10	120	128	142	164	18	377.2	375.9	381.0	380.0	381.3	380.1	381.5	380.3	382.1	380.7	398.3	396.6
BDA2350Brd	59972	60118	Roadway	512		0	0	0	0	18	386.8	386.8	380.0	380.0	380.1	380.1	380.3	380.3	380.7	380.7	398.3	396.6
BDA2350C	60107	59972	60" CSP	97	10	120	128	142	164	34	377.5	377.2	381.9	381.0	382.1	381.3	382.5	381.5	383.3	382.1	400.7	398.3
BDA2350Crd	60107	59972	Roadway	97		0	0	0	0	8	386.8	386.8	381.0	381.0	381.3	381.3	381.5	381.5	382.1	382.1	400.7	398.4
BDA2360A	67069	60107	Natural	1250	10	115	122	140	160	177	378.5	376.8	383.1	381.9	383.3	382.1	383.7	382.5	384.2	383.3	384.8	384.0
BDA2380A	66573	67069	48" CSP	1309	10	35	35	55	65	77	380.9	379.3	383.9	383.1	384.2	383.3	385.6	383.7	386.5	384.2	388.0	384.8
BDA2380Ard	66573	67069	Roadway	1309		0	0	0	0	0	388.3	388.0	383.1	383.1	383.3	383.3	383.7	383.7	384.2	384.2	384.8	384.8
BDA2370A	60462	67069	Natural	600	10	77	79	95	106	117	380.8	378.5	383.3	383.1	383.5	383.3	383.8	383.7	384.4	384.2	384.9	384.8
BDA2370B	60463	60462	54" CSP culvert	55	10	76	79	94	106	117	380.9	380.8	384.5	383.3	384.6	383.5	385.1	383.8	385.7	384.4	386.2	384.9
BDA2370Brd	60463	60462	Roadway	55		0	0	0	0	0	390.2	390.2	383.3	383.3	383.5	383.5	383.8	383.8	384.4	384.4	384.9	384.9
BDA2370C	60460	60463	Natural	570	10	77	79	94	107	118	381.7	380.9	385.7	384.5	385.7	384.6	386.1	385.1	386.5	385.7	386.9	386.2
BDA2390A	60461	60460	54" CSP	102	10	77	79	95	108	119	382.1	381.7	386.2	385.7	386.3	385.7	386.9	386.1	387.4	386.5	388.1	386.9
BDA2390Ard	60461	60460	Roadway	102		0	0	0	0	0	390.0	390.0	385.7	385.7	385.7	385.7	386.1	386.1	386.5	386.5	386.9	386.9
BDA2390B	60455	60461	Natural	1000	10	65	66	84	93	103	382.9	382.1	387.2	386.2	387.3	386.3	387.8	386.9	388.2	387.4	388.7	388.1
BDA2395A	60454	60455	48" CSP culvert	45	10	65	67	86	97	109	383.5	383.5	387.7	387.2	387.8	387.3	388.6	387.8	389.2	388.2	389.9	388.7
BDA2395Ard	60454	60455	Roadway	45		0	0	0	0	0	392.0	392.0	387.2	387.2	387.3	387.3	387.8	387.8	388.2	388.2	388.7	388.7
BDA2395B	60456	60454	Natural	700	10	47	48	61	69	76	383.7	383.4	387.9	387.7	388.0	387.8	388.7	388.6	389.3	389.2	390.0	389.9
BDA2395C	68451	60456	48" CSP	1037	10	48	48	65	83	93	386.1	383.7	389.2	387.9	389.3	388.0	391.3	388.7	393.1	389.3	394.3	390.0
BDA2395Crd	68451	60456	Roadway	1037		0	0	0	0	0	394.7	393.0	387.9	387.9	388.0	388.0	388.7	388.7	389.3	389.3	390.0	390.0
BDA2400A	60541	68451	36" CSP	1086	10	10	9	15	23	26	388.0	387.0	389.7	389.2	389.7	389.3	392.1	391.3	394.9	393.1	396.2	394.3
BDA2400Ard	60541	68451	Roadway	1086		0	0	0	0	0	398.8	394.7	389.2	389.2	389.3	389.3	391.3	391.3	393.1	393.1	394.3	394.3
BDA2400B	60550	68451	36" CSP	472	10	18	19	26	27	32	387.1	386.2	389.6	389.2	389.7	389.3	391.9	391.3	393.4	393.1	394.5	394.3
BDA2400Brd	60550	68451	Roadway	472		0	0	0	0	0	394.8	394.3	389.2	389.2	389.3	389.3	391.3	391.3	393.1	393.1	394.3	394.3
BDA2400C	62088	60550	36" CSP	365	10	18	19	26	27	32	387.6	387.1	389.9	389.6	390.0	389.7	392.3	391.9	393.6	393.4	394.7	394.5
BDA2400Crd	62088	60550	Roadway	365		0	0	0	0	0	395.6	394.8	389.6	389.6	389.7	389.7	391.9	391.9	393.4	393.4	394.5	394.5
BDA2400D	62089	62088	36" CSP	336	10	18	18	25	27	32	388.1	387.6	390.3	389.9	390.4	390.0	392.8	392.3	393.8	393.6	395.5	394.7
BDA2400Drd	62089	62088	Roadway	336		0	0	0	0	0	395.6	395.3	390.3	390.3	390.4	390.4	392.8	392.8	393.8	393.8	395.5	395.5
BDA2400E	62090	62089	30" CSP	170	10	17	18	25	27	32	389.1	388.1	390.7	390.3	390.8	390.4	393.5	392.8	394.6	393.8	383.7	377.8
BDA2400Erd	62090	62089	Roadway	170		0	0	0	0	0	395.3	395.0	390.7	390.7	390.8	390.8	393.5	393.5	394.6	394.6	377.3	377.3

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Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA2400F	62024	62090	30" CSP	275	10	17	18	25	26	26	392.3	389.1	393.4	390.7	393.5	390.8	394.7	393.5	395.4	394.6	395.7	395.6
BDA2400Frd	62024	62090	Roadway	275		0	0	0	8	27	395.2	395.0	390.7	390.7	390.8	390.8	393.5	393.5	395.4	395.1	395.7	395.6
BDA2400G	62023	62024	3.5' x 2' Box culvert	28	10	17	18	25	26	25	392.3	392.3	393.6	393.4	393.6	393.5	394.7	394.7	395.5	395.4	395.7	395.7
BDA2400Grd	62023	62024	Roadway	28		0	0	0	12	27	395.3	395.2	393.4	393.4	393.5	393.5	394.7	394.7	395.5	395.4	395.7	395.7
BDA2400H	62022	62023	30" CSP	311	10	17	18	24	25	25	392.8	392.3	394.9	393.6	395.0	393.6	395.9	394.7	396.2	395.5	396.3	395.7
BDA2400Hrd	62022	62023	Roadway	311		0	0	0	11	21	396.0	395.3	393.6	393.6	393.6	393.6	394.7	394.7	396.2	395.5	396.3	395.7
BDA2400I	62093	62022	3.5' x 2' Box culvert	28	10	17	18	24	28	0	392.9	392.8	394.9	394.9	395.0	395.0	396.0	395.9	396.3	396.2	377.3	377.3
BDA2400Ird	62093	62022	Roadway	28		0	0	0	6	32	396.2	396.0	394.9	394.9	395.0	395.0	395.9	395.9	396.3	396.2	383.7	377.8
BDA2400J1	62094	62093	21" CSP	308	10	9	9	9	9	64	392.9	392.1	396.0	394.9	396.1	395.0	396.4	396.0	396.5	396.3	376.8	375.8
BDA2400J2	62094	62093	21" CSP	308	10	9	9	9	9	0	392.9	392.1	396.0	394.9	396.1	395.0	396.4	396.0	396.5	396.3	375.8	375.8
BDA2400Jrd	62094	62093	Roadway	308		0	0	13	22	64	396.2	395.8	396.0	394.9	396.1	395.0	396.4	396.3	396.5	396.4	377.3	376.8
BDA2400K1	62025	62094	21" CSP	27	10	9	8	8	8	8	393.3	392.1	396.0	396.0	396.1	396.1	396.4	396.4	396.5	396.5	396.6	396.6
BDA2400K2	62025	62094	21" CSP	27	10	9	8	8	8	8	393.3	392.1	396.0	396.0	396.1	396.1	396.4	396.4	396.5	396.5	396.6	396.6
BDA2400Krd	62025	62094	Roadway	27		14	16	25	30	36	395.3	395.8	396.0	396.0	396.1	396.1	396.4	396.4	396.5	396.5	396.6	396.6
BDA2400L1	62095	62025	21" CSP	109	10	10	10	15	17	0	394.2	393.3	396.5	396.0	396.7	396.1	397.6	396.4	398.0	396.5	371.2	371.2
BDA2400L2	62095	62025	21" CSP	109	10	10	10	15	17	65	394.2	393.3	396.5	396.0	396.7	396.1	397.6	396.4	398.0	396.5	375.8	374.8
BDA2400Lrd	62095	62025	Roadway	109		0	0	0	0	0	398.3	395.3	396.0	396.0	396.1	396.1	396.4	396.4	396.5	396.5	374.8	374.8
BDA2400M	69935	62095	30" CSP	353	10	20	20	30	34	0	394.5	394.2	397.4	396.5	397.6	396.7	399.8	397.6	400.6	398.0	374.6	374.6
BDA2400Mrd	69935	62095	Roadway	353		0	0	0	0	82	398.3	400.6	396.5	396.5	396.7	396.7	397.6	397.6	398.3	400.6	376.2	372.9
BDA2410A	80027	80025	Natural	680	10	23	27	18	33	40	374.7	373.8	378.6	378.6	378.8	378.8	378.7	378.7	379.3	379.2	379.5	379.5
BDA2410B	60102	80027	Natural	580	10	19	23	23	32	37	375.0	374.7	378.7	378.6	378.9	378.8	378.7	378.7	379.3	379.3	379.5	379.5
BDA2420A1	60101	60102	48" CMP culverts	120	10	10	12	13	17	20	375.3	375.1	378.7	378.7	378.9	378.9	378.8	378.7	379.3	379.3	379.6	379.5
BDA2420A2	60101	60102	48" CMP culverts	120	10	10	12	13	18	20	375.4	375.0	378.7	378.7	378.9	378.9	378.8	378.7	379.3	379.3	379.6	379.5
BDA2420Ard	60101	60102	Roadway	120		0	0	0	0	0	384.9	384.9	378.7	378.7	378.9	378.9	378.7	378.7	379.3	379.3	379.5	379.5
BDA2430A	61733	60101	Natural	700	10	13	14	17	21	25	376.1	375.3	378.7	378.7	378.9	378.9	378.8	378.8	379.3	379.3	379.6	379.6
Bethel Danebo - A3 Channel																						
BDA3010A	61607	80044	Natural	2400	100	352	400	219	455	522	374.9	370.0	380.9	380.8	381.1	381.1	378.7	378.6	381.3	381.2	381.6	381.5
BDA3020A1	61608	61607	6' x 10' Concrete Box culvert	100	100	184	206	112	235	270	375.0	374.9	380.9	380.9	381.2	381.1	378.7	378.7	381.4	381.3	381.7	381.6
BDA3020A2	61608	61607	6' x 10' Concrete Box culvert	100	100	184	206	112	235	270	375.0	374.9	380.9	380.9	381.2	381.1	378.7	378.7	381.4	381.3	381.7	381.6
BDA3020Ard	61608	61607	Roadway	100		0	0	0	0	0	385.6	385.6	380.9	380.9	381.1	381.1	378.7	378.7	381.3	381.3	381.6	381.6
BDA3020B	67113	61608	Natural	2470	100	373	411	227	472	537	376.6	375.0	381.3	380.9	381.7	381.2	380.0	378.7	381.9	381.4	382.3	381.7

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA3030A1	61694	67113	6' x 10' Concrete Box culvert	83	100	189	208	114	238	271	376.7	376.6	381.4	381.3	381.8	381.7	380.1	380.0	382.0	381.9	382.5	382.3
BDA3030A2	61694	67113	6' x 10' Concrete Box culvert	83	100	189	208	114	238	271	376.7	376.6	381.4	381.3	381.8	381.7	380.1	380.0	382.0	381.9	382.5	382.3
BDA3030Ard	61694	67113	Roadway	83		0	0	0	0	0	385.4	385.4	381.3	381.3	381.7	381.7	380.0	380.0	381.9	381.9	382.3	382.3
BDA3030B	80045	61694	Natural	850	100	367	405	227	463	528	376.6	376.7	381.8	381.4	382.2	381.8	380.7	380.1	382.4	382.0	382.9	382.5
BDA3030C	80050	80045	Natural	1600	100	211	249	125	271	321	380.6	376.6	383.5	381.8	383.7	382.2	383.5	380.7	384.4	382.4	384.6	382.9
BDA3040A	80051	80050	Natural	32	100	186	215	106	235	277	380.2	380.6	383.7	383.5	383.9	383.7	383.6	383.5	384.5	384.4	384.7	384.6
BDA3040B	80052	80051	Natural	350	100	186	215	107	235	277	380.6	380.2	384.1	383.7	384.4	383.9	383.7	383.6	384.8	384.5	385.1	384.7
BDA3040D	modpt	80052	Natural	1100	10	13	13	20	25	29	382.6	380.6	384.2	384.1	384.4	384.4	384.6	383.7	384.9	384.8	385.1	385.1
BDA3040C	63147	80052	Natural	2370	100	181	207	108	228	269	381.5	380.6	386.6	384.1	386.9	384.4	385.6	383.7	387.2	384.8	387.6	385.1
BDA3060A	63130	63147	Natural	470	100	173	195	108	218	257	383.0	381.5	386.8	386.6	387.1	386.9	385.8	385.6	387.4	387.2	387.8	387.6
BDA3070A	63207	63147	36" CSP	892	10	6	7	10	12	14	383.7	381.5	386.6	386.6	387.0	386.9	385.6	385.6	387.2	387.2	387.6	387.6
BDA3070Ard	63207	63147	Roadway	892		0	0	0	0	0	396.0	391.4	386.6	386.6	387.0	387.0	385.6	385.6	387.2	387.2	387.6	387.6
BDA3080A	63129	63130	7' x 10' Concrete Box culvert	96	100	173	196	108	218	257	382.9	383.0	387.0	386.8	387.4	387.1	386.0	385.8	387.6	387.4	388.1	387.8
BDA3080Ard	63129	63130	Roadway	96		0	0	0	0	0	391.8	391.8	386.8	386.8	387.1	387.1	385.8	385.8	387.4	387.4	387.8	387.8
BDA3080C1	80055	80054	Natural	750	100	164	185	141	210	245	383.6	382.2	389.7	389.6	390.0	389.9	388.9	388.8	390.3	390.2	390.7	390.7
BDA3080C2	80056	80055	Natural	750	100	192	201	237	267	301	384.5	383.6	389.7	389.7	390.0	390.0	388.9	388.9	390.3	390.3	390.8	390.7
BDA3080D	63309	80056	Natural	700	100	230	232	255	328	372	386.0	384.8	389.7	389.7	390.0	390.0	389.0	388.9	390.3	390.3	390.8	390.8
BDA3090A	67158	63309	7' x 10' Concrete Box culvert	96	100	250	249	289	360	408	386.5	386.3	390.0	389.7	390.3	390.0	390.2	389.3	390.8	390.3	391.2	390.8
BDA3090Ard	67158	63309	Roadway	96		0	0	0	0	0	395.5	395.0	389.7	389.7	390.0	390.0	389.0	389.0	390.3	390.3	390.8	390.8
BDA3090B	63276	67158	Natural	1300	100	238	236	286	341	381	386.8	385.2	391.7	390.0	391.6	390.3	392.0	390.2	392.3	390.8	392.6	391.2
BDA3110D	63359	63307	36" CSP	160	10	20	19	29	35	41	388.4	389.3	392.2	392.0	392.2	392.0	392.6	392.3	393.1	392.8	393.6	393.1
BDA3110DRD	63359	63307	Roadway	160		0	0	0	0	0	395.0	395.0	392.0	392.0	392.0	392.0	392.3	392.3	392.8	392.8	393.1	393.1
BDA3110C	63307	63275	Natural	1300	10	17	18	22	27	31	389.3	388.2	392.0	391.8	392.0	391.9	392.3	392.2	392.8	392.7	393.1	393.0
BDA3110A	63275	63276	42" CMP	160	10	18	19	21	26	27	388.2	388.1	391.8	391.7	391.9	391.6	392.2	392.0	392.7	392.3	393.0	392.6
BDA3110Ard	63275	63276	Roadway	160		0	0	0	0	0	396.6	396.6	391.7	391.7	391.6	391.6	392.0	392.0	392.3	392.3	392.6	392.6
BDA3100A	63303	63276	Natural	600	100	212	209	267	313	346	387.2	386.8	391.9	391.7	391.9	391.6	392.3	392.0	392.7	392.3	392.9	392.6
BDA3120A	63326	63303	42" CSP	140	10	18	16	21	36	43	387.7	387.2	392.0	391.9	392.0	391.9	392.3	392.3	392.7	392.7	393.0	392.9
BDA3120Ard	63326	63303	Roadway	140		0	0	0	0	0	397.0	397.0	391.9	391.9	391.9	391.9	392.3	392.3	392.7	392.7	392.9	392.9
BDA3100B	63305	63303	Natural	1900	100	199	195	270	310	337	388.6	387.2	393.3	391.9	393.3	391.9	393.9	392.3	394.2	392.7	394.4	392.9
BDA3150C	63349	63332	42" CSP	27	10	27	25	39	47	56	388.9	388.9	393.7	393.6	393.6	393.5	394.4	394.4	395.0	394.9	395.7	395.5
BDA3150Crd	63349	63332	Roadway	27		0	0	0	0	0	397.1	396.9	393.6	393.6	393.5	393.5	394.4	394.4	394.9	394.9	395.5	395.5
BDA3150B	63332	63335	60" CSP	275	10	53	47	68	87	105	388.6	388.2	393.6	393.5	393.5	393.4	394.4	394.1	394.9	394.5	395.5	394.9
BDA3150Brd	63332	63335	Roadway	275		0	0	0	0	0	396.9	396.0	393.5	393.5	393.4	393.4	394.1	394.1	394.5	394.5	394.9	394.9
BDA3150A	63335	63305	48" CSP	80	10	53	47	68	87	105	387.8	388.6	393.5	393.3	393.4	393.3	394.1	393.9	394.5	394.2	394.9	394.4

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA3150Ard	63335	63305	Roadway	80		0	0	0	0	0	399.0	396.0	393.5	393.5	393.4	393.4	394.1	394.1	394.5	394.5	394.9	394.9
BDA3160A	66631	63332	48" CSP	693	10	26	22	29	40	49	391.0	388.7	393.9	393.6	393.7	393.5	394.7	394.4	395.5	394.9	396.6	395.5
BDA3160Ard	66631	63332	Roadway	693		0	0	0	0	0	398.6	398.4	393.6	393.6	393.5	393.5	394.4	394.4	394.9	394.9	395.5	395.5
BDA3180A	63351	63305	48" CSP	70	10	48	48	74	85	88	387.5	388.7	393.5	393.3	393.4	393.3	394.3	393.9	394.6	394.2	394.8	394.4
BDA3180Ard	63351	63305	Roadway	70		0	0	0	0	0	399.0	397.9	393.5	393.5	393.4	393.4	394.3	394.3	394.6	394.6	394.8	394.8
BDA3180B	63369	63351	48" CSP	889	10	48	48	74	85	88	390.7	387.5	394.6	393.5	394.6	393.4	397.2	394.3	398.2	394.6	398.7	394.8
BDA3180Brd	63369	63351	Roadway	889		0	0	0	0	0	398.6	397.9	393.5	393.5	393.4	393.4	394.3	394.3	394.6	394.6	398.7	397.9
BDA3180C	63810	63369	48" CSP	939	10	26	27	41	47	50	392.9	390.7	395.1	394.6	395.2	394.6	398.1	397.2	399.2	398.2	399.9	398.7
BDA3180Crd	63810	63369	Roadway	939		0	0	0	0	0	400.0	398.6	394.6	394.6	394.6	394.6	397.2	397.2	398.2	398.2	398.7	398.7
BDA3180D	63811	63810	42" CSP	400	10	27	27	41	47	49	393.7	392.9	395.8	395.1	395.9	395.2	398.9	398.1	400.1	399.2	400.5	399.9
BDA3180Drd	63811	63810	Roadway	400		0	0	0	0	14	400.0	400.0	395.1	395.1	395.2	395.2	398.1	398.1	400.1	400.0	400.5	400.2
BDA3130A	63364	63305	66" CSP	90	10	102	101	143	158	170	387.2	388.6	393.5	393.3	393.5	393.3	394.2	393.9	394.6	394.2	394.8	394.4
BDA3130Ard	63364	63305	Roadway	90		0	0	0	0	0	399.0	398.0	393.5	393.5	393.5	393.5	394.2	394.2	394.6	394.6	394.8	394.8
BDA3130B	63822	63364	60" CSP	2417	10	89	88	124	135	136	391.4	387.6	396.7	393.5	396.6	393.5	400.8	394.2	402.3	394.6	402.4	394.8
BDA3130Brd	63822	63364	Roadway	2417		0	0	0	0	1	402.3	398.0	393.5	393.5	393.5	393.5	394.2	394.2	402.3	398.0	402.4	398.0
BDA3200A	63826	63822	60" CSP	949	10	73	73	106	110	115	392.9	391.4	397.5	396.7	397.4	396.6	402.8	400.8	404.5	402.3	404.7	402.4
BDA3200Ard	63826	63822	Roadway	949		0	0	0	0	0	404.8	402.3	396.7	396.7	396.6	396.6	400.8	400.8	402.3	402.3	402.4	402.4
BDA3210A	63800	63826	60" CSP	1774	10	53	52	77	81	89	395.3	392.9	398.6	397.5	398.5	397.4	404.6	402.8	405.9	404.5	406.2	404.7
BDA3210Ard	63800	63826	Roadway	1774		0	0	0	0	4	405.9	404.8	397.5	397.5	397.4	397.4	402.8	402.8	405.9	404.8	406.2	404.9
BDA3220A	63797	63800	48" CSP	722	10	24	22	31	44	54	396.9	395.3	399.0	398.6	398.9	398.5	405.0	404.6	406.1	405.9	406.4	406.2
BDA3220Ard	63797	63800	Roadway	722		0	0	0	0	9	406.0	405.9	398.6	398.6	398.5	398.5	404.6	404.6	406.1	405.9	406.4	406.2
BDA3220B	63795	63797	42" CSP	713	10	25	22	30	44	47	398.3	396.9	400.3	399.0	400.2	398.9	405.8	405.0	406.4	406.1	406.7	406.4
BDA3220Brd	63795	63797	Roadway	713		0	0	0	8	20	406.0	406.0	399.0	399.0	398.9	398.9	405.0	405.0	406.4	406.1	406.7	406.4
Bethel Danebo - Greenhill Tributary																						
BDGH050A1	80036	80070	36" CMP	45	25	72	67	72	82	82	365.5	365.7	371.0	370.1	370.7	370.5	371.0	369.5	371.7	370.7	371.7	371.3
BDGH050A2	80036	80057	36" CMP	45	25	60	58	60	67	67	366.0	365.4	371.0	370.1	370.7	370.5	371.0	369.5	371.7	370.7	371.7	371.3
BDGH050B	80035	80036	Natural	30	25	107	100	107	124	133	366.4	365.4	370.0	370.1	370.5	370.5	369.0	369.5	370.7	370.7	371.3	371.3
BDGH050C	81000	80035	Natural	1875	10	85	90	91	117	138	369.0	366.4	371.7	370.0	371.7	370.5	371.8	369.0	372.0	370.7	372.3	371.3
BDGH050D	81001	81000	Natural	120	25	85	89	90	118	139	369.1	369.0	371.9	371.7	371.9	371.7	372.0	371.8	372.3	372.0	372.5	372.3
BDGH050E	80037	81001	Natural	20	25	85	89	90	118	139	368.5	369.1	371.9	371.9	372.0	371.9	372.0	372.0	372.3	372.3	372.6	372.5
BDGH064A1	81002	80037	3.4' x 5.1' Rectangle	15	10	47	50	51	65	76	369.0	368.5	372.0	371.9	372.0	372.0	372.1	372.0	372.4	372.3	372.8	372.6
BDGH064A2	81002	80037	3.4' x 5.1' Rectangle	15	10	35	37	38	50	61	369.0	368.5	372.0	371.9	372.0	372.0	372.1	372.0	372.4	372.3	372.8	372.6
BDGH064Ard	81002	80037	Roadway	2700		0	0	0	0	0	374.3	374.2	371.9	371.9	372.0	372.0	372.0	372.0	372.3	372.3	372.6	372.6
BDGH064B	81003	81002	Natural	22	10	82	88	90	116	136	369.2	369.0	372.0	372.0	372.1	372.0	372.1	372.1	372.5	372.4	372.8	372.8
BDGH064C	80038	81003	Natural	26	10	82	88	90	116	136	369.5	369.2	372.1	372.0	372.2	372.1	372.2	372.1	372.6	372.5	372.9	372.8
BDGH064D	81004	80038	Natural	32	10	68	73	80	97	113	369.8	369.5	372.2	372.1	372.2	372.2	372.2	372.2	372.6	372.6	372.9	372.9
BDGH064E	81015	81004	Natural	395	10	69	73	81	97	113	370.1	369.8	373.2	372.2	373.3	372.2	373.4	372.2	373.7	372.6	374.0	372.9
BDGH064F	80064	81015	Natural	437	10	69	73	81	98	114	370.2	370.1	373.6	373.2	373.7	373.3	373.8	373.4	374.1	373.7	374.4	374.0
BDGH060B	80040	80071	Natural	835	10	13	14	14	18	22	370.0	369.7	372.4	372.2	372.4	372.3	372.4	372.3	372.8	372.7	373.1	373.0
BDGH060	80071	80038	Natural	835	10	16	16	15	21	26	369.7	369.5	372.2	372.1	372.3	372.2	372.3	372.2	372.7	372.6	373.0	372.9
BDGH062A	80065	80064	Natural	205	10	67	71	81	96	111	370.6	370.2	373.7	373.6	373.8	373.7	374.0	373.8	374.3	374.1	374.6	374.4
BDGH062B	81005	80065	Natural	597	10	68	71	82	97	112	371.9	370.6	374.7	373.7	374.8	373.8	375.0	374.0	375.3	374.3	375.6	374.6
BDGH062C	70559	81005	Natural	58	10	68	72	82	97	112	371.5	371.9	374.8	374.7	374.9	374.8	375.1	375.0	375.4	375.3	375.7	375.6
BDGH066	70560	70559	24" CSP	117	10	2	2	3	4	3	371.7	371.4	374.9	374.8	375.0	374.9	375.1	375.1	375.4	375.4	375.7	375.7

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDGH066rd	70560	70559	Roadway	117		0	3	2	4	5	375.0	373.0	374.8	374.8	375.0	374.9	375.1	375.1	375.4	375.4	375.7	375.7
BDGH075A	81007	70559	Natural	545	10	64	67	80	92	106	371.2	371.5	375.2	374.8	375.3	374.9	375.5	375.1	375.9	375.4	376.2	375.7
BDGH075B	70538	81007	Natural	55	10	64	67	82	94	108	370.1	371.2	375.2	375.2	375.3	375.3	375.5	375.5	375.9	375.9	376.2	376.2
BDGH068	70539	70538	24" CSP	67	10	6	5	9	11	13	370.3	370.1	375.2	375.2	375.3	375.3	375.6	375.5	376.0	375.9	376.3	376.2
BDGH068rd	70539	70538	Roadway	67		0	0	0	0	0	377.5	375.0	375.2	375.2	375.3	375.3	375.5	375.5	375.9	375.9	376.2	376.2
BDGH070	59949	68192	27" CSP	335	10	4	4	6	9	11	373.1	372.9	375.3	375.2	375.4	375.3	375.7	375.6	376.1	375.9	376.5	376.3
BDGH070rd	59949	68192	Roadway	335		0	0	0	0	0	379.0	377.8	375.2	375.2	375.3	375.3	375.6	375.6	375.9	375.9	376.3	376.3
BDGH075C	81009	70538	Natural	173	10	60	62	75	87	100	371.1	370.1	375.2	375.2	375.3	375.3	375.5	375.5	375.9	375.9	376.2	376.2
BDGH075D	81010	81009	Natural	22	10	60	63	76	88	101	371.2	371.1	375.2	375.2	375.3	375.3	375.5	375.5	375.9	375.9	376.2	376.2
BDGH075E	80039	81010	Natural	35	10	60	63	76	90	103	370.9	371.2	375.2	375.2	375.3	375.3	375.5	375.5	375.9	375.9	376.2	376.2
BDGH075F1	68192	80039	54" CSP	57	10	20	21	24	29	33	371.2	370.9	375.2	375.2	375.3	375.3	375.6	375.5	375.9	375.9	376.3	376.2
BDGH075F2	68192	80039	48" CSP	57	10	15	16	19	23	25	371.2	371.1	375.2	375.2	375.3	375.3	375.6	375.5	375.9	375.9	376.3	376.2
BDGH075F3	68192	80039	54" CSP	57	10	18	19	23	27	32	371.2	371.2	375.2	375.2	375.3	375.3	375.6	375.5	375.9	375.9	376.3	376.2
BDGH075G	80069	68192	4' x 8' Concrete Box Culvert	549	10	50	52	62	73	83	371.8	371.2	375.3	375.2	375.4	375.3	375.7	375.6	376.1	375.9	376.5	376.3
BDGH075Grd	80069	68192	Roadway	549	10	0	0	0	0	0	378.2	378.1	375.2	375.2	375.3	375.3	375.6	375.6	375.9	375.9	376.3	376.3
BDGH080B	70177	70170	42" CSP	520	10	8	7	11	18	21	372.5	372.0	375.2	375.2	375.3	375.3	375.6	375.6	376.0	375.9	376.4	376.3
BDGH080Brd	70177	70170	Roadway	520		0	0	0	0	0	379.0	377.9	375.2	375.2	375.3	375.3	375.6	375.6	376.0	376.0	376.4	376.4
BDGH080A	70170	80039	42" CSP	520	10	8	7	11	17	20	372.0	371.5	375.2	375.2	375.3	375.3	375.6	375.5	375.9	375.9	376.3	376.2
BDGH080Ard	70170	80039	Roadway	520		0	0	0	0	0	380.0	378.5	375.2	375.2	375.3	375.3	375.5	375.5	375.9	375.9	376.2	376.2
BDGH090	59945	80069	Rectangle	296	10	42	44	54	61	69	372.2	371.8	375.4	375.3	375.5	375.4	375.8	375.7	376.2	376.1	376.7	376.5
BDGH090rd	59945	80069	Roadway	296		0	0	0	0	0	378.4	378.2	375.3	375.3	375.4	375.4	375.7	375.7	376.1	376.1	376.5	376.5
BDGH100A	60116	59945	Natural	990	10	8	9	13	13	15	373.3	371.6	375.4	375.4	375.5	375.5	375.8	375.8	376.2	376.2	376.7	376.7
BDGH100B	60210	60116	48" CSP Culvert	100	10	10	10	16	22	26	374.3	373.3	375.4	375.4	375.5	375.5	375.9	375.8	376.3	376.2	376.7	376.7
BDGH100Brd	60210	60116	Roadway	100		0	0	0	0	0	379.5	379.0	375.4	375.4	375.5	375.5	375.9	375.9	376.3	376.3	376.7	376.7
BDGH100C	60212	60210	36" CSP	632	10	10	10	16	23	27	375.0	374.3	376.5	375.4	376.5	375.5	377.0	375.9	377.5	376.3	377.8	376.7
BDGH100Crd	60212	60210	Roadway	632		0	0	0	0	0	381.7	379.0	375.4	375.4	375.5	375.5	375.9	375.9	376.3	376.3	376.7	376.7
BDGH110A	60111	59945	Natural	1660	10	20	19	27	34	37	374.0	371.8	375.9	375.4	375.9	375.5	376.2	375.8	376.5	376.2	376.9	376.7
BDGH110B	60196	60111	48" CMP Culvert	44	10	20	19	30	42	49	374.1	374.0	376.1	375.9	376.0	375.9	376.4	376.2	376.7	376.5	377.0	376.9
BDGH110BRD	60196	60111	Roadway	44		0	0	0	0	0	380.2	380.2	375.9	375.9	375.9	375.9	376.2	376.2	376.5	376.5	376.9	376.9
BDGH120A1	80041	80040	48" CMP Culvert	41	10	7	7	8	10	12	370.8	370.8	372.4	372.4	372.5	372.4	372.5	372.4	372.9	372.8	373.2	373.1
BDGH120A2	80041	80040	48" CMP Culvert	41	10	6	7	8	9	11	371.0	370.8	372.4	372.4	372.5	372.4	372.5	372.4	372.9	372.8	373.2	373.1
BDGH120B	80042	80041	Natural	2070	10	12	12	17	20	24	371.7	370.3	373.3	372.4	373.4	372.5	373.6	372.5	373.7	372.9	373.9	373.2
BDGH120C	80043	80042	72" CMP Culvert	24	10	13	13	19	26	30	371.7	371.7	373.4	373.3	373.4	373.4	373.7	373.6	373.8	373.7	374.0	373.9
BDGH120D	61605	80043	Natural	560	10	13	13	20	28	33	375.2	371.7	376.0	373.4	376.0	373.4	376.2	373.7	376.4	373.8	376.5	374.0
BDGH120E	61601	61605	42" CSP	50	10	14	13	20	29	34	373.6	375.2	376.2	376.0	376.2	376.0	376.5	376.2	376.8	376.4	376.9	376.5
BDGH120Erd	61601	61605	Roadway	50		0	0	0	0	0	379.5	378.8	376.2	376.2	376.2	376.2	376.5	376.5	376.8	376.8	376.9	376.9
BDGH130	69068	61601	42" CSP	152	10	14	13	20	29	34	374.1	373.6	376.2	376.2	376.2	376.2	376.5	376.5	376.9	376.8	377.2	376.9
BDGH130rd	69068	61601	Roadway	152		0	0	0	0	0	379.3	378.8	376.2	376.2	376.2	376.2	376.5	376.5	376.8	376.8	376.9	376.9

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Bethel Danebo - Roosevelt Channel																						
BDRC010A	80046	80045	66" CSP	19	25	170	175	156	200	216	377.5	377.4	382.7	381.8	382.9	382.2	381.9	380.7	383.4	382.4	384.0	382.9
BDRC010Ard	80046	80045	Roadway	19		0	0	0	0	0	388.0	384.0	382.7	382.7	382.9	382.9	381.9	381.9	383.4	383.4	384.0	384.0
BDRC010B	67117	80046	Natural	450	25	171	176	156	201	216	378.4	377.5	383.1	382.7	383.2	382.9	382.6	381.9	383.7	383.4	384.2	384.0
BDRC010C1	61727	67117	60" CSP	132	50	85	88	78	101	107	378.4	378.5	383.5	383.1	383.7	383.2	383.0	382.6	384.3	383.7	384.8	384.2
BDRC010C2	61727	67117	60" CSP	132	50	86	88	78	101	109	378.7	378.4	383.5	383.1	383.7	383.2	383.0	382.6	384.3	383.7	384.8	384.2
BDRC010Crd	61727	67117	Roadway	132		0	0	0	0	0	388.4	388.4	383.1	383.1	383.2	383.2	382.6	382.6	383.7	383.7	384.2	384.2
BDRC010D	80047	61727	Natural	1360	25	152	158	156	181	193	379.5	378.4	384.2	383.5	384.4	383.7	384.1	383.0	384.9	384.3	385.4	384.8
BDRC020A	61732	80047	36" CSP	110	10	15	14	21	24	28	381.9	380.5	384.3	384.2	384.4	384.4	384.1	384.1	384.9	384.9	385.5	385.4
BDRC020Ard	61732	80047	Roadway	110		0	0	0	0	0	386.8	386.8	384.2	384.2	384.4	384.4	384.1	384.1	384.9	384.9	385.4	385.4
BDRC020B	80049	61732	Natural	520	10	16	15	23	25	30	383.3	381.6	384.6	384.3	384.6	384.4	385.0	384.1	385.1	384.9	385.6	385.5
BDRC020C	61741	80049	Natural	1300	10	16	15	22	26	30	384.7	383.3	386.7	384.6	386.6	384.6	387.0	385.0	387.2	385.1	387.4	385.6
BDRC010E1	80048	80047	6' X 6' Concrete box culvert	49	25	70	73	74	84	89	379.6	379.5	384.3	384.2	384.4	384.4	384.2	384.1	384.9	384.9	385.5	385.4
BDRC010E2	80048	80047	6' X 6' Concrete box culvert	49	25	71	74	75	86	91	379.6	379.5	384.3	384.2	384.4	384.4	384.2	384.1	384.9	384.9	385.5	385.4
BDRC010Erd	80048	80047	Roadway	49		0	0	0	0	0	386.8	386.8	384.2	384.2	384.4	384.4	384.1	384.1	384.9	384.9	385.4	385.4
BDRC010F	67120	80048	Natural	1130	25	143	148	149	171	181	380.0	379.6	384.8	384.3	384.9	384.4	384.7	384.2	385.3	384.9	385.8	385.5
BDRC030A	61743	67120	78" CSP	110	25	144	149	151	173	184	380.2	380.0	385.3	384.8	385.5	384.9	385.3	384.7	386.0	385.3	386.4	385.8
BDRC030Ard	61743	67120	Roadway	110		0	0	0	0	0	389.0	389.0	384.8	384.8	384.9	384.9	384.7	384.7	385.3	385.3	385.8	385.8
BDRC030B	61934	61743	Natural	1500	10	136	140	153	165	174	381.4	380.2	385.8	385.3	385.9	385.5	385.9	385.3	386.3	386.0	386.7	386.4
BDRC030C	61935	61934	48" CSP	105	10	139	141	159	169	176	381.1	381.4	388.4	385.8	388.6	385.9	389.3	385.9	390.3	386.3	391.1	386.7
BDRC030Crd	61935	61934	Roadway	105		0	0	0	0	1	391.0	391.0	385.8	385.8	385.9	385.9	385.9	385.9	386.3	386.3	391.1	391.0
BDRC030D	61959	61935	Natural	800	10	142	143	170	197	230	382.9	381.1	388.5	388.4	388.7	388.6	389.4	389.3	390.4	390.3	391.2	391.1
BDRC040A	61977	61959	Natural	2400	10	119	108	166	181	210	387.2	382.9	390.3	388.5	390.3	388.7	391.1	389.4	391.7	390.4	392.0	391.2
BDRC050B	69260	61977	54" CSP	126	10	41	38	59	69	84	387.5	387.7	390.5	390.3	390.4	390.3	391.2	391.1	391.9	391.7	392.3	392.0
BDRC050Brd	69260	61977	Roadway	126		0	0	0	0	0	397.8	397.5	390.3	390.3	390.3	390.3	391.1	391.1	391.7	391.7	392.0	392.0
BDRC050C	69952	69260	54" CSP	1973	10	41	38	59	71	85	389.4	387.5	392.3	390.5	392.1	390.4	393.3	391.2	394.5	391.9	396.6	392.3
BDRC050Crd	69952	69260	Roadway	1973		0	0	0	0	0	399.8	397.8	390.5	390.5	390.4	390.4	391.2	391.2	391.9	391.9	392.3	392.3
BDRC050A	66603	61977	60" CSP	1520	10	58	54	81	90	105	388.6	387.2	392.0	390.3	391.8	390.3	392.9	391.1	393.7	391.7	394.5	392.0
BDRC050Ard	66603	61977	Roadway	1520		0	0	0	0	0	400.3	397.5	390.3	390.3	390.3	390.3	391.1	391.1	391.7	391.7	392.0	392.0
BDRC060A	62329	66603	48" CSP	1336	10	48	44	66	74	82	393.1	388.6	395.1	392.0	395.0	391.8	396.2	392.9	397.8	393.7	400.6	394.5
BDRC060Ard	62329	66603	Roadway	1336		0	0	0	0	0	402.7	400.3	392.0	392.0	391.8	391.8	392.9	392.9	393.7	393.7	394.5	394.5
BDRC070A	62317	62329	48" CSP	2018	10	34	31	48	56	61	396.1	393.1	398.7	395.1	398.6	395.0	399.3	396.2	400.7	397.8	403.0	400.6
BDRC070Ard	62317	62329	Roadway	2018		0	0	0	0	0	402.9	402.7	395.1	395.1	395.0	395.0	396.2	396.2	397.8	397.8	403.0	402.7

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE LAUREL HILL STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Drainage Area (acres)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions				Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)							
													10-Year		25-Year Winter		25-Year Summer		50-Year	
	US	DS					10-Year	25-Year-W	25-Year-S	50-Year	US	DS	US	DS	US	DS	US	DS	US	DS
Laurel Hill - Glenwood																				
LHGL010A	72145	72146	Natural	150	1246	25	117	119	88	128	419.8	415.1	425.1	425.0	425.1	425.0	425.1	425.0	425.1	425.0
LHGL010B	72144	72145	46" CSP culvert	120	1246	25	117	119	88	128	422.8	421.5	427.7	425.1	427.8	425.1	426.6	425.1	428.3	425.1
LHGL010BRD	72144	72145	Roadway	120			0	0	0	0	460.0	458.7	425.1	425.1	425.1	425.1	425.1	425.1	425.1	425.1
LHGL010C	72143	72144	Natural	90	1246	25	117	119	88	128	423.8	422.8	427.7	427.7	427.9	427.8	426.7	426.6	428.5	428.3
LHGL010D1	72142	72143	30" CMP culvert	70	1225	25	34	34	34	34	424.9	424.5	429.2	427.7	429.3	427.9	428.9	426.7	429.4	428.5
LHGL010D2	72142	72143	30" CMP culvert	70	1225	25	33	33	33	33	424.8	424.6	429.2	427.7	429.3	427.9	428.9	426.7	429.4	428.5
LHGL010DRD	72142	72143	Roadway	70			209	232	64	319	428.6	428.2	429.2	428.8	429.3	428.9	428.9	428.5	429.4	429.0
LHGL010E	72597	72598	Natural	150	1246	25	152	171	52	240	424.8	420.8	426.7	425.0	426.8	425.0	425.9	425.0	427.1	425.0
LHGL010F	72143	72597	Natural	340	1246	25	152	171	52	240	425.5	424.8	427.7	426.7	427.9	426.8	426.7	425.9	428.5	427.1
LHGL020A	72596	72142	Natural	110	1225	25	264	285	130	363	426.2	424.3	429.7	429.2	429.8	429.3	429.0	428.9	430.1	429.4
LHGL020B	56526	72596	Natural	70	656	25	160	182	120	250	426.5	426.2	430.4	429.7	430.5	429.8	429.8	429.0	430.9	430.1
LHGL020C	56525	56526	60" CMP culvert	79	656	25	160	182	120	250	427.6	426.8	432.9	430.5	433.5	430.7	431.8	430.0	436.0	431.3
LHGL020CRD	56525	56526	Roadway	79			0	0	0	0	442.9	442.2	430.4	430.4	430.5	430.5	429.8	429.8	430.9	430.9
Laurel Hill - Riverview/Augusta																				
LHRA020A	72139	56525	Natural	350	656	25	160	182	120	252	431.5	427.6	434.7	432.9	434.9	433.5	434.2	431.8	436.3	436.0
LHRA020B	72138	72139	6'x6' CSP culvert	68	616	25	154	174	111	244	432.1	431.5	435.7	434.7	436.1	434.9	435.0	434.2	437.4	436.3
LHRA020BRD	72138	72139	Roadway	68			0	0	0	0	447.6	446.9	434.7	434.7	434.9	434.9	434.2	434.2	436.3	436.3
LHRA020C	56522	72138	Natural	500	616	10	154	174	111	249	435.6	432.1	438.9	435.7	439.0	436.1	438.6	435.0	439.5	437.4
LHRA020D	66993	56522	6'x6' CSP culvert	285	576	25	147	167	99	233	438.1	435.7	440.8	438.9	441.1	439.0	440.0	438.6	442.2	439.5
LHRA020DRD	66993	56522	Roadway	285			0	0	0	0	450.0	447.7	438.9	438.9	439.0	439.0	438.6	438.6	439.5	439.5
LHRA030A	53635	66993	Natural	230	576	10	147	167	98.797	233	442.5	438.1	444.4	440.8	444.5	441.1	444.3	440.0	444.7	442.2
LHRA030B1	75474	53635	7'x4' CSP culverts	75	536	10	74	84	49	114	443.7	442.5	445.2	444.4	445.3	444.5	444.7	444.3	445.8	444.7
LHRA030B2	75474	53635	7'x4' CSP culverts	75	536	10	66	75	42	105	443.8	442.7	445.2	444.4	445.3	444.5	444.7	444.3	445.8	444.7
LHRA030BRD	75474	53635	Roadway	75			0	0	0	0	455.1	453.9	444.4	444.4	444.5	444.5	444.3	444.3	444.7	444.7
LHRA040A	75473	75474	Natural	400	536	10	96	112	55	171	446.2	443.7	450.3	445.2	450.5	445.3	449.6	444.7	451.2	445.8
LHRA040B	53662	75473	Natural	250	480	10	90	105	47	158	447.7	446.2	451.2	450.3	451.4	450.5	450.4	449.6	452.1	451.2
LHRA040C	53649	53662	66" CSP culvert	350	480	10	90	105	47	159	453.1	447.7	454.9	451.2	455.0	451.4	454.3	450.4	455.7	452.1
LHRA040CRD	53649	53662	Roadway	350			0	0	0	0	456.9	451.5	451.2	451.2	451.4	451.4	450.4	450.4	452.1	452.1
LHRA040D	72125	53649	Natural	105	480	10	90	105	47	159	453.8	453.1	456.4	454.9	456.6	455.0	455.8	454.3	457.3	455.7
LHRA040E	72124	72125	72" CMP culvert	40	480	10	90	105	47	159	453.7	453.8	457.2	456.4	457.5	456.6	456.3	455.8	458.5	457.3
LHRA040ERD	72124	72125	Roadway	40			0	0	0	0	460.6	460.6	456.4	456.4	456.6	456.6	455.8	455.8	457.3	457.3
LHRA040F	72123	72124	Natural	310	480	10	90	105	47	159	457.3	454.9	460.2	457.3	460.4	457.5	459.5	456.7	461.1	458.5

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE LAUREL HILL STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Drainage Area (acres)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions				Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)							
													10-Year		25-Year Winter		25-Year Summer		50-Year	
	US	DS					10-Year	25-Year-W	25-Year-S	50-Year	US	DS	US	DS	US	DS	US	DS	US	DS
LHRA040G	72122	72123	60" CMP culvert	30	480	10	90	105	47	159	457.7	457.3	461.2	460.2	461.6	460.4	460.1	459.5	462.7	461.1
LHRA040GRD	72122	72123	Roadway	30			0	0	0	0	463.6	463.2	460.2	460.2	460.4	460.4	459.5	459.5	461.1	461.1
LHRA040H	53655	72122	Natural	110	480	10	90	105	47	159	458.7	457.7	461.5	461.2	461.8	461.6	460.5	460.1	462.9	462.7
LHRA040I	53755	53655	72" CMP	140	480	10	91	105	47	159	460.0	458.7	462.2	461.5	462.4	461.8	461.5	460.5	463.3	462.9
LHRA040J1	75482	53755	36" CSP	95	480	10	36	44	12	80	461.9	460.0	463.3	462.2	463.5	462.4	462.7	461.5	465.0	463.3
LHRA040J2	75482	53755	36" CSP	95	480	10	55	61	36	79	461.0	460.0	463.3	462.2	463.5	462.4	462.7	461.5	465.0	463.3
LHRA050E	75483	75482	36" CSP	388	173	10	55	55	26	81	466.9	461.0	468.8	463.3	468.8	463.5	468.1	462.7	472.5	465.0
LHRA050F	75484	75483	36" CSP	210	173	10	55	55	26	81	469.6	467.0	471.7	469.0	471.7	469.0	470.9	468.2	476.2	472.5
LHRA050G	75485	75484	36" CSP	250	146	10	52	50	19	73	477.6	469.7	479.1	471.7	479.0	471.7	478.5	470.9	480.0	476.2
LHRA070R	75486	75485	36" CSP	253	146	10	52	50	19	73	484.9	477.7	486.4	479.2	486.4	479.1	485.7	478.5	486.7	480.0
LHRA070S	75487	75486	36" CSP	284	107	10	39	37	12	53	492.3	484.9	493.6	486.4	493.5	486.4	493.0	485.7	493.8	486.7
LHRA070T	75488	75487	36" CSP	363	107	10	39	37	12	53	496.9	492.2	498.7	493.6	498.6	493.5	497.8	493.0	499.1	493.8
LHRA070U	53703	75488	36" CSP	92	107	10	39	37	12	53	499.1	496.9	500.4	498.7	500.4	498.6	499.8	497.8	500.7	499.1
LHRA090D	51387	53703	42" CSP	158	107	10	39	37	12	53	500.4	499.3	502.1	501.1	502.1	501.0	501.3	500.2	502.5	501.4
LHRA040K	75475	75474	36" CSP	86	307	10	45	46	36	49	446.3	446.0	449.3	448.2	449.4	448.2	448.8	447.9	449.5	448.2
LHRA040L	75476	75475	36" CSP	212	307	10	45	46	36	49	452.1	446.3	453.5	449.3	453.5	449.4	453.3	448.8	453.6	449.5
LHRA040M	75477	75476	36" CSP	429	307	10	45	46	36	49	453.9	452.3	457.5	454.5	457.6	454.5	456.5	454.3	457.9	454.6
LHRA040N	75478	75477	36" CSP	413	307	10	46	46	36	49	455.4	453.9	460.0	457.5	460.3	457.6	458.0	456.5	460.8	457.9
LHRA040O	75479	75478	36" CSP	120	307	10	46	47	36	50	456.0	455.4	460.7	460.0	461.0	460.3	458.4	458.0	461.6	460.8
LHRA040P	75480	75479	36" CSP	347	307	10	46	47	36	50	459.1	456.0	462.5	460.7	463.0	461.0	460.8	458.4	463.8	461.6
LHRA040Q	75481	75480	36" CSP	150	307	10	46	47	36	51	461.1	459.3	463.3	462.5	463.7	463.0	462.7	460.8	464.8	463.8
LHRA040R	53754	75481	36" CSP	43	307	10	46	46	36	53	461.1	461.2	463.7	463.4	464.0	463.7	463.4	463.1	465.1	464.8
LHRA040S	53754	75482	65" CSP	189	307	10	37	50	22	83	462.3	461.0	463.7	463.3	464.0	463.5	463.4	462.7	465.1	465.0
LHRA050A1	53753	53754	36" CSP	45	307	10	42	48	29	66	461.1	460.9	464.0	463.7	464.3	464.0	463.5	463.4	465.7	465.1
LHRA050A2	53753	53754	36" CSP	45	307	10	42	48	29	66	461.1	460.9	464.0	463.7	464.3	464.0	463.5	463.4	465.7	465.1
LHRA050ARD	53753	53754	Roadway	45			0	0	0	0	466.9	466.9	463.7	463.7	464.0	464.0	463.4	463.4	465.1	465.1
LHRA050B	53752	53753	65" CMP	189	307	10	83	97	57	131	462.3	461.1	465.4	464.0	465.7	464.3	464.8	463.5	466.8	465.7
LHRA050C	66483	53752	48" CSP	667	274	10	78	91	50	124	467.6	462.4	470.0	465.4	470.3	465.7	469.4	464.8	472.4	466.8
LHRA050CRD	66483	53752	Roadway	667			0	0	0	0	479.1	471.9	465.4	465.4	465.7	465.7	464.8	464.8	466.8	466.8
LHRA050D	53777	66483	42" CSP	193	274	10	79	91	50	124	472.2	467.6	474.0	470.0	474.2	470.3	473.6	469.4	476.2	472.4
LHRA050DRD	53777	66483	Roadway	193			0	0	0	0	481.8	479.1	470.0	470.0	470.3	470.3	469.4	469.4	472.4	472.4
LHRA060A	68603	53777	42" CSP	140	221	10	69	80	43	111	474.8	473.0	477.0	475.1	477.2	475.3	476.4	474.6	478.1	476.2
LHRA060ARD	68603	53777	Roadway	140			0	0	0	0	484.0	481.8	474.0	474.0	474.2	474.2	473.6	473.6	476.2	476.2
LHRA070A	53783	68603	42" CSP	160	221	10	54	35	23	56	476.6	474.8	478.5	477.0	478.0	477.2	477.7	476.4	478.7	478.1
LHRA070ARD	53783	68603	Roadway	160			0	0	0	0	484.5	483.0	477.0	477.0	477.2	477.2	476.4	476.4	478.1	478.1
LHRA070B	53704	53783	42" CSP	732	197	10	46	26	18	39	489.2	476.6	490.7	478.5	490.3	478.0	490.1	477.7	490.5	478.7
LHRA070BRD	53704	53783	Roadway	732			0	0	0	0	499.2	484.5	478.5	478.5	478.0	478.0	477.7	477.7	478.7	478.7
LHRA090B	75490	75489	30" CSP	292	159	10	35	12	9	13	496.7	492.6	498.7	494.0	497.7	493.3	497.6	493.2	497.8	493.3
LHRA090A	75489	53704	30" CSP	38	159	10	35	12	9	13	492.6	491.0	494.0	492.2	493.3	491.7	493.2	491.6	493.3	491.7
LHRA090C1	76212	75490	18" CSP	18	159	10	20	6	4	7	498.2	497.3	501.0	498.7	499.0	497.8	498.9	497.7	499.0	497.8
LHRA090C2	76212	75490	18" CSP	18	159	10	16	6	4	6	498.2	497.3	501.0	498.7	499.0	498.0	498.9	497.8	499.0	498.0

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE LAUREL HILL STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Drainage Area (acres)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions				Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)							
													10-Year		25-Year Winter		25-Year Summer		50-Year	
	US	DS					10-Year	25-Year-W	25-Year-S	50-Year	US	DS	US	DS	US	DS	US	DS	US	DS
LHRA070C	53646	68603	42" CSP culvert	50	159	10	24	48	25	70	478.0	474.8	478.7	477.0	479.1	477.2	478.7	476.4	479.7	478.1
LHRA070CRD	53646	68603	Roadway	50			0	0	0	0	485.3	484.0	477.0	477.0	477.2	477.2	476.4	476.4	478.1	478.1
LHRA070D	72119	53646	Natural	160	159	10	24	48	25	70	482.4	478.0	483.7	478.7	484.2	479.1	483.7	478.7	484.4	479.7
LHRA070E	72118	72119	36" CSP culvert	15	159	10	24	48	25	70	483.1	482.9	485.0	484.3	486.1	485.0	485.0	484.3	487.2	485.6
LHRA070ERD	72118	72119	Roadway	15			0	0	0	0	487.9	487.7	483.7	483.7	484.2	484.2	483.7	483.7	484.4	484.4
LHRA070F	72117	72118	Natural	52	159	10	24	48	25	70	484.5	483.1	485.6	485.0	486.1	486.1	485.6	485.0	487.2	487.2
LHRA070G	72116	72117	Bridge	9	159	10	24	48	25	71	484.5	484.5	485.8	485.6	486.4	486.1	485.8	485.6	487.4	487.2
LHRA070GRD	72116	72117	Roadway	9			0	0	0	0	488.3	488.3	485.6	485.6	486.1	486.1	485.6	485.6	487.2	487.2
LHRA070H	72115	72116	Natural	150	159	10	24	48	25	73	485.6	484.5	486.8	485.8	487.0	486.4	486.8	485.8	487.5	487.4
LHRA070I	72114	72115	Bridge	12	159	10	24	48	25	73	485.9	485.6	486.9	486.8	487.3	487.0	486.9	486.8	487.8	487.5
LHRA070IRD	72114	72115	Roadway	12			0	0	0	0	491.6	491.4	486.8	486.8	487.0	487.0	486.8	486.8	487.5	487.5
LHRA070J	72113	72114	Natural	65	159	10	24	48	25	73	486.0	485.9	487.9	486.9	488.5	487.3	487.9	486.9	489.0	487.8
LHRA070K	72112	72113	42" CSP culvert	17	159	10	24	48	25	73	486.6	486.0	488.2	487.9	489.2	488.5	488.2	487.9	490.1	489.0
LHRA070KRD	72112	72113	Roadway	17			0	0	0	0	490.3	489.8	487.9	487.9	488.5	488.5	487.9	487.9	489.0	489.0
LHRA070L	72111	72112	Natural	60	159	10	24	48	25	74	487.1	486.6	489.6	488.2	490.6	489.2	489.6	488.2	491.2	490.1
LHRA070M	72110	72111	5'x3.5' CSP culvert	20	159	10	24	48	25	74	487.4	487.1	489.7	489.6	490.7	490.6	489.7	489.6	491.4	491.2
LHRA070MRD	72110	72111	Roadway	20			0	0	0	0	491.7	491.4	489.6	489.6	490.6	490.6	489.6	489.6	491.2	491.2
LHRA070N	72109	72110	Natural	177	159	10	26	49	26	74	489.7	487.4	490.6	489.7	491.1	490.7	490.6	489.7	492.0	491.4
LHRA070O	72108	72109	3'x2.7' CSP culvert	20	159	10	26	49	26	75	489.4	489.7	491.4	490.6	492.3	491.1	491.4	490.6	493.7	492.0
LHRA070ORD	72108	72109	Roadway	20			0	0	0	0	493.8	493.8	490.6	490.6	491.1	491.1	490.6	490.6	492.0	492.0
LHRA070P	72107	72108	Natural	66	159	10	26	49	26	76	491.1	489.4	492.4	491.4	492.8	492.3	492.4	491.4	493.8	493.7
LHRA070Q	72106	72107	36" CSP	32	159	10	26	49	26	78	492.3	491.1	493.7	492.4	494.5	492.8	493.7	492.4	495.9	493.8
LHRA070QRD	72106	72107	Roadway	32			0	0	0	0	495.9	494.7	492.4	492.4	492.8	492.8	492.4	492.4	493.8	493.8
LHRA100A	72105	72106	Natural	100	159	10	27	49	26	83	493.3	492.3	494.4	493.7	494.8	494.5	494.3	493.7	495.9	495.9
LHRA100B	72104	72105	36" CSP	118	159	10	27	49	26	59	496.6	493.7	498.3	495.2	499.2	495.9	498.2	495.1	500.3	496.2
LHRA100BRD	72104	72105	Roadway	118			0	0	0	28	500.1	497.2	494.4	494.4	494.8	494.8	494.3	494.3	500.3	497.3
LHRA100C	51409	72104	Natural	56	159	10	28	49	26	87	498.5	496.6	500.3	498.3	501.0	499.2	500.3	498.2	501.8	500.3
LHRA100D	99796	51409	30" CSP culvert	31	159	10	29	50	26	56	498.8	498.5	501.0	500.3	502.3	501.0	500.8	500.3	503.0	501.8
LHRA100DRD	99796	51409	Roadway	31			0	0	0	41	502.8	502.4	500.3	500.3	501.0	501.0	500.3	500.3	503.0	502.6

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Willakenzie North - Delta Highway																						
WKDH010A	72606	72603	Natural	880	25	281	305	283	325	362	375.4	376.1	383.5	383.4	383.5	383.4	383.5	383.4	383.5	383.4	383.5	383.4
WKDH010G	72605	72606	Natural	1080	25	13	14	22	35	40	377.8	374.8	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010H	72604	72605	Natural	10	25	13	14	22	36	40	377.9	377.8	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010I	67019	72604	Natural	80	25	13	14	22	36	40	378.8	377.9	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010J	58450	67019	72" CSP	85	25	13	14	22	36	40	377.3	377.0	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010JRD	58450	67019	Roadway	85		0	0	0	0	0	389.0	389.0	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010B	72602	72606	Natural	10	25	276	297	281	319	356	375.5	375.4	383.6	383.5	383.6	383.5	383.6	383.5	383.6	383.5	383.7	383.5
WKDH010C	72601	72602	Natural	410	25	276	297	281	319	356	376.2	375.5	383.6	383.6	383.7	383.6	383.6	383.6	383.7	383.6	383.8	383.7
WKDH010D	72600	72601	Natural	10	25	276	297	281	319	356	376.2	376.2	383.8	383.6	383.9	383.7	383.9	383.6	384.0	383.7	384.1	383.8
WKDH010E	58446	72600	Natural	230	25	276	297	281	319	356	377.0	376.2	383.8	383.8	383.9	383.9	383.9	383.9	384.0	384.0	384.1	384.1
WKDH010F1	58447	58446	84"CMP	83	50	138	148	140	160	178	377.3	377.0	384.1	383.8	384.2	383.9	384.1	383.9	384.3	384.0	384.5	384.1
WKDH010F2	58447	58446	84"CMP	83	50	138	148	140	160	178	377.3	377.0	384.1	383.8	384.2	383.9	384.1	383.9	384.3	384.0	384.5	384.1
WKDH010FRD	58447	58446	Roadway	83		0	0	0	0	0	390.5	390.5	383.8	383.8	383.9	383.9	383.9	383.9	384.0	384.0	384.1	384.1
WKDH020A	58442	58447	Natural	2500	25	285	304	303	338	373	378.1	377.3	384.1	384.1	384.2	384.2	384.1	384.1	384.3	384.3	384.5	384.5
Willakenzie North - North Beltline																						
WKNB010D	59792	58442	Natural	1000	25	24	25	40	63	72	381.6	378.1	384.1	384.1	384.2	384.2	384.1	384.1	384.3	384.3	384.5	384.5
WKNB010E	59799	59792	48" CMP	365	25	24	26	40	66	74	382.6	381.6	384.8	384.1	384.9	384.2	385.8	384.1	388.0	384.3	388.8	384.5
WKNB010ERD	59799	59792	Roadway	365		0	0	0	0	0	399.0	398.0	384.1	384.1	384.2	384.2	384.1	384.1	384.3	384.3	384.5	384.5
WKNB010A1	58441	58442	72" CMP	83	25	142	152	166	179	196	395.7	395.6	399.7	398.8	399.9	399.0	400.1	399.1	400.3	399.2	400.5	399.4
WKNB010A2	58441	58442	72" CMP	83	25	142	152	166	179	196	395.7	395.6	399.7	398.8	399.9	399.0	400.1	399.1	400.3	399.2	400.5	399.4
WKNB010ARD	58441	58442	Roadway	83		0	0	0	0	0	407.0	405.0	384.1	384.1	384.2	384.2	384.1	384.1	384.3	384.3	384.5	384.5
WKNB010B	58371	58441	Natural	2250	25	284	305	333	358	393	396.4	393.8	402.8	399.7	403.0	399.9	403.2	400.1	403.5	400.3	403.7	400.5
WKNB010C1	59755	58371	72" CMP	329	25	142	153	167	180	197	397.9	396.4	404.1	402.8	404.5	403.0	405.1	403.2	405.7	403.5	406.5	403.7
WKNB010C2	59755	58371	72" CMP	329	25	142	153	167	180	197	397.9	396.4	404.1	402.8	404.5	403.0	405.1	403.2	405.7	403.5	406.5	403.7
WKNB010CRD	59755	58371	Roadway	329		0	0	0	0	0	410.0	409.0	402.8	402.8	403.0	403.0	403.2	403.2	403.5	403.5	403.7	403.7
WKNB020A	59766	59755	Natural	1220	25	272	293	322	352	382	399.5	397.9	405.2	404.1	405.5	404.5	405.9	405.1	406.4	405.7	407.1	406.5
WKNB020B1	59753	59766	72" CSP	85	25	136	147	163	179	195	399.6	399.4	405.6	405.2	406.0	405.5	406.5	405.9	407.0	406.4	407.9	407.1
WKNB020B2	59753	59766	72" CSP	85	25	136	147	163	179	195	399.6	399.4	405.6	405.2	406.0	405.5	406.5	405.9	407.0	406.4	407.9	407.1
WKNB020BRD	59753	59766	Roadway	85		0	0	0	0	0	412.1	411.0	405.2	405.2	405.5	405.5	405.9	405.9	406.4	406.4	407.1	407.1
WKNB020C	59778	59753	Natural	530	25	273	295	328.483	363	395	400.0	399.4	406.3	405.6	406.6	406.0	407.1	406.5	407.6	407.0	408.3	407.9
WKNB020D1	69005	59778	72" CMP	85	25	136	148	165	183	200	401.1	400.9	406.9	406.3	407.4	406.6	407.9	407.1	408.5	407.6	409.5	408.3
WKNB020D2	69005	59778	72" CMP	85	25	136	148	165	183	200	401.1	400.9	406.9	406.3	407.4	406.6	407.9	407.1	408.5	407.6	409.5	408.3
WKNB020DRD	69005	59778	Roadway	85		0	0	0	0	0	412.1	412.1	406.3	406.3	406.6	406.6	407.1	407.1	407.6	407.6	408.3	408.3
WKNB030A	59774	69005	Natural	1350	25	261	283	325	364	404	403.0	400.6	408.5	406.9	408.8	407.4	409.3	407.9	409.8	408.5	410.5	409.5
WKNB040A1	59772	59774	30"CMP	89	25	13	13	20	30	35	409.2	409.1	411.2	410.3	411.2	410.3	411.9	410.6	413.1	411.0	413.8	411.1
WKNB040A2	59772	59774	30"CMP	89	25	13	13	20	30	35	409.2	409.1	411.2	410.3	411.2	410.3	411.9	410.6	413.1	411.0	413.8	411.1
WKNB040ARD	59772	59774	Roadway	89		0	0	0	0	0	416.0	416.0	408.5	408.5	408.8	408.8	409.3	409.3	409.8	409.8	410.5	410.5
WKNB030B	59425	59774	Natural	1300	25	240	261	313	352	397	405.7	403.0	410.0	408.5	410.2	408.8	410.6	409.3	411.0	409.8	411.4	410.5
WKNB030C1	59426	59425	72" CSP	603	25	121	131	158	179	202	407.1	406.0	411.3	410.0	411.6	410.2	412.2	410.6	412.8	411.0	413.6	411.4
WKNB030C2	59426	59425	72" CSP	603	25	121	131	158	179	202	407.1	406.0	411.3	410.0	411.6	410.2	412.2	410.6	412.8	411.0	413.6	411.4
WKNB030CRD	59426	59425	Roadway	603		0	0	0	0	0	417.7	416.0	410.0	410.0	410.2	410.2	410.6	410.6	411.0	411.0	411.4	411.4
WKNB060A	67893	59426	66" CSP	340	25	82	89	105	121	131	407.6	407.1	411.6	411.3	411.9	411.6	412.5	412.2	413.2	412.8	414.0	413.6

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKNB060ARD	59426	67893	Roadway	340		0	0	0	0	0	417.7	417.4	411.6	411.6	411.9	411.9	412.5	412.5	413.2	413.2	414.0	414.0
WKNB060B	59519	67893	66" CSP	1043	10	83	90	107	123	132	407.7	407.6	412.7	411.6	413.0	411.9	413.9	412.5	414.6	413.2	415.5	414.0
WKNB060BRD	59519	67893	Roadway	1043		0	0	0	0	0	417.9	417.4	411.6	411.6	411.9	411.9	412.5	412.5	413.2	413.2	414.0	414.0
WKNB050A	59518	59519	42" CSP	105	10	25	27	33	24	23	410.9	408.0	412.9	412.7	413.1	413.0	413.9	413.9	414.6	414.6	415.5	415.5
WKNB050ARD	59518	59519	Roadway	105		0	0	0	0	0	418.3	417.9	412.7	412.7	413.0	413.0	413.9	413.9	414.6	414.6	415.5	415.5
WKNB050B	59546	59518	36" CSP	436	10	7	8	13	14	12	412.2	410.9	413.2	412.9	413.2	413.1	414.0	413.9	414.8	414.6	415.7	415.5
WKNB050BRD	59518	59546	Roadway	436		0	0	0	0	0	418.3	418.0	413.2	413.2	413.2	413.2	414.0	414.0	414.8	414.8	415.7	415.7
WKNB050C	59495	59546	42" CSP	656	10	7	7	12	15	14	413.5	412.6	414.6	413.4	414.7	413.4	415.0	414.0	415.2	414.8	415.8	415.7
WKNB050CRD	59495	59546	Roadway	656		0	0	0	0	0	420.0	418.0	413.2	413.2	413.2	413.2	414.0	414.0	414.8	414.8	415.7	415.7
WKNB050D	59545	59495	36" CSP	34	10	7	7	11	15	15	413.6	413.5	414.7	414.6	414.7	414.7	415.0	415.0	415.2	415.2	415.8	415.8
WKNB050DRD	59495	59545	Roadway	34		0	0	0	0	0	420.0	419.6	414.7	414.7	414.7	414.7	415.0	415.0	415.2	415.2	415.8	415.8
WKNB050E	67912	59545	3' X 5' Conc. Box	148	10	7	7	11	15	16	414.0	413.6	414.7	414.7	414.8	414.7	415.1	415.0	415.2	415.2	415.8	415.8
WKNB050ERD	67912	59545	Roadway	148		0	0	0	0	0	419.6	419.6	414.7	414.7	414.7	414.7	415.0	415.0	415.2	415.2	415.8	415.8
WKNB050F	68227	67912	3' X 5' Conc. Box	920	10	7	7	11	16	18	415.2	414.0	415.8	414.7	415.8	414.8	416.0	415.1	416.2	415.2	416.3	415.8
WKNB050FRD	68227	67912	Roadway	920		0	0	0	0	0	420.7	419.6	414.7	414.7	414.8	414.8	415.1	415.1	415.2	415.2	415.8	415.8
WKNB050G	69048	68227	42" CSP	169	10	7	7	11	16	19	418.5	415.2	419.0	415.8	419.1	415.8	419.2	416.0	419.3	416.2	419.4	416.3
WKNB050GRD	69048	68227	Roadway	169		0	0	0	0	0	421.0	420.7	415.8	415.8	415.8	415.8	416.0	416.0	416.2	416.2	416.3	416.3
WKNB050H	61213	59519	54" CSP	2545	10	59	64	70	80	84	412.4	407.7	415.6	412.7	416.2	413.0	417.7	413.9	420.2	414.6	420.8	415.5
WKNB050HRD	61213	59519	Roadway	2545		0	0	0	0	0	422.1	417.9	412.7	412.7	413.0	413.0	413.9	413.9	414.6	414.6	415.5	415.5
WKNB140A	61212	61213	54" CSP	701	10	44	48	53	55	58	413.2	412.5	416.3	415.6	416.8	416.2	418.2	417.7	420.7	420.2	421.3	420.8
WKNB140ARD	61212	61213	Roadway	701		0	0	0	0	0	424.0	422.1	415.6	415.6	416.2	416.2	417.7	417.7	420.2	420.2	420.8	420.8
WKNB140B	66590	61212	42" CSP	591	10	44	48	52	54	57	413.9	413.2	417.7	416.3	418.4	416.8	419.8	418.2	422.2	420.7	422.4	421.3
WKNB140BRD	61212	66590	Roadway	591		0	0	0	0	0	424.0	422.4	417.7	417.7	418.4	418.4	419.8	419.8	422.2	422.2	422.4	422.4
WKNB150A	61030	66590	42" CSP	532	10	34	37	44	45	49	418.5	413.9	420.0	417.7	420.1	418.4	420.8	419.8	421.3	422.2	421.8	422.4
WKNB150ARD	61030	66590	Roadway	532		0	0	0	0	0	427.0	422.4	417.7	417.7	418.4	418.4	419.8	419.8	422.2	422.2	422.4	422.4
WKNB150B	71108	61030	Natural	250	10	34	37	42	44	47	418.3	418.5	420.5	420.0	420.6	420.1	421.0	420.8	421.4	421.3	421.9	421.8
WKNB150C	71109	71108	Natural	620	10	34	36	40	41	44	418.2	418.3	421.4	420.5	421.6	420.6	421.9	421.0	422.1	421.4	422.5	421.9
WKNB150D	61085	71109	Natural	350	10	34	37	40	40	40	418.3	418.2	421.5	421.4	421.7	421.6	422.0	421.9	422.2	422.1	422.6	422.5
WKNB150E	61086	61085	42" CSP	68	10	34	37	41	41	43	418.4	418.3	421.8	421.5	422.0	421.7	422.4	422.0	422.5	422.2	422.9	422.6
WKNB150ERD	61085	61086	Roadway	68		0	0	0	0	0	423.3	422.7	421.8	421.8	422.0	422.0	422.4	422.4	422.5	422.5	422.9	422.9
WKNB190A	61087	61086	Natural	620	10	25	27	33	34	37	419.0	418.4	421.9	421.8	422.2	422.0	422.6	422.4	422.8	422.5	423.2	422.9
WKNB190B	61049	61087	Natural	340	10	27	29	44	52	57	420.7	419.0	422.1	421.9	422.3	422.2	422.7	422.6	422.9	422.8	423.3	423.2
WKNB190C1	67095	61049	48" CSP	42	10	14	15	22	27	30	420.9	420.7	422.3	422.1	422.5	422.3	422.8	422.7	423.0	422.9	423.4	423.3
WKNB190C2	67095	61049	48" CSP	42	10	14	15	22	27	30	420.9	420.7	422.3	422.1	422.5	422.3	422.8	422.7	423.0	422.9	423.4	423.3
WKNB190CRD	67095	61049	Roadway	42		0	0	0	0	0	426.0	426.0	422.1	422.1	422.3	422.3	422.7	422.7	422.9	422.9	423.3	423.3
WKNB190D	62684	67095	Natural	400	10	28	29	45	55	61	421.5	420.9	423.6	422.3	423.6	422.5	424.1	422.8	424.3	423.0	424.5	423.4
WKNB190E1	62685	62684	48" CSP	75	10	9	10	15	18	21	421.6	421.5	423.6	423.6	423.6	423.6	424.1	424.1	424.4	424.3	424.5	424.5
WKNB190E2	62685	62684	48" CSP	75	10	9	10	15	18	21	421.6	421.5	423.6	423.6	423.6	423.6	424.1	424.1	424.4	424.3	424.5	424.5
WKNB190E3	62685	62684	48" CSP	75	10	9	10	15	18	21	421.6	421.5	423.6	423.6	423.6	423.6	424.1	424.1	424.4	424.3	424.5	424.5
WKNB190ERD	62685	62684	Roadway	75		0	0	0	0	0	429.0	428.0	423.6	423.6	423.6	423.6	424.1	424.1	424.3	424.3	424.5	424.5
WKNB190F	62688	62685	Natural	470	10	28	30	46	60	63	422.3	421.6	424.1	423.6	424.2	423.6	424.6	424.1	424.9	424.4	425.0	424.5

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKNB190G1	62712	62688	60" CMP	100	10	14	15	23	31	32	422.4	422.3	424.3	424.1	424.3	424.2	424.8	424.6	425.2	424.9	425.3	425.0
WKNB190G2	62712	62688	60" CMP	100	10	14	15	23	31	32	422.4	422.3	424.3	424.1	424.3	424.2	424.8	424.6	425.2	424.9	425.3	425.0
WKNB190GRD	62712	62688	Roadway	100		0	0	0	0	0	429.0	429.0	424.1	424.1	424.2	424.2	424.6	424.6	424.9	424.9	425.0	425.0
WKNB190H	62750	62712	36" CSP	262	10	28	30	47	63	65	422.8	422.4	425.2	424.3	425.3	424.3	426.5	424.8	427.9	425.2	428.1	425.3
WKNB190HRD	62712	62750	Roadway	262		0	0	0	0	0	429.0	427.9	425.2	425.2	425.3	425.3	426.5	426.5	427.9	427.9	428.1	428.1
WKNB060C	59428	59426	Natural	580	25	144	154	197	232	269	408.8	407.5	413.5	411.3	413.7	411.6	414.2	412.2	414.6	412.8	415.0	413.6
WKNB060D	59401	59428	Natural	1100	25	144	155	199	234	273	410.2	408.8	415.2	413.5	415.4	413.7	416.0	414.2	416.4	414.6	416.9	415.0
WKNB070A	59497	59401	54" CSP	880	10	17	14	8	14	20	411.7	410.6	415.2	415.2	415.4	415.4	416.0	416.0	416.5	416.4	417.0	416.9
WKNB070ARD	59497	59401	Roadway	880		0	0	0	0	0	418.2	417.1	415.2	415.2	415.4	415.4	416.0	416.0	416.4	416.4	416.9	416.9
WKNB060E	59385	59401	Natural	900	25	135	145	198	230	263	411.3	410.2	416.4	415.2	416.6	415.4	417.3	416.0	417.8	416.4	418.2	416.9
WKNB110A	59476	59385	72" CSP	120	25	43	46	64	73	84	410.3	409.9	416.4	416.4	416.6	416.6	417.4	417.3	417.8	417.8	418.3	418.2
WKNB110ARD	59476	59385	Roadway	120		0	0	0	0	0	421.3	420.4	416.4	416.4	416.6	416.6	417.3	417.3	417.8	417.8	418.2	418.2
WKNB110B	59420	59476	72" CSP	110	10	37	40	57	63	72	411.4	410.3	416.4	416.4	416.6	416.6	417.4	417.4	417.9	417.8	418.4	418.3
WKNB110BRD	59476	59420	Roadway	110		0	0	0	0	0	421.3	418.5	416.4	416.4	416.6	416.6	417.4	417.4	417.9	417.9	418.4	418.4
WKNB110C	61133	59420	72" CSP	1337	10	38	40	57	64	73	413.0	411.2	416.6	416.4	416.8	416.6	417.7	417.4	418.2	417.9	418.8	418.4
WKNB110CRD	61133	59420	Roadway	1337		0	0	0	0	0	423.8	418.5	416.4	416.4	416.6	416.6	417.4	417.4	417.9	417.9	418.4	418.4
WKNB120A	60890	61133	66" CSP	130	10	32	34	49	56	62	413.5	413.0	416.6	416.6	416.8	416.8	417.8	417.7	418.3	418.2	418.9	418.8
WKNB120ARD	60890	61133	Roadway	130		0	0	0	0	0	424.0	423.8	416.6	416.6	416.8	416.8	417.7	417.7	418.2	418.2	418.8	418.8
WKNB120B	99575	60890	66" CMP	1458	10	33	35	50	58	64	414.3	413.5	417.7	416.6	417.8	416.8	418.9	417.8	419.6	418.3	420.6	418.9
WKNB120BRD	99575	60890	Roadway	1458		0	0	0	0	0	425.6	424.0	416.6	416.6	416.8	416.8	417.8	417.8	418.3	418.3	418.9	418.9
WKNB160A	61199	99575	60" CSP	1201	10	25	27	39	46	50	415.4	414.3	418.0	417.7	418.2	417.8	419.3	418.9	420.0	419.6	421.1	420.6
WKNB160ARD	61199	99575	Roadway	1201		0	0	0	0	0	426.4	425.6	417.7	417.7	417.8	417.8	418.9	418.9	419.6	419.6	420.6	420.6
WKNB180A	61183	61199	48" CSP	1214	10	16	17	25	31	32	418.1	416.4	419.6	418.0	419.7	418.2	420.2	419.3	420.6	420.0	421.7	421.1
WKNB180Ard	61183	61199	Roadway	1214		0	0	0	0	0	427.9	426.4	418.0	418.0	418.2	418.2	419.3	419.3	420.0	420.0	421.1	421.1
WKNB180B	61235	61183	42" CSP	480	10	16	17	26	34	38	419.6	418.1	420.9	419.6	421.0	419.7	421.4	420.2	421.8	420.6	422.2	421.7
WKNB180Brd	61183	61235	Roadway	480		0	0	0	0	0	427.9	426.8	420.9	420.9	421.0	421.0	421.4	421.4	421.8	421.8	422.2	422.2
WKNB100A	66880	67043	72" CSP	130	25	33	34	54	78	99	410.8	410.5	416.7	416.7	416.9	416.8	417.6	417.6	418.1	418.1	418.6	418.5
WKNB100ARD	67043	66880	Roadway	130		0	0	0	0	0	420.9	420.0	416.7	416.7	416.9	416.9	417.6	417.6	418.1	418.1	418.6	418.6
WKNB100B	59462	66880	60" CSP	47	10	33	34	54	78	99	411.4	410.8	416.7	416.7	416.9	416.9	417.7	417.6	418.1	418.1	418.6	418.6
WKNB100BRD	59462	66880	Roadway	47		0	0	0	0	0	422.5	420.0	416.7	416.7	416.9	416.9	417.6	417.6	418.1	418.1	418.6	418.6
WKNB100C	59421	59462	66" CSP	30	10	24	25	40	56	70	412.5	412.3	416.7	416.7	416.9	416.9	417.7	417.7	418.1	418.1	418.6	418.6
WKNB100CRD	59462	59421	Roadway	30		0	0	0	0	0	422.5	421.0	416.7	416.7	416.9	416.9	417.7	417.7	418.1	418.1	418.6	418.6
WKNB100D	61140	59421	60" CSP	905	10	24	26	41	58	71	413.8	412.5	416.8	416.7	417.0	416.9	417.9	417.7	418.4	418.1	419.0	418.6
WKNB100DRD	61140	59421	Roadway	905		0	0	0	0	0	422.8	421.0	416.7	416.7	416.9	416.9	417.7	417.7	418.1	418.1	418.6	418.6
WKNB090A	61142	61140	48" CSP	1037	10	17	18	29	40	48	414.6	413.7	417.1	416.8	417.3	417.0	418.4	417.9	419.2	418.4	420.6	419.0
WKNB090ARD	61142	61140	Roadway	1037		0	0	0	0	0	424.8	422.8	416.8	416.8	417.0	417.0	417.9	417.9	418.4	418.4	419.0	419.0
WKNB110D	67043	59385	Natural	400	25	93	99	139	164	187	411.8	411.3	416.7	416.4	416.8	416.6	417.6	417.3	418.1	417.8	418.5	418.2
WKNB100E	71240	67043	Natural	1930	25	65	66	101	131	150	415.9	411.8	418.2	416.7	418.2	416.8	418.8	417.6	419.2	418.1	419.5	418.5
WKNB100F	71239	71240	Natural	150	25	66	66	103	149	173	421.2	415.9	423.6	418.2	423.6	418.2	424.0	418.8	424.5	419.2	424.7	419.5
Willakenzie North - Gilham Road																						
WKGL010A	71280	71279	Natural	1200	10	55	59	83	84	93	389.2	379.5	391.2	385.6	391.3	385.6	391.7	385.6	391.7	385.7	391.8	385.7
WKGL010B	71281	71280	48" CMP	30	10	53	56	79	81	89	389.3	389.2	392.2	391.2	392.3	391.3	393.0	391.7	393.0	391.7	393.3	391.8
WKGL010BRD	71281	71280	Roadway	30		0	0	0	0	0	395.4	395.4	391.2	391.2	391.3	391.3	391.7	391.7	391.7	391.7	391.8	391.8

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKGL020A	71282	71281	Natural	920	10	43	45	65	70	74	392.7	389.3	395.2	392.2	395.3	392.3	395.9	393.0	396.1	393.0	396.7	393.3
WKGL020B	73036	71282	Natural	1280	10	43	45	67	75	84	394.3	392.7	397.5	395.2	397.6	395.3	398.2	395.9	398.4	396.1	398.6	396.7
WKGL020C	70865	73036	48" CSP	15	10	43	45	68	76	85	385.1	394.3	397.7	397.5	397.7	397.6	398.5	398.2	398.7	398.4	398.9	398.6
WKGL020D	70862	70865	72" CSP	1015	10	43	45	68	76	85	387.2	385.1	397.8	397.7	397.9	397.7	398.8	398.5	399.1	398.7	399.5	398.9
WKGL030A	58511	70862	42" CSP	610	10	10	10	16	26	30	392.1	390.4	397.9	397.8	398.0	397.9	399.0	398.8	399.4	399.1	399.9	399.5
WKGL030ARD	70862	58511	Roadway	610		0	0	0	0	0	404.2	403.3	397.9	397.9	398.0	398.0	399.0	399.0	399.4	399.4	399.9	399.9
WKGL030G	58499	70862	54" CMP	562	10	7	7	11	18	21	388.3	387.2	397.8	397.8	397.9	397.9	398.9	398.8	399.2	399.1	399.6	399.5
WKGL030GRD	58499	70862	Roadway	562		0	0	0	0	0	406.2	404.2	397.8	397.8	397.9	397.9	398.8	398.8	399.1	399.1	399.5	399.5
WKGL030B	58454	70862	42" CSP	70	10	28	29	45	53	60	396.3	390.4	397.7	397.8	397.8	397.9	399.1	398.8	399.7	399.1	400.3	399.5
WKGL030BRD	58454	70862	Roadway	70		0	0	0	0	0	410.2	404.2	397.8	397.8	397.9	397.9	398.8	398.8	399.1	399.1	399.5	399.5
WKGL030C	70121	58454	Natural	1650	10	21	22	33	45	52	399.0	396.4	400.9	397.7	400.9	397.8	401.1	399.1	401.4	399.7	401.6	400.3
WKGL030D	70120	70121	48" CSP	85	10	21	21	34	51	59	399.1	399.0	401.1	400.9	401.2	400.9	401.6	401.1	402.1	401.4	402.4	401.6
WKGL030DRD	70120	70121	Roadway	85		0	0	0	0	0	406.0	406.0	400.9	400.9	400.9	400.9	401.1	401.1	401.4	401.4	401.6	401.6
WKGL030E	71289	70120	Natural	400	10	21	21	34	52	60	400.6	399.5	402.2	401.1	402.2	401.2	402.6	401.6	403.0	402.1	403.1	402.4
WKGL030F	58463	71289	Natural	410	10	21	21	34	53	62	401.8	400.6	404.1	402.2	404.1	402.2	404.6	402.6	405.1	403.0	405.3	403.1
Willakenzie North - County Farm																						
WKCF020A	58172	58169	78" CSP	2866	10	104	85	88	133	169	393.2	389.9	397.3	392.5	396.8	392.3	396.9	392.3	398.0	392.9	399.0	393.3
WKCF020ARD	58172	58169	Roadway	2866		0	0	0	0	0	407.9	405.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.0	388.1	388.1
WKCF020B	66533	58172	78" CSP	1596	10	85	72	81	124	154	396.7	393.2	399.4	397.3	399.2	396.8	399.4	396.9	400.1	398.0	400.7	399.0
WKCF020BRD	58172	66533	Roadway	1596		0	0	0	0	0	407.9	406.0	399.4	399.4	399.2	399.2	399.4	399.4	400.1	400.1	400.7	400.7
WKCF030A	58356	66533	66" CSP	1085	10	60	53	66	98	121	398.6	396.6	401.2	399.4	401.0	399.2	401.4	399.4	402.2	400.1	402.7	400.7
WKCF030ARD	58356	66533	Roadway	1085		0	0	0	0	0	410.2	406.0	399.4	399.4	399.2	399.2	399.4	399.4	400.1	400.1	400.7	400.7
WKCF040A	59511	58356	60" CSP	2093	10	35	34	46	69	83	403.5	398.6	405.4	401.2	405.3	401.0	405.7	401.4	406.2	402.2	406.6	402.7
WKCF040ARD	59511	58356	Roadway	2093		0	0	0	0	0	414.8	410.2	401.2	401.2	401.0	401.0	401.4	401.4	402.2	402.2	402.7	402.7
WKCF070D	66196	59511	54" CSP	2465	10	5	4	5	8	10	405.7	403.9	406.7	405.4	406.6	405.3	406.6	405.7	406.9	406.2	407.1	406.6
WKCF070DRD	66196	59511	Roadway	2465		0	0	0	0	0	417.7	414.8	405.4	405.4	405.3	405.3	405.7	405.7	406.2	406.2	406.6	406.6
WKCF070A	68994	59511	54" CSP	467	10	15	13	13	24	30	404.4	403.5	405.7	405.4	405.6	405.3	405.8	405.7	406.5	406.2	406.8	406.6
WKCF070ARD	68994	59511	Roadway	467		0	0	0	0	0	415.4	414.8	405.4	405.4	405.3	405.3	405.7	405.7	406.2	406.2	406.6	406.6
WKCF070B	59487	68994	42" CSP	581	10	15	13	13	25	31	405.7	404.4	407.2	405.7	407.1	405.6	407.1	405.8	407.7	406.5	408.1	406.8
WKCF070BRD	59487	68994	Roadway	581		0	0	0	0	0	415.7	415.4	405.7	405.7	405.6	405.6	405.8	405.8	406.5	406.5	406.8	406.8
WKCF070C	59489	59487	36" CSP	533	10	15	13	13	25	31	406.7	405.7	408.4	407.2	408.2	407.1	408.2	407.1	409.0	407.7	409.6	408.1
WKCF070CRD	59487	59489	Roadway	533		0	0	0	0	0	415.7	415.6	408.4	408.4	408.2	408.2	408.2	408.2	409.0	409.0	409.6	409.6
Willakenzie South - Debrick Slough																						
WKDS010A	60730	71171	Natural	1200	25	117	126	117	187	212	387.2	384.6	389.8	388.8	389.9	388.8	389.8	388.8	390.2	388.8	390.4	388.8
WKDS010B	60786	60730	54" CSP	486	10	30	31	49	76	86	392.6	392.0	394.8	393.6	394.9	393.6	395.5	394.0	396.4	394.5	396.8	394.7
WKDS010BRD	60786	60730	Roadway	486		0	0	0	0	0	402.3	399.3	389.8	389.8	389.9	389.9	389.8	389.8	390.2	390.2	390.4	390.4
WKDS020A	71172	60730	Natural	600	25	93	98	83	115	148	388.6	387.2	391.0	389.8	391.0	389.9	390.9	389.8	391.1	390.2	391.3	390.4
WKDS020B	71173	71172	72" CSP	640	50	93	98	83	115	148	390.3	388.6	393.5	391.0	393.6	391.0	393.3	390.9	394.0	391.1	394.6	391.3
WKDS020BRD	71173	71172	Roadway	640		0	0	0	0	0	399.5	399.5	391.0	391.0	391.0	391.0	390.9	390.9	391.1	391.1	391.3	391.3
WKDS020C	62475	71173	Natural	200	25	93	98	83	115	148	391.0	390.3	394.2	393.5	394.3	393.6	394.0	393.3	394.6	394.0	395.1	394.6
WKDS020D	62474	62475	72" CSP culvert	316	50	93	98	83	115	148	392.4	391.0	395.4	394.2	395.5	394.3	395.2	394.0	395.8	394.6	396.5	395.1
WKDS020DRD	62474	62475	Roadway	316		0	0	0	0	0	404.0	404.0	394.2	394.2	394.3	394.3	394.0	394.0	394.6	394.6	395.1	395.1

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKDS030A	71176	62474	Natural	1300	25	88	92	82	111	145	393.0	392.9	397.0	395.4	397.1	395.5	396.9	395.2	397.3	395.8	397.7	396.5
WKDS030B	99056	71176	Natural	380	25	88	92	84	113	149	393.8	393.0	397.3	397.0	397.4	397.1	397.2	396.9	397.7	397.3	398.1	397.7
WKDS030C1	99058	99056	3.75'x6' CSP culvert	49	25	46	48	43	59	76	394.1	393.8	397.4	397.3	397.4	397.4	397.3	397.2	397.7	397.7	398.2	398.1
WKDS030C2	99058	99056	3.75'x6' CSP culvert	49	25	43	44	40	55	74	394.0	393.8	397.4	397.3	397.4	397.4	397.3	397.2	397.7	397.7	398.2	398.1
WKDS030CRD	99058	99056	Roadway	49		0	0	0	0	0	400.2	400.2	397.3	397.3	397.4	397.4	397.2	397.2	397.7	397.7	398.1	398.1
WKDS040A	71179	99058	Natural	220	10	65	76	82	91	110	396.5	394.0	399.2	397.4	399.4	397.4	399.464	397.258	399.6	397.7	399.9	398.2
WKDS040B	71180	71179	Natural	40	10	65	76	82	91	110	396.7	396.5	399.2	399.2	399.4	399.4	399.5	399.5	399.7	399.6	400.0	399.9
WKDS040BRD	71180	71179	Roadway	40		0	0	0	0	0	403.7	403.7	399.2	399.2	399.4	399.4	399.5	399.5	399.6	399.6	399.9	399.9
WKDS040C	71182	71180	Natural	2370	10	66	78	88	97	118	398.8	396.7	401.1	399.2	401.3	399.4	401.4	399.5	401.5	399.7	401.8	400.0
WKDS040D	71183	71182	36" CMP culvert	49	10	66	72	73	74	74	398.5	398.8	404.5	401.1	404.9	401.3	405.0	401.4	405.0	401.5	405.1	401.8
WKDS040DRD	71183	71182	Roadway	49		0	9	18	27	48	404.8	404.8	401.1	401.1	404.9	404.9	405.0	404.9	405.0	404.9	405.1	405.0
WKDS040E	71185	71183	Natural	430	10	69	80	91	101	123	397.3	396.8	404.5	404.5	405.0	404.9	405.0	405.0	405.1	405.0	405.2	405.1
WKDS040F	71186	71185	72" CMP culvert	20	10	75	80	97	110	119	397.5	397.3	404.6	404.5	405.1	405.0	405.2	405.0	405.3	405.1	405.5	405.2
WKDS040FRD	71186	71185	Roadway	20		0	0	0	0	0	411.2	411.2	404.5	404.5	405.0	405.0	405.0	405.0	405.1	405.1	405.2	405.2
WKDS040G	71187	71186	Natural	220	10	83	87	115	127	135	397.3	397.5	404.6	404.6	405.1	405.1	405.2	405.2	405.3	405.3	405.5	405.5
WKDS040H	71188	71187	72" CMP culvert	99	10	86	90	122	137	146	397.5	397.3	404.8	404.6	405.3	405.1	405.5	405.2	405.7	405.3	406.1	405.5
WKDS040HRD	71188	71187	Roadway	99		0	0	0	0	0	410.2	410.2	404.6	404.6	405.1	405.1	405.2	405.2	405.3	405.3	405.5	405.5
WKDS040I	62914	71188	Natural	430	10	90	93	129	146	158	399.9	397.5	404.8	404.8	405.4	405.3	405.5	405.5	405.7	405.7	406.1	406.1
WKDS050A	62978	62914	72" CSP	716	10	81	85	116	125	133	400.1	399.5	405.0	404.8	405.7	405.4	406.0	405.5	406.3	405.7	406.8	406.1
WKDS050ARD	62978	62914	Roadway	716		0	0	0	0	0	412.8	412.8	404.8	404.8	405.4	405.4	405.5	405.5	405.7	405.7	406.1	406.1
WKDS060A	62946	62978	66" CSP	1100	10	72	75	100	102	104	401.6	400.0	405.6	405.0	406.4	405.7	406.7	406.0	407.4	406.3	408.2	406.8
WKDS060ARD	62946	62978	Roadway	1100		0	0	0	0	0	414.2	414.2	405.0	405.0	405.7	405.7	406.0	406.0	406.3	406.3	406.8	406.8
WKDS070A	62915	62946	60" CSP	1640	10	57	59	77	77	79	403.6	401.5	406.8	405.6	407.4	406.4	408.2	406.7	409.1	407.4	410.0	408.2
WKDS070ARD	62915	62946	Roadway	1640		0	0	0	0	0	410.4	410.4	405.6	405.6	406.4	406.4	406.7	406.7	407.4	407.4	408.2	408.2
WKDS070B	71121	62915	Natural	450	10	58	60	81	95	93	405.3	403.6	407.1	406.8	407.5	407.4	408.3	408.2	409.1	409.1	410.0	410.0
WKDS070C	62891	71121	Natural	420	10	59	62	90	130	145	406.8	405.3	409.6	407.1	409.7	407.5	410.0	408.3	410.6	409.1	410.7	410.0
WKDS070D	62989	62891	48" CSP	30	10	59	62	89	131	145	408.2	407.8	411.0	410.1	411.1	410.2	411.8	410.7	412.9	411.2	413.5	411.4
WKDS070DRD	62989	62891	Roadway	30		0	0	0	0	0	416.0	415.5	409.6	409.6	409.7	409.7	410.0	410.0	410.6	410.6	410.7	410.7
WKDS080A	62986	62989	36" CSP	650	10	20	21	24	27	29	412.2	408.2	413.5	411.0	413.6	411.1	413.7	411.8	414.0	412.9	414.4	413.5
WKDS080ARD	62986	62989	Roadway	650		0	0	0	0	0	420.3	416.0	411.0	411.0	411.1	411.1	411.8	411.8	412.9	412.9	413.5	413.5
WKDS080B	62760	62986	42" CSP	738	10	20	21	24	26	28	413.0	412.1	415.1	413.5	415.2	413.6	415.3	413.7	415.4	414.0	415.5	414.4
WKDS080BRD	62760	62986	Roadway	738		0	0	0	0	0	421.2	420.3	413.5	413.5	413.6	413.6	413.7	413.7	414.0	414.0	414.4	414.4
WKDS080C	62758	62760	36" CSP	242	10	20	21	24	26	28	413.6	413.2	415.6	415.1	415.7	415.2	415.9	415.3	416.1	415.4	416.2	415.5
WKDS080CRD	62758	62760	Roadway	242		0	0	0	0	0	421.9	421.2	415.1	415.1	415.2	415.2	415.3	415.3	415.4	415.4	415.5	415.5
WKDS080D	62713	62758	30" CSP	48	10	20	21	24	26	28	414.1	414.1	416.4	415.6	416.5	415.7	416.8	415.9	417.0	416.1	417.2	416.2
WKDS080DRD	62713	62758	Roadway	48		0	0	0	0	0	420.0	420.0	415.6	415.6	415.7	415.7	415.9	415.9	416.1	416.1	416.2	416.2

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKDS090A	62715	62713	Natural	457	10	10	12	14	14	15	415.4	415.0	416.5	416.4	416.6	416.5	416.9	416.8	417.0	417.0	417.2	417.2
WKDS090B	62716	62715	30" CSP culvert	442	10	10	11	13	13	13	414.6	414.0	416.8	416.5	417.0	416.6	417.4	416.9	417.6	417.0	417.8	417.2
WKDS090BRD	62716	62715	Roadway	442		0	0	0	0	0	420.5	420.5	416.5	416.5	416.6	416.6	416.9	416.9	417.0	417.0	417.2	417.2
WKDS090C	71102	62716	Natural	310	10	11	12	18	21	20	416.1	414.6	416.9	416.8	417.0	417.0	417.4	417.4	417.6	417.6	417.8	417.8
WKDS090D	71101	71102	Natural	364	10	11	12	19	28	33	417.4	416.1	418.2	416.9	418.2	417.0	418.4	417.4	418.5	417.6	418.6	417.8
Willakenzie South - Delta Ponds																						
WKDP130A	71156	71157	Natural	330	10	40	40	47	79	108	395.6	386.2	397.3	387.5	397.3	387.5	397.4	387.6	397.8	387.9	398.1	388.2
WKDP130B	60760	71156	Natural	320	10	40	40	47	79	108	400.0	396.0	403.7	398.2	403.7	398.2	403.9	398.4	404.6	399.2	405.1	399.6
WKDP130C	66584	60760	54" CSP	1332	10	19	19	26	43	60	400.4	400.0	403.8	403.7	403.8	403.7	404.2	403.9	405.4	404.6	406.7	405.1
WKDP130CRD	66584	60760	Roadway	1332		0	0	0	0	0	410.1	409.5	403.7	403.7	403.7	403.7	403.9	403.9	404.6	404.6	405.1	405.1
WKDP130D	60840	66584	48" CSP	553	10	19	19	26	43	60	401.9	400.6	404.0	403.8	404.0	403.8	404.4	404.2	406.0	405.4	407.8	406.7
WKDP130DRD	66584	60840	Roadway	553		0	0	0	0	0	410.1	407.8	404.0	404.0	404.0	404.0	404.4	404.4	406.0	406.0	407.8	407.8
WKDP130E	60828	60840	36" CSP	558	10	9	9	15	24	28	404.1	402.5	405.2	404.0	405.3	404.0	405.6	404.4	406.6	406.0	409.2	407.8
WKDP130ERD	60828	60840	Roadway	558		0	0	0	0	0	413.0	407.8	404.0	404.0	404.0	404.0	404.4	404.4	406.0	406.0	407.8	407.8
WKDP130F	60811	60840	36" CSP	548	10	11	11	12	23	30	403.3	402.5	404.8	404.0	404.7	404.0	404.9	404.4	406.6	406.0	409.3	407.8
WKDP130FRD	60811	60840	Roadway	548		0	0	0	0	0	414.1	407.8	404.0	404.0	404.0	404.0	404.4	404.4	406.0	406.0	407.8	407.8
WKDP080A	66556	59213	36" CSP	313	10	46	48	56	57	58	389.2	383.6	394.1	388.6	394.8	388.6	398.1	388.2	398.2	388.6	398.2	388.6
WKDP080ARD	66556	59213	Roadway	313		0	0	17	24	41	398.0	392.0	388.6	388.6	388.6	388.6	398.1	392.1	398.2	392.1	398.2	392.2
WKDP080B	60844	66556	54" CSP	635	10	34	36	55	69	81	392.9	391.8	395.2	394.1	395.4	394.8	398.8	398.1	399.3	398.2	399.7	398.2
WKDP080BRD	60844	66556	Roadway	635		0	0	0	0	0	400.9	398.0	394.1	394.1	394.8	394.8	398.1	398.1	398.2	398.2	398.2	398.2
WKDP090C	60771	60844	24" CSP	786	10	8	8	13	16	15	399.1	393.4	399.7	395.2	399.8	395.4	401.7	398.8	402.1	399.3	402.1	399.7
WKDP090CRD	60771	60844	Roadway	786		0	0	0	2	4	402.0	400.9	395.2	395.2	395.4	395.4	398.8	398.8	402.1	400.9	402.1	401.0
WKDP090A	60856	60844	48" CSP	119	10	21	23	33	42	53	393.7	393.4	395.4	395.2	395.5	395.4	398.9	398.8	399.4	399.3	399.9	399.7
WKDP090ARD	60856	60844	Roadway	119		0	0	0	0	0	401.0	400.9	395.2	395.2	395.4	395.4	398.8	398.8	399.3	399.3	399.7	399.7
WKDP090B	60804	60856	42" CSP	1801	10	21	22	35	42	53	397.9	393.7	399.7	395.4	399.7	395.5	401.2	398.9	403.7	399.4	406.2	399.9
WKDP090BRD	60804	60856	Roadway	1801		0	0	0	0	0	407.3	401.0	395.4	395.4	395.5	395.5	398.9	398.9	399.4	399.4	399.9	399.9
WKDP120A	61595	60804	42" CSP	1894	10	13	13	20	30	34	400.7	398.0	402.1	399.7	402.1	399.7	402.5	401.2	404.8	403.7	409.1	406.2
WKDP120ARD	61595	60804	Roadway	1894		0	0	0	0	0	416.7	407.3	399.7	399.7	399.7	399.7	401.2	401.2	403.7	403.7	406.2	406.2
WKDP080C	59248	66556	30" CSP	439	10	8	9	13	11	12	392.3	389.2	394.2	394.1	395.0	394.8	398.3	398.1	398.4	398.2	398.4	398.2
WKDP080CRD	59248	66556	Roadway	439		0	0	3	4	6	398.2	398.0	394.1	394.1	394.8	394.8	398.3	398.1	398.4	398.2	398.4	398.2
WKDP080D	59218	59248	24" CSP	209	10	7	7	11	13	15	395.5	392.3	396.2	394.2	396.2	395.0	398.9	398.3	399.2	398.4	399.5	398.4
WKDP080DRD	59218	59248	Roadway	209		0	0	0	0	0	400.5	398.2	394.2	394.2	395.0	395.0	398.3	398.3	398.4	398.4	398.4	398.4
WKDP080E	59181	59218	30" CSP	150	10	7	7	12	13	15	395.6	395.5	396.9	396.2	396.9	396.2	399.1	398.9	399.4	399.2	399.8	399.5
WKDP080ERD	59218	59181	Roadway	150		0	0	0	0	0	400.5	400.2	396.9	396.9	396.9	396.9	399.1	399.1	399.4	399.4	399.8	399.8
WKDP080F	59198	59181	Natural	175	10	7	7	12	16	18	396.5	395.6	397.4	396.9	397.5	396.9	399.2	399.1	399.5	399.4	399.8	399.8
WKDP080G	59197	59198	21" CSP	216	10	7	7	12	17	16	398.3	396.5	399.2	397.4	399.2	397.5	400.7	399.2	401.1	399.5	401.2	399.8
WKDP080GRD	59197	59198	Roadway	216		0	0	0	5	9	401.0	400.2	397.4	397.4	397.5	397.5	399.2	399.2	401.1	400.3	401.2	400.3
Willakenzie South - Gilham-Norkenzie																						
WKGN010A	59134	59192	72" CSP	264	10	127	132	197	212	238	390.4	389.3	393.9	389.4	394.0	389.4	395.0	389.5	395.2	389.5	395.7	389.5
WKGN010ARD	59134	59192	Roadway	264		0	0	0	0	0	400.0	399.0	389.4	389.4	389.4	389.4	389.5	389.5	389.5	389.5	389.5	389.5
WKGN010B	68175	59134	36" CSP	895	10	11	11	18	28	31	395.6	392.0	396.5	393.9	396.6	394.0	397.0	395.0	397.5	395.2	397.9	395.7
WKGN010BRD	68175	59134	Roadway	895		0	0	0	0	0	404.6	400.0	393.9	393.9	394.0	394.0	395.0	395.0	395.2	395.2	395.7	395.7

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Existing Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKGN010C	59868	59134	72" CSP	2151	10	105	109	163	181	201	396.5	390.4	399.5	393.9	399.6	394.0	400.6	395.0	401.0	395.2	401.6	395.7
WKGN010CRD	59868	59134	Roadway	2151		0	0	0	0	0	414.2	400.0	393.9	393.9	394.0	394.0	395.0	395.0	395.2	395.2	395.7	395.7
WKGN030D	59862	59868	36 "CSP	1880	10	10	10	17	21	23	402.2	398.6	403.6	399.5	403.7	399.6	403.9	400.6	404.2	401.0	404.3	401.6
WKGN030DRD	59868	59862	Roadway	1880		0	0	0	0	0	414.2	413.3	403.6	403.6	403.7	403.7	403.9	403.9	404.2	404.2	404.3	404.3
WKGN030E	59859	59862	42" CSP	606	10	10	10	16	22	25	403.4	402.2	404.6	403.6	404.6	403.7	405.0	403.9	405.4	404.2	405.5	404.3
WKGN030ERD	59862	59859	Roadway	606		0	0	0	0	0	413.3	413.1	404.6	404.6	404.6	404.6	405.0	405.0	405.4	405.4	405.5	405.5
WKGN030A	59896	59868	66 " CSP	793	10	82	85	126	144	159	398.6	396.9	401.8	399.5	401.8	399.6	402.7	400.6	403.2	401.0	403.8	401.6
WKGN030ARD	59868	59896	Roadway	793		0	0	0	0	0	414.2	411.3	401.8	401.8	401.8	401.8	402.7	402.7	403.2	403.2	403.8	403.8
WKGN030B	59889	59896	66" CSP	1460	10	74	76	113	128	140	401.3	398.6	404.3	401.8	404.3	401.8	405.3	402.7	405.9	403.2	406.7	403.8
WKGN030BRD	59889	59896	Roadway	1460		0	0	0	0	0	413.7	411.3	401.8	401.8	401.8	401.8	402.7	402.7	403.2	403.2	403.8	403.8
WKGN030C	59878	59896	30 " CSP	509	10	9	9	15	21	23	403.8	401.9	405.0	402.9	405.0	402.9	405.4	403.2	405.9	403.4	406.1	403.8
WKGN030CRD	59896	59878	Roadway	509		0	0	0	0	0	411.3	409.9	405.0	405.0	405.0	405.0	405.4	405.4	405.9	405.9	406.1	406.1
WKGN040A	59875	59878	36" CSP	411	10	0	0	0	1	2	405.2	404.7	405.2	405.0	405.2	405.0	405.4	405.4	405.9	405.9	406.2	406.1
WKGN040ARD	59875	59878	Roadway	411		0	0	0	0	0	411.3	409.9	405.0	405.0	405.0	405.0	405.4	405.4	405.9	405.9	406.1	406.1
WKGN040B	59873	59875	27" CSP	258	10	0	0	0	0	0	406.4	405.8	406.4	405.8	406.4	405.8	406.4	405.8	406.4	405.9	406.4	406.2
WKGN040BRD	59873	59875	Roadway	258		0	0	0	0	0	413.9	411.3	405.2	405.2	405.2	405.2	405.4	405.4	405.9	405.9	406.2	406.2
WKGN040C	59889	59873	24" CSP	364	10	0	0	0	0	0	407.8	406.6	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4
WKGN040CRD	59873	59889	Roadway	364		0	0	0	0	0	413.9	413.7	404.3	404.3	404.3	404.3	405.3	405.3	405.9	405.9	406.7	406.7
WKGN060A	61562	59889	66" CSP	1506	10	58	60	90	102	110	402.3	401.3	405.7	404.3	405.8	404.3	406.9	405.3	407.5	405.9	408.5	406.7
WKGN060ARD	59889	61562	Roadway	1506		0	0	0	0	0	413.7	412.7	405.7	405.7	405.8	405.8	406.9	406.9	407.5	407.5	408.5	408.5
WKGN070C	61554	61562	42" CSP	1014	10	13	13	19	24	29	405.7	403.5	406.8	405.7	406.8	405.8	407.5	406.9	408.2	407.5	409.5	408.5
WKGN070CRD	61554	61562	Roadway	1014		0	0	0	0	0	415.7	412.7	405.7	405.7	405.8	405.8	406.9	406.9	407.5	407.5	408.5	408.5
WKGN070D	61444	61554	36" CSP	43	10	13	13	19	24	28	410.6	406.2	411.2	406.8	411.2	406.8	411.2	407.5	411.3	408.2	411.5	409.5
WKGN070DRD	61554	61444	Roadway	43		0	0	0	0	0	415.7	415.0	411.2	411.2	411.2	411.2	411.2	411.2	411.3	411.3	411.5	411.5
WKGN070E	71196	61444	Natural	500	10	13	13	19	24	29	411.7	410.6	413.5	411.2	413.5	411.2	413.8	411.2	414.1	411.3	414.2	411.5
WKGN070F	71197	71196	36" CSP culvert	31	10	13	13	19	24	28	411.8	411.7	413.6	413.5	413.7	413.5	414.1	413.8	414.3	414.1	414.5	414.2
WKGN070FRD	71197	71196	Roadway	31		0	0	0	0	0	417.0	417.0	413.5	413.5	413.5	413.5	413.8	413.8	414.1	414.1	414.2	414.2
WKGN070G	71198	71197	Natural	340	10	13	13	19	27	32	412.2	411.8	413.8	413.6	413.8	413.7	414.2	414.1	414.4	414.3	414.6	414.5
WKGN070H	72432	71198	36" CSP culvert	17	10	13	13	20	31	36	412.2	412.2	414.0	413.8	414.0	413.8	414.4	414.2	414.8	414.4	415.1	414.6
WKGN070HRD	71198	72432	Roadway	17		0	0	0	0	0	417.8	417.6	414.0	414.0	414.0	414.0	414.4	414.4	414.8	414.8	415.1	415.1
WKGN070A	61565	61562	48" CSP	1999	10	24	26	38	43	46	405.7	403.5	407.8	405.7	407.9	405.8	408.7	406.9	409.3	407.5	410.4	408.5
WKGN070ARD	61565	61562	Roadway	1999		0	0	0	0	0	417.9	412.7	405.7	405.7	405.8	405.8	406.9	406.9	407.5	407.5	408.5	408.5
WKGN070B	99498	61565	42" CSP	695	10	24	26	39	47	51	408.2	405.8	409.8	407.8	409.9	407.9	410.5	408.7	411.0	409.3	411.9	410.4
WKGN070BRD	99498	61565	Roadway	695		0	0	0	0	0	420.0	417.9	407.8	407.8	407.9	407.9	408.7	408.7	409.3	409.3	410.4	410.4
WKGN090A	99495	99498	36" CSP	597	10	13	14	21	26	29	409.3	408.2	410.8	409.8	410.9	409.9	411.4	410.5	411.9	411.0	412.8	411.9
WKGN090ARD	99495	99498	Roadway	597		0	0	0	0	0	421.0	420.0	409.8	409.8	409.9	409.9	410.5	410.5	411.0	411.0	411.9	411.9
WKGN090B	61437	99495	48" CSP	122	10	13	14	21	26	28	409.6	409.4	411.1	410.8	411.2	410.9	411.7	411.4	412.1	411.9	412.9	412.8
WKGN090BRD	99495	61437	Roadway	122		0	0	0	0	0	421.0	415.6	411.1	411.1	411.2	411.2	411.7	411.7	412.1	412.1	412.9	412.9
WKGN090C	61423	61437	Natural	800	10	13	14	22	29	34	412.0	409.6	413.8	411.1	413.8	411.2	414.0	411.7	414.3	412.1	414.4	412.9

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLAMETTE RIVER BASIN STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions			Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)					
											10-Year		25-Year Winter		25-Year Summer	
	US	DS				10-Year	25-Year-W	25-Year-S	US	DS	US	DS	US	DS	US	DS
Outfall A																
WRRR010E	76425	59065	48" CSP	48	10	32	32	51	378.1	383.1	392.1	392.1	392.1	392.1	392.192	392.1
WRRR010D	76424	76425	48" CSP	100	10	32	32	51	378.3	378.1	392.2	392.1	392.2	392.1	392.4	392.2
WRRR010DRD	76424	76425	Roadway	100		0	0	0	396.4	381.8	392.1	392.1	392.1	392.1	392.2	392.2
WRRR010C	59082	76424	48" CSP	45	10	32	32	51	387.4	378.3	392.2	392.2	392.2	392.2	392.4	392.4
WRRR010CRD	76424	59082	Roadway	45		0	0	0	396.4	396.0	392.2	392.2	392.2	392.2	392.4	392.4
WRRR010B	59080	59082	54" CSP	635	10	32	32	51	387.8	387.4	392.4	392.2	392.4	392.2	392.9	392.4
WRRR010BRD	59080	59082	Roadway	635		0	0	0	397.6	396.0	392.2	392.2	392.2	392.2	392.4	392.4
WRRR010A	59087	59080	54" CSP	247	10	32	32	51	388.0	387.8	392.5	392.4	392.5	392.4	393.1	392.9
WRRR010ARD	59080	59087	Roadway	247		0	0	0	397.6	397.0	392.5	392.5	392.5	392.5	393.1	393.1
WRRR020A	66178	59087	54" CSP	22	10	29	29	45	388.0	388.0	392.5	392.5	392.6	392.5	393.2	393.1
WRRR020ARD	66178	59087	Roadway	22		0	0	0	397.0	397.0	392.5	392.5	392.5	392.5	393.1	393.1
WRRR030A	59120	66178	48" CSP	1241	10	19	20	30	389.4	388.3	392.8	392.5	392.8	392.6	393.7	393.2
WRRR030ARD	59120	66178	Roadway	1241		0	0	0	398.6	397.0	392.5	392.5	392.6	392.6	393.2	393.2
WRRR040A	60606	59120	48" CSP	775	10	17	17	26	390.0	389.4	392.9	392.8	392.9	392.8	394.0	393.7
WRRR040ARD	60606	59120	Roadway	775		0	0	0	399.2	398.6	392.8	392.8	392.8	392.8	393.7	393.7
WRRR050B	60626	60606	42" CSP	600	10	11	11	16	392.4	390.8	393.5	392.9	393.5	392.9	394.2	394.0
WRRR050BRD	60626	60606	Roadway	600		0	0	0	401.0	399.2	392.9	392.9	392.9	392.9	394.0	394.0
WRRR050A	60617	60626	36" CSP	355	10	11	11	16	393.2	392.7	394.6	393.7	394.7	393.7	395.0	394.2
WRRR050ARD	60626	60617	Roadway	355		0	0	0	401.0	400.6	394.6	394.6	394.7	394.7	395.0	395.0
Outfall B																
WRRR060F	66175	59066	30" CSP	10	10	7	7	12	383.4	382.5	393.3	392.9	393.0	392.9	392.977	392.9
WRRR060E	66552	66175	30" CSP	41	10	7	7	12	381.3	383.4	393.4	393.3	393.0	393.0	393.1	393.0
WRRR060D	76421	66552	30" CSP	130	10	7	7	12	381.6	381.3	393.1	393.4	393.0	393.0	393.1	393.1
WRRR060C	59084	76421	30" CSP	38	10	7	7	12	389.2	381.6	393.1	393.1	393.0	393.0	393.1	393.1
WRRR060B	59083	59084	30" CSP	109	10	7	7	12	390.7	389.2	393.0	393.1	393.0	393.0	393.3	393.1
WRRR060BRD	59083	59084	Roadway	109		0	0	0	402.0	400.0	393.1	393.1	393.0	393.0	393.1	393.1
WRRR060A	67889	59083	30" CSP	998	10	7	7	12	393.8	391.4	394.9	393.0	394.9	393.0	395.2	393.3
WRRR060ARD	67889	59083	Roadway	998		0	0	0	404.0	402.0	393.0	393.0	393.0	393.0	393.3	393.3
Outfall C																
WRRR090D	76423	60612	30" CSP	588	10	10	10	12	399.2	398.4	400.8	399.6	400.8	399.6	401.0	399.6
WRRR090C	76422	76423	30" CSP	43	10	10	10	12	397.8	399.2	400.8	400.8	400.9	400.8	401.1	401.0
WRRR090CRD	76422	76423	Roadway	43		0	0	0	406.0	405.0	400.8	400.8	400.8	400.8	401.0	401.0
WRRR090B	60647	76422	30" CSP	12	10	10	10	12	399.2	397.8	400.7	400.8	400.8	400.9	401.1	401.1
WRRR090BRD	60647	76422	Roadway	12		0	0	0	406.5	405.0	400.8	400.8	400.9	400.9	401.1	401.1
WRRR090A	60658	60647	30" CSP	413	10	7	7	8	395.3	399.3	400.9	400.7	401.0	400.8	401.3	401.1
WRRR090ARD	60647	60658	Roadway	413		0	0	0	405.5	405.3	400.9	400.9	401.0	401.0	401.3	401.3
WRRR100A	62222	60658	27" CSP	700	10	7	7	8	400.8	399.8	402.1	400.9	402.1	401.0	402.3	401.3
WRRR100ARD	62222	60658	Roadway	700		0	0	0	406.0	404.3	400.9	400.9	401.0	401.0	401.3	401.3

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLOW CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Willow Creek - Main Stem																						
WCMN010A	71038	71120	Natural	400	25	549	821	188	676	842	381.4	376.5	388.1	388.1	390.0	389.8	386.0	386.0	389.0	388.9	390.1	390.0
WCMN010B	71037	71038	bridge	34	50	543	821	184	670	833	381.4	381.4	388.1	388.1	390.0	390.0	386.0	386.0	389.0	389.0	390.1	390.1
WCMN010C	71049	71037	Natural	900	25	491	780	167	559	777	383.3	381.4	389.3	388.1	390.3	390.0	386.6	386.0	389.4	389.0	390.4	390.1
WCMN010D	73754	71049	Natural	3000	25	492	814	170	622	793	390.1	383.3	395.2	389.3	397.7	390.3	392.7	386.6	397.1	389.4	397.6	390.4
Willow Creek - West Branch																						
WCMN010H	54462	73754	Natural	1500	10	14	13	13	26	28	398.5	392.1	399.5	395.2	399.5	397.7	399.7	392.7	399.9	397.1	399.9	397.6
WCMN020A	54494	54462	48" CSP	125	10	14	14	16	26	32	396.4	398.5	399.6	399.5	399.6	399.5	399.8	399.7	400.1	399.9	400.2	399.9
WCMN020Ard	54494	54462	Roadway	125		0	0	0	0	0	403.0	403.0	399.5	399.5	399.5	399.5	399.7	399.7	399.9	399.9	399.9	399.9
WCMN020B	54495	54494	48" CSP	450	10	14	14	16	26	32	399.1	396.4	400.1	399.6	400.1	399.6	400.2	399.8	400.5	400.1	400.6	400.2
WCMN020Brd	54495	54494	Roadway	450		0	0	0	0	0	407.2	403.0	399.6	399.6	399.6	399.6	399.8	399.8	400.1	400.1	400.2	400.2
WCMN010E#1	76010	73754	4'x12' box culvert	64	25	160	189	69	192	235	392.4	392.1	395.5	395.2	398.0	397.7	393.6	393.0	397.3	397.1	397.8	397.6
WCMN010E#2	76010	73754	4'x12' box culvert	64	25	160	189	69	192	235	392.4	392.1	395.5	395.2	398.0	397.7	393.6	393.0	397.3	397.1	397.8	397.6
WCMN010Erd	76010	73754	Roadway	64		0	0	0	0	0	398.1	398.0	395.2	395.2	397.7	397.7	392.7	392.7	397.1	397.1	397.6	397.6
WCWE100A	71034	76010	Natural	676	25	308	381	134	387	480	394.0	390.4	397.5	395.5	398.2	398.0	396.6	393.6	397.7	397.3	398.1	397.8
WCWE100B	71033	71034	Natural	960	10	98	113	54	131	160	400.5	394.0	405.6	397.5	405.7	398.2	405.1	396.6	405.9	397.7	406.1	398.1
WCWE100C#1	71032	71033	42"x27" CMP elliptical culvert	47	10	27	28	27	29	29	400.6	400.6	405.8	405.6	405.9	405.7	405.3	405.1	406.1	405.9	406.4	406.1
WCWE100C#2	71032	71033	42"x27" CMP elliptical culvert	47	10	27	29	28	30	30	400.6	400.6	405.8	405.6	405.9	405.7	405.3	405.1	406.1	405.9	406.4	406.1
WCWE100Crd	71032	71033	Roadway	47		47	62	5	80	108	405.1	405.0	405.8	405.6	405.9	405.7	405.3	405.1	406.1	405.9	406.4	406.1
WCWE100D	71040	71034	Natural	417	25	218	270	90	273	339	396.0	394.0	401.0	397.5	401.2	398.2	400.3	396.6	401.2	397.7	401.5	398.1
WCWE100E	71031	71040	Natural	1200	25	219	270	91	275	341	402.7	396.0	409.3	401.0	409.6	401.2	407.3	400.3	409.6	401.2	409.9	401.5
WCWE100F	71030	71031	48" CSP culvert	32	25	149	149	91	152	154	404.6	403.4	411.3	409.3	411.5	409.6	408.1	407.3	411.5	409.6	411.6	409.9
WCWE100Frd	71030	71031	Roadway	32		84	139	0	148	218	410.8	410.8	411.3	411.1	411.5	411.2	407.3	407.3	411.5	411.2	411.6	411.3
WCWE110A	71050	71030	Natural	450	10	148	178	62	188	232	407.1	404.5	411.8	411.3	412.0	411.5	409.7	408.1	412.1	411.5	412.4	411.6
WCWE110B	71029	71050	Natural	800	10	148	178	63	188	233	411.6	407.1	415.4	411.8	415.8	412.0	414.2	409.7	415.9	412.1	416.9	412.4
WCWE110C#1	71028	71029	12" CSP culverts	19	10	7	7	7	7	7	413.7	413.7	417.0	415.4	417.1	415.8	416.7	414.7	417.1	415.9	417.2	416.9
WCWE110C#2	71028	71029	15" CSP culvert	19	10	12	12	11	12	12	413.7	413.7	417.0	415.4	417.1	415.8	416.7	415.0	417.1	415.9	417.2	416.9
WCWE110Crd	71028	71029	Roadway	19		131	162	46	174	226	416.3	416.3	417.0	416.7	417.1	416.7	416.7	416.5	417.1	416.8	417.2	416.9
WCWE120A	71027	71028	Natural	1300	10	124	150	60	155	192	424.4	413.6	427.6	417.0	427.9	417.1	426.7	416.7	428.0	417.1	428.5	417.2
WCWE120B	71026	71027	42" CSP culvert	32	10	103	105	62	106	108	425.1	426.3	431.5	429.4	431.6	429.4	429.7	428.8	431.6	429.4	431.7	429.4
WCWE120Brd	71026	71027	Roadway	32		22	45	0	50	84	431.2	431.2	431.5	431.3	431.6	431.4	426.7	426.7	431.6	431.4	431.7	431.5

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLOW CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WCWE120C	71025	71026	Natural	320	10	126	150	73	156	193	431.6	425.1	434.8	431.5	434.9	431.6	433.9	429.7	434.9	431.6	435.1	431.7
WCWE120D#1	71024	71025	18" CSP culverts	20	10	17	17	17	17	17	432.2	431.6	435.4	434.8	435.4	434.9	435.1	433.9	435.4	434.9	435.5	435.1
WCWE120D#2	71024	71025	24" CSP culvert	20	10	27	27	27	28	27	432.2	431.6	435.4	434.8	435.4	434.9	435.1	433.9	435.4	434.9	435.5	435.1
WCWE120Drd	71024	71025	Roadway	20		97	123	33	130	168	434.7	434.7	435.4	435.0	435.4	435.1	435.1	434.8	435.4	435.1	435.5	435.1
WCWE130A	71023	71024	Natural	700	10	100	119	70	124	152	439.8	432.2	442.0	435.4	442.1	435.4	441.8	435.1	442.1	435.4	442.2	435.5
WCWE130B	71022	71023	48" CMP culvert	30	10	101	119	74	124	152	443.1	442.3	447.3	445.0	448.2	445.4	446.4	444.5	448.5	445.5	450.0	445.9
WCWE130C	71021	71022	Natural	500	10	108	121	82	143	181	454.0	443.1	457.0	447.3	457.1	448.2	456.7	446.4	457.2	448.5	457.5	450.0
WCWE130D	71020	71021	48" CMP culvert	31	10	109	121	85	133	136	457.0	456.3	461.7	459.4	462.4	459.6	460.8	458.8	463.0	459.7	463.2	459.8
WCWE130Drd	71020	71021	Roadway	31		0	0	0	15	51	462.8	462.8	457.0	457.0	457.1	457.1	456.7	456.7	463.0	462.9	463.2	463.0
Willow Creek - East Branch																						
WCMN10F1	73761	73754	Natural	290	25	209	432	59	310	439	390.3	390.1	395.6	395.2	398.1	397.7	393.1	392.7	397.4	397.1	398.0	397.6
WCEA005A	76015	73761	48" CSP culvert	50	25	6	49	2	27	51	392.1	391.2	395.6	395.6	398.4	398.1	393.1	393.1	397.5	397.4	398.3	398.0
WCEA005Ard	76015	73761	Roadway	33		0	28	0	0	22	398.0	398.0	395.6	395.6	398.4	398.2	393.1	393.1	397.4	397.4	398.3	398.2
WCEA005B	73501	76015	Natural	550	25	5	65	0	25	66	395.4	392.1	396.2	395.6	398.4	398.4	393.1	393.1	397.5	397.5	398.4	398.3
WCEA005C	73500	73501	Natural	2000	25	8	71	0	32	70	403.6	396.0	403.9	396.2	404.4	398.4	395.4	395.4	404.1	397.5	404.4	398.4
WCMN10F2	73768	73761	Natural	535	25	203	364	58	286	369	390.6	390.3	396.1	395.6	398.7	398.1	393.7	393.1	397.7	397.4	398.6	398.0
WCMN010G#1	76016	73768	6'x8' box culvert	64	25	101	175	29	143	178	392.2	390.6	396.2	396.1	399.0	398.7	393.7	393.7	397.8	397.7	398.8	398.6
WCMN010G#2	76016	73768	6'x8' box culvert	64	25	101	175	29	143	178	392.2	390.6	396.2	396.1	399.0	398.7	393.7	393.7	397.8	397.7	398.8	398.6
WCMN010Grd	76016	73768	Roadway	64		0	35	0	0	19	398.6	398.5	396.1	396.1	399.0	398.8	393.7	393.7	397.7	397.7	398.8	398.7
WCEA10A1	73500	76016	Natural	1300	25	202	385	58	293	374	398.7	392.2	403.9	396.2	404.4	399.0	402.2	393.7	404.1	397.8	404.4	398.8
WCEA10A2	71041	73500	Natural	1322	25	222	434	55	319	449	405.0	398.7	410.5	403.9	410.8	404.4	408.1	402.2	410.7	404.1	410.9	404.4
WCEA030A	51997	71041	Natural	1774	10	28	48	15	38	51	435.8	405.0	437.5	410.5	437.6	410.8	437.2	408.1	437.5	410.7	437.6	410.9
WCEA030B	51998	51997	24" CSP culvert	164	10	39	40	28	40	40	439.1	435.8	445.5	437.5	445.6	437.6	442.2	437.2	445.7	437.5	445.8	437.6
WCEA030Brd	51998	51997	Roadway	164		5	9	0	24	38	445.3	445.3	445.5	445.3	445.6	445.4	437.2	437.2	445.7	445.4	445.8	445.5
WCEA030C	71042	71041	Natural	1200	25	228	273	123	277	361	418.0	405.0	424.7	410.5	424.7	410.8	424.3	408.1	424.8	410.7	424.9	410.9
WCEA030D	71017	71042	Natural	2000	25	226	274	142	275	356	426.7	418.0	437.3	424.7	437.9	424.7	435.8	424.3	438.2	424.8	438.6	424.9
WCEA030E	71016	71017	bridge	35	25	227	279	164	297	368	427.6	426.7	437.3	437.3	438.0	437.9	435.8	435.8	438.2	438.2	438.7	438.6
WCEA050A	71043	71016	Natural	414	25	223	271	167	297	367	435.1	427.6	438.6	437.3	438.9	438.0	438.1	435.8	439.1	438.2	439.6	438.7
WCEA050B	71015	71043	Natural	364	10	55	56	51	64	72	442.6	435.1	444.9	438.6	445.0	438.9	444.8	438.1	450.1	439.1	453.1	439.6
WCEA050C	71014	71015	30"x42" CMP elliptical culvert	51	10	54	55	52	58	59	448.0	446.9	451.8	449.3	451.8	449.3	451.6	449.2	452.2	450.1	453.1	453.1
WCEA050Crd	71014	71015	Roadway	51		1	1	0	32	77	451.7	451.7	451.8	451.7	451.8	451.7	444.8	444.8	452.2	452.0	453.1	453.1
WCEA050D	71044	71043	Natural	250	10	176	216	130	236	301	436.8	435.1	440.1	438.6	440.2	438.9	440.1	438.1	440.3	439.1	440.4	439.6

APPENDIX E
TABLE E-3
HYDRAULIC PERFORMANCE OF THE WILLOW CREEK STORM DRAINAGE SYSTEM UNDER EXISTING LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Exisiting Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Existing Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WCEA060A	71013	71044	Natural	647	10	91	109	61	111	142	445.6	436.8	447.5	440.1	447.7	440.2	447.2	440.1	447.7	440.3	447.9	440.4
WCEA060B	71012	71013	36" CSP culvert	82	10	92	109	64	114	136	448.7	446.6	453.6	448.9	455.4	449.6	451.4	448.3	456.0	449.6	458.6	449.6
WCEA060Brd	71012	71013	Roadway	82		0	0	0	0	7	458.4	458.4	447.5	447.5	447.7	447.7	447.2	447.2	447.7	447.7	458.6	458.5
WCEA060C	71011	71044	Natural	600	10	72	84	52	100	126	450.0	436.8	452.5	440.1	452.5	440.2	451.8	440.1	452.6	440.3	452.7	440.4
WCEA060D#1	71010	71011	27"x42" CMP elliptical culvert	23	10	48	49	35	52	52	450.1	450.0	453.9	452.5	453.9	452.5	453.0	451.8	454.1	452.6	454.2	452.7
WCEA060D#2	71010	71011	18" CMP culvert	23	10	11	11	10	12	12	450.1	450.0	453.9	452.5	453.9	452.5	453.0	451.8	454.1	452.6	454.2	452.7
WCEA060D#3	71010	71011	18" CMP culvert	23	10	11	11	10	12	12	450.1	450.0	453.9	452.5	453.9	452.5	453.0	451.8	454.1	452.6	454.2	452.7
WCEA060Drd	71010	71011	Roadway	23		6	15	0	32	54	453.7	453.7	453.9	453.7	453.9	453.8	451.8	451.8	454.1	453.8	454.2	453.9
WCEA060E	71045	71010	Natural	228	10	76	84	55	107	128	452.3	450.1	455.0	453.9	455.1	453.9	454.4	453.0	455.5	454.1	456.1	454.2
WCEA060F	71046	71045	36" CMP culvert	41	10	62	63	56	64	65	456.8	456.3	461.7	458.8	461.7	458.8	461.0	458.7	461.9	458.9	462.0	458.9
WCEA060Frd	71046	71045	Roadway	41		15	22	0	43	69	461.4	461.4	461.7	461.5	461.7	461.5	454.4	454.4	461.9	461.6	462.0	461.7
WCEA060G	71048	71046	Natural	100	10	77	84	57	107	134	458.1	456.0	461.7	461.7	461.8	461.7	461.1	461.0	461.9	461.9	462.0	462.0
WCEA060H	71009	71048	Natural	400	10	77	84	62	107	135	466.3	458.1	468.9	461.7	469.0	461.8	468.7	461.1	469.3	461.9	469.6	462.0
WCEA060I	71008	71009	36" CSP culvert	24	10	78	84	63	105	110	468.7	468.1	472.8	470.1	473.3	470.2	471.9	469.8	474.9	471.1	475.2	471.1
WCEA060Ird	71008	71009	Roadway	24		0	0	0	2	26	474.7	474.7	468.9	468.9	469.0	469.0	468.7	468.7	474.9	474.7	475.2	474.9

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Amazon Main channel																						
SPRR-B	71110	71111	bridge	95	25	2874	3484	1722	3127	3577	372.0	372.0	382.6	382.4	383.0	382.8	381.5	381.4	382.8	382.6	383.0	382.8
SPRR-rd	71110	71111	Roadway	95		0	0	0	0	0	387.0	387.0	382.4	382.4	382.8	382.8	381.4	381.4	382.6	382.6	382.8	382.8
MainLW020E	71123	71110	Natural	978	25	2861	3469	1736	3109	3553	371.9	372.0	383.8	382.6	384.4	383.0	382.1	381.5	384.1	382.8	384.5	383.0
MainLW020F	63032	71123	Natural	300	25	2863	3471	1754	3110	3554	372.3	371.9	383.9	383.8	384.6	384.4	382.2	382.1	384.2	384.1	384.7	384.5
MainLW030A	71107	63032	Natural	1252	25	2830	3424	1774	3075	3507	374.0	372.3	385.1	383.9	385.9	384.6	383.0	382.2	385.7	384.2	386.0	384.7
SPB	71106	71107	bridge	118	25	2830	3426	1791	3075	3508	374.0	374.0	385.2	385.1	386.1	385.9	383.1	383.0	385.9	385.7	386.2	386.0
SPBrd	71106	71107	Roadway	118		0	0	0	0	0	388.0	388.0	385.1	385.1	385.9	385.9	383.0	383.0	385.7	385.7	386.0	386.0
MainLW030B	71105	71106	Natural	935	25	2831	3427	1803	3075	3508	373.8	374.0	386.4	385.2	387.4	386.1	383.9	383.1	387.0	385.9	387.6	386.2
MainLW030C	71104	71105	Natural	1300	25	2807	3405	1823	3041	3464	376.3	373.8	387.6	386.4	388.4	387.4	385.0	383.9	388.0	387.0	388.6	387.6
MainLW030D	71103	71104	Natural	240	25	2811	3409	1835	3042	3470	376.5	376.3	387.7	387.6	388.5	388.4	385.3	385.0	388.2	388.0	388.7	388.6
Danebo	71122	71103	bridge	75	25	2813	3410	1838	3042	3472	376.5	376.5	387.9	387.7	388.7	388.5	385.4	385.3	388.3	388.2	388.8	388.7
Danebord	71122	71103	Roadway	75		0	0	0	0	3	388.7	388.7	387.7	387.7	388.5	388.5	385.3	385.3	388.2	388.2	388.8	388.8
MainLW050A	71120	71122	Natural	1079	25	2808	3401	1848	3031	3463	376.5	376.5	388.8	387.9	390.0	388.7	386.5	385.4	389.6	388.3	390.1	388.8
MainLW060A	71100	71120	Natural	297	25	2337	2578	1648	2480	2677	377.5	376.5	389.0	388.8	390.1	390.0	386.7	386.5	389.7	389.6	390.2	390.1
Beltline	71099	71100	bridge	97	50	2340	2587	1653	2482	2688	377.5	377.5	389.0	389.0	390.1	390.1	386.7	386.7	389.7	389.7	390.2	390.2
Beltlinerd	71099	71100	Roadway	96		0	0	0	0	0	390.3	390.3	389.0	389.0	390.1	390.1	386.7	386.7	389.7	389.7	390.2	390.2
MainLW060B	71098	71099	Natural	205	25	2344	2590	1656	2483	2691	377.5	377.5	389.1	389.0	390.2	390.1	386.8	386.7	389.8	389.7	390.3	390.2
MainLW060C	63126	71098	Natural	1620	25	2382	2622	1693	2501	2744	380.4	377.5	389.8	389.1	390.8	390.2	387.6	386.8	390.4	389.8	390.9	390.3
MainBT020C	71097	63126	Natural	245	25	2359	2610	1719	2474	2717	380.8	380.4	390.2	389.8	391.1	390.8	388.1	387.6	390.7	390.4	391.2	390.9
MainBT020D	71096	71097	Natural	255	25	2361	2614	1725	2475	2720	380.8	380.8	390.5	390.2	391.5	391.1	388.6	388.1	391.1	390.7	391.6	391.2
MainBT030A	71095	71096	Natural	490	25	2364	2618	1731	2476	2722	381.0	380.8	391.4	390.5	392.2	391.5	389.6	388.6	391.9	391.1	392.3	391.6
Bertlesn	63127	71095	bridge	90	25	2211	2471	1734	2328	2573	381.0	381.0	391.5	391.4	392.3	392.2	389.8	389.6	392.0	391.9	392.5	392.3
Bertlesnrd	63127	71095	Roadway	90		157	156	0	158	161	390.3	390.3	391.5	391.4	392.3	392.2	389.6	389.6	392.0	391.9	392.5	392.3
MainBT010B	71094	63127	Natural	970	25	2303	2542	1732	2422	2649	381.5	381.0	393.0	391.5	393.6	392.3	391.5	389.8	393.3	392.0	393.7	392.5
W11th	54748	71094	bridge	162	50	2303	2545	1738	2423	2650	381.5	381.5	393.2	393.0	393.8	393.6	391.7	391.5	393.5	393.3	393.9	393.7
W11thrd	54748	71094	Roadway	162		0	0	0	0	0	395.4	395.4	393.0	393.0	393.6	393.6	391.5	391.5	393.3	393.3	393.7	393.7
MainBT050A	71093	54748	Natural	284	25	2285	2513	1737	2398	2619	381.0	381.5	393.4	393.2	394.1	393.8	391.9	391.7	393.7	393.5	394.3	393.9
MainBT050B	71092	71093	Natural	500	25	2285	2516	1753	2400	2622	381.1	380.9	393.5	393.4	394.2	394.1	392.0	391.9	393.8	393.7	394.3	394.3
MainBT050C	71091	71092	Natural	100	25	2285	2520	1778	2401	2623	381.1	381.1	393.5	393.5	394.2	394.2	392.0	392.0	393.8	393.8	394.4	394.3
MainBT050D	71090	71091	Natural	115	25	2265	2487	1777	2378	2591	381.1	381.1	393.7	393.5	394.4	394.2	392.2	392.0	394.0	393.8	394.5	394.4
MainBT050E	71089	71090	Natural	685	25	2265	2488	1795	2378	2594	382.2	381.1	394.3	393.7	395.0	394.4	392.8	392.2	394.6	394.0	395.2	394.5
MainBT050F	71088	71089	Natural	705	25	2265	2492	1826	2380	2600	383.4	382.2	394.8	394.3	395.5	395.0	393.3	392.8	395.2	394.6	395.7	395.2
MainBH030A	71087	71088	Natural	400	25	2266	2496	1851	2381	2605	384.5	383.4	395.5	394.8	396.4	395.5	394.0	393.3	396.0	395.2	396.6	395.7
MainBH030B	71086	71087	Natural	218	25	2266	2497	1860	2382	2606	385.5	384.5	395.8	395.5	396.6	396.4	394.4	394.0	396.3	396.0	396.8	396.6
BaileyHl	71085	71086	bridge	64	25	2107	2281	1667	2187	2304	385.5	385.5	395.9	395.8	396.7	396.6	394.4	394.4	396.3	396.3	396.9	396.8
BaileyHlrd	71085	71086	Roadway	64		0	0	0	0	0	400.0	400.0	395.8	395.8	396.6	396.6	394.4	394.4	396.3	396.3	396.8	396.8
MainBH010A	54741	71085	Natural	1275	25	2075	2250	1658	2206	2282	387.6	385.5	397.8	395.9	397.9	396.7	395.5	394.4	397.8	396.3	397.9	396.9
MainBH010B	54745	54741	Natural	725	25	2063	2228	1648	2203	2268	388.8	387.6	398.1	397.8	398.2	397.9	396.4	395.5	398.2	397.8	398.2	397.9
MainBH015A	71006	54745	Natural	550	25	2060	2213	1647	2196	2261	389.7	388.8	398.7	398.1	398.8	398.2	397.1	396.4	398.8	398.2	398.9	398.2
AcornPk	71007	71006	bridge	25	25	2060	2213	1650	2196	2261	390.0	389.7	398.8	398.7	399.0	398.8	397.4	397.1	399.0	398.8	399.0	398.9
MainBH010C	71124	71007	Natural	498	25	2060	2213	1655	2196	2261	391.4	390.0	399.5	398.8	399.7	399.0	398.2	397.4	399.6	399.0	399.7	399.0
MainBH010D	71084	71124	Natural	486	25	2060	2213	1660	2196	2261	392.8	391.4	400.3	399.5	400.6	399.7	399.3	398.2	400.6	399.6	400.7	399.7
OakPatch	71083	71084	bridge	52	25	2055	2204	1658	2190	2255	392.8	392.8	400.6	400.3	400.8	400.6	399.5	399.3	400.8	400.6	400.9	400.7
MainCV010	55294	71083	Natural	800	25	2055	2204	1662	2191	2256	393.8	392.8	402.0	400.6	402.3	400.8	401.1	399.5	402.3	400.8	402.4	400.9

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
MainCV070	55283	55294	Natural	800	25	2037	2173	1660	2161	2228	394.8	393.8	403.2	402.0	403.5	402.3	402.3	401.1	403.5	402.3	404.3	402.4
MainCV020	71082	55283	Natural	600	25	2031	2165	1655	2158	2226	395.5	394.8	404.0	403.2	405.0	403.5	403.1	402.3	404.9	403.5	405.8	404.3
CityView	71081	71082	bridge	58	25	2031	2229	1658	2207	2240	395.5	395.5	404.1	404.0	405.5	405.0	403.2	403.1	405.2	404.9	406.9	405.8
MainCV060	55272	71081	Natural	680	25	2028	2216	1660	2188	2334	395.3	395.5	404.9	404.1	406.1	405.5	403.9	403.2	405.9	405.2	407.0	406.9
MainCV050A	55274	55272	Natural	400	25	2015	2209	1643	2244	2446	395.4	395.3	405.8	404.9	406.6	406.1	404.3	403.9	406.4	405.9	407.2	407.0
MainCV050B	71005	55274	Natural	500	25	1998	2156	1601	2210	2417	395.4	395.4	406.4	405.8	407.0	406.6	404.6	404.3	406.9	406.4	407.5	407.2
Garfield	71004	71005	bridge	59	25	2008	2158	1602	2217	2428	394.7	395.4	406.6	406.4	407.1	407.0	404.8	404.6	407.0	406.9	407.6	407.5
MainCV040	71003	71004	Natural	1600	25	2044	2164	1659	2228	2483	398.9	394.7	407.5	406.6	407.8	407.1	406.7	404.8	407.8	407.0	409.3	407.6
Chambers#1	71002	71003	10'x9' CSP culvert	45	25	693	735	543	759	902	399.1	398.9	408.1	407.5	408.5	407.8	407.1	406.7	408.5	407.8	409.8	409.3
Chambers#2	71002	71003	10'x9' CSP culvert	45	25	693	735	543	759	902	399.1	398.9	408.1	407.5	408.5	407.8	407.1	406.7	408.5	407.8	409.8	409.3
Chamb-bike	71002	71003	13.3'x8' CSP culvert	45	25	659	682	564	701	835	400.0	400.0	408.1	407.5	408.5	407.8	407.1	406.7	408.5	407.8	409.8	409.3
MainPK080	55256	71002	Natural	500	25	2047	2151	1663	2219	2773	400.4	399.1	408.7	408.1	409.0	408.5	407.7	407.1	409.1	408.5	410.1	409.8
MainPK060	71080	55256	Natural	1000	25	1825	1905	1347	2033	2342	403.0	400.4	410.2	408.7	410.6	409.0	409.1	407.7	410.9	409.1	412.7	410.1
Polk	71079	71080	bridge	70	25	1810	1883	1331	2019	2086	403.0	403.0	410.7	410.2	411.1	410.6	409.5	409.1	411.4	410.9	412.9	412.7
Polkrd	71079	71080	Roadway	33		0	0	0	0	281	411.5	411.5	410.2	410.2	410.6	410.6	409.1	409.1	410.9	410.9	412.9	412.7
MainPK050	66991	71079	Natural	700	25	1799	1865	1319	2008	2190	403.8	403.0	411.8	410.7	412.1	411.1	410.6	409.5	412.4	411.4	413.5	412.9
MainPK020B	71128	66991	Natural	500	25	1782	1839	1317	1991	2169	404.4	403.8	412.4	411.8	412.7	412.1	411.2	410.6	413.0	412.4	414.0	413.5
MainPK020A	56048	71128	Natural	800	25	1782	1840	1319	1995	2193	405.4	404.4	413.5	412.4	413.7	412.7	412.2	411.2	414.0	413.0	414.8	414.0
MainPK040C	71127	56048	Natural	120	25	1771	1821	1319	1982	2180	405.5	405.4	413.8	413.5	414.0	413.7	412.6	412.2	414.3	414.0	415.1	414.8
MainPK040B	71125	71127	Natural	680	25	1770	1821	1320	1983	2183	406.1	405.5	415.3	413.8	415.5	414.0	414.1	412.6	415.8	414.3	416.6	415.1
MainPK040A	71078	71125	Natural	500	25	1770	1821	1321	1985	2237	406.6	406.1	415.4	415.3	415.5	415.5	414.1	414.1	415.9	415.8	417.5	416.6
Jefrsn#1	71077	71078	10.67' x 9.83' CSP culvert	46	25	885	911	661	993	1159	406.7	406.6	416.2	415.4	416.4	415.5	414.7	414.1	416.8	415.9	418.3	417.5
Jefrsn#2	71077	71078	10.67' x 9.83' CSP culvert	46	25	885	911	661	993	1159	406.7	406.6	416.2	415.4	416.4	415.5	414.7	414.1	416.8	415.9	418.3	417.5
Jefrsnrd	71077	71078	Roadway	46		0	0	0	0	13	418.0	418.0	415.4	415.4	415.5	415.5	414.1	414.1	415.9	415.9	418.3	418.1
MainMD170A	71076	71077	Natural	327	25	1772	1822	1323	1988	2335	407.0	406.7	416.9	416.2	417.0	416.4	415.0	414.7	417.2	416.8	418.4	418.3
Wash#1	71075	71076	7.9'x 10.67' CSP culvert	40	25	781	791	662	802	807	407.1	407.0	417.6	416.9	417.7	417.0	415.6	415.0	417.9	417.2	418.5	418.4
Wash#2	71075	71076	7.9'x 10.67' CSP culvert	40	25	781	791	662	802	807	407.1	407.0	417.6	416.9	417.7	417.0	415.6	415.0	417.9	417.2	418.5	418.4
Washngtnrd	71075	71076	Roadway	40		219	249	0	513	1576	416.4	416.4	417.6	417.5	417.7	417.5	415.0	415.0	417.9	417.6	418.5	418.4
MainMD170B	71074	71075	Natural	332	25	1746	1778	1324	1959	2331	407.3	407.1	417.8	417.6	417.9	417.7	416.4	415.6	418.1	417.9	418.7	418.5
Lawren#1	71073	71074	9.7'x10.67' CSP culvert	46	25	873	889	668	971	1112	407.3	407.3	418.4	417.8	418.5	417.9	416.8	416.4	418.7	418.1	419.3	418.7

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Lawren#2	71073	71074	9.7'x10.67' CSP culvert	46	25	873	889	668	971	1112	407.3	407.3	418.4	417.8	418.5	417.9	416.8	416.4	418.7	418.1	419.3	418.7
Lawrencerd	71073	71074	Roadway	46		0	1	0	19	147	418.4	418.4	417.8	417.8	418.5	418.4	416.4	416.4	418.7	418.6	419.3	419.1
MainMD170C	71072	71073	Natural	337	25	1746	1779	1352	1962	2346	407.7	407.3	418.7	418.4	418.8	418.5	417.5	416.8	419.1	418.7	419.8	419.3
Lincoln#1	71071	71072	9.4'x 10.67' CSP culvert	47	25	857	862	677	910	962	407.8	407.7	419.2	418.7	419.3	418.8	417.9	417.5	419.7	419.1	420.5	419.8
Lincoln#2	71071	71072	9.4'x 10.67' CSP culvert	47	25	857	862	677	910	962	407.8	407.7	419.2	418.7	419.3	418.8	417.9	417.5	419.7	419.1	420.5	419.8
Lincolnrd	71071	71072	Roadway	47		34	54	0	166	595	418.8	418.7	419.2	419.0	419.3	419.1	417.5	417.5	419.7	419.5	420.5	420.1
MainMD150A	71070	71071	Natural	363	25	1749	1779	1362	1970	2357	408.1	407.8	419.8	419.2	419.9	419.3	418.2	417.9	420.4	419.7	421.5	420.5
Charn#1	71069	71070	10.8'x 10.67' CSP culvert	60	25	876	890	684	964	1024	408.2	408.1	420.2	419.8	420.4	419.9	418.6	418.2	420.9	420.4	422.0	421.5
Charn#2	71069	71070	10.8'x 10.67' CSP culvert	60	25	876	890	684	964	1024	408.2	408.1	420.2	419.8	420.4	419.9	418.6	418.2	420.9	420.4	422.0	421.5
Charnltnrd	71069	71070	Roadway	60		0	0	0	68	676	420.4	420.3	419.8	419.8	419.9	419.9	418.2	418.2	420.9	420.7	422.0	421.6
MainMD150B	71068	71069	Natural	126	25	1753	1781	1374	1984	2364	408.4	408.2	420.2	420.2	420.4	420.4	418.7	418.6	421.0	420.9	422.0	422.0
15th	71067	71068	9.8'x22' CSP culvert	87	25	1754	1781	1377	1988	2239	408.4	408.4	420.3	420.2	420.5	420.4	418.7	418.7	421.1	421.0	422.2	422.0
15thrd	71067	71068	Roadway	87		0	0	0	0	152	421.2	421.1	420.2	420.2	420.4	420.4	418.7	418.7	421.0	421.0	422.2	422.0
MainMD150C	71066	71067	Natural	145	25	1757	1782	1381	1996	2368	408.7	408.4	420.3	420.3	420.5	420.5	418.9	418.7	421.1	421.1	422.2	422.2
Olive#1	71065	71066	10'x 10.67' CSP culvert	50	25	848	832	692	907	951	408.7	408.7	420.8	420.3	420.9	420.5	419.3	418.9	421.6	421.1	422.5	422.2
Olive#2	71065	71066	10'x 10.67' CSP culvert	50		848	832	692	907	951	408.7	408.7	420.8	420.3	420.9	420.5	419.3	418.9	421.6	421.1	422.5	422.2
Oliverd	71065	71066	Roadway	50		106	142	0	399	1165	420.0	420.0	420.8	420.6	420.9	420.7	418.9	418.9	421.6	421.3	422.5	422.2
MainMD150D	71064	71065	Natural	376	25	1767	1784	1384	2018	2394	409.0	408.7	421.3	420.8	421.3	420.9	419.5	419.3	421.8	421.6	422.6	422.5
16th#1	71063	71064	10'x 10.67' CSP culvert	120	25	793	783	692	845	860	409.0	409.0	421.7	421.3	421.7	421.3	419.9	419.5	422.2	421.8	422.9	422.6
16th#2	71063	71064	10'x 10.67' CSP culvert	120	25	793	783	692	845	860	409.0	409.0	421.7	421.3	421.7	421.3	419.9	419.5	422.2	421.8	422.9	422.6
16thrd	71063	71064	Roadway	120		229	231	0	614	1311	420.3	420.3	421.7	421.4	421.7	421.4	419.5	419.5	422.2	421.8	422.9	422.6
MainMD150E	71062	71063	Natural	423	25	1767	1776	1386	2050	2425	409.3	409.0	421.8	421.7	421.9	421.7	420.6	419.9	422.3	422.2	423.0	422.9
Oak#1	71061	71062	9.6'x 10.67' CSP culvert	54	25	708	693	677	734	734	409.5	409.3	422.1	421.8	422.2	421.9	420.9	420.6	422.5	422.3	423.2	423.0

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Oak#2	71061	71062	9.6'x 10.67' CSP culvert	54	25	708	693	677	734	734	409.5	409.3	422.1	421.8	422.2	421.9	420.9	420.6	422.5	422.3	423.2	423.0
Oakrd	71061	71062	Roadway	54		714	759	121	1082	1591	420.1	420.0	422.1	421.8	422.2	421.9	420.9	420.7	422.5	422.3	423.2	423.0
MainMD150F	71060	71061	Natural	350	25	1773	1777	1412	2071	2454	409.6	409.5	422.2	422.1	422.3	422.2	421.2	420.9	422.7	422.5	423.3	423.2
Pearl#1	71059	71060	8.4'x 10.67' CSP culvert	80	25	650	652	666	644	636	409.6	409.6	422.4	422.2	422.4	422.3	421.6	421.2	422.8	422.7	423.4	423.3
Pearl#2	71059	71060	8.4'x 10.67' CSP culvert	80	25	650	652	666	644	636	409.6	409.6	422.4	422.2	422.4	422.3	421.6	421.2	422.8	422.7	423.4	423.3
Pearlrd	71059	71060	Roadway	80		1114	1146	334	1474	1957	420.1	420.0	422.4	422.2	422.4	422.3	421.6	421.2	422.8	422.7	423.4	423.3
MainMD150G	66998	71059	Natural	510	25	1763	1760	1551	2077	2466	410.2	409.6	422.5	422.4	422.6	422.4	421.8	421.6	422.9	422.8	423.5	423.4
18th#1	71057	66998	10.8'x 10.67' CSP culvert	50	25	820	799	833	913	961	410.2	410.2	423.1	422.5	423.2	422.6	422.2	421.8	423.6	422.9	424.0	423.5
18th#2	71057	66998	10.8'x 10.67' CSP culvert	50	25	820	799	833	913	961	410.2	410.2	423.1	422.5	423.2	422.6	422.2	421.8	423.6	422.9	424.0	423.5
18thrd	71057	66998	Roadway	50		190	190	6	376	902	422.1	422.0	423.1	422.9	423.2	422.9	422.2	422.1	423.6	423.3	424.0	423.6
MainMD030	57188	71057	Natural	350	25	1793	1745	1701	2163	2682	410.8	410.2	423.3	423.1	423.4	423.2	422.9	422.2	423.7	423.6	424.1	424.0
19th	57163	57188	10.5'x22' CSP culvert	53	25	1705	1662	1763	2008	2264	410.8	410.8	423.4	423.3	423.4	423.4	422.9	422.9	423.8	423.7	424.3	424.1
19thrd	57163	57188	Roadway	53		108	114	25	191	503	422.5	422.5	423.4	423.3	423.4	423.4	422.9	422.9	423.8	423.7	424.3	424.1
MainMD100A	71054	57163	Natural	1975	25	1777	1734	1795	2277	2980	414.7	410.8	425.4	423.4	425.3	423.4	424.6	422.9	427.0	423.8	428.4	424.3
24th#1	71053	71054	7'x9.68' CSP culverts	46	25	895	874	901	1063	1087	417.2	417.2	426.4	425.4	426.3	425.3	425.9	424.6	428.0	427.0	428.7	428.4
24th#2	71053	71054	7'x9.68' CSP culvert	46	25	895	874	901	1063	1087	417.2	417.2	426.4	425.4	426.3	425.3	425.9	424.6	428.0	427.0	428.7	428.4
24thrd	71053	71054	Roadway	46		0	0	0	573	1943	427.2	427.2	425.4	425.4	425.3	425.3	424.6	424.6	428.0	427.6	428.7	428.4
MainMD100B	54172	71053	Natural	650	25	1744	1710	1787	2335	2928	418.9	417.2	427.9	426.4	427.8	426.3	427.9	425.9	430.1	428.0	430.4	428.7
MainMD040	66967	54172	Natural	1300	25	1503	1483	1567	2020	2559	420.0	418.9	428.7	427.9	428.5	427.8	428.7	427.9	430.9	430.1	431.7	430.4
MainMD110	54174	66967	Natural	150	25	1420	1412	1497	1913	2423	420.2	420.0	428.7	428.7	428.6	428.5	428.7	428.7	431.0	430.9	431.8	431.7
MainUP050	65370	67978	Natural	1400	25	547	572	626	920	1034	457.0	446.8	461.8	455.6	461.9	455.7	462.1	456.2	463.9	457.5	464.9	457.9
MainMD120	71052	54175	Natural	700	25	1359	1362	1460	1872	2353	422.2	421.0	429.5	428.8	429.3	428.7	429.5	428.8	431.5	431.0	432.4	431.9
29th	71051	71052	7.5'x15' CMP M baskhnd culvert	80	25	1336	1342	1443	1832	1923	425.0	425.0	432.9	431.3	432.9	431.3	433.3	431.6	434.6	432.7	434.9	433.0
29thrd	71051	71052	Roadway	80		0	0	0	31	409	434.5	434.5	429.5	429.5	429.3	429.3	429.5	429.5	434.6	434.5	434.9	434.7
MainMD060A	71001	71051	Natural	725	25	1336	1343	1446	1865	2332	426.7	425.0	434.3	432.9	434.4	432.9	434.7	433.3	435.9	434.6	436.6	434.9
30th	71000	71001	bridge	79	25	1337	1344	1451	1866	2332	426.8	426.7	434.7	434.3	434.7	434.4	435.0	434.7	436.2	435.9	436.9	436.6

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
MainMD060B	51750	71000	Natural	335	25	1337	1345	1455	1868	2332	427.5	426.8	435.3	434.7	435.3	434.7	435.6	435.0	436.8	436.2	437.7	436.9
31st	51751	51750	7.5'x15' CMP M baskhnd culvert	84	25	1337	1346	1458	1868	2212	427.5	427.5	436.3	435.3	436.3	435.3	436.7	435.6	438.1	436.8	439.1	437.7
31strd	51751	51750	Roadway	84		0	0	0	0	144	438.1	438.1	435.3	435.3	435.3	435.3	435.6	435.6	436.8	436.8	439.1	438.8
MainUP160A	51757	51751	Natural	415	25	1286	1300	1405	1824	2293	428.8	427.5	436.8	436.3	436.8	436.3	437.2	436.7	438.8	438.1	440.1	439.1
MainUP160B	51730	51757	Natural	268	25	1223	1243	1350	1775	2214	429.6	428.8	437.2	436.8	437.2	436.8	437.6	437.2	439.5	438.8	440.6	440.1
33rd	51729	51730	8'x15' CMP M baskhnd culvert	220	25	1119	1130	1219	1649	1874	431.1	429.6	438.4	437.2	438.5	437.2	438.9	437.6	440.9	439.5	442.0	440.6
33rdrd	51729	51730	8'x15' CMP M baskhnd culvert	220	25	0	0	0	0	174	440.9	440.5	437.2	437.2	437.2	437.2	437.6	437.6	439.5	439.5	442.0	441.3
MainUP170	66944	51729	Natural	1390	25	1095	1108	1194	1705	2094	434.9	431.1	442.7	438.4	442.7	438.5	443.0	438.9	445.2	440.9	445.3	442.0
MainUP150A	50544	66944	Natural	1240	25	987	997	1071	1622	1835	441.3	434.9	447.7	442.7	447.7	442.7	447.9	443.0	449.7	445.2	450.0	445.3
MainUP150B	50517	50544	Natural	1340	25	909	921	993	1485	1720	446.5	441.3	453.1	447.7	453.2	447.7	453.4	447.9	454.7	449.7	456.3	450.0
FoxHolw#1	67978	50517	72" CSP culverts	225	25	288	290	300	318	319	447.5	446.5	455.6	453.1	455.7	453.2	456.2	453.4	457.5	454.7	457.9	456.3
FoxHolw#2	67978	50517	72" CSP culvert	225	25	284	289	300	318	319	446.8	446.5	455.6	453.1	455.7	453.2	456.2	453.4	457.5	454.7	457.9	456.3
FoxHolwrd	67978	50517	Roadway	225		0	0	15	308	607	455.8	455.8	453.1	453.1	453.2	453.2	456.2	456.0	457.5	457.0	457.9	457.2
MainMD050	54175	54174	Natural	175	25	1378	1376	1474	1870	2372	421.0	420.2	428.8	428.7	428.7	428.6	428.8	428.7	431.0	431.0	431.9	431.8
MainUP020	65398	65370	Natural	1050	25	397	408	435	681	843	467.0	457.0	471.3	461.8	471.4	461.9	471.6	462.1	473.0	463.9	474.5	464.9
Snell	65396	65398	72" CSP culvert	37	25	326	334	345	358	358	467.0	467.0	473.8	471.3	474.0	471.4	474.2	471.6	475.2	473.0	475.6	474.5
Snellrd	65396	65398	Roadway	37		0	0	2	215	454	474.1	474.1	471.3	471.3	471.4	471.4	474.2	474.2	475.2	475.1	475.6	475.1
MainUP030	65379	65396	Natural	2100	25	251	261	270	421	531	502.4	467.0	506.6	473.8	506.6	474.0	506.7	474.2	507.6	475.2	508.2	475.6
Amazon - Lower Sub-Basin																						
AMLW030E	63042	63032	66" CSP	425	10	62	70	75	87	92	375.5	375.0	384.0	383.9	384.7	384.6	382.2	382.2	384.3	384.2	384.8	384.7
AMLW030Erd	63042	63032	Roadway	425		0	0	0	0	0	388.1	386.5	383.9	383.9	384.6	384.6	382.2	382.2	384.2	384.2	384.7	384.7
AMLW030F	69111	63042	60" CSP	1038	10	62	70	76	87	92	376.3	375.5	384.5	384.0	385.3	384.7	382.2	382.2	384.6	384.3	385.3	384.8
AMLW030Frd	69111	63042	Roadway	1038		0	3	0	0	2	385.2	385.1	384.0	384.0	385.3	385.1	382.2	382.2	384.3	384.3	385.3	385.1
AMLW030G	63178	69111	54" CSP	1351	10	62	70	76	73	69	377.2	376.3	385.6	384.5	385.9	385.3	382.9	382.2	385.9	384.6	386.2	385.3
AMLW030Grd	63178	69111	Roadway	1351		7	39	0	27	73	385.4	384.2	385.6	384.5	385.9	385.3	382.2	382.2	385.9	384.6	386.2	385.3
Amazon - Bertelsen Sub-basin																						
AMBT020A	54522	63126	48" CSP	1239	10	63	65	91	75	70	383.6	381.7	391.0	389.8	391.8	390.8	391.2	387.6	391.9	390.4	392.8	390.9
AMBT020Ard	63126	54522	Roadway	1239		0	0	0	0	0	394.8	391.0	391.0	391.0	391.8	391.8	391.2	391.2	391.9	391.9	392.8	392.8
AMBT020B	66971	54522	42" CSP	761	10	27	28	46	63	63	387.6	383.7	391.5	391.0	394.7	391.8	393.1	391.2	395.0	391.9	395.1	392.8
AMBT020Brd	66971	54522	Roadway	761		0	0	0	0	7	395.0	391.0	391.0	391.0	391.8	391.8	391.2	391.2	395.0	391.9	395.1	392.8
AMBT010A	63173	63127	36" CSP	77	10	24	26	29	49	59	383.2	383.0	391.7	391.5	392.6	392.3	389.8	389.8	392.1	392.0	392.6	392.5
AMBT030A	54486	63127	66" CSP	2250	10	55	53	76	93	106	386.7	384.4	391.9	391.5	392.8	392.3	390.4	389.8	392.7	392.0	393.7	392.5
AMBT030B	54488	54486	60" CSP	2208	10	57	58	77	97	110	389.8	386.7	392.9	391.9	393.7	392.8	393.5	390.4	395.7	392.7	397.5	393.7

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMBT030Brd	54488	54486	Roadway	2208		0	0	0	0	5	397.3	393.6	391.9	391.9	392.8	392.8	390.4	390.4	392.7	392.7	397.5	393.7
AMBT030C	54489	54488	54" CSP	358	10	58	59	78	103	123	391.3	389.8	393.5	392.9	393.9	393.7	394.2	393.5	396.8	395.7	399.1	397.5
AMBT030Crd	54489	54488	Roadway	358		0	0	0	0	0	400.1	397.3	392.9	392.9	393.7	393.7	393.5	393.5	395.7	395.7	397.5	397.5
AMBT030D	68843	54489	42" CSP	508	10	58	60	79	101	100	393.4	391.3	396.8	393.5	397.0	393.9	398.5	394.2	401.8	396.8	402.1	399.1
AMBT030Drd	68843	54489	Roadway	508		0	0	0	12	57	401.6	400.1	393.5	393.5	393.9	393.9	394.2	394.2	401.8	400.2	402.1	400.5
AMBT090A	54809	68843	30" CSP	1144	10	22	24	28	37	32	406.0	394.6	407.4	396.8	407.4	397.0	407.6	398.5	410.7	401.8	410.8	402.1
AMBT090Ard	54809	68843	Roadway	1144		0	0	0	8	18	410.6	401.6	396.8	396.8	397.0	397.0	398.5	398.5	410.7	401.8	410.8	402.1
AMBT090B	51993	54809	27" CSP	978	10	22	24	28	36	36	420.0	406.3	421.4	407.6	421.4	407.7	421.6	407.8	427.1	410.7	427.1	410.8
AMBT090Brd	51993	54809	Roadway	978		0	0	0	7	18	427.0	410.6	407.4	407.4	407.4	407.4	407.6	407.6	427.1	410.7	427.1	410.8
AMBT090C	51995	51993	24" CSP	690	10	22	24	28	42	42	444.4	420.6	445.6	421.7	445.6	421.7	445.8	421.8	452.3	427.1	452.3	427.1
AMBT090Crd	51995	51993	Roadway	690		0	0	0	8	21	452.2	427.0	421.4	421.4	421.4	421.4	421.6	421.6	452.3	427.1	452.3	427.1
AMBT040A	54747	54748	54" CSP	445	10	47	48	80	96	94	386.6	383.0	393.4	393.2	394.1	393.8	391.7	391.7	393.9	393.5	394.4	393.9
AMBT040Ard	54748	54747	Roadway	445		0	0	0	0	0	395.4	394.0	393.4	393.4	394.1	394.1	391.7	391.7	393.9	393.9	394.4	394.4
AMBT040B	66976	54747	Natural	500	10	33	32	57	63	63	387.6	386.6	393.4	393.4	394.1	394.1	391.7	391.7	393.9	393.9	394.5	394.4
AMBT040C	54813	66976	54" CSP	13	10	33	34	57	67	62	384.3	387.6	393.5	393.4	394.1	394.1	391.7	391.7	394.0	393.9	394.5	394.5
AMBT040Crd	54813	66976	Roadway	13		0	5	0	1	56	394.0	393.9	393.4	393.4	394.1	394.1	391.7	391.7	394.0	393.9	394.5	394.5
AMBT040D	54811	54813	54" CSP	596	10	33	34	57	67	74	384.9	384.3	393.5	393.5	394.2	394.1	392.2	391.7	394.8	394.0	395.4	394.5
AMBT040Drd	54811	54813	Roadway	596		0	0	0	0	0	395.9	394.0	393.5	393.5	394.1	394.1	391.7	391.7	394.0	394.0	394.5	394.5
AMBT040E	54909	54811	48" CSP	980	10	33	34	57	67	62	386.9	385.3	393.8	393.5	394.6	394.2	394.2	392.2	396.8	394.8	397.0	395.4
AMBT040Erd	54909	54811	Roadway	980		0	0	0	8	23	396.5	395.9	393.5	393.5	394.2	394.2	392.2	392.2	396.8	396.0	397.0	396.1
AMBT060A	54898	54909	48" CSP	604	10	20	20	35	56	64	388.7	386.9	393.9	393.8	394.7	394.6	394.8	394.2	398.0	396.8	398.5	397.0
Amazon Bailey Hill																						
AMBH020A	54773	71086	72" CSP	2886	25	186	191	222	229	224	392.7	386.2	401.8	395.8	402.4	396.6	402.5	394.4	405.1	396.3	405.4	396.8
AMBH020Ard	54773	71086	Roadway	2886		0	0	0	18	62	404.8	400.0	395.8	395.8	396.6	396.6	394.4	394.4	405.1	400.2	405.4	400.4
AMBH020B	54772	71086	72" CSP	2884	25	179	184	216	220	214	392.7	386.2	401.4	395.8	402.0	396.6	402.2	394.4	404.4	396.3	404.7	396.8
AMBH020Brd	54772	71086	Roadway	2884		0	0	0	22	62	404.0	400.0	395.8	395.8	396.6	396.6	394.4	394.4	404.4	400.2	404.7	400.4
AMBH050A	54815	54773	66" CSP	320	25	165	171	193	235	251	393.2	392.8	402.8	401.8	403.3	402.4	404.0	402.5	407.2	405.1	407.7	405.4
AMBH050Ard	54815	54773	Roadway	320		0	0	0	0	23	407.5	404.8	401.8	401.8	402.4	402.4	402.5	402.5	405.1	405.1	407.7	405.4
AMBH020C	54815	54772	66" CSP	312	25	158	163	180	221	232	393.2	392.7	402.8	401.4	403.3	402.0	404.0	402.2	407.2	404.4	407.7	404.7
AMBH020Crd	54815	54772	Roadway	312		0	0	0	0	27	407.5	404.0	401.4	401.4	402.0	402.0	402.2	402.2	404.4	404.4	407.7	404.7
AMBH050B	68846	54815	84" CSP	132	25	312	323	366	445	444	393.9	393.2	403.5	402.8	403.9	403.3	404.8	404.0	408.4	407.2	408.9	407.7
AMBH050Brd	68846	54815	Roadway	132		0	0	0	0	74	408.5	407.5	402.8	402.8	403.3	403.3	404.0	404.0	407.2	407.2	408.9	407.9
AMBH050C	52255	68846	72" CSP	528	25	312	322	366	347	342	397.3	394.7	406.9	403.5	407.4	403.9	409.1	404.8	411.7	408.4	411.8	408.9
AMBH050Crd	52255	68846	Roadway	528		0	0	0	143	221	411.0	408.5	403.5	403.5	403.9	403.9	404.8	404.8	411.7	409.2	411.8	409.3
AMBH070C	52243	52255	36" CSP	595	10	51	51	68	76	76	411.8	405.6	414.0	407.6	414.1	407.6	416.9	409.1	420.3	411.7	420.3	411.8
AMBH070Crd	52243	52255	Roadway	595		0	0	0	55	80	420.0	411.0	406.9	406.9	407.4	407.4	409.1	409.1	420.3	411.7	420.3	411.8
AMBH070D	52248	52243	33" CSP	515	10	51	51	68	72	72	421.8	413.6	423.7	415.4	423.8	415.5	426.8	416.9	427.3	420.3	427.4	420.3
AMBH070Drd	52248	52243	Roadway	515		0	0	0	71	95	427.0	420.0	414.0	414.0	414.1	414.1	416.9	416.9	427.3	420.3	427.4	420.4
AMBH070E	52240	52248	30" CSP	442	10	51	51	60	60	60	432.7	423.9	435.4	425.8	435.5	425.8	438.3	426.8	438.5	427.3	438.5	427.4
AMBH070Erd	52240	52248	Roadway	442		0	0	10	75	98	438.2	427.0	423.7	423.7	423.8	423.8	438.3	427.1	438.5	427.3	438.5	427.4
AMBH070F	66465	52240	27" CSP	290	10	51	51	57	61	61	445.3	434.2	448.7	435.8	448.9	435.8	451.9	438.3	452.0	438.5	452.1	438.5
AMBH070Frd	66465	52240	Roadway	290		0	0	15	77	100	451.8	438.2	435.4	435.4	435.5	435.5	451.9	438.3	452.0	438.5	452.1	438.5
AMBH070A	52163	52255	66" CSP	515	10	254	266	312	268	256	400.4	397.7	410.5	406.9	411.0	407.4	411.6	409.1	412.5	411.7	412.8	411.8
AMBH070Ard	52163	52255	Roadway	515		0	0	60	217	274	410.4	411.0	410.5	410.5	411.0	411.0	411.6	411.4	412.5	412.1	412.8	412.2
AMBH070B	67805	52163	54" CSP	1272	10	230	234	234	235	232	416.6	400.4	427.2	410.5	427.3	411.0	427.5	411.6	427.9	412.5	428.2	412.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMBH070Brd	67805	52163	Roadway	1272		47	76	128	291	398	427.0	410.4	427.2	410.6	427.3	411.0	427.5	411.6	427.9	412.5	428.2	412.8
AMBH120A	52213	67805	54" CSP	311	10	210	232	235	237	237	423.1	416.6	432.6	427.2	433.9	427.3	434.2	427.5	434.5	427.9	434.7	428.2
AMBH120Ard	52213	67805	Roadway	311		0	0	37	222	317	434.0	427.0	427.2	427.2	427.3	427.3	434.2	427.5	434.5	427.9	434.7	428.2
AMBH120E	52216	52213	36" CSP	170	10	28	31	41	47	46	428.9	423.1	433.0	432.6	434.4	433.9	434.9	434.2	435.6	434.5	435.7	434.7
AMBH120Erd	52216	52213	Roadway	170		0	0	0	15	29	435.5	434.0	432.6	432.6	433.9	433.9	434.2	434.2	435.6	434.5	435.7	434.7
AMBH120F	52217	52216	30" CSP	230	10	28	31	36	53	53	433.0	428.8	434.5	433.0	435.8	434.4	437.0	434.9	440.1	435.6	440.1	435.7
AMBH120Frd	52217	52216	Roadway	230		0	0	0	7	20	440.0	435.5	433.0	433.0	434.4	434.4	434.9	434.9	440.1	435.6	440.1	435.7
AMBH120G	52145	52217	27" CSP	372	10	28	30	36	62	74	459.0	434.0	460.0	435.0	460.0	435.8	460.1	437.0	460.6	440.1	465.9	440.1
AMBH120Grd	52145	52217	Roadway	372		0	0	0	0	0	466.0	440.0	434.5	434.5	435.8	435.8	437.0	437.0	440.1	440.1	440.1	440.1
AMBH120B	68649	52213	48" CSP	430	10	183	204	207	208	208	436.1	424.1	440.6	432.6	444.2	433.9	444.8	434.2	445.1	434.5	445.2	434.7
AMBH120Brd	68649	52213	Roadway	430		0	0	32	193	272	444.6	434.0	432.6	432.6	433.9	433.9	444.8	434.2	445.1	434.5	445.2	434.7
AMBH120C	52167	68649	36" CSP	1057	10	92	99	114	114	114	479.5	438.1	481.7	440.6	481.7	444.2	487.0	444.8	487.3	445.1	487.3	445.2
AMBH120Crd	52167	68649	Roadway	1057		0	0	5	85	124	487.0	444.6	440.6	440.6	444.2	444.2	487.0	444.8	487.3	445.1	487.3	445.2
AMBH120D	52214	68649	36" CSP	321	10	94	114	125	172	172	465.3	438.1	466.9	440.6	466.9	444.2	467.0	444.8	471.7	445.1	471.8	445.2
AMBH120Drd	52214	68649	Roadway	321		0	0	0	35	75	471.6	444.6	440.6	440.6	444.2	444.2	444.8	444.8	471.7	445.1	471.8	445.2
AMBH015A	54776	54745	36" CSP	13	10	19	20	32	52	59	390.7	392.0	398.1	398.1	398.2	398.2	396.4	396.4	398.2	398.2	398.2	398.2
AMBH015Ard	54776	54745	Roadway	13		4	9	0	6	13	398.0	398.0	398.1	398.1	398.2	398.2	396.4	396.4	398.2	398.2	398.2	398.2
AMBH015B	54867	54776	36" CSP	384	10	19	20	32	52	49	391.6	390.7	398.3	398.1	398.5	398.2	396.4	396.4	399.2	398.2	399.4	398.2
AMBH015Brd	54867	54776	Roadway	384		0	0	0	0	17	399.2	398.0	398.1	398.1	398.2	398.2	396.4	396.4	399.2	398.2	399.4	398.2
AMBH015C	54854	54867	30" CSP	278	10	19	20	32	42	40	393.7	391.0	398.7	398.3	399.0	398.5	398.0	396.4	401.2	399.2	401.3	399.4
AMBH015Crd	54854	54867	Roadway	278		0	0	0	21	34	401.0	399.2	398.3	398.3	398.5	398.5	396.4	396.4	401.2	399.4	401.3	399.5
Amazon - City View Sub-Basin																						
AMCV070A	68093	55294	48" CSP	766	10	42	44	50	68	65	396.8	395.2	402.7	402.0	403.2	402.3	401.5	401.1	403.4	402.3	403.7	402.4
AMCV070Ard	68093	55294	Roadway	766		0	0	0	2	16	403.2	403.0	402.0	402.0	403.2	403.0	401.1	401.1	403.4	403.0	403.7	403.2
AMCV070B	55344	68093	42" CSP	420	10	42	43	50	68	64	398.2	397.0	403.6	402.7	404.1	403.2	402.7	401.5	405.1	403.4	405.2	403.7
AMCV070Brd	55344	68093	Roadway	420		0	0	0	13	36	404.9	403.2	402.7	402.7	403.2	403.2	401.5	401.5	405.1	403.4	405.2	403.7
AMCV070C	55365	55344	36" CSP	1238	10	42	45	52	70	70	413.4	398.4	415.1	403.6	415.1	404.1	415.4	402.7	421.8	405.1	421.9	405.2
AMCV070Crd	55365	55344	Roadway	1238		0	0	0	15	38	421.7	404.9	403.6	403.6	404.1	404.1	402.7	402.7	421.8	405.1	421.9	405.2
AMCV030A	55432	55272	42" CSP	1773	10	21	22	33	35	34	399.1	396.2	405.3	404.9	406.5	406.1	406.0	403.9	406.5	405.9	407.0	407.0
AMCV030Ard	55432	55272	Roadway	1773		0	1	0	1	25	406.4	404.9	404.9	404.9	406.5	406.1	403.9	403.9	406.5	405.9	407.0	407.0
AMCV030B	55446	55272	30" CSP	440	10	5	13	8	12	19	398.6	395.3	404.9	404.9	406.1	406.1	404.0	403.9	405.9	405.9	407.0	407.0
AMCV030Brd	55272	55446	Roadway	440		0	23	0	18	59	404.9	405.2	404.9	404.9	406.1	406.1	403.9	403.9	405.9	405.9	407.0	407.0
AMCV030C	55432	55446	24" CSP	1540	10	5	6	8	9	8	400.6	398.6	405.3	404.9	406.5	406.1	406.0	404.0	406.5	405.9	407.0	407.0
AMCV030Crd	55432	55446	Roadway	1540		0	1	0	1	28	406.4	405.2	404.9	404.9	406.5	406.1	404.0	404.0	406.5	405.9	407.0	407.0
AMCV050A	55395	55274	48" CSP	650	10	66	67	75	103	103	400.3	396.0	406.7	405.8	407.7	406.6	406.4	404.3	409.3	406.4	409.8	407.2
AMCV050Ard	55395	55274	Roadway	650		0	0	0	1	27	409.2	409.0	405.8	405.8	406.6	406.6	404.3	404.3	409.3	409.0	409.8	409.2
AMCV050B	55396	55395	42" CSP	256	10	66	67	75	92	90	404.9	400.8	408.1	406.7	409.1	407.7	408.5	406.4	411.2	409.3	411.3	409.8
AMCV050Brd	55396	55395	Roadway	256		0	0	0	36	73	410.9	409.2	406.7	406.7	407.7	407.7	406.4	406.4	411.2	409.5	411.3	409.8
AMCV050C	55369	55396	36" CSP	11	10	27	27	29	32	35	405.0	404.9	408.3	408.1	409.2	409.1	408.6	408.5	411.3	411.2	411.4	411.3
AMCV050Crd	55369	55396	Roadway	11		0	0	0	2	23	411.3	410.9	408.1	408.1	409.1	409.1	408.5	408.5	411.3	411.2	411.4	411.3
AMCV050D	55382	55369	30" CSP	621	10	27	27	29	30	30	409.6	405.0	411.3	408.3	411.4	409.2	411.6	408.6	415.1	411.3	415.2	411.4
AMCV050Drd	55382	55369	Roadway	621		0	0	0	3	20	415.0	411.3	408.3	408.3	409.2	409.2	408.6	408.6	415.1	411.4	415.2	411.5
AMCV050H	55382	55396	42" CSP	613	10	41	41	51	75	75	409.6	404.9	411.3	408.1	411.4	409.1	411.6	408.5	415.1	411.2	415.2	411.3
AMCV050Hrd	55382	55396	Roadway	613		0	0	0	4	21	415.0	410.9	408.1	408.1	409.1	409.1	408.5	408.5	415.1	411.2	415.2	411.3
AMCV050I	68794	55382	36" CSP	1203	10	48	49	57	59	59	419.7	409.6	422.4	411.7	422.8	411.8	425.1	412.0	425.3	415.1	425.4	415.2

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMCV050Ird	68794	55382	Roadway	1203		0	0	0	33	57	425.1	415.0	411.3	411.3	411.4	411.4	411.6	411.6	425.3	415.2	425.4	415.3
AMCV050J	52716	68794	30" CSP	884	10	49	50	50	52	52	429.0	419.7	436.3	422.4	437.2	422.8	437.3	425.1	437.5	425.3	437.5	425.4
AMCV050Jrd	52716	68794	Roadway	884		0	0	12	50	74	437.2	425.1	422.4	422.4	437.2	425.1	437.3	425.2	437.5	425.4	437.5	425.4
AMCV050K	52713	52716	27" CSP	872	10	49	51	55	55	55	461.8	429.1	463.6	436.3	465.2	437.2	469.3	437.3	469.4	437.5	469.4	437.5
AMCV050Krd	52713	52716	Roadway	872		0	0	6	49	71	469.2	437.2	436.3	436.3	437.2	437.2	469.3	437.3	469.4	437.5	469.4	437.5
AMCV050L	52573	52713	30" CSP	115	10	49	53	61	86	86	470.0	463.0	471.4	464.3	471.5	465.2	472.7	469.3	476.3	469.4	476.3	469.4
AMCV050Lrd	52573	52713	Roadway	115		0	0	0	19	41	476.2	469.2	463.6	463.6	465.2	465.2	469.3	469.3	476.3	469.4	476.3	469.4
AMCV050E	52736	55382	30" CSP	1053	10	19	20	22	37	38	419.2	409.6	420.5	411.3	420.5	411.4	420.6	411.6	425.0	415.1	426.1	415.2
AMCV050Erd	52736	55382	Roadway	1053		0	0	0	0	6	426.0	415.0	411.3	411.3	411.4	411.4	411.6	411.6	415.1	415.1	426.1	415.2
AMCV050F	52733	52736	24" CSP	940	10	19	20	22	30	31	436.4	422.8	437.8	424.1	437.8	424.2	438.0	424.3	444.3	425.0	444.3	426.1
AMCV050Frd	52733	52736	Roadway	940		0	0	0	7	18	444.2	426.0	420.5	420.5	420.5	420.5	420.6	420.6	444.3	426.1	444.3	426.1
AMCV050G	52730	52733	18" CSP	617	10	19	20	21	21	21	462.5	436.6	463.8	437.8	463.8	437.8	467.0	438.1	467.1	444.3	467.1	444.3
AMCV050Grd	52730	52733	Roadway	617		0	0	1	22	31	467.0	444.2	437.8	437.8	437.8	437.8	467.0	444.2	467.1	444.3	467.1	444.3
Amazon - Polk Street Sub-Basin																						
AMPK070A	55289	55256	66" CSP	1262	10	134	141	158	177	177	406.1	401.1	410.4	408.7	410.8	409.0	410.5	407.7	412.0	409.1	412.8	410.1
AMPK070Ard	55289	55256	Roadway	1262		0	0	0	0	0	414.0	414.0	408.7	408.7	409.0	409.0	407.7	407.7	409.1	409.1	410.1	410.1
AMPK070B	52686	55289	60" CSP	905	10	137	142	160	182	179	408.5	406.1	413.2	410.4	413.7	410.8	414.5	410.5	416.5	412.0	416.8	412.8
AMPK070Brd	52686	55289	Roadway	905		0	0	0	0	22	416.5	414.1	410.4	410.4	410.8	410.8	410.5	410.5	416.5	414.1	416.8	414.3
AMPK070C	52685	52686	66" CSP	1555	10	138	144	161	182	205	413.7	408.5	417.3	413.2	417.4	413.7	418.4	414.5	421.9	416.5	423.5	416.8
AMPK070Crd	52685	52686	Roadway	1555		0	0	0	0	0	429.8	416.5	413.2	413.2	413.7	413.7	414.5	414.5	416.5	416.5	416.8	416.8
AMPK090A	52707	52685	36" CSP	1550	10	60	64	75	85	86	443.4	413.7	445.3	417.3	445.3	417.4	445.8	418.4	452.2	421.9	452.3	423.5
AMPK090Ard	52707	52685	Roadway	1550		0	0	0	36	66	452.0	429.8	417.3	417.3	417.4	417.4	418.4	418.4	452.2	430.0	452.3	430.1
AMPK060A	55290	55256	66" CSP	1263	10	84	92	121	159	164	405.9	400.7	409.2	408.7	409.8	409.0	409.6	407.7	411.3	409.1	412.1	410.1
AMPK060Ard	55256	55290	Roadway	1263		0	0	0	0	0	414.0	413.9	409.2	409.2	409.8	409.8	409.6	409.6	411.3	411.3	412.1	412.1
AMPK060B	52689	55290	60" CSP	1354	10	87	94	130	170	170	411.4	405.9	414.1	409.2	414.2	409.8	415.0	409.6	416.8	411.3	418.4	412.1
AMPK060C#1	66476	52689	48" CSP	1092	10	67	69	76	83	84	413.6	411.4	417.8	414.1	417.9	414.2	418.6	415.0	421.1	416.8	422.8	418.4
AMPK060C#2	66476	52689	60" CSP	855	10	97	104	135	167	169	414.5	411.4	417.8	414.1	417.9	414.2	418.6	415.0	421.1	416.8	422.8	418.4
AMPK060Crd	66476	52689	Roadway	1092		0	0	0	0	0	424.1	419.0	414.1	414.1	414.2	414.2	415.0	415.0	416.8	416.8	418.4	418.4
AMPK060D	52687	55256	54" CSP	1589	25	94	95	117	121	123	407.7	401.5	411.7	408.7	412.3	409.0	413.0	407.7	414.8	409.1	416.0	410.1
AMPK060Drd	52687	55256	Roadway	1589		0	0	0	0	0	416.0	413.0	408.7	408.7	409.0	409.0	407.7	407.7	409.1	409.1	416.0	413.0
AMPK060E	52689	52687	48" CSP	573	10	81	81	89	88	94	411.4	407.7	414.1	411.7	414.2	412.3	415.0	413.0	416.8	414.8	418.4	416.0
AMPK060Erd	52689	52687	Roadway	573		0	0	0	0	0	419.0	416.0	411.7	411.7	412.3	412.3	413.0	413.0	414.8	414.8	416.0	416.0
AMPK170A	53474	66476	60" CSP	256	10	98	103	127	159	156	415.0	414.5	418.7	417.8	418.8	417.9	419.6	418.6	422.3	421.1	423.9	422.8
AMPK090B	53474	52685	48" CSP	391	10	70	73	74	83	88	416.0	413.7	418.7	417.3	418.8	417.4	419.6	418.4	422.3	421.9	423.9	423.5
AMPK170B	53457	53474	48" CSP	28	10	168	176	199	223	223	416.2	416.1	421.7	419.8	421.9	419.8	422.6	420.0	424.9	422.3	426.2	423.9
AMPK170Brd	53457	53474	Roadway	28		0	0	0	0	12	426.0	426.0	418.7	418.7	418.8	418.8	419.6	419.6	422.3	422.3	426.2	426.1
AMPK170C	53441	53457	54" CSP	766	10	143	148	168	192	192	422.8	416.2	427.3	421.7	428.1	421.9	430.9	422.6	434.7	424.9	434.7	426.2
AMPK170Crd	53441	53457	Roadway	766		0	0	0	20	43	434.5	426.0	421.7	421.7	421.9	421.9	422.6	422.6	434.7	426.2	434.7	426.2
AMPK170D	53415	53441	54" CSP	1374	10	105	109	123	132	131	430.7	422.8	433.6	427.3	433.9	428.1	436.7	430.9	442.0	434.7	442.3	434.7
AMPK170Drd	53415	53441	Roadway	1374		0	0	0	0	0	443.3	434.5	427.3	427.3	428.1	428.1	430.9	430.9	434.7	434.7	434.7	434.7
AMPK170E	53405	53415	54" CSP	659	10	82	87	93	105	106	435.5	430.7	437.8	433.6	437.9	433.9	438.4	436.7	443.2	442.0	443.4	442.3
AMPK170Erd	53405	53415	Roadway	659		0	0	0	0	1	443.0	443.3	437.8	437.8	437.9	437.9	438.4	438.4	443.2	443.2	443.4	443.3
AMPK170F	53388	53405	54" CSP	779	10	42	45	53	96	101	438.8	435.2	440.6	437.8	440.7	437.9	440.9	438.4	447.5	443.2	447.8	443.4
AMPK170Frd	53388	53405	Roadway	779		0	0	0	0	0	447.8	443.0	437.8	437.8	437.9	437.9	438.4	438.4	443.2	443.2	447.8	443.4
AMPK170G	53390	53388	48" CSP	361	10	42	45	53	96	97	440.7	439.2	443.0	441.1	443.0	441.2	443.3	441.4	448.2	447.5	448.4	447.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMPK170Grd	53390	53388	Roadway	361		0	0	0	0	9	448.2	447.8	440.6	440.6	440.7	440.7	440.9	440.9	448.2	447.8	448.4	447.9
AMPK170H	53416	53415	54" CSP	26	10	24	25	29	53	64	430.7	430.7	433.7	433.6	433.9	433.9	436.7	436.7	442.1	442.0	442.4	442.3
AMPK170I	53422	53416	24" CSP	459	10	24	25	30	38	38	452.2	438.6	453.5	439.8	453.5	439.8	453.8	440.0	456.6	442.1	456.7	442.4
AMPK170Ird	53422	53416	Roadway	459		0	0	0	18	29	456.5	444.2	433.7	433.7	433.9	433.9	436.7	436.7	456.6	444.3	456.7	444.3
AMPK170J	68811	53457	36" CSP	358	10	26	28	32	55	62	417.5	416.3	422.3	421.7	422.6	421.9	423.5	422.6	425.3	424.9	426.3	426.2
AMPK170Jrd	68811	53457	Roadway	358		0	0	0	0	28	424.4	426.0	422.3	422.3	422.6	422.6	423.5	423.5	425.3	425.3	426.3	426.2
AMPK170K	53426	68811	27" CSP	1528	10	26	28	31	33	33	438.7	418.0	440.1	422.3	440.3	422.6	442.7	423.5	444.5	425.3	444.6	426.3
AMPK170Krd	53426	68811	Roadway	1528		0	0	0	15	28	444.4	424.4	422.3	422.3	422.6	422.6	423.5	423.5	444.5	425.3	444.6	426.3
AMPK170L	53422	53426	24" CSP	422	10	26	28	33	36	36	452.2	438.9	453.5	440.1	453.5	440.3	453.8	442.7	456.6	444.5	456.7	444.6
AMPK170Lrd	53422	53426	Roadway	422		0	0	0	18	31	456.5	444.4	440.1	440.1	440.3	440.3	442.7	442.7	456.6	444.5	456.7	444.6
AMPK170M	68813	66476	48" CSP	452	10	66	71	86	100	133	415.4	413.6	418.9	417.8	419.2	417.9	420.7	418.6	423.5	421.1	426.4	422.8
AMPK170N	53447	68813	42" CSP	1262	10	50	53	66	66	65	419.6	415.4	422.5	418.9	423.2	419.2	425.3	420.7	426.2	423.5	426.6	426.4
AMPK170Nrd	53447	68813	Roadway	1262		0	0	0	34	94	425.0	425.7	422.5	422.5	423.2	423.2	425.3	425.3	426.2	426.0	426.6	426.4
AMPK170O	53400	53447	30" CSP	290	10	9	12	18	18	18	421.4	419.6	422.7	422.5	423.5	423.2	425.9	425.3	426.2	426.2	426.6	426.6
AMPK170Ord	53400	53447	Roadway	290		0	0	2	32	66	425.8	425.0	422.5	422.5	423.2	423.2	425.9	425.3	426.2	426.2	426.6	426.6
AMPK170P	53401	53400	24" CSP	311	10	9	12	20	24	24	423.5	421.4	424.5	422.7	424.8	423.5	428.6	425.9	430.1	426.2	430.3	426.6
AMPK170Prd	53401	53400	Roadway	311		0	0	0	20	49	430.0	425.8	422.7	422.7	423.5	423.5	425.9	425.9	430.1	426.2	430.3	426.6
AMPK170Q	53405	53401	24" CSP	888	10	3	4	15	26	26	437.4	423.6	437.8	424.5	437.9	424.8	438.4	428.6	443.2	430.1	443.4	430.3
AMPK170Qrd	53405	53401	Roadway	888		0	0	0	42	91	443.0	430.0	424.5	424.5	424.8	424.8	428.6	428.6	443.2	430.2	443.4	430.4
AMPK170R	53408	53405	24" CSP	430	10	41	41	41	42	42	451.3	437.4	458.3	439.4	458.3	439.4	458.4	439.4	458.5	443.2	458.5	443.4
AMPK170Rrd	53408	53405	Roadway	430		2	4	11	54	75	458.3	443.0	458.3	443.0	458.3	443.0	458.4	443.1	458.5	443.2	458.5	443.4
AMPK170S	53448	53447	30" CSP	180	10	42	42	49	51	52	422.3	419.8	424.6	422.5	425.5	423.2	428.5	425.3	428.8	426.2	428.9	426.6
AMPK170Srd	53448	53447	Roadway	180		0	0	0	53	95	428.6	425.0	422.5	422.5	423.2	423.2	425.3	425.3	428.8	426.2	428.9	426.6
AMPK170U	53358	53448	36" CSP	580	10	14	14	26	16	18	423.8	422.3	425.3	424.6	425.8	425.5	428.8	428.5	429.3	428.8	429.5	428.9
AMPK170Urd	53358	53448	Roadway	580		0	0	1	38	65	428.6	428.6	424.6	424.6	425.5	425.5	428.8	428.6	429.3	428.9	429.5	429.0
AMPK170T	53358	53401	21" CSP	197	10	7	9	11	18	18	423.6	423.5	425.3	424.5	425.8	424.8	428.8	428.6	429.3	430.1	429.5	430.3
AMPK170Trd	53401	53358	Roadway	197		0	0	0	14	35	430.0	428.6	425.3	425.3	425.8	425.8	428.8	428.8	430.1	429.3	430.3	429.5
Amazon - Middle Sub-Basin																						
AMMD140A	57400	66998	48" CSP	575	10	60	58	66	48	47	413.0	412.6	422.6	422.5	422.6	422.6	421.8	421.8	422.9	422.9	423.5	423.5
AMMD140Ard	66998	57400	Roadway	575		62	61	30	88	191	420.8	421.2	422.5	422.6	422.6	422.6	421.8	421.8	422.9	422.9	423.5	423.5
AMMD140B	57422	57400	42" CSP	608	10	58	54	65	43	42	413.8	413.4	422.6	422.6	422.6	422.6	421.8	421.8	422.9	422.9	423.5	423.5
AMMD140Brd	57400	57422	Roadway	608		51	50	33	58	137	421.2	420.5	422.6	422.6	422.6	422.6	421.8	421.8	422.9	422.9	423.5	423.5
AMMD145A	57427	57422	36" CSP	767	10	21	22	28	28	25	415.5	414.2	422.6	422.6	422.6	422.6	421.9	421.8	422.9	422.9	423.5	423.5
AMMD145Ard	57422	57427	Roadway	767		19	19	6	22	45	420.5	421.8	422.6	422.6	422.6	422.6	421.8	421.9	422.9	422.9	423.5	423.5
AMMD165A	57436	57188	27" CSP	216	10	32	30	38	25	25	411.6	410.8	423.3	423.3	423.4	423.4	422.9	422.9	423.7	423.7	424.1	424.1
AMMD165Ard	57188	57436	Roadway	216		120	132	174	185	182	420.8	419.7	423.3	423.3	423.4	423.4	422.9	422.9	423.7	423.7	424.1	424.1
AMMD165B	56284	57436	24" CSP	294	10	15	14	23	15	14	413.6	411.6	423.3	423.3	423.4	423.4	422.9	422.9	423.7	423.7	424.1	424.1
AMMD165Brd	57436	56284	Roadway	294		40	48	64	77	69	419.7	420.0	423.3	423.3	423.4	423.4	422.9	422.9	423.7	423.7	424.1	424.1
AMMD135A	57433	57163	30" CSP	72	10	33	35	52	38	35	413.7	413.8	423.4	423.4	423.4	423.4	422.9	422.9	423.9	423.8	424.3	424.3
AMMD135Ard	57163	57433	Roadway	72		207	207	243	305	337	420.7	420.8	423.4	423.4	423.4	423.4	422.9	422.9	423.8	423.9	424.3	424.3
AMMD135B	57431	57433	30" CSP	704	10	27	26	31	26	24	415.4	413.7	423.4	423.4	423.4	423.4	422.9	422.9	423.9	423.9	424.3	424.3
AMMD135Brd	57433	57431	Roadway	704		146	148	141	237	236	420.8	421.2	423.4	423.4	423.4	423.4	422.9	422.9	423.9	423.9	424.3	424.3
AMMD135C	57428	57431	30" CSP	808	10	24	23	28	21	22	417.0	415.4	423.4	423.4	423.4	423.4	423.0	422.9	423.9	423.9	424.3	424.3
AMMD135Crd	57428	57431	Roadway	808		45	46	60	100	119	421.8	421.2	423.4	423.4	423.4	423.4	423.0	422.9	423.9	423.9	424.3	424.3
AMMD040A#1	54353	54172	60" CSP	961	10	108	109	112	122	116	421.0	419.5	429.8	427.9	429.6	427.8	429.6	427.9	430.6	430.1	430.9	430.4

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMMD040A#2	54353	54172	60" CSP	961	10	108	109	112	122	116	421.0	419.5	429.8	427.9	429.6	427.8	429.6	427.9	430.6	430.1	430.9	430.4
AMMD040Ard	54353	54172	Roadway	961		43	27	30	164	286	429.0	428.8	429.8	429.1	429.6	429.0	429.6	429.1	430.6	430.1	430.9	430.4
AMMD040B#1	54330	54353	83.04" elliptical CSP	486	10	158	161	166	168	160	422.9	422.1	430.6	429.8	430.5	429.6	430.6	429.6	431.2	430.6	431.4	430.9
AMMD040B#2	54330	54353	42" CSP	451	10	61	59	76	62	59	423.5	422.7	430.6	429.8	430.5	429.6	430.6	429.6	431.2	430.6	431.4	430.9
AMMD040Brd	54330	54353	Roadway	486		106	88	96	242	353	429.8	429.0	430.6	429.8	430.5	429.6	430.6	429.6	431.2	430.6	431.4	430.9
AMMD040C	54335	54330	83.04" CSP	646	10	131	133	136	136	134	422.9	421.9	431.2	430.6	431.2	430.5	431.2	430.6	431.6	431.2	431.8	431.4
AMMD040Crd	54335	54330	Roadway	646		30	29	33	95	101	430.8	429.8	431.2	430.6	431.2	430.5	431.2	430.6	431.6	431.2	431.8	431.4
AMMD040D	66486	54335	54" CSP	1157	10	145	153	157	195	198	435.7	423.9	439.3	431.2	439.7	431.2	440.5	431.2	446.0	431.6	446.6	431.8
AMMD040Drd	66486	54335	Roadway	1157		0	0	0	0	0	449.2	430.8	431.2	431.2	431.2	431.2	431.2	431.2	431.6	431.6	431.8	431.8
AMMD040L	54315	54330	42" CSP	612	10	32	33	34	40	40	424.8	423.5	431.5	430.6	431.5	430.5	431.6	430.6	432.5	431.2	432.8	431.4
AMMD040Lrd	54315	54330	Roadway	612		0	0	0	76	133	432.0	429.8	430.6	430.6	430.5	430.5	430.6	430.6	432.5	431.2	432.8	431.4
AMMD040M	66485	54315	36" CSP	836	10	32	33	34	55	55	431.8	424.8	434.0	431.5	434.0	431.5	434.2	431.6	439.1	432.5	439.4	432.8
AMMD040Mrd	66485	54315	Roadway	836		0	0	0	64	140	438.8	432.0	431.5	431.5	431.5	431.5	431.6	431.6	439.1	432.5	439.4	432.8
AMMD040N	54295	66485	30" CSP	777	10	32	33	35	44	44	437.4	431.8	440.2	434.0	440.5	434.0	441.4	434.2	446.4	439.1	446.6	439.4
AMMD040Nrd	54295	66485	Roadway	777		0	0	0	84	161	446.0	438.8	434.0	434.0	434.0	434.0	434.2	434.2	446.4	439.2	446.6	439.4
AMMD040H	54295	66486	42" CSP	384	10	42	43	48	70	63	438.0	435.7	440.2	439.3	440.5	439.7	441.4	440.5	446.4	446.0	446.6	446.6
AMMD040Hrd	66486	54295	Roadway	384		0	0	0	0	0	449.2	446.0	440.2	440.2	440.5	440.5	441.4	441.4	446.4	446.4	446.6	446.6
AMMD040I	54267	54295	30" CSP	1499	10	30	32	33	35	34	445.5	438.0	451.2	440.2	452.0	440.5	453.6	441.4	454.4	446.4	454.5	446.6
AMMD040Ird	54267	54295	Roadway	1499		0	0	0	62	99	454.0	446.0	440.2	440.2	440.5	440.5	441.4	441.4	454.4	446.4	454.5	446.6
AMMD040J	54271	54267	24" CSP	482	10	30	32	32	31	32	457.0	450.0	461.5	451.9	462.6	452.0	462.7	453.6	462.9	454.4	463.0	454.5
AMMD040Jrd	54271	54267	Roadway	482		0	0	5	79	105	462.6	454.0	451.2	451.2	462.6	454.0	462.7	454.1	462.9	454.4	463.0	454.5
AMMD040E	54325	66486	48" CSP	481	10	106	113	119	152	151	444.2	436.4	446.5	439.3	446.6	439.7	446.7	440.5	452.4	446.0	452.5	446.6
AMMD040Erd	54325	66486	Roadway	481		0	0	0	23	56	452.2	449.2	439.3	439.3	439.7	439.7	440.5	440.5	452.4	449.4	452.5	449.5
AMMD040F	54271	54325	42" CSP	712	10	106	113	115	126	126	455.1	444.2	461.5	446.5	462.6	446.6	462.7	446.7	462.9	452.4	463.0	452.5
AMMD040Frd	54271	54325	Roadway	712		0	0	4	72	95	462.6	452.2	446.5	446.5	462.6	452.2	462.7	452.3	462.9	452.5	463.0	452.6
AMMD040G#1	54254	54271	42" CSP	232	10	101	101	101	106	106	458.0	455.1	465.4	461.5	465.5	462.6	465.6	462.7	465.9	462.9	466.0	463.0
AMMD040G#2	54254	54271	24" CSP	166	10	31	31	31	32	32	458.0	457.0	465.4	461.5	465.5	462.6	465.6	462.7	465.9	462.9	466.0	463.0
AMMD040Grd	54254	54271	Roadway	232		14	40	53	178	225	465.3	462.6	465.4	462.7	465.5	462.8	465.6	462.9	465.9	463.2	466.0	463.3
AMMD040K	54260	54254	42" CSP	639	10	136	136	136	139	139	476.1	458.3	482.8	465.4	482.9	465.5	482.9	465.6	483.2	465.9	483.3	466.0
AMMD040Krd	54260	54254	Roadway	639		3	13	26	150	198	482.8	465.3	482.8	465.4	482.9	465.5	482.9	465.6	483.2	465.9	483.3	466.0
AMMD020A	66702	54260	42" CSP	475	10	54	57	64	109	111	483.7	476.2	485.5	482.8	485.6	482.9	485.9	482.9	490.2	483.2	490.4	483.3
AMMD020Ard	66702	54260	Roadway	475		0	0	0	0	15	490.3	482.8	482.8	482.8	482.9	482.9	482.9	482.9	483.2	483.2	490.4	483.3
AMMD020B	51411	66702	36" CSP	1442	10	55	57	65	109	109	530.0	483.7	531.5	485.5	531.5	485.6	531.6	485.9	534.9	490.2	535.0	490.4
AMMD020Brd	51411	66702	Roadway	1442		0	0	0	0	20	534.9	490.3	485.5	485.5	485.6	485.6	485.9	485.9	534.9	490.3	535.0	490.4
AMMD020C	51437	51411	30" CSP	526	10	55	57	65	82	82	551.3	530.0	553.1	531.5	553.1	531.5	553.4	531.6	557.6	534.9	557.7	535.0
AMMD020Crd	51437	51411	Roadway	526		0	0	0	34	64	557.5	534.9	531.5	531.5	531.5	531.5	531.6	531.6	557.6	535.0	557.7	535.1
AMMD110A	54362	66967	42" CSP	1291	10	63	63	70	63	62	423.4	420.0	433.8	428.7	433.7	428.5	433.9	428.7	434.2	430.9	434.4	431.7
AMMD110Ard	54362	66967	Roadway	1291		18	13	22	43	80	433.1	433.2	433.8	433.4	433.7	433.4	433.9	433.4	434.2	433.5	434.4	433.7
AMMD110B	66460	54362	36" CSP	772	10	48	48	56	47	47	428.5	423.4	435.5	433.8	435.5	433.7	435.5	433.9	435.8	434.2	436.2	434.4
AMMD110Brd	66460	54362	Roadway	772		53	58	72	150	190	435.0	433.1	435.5	433.8	435.5	433.7	435.5	433.9	435.8	434.2	436.2	434.4
AMMD080L	51307	66460	30" CSP	164	10	46	45	51	45	45	433.6	429.0	437.2	435.5	437.3	435.5	437.3	435.5	437.5	435.8	437.6	436.2
AMMD080Lrd	51307	66460	Roadway	164		46	50	65	144	188	437.0	435.0	437.2	435.5	437.3	435.5	437.3	435.5	437.5	435.8	437.6	436.2
AMMD080K#1	51306	51307	2-24" CSP	278	10	23	23	25	22	21	435.5	433.6	440.2	437.2	440.2	437.3	440.3	437.3	440.5	437.5	440.6	437.6

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMMD080K#2	51306	51307	24" CSP	235	10	25	25	27	24	23	435.5	433.6	440.2	437.2	440.2	437.3	440.3	437.3	440.5	437.5	440.6	437.6
AMMD080Krd	51306	51307	Roadway	278		36	40	55	133	177	440.0	437.0	440.2	437.2	440.2	437.3	440.3	437.3	440.5	437.5	440.6	437.6
AMMD080J#1	51305	51306	36" CSP	251	10	34	33	35	35	36	436.0	435.5	441.0	440.2	441.0	440.2	441.1	440.3	441.4	440.5	441.5	440.6
AMMD080J#2	51305	51306	27" CSP	250	10	16	16	18	17	17	436.0	435.5	441.0	440.2	441.0	440.2	441.1	440.3	441.4	440.5	441.5	440.6
AMMD080Jrd	51305	51306	Roadway	251		33	37	51	126	168	440.6	440.0	441.0	440.3	441.0	440.3	441.1	440.4	441.4	440.7	441.5	440.8
AMMD080I	51303	51305	48" CSP	473	10	63	64	66	63	64	436.7	436.0	442.2	441.0	442.3	441.0	442.3	441.1	442.7	441.4	442.8	441.5
AMMD080Ird	51303	51305	Roadway	473		19	24	39	117	160	442.0	440.6	442.2	441.0	442.3	441.0	442.3	441.1	442.7	441.4	442.8	441.5
AMMD080H	51344	51302	30" CSP	710	10	47	47	48	47	47	449.3	439.3	455.2	445.1	455.2	445.1	455.2	445.2	455.4	445.4	455.4	445.5
AMMD080Hrd	51344	51302	Roadway	710		22	26	38	98	128	455.0	445.0	455.2	445.2	455.2	445.2	455.2	445.2	455.4	445.4	455.4	445.5
AMMD080G	51302	51303	36" CSP	288	10	57	57	57	57	57	438.6	437.4	445.1	442.2	445.1	442.3	445.2	442.3	445.4	442.7	445.5	442.8
AMMD080Grd	51302	51303	Roadway	288		9	14	25	84	114	445.0	443.0	445.1	443.1	445.1	443.1	445.2	443.2	445.4	443.4	445.5	443.5
AMMD080F	51303	51309	36" CSP	32	10	27	29	35	54	60	437.4	437.3	442.2	442.1	442.3	442.1	442.3	442.1	442.7	442.2	442.8	442.2
AMMD080Frd	51303	51309	Roadway	32		0	0	0	0	0	443.0	442.0	442.1	442.1	442.1	442.1	442.1	442.1	442.2	442.2	442.2	442.2
AMMD080E	51309	51311	18" CSP	106	10	14	14	13	13	14	437.3	437.0	442.1	440.2	442.1	440.3	442.1	440.3	442.2	440.4	442.2	440.5
AMMD080Erd	51309	51311	Roadway	106		14	17	23	42	48	442.0	440.0	442.1	440.2	442.1	440.3	442.1	440.3	442.2	440.4	442.2	440.5
AMMD080D#1	51311	51313	18" CSP	489	10	6	6	6	6	6	437.0	435.9	440.2	439.7	440.3	439.7	440.3	439.8	440.4	439.9	440.5	439.9
AMMD080D#2	51311	51313	18" CSP	339	10	7	7	8	7	7	437.0	435.9	440.2	439.7	440.3	439.7	440.3	439.8	440.4	439.9	440.5	439.9
AMMD080Drd	51311	51313	Roadway	489		19	22	28	46	53	440.0	438.9	440.2	439.7	440.3	439.7	440.3	439.8	440.4	439.9	440.5	439.9
AMMD080C#1	51313	51314	18" CSP	31	10	10	10	10	10	10	435.9	436.0	439.7	439.6	439.7	439.6	439.8	439.6	439.9	439.7	439.9	439.8
AMMD080C#2	51313	51314	18" CSP	35	10	10	10	10	10	10	435.9	436.0	439.7	439.6	439.7	439.6	439.8	439.6	439.9	439.7	439.9	439.8
AMMD080Crd	51313	51314	Roadway	31		17	20	26	43	49	438.9	439.5	439.7	439.7	439.7	439.7	439.8	439.7	439.9	439.8	439.9	439.9
AMMD080B#1	51314	68667	18" CSP	182	10	11	11	11	11	11	436.0	435.4	439.6	437.3	439.6	437.6	439.6	437.9	439.7	438.0	439.8	438.1
AMMD080B#2	51314	68667	18" CSP	182	10	11	11	11	11	11	436.0	435.4	439.6	437.3	439.6	437.6	439.6	437.9	439.7	438.0	439.8	438.1
AMMD080Brd	51314	68667	Roadway	182		5	9	17	34	41	439.5	437.8	439.6	437.9	439.6	437.9	439.6	437.9	439.7	438.0	439.8	438.1
AMMD080A	68667	51963	27" CSP	150	10	25	28	31	35	36	435.4	433.2	437.3	434.3	437.6	434.4	437.9	434.5	438.0	434.9	438.1	437.0
AMMD080Ard	68667	51963	Roadway	150		0	0	4	17	35	437.8	437.0	434.3	434.3	434.4	434.4	437.9	437.1	438.0	437.2	438.1	437.3
AMMD080M	51963	51961	30" CSP	388	10	15	17	21	32	38	433.3	428.0	434.3	429.8	434.4	429.7	434.5	430.2	434.9	431.5	437.0	433.9
AMMD080Mrd	51963	51961	Roadway	388		0	0	0	0	0	437.0	435.0	429.8	429.8	429.7	429.7	430.2	430.2	431.5	431.5	437.0	435.0
AMMD120A	51961	54175	42" CSP	2445	10	15	15	19	28	36	428.0	421.0	429.8	428.8	429.7	428.7	430.2	428.8	431.5	431.0	433.9	431.9
AMMD120Ard	51961	54175	Roadway	2445		0	0	0	0	0	435.0	434.1	428.8	428.8	428.7	428.7	428.8	428.8	431.0	431.0	431.9	431.9
AMMD070B	51963	51964	27" CSP	731	10	11	12	14	20	21	433.2	428.8	434.3	430.4	434.4	430.4	434.5	430.9	434.9	432.4	437.0	433.5
AMMD070Brd	51963	51964	Roadway	731		0	0	0	0	0	437.0	433.5	430.4	430.4	430.4	430.4	430.9	430.9	432.4	432.4	437.0	433.5
AMMD070A	51964	71052	30" CSP	1051	10	11	11	13	18	20	428.8	426.0	430.4	429.5	430.4	429.3	430.9	429.5	432.4	431.5	433.5	432.4
AMMD070Ard	71052	51964	Roadway	1051		0	0	0	0	0	435.9	433.5	430.4	430.4	430.4	430.4	430.9	430.9	432.4	432.4	433.5	433.5
Amazon - Upper Sub-Basin																						
AMUP180A	51841	51730	36" CSP	1314	10	65	65	65	65	65	444.7	432.4	450.1	437.2	450.2	437.2	450.2	437.6	450.5	439.5	450.6	440.6
AMUP180Ard	51841	51730	Roadway	1314		54	62	85	178	233	449.8	440.5	450.1	440.8	450.2	440.8	450.2	440.9	450.5	441.2	450.6	441.3
AMUP180B	68653	51841	36" CSP	214	10	58	59	60	59	58	447.0	444.7	452.1	450.1	452.1	450.2	452.2	450.2	452.4	450.5	452.5	450.6
AMUP180Brd	68653	51841	Roadway	214		10	14	27	98	125	452.0	449.8	452.1	450.1	452.1	450.2	452.2	450.2	452.4	450.5	452.5	450.6
AMUP180C	51296	68653	30" CSP	1254	10	62	62	62	62	62	480.9	447.5	486.1	452.1	486.1	452.1	486.1	452.2	486.3	452.4	486.4	452.5
AMUP180Crd	51296	68653	Roadway	1254		8	11	25	98	123	486.0	452.0	486.1	452.1	486.1	452.1	486.1	452.2	486.3	452.4	486.4	452.5
AMUP180D	66447	51296	36" CSP	146	10	71	73	86	89	89	485.0	481.9	488.1	486.1	488.2	486.1	489.2	486.1	489.5	486.3	489.5	486.4
AMUP180Drd	66447	51296	Roadway	146		0	0	0	73	97	489.2	486.0	486.1	486.1	486.1	486.1	486.1	486.1	489.5	486.3	489.5	486.4
AMUP180E	51285	66447	30" CSP	321	10	71	73	86	92	92	499.0	485.4	500.9	488.1	501.0	488.2	506.6	489.2	509.2	489.5	509.2	489.5
AMUP180Erd	51285	66447	Roadway	321		0	0	0	69	93	509.0	489.2	488.1	488.1	488.2	488.2	489.2	489.2	509.2	489.5	509.2	489.5

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMUP180F	68670	51285	36" CSP	185	10	71	73	90	92	92	508.1	499.9	510.2	501.5	510.2	501.6	511.8	506.6	514.9	509.2	515.0	509.2
AMUP180Frd	68670	51285	Roadway	185		0	0	0	71	95	514.7	509.0	500.9	500.9	501.0	501.0	506.6	506.6	514.9	509.2	515.0	509.3
AMUP180G	68668	68670	30" CSP	41	10	71	73	86	88	88	510.0	508.1	512.6	510.2	512.7	510.2	514.8	511.8	515.4	514.9	515.5	515.0
AMUP180Grd	68668	68670	Roadway	41		0	0	4	129	151	514.0	514.7	512.6	512.6	512.7	512.7	514.8	514.8	515.4	515.4	515.5	515.5
AMUP180H	51271	68668	27" CSP	102	10	71	73	82	82	82	514.7	510.0	519.7	512.6	520.1	512.7	523.1	514.8	523.2	515.4	523.2	515.5
AMUP180Hrd	51271	68668	Roadway	102		0	0	19	90	114	523.0	514.0	512.6	512.6	512.7	512.7	523.1	514.8	523.2	515.4	523.2	515.5
AMUP180I	51284	51271	36" CSP	283	10	73	73	97	99	99	523.5	517.2	526.1	519.7	526.1	520.1	532.7	523.1	533.2	523.2	533.3	523.2
AMUP180Ird	51284	51271	Roadway	283		0	0	0	65	88	533.0	523.0	519.7	519.7	520.1	520.1	523.1	523.1	533.2	523.2	533.3	523.3
AMUP180J	51256	51284	33" CSP	178	10	71	73	93	93	93	531.2	523.9	533.1	526.1	533.2	526.1	540.1	532.7	540.2	533.2	540.3	533.3
AMUP180Jrd	51256	51284	Roadway	178		0	0	8	77	100	540.0	533.0	526.1	526.1	526.1	526.1	540.1	533.1	540.2	533.2	540.3	533.3
AMUP180K	51239	51256	30" CSP	92	10	71	73	94	95	95	543.0	531.9	545.1	533.2	545.2	533.2	546.1	540.1	546.2	540.2	546.3	540.3
AMUP180Krd	51239	51256	Roadway	92		0	0	29	95	118	546.0	540.0	533.1	533.1	533.2	533.2	546.1	540.1	546.2	540.2	546.3	540.3
AMUP190A	51204	51239	Natural	675	10	44	46	62	98	115	586.9	543.0	588.1	545.1	588.2	545.2	588.4	546.1	588.7	546.2	588.9	546.3
AMUP190B	50107	51204	24" CSP culvert	320	10	38	38	42	45	45	600.0	586.9	606.0	588.1	606.1	588.2	606.1	588.4	606.2	588.7	606.2	588.9
AMUP190Brd	50107	51204	Roadway	320		6	8	20	53	71	606.0	589.9	606.0	589.9	606.1	590.0	606.1	590.0	606.2	590.1	606.2	590.1
AMUP190C	50115	50107	Natural	75	10	45	50	62	98	115	601.6	600.0	606.3	606.0	606.4	606.1	606.5	606.1	607.3	606.2	607.7	606.2
AMUP190D	50163	50115	36" CSP culvert	655	10	51	53	62	98	98	621.2	601.6	622.5	606.3	622.5	606.4	622.8	606.5	630.4	607.3	630.5	607.7
AMUP190Drd	50163	50115	Roadway	655		0	0	0	0	18	630.4	608.6	606.3	606.3	606.4	606.4	606.5	606.5	630.4	608.6	630.5	608.7
AMUP140A	51469	66944	54" CSP	61	10	109	113	119	119	120	434.4	434.9	443.2	442.7	443.3	442.7	443.5	443.0	445.2	445.2	445.3	445.3
AMUP140Ard	51469	66944	Roadway	61		0	1	21	167	212	443.2	443.1	443.2	443.1	443.3	443.1	443.5	443.3	445.2	445.2	445.3	445.3
AMUP140B	51850	51469	54" CSP	582	10	109	116	130	132	132	436.7	434.7	445.4	443.2	445.7	443.3	446.6	443.5	446.9	445.2	447.2	445.3
AMUP140Brd	51850	51469	Roadway	582		0	0	6	66	119	446.5	443.2	443.2	443.2	443.3	443.3	446.6	443.5	446.9	445.2	447.2	445.3
AMUP140C	66678	51850	30" CSP	80	10	79	79	77	79	80	440.4	438.4	448.2	445.4	448.3	445.7	448.3	446.6	448.4	446.9	448.5	447.2
AMUP140Crd	66678	51850	Roadway	80		49	60	90	145	197	448.0	446.5	448.2	446.7	448.3	446.8	448.3	446.8	448.4	446.9	448.5	447.2
AMUP140D	51853	66678	36" CSP	125	10	73	73	77	71	71	443.2	442.0	448.7	448.2	448.7	448.3	448.8	448.3	449.1	448.4	449.3	448.5
AMUP140Drd	51853	66678	Roadway	125		74	81	101	149	195	448.0	447.9	448.7	448.4	448.7	448.4	448.8	448.5	449.1	448.7	449.3	448.8
AMUP140E	51763	51853	36" CSP	11	10	84	84	84	84	84	446.0	443.2	450.1	448.7	450.2	448.7	450.2	448.8	450.3	449.1	450.4	449.3
AMUP140Erd	51763	51853	Roadway	11		26	33	55	116	170	450.0	448.0	450.1	448.7	450.2	448.7	450.2	448.8	450.3	449.1	450.4	449.3
AMUP140F	50531	51763	Natural	1550	10	66	69	82	120	144	484.1	446.0	486.0	450.1	486.1	450.2	486.3	450.2	486.7	450.3	487.0	450.4
AMUP120A	50660	50531	36" CSP	314	10	67	73	87	120	122	493.8	484.1	495.6	486.0	495.8	486.1	496.2	486.3	501.3	486.7	501.4	487.0
AMUP120Ard	50660	50531	Roadway	314		0	0	0	26	53	501.2	491.5	486.0	486.0	486.1	486.1	486.3	486.3	501.3	491.6	501.4	491.7
AMUP060A	50629	50517	60" CSP	64	10	304	301	303	311	311	448.2	448.0	455.4	453.1	455.5	453.2	455.6	453.4	456.5	454.7	456.7	456.3
AMUP060Ard	50629	50517	Roadway	64		45	53	91	374	559	455.0	454.9	455.4	455.2	455.5	455.3	455.6	455.4	456.5	456.2	456.7	456.3
AMUP060B	50653	50629	54" CSP	623	10	341	352	386	388	387	473.0	448.3	480.5	455.4	482.1	455.5	487.5	455.6	488.0	456.5	488.1	456.7
AMUP060Brd	50653	50629	Roadway	623		0	0	2	261	345	487.5	455.0	455.4	455.4	455.5	455.5	487.5	455.6	488.0	456.5	488.1	456.7
AMUP060C	50671	50653	54" CSP	2580	10	260	260	260	260	260	521.4	473.0	531.0	480.5	531.1	482.1	531.2	487.5	531.5	488.0	531.6	488.1
AMUP060Crd	50671	50653	Roadway	2580		51	62	112	338	413	530.8	487.5	531.0	487.7	531.1	487.8	531.2	487.9	531.5	488.2	531.6	488.3
AMUP130A	50200	50671	54" CSP	882	10	216	218	227	230	218	533.8	521.4	542.4	531.0	542.4	531.1	542.5	531.2	542.8	531.5	543.2	531.6
AMUP130Ard	50200	50671	Roadway	882		88	96	141	360	433	542.0	530.8	542.4	531.2	542.4	531.2	542.5	531.3	542.8	531.6	543.2	532.0
AMUP070A	65601	50200	42" CSP	547	10	77	82	92	111	111	545.2	534.2	547.5	542.4	547.7	542.4	548.2	542.5	551.0	542.8	551.1	543.2
AMUP070Ard	65601	50200	Roadway	547		0	0	0	39	75	550.8	542.0	542.4	542.4	542.4	542.4	542.5	542.5	551.0	542.8	551.1	543.2
AMUP070B	65582	65601	36" CSP	2041	10	77	82	94	146	146	623.4	545.2	625.1	547.5	625.2	547.7	625.4	548.2	662.1	551.0	662.2	551.1
AMUP070Brd	65582	65601	Roadway	2041		0	0	0	11	48	662.0	550.8	547.5	547.5	547.7	547.7	548.2	548.2	662.1	551.0	662.2	551.1

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE AMAZON CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
AMUP070C	50238	50200	48" CSP	1133	10	150	145	171	172	172	551.7	534.2	558.5	542.4	557.5	542.4	563.4	542.5	563.9	542.8	564.0	543.2
AMUP070Crd	50238	50200	Roadway	1133		0	0	0	118	186	563.5	543.0	542.4	542.4	542.4	542.4	542.5	542.5	563.9	543.4	564.0	543.5
Willamte	50090	50238	42" CSP	128	10	144	144	144	144	144	558.0	551.7	564.2	558.5	564.1	557.5	564.6	563.4	565.0	563.9	565.2	564.0
Willamterd	50090	50238	Roadway	128		18	4	111	241	300	564.0	563.5	564.2	563.7	564.1	563.6	564.6	564.1	565.0	564.5	565.2	564.5
AMUP080A	50110	50090	Natural	950	10	116	117	123	195	233	590.0	558.0	594.7	564.2	594.7	564.1	594.7	564.6	595.1	565.0	595.3	565.2
Brooksd#1	50109	50110	48" CSP culverts	114	10	53	56	62	100	118	594.0	590.0	595.4	594.7	595.5	594.7	595.7	594.7	596.8	595.1	597.4	595.3
Brooksd#2	50109	50110	48" CSP culvert	114	10	53	56	62	100	118	594.0	590.0	595.4	594.7	595.5	594.7	595.7	594.7	596.8	595.1	597.4	595.3
AMUP100A	66910	50109	Natural	350	10	45	46	51	81	100	617.0	594.0	618.8	595.4	618.9	595.5	619.1	595.7	619.1	596.8	619.4	597.4
BraeBurn	50108	66910	36" CSP culvert	59	10	45	47	52	82	89	619.0	618.0	621.3	619.6	621.4	619.6	621.6	619.8	623.6	620.5	624.2	620.8
BraeBurnrd	50108	66910	Roadway	59		0	0	0	0	11	624.0	624.0	618.8	618.8	618.9	618.9	619.1	619.1	619.1	619.1	624.2	624.1
AMUP100C	71047	50108	Natural	460	10	46	47	53	89	105	650.4	619.0	651.9	621.3	651.9	621.4	652.0	621.6	652.4	623.6	652.6	624.2
AMUP100D	50130	71047	Natural	140	10	46	47	53	90	105	660.0	650.4	662.4	651.9	662.5	651.9	662.6	652.0	663.2	652.4	663.4	652.6
AMUP100E	50129	50130	36" CSP culvert	148	10	46	47	53	90	98	668.0	660.0	669.2	662.4	669.2	662.5	669.3	662.6	670.8	663.2	672.3	663.4
AMUP100Erd	50129	50130	Roadway	148		0	0	0	0	8	672.0	672.0	662.4	662.4	662.5	662.5	662.6	662.6	663.2	663.2	672.3	672.1
AMUP110A	99479	50129	Natural	600	10	42	43	49	88	113	703.5	668.0	707.2	669.2	707.3	669.2	707.5	669.3	708.1	670.8	708.2	672.3
AMUP040A#1	65533	65370	48" CSP	401	10	54	56	63	78	93	461.7	457.0	463.4	461.8	463.4	461.9	463.6	462.1	464.9	463.9	466.4	464.9
AMUP040A#2	65533	65370	36" CSP	382	10	3	3	6	34	45	463.0	457.8	463.4	461.8	463.4	461.9	463.6	462.1	464.9	463.9	466.4	464.9
AMUP040Ard	65533	65370	Roadway	401		0	0	0	0	0	473.0	464.1	461.8	461.8	461.9	461.9	462.1	462.1	463.9	463.9	464.9	464.9
AMUP040B	65310	65533	48" CSP	19	10	57	59	69	113	138	462.2	461.7	463.9	463.4	463.9	463.4	464.1	463.6	465.2	464.9	466.8	466.4
AMUP040C	50602	65310	48" CSP	1966	10	57	60	69	119	146	510.0	461.9	511.4	463.9	511.5	463.9	511.6	464.1	512.2	465.2	512.5	466.8
AMUP040D	50739	50602	36" CSP	845	10	58	60	70	116	124	542.4	510.0	544.0	511.4	544.0	511.5	544.2	511.6	550.0	512.2	550.1	512.5
AMUP040Drd	50739	50602	Roadway	845		0	0	0	4	24	550.0	518.0	511.4	511.4	511.5	511.5	511.6	511.6	550.0	518.0	550.1	518.1
Amazon - Headwaters Sub-Basin																						
Martin	66656	65379	48" CSP	45	10	252	263	277	324	325	504.8	502.4	513.6	506.6	514.3	506.6	515.1	506.7	518.6	507.6	519.0	508.2
Martinrd	66656	65379	Roadway	45		0	0	0	118	242	517.8	517.8	506.6	506.6	506.6	506.6	506.7	506.7	518.6	518.4	519.0	518.8
AMHW010A	67175	66656	36" CSP	79	10	90	93	97	102	106	510.7	506.6	516.2	513.6	517.1	514.3	517.9	515.1	518.9	518.6	519.1	519.0

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Bethel Danebo - A2 Channel																						
BDA2010A	58209	80001	Natural	840	100	509	604	307	732	901	359.6	357.4	365.2	361.1	365.6	361.3	364.4	360.6	366.0	361.6	366.5	362.0
BDA2010E	58709	58209	48" CSP	1029	10	32	32	48	60	75	362	360.7	365.5	365.2	366.0	365.6	365.3	364.4	367.3	366.0	369.2	366.5
BDA2010Erd	58709	58209	Roadway	1029		0	0	0	0	0	374	372.0	365.2	365.2	365.6	365.6	364.4	364.4	366.0	366.0	366.5	366.5
BDA2020A	58689	58709	42" CSP	830	10	22	22	33	37	45	366	362.0	367.5	365.5	367.5	366.0	367.8	365.3	368.6	367.3	371.3	369.2
BDA2020Ard	58689	58709	Roadway	830		0	0	0	0	0	375	374.0	365.5	365.5	366.0	366.0	365.3	365.3	367.3	367.3	369.2	369.2
BDA2010B	80002	58209	Natural	1540	100	482	573	303	695	855	361.9	359.6	368.0	365.2	368.4	365.6	366.9	364.4	369.0	366.0	369.7	366.5
BDA2040A	58205	80002	60" CSP	390	10	22	20	25	48	58	362	361.9	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2040Ard	80002	58205	Roadway	390		0	0	0	0	0	376	376.2	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2040B	58204	58205	60" CSP	665	10	9	8	11	21	25	363	362.0	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2040Brd	58204	58205	Roadway	665		0	0	0	0	0	376	371.9	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2040C	58207	58204	48" CSP	250	10	10	8	12	21	25	363	362.7	368.0	368.0	368.5	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2040Crd	58207	58204	Roadway	250		0	0	0	0	0	372	371.9	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2060A	58673	80002	60" CSP	725	10	110	102	163	195	191	364	363.0	368.7	368.0	369.5	368.4	370.4	366.9	375.6	369.0	375.3	369.7
BDA2060Ard	58673	80002	Roadway	725		0	0	0	0	0	377	376.3	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2060B	58680	58673	72" CSP	884	10	98	91	146	165	159	367	364.2	370.5	368.7	370.9	369.5	373.8	370.4	377.8	375.6	377.8	375.3
BDA2060Brd	58680	58673	Roadway	884		0	0	0	0	0	378	376.9	368.7	368.7	369.5	369.5	370.4	370.4	377.8	376.9	377.8	376.9
BDA2110A	58658	58680	54" CSP	973	10	18	19	31	39	36	368	367.4	370.7	370.5	371.0	370.9	374.1	373.8	376.7	377.8	377.0	377.8
BDA2110Ard	58680	58658	Roadway	973		0	0	0	0	0	378	376.7	370.7	370.7	371.0	371.0	374.1	374.1	377.8	376.7	377.8	377.0
BDA2110B	58658	58645	24" CSP	166	10	19	19	31	35	35	371	369.0	372.6	370.7	372.6	371.0	377.1	374.1	377.3	376.7	377.4	377.0
BDA2110Brd	58658	58645	Roadway	166		0	0	1	26	32	377	376.7	370.7	370.7	371.0	371.0	377.1	376.7	377.3	376.9	377.4	377.0
BDA2070A	58683	58680	60' CSP	1641	10	65	61	98	127	120	369	367.4	373.0	370.5	372.8	370.9	377.1	373.8	380.2	377.8	380.4	377.8
BDA2070Ard	58683	58680	Roadway	1641		0	0	0	0	0	381	377.8	370.5	370.5	370.9	370.9	373.8	373.8	377.8	377.8	377.8	377.8
BDA2080A	66164	58683	48" CSP	40	10	66	62	98	137	137	373	372.4	374.9	374.4	374.8	374.4	377.4	377.1	380.4	380.2	380.6	380.4
BDA2080Ard	66164	58683	Roadway	40		0	0	0	0	0	381	380.7	373.0	373.0	372.8	372.8	377.1	377.1	380.2	380.2	380.4	380.4
BDA2080B	58668	66164	60" CSP	280	10	37	35	57	78	78	369	369.8	375.0	374.9	374.9	374.8	377.6	377.4	379.9	380.4	380.3	380.6
BDA2080Brd	58668	66164	Roadway	280		0	0	0	0	0	381	379.7	375.0	375.0	374.9	374.9	377.6	377.6	379.9	379.9	380.3	380.3
BDA2080C	68474	58668	60" CSP	1272	10	36	35	56	78	78	372	369.0	375.3	375.0	375.2	374.9	378.3	377.6	381.4	379.9	381.2	380.3
BDA2080Crd	68474	58668	Roadway	1272		0	0	0	0	0	382	379.7	375.0	375.0	374.9	374.9	377.6	377.6	379.9	379.9	380.3	380.3
BDA2080D	58950	68474	54" CSP	501	10	36	35	56	77	77	372	372.0	375.5	375.3	375.4	375.2	378.8	378.3	381.7	381.4	381.7	381.2
BDA2080Drd	58950	68474	Roadway	501		0	0	0	0	0	382	381.6	375.3	375.3	375.2	375.2	378.3	378.3	381.7	381.6	381.7	381.6
BDA2090A	60231	58950	42" CSP	960	10	16	16	25	36	32	373	371.8	375.8	375.5	375.7	375.4	379.7	378.8	382.7	381.7	382.9	381.7
BDA2090Ard	60231	58950	Roadway	960		0	0	0	0	0	383	381.7	375.5	375.5	375.4	375.4	378.8	378.8	381.7	381.7	381.7	381.7
BDA2090B	60245	60231	36" CSP	1068	10	16	16	25	36	31	375	373.3	377.1	375.8	377.0	375.7	381.8	379.7	383.4	382.7	383.5	382.9
BDA2090Brd	60245	60231	Roadway	1068		0	0	0	1	5	383	383.2	375.8	375.8	375.7	375.7	379.7	379.7	383.4	383.2	383.5	383.3
BDA2010C	80003	80002	Natural	56	100	406	482	294	591	716	361.7	361.9	368.0	368.0	368.4	368.4	366.9	366.9	369.0	369.0	369.7	369.7
BDA2010D	80004	80003	Natural	480	100	405	482	294	590	717	361.6	361.7	368.1	368.0	368.5	368.4	367.0	366.9	369.1	369.0	369.8	369.7
BDA2120A	80007	80004	Natural	2050	100	399	477	295	582	704	363	361.6	368.5	368.1	369.0	368.5	367.5	367.0	369.6	369.1	370.3	369.8
BDA2130B	80009	80007	Natural	1050	10	23	24	30	34	40	378	374.6	379.4	375.4	379.4	375.4	379.5	375.5	379.5	375.6	379.6	375.6
BDA2140A	58235	80007	Natural	200	10	37	36	58	79	87	369.4	365.7	370.8	368.5	370.8	369.0	371.0	367.5	371.2	369.6	371.3	370.3
BDA2140B	58946	58235	42" CSP	350	10	37	36	58	79	88	366	370.1	373.2	372.0	373.1	372.0	374.5	372.5	376.0	372.9	376.7	373.0
BDA2140Brd	58946	58235	Roadway	350		0	0	0	0	0	378	378.0	370.8	370.8	370.8	370.8	371.0	371.0	371.2	371.2	371.3	371.3
BDA2140C	58875	58946	42" CSP	1690	10	18	17	28	39	43	370	366.3	373.8	373.2	373.7	373.1	376.1	374.5	379.2	376.0	380.0	376.7
BDA2140Crd	58875	58946	Roadway	1690		0	0	0	0	0	380	378.4	373.2	373.2	373.1	373.1	374.5	374.5	376.0	376.0	380.0	378.4
BDA2130A	80010	80007	Natural	2000	100	355	418	326	516	652	367	364.6	371.5	368.5	371.8	369.0	371.6	367.5	372.3	369.6	372.9	370.3
BDA2170A	80014	80010	Natural	700	100	347	412	342	508	648	368	366.7	372.8	371.5	373.1	371.8	372.7	371.6	373.6	372.3	374.2	372.9

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA2170B	80015	80014	Bridge	135	100	347	412	344	509	650	369	368.3	372.9	372.8	373.2	373.1	372.9	372.7	373.7	373.6	374.3	374.2
BDA2180A	58854	80015	Natural	550	100	345	409	345	505	647	367	368.7	373.1	372.9	373.5	373.2	373.1	372.9	374.0	373.7	374.6	374.3
BDA2190B	58894	58854	84" CSP	445	10	106	125	109	163	261	369	367.4	373.2	373.1	373.7	373.5	373.2	373.1	374.2	374.0	375.5	374.6
BDA2190Brd	58894	58854	Roadway	445		0	0	0	0	0	382	381.8	373.1	373.1	373.5	373.5	373.1	373.1	374.0	374.0	374.6	374.6
BDA2190C	58893	58894	84" CSP	2163	10	93	111	93	140	243	371	368.5	374.5	373.2	375.0	373.7	374.4	373.2	375.7	374.2	379.3	375.5
BDA2190Crd	58893	58894	Roadway	2163		0	0	0	0	0	385	381.8	373.2	373.2	373.7	373.7	373.2	373.2	374.2	374.2	375.5	375.5
BDA2200A	58853	58893	84" CSP	469	10	79	95	70	127	247	371	370.8	374.8	374.5	375.3	375.0	374.7	374.4	376.1	375.7	380.1	379.3
BDA2200Ard	58853	58893	Roadway	469		0	0	0	0	0	385	384.6	374.5	374.5	375.0	375.0	374.4	374.4	375.7	375.7	379.3	379.3
BDA2200B	72463	58853	72" CSP	590	10	70	84	59	115	228	373	372.3	375.9	374.8	376.2	375.3	375.6	374.7	377.0	376.1	381.8	380.1
BDA2200Brd	72463	58853	Roadway	590		0	0	0	0	0	386	385.4	374.8	374.8	375.3	375.3	374.7	374.7	376.1	376.1	380.1	380.1
BDA2200C	72470	72463	72" CSP	705	10	70	84	59	115	228	374	372.9	376.9	375.9	377.3	376.2	376.6	375.6	378.2	377.0	384.4	381.8
BDA2200Crd	72470	72463	Roadway	705		0	0	0	0	0	387	385.6	375.9	375.9	376.2	376.2	375.6	375.6	377.0	377.0	381.8	381.8
BDA2200D	72474	72470	72" CSP	440	10	70	84	59	115	231	374	373.7	377.4	376.9	377.8	377.3	377.1	376.6	378.7	378.2	385.3	384.4
BDA2200Drd	72470	72474	Roadway	440		0	0	0	0	0	387	385.2	377.4	377.4	377.8	377.8	377.1	377.1	378.7	378.7	385.3	385.3
BDA2210A1	72515	72474	36" CSP	20	10	35	42	30	58	115	383	377.1	383.7	377.8	383.8	377.8	383.6	377.7	383.8	378.7	386.3	385.3
BDA2210A2	72515	72474	36" CSP	20	10	35	42	30	58	115	383	377.1	383.7	377.8	383.8	377.8	383.6	377.7	383.8	378.7	386.3	385.3
BDA2210Ard	72515	72474	Roadway	20		0	0	0	0	27	386	385.6	377.4	377.4	377.8	377.8	377.1	377.1	378.7	378.7	386.3	385.7
BDA2210B1	58997	72515	36" CSP	40	10	35	42	30	43	84	383	382.9	387.0	383.7	387.8	383.8	386.3	383.6	388.3	383.8	388.5	386.3
BDA2210B2	58997	72515	36" CSP	40	10	35	42	30	43	84	383	382.9	387.0	383.7	387.8	383.8	386.3	383.6	388.3	383.8	388.5	386.3
BDA2210Brd	58997	72515	Roadway	40		0	0	0	29	69	388	388.1	383.7	383.7	383.8	383.8	383.6	383.6	388.3	388.2	388.5	388.3
BDA2210C	69700	58997	Natural	900	10	92	101	119	152	228	381	382.7	387.0	387.0	387.8	387.8	386.3	386.3	388.3	388.3	388.5	388.5
BDA2220A	80017	69700	36" CSP	146	10	33	32	52	80	92	386	384.0	387.4	387.0	387.8	387.8	388.0	386.3	389.9	388.3	391.1	388.5
BDA2220Ard	80017	69700	Roadway	146		0	0	0	0	0	392	392.2	387.0	387.0	387.8	387.8	386.3	386.3	388.3	388.3	388.5	388.5
BDA2230A	69714	69700	60" CSP	869	10	88	88	132	149	158	381	380.5	388.0	387.0	389.0	387.8	389.1	386.3	391.5	388.3	393.0	388.5
BDA2230Ard	69714	69700	Roadway	869		0	0	0	0	0	393	392.0	387.0	387.0	387.8	387.8	386.3	386.3	388.3	388.3	388.5	388.5
BDA2240A	69732	69714	60" CSP	809	10	74	76	113	123	120	382	381.5	389.0	388.0	390.1	389.0	391.4	389.1	394.1	391.5	394.5	393.0
BDA2240Ard	69732	69714	Roadway	809		0	0	0	1	41	394	393.0	388.0	388.0	389.0	389.0	389.1	389.1	394.1	393.0	394.5	393.3
BDA2260A	80018	58854	Natural	1160	25	247	286	259	364	408	370	367.4	373.9	373.1	374.3	373.5	374.0	373.1	374.9	374.0	375.3	374.6
BDA2260B	80019	80018	Natural	260	25	231	267	241	336	378	368	369.8	374.2	373.9	374.5	374.3	374.2	374.0	375.1	374.9	375.5	375.3
BDA2260C	80020	80019	15x24 M baskhnd culvert	110	25	231	267	242	337	379	368	368.5	374.2	374.2	374.6	374.5	374.3	374.2	375.1	375.1	375.6	375.5
BDA2260D	80021	80020	Trapezoid	400	25	231	267	242	337	380	368	368.5	374.5	374.2	374.8	374.6	374.5	374.3	375.5	375.1	375.9	375.6
BDA2270A	80022	80021	13x26 M baskhnd culvert	129	25	231	267	243	337	380	368.4	368.4	374.5	374.5	374.9	374.8	374.6	374.5	375.5	375.5	375.9	375.9
BDA2280A	66548	80022	66" CSP	776	10	68	66	99	119	134	371	368.4	374.8	374.5	375.2	374.9	375.1	374.6	376.3	375.5	377.1	375.9
BDA2280Ard	66548	80022	Roadway	776		0	0	0	0	0	383	382.0	374.5	374.5	374.9	374.9	374.6	374.6	375.5	375.5	375.9	375.9
BDA2280B	58883	66548	60" CSP	1303	10	58	55	84	99	112	373	371.3	376.0	374.8	376.1	375.2	376.9	375.1	378.1	376.3	379.4	377.1
BDA2280Brd	58883	66548	Roadway	1303		0	0	0	0	0	384	383.1	374.8	374.8	375.2	375.2	375.1	375.1	376.3	376.3	377.1	377.1
BDA2290A	69242	58883	60" CSP	27	10	36	34	51	58	60	379	372.9	379.8	376.0	379.8	376.1	380.0	376.9	380.0	378.1	380.0	379.4
BDA2290Ard	69242	58883	Roadway	27		0	0	0	0	0	384	384.0	376.0	376.0	376.1	376.1	376.9	376.9	378.1	378.1	379.4	379.4
BDA2290B	69021	69242	Natural	1500	10	36	34	51	58	60	382	379.2	385.7	379.8	385.6	379.8	386.2	380.0	386.4	380.0	386.6	380.0
BDA2290C	60488	69021	54" CSP	12	10	37	34	53	69	71	379	382.2	385.7	385.7	385.6	385.6	386.2	386.2	386.5	386.4	386.6	386.6
BDA2290Crd	60488	69021	Roadway	12		0	0	0	1	13	386	386.4	385.7	385.7	385.6	385.6	386.2	386.2	386.5	386.4	386.6	386.6
BDA2300A	68209	60488	48" CSP	1121	10	18	17	26	33	38	380	379.5	385.9	385.7	385.8	385.6	386.7	386.2	387.1	386.5	387.5	386.6

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA2300Ard	68209	60488	Roadway	1121		0	0	0	0	0	388	386.4	385.7	385.7	385.6	385.6	386.2	386.2	386.5	386.5	386.6	386.6
BDA2300B	60565	68209	42"CSP	634	10	18	17	26	33	38	381	380.6	386.1	385.9	386.0	385.8	387.2	386.7	388.0	387.1	388.6	387.5
BDA2300Brd	60565	68209	Roadway	634		0	0	0	0	0	390	388.4	385.9	385.9	385.8	385.8	386.7	386.7	387.1	387.1	387.5	387.5
BDA2270B	80023	80022	Trapezoid	500	25	173	199	183	243	275	368	368.4	374.6	374.5	375.0	374.9	374.7	374.6	375.7	375.5	376.1	375.9
BDA2270C	80024	80023	15x24 M baskhnd culvert	90	25	172	198	182	242	273	368	368.4	374.6	374.6	375.0	375.0	374.7	374.7	375.7	375.7	376.1	376.1
BDA2270D	60115	80024	Natural	1300	25	171	197	176	238	268	372	368.4	376.0	374.6	376.2	375.0	376.0	374.7	376.5	375.7	376.8	376.1
BDA2320A	60238	60115	36" CSP	154	10	26	26	42	54	61	374	373.8	376.3	376.0	376.5	376.2	376.9	376.0	377.5	376.5	377.9	376.8
BDA2320Ard	60238	60115	Roadway	154		0	0	0	0	0	381	380.0	376.0	376.0	376.2	376.2	376.0	376.0	376.5	376.5	376.8	376.8
BDA2320B	60216	60238	36" CSP	1353	10	15	15	24	29	34	379	374.1	379.9	376.3	379.9	376.5	380.3	376.9	380.8	377.5	381.9	377.9
BDA2320Brd	60216	60238	Roadway	1353		0	0	0	0	0	385	380.8	376.3	376.3	376.5	376.5	376.9	376.9	377.5	377.5	377.9	377.9
BDA2320C	60123	60115	Natural	1290	25	155	175	164	214	239	372.7	371.9	378.4	376.0	378.6	376.2	378.5	376.0	378.9	376.5	379.2	376.8
BDA2340A	80025	60123	Natural	630	10	149	167	160	205	228	373.8	372.7	378.7	378.4	378.9	378.6	378.8	378.5	379.4	378.9	379.6	379.2
BDA2350A	60118	80025	Natural	840	10	125	136	147	171	185	376	373.8	380.1	378.7	380.3	378.9	380.4	378.8	380.8	379.4	381.0	379.6
BDA2350B	59972	60118	66" CSP	512	10	126	136	148	171	185	377	375.9	381.2	380.1	381.4	380.3	381.7	380.4	382.3	380.8	382.9	381.0
BDA2350Brd	59972	60118	Roadway	512		0	0	0	0	0	387	386.8	380.1	380.1	380.3	380.3	380.4	380.4	380.8	380.8	381.0	381.0
BDA2350C	60107	59972	60" CSP	97	10	126	136	148	171	185	378	377.2	382.0	381.2	382.3	381.4	382.7	381.7	383.5	382.3	384.4	382.9
BDA2350Crd	60107	59972	Roadway	97		0	0	0	0	0	387	386.8	381.2	381.2	381.4	381.4	381.7	381.7	382.3	382.3	382.9	382.9
BDA2360A	67069	60107	Natural	1250	10	121	129	147	167	183	379	376.8	383.3	382.0	383.5	382.3	383.8	382.7	384.4	383.5	385.0	384.4
BDA2380A	66573	67069	48" CSP	1309	10	36	36	56	68	78	381	379.3	384.1	383.3	384.4	383.5	385.8	383.8	387.2	384.4	388.3	385.0
BDA2380Ard	66573	67069	Roadway	1309		0	0	0	0	0	388	388.0	383.3	383.3	383.5	383.5	383.8	383.8	384.4	384.4	385.0	385.0
BDA2370A	60462	67069	Natural	600	10	79	84	98	109	119	381	378.5	383.4	383.3	383.6	383.5	384.0	383.8	384.5	384.4	385.1	385.0
BDA2370B	60463	60462	54" CSP culvert	55	10	79	83	97	109	119	381	380.8	384.6	383.4	384.8	383.6	385.3	384.0	385.8	384.5	386.4	385.1
BDA2370Brd	60463	60462	Roadway	55		0	0	0	0	0	390	390.2	383.4	383.4	383.6	383.6	384.0	384.0	384.5	384.5	385.1	385.1
BDA2370C	60460	60463	Natural	570	10	79	83	97	110	120	382	380.9	385.7	384.6	385.9	384.8	386.2	385.3	386.6	385.8	387.1	386.4
BDA2390A	60461	60460	54" CSP	102	10	80	83	98	111	121	382	381.7	386.3	385.7	386.5	385.9	387.0	386.2	387.6	386.6	388.3	387.1
BDA2390Ard	60461	60460	Roadway	102		0	0	0	0	0	390	390.0	385.7	385.7	385.9	385.9	386.2	386.2	386.6	386.6	387.1	387.1
BDA2390B	60455	60461	Natural	1000	10	68	71	88	97	106	383	382.1	387.3	386.3	387.5	386.5	387.9	387.0	388.3	387.6	388.8	388.3
BDA2395A	60454	60455	48" CSP culvert	45	10	68	71	91	101	112	383	383.5	387.9	387.3	388.0	387.5	388.8	387.9	389.4	388.3	390.1	388.8
BDA2395Ard	60454	60455	Roadway	45		0	0	0	0	0	392	392.0	387.3	387.3	387.5	387.5	387.9	387.9	388.3	388.3	388.8	388.8
BDA2395B	60456	60454	Natural	700	10	48	51	63	71	76	384	383.4	388.1	387.9	388.2	388.0	388.9	388.8	389.5	389.4	390.2	390.1
BDA2395C	68451	60456	48" CSP	1037	10	49	52	69	86	93	386	383.7	389.4	388.1	389.6	388.2	391.7	388.9	393.2	389.5	394.3	390.2
BDA2395Crd	68451	60456	Roadway	1037		0	0	0	0	0	395	393.0	388.1	388.1	388.2	388.2	388.9	388.9	389.5	389.5	390.2	390.2
BDA2400A	60541	68451	36" CSP	1086	10	10	10	16	24	27	388	387.0	389.8	389.4	389.9	389.6	392.5	391.7	395.2	393.2	396.5	394.3
BDA2400Ard	60541	68451	Roadway	1086		0	0	0	0	0	399	394.7	389.4	389.4	389.6	389.6	391.7	391.7	393.2	393.2	394.3	394.3
BDA2400B	60550	68451	36" CSP	472	10	19	22	29	30	33	387	386.2	389.8	389.4	390.2	389.6	392.4	391.7	393.5	393.2	394.5	394.3
BDA2400Brd	60550	68451	Roadway	472		0	0	0	0	0	395	394.3	389.4	389.4	389.6	389.6	391.7	391.7	393.2	393.2	394.3	394.3
BDA2400C	62088	60550	36" CSP	365	10	19	22	28	30	33	388	387.1	390.1	389.8	390.7	390.2	392.9	392.4	393.8	393.5	395.1	394.5
BDA2400Crd	62088	60550	Roadway	365		0	0	0	0	0	396	394.8	389.8	389.8	390.2	390.2	392.4	392.4	393.5	393.5	394.5	394.5
BDA2400D	62089	62088	36" CSP	336	10	19	22	28	30	33	388	387.6	390.5	390.1	391.2	390.7	393.4	392.9	394.5	393.8	395.8	395.1
BDA2400Drd	62089	62088	Roadway	336		0	0	0	0	7	395	395.6	390.5	390.5	391.2	391.2	393.4	393.4	394.5	394.5	395.8	395.7
BDA2400E	62090	62089	30" CSP	170	10	18	22	28	30	29	389	388.1	390.8	390.5	391.7	391.2	394.0	393.4	395.4	394.5	395.8	395.8
BDA2400Erd	62090	62089	Roadway	170		0	0	0	3	27	395	395.3	390.8	390.8	391.7	391.7	394.0	394.0	395.4	395.4	395.8	395.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA2400F	62024	62090	30" CSP	275	10	18	22	28	27	26	392	389.1	393.5	390.8	393.6	391.7	395.2	394.0	395.6	395.4	395.8	395.8
BDA2400Frd	62024	62090	Roadway	275		0	0	0	22	33	395	395.0	390.8	390.8	391.7	391.7	395.2	395.0	395.6	395.4	395.8	395.8
BDA2400G	62023	62024	3.5' x 2' Box culvert	28	10	18	22	28	26	25	392	392.3	393.6	393.5	393.8	393.6	395.3	395.2	395.6	395.6	395.8	395.8
BDA2400Grd	62023	62024	Roadway	28		0	0	1	23	33	395	395.2	393.5	393.5	393.6	393.6	395.3	395.2	395.6	395.6	395.8	395.8
BDA2400H	62022	62023	30" CSP	311	10	18	22	27	26	26	393	392.3	395.0	393.6	395.4	393.8	396.2	395.3	396.2	395.6	396.3	395.8
BDA2400Hrd	62022	62023	Roadway	311		0	0	8	18	25	396	395.3	393.6	393.6	393.8	393.8	396.2	395.4	396.2	395.6	396.3	395.8
BDA2400I	62093	62022	3.5' x 2' Box culvert	28	10	18	22	28	29	30	393	392.8	395.0	395.0	395.5	395.4	396.3	396.2	396.3	396.2	396.4	396.3
BDA2400Ird	62093	62022	Roadway	28		0	0	3	12	19	396	396.0	395.0	395.0	395.4	395.4	396.3	396.2	396.3	396.2	396.4	396.3
BDA2400J1	62094	62093	21" CSP	308	10	9	9	9	9	9	392	392.9	396.2	395.0	396.3	395.5	396.5	396.3	396.6	396.3	396.6	396.4
BDA2400J2	62094	62093	21" CSP	308	10	9	9	9	9	9	392	392.9	396.2	395.0	396.3	395.5	396.5	396.3	396.6	396.3	396.6	396.4
BDA2400Jrd	62094	62093	Roadway	308		0	6	20	27	34	396	396.2	396.2	396.2	396.3	396.3	396.5	396.4	396.6	396.4	396.6	396.5
BDA2400K1	62025	62094	21" CSP	27	10	9	9	9	8	8	393	392.1	396.2	396.2	396.3	396.3	396.5	396.5	396.6	396.6	396.6	396.6
BDA2400K2	62025	62094	21" CSP	27	10	9	9	9	8	8	393	392.1	396.2	396.2	396.3	396.3	396.5	396.5	396.6	396.6	396.6	396.6
BDA2400Krd	62025	62094	Roadway	27		18	20	29	33	40	395	395.8	396.2	396.2	396.3	396.3	396.5	396.5	396.6	396.6	396.6	396.6
BDA2400L1	62095	62025	21" CSP	109	10	11	11	16	18	18	394	393.3	396.8	396.2	397.0	396.3	398.0	396.5	398.3	396.6	398.4	396.6
BDA2400L2	62095	62025	21" CSP	109	10	11	11	16	18	18	394	393.3	396.8	396.2	397.0	396.3	398.0	396.5	398.3	396.6	398.4	396.6
BDA2400Lrd	62095	62025	Roadway	109		0	0	0	0	7	398	395.3	396.2	396.2	396.3	396.3	396.5	396.5	398.3	396.6	398.4	396.6
BDA2400M	69935	62095	30" CSP	353	10	22	22	33	34	34	395	394.2	398.0	396.8	398.2	397.0	400.6	398.0	400.7	398.3	400.7	398.4
BDA2400Mrd	69935	62095	Roadway	353		0	0	0	5	12	401	398.3	396.8	396.8	397.0	397.0	400.6	398.3	400.7	398.4	400.7	398.4
BDA2410A	80027	80025	Natural	680	10	25	30	19	38	45	374.7	373.8	378.7	378.7	379.0	378.9	378.8	378.8	379.4	379.4	379.6	379.6
BDA2410B	60102	80027	Natural	580	10	21	25	24	34	40	375.0	374.7	378.8	378.7	379.0	379.0	378.9	378.8	379.4	379.4	379.6	379.6
BDA2420A1	60101	60102	48" CMP culverts	120	10	11	13	14	19	22	375	375.1	378.8	378.8	379.0	379.0	378.9	378.9	379.4	379.4	379.7	379.6
BDA2420A2	60101	60102	48" CMP culverts	120	10	11	13	14	19	22	375	375.0	378.8	378.8	379.0	379.0	378.9	378.9	379.4	379.4	379.7	379.6
BDA2420Ard	60101	60102	Roadway	120		0	0	0	0	0	385	384.9	378.8	378.8	379.0	379.0	378.9	378.9	379.4	379.4	379.6	379.6
BDA2430A	61733	60101	Natural	700	10	14	15	18	23	27	376.1	375.3	378.8	378.8	379.0	379.0	378.9	378.9	379.5	379.4	379.7	379.7
Bethel Danebo - A3 Channel																						
BDA3010A	61607	80044	Natural	2400	100	457	541	336	584	665	374.9	370.0	381.1	381.0	381.4	381.2	379.2	379.1	381.5	381.4	381.7	381.6
BDA3020A1	61608	61607	6' x 10' Concrete Box culvert	100	100	236	275	170	298	337	375.0	374.9	381.2	381.1	381.5	381.4	379.2	379.2	381.6	381.5	382.0	381.7
BDA3020A2	61608	61607	6' x 10' Concrete Box culvert	100	100	236	275	170	298	337	375.0	374.9	381.2	381.1	381.5	381.4	379.2	379.2	381.6	381.5	382.0	381.7
BDA3020Ard	61608	61607	Roadway	100		0	0	0	0	0	385.6	385.6	381.1	381.1	381.4	381.4	379.2	379.2	381.5	381.5	381.7	381.7
BDA3020B	67113	61608	Natural	2470	100	467	537	349	588	658	376.6	375.0	381.8	381.2	382.3	381.5	380.8	379.2	382.4	381.6	382.9	382.0

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA3030A1	61694	67113	6' x 10' Concrete Box culvert	83	100	236	271	175	297	332	376.7	376.6	382.0	381.8	382.5	382.3	381.0	380.8	382.7	382.4	383.1	382.9
BDA3030A2	61694	67113	6' x 10' Concrete Box culvert	83	100	236	271	175	297	332	376.7	376.6	382.0	381.8	382.5	382.3	381.0	380.8	382.7	382.4	383.1	382.9
BDA3030Ard	61694	67113	Roadway	83		0	0	0	0	0	385.4	385.4	381.8	381.8	382.3	382.3	380.8	380.8	382.4	382.4	382.9	382.9
BDA3030B	80045	61694	Natural	850	100	460	528	349	579	646	376.6	376.7	382.4	382.0	383.0	382.5	381.6	381.0	383.1	382.7	383.6	383.1
BDA3030C	80050	80045	Natural	1600	100	263	323	198	381	446	380.6	376.6	383.8	382.4	384.2	383.0	384.0	381.6	384.9	383.1	385.1	383.6
BDA3040A	80051	80050	Natural	32	100	233	280	171	303	347	380.2	380.6	384.0	383.8	384.4	384.2	384.0	384.0	384.9	384.9	385.2	385.1
BDA3040B	80052	80051	Natural	350	100	233	279	171	303	346	380.6	380.2	384.5	384.0	384.9	384.4	384.2	384.0	385.2	384.9	385.5	385.2
BDA3040D	modpt	80052	Natural	1100	10	16	16	26	31	35	382.6	380.6	384.5	384.5	384.9	384.9	384.9	384.2	385.5	385.2	385.7	385.5
BDA3040C	63147	80052	Natural	2370	100	226	269	171	294	336	381.5	380.6	387.1	384.5	387.6	384.9	386.5	384.2	387.8	385.2	388.2	385.5
BDA3060A	63130	63147	Natural	470	100	216	253	168	280	321	383.0	381.5	387.3	387.1	387.8	387.6	386.7	386.5	388.0	387.8	388.4	388.2
BDA3070A	63207	63147	36" CSP	892	10	11	11	16	18	21	383.7	381.5	387.2	387.1	387.7	387.6	386.5	386.5	388.0	387.8	388.6	388.2
BDA3070Ard	63207	63147	Roadway	892		0	0	0	0	0	396.0	391.4	387.2	387.2	387.7	387.7	386.5	386.5	388.0	388.0	388.6	388.6
BDA3080A	63129	63130	7' x 10' Concrete Box culvert	96	100	216	254	168	280	321	382.9	383.0	387.6	387.3	388.0	387.8	386.9	386.7	388.3	388.0	388.7	388.4
BDA3080Ard	63129	63130	Roadway	96		0	0	0	0	0	391.8	391.8	387.3	387.3	387.8	387.8	386.7	386.7	388.0	388.0	388.4	388.4
BDA3080C1	80055	80054	Natural	750	100	208	241	209	276	310	383.6	382.2	390.2	390.2	390.7	390.7	389.7	389.7	391.1	391.1	391.5	391.5
BDA3080C2	80056	80055	Natural	750	100	247	273	359	340	378	384.5	383.6	390.3	390.2	390.8	390.7	389.8	389.7	391.1	391.1	391.5	391.5
BDA3080D	63309	80056	Natural	700	100	303	320	400	423	470	386.0	384.8	390.3	390.3	390.8	390.8	389.8	389.8	391.1	391.1	391.6	391.5
BDA3090A	67158	63309	7' x 10' Concrete Box culvert	96	100	331	344	424	464	516	386.5	386.3	390.7	390.3	391.1	390.8	391.3	390.1	391.6	391.1	392.1	391.6
BDA3090Ard	67158	63309	Roadway	96		0	0	0	0	0	395.5	395.0	390.3	390.3	390.8	390.8	389.8	389.8	391.1	391.1	391.6	391.6
BDA3090B	63276	67158	Natural	1300	100	313	325	404	436	480	386.8	385.2	392.1	390.7	392.3	391.1	392.7	391.3	392.9	391.6	393.2	392.1
BDA3110D	63359	63307	36" CSP	160	10	28	28	41	47	55	388.4	389.3	393.0	392.6	393.2	392.9	394.1	393.3	394.5	393.7	395.1	394.1
BDA3110DRD	63359	63307	Roadway	160		0	0	0	0	1	395.0	395.0	392.6	392.6	392.9	392.9	393.3	393.3	393.7	393.7	395.1	395.0
BDA3110C	63307	63275	Natural	1300	10	25	27	32	36	42	389.3	388.2	392.6	392.5	392.9	392.7	393.3	393.2	393.7	393.6	394.1	394.0
BDA3110A	63275	63276	42" CMP	160	10	26	28	34	34	37	388.2	388.1	392.5	392.1	392.7	392.3	393.2	392.7	393.6	392.9	394.0	393.2
BDA3110Ard	63275	63276	Roadway	160		0	0	0	0	0	396.6	396.6	392.1	392.1	392.3	392.3	392.7	392.7	392.9	392.9	393.2	393.2
BDA3100A	63303	63276	Natural	600	100	270	278	355	379	415	387.2	386.8	392.4	392.1	392.6	392.3	393.0	392.7	393.2	392.9	393.5	393.2
BDA3120A	63326	63303	42" CSP	140	10	23	21	31	50	60	387.7	387.2	392.5	392.4	392.6	392.6	393.1	393.0	393.4	393.2	393.7	393.5
BDA3120Ard	63326	63303	Roadway	140		0	0	0	0	0	397.0	397.0	392.4	392.4	392.6	392.6	393.0	393.0	393.2	393.2	393.5	393.5
BDA3100B	63305	63303	Natural	1900	100	254	259	341	364	387	388.6	387.2	393.8	392.4	393.9	392.6	394.5	393.0	394.6	393.2	394.8	393.5
BDA3150C	63349	63332	42" CSP	27	10	32	31	48	56	67	388.9	388.9	394.4	394.4	394.5	394.4	395.9	395.7	396.5	396.3	397.0	396.8
BDA3150Crd	63349	63332	Roadway	27		0	0	0	0	0	397.1	396.9	394.4	394.4	394.4	394.4	395.7	395.7	396.3	396.3	396.8	396.8
BDA3150B	63332	63335	60" CSP	275	10	74	70	106	127	135	388.6	388.2	394.4	394.1	394.4	394.2	395.7	395.1	396.3	395.4	396.8	395.8
BDA3150Brd	63332	63335	Roadway	275		0	0	0	0	0	396.9	396.0	394.1	394.1	394.2	394.2	395.1	395.1	395.4	395.4	395.8	395.8
BDA3150A	63335	63305	48" CSP	80	10	74	70	106	127	135	387.8	388.6	394.1	393.8	394.2	393.9	395.1	394.5	395.4	394.6	395.8	394.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDA3150Ard	63335	63305	Roadway	80		0	0	0	0	0	399.0	396.0	394.1	394.1	394.2	394.2	395.1	395.1	395.4	395.4	395.8	395.8
BDA3160A	66631	63332	48" CSP	693	10	42	39	59	71	71	391.0	388.7	395.2	394.4	395.1	394.4	397.3	395.7	398.6	396.3	398.9	396.8
BDA3160Ard	66631	63332	Roadway	693		0	0	0	0	5	398.6	398.4	394.4	394.4	394.4	394.4	395.7	395.7	398.6	398.4	398.9	398.5
BDA3180A	63351	63305	48" CSP	70	10	59	61	83	86	94	387.5	388.7	394.1	393.8	394.2	393.9	394.9	394.5	395.1	394.6	395.4	394.8
BDA3180Ard	63351	63305	Roadway	70		0	0	0	0	0	399.0	397.9	394.1	394.1	394.2	394.2	394.9	394.9	395.1	395.1	395.4	395.4
BDA3180B	63369	63351	48" CSP	889	10	58	60	83	86	86	390.7	387.5	395.8	394.1	396.0	394.2	398.6	394.9	398.7	395.1	399.0	395.4
BDA3180Brd	63369	63351	Roadway	889		0	0	0	2	12	398.6	397.9	394.1	394.1	394.2	394.2	394.9	394.9	398.7	397.9	399.0	398.0
BDA3180C	63810	63369	48" CSP	939	10	32	33	49	50	49	392.9	390.7	396.3	395.8	396.6	396.0	399.5	398.6	400.0	398.7	400.2	399.0
BDA3180Crd	63810	63369	Roadway	939		0	0	0	0	8	400.0	398.6	395.8	395.8	396.0	396.0	398.6	398.6	400.0	398.7	400.2	399.0
BDA3180D	63811	63810	42" CSP	400	10	31	33	49	50	51	393.7	392.9	396.7	396.3	397.0	396.6	400.2	399.5	400.5	400.0	400.7	400.2
BDA3180Drd	63811	63810	Roadway	400		0	0	2	16	27	400.0	400.0	396.3	396.3	396.6	396.6	400.2	400.0	400.5	400.2	400.7	400.2
BDA3130A	63364	63305	66" CSP	90	10	128	132	161	175	182	387.2	388.6	394.1	393.8	394.2	393.9	394.8	394.5	395.0	394.6	395.3	394.8
BDA3130Ard	63364	63305	Roadway	90		0	0	0	0	0	399.0	398.0	394.1	394.1	394.2	394.2	394.8	394.8	395.0	395.0	395.3	395.3
BDA3130B	63822	63364	60" CSP	2417	10	109	113	135	136	136	391.4	387.6	399.2	394.1	399.6	394.2	402.3	394.8	402.4	395.0	402.6	395.3
BDA3130Brd	63822	63364	Roadway	2417		0	0	0	2	13	402.3	398.0	394.1	394.1	394.2	394.2	402.3	398.0	402.4	398.0	402.6	398.2
BDA3200A	63826	63822	60" CSP	949	10	89	92	116	115	117	392.9	391.4	400.6	399.2	401.1	399.6	404.4	402.3	404.7	402.4	405.0	402.6
BDA3200Ard	63826	63822	Roadway	949		0	0	0	0	9	404.8	402.3	399.2	399.2	399.6	399.6	402.3	402.3	402.4	402.4	405.0	402.6
BDA3210A	63800	63826	60" CSP	1774	10	66	68	98	92	95	395.3	392.9	402.0	400.6	402.6	401.1	406.0	404.4	406.3	404.7	406.6	405.0
BDA3210Ard	63800	63826	Roadway	1774		0	0	1	8	23	405.9	404.8	400.6	400.6	401.1	401.1	406.0	404.8	406.3	404.9	406.6	405.0
BDA3220A	63797	63800	48" CSP	722	10	32	32	67	58	60	396.9	395.3	402.5	402.0	403.0	402.6	406.4	406.0	406.5	406.3	406.7	406.6
BDA3220Ard	63797	63800	Roadway	722		0	0	7	16	26	406.0	405.9	402.0	402.0	402.6	402.6	406.4	406.0	406.5	406.3	406.7	406.6
BDA3220B	63795	63797	42" CSP	713	10	32	32	59	50	51	398.3	396.9	403.4	402.5	403.9	403.0	406.7	406.4	406.8	406.5	407.0	406.7
BDA3220Brd	63795	63797	Roadway	713		0	0	24	30	41	406.0	406.0	402.5	402.5	403.0	403.0	406.7	406.4	406.8	406.5	407.0	406.7
Bethel Danebo - Greenhill Tributary																						
BDGH050A1	80036	80070	36" CMP	45	25	84	91	89	102	109	365.7	365.5	371.0	371.0	371.7	370.7	371.4	371.0	372.5	371.7	373.3	371.7
BDGH050A2	80036	80057	36" CMP	45	25	61	68	66	79	85	365.4	366.0	371.0	371.0	371.7	370.7	371.4	371.0	372.5	371.7	373.3	371.7
BDGH050B	80035	80036	Natural	30	25	145	162	158	180	194	366.4	365.4	371.0	371.0	371.7	371.7	371.3	371.4	372.5	372.5	373.3	373.3
BDGH050C	81000	80035	Natural	1875	10	151	162	178	201	216	369.0	366.4	372.3	371.0	372.6	371.7	372.6	371.3	373.2	372.5	373.7	373.3
BDGH050D	81001	81000	Natural	120	25	152	164	177	206	228	369.1	369.0	372.6	372.3	372.8	372.6	372.9	372.6	373.3	373.2	373.8	373.7
BDGH050E	80037	81001	Natural	20	25	152	164	177	206	229	368.5	369.1	372.7	372.6	372.8	372.8	373.0	372.9	373.4	373.3	373.9	373.8
BDGH064A1	81002	80037	3.4' x 5.1' Rectangle	15	10	78	84	93	106	117	369.0	368.5	372.9	372.7	373.2	372.8	373.3	373.0	373.8	373.4	374.3	373.9
BDGH064A2	81002	80037	3.4' x 5.1' Rectangle	15	10	64	70	75	86	94	369.0	368.5	372.9	372.7	373.2	372.8	373.3	373.0	373.8	373.4	374.3	373.9
BDGH064Ard	81002	80037	Roadway	2700		0	0	0	0	0	374.3	374.2	372.7	372.7	372.8	372.8	373.0	373.0	373.4	373.4	373.9	373.9
BDGH064B	81003	81002	Natural	22	10	142	154	167	192	212	369.2	369.0	372.9	372.9	373.2	373.2	373.3	373.3	373.8	373.8	374.3	374.3
BDGH064C	80038	81003	Natural	26	10	142	154	167	192	212	369.5	369.2	373.0	372.9	373.2	373.2	373.4	373.3	373.8	373.8	374.3	374.3
BDGH064D	81004	80038	Natural	32	10	109	117	128	148	167	369.8	369.5	373.0	373.0	373.3	373.2	373.4	373.4	373.8	373.8	374.3	374.3
BDGH064E	81015	81004	Natural	395	10	109	117	128	149	168	370.1	369.8	374.0	373.0	374.1	373.3	374.3	373.4	374.6	373.8	375.0	374.3
BDGH064F	80064	81015	Natural	437	10	109	118	128	149	169	370.2	370.1	374.4	374.0	374.5	374.1	374.7	374.3	375.1	374.6	375.5	375.0
BDGH060B	80040	80071	Natural	835	10	26	29	31	37	42	370.0	369.7	373.3	373.2	373.5	373.4	373.6	373.5	374.0	373.9	374.4	374.4
BDGH060	80071	80038	Natural	835	10	34	37	40	47	54	369.7	369.5	373.2	373.0	373.4	373.2	373.5	373.4	373.9	373.8	374.4	374.3
BDGH062A	80065	80064	Natural	205	10	101	109	119	138	157	370.6	370.2	374.5	374.4	374.7	374.5	374.9	374.7	375.3	375.1	375.7	375.5
BDGH062B	81005	80065	Natural	597	10	101	109	119	139	159	371.9	370.6	375.4	374.5	375.6	374.7	375.9	374.9	376.3	375.3	376.7	375.7
BDGH062C	70559	81005	Natural	58	10	101	109	120	140	160	371.5	371.9	375.5	375.4	375.7	375.6	375.9	375.9	376.4	376.3	376.8	376.7
BDGH066	70560	70559	24" CSP	117	10	2	2	3	2	2	371.7	371.4	375.5	375.5	375.7	375.7	375.9	375.9	376.4	376.4	376.8	376.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
BDGH066rd	70560	70559	Roadway	117		4	3	2	3	3	375.0	373.0	375.5	375.5	375.7	375.7	375.9	375.9	376.4	376.4	376.8	376.8
BDGH075A	81007	70559	Natural	545	10	84	90	99	116	132	371.2	371.5	375.9	375.5	376.1	375.7	376.3	375.9	376.8	376.4	377.1	376.8
BDGH075B	70538	81007	Natural	55	10	84	90	102	118	134	370.1	371.2	375.9	375.9	376.1	376.1	376.4	376.3	376.8	376.8	377.1	377.1
BDGH068	70539	70538	24" CSP	67	10	6	5	8	11	13	370.3	370.1	375.9	375.9	376.1	376.1	376.4	376.4	376.9	376.8	377.2	377.1
BDGH068rd	70539	70538	Roadway	67		0	0	0	0	0	377.5	375.0	375.9	375.9	376.1	376.1	376.4	376.4	376.8	376.8	377.1	377.1
BDGH070	59949	68192	27" CSP	335	10	5	5	7	10	12	373.1	372.9	376.0	376.0	376.2	376.2	376.5	376.5	377.0	376.9	377.4	377.3
BDGH070rd	59949	68192	Roadway	335		0	0	0	0	0	379.0	377.8	376.0	376.0	376.2	376.2	376.5	376.5	376.9	376.9	377.3	377.3
BDGH075C	81009	70538	Natural	173	10	80	86	98	113	127	371.1	370.1	375.9	375.9	376.1	376.1	376.4	376.4	376.8	376.8	377.1	377.1
BDGH075D	81010	81009	Natural	22	10	80	86	99	114	130	371.2	371.1	375.9	375.9	376.1	376.1	376.4	376.4	376.8	376.8	377.1	377.1
BDGH075E	80039	81010	Natural	35	10	81	86	101	116	131	370.9	371.2	375.9	375.9	376.1	376.1	376.4	376.4	376.8	376.8	377.1	377.1
BDGH075F1	68192	80039	54" CSP	57	10	26	28	31	36	40	371.2	370.9	376.0	375.9	376.2	376.1	376.5	376.4	376.9	376.8	377.3	377.1
BDGH075F2	68192	80039	48" CSP	57	10	20	21	24	28	31	371.2	371.1	376.0	375.9	376.2	376.1	376.5	376.4	376.9	376.8	377.3	377.1
BDGH075F3	68192	80039	54" CSP	57	10	24	26	31	35	39	371.2	371.2	376.0	375.9	376.2	376.1	376.5	376.4	376.9	376.8	377.3	377.1
BDGH075G	80069	68192	4' x 8' Concrete Box Culvert	549	10	66	71	79	92	104	371.8	371.2	376.1	376.0	376.3	376.2	376.7	376.5	377.2	376.9	377.6	377.3
BDGH075Grd	80069	68192	Roadway	549	10	0	0	0	0	0	378.2	378.1	376.0	376.0	376.2	376.2	376.5	376.5	376.9	376.9	377.3	377.3
BDGH080B	70177	70170	42" CSP	520	10	12	11	18	28	32	372.5	372.0	376.0	376.0	376.3	376.2	376.7	376.5	377.2	376.9	377.9	377.3
BDGH080BRD	70177	70170	Roadway	520		0	0	0	0	0	379.0	377.9	376.0	376.0	376.3	376.3	376.7	376.7	377.2	377.2	377.9	377.9
BDGH080A	70170	80039	42" CSP	520	10	12	11	18	28	32	372.0	371.5	376.0	375.9	376.2	376.1	376.5	376.4	376.9	376.8	377.3	377.1
BDGH080ARD	70170	80039	Roadway	520		0	0	0	0	0	380.0	378.5	375.9	375.9	376.1	376.1	376.4	376.4	376.8	376.8	377.1	377.1
BDGH090	59945	80069	Rectangle	296	10	57	61	71	80	91	372.2	371.8	376.2	376.1	376.4	376.3	376.8	376.7	377.4	377.2	377.9	377.6
BDGH090rd	59945	80069	Roadway	296		0	0	0	0	0	378.4	378.2	376.1	376.1	376.3	376.3	376.7	376.7	377.2	377.2	377.6	377.6
BDGH100A	60116	59945	Natural	990	10	8	9	12	12	13	373.3	371.6	376.2	376.2	376.4	376.4	376.8	376.8	377.4	377.4	377.9	377.9
BDGH100B	60210	60116	48" CSP Culvert	100	10	10	10	16	23	28	374.3	373.3	376.2	376.2	376.4	376.4	376.8	376.8	377.4	377.4	377.9	377.9
BDGH100Brd	60210	60116	Roadway	100		0	0	0	0	0	379.5	379.0	376.2	376.2	376.4	376.4	376.8	376.8	377.4	377.4	377.9	377.9
BDGH100C	60212	60210	36" CSP	632	10	11	10	17	25	29	375.0	374.3	376.6	376.2	376.7	376.4	377.2	376.8	377.7	377.4	378.4	377.9
BDGH100Crd	60212	60210	Roadway	632		0	0	0	0	0	381.7	379.0	376.2	376.2	376.4	376.4	376.8	376.8	377.4	377.4	377.9	377.9
BDGH110A	60111	59945	Natural	1660	10	30	31	43	47	53	374.0	371.8	376.5	376.2	376.7	376.4	377.1	376.8	377.6	377.4	378.1	377.9
BDGH110B	60196	60111	48" CMP Culvert	44	10	33	32	51	63	74	374.1	374.0	376.7	376.5	376.8	376.7	377.3	377.1	377.7	377.6	378.3	378.1
BDGH110BRD	60196	60111	Roadway	44		0	0	0	0	0	380.2	380.2	376.5	376.5	376.7	376.7	377.1	377.1	377.6	377.6	378.1	378.1
BDGH120A1	80041	80040	48" CMP Culvert	41	10	14	15	17	21	23	370.8	370.8	373.4	373.3	373.6	373.5	373.7	373.6	374.1	374.0	374.5	374.4
BDGH120A2	80041	80040	48" CMP Culvert	41	10	14	15	17	20	23	371.0	370.8	373.4	373.3	373.6	373.5	373.7	373.6	374.1	374.0	374.5	374.4
BDGH120B	80042	80041	Natural	2070	10	12	13	15	18	20	371.7	370.3	373.6	373.4	373.7	373.6	373.9	373.7	374.2	374.1	374.5	374.5
BDGH120C	80043	80042	72" CMP Culvert	24	10	14	14	21	27	32	371.7	371.7	373.6	373.6	373.8	373.7	373.9	373.9	374.2	374.2	374.5	374.5
BDGH120D	61605	80043	Natural	560	10	15	14	22	31	37	375.2	371.7	376.1	373.6	376.1	373.8	376.3	373.9	376.5	374.2	376.6	374.5
BDGH120E	61601	61605	42" CSP	50	10	15	14	22	32	38	373.6	375.2	376.3	376.1	376.2	376.1	376.6	376.3	376.9	376.5	377.1	376.6
BDGH120Erd	61601	61605	Roadway	50		0	0	0	0	0	379.5	378.8	376.3	376.3	376.2	376.2	376.6	376.6	376.9	376.9	377.1	377.1
BDGH130	69068	61601	42" CSP	152	10	15	14	22	32	38	374.1	373.6	376.3	376.3	376.3	376.2	376.6	376.6	377.1	376.9	377.4	377.1
BDGH130rd	69068	61601	Roadway	152		0	0	0	0	0	379.3	378.8	376.3	376.3	376.2	376.2	376.6	376.6	376.9	376.9	377.1	377.1

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE BETHEL DANEBO STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Structure ID	Node ID		Structure Size/Type	Structure Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Bethel Danebo - Roosevelt Channel																						
BDRC010A	80046	80045	66" CSP	19	25	206	216	197	242	262	377.5	377.4	383.5	382.4	384.1	383.0	382.8	381.6	384.4	383.1	385.3	383.6
BDRC010Ard	80046	80045	Roadway	19		0	0	0	0	0	388.0	384.0	383.5	383.5	384.1	384.1	382.8	382.8	384.4	384.4	385.3	385.3
BDRC010B	67117	80046	Natural	450	25	207	216	198	243	263	378.4	377.5	383.8	383.5	384.3	384.1	383.3	382.8	384.6	384.4	385.4	385.3
BDRC010C1	61727	67117	60" CSP	132	50	103	108	100	123	132	378.4	378.5	384.4	383.8	384.9	384.3	383.8	383.3	385.5	384.6	386.4	385.4
BDRC010C2	61727	67117	60" CSP	132	50	104	109	98	121	132	378.7	378.4	384.4	383.8	384.9	384.3	383.8	383.3	385.5	384.6	386.4	385.4
BDRC010Crd	61727	67117	Roadway	132		0	0	0	0	0	388.4	388.4	383.8	383.8	384.3	384.3	383.3	383.3	384.6	384.6	385.4	385.4
BDRC010D	80047	61727	Natural	1360	25	182	191	192	232	245	379.5	378.4	384.9	384.4	385.5	384.9	384.7	383.8	386.2	385.5	387.2	386.4
BDRC020A	61732	80047	36" CSP	110	10	19	19	27	28	33	381.9	380.5	385.0	384.9	385.6	385.5	384.8	384.7	386.3	386.2	387.2	387.2
BDRC020Ard	61732	80047	Roadway	110		0	0	0	0	12	386.8	386.8	384.9	384.9	385.5	385.5	384.7	384.7	386.2	386.2	387.2	387.2
BDRC020B	80049	61732	Natural	520	10	20	19	29	30	34	383.3	381.6	385.1	385.0	385.6	385.6	385.2	384.8	386.3	386.3	387.2	387.2
BDRC020C	61741	80049	Natural	1300	10	21	21	30	34	40	384.7	383.3	387.0	385.1	386.9	385.6	387.4	385.2	387.6	386.3	387.8	387.2
BDRC010E1	80048	80047	6' X 6' Concrete box culvert	49	25	84	88	89	110	128	379.6	379.5	385.0	384.9	385.5	385.5	384.8	384.7	386.3	386.2	387.2	387.2
BDRC010E2	80048	80047	6' X 6' Concrete box culvert	49	25	85	89	90	112	130	379.6	379.5	385.0	384.9	385.5	385.5	384.8	384.7	386.3	386.2	387.2	387.2
BDRC010Erd	80048	80047	Roadway	49		0	0	0	0	49	386.8	386.8	384.9	384.9	385.5	385.5	384.7	384.7	386.2	386.2	387.2	387.2
BDRC010F	67120	80048	Natural	1130	25	170	178	178	225	266	380.0	379.6	385.4	385.0	385.8	385.5	385.3	384.8	386.5	386.3	387.4	387.2
BDRC030A	61743	67120	78" CSP	110	25	171	178	178	227	274	380.2	380.0	386.0	385.4	386.4	385.8	386.0	385.3	387.4	386.5	388.4	387.4
BDRC030Ard	61743	67120	Roadway	110		0	0	0	0	0	389.0	389.0	385.4	385.4	385.8	385.8	385.3	385.3	386.5	386.5	387.4	387.4
BDRC030B	61934	61743	Natural	1500	10	162	169	178	226	271	381.4	380.2	386.4	386.0	386.7	386.4	386.4	386.0	387.6	387.4	388.6	388.4
BDRC030C	61935	61934	48" CSP	105	10	165	171	181	179	179	381.1	381.4	390.2	386.4	390.9	386.7	391.1	386.4	391.8	387.6	392.0	388.6
BDRC030Crd	61935	61934	Roadway	105		0	0	1	65	122	391.0	391.0	386.4	386.4	386.7	386.7	391.1	391.0	391.8	391.4	392.0	391.7
BDRC030D	61959	61935	Natural	800	10	185	187	239	249	289	382.9	381.1	390.3	390.2	391.0	390.9	391.2	391.1	391.8	391.8	392.1	392.0
BDRC040A	61977	61959	Natural	2400	10	162	157	231	247	267	387.2	382.9	391.1	390.3	391.5	391.0	392.2	391.2	392.5	391.8	392.8	392.1
BDRC050B	69260	61977	54" CSP	126	10	77	77	109	113	123	387.5	387.7	391.5	391.1	391.8	391.5	392.8	392.2	393.0	392.5	393.5	392.8
BDRC050Brd	69260	61977	Roadway	126		0	0	0	0	0	397.8	397.5	391.1	391.1	391.5	391.5	392.2	392.2	392.5	392.5	392.8	392.8
BDRC050C	69952	69260	54" CSP	1973	10	78	77	110	112	111	389.4	387.5	394.9	391.5	395.2	391.8	399.8	392.8	400.0	393.0	400.3	393.5
BDRC050Crd	69952	69260	Roadway	1973		0	0	0	4	18	399.8	397.8	391.5	391.5	391.8	391.8	399.8	397.8	400.0	397.8	400.3	398.0
BDRC050A	66603	61977	60" CSP	1520	10	66	63	91	103	114	388.6	387.2	392.5	391.1	392.5	391.5	394.3	392.2	395.0	392.5	395.8	392.8
BDRC050Ard	66603	61977	Roadway	1520		0	0	0	0	0	400.3	397.5	391.1	391.1	391.5	391.5	392.2	392.2	392.5	392.5	392.8	392.8
BDRC060A	62329	66603	48" CSP	1336	10	55	52	73	81	83	393.1	388.6	395.5	392.5	395.4	392.5	398.4	394.3	400.7	395.0	401.3	395.8
BDRC060Ard	62329	66603	Roadway	1336		0	0	0	0	0	402.7	400.3	392.5	392.5	392.5	392.5	394.3	394.3	395.0	395.0	395.8	395.8
BDRC070A	62317	62329	48" CSP	2018	10	40	38	55	60	59	396.1	393.1	398.9	395.5	398.8	395.4	401.8	398.4	403.0	400.7	403.3	401.3
BDRC070Ard	62317	62329	Roadway	2018		0	0	0	0	4	402.9	402.7	395.5	395.5	395.4	395.4	398.4	398.4	403.0	402.7	403.3	402.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE LAUREL HILL STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions				Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)							
												10-Year		25-Year Winter		25-Year Summer		50-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	US	DS	US	DS	US	DS	US	DS	US	DS
Laurel Hill - Glenwood																			
LHGL010A	72145	72146	Natural	150	25	127	134	118	142	419.8	415.1	425.1	425.0	425.2	425.0	425.1	425.0	425.2	425.0
LHGL010B	72144	72145	46" CSP culvert	120	25	127	134	118	142	422.8	421.5	428.3	425.1	428.7	425.2	427.7	425.1	429.1	425.2
LHGL010BRD	72144	72145	Roadway	120		0	0	0	0	460.0	458.7	425.1	425.1	425.2	425.2	425.1	425.1	425.2	425.2
LHGL010C	72143	72144	Natural	90	25	127	135	118	142	423.8	422.8	428.4	428.3	428.8	428.7	427.8	427.7	429.3	429.1
LHGL010D1	72142	72143	30" CMP culvert	70	25	34	34	34	34	424.9	424.5	429.4	428.4	429.5	428.8	429.3	427.8	429.7	429.3
LHGL010D2	72142	72143	30" CMP culvert	70	25	33	33	34	33	424.8	424.6	429.4	428.4	429.5	428.8	429.3	427.8	429.7	429.3
LHGL010DRD	72142	72143	Roadway	70		308	364	221	463	428.6	428.2	429.4	429.0	429.5	429.1	429.3	428.9	429.7	429.3
LHGL010E	72597	72598	Natural	150	25	233	273	162	354	424.8	420.8	427.1	425.0	427.3	425.0	426.7	425.0	427.6	425.0
LHGL010F	72143	72597	Natural	340	25	233	273	162	354	425.5	424.8	428.4	427.1	428.8	427.3	427.8	426.7	429.3	427.6
LHGL020A	72596	72142	Natural	110	25	353	402	275	492	426.2	424.3	430.2	429.4	430.2	429.5	430.0	429.3	430.5	429.7
LHGL020B	56526	72596	Natural	70	25	194	229	214	297	426.5	426.2	430.7	430.2	430.9	430.2	430.8	430.0	431.2	430.5
LHGL020C	56525	56526	60" CMP culvert	79	25	194	229	215	297	427.6	426.8	433.9	430.8	435.2	431.1	434.6	431.0	438.0	431.5
LHGL020CRD	56525	56526	Roadway	79		0	0	0	0	442.9	442.2	430.7	430.7	430.9	430.9	430.8	430.8	431.2	431.2
Laurel Hill - Riverview/Augusta																			
LHRA020A	72139	56525	Natural	350	25	194	230	215	299	431.5	427.6	435.0	433.9	435.6	435.2	435.2	434.6	438.1	438.0
LHRA020B	72138	72139	6'x6' CSP culvert	68	25	187	221	204	289	432.1	431.5	436.3	435.0	436.9	435.6	436.5	435.2	439.1	438.1
LHRA020BRD	72138	72139	Roadway	68		0	0	0	0	447.6	446.9	435.0	435.0	435.6	435.6	435.2	435.2	438.1	438.1
LHRA020C	56522	72138	Natural	500	10	187	222	205	305	435.6	432.1	439.1	436.3	439.3	436.9	439.2	436.5	440.0	439.1
LHRA020D	66993	56522	6'x6' CSP culvert	285	25	176	209	187	278	438.1	435.7	441.3	439.1	441.8	439.3	441.5	439.2	442.8	440.0
LHRA020DRD	66993	56522	Roadway	285		0	0	0	0	450.0	447.7	439.1	439.1	439.3	439.3	439.2	439.2	440.0	440.0
LHRA030A	53635	66993	Natural	230	10	176	209	187	278	442.5	438.1	444.8	441.3	444.6	441.8	445.0	441.5	444.8	442.8
LHRA030B1	75474	53635	7'x4' CSP culverts	75	10	89	105	92	138	443.7	442.5	445.4	444.8	445.6	444.6	445.6	445.0	446.1	444.8
LHRA030B2	75474	53635	7'x4' CSP culverts	75	10	80	96	84	129	443.8	442.7	445.4	444.8	445.6	444.6	445.6	445.0	446.1	444.8
LHRA030BRD	75474	53635	Roadway	75		0	0	0	0	455.1	453.9	444.8	444.8	444.6	444.6	445.0	445.0	444.8	444.8
LHRA040A	75473	75474	Natural	400	10	123	153	130	212	446.2	443.7	450.7	445.4	451.1	445.6	450.8	445.6	451.6	446.1
LHRA040B	53662	75473	Natural	250	10	111	141	113	194	447.7	446.2	451.5	450.7	451.9	451.1	451.5	450.8	452.5	451.6
LHRA040C	53649	53662	66" CSP culvert	350	10	112	141	113	194	453.1	447.7	455.1	451.5	455.4	451.9	455.1	451.5	456.3	452.5
LHRA040CRD	53649	53662	Roadway	350		0	0	0	0	456.9	451.5	451.5	451.5	451.9	451.9	451.5	451.5	452.5	452.5
LHRA040D	72125	53649	Natural	105	10	112	141	113	194	453.8	453.1	456.7	455.1	457.1	455.4	456.7	455.1	457.6	456.3
LHRA040E	72124	72125	72" CMP culvert	40	10	112	141	113	194	453.7	453.8	457.7	456.7	458.2	457.1	457.7	456.7	459.1	457.6
LHRA040ERD	72124	72125	Roadway	40		0	0	0	0	460.6	460.6	456.7	456.7	457.1	457.1	456.7	456.7	457.6	457.6
LHRA040F	72123	72124	Natural	310	10	112	141	113	195	457.3	454.9	460.5	457.7	460.8	458.2	460.5	457.7	461.2	459.1

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE LAUREL HILL STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions				Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)							
												10-Year		25-Year Winter		25-Year Summer		50-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	US	DS	US	DS	US	DS	US	DS	US	DS
LHRA040G	72122	72123	60" CMP culvert	30	10	111	141	113	194	457.7	457.3	461.7	460.5	462.3	460.8	461.7	460.5	463.4	461.2
LHRA040GRD	72122	72123	Roadway	30		0	0	0	0	463.6	463.2	460.5	460.5	460.8	460.8	460.5	460.5	461.2	461.2
LHRA040H	53655	72122	Natural	110	10	111	141	113	194	458.7	457.7	461.9	461.7	462.6	462.3	461.9	461.7	463.6	463.4
LHRA040I	53755	53655	72" CMP	140	10	112	141	113	195	460.0	458.7	462.5	461.9	463.0	462.6	462.5	461.9	464.0	463.6
LHRA040J1	75482	53755	36" CSP	95	10	48	69	49	97	461.9	460.0	463.6	462.5	464.4	463.0	463.6	462.5	466.6	464.0
LHRA040J2	75482	53755	36" CSP	95	10	64	72	65	97	461.0	460.0	463.6	462.5	464.4	463.0	463.6	462.5	466.6	464.0
LHRA050E	75483	75482	36" CSP	388	10	67	72	60	82	466.9	461.0	469.2	463.6	469.9	464.4	468.9	463.6	473.5	466.6
LHRA050F	75484	75483	36" CSP	210	10	67	72	60	99	469.6	467.0	472.1	469.3	472.5	469.9	471.8	469.1	479.1	473.5
LHRA050G	75485	75484	36" CSP	250	10	61	66	51	100	477.6	469.7	479.2	472.1	479.3	472.5	479.0	471.8	485.7	479.1
LHRA070R	75486	75485	36" CSP	253	10	61	66	51	101	484.9	477.7	486.5	479.3	486.6	479.4	486.4	479.1	492.5	485.7
LHRA070S	75487	75486	36" CSP	284	10	46	50	38	86	492.3	484.9	493.7	486.5	493.8	486.6	493.5	486.4	496.8	492.5
LHRA070T	75488	75487	36" CSP	363	10	46	50	38	87	496.9	492.2	498.9	493.7	499.0	493.8	498.7	493.5	503.3	496.8
LHRA070U	53703	75488	36" CSP	92	10	46	50	38	88	499.1	496.9	500.6	498.9	500.6	499.0	500.4	498.7	505.1	503.3
LHRA090D	51387	53703	42" CSP	158	10	46	50	38	97	500.4	499.3	502.3	501.3	502.4	501.4	502.1	501.0	506.5	505.2
LHRA040K	75475	75474	36" CSP	86	10	46	47	46	57	446.3	446.0	449.4	448.2	449.4	448.2	449.4	448.2	449.9	448.4
LHRA040L	75476	75475	36" CSP	212	10	46	47	46	57	452.1	446.3	453.5	449.4	453.6	449.4	453.5	449.4	453.7	449.9
LHRA040M	75477	75476	36" CSP	429	10	46	47	46	57	453.9	452.3	457.6	454.5	457.7	454.6	457.7	454.5	459.1	454.8
LHRA040N	75478	75477	36" CSP	413	10	47	48	47	57	455.4	453.9	460.3	457.6	460.5	457.7	460.3	457.7	463.0	459.1
LHRA040O	75479	75478	36" CSP	120	10	47	48	47	53	456.0	455.4	461.0	460.3	461.3	460.5	461.1	460.3	463.1	463.0
LHRA040P	75480	75479	36" CSP	347	10	46	47	47	50	459.1	456.0	463.0	461.0	463.4	461.3	463.0	461.1	464.5	463.1
LHRA040Q	75481	75480	36" CSP	150	10	47	48	47	63	461.1	459.3	463.6	463.0	464.2	463.4	463.7	463.0	466.2	464.5
LHRA040R	53754	75481	36" CSP	43	10	47	48	48	63	461.1	461.2	463.9	463.6	464.5	464.2	464.0	463.7	466.7	466.2
LHRA040S	53754	75482	65" CSP	189	10	48	70	53	102	462.3	461.0	463.9	463.6	464.5	464.4	464.0	463.6	466.7	466.6
LHRA050A1	53753	53754	36" CSP	45	10	47	59	50	76	461.1	460.9	464.3	463.9	465.0	464.5	464.4	464.0	467.3	466.7
LHRA050A2	53753	53754	36" CSP	45	10	47	59	50	76	461.1	460.9	464.3	463.9	465.0	464.5	464.4	464.0	467.3	466.7
LHRA050ARD	53753	53754	Roadway	45		0	0	0	34	466.9	466.9	463.9	463.9	464.5	464.5	464.0	464.0	467.3	467.2
LHRA050B	53752	53753	65" CMP	189	10	95	117	100	161	462.3	461.1	465.7	464.3	466.3	465.0	465.8	464.4	469.0	467.3
LHRA050C	66483	53752	48" CSP	667	10	90	110	89	153	467.6	462.4	470.2	465.7	470.8	466.3	470.2	465.8	478.1	469.0
LHRA050CRD	66483	53752	Roadway	667		0	0	0	0	479.1	471.9	465.7	465.7	466.3	466.3	465.8	465.8	469.0	469.0
LHRA050D	53777	66483	42" CSP	193	10	91	110	89	144	472.2	467.6	474.2	470.2	474.6	470.8	474.2	470.2	482.0	478.1
LHRA050DRD	53777	66483	Roadway	193		0	0	0	29	481.8	479.1	470.2	470.2	470.8	470.8	470.2	470.2	482.0	479.3
LHRA060A	68603	53777	42" CSP	140	10	80	95	76	129	474.8	473.0	477.2	475.3	477.5	475.6	477.1	475.2	484.2	482.0
LHRA060ARD	68603	53777	Roadway	140		0	0	0	26	484.0	481.8	474.2	474.2	474.6	474.6	474.2	474.2	484.2	482.0
LHRA070A	53783	68603	42" CSP	160	10	58	40	33	64	476.6	474.8	478.6	477.2	478.2	477.5	478.0	477.1	484.5	484.2
LHRA070ARD	53783	68603	Roadway	160		0	0	0	6	484.5	483.0	477.2	477.2	477.5	477.5	477.1	477.1	484.5	484.2
LHRA070B	53704	53783	42" CSP	732	10	49	29	25	49	489.2	476.6	490.7	478.6	490.3	478.2	490.2	478.0	490.7	484.5
LHRA070BRD	53704	53783	Roadway	732		0	0	0	0	499.2	484.5	478.6	478.6	478.2	478.2	478.0	478.0	484.5	484.5
LHRA090B	75490	75489	30" CSP	292	10	36	12	11	13	496.7	492.6	498.8	494.0	497.8	493.3	497.7	493.3	497.8	493.3
LHRA090A	75489	53704	30" CSP	38	10	37	12	11	13	492.6	491.0	494.0	492.2	493.3	491.7	493.3	491.7	493.3	491.7
LHRA090C1	76212	75490	18" CSP	18	10	21	6	6	7	498.2	497.3	501.1	498.8	499.0	497.8	499.0	497.8	499.1	497.8
LHRA090C2	76212	75490	18" CSP	18	10	16	6	5	6	498.2	497.3	501.1	498.8	499.0	498.0	499.0	497.9	499.1	498.0

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE LAUREL HILL STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions				Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)							
												10-Year		25-Year Winter		25-Year Summer		50-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	US	DS	US	DS	US	DS	US	DS	US	DS
LHRA070C	53646	68603	42" CSP culvert	50	10	28	58	46	93	478.0	474.8	478.8	477.2	479.4	477.5	479.1	477.1	485.3	484.2
LHRA070CRD	53646	68603	Roadway	50		0	0	0	5	485.3	484.0	477.2	477.2	477.5	477.5	477.1	477.1	485.3	484.2
LHRA070D	72119	53646	Natural	160	10	28	58	46	100	482.4	478.0	483.8	478.8	484.3	479.4	484.1	479.1	485.5	485.3
LHRA070E	72118	72119	36" CSP culvert	15	10	28	58	46	84	483.1	482.9	485.2	484.4	486.6	485.4	486.0	484.9	488.0	485.7
LHRA070ERD	72118	72119	Roadway	15		0	0	0	19	487.9	487.7	483.8	483.8	484.3	484.3	484.1	484.1	488.0	487.9
LHRA070F	72117	72118	Natural	52	10	28	59	46	102	484.5	483.1	485.7	485.2	486.6	486.6	486.1	486.0	488.0	488.0
LHRA070G	72116	72117	Bridge	9	10	28	59	46	98	484.5	484.5	485.9	485.7	486.8	486.6	486.3	486.1	488.4	488.0
LHRA070GRD	72116	72117	Roadway	9		0	0	0	13	488.3	488.3	485.7	485.7	486.6	486.6	486.1	486.1	488.4	488.4
LHRA070H	72115	72116	Natural	150	10	28	59	46	113	485.6	484.5	486.9	485.9	487.2	486.8	487.1	486.3	488.5	488.4
LHRA070I	72114	72115	Bridge	12	10	28	59	46	120	485.9	485.6	487.0	486.9	487.4	487.2	487.3	487.1	489.1	488.5
LHRA070IRD	72114	72115	Roadway	12		0	0	0	0	491.6	491.4	486.9	486.9	487.2	487.2	487.1	487.1	488.5	488.5
LHRA070J	72113	72114	Natural	65	10	28	59	46	121	486.0	485.9	488.0	487.0	488.8	487.4	488.5	487.3	489.9	489.1
LHRA070K	72112	72113	42" CSP culvert	17	10	28	59	46	81	486.6	486.0	488.4	488.0	489.6	488.8	489.1	488.5	490.5	489.9
LHRA070KRD	72112	72113	Roadway	17		0	0	0	59	490.3	489.8	488.0	488.0	488.8	488.8	488.5	488.5	490.5	489.9
LHRA070L	72111	72112	Natural	60	10	28	59	46	121	487.1	486.6	489.8	488.4	490.9	489.6	490.5	489.1	491.6	490.5
LHRA070M	72110	72111	5'x3.5' CSP culvert	20	10	29	59	46	93	487.4	487.1	489.9	489.8	491.0	490.9	490.6	490.5	491.9	491.6
LHRA070MRD	72110	72111	Roadway	20		0	0	0	47	491.7	491.4	489.8	489.8	490.9	490.9	490.5	490.5	491.9	491.6
LHRA070N	72109	72110	Natural	177	10	31	59	48	124	489.7	487.4	490.7	489.9	491.5	491.0	491.0	490.6	493.4	491.9
LHRA070O	72108	72109	3'x2.7' CSP culvert	20	10	31	60	48	85	489.4	489.7	491.6	490.7	492.9	491.5	492.3	491.0	494.3	493.4
LHRA070ORD	72108	72109	Roadway	20		0	0	0	68	493.8	493.8	490.7	490.7	491.5	491.5	491.0	491.0	494.3	494.2
LHRA070P	72107	72108	Natural	66	10	31	60	48	136	491.1	489.4	492.5	491.6	493.1	492.9	492.8	492.3	494.4	494.3
LHRA070Q	72106	72107	36" CSP	32	10	31	60	48	80	492.3	491.1	493.9	492.5	494.9	493.1	494.5	492.8	496.1	494.4
LHRA070QRD	72106	72107	Roadway	32		0	0	0	65	495.9	494.7	492.5	492.5	493.1	493.1	492.8	492.8	496.1	494.9
LHRA100A	72105	72106	Natural	100	10	31	60	48	137	493.3	492.3	494.4	493.9	495.1	494.9	494.8	494.5	496.3	496.1
LHRA100B	72104	72105	36" CSP	118	10	31	59	48	60	496.6	493.7	498.4	495.3	500.2	496.2	499.2	495.8	500.4	496.3
LHRA100BRD	72104	72105	Roadway	118		0	2	0	78	500.1	497.2	494.4	494.4	500.2	497.2	494.8	494.8	500.4	497.5
LHRA100C	51409	72104	Natural	56	10	32	63	49	137	498.5	496.6	500.4	498.4	501.5	500.2	501.0	499.2	502.2	500.4
LHRA100D	99796	51409	30" CSP culvert	31	10	32	56	49	56	498.8	498.5	501.1	500.4	502.9	501.5	502.3	501.0	503.2	502.2
LHRA100DRD	99796	51409	Roadway	31		0	12	0	95	502.8	502.4	500.4	500.4	502.9	502.5	501.0	501.0	503.2	502.8

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Willakenzie North - Delta Highway																						
WKDH010A	72606	72603	Natural	880	25	311	343	309	360	396	375.4	376.1	383.5	383.4	383.5	383.4	383.5	383.4	383.5	383.4	383.5	383.4
WKDH010G	72605	72606	Natural	1080	25	21	22	36	55	63	377.8	374.8	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010H	72604	72605	Natural	10	25	22	23	36	56	64	377.9	377.8	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010I	67019	72604	Natural	80	25	22	23	36	56	64	378.8	377.9	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010J	58450	67019	72" CSP	85	25	22	23	36	56	64	377.3	377.0	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.6	383.5
WKDH010JRD	58450	67019	Roadway	85		0	0	0	0	0	389.0	389.0	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5	383.5
WKDH010B	72602	72606	Natural	10	25	303	330	306	350	386	375.5	375.4	383.6	383.5	383.7	383.5	383.6	383.5	383.7	383.5	383.7	383.5
WKDH010C	72601	72602	Natural	410	25	303	330	306	350	386	376.2	375.5	383.7	383.6	383.7	383.7	383.7	383.6	383.8	383.7	383.8	383.7
WKDH010D	72600	72601	Natural	10	25	303	330	306	350	386	376.2	376.2	383.9	383.7	384.0	383.7	383.9	383.7	384.1	383.8	384.3	383.8
WKDH010E	58446	72600	Natural	230	25	303	330	306	350	386	377.0	376.2	383.9	383.9	384.0	384.0	383.9	383.9	384.1	384.1	384.3	384.3
WKDH010F1	58447	58446	84"CMP	83	50	151	165	153	175	193	377.3	377.0	384.2	383.9	384.4	384.0	384.2	383.9	384.5	384.1	384.7	384.3
WKDH010F2	58447	58446	84"CMP	83	50	151	165	153	175	193	377.3	377.0	384.2	383.9	384.4	384.0	384.2	383.9	384.5	384.1	384.7	384.3
WKDH010FRD	58447	58446	Roadway	83		0	0	0	0	0	390.5	390.5	383.9	383.9	384.0	384.0	383.9	383.9	384.1	384.1	384.3	384.3
WKDH020A	58442	58447	Natural	2500	25	311	334	331	365	399	378.1	377.3	384.2	384.2	384.4	384.4	384.2	384.2	384.5	384.5	384.7	384.7
Willakenzie North - North Beltline																						
WKNB010D	59792	58442	Natural	1000	25	28	29	47	74	83	381.6	378.1	384.2	384.2	384.4	384.4	384.2	384.2	384.5	384.5	384.7	384.7
WKNB010E	59799	59792	48" CMP	365	25	28	30	48	77	87	382.6	381.6	385.1	384.2	385.2	384.4	386.2	384.2	389.1	384.5	390.3	384.7
WKNB010ERD	59799	59792	Roadway	365		0	0	0	0	0	399.0	398.0	384.2	384.2	384.4	384.4	384.2	384.2	384.5	384.5	384.7	384.7
WKNB010A1	58441	58442	72" CMP	83	25	157	168	181	192	207	395.7	395.6	400.0	399.0	400.1	399.1	400.3	399.3	400.5	399.4	400.7	399.5
WKNB010A2	58441	58442	72" CMP	83	25	157	168	181	192	207	395.7	395.6	400.0	399.0	400.1	399.1	400.3	399.3	400.5	399.4	400.7	399.5
WKNB010ARD	58441	58442	Roadway	83		0	0	0	0	0	407.0	405.0	384.2	384.2	384.4	384.4	384.2	384.2	384.5	384.5	384.7	384.7
WKNB010B	58371	58441	Natural	2250	25	315	337	362	384	414	396.4	393.8	403.1	400.0	403.3	400.1	403.5	400.3	403.7	400.5	403.9	400.7
WKNB010C1	59755	58371	72" CMP	329	25	158	169	182	193	207	397.9	396.4	404.7	403.1	405.2	403.3	405.8	403.5	406.3	403.7	407.0	403.9
WKNB010C2	59755	58371	72" CMP	329	25	158	169	182	193	207	397.9	396.4	404.7	403.1	405.2	403.3	405.8	403.5	406.3	403.7	407.0	403.9
WKNB010CRD	59755	58371	Roadway	329		0	0	0	0	0	410.0	409.0	403.1	403.1	403.3	403.3	403.5	403.5	403.7	403.7	403.9	403.9
WKNB020A	59766	59755	Natural	1220	25	302	327	352	377	400	399.5	397.9	405.6	404.7	406.0	405.2	406.5	405.8	406.9	406.3	407.5	407.0
WKNB020B1	59753	59766	72" CSP	85	25	151	164	179	192	203	399.6	399.4	406.2	405.6	406.6	406.0	407.1	406.5	407.7	406.9	408.4	407.5
WKNB020B2	59753	59766	72" CSP	85	25	151	164	179	192	203	399.6	399.4	406.2	405.6	406.6	406.0	407.1	406.5	407.7	406.9	408.4	407.5
WKNB020BRD	59753	59766	Roadway	85		0	0	0	0	0	412.1	411.0	405.6	405.6	406.0	406.0	406.5	406.5	406.9	406.9	407.5	407.5
WKNB020C	59778	59753	Natural	530	25	303	329	363	388	410	400.0	399.4	406.8	406.2	407.2	406.6	407.7	407.1	408.2	407.7	408.8	408.4
WKNB020D1	69005	59778	72" CMP	85	25	152	165	183	196	206	401.1	400.9	407.5	406.8	408.0	407.2	408.6	407.7	409.4	408.2	410.1	408.8
WKNB020D2	69005	59778	72" CMP	85	25	152	165	183	196	206	401.1	400.9	407.5	406.8	408.0	407.2	408.6	407.7	409.4	408.2	410.1	408.8
WKNB020DRD	69005	59778	Roadway	85		0	0	0	0	0	412.1	412.1	406.8	406.8	407.2	407.2	407.7	407.7	408.2	408.2	408.8	408.8
WKNB030A	59774	69005	Natural	1350	25	293	319	363	399	418	403.0	400.6	409.0	407.5	409.3	408.0	409.7	408.6	410.3	409.4	411.1	410.1
WKNB040A1	59772	59774	30"CMP	89	25	13	14	20	31	36	409.2	409.1	411.2	410.4	411.2	410.4	411.9	410.7	413.1	411.0	413.9	411.2
WKNB040A2	59772	59774	30"CMP	89	25	13	14	20	31	36	409.2	409.1	411.2	410.4	411.2	410.4	411.9	410.7	413.1	411.0	413.9	411.2
WKNB040ARD	59772	59774	Roadway	89		0	0	0	0	0	416.0	416.0	409.0	409.0	409.3	409.3	409.7	409.7	410.3	410.3	411.1	411.1
WKNB030B	59425	59774	Natural	1300	25	274	297	355	393	415	405.7	403.0	410.3	409.0	410.6	409.3	411.0	409.7	411.4	410.3	411.8	411.1
WKNB030C1	59426	59425	72" CSP	603	25	137	149	180	200	211	407.1	406.0	411.7	410.3	412.1	410.6	412.8	411.0	413.5	411.4	414.0	411.8
WKNB030C2	59426	59425	72" CSP	603	25	137	149	180	200	211	407.1	406.0	411.7	410.3	412.1	410.6	412.8	411.0	413.5	411.4	414.0	411.8
WKNB030CRD	59426	59425	Roadway	603		0	0	0	0	0	417.7	416.0	410.3	410.3	410.6	410.6	411.0	411.0	411.4	411.4	411.8	411.8
WKNB060A	67893	59426	66" CSP	340	25	86	93	109	126	127	407.6	407.1	412.0	411.7	412.3	412.1	413.2	412.8	413.9	413.5	414.4	414.0

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKNB060ARD	59426	67893	Roadway	340		0	0	0	0	0	417.7	417.4	412.0	412.0	412.3	412.3	413.2	413.2	413.9	413.9	414.4	414.4
WKNB060B	59519	67893	66" CSP	1043	10	87	93	111	127	129	407.7	407.6	413.0	412.0	413.5	412.3	414.5	413.2	415.4	413.9	416.1	414.4
WKNB060BRD	59519	67893	Roadway	1043		0	0	0	0	0	417.9	417.4	412.0	412.0	412.3	412.3	413.2	413.2	413.9	413.9	414.4	414.4
WKNB050A	59518	59519	42" CSP	105	10	26	26	33	22	24	410.9	408.0	413.1	413.0	413.5	413.5	414.5	414.5	415.4	415.4	416.1	416.1
WKNB050ARD	59518	59519	Roadway	105		0	0	0	0	0	418.3	417.9	413.0	413.0	413.5	413.5	414.5	414.5	415.4	415.4	416.1	416.1
WKNB050B	59546	59518	36" CSP	436	10	8	8	13	14	13	412.2	410.9	413.2	413.1	413.6	413.5	414.6	414.5	415.5	415.4	416.2	416.1
WKNB050BRD	59518	59546	Roadway	436		0	0	0	0	0	418.3	418.0	413.2	413.2	413.6	413.6	414.6	414.6	415.5	415.5	416.2	416.2
WKNB050C	59495	59546	42" CSP	656	10	7	7	12	14	13	413.5	412.6	414.7	413.4	414.7	413.6	415.0	414.6	415.6	415.5	416.4	416.2
WKNB050CRD	59495	59546	Roadway	656		0	0	0	0	0	420.0	418.0	413.2	413.2	413.6	413.6	414.6	414.6	415.5	415.5	416.2	416.2
WKNB050D	59545	59495	36" CSP	34	10	7	7	12	15	14	413.6	413.5	414.7	414.7	414.7	414.7	415.1	415.0	415.6	415.6	416.4	416.4
WKNB050DRD	59495	59545	Roadway	34		0	0	0	0	0	420.0	419.6	414.7	414.7	414.7	414.7	415.1	415.1	415.6	415.6	416.4	416.4
WKNB050E	67912	59545	3' X 5' Conc. Box	148	10	7	7	12	15	15	414.0	413.6	414.7	414.7	414.8	414.7	415.1	415.1	415.6	415.6	416.4	416.4
WKNB050ERD	67912	59545	Roadway	148		0	0	0	0	0	419.6	419.6	414.7	414.7	414.7	414.7	415.1	415.1	415.6	415.6	416.4	416.4
WKNB050F	68227	67912	3' X 5' Conc. Box	920	10	7	7	12	16	19	415.2	414.0	415.8	414.7	415.8	414.8	416.0	415.1	416.3	415.6	416.5	416.4
WKNB050FRD	68227	67912	Roadway	920		0	0	0	0	0	420.7	419.6	414.7	414.7	414.8	414.8	415.1	415.1	415.6	415.6	416.4	416.4
WKNB050G	69048	68227	42" CSP	169	10	7	7	12	17	19	418.5	415.2	419.1	415.8	419.1	415.8	419.2	416.0	419.4	416.3	419.4	416.5
WKNB050GRD	69048	68227	Roadway	169		0	0	0	0	0	421.0	420.7	415.8	415.8	415.8	415.8	416.0	416.0	416.3	416.3	416.5	416.5
WKNB050H	61213	59519	54" CSP	2545	10	62	67	74	84	83	412.4	407.7	416.0	413.0	417.1	413.5	418.9	414.5	420.7	415.4	420.8	416.1
WKNB050HRD	61213	59519	Roadway	2545		0	0	0	0	0	422.1	417.9	413.0	413.0	413.5	413.5	414.5	414.5	415.4	415.4	416.1	416.1
WKNB140A	61212	61213	54" CSP	701	10	47	51	56	57	58	413.2	412.5	416.6	416.0	417.6	417.1	419.4	418.9	421.3	420.7	421.3	420.8
WKNB140ARD	61212	61213	Roadway	701		0	0	0	0	0	424.0	422.1	416.0	416.0	417.1	417.1	418.9	418.9	420.7	420.7	420.8	420.8
WKNB140B	66590	61212	42" CSP	591	10	47	50	54	56	58	413.9	413.2	418.1	416.6	419.4	417.6	420.7	419.4	422.4	421.3	422.4	421.3
WKNB140BRD	61212	66590	Roadway	591		0	0	0	0	0	424.0	422.4	418.1	418.1	419.4	419.4	420.7	420.7	422.4	422.4	422.4	422.4
WKNB150A	61030	66590	42" CSP	532	10	34	39	47	47	48	418.5	413.9	420.0	418.1	420.5	419.4	421.3	420.7	421.7	422.4	422.1	422.4
WKNB150ARD	61030	66590	Roadway	532		0	0	0	0	0	427.0	422.4	418.1	418.1	419.4	419.4	420.7	420.7	422.4	422.4	422.4	422.4
WKNB150B	71108	61030	Natural	250	10	34	38	45	45	47	418.3	418.5	420.5	420.0	420.8	420.5	421.4	421.3	421.7	421.7	422.2	422.1
WKNB150C	71109	71108	Natural	620	10	34	37	41	41	44	418.2	418.3	421.4	420.5	421.7	420.8	422.1	421.4	422.3	421.7	422.7	422.2
WKNB150D	61085	71109	Natural	350	10	34	37	39	38	39	418.3	418.2	421.5	421.4	421.8	421.7	422.2	422.1	422.4	422.3	422.8	422.7
WKNB150E	61086	61085	42" CSP	68	10	35	37	40	39	41	418.4	418.3	421.8	421.5	422.1	421.8	422.5	422.2	422.7	422.4	423.1	422.8
WKNB150ERD	61085	61086	Roadway	68		0	0	0	0	0	423.3	422.7	421.8	421.8	422.1	422.1	422.5	422.5	422.7	422.7	423.1	423.1
WKNB190A	61087	61086	Natural	620	10	25	27	32	34	37	419.0	418.4	422.0	421.8	422.3	422.1	422.7	422.5	422.9	422.7	423.3	423.1
WKNB190B	61049	61087	Natural	340	10	28	29	45	53	57	420.7	419.0	422.1	422.0	422.4	422.3	422.8	422.7	423.0	422.9	423.4	423.3
WKNB190C1	67095	61049	48" CSP	42	10	14	15	23	27	30	420.9	420.7	422.3	422.1	422.5	422.4	422.9	422.8	423.1	423.0	423.4	423.4
WKNB190C2	67095	61049	48" CSP	42	10	14	15	23	27	30	420.9	420.7	422.3	422.1	422.5	422.4	422.9	422.8	423.1	423.0	423.4	423.4
WKNB190CRD	67095	61049	Roadway	42		0	0	0	0	0	426.0	426.0	422.1	422.1	422.4	422.4	422.8	422.8	423.0	423.0	423.4	423.4
WKNB190D	62684	67095	Natural	400	10	28	30	46	56	62	421.5	420.9	423.6	422.3	423.6	422.5	424.1	422.9	424.3	423.1	424.5	423.4
WKNB190E1	62685	62684	48" CSP	75	10	9	10	15	19	21	421.6	421.5	423.6	423.6	423.7	423.6	424.2	424.1	424.4	424.3	424.6	424.5
WKNB190E2	62685	62684	48" CSP	75	10	9	10	15	19	21	421.6	421.5	423.6	423.6	423.7	423.6	424.2	424.1	424.4	424.3	424.6	424.5
WKNB190E3	62685	62684	48" CSP	75	10	9	10	15	19	21	421.6	421.5	423.6	423.6	423.7	423.6	424.2	424.1	424.4	424.3	424.6	424.5
WKNB190ERD	62685	62684	Roadway	75		0	0	0	0	0	429.0	428.0	423.6	423.6	423.6	423.6	424.1	424.1	424.3	424.3	424.5	424.5
WKNB190F	62688	62685	Natural	470	10	29	30	47	60	63	422.3	421.6	424.1	423.6	424.2	423.7	424.6	424.2	424.9	424.4	425.0	424.6

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKNB190G1	62712	62688	60" CMP	100	10	14	15	24	31	32	422.4	422.3	424.3	424.1	424.4	424.2	424.9	424.6	425.2	424.9	425.3	425.0
WKNB190G2	62712	62688	60" CMP	100	10	14	15	24	31	32	422.4	422.3	424.3	424.1	424.4	424.2	424.9	424.6	425.2	424.9	425.3	425.0
WKNB190GRD	62712	62688	Roadway	100		0	0	0	0	0	429.0	429.0	424.1	424.1	424.2	424.2	424.6	424.6	424.9	424.9	425.0	425.0
WKNB190H	62750	62712	36" CSP	262	10	29	30	48	63	65	422.8	422.4	425.3	424.3	425.4	424.4	426.5	424.9	427.9	425.2	428.2	425.3
WKNB190HRD	62712	62750	Roadway	262		0	0	0	0	0	429.0	427.9	425.3	425.3	425.4	425.4	426.5	426.5	427.9	427.9	428.2	428.2
WKNB060C	59428	59426	Natural	580	25	173	186	238	270	294	408.8	407.5	413.9	411.7	414.0	412.1	414.6	412.8	415.0	413.5	415.3	414.0
WKNB060D	59401	59428	Natural	1100	25	173	186	241	277	298	410.2	408.8	415.6	413.9	415.8	414.0	416.5	414.6	417.1	415.0	417.6	415.3
WKNB070A	59497	59401	54" CSP	880	10	19	17	16	30	38	411.7	410.6	415.7	415.6	415.9	415.8	416.5	416.5	417.2	417.1	417.8	417.6
WKNB070ARD	59497	59401	Roadway	880		0	0	0	0	0	418.2	417.1	415.6	415.6	415.8	415.8	416.5	416.5	417.1	417.1	417.6	417.6
WKNB060E	59385	59401	Natural	900	25	159	171	232	266	291	411.3	410.2	416.8	415.6	417.0	415.8	417.8	416.5	418.3	417.1	418.7	417.6
WKNB110A	59476	59385	72" CSP	120	25	47	51	70	80	94	410.3	409.9	416.9	416.8	417.1	417.0	417.9	417.8	418.3	418.3	418.8	418.7
WKNB110ARD	59476	59385	Roadway	120		0	0	0	0	0	421.3	420.4	416.8	416.8	417.0	417.0	417.8	417.8	418.3	418.3	418.7	418.7
WKNB110B	59420	59476	72" CSP	110	10	41	44	62	69	77	411.4	410.3	416.9	416.9	417.1	417.1	417.9	417.9	418.4	418.3	418.8	418.8
WKNB110BRD	59476	59420	Roadway	110		0	0	0	0	0	421.3	418.5	416.9	416.9	417.1	417.1	417.9	417.9	418.4	418.4	418.8	418.8
WKNB110C	61133	59420	72" CSP	1337	10	41	44	62	69	103	413.0	411.2	417.1	416.9	417.3	417.1	418.3	417.9	418.8	418.4	419.8	418.8
WKNB110CRD	61133	59420	Roadway	1337		0	0	0	0	0	423.8	418.5	416.9	416.9	417.1	417.1	417.9	417.9	418.4	418.4	418.8	418.8
WKNB120A	60890	61133	66" CSP	130	10	35	37	53	59	86	413.5	413.0	417.1	417.1	417.3	417.3	418.4	418.3	418.9	418.8	420.0	419.8
WKNB120ARD	60890	61133	Roadway	130		0	0	0	0	0	424.0	423.8	417.1	417.1	417.3	417.3	418.3	418.3	418.8	418.8	419.8	419.8
WKNB120B	99575	60890	66" CMP	1458	10	35	37	53	60	87	414.3	413.5	418.0	417.1	418.2	417.3	419.5	418.4	420.4	418.9	423.7	420.0
WKNB120BRD	99575	60890	Roadway	1458		0	0	0	0	0	425.6	424.0	417.1	417.1	417.3	417.3	418.4	418.4	418.9	418.9	420.0	420.0
WKNB160A	61199	99575	60" CSP	1201	10	27	28	41	46	65	415.4	414.3	418.3	418.0	418.5	418.2	419.8	419.5	420.8	420.4	424.7	423.7
WKNB160ARD	61199	99575	Roadway	1201		0	0	0	0	0	426.4	425.6	418.0	418.0	418.2	418.2	419.5	419.5	420.4	420.4	423.7	423.7
WKNB180A	61183	61199	48" CSP	1214	10	18	19	27	32	43	418.1	416.4	419.7	418.3	419.8	418.5	420.5	419.8	421.4	420.8	426.1	424.7
WKNB180Ard	61183	61199	Roadway	1214		0	0	0	0	0	427.9	426.4	418.3	418.3	418.5	418.5	419.8	419.8	420.8	420.8	424.7	424.7
WKNB180B	61235	61183	42" CSP	480	10	18	19	29	37	44	419.6	418.1	421.0	419.7	421.0	419.8	421.5	420.5	422.0	421.4	426.8	426.1
WKNB180Brd	61183	61235	Roadway	480		0	0	0	0	0	427.9	426.8	421.0	421.0	421.0	421.0	421.5	421.5	422.0	422.0	426.8	426.8
WKNB100A	66880	67043	72" CSP	130	25	48	50	79	114	136	410.8	410.5	417.1	417.1	417.3	417.3	418.2	418.1	418.6	418.6	419.1	419.0
WKNB100ARD	67043	66880	Roadway	130		0	0	0	0	0	420.9	420.0	417.1	417.1	417.3	417.3	418.2	418.2	418.6	418.6	419.1	419.1
WKNB100B	59462	66880	60" CSP	47	10	48	50	79	114	136	411.4	410.8	417.2	417.1	417.4	417.3	418.3	418.2	418.7	418.6	419.2	419.1
WKNB100BRD	59462	66880	Roadway	47		0	0	0	0	0	422.5	420.0	417.1	417.1	417.3	417.3	418.2	418.2	418.6	418.6	419.1	419.1
WKNB100C	59421	59462	66" CSP	30	10	38	41	64	88	103	412.5	412.3	417.2	417.2	417.4	417.4	418.3	418.3	418.8	418.7	419.3	419.2
WKNB100CRD	59462	59421	Roadway	30		0	0	0	0	0	422.5	421.0	417.2	417.2	417.4	417.4	418.3	418.3	418.8	418.8	419.3	419.3
WKNB100D	61140	59421	60" CSP	905	10	39	41	65	89	103	413.8	412.5	417.4	417.2	417.7	417.4	418.9	418.3	419.8	418.8	421.1	419.3
WKNB100DRD	61140	59421	Roadway	905		0	0	0	0	0	422.8	421.0	417.2	417.2	417.4	417.4	418.3	418.3	418.8	418.8	419.3	419.3
WKNB090A	61142	61140	48" CSP	1037	10	30	32	50	64	75	414.6	413.7	418.0	417.4	418.3	417.7	420.6	418.9	422.5	419.8	424.8	421.1
WKNB090ARD	61142	61140	Roadway	1037		0	0	0	0	0	424.8	422.8	417.4	417.4	417.7	417.7	418.9	418.9	419.8	419.8	424.8	422.8
WKNB110D	67043	59385	Natural	400	25	113	120	167	192	228	411.8	411.3	417.1	416.8	417.3	417.0	418.1	417.8	418.6	418.3	419.0	418.7
WKNB100E	71240	67043	Natural	1930	25	71	71	110	136	142	415.9	411.8	418.3	417.1	418.3	417.3	418.9	418.1	419.4	418.6	419.9	419.0
WKNB100F	71239	71240	Natural	150	25	72	72	112	159	186	421.2	415.9	423.7	418.3	423.7	418.3	424.1	418.9	424.6	419.4	424.8	419.9
Willakenzie North - Gilham Road																						
WKGL010A	71280	71279	Natural	1200	10	103	109	139	156	171	389.2	379.5	391.9	385.7	392.0	385.7	392.4	385.7	392.6	385.7	392.7	385.7
WKGL010B	71281	71280	48" CMP	30	10	89	95	117	126	136	389.3	389.2	393.4	391.9	393.5	392.0	394.4	392.4	394.8	392.6	395.3	392.7
WKGL010BRD	71281	71280	Roadway	30		0	0	0	0	0	395.4	395.4	391.9	391.9	392.0	392.0	392.4	392.4	392.6	392.6	392.7	392.7

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKGL020A	71282	71281	Natural	920	10	62	65	81	84	88	392.7	389.3	396.0	393.4	396.2	393.5	398.1	394.4	398.3	394.8	399.0	395.3
WKGL020B	73036	71282	Natural	1280	10	63	66	93	100	108	394.3	392.7	398.1	396.0	398.1	396.2	398.9	398.1	399.0	398.3	399.5	399.0
WKGL020C	70865	73036	48" CSP	15	10	63	66	97	104	115	385.1	394.3	398.3	398.1	398.4	398.1	399.3	398.9	399.5	399.0	400.0	399.5
WKGL020D	70862	70865	72" CSP	1015	10	63	66	97	104	115	387.2	385.1	398.6	398.3	398.7	398.4	400.0	399.3	400.3	399.5	400.8	400.0
WKGL030A	58511	70862	42" CSP	610	10	13	13	21	35	40	392.1	390.4	398.7	398.6	398.8	398.7	400.3	400.0	400.9	400.3	401.7	400.8
WKGL030ARD	70862	58511	Roadway	610		0	0	0	0	0	404.2	403.3	398.7	398.7	398.8	398.8	400.3	400.3	400.9	400.9	401.7	401.7
WKGL030G	58499	70862	54" CMP	562	10	11	12	18	28	32	388.3	387.2	398.7	398.6	398.8	398.7	400.2	400.0	400.5	400.3	401.1	400.8
WKGL030GRD	58499	70862	Roadway	562		0	0	0	0	0	406.2	404.2	398.6	398.6	398.7	398.7	400.0	400.0	400.3	400.3	400.8	400.8
WKGL030B	58454	70862	42" CSP	70	10	41	44	63	69	71	396.3	390.4	398.9	398.6	399.0	398.7	400.9	400.0	401.3	400.3	401.9	400.8
WKGL030BRD	58454	70862	Roadway	70		0	0	0	0	0	410.2	404.2	398.6	398.6	398.7	398.7	400.0	400.0	400.3	400.3	400.8	400.8
WKGL030C	70121	58454	Natural	1650	10	25	26	40	51	50	399.0	396.4	400.8	398.9	400.9	399.0	401.3	400.9	401.7	401.3	402.1	401.9
WKGL030D	70120	70121	48" CSP	85	10	25	26	41	60	68	399.1	399.0	401.2	400.8	401.3	400.9	401.8	401.3	402.4	401.7	402.7	402.1
WKGL030DRD	70120	70121	Roadway	85		0	0	0	0	0	406.0	406.0	400.8	400.8	400.9	400.9	401.3	401.3	401.7	401.7	402.1	402.1
WKGL030E	71289	70120	Natural	400	10	25	26	41	61	70	400.6	399.5	402.3	401.2	402.3	401.3	402.7	401.8	403.1	402.4	403.3	402.7
WKGL030F	58463	71289	Natural	410	10	25	26	41	63	72	401.8	400.6	404.3	402.3	404.3	402.3	404.8	402.7	405.3	403.1	405.5	403.3
Willakenzie North - County Farm																						
WKCF020A	58172	58169	78" CSP	2866	10	166	167	206	248	258	393.2	389.9	398.9	393.3	398.9	393.3	401.0	393.7	403.5	394.1	404.4	394.2
WKCF020ARD	58172	58169	Roadway	2866		0	0	0	0	0	407.9	405.0	388.1	388.1	388.1	388.1	388.1	388.1	388.1	388.1	388.1	388.1
WKCF020B	66533	58172	78" CSP	1596	10	140	141	180	220	240	396.7	393.2	400.6	398.9	400.6	398.9	402.9	401.0	406.3	403.5	407.1	404.4
WKCF020BRD	58172	66533	Roadway	1596		0	0	0	0	0	407.9	406.0	400.6	400.6	400.6	400.6	402.9	402.9	406.3	406.3	407.1	407.1
WKCF030A	58356	66533	66" CSP	1085	10	107	107	141	190	191	398.6	396.6	402.4	400.6	402.4	400.6	404.9	402.9	410.2	406.3	410.4	407.1
WKCF030ARD	58356	66533	Roadway	1085		0	0	0	0	19	410.2	406.0	400.6	400.6	400.6	400.6	402.9	402.9	410.2	406.3	410.4	407.1
WKCF040A	59511	58356	60" CSP	2093	10	63	63	85	113	110	403.5	398.6	406.1	402.4	406.1	402.4	407.5	404.9	414.8	410.2	415.0	410.4
WKCF040ARD	59511	58356	Roadway	2093		0	0	0	0	13	414.8	410.2	402.4	402.4	402.4	402.4	404.9	404.9	414.8	410.2	415.0	410.4
WKCF070D	66196	59511	54" CSP	2465	10	24	24	37	58	61	405.7	403.9	407.9	406.1	408.0	406.1	408.7	407.5	417.7	414.8	417.8	415.0
WKCF070DRD	66196	59511	Roadway	2465		0	0	0	0	3	417.7	414.8	406.1	406.1	406.1	406.1	407.5	407.5	417.7	414.8	417.8	415.0
WKCF070A	68994	59511	54" CSP	467	10	16	15	16	32	40	404.4	403.5	406.2	406.1	406.2	406.1	407.6	407.5	415.1	414.8	415.4	415.0
WKCF070ARD	68994	59511	Roadway	467		0	0	0	0	0	415.4	414.8	406.1	406.1	406.1	406.1	407.5	407.5	414.8	414.8	415.4	415.0
WKCF070B	59487	68994	42" CSP	581	10	16	15	15	32	39	405.7	404.4	407.2	406.2	407.1	406.2	407.8	407.6	415.3	415.1	415.7	415.4
WKCF070BRD	59487	68994	Roadway	581		0	0	0	0	0	415.7	415.4	406.2	406.2	406.2	406.2	407.6	407.6	415.1	415.1	415.7	415.4
WKCF070C	59489	59487	36" CSP	533	10	16	15	16	32	40	406.7	405.7	408.4	407.2	408.3	407.1	408.4	407.8	415.7	415.3	416.0	415.7
WKCF070CRD	59487	59489	Roadway	533		0	0	0	0	-6	415.7	415.6	408.4	408.4	408.3	408.3	408.4	408.4	415.7	415.7	415.8	416.0
Willakenzie South - Debrick Slough																						
WKDS010A	60730	71171	Natural	1200	25	141	156	163	229	258	387.2	384.6	390.0	388.8	390.1	388.8	390.1	388.8	390.5	388.8	390.6	388.8
WKDS010B	60786	60730	54" CSP	486	10	31	33	52	79	89	392.6	392.0	394.9	393.6	394.9	393.6	395.6	394.1	396.5	394.6	397.0	394.8
WKDS010BRD	60786	60730	Roadway	486		0	0	0	0	0	402.3	399.3	390.0	390.0	390.1	390.1	390.1	390.1	390.5	390.5	390.6	390.6
WKDS020A	71172	60730	Natural	600	25	110	122	103	145	171	388.6	387.2	391.1	390.0	391.2	390.1	391.0	390.1	391.3	390.5	391.5	390.6
WKDS020B	71173	71172	72" CSP	640	50	110	122	104	145	172	390.3	388.6	393.9	391.1	394.1	391.2	393.8	391.0	394.5	391.3	395.0	391.5
WKDS020BRD	71173	71172	Roadway	640		0	0	0	0	0	399.5	399.5	391.1	391.1	391.2	391.2	391.0	391.0	391.3	391.3	391.5	391.5
WKDS020C	62475	71173	Natural	200	25	110	122	104	145	172	391.0	390.3	394.5	393.9	394.7	394.1	394.4	393.8	395.0	394.5	395.4	395.0
WKDS020D	62474	62475	72" CSP culvert	316	50	110	122	104	145	172	392.4	391.0	395.7	394.5	396.0	394.7	395.6	394.4	396.4	395.0	397.0	395.4
WKDS020DRD	62474	62475	Roadway	316		0	0	0	0	0	404.0	404.0	394.5	394.5	394.7	394.7	394.4	394.4	395.0	395.0	395.4	395.4

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKDS030A	71176	62474	Natural	1300	25	98	109	95	128	161	393.0	392.9	397.2	395.7	397.3	396.0	397.1	395.6	397.5	396.4	397.9	397.0
WKDS030B	99056	71176	Natural	380	25	99	110	100	144	170	393.8	393.0	397.5	397.2	397.6	397.3	397.4	397.1	397.9	397.5	398.3	397.9
WKDS030C1	99058	99056	3.75'x6' CSP culvert	49	25	52	57	52	76	88	394.1	393.8	397.5	397.5	397.7	397.6	397.5	397.4	398.0	397.9	398.4	398.3
WKDS030C2	99058	99056	3.75'x6' CSP culvert	49	25	47	53	49	72	86	394.0	393.8	397.5	397.5	397.7	397.6	397.5	397.4	398.0	397.9	398.4	398.3
WKDS030CRD	99058	99056	Roadway	49		0	0	0	0	0	400.2	400.2	397.5	397.5	397.6	397.6	397.4	397.4	397.9	397.9	398.3	398.3
WKDS040A	71179	99058	Natural	220	10	68	85	92	100	118	396.5	394.0	399.2	397.5	399.5	397.7	399.6	397.5	399.8	398.0	400.0	398.4
WKDS040B	71180	71179	Natural	40	10	68	85	92	100	118	396.7	396.5	399.3	399.2	399.6	399.5	399.7	399.6	399.8	399.8	400.1	400.0
WKDS040BRD	71180	71179	Roadway	40		0	0	0	0	0	403.7	403.7	399.2	399.2	399.5	399.5	399.6	399.6	399.8	399.8	400.0	400.0
WKDS040C	71182	71180	Natural	2370	10	69	88	99	107	127	398.8	396.7	401.1	399.3	401.4	399.6	401.5	399.7	401.6	399.8	401.9	400.1
WKDS040D	71183	71182	36" CMP culvert	49	10	69	73	74	74	75	398.5	398.8	404.8	401.1	405.0	401.4	405.0	401.5	405.1	401.6	405.1	401.9
WKDS040DRD	71183	71182	Roadway	49		0	20	27	38	60	404.8	404.8	401.1	401.1	405.0	404.9	405.0	404.9	405.1	405.0	405.1	405.0
WKDS040E	71185	71183	Natural	430	10	72	93	101	112	134	397.3	396.8	404.8	404.8	405.1	405.0	405.1	405.0	405.2	405.1	405.3	405.1
WKDS040F	71186	71185	72" CMP culvert	20	10	78	89	101	115	131	397.5	397.3	404.9	404.8	405.2	405.1	405.3	405.1	405.4	405.2	405.6	405.3
WKDS040FRD	71186	71185	Roadway	20		0	0	0	0	0	411.2	411.2	404.8	404.8	405.1	405.1	405.1	405.1	405.2	405.2	405.3	405.3
WKDS040G	71187	71186	Natural	220	10	87	94	120	131	141	397.3	397.5	404.9	404.9	405.2	405.2	405.3	405.3	405.4	405.4	405.6	405.6
WKDS040H	71188	71187	72" CMP culvert	99	10	91	96	128	142	154	397.5	397.3	405.1	404.9	405.5	405.2	405.7	405.3	405.9	405.4	406.3	405.6
WKDS040HRD	71188	71187	Roadway	99		0	0	0	0	0	410.2	410.2	404.9	404.9	405.2	405.2	405.3	405.3	405.4	405.4	405.6	405.6
WKDS040I	62914	71188	Natural	430	10	94	98	135	153	167	399.9	397.5	405.1	405.1	405.6	405.5	405.7	405.7	405.9	405.9	406.3	406.3
WKDS050A	62978	62914	72" CSP	716	10	83	87	119	127	136	400.1	399.5	405.3	405.1	406.0	405.6	406.2	405.7	406.5	405.9	407.1	406.3
WKDS050ARD	62978	62914	Roadway	716		0	0	0	0	0	412.8	412.8	405.1	405.1	405.6	405.6	405.7	405.7	405.9	405.9	406.3	406.3
WKDS060A	62946	62978	66" CSP	1100	10	74	77	101	101	104	401.6	400.0	405.9	405.3	406.7	406.0	407.1	406.2	407.8	406.5	408.7	407.1
WKDS060ARD	62946	62978	Roadway	1100		0	0	0	0	0	414.2	414.2	405.3	405.3	406.0	406.0	406.2	406.2	406.5	406.5	407.1	407.1
WKDS070A	62915	62946	60" CSP	1640	10	58	60	77	76	81	403.6	401.5	406.9	405.9	407.7	406.7	408.5	407.1	409.4	407.8	410.4	408.7
WKDS070ARD	62915	62946	Roadway	1640		0	0	0	0	0	410.4	410.4	405.9	405.9	406.7	406.7	407.1	407.1	407.8	407.8	408.7	408.7
WKDS070B	71121	62915	Natural	450	10	60	62	83	93	91	405.3	403.6	407.1	406.9	407.8	407.7	408.5	408.5	409.4	409.4	410.4	410.4
WKDS070C	62891	71121	Natural	420	10	61	64	92	134	149	406.8	405.3	409.6	407.1	409.7	407.8	410.0	408.5	410.6	409.4	410.7	410.4
WKDS070D	62989	62891	48" CSP	30	10	61	64	92	135	150	408.2	407.8	411.0	410.1	411.1	410.2	411.9	410.7	413.1	411.3	413.6	411.4
WKDS070DRD	62989	62891	Roadway	30		0	0	0	0	0	416.0	415.5	409.6	409.6	409.7	409.7	410.0	410.0	410.6	410.6	410.7	410.7
WKDS080A	62986	62989	36" CSP	650	10	20	22	25	27	29	412.2	408.2	413.5	411.0	413.6	411.1	413.7	411.9	414.1	413.1	414.6	413.6
WKDS080ARD	62986	62989	Roadway	650		0	0	0	0	0	420.3	416.0	411.0	411.0	411.1	411.1	411.9	411.9	413.1	413.1	413.6	413.6
WKDS080B	62760	62986	42" CSP	738	10	20	22	25	26	28	413.0	412.1	415.1	413.5	415.2	413.6	415.4	413.7	415.4	414.1	415.6	414.6
WKDS080BRD	62760	62986	Roadway	738		0	0	0	0	0	421.2	420.3	413.5	413.5	413.6	413.6	413.7	413.7	414.1	414.1	414.6	414.6
WKDS080C	62758	62760	36" CSP	242	10	20	22	25	26	28	413.6	413.2	415.6	415.1	415.8	415.2	416.0	415.4	416.1	415.4	416.2	415.6
WKDS080CRD	62758	62760	Roadway	242		0	0	0	0	0	421.9	421.2	415.1	415.1	415.2	415.2	415.4	415.4	415.4	415.4	415.6	415.6
WKDS080D	62713	62758	30" CSP	48	10	20	22	25	26	28	414.1	414.1	416.4	415.6	416.6	415.8	416.8	416.0	417.0	416.1	417.2	416.2
WKDS080DRD	62713	62758	Roadway	48		0	0	0	0	0	420.0	420.0	415.6	415.6	415.8	415.8	416.0	416.0	416.1	416.1	416.2	416.2

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKDS090A	62715	62713	Natural	457	10	11	12	14	14	15	415.4	415.0	416.5	416.4	416.6	416.6	416.9	416.8	417.0	417.0	417.2	417.2
WKDS090B	62716	62715	30" CSP culvert	442	10	11	11	13	13	13	414.6	414.0	416.9	416.5	417.0	416.6	417.4	416.9	417.6	417.0	417.9	417.2
WKDS090BRD	62716	62715	Roadway	442		0	0	0	0	0	420.5	420.5	416.5	416.5	416.6	416.6	416.9	416.9	417.0	417.0	417.2	417.2
WKDS090C	71102	62716	Natural	310	10	11	12	19	21	20	416.1	414.6	416.9	416.9	417.1	417.0	417.5	417.4	417.6	417.6	417.9	417.9
WKDS090D	71101	71102	Natural	364	10	11	12	20	29	34	417.4	416.1	418.2	416.9	418.2	417.1	418.4	417.5	418.5	417.6	418.6	417.9
Willakenzie South - Delta Ponds																						
WKDP130A	71156	71157	Natural	330	10	47	47	61	111	124	395.6	386.2	397.4	387.6	397.4	387.6	397.6	387.8	398.2	388.2	398.3	388.3
WKDP130B	60760	71156	Natural	320	10	47	47	61	111	124	400.0	396.0	403.9	398.4	403.9	398.4	404.2	398.8	405.1	399.7	405.3	399.8
WKDP130C	66584	60760	54" CSP	1332	10	22	22	32	60	59	400.4	400.0	404.1	403.9	404.1	403.9	404.6	404.2	406.8	405.1	406.9	405.3
WKDP130CRD	66584	60760	Roadway	1332		0	0	0	0	0	410.1	409.5	403.9	403.9	403.9	403.9	404.2	404.2	405.1	405.1	405.3	405.3
WKDP130D	60840	66584	48" CSP	553	10	22	22	32	60	59	401.9	400.6	404.3	404.1	404.3	404.1	405.0	404.6	407.8	406.8	407.9	406.9
WKDP130DRD	66584	60840	Roadway	553		0	0	0	0	0	410.1	407.8	404.3	404.3	404.3	404.3	405.0	405.0	407.8	407.8	407.9	407.9
WKDP130E	60828	60840	36" CSP	558	10	12	12	19	32	37	404.1	402.5	405.4	404.3	405.4	404.3	405.8	405.0	409.7	407.8	410.2	407.9
WKDP130ERD	60828	60840	Roadway	558		0	0	0	0	0	413.0	407.8	404.3	404.3	404.3	404.3	405.0	405.0	407.8	407.8	407.9	407.9
WKDP130F	60811	60840	36" CSP	548	10	11	11	13	26	32	403.3	402.5	404.8	404.3	404.8	404.3	405.3	405.0	408.9	407.8	409.4	407.9
WKDP130FRD	60811	60840	Roadway	548		0	0	0	0	0	414.1	407.8	404.3	404.3	404.3	404.3	405.0	405.0	407.8	407.8	407.9	407.9
WKDP080A	66556	59213	36" CSP	313	10	52	53	57	57	58	389.2	383.6	396.3	388.6	397.1	388.6	398.2	388.2	398.2	388.6	398.2	388.6
WKDP080ARD	66556	59213	Roadway	313		0	0	28	38	55	398.0	392.0	388.6	388.6	388.6	388.6	398.2	392.2	398.2	392.2	398.2	392.2
WKDP080B	60844	66556	54" CSP	635	10	37	38	61	77	89	392.9	391.8	396.6	396.3	397.4	397.1	399.0	398.2	399.6	398.2	400.1	398.2
WKDP080BRD	60844	66556	Roadway	635		0	0	0	0	0	400.9	398.0	396.3	396.3	397.1	397.1	398.2	398.2	398.2	398.2	398.2	398.2
WKDP090C	60771	60844	24" CSP	786	10	9	10	14	16	15	399.1	393.4	400.0	396.6	400.1	397.4	402.1	399.0	402.2	399.6	402.2	400.1
WKDP090CRD	60771	60844	Roadway	786		0	0	3	5	9	402.0	400.9	396.6	396.6	397.4	397.4	402.1	401.0	402.2	401.0	402.2	401.0
WKDP090A	60856	60844	48" CSP	119	10	23	27	36	49	57	393.7	393.4	396.7	396.6	397.5	397.4	399.2	399.0	399.8	399.6	400.3	400.1
WKDP090ARD	60856	60844	Roadway	119		0	0	0	0	0	401.0	400.9	396.6	396.6	397.4	397.4	399.0	399.0	399.6	399.6	400.1	400.1
WKDP090B	60804	60856	42" CSP	1801	10	24	25	36	49	57	397.9	393.7	399.7	396.7	399.7	397.5	401.9	399.2	405.4	399.8	407.3	400.3
WKDP090BRD	60804	60856	Roadway	1801		0	0	0	0	0	407.3	401.0	396.7	396.7	397.5	397.5	399.2	399.2	399.8	399.8	407.3	401.0
WKDP120A	61595	60804	42" CSP	1894	10	13	13	21	29	36	400.7	398.0	402.2	399.7	402.2	399.7	402.9	401.9	407.6	405.4	410.6	407.3
WKDP120ARD	61595	60804	Roadway	1894		0	0	0	0	0	416.7	407.3	399.7	399.7	399.7	399.7	401.9	401.9	405.4	405.4	407.3	407.3
WKDP080C	59248	66556	30" CSP	439	10	11	11	17	17	15	392.3	389.2	396.6	396.3	397.5	397.1	398.4	398.2	398.4	398.2	398.5	398.2
WKDP080CRD	59248	66556	Roadway	439		0	0	7	8	10	398.2	398.0	396.3	396.3	397.1	397.1	398.4	398.2	398.4	398.2	398.5	398.2
WKDP080D	59218	59248	24" CSP	209	10	11	11	17	18	20	395.5	392.3	397.1	396.6	398.0	397.5	399.8	398.4	399.9	398.4	400.3	398.5
WKDP080DRD	59218	59248	Roadway	209		0	0	0	0	0	400.5	398.2	396.6	396.6	397.5	397.5	398.4	398.4	398.4	398.4	398.5	398.5
WKDP080E	59181	59218	30" CSP	150	10	11	11	17	18	18	395.6	395.5	397.3	397.1	398.1	398.0	400.2	399.8	400.4	399.9	400.6	400.3
WKDP080ERD	59218	59181	Roadway	150		0	0	0	0	-5	400.5	400.2	397.3	397.3	398.1	398.1	400.2	400.2	400.4	400.4	400.6	400.6
WKDP080F	59198	59181	Natural	175	10	11	11	17	25	28	396.5	395.6	397.8	397.3	398.3	398.1	400.2	400.2	400.4	400.4	400.7	400.6
WKDP080G	59197	59198	21" CSP	216	10	11	11	16	17	17	398.3	396.5	399.5	397.8	399.6	398.3	401.1	400.2	401.2	400.4	401.3	400.7
WKDP080GRD	59197	59198	Roadway	216		0	0	9	19	28	401.0	400.2	397.8	397.8	398.3	398.3	401.1	400.3	401.2	400.4	401.3	400.7
Willakenzie South - Gilham-Norkenzie																						
WKGN010A	59134	59192	72" CSP	264	10	136	142	210	223	247	390.4	389.3	394.1	389.4	394.2	389.4	395.2	389.5	395.4	389.5	396.1	389.5
WKGN010ARD	59134	59192	Roadway	264		0	0	0	0	0	400.0	399.0	389.4	389.4	389.4	389.4	389.5	389.5	389.5	389.5	389.5	389.5
WKGN010B	68175	59134	36" CSP	895	10	11	11	18	28	31	395.6	392.0	396.5	394.1	396.6	394.2	397.0	395.2	397.6	395.4	398.0	396.1
WKGN010BRD	68175	59134	Roadway	895		0	0	0	0	0	404.6	400.0	394.1	394.1	394.2	394.2	395.2	395.2	395.4	395.4	396.1	396.1

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAKENZIE BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WKGN010C	59868	59134	72" CSP	2151	10	113	118	174	191	210	396.5	390.4	399.7	394.1	399.7	394.2	400.8	395.2	401.3	395.4	402.1	396.1
WKGN010CRD	59868	59134	Roadway	2151		0	0	0	0	0	414.2	400.0	394.1	394.1	394.2	394.2	395.2	395.2	395.4	395.4	396.1	396.1
WKGN030D	59862	59868	36 "CSP	1880	10	10	11	17	22	23	402.2	398.6	403.6	399.7	403.7	399.7	403.9	400.8	404.2	401.3	404.4	402.1
WKGN030DRD	59868	59862	Roadway	1880		0	0	0	0	0	414.2	413.3	403.6	403.6	403.7	403.7	403.9	403.9	404.2	404.2	404.4	404.4
WKGN030E	59859	59862	42" CSP	606	10	10	11	17	22	26	403.4	402.2	404.6	403.6	404.7	403.7	405.1	403.9	405.4	404.2	405.6	404.4
WKGN030ERD	59862	59859	Roadway	606		0	0	0	0	0	413.3	413.1	404.6	404.6	404.7	404.7	405.1	405.1	405.4	405.4	405.6	405.6
WKGN030A	59896	59868	66 " CSP	793	10	90	93	137	153	169	398.6	396.9	401.9	399.7	402.0	399.7	403.0	400.8	403.5	401.3	404.5	402.1
WKGN030ARD	59868	59896	Roadway	793		0	0	0	0	0	414.2	411.3	401.9	401.9	402.0	402.0	403.0	403.0	403.5	403.5	404.5	404.5
WKGN030B	59889	59896	66" CSP	1460	10	81	83	123	137	151	401.3	398.6	404.5	401.9	404.5	402.0	405.7	403.0	406.3	403.5	407.9	404.5
WKGN030BRD	59889	59896	Roadway	1460		0	0	0	0	0	413.7	411.3	401.9	401.9	402.0	402.0	403.0	403.0	403.5	403.5	404.5	404.5
WKGN030C	59878	59896	30 " CSP	509	10	9	9	15	21	24	403.8	401.9	405.0	402.9	405.0	402.9	405.4	403.2	405.9	403.5	406.2	404.5
WKGN030CRD	59896	59878	Roadway	509		0	0	0	0	0	411.3	409.9	405.0	405.0	405.0	405.0	405.4	405.4	405.9	405.9	406.2	406.2
WKGN040A	59875	59878	36" CSP	411	10	0	0	0	1	2	405.2	404.7	405.2	405.0	405.2	405.0	405.4	405.4	406.0	405.9	406.2	406.2
WKGN040ARD	59875	59878	Roadway	411		0	0	0	0	0	411.3	409.9	405.0	405.0	405.0	405.0	405.4	405.4	405.9	405.9	406.2	406.2
WKGN040B	59873	59875	27" CSP	258	10	0	0	0	0	0	406.4	405.8	406.4	405.8	406.4	405.8	406.4	405.8	406.4	406.0	406.5	406.2
WKGN040BRD	59873	59875	Roadway	258		0	0	0	0	0	413.9	411.3	405.2	405.2	405.2	405.2	405.4	405.4	406.0	406.0	406.2	406.2
WKGN040C	59889	59873	24" CSP	364	10	0	0	0	0	0	407.8	406.6	406.4	406.4	406.4	406.4	406.4	406.4	406.4	406.4	407.9	406.7
WKGN040CRD	59873	59889	Roadway	364		0	0	0	0	0	413.9	413.7	404.5	404.5	404.5	404.5	405.7	405.7	406.3	406.3	407.9	407.9
WKGN060A	61562	59889	66" CSP	1506	10	65	68	100	111	123	402.3	401.3	405.9	404.5	406.0	404.5	407.3	405.7	408.1	406.3	410.2	407.9
WKGN060ARD	59889	61562	Roadway	1506		0	0	0	0	0	413.7	412.7	405.9	405.9	406.0	406.0	407.3	407.3	408.1	408.1	410.2	410.2
WKGN070C	61554	61562	42" CSP	1014	10	18	18	28	34	42	405.7	403.5	407.2	405.9	407.2	406.0	408.3	407.3	409.5	408.1	412.1	410.2
WKGN070CRD	61554	61562	Roadway	1014		0	0	0	0	0	415.7	412.7	405.9	405.9	406.0	406.0	407.3	407.3	408.1	408.1	410.2	410.2
WKGN070D	61444	61554	36" CSP	43	10	18	18	27	34	42	410.6	406.2	411.3	407.2	411.3	407.2	411.3	408.3	411.6	409.5	412.7	412.1
WKGN070DRD	61554	61444	Roadway	43		0	0	0	0	0	415.7	415.0	411.3	411.3	411.3	411.3	411.3	411.3	411.6	411.6	412.7	412.7
WKGN070E	71196	61444	Natural	500	10	18	18	27	34	42	411.7	410.6	413.8	411.3	413.8	411.3	414.2	411.3	414.4	411.6	414.4	412.7
WKGN070F	71197	71196	36" CSP culvert	31	10	18	19	28	34	41	411.8	411.7	414.0	413.8	414.0	413.8	414.5	414.2	414.8	414.4	415.0	414.4
WKGN070FRD	71197	71196	Roadway	31		0	0	0	0	0	417.0	417.0	413.8	413.8	413.8	413.8	414.2	414.2	414.4	414.4	414.4	414.4
WKGN070G	71198	71197	Natural	340	10	18	19	28	37	43	412.2	411.8	414.1	414.0	414.1	414.0	414.6	414.5	414.9	414.8	415.1	415.0
WKGN070H	72432	71198	36" CSP culvert	17	10	19	19	29	42	49	412.2	412.2	414.3	414.1	414.4	414.1	414.9	414.6	415.4	414.9	415.7	415.1
WKGN070HRD	71198	72432	Roadway	17		0	0	0	0	0	417.8	417.6	414.3	414.3	414.4	414.4	414.9	414.9	415.4	415.4	415.7	415.7
WKGN070A	61565	61562	48" CSP	1999	10	25	26	39	42	46	405.7	403.5	407.8	405.9	407.9	406.0	408.9	407.3	409.9	408.1	411.6	410.2
WKGN070ARD	61565	61562	Roadway	1999		0	0	0	0	0	417.9	412.7	405.9	405.9	406.0	406.0	407.3	407.3	408.1	408.1	410.2	410.2
WKGN070B	99498	61565	42" CSP	695	10	25	26	40	48	51	408.2	405.8	409.9	407.8	409.9	407.9	410.6	408.9	411.2	409.9	412.8	411.6
WKGN070BRD	99498	61565	Roadway	695		0	0	0	0	0	420.0	417.9	407.8	407.8	407.9	407.9	408.9	408.9	409.9	409.9	411.6	411.6
WKGN090A	99495	99498	36" CSP	597	10	14	14	22	26	31	409.3	408.2	410.8	409.9	410.9	409.9	411.5	410.6	412.1	411.2	413.4	412.8
WKGN090ARD	99495	99498	Roadway	597		0	0	0	0	0	421.0	420.0	409.9	409.9	409.9	409.9	410.6	410.6	411.2	411.2	412.8	412.8
WKGN090B	61437	99495	48" CSP	122	10	14	14	22	26	31	409.6	409.4	411.1	410.8	411.2	410.9	411.7	411.5	412.3	412.1	413.5	413.4
WKGN090BRD	99495	61437	Roadway	122		0	0	0	0	0	421.0	415.6	411.1	411.1	411.2	411.2	411.7	411.7	412.3	412.3	413.5	413.5
WKGN090C	61423	61437	Natural	800	10	14	14	22	29	35	412.0	409.6	413.8	411.1	413.8	411.2	414.0	411.7	414.3	412.3	414.4	413.5

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLAMETTE RIVER BASIN STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions			Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)					
											10-Year		25-Year Winter		25-Year Summer	
	US	DS				10-Year	25-Year-W	25-Year-S	US	DS	US	DS	US	DS	US	DS
WRRR010E	76425	59065	48" CSP	48	10	39	39	63	378.1	383.1	392.2	392.1	392.2	392.1	392.2	392.1
WRRR010D	76424	76425	48" CSP	100	10	39	39	63	378.3	378.1	392.3	392.2	392.3	392.2	392.5	392.2
WRRR010DRD	76424	76425	Roadway	100		0	0	0	396.4	381.8	392.2	392.2	392.2	392.2	392.2	392.2
WRRR010C	59082	76424	48" CSP	45	10	39	39	63	387.4	378.3	392.3	392.3	392.3	392.3	392.6	392.5
WRRR010CRD	76424	59082	Roadway	45		0	0	0	396.4	396.0	392.3	392.3	392.3	392.3	392.6	392.6
WRRR010B	59080	59082	54" CSP	635	10	39	39	63	387.8	387.4	392.6	392.3	392.6	392.3	393.4	392.6
WRRR010BRD	59080	59082	Roadway	635		0	0	0	397.6	396.0	392.3	392.3	392.3	392.3	392.6	392.6
WRRR010A	59087	59080	54" CSP	247	10	39	39	63	388.0	387.8	392.7	392.6	392.7	392.6	393.7	393.4
WRRR010ARD	59080	59087	Roadway	247		0	0	0	397.6	397.0	392.7	392.7	392.7	392.7	393.7	393.7
WRRR020A	66178	59087	54" CSP	22	10	35	35	56	388.0	388.0	392.8	392.7	392.8	392.7	393.8	393.7
WRRR020ARD	66178	59087	Roadway	22		0	0	0	397.0	397.0	392.7	392.7	392.7	392.7	393.7	393.7
WRRR030A	59120	66178	48" CSP	1241	10	23	24	37	389.4	388.3	393.1	392.8	393.1	392.8	394.7	393.8
WRRR030ARD	59120	66178	Roadway	1241		0	0	0	398.6	397.0	392.8	392.8	392.8	392.8	393.8	393.8
WRRR040A	60606	59120	48" CSP	775	10	20	20	31	390.0	389.4	393.2	393.1	393.3	393.1	395.1	394.7
WRRR040ARD	60606	59120	Roadway	775		0	0	0	399.2	398.6	393.1	393.1	393.1	393.1	394.7	394.7
WRRR050B	60626	60606	42" CSP	600	10	12	12	19	392.4	390.8	393.6	393.2	393.6	393.3	395.4	395.1
WRRR050BRD	60626	60606	Roadway	600		0	0	0	401.0	399.2	393.2	393.2	393.3	393.3	395.1	395.1
WRRR050A	60617	60626	36" CSP	355	10	12	12	18	393.2	392.7	394.7	393.8	394.7	393.8	395.6	395.4
WRRR050ARD	60626	60617	Roadway	355		0	0	0	401.0	400.6	394.7	394.7	394.7	394.7	395.6	395.6
Outfall B																
WRRR060F	66175	59066	30" CSP	10	10	8	8	14	383.4	382.5	392.9	392.9	393.0	392.9	393.1	392.9
WRRR060E	66552	66175	30" CSP	41	10	8	8	14	381.3	383.4	393.1	392.9	393.0	393.0	393.0	393.1
WRRR060D	76421	66552	30" CSP	130	10	8	8	14	381.6	381.3	393.1	393.1	393.0	393.0	393.2	393.0
WRRR060C	59084	76421	30" CSP	38	10	8	8	14	389.2	381.6	393.0	393.1	393.0	393.0	393.2	393.2
WRRR060B	59083	59084	30" CSP	109	10	8	8	14	390.7	389.2	393.1	393.0	393.1	393.0	393.4	393.2
WRRR060BRD	59083	59084	Roadway	109		0	0	0	402.0	400.0	393.0	393.0	393.0	393.0	393.2	393.2
WRRR060A	67889	59083	30" CSP	998	10	8	8	14	393.8	391.4	395.0	393.1	395.0	393.1	395.4	393.4
WRRR060ARD	67889	59083	Roadway	998		0	0	0	404.0	402.0	393.1	393.1	393.1	393.1	393.4	393.4
Outfall C																
WRRR090D	76423	60612	30" CSP	588	10	11	11	14	399.2	398.4	400.8	399.6	400.9	399.6	401.2	399.6
WRRR090C	76422	76423	30" CSP	43	10	11	11	14	397.8	399.2	400.9	400.8	400.9	400.9	401.3	401.2
WRRR090CRD	76422	76423	Roadway	43		0	0	0	406.0	405.0	400.8	400.8	400.9	400.9	401.2	401.2
WRRR090B	60647	76422	30" CSP	12	10	11	11	14	399.2	397.8	400.8	400.9	400.9	400.9	401.3	401.3
WRRR090BRD	60647	76422	Roadway	12		0	0	0	406.5	405.0	400.9	400.9	400.9	400.9	401.3	401.3
WRRR090A	60658	60647	30" CSP	413	10	7	7	9	395.3	399.3	401.1	400.8	401.1	400.9	401.5	401.3
WRRR090ARD	60647	60658	Roadway	413		0	0	0	405.5	405.3	401.1	401.1	401.1	401.1	401.5	401.5
WRRR100A	62222	60658	27" CSP	700	10	7	7	10	400.8	399.8	402.2	401.1	402.2	401.1	402.5	401.5
WRRR100ARD	62222	60658	Roadway	700		0	0	0	406.0	404.3	401.1	401.1	401.1	401.1	401.5	401.5

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLOW CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
Willow Creek - Main Stem																						
WCMN010A	71038	71120	Natural	400	25	598	870	225	804	902	381.4	376.5	388.5	388.5	390.2	390.0	386.5	386.5	389.6	389.6	390.3	390.1
WCMN010B	71037	71038	bridge	34	50	591	870	224	798	902	381.4	381.4	388.5	388.5	390.2	390.2	386.5	386.5	389.7	389.6	390.3	390.3
WCMN010C	71049	71037	Natural	900	25	514	836	206	701	849	383.3	381.4	389.3	388.5	390.5	390.2	387.1	386.5	389.9	389.7	390.6	390.3
WCMN010D	73754	71049	Natural	3000	25	516	869	211	657	862	390.1	383.3	395.6	389.3	397.7	390.5	393.1	387.1	397.5	389.9	397.6	390.6
Willow Creek - West Branch																						
WCMN010H	54462	73754	Natural	1500	10	14	13	14	23	28	398.5	392.1	399.5	395.6	399.5	397.7	399.7	393.1	399.8	397.5	399.9	397.6
WCMN020A	54494	54462	48" CSP	125	10	14	14	16	27	32	396.4	398.5	399.6	399.5	399.6	399.5	399.8	399.7	400.0	399.8	400.2	399.9
WCMN020Ard	54494	54462	Roadway	125		0	0	0	0	0	403.0	403.0	399.5	399.5	399.5	399.5	399.7	399.7	399.8	399.8	399.9	399.9
WCMN020B	54495	54494	48" CSP	450	10	14	14	16	27	32	399.1	396.4	400.1	399.6	400.1	399.6	400.2	399.8	400.5	400.0	400.6	400.2
WCMN020Brd	54495	54494	Roadway	450		0	0	0	0	0	407.2	403.0	399.6	399.6	399.6	399.6	399.8	399.8	400.0	400.0	400.2	400.2
WCMN010E#1	76010	73754	4'x12' box culvert	64	25	166	200	89	204	249	392.4	392.1	395.8	395.6	398.0	397.7	393.9	393.2	397.6	397.5	397.9	397.6
WCMN010E#2	76010	73754	4'x12' box culvert	64	25	166	200	89	204	249	392.4	392.1	395.8	395.6	398.0	397.7	393.9	393.2	397.6	397.5	397.9	397.6
WCMN010Erd	76010	73754	Roadway	64		0	0	0	0	0	398.1	398.0	395.6	395.6	397.7	397.7	393.1	393.1	397.5	397.5	397.6	397.6
WCWE100A	71034	76010	Natural	676	25	328	389	173	419	512	394.0	390.4	397.5	395.8	398.3	398.0	396.9	393.9	397.8	397.6	398.2	397.9
WCWE100B	71033	71034	Natural	960	10	108	115	84	149	180	400.5	394.0	405.7	397.5	405.7	398.3	405.4	396.9	406.0	397.8	406.2	398.2
WCWE100C#1	71032	71033	42"x27" CMP elliptical culvert	47	10	27	28	27	30	31	400.6	400.6	405.9	405.7	406.0	405.7	405.7	405.4	406.3	406.0	406.5	406.2
WCWE100C#2	71032	71033	42"x27" CMP elliptical culvert	47	10	28	29	28	31	32	400.6	400.6	405.9	405.7	406.0	405.7	405.7	405.4	406.3	406.0	406.5	406.2
WCWE100Crd	71032	71033	Roadway	47		59	65	35	101	137	405.1	405.0	405.9	405.7	406.0	405.7	405.7	405.4	406.3	406.0	406.5	406.2
WCWE100D	71040	71034	Natural	417	25	234	279	119	298	364	396.0	394.0	401.1	397.5	401.3	398.3	400.5	396.9	401.4	397.8	401.6	398.2
WCWE100E	71031	71040	Natural	1200	25	235	279	120	301	366	402.7	396.0	409.4	401.1	409.6	401.3	408.5	400.5	409.7	401.4	410.0	401.6
WCWE100F	71030	71031	48" CSP culvert	32	25	149	149	128	155	152	404.6	403.4	411.4	409.4	411.5	409.6	410.1	408.5	411.5	409.7	411.7	410.0
WCWE100Frd	71030	71031	Roadway	32		102	149	0	174	247	410.8	410.8	411.4	411.1	411.5	411.2	408.5	408.5	411.5	411.3	411.7	411.4
WCWE110A	71050	71030	Natural	450	10	162	185	89	207	253	407.1	404.5	411.9	411.4	412.1	411.5	410.5	410.1	412.2	411.5	412.6	411.7
WCWE110B	71029	71050	Natural	800	10	162	185	95	208	253	411.6	407.1	415.6	411.9	415.9	412.1	414.7	410.5	416.3	412.2	417.1	412.6
WCWE110C#1	71028	71029	12" CSP culverts	19	10	7	7	7	7	7	413.7	413.7	417.0	415.6	417.1	415.9	416.9	414.7	417.1	416.3	417.3	417.1
WCWE110C#2	71028	71029	15" CSP culvert	19	10	12	12	11	12	12	413.7	413.7	417.0	415.6	417.1	415.9	416.9	415.0	417.1	416.3	417.3	417.1
WCWE110Crd	71028	71029	Roadway	19		146	170	80	196	247	416.3	416.3	417.0	416.7	417.1	416.7	416.9	416.6	417.1	416.8	417.3	417.1
WCWE120A	71027	71028	Natural	1300	10	135	155	83	172	209	424.4	413.6	427.7	417.0	428.0	417.1	427.1	416.9	428.2	417.1	428.7	417.3
WCWE120B	71026	71027	42" CSP culvert	32	10	104	106	84	107	109	425.1	426.3	431.5	429.4	431.6	429.4	430.7	429.2	431.7	429.4	431.8	429.5
WCWE120Brd	71026	71027	Roadway	32		32	49	0	67	101	431.2	431.2	431.5	431.3	431.6	431.4	427.1	427.1	431.7	431.4	431.8	431.5

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLOW CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WCWE120C	71025	71026	Natural	320	10	137	155	105	175	210	431.6	425.1	434.8	431.5	434.9	431.6	434.6	430.7	435.0	431.7	435.2	431.8
WCWE120D#1	71024	71025	18" CSP culverts	20	10	17	17	17	17	17	432.2	431.6	435.4	434.8	435.4	434.9	435.3	434.6	435.5	435.0	435.6	435.2
WCWE120D#2	71024	71025	24" CSP culvert	20	10	27	27	27	27	27	432.2	431.6	435.4	434.8	435.4	434.9	435.3	434.6	435.5	435.0	435.6	435.2
WCWE120Drd	71024	71025	Roadway	20		109	128	74	149	186	434.7	434.7	435.4	435.0	435.4	435.1	435.3	435.0	435.5	435.1	435.6	435.2
WCWE130A	71023	71024	Natural	700	10	110	123	92	138	166	439.8	432.2	442.0	435.4	442.1	435.4	441.9	435.3	442.2	435.5	442.3	435.6
WCWE130B	71022	71023	48" CMP culvert	30	10	111	123	94	139	167	443.1	442.3	447.7	445.2	448.4	445.5	447.1	444.9	449.3	445.8	450.9	446.0
WCWE130C	71021	71022	Natural	500	10	119	124	107	180	222	454.0	443.1	457.1	447.7	457.1	448.4	457.0	447.1	457.5	449.3	457.7	450.9
WCWE130D	71020	71021	48" CMP culvert	31	10	120	124	109	136	139	457.0	456.3	462.3	459.6	462.5	459.6	461.7	459.4	463.2	459.8	463.3	459.8
WCWE130Drd	71020	71021	Roadway	31		0	0	0	50	91	462.8	462.8	457.1	457.1	457.1	457.1	457.0	457.0	463.2	463.0	463.3	463.1
Willow Creek - East Branch																						
WCMN10F1	73761	73754	Natural	290	25	250	442	74	369	480	390.3	390.1	395.9	395.6	398.2	397.7	393.3	393.1	397.8	397.5	398.1	397.6
WCEA005A	76015	73761	48" CSP culvert	50	25	11	52	1	45	53	392.1	391.2	395.9	395.9	398.4	398.2	393.3	393.3	398.0	397.8	398.5	398.1
WCEA005Ard	76015	73761	Roadway	33		0	32	0	0	44	398.0	398.0	395.9	395.9	398.4	398.3	393.3	393.3	398.0	398.0	398.5	398.3
WCEA005B	73501	76015	Natural	550	25	9	69	0	42	89	395.4	392.1	396.5	395.9	398.4	398.4	393.3	393.3	398.1	398.0	398.5	398.5
WCEA005C	73500	73501	Natural	2000	25	16	73	0	49	93	403.6	396.0	403.9	396.5	404.5	398.4	395.4	395.4	404.3	398.1	404.6	398.5
WCMN10F2	73768	73761	Natural	535	25	243	369	74	325	388	390.6	390.3	396.5	395.9	398.7	398.2	394.0	393.3	398.2	397.8	398.8	398.1
WCMN010G#1	76016	73768	6'x8' box culvert	64	25	121	179	37	163	181	392.2	390.6	396.6	396.5	399.0	398.7	394.0	394.0	398.4	398.2	399.1	398.8
WCMN010G#2	76016	73768	6'x8' box culvert	64	25	121	179	37	163	181	392.2	390.6	396.6	396.5	399.0	398.7	394.0	394.0	398.4	398.2	399.1	398.8
WCMN010Grd	76016	73768	Roadway	64		0	40	0	0	53	398.6	398.5	396.5	396.5	399.0	398.8	394.0	394.0	398.2	398.2	399.1	398.9
WCEA10A1	73500	76016	Natural	1300	25	240	390	74	332	395	398.7	392.2	403.9	396.6	404.5	399.0	402.4	394.0	404.3	398.4	404.6	399.1
WCEA10A2	71041	73500	Natural	1322	25	249	445	73	381	510	405.0	398.7	410.6	403.9	410.8	404.5	408.5	402.4	410.8	404.3	411.0	404.6
WCEA030A	51997	71041	Natural	1774	10	41	54	47	60	79	435.8	405.0	437.5	410.6	437.6	410.8	437.6	408.5	437.6	410.8	437.6	411.0
WCEA030B	51998	51997	24" CSP culvert	164	10	40	40	41	41	41	439.1	435.8	445.7	437.5	445.7	437.6	445.8	437.6	446.0	437.6	446.1	437.6
WCEA030Brd	51998	51997	Roadway	164		23	21	35	82	102	445.3	445.3	445.7	445.4	445.7	445.4	445.8	445.5	446.0	445.6	446.1	445.6
WCEA030C	71042	71041	Natural	1200	25	247	273	149	314	392	418.0	405.0	424.7	410.6	424.7	410.8	424.7	408.5	424.8	410.8	424.9	411.0
WCEA030D	71017	71042	Natural	2000	25	246	274	182	308	389	426.7	418.0	437.5	424.7	438.3	424.7	436.8	424.7	438.5	424.8	438.8	424.9
WCEA030E	71016	71017	bridge	35	25	251	285	202	341	417	427.6	426.7	437.5	437.5	438.3	438.3	436.8	436.8	438.5	438.5	438.8	438.8
WCEA050A	71043	71016	Natural	414	25	254	279	221	346	419	435.1	427.6	438.8	437.5	439.0	438.3	438.6	436.8	439.4	438.5	439.9	438.8
WCEA050B	71015	71043	Natural	364	10	58	57	57	67	73	442.6	435.1	445.0	438.8	445.1	439.0	445.0	438.6	451.4	439.4	453.6	439.9
WCEA050C	71014	71015	30"x42" CMP elliptical culvert	51	10	55	55	55	59	60	448.0	446.9	451.9	449.3	451.8	449.3	451.9	449.3	452.2	451.4	453.6	453.6
WCEA050Crd	71014	71015	Roadway	51		3	2	4	42	86	451.7	451.7	451.9	451.7	451.8	451.7	451.9	451.7	452.2	452.0	453.6	453.6
WCEA050D	71044	71043	Natural	250	10	203	223	172	290	362	436.8	435.1	440.2	438.8	440.3	439.0	440.1	438.6	440.4	439.4	440.6	439.9

APPENDIX E
TABLE E-4
HYDRAULIC PERFORMANCE OF THE WILLOW CREEK STORM DRAINAGE SYSTEM UNDER FUTURE LAND USE CONDITIONS

Segment ID	Node ID		Segment Size/Type	Segment Length (ft)	Design Storm	Peak Flow (cfs) Future Land Use Conditions					Invert Elevation (ft)		Water Surface Elevation under Future Land Use Conditions (ft)									
													10-Year		25-Year Winter		25-Year Summer		50-Year		100-Year	
	US	DS				10-Year	25-Year-W	25-Year-S	50-Year	100-Year	US	DS	US	DS	US	DS	US	DS	US	DS	US	DS
WCEA060A	71013	71044	Natural	647	10	106	113	94	157	198	445.6	436.8	447.6	440.2	447.7	440.3	447.5	440.1	448.1	440.4	448.3	440.6
WCEA060B	71012	71013	36" CSP culvert	82	10	107	113	97	137	139	448.7	446.6	455.2	449.6	455.8	449.6	454.0	449.0	458.8	449.6	459.0	449.6
WCEA060Brd	71012	71013	Roadway	82		0	0	0	28	64	458.4	458.4	447.6	447.6	447.7	447.7	447.5	447.5	458.8	458.6	459.0	458.8
WCEA060C	71011	71044	Natural	600	10	81	86	58	120	150	450.0	436.8	452.5	440.2	452.5	440.3	452.3	440.1	452.7	440.4	452.8	440.6
WCEA060D#1	71010	71011	27"x42" CMP elliptical culvert	23	10	49	49	49	52	53	450.1	450.0	453.9	452.5	454.0	452.5	453.8	452.3	454.1	452.7	454.3	452.8
WCEA060D#2	71010	71011	18" CMP culvert	23	10	11	11	11	12	12	450.1	450.0	453.9	452.5	454.0	452.5	453.8	452.3	454.1	452.7	454.3	452.8
WCEA060D#3	71010	71011	18" CMP culvert	23	10	11	11	11	12	12	450.1	450.0	453.9	452.5	454.0	452.5	453.8	452.3	454.1	452.7	454.3	452.8
WCEA060Drd	71010	71011	Roadway	23		14	16	1	50	85	453.7	453.7	453.9	453.8	454.0	453.8	453.8	453.7	454.1	453.9	454.3	454.0
WCEA060E	71045	71010	Natural	228	10	84	86	76	125	161	452.3	450.1	455.1	453.9	455.1	454.0	454.9	453.8	456.1	454.1	456.3	454.3
WCEA060F	71046	71045	36" CMP culvert	41	10	63	63	62	65	66	456.8	456.3	461.7	458.8	461.8	458.8	461.7	458.8	462.0	458.9	462.1	458.9
WCEA060Frd	71046	71045	Roadway	41		21	24	15	68	96	461.4	461.4	461.7	461.5	461.8	461.5	461.7	461.5	462.0	461.7	462.1	461.8
WCEA060G	71048	71046	Natural	100	10	84	86	78	134	163	458.1	456.0	461.8	461.7	461.8	461.8	461.7	461.7	462.0	462.0	462.2	462.1
WCEA060H	71009	71048	Natural	400	10	85	86	79	134	163	466.3	458.1	469.0	461.8	469.0	461.8	468.9	461.7	469.6	462.0	470.0	462.2
WCEA060I	71008	71009	36" CSP culvert	24	10	85	87	79	110	112	468.7	468.1	473.3	470.3	473.4	470.3	473.0	470.1	475.2	471.1	475.4	471.1
WCEA060Ird	71008	71009	Roadway	24		0	0	0	26	53	474.7	474.7	469.0	469.0	469.0	469.0	468.9	468.9	475.2	474.9	475.4	475.0