Appendix A-1

CIP Conceptual Layouts

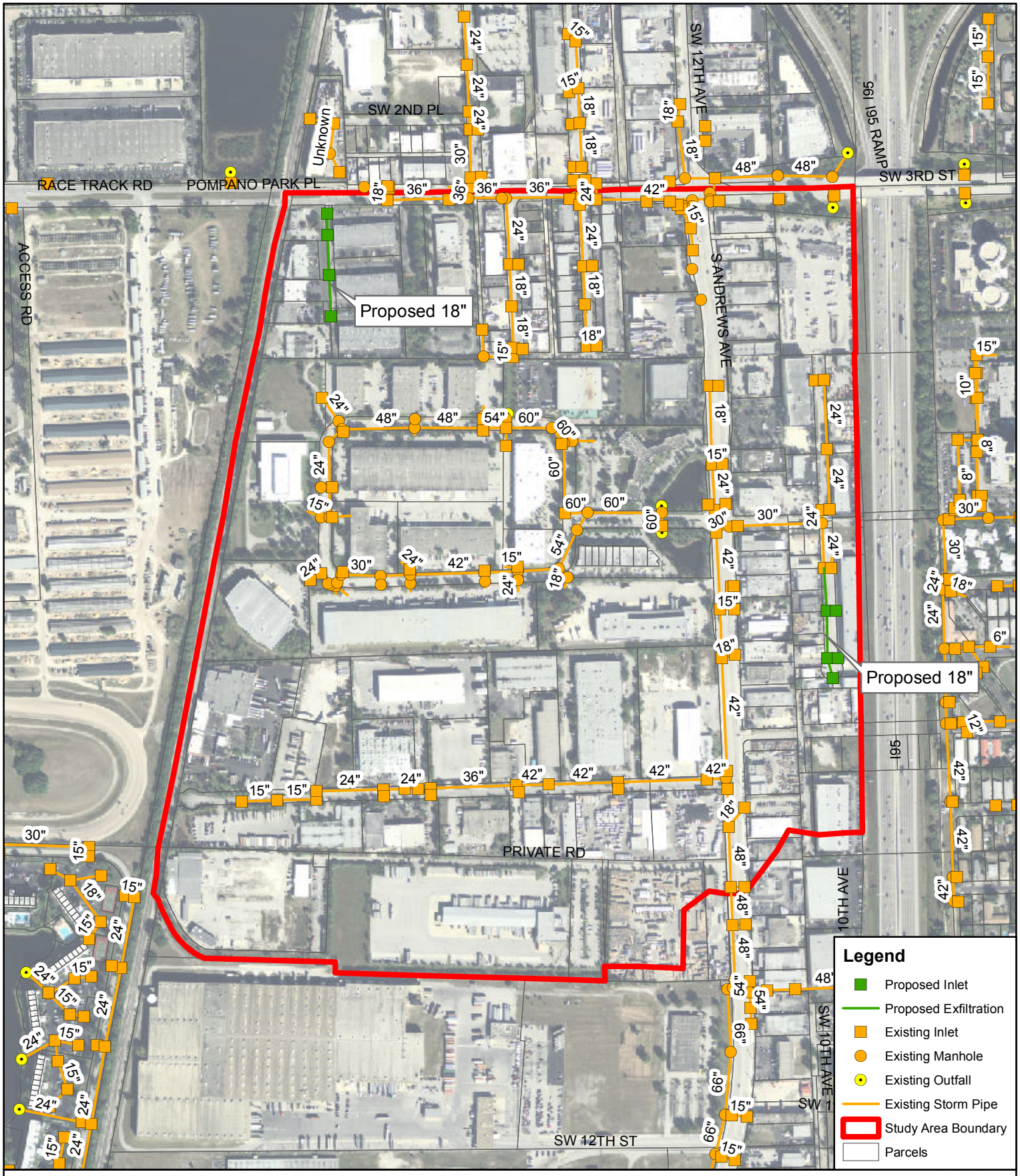

Figure A-1
Pompano Park Place & Andrews Avenue
Recommended Alternative

N
W E
S

0 300 600
Feet

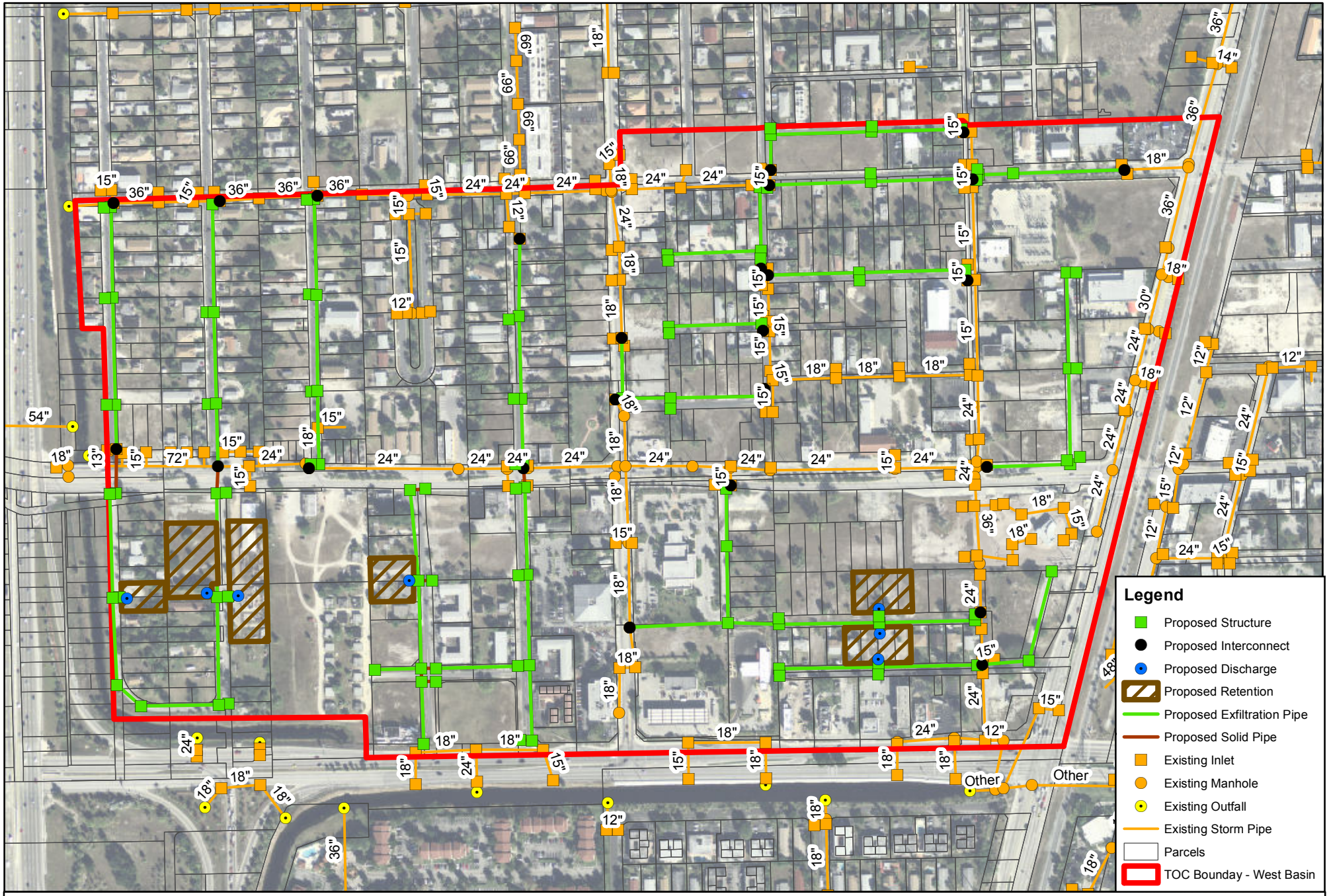

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Figure A-2
Northwest CRA - TOC
Recommended Alternative

0 250 500 Feet

N
W E
S

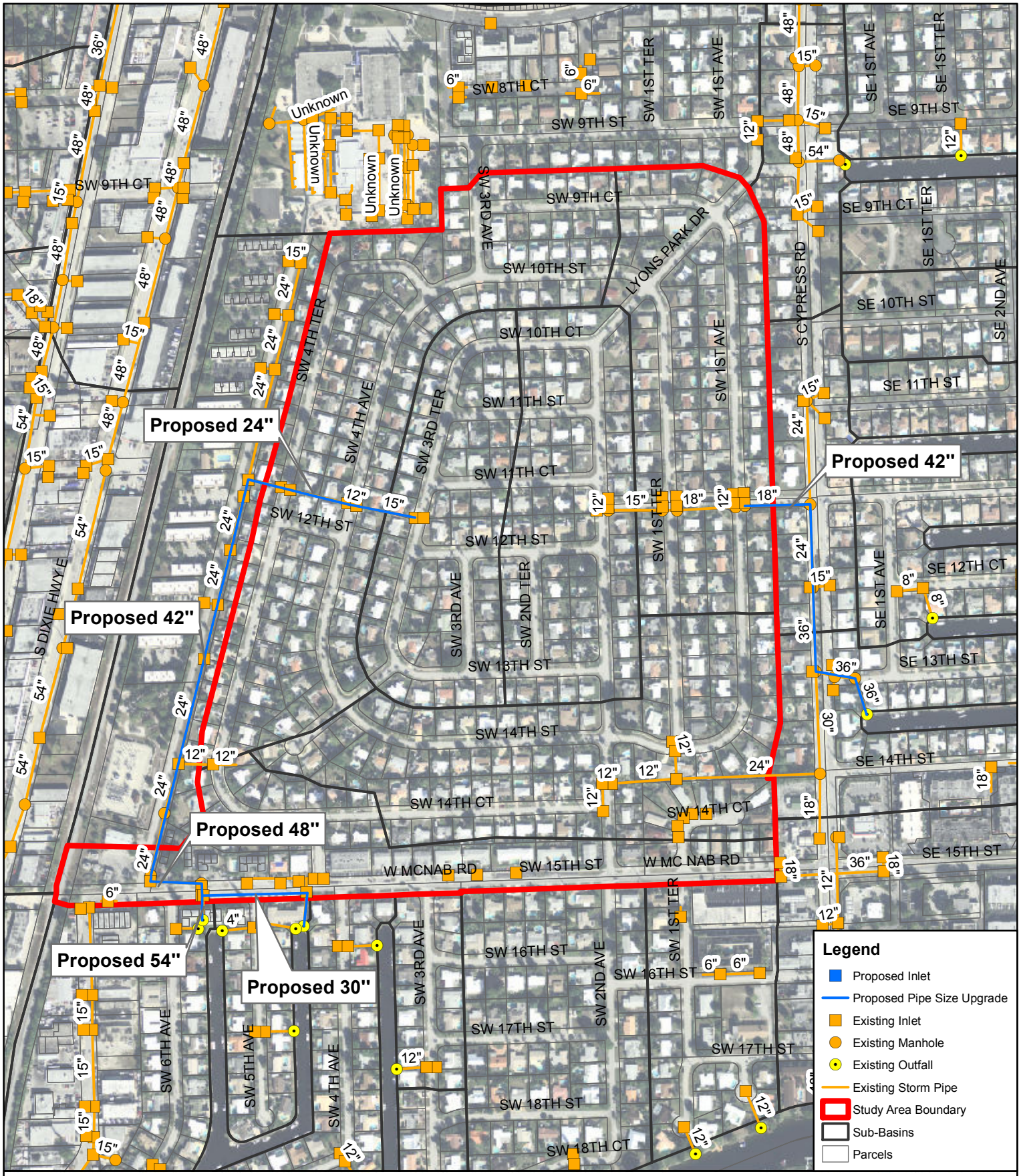

Figure A-3
Lyons Park Neighborhood
Recommended Alternative

Figure A-4
Avondale Neighborhood
Recommended Alternative

0 150 300 Feet

N S E W

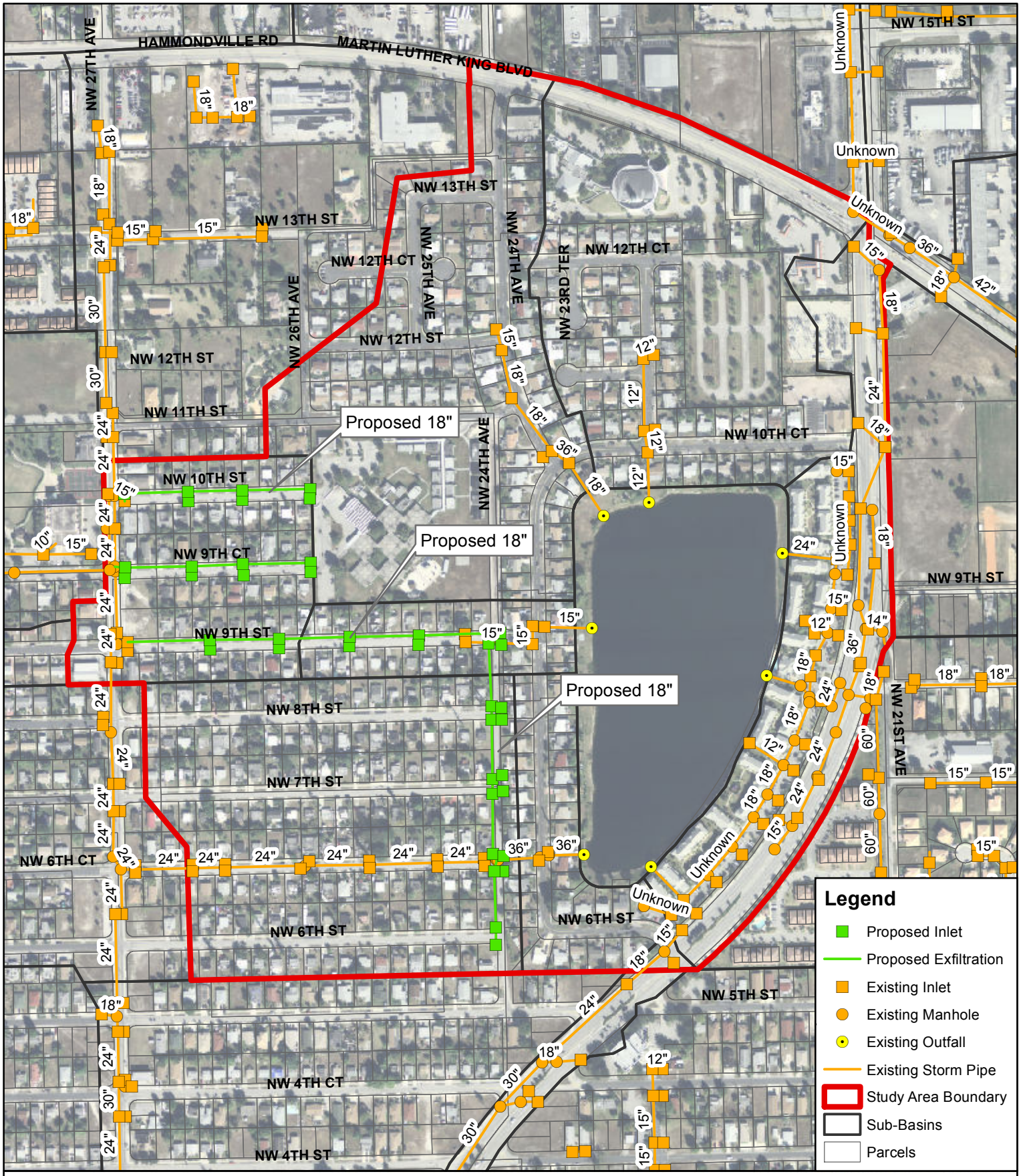

Figure A-5
Esquire Lake Neighborhood
Recommended Alternative

N
W E
S

0 250 500
Feet

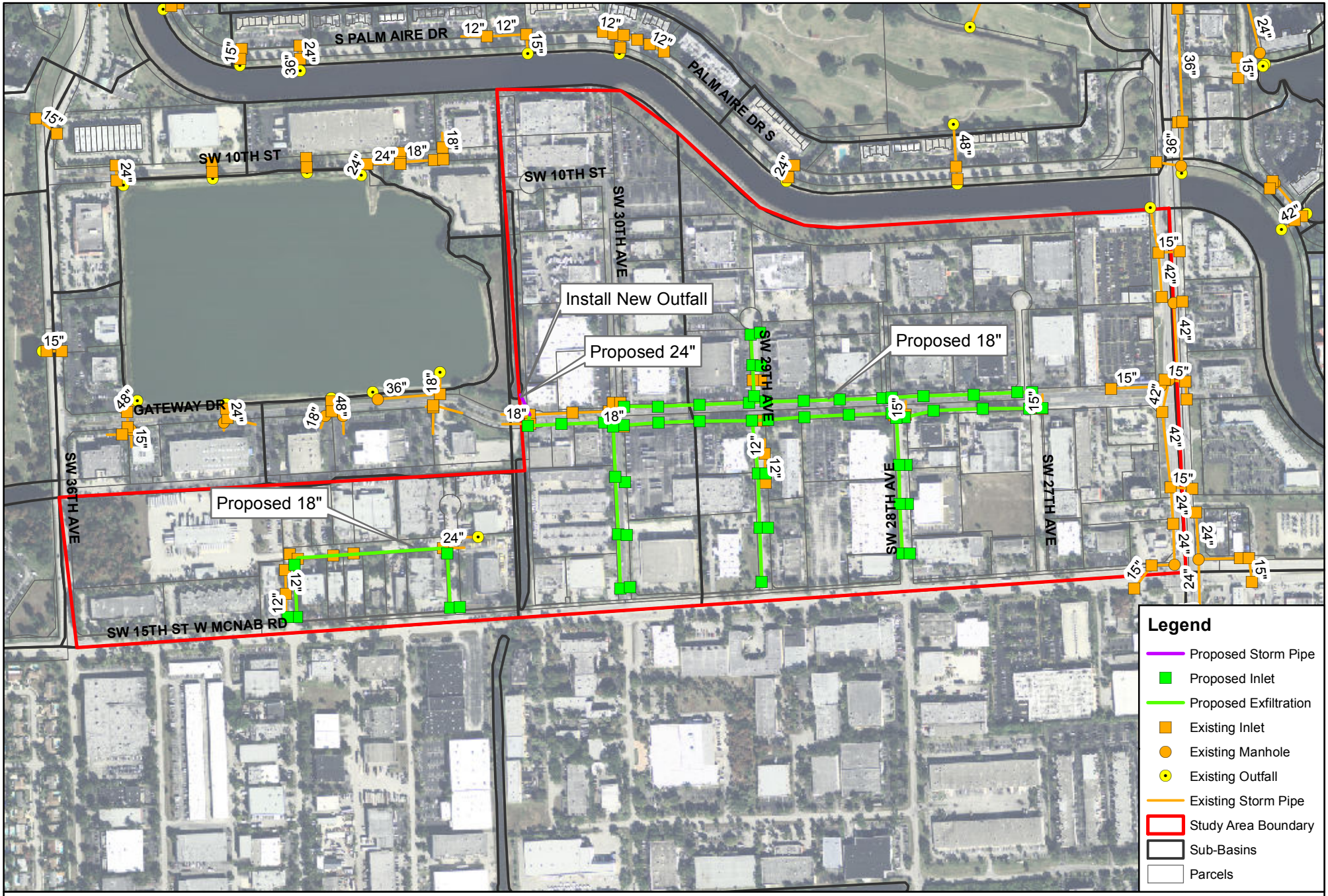

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Figure A-6
Gateway Drive
Recommended Alternative

0 250 500 Feet

N
W E
S

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Figure A-7
Kendall Lake Neighborhood
Recommended Alternative

N
W E
S

0 200 400
Feet

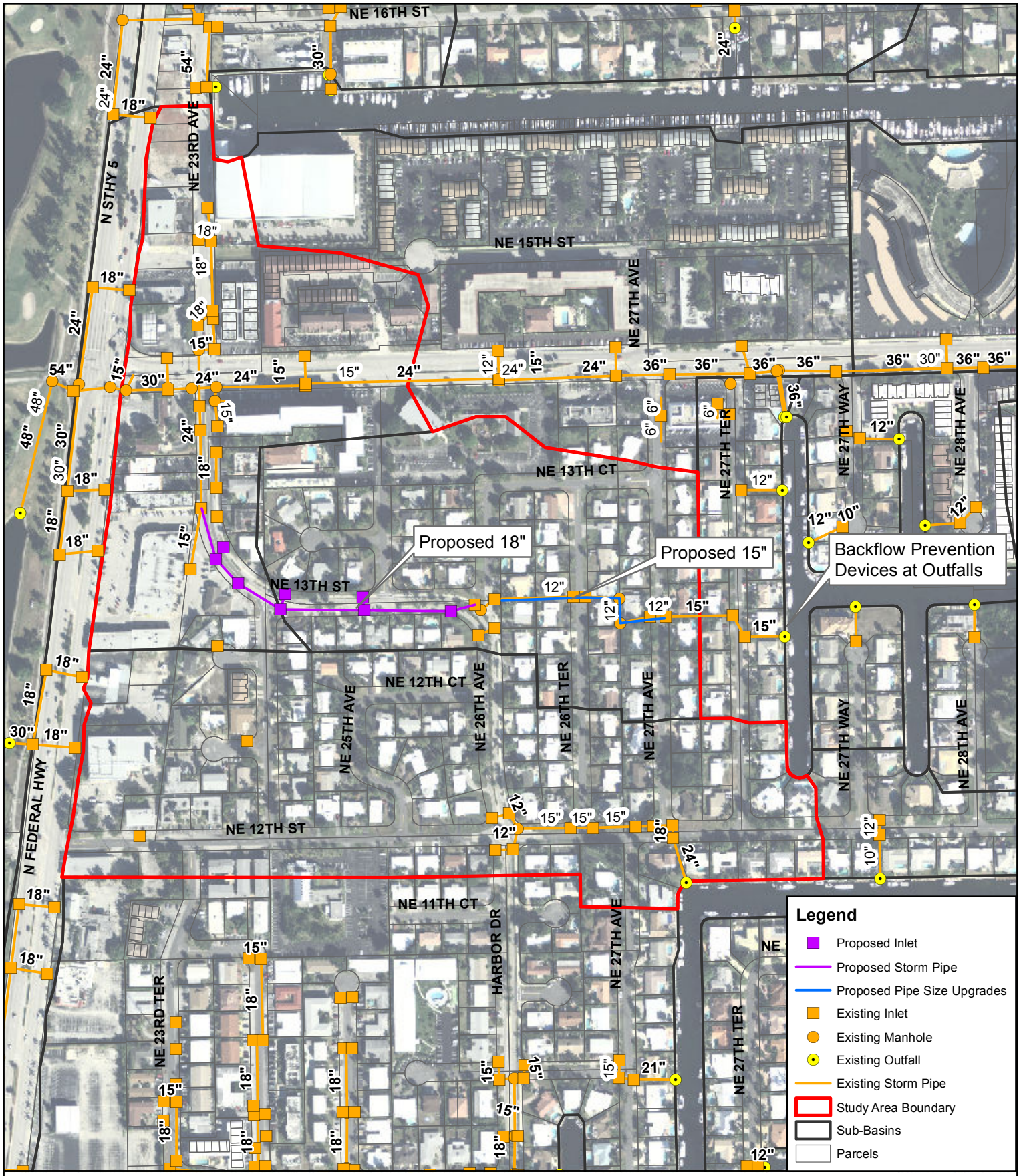

Figure A-8
US-1 & NE 14th Street Causeway
Recommended Alternative

0 250 500 Feet

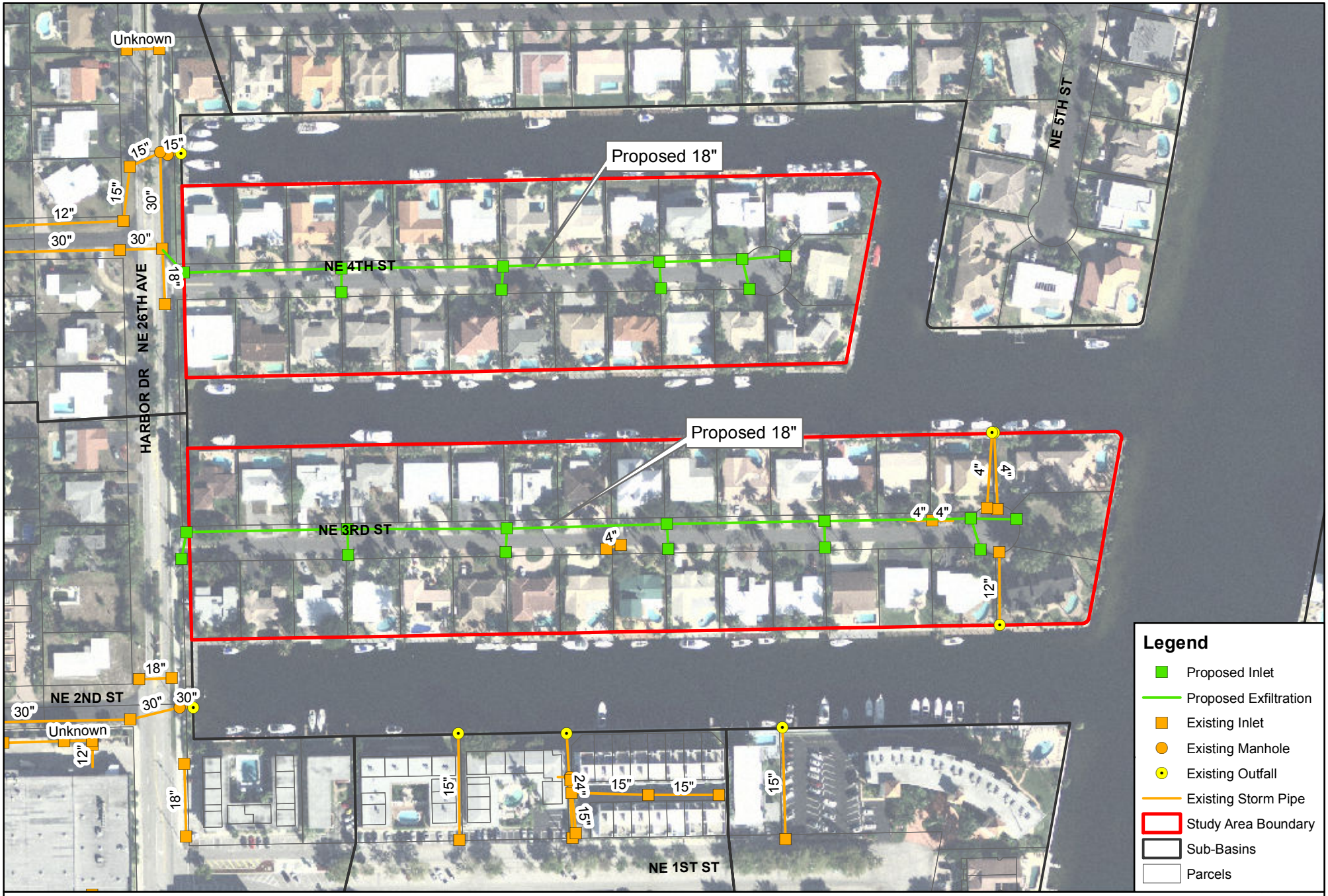

Figure A-9
NE 4th Street & NE 3rd Street
Recommended Alternative

0 100 200 Feet

N W E S

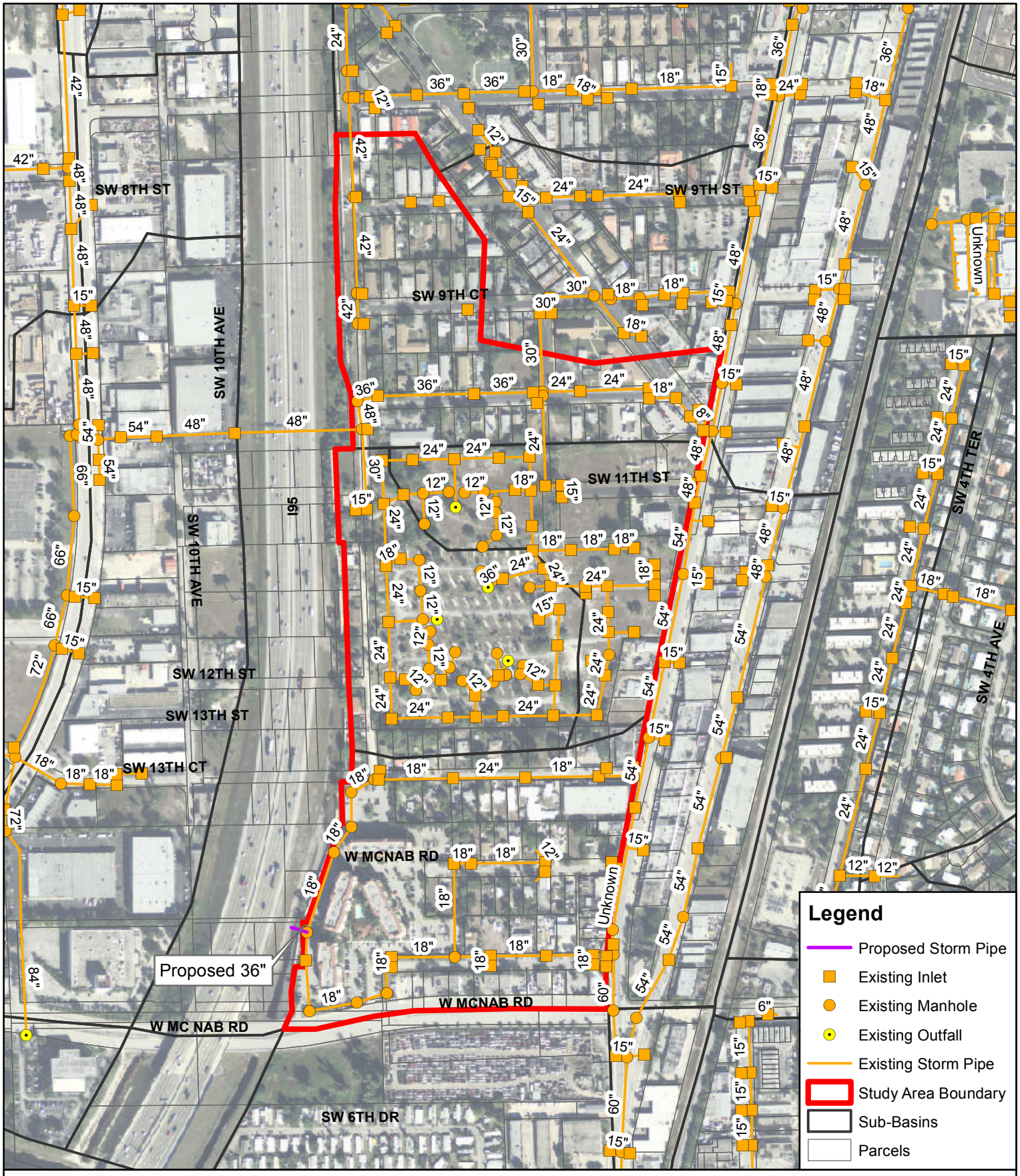

Figure A-10
Dixie Highway and McNab Road
Recommended Alternative

N
W E
S

0 250 500
Feet

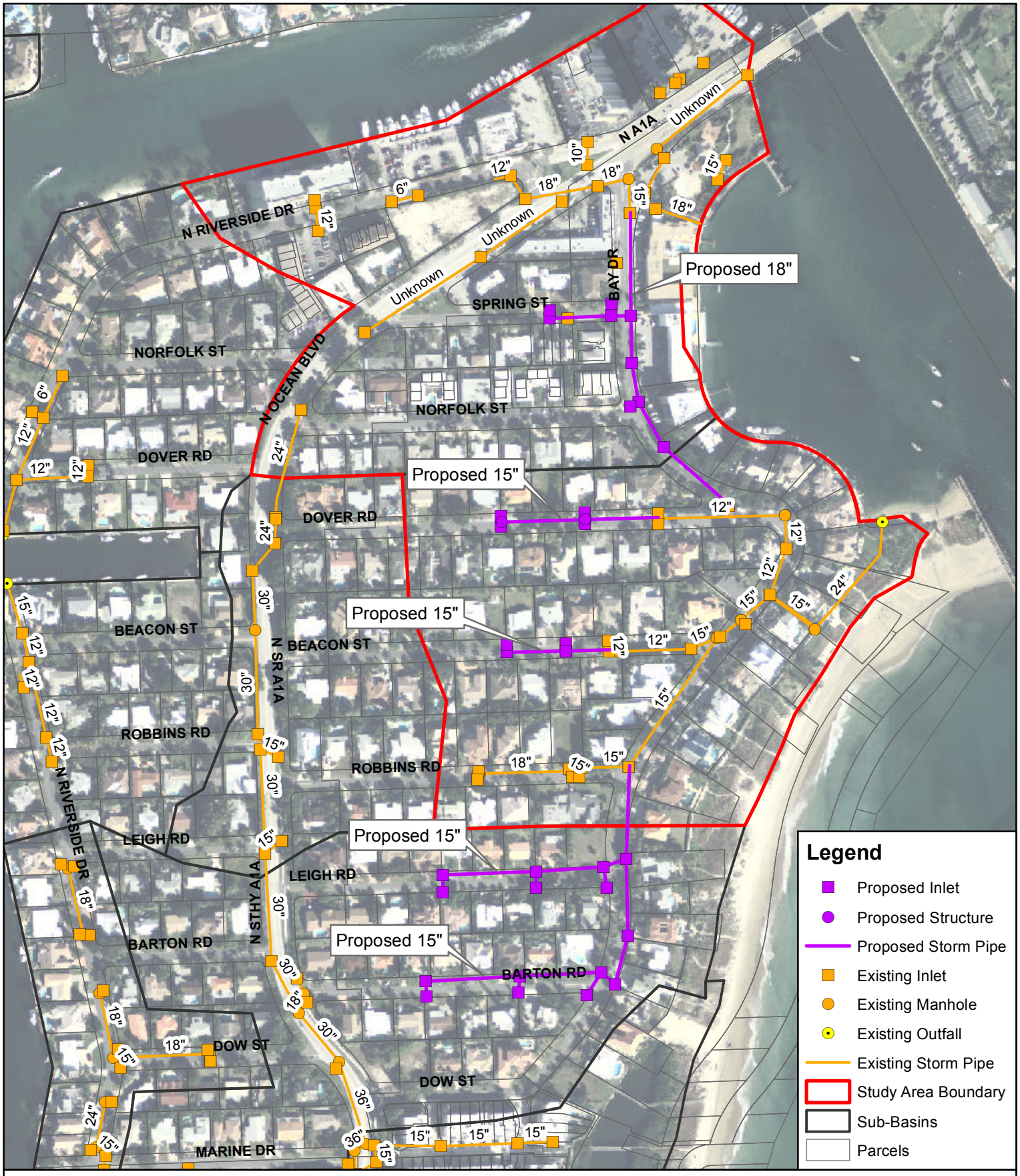

Figure A-11
Bay Drive Neighborhood
Recommended Alternative

N
W E
S

0 250 500 Feet

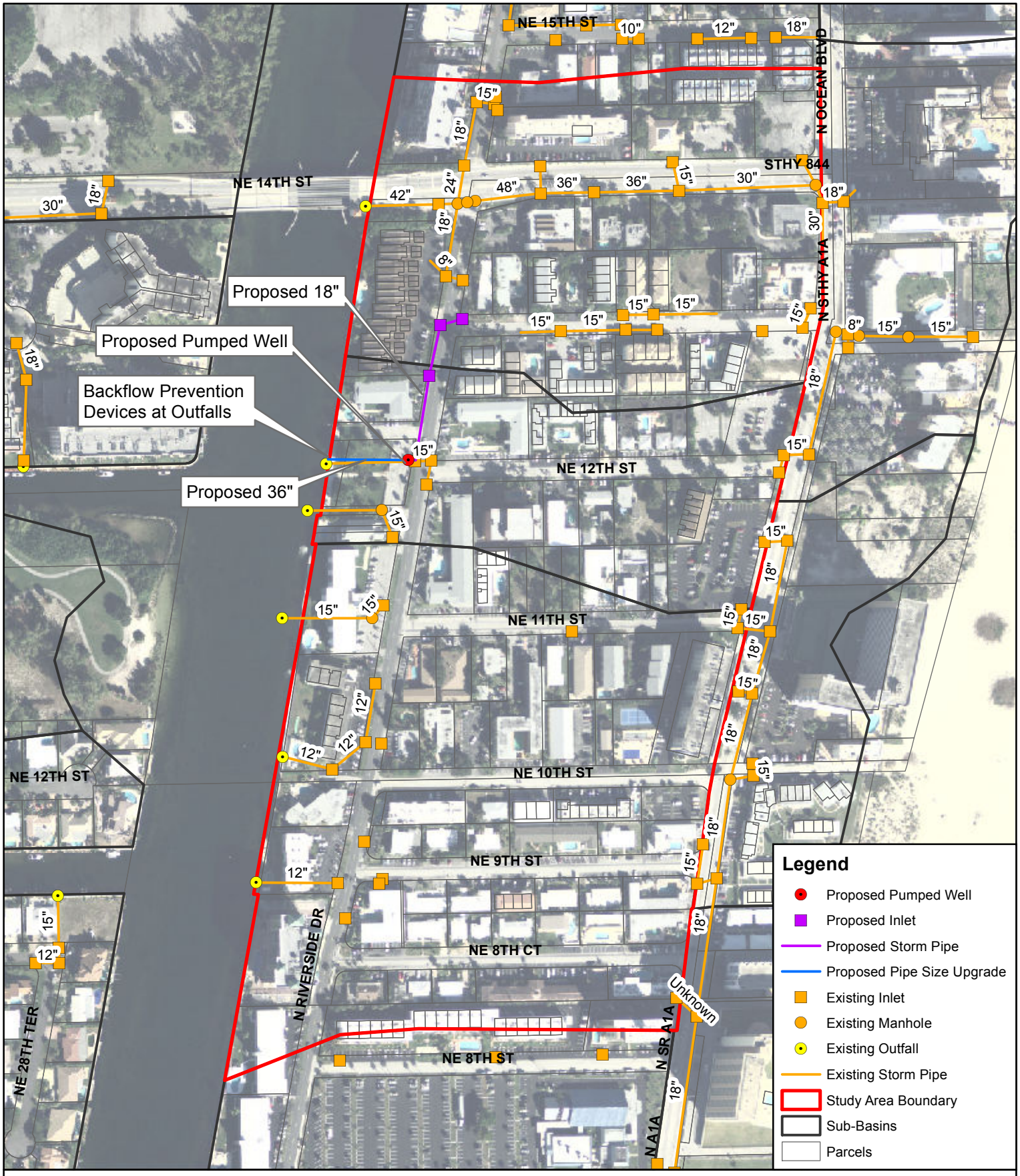

Figure A-12
N Riverside Drive & NE 14th Street Causeway
Recommended Alternative

N W E S

0 200 400 Feet

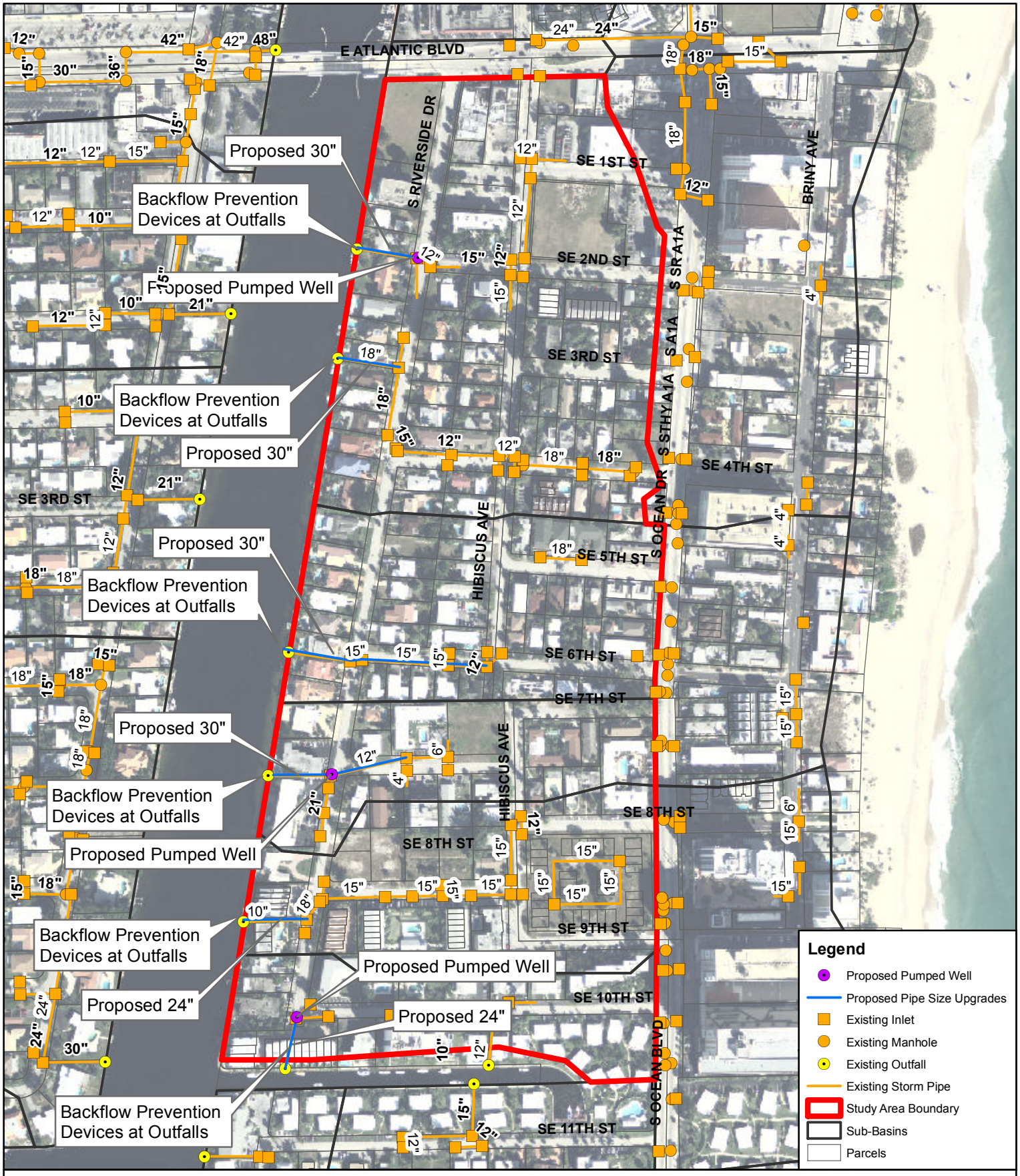

Figure A-13
Atlantic Blvd & South Riverside Drive
Recommended Alternative

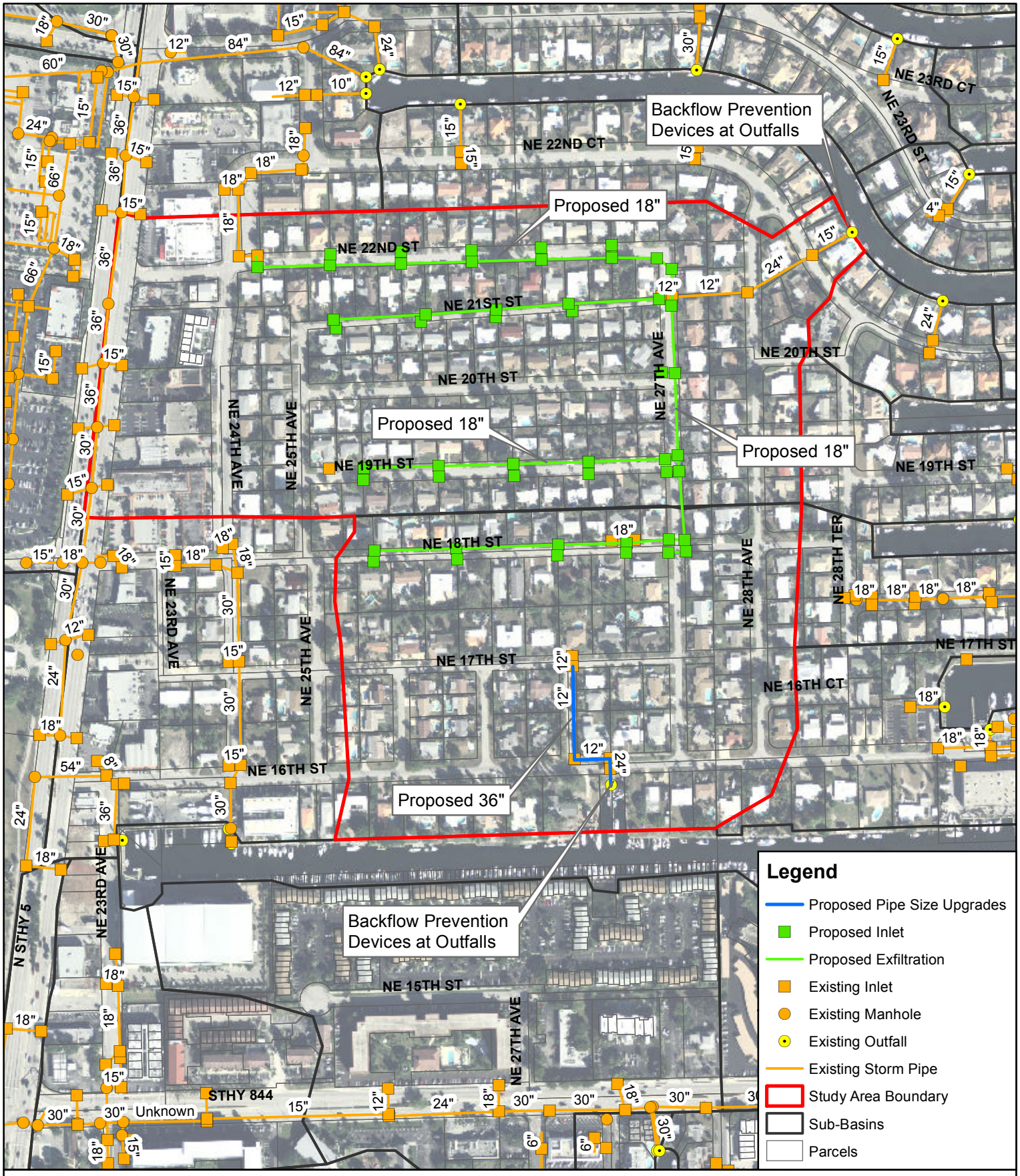

Figure A-14
NE 27th Avenue & NE 16th Street
Recommended Alternative

N
W E
S

0 200 400
Feet

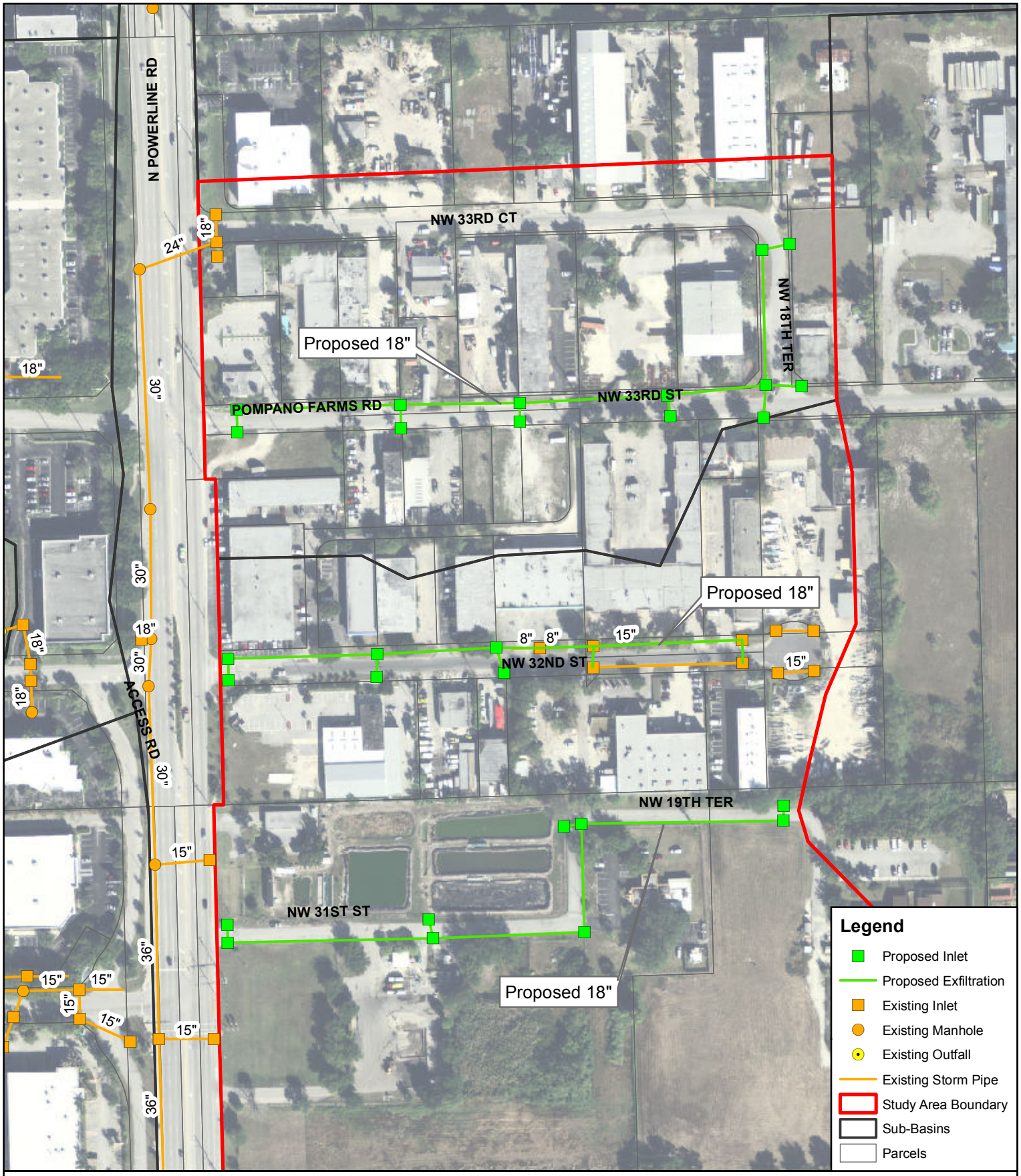

Figure A-15
Powerline Road & NW 33rd Street
Recommended Alternative

N
W E
S

0 150 300 Feet

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Figure A-16
NW 22nd Street
Recommended Alternative

0 150 300 Feet

N W E S

Figure A-17
SE 28th Avenue South of Atlantic Blvd
Recommended Alternative

N
W E
S

0 200 400
Feet

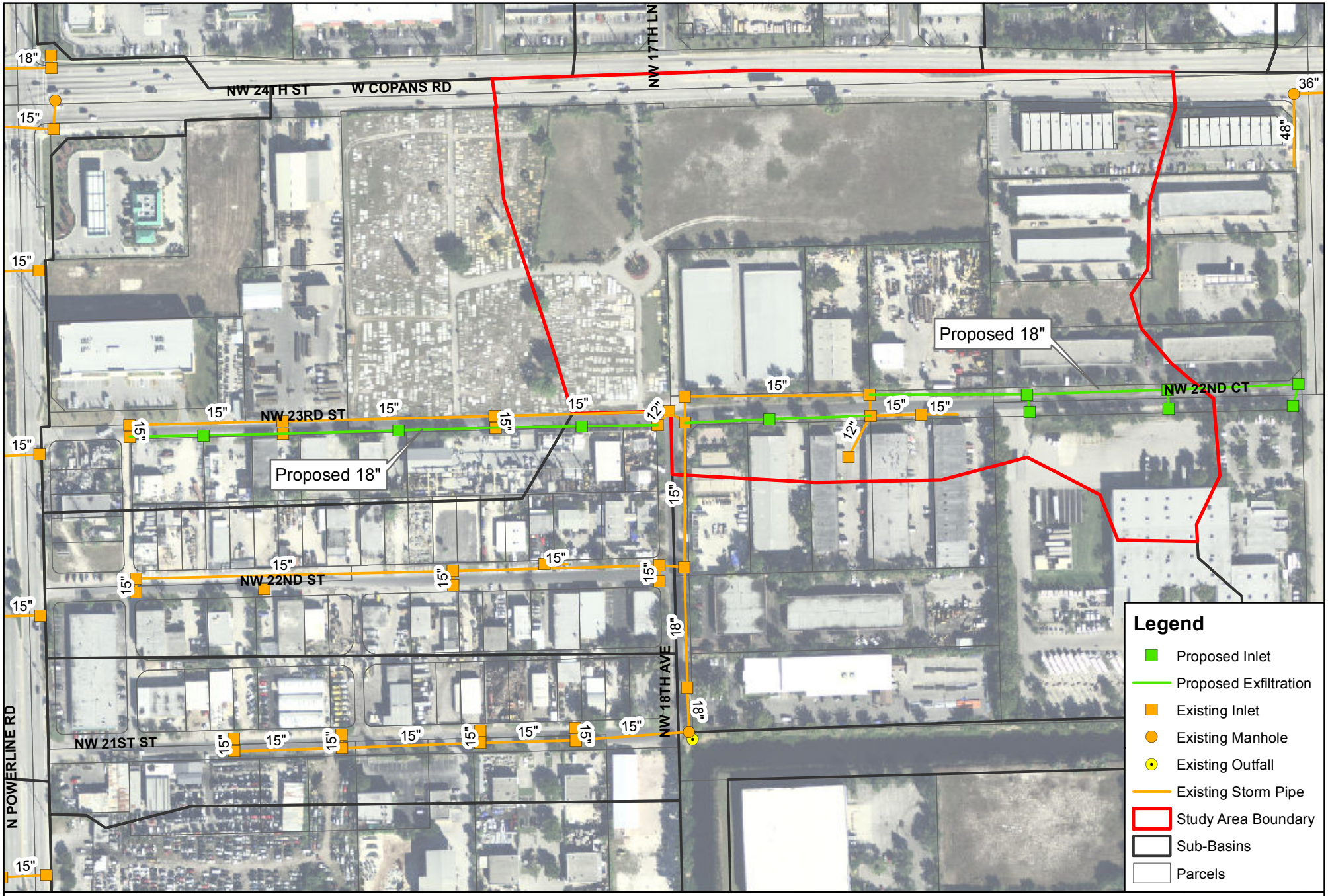

Figure A-18
NW 22nd Court
Recommended Alternative

0 150 300 Feet

N W E S

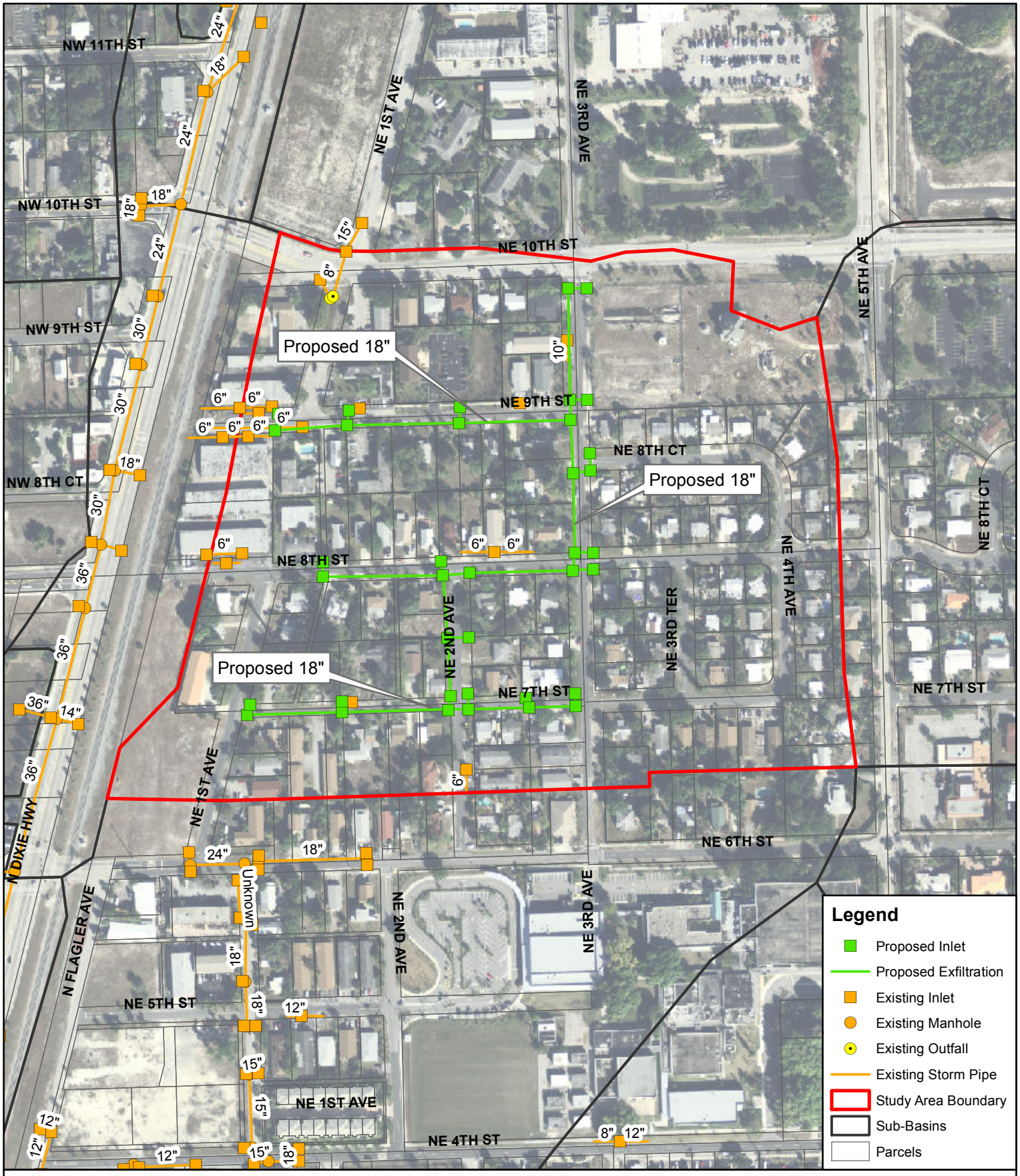

Figure A-19
NE 10th Street & Dixie Highway
Recommended Alternative

N
W E
S

0 200 400
Feet

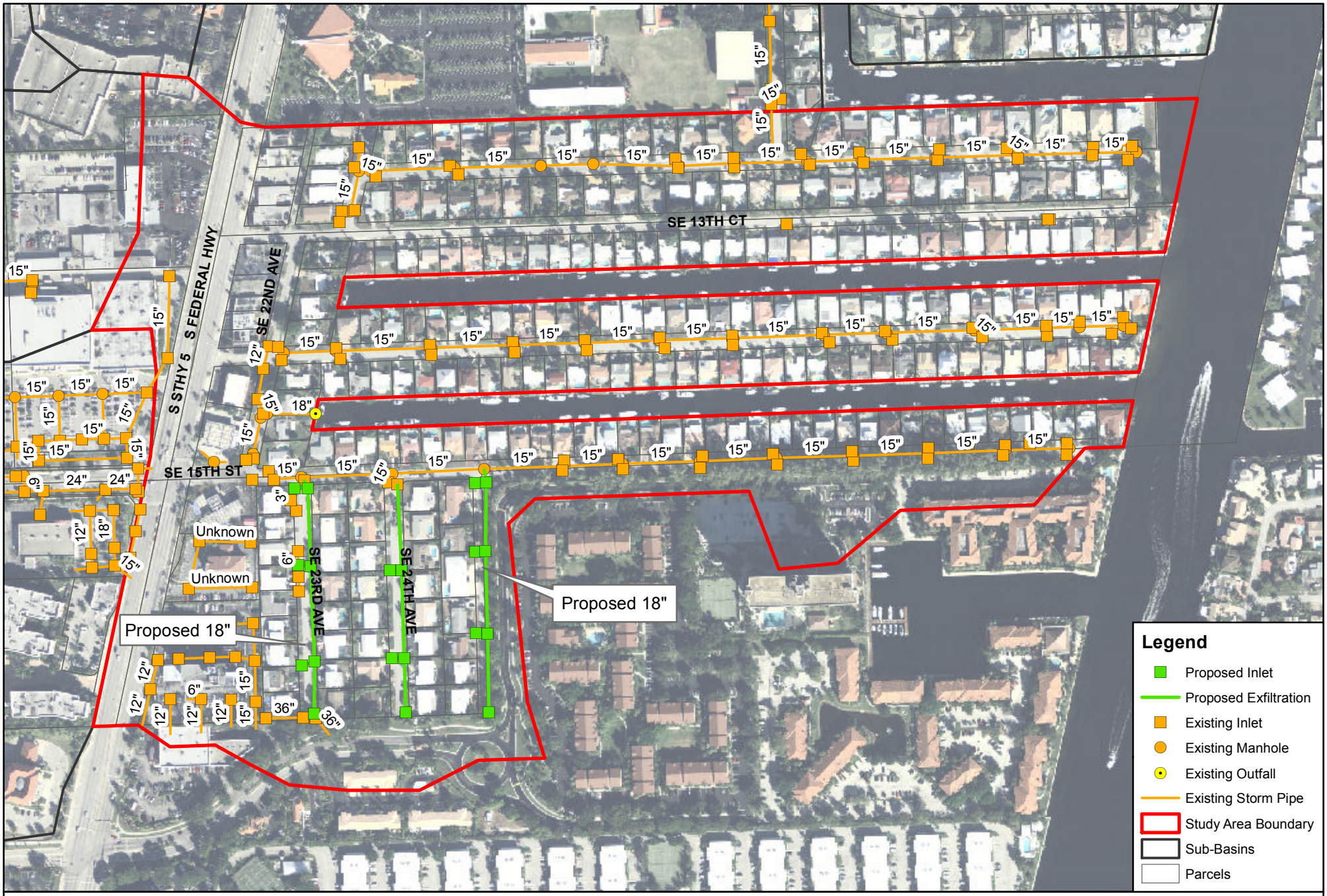

Figure A-20
US-1 & SE 15th Street
Recommended Alternative

0 200 400 Feet

N W E S

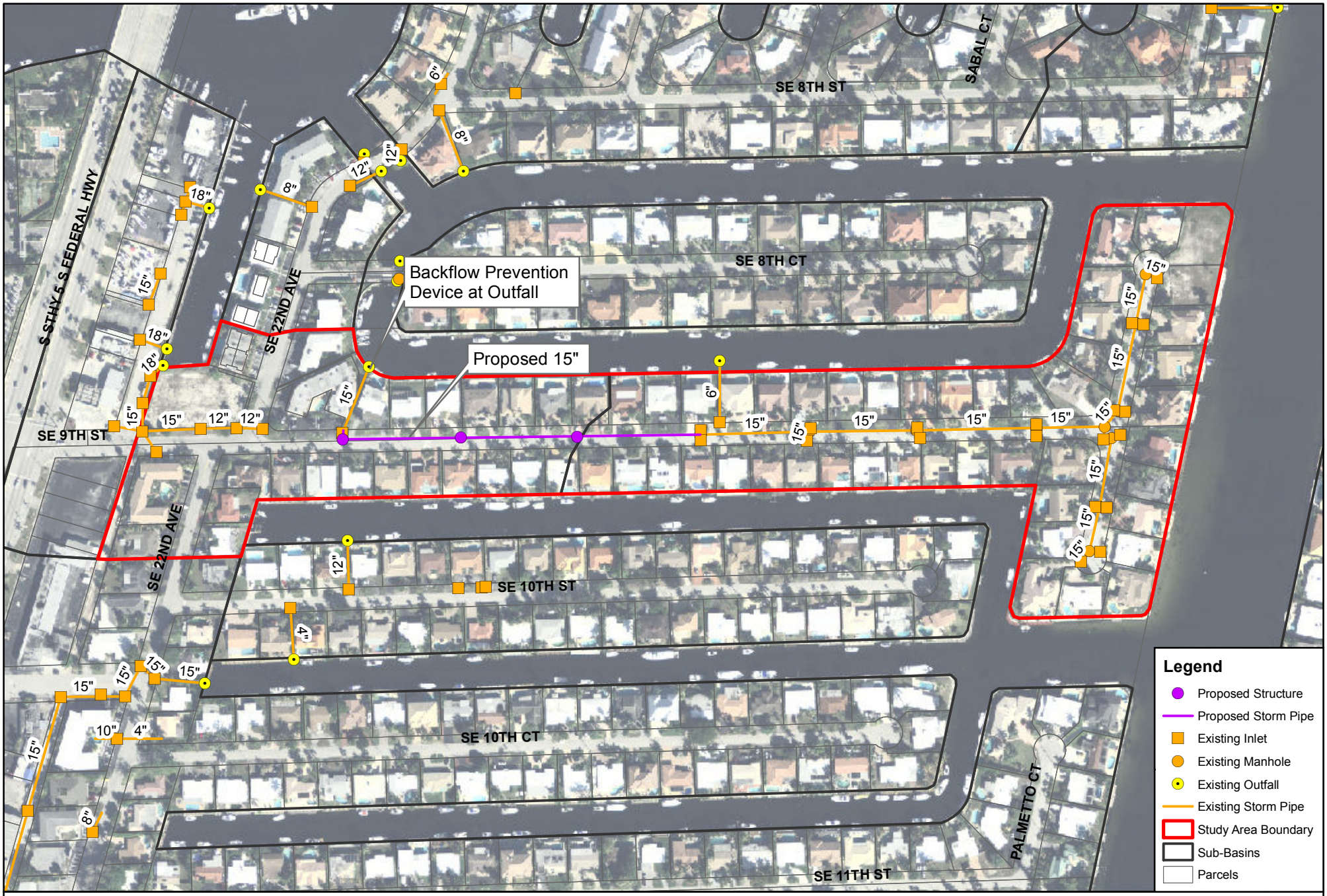

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Figure A-21
SE 9th Street
Recommended Alternative

0 150 300 Feet

N W E S

Figure A-22
NW 16th Lane
Recommended Alternative

Figure A-24
NW 7th Terrace
Recommended Alternative

N
W E
S

0 100 200
Feet

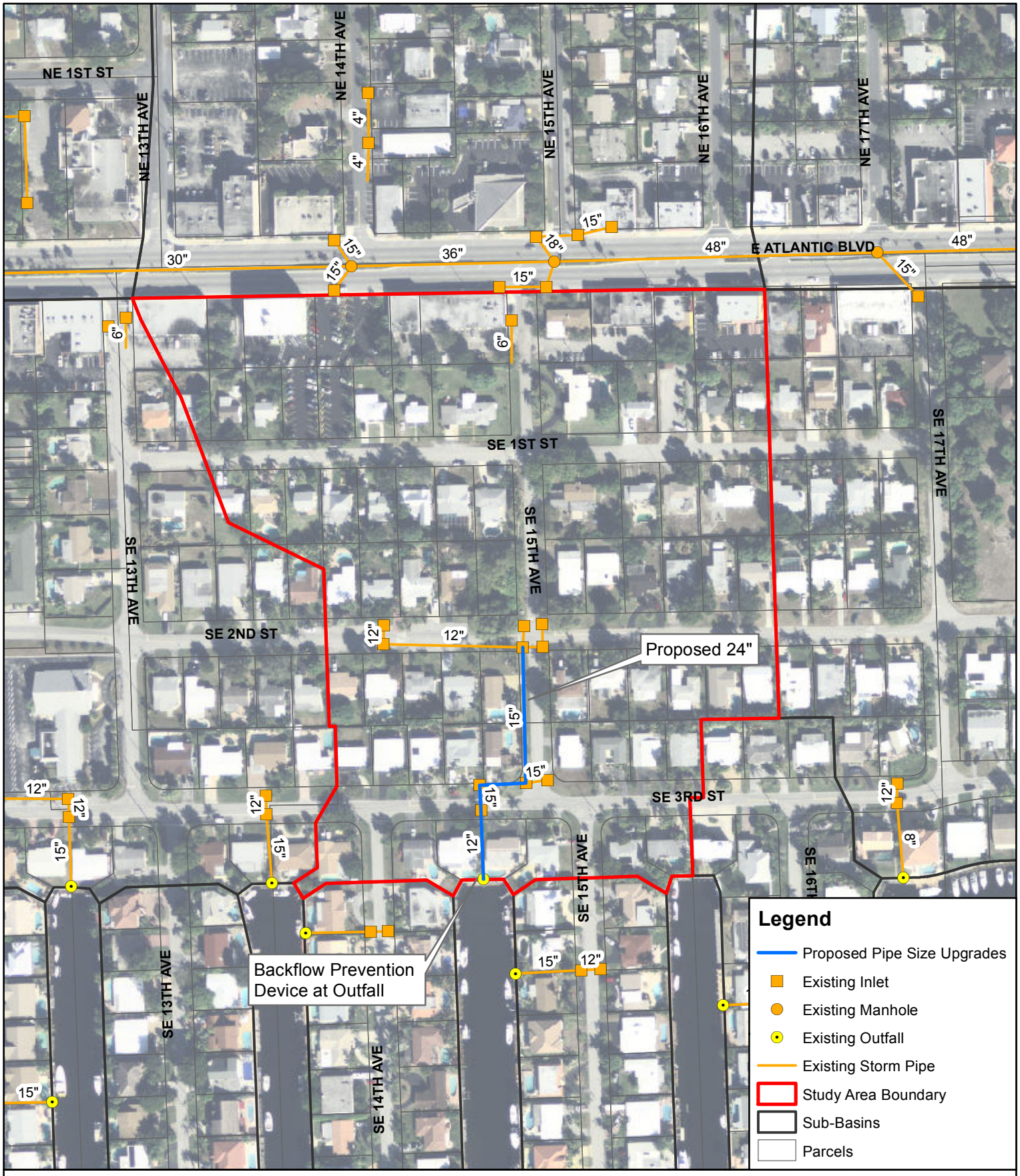

Figure A-25
SE 15th Avenue
Recommended Alternative

N
W E
S

0 150 300
Feet

Appendix A-2

CIP Preliminary Cost Estimates

Study Area #1: Pompano Park Place & Andrews Avenue
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	9	EA	$4,500	$40,500
15" RCP Drainage Pipe	90	LF	$50	$4,500
18" RCP Drainage Pipe with Exfiltration	975	LF	$120	$117,000
Pavement Restoration	2,383	SY	$40	$95,333
			Subtotal	$257,333
			Mobilization	$25,733
			Subtotal	$283,067
			20% Construction Contingency	$56,613
			15% Design and Permitting	$42,460
			5% Construction Administration	$14,153
			Total Cost	**$396,293**

Study Area #2: Northwest CRA TOC
Preliminary Cost Estimate - Existing Conditions Improvements

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Demolition				
Remove and Dispose of Existing Asphalt Pavement	8800	SY	$3.00	$26,400.00
Drainage				
Install Drainage Structure - Inlet	32	EA	$4,500.00	$144,000.00
Install Drainage Structure - Manhole	2	EA	$4,500.00	$9,000.00
Install Drainage Structure (Connection to Existing System)	8	EA	$5,000.00	$40,000.00
Install 24" Solid Drainage Pipe	688	LF	$70.00	$48,160.00
Install 24" Drainage Pipe with Exfiltration	3600	LF	$140.00	$504,000.00
Install Baffle Boxes	10	EA	$300.00	$3,000.00
Install Discharge Structure in Retention Areas	0	EA	$600.00	$0.00
Soil Removal & Construct Dry Retention	0	CY	$10.00	$0.00
Restoration				
1 1/4" Type S-1 Asphalt Concrete	8800	SY	$8.50	$74,800.00
3/4" Type S-III Asphalt Concrete	8800	SY	$6.00	$52,800.00
8" Limerock Base	8800	SY	$10.00	$88,000.00
12" Compacted Subgrade	8800	SY	$3.00	$26,400.00
Driveway Restoration	5600	SY	$40.00	$224,000.00
Construct Concrete Catch Basin Aprons	32	EA	$400.00	$12,800.00
Clear and Grade Swale	5600	SY	$3.00	$16,800.00
Install Sod	5600	SY	$3.00	$16,800.00
Sod Restoration of Retention Area	0	SY	$4.00	$0.00
			Subtotal	$1,286,960
			Mobilization	$128,696
			Subtotal	$1,415,656
			20% Construction Contingency	$283,131
			15% Design and Permitting	$212,348
			5% Construction Administration	$70,783
			Total Cost	**$1,981,918**

Study Area #2: Northwest CRA TOC
Preliminary Cost Estimate - Future Conditions Improvements

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Demolition				
Remove and Dispose of Existing Asphalt Pavement	35655	SY	$3.00	$106,964.00
Drainage				
Install Drainage Structure - Inlet	110	EA	$4,500.00	$495,000.00
Install Drainage Structure - Manhole	7	EA	$4,500.00	$31,500.00
Install Drainage Structure (Connection to Existing System)	25	EA	$5,000.00	$125,000.00
Install 24" Solid Drainage Pipe	2135	LF	$70.00	$149,450.00
Install 24" Drainage Pipe with Exfiltration	14586	LF	$140.00	$2,042,040.00
Install Baffle Boxes	80	EA	$300.00	$24,000.00
Install Discharge Structure in Retention Areas	7	EA	$600.00	$4,200.00
Soil Removal & Construct Dry Retention	17340	CY	$10.00	$173,400.00
Restoration				
1 1/4" Type S-1 Asphalt Concrete	35655	SY	$8.50	$303,064.67
3/4" Type S-III Asphalt Concrete	35655	SY	$6.00	$213,928.00
8" Limerock Base	35655	SY	$10.00	$356,546.67
12" Compacted Subgrade	35655	SY	$3.00	$106,964.00
Driveway Restoration	22689	SY	$40.00	$907,573.33
Construct Concrete Catch Basin Aprons	99	EA	$400.00	$39,600.00
Clear and Grade Swale	22689	SY	$3.00	$68,068.00
Install Sod	22689	SY	$3.00	$68,068.00
Sod Restoration of Retention Area	19120	SY	$4.00	$76,480.00
			Subtotal	$5,291,847
			Mobilization	$529,185
			Subtotal	$5,821,031
			20% Construction Contingency	$1,164,206
			15% Design and Permitting	$873,155
			5% Construction Administration	$291,052
			Total Cost	**$8,149,444**

Study Area #3: Lyons Park Neighborhood
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Remove Existing Pipe	4075	LF	$20	$81,500
Upgrade Existing Outfall	2	EA	$5,000	$10,000
Replace Existing Drainage Structure	20	EA	$5,000	$100,000
24" RCP Drainage Pipe	622	LF	$75	$46,650
30" RCP Drainage Pipe	500	LF	$77	$38,500
42" RCP Drainage Pipe	2332	LF	$100	$233,200
48" RCP Drainage Pipe	247	LF	$125	$30,875
54" RCP Drainage Pipe	375	LF	$155	$58,125
Swale Regrading throughout study area	38,889	SY	$15	$583,333
Pavement Restoration	9,964	SY	$40	$398,542
			Subtotal	$1,580,726
			Mobilization	$158,073
			Subtotal	$1,738,798
			20% Construction Contingency	$347,760
			15% Design and Permitting	$260,820
			5% Construction Administration	$86,940
			Total Cost	**$2,434,317**

Study Area #4: Avondale Neighborhood
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total Cost
Stormwater Pump Station	1	EA	$600,000	$600,000
30" Pressure Pipe	1800	LF	$77	$138,600
15" Backflow Prevention Devices at Outfall	1	EA	$40,000	$40,000
18" Backflow Prevention Devices at Outfall	1	EA	$45,000	$45,000
30" Backflow Prevention Devices at Outfall	1	EA	$55,000	$55,000
Soil Removal & Construct Dry Retention	10,000	CY	$10	$100,000
Sod Restoration of Retention Area	5,000	SY	$4	$20,000
Swale Regrading throughout study area	29,400	SY	$15	$441,000
Pavement Restoration	4,400	SY	$40	$176,000
			Subtotal	$1,615,600
			Mobilization	$161,560
			Subtotal	$1,777,160
			20% Construction Contingency	$355,432
			15% Design and Permitting	$266,574
			5% Construction Administration	$88,858
			Total Cost	**$2,488,024**

Study Area #5: Esquire Lake Neighborhood
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	41	EA	$4,500	$184,500
Replace Existing Drainage Structure	5	EA	$5,000	$25,000
18" RCP Drainage Pipe with Exfiltration	3400	LF	$120	$408,000
15" RCP Drainage Pipe	920	EA	$50	$46,000
Swale Regrading	5,289	SY	$15	$79,333
Pavement Restoration	8,311	SY	$40	$332,444
			Subtotal	$1,075,278
			Mobilization	$107,528
			Subtotal	$1,182,806
			20% Construction Contingency	$236,561
			15% Design and Permitting	$177,421
			5% Construction Administration	$59,140
			Total Cost	**$1,655,928**

Study Area #6: Gateway Drive
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	59	EA	$4,500	$265,500
Replace Existing Drainage Structure	5	EA	$5,000	$25,000
18" RCP Drainage Pipe with Exfiltration	8050	LF	$120	$966,000
15" RCP Drainage Pipe	520	EA	$50	$26,000
24" Drainage Pipe	100	LF	$75	$7,500
Remove Existing Pipe	675	LF	$20	$13,500
Install New Outfall	1	EA	$10,000	$10,000
Swale Regrading	12,522	SY	$15	$187,833
Pavement Restoration	19,678	SY	$40	$787,111
			Subtotal	$2,288,444
			Mobilization	$228,844
			Subtotal	$2,517,289
			20% Construction Contingency	$503,458
			15% Design and Permitting	$377,593
			5% Construction Administration	$125,864
			Total Cost	**$3,524,204**

Study Area #7: Kendall Lake Neighborhood
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	52	EA	$4,500	$234,000
Replace Existing Drainage Structure	8	EA	$5,000	$40,000
Install Overflow Control Structure	1	EA	$10,000	$10,000
18" RCP Drainage Pipe with Exfiltration	5700	LF	$120	$684,000
15" RCP Drainage Pipe	830	EA	$50	$41,500
Soil Removal & Construct Dry Retention	5,500	CY	$10	$55,000
Sod Restoration of Retention Area	3,000	SY	$4	$12,000
Swale Regrading	8,867	SY	$15	$133,000
Pavement Restoration	13,933	SY	$40	$557,333
			Subtotal	$1,766,833
			Mobilization	$176,683
			Subtotal	$1,943,517
			20% Construction Contingency	$388,703
			15% Design and Permitting	$291,528
			5% Construction Administration	$97,176
			Total Cost	**$2,720,923**

Study Area #8: US-1 & NE 14th Street Causeway
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Remove Existing Pipe	525	LF	$20	$10,500
Replace Existing Drainage Structure	9	EA	$5,000	$45,000
Install Catch Basin	8	EA	$4,500	$36,000
15" RCP Drainage Pipe	525	EA	$50	$26,250
18" RCP Drainage Pipe	1010	LF	$65	$65,650
15" Backflow Prevention Devices at Outfall	1	EA	$40,000	$40,000
Swale Regrading throughout study area	14,467	SY	$15	$217,000
Pavement Restoration	3,752	SY	$40	$150,089
			Subtotal	$590,489
			Mobilization	$59,049
			Subtotal	$649,538
			20% Construction Contingency	$129,908
			15% Design and Permitting	$97,431
			5% Construction Administration	$32,477
			Total Cost	**$909,353**

Study Area #9: NE 4th Street & NE 3rd Street
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	23	EA	$4,500	$103,500
Replace Existing Drainage Structure	1	EA	$5,000	$5,000
18" RCP Drainage Pipe with Exfiltration	2020	LF	$120	$242,400
15" RCP Drainage Pipe	415	EA	$50	$20,750
Swale Regrading throughout study area	3,142	SY	$15	$47,133
Pavement Restoration	4,938	SY	$40	$197,511
			Subtotal	$616,294
			Mobilization	$61,629
			Subtotal	$677,924
			20% Construction Contingency	$135,585
			15% Design and Permitting	$101,689
			5% Construction Administration	$33,896
			Total Cost	**$949,093**

Study Area #10: Dixie Highway & McNab Road
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
36" RCP Drainage Pipe	100	LF	$90	$9,000
Install New Outfall	1	EA	$10,000	$10,000
Replace Existing Drainage Structure	1	EA	$5,000	$5,000
Pavement Restoration	244	SY	$40	$9,778
			Subtotal	$33,778
			Mobilization	$3,378
			Subtotal	$37,156
			20% Construction Contingency	$7,431
			15% Design and Permitting	$5,573
			5% Construction Administration	$1,858
			Total Cost	**$52,018**

Study Area #11: Bay Drive Neighborhood
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Drainage Structure	34	EA	$4,500	$153,000
Replace Existing Drainage Structure	5	EA	$5,000	$25,000
15" RCP Drainage Pipe	2410	EA	$50	$120,500
18" RCP Drainage Pipe	1050	LF	$65	$68,250
Swale Regrading	5,382	SY	$15	$80,733
Pavement Restoration	8,458	SY	$40	$338,311
			Subtotal	$785,794
			Mobilization	$78,579
			Subtotal	$864,374
			20% Construction Contingency	$172,875
			15% Design and Permitting	$129,656
			5% Construction Administration	$43,219
			Total Cost	**$1,210,123**

Study Area #12: N Riverside Drive & NE 14th Street Causeway
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	3	EA	$4,500	$13,500
18" RCP Drainage Pipe	365	LF	$65	$23,725
36" RCP Drainage Pipe	200	LF	$90	$18,000
36" Backflow Prevention Devices at Outfalls	1	EA	$60,000	$60,000
Remove Existing Pipe	200	LF	$20	$4,000
Upgrade Existing Outfall	1	EA	$5,000	$5,000
Replace Existing Drainage Structure	1	EA	$5,000	$5,000
Install Pumped Drainage Well	1	EA	$300,000	$300,000
Swale Regrading throughout project area	10,111	SY	$15	$151,667
Pavement Restoration	1,381	SY	$40	$55,244
			Subtotal	$636,136
			Mobilization	$63,614
			Subtotal	$699,750
			20% Construction Contingency	$139,950
			15% Design and Permitting	$104,962
			5% Construction Administration	$34,987
			Total Cost	**$979,650**

Study Area #13: Atlantic Blvd & South Riverside Drive
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Upgrade Existing Outfall	6	EA	$5,000	$30,000
24" Backflow prevention devices at outfall	2	EA	$50,000	$100,000
30" Backflow prevention devices at outfall	4	EA	$55,000	$220,000
Remove Existing Pipe	1530	LF	$20	$30,600
Replace Existing Drainage Structure	10	EA	$5,000	$50,000
Install 24" RCP Drainage Pipe	310	LF	$75	$23,250
Install 30" RCP Drainage Pipe	1220	LF	$77	$93,940
Install Pumped Drainage Well	3	EA	$300,000	$900,000
Swale Regrading throughout study area	17,889	SY	$15	$268,333
Pavement Restoration	3,740	SY	$40	$149,600
			Subtotal	$1,865,723
			Mobilization	$186,572
			Subtotal	$2,052,296
			20% Construction Contingency	$410,459
			15% Design and Permitting	$307,844
			5% Construction Administration	$102,615
			Total Cost	**$2,873,214**

Study Area #14: NE 27th Avenue & NE 16th Street
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	49	EA	$4,500	$220,500
18" RCP Drainage Pipe with Exfiltration	5100	LF	$120	$612,000
15" RCP Drainage Pipe	565	EA	$50	$28,250
36" RCP Drainage Pipe	470	LF	$90	$42,300
Remove Existing Pipe	470	LF	$20	$9,400
Replace Existing Drainage Structure	5	EA	$5,000	$25,000
24" Backflow Prevention Devices at Outfall	1	EA	$50,000	$50,000
36" Backflow Prevention Devices at Outfall	1	EA	$60,000	$60,000
Upgrade Existing Outfall	1	EA	$5,000	$5,000
Swale Regrading	7,933	SY	$15	$119,000
Pavement Restoration	12,467	SY	$40	$498,667
			Subtotal	$1,670,117
			Mobilization	$167,012
			Subtotal	$1,837,128
			20% Construction Contingency	$367,426
			15% Design and Permitting	$275,569
			5% Construction Administration	$91,856
			Total Cost	**$2,571,980**

Study Area #15: Powerline Road & NW 33rd Street
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	28	EA	$4,500	$126,000
Replace Existing Drainage Structure	4	EA	$5,000	$20,000
Remove Existing Pipe	380	LF	$20	$7,600
18" RCP Drainage Pipe with Exfiltration	3250	LF	$120	$390,000
15" RCP Drainage Pipe	480	EA	$50	$24,000
Swale Regrading	5,056	SY	$15	$75,833
Pavement Restoration	7,944	SY	$40	$317,778
			Subtotal	$961,211
			Mobilization	$96,121
			Subtotal	$1,057,332
			20% Construction Contingency	$211,466
			15% Design and Permitting	$158,600
			5% Construction Administration	$52,867
			Total Cost	**$1,480,265**

Study Area #16: NW 22nd Street
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	2	EA	$4,500	$9,000
Replace Existing Drainage Structure	5	EA	$5,000	$25,000
18" RCP Drainage Pipe with Exfiltration	800	LF	$120	$96,000
Swale Regrading	1,244	SY	$15	$18,667
Pavement Restoration	1,956	SY	$40	$78,222
			Subtotal	$226,889
			Mobilization	$22,689
			Subtotal	$249,578
			20% Construction Contingency	$49,916
			15% Design and Permitting	$37,437
			5% Construction Administration	$12,479
			Total Cost	**$349,409**

Study Area #17: SE 28th Avenue South of Atlantic Blvd
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
21" Backflow prevention devices at outfall	2	EA	$50,000	$100,000
Swale Regrading throughout study area	18,667	SY	$15	$280,000
			Subtotal	$380,000
			Mobilization	$38,000
			Subtotal	$418,000
			20% Construction Contingency	$83,600
			15% Design and Permitting	$62,700
			5% Construction Administration	$20,900
			Total Cost	**$585,200**

Study Area #18: NW 22nd Court
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	10	EA	$4,500	$45,000
Replace Existing Drainage Structure	7	EA	$5,000	$35,000
18" RCP Drainage Pipe with Exfiltration	2370	LF	$120	$284,400
15" RCP Drainage Pipe	120	EA	$50	$6,000
Swale Regrading	3,687	SY	$15	$55,300
Pavement Restoration	5,793	SY	$40	$231,733
			Subtotal	$657,433
			Mobilization	$65,743
			Subtotal	$723,177
			20% Construction Contingency	$144,635
			15% Design and Permitting	$108,477
			5% Construction Administration	$36,159
			Total Cost	**$1,012,447**

Study Area #19: NE 10th Street & Dixie Highway
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	37	EA	$4,500	$166,500
18" RCP Drainage Pipe with Exfiltration	2800	LF	$120	$336,000
15" RCP Drainage Pipe	670	EA	$50	$33,500
Swale Regrading	4,356	SY	$15	$65,333
Pavement Restoration	6,844	SY	$40	$273,778
			Subtotal	$875,111
			Mobilization	$87,511
			Subtotal	$962,622
			20% Construction Contingency	$192,524
			15% Design and Permitting	$144,393
			5% Construction Administration	$48,131
			Total Cost	**$1,347,671**

Study Area #20: US-1 & SE 15th Street
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	19	EA	$4,500	$85,500
Replace Existing Drainage Structure	3	EA	$5,000	$15,000
18" RCP Drainage Pipe with Exfiltration	1940	LF	$120	$232,800
15" RCP Drainage Pipe	260	EA	$50	$13,000
Swale Regrading throughout study area	15,556	SY	$15	$233,333
Pavement Restoration	4,742	SY	$40	$189,689
			Subtotal	$769,322
			Mobilization	$76,932
			Subtotal	$846,254
			20% Construction Contingency	$169,251
			15% Design and Permitting	$126,938
			5% Construction Administration	$42,313
			Total Cost	**$1,184,756**

Study Area #21: SE 9th Street
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Drainage Structure	3	EA	$4,500	$13,500
Replace Existing Drainage Structure	2	EA	$5,000	$10,000
15" RCP Drainage Pipe	800	LF	$50	$40,000
15" Backflow prevention devices at outfall	1	EA	$40,000	$40,000
Swale Regrading throughout study area	4,200	SY	$15	$63,000
Pavement Restoration	1,956	SY	$40	$78,222
			Subtotal	$244,722
			Mobilization	$24,472
			Subtotal	$269,194
			20% Construction Contingency	$53,839
			15% Design and Permitting	$40,379
			5% Construction Administration	$13,460
			Total Cost	**$376,872**

Study Area #22: NW 16th Lane
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Install Catch Basin	6	EA	$4,500	$27,000
Replace Existing Drainage Structure	3	EA	$5,000	$15,000
Remove Existing Pipe	800	LF	$20	$16,000
18" RCP Drainage Pipe with Exfiltration	910	LF	$120	$109,200
15" RCP Drainage Pipe	115	EA	$50	$5,750
Swale Regrading	1,416	SY	$15	$21,233
Pavement Restoration	2,224	SY	$40	$88,978
			Subtotal	$283,161
			Mobilization	$28,316
			Subtotal	$311,477
			20% Construction Contingency	$62,295
			15% Design and Permitting	$46,722
			5% Construction Administration	$15,574
			Total Cost	**$436,068**

Study Area #24: NW 7th Terrace
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Soil Removal & Expand Retention Area	5,000	CY	$10	$50,000
Sod Restoration of Retention Area	2,600	SY	$4	$10,400
			Subtotal	$60,400
			Mobilization	$6,040
			Subtotal	$66,440
			20% Construction Contingency	$13,288
			15% Design and Permitting	$9,966
			5% Construction Administration	$3,322
			Total Cost	**$93,016**

Study Area #25: SE 15th Avenue
Preliminary Cost Estimate

Recommended Alternative

Item	Quantity	Unit	Unit Cost	Total
Replace Existing Drainage Structure	4	EA	$5,000	$20,000
Removal of Existing Pipe	480	LF	$20	$9,600
24" RCP Drainage Pipe	480	EA	$75	$36,000
24" Backflow prevention devices at outfall	1	EA	$50,000	$50,000
Swale Regrading throughout study area	6,222	SY	$15	$93,333
Pavement Restoration	1,173	SY	$40	$46,933
			Subtotal	$255,867
			Mobilization	$25,587
			Subtotal	$281,453
			20% Construction Contingency	$56,291
			15% Design and Permitting	$42,218
			5% Construction Administration	$14,073
			Total Cost	**$394,035**

Appendix A-3

Floodplain Management Planning Committee Documents

City of Pompano Beach – Stormwater Master Plan

Floodplain Management Planning Committee (FMPC) – Kickoff Meeting Agenda
Thursday April 19, 2012 at 2:00PM
Utilities Department Conference Room

Name	Department	Email Address
Jean Dolan	Planning and Zoning	Jean.Dolan@copbfl.com
Alessandra Delfico	Engineering	Alessandra.Delfico@copbfl.com
Randy Brown	Utilities Administration	Randolph.Brown@copbfl.com
William Herrmann	Utilities Administration	William.Herrmann@copbfl.com
Duncan Bethel	Utilities Administration	Duncan.Bethel@copbfl.com
Robert McCaughan	Public Works Administration	Robert.McCaughan@copbfl.com
Kimberly Spill	Emergency Management	Kimberly.Spill@copbfl.com
Michael Rada	Development Services	Michael.Rada@copbfl.com
Sandra King	Public Communication	Sandra.King@copbfl.com
Suzette Sibble	Finance	Suzette.Sibble@copbfl.com
Mark Beaudreau	Parks and Recreation	Mark.Beaudreau@copbfl.com
Natasha Alfonso	Community Redevelopment Agency	Natasha.Alfonso@copbfl.com
Peter Moore	Chen Moore and Associates, Inc.	pmoore@chenmoore.com
Jason McClair	Chen Moore and Associates, Inc.	jmcclair@chenmoore.com
Jennifer Smith	Chen Moore and Associates, Inc.	jsmith@chenmoore.com
Gabriel Bacca-Cortes	Chen Moore and Associates, Inc.	gbacca@chenmoore.com

Purpose

The purpose of the Floodplain Management Planning Committee (FMPC) is to identify any existing flood hazards within the City limits and to develop a plan to reduce the flood hazards within the City limits. The FMPC must be conducted in accordance with the FEMA Flood Plain Management Planning process defined in the FEMA CRS Coordinator's Manual under Activity 511. The planning process will include the following 10 steps as defined in Activity 511 in the CRS Coordinator's Manual:

- Step 1 – Organize to prepare the Floodplain Management Plan
- Step 2 – Public Involvement
- Step 3 – Coordination with other agencies
- Step 4 – Identify flooding problem areas within the City limits
- Step 5 – Identify impacts of floodplain hazards on City
- Step 6 – Set improvement goals for the Floodplain Management Plan
- Step 7 – Review possible mitigation activities
- Step 8 – Draft an Floodplain Management Plan
- Step 9 – Adopt the Floodplain Management Plan by City Commission
- Step 10 – Implement Floodplain Management Plan

AGENDA

Step 1 – Organize to prepare the Floodplain Management Plan

- Committee Introductions
- Committee Purpose
- Discuss Tentative Meeting Schedule

Step 2 – Public Involvement

- Schedule public information meeting to obtain input on flooding problem areas within City
- Distribute questionnaire to residents to obtain input on flooding problem areas within City to obtain input on flooding problem areas within City
- Solicit feedback from neighborhood advisory groups, HOA, or other civic organizations
- Schedule public information meeting to obtain input on draft Floodplain Management Plan

Step 3 – Coordination with other agencies

- Invite adjacent municipalities to participate in the planning process
- Invite regulatory agencies (FEMA, FDEP, SFWMD, Broward County EPGM) to participate in the planning process
- Contact other organizations (National Weather Service, Red Cross, etc) for any information on on-going programs related to the flood hazard

Step 4 – Identify Flooding Problem Areas

- Identify known flooding areas throughout the City
- Discuss past flood events within the City
- Review Potential Flooding Location Maps to confirm/deny the extent of flooding displayed on these maps based on past observations during heavy rainfall events.

Step 5 – Identify Impacts of Flooding Hazard

- Life, safety, and health of residents
- Critical Facilities and Infrastructure
- Economy / Tax Base
- Repetitive Loss Properties
- Future Development

ADJOURN

FMPC MEETING SCHEDULE (TENTATIVE)

April 2012	FMPC Kickoff Meeting
May 2012	FMPC Public Meeting #1
June 2012	System Improvement Goals
July 2012	Review Existing Mitigation Activities
August 2012	FMPC Public Meeting #2
September 2012	Review Draft Floodplain Management Plan

Future Meeting Agenda Items

- Step 6 – Set improvement goals for the Floodplain Management Plan
- Step 7 – Review possible mitigation activities
- Step 8 – Draft an Floodplain Management Plan
- Step 9 – Adopt the Floodplain Management Plan by City Commission
- Step 10 – Implement Floodplain Management Plan

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City of Pompano Beach
Floodplain Management Planning Committee

Kickoff Meeting Sign-In Sheet
April 19, 2012 – 2:00PM

NAME	DEPARTMENT	EMAIL / PHONE
Jennifer Smith	Chen Moore	jsmith@chenmoore.com 954-818-5804
Duncan Bethe	City of Pompano Utilities	duncan.bethe@copbfl.com 954.786.4224
Mark Beaudreau	COPB - Parks & Rec.	mark.beaudreau@copbfl.com
Alessandra Delfico	COPB Engineering	alessandra.delfico@copbfl.com
Maria Loucraft	Utilities	maria.loucraft@copbfl.com
Gabriel Bucca	Chen Moore	gbucca@chenmoore.com
Jason McLair	Chen Moore	jmclair@chenmoore.com
Natasha Alfonso	CRA	natasha.alfonso@copbfl.com / 954.786.4055
Jean Dolan	Dev. Services	jean.dolan@copbfl.com 954.786.5554
Randy Brown	Utilities	Randolph.Brown@COPBFL.com

NW 5th – Fatality issue on NW 5th caused absenses from Emergency mgt & Public Information.

City of Pompano Beach – Stormwater Master Plan

Floodplain Management Planning Committee (FMPC) – Kickoff Meeting Minutes
Thursday April 19, 2012 at 2:00PM
Utilities Department Conference Room

Meeting Attendees		
Name	**Department**	**Email Address**
Jean Dolan	Planning and Zoning	Jean.Dolan@copbfl.com
Alessandra Delfico	Engineering	Alessandra.Delfico@copbfl.com
Randy Brown	Utilities Administration	Randolph.Brown@copbfl.com
Duncan Bethel	Utilities Administration	Duncan.Bethel@copbfl.com
Maria Loucraft	Utilities Administration	Maria.Loucraft@copbfl.com
Mark Beaudreau	Parks and Recreation	Mark.Beaudreau@copbfl.com
Natasha Alfonso	Community Redevelopment Agency	Natasha.Alfonso@copbfl.com
Jason McClair	Chen Moore and Associates, Inc.	jmcclair@chenmoore.com
Jennifer Smith	Chen Moore and Associates, Inc.	jsmith@chenmoore.com
Gabriel Bacca-Cortes	Chen Moore and Associates, Inc.	gbacca@chenmoore.com

Note: A traffic fatality occurred this afternoon on FEC railroad tracks to north of NE 10th Street, which caused absences of representatives from Emergency Management Department and Public Communication Department.

Discussion Items – Step 1 (Organize for Floodplain Management Plan)

- The kickoff meeting of the FMPC Committee began with introductions of all attendees.
- Jason outlined the purpose of the FMPC Committee, which is to identify any existing flood hazards within the City limits and to develop a plan to reduce the flood hazards within the City limits. Jason noted FMPC must be conducted in accordance with the FEMA Flood Plain Management Planning process defined in the FEMA CRS Coordinator's Manual under Activity 511.
- The planning process will include the following 10 steps as defined in Activity 511 in the CRS Coordinator's Manual. Jason noted that Steps 1-5 will be addressed during this Kickoff Meeting.

  Step 1 – Organize to prepare the Floodplain Management Plan
  Step 2 – Public Involvement
  Step 3 – Coordination with other agencies
  Step 4 – Identify flooding problem areas within the City limits
  Step 5 – Identify impacts of floodplain hazards on City
  Step 6 – Set improvement goals for the Floodplain Management Plan
  Step 7 – Review possible mitigation activities
  Step 8 – Draft an Floodplain Management Plan
  Step 9 – Adopt the Floodplain Management Plan by City Commission
  Step 10 – Implement Floodplain Management Plan

- Jason reviewed the tentative FMPC meeting schedule, which was developed to coincide with the deliverable deadlines for the Stormwater Master Plan Project. The tentative meeting scheduled is listed below

April 2012	FMPC Kickoff Meeting
May 2012	FMPC Public Meeting #1
June 2012	System Improvement Goals
July 2012	Review Existing Mitigation Activities
August 2012	FMPC Public Meeting #2
September 2012	Review Draft Floodplain Management Plan

- Jason noted that the future FMPC meetings will address the following steps of the planning process as defined in Activity 511 in the CRS Coordinator's Manual:

  Step 6 – Set improvement goals for the Floodplain Management Plan
  Step 7 – Review possible mitigation activities
  Step 8 – Draft an Floodplain Management Plan
  Step 9 – Adopt the Floodplain Management Plan by City Commission
  Step 10 – Implement Floodplain Management Plan

<u>Discussion Items – Step 2 (Public Involvement)</u>

- Jason recommended that the City hold two public meetings during the planning process. The first meeting will be held to obtain input from the residents on observed flooding hazards throughout the City, which should occur in May 2012. The second meeting will be held to discuss recommended improvements within the draft Floodplain Management Plan, which should occur in August or September 2012.
- Jean will schedule resident outreach meeting, which will be in an open house format and will allow residents to review flooding maps and identify observed flooding areas in their neighborhood. The meeting will be scheduled in May at the Larkins Center during 4PM-7PM timeframe. Chen will provide presentation boards with large maps along with interactive post-it notes to identify observed flooding locations and easel pads to note descriptions of residents' flooding concerns. After the public meeting, the location of all resident flooding complaints will be identified within the GIS database for comparison with expected flooding areas defined by the stormwater model.
- Alessandra requested that Chen provide example photos which denote different levels of flooding. The photos should assist residents with properly categorizing the observed flooding within their neighborhood.
- Alessandra noted to place landmarks, such as schools, parks, or fire stations, on these flooding maps to assist residents with locating their neighborhoods.
- Alessandra inquired if these display maps for the public meetings should include flooding results from a design storm. Jason noted that the stormwater model could be run for a specific storm event, such as the Halloween 2011 storm event, which will be remembered by most residents.
- Duncan noted that MS4 surface water brochure should be distributed during the public meeting to help meet the public education requirements under the Countywide NPDES Permit.
- Jean noted that some residents may be unable to attend the public meetings. Alessandra noted that the maps can be displayed at the Engineering Building for a week following the public meeting. An Engineering staff member could be available to assist any residents who stop by with maps and obtaining flooding concerns. Jean also noted an option to post comments online.
- Jason mentioned the City can receive points through inviting public advisory groups, homeowner associations, and other interested group to participate in the planning process. The City can send

outreach notices for the public meetings to residents through HOA contacts. Mark noted HOA contact list is outdated, but he will work on updating the list with new emails.

- Jean noted that individual invitations to these public meetings will be provide to all members of City Boards.
- Natasha mentioned to inform residents through the monthly water bill. It was noted that a portion of the City does not receive water service from the City, but from Broward County, so those residents would not receive the notice. It was noted that residents with automatic bill pay for water services may not receive the notice. Although it is too late to distribute notices for the first public meeting within water bills, the water bill inserts will be used to publicize the second public meeting in August/September.
- The City will consider setting up a public information booth to obtain input on observed flooding at City functions, such as the green market or the health fair. Maria mentioned the Health Fair is scheduled for August 8-9, where many residents typically attend. It may be possible to set up a booth at this Health Fair in lieu of the second public meeting.
- Mark mentioned flyer for this public outreach meeting could also be distributed to the participants at events within the City parks.
- Jason recommended to distribute a questionnaire to the residents to obtain input on observed flooding through the City. This questionnaire can be included with the notice for the second public meeting to be inserted with the water bill to residents. The questionnaire should also be posted online at the City website to obtain input on flooding concerns.
- Jean noted to plan date for second meeting soon.

<u>Discussion Items – Step 3 (Coordination with other agencies)</u>

- Jason mentioned CRS credit points can be obtained for inviting other agencies and/or neighboring municipalities to participate in the planning process. Jason requested contact information for appropriate individuals at these municipalities.
- Jean agreed to inviting both agencies and neighboring cities to meeting.
- Jean mentioned that Broward County may be interested in discussing beach cleanup effort or that SFWMD may be interested in discussing their water quality efforts at these public meetings. It was also discussed that the hurricane awareness booth is directly related to the potential flood hazards and should be included in the public meetings.
- Duncan suggested including the following contacts at the neighboring cities: Art Gram at City of Coconut Creek Utilities and Don Prince at Town of Lauderdale By The Sea.
- Alessandra agreed that the City of Pompano Beach is centrally located and may benefit holding a joint meeting within the City for all other municipalities.
- Jason noted that he will begin to create list of invitees for the meeting and will forward to the committee members for any additions.

<u>Discussion Items – Step 4 (Identify Flooding Problem Areas)</u>

- Jason distributed the flooding maps for comments from the committee members, which have updated per previous review comments from Duncan.
- Jean requested to comparison between the flooding maps developed from the stormwater model for the City within to the new draft FEMA flood zone maps
- Jean mentioned the recently installed exfiltration systems by Broward County within the neighborhood north of the Pompano Airpark. Jason noted that the stormwater model has been updated to include these new drainage systems.
- Duncan discussed the need for proper maintenance of exfiltration systems to ensure long term effectiveness.

- Alessandra suggested to run the stormwater model for the recent Halloween 2011 storm event and to update the flooding maps for this storm event to allow the residents in attendance to relate to a specific event.
- Gabriel noted the stormwater model is currently being calibrated based on Hurricane Irene storm event, with is a greater intensity then the Halloween 2011 storm event.
- Randy noted how important these public outreach meetings are for the City Commission and City Manager.
- Jean mentioned that it may be possible to have Powerpoint presentation running in background of public meeting to educate residents on flooding hazards.
- The committee reviewed all previous comments on flooding areas throughout the City. Chen will incorporate into the analysis of flooding areas. Most of the discussion was centered at the intersections: NW 4rd Ave and NW 4th St; US Federal Highway and SE 9th St; NE 14th St and NE 23rd Ave; NE 18th St and NE 28th Ter;, NW 3rd Ave and NW 18th Ct; and, SE 15th St and SE 22nd Ave.

Discussion Items – Step 5 (Identify Impacts of Flooding Hazard)

- Jason noted that the Floodplain Management Plan must identify impacts of the flooding hazards on life, safety, and health of residents.
- Jason noted that all critical facilities and infrastructure must be located on the flooding maps to ensure adequate protection from flood hazards for these facilities. Jason noted that following items should be located on the flooding maps: fire stations, police stations, sanitary pump stations, FPL facilities.
- Alessandra can provide the facility maps which were created for the Emergency Management Department and can be incorporated into the flooding maps.

ACTION ITEMS

- Hold coordination meeting Sandra at Public Communication (Jean/Chen)
- Schedule time and date for Public Meeting #1 at the Larkin Center (Jean)
- Provide contact list of all board members to invited to Public Meeting #1 (Jean)
- Provide current contact list for local HOAs and civic associations (Mark)
- Prepare language for public notice on Public Meeting #1 (Chen)
- Prepare presentation material for Public Meeting #1 (Chen)
- Provide vital facility map from Emergency Management Department (Alessandra)
- Distribute contact list for other agencies and municipalities to be invite (Chen)
- Investigate procedure for water bill inserts for Public Meeting #2 (Jean)
- Investigate inclusion of Public Meeting #2 at City Health Fair (Jean)
- Prepare draft questionnaire for Public Meeting #2 (Chen)

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PRESS RELEASE

City of Pompano Beach
100 West Atlantic Boulevard | Pompano Beach, FL 33060

Press Release Date: 5/7/12

Stormwater Flooding Public Outreach Meeting
Monday May 14th
E. Pat Larkins Community Center
520 Hammondville Road / Martin Luther King, Jr. Boulevard
4:00 p.m. until 7:00 p.m.

The City of Pompano Beach will host a public outreach meeting on Monday, May 14th at the E. Pat Larkins Community Center from 4:00 p.m. until 7:00 p.m. to gather input from residents, business owners and stakeholder on any observed flooding within the City limits. All attendees will be given the opportunity to provide feedback to the City on past flooding within their neighborhood. The meeting is free and open to the public.

The City of Pompano Beach is currently developing a Stormwater Master Plan for the entire City limits. The purpose of this Stormwater Master Plan is to identify any deficiencies with the City's existing stormwater management system and to recommend any system improvements to alleviate any existing flooding issues. Any input provided by the general public will assist the City in focusing their attention on areas of the City with past flooding problems and help the City to prioritize these areas for future improvements to the City's stormwater system.

Maps of all areas of the City will be set up throughout the meeting location for review by all attendees. City representatives will also be present to provide guidance to all attendees and to document the feedback received from the attendees. A questionnaire will also be available to any resident unable to attend the meeting but wishing to provide feedback to City on past flooding within their neighborhood.

Fore more information, call 954-786-4144.

Sandra King, Public Communications Director | Phone: 954-786-4527

City of Pompano Beach
Stormwater Master Plan
Floodplain Management Planning Committee

Public Outreach Meeting Sign-in Sheet
May 14th 2012 3:00 – 7:00

Name	Address	Contact Information Email/Phone
Derrick Smith	500 W Cypress Creek Rd #630 Fort Laud 33309	dsmithgator@gmail.com
Jennifer Smith	500 W. Cypress Creek Rd #630	jsmithfau@gmail.com
JOEL BROWNSEY	500 W. CYPRESS CREEK RD #630 FT LAUD FL 33309	jbrownsey@att.net
Gabriel Bacca	500 W Cypress Creek rd #630, FTL	~~gbacca@yahoo.c~~ gabriel_bacca@yahoo.com
Maria Loucraft COPB-Util	1205 NE 5th Ave - Utilities Dept maria.loucraft@copbfl.com	
Jason McClair	500 W Cypress Creek Road #630	jmcclair@yahoo.com
Duncan BETHEL COPB-Util	1201 N.E. 3 AVE	duncan.bethel@copbfl.com
Jean Dolan	617 NW 30th St, Wilton Manors	jean.dolan@copbfl.com
Randy Brown	1205 NE 5th Ave Pompano Beach	Randolph.Brown@COPBFL.com
Mark A Beaudrau	1801 NE 6 St. Pompano Beach	mark.beaudrau@copbfl.com
Leigh Brown	2767 NE 15 St Pompano Beach 33062	lbrown@dunmoore.com

City of Pompano Beach – Stormwater Master Plan

Floodplain Management Planning Committee (FMPC) – Kickoff Meeting Agenda
Tuesday June 26, 2012 at 10:00AM
Utilities Department Conference Room

Name	Department	Email Address
Jean Dolan	Planning and Zoning	Jean.Dolan@copbfl.com
Alessandra Delfico	Engineering	Alessandra.Delfico@copbfl.com
Randy Brown	Utilities Administration	Randolph.Brown@copbfl.com
William Herrmann	Utilities Administration	William.Herrmann@copbfl.com
Duncan Bethel	Utilities Administration	Duncan.Bethel@copbfl.com
Maria Loucraft	Utilities Administration	Maria.Loucraft@copbfl.com
Jason McClair	Chen Moore and Associates, Inc.	jmcclair@chenmoore.com
Jennifer Smith	Chen Moore and Associates, Inc.	jsmith@chenmoore.com
Gabriel Bacca-Cortes	Chen Moore and Associates, Inc.	gbacca@chenmoore.com

AGENDA

Step 6 – Set improvement goals for the Floodplain Management Plan

- Review Sub-Basin Prioritization Formula
- Review Sub-Basin Prioritization Results (Top 20)
- Delineation of Study Areas
- Review Ranking of Study Areas
- Develop goals for the Floodplain Management Plan
- Review Future Action Items

FMPC MEETING SCHEDULE (TENTATIVE)

July 2012	Review Existing Mitigation Activities
August 2012	FMPC Public Meeting #2
September 2012	Review Draft Floodplain Management Plan

Future Meeting Agenda Items

- Step 7 – Review possible mitigation activities
- Step 8 – Draft an Floodplain Management Plan
- Step 9 – Adopt the Floodplain Management Plan by City Commission
- Step 10 – Implement Floodplain Management Plan

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City of Pompano Beach
Floodplain Management Planning Committee

System Improvement Goals Meeting – Sign-In Sheet
June 26, 2012 – 10:00AM

NAME	DEPARTMENT	EMAIL / PHONE
Gabriel Bacca	Chen Moore	gbacca@chenmoore
Jennifer Smith	Chen Moore	jsmith@chenmoore
Jason McClair	Chen Moore	jmcclair@chenmoore.
Duncan BETHEL	City of Pompano	duncan.bethel@copbfl.com
Michael Taylor	City of Pompano	Michael.Taylor@CopBFl.com
Alessandra Delhco	Engineering	alessandra.delhco@copbfl.com
Bill HERRMANN	COPB	
Maria Loucraft	City of Pompano-Utilities	maria.loucraft@copbfl.com
Jean Dolan	Dev. Services	jean.dolan@copbfl.com
Randy Beam	Utilities	Randolph.Beam@COPBFL.com

City of Pompano Beach – Stormwater Master Plan

Floodplain Management Planning Committee (FMPC) – Meeting Minutes
Tuesday June 26, 2012 at 10:00AM
Utilities Department Conference Room

Meeting Attendees		
Name	**Department**	**Email Address**
Jean Dolan	Planning and Zoning	Jean.Dolan@copbfl.com
Alessandra Delfico	Engineering	Alessandra.Delfico@copbfl.com
Randy Brown	Utilities Administration	Randolph.Brown@copbfl.com
William Herrmann	Utilities Administration	William.Herrmann@copbfl.com
Duncan Bethel	Utilities Administration	Duncan.Bethel@copbfl.com
Maria Loucraft	Utilities Administration	Maria.Loucraft@copbfl.com
Jason McClair	Chen Moore and Associates, Inc.	jmcclair@chenmoore.com
Jennifer Smith	Chen Moore and Associates, Inc.	jsmith@chenmoore.com
Gabriel Bacca-Cortes	Chen Moore and Associates, Inc.	gbacca@chenmoore.com

Step 6 – Set improvement goals for the Floodplain Management Plan

David Harris, a City resident at 2661 NE 4th Street within Harbor Village, attended start of meeting to announce to all parties his concern of flooding along NE 4th Street. Mr. Harris provided a photo displaying the extent of flooding during rain event October 2011 and noted there is currently no existing drainage facilities NE 4th Street. The stormwater runoff typically flows along the roadway east to the cul-de-sac. Mr. Harris also noted that there are approximately 35 homes along this street and during heavy rainfall events the water has backed up into the resident garages.

- Jason provided meeting introduction and noted that the meeting purpose was to review a sub-basin prioritization list prepared by CMA and to obtain feedback from the City staff.
- Maria asked if this prioritization formula included only the model results or if there was a separate formula for the model results. Jason noted that the stormwater model results are one of four components included within the prioritization formula. The stormwater model was used to estimate the total length of roadway centerline that would be expected to be flooded within each sub-basin during a design storm event. This length of roadway flooding was divided by the total length of roadways within each respective sub-basin, which results in a ratio which can be used for comparison purposes. Each sub-basin within the City was ranked from highest to lowest percentage of roadway centerlines expected to be flooded.
- Duncan noted that some priority sub-basins have existing drainage facilities within the area and inquired whether the stormwater model includes the existing drainage facilities. Jason noted that the stormwater model includes all existing drainage facilities identified in the City's stormwater atlas along with additional drainage systems identified within various other documents provided by the City.
- Alessandra noted that the existing stormwater system is still being surveyed and is not complete at this time. Jason noted that GIS Stormwater Atlas and the stormwater model will be updated with gathered survey data, which will include horizontal coordinates, rim elevations, and invert elevations

for all City-owned drainage structures. Jason noted that the results of the updated stormwater model will not differ significantly from the current version of the existing conditions stormwater model.

- Maria inquired on the current progress of the survey verification effort. Jason noted that the various survey datasets are currently at different levels of completion since the surveyor is using separate work crews to obtain specific data. The survey subconsultant has dedicated one work crew for each of the following efforts: establishing new benchmarks throughout the City, collecting horizontal coordinates for each drainage structure, and collecting the vertical elevation data for each drainage structure. The surveyor has near completion with establishing the new benchmark while approximately 50% of horizontal coordinates have been obtained and 30% vertical elevations have been obtained.
- Jean began a discussion on the FEMA draft flood maps along with 90-day appeal process. She noted a property located near Copans Road and US-1 with a significant change in base flood elevation which will be much higher (roughly 5 feet) than property across the street. Jean also mentioned she heard the appeal process might not have officially begun and that the maps may not be adopted until summer of 2013. Alessandra and Jason noted that the appeal deadline was originally set for June 26th 2012. Jean noted that significant portion of the City has been removed from a flood zone. Jean asked if this stormwater model can be used to review the FEMA maps and to distinguish areas that may contain improper base flood elevations. Jason summarized the strict FEMA appeal process which required the use of the FEMA model data during an appeal. Therefore they may be compared, but may not be used to submit an appeal.
- Jason continued with the summary presentation of the basin prioritization by noting the stormwater model results was incorporated into the prioritization formula. All 620 sub-basins were modeled for a 5 year storm event and were ranked by dividing the length of flooded roadways by tributary flooding area. The top 5% were assigned a value of 4 points and top 10% were assigned a value of 2 points. Alessandra noted that the point values stopped after the 64 sub-basin (top 10%) and that assigning a point value for all basins showing flooding would be preferred.
- The next item within the prioritization formula is the City Input, which was assigned one point for all sub-basins the City provided a concern. Maria and Bill mentioned to modify the language from 'City Input' to include more objective language, such as documented, historical, observed concerns from City staff. Duncan requested the City Input be weighed higher in the prioritization formula, which all parties agreed to since this parameter is considered to be the most accurate parameter used within the prioritization formula.
- Jason continued with presentation and noted that one point was assigned for each resident complaint within each sub-basin. Maria asked if the same address received multiple points for multiple complaints. Jennifer noted that a maximum of one point was assigned per address to ensure multiple complaints from an individual address where treated equally with other addresses throughout the City. The City requested to track the date of the resident complaints in case any drainage improvements have since been completed in the area of these complaints. Jen noted that all resident complaints received by the City prior to the start of this project had not been dated and would need to be researched further.
- Alessandra asked CMA to investigate the cost benefit of certain projects, as there are some smaller areas that can create a benefit for a smaller cost. CMA will investigate this.
- Jason noted one point was assigned within the prioritization formula for each repetitive loss property in each sub-basin, which was agreed to by the City.
- Maria asked if water quality was considered the sub-basin prioritization at this time. Jason noted the prioritization of all sub-basins was based strictly on flood control information.
- Bill noted that some study areas, such as Avondale, should be assigned a lower priority since the City is currently able to manage the flooding issues with additional attention of the City's operations and maintenance staff. This would allow additional capital costs to be re-assigned elsewhere in the City to areas that may not have any existing drainage facilities. Jason recommended further discussion after

the next submittal, which will summarize the various proposed alternatives throughout the City along with the associated construction cost estimates.

- Alessandra summarized the City's desired modifications to the prioritization formula: Points based on the stormwater model results should be assigned for all sub-basins, not just the top 10%. The City Input is to be reworded and assigned a higher weight within the prioritization formula. Dates for the resident complaints should be confirmed and all resident complaints which have since been addressed through system improvements should be neglected within the prioritization formula.
- Discussion began on each study area identified by CMA as a "priority area". The City has the following concerns in regards to these study areas:
  - NW CRA Area – Duncan noted there is currently adequate drainage in this area and no historical concerns of flooding. Randy noted any proposed development will be required to construct their own drainage system upon development. Jason noted that the NW CRA Area was identified as a study area based on the stormwater model results. This area may not have any current flooding problems due to the significant undeveloped land area, which has a higher infiltration capacity due to the extensive pervious ground surface in the multiple vacant properties. CMA will investigate this area further within the stormwater model and will meet with Duncan directly to confirm the atlas is correct in this area.
  - Sample & US-1 (Cresthaven) – A previous Broward County Improvement Project was completed in this area, which included the installation of new exfiltration trench systems. Duncan noted no historical flooding problems have been encountered in this area. CMA noted that this areas was originally defined to be an area of concern by City staff during previous review meetings. Duncan & CMA to check original notes and confirm with if this is subbasin should be included as a City concern.
  - Dixie Highway & McNab Road – The stormwater model shows flooding in this area. The City mentioned ongoing land development (Captiva Cove) being built with their own on-site drainage in this area.
  - Additional areas were discussed between CMA and Duncan following the conclusion of the meeting. CMA provided large City maps to Duncan and Michael to obtain additional input on where the City staff has observed historical flooding throughout the City.
- Duncan requested that the public outreach questionnaire about flooding be placed on the City website and at customer service center for access by City residents, since he is are still receiving phone calls due to the Sun-Sentinel article. CMA will forward the questionnaire from the meeting to Alessandra to be placed on the City website.
- Jason requested to begin planning and advertising for second resident outreach meeting. The City agreed that the second meeting can be held at the City Health Fair on August 8th and 9th at the City Civic Center. CMA to coordinate with Mike Smith Extension 5549 to set up a table.

FMPC MEETING SCHEDULE (TENTATIVE)

July 2012	Review Existing Mitigation Activities
August 2012	FMPC Public Meeting #2
September 2012	Review Draft Floodplain Management Plan

Future Meeting Agenda Items

- Step 7 – Review possible mitigation activities
- Step 8 – Draft an Floodplain Management Plan
- Step 9 – Adopt the Floodplain Management Plan by City Commission
- Step 10 – Implement Floodplain Management Plan

ACTION ITEMS

- Update prioritization formula (CMA)
- Investigate dates of complaints, if available (CMA and City)
- Review maps and identify historical flooding areas (Duncan)
- Begin analysis of proposed alternatives (CMA)
- Prepare advertisement for Public Meeting #2 at City Health Fair (Jean)
- Prepare table for Public Meeting #2 at City Health Fair (CMA)
- Prepare questionnaire to be added to City website (CMA)

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PRESS RELEASE

City of Pompano Beach
100 West Atlantic Boulevard | Pompano Beach, FL 33060

Press Release Date: 8/3/12

Health and Financial Wellness Fair
Public Outreach on Stormwater Flooding
Wednesday, August 8th and Thursday, August 9th
Emma Lou Olson Civic Center, 1801 NE 6 Street
10:00 a.m. to 3:00 p.m.

The City of Pompano Beach is currently developing a Stormwater Master Plan for the entire City limits. The purpose of this Stormwater Master Plan is to identify any deficiencies with the City's existing stormwater management system and to recommend any system improvements to alleviate any existing flooding issues within the City. Any input provided by the general public will assist the City in focusing their attention on areas of the City with past flooding problems and help the City to prioritize these areas for future improvements to the City's stormwater system.

The City of Pompano Beach will set up a table at the City Health and Wellness Fair to gather input from employees, residents, business owners, and stakeholders on any observed flooding within the City limits. All attendees will be given the opportunity to provide feedback to the City on past flooding within their neighborhood. Maps of all areas of the City will be set up at the table for review by all attendees. City representatives will also be present to provide guidance to all attendees and to document the feedback received from the attendees. The meeting is free and open to the public. A questionnaire will also be available to any resident unable to attend the event but wishing to provide feedback to City on past flooding within their neighborhood.

Sandra King, Public Communications Director | Phone: 954-786-4527

City of Pompano Beach
Stormwater Master Plan
Floodplain Management Planning Committee

Public Outreach Meeting Sign-in Sheet
August 8th & 9th 2012 10:00 – 3:00

Name	Address	Contact Information Email/Phone
LaShunna Pierre	1711 NE 2 Terr	9547864119
George Browning	2300 N. Cypress Rd	954-782-5926
Rex Pace	2784 NE 5th ST	954-553-7074
Beulah Wright	2419 N 60th Pompano	954 971-0017
BILL COOPER	2451 E ATLATIC BLVD	954 942 2306
ERHARD SCHULZ	2700 NE 4th Street	954-781-3493
Angela Toleano	2712 NE 4th St.	
ROBERT SNANANAN	3210 SE 10TH ST	954.600.4791
William O'BRIEN	3410 ROBBINS ROAD P.B.	954-941-2178
Nancy Belotto	1531 SE 24 Terr	954 781-0091
Sue Saperstein	401 Briny Ave -209	954 782-8889
Glenn Falcey	2662 NE 4th St	732-673-1725
Don Luetgens	2374 NE 9ST	954 868-9458
Colleen Gentile	1601 E Atlantic Blvd.	954-942-1733
MARC JACOB	101E McNab RD #133	954-783-5115

City of Pompano Beach
Stormwater Master Plan
Floodplain Management Planning Committee

Public Outreach Meeting Sign-in Sheet
August 8th & 9th 2012 10:00 – 3:00

	Name	Address	Contact Information Email/Phone
	Jackie Kurt	2741 NE 4 ST.	9-786-0484
	Dan Kurt	2741 NE 4 ST.	954-786-0484
(18)	Beverly Cutter	2436 SE 13 CT	954-782-2593
	Meta Berk	2752 NE 4 ST	954. 946 8040
	Steven Berk	2752 NE 4 ST	954 946 8040
	Robert Berk	2752 ne 4 st	" 946 8040
	Barbara Harrison	1300 NE 26 Avenue	–
	Lester	361 SE 5th Ave	–

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City of Pompano Beach
Floodplain Management Planning Committee

Proposed System Alternatives Meeting – Sign-In Sheet
September 7, 2012 – 1:00PM

NAME	DEPARTMENT	EMAIL / PHONE
PETER MOORE	CHEN MOORE	PMOORE@CHENMOORE.COM (954) 730-0707 X1002
Duncan Bethel	City of Pompano	duncan.bethel@copbfl.com 954-786-4724
Mike Taylor	city of Pompano	Michael.Taylor@CopbFl.com (954) 786-4724
Randy Brown	Utilities	Randolph.Brown@COPBFL.com 954-545-7043
Jean Dolan	City of Pomp. Deuert.	jean.dolan@copbfl.com
Maria Loucraft	Utilities	maria.loucraft@copbfl.com (954) 545-7004
Jennifer Smith	Cher Moore	jsmith@chenmoore.com 954-730-0707 x1030
Jason McClair	Cher Moore	jmcclair@chenmoore.com 954-730-0707

City of Pompano Beach – Stormwater Master Plan

Floodplain Management Planning Committee (FMPC) – Meeting Minutes
Friday September 7, 2012 at 1:00PM
Utilities Department Conference Room

Meeting Attendees		
Name	**Department**	**Email Address**
Jean Dolan	Planning and Zoning	Jean.Dolan@copbfl.com
Alessandra Delfico	Engineering	Alessandra.Delfico@copbfl.com
Randy Brown	Utilities Administration	Randolph.Brown@copbfl.com
Duncan Bethel	Utilities Administration	Duncan.Bethel@copbfl.com
Mike Taylor	Utilities Administration	Michael.Taylor@copbfl.com
Maria Loucraft	Utilities Administration	Maria.Loucraft@copbfl.com
Jason McClair	Chen Moore and Associates, Inc.	jmcclair@chenmoore.com
Peter Moore	Chen Moore and Associates, Inc.	pmoore@chenmoore.com
Jennifer Smith	Chen Moore and Associates, Inc.	jsmith@chenmoore.com

- Peter provided meeting introduction and noted that the meeting purpose was to review system improvement alternatives prepared by CMA and to obtain feedback from the City staff.
- Maria requested to add water quality in the sub-basin prioritization formula. Peter mentioned this prioritization formula is currently based on existing flooding, but the water quality component will be added to the formula. Additional points will be assigned for sub-basins which directly discharge into the Pompano Canal.
- Maria asked whether the proposed system improvements will assist with addressing I/I issues into the existing sanitary sewer system. Peter mentioned these projects will reduce inflow from the ground surface since the extent of flooding will be reduced by the proposed improvements, but will not affect infiltration since the groundwater levels will not be impacted by the proposed improvements. At existing lift station locations which currently encounter flooding problems, such as within the Avondale neighborhood, these proposed improvements will help alleviate flooding levels near lift stations, which could further reduce any inflow into the sanitary system.
- Jean noted that potential CDBG funding may be available to certain low income neighborhoods, such as Avondale.
- Standard Operating Procedures for the maintenance of the existing stormwater management system were provided to Duncan for review to be incorporated into the Draft Stormwater Master Plan on September 21st, 2012.
- CMA began a discussion on every study area. CMA noted that each of the proposed system improvement alternatives was analyzed to compare the effectiveness of reducing peak flood stages and flooding duration within each study area. The extent of each system improvement alternative was maximized to obtain the highest potential reduction in peak flood stages and flood duration. The configuration of the most effective system improvement alternative will be refined to ensure feasibility.

Study Area Discussion

CMA reviewed each of the proposed system improvement alternatives for each study area. The City made

the following review comments for each study area:

Study Area #1 – Pompano Park Place & Andrews Avenue

- Duncan noted that major flooding is limited to along SW 15th Avenue & SW 9th Terrace.
- Calculate total storage volume needed for entire study area to meet level of service within public right-of-way areas. The City may be interested in the purchase of private properties to install dry retention areas throughout the study area.
- Estimate the extent of flooding due to stormwater runoff from public right-of-way areas only by removing stormwater runoff contributed from private properties into the public right-of-way. These results can be used to estimate how flooding within the public right-of-way areas is due to the private properties.

Study Area #2 – Lyons Park

- Flooding may have been caused when existing drainage ditch along Flagler was converted into a pipe connection. Duncan estimates this drainage pipe to be 18-inch to 24-inch diameter.
- Consider upsizing existing drainage system and adding a new drainage culvert along Flagler.
- Consider a potential Neighborhood Improvement Project (NIP), which would include the installation of new sanitary sewer, water distribution, and stormwater infrastructure throughout the neighborhood simultaneously under the same project.

Study Area #3 – Avondale

- Investigate the use of the existing City park at the western end of the study area for additional stormwater storage from a new pumped system.

Study Area #4 – Esquire Lake Neighborhood

- Duncan noted that Alternative #1 should not be implemented since upsizing the existing outfall pipes into the lake could further increase the peak water levels.
- Duncan noted that flooding occurs chiefly along NW 10th Street and NW 9th Street and the proposed exfiltration should only be installed within these problem areas along with swale regrading.

Study Area #5 – NE 4th Street & NE 3rd Street

- City requests to investigate swale grading between existing houses. Peter noted that introduction of new stormwater runoff within between the existing houses could undermine the existing seawall. A drainage easement would also be required to prevent any new owners from filling in the new swale on private property.

Study Area #6 – US-1 and NE 14th Street Causeway

- Duncan noted that flooding is located chiefly along NE 23rd Avenue just south of NE 14th Street and that the proposed improvements should be focused on this problem area with swale regarding.

Study Area #7 – Bay Drive Neighborhood

- Duncan requested to investigate exfiltration trench options since the existing exfiltration trench system helps alleviate flooding in other nearby areas.
- Leigh Road and Barton Road are low lying areas which have existing flooding issues and additional drainage should be proposed along these roadways.

Study Area #8 – Gateway Drive

- City did not have any comments on the proposed system improvement alternative.

Study Area #9 – North Riverside Drive and NE 14th Street Causeway

- Duncan noted that the two existing 15-inch outfalls are privately owned and cannot be considered for upgraded. CMA will update stormwater model to consider upsizing only the one 18-inch City owned outfall pipe from Riverside Drive.
- The public right-of-way for NE 10th Street extends to the Intracoastal Waterway and would be available for a new drainage outfall (if allowed by regulatory agencies).
- CMA noted that a pumped system is the most effective option under to future sea level rise projections.

Study Area #10 – NE 27th Avenue and NE 16th Street

- Duncan noted that flooding occurs chiefly along NE 18th Street and the north end of NE 27th Avenue. The proposed improvements should be focused on these problem areas together with swale regarding.

Study Area #11 – Dixie Highway and McNab Road

- Duncan confirmed that the existing system connection to the FDOT system along I-95 had been closed which created flooding in the south end of study area. Jason confirmed that the model results show that reactivating this system connection will alleviate the flooding problems.
- Duncan noted that the FDOT engineer was going to investigate and coordinate with the City on this connection, which is still pending.

Study Area #12 – Kendall Lake Area

- Duncan noted that his concern about the erosion of the existing lake banks, especially along the west side, which appears to be caused when the lake reaches capacity. The proposed improvements should be focused on reducing the flow of stormwater runoff into the lake and/or expanding the capacity of the lake.
- Alessandra noted the City is attempting to connect the lake to the vacant parcel, which is located southwest of the lake. CMA will analyze the effectiveness of this alternative to estimate how much the existing lake capacity should be expanded.

Study Area #13 – Atlantic Boulevard and South Riverside Drive

- Duncan noted how low the ground surface is within the right-of-way areas compared to high tide elevation.
- Duncan noted that the performance of the existing stormwater system is tidally influenced, even with the existing Red Valve backflow devices at the existing outfalls.
- Jean discussed proposed development planned for the vacant parcel on the Intracoastal Waterway on the southwest corner of Atlantic Boulevard and South Riverside Drive. Jason noted the vacant property currently receives stormwater runoff from the Riverside Drive due to the low elevation and that development of the parcel may worsen the right of way flooding, even if developed to meet current stormwater regulations.
- Jason noted that the pipe upgrade option is the most effective alternative for this study area, even though it will not eliminate flooding within the right-of-way areas due to the very low ground surface elevation.

Study Area #14 – Powerline Road and NW 33rd Street

- City did not have any review comments on this study area.

Study Area #15 – SE 9th Street

- City did not have any review comments on this study area.

Study Area #16 – US-1 and SE 15th Street

- City did not have any review comments on this study area.

Study Area #17 – US-1 & SE 15th Street

- Duncan noted that flooding occurs chiefly along NE 9th Street and the proposed exfiltration should be focused on the problem area together with swale regrading.

Study Area #18 – NW 22nd Court

- Duncan noted that flooding occurs chiefly along NW 22nd Court near the intersection of NW 18th Avenue. The proposed exfiltration trench along with swale regrading should be installed to address the problem area.

Study Area #19 – NW 22nd Street

- City did not have any review comments on this study area.

Study Area #20 – NW 16th Lane

- City did not have any review comments on this study area.

Study Area #21 – SE 15th Avenue

- City did not have any review comments on this study area.

Study Area #22 – NE MLK Blvd and Powerline Road

- City did not have any review comments on this study area.
- CMA discussed that there are no proposed improvements for this study area since all flooding issues are located on private property.

Study Area #23 – NW 7th Terrace

- Duncan requested to investigate expanding storage capacity of existing pond/retention area within the study area.

Study Area #24 – SE 28th Avenue South of Atlantic Blvd

- Duncan noted the resident complaint within this study area was limited to a resident attempting to sell his house. Based on observations, this study area does not encounter any historical significant flooding problems.
- Duncan noted that the existing outfall pipes were recently relined.

ACTION ITEMS

- Update prioritization formula to include water quality (CMA)
- Update system improvement alternatives as discussed during meeting (CMA)
- Provide CRS Checklist (Jean)
- Review SOPs (Duncan)
- Submit Draft Stormwater Master Plan on September 21st 2012 (CMA)

City of Pompano Beach – Stormwater Master Plan

Review Meeting Agenda
November 6, 2012 – 10:30 AM

1. Draft Stormwater Master Plan – Submitted September 21, 2012
   - Questions/Comments on Submittal
   - NW CRA Area (Priority Basin #2)
   - Status Update on Old Pompano Canal TMDL
   - Additional Sea Level Rise Analysis

2. Final Stormwater Master Plan
   - Stormwater CIP Implementation Timeframe
   - Future Target Annual Budget for Stormwater CIP
   - Future Target Annual Budget for Stormwater Operational and Maintenance Costs
   - Stormwater Utility Fee Update
   - Submittal of Final Document
   - Schedule Presentation to City Commission

3. As-Built Survey
   - Survey Vertical Control and Benchmarks
   - As-Built Survey of Stormwater Components
   - GIS Geodatabase Update

City of Pompano Beach – Stormwater Master Plan

Draft Master Plan Review Meeting Minutes
November 7, 2012 – 10:30 AM
Utilities Department Conference Room

Meeting Attendees		
Name	**Department**	**Email Address**
Alessandra Delfico	Engineering	Alessandra.Delfico@copbfl.com
Randy Brown	Utilities Administration	Randolph.Brown@copbfl.com
Duncan Bethel	Utilities Administration	Duncan.Bethel@copbfl.com
Mike Taylor	Utilities Administration	Michael.Taylor@copbfl.com
Maria Loucraft	Utilities Administration	Maria.Loucraft@copbfl.com
William Herrmann	Utilities Administration	William.Herrmann@copbfl.com
Suzette Sibble	Finance	Suzette.Sibble@copbfl.com
Jason McClair	Chen Moore and Associates	jmcclair@chenmoore.com
Peter Moore	Chen Moore and Associates	pmoore@chenmoore.com
Jennifer Smith	Chen Moore and Associates	jsmith@chenmoore.com

The purpose of this meeting was to discuss any review comments on the Draft Stormwater Master Plan, which was submitted on September 21, 2012, and to develop an action plan for the Final Stormwater Master Plan. City staff had forwarded written review comments on October 29, 2012. Jason noted Chen Moore and Associates had already addressed the majority of the review comments but discussed each review comment for clarification purposes. All review comments from City which discussed during this meeting are listed below:

- An Executive Summary should be included in the front of the document.
  Jason noted an executive summary section has been added to the Stormwater Master Plan document.
- The document should be double sided to demonstrate our commitment to going green.
  Jason agreed that the final stormwater master plan documents will be printed double sided.
- There should be a complete ranking of all the projects included in the master plan, and not just the first 25. The projects beyond the first 25 do not need alternatives.
  Jason noted that the complete list of ranked basins is provided in Appendix A-4 of the Stormwater Master Plan document. Alessandra requested that they be summarized within the master plan document. Jason responded that we will add this within the write-up of the Stormwater Master Plan.
- Please verify that the final document includes an updated model run incorporating the updated pipe information based on the complete set of collected data.
  Jason explained that not all stormwater pipes and structures are essential in modeling the performance of the stormwater system. The SWMM model only simulates the flow of stormwater runoff between basins via pipe links, channel links, or overland flow. The SWMM model simulates the storage capacity for stormwater runoff within each basins but does not model stormwater flow internal to each basin, which is why it is not necessary to include every stormwater pipe and structure in the City's system within the SWMM model. All significant pipes and structures along with their associated elevation data have been incorporated into the current version of the SWMM model. Jason noted that the surveyor has not yet completed their as-built survey of all City stormwater structures.

All stormwater pipes and structures incorporated within the SWMM model will be compared to the final survey data and updated as necessary. Jason noted that any revisions to the rim elevations and invert elevations within the SWMM model will likely result in insignificant changes to the model results for peak stage and peak discharge.

- In Appendix A-5 Photo Study - Remove the pictures from the maps that do not show flooding. Add the potential flooding layer instead.
  All photo study maps will be updated to include an overlay of the potential flooding maps to display the exact location of expected flooding.
- One of the Discs contains the recent projects. Add the dates they were put into service. Are these completed projects? Not all contain as-builts. Should they be called "recent" projects if they were completed many years ago?
  This appendix includes all project as-builts or design plans that were provided from the City to CMA to date. Jennifer explained that all of these projects along with the year of construction had already been added in the GIS geodatabase and will be hyperlinked to the plans. The list of projects within the Stormwater Master Plan document will be updated with year of construction. The appendix will be renamed from "recent projects" to 'past projects'.
- p. 3-30 Monitoring Requirements? Are these correct?
  Peter explained the NPDES permit requirements and suggested to rename this section as 'calculated plan' rather than 'monitoring plan'.
- p. 4-63 By making the suggestions in this way it seems like we are not doing some of these already (such as storm drain markings, Erosion & Sediment Control Training, sweeping). Also, does the City have significant # of Septic tank systems that this item is suggested?
  Jason agrees that the City has completed some of the BMP's in the list. This section will be updated to note which BMP's the City is currently completing and which ones are recommended to be completed. Jason asked about the status of the fertilizer management ordinance. Maria answered that Jean is still working on implementing this ordinance and can be listed in the master plan as on-going.
- p. 4-68 Table 4.9 says that these devices may not be accepted by all regulatory agencies. Are they accepted by the ones that apply to us? If they are not applicable to us, why are they there? Or is it that these do not typically work on the coast? If so, why not instead indicate where these devices could be useful?
  Jason noted that although these pollution control devices are currently not approved by South Florida Water Management District (SFWMD) to provide water quality treatment under permits for new construction, they can be used to show a reduction in pollutant loading under NPDES requirements.
- Should the refurbishing of the swales be a strong recommendation in the plan, based on the effectiveness of this treatment tool? Please show a comparison of swales vs. French drains. Also, could you include information on the specification for these areas (such as recommended depth, sloping…general design information) and perhaps a drawing or picture of what one should look like?
  Jason agrees and the swale program will be defined in more detail within the Stormwater Master Plan with an example cross section diagram and graphics.
- p. 5-187 Are there any recommendations concerning staffing and equipment for operations and maintenance? If the items in the plan are implemented will additional staff & equipment be needed?
  Peter requested that the City provide their expectations for future additional staff and equipment to operate and maintain the stormwater system. Randy mentioned that the City will likely need another maintenance crew and vactor truck for the recently annexed north area along with an additional crew for the proposed system improvements as described in the master plan. Jason asked if additional staff and equipment needs could be correlated based on the length of additional pipe. William explained

length of pipe needs to be analyzed together with size of pipe as well as number and depth of swales to be maintained. Although the new NPDES permit requires 10% of all structures to be inspected and cleaned annually, Peter and Duncan mentioned that certain stormwater structures are in need of cleaning more often. Duncan noted that the maintenance crews currently perform inspections while cleaning the system.

- The City had various other specific comments related to the content of the Stormwater Master Plan document.
  Jason noted all grammar or spelling corrections have been updated within the Stormwater Master Plan document.

After the discussion of the City's review comments was completed, CMA proceed to review other various action items which still need to be completed under this project as listed below.

- As Built Survey Status – Jason noted that surveyor has to date located approximately 70% of the 5,200 total stormwater structures limit within the scope. CMA provided a progress map to the City which displays the location of all stormwater structures which have been located to date. The surveyor has basically located every structure within the central areas of the City limits. In general, the remaining stormwater structures still to be located are located within the western limits in the Palm Aire area, within the eastern limits on the barrier island, and within the north limits in recently annexed area. Jason noted that the surveyor appears to be behind schedule. Peter noted that the deadline for the as-built survey was supposed to be December 2012. The primary reason for the delay is that the surveyor is encountering significantly more City stormwater structures than were included within the City stormwater atlas, which has results in additional field efforts by the surveyor. Jennifer noted that the surveyor has currently located approximately 29% more structures in City right of way areas located to date, which were not included within the City's stormwater atlas. The surveyor also encountered additional delays during the process of gaining NGS approval of the new benchmarks. Alessandra asked if the new benchmarks have already been certified by NGS. Jason noted the benchmarks should have been certified recently but will confirm with the surveyor. CMA is meeting with the surveyor on Monday 11/12/12 to confirm the current status and the expected completion schedule. Peter will update the City on a timeframe for completion immediately after this meeting.
- NW CRA Area (Priority Basin #2) – Jason asked the City how to define this study area within the Stormwater Master Plan in regards to the proposed improvements with the CRA. Jason noted that limited stormwater improvements would be necessary to address flooding under the existing conditions but CMA is also developing a conceptual plan for a master stormwater system on behalf of the CRA based on the future build out conditions. Alessandra stated that the proposed stormwater improvements within this area should be defined based on the existing conditions but the Stormwater Master Plan should refer the potential master stormwater management system under development by the CRA.
- Status Update on Old Pompano Canal TMDL – Jason asked if there was an update to delisting the Old Pompano Canal. Maria stated that the City is progressing toward delisting since the requirements have been met but the review relevant documentation by FDEP is still in progress.
- Additional Sea Level Rise Analysis – Jason asked if the City would like CMA to perform any additional sea level rise analysis or present the results in any other way than the inundation maps included within the Stormwater Master Plan. The City did not have any other suggestions. Jason noted that the GIS raster files which display the extent of expected inundation could be provided to the City for future use.
- Stormwater CIP Implementation – The City requested a schedule of completion for the top 25 projects in addition to the budget. Jason noted that the City needs to establish an annual budget for

future capital improvements to allow the projects to be scheduled within a Capital Improvement Program (CIP) with a defined timeframe. Depending on the available funds for capital improvements, the recommended projects would need to be defined within 5-year CIP, 10-year CIP, or longer. Suzette noted that CIP funding would need to come from a combination of public bonds via a public offering and the revenue from the Stormwater Utility Fee. The City may consider at $20 million or $30 million bond for stormwater improvements. Depending on the annual CIP budget established by the City, CMA will develop a schedule and budget for the Stormwater Capital Improvement Program. Peter mentioned that some projects may be part of a neighborhood improvement project or business development project, which may change the schedule in the future. Peter noted an approximate duration for the construction of all projects could be estimated to be 30-36 months.

- Future Target Annual Budget for Stormwater Operational and Maintenance Costs - Peter noted that although Alessandra provided the City's current operating budget, the City should be provide any input on additional labor and equipment necessary to maintain additional portions of the stormwater system along with meeting new regulatory requirements. Peter requested a separate meeting with Randy, Duncan, and Mike to discuss and review the existing operations and maintenance expenses for the existing stormwater system and to develop recommended budget for future operations and maintenance costs. The future operations and maintenance budget needs to consider the additional stormwater infrastructure within the recently annexed area in the northern portion of the City along with the proposed stormwater improvements defined within the Stormwater Master Plan. The City will also need to budget for additional compliance efforts which are required to meet new regulatory requirements, such as the FDEP NPDES Permit. Randy mentioned that at least an additional vactor truck along with 2-4 additional staff members would likely be required in the future. Bill mentioned that an asset management program should be implemented in the future. Randy noted that an asset management program would also require an additional IT staff position in order to ensure adequate implementation.
- Stormwater Utility Fee – Peter noted that the future operations and maintenance budget needs to be established in order to reassess the Stormwater Utility Fee. Randy agreed that the stormwater utility fee can be a phased increase based on the implementation schedule.
- Peter concluded meeting noting that CMA will discuss current O&M expenses with Duncan and Mike. Peter will plan to meet with the City the week before Thanksgiving to prepare the information needed to be presented to the City Commission.

Appendix A-4

Basin Prioritization Data Tables

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
1	SE_107_03	5	0	3	3	1.2	12.2	3-Lyons Park Neighborhood
2	CE_061_03	6	0	3	2	0.2	11.2	9-NE 4th Street & NE 3rd Street
3	CE_068_01	6	0	3	0.5	0.8	10.3	11-Bay Drive Neighborhood
4	SE_046_03	1	0	3	3	3.0	10.0	4-Avondale Neighborhood
5	CE_042_02	4	0	3	2	0.3	9.3	8-US-1 & NE 14th St Causeway
6	SW_029_14	3	0	3	2	1.3	9.3	1-Pompano Park Place & Andrews Avenue
7	SE_046_01	0	0	3	3	2.7	8.7	4-Avondale Neighborhood
8	SE_047_01	0	0	3	3	2.3	8.3	4-Avondale Neighborhood
9	SW_027_04	1	1	3	0.5	2.7	8.2	1-Pompano Park Place & Andrews Avenue
10	SE_043_04	1	0	3	3	0.9	7.9	3-Lyons Park Neighborhood
11	CW_025_01	0	0	3	3	1.6	7.6	5-Esquire Lake Neighborhood
12	CE_038_01	2	0	3	2	0.5	7.5	14-NE 27th Avenue & NE 16th Street
13	CW_038_04	2	0	3	1	1.5	7.5	5-Esquire Lake Neighborhood
14	SE_046_02	0	0	3	2	2.5	7.5	4-Avondale Neighborhood
15	CW_037_01	1	1	3	0	2.0	7.0	16-NW 22nd Street
16	SE_024_01	1	1	3	1	0.9	6.9	13-Atlantic Blvd & South Riverside Drive
17	CW_042_04	0	0	3	2	1.8	6.8	18-NW 22nd Court
18	CE_015_01	2	0	3	0.5	1.2	6.7	19-NE 10th Street & Dixie Highway
19	SE_058_01	0	0	3	1	2.7	6.7	4-Avondale Neighborhood
20	SW_011_01	1	0	3	1	1.7	6.7	6-Gateway Drive
21	SE_043_02	0	0	3	3	0.6	6.6	3-Lyons Park Neighborhood
22	SE_043_05	1	0	3	2	0.6	6.6	3-Lyons Park Neighborhood
23	SE_107_02	1	0	3	1	1.6	6.6	3-Lyons Park Neighborhood
24	CE_072_02	2	1	0	2	1.5	6.5	7-Kendall Lake Neighborhood
25	SE_023_01	1	0	3	2	0.5	6.5	20-US-1 & SE 15th Street
26	SW_029_12	0	1	3	1	1.5	6.5	1-Pompano Park Place & Andrews Avenue
27	CE_058_01	0	0	3	3	0.4	6.4	9-NE 4th Street & NE 3rd Street
28	SE_019_01	1	0	3	2	0.4	6.4	21- SE 9th Street
29	SW_029_13	1	0	3	0.5	1.9	6.4	1-Pompano Park Place & Andrews Avenue
30	CE_040_03	2	0	3	1	0.3	6.3	8-US-1 & NE 14th St Causeway
31	CW_009_01	0	1	3	0.5	1.8	6.3	23-NE MLK & Powerline Road
32	NW_013_01	1	0	3	0.5	1.8	6.3	15-Powerline Road & NW 33rd Street
33	NW_017_01	1	0	3	0.5	1.8	6.3	22-NW 16th Lane
34	SW_010_01	0	1	3	0.5	1.7	6.2	6-Gateway Drive
35	SW_027_03	0	0	3	0.5	2.7	6.2	1-Pompano Park Place & Andrews Avenue
36	CE_083_01	1	0	3	0.5	1.5	6.0	24-NW 7th Terrace
37	SW_013_01	1	0	3	0.5	1.5	6.0	6-Gateway Drive
38	SE_107_01	1	0	3	1	0.9	5.9	3-Lyons Park Neighborhood
39	SW_029_11	1	0	3	0.5	1.3	5.8	1-Pompano Park Place & Andrews Avenue
40	CE_006_03	0	0	0	3	2.7	5.7	2-Northwest CRA - TOC
41	CE_006_04	0	0	0	3	2.7	5.7	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
42	CE_010_07	0	0	0	3	2.7	5.7	2-Northwest CRA - TOC
43	SW_029_17	0	0	3	0.5	2.2	5.7	1-Pompano Park Place & Andrews Avenue
44	SE_097_01	0	0	3	1	1.6	5.6	10-Dixie Highway & McNab Road
45	CE_066_01	1	0	3	1	0.4	5.4	11-Bay Drive Neighborhood
46	CW_028_03	0	0	0	3	2.3	5.3	
47	NW_006_01	0	0	3	0.5	1.8	5.3	15-Powerline Road & NW 33rd Street
48	SE_060_01	0	1	3	0.5	0.7	5.2	25-SE 15th Avenue
49	SW_044_01	0	0	3	0.5	1.6	5.1	1-Pompano Park Place & Andrews Avenue
50	CE_032_01	1	0	3	0.5	0.5	5.0	14-NE 27th Avenue & NE 16th Street
51	CW_038_03	0	0	0	3	2.0	5.0	
52	SW_029_16	0	0	3	0.5	1.5	5.0	1-Pompano Park Place & Andrews Avenue
53	SW_044_02	0	0	3	0.5	1.5	5.0	1-Pompano Park Place & Andrews Avenue
54	SE_093_01	2	0	0	2	0.9	4.9	
55	SE_107_04	0	0	3	1	0.8	4.8	3-Lyons Park Neighborhood
56	CE_007_01	1	0	0	2	1.8	4.8	7-Kendall Lake Neighborhood
57	SW_029_15	0	0	3	0.5	1.3	4.8	1-Pompano Park Place & Andrews Avenue
58	CE_006_02	0	0	0	2	2.7	4.7	2-Northwest CRA - TOC
59	CW_028_02	0	0	0	2	2.7	4.7	
60	SW_029_05	0	0	0	3	1.7	4.7	10-Dixie Highway & McNab Road
61	CE_073_01	0	0	3	1	0.7	4.7	12-N Riverside Dr & NE 14th St Causeway
62	CE_041_01	0	0	3	1	0.6	4.6	12-N Riverside Dr & NE 14th St Causeway
63	CE_006_01	0	0	0	2	2.6	4.6	2-Northwest CRA - TOC
64	CE_010_01	0	0	0	2	2.5	4.5	2-Northwest CRA - TOC
65	CE_075_01	0	0	3	0.5	0.9	4.4	12-N Riverside Dr & NE 14th St Causeway
66	CE_008_03	0	0	0	2	2.3	4.3	
67	CW_042_03	0	0	0	3	1.3	4.3	
68	CW_026_01	0	0	0	3	1.2	4.2	5-Esquire Lake Neighborhood
69	SW_029_06	0	0	0	3	1.2	4.2	10-Dixie Highway & McNab Road
70	CE_017_04	0	0	0	3	1.0	4.0	
71	CE_072_03	2	0	0	0	1.8	3.8	
72	CW_031_01	0	0	0	1	2.8	3.8	
73	CE_008_06	0	0	0	1	2.7	3.7	
74	CE_048_01	2	0	0	1	0.7	3.7	
75	CE_020_03	0	1	0	0	2.7	3.7	2-Northwest CRA - TOC
76	CE_042_01	0	0	0	3	0.6	3.6	
77	CE_056_01	0	0	0	3	0.6	3.6	
78	Pwrlne_02	0	0	0	2	1.6	3.6	
79	SE_049_01	0	0	0	3	0.6	3.6	
80	CE_003_02	0	0	0	1	2.6	3.6	
81	CE_003_06	0	0	0	1	2.6	3.6	
82	CE_010_05	0	0	0	1	2.6	3.6	2-Northwest CRA - TOC

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
83	CE_003_05	0	0	0	0.5	3.0	3.5	
84	CE_008_04	0	0	0	0.5	3.0	3.5	
85	CE_072_04	1	0	0	0.5	2.0	3.5	
86	CW_017_04	0	0	0	2	1.5	3.5	
87	SE_043_01	1	0	0	2	0.5	3.5	
88	SE_119_01	0	0	0	1	2.5	3.5	2-Northwest CRA - TOC
89	SW_028_01	0	0	0	0.5	3.0	3.5	
90	CE_037_01	0	0	0	3	0.4	3.4	
91	CW_033_01	0	0	0	0.5	2.9	3.4	
92	SE_038_01	0	0	0	3	0.4	3.4	
93	SE_045_01	0	0	0	3	0.4	3.4	
94	SW_027_01	0	0	0	0.5	2.9	3.4	
95	CE_053_01	1	0	0	2	0.3	3.3	
96	SE_070_01	0	0	0	3	0.3	3.3	
97	CE_008_05	0	0	0	1	2.3	3.3	
98	CW_015_01	1	0	0	0.5	1.8	3.3	5-Esquire Lake Neighborhood
99	CW_038_01	0	0	0	0.5	2.8	3.3	
100	CW_038_05	0	0	0	2	1.3	3.3	
101	I95_3	0	0	0	0.5	2.8	3.3	
102	I95_4	0	0	0	0.5	2.8	3.3	
103	SW_015_01	0	0	0	0.5	2.8	3.3	
104	CE_089_01	0	0	0	0.5	2.8	3.3	2-Northwest CRA - TOC
105	Atlantic_05	0	0	0	0.5	2.7	3.2	
106	CW_022_01	0	0	0	0.5	2.7	3.2	
107	CW_029_01	0	0	0	0.5	2.7	3.2	
108	CW_039_02	0	0	0	0.5	2.7	3.2	
109	SE_050_01	0	0	0	3	0.2	3.2	
110	SW_026_02	0	0	0	1	2.2	3.2	
111	CE_008_02	0	0	0	0.5	2.6	3.1	
112	CW_028_04	0	0	0	0.5	2.6	3.1	
113	CE_008_01	0	0	0	0.5	2.5	3.0	
114	CE_010_02	0	0	0	0.5	2.5	3.0	2-Northwest CRA - TOC
115	CW_016_01	1	0	0	0.5	1.5	3.0	5-Esquire Lake Neighborhood
116	CW_036_01	0	0	0	0.5	2.5	3.0	
117	I95_5	0	0	0	0	3.0	3.0	
118	CE_003_04	0	0	0	0.5	2.4	2.9	
119	CE_010_03	0	0	0	0.5	2.4	2.9	2-Northwest CRA - TOC
120	CE_010_04	0	0	0	0.5	2.4	2.9	2-Northwest CRA - TOC
121	CE_010_06	0	0	0	0.5	2.4	2.9	2-Northwest CRA - TOC
122	CE_010_08	0	0	0	0.5	2.4	2.9	
123	SE_072_05	0	0	0	0.5	2.4	2.9	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
124	SW_027_02	0	0	0	0.5	2.4	2.9	
125	CE_044_01	1	0	0	1	0.9	2.9	8-US-1 & NE 14th St Causeway
126	CW_026_02	0	0	0	1	1.9	2.9	5-Esquire Lake Neighborhood
127	SW_029_07	0	0	0	1	1.9	2.9	
128	SE_061_06	1	0	0	1	0.8	2.8	
129	CE_003_01	0	0	0	0.5	2.3	2.8	
130	CW_039_01	0	0	0	0.5	2.3	2.8	
131	CW_040_01	0	0	0	0.5	2.3	2.8	
132	CW_014_02	0	0	0	1	1.7	2.7	
133	CW_042_05	0	0	0	1	1.7	2.7	
134	Cypress_01	1	0	0	0.5	1.2	2.7	
135	Pwrlne_01	0	0	0	1	1.7	2.7	
136	SW_022_01	0	0	0	0	2.7	2.7	
137	SW_029_04	0	0	0	1	1.7	2.7	10-Dixie Highway & McNab Road
138	SW_029_08	0	0	0	1	1.7	2.7	
139	CE_017_03	1	0	0	0	1.6	2.6	
140	CE_072_01	0	0	0	1	1.6	2.6	7-Kendall Lake Neighborhood
141	CW_036_02	0	0	0	1	1.6	2.6	
142	NW_009_01	0	0	0	1	1.6	2.6	
143	SE_010_01	1	0	0	1	0.6	2.6	17-SE 28th Ave South of Atlantic Blvd
144	CE_008_07	0	0	0	0	2.5	2.5	
145	CW_004_02	0	0	0	0.5	2.0	2.5	
146	CW_011_01	0	1	0	0	1.5	2.5	
147	CW_017_03	0	0	0	1	1.5	2.5	
148	CW_028_01	0	0	0	0	2.5	2.5	
149	NW_021_01	0	0	0	0.5	2.0	2.5	
150	SE_009_02	1	0	0	0.5	1.0	2.5	17-SE 28th Ave South of Atlantic Blvd
151	SE_062_01	0	0	0	2	0.5	2.5	
152	Atlantic_02	0	0	0	0	2.4	2.4	
153	Atlantic_03	0	0	0	0	2.4	2.4	
154	CE_003_03	0	0	0	0	2.4	2.4	
155	CW_022_02	0	0	0	0	2.4	2.4	
156	NE_010_03	0	0	0	2	0.4	2.4	
157	SE_027_01	1	0	0	1	0.4	2.4	13-Atlantic Blvd & South Riverside Drive
158	SE_032_01	0	0	0	2	0.4	2.4	
159	CW_004_01	0	1	0	0	1.4	2.4	
160	CW_017_02	0	0	0	0.5	1.9	2.4	
161	I95_6	0	0	0	0.5	1.9	2.4	
162	Pwrlne_04	1	0	0	0	1.4	2.4	5-Esquire Lake Neighborhood
163	SW_016_01	0	0	0	0.5	1.9	2.4	
164	SW_023_02	0	0	0	0.5	1.9	2.4	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
165	SW_029_01	0	0	0	0.5	1.9	2.4	
166	US1_01	1	0	0	0.5	0.9	2.4	
167	SE_044_01	0	0	0	1	1.3	2.3	
168	CE_062_01	1	0	0	0.5	0.8	2.3	
169	CE_004_01	0	0	0	0.5	1.8	2.3	
170	CE_009_03	0	0	0	0.5	1.8	2.3	
171	CW_042_01	0	0	0	0.5	1.8	2.3	
172	SW_004_01	0	0	0	0.5	1.8	2.3	
173	SW_014_02	0	0	0	0.5	1.8	2.3	
174	SW_029_10	0	0	0	0.5	1.8	2.3	
175	SW_039_01	0	0	0	0.5	1.8	2.3	
176	SW_040_01	0	0	0	0.5	1.8	2.3	
177	CE_020_01	0	1	0	0.5	0.7	2.2	2-Northwest CRA - TOC
178	CE_053_04	1	0	0	1	0.2	2.2	
179	CW_002_01	0	0	0	0.5	1.7	2.2	
180	CW_038_02	0	0	0	0.5	1.7	2.2	
181	Dixie_03	0	0	0	0.5	1.7	2.2	
182	Dixie_10	0	0	0	0.5	1.7	2.2	
183	NW_008_01	0	0	0	0.5	1.7	2.2	
184	NW_016_01	0	0	0	0.5	1.7	2.2	
185	SE_068_01	0	0	0	2	0.2	2.2	
186	SE_069_01	0	0	0	2	0.2	2.2	
187	SW_015_02	0	0	0	0.5	1.7	2.2	
188	SW_026_01	0	0	0	0	2.2	2.2	
189	SW_038_01	0	0	0	0.5	1.7	2.2	
190	CE_054_01	1	0	0	0.5	0.7	2.2	
191	NW_020_01	0	0	0	0.5	1.7	2.2	
192	CE_017_02	0	0	0	0.5	1.6	2.1	
193	FXE1_01	0	0	0	0.5	1.6	2.1	
194	NW_012_01	0	0	0	0.5	1.6	2.1	
195	SE_033_01	0	0	0	2	0.1	2.1	
196	SW_001_01	0	0	0	0.5	1.6	2.1	
197	SW_029_02	0	0	0	0.5	1.6	2.1	
198	Atlantic_01	0	0	0	0	2.1	2.1	
199	Atlantic_04	0	0	0	0	2.1	2.1	
200	NE_007_05	0	1	0	0	1.1	2.1	
201	CE_083_02	0	0	0	0.5	1.5	2.0	
202	CW_002_02	0	0	0	0.5	1.5	2.0	
203	CW_004_03	0	0	0	0.5	1.5	2.0	
204	CW_024_01	0	0	0	0	2.0	2.0	
205	CW_030_01	0	0	0	0.5	1.5	2.0	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
206	CW_043_01	0	0	0	0.5	1.5	2.0	
207	CW_043_02	0	0	0	0.5	1.5	2.0	
208	CW_045_01	0	0	0	0.5	1.5	2.0	
209	Dixie_07	0	0	0	0.5	1.5	2.0	
210	Dixie_09	0	0	0	0.5	1.5	2.0	
211	I95_2E	0	0	0	0	2.0	2.0	
212	NE_007_04	0	0	0	0.5	1.5	2.0	
213	NW_034_01	0	0	0	0.5	1.5	2.0	
214	SE_061_03	1	0	0	0.5	0.5	2.0	
215	SE_072_02	0	0	0	0.5	1.5	2.0	
216	SW_002_04	0	0	0	0	2.0	2.0	
217	SW_003_01	0	0	0	0.5	1.5	2.0	
218	SW_003_02	0	0	0	0.5	1.5	2.0	
219	SW_003_04	0	0	0	0.5	1.5	2.0	
220	SW_014_01	0	0	0	0	2.0	2.0	
221	SW_029_03	0	0	0	0.5	1.5	2.0	
222	SE_042_01	0	0	0	0.5	1.5	2.0	
223	CW_018_01	0	0	0	0.5	1.5	2.0	
224	CE_001_01	0	0	0	0.5	1.4	1.9	
225	CE_002_01	0	0	0	0.5	1.4	1.9	
226	CE_040_01	0	0	0	1	0.9	1.9	
227	CW_005_01	0	0	0	0	1.9	1.9	
228	CW_014_01	0	0	0	0.5	1.4	1.9	
229	CW_017_01	0	0	0	0.5	1.4	1.9	
230	CW_027_01	0	0	0	0	1.9	1.9	
231	Dixie_04	0	0	0	0.5	1.4	1.9	
232	I95_2N	0	0	0	0	1.9	1.9	
233	NW_010_01	0	0	0	0.5	1.4	1.9	
234	SE_005_01	0	0	0	1	0.9	1.9	
235	SW_002_01	0	0	0	0	1.9	1.9	
236	SW_007_01	0	0	0	0.5	1.4	1.9	
237	SW_029_09	0	0	0	0	1.9	1.9	
238	SW_041_01	0	0	0	0	1.9	1.9	
239	CE_011_01	0	0	0	0.5	1.3	1.8	
240	CE_018_01	1	0	0	0.5	0.3	1.8	
241	SE_009_01	0	0	0	1	0.8	1.8	17-SE 28th Ave South of Atlantic Blvd
242	SE_051_01	0	0	0	1	0.8	1.8	
243	CE_005_01	0	0	0	0	1.8	1.8	
244	Copans_01	0	0	0	0.5	1.3	1.8	
245	CW_005_02	0	0	0	0	1.8	1.8	
246	CW_006_01	0	0	0	0	1.8	1.8	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
247	CW_013_01	0	0	0	0.5	1.3	1.8	
248	CW_034_01	0	0	0	0	1.8	1.8	
249	CW_042_02	0	0	0	0.5	1.3	1.8	
250	CW_044_01	0	0	0	0.5	1.3	1.8	
251	FXE1_02	0	0	0	0	1.8	1.8	
252	NW_002_01	0	0	0	0	1.8	1.8	
253	NW_004_01	0	0	0	0	1.8	1.8	
254	NW_030_01	0	0	0	0.5	1.3	1.8	
255	SW_005_01	0	0	0	0	1.8	1.8	
256	SW_009_01	0	0	0	0.5	1.3	1.8	
257	SW_024_01	0	0	0	0	1.8	1.8	
258	SW_030_01	0	0	0	0	1.8	1.8	
259	SW_036_01	0	0	0	0	1.8	1.8	
260	CE_084_01	1	0	0	0.5	0.2	1.7	
261	CE_087_01	0	0	0	0.5	1.2	1.7	7-Kendall Lake Neighborhood
262	CE_088_01	0	0	0	0	1.7	1.7	
263	CE_088_02	0	0	0	0	1.7	1.7	
264	CW_007_01	0	0	0	0.5	1.2	1.7	
265	CW_008_01	0	0	0	0.5	1.2	1.7	
266	CW_012_01	0	0	0	0	1.7	1.7	
267	CW_018_02	0	0	0	0.5	1.2	1.7	
268	CW_021_01	0	0	0	0	1.7	1.7	
269	Dixie_08	0	0	0	0	1.7	1.7	
270	I95_1W	0	0	0	0	1.7	1.7	
271	NE_004_01	1	0	0	0.5	0.2	1.7	
272	NE_007_02	0	0	0	0.5	1.2	1.7	
273	NW_018_01	0	0	0	0	1.7	1.7	
274	NW_032_01	0	0	0	0.5	1.2	1.7	
275	SW_002_02	0	0	0	0	1.7	1.7	
276	SW_003_03	0	0	0	0	1.7	1.7	
277	SW_012_01	0	0	0	0	1.7	1.7	
278	SW_017_01	0	0	0	0	1.7	1.7	
279	CE_071_01	0	0	0	1	0.7	1.7	
280	CE_078_01	0	0	0	1	0.7	1.7	
281	SE_041_01	0	0	0	1	0.7	1.7	13-Atlantic Blvd & South Riverside Drive
282	CW_019_02	0	0	0	0.5	1.2	1.7	
283	NW_001_01	0	0	0	0	1.7	1.7	
284	CE_009_01	0	0	0	0	1.6	1.6	
285	CE_045_01	1	0	0	0.5	0.1	1.6	
286	CE_053_02	0	0	0	1	0.6	1.6	
287	CE_081_03	1	0	0	0	0.6	1.6	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
288	CW_008_02	0	0	0	0	1.6	1.6	
289	CW_017_06	0	0	0	0	1.6	1.6	
290	I95_1WS	0	0	0	0	1.6	1.6	
291	I95_2W	0	0	0	0	1.6	1.6	
292	NE_007_01	0	0	0	0.5	1.1	1.6	
293	NE_007_03	0	0	0	0.5	1.1	1.6	
294	NW_007_01	0	0	0	0	1.6	1.6	
295	NW_014_01	0	0	0	0	1.6	1.6	
296	NW_028_02	0	0	0	0	1.6	1.6	
297	SE_020_01	0	0	0	0.5	1.1	1.6	
298	SE_028_01	0	0	0	1	0.6	1.6	
299	SE_108_01	0	0	0	0	1.6	1.6	
300	SW_002_03	0	0	0	0	1.6	1.6	
301	SW_018_01	0	0	0	0	1.6	1.6	
302	SW_020_01	0	0	0	0	1.6	1.6	
303	SW_021_01	0	0	0	0	1.6	1.6	
304	SW_032_01	0	0	0	0.5	1.1	1.6	
305	SW_035_02	0	0	0	0.5	1.1	1.6	
306	WAT_03	0	0	0	0	1.6	1.6	
307	NE_007_06	0	0	0	0.5	1.1	1.6	
308	Andrews_03	0	0	0	0	1.5	1.5	
309	CE_016_01	0	0	0	0.5	1.0	1.5	
310	CE_017_01	0	0	0	0	1.5	1.5	
311	CE_070_01	0	0	0	1	0.5	1.5	
312	Copans_03	0	0	0	0	1.5	1.5	
313	Dixie_04_W	0	0	0	0	1.5	1.5	
314	Dixie_05_W	0	0	0	0	1.5	1.5	
315	Dixie_06	0	0	0	0	1.5	1.5	2-Northwest CRA - TOC
316	NW_005_01	0	0	0	0	1.5	1.5	
317	NW_013_02	0	0	0	0	1.5	1.5	
318	NW_017_01_W	0	0	0	0	1.5	1.5	
319	NW_018_01_W	0	0	0	0	1.5	1.5	
320	NW_018_02	0	0	0	0	1.5	1.5	
321	NW_018_03	0	0	0	0	1.5	1.5	
322	NW_018_04_W	0	0	0	0	1.5	1.5	
323	NW_018_05	0	0	0	0	1.5	1.5	
324	NW_018_06	0	0	0	0	1.5	1.5	
325	NW_026_01	0	0	0	0	1.5	1.5	
326	NW_030_01_W	0	0	0	0	1.5	1.5	
327	NW_033_01	0	0	0	0	1.5	1.5	
328	SE_002_01	0	0	0	1	0.5	1.5	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
329	SE_022_01	0	0	0	0.5	1.0	1.5	
330	SE_026_01	0	0	0	1	0.5	1.5	13-Atlantic Blvd & South Riverside Drive
331	SE_067_01	0	0	0	1	0.5	1.5	
332	SE_072_02_W	0	0	0	0	1.5	1.5	
333	SE_072_03	0	0	0	0	1.5	1.5	
334	SE_115_01	0	0	0	1	0.5	1.5	
335	SW_023_01	0	0	0	0	1.5	1.5	
336	SW_033_01	0	0	0	0	1.5	1.5	
337	SW_035_01	0	0	0	0	1.5	1.5	
338	SW_040_01_W	0	0	0	0	1.5	1.5	
339	NW_028_01	0	0	0	0	1.5	1.5	
340	NW_029_01	0	0	0	0	1.5	1.5	
341	Cypress_02	0	0	0	0.5	0.9	1.4	
342	CE_061_02	0	0	0	1	0.4	1.4	
343	SE_074_01	0	0	0	1	0.4	1.4	
344	Andrews_01	0	0	0	0	1.4	1.4	
345	Andrews_02	0	0	0	0	1.4	1.4	
346	CE_013_01	0	0	0	0.5	0.9	1.4	
347	CE_086_01	0	0	0	0.5	0.9	1.4	
348	I95_1ES	0	0	0	0	1.4	1.4	
349	NE_007_02_W	0	0	0	0	1.4	1.4	
350	NW_003_01	0	0	0	0	1.4	1.4	
351	NW_016_01_W	0	0	0	0	1.4	1.4	
352	NW_022_01	0	0	0	0	1.4	1.4	
353	NW_031_01	0	0	0	0	1.4	1.4	
354	Pwrlne_05	0	0	0	0	1.4	1.4	
355	Pwrlne_06	0	0	0	0	1.4	1.4	
356	SMPLE_04	0	0	0	0	1.4	1.4	
357	SW_006_01	0	0	0	0	1.4	1.4	
358	SW_029_15_W	0	0	0	0	1.4	1.4	1-Pompano Park Place & Andrews Avenue
359	SW_037_01	0	0	0	0	1.4	1.4	
360	SW_044_01_W	0	0	0	0	1.4	1.4	1-Pompano Park Place & Andrews Avenue
361	WAT_01	0	0	0	0	1.4	1.4	
362	I95_1EN	0	0	0	0	1.4	1.4	
363	CE_017_10	0	0	0	0.5	0.8	1.3	
364	SMPLE_02	0	0	0	0	1.3	1.3	
365	CE_023_01	0	0	0	0.5	0.8	1.3	
366	CE_040_02	0	0	0	0.5	0.8	1.3	
367	CE_052_01	0	0	0	1	0.3	1.3	
368	CE_059_01	0	0	0	1	0.3	1.3	
369	CE_076_01	0	0	0	0.5	0.8	1.3	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
370	CE_085_02	0	0	0	0.5	0.8	1.3	
371	CEOUT_01	0	0	0	0.5	0.8	1.3	
372	SE_005_02	0	0	0	0.5	0.8	1.3	
373	SE_011_01	0	0	0	0.5	0.8	1.3	
374	SE_013_01	0	0	0	0.5	0.8	1.3	
375	SE_052_01	0	0	0	0.5	0.8	1.3	
376	SE_057_01	0	0	0	0.5	0.8	1.3	
377	SE_061_05	0	0	0	0.5	0.8	1.3	
378	SE_081_01	0	0	0	0.5	0.8	1.3	
379	SE_104_01	0	0	0	0.5	0.8	1.3	
380	CE_009_02	0	0	0	0	1.3	1.3	
381	CW_001_01	0	0	0	0	1.3	1.3	
382	CW_008_03	0	0	0	0	1.3	1.3	
383	CW_020_01	0	0	0	0	1.3	1.3	
384	CW_046_01	0	0	0	0	1.3	1.3	
385	I95_7	0	0	0	0	1.3	1.3	
386	NW_011_01	0	0	0	0	1.3	1.3	
387	NW_015_01	0	0	0	0	1.3	1.3	
388	NW_018_04	0	0	0	0	1.3	1.3	
389	Pwrlne_03	0	0	0	0	1.3	1.3	
390	SW_008_01	0	0	0	0	1.3	1.3	
391	SW_019_01	0	0	0	0	1.3	1.3	
392	WAT_02	0	0	0	0	1.3	1.3	
393	WAT_08	0	0	0	0	1.3	1.3	
394	WAT_10	0	0	0	0	1.3	1.3	
395	Dixie_02	0	0	0	0.5	0.8	1.3	
396	SMPLE_06	0	0	0	0	1.2	1.2	
397	CE_051_01	0	0	0	1	0.2	1.2	
398	CW_003_02	0	0	0	0	1.2	1.2	
399	CW_042_06	0	0	0	0	1.2	1.2	
400	CW_044_01_W	0	0	0	0	1.2	1.2	
401	Dixie_11	0	0	0	0	1.2	1.2	
402	I95_1E	0	0	0	0	1.2	1.2	
403	NW_019_01	0	0	0	0	1.2	1.2	
404	SE_066_01	0	0	0	1	0.2	1.2	
405	SE_072_04	0	0	0	0	1.2	1.2	
406	SE_072_04_W	0	0	0	0	1.2	1.2	
407	SE_111_01	1	0	0	0	0.2	1.2	
408	SW_028_02	0	0	0	0	1.2	1.2	
409	SW_028_03	0	0	0	0	1.2	1.2	
410	CE_019_01	0	0	0	0.5	0.7	1.2	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
411	CE_031_01	0	0	0	0.5	0.7	1.2	
412	CE_036_01	0	0	0	0.5	0.7	1.2	
413	CE_080_03	0	0	0	0.5	0.7	1.2	
414	SE_040_01	0	0	0	0.5	0.7	1.2	
415	SE_056_01	0	0	0	0.5	0.7	1.2	
416	SE_061_02	0	0	0	0.5	0.7	1.2	
417	SE_065_01	0	0	0	0.5	0.7	1.2	
418	SE_094_01	0	0	0	0.5	0.7	1.2	
419	SE_130_01	0	0	0	0.5	0.7	1.2	
420	CW_041_01	0	0	0	0	1.2	1.2	
421	CW_010_01	0	0	0	0	1.2	1.2	
422	CW_019_01	0	0	0	0	1.2	1.2	
423	SE_053_01	0	0	0	0.5	0.6	1.1	
424	CE_039_01	0	0	0	0.5	0.6	1.1	
425	CE_053_03	0	0	0	0.5	0.6	1.1	
426	CE_067_01	0	0	0	0.5	0.6	1.1	
427	CE_079_01	0	0	0	0.5	0.6	1.1	
428	CW_003_01	0	0	0	0	1.1	1.1	
429	CW_017_05	0	0	0	0	1.1	1.1	
430	Dixie_05	0	0	0	0	1.1	1.1	
431	NE_010_01	0	0	0	1	0.1	1.1	
432	SE_021_01	0	0	0	0.5	0.6	1.1	
433	SE_034_01	0	0	0	0.5	0.6	1.1	
434	SE_048_01	0	0	0	0.5	0.6	1.1	
435	SE_061_04	0	0	0	0.5	0.6	1.1	
436	SE_087_01	0	0	0	0.5	0.6	1.1	
437	SE_092_01	0	0	0	0.5	0.6	1.1	
438	SW_031_01	0	0	0	0	1.1	1.1	
439	SW_031_02	0	0	0	0	1.1	1.1	
440	SW_034_01	0	0	0	0	1.1	1.1	
441	SW_034_02	0	0	0	0	1.1	1.1	
442	SW_043_01	0	0	0	0	1.1	1.1	
443	WAT_04	0	0	0	0	1.1	1.1	5-Esquire Lake Neighborhood
444	WAT_05	0	0	0	0	1.1	1.1	
445	WAT_07	0	0	0	0	1.1	1.1	7-Kendall Lake Neighborhood
446	SMPLE_07	0	0	0	0	1.1	1.1	
447	CE_017_01_W	0	0	0	0	1.0	1.0	
448	CE_020_02	0	0	0	0.5	0.5	1.0	
449	CE_021_01	0	0	0	0.5	0.5	1.0	
450	CE_024_03	0	0	0	1	0.0	1.0	
451	CE_050_01	0	0	0	0.5	0.5	1.0	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
452	Copans_02	0	0	0	0	1.0	1.0	
453	CW_023_01	0	0	0	0	1.0	1.0	
454	Dixie_01	0	0	0	0.5	0.5	1.0	
455	NE_001_01	0	0	0	0.5	0.5	1.0	
456	NE_008_01	0	0	0	0	1.0	1.0	
457	NE_010_02	0	0	0	0.5	0.5	1.0	
458	NE_015_02	0	0	0	0.5	0.5	1.0	
459	NE_018_01	0	0	0	0.5	0.5	1.0	
460	NE_020_01	0	0	0	0.5	0.5	1.0	
461	NEOUT_02	0	0	0	0.5	0.5	1.0	
462	NW_002_02	0	0	0	0	1.0	1.0	
463	NW_012_01_W	0	0	0	0	1.0	1.0	
464	SE_036_01	0	0	0	1	0.0	1.0	
465	SE_043_03	0	0	0	0.5	0.5	1.0	
466	SE_059_01	0	0	0	0.5	0.5	1.0	
467	SE_064_01	0	0	0	0.5	0.5	1.0	
468	SE_084_01	0	0	0	0.5	0.5	1.0	
469	SE_109_01	0	0	0	0.5	0.5	1.0	
470	SW_042_01	0	0	0	0	1.0	1.0	
471	WAT_09	0	0	0	0	1.0	1.0	
472	SMPLE_03	0	0	0	0	1.0	1.0	
473	CE_017_06	0	0	0	0.5	0.5	1.0	
474	SE_031_01	0	0	0	0	0.9	0.9	
475	SMPLE_05	0	0	0	0	0.9	0.9	
476	Atlantic_06	0	0	0	0.5	0.4	0.9	
477	CE_019_02	0	0	0	0.5	0.4	0.9	
478	CE_025_01	0	0	0	0.5	0.4	0.9	
479	CE_028_01	0	0	0	0.5	0.4	0.9	
480	CE_047_01	0	0	0	0.5	0.4	0.9	
481	CE_063_01	0	0	0	0.5	0.4	0.9	
482	CE_085_01	0	0	0	0.5	0.4	0.9	
483	SE_001_01	0	0	0	0.5	0.4	0.9	
484	SE_017_01	0	0	0	0.5	0.4	0.9	
485	SE_029_01	0	0	0	0.5	0.4	0.9	
486	SE_095_01	0	0	0	0.5	0.4	0.9	
487	SE_099_01	0	0	0	0.5	0.4	0.9	
488	SE_102_01	0	0	0	0.5	0.4	0.9	
489	SE_103_01	0	0	0	0.5	0.4	0.9	
490	SE_113_01	0	0	0	0.5	0.4	0.9	
491	SE_124_01	0	0	0	0.5	0.4	0.9	
492	SE_128_01	0	0	0	0.5	0.4	0.9	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
493	US1_03	0	0	0	0.5	0.4	0.9	
494	CE_022_01	0	0	0	0.5	0.3	0.8	
495	CE_041_02	0	0	0	0	0.8	0.8	
496	CE_043_01	0	0	0	0.5	0.3	0.8	
497	CE_057_01	0	0	0	0.5	0.3	0.8	
498	CE_061_01	0	0	0	0.5	0.3	0.8	
499	CE_069_01	0	0	0	0.5	0.3	0.8	
500	CE_077_01	0	0	0	0.5	0.3	0.8	
501	CE_078_02	0	0	0	0.5	0.3	0.8	
502	CE_082_01	0	0	0	0.5	0.3	0.8	
503	CE_085_03	0	0	0	0.5	0.3	0.8	
504	NW_027_01	0	0	0	0	0.8	0.8	
505	NWOUT_01	0	0	0	0	0.8	0.8	
506	NWOUT_04	0	0	0	0	0.8	0.8	
507	SE_003_01	0	0	0	0.5	0.3	0.8	
508	SE_012_01	0	0	0	0.5	0.3	0.8	
509	SE_014_01	0	0	0	0.5	0.3	0.8	
510	SE_025_01	0	0	0	0.5	0.3	0.8	13-Atlantic Blvd & South Riverside Drive
511	SE_061_01	0	0	0	0.5	0.3	0.8	
512	SE_077_02	0	0	0	0.5	0.3	0.8	
513	SE_080_01	0	0	0	0.5	0.3	0.8	
514	SE_082_01	0	0	0	0.5	0.3	0.8	
515	SE_091_01	0	0	0	0	0.8	0.8	
516	SE_106_01	0	0	0	0.5	0.3	0.8	
517	SE_110_01	0	0	0	0.5	0.3	0.8	
518	SE_115_02	0	0	0	0.5	0.3	0.8	
519	SE_118_01	0	0	0	0.5	0.3	0.8	
520	SMPLE_01	0	0	0	0	0.8	0.8	
521	SE_072_01	0	0	0	0	0.7	0.7	
522	CE_029_01	0	0	0	0.5	0.2	0.7	
523	CE_030_01	0	0	0	0.5	0.2	0.7	
524	CE_049_01	0	0	0	0.5	0.2	0.7	
525	CE_055_01	0	0	0	0.5	0.2	0.7	
526	CE_065_01	0	0	0	0.5	0.2	0.7	
527	CE_074_01	0	0	0	0.5	0.2	0.7	
528	CE_078_03	0	0	0	0.5	0.2	0.7	
529	NE_005_01	0	0	0	0.5	0.2	0.7	
530	NE_009_01	0	0	0	0.5	0.2	0.7	
531	NE_015_01	0	0	0	0.5	0.2	0.7	
532	SE_004_01	0	0	0	0.5	0.2	0.7	
533	SE_098_01	0	0	0	0.5	0.2	0.7	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
534	SE_100_01	0	0	0	0.5	0.2	0.7	
535	SE_125_01	0	0	0	0.5	0.2	0.7	
536	CE_081_02	0	0	0	0	0.7	0.7	
537	SE_030_01	0	0	0	0	0.7	0.7	
538	SE_035_01	0	0	0	0	0.7	0.7	
539	CE_014_01	0	0	0	0	0.6	0.6	
540	CE_017_07	0	0	0	0.5	0.1	0.6	
541	CE_017_09	0	0	0	0.5	0.1	0.6	
542	CE_080_01	0	0	0	0	0.6	0.6	
543	NE_003_01	0	0	0	0.5	0.1	0.6	
544	NE_005_02	0	0	0	0.5	0.1	0.6	
545	NE_005_03	0	0	0	0.5	0.1	0.6	
546	NE_010_04	0	0	0	0.5	0.1	0.6	
547	NE_013_01	0	0	0	0.5	0.1	0.6	
548	NE_015_03	0	0	0	0.5	0.1	0.6	
549	NE_017_01	0	0	0	0.5	0.1	0.6	
550	NE_019_01	0	0	0	0.5	0.1	0.6	
551	NWOUT_02	0	0	0	0	0.6	0.6	
552	SE_007_01	0	0	0	0	0.6	0.6	
553	SE_039_01	0	0	0	0	0.6	0.6	
554	SE_054_01	0	0	0	0	0.6	0.6	
555	SE_071_01	0	0	0	0	0.6	0.6	
556	SE_073_01	0	0	0	0.5	0.1	0.6	
557	SE_080_02	0	0	0	0	0.6	0.6	
558	SE_088_01	0	0	0	0	0.6	0.6	
559	SE_090_01	0	0	0	0	0.6	0.6	
560	SE_096_01	0	0	0	0	0.6	0.6	
561	SE_101_01	0	0	0	0	0.6	0.6	
562	SE_112_01	0	0	0	0	0.6	0.6	
563	SE_127_01	0	0	0	0.5	0.1	0.6	
564	CE_024_01	0	0	0	0	0.5	0.5	
565	CE_027_01	0	0	0	0	0.5	0.5	
566	CE_034_01	0	0	0	0	0.5	0.5	
567	CE_035_01	0	0	0	0	0.5	0.5	
568	CE_046_01	0	0	0	0	0.5	0.5	
569	NE_021_01	0	0	0	0	0.5	0.5	
570	NEOUT_03	0	0	0	0.5	0.0	0.5	
571	NWOUT_03	0	0	0	0	0.5	0.5	
572	SE_005_03	0	0	0	0	0.5	0.5	
573	SE_015_01	0	0	0	0	0.5	0.5	
574	SE_016_01	0	0	0	0	0.5	0.5	

Appendix A-4 Basin Prioritization Data Table

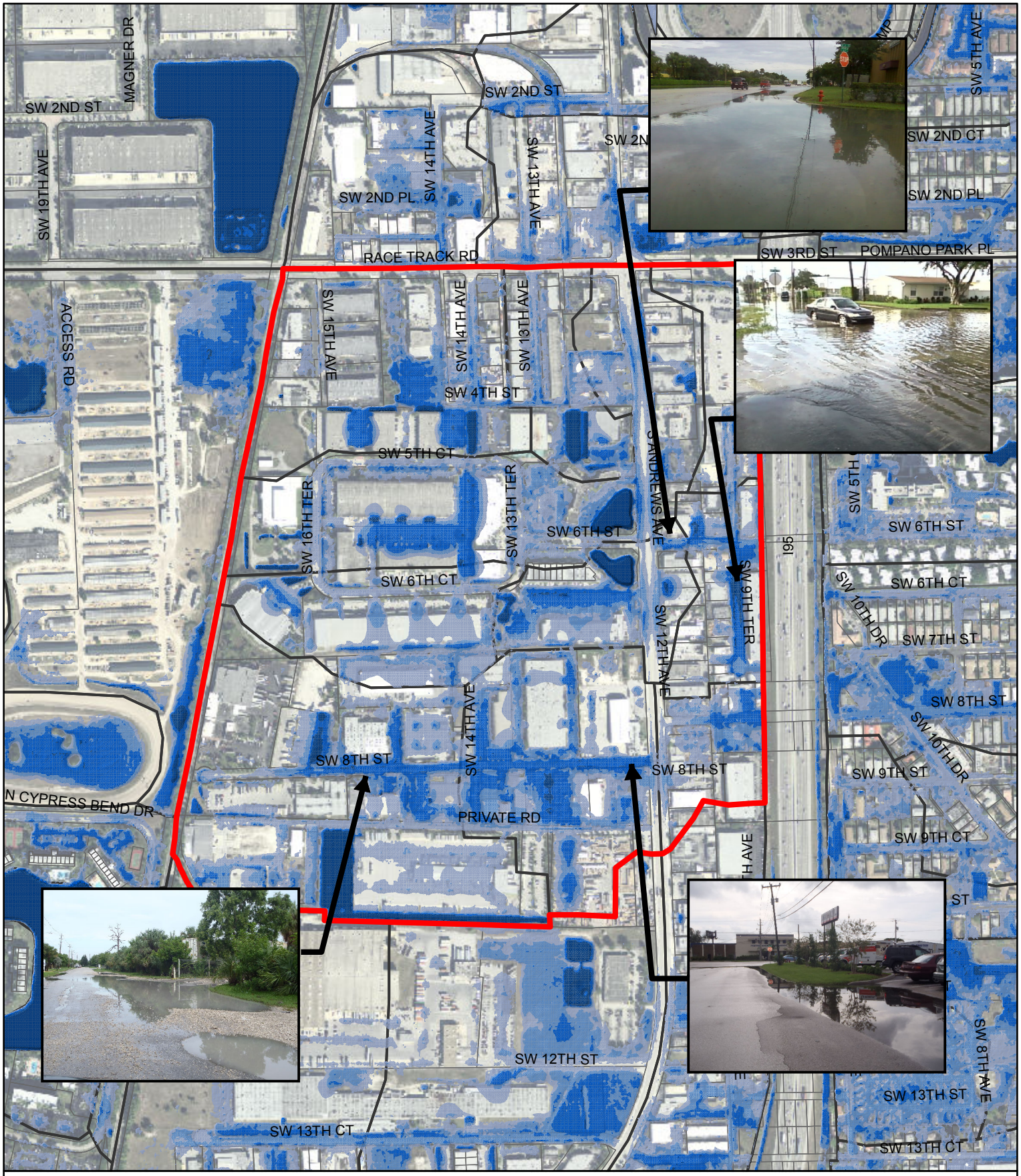
No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
575	SE_018_01	0	0	0	0	0.5	0.5	
576	SE_037_01	0	0	0	0.5	0.0	0.5	
577	SE_055_01	0	0	0	0	0.5	0.5	
578	SE_105_01	0	0	0	0	0.5	0.5	
579	SE_122_01	0	0	0	0	0.5	0.5	
580	SE_126_01	0	0	0	0	0.5	0.5	
581	SEOUT_01	0	0	0	0.5	0.0	0.5	
582	CE_081_01	0	0	0	0	0.4	0.4	
583	NE_022_01	0	0	0	0	0.4	0.4	
584	SE_063_01	0	0	0	0	0.4	0.4	
585	SE_085_01	0	0	0	0	0.4	0.4	
586	SE_123_01	0	0	0	0	0.4	0.4	
587	US1_02	0	0	0	0	0.4	0.4	
588	US1_04	0	0	0	0	0.4	0.4	
589	CE_017_05	0	0	0	0	0.4	0.4	
590	CE_026_01	0	0	0	0	0.3	0.3	
591	SE_006_01	0	0	0	0	0.3	0.3	
592	SE_076_01	0	0	0	0	0.3	0.3	
593	SE_077_01	0	0	0	0	0.3	0.3	
594	SE_079_01	0	0	0	0	0.3	0.3	
595	SE_083_01	0	0	0	0	0.3	0.3	
596	SE_086_01	0	0	0	0	0.3	0.3	
597	SE_089_01	0	0	0	0	0.3	0.3	
598	SE_117_01	0	0	0	0	0.3	0.3	
599	SE_120_01	0	0	0	0	0.3	0.3	
600	CE_012_01	0	0	0	0	0.2	0.2	
601	CE_033_01	0	0	0	0	0.2	0.2	
602	CE_060_01	0	0	0	0	0.2	0.2	
603	CE_064_01	0	0	0	0	0.2	0.2	
604	CE_080_02	0	0	0	0	0.2	0.2	
605	Cypress_03	0	0	0	0	0.2	0.2	
606	SE_121_01	0	0	0	0	0.2	0.2	
607	CE_017_08	0	0	0	0	0.1	0.1	
608	CE_024_02	0	0	0	0	0.1	0.1	
609	NE_002_01	0	0	0	0	0.1	0.1	
610	NE_005_04	0	0	0	0	0.1	0.1	
611	NE_014_01	0	0	0	0	0.1	0.1	
612	SE_075_01	0	0	0	0	0.1	0.1	
613	SE_078_01	0	0	0	0	0.1	0.1	
614	SE_078_02	0	0	0	0	0.1	0.1	
615	SE_129_01	0	0	0	0	0.1	0.1	

Appendix A-4 Basin Prioritization Data Table

No.	Sub-Basin Name	Flooding Complaints (1 point each)	FEMA Repetitive Loss Properties (1 point each)	Historical Observations (3 Points each)	Model Results	Water Quality Results	Total	Study Area
616	NE_006_01	0	0	0	0	0.0	0.0	
617	NE_011_01	0	0	0	0	0.0	0.0	
618	NE_012_01	0	0	0	0	0.0	0.0	
619	NE_016_01	0	0	0	0	0.0	0.0	
620	NEOUT_04	0	0	0	0	0.0	0.0	
621	SE_131_01	0	0	0	0	0.0	0.0	

Appendix A-5

Priority Basin Photo Study



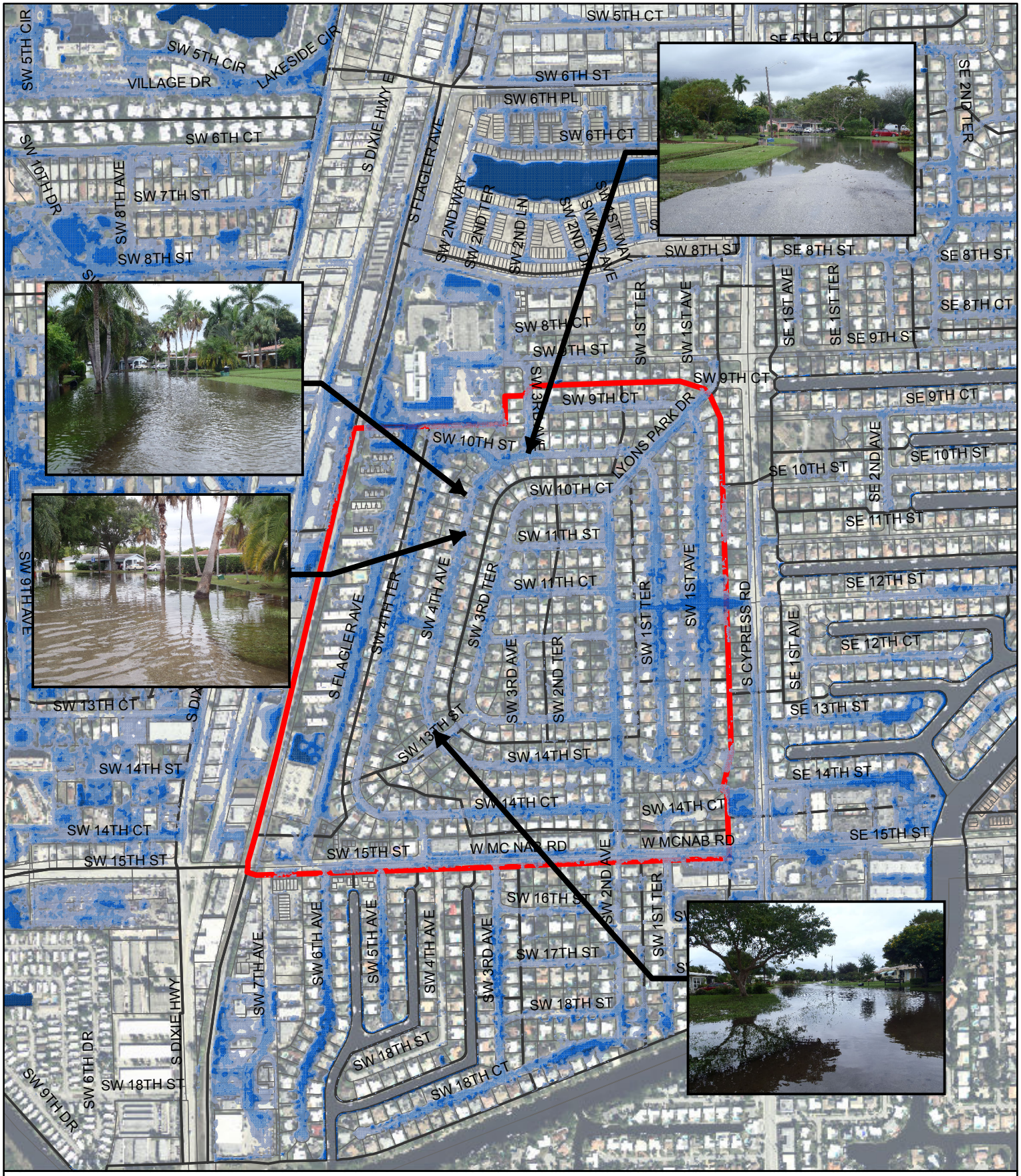
pompano beach
Florida's Warmest Welcome

CHEN·MOORE
&ASSOCIATES

Pompano Park Place & Andrews Avenue
Photo Study

N
W E
S

0 300 600
Feet



pompano beach
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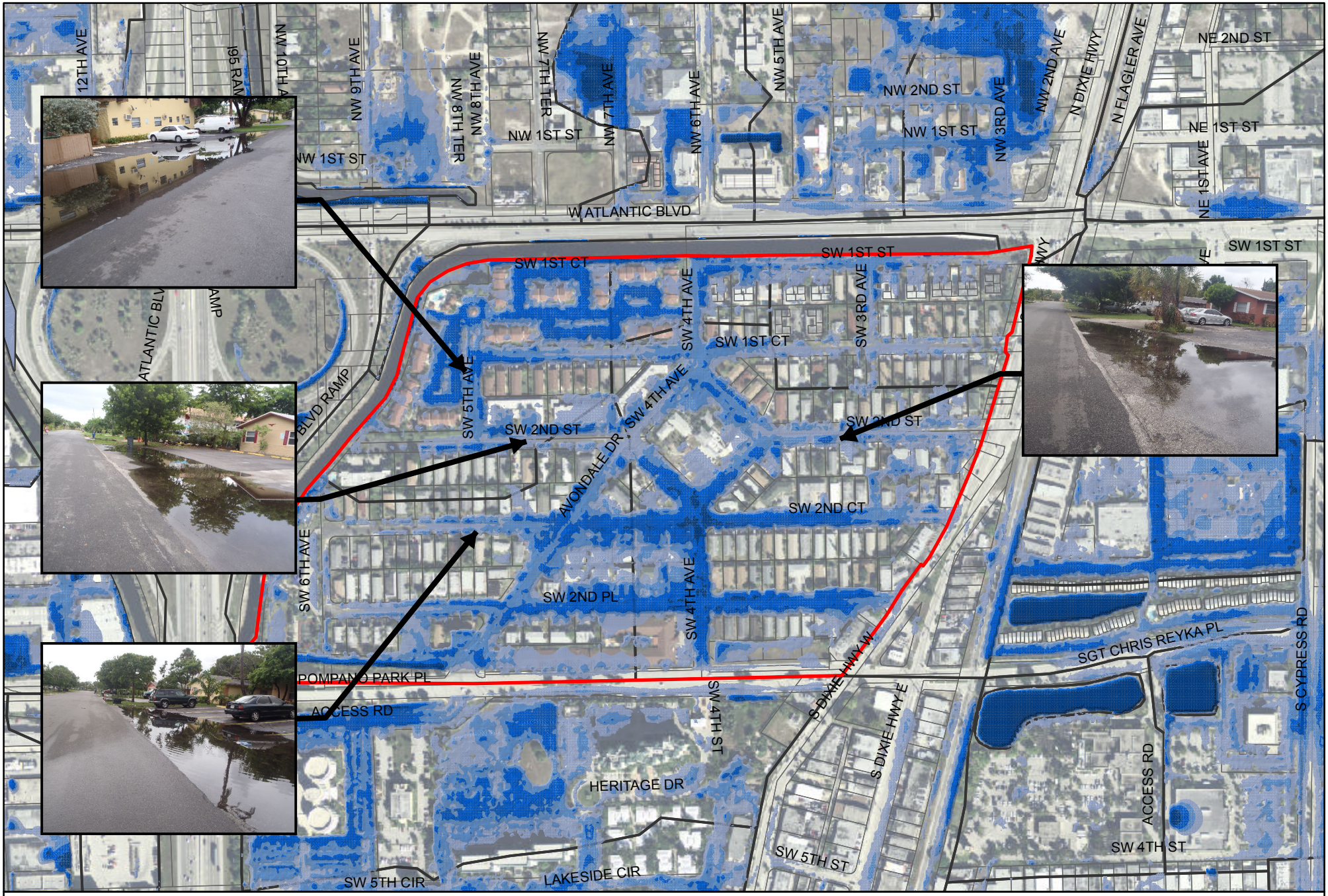
&ASSOCIATES

Lyons Park Neighborhood
Photo Study

N
W E
S

0 300 600
Feet



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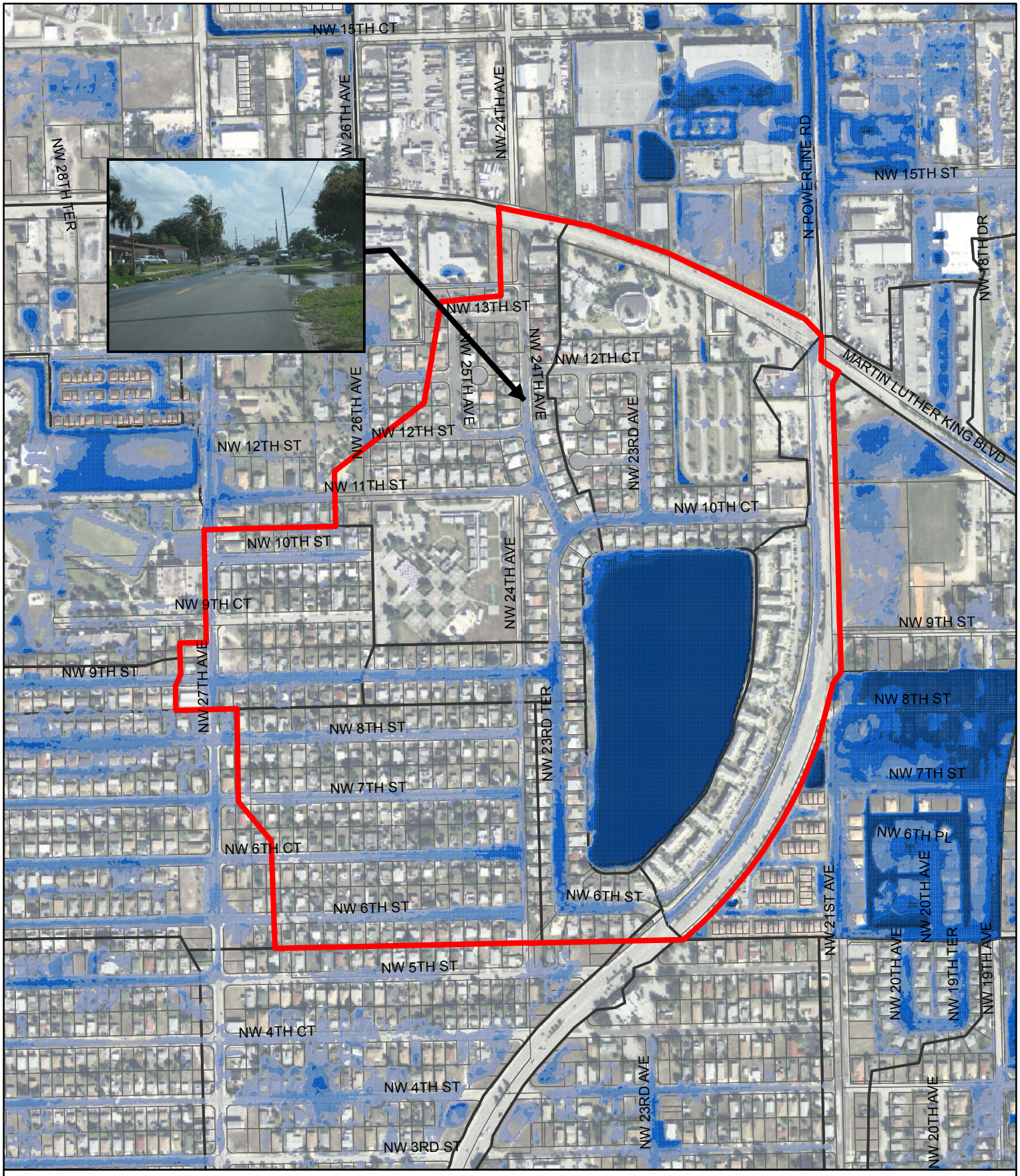
Avondale Neighborhood
Photo Study

0 300 600 Feet

N W E S



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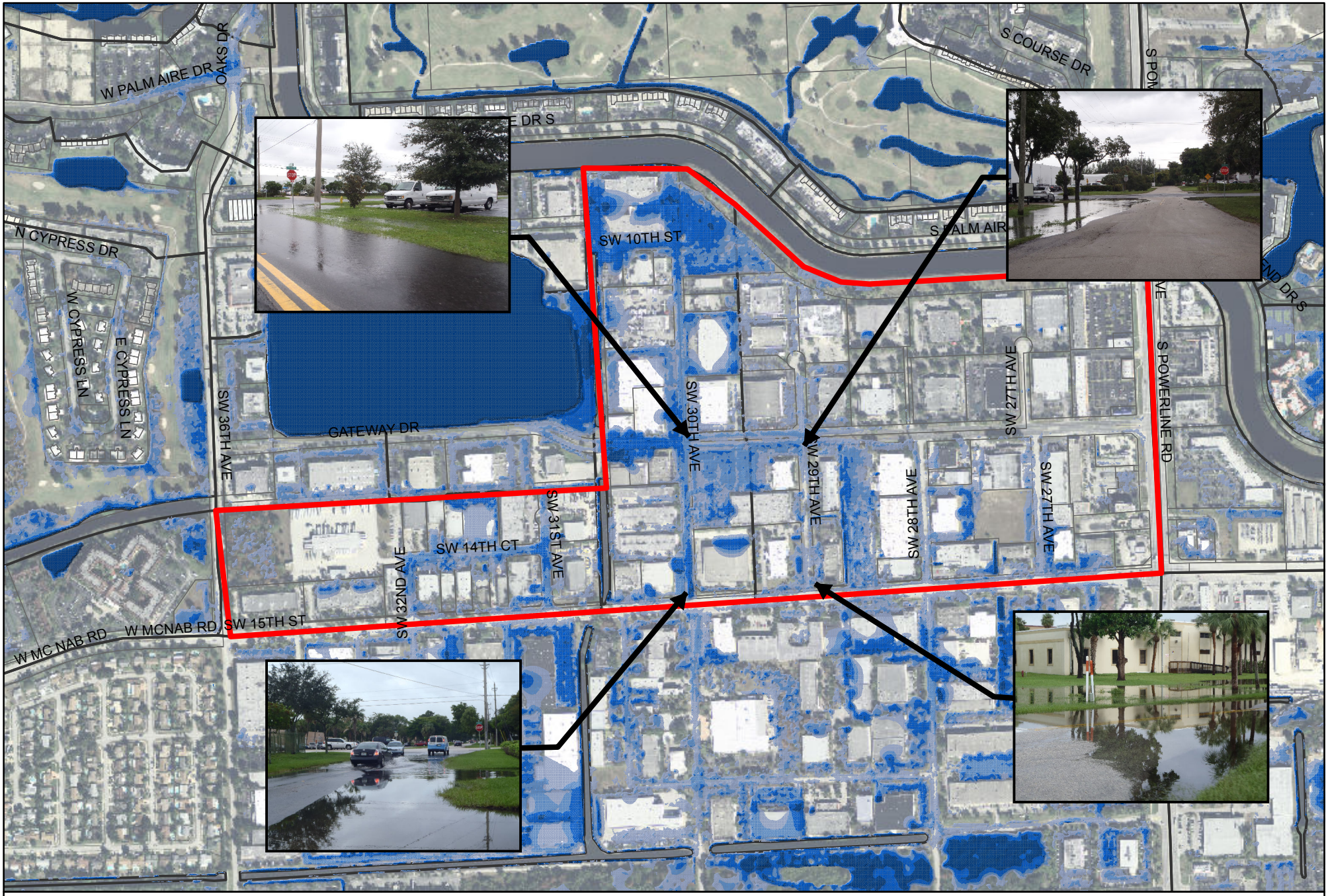
Esquire Lake
Photo Study

N
W E
S

0 300 600
Feet



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Gateway Drive
Photo Study

0 400 800 Feet

N
W E
S

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&ASSOCIATES

Kendall Lake Neighborhood
Photo Study

N
W E
S

0 300 600
Feet

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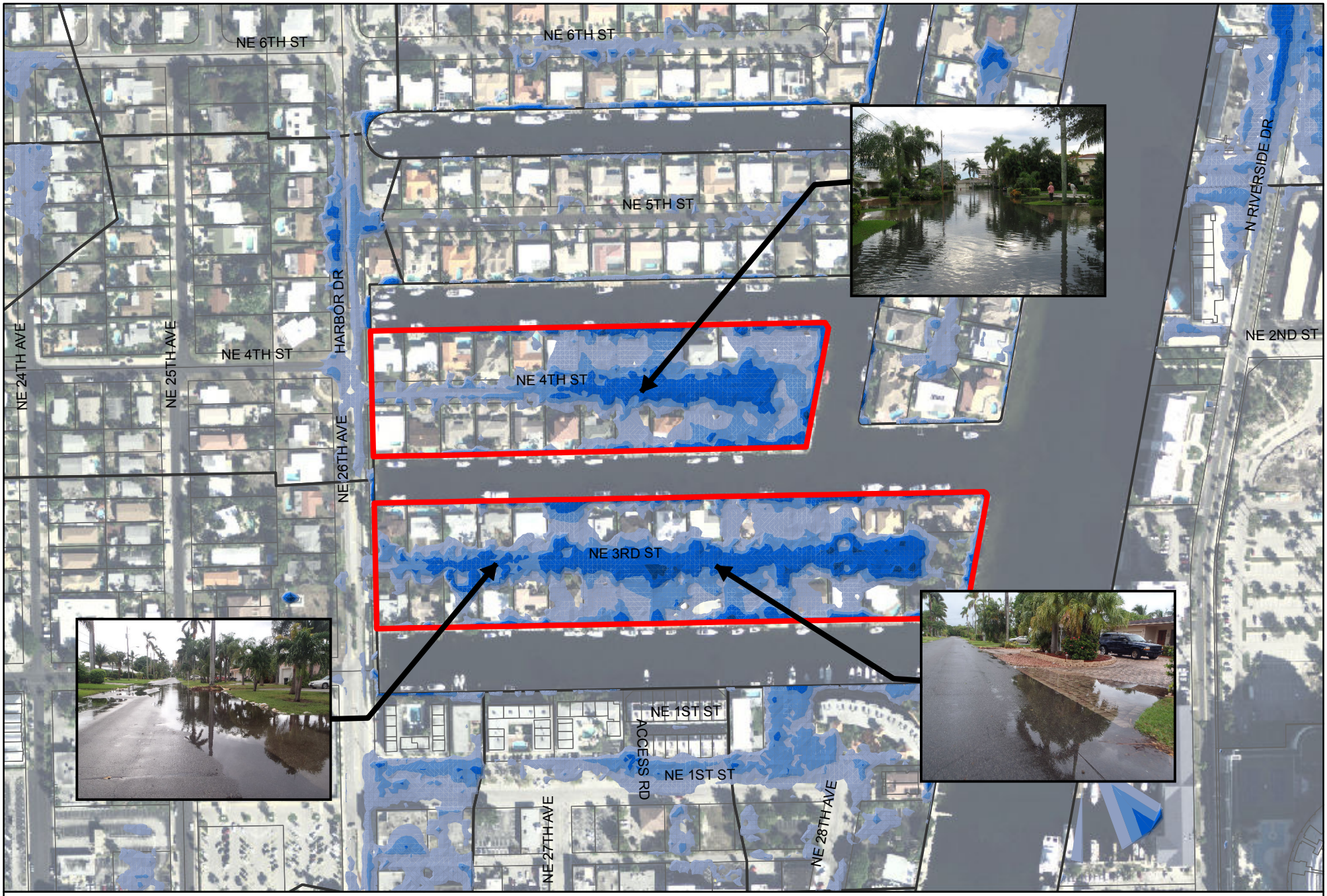
US-1 & NE 14th Street Causeway
Photo Study

N
W E
S

0 300 600
Feet



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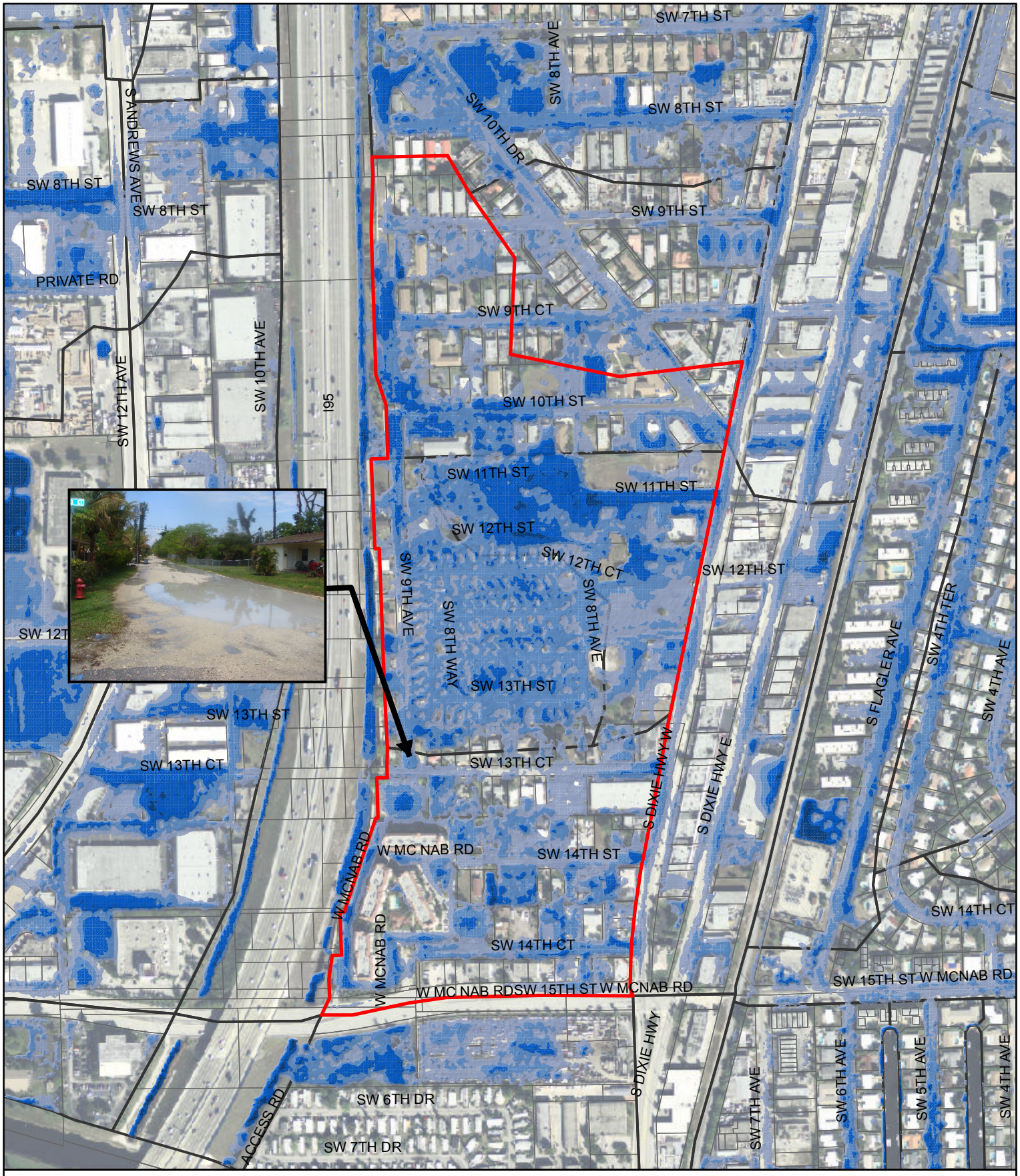
NE 4th Street & NE 3rd Street
Photo Study

0 200 400 Feet

N W E S



Dixie Highway & McNab Road
Photo Study

N
W E
S

0 300 600
Feet

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Bay Drive Neighborhood
Photo Study

N
W E
S

0 300 600
Feet

N Riverside Drive & NE 14th Street Causeway
Photo Study

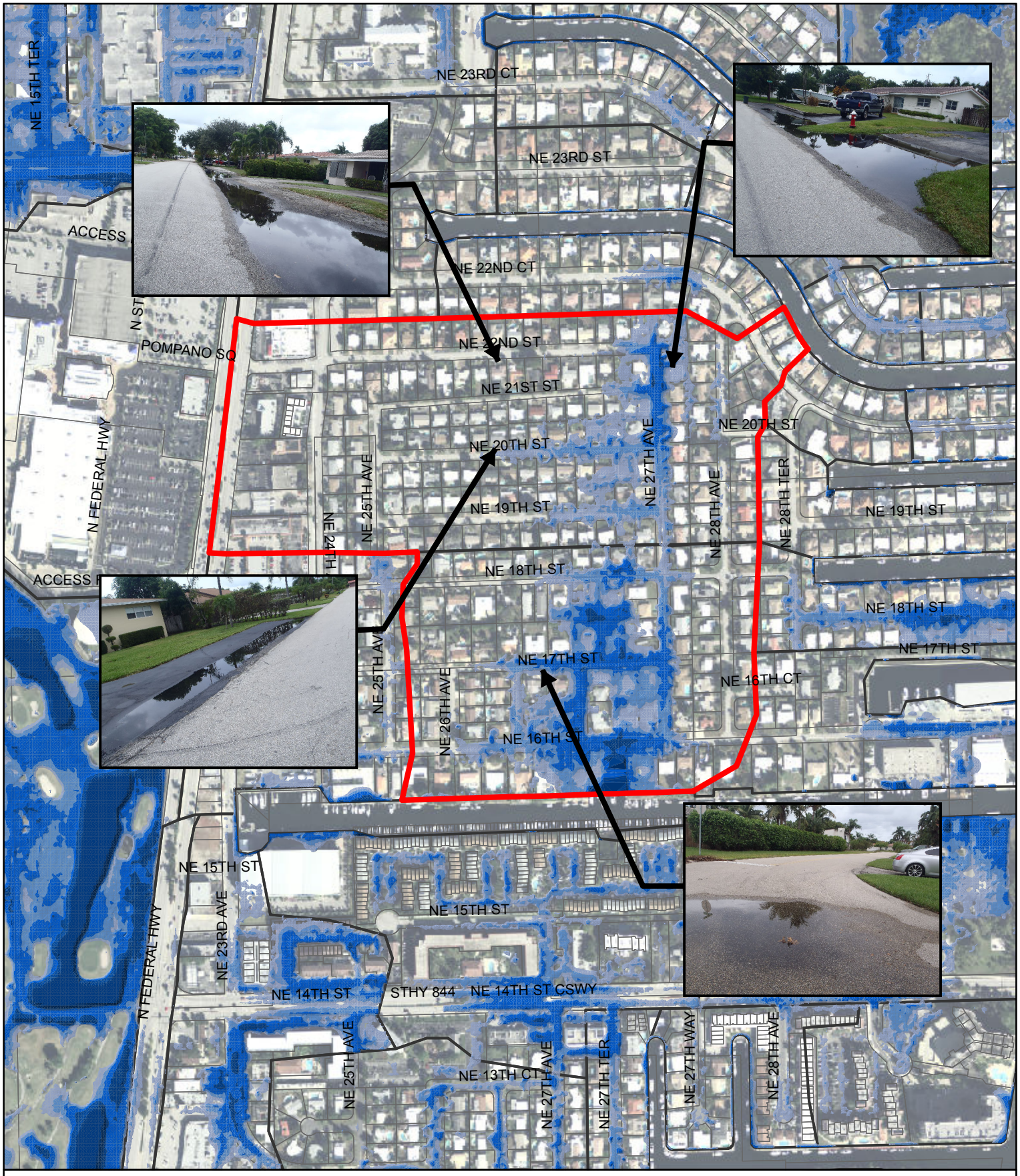
N
W E
S

0 300 600
Feet

Atlantic Blvd & South Riverside Drive
Photo Study

N
W E
S

0 300 600
Feet



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NE 27th Avenue & NE 16th Street
Photo Study

N
W E
S

0 300 600
Feet

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Powerline Road & NW 33rd Street
Photo Study

N
W E
S

0 150 300
Feet

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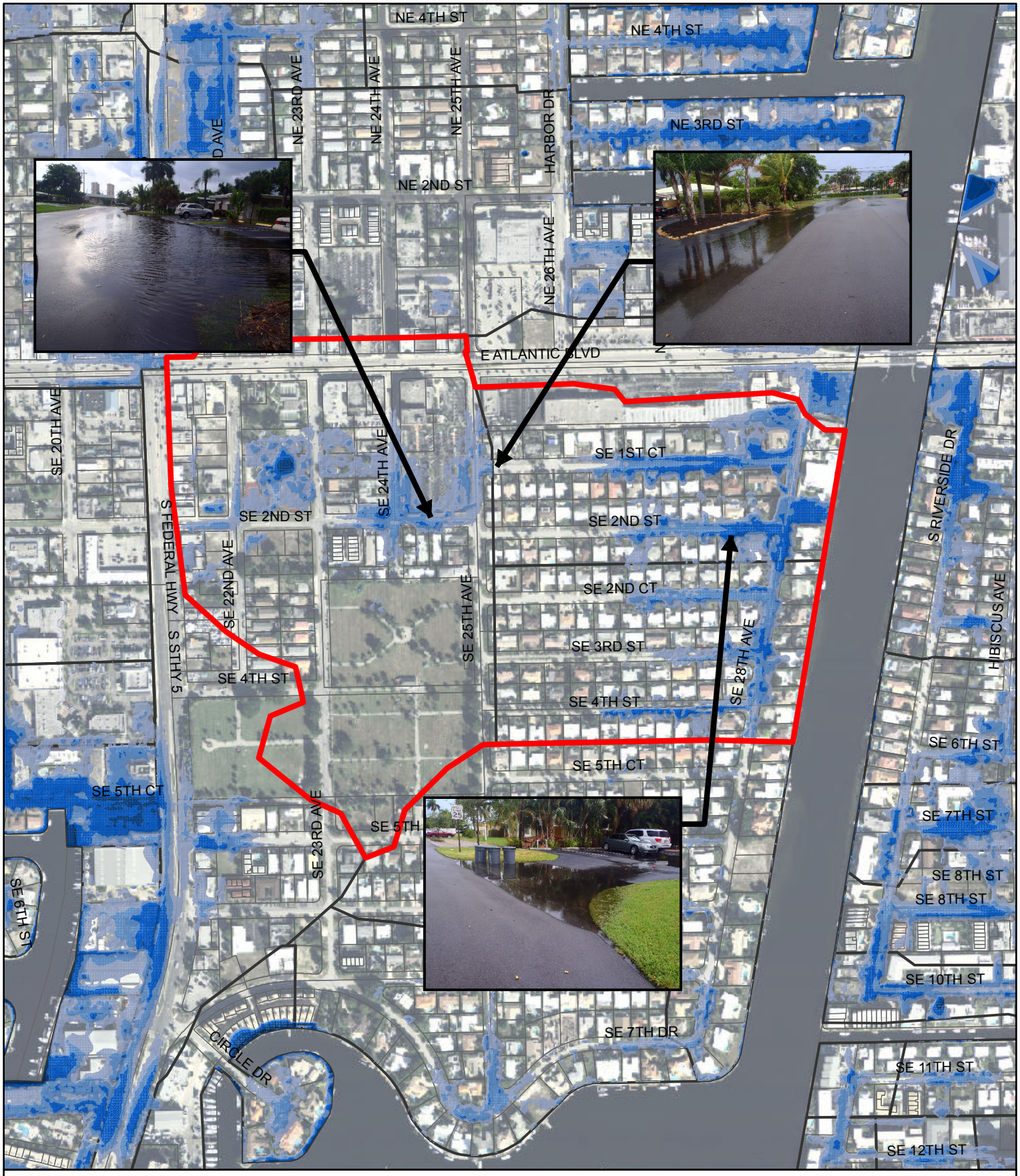
NW 22nd Street
Photo Study

0 200 400 Feet

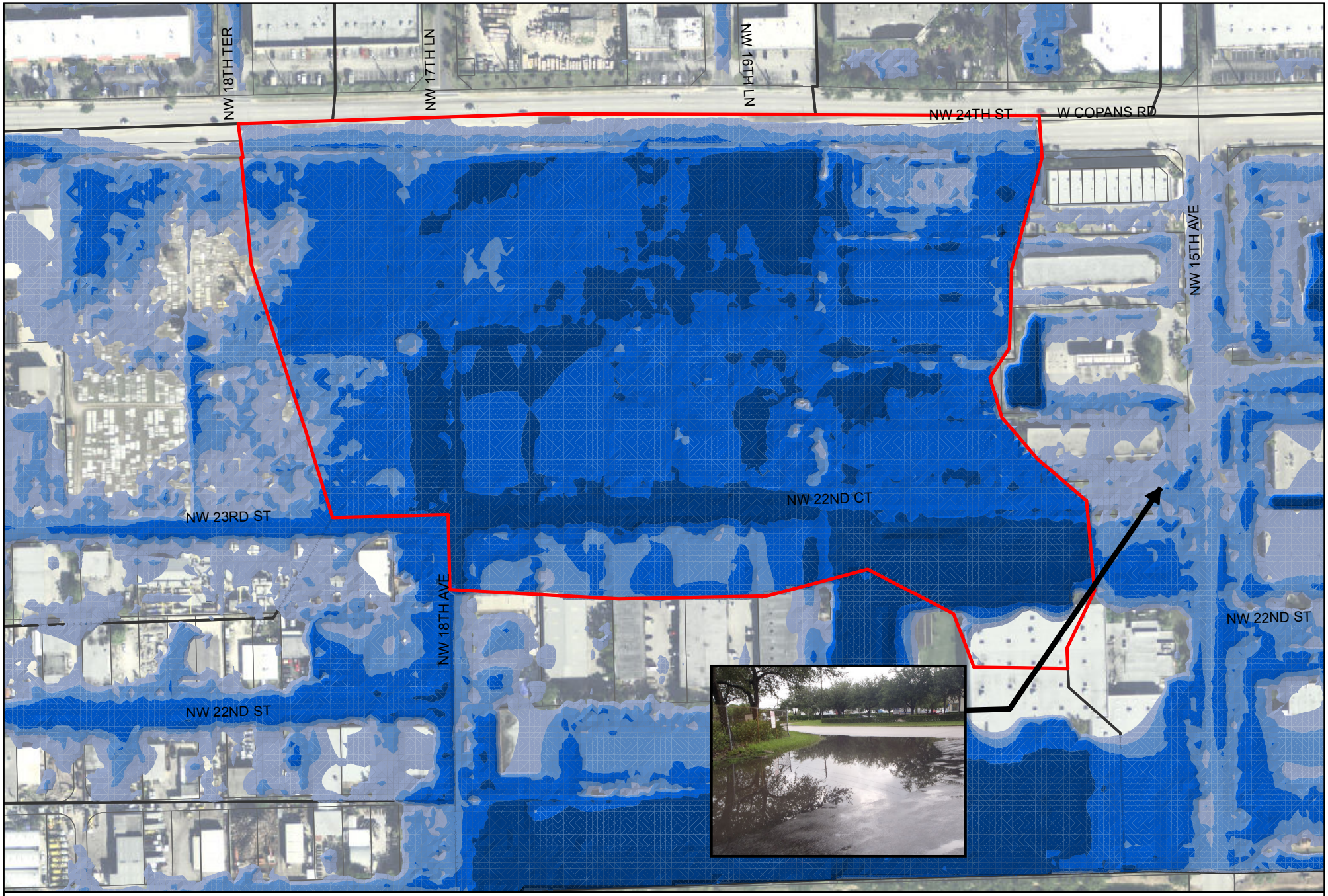
N
W E
S



SE 28th Avenue South of Atlantic Blvd
Photo Study

N
W E
S

0 250 500
Feet



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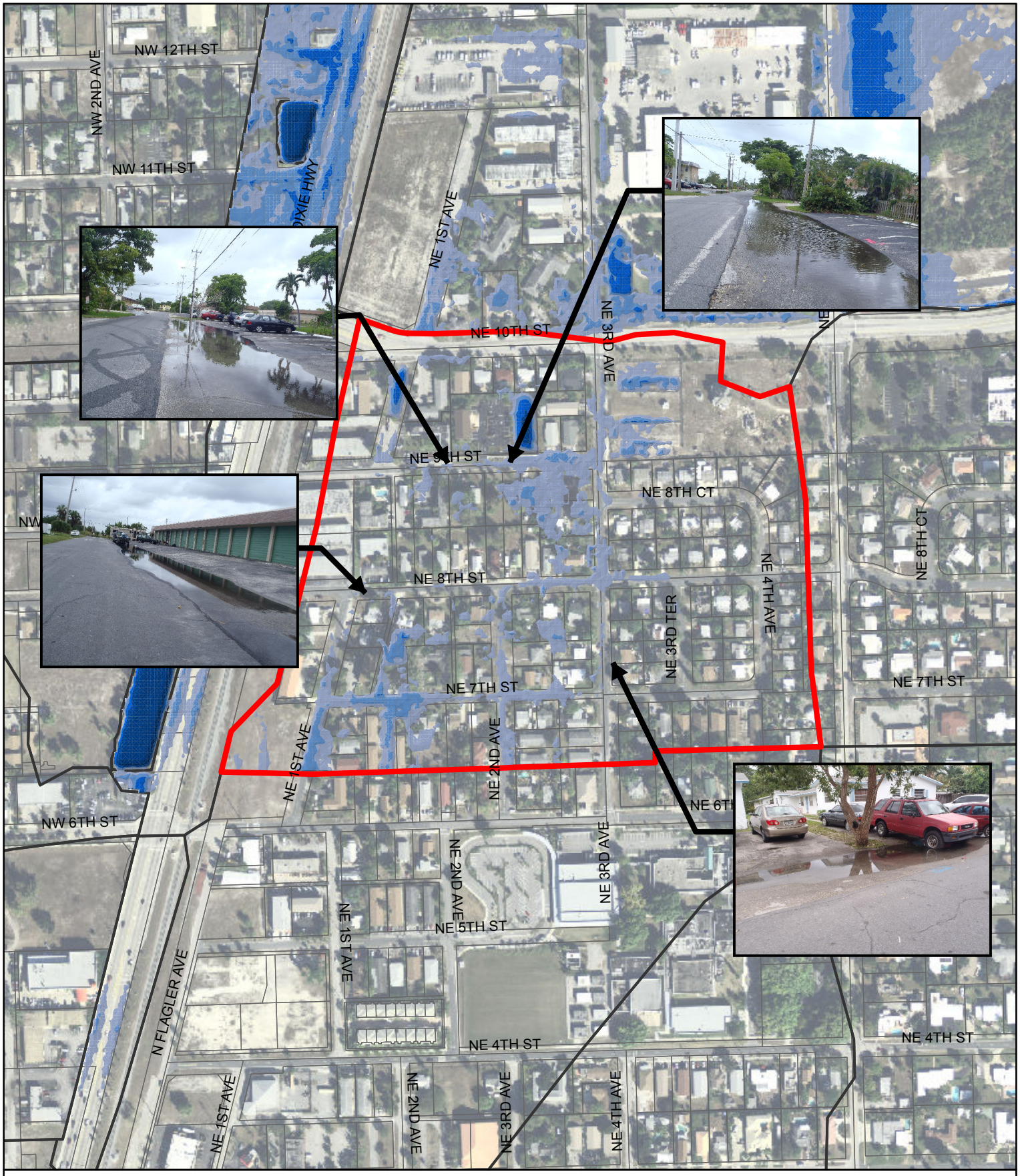
NW 22nd Court
Photo Study

0 150 300 Feet

N
W E
S



pompano beach
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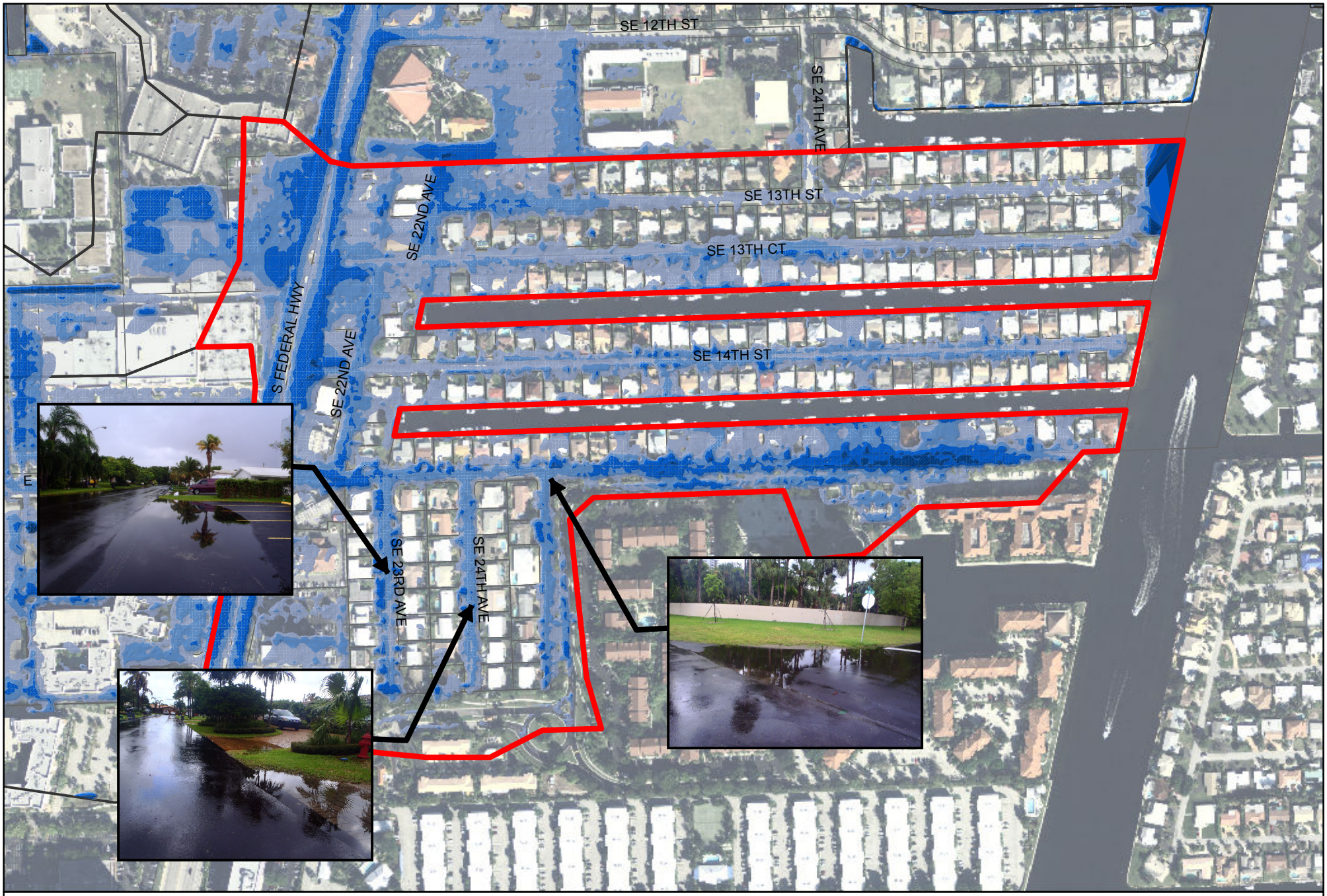
&ASSOCIATES

NE 10th Street & Dixie Highway
Photo Study

N
W E
S

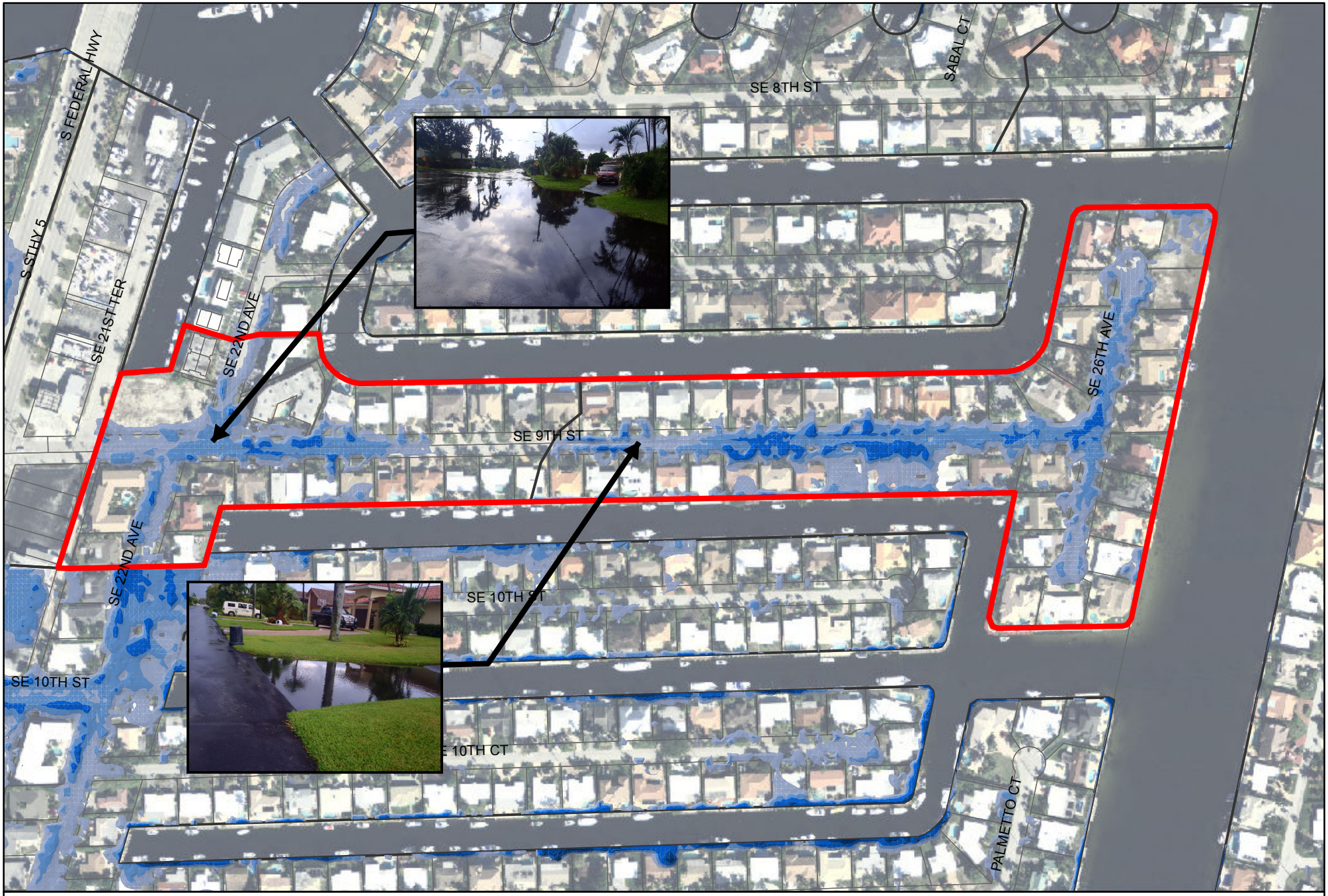
0 200 400
Feet



US-1 & SE 15th Avenue
Photo Study

0 200 400 Feet

N W E S



pompano beach
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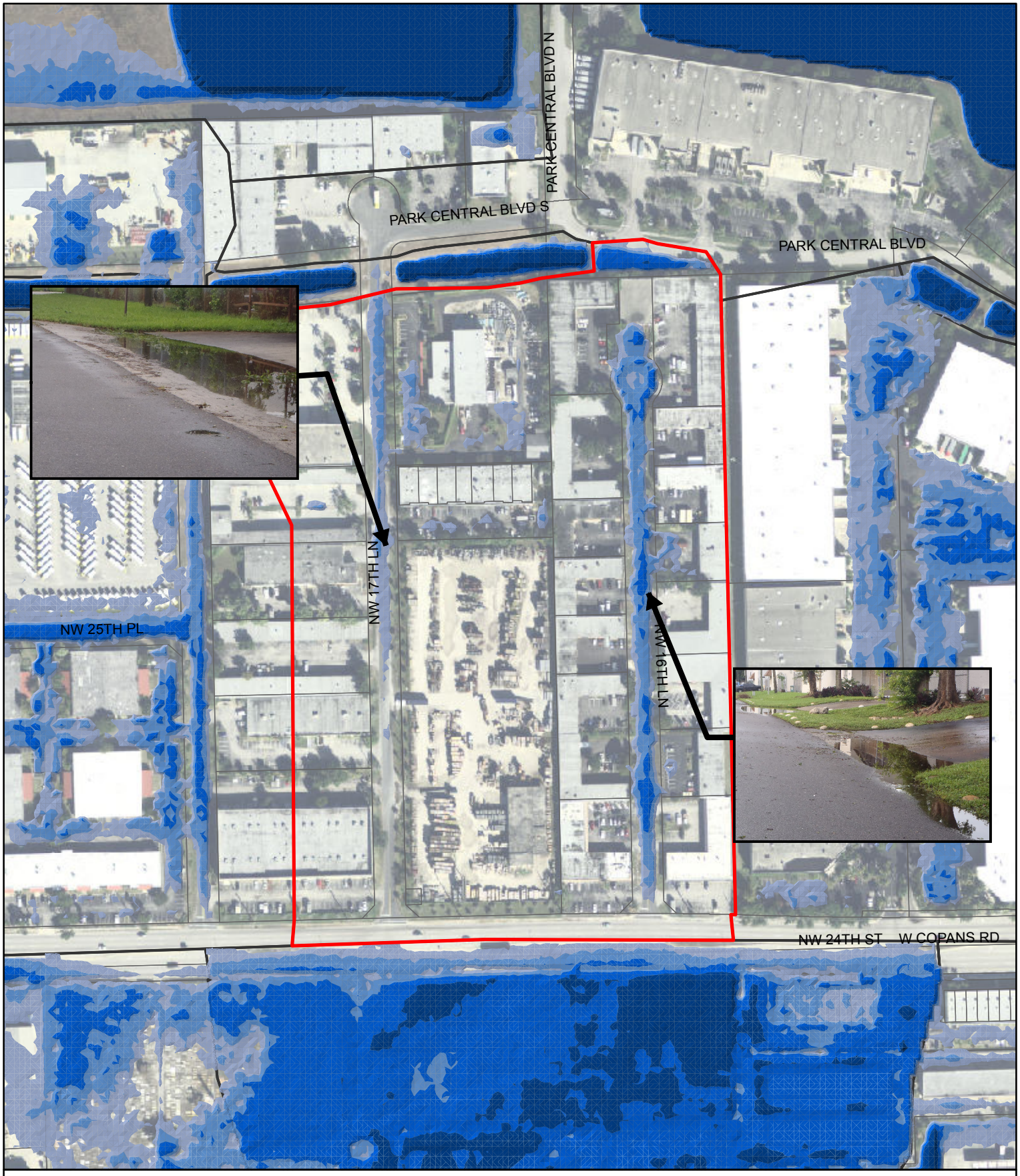
SE 9th Street
Photo Study

0 200 400 Feet

N W E S



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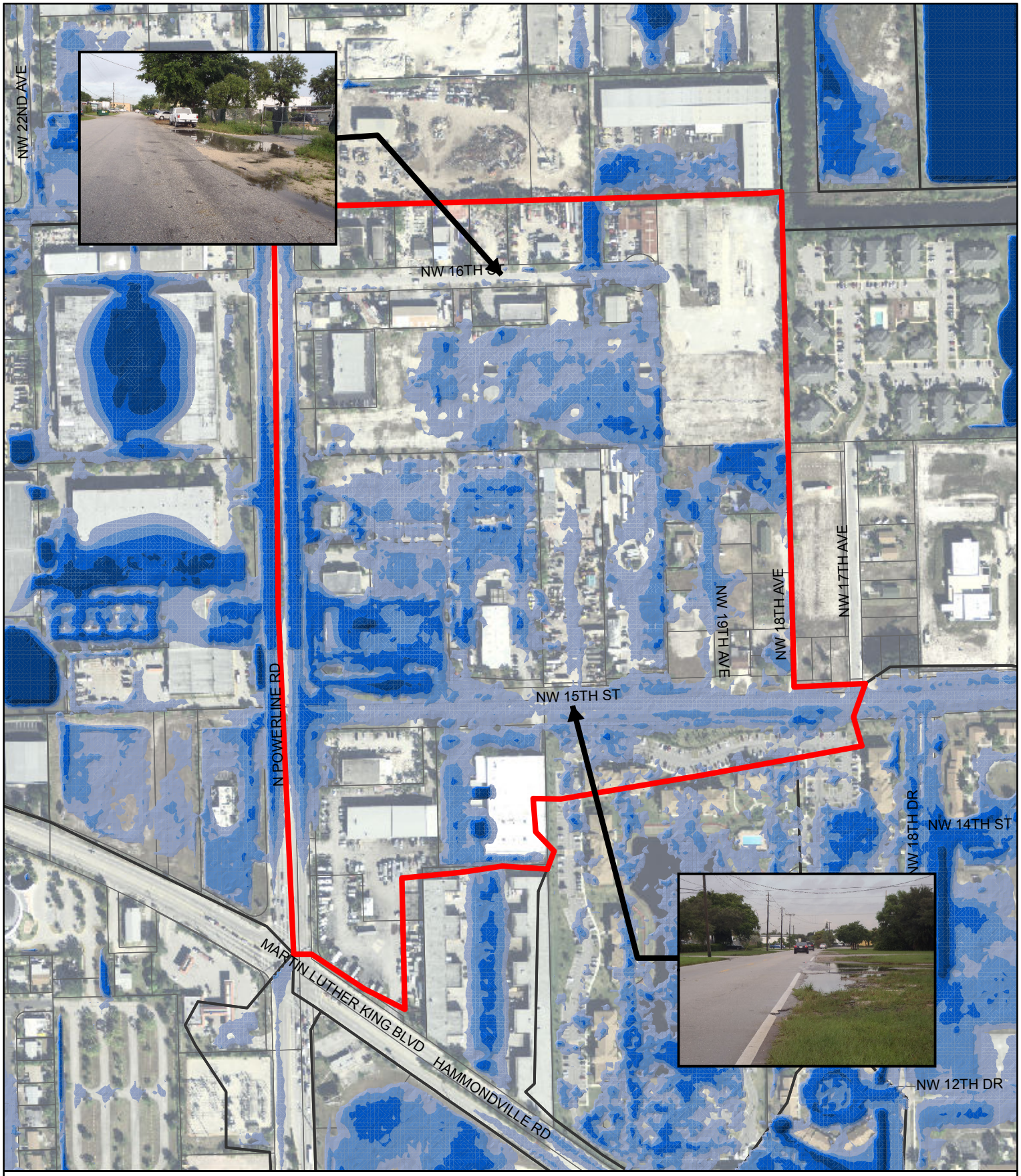
NW 16th Lane
Photo Study

N
W E
S

0 150 300
Feet



pompano beach
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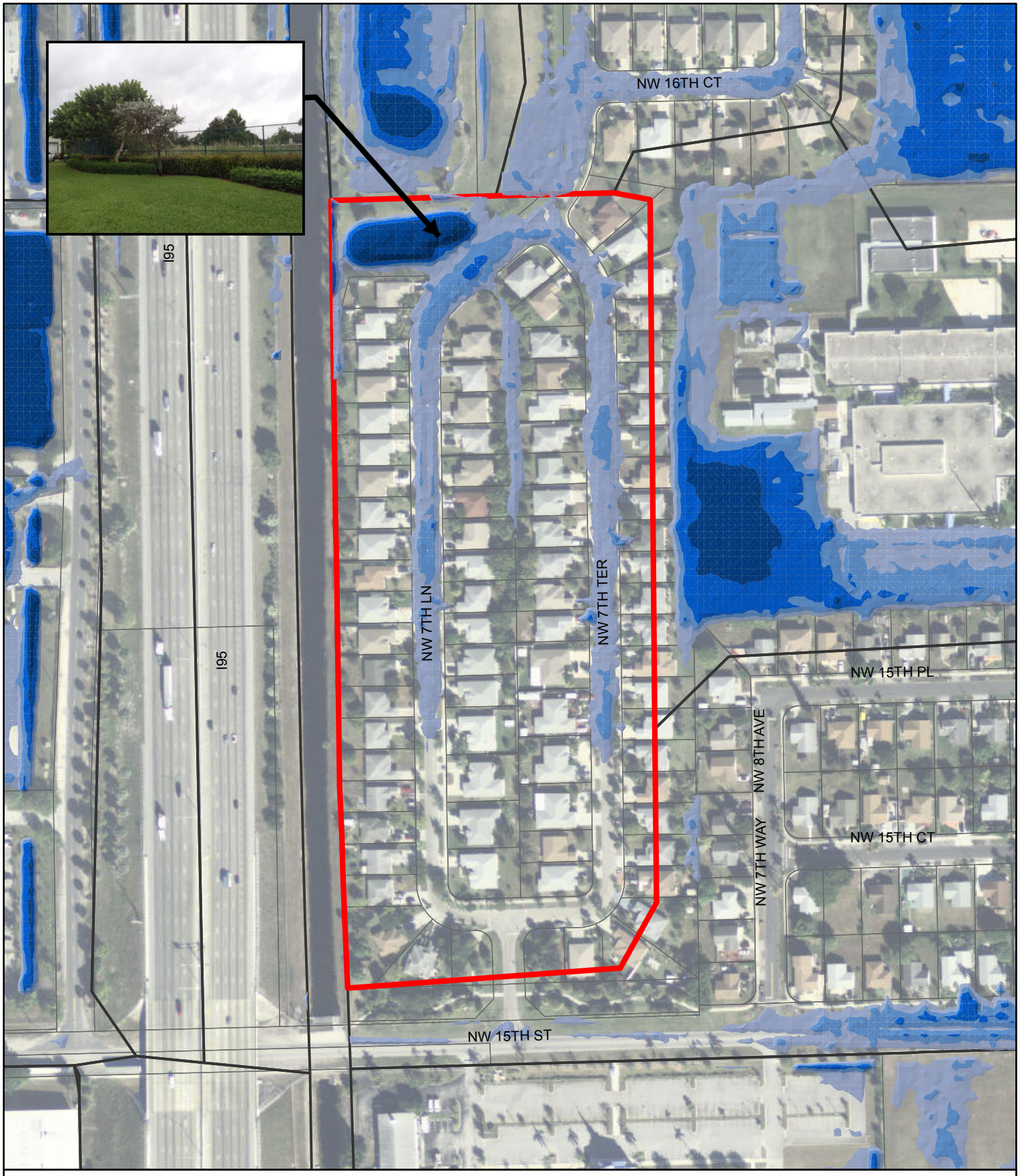
NE MLK Blvd & Powerline Road
Photo Study

N
W E
S

0 200 400
Feet



pompano beach
Florida's Warmest Welcome

CHEN·MOORE
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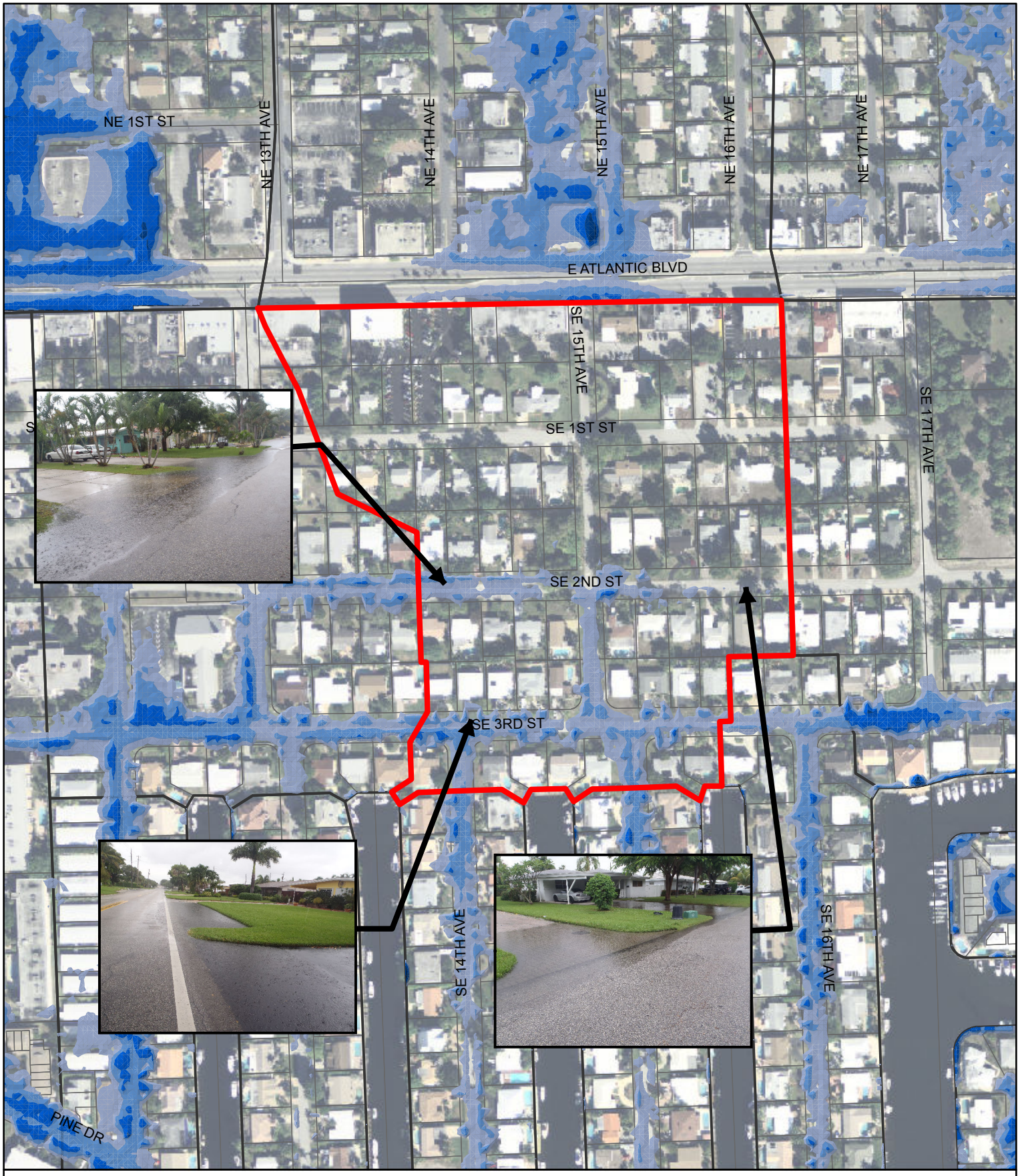
NW 7th Terrace
Photo Study

N
W E
S

0 100 200
Feet



pompano beach
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SE 15th Avenue
Photo Study

N
W E
S

0 150 300
Feet

Appendix A-6

SWMM Stormwater Model Input Parameters

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
Andrews_01	5yr7.8in	IN_0468	9.39	55.4	3639	2.49
Andrews_02	5yr7.8in	IN_0481	3.96	55.9	639	0.7
Andrews_03	5yr7.8in	Andrews03	2.21	67.4	331	0.33
Atlantic_01	5yr7.8in	Atlantic01	5.63	64	3880	2.19
Atlantic_02	5yr7.8in	Atlantic02	3.77	67.8	2509	2.33
Atlantic_03	5yr7.8in	Atlantic03	4.72	67.7	478	0.43
Atlantic_04	5yr7.8in	Atlantic04	3.54	55.4	455	0.88
Atlantic_05	5yr7.8in	Atlantic05	27.39	37.2	6211	0.85
CE_001_01	5yr7.8in	IN_1582	3.58	26.5	585	0.52
CE_002_01	5yr7.8in	CE00201	32.01	40.1	777	0.25
CE_003_01	5yr7.8in	CE00301	22.37	21.5	1477	0.47
CE_003_02	5yr7.8in	IN_1407	17.13	24.5	1014	0.46
CE_003_03	5yr7.8in	CE00303	14.87	32.1	668	0.81
CE_003_04	5yr7.8in	MH_0267	21.94	24.2	1125	0.66
CE_003_05	5yr7.8in	IN_1439	34.1	37.1	1357	0.36
CE_003_06	5yr7.8in	IN_1575	24.87	31	1601	0.34
CE_004_01	5yr7.8in	CE00401	30.91	23.5	1055	0.27
CE_005_01	5yr7.8in	CE00501	48.65	40.4	1350	0.4
CE_006_01	5yr7.8in	IN_1104	9.86	31.6	1363	0.53
CE_006_02	5yr7.8in	IN_1095	15.63	36.1	882	0.41
CE_006_03	5yr7.8in	IN_1129	13.74	42.1	959	0.32
CE_006_04	5yr7.8in	IN_1137	6.82	34	340	0.61
CE_007_01	5yr7.8in	IN_1676	19.09	21.1	1309	0.5
CE_008_01	5yr7.8in	IN_1067	49.41	29.8	1663	0.31
CE_008_02	5yr7.8in	IN_1074	34.22	37.2	1588	0.25
CE_008_03	5yr7.8in	MH_0170	3.73	41.1	379	0.01
CE_008_04	5yr7.8in	IN_1085	40.64	36	1649	0.61
CE_008_05	5yr7.8in	MH_0237	9.8	31.7	1024	0.5
CE_008_06	5yr7.8in	IN_1366	11.37	22.5	578	0.27
CE_008_07	5yr7.8in	MH_0251	27.73	35	1018	0.2
CE_009_01	5yr7.8in	MH_0295	7.01	18.1	756	0.46
CE_009_02	5yr7.8in	MH_0277	14.28	19.8	1115	0.28
CE_009_03	5yr7.8in	MH_0274	23.81	23.8	814	0.18
CE_010_01	5yr7.8in	IN_1276	18.31	34.4	903	0.18
CE_010_02	5yr7.8in	CE01002	25.08	34.1	1023	0.32
CE_010_03	5yr7.8in	MH_0223	14.52	54.6	1030	0.08
CE_010_04	5yr7.8in	MH_0215	15.5	37.8	904	0.29
CE_010_05	5yr7.8in	IN_1215	18.45	48.8	1417	0.79
CE_010_06	5yr7.8in	IN_1164	11.68	48.3	699	0.85
CE_010_07	5yr7.8in	IN_1154	12.83	37	912	0.47
CE_010_08	5yr7.8in	IN_1143	8.72	41.6	759	0.53
CE_011_01	5yr7.8in	CE01101	166.31	31.2	2636	0.19
CE_012_01	5yr7.8in	CE01201	207.9	36.3	3713	0.25
CE_013_01	5yr7.8in	CE01301	495.49	12.3	6752	0.19
CE_014_01	5yr7.8in	CE01401	58.8	75.7	4716	0.39
CE_015_01	5yr7.8in	CE01501	37.46	31.6	922	0.16

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
CE_016_01	5yr7.8in	CE01601	85.35	32.4	1823	0.27
CE_017_01	5yr7.8in	CE01701	44.82	52.1	2011	0.61
CE_017_01_W	5yr7.8in	CE01701W	1.6	99.6	264	0.02
CE_017_02	5yr7.8in	IN_3846	44.62	26.1	2199	0.77
CE_017_03	5yr7.8in	IN_3839	33.71	25	1129	0.11
CE_017_04	5yr7.8in	IN_3868	13.16	35.8	875	0.29
CE_017_05	5yr7.8in	IN_3802	19.55	32.3	2610	0.48
CE_017_06	5yr7.8in	MH_1148	40.29	29.3	1675	0.27
CE_017_07	5yr7.8in	IN_4115	32.94	36.1	1134	0.27
CE_017_08	5yr7.8in	MH_1149	27.85	40.8	2914	0.33
CE_017_09	5yr7.8in	CE01709	53.37	38.7	2546	0.18
CE_017_10	5yr7.8in	IN_4165	9.53	51.2	785	0.09
CE_018_01	5yr7.8in	IN_1840	96.7	24.9	2300	0.34
CE_019_01	5yr7.8in	IN_1816	20.53	60.6	1166	0.28
CE_019_02	5yr7.8in	CE01902	32.25	42.3	1016	0.32
CE_020_01	5yr7.8in	MH_0210	36.55	43.4	1336	0.36
CE_020_02	5yr7.8in	MH_0308	64.38	31.3	1349	0.22
CE_020_03	5yr7.8in	MH_0205	47.72	48.6	1281	0.17
CE_021_01	5yr7.8in	IN_3073	10.18	60.2	714	0.6
CE_022_01	5yr7.8in	IN_3078	10.47	25.1	419	0.29
CE_023_01	5yr7.8in	IN_3082	18.26	5.4	830	0.22
CE_024_01	5yr7.8in	MH_0491	16.94	59.1	1284	0.63
CE_024_02	5yr7.8in	MH_1045	25.6	62.9	1000	0.08
CE_024_03	5yr7.8in	MH_1041	47.33	36.9	1320	0.24
CE_025_01	5yr7.8in	IN_3070	6.09	27.3	537	0.57
CE_026_01	5yr7.8in	IN_3063	5.76	25.7	365	0.46
CE_027_01	5yr7.8in	IN_3079	5.8	32.2	718	0.56
CE_028_01	5yr7.8in	IN_3081	4.34	23.2	649	0.56
CE_029_01	5yr7.8in	IN_3047	2.96	32.5	578	0.94
CE_030_01	5yr7.8in	IN_3050	3.31	27.4	545	0.95
CE_031_01	5yr7.8in	IN_3061	9.17	29.6	546	0.54
CE_032_01	5yr7.8in	IN_3043	44.23	43	1687	0.27
CE_033_01	5yr7.8in	IN_3041	3.89	28.7	578	0.8
CE_034_01	5yr7.8in	IN_3038	4.18	31.7	699	0.36
CE_035_01	5yr7.8in	IN_3036	8.89	31.4	953	0.98
CE_036_01	5yr7.8in	IN_3052	18.36	57.6	1663	0.5
CE_037_01	5yr7.8in	MH_0484	8.75	26.4	659	0.44
CE_038_01	5yr7.8in	IN_3013	29.67	21.7	1554	0.57
CE_039_01	5yr7.8in	IN_3003	14.17	54.9	1135	0.84
CE_040_01	5yr7.8in	IN_2971	26.49	45.8	990	0.3
CE_040_02	5yr7.8in	IN_2993	21.65	46.6	1146	0.56
CE_040_03	5yr7.8in	IN_2981	20.89	69	1393	0.59
CE_041_01	5yr7.8in	IN_3425	16.77	47.7	888	0.56
CE_041_02	5yr7.8in	MH_0537	10.19	43	846	0.57
CE_042_01	5yr7.8in	IN_2961	5.4	42.8	547	0.54
CE_042_02	5yr7.8in	MH_0471	18.18	32.7	1311	0.57

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
CE_043_01	5yr7.8in	IN_3000	6.87	52.5	905	0.54
CE_044_01	5yr7.8in	IN_2834	28.46	41.6	1237	0.49
CE_045_01	5yr7.8in	IN_2963	2.39	32.5	342	1.09
CE_046_01	5yr7.8in	IN_3001	8.49	8.8	679	0.5
CE_047_01	5yr7.8in	IN_3093	7.19	25.9	579	0.59
CE_048_01	5yr7.8in	MH_0460	46.41	58.3	2094	0.25
CE_049_01	5yr7.8in	IN_2837	12.72	28.8	596	0.32
CE_050_01	5yr7.8in	IN_2949	4.6	29.2	605	1.14
CE_051_01	5yr7.8in	IN_2946	5.06	33	402	0.33
CE_052_01	5yr7.8in	IN_3088	4.99	28.2	577	0.74
CE_053_01	5yr7.8in	IN_2871	21.38	27.3	1078	0.31
CE_053_02	5yr7.8in	IN_2850	22.05	60.4	957	0.37
CE_053_03	5yr7.8in	IN_2842	27.64	54.9	1378	0.47
CE_053_04	5yr7.8in	MH_0463	18.62	29.5	1107	0.32
CE_054_01	5yr7.8in	IN_2879	14.91	32.4	1415	0.59
CE_055_01	5yr7.8in	IN_2941	5.08	29.5	410	0.21
CE_056_01	5yr7.8in	IN_2878	12.51	26.9	1132	0.37
CE_057_01	5yr7.8in	IN_2937	6.18	29.7	585	0.57
CE_058_01	5yr7.8in	CE05801	8	24.8	595	0.35
CE_059_01	5yr7.8in	IN_2912	9.88	29.5	659	0.62
CE_060_01	5yr7.8in	IN_2911	6.44	29.7	585	0.44
CE_061_01	5yr7.8in	IN_2893	12.25	36.2	791	0.41
CE_061_02	5yr7.8in	IN_2904	13.04	48.5	1366	0.32
CE_061_03	5yr7.8in	CE06103	5.91	32.8	466	0.4
CE_062_01	5yr7.8in	MH_0466	27.83	58	1421	0.19
CE_063_01	5yr7.8in	IN_3581	5.67	66.2	753	0.38
CE_064_01	5yr7.8in	IN_2935	4.34	51.9	481	0.43
CE_065_01	5yr7.8in	IN_3220	11.94	20.5	753	0.22
CE_066_01	5yr7.8in	IN_3229	22.76	44	1222	0.61
CE_067_01	5yr7.8in	IN_3190	8.22	18.3	615	0.71
CE_068_01	5yr7.8in	IN_3202	19.73	24.1	1128	0.27
CE_069_01	5yr7.8in	IN_3173	9.61	35.2	393	0.36
CE_070_01	5yr7.8in	IN_3165	4.22	55.3	625	1.46
CE_071_01	5yr7.8in	IN_3174	10.92	40	599	0.67
CE_072_01	5yr7.8in	IN_1578	8.85	22.2	472	0.6
CE_072_02	5yr7.8in	IN_1592	38.38	24.7	1097	0.44
CE_072_03	5yr7.8in	CE07203	43.78	26.8	1118	0.39
CE_072_04	5yr7.8in	IN_1599	50.02	37.4	1515	0.22
CE_073_01	5yr7.8in	IN_3131	10.1	45.8	525	1.01
CE_074_01	5yr7.8in	IN_3251	7.21	47.7	900	1.09
CE_075_01	5yr7.8in	MH_0623	24.22	52	1124	0.61
CE_076_01	5yr7.8in	IN_3116	14.33	50.4	692	1.01
CE_077_01	5yr7.8in	IN_3402	10.31	45.7	3667	1.5
CE_078_01	5yr7.8in	IN_3102	22.96	47.5	1652	1.61
CE_078_02	5yr7.8in	IN_3534	7.07	43.4	461	0.66
CE_078_03	5yr7.8in	MH_0501	5.69	47.8	519	1.8

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
CE_079_01	5yr7.8in	MH_0606	8.94	47.6	790	0.84
CE_080_01	5yr7.8in	MH_0602	23.98	49.3	1665	0.3
CE_080_02	5yr7.8in	IN_3408	7.97	68.6	889	1.9
CE_080_03	5yr7.8in	MH_0522	13.68	59.4	1133	1.86
CE_081_01	5yr7.8in	MH_0531	1.32	76.6	132	1.59
CE_081_02	5yr7.8in	IN_3410	11.36	72.2	1133	1.59
CE_081_03	5yr7.8in	IN_3433	16.36	49.9	802	0.62
CE_082_01	5yr7.8in	IN_3126	9.25	63	795	0.87
CE_083_01	5yr7.8in	IN_1419	14.23	20	547	0.22
CE_083_02	5yr7.8in	IN_1516	8.05	17.8	771	0.42
CE_084_01	5yr7.8in	IN_2936	13.12	31.5	568	0.28
CE_085_01	5yr7.8in	MH_0538	18.94	52.1	1242	0.78
CE_085_02	5yr7.8in	MH_0540	21.02	29	1262	0.55
CE_085_03	5yr7.8in	IN_3255	10.13	22.7	543	0.55
CE_086_01	5yr7.8in	IN_2998	9.97	48.3	885	0.38
CE_087_01	5yr7.8in	IN_1586	3.17	22.8	744	2.61
CE_088_01	5yr7.8in	MH_0299	25.31	26	1344	0.24
CE_088_02	5yr7.8in	MH_0298	8.37	22.7	862	0.33
CE_089_01	5yr7.8in	IN_1242	14.66	64.7	1485	1.89
CEOUT_01	5yr7.8in	CEOUT01	63.88	43.5	1576	0.29
Copans_01	5yr7.8in	MH_1114	4.96	47.4	990	0.18
Copans_02	5yr7.8in	MH_1064	2.93	45.2	416	0.71
Copans_03	5yr7.8in	IN_0485	5.51	45.6	789	0.81
CW_001_01	5yr7.8in	CW00101	44.38	57.3	1544	0.26
CW_002_01	5yr7.8in	IN_1614	14.14	31.7	936	0.32
CW_002_02	5yr7.8in	IN_1618	22.04	54.5	1154	0.13
CW_003_01	5yr7.8in	CW00301	65.3	44.4	3229	0.29
CW_003_02	5yr7.8in	CW00302	14.99	52.1	924	0.38
CW_004_01	5yr7.8in	CW00401	62.21	43.3	1736	0.19
CW_004_02	5yr7.8in	CW00402	68.97	60.5	2213	0.25
CW_004_03	5yr7.8in	MH_0016	57.45	60.8	1366	0.07
CW_005_01	5yr7.8in	IN_0240	41.32	73.5	1462	0.38
CW_005_02	5yr7.8in	CW00502	18.3	70.3	863	0.39
CW_006_01	5yr7.8in	IN_4480	30.28	48.1	1374	0.25
CW_007_01	5yr7.8in	CW00701	50.4	59.4	1748	0.21
CW_008_01	5yr7.8in	IN_1628	26.22	43.2	2423	0.97
CW_008_02	5yr7.8in	CW00802	30.45	51.2	1833	0.44
CW_008_03	5yr7.8in	IN_1513	20.51	58.8	2000	0.54
CW_009_01	5yr7.8in	IN_0254	55.06	61.9	2063	0.16
CW_010_01	5yr7.8in	CW01001	22.99	63.7	2909	1.12
CW_011_01	5yr7.8in	CW01101	36.41	24.3	1700	0.22
CW_012_01	5yr7.8in	CW01201	33.06	43.9	1095	0.28
CW_013_01	5yr7.8in	CW01301	33.7	30.4	1560	0.14
CW_014_01	5yr7.8in	IN_0273	22.54	27.6	2102	0.39
CW_014_02	5yr7.8in	IN_0268	33.18	32.6	1566	0.23
CW_015_01	5yr7.8in	IN_0585	28.97	41	1090	0.29

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
CW_016_01	5yr7.8in	IN_0588	30.44	44.1	1324	0.41
CW_017_01	5yr7.8in	CW01701	26.5	54.5	2372	0.49
CW_017_02	5yr7.8in	MH_0634	24.33	62.4	1054	0.26
CW_017_03	5yr7.8in	CW01703	10.63	26.3	318	0.14
CW_017_04	5yr7.8in	MH_0114	12.09	13.1	426	0.16
CW_017_05	5yr7.8in	IN_0638	3.18	56.3	303	0.22
CW_017_06	5yr7.8in	MH_0032	7.5	69.5	507	0.28
CW_018_01	5yr7.8in	IN_0193	11.05	29.5	1004	0.21
CW_018_02	5yr7.8in	IN_0191	18.87	38.5	1506	1.16
CW_019_01	5yr7.8in	MH_0030	16.26	63.2	2035	1.47
CW_019_02	5yr7.8in	IN_0197	12.95	62.4	2308	1.57
CW_020_01	5yr7.8in	CW02001	37.68	31.2	1136	0.32
CW_021_01	5yr7.8in	CW02101	43.11	65.8	2806	0.7
CW_022_01	5yr7.8in	IN_1288	57.88	54.7	888	0.15
CW_022_02	5yr7.8in	IN_1351	21.4	72.6	547	0.12
CW_023_01	5yr7.8in	CW02301	15.97	30.2	766	0.12
CW_024_01	5yr7.8in	CW02401	42.38	50.2	1310	0.22
CW_025_01	5yr7.8in	IN_0581	5.51	26	324	0.41
CW_026_01	5yr7.8in	MH_0104	20.75	43.1	1438	0.49
CW_026_02	5yr7.8in	MH_0100	28.43	18.9	881	0.13
CW_027_01	5yr7.8in	CW02701	21.48	50.4	1157	0.84
CW_028_01	5yr7.8in	MH_0040	12.56	49.6	1052	0.14
CW_028_02	5yr7.8in	IN_0681	9.86	25.1	753	0.44
CW_028_03	5yr7.8in	IN_0597	26.14	19.7	2212	0.47
CW_028_04	5yr7.8in	MH_0083	26.48	16.9	1097	0.26
CW_029_01	5yr7.8in	CW02901	42.58	35.3	1148	0.07
CW_030_01	5yr7.8in	IN_0749	29.82	11.7	962	0.15
CW_031_01	5yr7.8in	CW03101	51.51	34.2	956	0.16
CW_033_01	5yr7.8in	CW03301	70.79	66.9	2361	0.22
CW_034_01	5yr7.8in	CW03401	125.24	14.6	6235	0.75
CW_036_01	5yr7.8in	IN_0284	36.72	28.3	1317	0.21
CW_036_02	5yr7.8in	CW03602	48.4	22	1114	0.15
CW_037_01	5yr7.8in	IN_0159	41.31	60.9	2023	0.31
CW_038_01	5yr7.8in	MH_0029	24.12	45	1237	0.18
CW_038_02	5yr7.8in	IN_0654	32.56	22.9	1077	0.08
CW_038_03	5yr7.8in	MH_0093	52.6	31.1	1192	0.12
CW_038_04	5yr7.8in	IN_0575	13.23	25.3	768	0.31
CW_038_05	5yr7.8in	CW03805	17.42	31.7	674	0.21
CW_039_01	5yr7.8in	IN_0311	15.58	46.6	979	0.32
CW_039_02	5yr7.8in	IN_0315	29.72	34.6	1315	0.24
CW_040_01	5yr7.8in	IN_0304	17.74	58.6	1655	0.75
CW_041_01	5yr7.8in	MH_0010	33.47	34.4	1508	0.21
CW_042_01	5yr7.8in	IN_0176	9.35	72.3	334	0.27
CW_042_02	5yr7.8in	MH_0007	12.74	65.3	544	0.29
CW_042_03	5yr7.8in	IN_0168	10.46	74.3	367	0.25
CW_042_04	5yr7.8in	MH_0006	25.43	49.1	1057	0.12

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
CW_042_05	5yr7.8in	IN_0185	18.99	52.5	778	0.21
CW_042_06	5yr7.8in	CW04206	15.93	69	837	0.5
CW_043_01	5yr7.8in	IN_1723	36.27	61.8	1226	0.16
CW_043_02	5yr7.8in	IN_1721	29.09	59.1	1332	0.3
CW_044_01	5yr7.8in	IN_1500	62.62	31.8	2420	0.33
CW_044_01_W	5yr7.8in	CW04401W	13.87	98	777	0.02
CW_045_01	5yr7.8in	CW04501	16.45	18.7	2212	0.8
CW_046_01	5yr7.8in	CW04601	19.94	32.6	718	0.13
Cypress_01	5yr7.8in	MH_0398	10.22	60.6	549	0.12
Cypress_02	5yr7.8in	MH_0389	16.14	64.8	1023	0.17
Cypress_03	5yr7.8in	MH_0382	7.28	37	582	0.23
Dixie_01	5yr7.8in	MH_1101	20.76	67.9	719	0.14
Dixie_02	5yr7.8in	MH_0366	25.6	66.7	822	0.27
Dixie_03	5yr7.8in	MH_0272	14.75	74.8	666	0.13
Dixie_04	5yr7.8in	MH_0236	21	55	566	0.22
Dixie_04_W	5yr7.8in	Dixie04W	0.38	43.1	128	0.02
Dixie_05	5yr7.8in	MH_0181	10.14	65.9	440	0.35
Dixie_05_W	5yr7.8in	Dixie05W	0.91	14	199	0.02
Dixie_06	5yr7.8in	MH_0200	3.17	73	275	0.5
Dixie_07	5yr7.8in	Dixie07	11.54	63.2	407	0.34
Dixie_08	5yr7.8in	Dixie08	24.66	71.6	828	0.2
Dixie_09	5yr7.8in	Dixie09	33.08	72.4	1124	0.14
Dixie_10	5yr7.8in	Dixie10	20.92	74.9	923	0.2
Dixie_11	5yr7.8in	Dixie11	7.6	71.4	1132	0.57
FXE1_01	5yr7.8in	FXE101	841.53	41.4	15876	0.11
FXE1_02	5yr7.8in	FXE102	173.51	49.9	3113	0.14
I95_1E	5yr7.8in	I951E	19.25	51.3	4696	3.22
I95_1W	5yr7.8in	I951W	28.27	45.4	6809	3.73
I95_2E	5yr7.8in	I952E	32.89	40.9	8051	2.75
I95_2W	5yr7.8in	I952W	17.77	43.1	7072	4.88
I95_3	5yr7.8in	I953W	32.93	60.1	10956	6.42
I95_4	5yr7.8in	I954	15.15	54.8	3321	2.8
I95_5	5yr7.8in	I955	34.27	38.9	7302	2.62
I95_6	5yr7.8in	I956	50.15	58.7	20465	3.44
I95_7	5yr7.8in	I957	6.3	51.1	1963	8
NE_001_01	5yr7.8in	NE00101	144.84	39.6	3106	0.13
NE_002_01	5yr7.8in	MH_0755	45.92	54	1562	0.41
NE_003_01	5yr7.8in	MH_1034	154.92	40.6	4284	0.16
NE_004_01	5yr7.8in	MH_1010	136.7	46	2181	0.24
NE_005_01	5yr7.8in	NE00501	67.58	46	2222	0.26
NE_005_02	5yr7.8in	IN_2114	35.2	24.1	1077	0.22
NE_005_03	5yr7.8in	IN_2014	87.31	28.4	2124	0.22
NE_005_04	5yr7.8in	IN_1888	53.42	29.3	1799	0.33
NE_006_01	5yr7.8in	IN_3704	41.06	25	1491	0.29
NE_007_01	5yr7.8in	IN_4010	13.05	33.3	720	0.32
NE_007_02	5yr7.8in	NE00702	63.77	44.6	1798	0.35

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
NE_007_02_W	5yr7.8in	NE00702W	0.81	78.8	188	0.02
NE_007_03	5yr7.8in	IN_4039	31.37	41.9	1443	0.31
NE_007_04	5yr7.8in	IN_4042	19.91	36.5	1431	0.38
NE_007_05	5yr7.8in	IN_4059	44.91	27.5	1830	0.7
NE_007_06	5yr7.8in	NE00706	41.33	27	1338	0.61
NE_008_01	5yr7.8in	NE00801	12.81	19.2	902	0.2
NE_009_01	5yr7.8in	IN_2008	52.57	57.1	1438	0.28
NE_010_01	5yr7.8in	NE01001	57.04	37.4	1338	0.22
NE_010_02	5yr7.8in	NE01002	28.27	68.3	813	0.25
NE_010_03	5yr7.8in	IN_1989	28.27	39.7	1071	0.34
NE_010_04	5yr7.8in	IN_2000	44.24	39	1039	0.32
NE_011_01	5yr7.8in	NE01101	20.69	48.7	620	0.07
NE_012_01	5yr7.8in	MH_0732	24.35	16.2	1304	0.35
NE_013_01	5yr7.8in	NE01301	29.84	22.1	1409	0.34
NE_014_01	5yr7.8in	IN_3892	32.24	32.5	897	0.23
NE_015_01	5yr7.8in	MH_1059	47.93	31.1	1377	0.22
NE_015_02	5yr7.8in	MH_1058	69.37	72	1472	0.22
NE_015_03	5yr7.8in	IN_2084	41.31	25.1	1587	0.32
NE_016_01	5yr7.8in	MH_0680	26.98	17.7	1311	0.19
NE_017_01	5yr7.8in	MH_0701	44.99	37	2005	0.2
NE_018_01	5yr7.8in	MH_0813	94.44	53.9	1734	0.23
NE_019_01	5yr7.8in	MH_0716	92.16	39.3	2312	0.23
NE_020_01	5yr7.8in	MH_0671	35.97	50.7	2435	0.26
NE_021_01	5yr7.8in	MH_0998	122.65	20.7	2797	0.36
NE_022_01	5yr7.8in	NE00301	53.71	38	1383	0.02
NEOUT_02	5yr7.8in	NEOUT02	184.63	45.4	3085	0.28
NEOUT_03	5yr7.8in	NEOUT03	130.21	43.6	3408	0.43
NEOUT_04	5yr7.8in	NEOUT04	67.36	44.2	1447	0.3
NW_001_01	5yr7.8in	NW00101	28.53	35.4	2298	0.91
NW_002_01	5yr7.8in	NW00201	14.12	7	739	0.33
NW_002_02	5yr7.8in	NW00202	25.59	58.6	1218	0.47
NW_003_01	5yr7.8in	NW00301	102.54	28.6	4937	0.48
NW_004_01	5yr7.8in	NW00401	76.69	38.8	1983	0.29
NW_005_01	5yr7.8in	NW00501	31.36	59.1	1639	0.3
NW_006_01	5yr7.8in	NW00601	14.79	64.9	519	0.39
NW_007_01	5yr7.8in	NW00701	21.19	37.4	1095	0.62
NW_008_01	5yr7.8in	NW00801	50.89	44.1	1044	0.14
NW_009_01	5yr7.8in	IN_4474	21.92	42.8	1047	0.35
NW_010_01	5yr7.8in	NW01001	15.2	21.5	928	0.48
NW_011_01	5yr7.8in	CS40_HW	1.53	59.1	256	0.2
NW_012_01	5yr7.8in	IN_0417	38.85	59.2	3469	0.18
NW_012_01_W	5yr7.8in	NW01201W	7.29	99.5	564	0.02
NW_013_01	5yr7.8in	NW01301	33.88	34.1	1558	0.39
NW_013_02	5yr7.8in	NW01302	43.48	30.7	2732	0.68
NW_014_01	5yr7.8in	NW01401	20.91	53.9	1418	0.65
NW_015_01	5yr7.8in	NW01501W	34.77	64.8	2086	0.49

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
NW_016_01	5yr7.8in	NW01601	38.59	63.1	1673	0.37
NW_016_01_W	5yr7.8in	NW01601W	0.54	74.2	154	0.02
NW_017_01	5yr7.8in	NW01701	25.3	64.5	1081	0.41
NW_017_01_W	5yr7.8in	NW01701W	1.34	62.8	242	0.02
NW_018_01	5yr7.8in	NW01801	45.09	47.7	3909	0.74
NW_018_01_W	5yr7.8in	NW01801W	2.64	59.3	339	0.02
NW_018_02	5yr7.8in	NW01802	17.32	53.3	946	0.76
NW_018_03	5yr7.8in	NW01803	23.12	62.8	1301	0.62
NW_018_04	5yr7.8in	NW01804	19.47	55.3	916	0.49
NW_018_04_W	5yr7.8in	NW01804W	0.49	55.7	147	0.02
NW_018_05	5yr7.8in	NW01805	16.54	59.5	1240	0.88
NW_018_06	5yr7.8in	NW01806	20.18	61.9	907	0.42
NW_019_01	5yr7.8in	IN_0466	10.55	55.5	1069	0.73
NW_020_01	5yr7.8in	NW02001	30.65	57.2	1583	0.35
NW_021_01	5yr7.8in	NW02101	55.76	51.6	2423	0.29
NW_022_01	5yr7.8in	NW02201	13.57	60.1	376	0.2
NW_026_01	5yr7.8in	NW02601	47.93	64.7	2321	0.32
NW_028_01	5yr7.8in	IN_0436	24.33	49.1	1040	0.26
NW_028_02	5yr7.8in	IN_0440	14.96	48.8	1049	0.08
NW_029_01	5yr7.8in	NW02901	16.45	19.9	1458	0.61
NW_030_01	5yr7.8in	MH_0043	27.7	43.9	1589	0.2
NW_030_01_W	5yr7.8in	WAT23	3.79	91	406	0.02
NW_031_01	5yr7.8in	NW03101	87.32	35.6	5925	0.7
NW_032_01	5yr7.8in	MH_1074	28.33	53.6	2220	0.66
NW_033_01	5yr7.8in	MH_0042	20.43	63.5	1077	0.26
NW_034_01	5yr7.8in	NW03401	55.23	49.9	2435	0.28
NWOUT_01	5yr7.8in	NWOUT01	658.27	32.5	14084	0.2
NWOUT_02	5yr7.8in	NWOUT02	888.14	42.8	18895	0.11
NWOUT_03	5yr7.8in	NWOUT03	315.22	41.1	6724	0.13
NWOUT_04	5yr7.8in	NWOUT04	240.48	38.2	6185	0.48
Pwrlne_01	5yr7.8in	Pwrlne01	8.63	57.4	1880	0.2
Pwrlne_02	5yr7.8in	Pwrlne02	15.05	54.9	3279	0.2
Pwrlne_03	5yr7.8in	Pwline03	1.82	55.6	396	0.2
SE_001_01	5yr7.8in	IN_2542	4.06	27.6	390	0.55
SE_002_01	5yr7.8in	IN_2554	5.55	24.3	416	0.4
SE_003_01	5yr7.8in	IN_2564	6.07	30.1	473	0.36
SE_004_01	5yr7.8in	IN_2559	14.1	41.2	990	0.58
SE_005_01	5yr7.8in	IN_2603	26.3	45.7	2037	0.48
SE_005_02	5yr7.8in	IN_2591	38.91	59.8	1428	0.31
SE_005_03	5yr7.8in	IN_2592	10.26	60.3	764	0.15
SE_006_01	5yr7.8in	SE00601	17.86	60.3	1580	0.35
SE_007_01	5yr7.8in	MH_0589	10.95	41.1	939	1.2
SE_009_01	5yr7.8in	IN_2737	31.73	62.1	1077	0.36
SE_009_02	5yr7.8in	IN_2677	45.61	45.3	1811	0.19
SE_010_01	5yr7.8in	IN_2741	20	27.3	798	0.54
SE_011_01	5yr7.8in	IN_2774	30.4	28.8	1010	0.36

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
SE_012_01	5yr7.8in	IN_2714	11.04	47.3	1263	0.7
SE_013_01	5yr7.8in	IN_2769	22.28	28.9	633	0.4
SE_014_01	5yr7.8in	IN_2702	15.41	25.5	824	0.41
SE_015_01	5yr7.8in	IN_2767	4.68	22.7	383	0.76
SE_016_01	5yr7.8in	IN_2711	5.96	75.8	641	0.2
SE_017_01	5yr7.8in	IN_2706	2.64	53	630	1.02
SE_018_01	5yr7.8in	IN_2707	8.27	28.8	288	0.15
SE_019_01	5yr7.8in	IN_2713	20.16	39.1	867	0.3
SE_020_01	5yr7.8in	IN_2228	22.23	81	744	0.1
SE_021_01	5yr7.8in	IN_2644	9.36	30.5	351	0.1
SE_022_01	5yr7.8in	IN_2640	63.88	46.4	1625	0.15
SE_023_01	5yr7.8in	SE02301	79.83	45.3	2415	0.18
SE_024_01	5yr7.8in	IN_3353	20.8	39	1579	0.74
SE_025_01	5yr7.8in	IN_3350	10.67	40.9	1047	0.88
SE_026_01	5yr7.8in	IN_3349	6.65	40.3	926	1.1
SE_027_01	5yr7.8in	IN_3343	6.3	40.3	609	0.68
SE_028_01	5yr7.8in	IN_3287	2.25	32.8	511	1.47
SE_029_01	5yr7.8in	IN_3289	5.86	39.8	606	0.72
SE_030_01	5yr7.8in	MH_0558	7.36	57	556	1.01
SE_031_01	5yr7.8in	SE03101	37.53	63.9	1639	0.2
SE_032_01	5yr7.8in	IN_3285	2.2	32.8	613	1.76
SE_033_01	5yr7.8in	IN_3284	3.57	49.4	715	0.78
SE_034_01	5yr7.8in	IN_3280	6.73	43.9	592	2.93
SE_035_01	5yr7.8in	SE03501	15.5	38.9	2020	2.21
SE_036_01	5yr7.8in	IN_3518	2.26	26.8	567	1.63
SE_037_01	5yr7.8in	IN_3522	5.32	21.5	689	0.78
SE_038_01	5yr7.8in	IN_3524	4.2	23.1	826	1.04
SE_039_01	5yr7.8in	IN_3379	8.58	35.8	849	0.85
SE_040_01	5yr7.8in	SE04001	14.98	42.8	1606	1.58
SE_041_01	5yr7.8in	IN_3345	10.28	43.9	1302	1
SE_042_01	5yr7.8in	MH_0647	32.42	37.7	1060	0.15
SE_043_01	5yr7.8in	MH_0372	14.66	42.1	778	0.17
SE_043_02	5yr7.8in	IN_2171	22.31	26.9	1019	0.26
SE_043_03	5yr7.8in	MH_0373	7.66	28.6	543	0.21
SE_043_04	5yr7.8in	MH_0378	18.98	21	848	0.21
SE_043_05	5yr7.8in	MH_0379	15.14	23.4	966	0.27
SE_044_01	5yr7.8in	IN_2121	24.15	61	1223	0.2
SE_045_01	5yr7.8in	IN_2122	5.1	39.9	525	0.64
SE_046_01	5yr7.8in	IN_0370	16.67	36.4	1274	0.34
SE_046_03	5yr7.8in	IN_2330	33.74	40.2	1984	0.34
SE_047_01	5yr7.8in	IN_2344	4.04	35.2	537	0.49
SE_048_01	5yr7.8in	IN_2138	8.95	31.6	611	0.37
SE_049_01	5yr7.8in	IN_2140	4.06	28.8	291	0.38
SE_050_01	5yr7.8in	IN_2141	8.17	29	576	0.39
SE_051_01	5yr7.8in	IN_2144	17.24	25.1	582	0.17
SE_052_01	5yr7.8in	IN_2145	9.98	44	550	0.28

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
SE_053_01	5yr7.8in	IN_2355	21.84	39.5	1037	0.68
SE_054_01	5yr7.8in	IN_2352	15.02	38.2	773	1.01
SE_055_01	5yr7.8in	IN_2457	10.02	57.6	372	0.73
SE_056_01	5yr7.8in	IN_2461	10.49	51.5	364	0.68
SE_057_01	5yr7.8in	IN_2465	12.34	53.1	396	0.68
SE_058_01	5yr7.8in	IN_2346	11.26	22.7	772	0.15
SE_059_01	5yr7.8in	IN_2471	14.96	45.4	704	1.27
SE_060_01	5yr7.8in	IN_2482	18.23	35.1	756	0.8
SE_061_01	5yr7.8in	IN_2648	13.94	30.7	1011	0.93
SE_061_02	5yr7.8in	IN_1774	18.42	36.4	984	0.47
SE_061_03	5yr7.8in	IN_1785	28.12	49.6	1512	0.57
SE_061_04	5yr7.8in	IN_1784	13.09	66.5	740	0.13
SE_061_05	5yr7.8in	MH_0318	30.4	38.2	739	0.32
SE_061_06	5yr7.8in	IN_1744	73.4	32	1431	0.26
SE_062_01	5yr7.8in	IN_2473	5.58	49	564	0.52
SE_063_01	5yr7.8in	IN_2475	6.05	26.1	549	0.41
SE_064_01	5yr7.8in	IN_2489	7.11	26.9	566	0.23
SE_065_01	5yr7.8in	IN_2488	8.33	37.3	530	0.23
SE_066_01	5yr7.8in	IN_2485	10.9	32.6	584	0.22
SE_067_01	5yr7.8in	IN_2652	1.68	30.1	471	1.01
SE_068_01	5yr7.8in	IN_2651	6.32	64.7	396	0.35
SE_069_01	5yr7.8in	IN_2681	12.55	25.7	879	0.42
SE_070_01	5yr7.8in	IN_2653	6.65	53.6	753	0.62
SE_071_01	5yr7.8in	SE07101	20.09	47.2	2108	0.66
SE_072_01	5yr7.8in	MH_0407	23.53	39.4	1182	0.42
SE_072_02	5yr7.8in	MH_0396	10.43	67.3	679	0.17
SE_072_02_W	5yr7.8in	SE07202W	0.97	74.6	205	0.02
SE_072_03	5yr7.8in	MH_0396	7.73	35.3	352	0.09
SE_072_04	5yr7.8in	IN_2291	11.79	50.4	689	0.13
SE_072_04_W	5yr7.8in	SE07204W	2.19	81	309	0.02
SE_072_05	5yr7.8in	IN_2304	16.08	59.2	1172	0.28
SE_073_01	5yr7.8in	IN_2370	5.65	29.8	431	0.43
SE_074_01	5yr7.8in	IN_2365	4.47	30.5	584	0.8
SE_075_01	5yr7.8in	IN_2360	5.39	20.6	591	0.51
SE_076_01	5yr7.8in	IN_2358	4.31	26.3	572	0.71
SE_077_01	5yr7.8in	IN_2380	3.7	31	530	0.66
SE_077_02	5yr7.8in	IN_2384	12.53	19	487	0.11
SE_078_01	5yr7.8in	IN_2375	3.5	31	395	0.52
SE_078_02	5yr7.8in	IN_2373	2.6	28.6	279	0.43
SE_079_01	5yr7.8in	IN_2402	7.61	28.8	554	0.4
SE_080_01	5yr7.8in	IN_2385	2.85	32.5	325	0.57
SE_080_02	5yr7.8in	IN_2379	7.23	28.2	667	0.31
SE_081_01	5yr7.8in	IN_2389	30.1	25.5	1030	0.12
SE_082_01	5yr7.8in	IN_2396	12.2	27.7	812	0.37
SE_083_01	5yr7.8in	IN_2356	6.18	28.7	396	0.35
SE_084_01	5yr7.8in	IN_2398	9.48	28.1	698	0.37

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
SE_085_01	5yr7.8in	IN_2497	7.37	25.7	677	0.31
SE_086_01	5yr7.8in	IN_2502	6.21	28.4	612	0.46
SE_087_01	5yr7.8in	IN_2499	11.55	29	1016	0.26
SE_088_01	5yr7.8in	IN_2503	12.3	29.9	759	0.23
SE_089_01	5yr7.8in	IN_2505	9.93	30.4	594	0.22
SE_090_01	5yr7.8in	IN_2507	7.81	31.6	667	0.35
SE_091_01	5yr7.8in	IN_2517	12.33	39.2	1025	0.51
SE_092_01	5yr7.8in	IN_2782	13.13	26.8	1257	0.24
SE_093_01	5yr7.8in	IN_2416	30.25	25.5	851	0.12
SE_094_01	5yr7.8in	IN_2418	5.86	22.8	297	0.18
SE_095_01	5yr7.8in	IN_2406	5.43	24.8	514	0.4
SE_096_01	5yr7.8in	IN_2414	6.07	26.3	530	0.4
SE_097_01	5yr7.8in	SE09701	23.13	35.3	1564	0.23
SE_098_01	5yr7.8in	IN_2408	7.77	30.1	559	0.41
SE_099_01	5yr7.8in	IN_2428	7.3	30.8	647	0.65
SE_100_01	5yr7.8in	IN_2412	8.78	32.3	597	0.27
SE_101_01	5yr7.8in	IN_2529	9.51	31.6	695	0.36
SE_102_01	5yr7.8in	IN_2527	8.32	35.6	390	0.17
SE_103_01	5yr7.8in	IN_2426	12.59	33.8	636	0.33
SE_104_01	5yr7.8in	IN_2422	13.52	35.8	673	0.4
SE_105_01	5yr7.8in	IN_2420	12.14	28.5	626	0.3
SE_106_01	5yr7.8in	IN_3513	15.02	33.5	810	0.49
SE_107_01	5yr7.8in	IN_2134	15.02	47.9	1108	0.16
SE_107_02	5yr7.8in	IN_2163	20.62	40.4	1621	0.32
SE_107_03	5yr7.8in	IN_2166	27.31	22.5	1141	0.13
SE_107_04	5yr7.8in	IN_2168	14.11	22.3	794	0.18
SE_108_01	5yr7.8in	SE10801	42.47	58.5	1155	0.1
SE_109_01	5yr7.8in	IN_2155	26.41	58.8	1321	0.1
SE_110_01	5yr7.8in	IN_2438	11.79	29.1	644	0.23
SE_111_01	5yr7.8in	IN_2435	4.7	31.7	534	1.01
SE_112_01	5yr7.8in	IN_2442	4.98	26.4	667	0.61
SE_113_01	5yr7.8in	IN_2443	18.3	52.2	1058	0.6
SE_115_01	5yr7.8in	IN_2455	12.16	28.8	901	0.51
SE_115_02	5yr7.8in	SE11502	14.01	29.1	602	0.43
SE_117_01	5yr7.8in	IN_2433	3.02	24.4	363	0.2
SE_118_01	5yr7.8in	IN_2565	3.19	34.1	410	1.26
SE_119_01	5yr7.8in	IN_2319	17.95	53.2	1581	0.3
SE_120_01	5yr7.8in	IN_2568	7.58	25.7	877	0.87
SE_121_01	5yr7.8in	IN_2546	5.24	27.5	526	0.67
SE_122_01	5yr7.8in	IN_2432	4.05	25.2	386	0.56
SE_123_01	5yr7.8in	IN_2550	4.99	25.9	445	0.73
SE_124_01	5yr7.8in	IN_2545	11.59	29.5	680	0.33
SE_125_01	5yr7.8in	IN_2535	5.53	28.4	568	0.45
SE_126_01	5yr7.8in	IN_2534	5.76	47.8	646	0.56
SE_127_01	5yr7.8in	IN_2552	6.33	20.8	643	0.47
SE_128_01	5yr7.8in	IN_2537	6.35	37.7	484	0.56

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
SE_129_01	5yr7.8in	IN_2562	6	27.9	738	0.54
SE_130_01	5yr7.8in	IN_2715	20.18	60.6	928	0.58
SE_131_01	5yr7.8in	SE13101	13.18	65.7	1629	0.56
SEOUT_01	5yr7.8in	SEOUT01	33.42	25.3	1206	0.05
SMPLE_01	5yr7.8in	CS40_HW	5.33	66.7	618	0.47
SMPLE_02	5yr7.8in	SMPLE02	1.85	55.6	212	0.48
SMPLE_03	5yr7.8in	SMPLE03	1.5	54.1	185	0.44
SMPLE_04	5yr7.8in	SMPLE04	2.55	66.6	179	0.33
SMPLE_05	5yr7.8in	SMPLE05	1.61	71.8	174	0.52
SMPLE_06	5yr7.8in	SMPLE06	1.87	48.6	1198	5.23
SMPLE_07	5yr7.8in	SMPLE07	4.95	56.6	2464	4.45
SW_001_01	5yr7.8in	IN_0144	33.91	25.9	546	0.05
SW_002_01	5yr7.8in	IN_0516	52.3	14.2	1716	0.31
SW_002_02	5yr7.8in	IN_0509	38.03	14.7	1232	0.17
SW_002_03	5yr7.8in	IN_0496	31.08	11.4	1051	0.29
SW_002_04	5yr7.8in	IN_0503	34.11	8.7	1297	0.47
SW_003_01	5yr7.8in	IN_0075	6.11	13	665	0.2
SW_003_02	5yr7.8in	IN_0061	23.83	30.6	686	0.23
SW_003_03	5yr7.8in	MH_0003	21.57	16.8	692	0.3
SW_003_04	5yr7.8in	SW00304	107.6	10.5	3451	0.3
SW_004_01	5yr7.8in	IN_0492	30.89	23.5	2218	0.53
SW_005_01	5yr7.8in	SW00501	42.21	27.7	1212	0.7
SW_006_01	5yr7.8in	IN_0047	12.79	43.2	798	0.63
SW_007_01	5yr7.8in	IN_0053	11.82	54.3	828	0.39
SW_008_01	5yr7.8in	IN_0013	12.71	47.7	699	0.31
SW_009_01	5yr7.8in	IN_0008	11.88	38.7	1329	0.35
SW_010_01	5yr7.8in	IN_0020	33.41	50.2	1292	0.15
SW_011_01	5yr7.8in	IN_0003	44.89	55.9	866	0.19
SW_012_01	5yr7.8in	SW01201	23.26	31.1	476	0.13
SW_013_01	5yr7.8in	IN_0002	90.68	54.1	1620	0.08
SW_014_01	5yr7.8in	SW01401	106.69	11.6	3404	0.42
SW_014_02	5yr7.8in	SW01402	71.4	13.4	3092	0.51
SW_015_01	5yr7.8in	IN_0120	59.95	47.6	2441	0.51
SW_015_02	5yr7.8in	SW01502	41.54	17.7	1988	0.13
SW_016_01	5yr7.8in	MH_0005	53.97	21.1	680	0.19
SW_017_01	5yr7.8in	SW01701	130.3	6.6	3523	0.56
SW_018_01	5yr7.8in	IN_0029	35.79	18.6	1107	0.32
SW_019_01	5yr7.8in	IN_0077	7.46	11.1	366	0.21
SW_020_01	5yr7.8in	IN_0069	14.26	20.1	431	0.02
SW_021_01	5yr7.8in	IN_0025	13.59	24.4	617	0.2
SW_022_01	5yr7.8in	SW02201	41.3	36.9	1886	0.22
SW_023_01	5yr7.8in	SW02301	172.27	15	7895	0.49
SW_023_02	5yr7.8in	SW02302	33.95	18.5	3192	0.56
SW_024_01	5yr7.8in	SW02401	104.74	39.3	2268	0.2
SW_026_01	5yr7.8in	IN_0364	14.29	69.2	1076	0.4
SW_026_02	5yr7.8in	IN_0358	12.22	70.5	701	0.1

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
SW_027_01	5yr7.8in	IN_0351	25.01	70.8	1372	0.36
SW_027_02	5yr7.8in	IN_0329	25.93	63	1787	0.44
SW_027_03	5yr7.8in	IN_0392	12.15	54.8	641	0.3
SW_027_04	5yr7.8in	IN_0402	32.31	58.3	1314	0.53
SW_028_01	5yr7.8in	SW02801	172.92	44.4	3167	0.24
SW_028_02	5yr7.8in	SW02802	16.71	22	1366	1.11
SW_028_03	5yr7.8in	SW02803	25.5	49.9	5610	3.18
SW_029_01	5yr7.8in	MH_0118	43.6	72.3	2657	0.4
SW_029_02	5yr7.8in	IN_0827	66.54	53.9	4621	0.64
SW_029_03	5yr7.8in	IN_0815	60.25	55.7	5138	0.34
SW_029_04	5yr7.8in	MH_0132	18	36.6	770	0.08
SW_029_05	5yr7.8in	IN_0935	15.54	36.9	1165	0.47
SW_029_06	5yr7.8in	IN_0948	13.72	20.2	923	0.18
SW_029_07	5yr7.8in	IN_0961	15.75	48.4	789	0.21
SW_029_08	5yr7.8in	MH_0142	38	37.8	1005	0.18
SW_029_09	5yr7.8in	IN_1006	42.22	43.4	1697	0.15
SW_029_10	5yr7.8in	SW02910	32.84	34.6	837	0.14
SW_029_11	5yr7.8in	MH_0151	9.19	77.1	871	0.57
SW_029_12	5yr7.8in	IN_1043	29.17	71.2	1559	0.26
SW_029_13	5yr7.8in	IN_1037	51.37	55.8	3777	0.47
SW_029_14	5yr7.8in	MH_0153	11.08	78.3	796	0.22
SW_029_15	5yr7.8in	IN_1020	12.46	57.7	1313	0.16
SW_029_15_W	5yr7.8in	SW02915W	0.48	90	145	0.02
SW_029_16	5yr7.8in	IN_0382	9.96	70.3	1091	0.44
SW_029_17	5yr7.8in	IN_0384	15.07	66.9	949	0.39
SW_030_01	5yr7.8in	IN_0138	33.56	11.6	818	0.25
SW_031_01	5yr7.8in	IN_0844	27.02	25.7	1574	0.46
SW_031_02	5yr7.8in	IN_0847	17.23	34.8	1131	0.8
SW_032_01	5yr7.8in	IN_0833	13.86	28.7	688	0.28
SW_033_01	5yr7.8in	IN_0854	6.03	29.8	475	0.19
SW_034_01	5yr7.8in	IN_0856	5.97	18.8	718	0.83
SW_034_02	5yr7.8in	IN_0871	3.61	15.4	308	0.2
SW_035_01	5yr7.8in	IN_0881	24.07	25.1	1360	0.23
SW_035_02	5yr7.8in	IN_0910	10.83	21.2	1010	0.43
SW_036_01	5yr7.8in	SW03601	38.56	57.7	1314	0.19
SW_037_01	5yr7.8in	SW03701	8.57	47.1	617	0.5
SW_038_01	5yr7.8in	IN_0073	25.59	17.5	1122	0.33
SW_039_01	5yr7.8in	SW03901	53.08	23.9	1810	0.22
SW_040_01	5yr7.8in	SW04001	51.68	14.8	2309	0.32
SW_040_01_W	5yr7.8in	SW04001W	3.46	76.1	388	0.02
SW_041_01	5yr7.8in	SW04101	32.87	27	1536	0.36
SW_042_01	5yr7.8in	SW04201	12.01	32	591	0.17
SW_043_01	5yr7.8in	IN_0898	6.69	27.2	611	0.48
SW_044_01	5yr7.8in	IN_0410	27.62	51.2	3025	0.44
SW_044_01_W	5yr7.8in	SW04401W	0.67	90	170	0.02
SW_044_02	5yr7.8in	IN_1053	18.5	54.4	1329	0.22

A-6 SWMM Stormwater Model Input Parameters

Subcatchments	Raingage	Outlet	Area (AC)	% Impervious	Width	% Slope
SE_046_02	5yr7.8in	IN_0376	26.24	30.4	1574	0.15
US1_01	5yr7.8in	US101	26.15	59.3	876	0.41
WAT_01	5yr7.8in	WAT01	2.92	84.3	357	0.02
WAT_02	5yr7.8in	WAT02	38.62	98.6	1297	0.02
WAT_03	5yr7.8in	WAT03	19.75	96.7	928	0.02
WAT_04	5yr7.8in	WAT04	18.7	96.3	902	0.02
WAT_05	5yr7.8in	CS40_HW	25.16	97.8	1047	0.02
WAT_06	5yr7.8in	WAT06	170.82	62.7	1188	0.22
WAT_07	5yr7.8in	WAT07	7.31	94.6	564	0.02
WAT_08	5yr7.8in	CS8_HW	12.82	95.9	747	0.02
WAT_09	5yr7.8in	WAT09	3.75	98.7	404	0.02
I95_1EN	5yr7.8in	I951EN	12.9	38.2	1603	2.31
I95_1ES	5yr7.8in	I951ES	7.22	58.6	767	1.48
I95_1WS	5yr7.8in	I951WS	22.26	26	1958	2.21
I95_2N	5yr7.8in	I952N	41.34	36	2922	1.61
WAT_10	5yr7.8in	WAT10	15	98	500	0.02
WestC14	5yr7.8in	C14WEST	15000	39.1	2500	0.25
SouthEC14	5yr7.8in	CS37A_HW	2258	41.4	5900	0.2

Appendix A-7

SWMM Existing Conditions Stormwater Model Results

Appendix A-7-1

SWMM Existing Conditions Stormwater Model Results

Peak Discharge

APPENDIX A-7-1

Table D-2 Peak Discharge (CFS) at Outfalls for the 25-yr, 72-hr (16-in) Design Storm

Conduit	Outfall	Pipe Diameter (ft)	Maximum Flow (CFS)
IN_2640_1	OUT_0107	1.25	10.9
IN_2644_1	OUT_0316	1	12.1
IN_2713_1	OUT_0159	1.25	9.9
IN_2711_1	OUT_0149	1	16.2
IN_2706_1	OUT_0151	1	11.9
IN_2702_1	OUT_0156	1.5	14.8
IN_2706_2	OUT_0151	1.25	9.7
IN_2767_1	OUT_0160	1.25	10.6
IN_2702_2	OUT_0156	1	9.9
IN_2707_1	OUT_0155	1	18.8
IN_2714_1	OUT_0163	1	5.7
IN_2769_1	OUT_0161	1.75	22.8
IN_2771_1	OUT_0162	2.5	55.2
IN_3518_1	OUT_0293	1.5	15.9
IN_3524_1	OUT_0295	1	5.8
IN_3522_1	OUT_0294	1.25	8.5
IN_3280_1	OUT_0282	2	27.3
IN_3280_2	OUT_0282	1	4.4
IN_3284_1	OUT_0285	1.25	6.7
IN_3284_2	OUT_0285	1	3.6
IN_3285_1	OUT_0286	1	4.3
IN_3287_1	OUT_0287	1	4.6
IN_3289_1	OUT_0289	1.25	8.6
IN_3343_1	OUT_0288	1	5.2
IN_3343_2	OUT_0288	0.83	3.1
IN_3345_1	OUT_0290	1.25	8.5
IN_3349_1	OUT_0311	1	4.6
IN_3350_1	OUT_0300	1.5	13.3
IN_3353_1	OUT_0291	1.75	20.6
IN_2935_1	OUT_0216	1.25	8.9
IN_3581_1	OUT_0215	1.75	23.0
IN_3581_2	OUT_0215	1	5.0
MH_0466_1	OUT_0217	2.5	26.2
MH_0602_1	OUT_0280	3.5	103.9
IN_2911_1	OUT_0222	1	5.4
IN_2936_1	OUT_0218	1.25	10.9
IN_2893_1	OUT_0314	1.25	17.7
IN_2912_1	OUT_0221	1	5.9
IN_2912_2	OUT_0221	1.25	18.7
MH_0496_1	OUT_0223	3	57.5

Conduit	Outfall	Pipe Diameter (ft)	Maximum Flow (CFS)
IN_2874_2	OUT_0220	1	9.0
IN_2878_1	OUT_0227	1	5.7
IN_2878_2	OUT_0227	0.83	3.4
IN_2941_1	OUT_0226	1	6.6
IN_2737_1	OUT_0302	1.5	15.0
IN_2741_1	OUT_0301	1.75	20.6
IN_2937_1	OUT_0219	1.25	9.1
IN_3371_1	OUT_0279	3	71.4
IN_3534_1	OUT_0307	1.25	7.3
IN_3118_1	OUT_0278	3	83.7
MH_0623_1	OUT_0310	1.25	8.1
IN_3131_1	OUT_0277	1.25	8.2
IN_3131_2	OUT_0277	1.5	12.6
IN_2879_1	OUT_0224	0.83	8.1
IN_2879_2	OUT_0224	1	6.1
MH_0460_1	OUT_0235	1.25	9.4
IN_2949_1	OUT_0231	1	5.6
IN_2946_1	OUT_0234	1	5.6
IN_3088_1	OUT_0233	1	5.8
IN_2837_1	OUT_0236	1	7.8
IN_2834_1	OUT_0230	2	37.4
IN_3093_1	OUT_0232	1.25	9.4
IN_2963_1	OUT_0238	9	90.9
IN_3001_1	OUT_0245	9	166.8
IN_2961_1	OUT_0237	1.25	12.1
IN_3000_1	OUT_0239	1	19.1
IN_2966_1	OUT_0242	3	101.5
IN_2998_1	OUT_0243	1.5	11.1
IN_3174_1	OUT_0276	1.25	6.7
IN_3165_1	OUT_0274	1	7.8
IN_3173_1	OUT_0272	1	10.3
IN_3202_1	OUT_0267	2	15.5
IN_3190_1	OUT_0268	1.25	9.2
IN_3220_1	OUT_0269	1	5.1
IN_3003_1	OUT_0313	1.5	21.6
IN_3013_1	OUT_0244	2	32.0
IN_3052_1	OUT_0266	2.5	21.0
IN_3036_1	OUT_0246	1.25	20.4
IN_3036_2	OUT_0246	0.83	3.5
IN_3043_1	OUT_0252	2	20.4
IN_3041_1	OUT_0250	2	29.2
IN_3038_1	OUT_0247	1.25	9.0
IN_3061_1	OUT_0255	1.75	23.1
IN_3047_1	OUT_0253	1.5	15.8
IN_3050_1	OUT_0251	1.25	10.1

Conduit	Outfall	Pipe Diameter (ft)	Maximum Flow (CFS)
IN_3081_1	OUT_0254	1	5.0
IN_3079_1	OUT_0257	1.5	14.2
IN_3063_1	OUT_0256	2	26.3
MH_0491_1	OUT_0312	7	506.8
MH_0491_2	OUT_0312	1.5	13.9
IN_3073_1	OUT_0263	2	18.4
IN_3073_2	OUT_0263	1.25	6.6
IN_3078_1	OUT_0259	1.25	10.0
IN_3070_1	OUT_0261	1	4.0
IN_3082_1	OUT_0258	9	169.2
IN_0496_1	OUT_0049	4	71.4
IN_0492_1	OUT_0043	1.5	13.0
MH_0065_1	OUT_0048	4	228.1
IN_0503	OUT_0331	4	105.5
IN_3379	OUT_0283	1.5	20.4

Appendix A-7-2

SWMM Existing Conditions Stormwater Model Results

Peak Flood Stages

APPENDIX A-7-2

Table D-1: Model-Estimated Stage and Depth of Flooding per Sub-basin

Notes: 1. Model nodes are in some cases located on surficial waterbodies, and thus, showing high flood depths that do not necessarily mean road flood depths.

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
Andrews_01	IN_0468	12.8	10.6	--	10.6	--	13.2	0.4	13.1	0.3
Andrews_02	IN_0481	11.9	10.8	--	10.8	--	12.7	0.8	13.1	1.2
Andrews_03	Andrews03	12.6	12.8	0.1	12.8	0.1	12.8	0.2	13.1	0.5
Atlantic_01	Atlantic01	4.2	5.3	1.1	5.3	1.1	7.1	2.8	7.8	3.6
Atlantic_02	Atlantic02	8.8	9.1	0.3	9.1	0.3	9.1	0.3	9.2	0.4
Atlantic_03	Atlantic03	10.9	11.1	0.2	11.1	0.2	11.1	0.3	11.2	0.3
Atlantic_04	Atlantic04	7.7	4.6	--	4.6	--	7.2	--	8.3	0.6
Atlantic_05	Atlantic05	3.5	10.8	7.3	10.8	7.3	11.3	7.8	11.8	8.3
CE_001_01	IN_1582	14.5	15.7	1.2	15.7	1.2	15.8	1.3	15.8	1.3
CE_002_01	CE00201	13.4	16.1	2.7	16.1	2.7	16.3	2.9	16.4	3.0
CE_003_01	CE00301	6.5	9.7	3.2	9.7	3.2	10.7	4.2	11.8	5.3
CE_003_02	IN_1407	9.2	10.5	1.3	10.5	1.3	12.0	2.8	12.4	3.2
CE_003_03	CE00303	7.5	10.2	2.6	10.2	2.6	11.4	3.8	11.8	4.2
CE_003_04	MH_0267	10.6	10.7	0.2	10.7	0.2	11.9	1.4	12.3	1.7
CE_003_05	IN_1439	11.2	11.4	0.2	11.4	0.2	11.8	0.6	12.1	0.9
CE_003_06	IN_1575	10.3	11.3	1.0	11.3	1.0	11.9	1.6	12.1	1.8
CE_004_01	CE00401	13.6	14.2	0.7	14.2	0.7	14.5	0.9	14.6	1.0
CE_005_01	CE00501	11.2	11.5	0.3	11.5	0.3	11.7	0.5	11.7	0.5
CE_006_01	IN_1104	7.5	7.8	0.3	7.8	0.3	9.3	1.8	9.9	2.4
CE_006_02	IN_1095	7.6	8.9	1.3	8.9	1.3	9.6	2.0	10.0	2.4
CE_006_03	IN_1129	8.1	8.9	0.8	8.9	0.8	9.6	1.5	9.8	1.8
CE_006_04	IN_1137	8.2	8.9	0.7	8.9	0.7	9.6	1.4	9.9	1.7
CE_007_01	IN_1676	10.4	11.0	0.6	11.0	0.6	13.1	2.7	13.3	2.9
CE_008_01	IN_1067	7.6	8.0	0.5	8.0	0.5	8.8	1.3	9.2	1.6
CE_008_02	IN_1074	8.5	8.7	0.2	8.7	0.2	9.3	0.8	9.6	1.1
CE_008_03	MH_0170	8.9	8.9	--	8.9	--	9.6	0.7	9.8	0.9
CE_008_04	IN_1085	8.1	9.0	0.9	9.0	0.9	9.7	1.6	9.9	1.9
CE_008_05	MH_0237	9.5	9.0	--	9.0	--	9.7	0.2	9.9	0.4
CE_008_06	IN_1366	7.8	9.3	1.4	9.3	1.4	9.7	1.9	9.9	2.1
CE_008_07	MH_0251	9.9	9.1	--	9.1	--	9.9	0.1	10.1	0.2
CE_009_01	MH_0295	12.3	9.4	--	9.4	--	12.7	0.4	13.0	0.7
CE_009_02	MH_0277	12.3	12.1	--	12.1	--	12.2	--	12.3	--
CE_009_03	MH_0274	12.4	12.5	0.1	12.5	0.1	12.6	0.2	12.6	0.3
CE_010_01	IN_1276	7.5	7.8	0.3	7.8	0.3	9.3	1.8	9.9	2.4
CE_010_02	CE01002	4.8	5.5	0.7	5.5	0.7	9.1	4.3	9.8	5.0
CE_010_03	MH_0223	8.9	9.0	0.1	9.0	0.1	9.2	0.2	9.8	0.9
CE_010_04	MH_0215	8.6	8.8	0.2	8.8	0.2	9.6	1.0	9.9	1.3
CE_010_05	IN_1215	7.1	8.6	1.5	8.6	1.5	9.6	2.5	9.9	2.8
CE_010_06	IN_1164	8.8	8.9	0.2	8.9	0.2	9.6	0.8	9.9	1.1
CE_010_07	IN_1154	7.0	8.9	1.8	8.9	1.8	9.6	2.5	9.9	2.8
CE_010_08	IN_1143	11.7	11.7	--	11.7	--	11.8	0.1	11.8	0.1
CE_011_01	CE01101	15.6	16.8	1.3	16.8	1.3	17.0	1.4	17.1	1.5
CE_012_01	CE01201	7.5	9.4	1.9	9.4	1.9	9.5	2.0	9.6	2.1
CE_013_01	CE01301	2.3	8.0	5.7	8.0	5.7	8.6	6.4	8.9	6.6
CE_014_01	CE01401	7.9	5.7	--	5.7	--	8.7	0.8	8.9	1.1
CE_015_01	CE01501	13.7	15.9	2.2	15.9	2.2	16.2	2.5	16.4	2.6
CE_016_01	CE01601	12.0	13.3	1.3	13.3	1.3	13.6	1.6	13.8	1.7
CE_017_01	CE01701	9.5	10.3	0.8	10.3	0.8	13.1	3.6	13.3	3.8
CE_017_01_W	CE01701W	6.7	10.0	3.3	10.0	3.3	13.1	6.4	13.3	6.6
CE_017_02	IN_3846	13.6	14.3	0.6	14.3	0.6	14.7	1.0	14.7	1.1
CE_017_03	IN_3839	18.1	18.1	--	18.1	--	18.4	0.3	18.5	0.4
CE_017_04	IN_3868	21.0	21.1	0.1	21.1	0.1	21.5	0.5	21.7	0.7
CE_017_05	IN_3802	19.8	18.0	--	18.0	--	19.8	--	19.9	0.1
CE_017_06	MH_1148	20.8	17.8	--	17.8	--	19.6	--	19.8	--
CE_017_07	IN_4115	18.7	17.4	--	17.4	--	17.7	--	17.8	--
CE_017_08	MH_1149	19.7	17.8	--	17.8	--	19.5	--	19.7	--
CE_017_09	CE01709	14.8	17.1	2.3	17.1	2.3	17.7	2.9	17.8	3.0
CE_017_10	IN_4165	16.7	17.1	0.4	17.1	0.4	17.3	0.6	17.8	1.1
CE_018_01	IN_1840	4.7	8.0	3.3	8.0	3.3	8.6	3.9	8.7	4.0

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
CE_019_01	IN_1816	6.4	8.3	2.0	8.3	2.0	8.4	2.1	8.5	2.1
CE_019_02	CE01902	3.8	10.2	6.4	10.2	6.4	10.3	6.5	10.4	6.6
CE_020_01	MH_0210	13.8	14.0	0.2	14.0	0.2	14.3	0.5	14.4	0.6
CE_020_02	MH_0308	12.1	12.2	0.1	12.2	0.1	12.3	0.2	12.4	0.3
CE_020_03	MH_0205	14.7	15.0	0.3	15.0	0.3	15.3	0.6	15.4	0.7
CE_021_01	IN_3073	6.3	5.1	--	5.1	--	5.2	--	5.2	--
CE_022_01	IN_3078	3.8	5.0	1.2	5.0	1.2	5.2	1.3	5.2	1.4
CE_023_01	IN_3082	4.0	2.4	--	2.4	--	3.2	--	3.8	--
CE_024_01	MH_0491	6.1	3.3	--	3.3	--	5.1	--	5.2	--
CE_024_02	MH_1045	8.5	9.8	1.3	9.8	1.3	10.6	2.0	10.8	2.3
CE_024_03	MH_1041	9.8	10.0	0.2	10.0	0.2	10.6	0.9	10.8	1.0
CE_025_01	IN_3070	5.6	4.9	--	4.9	--	4.9	--	5.0	--
CE_026_01	IN_3063	5.0	3.7	--	3.7	--	4.9	--	5.0	--
CE_027_01	IN_3079	3.9	4.1	0.2	4.1	0.2	4.3	0.4	4.5	0.5
CE_028_01	IN_3081	3.7	3.8	0.1	3.8	0.1	3.9	0.2	4.0	0.3
CE_029_01	IN_3047	3.3	3.8	0.4	3.8	0.4	4.3	1.0	4.5	1.2
CE_030_01	IN_3050	3.3	3.4	0.1	3.4	0.1	4.3	1.0	4.5	1.1
CE_031_01	IN_3061	4.0	4.2	0.2	4.2	0.2	4.9	0.9	5.1	1.1
CE_032_01	IN_3043	4.8	5.0	0.2	5.0	0.2	5.1	0.4	5.2	0.4
CE_033_01	IN_3041	3.8	2.4	--	2.4	--	4.0	0.2	4.4	0.5
CE_034_01	IN_3038	4.8	5.0	0.2	5.0	0.2	5.1	0.2	5.1	0.3
CE_035_01	IN_3036	3.7	3.2	--	3.2	--	4.4	0.7	4.7	1.0
CE_036_01	IN_3052	6.2	5.3	--	5.3	--	5.5	--	5.6	--
CE_037_01	MH_0484	3.7	4.8	1.0	4.8	1.0	5.3	1.5	5.4	1.6
CE_038_01	IN_3013	2.4	4.2	1.8	4.2	1.8	5.1	2.6	5.2	2.7
CE_039_01	IN_3003	0.6	2.4	1.8	2.4	1.8	3.3	2.7	3.6	3.0
CE_040_01	IN_2971	3.2	3.8	0.6	3.8	0.6	5.3	2.1	6.2	3.0
CE_040_02	IN_2993	3.2	3.6	0.4	3.6	0.4	4.3	1.1	4.7	1.5
CE_040_03	IN_2981	7.9	7.7	--	7.7	--	7.8	--	7.9	0.1
CE_041_01	IN_3425	2.3	3.9	1.6	3.9	1.6	4.8	2.5	5.1	2.8
CE_041_02	MH_0537	7.4	7.2	--	7.2	--	7.4	0.0	7.5	0.1
CE_042_01	IN_2961	3.4	3.8	0.4	3.8	0.4	5.2	1.8	5.8	2.4
CE_042_02	MH_0471	3.2	3.9	0.7	3.9	0.7	5.3	2.1	6.0	2.8
CE_043_01	IN_3000	3.2	3.6	0.4	3.6	0.4	4.3	1.1	4.7	1.5
CE_044_01	IN_2834	2.3	3.9	1.6	3.9	1.6	5.3	2.9	6.0	3.6
CE_045_01	IN_2963	2.8	2.4	--	2.4	--	2.4	--	3.0	0.2
CE_046_01	IN_3001	2.5	2.4	--	2.4	--	2.5	--	3.5	1.1
CE_047_01	IN_3093	3.4	3.5	0.1	3.5	0.1	3.9	0.5	4.1	0.7
CE_048_01	MH_0460	4.7	5.1	0.4	5.1	0.4	5.5	0.8	5.8	1.1
CE_049_01	IN_2837	2.3	3.1	0.8	3.1	0.8	4.1	1.8	4.3	2.1
CE_050_01	IN_2949	1.8	3.0	1.2	3.0	1.2	4.0	2.2	4.3	2.5
CE_051_01	IN_2946	2.5	3.0	0.5	3.0	0.5	4.0	1.5	4.3	1.8
CE_052_01	IN_3088	2.7	3.0	0.3	3.0	0.3	4.1	1.4	4.3	1.6
CE_053_01	IN_2871	5.2	5.3	0.1	5.3	0.1	6.0	0.8	6.2	1.0
CE_053_02	IN_2850	4.5	5.6	1.1	5.6	1.1	6.8	2.3	7.2	2.7
CE_053_03	IN_2842	4.8	5.6	0.8	5.6	0.8	6.3	1.5	6.5	1.7
CE_053_04	MH_0463	5.1	5.4	0.3	5.4	0.3	6.0	0.9	6.2	1.1
CE_054_01	IN_2879	2.1	3.1	0.9	3.1	0.9	5.1	3.0	5.4	3.3
CE_055_01	IN_2941	2.4	3.1	0.7	3.1	0.7	5.1	2.7	5.4	3.0
CE_056_01	IN_2878	3.5	3.7	0.2	3.7	0.2	4.3	0.8	4.5	1.0
CE_057_01	IN_2937	3.2	3.7	0.5	3.7	0.5	4.9	1.7	5.1	1.9
CE_058_01	CE05801	3.2	4.5	1.3	4.5	1.3	5.5	2.2	5.8	2.5
CE_059_01	IN_2912	3.5	3.4	--	3.4	--	4.5	1.0	4.7	1.2
CE_060_01	IN_2911	4.4	4.7	0.3	4.7	0.3	5.1	0.7	5.2	0.8
CE_061_01	IN_2893	5.1	5.1	--	5.1	--	5.2	0.1	5.3	0.1
CE_061_02	IN_2904	5.9	6.8	0.9	6.8	0.9	7.0	1.1	7.2	1.3
CE_061_03	CE06103	4.0	5.3	1.2	5.3	1.2	5.5	1.4	5.6	1.5
CE_062_01	MH_0466	6.4	5.2	--	5.2	--	5.4	--	5.4	--
CE_063_01	IN_3581	3.0	3.4	0.4	3.4	0.4	4.4	1.4	5.0	2.0
CE_064_01	IN_2935	3.4	3.6	0.2	3.6	0.2	4.4	1.0	4.8	1.4
CE_065_01	IN_3220	2.7	2.9	0.2	2.9	0.2	3.6	0.8	3.7	1.0
CE_066_01	IN_3229	1.3	2.6	1.3	2.6	1.3	3.6	2.3	3.7	2.4
CE_067_01	IN_3190	3.1	2.7	--	2.7	--	3.4	0.3	3.5	0.5
CE_068_01	IN_3202	3.2	2.6	--	2.6	--	3.6	0.4	3.7	0.5

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
CE_069_01	IN_3173	2.0	2.4	0.4	2.4	0.4	2.8	0.9	3.0	1.1
CE_070_01	IN_3165	1.0	2.4	1.4	2.4	1.4	2.9	1.8	3.1	2.0
CE_071_01	IN_3174	1.9	2.4	0.5	2.4	0.5	2.8	0.9	3.0	1.1
CE_072_01	IN_1578	11.6	11.9	0.3	11.9	0.3	13.0	1.4	14.0	2.4
CE_072_02	IN_1592	12.7	13.3	0.5	13.3	0.5	14.1	1.4	14.3	1.6
CE_072_03	CE07203	15.6	14.9	--	14.9	--	15.6	0.0	15.8	0.2
CE_072_04	IN_1599	13.5	14.0	0.5	14.0	0.5	14.3	0.8	14.5	1.0
CE_073_01	IN_3131	1.9	3.3	1.4	3.3	1.4	4.1	2.1	4.3	2.4
CE_074_01	IN_3251	9.0	9.1	0.1	9.1	0.1	9.4	0.4	9.5	0.4
CE_075_01	MH_0623	2.6	3.3	0.7	3.3	0.7	4.1	1.5	4.3	1.7
CE_076_01	IN_3116	3.1	3.3	0.2	3.3	0.2	4.0	0.9	4.3	1.2
CE_077_01	IN_3402	9.2	9.3	0.0	9.3	0.0	9.4	0.2	9.4	0.2
CE_078_01	IN_3102	2.8	3.2	0.4	3.2	0.4	3.7	0.9	4.0	1.2
CE_078_02	IN_3534	3.5	3.3	--	3.3	--	3.7	0.2	4.0	0.5
CE_078_03	MH_0501	3.5	3.6	0.1	3.6	0.1	4.0	0.5	4.2	0.7
CE_079_01	MH_0606	2.1	2.4	0.3	2.4	0.3	3.5	1.4	3.9	1.8
CE_080_01	MH_0602	3.3	2.4	--	2.4	--	3.6	0.3	4.0	0.7
CE_080_02	IN_3408	4.9	5.0	0.0	5.0	0.0	5.5	0.6	5.6	0.6
CE_080_03	MH_0522	4.0	5.1	1.1	5.1	1.1	5.5	1.5	5.6	1.6
CE_081_01	MH_0531	4.2	3.7	--	3.7	--	4.3	0.2	4.9	0.7
CE_081_02	IN_3410	5.2	5.6	0.5	5.6	0.5	5.8	0.7	6.0	0.8
CE_081_03	IN_3433	5.0	4.5	--	4.5	--	4.6	--	4.6	--
CE_082_01	IN_3126	2.5	3.3	0.9	3.3	0.9	4.1	1.6	4.3	1.8
CE_083_01	IN_1419	7.9	10.6	2.8	10.6	2.8	11.0	3.2	11.3	3.5
CE_083_02	IN_1516	10.5	11.2	0.6	11.2	0.6	11.3	0.8	11.4	0.8
CE_084_01	IN_2936	2.8	4.1	1.3	4.1	1.3	5.0	2.2	5.2	2.4
CE_085_01	MH_0538	3.8	2.5	--	2.5	--	4.0	0.2	4.3	0.5
CE_085_02	MH_0540	2.8	2.7	--	2.7	--	3.4	0.5	3.5	0.7
CE_085_03	IN_3255	1.9	2.7	0.8	2.7	0.8	3.4	1.6	3.6	1.8
CE_086_01	IN_2998	3.5	3.6	0.0	3.6	0.0	4.3	0.7	4.7	1.1
CE_087_01	IN_1586	9.8	11.1	1.2	11.1	1.2	13.5	3.7	14.1	4.3
CE_088_01	MH_0299	11.7	11.9	0.3	11.9	0.3	12.9	1.2	13.2	1.5
CE_088_02	MH_0298	12.0	12.2	0.1	12.2	0.1	12.9	0.8	13.2	1.1
CE_089_01	IN_1242	7.2	8.8	1.6	8.8	1.6	9.4	2.3	9.8	2.6
CEOUT_01	CEOUT01	4.6	5.4	0.9	5.4	0.9	5.5	1.0	5.6	1.0
Copans_01	MH_1114	12.9	12.6	--	12.6	--	12.7	--	12.8	--
Copans_02	MH_1064	13.3	13.3	0.0	13.3	0.0	13.4	0.1	13.4	0.1
Copans_03	IN_0485	12.4	10.3	--	10.3	--	12.5	0.1	12.7	0.3
CW_001_01	CW00101	8.9	11.7	2.8	11.7	2.8	11.9	3.0	12.0	3.1
CW_002_01	IN_1614	9.2	10.3	1.1	10.3	1.1	12.1	2.9	12.4	3.2
CW_002_02	IN_1618	10.7	11.3	0.6	11.3	0.6	12.1	1.4	12.4	1.7
CW_003_01	CW00301	8.2	12.0	3.8	12.0	3.8	12.4	4.2	12.7	4.5
CW_003_02	CW00302	9.4	12.2	2.8	12.2	2.8	12.6	3.2	12.7	3.3
CW_004_01	CW00401	5.0	12.2	7.2	12.2	7.2	12.6	7.5	12.6	7.6
CW_004_02	CW00402	5.7	11.4	5.7	11.4	5.7	12.3	6.5	12.5	6.8
CW_004_03	MH_0016	11.1	11.6	0.4	11.6	0.4	12.6	1.4	12.5	1.3
CW_005_01	IN_0240	10.2	10.4	0.2	10.4	0.2	12.1	2.0	12.4	2.3
CW_005_02	CW00502	8.0	10.6	2.5	10.6	2.5	12.6	4.5	12.4	4.4
CW_006_01	IN_4480	11.1	10.7	--	10.7	--	12.1	1.0	12.5	1.3
CW_007_01	CW00701	6.8	10.2	3.4	10.2	3.4	12.0	5.2	12.4	5.6
CW_008_01	IN_1628	6.8	10.4	3.6	10.4	3.6	12.1	5.3	12.9	6.1
CW_008_02	CW00802	4.8	10.1	5.2	10.1	5.2	12.1	7.3	12.9	8.1
CW_008_03	IN_1513	6.6	10.6	3.9	10.6	3.9	12.1	5.5	12.9	6.3
CW_009_01	IN_0254	6.9	11.4	4.5	11.4	4.5	12.1	5.2	12.5	5.6
CW_010_01	CW01001	8.9	10.8	1.9	10.8	1.9	12.4	3.5	12.7	3.7
CW_011_01	CW01101	5.0	10.9	5.9	10.9	5.9	12.1	7.1	12.5	7.5
CW_012_01	CW01201	4.2	10.6	6.4	10.6	6.4	11.3	7.1	11.8	7.6
CW_013_01	CW01301	9.2	11.2	1.9	11.2	1.9	11.8	2.5	12.2	3.0
CW_014_01	IN_0273	11.6	11.4	--	11.4	--	11.9	0.3	12.2	0.6
CW_014_02	IN_0268	11.1	11.5	0.4	11.5	0.4	11.9	0.9	12.3	1.2
CW_015_01	IN_0585	9.4	11.2	1.8	11.2	1.8	12.3	2.9	12.3	2.9
CW_016_01	IN_0588	9.6	11.2	1.6	11.2	1.6	12.3	2.7	12.4	2.8
CW_017_01	CW01701	5.5	12.1	6.6	12.1	6.6	12.4	6.9	12.5	6.9
CW_017_02	MH_0634	10.6	12.2	1.6	12.2	1.6	12.4	1.8	12.4	1.8

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
CW_017_03	CW01703	5.4	10.6	5.2	10.6	5.2	12.0	6.6	11.8	6.3
CW_017_04	MH_0114	10.3	10.6	0.3	10.6	0.3	11.5	1.2	11.5	1.2
CW_017_05	IN_0638	11.0	11.6	0.6	11.6	0.6	11.9	0.9	12.5	1.5
CW_017_06	MH_0032	11.1	11.4	0.4	11.4	0.4	12.1	1.0	12.5	1.5
CW_018_01	IN_0193	11.1	11.4	0.3	11.4	0.3	12.4	1.3	12.7	1.5
CW_018_02	IN_0191	11.1	11.8	0.7	11.8	0.7	12.4	1.3	12.7	1.6
CW_019_01	MH_0030	11.1	10.7	--	10.7	--	12.4	1.3	12.7	1.5
CW_019_02	IN_0197	11.4	11.7	0.3	11.7	0.3	12.4	1.0	12.7	1.2
CW_020_01	CW02001	8.2	11.5	3.3	11.5	3.3	12.1	3.9	12.8	4.6
CW_021_01	CW02101	7.0	9.5	2.5	9.5	2.5	9.8	2.8	10.2	3.1
CW_022_01	IN_1288	8.5	8.9	0.4	8.9	0.4	9.4	0.9	10.1	1.6
CW_022_02	IN_1351	10.9	9.8	--	9.8	--	9.9	--	10.2	--
CW_023_01	CW02301	6.4	10.4	4.0	10.4	4.0	11.4	5.0	11.8	5.4
CW_024_01	CW02401	7.6	9.2	1.6	9.2	1.6	11.3	3.7	11.8	4.2
CW_025_01	IN_0581	10.2	11.2	1.0	11.2	1.0	12.0	1.8	12.3	2.1
CW_026_01	MH_0104	9.6	11.2	1.6	11.2	1.6	12.0	2.4	12.3	2.7
CW_026_02	MH_0100	10.4	11.2	0.7	11.2	0.7	12.0	1.5	12.3	1.8
CW_027_01	CW02701	8.4	9.7	1.3	9.7	1.3	12.4	4.0	12.5	4.0
CW_028_01	MH_0040	12.0	7.7	--	7.7	--	9.2	--	10.0	--
CW_028_02	IN_0681	12.1	9.1	--	9.1	--	10.4	--	11.0	--
CW_028_03	IN_0597	13.9	9.6	--	9.6	--	10.9	--	11.3	--
CW_028_04	MH_0083	10.4	10.5	0.1	10.5	0.1	11.4	1.0	11.5	1.1
CW_029_01	CW02901	4.6	10.5	5.9	10.5	5.9	11.4	6.8	11.5	6.9
CW_030_01	IN_0749	9.4	10.5	1.1	10.5	1.1	11.4	2.0	11.5	2.1
CW_031_01	CW03101	7.6	10.5	2.9	10.5	2.9	11.5	3.9	11.6	4.0
CW_033_01	CW03301	7.1	8.8	1.6	8.8	1.6	9.9	2.8	10.1	3.0
CW_034_01	CW03401	2.3	7.4	5.1	7.4	5.1	11.3	9.1	11.8	9.6
CW_036_01	IN_0284	8.3	11.6	3.3	11.6	3.3	11.9	3.6	12.0	3.7
CW_036_02	CW03602	9.9	11.6	1.7	11.6	1.7	11.8	1.9	11.9	2.0
CW_037_01	IN_0159	8.7	11.8	3.1	11.8	3.1	12.5	3.9	12.7	4.0
CW_038_01	MH_0029	11.9	11.7	--	11.7	--	11.9	0.0	12.0	0.1
CW_038_02	IN_0654	10.8	11.6	0.8	11.6	0.8	11.8	1.0	11.9	1.1
CW_038_03	MH_0093	11.2	11.2	0.0	11.2	0.0	11.9	0.7	12.2	1.1
CW_038_04	IN_0575	10.9	11.2	0.3	11.2	0.3	11.7	0.8	12.2	1.4
CW_038_05	CW03805	8.4	11.2	2.8	11.2	2.8	12.0	3.5	12.2	3.8
CW_039_01	IN_0311	8.9	10.6	1.7	10.6	1.7	11.2	2.3	11.4	2.5
CW_039_02	IN_0315	9.5	10.6	1.1	10.6	1.1	11.2	1.8	11.4	2.0
CW_040_01	IN_0304	9.2	10.6	1.4	10.6	1.4	11.2	2.0	11.5	2.2
CW_041_01	MH_0010	11.3	11.2	--	11.2	--	12.4	1.1	12.7	1.4
CW_042_01	IN_0176	12.4	12.5	0.1	12.5	0.1	12.6	0.2	12.6	0.2
CW_042_02	MH_0007	12.1	12.2	0.1	12.2	0.1	12.4	0.3	12.5	0.4
CW_042_03	IN_0168	12.6	12.8	0.2	12.8	0.2	12.9	0.3	13.0	0.4
CW_042_04	MH_0006	11.2	12.5	1.2	12.5	1.2	12.8	1.6	12.9	1.7
CW_042_05	IN_0185	12.1	12.5	0.4	12.5	0.4	12.8	0.7	13.7	1.6
CW_042_06	CW04206	10.7	10.6	--	10.6	--	12.4	1.8	12.5	1.8
CW_043_01	IN_1723	11.5	11.8	0.2	11.8	0.2	12.1	0.6	12.4	0.9
CW_043_02	IN_1721	11.2	11.8	0.6	11.8	0.6	12.2	1.0	12.4	1.2
CW_044_01	IN_1500	10.4	10.5	0.1	10.5	0.1	12.1	1.7	12.4	2.0
CW_044_01_W	CW04401W	5.2	8.3	3.0	8.3	3.0	13.0	7.7	15.2	10.0
CW_045_01	CW04501	9.4	11.4	2.0	11.4	2.0	12.1	2.7	12.6	3.2
CW_046_01	CW04601	8.6	11.4	2.8	11.4	2.8	12.2	3.6	13.4	4.8
Cypress_01	MH_0398	4.0	4.3	0.2	4.3	0.2	5.0	1.0	5.3	1.2
Cypress_02	MH_0389	4.1	4.6	0.5	4.6	0.5	5.1	0.9	5.3	1.2
Cypress_03	MH_0382	5.3	2.4	--	2.4	--	4.6	--	5.0	--
Dixie_01	MH_1101	18.5	18.8	0.3	18.8	0.3	19.0	0.4	19.0	0.5
Dixie_02	MH_0366	18.5	18.9	0.4	18.9	0.4	19.1	0.6	19.2	0.7
Dixie_03	MH_0272	19.5	19.7	0.2	19.7	0.2	19.8	0.3	19.9	0.4
Dixie_04	MH_0236	17.3	17.5	0.2	17.5	0.2	18.0	0.6	18.1	0.8
Dixie_04_W	Dixie04W	12.3	17.5	5.2	17.5	5.2	18.1	5.8	18.1	5.8
Dixie_05	MH_0181	14.6	15.1	0.5	15.1	0.5	15.2	0.6	15.7	1.1
Dixie_05_W	Dixie05W	10.8	15.3	4.6	15.3	4.6	15.3	4.6	16.2	5.5
Dixie_06	MH_0200	13.6	14.0	0.4	14.0	0.4	14.0	0.4	14.1	0.5
Dixie_07	Dixie07	4.2	6.0	1.8	6.0	1.8	6.1	1.9	6.1	1.9
Dixie_08	Dixie08	4.9	6.3	1.4	6.3	1.4	6.3	1.4	6.3	1.4

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
Dixie_09	Dixie09	4.8	5.7	0.9	5.7	0.9	6.0	1.2	6.1	1.3
Dixie_10	Dixie10	4.6	5.7	1.1	5.7	1.1	6.0	1.4	6.1	1.5
Dixie_11	Dixie11	3.4	5.4	2.0	5.4	2.0	5.5	2.1	5.5	2.1
FXE1_01	FXE101	1.8	5.8	4.1	5.8	4.1	7.9	6.1	8.5	6.7
FXE1_02	FXE102	3.5	5.8	2.3	5.8	2.3	6.4	2.9	7.0	3.5
I95_1E	I951E	8.0	12.7	4.6	12.7	4.6	16.4	8.3	17.7	9.6
I95_1EN	I951EN	8.4	11.1	2.7	11.1	2.7	13.2	4.8	13.9	5.5
I95_1ES	I951ES	9.7	12.4	2.7	12.4	2.7	16.4	6.7	17.7	8.1
I95_1W	I951W	11.4	10.1	--	10.1	--	15.5	4.1	16.6	5.2
I95_1WS	I951WS	5.4	9.9	4.4	9.9	4.4	15.5	10.1	15.6	10.2
I95_2E	I952E	6.8	8.6	1.8	8.6	1.8	11.0	4.2	11.3	4.5
I95_2N	I952N	7.6	8.8	1.1	8.8	1.1	11.0	3.3	11.3	3.6
I95_2W	I952W	6.5	8.9	2.3	8.9	2.3	12.1	5.6	12.9	6.4
I95_3	I953W	6.3	7.8	1.4	7.8	1.4	9.4	3.0	10.1	3.8
I95_4	I954	4.3	8.8	4.5	8.8	4.5	9.9	5.6	10.1	5.9
I95_5	I955	4.1	4.3	0.2	4.3	0.2	7.1	3.0	8.1	3.9
I95_6	I956	4.5	5.8	1.3	5.8	1.3	6.3	1.8	6.4	1.9
I95_7	I957	2.4	4.4	2.0	4.4	2.0	5.5	3.1	5.2	2.8
NE_001_01	NE00101	7.2	8.2	1.0	8.2	1.0	8.4	1.2	8.5	1.3
NE_002_01	MH_0755	11.8	12.0	0.1	12.0	0.1	12.2	0.4	12.3	0.5
NE_003_01	MH_1034	8.5	8.9	0.4	8.9	0.4	9.2	0.7	9.5	1.1
NE_004_01	MH_1010	9.4	10.2	0.8	10.2	0.8	10.5	1.1	10.8	1.4
NE_005_01	NE00501	7.5	9.8	2.3	9.8	2.3	10.7	3.1	11.0	3.4
NE_005_02	IN_2114	8.5	9.8	1.3	9.8	1.3	10.6	2.1	10.9	2.4
NE_005_03	IN_2014	9.5	10.4	0.9	10.4	0.9	10.8	1.3	11.1	1.6
NE_005_04	IN_1888	13.3	12.6	--	12.6	--	12.9	--	13.0	--
NE_006_01	IN_3704	10.2	9.9	--	9.9	--	10.0	--	10.1	--
NE_007_01	IN_4010	11.8	12.5	0.7	12.5	0.7	13.1	1.3	13.1	1.3
NE_007_02	NE00702	11.2	12.5	1.3	12.5	1.3	12.9	1.7	12.9	1.7
NE_007_02_W	NE00702W	5.2	12.7	7.5	12.7	7.5	16.5	11.3	17.8	12.6
NE_007_03	IN_4039	11.1	12.7	1.6	12.7	1.6	13.8	2.7	13.9	2.8
NE_007_04	IN_4042	11.5	12.7	1.2	12.7	1.2	16.2	4.7	17.5	6.0
NE_007_05	IN_4059	13.5	13.9	0.4	13.9	0.4	16.2	2.7	17.7	4.2
NE_007_06	NE00706	14.3	14.1	--	14.1	--	14.4	0.1	14.5	0.2
NE_008_01	NE00801	7.0	10.8	3.8	10.8	3.8	13.8	6.8	13.9	6.8
NE_009_01	IN_2008	14.1	14.6	0.4	14.6	0.4	14.7	0.6	14.8	0.7
NE_010_01	NE01001	6.7	9.8	3.1	9.8	3.1	10.7	4.0	11.0	4.3
NE_010_02	NE01002	7.6	9.8	2.2	9.8	2.2	10.7	3.1	11.0	3.4
NE_010_03	IN_1989	7.5	9.8	2.3	9.8	2.3	10.7	3.1	11.0	3.5
NE_010_04	IN_2000	8.3	9.8	1.5	9.8	1.5	10.7	2.4	11.0	2.7
NE_011_01	NE01101	17.1	17.9	0.8	17.9	0.8	18.1	1.1	18.2	1.1
NE_012_01	MH_0732	9.7	9.6	--	9.6	--	9.9	0.2	10.0	0.3
NE_013_01	NE01301	10.7	10.7	0.0	10.7	0.0	10.9	0.2	11.0	0.3
NE_014_01	IN_3892	11.2	10.5	--	10.5	--	12.0	0.8	11.8	0.6
NE_015_01	MH_1059	11.4	12.7	1.3	12.7	1.3	13.2	1.8	13.4	1.9
NE_015_02	MH_1058	13.4	14.6	1.3	14.6	1.3	15.2	1.8	15.4	2.1
NE_015_03	IN_2084	12.3	12.8	0.5	12.8	0.5	13.2	0.9	13.4	1.1
NE_016_01	MH_0680	8.3	8.7	0.5	8.7	0.5	9.2	0.9	9.3	1.0
NE_017_01	MH_0701	8.5	7.9	--	7.9	--	8.1	--	8.1	--
NE_018_01	MH_0813	9.0	8.9	--	8.9	--	9.2	0.2	9.3	0.3
NE_019_01	MH_0716	8.0	8.7	0.7	8.7	0.7	9.0	1.0	9.1	1.1
NE_020_01	MH_0671	7.6	8.2	0.6	8.2	0.6	8.8	1.2	9.0	1.4
NE_021_01	MH_0998	9.5	10.1	0.6	10.1	0.6	10.6	1.1	10.8	1.3
NE_022_01	NE00301	-3.7	8.7	12.4	8.7	12.4	9.0	12.7	9.1	12.8
NEOUT_02	NEOUT02	14.7	15.5	0.8	15.5	0.8	15.8	1.1	15.9	1.2
NEOUT_03	NEOUT03	14.0	15.4	1.4	15.4	1.4	15.5	1.5	15.6	1.6
NEOUT_04	NEOUT04	12.4	16.1	3.7	16.1	3.7	16.8	4.5	17.0	4.6
NW_001_01	NW00101	7.3	9.4	2.0	9.4	2.0	11.8	4.4	12.5	5.2
NW_002_01	NW00201	9.7	10.7	1.0	10.7	1.0	10.7	1.0	10.8	1.1
NW_002_02	NW00202	6.1	11.6	5.5	11.6	5.5	12.4	6.3	12.5	6.4
NW_003_01	NW00301	5.9	10.1	4.2	10.1	4.2	12.4	6.5	12.6	6.7
NW_004_01	NW00401	8.3	10.9	2.6	10.9	2.6	12.4	4.1	12.6	4.3
NW_005_01	NW00501	8.5	13.1	4.6	13.1	4.6	13.9	5.4	14.1	5.6
NW_006_01	NW00601	11.0	12.6	1.6	12.6	1.6	12.8	1.8	12.9	1.9

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
NW_007_01	NW00701	9.0	11.9	2.9	11.9	2.9	12.4	3.4	12.6	3.7
NW_008_01	NW00801	11.0	12.3	1.3	12.3	1.3	12.6	1.6	13.0	2.0
NW_009_01	IN_4474	11.5	12.9	1.4	12.9	1.4	13.2	1.6	13.3	1.7
NW_010_01	NW01001	10.2	11.8	1.6	11.8	1.6	12.6	2.4	13.0	2.9
NW_011_01	CS40_HW	7.4	10.2	2.8	10.2	2.8	12.6	5.2	13.0	5.6
NW_012_01	IN_0417	12.1	12.5	0.4	12.5	0.4	12.8	0.7	13.0	0.9
NW_012_01_W	NW01201W	7.4	10.2	2.7	10.2	2.7	12.5	5.0	12.7	5.2
NW_013_01	NW01301	9.7	11.9	2.2	11.9	2.2	12.4	2.7	12.6	2.9
NW_013_02	NW01302	6.5	11.2	4.7	11.2	4.7	12.6	6.1	12.8	6.3
NW_014_01	NW01401	9.3	12.0	2.7	12.0	2.7	12.6	3.3	13.0	3.7
NW_015_01	NW01501W	7.3	11.6	4.3	11.6	4.3	12.7	5.3	13.1	5.7
NW_016_01	NW01601	9.4	11.8	2.4	11.8	2.4	12.6	3.2	12.8	3.4
NW_016_01_W	NW01601W	7.4	11.3	3.8	11.3	3.8	13.1	5.7	13.5	6.1
NW_017_01	NW01701	11.4	12.1	0.7	12.1	0.7	12.8	1.4	12.9	1.5
NW_017_01_W	NW01701W	8.1	11.0	2.9	11.0	2.9	13.0	4.8	13.3	5.2
NW_018_01	NW01801	5.6	8.3	2.6	8.3	2.6	12.7	7.1	13.8	8.1
NW_018_01_W	NW01801W	7.2	10.9	3.7	10.9	3.7	13.0	5.8	13.4	6.3
NW_018_02	NW01802	8.8	11.9	3.2	11.9	3.2	12.6	3.9	13.1	4.3
NW_018_03	NW01803	8.9	12.5	3.5	12.5	3.5	12.7	3.8	13.2	4.2
NW_018_04	NW01804	10.8	11.0	0.1	11.0	0.1	14.4	3.6	15.1	4.2
NW_018_04_W	NW01804W	7.9	11.0	3.1	11.0	3.1	16.6	8.7	16.7	8.7
NW_018_05	NW01805	7.3	11.6	4.3	11.6	4.3	12.6	5.3	13.1	5.7
NW_018_06	NW01806	9.0	11.6	2.6	11.6	2.6	12.7	3.6	13.2	4.2
NW_019_01	IN_0466	11.8	12.0	0.2	12.0	0.2	12.7	0.9	13.1	1.3
NW_020_01	NW02001	10.8	13.3	2.5	13.3	2.5	13.4	2.6	13.4	2.7
NW_021_01	NW02101	7.4	12.7	5.3	12.7	5.3	16.3	8.9	16.7	9.3
NW_022_01	NW02201	7.6	11.0	3.3	11.0	3.3	12.7	5.0	13.0	5.4
NW_026_01	NW02601	8.8	11.4	2.6	11.4	2.6	12.6	3.9	13.0	4.3
NW_028_01	IN_0436	11.7	12.0	0.3	12.0	0.3	12.5	0.8	12.6	0.9
NW_028_02	IN_0440	12.0	10.2	--	10.2	--	12.4	0.4	12.6	0.6
NW_029_01	NW02901	10.8	12.4	1.6	12.4	1.6	12.7	1.8	12.7	1.9
NW_030_01	MH_0043	11.6	11.8	0.2	11.8	0.2	12.4	0.8	12.6	1.0
NW_030_01_W	WAT23	7.5	11.5	4.0	11.5	4.0	12.4	4.9	12.6	5.1
NW_031_01	NW03101	5.5	8.3	2.8	8.3	2.8	11.7	6.1	12.2	6.7
NW_032_01	MH_1074	13.3	11.2	--	11.2	--	12.6	--	13.1	--
NW_033_01	MH_0042	12.3	10.2	--	10.2	--	12.4	0.1	12.6	0.3
NW_034_01	NW03401	9.9	11.4	1.5	11.4	1.5	12.4	2.5	12.6	2.8
NWOUT_01	NWOUT01	7.5	10.6	3.1	10.6	3.1	13.2	5.7	13.6	6.1
NWOUT_02	NWOUT02	6.7	9.3	2.5	9.3	2.5	12.1	5.3	13.1	6.3
NWOUT_03	NWOUT03	6.3	10.4	4.1	10.4	4.1	12.9	6.6	13.7	7.4
NWOUT_04	NWOUT04	11.7	16.0	4.3	16.0	4.3	17.4	5.7	18.0	6.2
Pwrlne_01	Pwrlne01	11.4	12.0	0.6	12.0	0.6	12.4	1.0	12.6	1.2
Pwrlne_02	Pwrlne02	9.8	11.8	2.0	11.8	2.0	12.6	2.8	12.8	3.0
Pwrlne_03	Pwline03	12.6	10.9	--	10.9	--	12.6	--	12.5	--
SE_001_01	IN_2542	2.7	3.8	1.1	3.8	1.1	5.0	2.3	5.2	2.5
SE_002_01	IN_2554	3.4	3.8	0.3	3.8	0.3	4.9	1.5	5.2	1.7
SE_003_01	IN_2564	3.3	3.7	0.5	3.7	0.5	5.0	1.7	5.1	1.9
SE_004_01	IN_2559	3.1	4.0	0.9	4.0	0.9	4.9	1.8	5.2	2.1
SE_005_01	IN_2603	3.5	4.0	0.5	4.0	0.5	4.8	1.4	5.0	1.6
SE_005_02	IN_2591	3.5	4.0	0.5	4.0	0.5	4.8	1.3	5.1	1.5
SE_005_03	IN_2592	4.1	4.1	--	4.1	--	4.8	0.7	5.2	1.1
SE_006_01	SE00601	3.2	4.1	0.8	4.1	0.8	5.1	1.9	5.1	1.9
SE_007_01	MH_0589	5.5	5.5	0.0	5.5	0.0	5.6	0.1	5.7	0.2
SE_009_01	IN_2737	1.9	3.5	1.7	3.5	1.7	4.4	2.5	4.7	2.9
SE_009_02	IN_2677	4.6	4.8	0.2	4.8	0.2	5.1	0.4	5.2	0.5
SE_010_01	IN_2741	2.3	3.6	1.3	3.6	1.3	4.3	2.1	4.8	2.5
SE_011_01	IN_2774	2.7	3.0	0.3	3.0	0.3	4.6	1.9	4.8	2.1
SE_012_01	IN_2714	3.0	3.8	0.8	3.8	0.8	4.8	1.8	5.0	2.1
SE_013_01	IN_2769	2.3	2.6	0.3	2.6	0.3	4.7	2.3	4.9	2.5
SE_014_01	IN_2702	2.8	2.8	--	2.8	--	4.1	1.3	4.4	1.6
SE_015_01	IN_2767	2.9	2.6	--	2.6	--	4.9	2.0	5.2	2.3
SE_016_01	IN_2711	3.1	4.1	1.1	4.1	1.1	4.9	1.9	5.1	2.0
SE_017_01	IN_2706	3.5	4.1	0.6	4.1	0.6	4.9	1.4	5.1	1.6
SE_018_01	IN_2707	2.9	2.4	--	2.4	--	4.2	1.3	4.5	1.6

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
SE_019_01	IN_2713	2.7	4.1	1.5	4.1	1.5	4.9	2.2	5.1	2.4
SE_020_01	IN_2228	5.0	5.4	0.4	5.4	0.4	5.5	0.5	5.5	0.5
SE_021_01	IN_2644	3.8	4.0	0.2	4.0	0.2	4.8	1.1	5.1	1.3
SE_022_01	IN_2640	3.5	4.1	0.6	4.1	0.6	4.8	1.3	5.1	1.6
SE_023_01	SE02301	2.5	4.1	1.6	4.1	1.6	4.8	2.4	5.1	2.6
SE_024_01	IN_3353	1.0	2.4	1.4	2.4	1.4	3.8	2.8	4.2	3.1
SE_025_01	IN_3350	2.6	2.9	0.2	2.9	0.2	3.8	1.2	4.2	1.5
SE_026_01	IN_3349	2.1	2.9	0.7	2.9	0.7	3.8	1.7	4.2	2.0
SE_027_01	IN_3343	1.5	2.9	1.4	2.9	1.4	3.8	2.4	4.2	2.7
SE_028_01	IN_3287	1.6	2.4	0.8	2.4	0.8	3.4	1.7	3.7	2.1
SE_029_01	IN_3289	1.7	2.5	0.8	2.5	0.8	3.3	1.7	3.7	2.0
SE_030_01	MH_0558	6.3	6.2	--	6.2	--	6.3	--	6.3	--
SE_031_01	SE03101	-0.5	4.6	5.0	4.6	5.0	5.1	5.6	5.4	5.8
SE_032_01	IN_3285	1.7	2.4	0.7	2.4	0.7	3.3	1.7	3.7	2.0
SE_033_01	IN_3284	1.5	2.4	0.9	2.4	0.9	3.3	1.7	3.6	2.1
SE_034_01	IN_3280	1.3	2.4	1.1	2.4	1.1	3.3	2.0	3.6	2.4
SE_035_01	SE03501	6.1	6.4	0.3	6.4	0.3	6.7	0.6	6.7	0.7
SE_036_01	IN_3518	1.8	2.8	1.0	2.8	1.0	3.9	2.1	4.2	2.4
SE_037_01	IN_3522	3.1	2.8	--	2.8	--	3.9	0.8	4.2	1.1
SE_038_01	IN_3524	1.8	2.8	1.0	2.8	1.0	3.9	2.1	4.2	2.4
SE_039_01	IN_3379	2.1	2.4	0.3	2.4	0.3	3.3	1.2	3.6	1.5
SE_040_01	SE04001	3.4	5.0	1.6	5.0	1.6	5.2	1.9	5.3	1.9
SE_041_01	IN_3345	1.9	2.9	0.9	2.9	0.9	3.8	1.9	4.2	2.3
SE_042_01	MH_0647	3.7	4.6	0.9	4.6	0.9	5.2	1.5	5.4	1.8
SE_043_01	MH_0372	4.7	4.9	0.2	4.9	0.2	5.1	0.4	5.2	0.5
SE_043_02	IN_2171	3.5	4.8	1.3	4.8	1.3	5.1	1.5	5.2	1.6
SE_043_03	MH_0373	5.0	5.1	0.1	5.1	0.1	5.2	0.2	5.3	0.3
SE_043_04	MH_0378	4.7	4.9	0.2	4.9	0.2	5.0	0.4	5.2	0.5
SE_043_05	MH_0379	4.6	4.8	0.2	4.8	0.2	5.0	0.4	5.1	0.5
SE_044_01	IN_2121	2.7	4.4	1.6	4.4	1.6	4.8	2.1	5.0	2.3
SE_045_01	IN_2122	3.6	4.3	0.7	4.3	0.7	4.8	1.1	5.0	1.4
SE_046_01	IN_0370	5.2	5.1	--	5.1	--	7.1	1.9	8.0	2.8
SE_046_02	IN_0376	4.0	5.5	1.5	5.5	1.5	6.9	2.9	7.8	3.8
SE_046_03	IN_2330	3.4	5.5	2.1	5.5	2.1	7.4	4.0	9.0	5.6
SE_047_01	IN_2344	5.5	5.3	--	5.3	--	7.0	1.5	8.3	2.7
SE_048_01	IN_2138	2.6	3.0	0.4	3.0	0.4	4.2	1.6	4.8	2.2
SE_049_01	IN_2140	3.1	4.3	1.2	4.3	1.2	4.8	1.6	5.0	1.9
SE_050_01	IN_2141	2.8	4.3	1.6	4.3	1.6	4.8	2.0	5.0	2.2
SE_051_01	IN_2144	3.0	4.3	1.3	4.3	1.3	4.8	1.7	5.0	2.0
SE_052_01	IN_2145	3.1	4.4	1.2	4.4	1.2	4.8	1.7	5.0	1.9
SE_053_01	IN_2355	2.4	4.0	1.7	4.0	1.7	5.3	2.9	5.4	3.0
SE_054_01	IN_2352	3.8	4.2	0.4	4.2	0.4	4.8	1.0	4.9	1.1
SE_055_01	IN_2457	3.5	3.6	0.1	3.6	0.1	4.8	1.4	5.0	1.6
SE_056_01	IN_2461	3.6	3.6	0.1	3.6	0.1	4.5	0.9	4.7	1.1
SE_057_01	IN_2465	3.2	2.8	--	2.8	--	3.8	0.6	4.0	0.8
SE_058_01	IN_2346	5.3	5.6	0.3	5.6	0.3	7.0	1.8	8.3	3.1
SE_059_01	IN_2471	2.1	2.9	0.7	2.9	0.7	3.9	1.7	4.1	2.0
SE_060_01	IN_2482	2.4	3.0	0.6	3.0	0.6	3.8	1.4	4.0	1.6
SE_061_01	IN_2648	3.9	3.6	--	3.6	--	3.8	--	4.1	0.2
SE_061_02	IN_1774	10.5	10.7	0.2	10.7	0.2	11.0	0.5	11.0	0.6
SE_061_03	IN_1785	6.0	7.2	1.3	7.2	1.3	7.7	1.8	7.9	2.0
SE_061_04	IN_1784	6.4	6.8	0.5	6.8	0.5	7.1	0.7	7.3	0.9
SE_061_05	MH_0318	10.3	10.4	0.1	10.4	0.1	10.5	0.2	10.6	0.3
SE_061_06	IN_1744	12.2	13.3	1.1	13.3	1.1	13.7	1.5	13.8	1.7
SE_062_01	IN_2473	1.8	2.8	1.0	2.8	1.0	4.2	2.4	4.4	2.6
SE_063_01	IN_2475	2.3	2.4	0.1	2.4	0.1	4.2	1.9	4.6	2.3
SE_064_01	IN_2489	2.5	2.9	0.4	2.9	0.4	3.8	1.3	4.0	1.5
SE_065_01	IN_2488	1.5	3.0	1.5	3.0	1.5	3.8	2.2	4.0	2.5
SE_066_01	IN_2485	1.7	3.1	1.4	3.1	1.4	3.8	2.1	4.1	2.4
SE_067_01	IN_2652	3.7	3.7	0.0	3.7	0.0	4.0	0.3	4.4	0.7
SE_068_01	IN_2651	2.3	2.9	0.6	2.9	0.6	4.0	1.7	4.3	2.1
SE_069_01	IN_2681	3.5	3.5	--	3.5	--	4.0	0.5	4.4	0.8
SE_070_01	IN_2653	2.2	2.7	0.4	2.7	0.4	4.0	1.8	4.4	2.1
SE_071_01	SE07101	3.4	3.7	0.3	3.7	0.3	4.0	0.5	4.2	0.8

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
SE_072_01	MH_0407	3.5	2.4	--	2.4	--	4.7	1.2	5.1	1.5
SE_072_02	MH_0396	4.3	5.0	0.7	5.0	0.7	5.3	1.0	5.5	1.2
SE_072_02_W	SE07202W	0.6	5.1	4.4	5.1	4.4	5.3	4.7	5.5	4.9
SE_072_03	MH_0396	4.3	5.0	0.7	5.0	0.7	5.3	1.0	5.5	1.2
SE_072_04	IN_2291	4.9	5.0	0.2	5.0	0.2	5.3	0.5	5.5	0.7
SE_072_04_W	SE07204W	0.8	3.2	2.5	3.2	2.5	5.3	4.5	5.6	4.8
SE_072_05	IN_2304	5.3	5.4	0.0	5.4	0.0	5.6	0.3	5.7	0.4
SE_073_01	IN_2370	4.8	4.5	--	4.5	--	4.7	--	5.1	0.2
SE_074_01	IN_2365	4.6	4.6	0.0	4.6	0.0	4.8	0.2	5.1	0.5
SE_075_01	IN_2360	4.0	3.7	--	3.7	--	4.7	0.7	5.1	1.1
SE_076_01	IN_2358	3.6	3.7	0.1	3.7	0.1	4.7	1.1	5.1	1.5
SE_077_01	IN_2380	3.5	3.7	0.3	3.7	0.3	4.8	1.3	5.1	1.6
SE_077_02	IN_2384	3.5	3.7	0.2	3.7	0.2	4.7	1.2	5.1	1.6
SE_078_01	IN_2375	2.8	2.9	0.1	2.9	0.1	4.7	1.9	5.0	2.2
SE_078_02	IN_2373	4.0	3.6	--	3.6	--	4.8	0.8	5.1	1.1
SE_079_01	IN_2402	4.4	3.5	--	3.5	--	4.7	0.4	5.1	0.7
SE_080_01	IN_2385	3.7	4.3	0.6	4.3	0.6	4.7	1.0	5.2	1.5
SE_080_02	IN_2379	3.7	3.6	--	3.6	--	4.7	1.0	5.1	1.3
SE_081_01	IN_2389	3.6	4.3	0.7	4.3	0.7	4.7	1.2	5.2	1.6
SE_082_01	IN_2396	4.0	4.2	0.2	4.2	0.2	4.7	0.7	5.0	1.0
SE_083_01	IN_2356	3.5	3.6	0.1	3.6	0.1	4.7	1.2	5.0	1.5
SE_084_01	IN_2398	4.0	4.2	0.2	4.2	0.2	4.7	0.8	5.0	1.0
SE_085_01	IN_2497	3.8	4.0	0.2	4.0	0.2	4.4	0.6	4.5	0.7
SE_086_01	IN_2502	3.4	3.6	0.2	3.6	0.2	4.5	1.1	4.5	1.1
SE_087_01	IN_2499	3.9	3.9	0.0	3.9	0.0	4.2	0.3	4.3	0.4
SE_088_01	IN_2503	3.4	3.4	0.1	3.4	0.1	3.5	0.2	3.6	0.2
SE_089_01	IN_2505	3.2	3.2	0.0	3.2	0.0	3.4	0.2	3.4	0.2
SE_090_01	IN_2507	3.1	3.2	0.0	3.2	0.0	3.4	0.2	3.5	0.3
SE_091_01	IN_2517	2.9	3.6	0.7	3.6	0.7	4.4	1.4	4.4	1.5
SE_092_01	IN_2782	3.6	4.3	0.6	4.3	0.6	4.7	1.1	5.2	1.5
SE_093_01	IN_2416	3.1	4.2	1.1	4.2	1.1	4.7	1.6	5.2	2.0
SE_094_01	IN_2418	3.7	4.2	0.6	4.2	0.6	4.7	1.1	5.2	1.5
SE_095_01	IN_2406	3.9	4.1	0.1	4.1	0.1	4.2	0.3	4.4	0.4
SE_096_01	IN_2414	3.5	3.6	0.1	3.6	0.1	3.7	0.2	4.0	0.5
SE_097_01	SE09701	3.5	5.7	2.2	5.7	2.2	6.0	2.5	6.1	2.6
SE_098_01	IN_2408	3.7	3.8	0.1	3.8	0.1	4.0	0.3	4.1	0.4
SE_099_01	IN_2428	4.0	4.2	0.1	4.2	0.1	4.3	0.3	4.4	0.4
SE_100_01	IN_2412	3.6	4.0	0.4	4.0	0.4	4.3	0.7	4.4	0.8
SE_101_01	IN_2529	4.4	3.5	--	3.5	--	4.6	0.2	4.9	0.5
SE_102_01	IN_2527	3.6	3.9	0.3	3.9	0.3	4.2	0.6	4.3	0.7
SE_103_01	IN_2426	3.5	4.0	0.4	4.0	0.4	4.4	0.9	4.6	1.0
SE_104_01	IN_2422	3.0	4.0	0.9	4.0	0.9	4.4	1.3	4.6	1.5
SE_105_01	IN_2420	3.7	2.4	--	2.4	--	3.2	--	3.9	0.3
SE_106_01	IN_3513	3.3	4.0	0.7	4.0	0.7	4.5	1.2	4.6	1.3
SE_107_01	IN_2134	4.1	4.3	0.2	4.3	0.2	4.8	0.6	5.0	0.9
SE_107_02	IN_2163	3.9	4.6	0.7	4.6	0.7	5.3	1.5	5.5	1.6
SE_107_03	IN_2166	3.7	4.8	1.1	4.8	1.1	5.0	1.4	5.2	1.5
SE_107_04	IN_2168	3.9	4.8	0.9	4.8	0.9	5.0	1.1	5.1	1.2
SE_108_01	SE10801	0.6	4.4	3.8	4.4	3.8	5.4	4.8	5.2	4.6
SE_109_01	IN_2155	4.2	4.6	0.4	4.6	0.4	4.9	0.7	5.1	0.8
SE_110_01	IN_2438	3.3	4.0	0.7	4.0	0.7	4.5	1.1	4.6	1.3
SE_111_01	IN_2435	5.2	2.7	--	2.7	--	3.9	--	4.5	--
SE_112_01	IN_2442	4.0	2.4	--	2.4	--	3.6	--	4.2	0.3
SE_113_01	IN_2443	3.1	3.3	0.3	3.3	0.3	3.5	0.5	4.2	1.1
SE_115_01	IN_2455	3.9	4.6	0.7	4.6	0.7	5.1	1.2	5.1	1.3
SE_115_02	SE11502	3.9	4.6	0.7	4.6	0.7	5.1	1.1	5.1	1.2
SE_117_01	IN_2433	4.8	4.8	0.0	4.8	0.0	4.9	0.1	5.0	0.3
SE_118_01	IN_2565	3.6	4.0	0.4	4.0	0.4	4.9	1.2	5.1	1.5
SE_119_01	IN_2319	4.3	5.5	1.2	5.5	1.2	5.9	1.6	6.0	1.8
SE_120_01	IN_2568	4.0	4.1	0.1	4.1	0.1	4.4	0.4	5.2	1.2
SE_121_01	IN_2546	3.9	3.9	0.1	3.9	0.1	4.8	0.9	5.0	1.1
SE_122_01	IN_2432	4.2	4.2	0.1	4.2	0.1	4.9	0.7	5.1	0.9
SE_123_01	IN_2550	3.4	2.4	--	2.4	--	4.9	1.4	5.1	1.6
SE_124_01	IN_2545	3.0	3.9	0.8	3.9	0.8	4.3	1.3	4.6	1.5

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
SE_125_01	IN_2535	3.5	3.5	0.1	3.5	0.1	4.4	0.9	4.6	1.1
SE_126_01	IN_2534	3.0	2.8	--	2.8	--	4.4	1.4	4.7	1.7
SE_127_01	IN_2552	3.8	2.4	--	2.4	--	4.6	0.8	5.0	1.1
SE_128_01	IN_2537	2.7	3.6	0.9	3.6	0.9	4.6	2.0	5.0	2.3
SE_129_01	IN_2562	3.1	3.9	0.7	3.9	0.7	5.0	1.8	5.1	1.9
SE_130_01	IN_2715	3.0	3.3	0.3	3.3	0.3	4.1	1.1	4.4	1.4
SE_131_01	SE13101	3.8	4.7	1.0	4.7	1.0	4.9	1.1	5.1	1.4
SEOUT_01	SEOUT01	2.7	2.8	0.1	2.8	0.1	3.9	1.1	4.2	1.5
SMPLE_01	CS40_HW	7.4	10.2	2.8	10.2	2.8	12.6	5.2	13.0	5.6
SMPLE_02	SMPLE02	12.4	13.6	1.3	13.6	1.3	13.9	1.5	14.0	1.6
SMPLE_03	SMPLE03	11.9	13.3	1.4	13.3	1.4	13.9	2.0	14.1	2.1
SMPLE_04	SMPLE04	11.5	13.1	1.6	13.1	1.6	13.9	2.4	14.1	2.6
SMPLE_05	SMPLE05	12.2	13.0	0.8	13.0	0.8	13.0	0.8	13.0	0.8
SMPLE_06	SMPLE06	12.0	12.6	0.5	12.6	0.5	12.6	0.6	12.7	0.6
SMPLE_07	SMPLE07	12.5	12.9	0.4	12.9	0.4	12.9	0.4	13.0	0.5
SouthEC14	CS37A_HW	1.7	3.2	1.5	3.2	1.5	6.4	4.8	7.4	5.7
SW_001_01	IN_0144	8.2	8.6	0.4	8.6	0.4	9.3	1.1	9.7	1.5
SW_002_01	IN_0516	7.5	7.5	0.1	7.5	0.1	8.2	0.8	8.4	0.9
SW_002_02	IN_0509	7.5	5.2	--	5.2	--	8.1	0.6	8.4	0.9
SW_002_03	IN_0496	7.8	2.9	--	2.9	--	5.3	--	6.4	--
SW_002_04	IN_0503	6.7	3.4	--	3.4	--	7.1	0.4	7.6	0.9
SW_003_01	IN_0075	5.6	6.5	0.9	6.5	0.9	8.7	3.1	10.2	4.6
SW_003_02	IN_0061	6.0	5.9	--	5.9	--	9.4	3.4	10.2	4.2
SW_003_03	MH_0003	7.2	5.9	--	5.9	--	8.7	1.5	10.2	3.0
SW_003_04	SW00304	2.2	6.8	4.6	6.8	4.6	7.1	4.9	7.2	5.0
SW_004_01	IN_0492	8.6	8.2	--	8.2	--	8.9	0.2	9.0	0.3
SW_005_01	SW00501	1.4	6.6	5.1	6.6	5.1	7.6	6.2	7.8	6.4
SW_006_01	IN_0047	5.1	2.8	--	2.8	--	11.8	6.7	11.7	6.6
SW_007_01	IN_0053	5.0	3.3	--	3.3	--	11.8	6.8	11.7	6.7
SW_008_01	IN_0013	5.3	2.8	--	2.8	--	11.3	6.0	11.2	5.9
SW_009_01	IN_0008	4.8	2.8	--	2.8	--	8.9	4.1	9.0	4.2
SW_010_01	IN_0020	4.4	5.5	1.1	5.5	1.1	8.1	3.7	8.5	4.1
SW_011_01	IN_0003	3.3	4.7	1.5	4.7	1.5	8.1	4.8	8.5	5.2
SW_012_01	SW01201	8.7	10.2	1.5	10.2	1.5	11.1	2.5	11.5	2.8
SW_013_01	IN_0002	3.0	5.6	2.6	5.6	2.6	7.9	4.9	8.5	5.5
SW_014_01	SW01401	4.3	6.9	2.7	6.9	2.7	10.2	5.9	10.4	6.2
SW_014_02	SW01402	4.1	7.9	3.8	7.9	3.8	10.7	6.6	10.5	6.3
SW_015_01	IN_0120	8.1	9.7	1.5	9.7	1.5	10.1	2.0	10.4	2.3
SW_015_02	SW01502	4.3	9.1	4.8	9.1	4.8	10.1	5.7	10.4	6.1
SW_016_01	MH_0005	4.8	5.6	0.8	5.6	0.8	10.3	5.4	10.5	5.6
SW_017_01	SW01701	1.3	3.9	2.6	3.9	2.6	6.9	5.6	7.6	6.3
SW_018_01	IN_0029	4.1	3.9	--	3.9	--	6.9	2.8	7.6	3.6
SW_019_01	IN_0077	5.0	3.7	--	3.7	--	10.1	5.1	9.9	4.9
SW_020_01	IN_0069	4.7	3.7	--	3.7	--	8.2	3.5	8.2	3.5
SW_021_01	IN_0025	4.8	3.6	--	3.6	--	10.5	5.7	10.0	5.2
SW_022_01	SW02201	2.8	6.7	3.9	6.7	3.9	9.7	6.9	9.9	7.0
SW_023_01	SW02301	1.3	4.9	3.6	4.9	3.6	8.6	7.3	10.1	8.8
SW_023_02	SW02302	3.2	8.2	5.0	8.2	5.0	9.2	6.0	9.5	6.3
SW_024_01	SW02401	2.6	6.6	4.0	6.6	4.0	9.1	6.5	9.3	6.7
SW_026_01	IN_0364	9.6	9.2	--	9.2	--	9.3	--	9.3	--
SW_026_02	IN_0358	7.5	8.5	1.0	8.5	1.0	8.6	1.1	8.6	1.2
SW_027_01	IN_0351	6.6	7.4	0.8	7.4	0.8	7.7	1.1	7.9	1.3
SW_027_02	IN_0329	6.3	7.2	0.9	7.2	0.9	7.6	1.3	7.8	1.5
SW_027_03	IN_0392	5.5	6.4	0.9	6.4	0.9	7.0	1.5	7.2	1.7
SW_027_04	IN_0402	5.6	6.4	0.8	6.4	0.8	7.0	1.4	7.2	1.6
SW_028_01	SW02801	2.9	7.5	4.6	7.5	4.6	8.0	5.1	8.9	6.0
SW_028_02	SW02802	4.7	6.6	1.9	6.6	1.9	8.0	3.3	8.5	3.8
SW_028_03	SW02803	6.4	7.7	1.3	7.7	1.3	9.4	3.0	10.0	3.5
SW_029_01	MH_0118	4.4	5.4	1.0	5.4	1.0	6.1	1.7	7.0	2.6
SW_029_02	IN_0827	4.0	5.0	0.9	5.0	0.9	6.1	2.0	7.2	3.1
SW_029_03	IN_0815	3.6	5.0	1.4	5.0	1.4	6.1	2.4	7.1	3.4
SW_029_04	MH_0132	6.2	5.8	--	5.8	--	6.2	--	6.4	0.1
SW_029_05	IN_0935	4.3	5.7	1.5	5.7	1.5	6.1	1.8	6.2	1.9
SW_029_06	IN_0948	4.3	5.7	1.4	5.7	1.4	6.1	1.8	6.2	1.9

Sub-basin	Outlet	Ground Elev (ft NAVD)	5-Yr 24-hr (7.8 in)		10-Yr 24-hr (9 in)		25-Yr 72-hr (16 in)		100-Yr 72-hr (20 in)	
			Stage (ft NAVD)	Flood [1] Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)	Stage (ft NAVD)	Flood Depth (ft)
SW_029_07	IN_0961	5.4	5.8	0.4	5.8	0.4	6.2	0.8	6.6	1.2
SW_029_08	MH_0142	5.0	5.8	0.8	5.8	0.8	6.4	1.4	6.8	1.8
SW_029_09	IN_1006	4.9	6.0	1.2	6.0	1.2	6.9	2.0	7.5	2.6
SW_029_10	SW02910	4.6	6.0	1.5	6.0	1.5	6.9	2.3	7.5	3.0
SW_029_11	MH_0151	5.4	5.9	0.5	5.9	0.5	6.5	1.1	7.1	1.7
SW_029_12	IN_1043	4.8	5.9	1.2	5.9	1.2	6.5	1.8	7.1	2.4
SW_029_13	IN_1037	4.4	5.9	1.5	5.9	1.5	6.5	2.1	7.1	2.7
SW_029_14	MH_0153	4.9	6.2	1.3	6.2	1.3	7.0	2.1	7.2	2.3
SW_029_15	IN_1020	6.3	6.5	0.2	6.5	0.2	7.0	0.7	7.2	0.9
SW_029_15_W	SW02915W	1.8	6.6	4.8	6.6	4.8	7.0	5.3	7.3	5.5
SW_029_16	IN_0382	5.1	6.2	1.1	6.2	1.1	7.0	1.9	7.2	2.1
SW_029_17	IN_0384	5.3	6.4	1.1	6.4	1.1	7.0	1.7	7.2	1.9
SW_030_01	IN_0138	7.4	6.6	--	6.6	--	8.8	1.4	10.0	2.6
SW_031_01	IN_0844	6.0	6.1	0.1	6.1	0.1	7.6	1.6	9.9	3.9
SW_031_02	IN_0847	5.5	5.0	--	5.0	--	7.7	2.2	10.2	4.7
SW_032_01	IN_0833	5.4	6.6	1.2	6.6	1.2	7.6	2.2	9.0	3.6
SW_033_01	IN_0854	5.5	5.0	--	5.0	--	7.6	2.1	10.1	4.6
SW_034_01	IN_0856	5.0	5.0	--	5.0	--	7.4	2.3	7.7	2.6
SW_034_02	IN_0871	6.8	3.9	--	3.9	--	8.5	1.7	10.0	3.2
SW_035_01	IN_0881	5.4	5.6	0.2	5.6	0.2	8.0	2.6	9.1	3.7
SW_035_02	IN_0910	5.2	6.6	1.4	6.6	1.4	7.9	2.7	9.0	3.8
SW_036_01	SW03601	2.8	5.4	2.7	5.4	2.7	6.2	3.4	7.0	4.2
SW_037_01	SW03701	5.1	4.7	--	4.7	--	6.2	1.1	7.2	2.1
SW_038_01	IN_0073	6.3	6.6	0.4	6.6	0.4	9.2	2.9	10.4	4.1
SW_039_01	SW03901	3.6	7.5	3.9	7.5	3.9	8.3	4.7	8.6	5.0
SW_040_01	SW04001	7.5	9.4	1.9	9.4	1.9	9.9	2.4	10.0	2.5
SW_040_01_W	SW04001W	2.1	2.5	0.3	2.5	0.3	8.2	6.1	8.4	6.3
SW_041_01	SW04101	3.3	6.9	3.6	6.9	3.6	8.8	5.5	9.0	5.7
SW_042_01	SW04201	5.1	6.3	1.2	6.3	1.2	10.7	5.6	11.3	6.2
SW_043_01	IN_0898	6.8	5.0	--	5.0	--	7.8	0.9	8.3	1.5
SW_044_01	IN_0410	6.3	6.6	0.3	6.6	0.3	7.0	0.7	7.1	0.8
SW_044_01_W	SW04401W	1.5	6.9	5.4	6.9	5.4	7.0	5.5	7.2	5.6
SW_044_02	IN_1053	6.5	6.6	0.1	6.6	0.1	7.0	0.4	7.1	0.6
US1_01	US101	2.8	3.7	0.8	3.7	0.8	3.9	1.1	4.2	1.4
WAT_01	WAT01	1.8	3.9	2.1	3.9	2.1	10.7	8.9	11.3	9.5
WAT_02	WAT02	1.0	2.8	1.8	2.8	1.8	11.8	10.8	11.7	10.7
WAT_03	WAT03	1.9	5.0	3.1	5.0	3.1	7.8	5.9	10.3	8.4
WAT_04	WAT04	5.9	11.2	5.3	11.2	5.3	12.4	6.5	12.4	6.5
WAT_05	CS40_HW	7.4	10.2	2.8	10.2	2.8	12.6	5.2	13.0	5.6
WAT_06	WAT06	5.6	7.9	2.3	7.9	2.3	9.7	4.1	10.0	4.4
WAT_07	WAT07	4.5	11.0	6.5	11.0	6.5	13.5	9.0	14.1	9.6
WAT_08	CS8_HW	5.6	10.1	4.5	10.1	4.5	15.5	9.9	16.2	10.6
WAT_09	WAT09	6.6	9.4	2.8	9.4	2.8	13.1	6.5	13.3	6.7
WAT_10	WAT10	6.2	9.7	3.6	9.7	3.6	12.4	6.2	12.7	6.5
WestC14	C14WEST	6.0	8.3	2.3	8.3	2.3	18.0	12.0	18.0	12.0

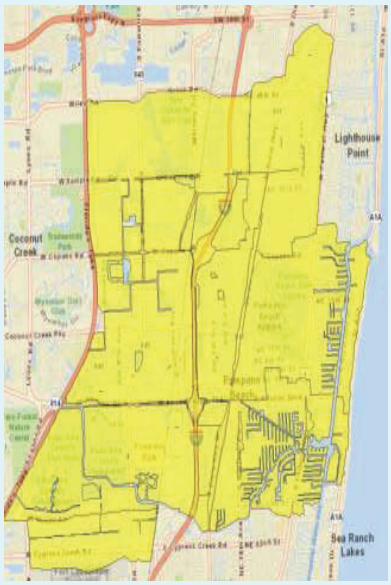
Appendix A-8

Stormwater Pollutant Load Estimates Report (AMEC)

Prepared for

Chen-Moore & Associates

Stormwater Pollutant Load Estimates for the City of Pompano Beach



Project No.: 600045
Date: June 2012

Certification

CERTIFICATION
Lakeland

Engineering Certification

I hereby certify that I am a registered professional engineer in the State of Florida practicing with AMEC Environment & Infrastructure, Inc., (AMEC) 2000 E. Edgewood Drive, Suite 215, Lakeland, FL 33803, a corporation authorized to operate as a business providing engineering consulting services (5392) by the State of Florida Department of Professional Regulation, Board of Engineers. I further certify that I, or others under my direct supervision, have prepared the engineering evaluations, findings, opinions, calculations, conclusions or technical advice hereby represented in this report.

SIGNATURE: _____

NAME: Timothy J. Kelly

LICENSE No: #44721

DATE: June 28, 2012

TIMOTHY J. KELLY
No. 44721
STATE OF FLORIDA
PROFESSIONAL ENGINEER

"Stormwater Pollutant Load Estimates for the City of Pompano Beach" contains:

Report with Tables 1-8a

Appendix A **Soils, Land Use, Environmental Resource Permit and Surface Water Management Permit Descriptions**
Appendix B **Pollutant Load Estimates for City of Pompano Stormwater Master Plan**
Appendix C **"Adjusted" Pollutant Load Estimates for City of Pompano Stormwater Master Plan**
Appendix D **"Adjusted" Pollutant Load Estimates for WBID 3271 (by Individual Drainage Basin)**

Figure 1 **Drainage Sub-Basins**
Figure 2 **Major Drainage Basins**
Figure 3 **Sub-Basin Nitrogen Loading**
Figure 4 **Major Drainage Basin Limits within WBID 3271**

COPY

Report

Stormwater Pollutant Load Estimates
For The City of Pompano Beach

Prepared for:

Chen-Moore & Associates
Fort Lauderdale, Florida

Prepared by:

AMEC
2000 E. Edgewood Drive, Suite 215
Lakeland, Florida 33803

AMEC Project No. 600045

June 2012

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1.0 PURPOSE AND OBJECTIVE

AMEC Environmental & Infrastructure, Inc. (AMEC) was tasked with by Chen Moore & Associates, Inc. (CMA) to estimate the stormwater pollutant loads from the City of Pompano's municipal limits/drainage basins. As part of AMEC's scope, existing stormwater structural best management practices (BMPs) were to be accounted for to estimate pollutant load reductions provided by those facilities.

It is important to note that the pollutant load estimates and existing BMP load reduction estimates were conducted in a "planning level" capacity. Pollutant loads were estimated using land use/soils data and existing BMP load reductions were estimated based on the presence of Surface Water Management or Environmental Resource Permit activity. Please see below discussions on the approach used for existing BMP load reduction estimates for this report.

2.0 LANDUSE BASED POLLUTANT LOADING ESTIMATIONS

AMEC used a land use-based method of estimating pollutant loads for the City of Pompano Beach Stormwater Master Plan since this is an accepted industry tool used for stormwater management. The landuse-based stormwater pollutant load is proportional to the catchment area multiplied by several other factors including the estimated runoff volume and the "event mean concentration" for land uses within the catchment area. Please refer to equations (1) and (2) below. The sub-basins within the City of Pompano Beach Stormwater Master Plan were combined with soils and land use data to generate the runoff coefficient parameter. The land use- based pollutant loading and runoff coefficient parameter were used to estimate pollutant loads for each sub-basin within the project boundary. The following section details the procedure for obtaining landuse and runoff coefficient estimates for each drainage catchment area. CMA provided the drainage sub-basins for the purposes of this report and AMEC did not check or modify those basin delineations.

Equation (1) $R = (P * C / 12) * A$

Where:

R = Runoff volume (acre-foot per year)

P = Annual rainfall depth (inches) (54.3" from local TMDLs)

C = Mean runoff coefficient (using non-DCIA Curve Number, % DCIA and methodology found in Harper, H.H., Baker, D.M. (2007). "Evaluation of Current Stormwater Design Criteria within the State of Florida- Final Report", Appendix C, Meteorological Zone 5)

A = Study area (acres) (Drainage basin or part thereof)

Equation (2) Annual pollutant loads (pounds per year)

$$L = 2.72 * R * C$$

Where:

L = Annual pollutant load lb/year) (per unique sub-basin, soil, land use polygon)

C = Event mean concentration of the pollutant (mg/l)

(From 2007 Harper Report, Table 4-17)

2.72 = Conversion factor (from mg/l to lb/acre-foot)

The methodology described in FDEP's Evaluation of Current Stormwater Design Criteria in the State of Florida (June 2007, Harper & Baker, ERD) and updates to this report, documented in FDEP and the Water Management Districts' Environmental Resource Permit Stormwater Quality Applicant's Handbook (Draft, March 2010) was used. An effective water quality runoff coefficient was calculated for each unique Sub-Basin/Land use/Soils polygon based on the Directly Connected Impervious Area Percentage (DCIA %) and the curve number for the non-DCIA and pervious portion of the catchment areas. Land use data describes lands using FLUCCS (Florida Land Use Code and Classification System) codes. Annual pollutant loading was calculated for each unique Sub-Basin/Land use/Soils polygon using the previously calculated runoff coefficient. The Sub-Basin/Land use/Soils annual loads were summed with respect to each sub-basin to calculate the sub-basin annual loads. Land use categories are broken down into the general groups based on differences in percentage imperviousness, vegetative cover and development density as described in the above FDEP documents. **Table 1** summarizes the general land use categories used for runoff characterization.

Table 1
General Lane Use Categories for Runoff Characterization Data

GENERAL CATEGORY	DESCRIPTION
Low-Density Residential	Rural areas with lot sizes greater than 1 acre or less than one dwelling unit per acre; internal roadways associated with the homes are also included
Single-Family Residential	Typical detached home community with lot sizes generally less than 1 acre and dwelling densities greater than one dwelling unit per acre; duplexes constructed on one-third to one-half acre lots are also included in this category; internal roadways associated with the homes are also included
Multi-Family Residential	Residential land use consisting primarily of apartments, condominiums, and cluster-homes; internal roadways associated with the homes are also included
Low-Intensity Commercial	Areas which receive only a moderate amount of traffic volume where cars are parked during the day for extended periods of time; these areas include universities, schools, professional office sites, and small shopping centers; internal roadways associated with the development are also included
High-Intensity Commercial	Land use consisting of commercial areas with high levels of traffic volume and constant traffic moving in and out of the area; includes downtown areas, commercial sites, regional malls, and associated parking lots; internal roadways associated with the development are also included
Industrial	Land uses include manufacturing, shipping and transportation services, sewage treatment facilities, water supply plants, and solid waste disposal; internal roadways associated with the development are also included
Highway	Includes major road systems, such as interstate highways and major arteries and thoroughfares; roadway areas associated with residential, commercial, and industrial land use categories are already included in loading rates for these categories
Agriculture	Includes cattle, grazing, row crops, citrus, and related activities
Open/ Undeveloped	Includes open space, barren land, undeveloped land which may be occupied by native vegetation, rangeland, and power lines; this land does not include golf course areas which are heavily fertilized and managed; golf course areas have runoff characteristics most similar to single-family residential areas
Mining/ Extractive	Includes a wide variety of mining activities for resources such as phosphate, sand, gravel, clay, shell, etc.
Wetlands	Include a wide range of diverse wetland types, such as hardwood wetlands, cypress stands, grassed wetlands, freshwater marsh, and mixed wetland associations
Open Water/ Lakes	Land use consists of open water and lakes, rivers, reservoirs, and other open waterbodies

(Harper 2007)

General DCIA values were assigned to FLUCCS codes using guidance from USDA's Technical Release 55 (TR-55) and engineering judgment. **Table 2** summarizes the land use FLUCCS and corresponding estimated DCIA values used in this project. CMA provided AMEC with DCIA values for each sub-basin. However, runoff coefficient parameter generation required greater detail than sub-basin level due to the presence of multiple landuse categories within a given sub-basin. AMEC DCIA values were relatively similar to the provided DCIA values. It is very important that CMA and the City of Pompano Beach reassess the DCIA analysis in the future when the City implements its TMDL prioritization efforts that may be required through its NPDES MS4 permit. Activities such as prioritizing sub-basins for water quality monitoring or

retrofit BMP considerations will likely require a greater level of detail to ensure the most cost-effective activities are implemented and the most accurate results are obtained. **Table 2** was adapted from TR-55 Table 2-2a. DCIA % was adjusted to match the provided sub-basin DCIA values.

Table 2
Land Use- DCIA %

FLUCCS	Generalized Landuse Description	DCIA%
1100	Residential-Low Density	20
1110	Fixed Single Family- Less than 2 Dwellings per Acre	20
1180	Rural Residential	20
1190	Low Density Under Construction	20
1200	Residential-Med Density	25
1210	Fixed Single Family- 2 to 5 Dwellings per Acre	25
1290	Med Density Under Construction	25
1300	Residential-High Density	50
1310	Fixed Single Family- 6 or More Dwellings per Acre	50
1320	Mobile Home Units- 6 or More Dwellings per Acre	50
1330	Multiple Dwelling Units, Low Rise- 2 Stories or Less	40
1340	Multiple Dwelling Units, High Rise- 3 Stories or More	50
1390	Residential, High Density Under Construction	50
1400	Commercial	70
1411	Retail and Services	70
1423	Wholesale Sales and Services	85
1480	Cemeteries	85
1490	Commercial And Services Under Construction	85
1500	Industrial	72
1550	Other Light Industrial	72
1600	Extractive	0
1610	Strip Mines	0
1660	Holding Ponds	0
1700	Institutional	65
1710	Educational Facilities	65
1741	Hospitals	65
1800	Recreational	10
1810	Swimming Beach	10
1820	Golf Courses	10

FLUCCS	Generalized Landuse Description	DCIA%
1830	Race Tracks	50
1850	Parks and Zoos	10
1900	Open Land	0
1920	Inactive Land with Street Pattern but W/O Structures	0
2100	Cropland and Pastureland	0
2100W	Wet Pastures*	50
2110	Improved Pastures	0
2140	Row Crops	0
2200	Tree Crops - Citrus	10
2300	Feeding Operations	10
2400	Nurseries and Vineyards	5
2430	Ornamentals	5
2500	Specialty Farms	5
2510	Horse Farms	5
2550	Tropical Fish Farms	0
2600	Other Open Lands - Rural	0
3100	Herbaceous Rangeland	0
3200	Shrub and Brush Rangeland	0
3300	Mixed Rangeland	0
4100	Upland Coniferous Forest	0
4110	Pine Flatwoods	0
4130	Sand Pine	0
4140	Pine – Mesic Oak	0
4200	Upland Hardwood Forests	0
4220	Brazilian Pepper	0
4300	Upland Hardwood Forests	0
4340	Hardwood - Coniferous Mixed Forest	0
4350	Dead Trees	0
4370	Australian Pines	0
4400	Tree Plantations	0
5000	Water	100
5100	Streams and Waterways	100
5120	Channelized River, Stream, Waterway	100
5200	Lakes	100
5300	Reservoirs	100
6100	Wetland Hardwood Forests	100

FLUCCS	Generalized Landuse Description	DCIA%
6104	Wetland Hardwood Forest	100
6110	BAY SWAMPS	100
6150	Streams and Lake Swamps	100
6170	Mixed Wetland Hardwoods	100
6172	Mixed Wetland Hardwoods- mixed shrubs	100
6180	Willow And Elderberry	100
6200	Wetland Coniferous Forests	100
6210	Cypress	100
6300	Wetland Forested Mixed	100
6400	Vegetated Non-Forested Wetlands	100
6410	Freshwater Marshes	100
6412	Cattail	100
6417	Disturbed Shrub Wetland	100
6430	Wet Prairies	100
6440	Emergent Aquatic Vegetation	100
6520	Shorelines	100
6530	Intermittent Ponds	100
7400	Mining	0
7430	Spoil Areas	0
8100	Transportation / Utilities	25
8110	Airports	25
8120	Railroads	25
8140	Roads and Highways	50
8200	Communications	25
8300	Utilities	25
8310	Electric Power Facilities	25
8320	Electric Power Transmission Lines	25
8330	Water Supply Plants	25
8340	Sewage Treatment	25
8350	Solid Waste Disposal	25

TR-55 Table 2-2a was manually modified and interpolated to create **Table 3**. **Table 3** provides a curve number given a land use FLUCCS code and hydrologic soil group.

Table 3
Non-DCIA Curve Number Given FLUCCS and Hydrologic Soil Group

FLUCCS	Generalized Landuse Description	Hydrologic Soils Group					
		A	B	B/D	C	D	W
1100	Residential-Low Density	39	61	80	74	80	99.8
1110	Fixed Single Family- Less than 2 Dwellings per Acre	39	61	80	74	80	99.8
1180	Rural Residential	39	61	80	74	80	99.8
1190	Low Density Under Construction	39	61	80	74	80	99.8
1200	Residential-Med Density	39	61	80	74	80	99.8
1210	Fixed Single Family- 2 to 5 Dwellings per Acre	39	61	80	74	80	99.8
1290	Med Density Under Construction	39	61	80	74	80	99.8
1300	Residential-High Density	39	61	80	74	80	99.8
1310	Fixed Single Family- 6 or More Dwellings per Acre	39	61	80	74	80	99.8
1320	Mobile Home Units- 6 or More Dwellings per Acre	39	61	80	74	80	99.8
1330	Multiple Dwelling Units, Low Rise- 2 Stories or Less	39	61	80	74	80	99.8
1340	Multiple Dwelling Units, High Rise- 3 Stories or More	39	61	80	74	80	99.8
1390	Residential, High Density Under Construction	39	61	80	74	80	99.8
1400	Commercial	39	61	80	74	80	99.8
1411	Retail and Services	39	61	80	74	80	99.8
1423	Wholesale Sales and Services	39	61	80	74	80	99.8
1480	Cemeteries	39	61	80	74	80	99.8
1490	Commercial And Services Under Construction	39	61	80	74	80	99.8
1500	Industrial	39	61	80	74	80	99.8
1550	Other Light Industrial	39	61	80	74	80	99.8
1600	Extractive	39	61	80	74	80	99.8
1610	Strip Mines	39	61	80	74	80	99.8
1660	Holding Ponds	39	61	80	74	80	99.8
1700	Institutional	39	61	80	74	80	99.8
1710	Educational Facilities	39	61	80	74	80	99.8
1741	Hospitals	39	61	80	74	80	99.8
1800	Recreational	39	61	80	74	80	99.8
1810	Swimming Beach	39	61	80	74	80	99.8

FLUCCS	Generalized Landuse Description	Hydrologic Soils Group					
		A	B	B/D	C	D	W
1820	Golf Courses	39	61	80	74	80	99.8
1830	Race Tracks	39	61	80	74	80	99.8
1840	Marinas and fish camps	39	61	80	74	80	99.8
1850	Parks and Zoos	39	61	80	74	80	99.8
1900	Open Land	39	61	80	74	80	99.8
1920	Inactive Land with Street Pattern but W/O Structures	39	61	80	74	80	99.8
2100	Cropland and Pastureland	39	61	80	74	80	99.8
2100W	Wet Pastures*	39	61	80	74	80	99.8
2110	Improved Pastures	39	61	80	74	80	99.8
2120	Unimproved Pastures	39	61	80	74	80	99.8
2140	Row Crops	39	61	80	74	80	99.8
2200	Tree Crops - Citrus	32	58	79	72	79	99.8
2300	Feeding Operations	32	58	79	72	79	99.8
2400	Nurseries and Vineyards	67	78	89	85	89	99.8
2410	Tree Nurseries	67	78	89	85	89	99.8
2430	Ornamentals	67	78	89	85	89	99.8
2500	Specialty Farms	67	78	89	85	89	99.8
2510	Horse Farms	67	78	89	85	89	99.8
2550	Tropical Fish Farms	67	78	89	85	89	99.8
2600	Other Open Lands - Rural	39	61	80	74	80	99.8
3100	Herbaceous Rangeland	39	61	80	74	80	99.8
3200	Shrub and Brush Rangeland	30	48	73	65	73	99.8
3300	Mixed Rangeland	30	48	73	65	73	99.8
4100	Upland Coniferous Forest	32	58	79	72	79	99.8
4110	Pine Flatwoods	32	58	79	72	79	99.8
4130	Sand Pine	32	58	79	72	79	99.8
4140	Pine – Mesic Oak	32	58	79	72	79	99.8
4200	Upland Hardwood Forests	32	58	79	72	79	99.8
4220	Brazilian Pepper	32	58	79	72	79	99.8
4240	Melaleuca	32	58	79	72	79	99.8
4300	Upland Hardwood Forests	32	58	79	72	79	99.8
4340	Hardwood - Coniferous Mixed Forest	32	58	79	72	79	99.8
4350	Dead Trees	32	58	79	72	79	99.8

FLUCCS	Generalized Landuse Description	Hydrologic Soils Group					
		A	B	B/D	C	D	W
4370	Australian Pines	32	58	79	72	79	99.8
4400	Tree Plantations	32	58	79	72	79	99.8
5000	Water	99.8	99.8	99.8	100	99.8	99.8
5100	Streams and Waterways	99.8	99.8	99.8	100	99.8	99.8
5120	Channelized River, Stream, Waterway	99.8	99.8	99.8	100	99.8	99.8
5200	Lakes	99.8	99.8	99.8	100	99.8	99.8
5300	Reservoirs	99.8	99.8	99.8	100	99.8	99.8
5400	Bays and Estuaries	99.8	99.8	99.8	100	99.8	99.8
5410	Embayments Opening	99.8	99.8	99.8	100	99.8	99.8
6100	Wetland Hardwood Forests	99.8	99.8	99.8	100	99.8	99.8
6104	Wetland Hardwood Forest	99.8	99.8	99.8	100	99.8	99.8
6110	BAY SWAMPS	98	98	98	98	98	99.8
6120	Mangrove Swamps	98	98	98	98	98	99.8
6150	Streams and Lake Swamps	98	98	98	98	98	99.8
6170	Mixed Wetland Hardwoods	99.8	99.8	99.8	100	99.8	99.8
6172	Mixed Wetland Hardwoods- mixed shrubs	99.8	99.8	99.8	100	99.8	99.8
6180	Willow And Elderberry	99.8	99.8	99.8	100	99.8	99.8
6200	Wetland Coniferous Forests	99.8	99.8	99.8	100	99.8	99.8
6210	Cypress	99.8	99.8	99.8	100	99.8	99.8
6300	Wetland Forested Mixed	98	98	98	98	98	99.8
6400	Vegetated Non-Forested Wetlands	98	98	98	98	98	99.8
6410	Freshwater Marshes	98	98	98	98	98	99.8
6412	Cattail	98	98	98	98	98	99.8
6417	Disturbed Shrub Wetland	98	98	98	98	98	99.8
6430	Wet Prairies	98	98	98	98	98	99.8
6440	Emergent Aquatic Vegetation	98	98	98	98	98	99.8
6520	Shorelines	98	98	98	98	98	99.8
6530	Intermittent Ponds	98	98	98	98	98	99.8
7400	Mining	39	61	80	74	80	99.8
7430	Spoil Areas	39	61	80	74	80	99.8
8100	Transportation	83	89	93	92	93	99.8
8110	Airports	83	89	93	92	93	99.8
8120	Railroads	83	89	93	92	93	99.8

FLUCCS	Generalized Landuse Description	Hydrologic Soils Group					
		A	B	B/D	C	D	W
8140	Roads and Highways	83	89	93	92	93	99.8
8200	Communications	83	89	93	92	93	99.8
8300	Utilities	83	89	93	92	93	99.8
8310	Electric Power Facilities	83	89	93	92	93	99.8
8320	Electric Power Transmission Lines	83	89	93	92	93	99.8
8330	Water Supply Plants	83	89	93	92	93	99.8
8340	Sewage Treatment	83	89	93	92	93	99.8
8350	Solid Waste Disposal	83	89	93	92	93	99.8

Source: Table 2 was adapted from TR-55 Table 2-2a. DCIA % was adjusted to match the sub-basin DCIA values provided by Chen Moore & Associates for this project.

The land use shapefile was obtained from CMA. Soil data was downloaded from the SFWMD GIS webpage: http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=134. Descriptions of the land use and soils are located in **Appendix A**.

With the exception of soil types A/D and UND the majority of the hydrologic soil groups from the District-provided soil coverage matched the hydrologic soil groups in **Table 3**. UND soil polygons were manually reviewed and assigned a hydrologic soil group based on level of development and adjacent hydrological soil groups. Soil type A/D and B/D soils were classified as hydrologic soil groups "C" and "D" respectively. Soils lacking a hydrologic group were assigned group classification based on adjacent soil groups and engineering judgment.

GIS tools were used to intersect basin, land use and soil files. Using Microsoft Excel© and **Tables 2 and 3**, each different basin/ land use/ soil combination was assigned a representative non-CN and DCIA value based on the land use and soil. The estimated runoff coefficients for each basin/ land use/ soil fraction are calculated using a table adapted from "Mean Annual Runoff Coefficient (C Values) as a Function of DCIA Percentage and Non-DCIA Curve Number (CN)" tables for Zone 5 (Harper 2007). The C value for each basin, land use and soil combination was obtained as noted above.

Event mean concentration (EMC) values for the majority of parameters were used from the Environmental Resource Permit Stormwater Quality Applicant's Handbook (FDEP and Water Management Districts, March 2010 Draft), Table 3.4. Supplemental values for other pollutant parameters including metals and for other land uses were obtained from Evaluation of Current Stormwater Design Criteria within the State of Florida (Harper, Baker, June 2007), Table 4-17. The EMC values used for this project are included as **Table 4.** The annual rainfall amount used in the load calculations was 54.3" in conformance to the value used for area TMDLs.

The runoff coefficient parameter in conjunction with the EMC value was used to estimate pollutant loading for each basin/ land use/ soil combination. The sum of the basin/ land use/ soil combinations for each respective sub-basin was tabulated to obtain the pollutant loading estimate for each sub-basin. The land use categories within the project boundary provide greater detail than are available on the EMC land use categories. Specific land use categories not originally present in **Table 4** were generalized and assigned to land use categories within that table.

Table 4
Event Mean Concentration Value

LAND USE CATEGORY	TYPICAL RUNOFF CONCENTRATION (mg/l)						
	TOTAL N	TOTAL P	BOD	TSS	COPPER	LEAD	ZINC
Low-Density Residential[1]	1.5	0.18	4.7	23	0.008[4]	0.002[4]	0.031[4]
Single-Family	1.85	0.31	7.9	37.5	0.016	0.004	0.062
Multi-Family	1.91	0.48	11.3	77.8	0.009	0.006	0.086
Low-Intensity Commercial	0.93	0.16	7.7	57.5	0.018	0.005	0.094
High-Intensity Commercial	2.48	0.23	11.3	69.7	0.015	--	0.16
Light Industrial	1.14	0.23	7.6	60	0.003	0.002	0.057
Highway	1.37	0.17	5.2	37.3	0.032	0.011	0.126
Pasture	2.48	0.7	5.1	94.3	--	--	--
Citrus	2.31	0.16	2.55	15.5	0.003	0.001	0.012
Row Crops	2.47	0.51	--	19.8	0.022	0.004	0.03
General Agriculture[2]	2.42	0.46	3.8	43.2	0.013	0.003	0.021
Undeveloped / Rangeland / Forest	1.15	0.055	1.4	8.4	--	--	--
Mining / Extractive	1.18	0.15	7.6[3]	60.0[3]	0.003[3]	0.002[3]	0.057[3]

Notes:

1. Average of single-family and undeveloped loading rates
2. Mean of pasture, citrus, and row crop land uses
3. Runoff concentrations assumed equal to industrial values for these parameters
4. Value assumed to be equal to 50% of single-family concentration
5. Runoff concentrations assumed equal to wetland values for these parameters

This table is a replica of the Table 4-17 in the Final Report of "Evaluation of Current Stormwater Design Criteria within the State of Florida" Prepared for: Florida Department of Environmental Protection (June 2007)
Prepared by: Environmental Research & Design, Inc. Harvey H. Harper, Ph.D., P.E. & David M. Baker, P.E
It is supplemented with Total N and Total P EMC values that are from Table 3.4 in the March 2010 Draft of
The Department of Environmental Protection and Water Management Districts'
"Environmental Resource Permit Stormwater Quality Applicant's Handbook
Design Requirements for Stormwater Treatment Systems in Florida"

Pollutant loads were estimated for the sub-basins identified within the City of Pompano Beach Stormwater Master Plan. This particular estimate of the stormwater pollutant loads is the raw landuse estimate and does not compensate for BMP load reduction (please refer to Section 3.0).

Sub-basin pollutant loads are summarized by major basin in **Table 5**. **Figure 1** identifies the drainage sub-basins provided by CMA that were used for the City drainage analyses. **Appendix B** includes the pollutant load estimates and pollutant loads per area (lbs/acre) for the individual sub-basins, without assumed BMP load reductions incorporated in the totals.

Table 5
Estimated Stormwater Pollutant Loads by Major Basin (Unadjusted for BMPs)

Major Basin Name	Major Basin Area (acres)	Estimated Existing Annual TN Load (tons)	Estimated Existing Annual TP Load (tons)	Estimated Existing Annual BOD Load (tons)	Estimated Existing Annual TSS Load (tons)	Estimated Existing Annual Cu Load (tons)	Estimated Existing Annual Pb Load (tons)	Estimated Existing Annual Zn Load (tons)
CE	3810.38	11.75	2.15	60.00	406.28	0.13	0.04	0.64
CW	2330.13	7.56	1.30	47.92	342.67	0.09	0.03	0.52
I95	320.69	1.32	0.17	5.11	36.59	0.03	0.01	0.12
NE	2344.82	8.23	1.71	46.94	317.56	0.06	0.03	0.42
NW	3534.10	11.56	1.98	66.41	477.69	0.11	0.04	0.69
SE	2311.15	7.98	1.54	45.08	292.12	0.08	0.03	0.43
SW	3848.48	13.18	2.64	80.67	593.63	0.14	0.05	0.83

3.0 EXISTING BMP LOAD REDUCTION ESTIMATES

A load reduction factor has to be applied to the raw stormwater loads to accurately quantify sub-basin pollutant loading. The "adjusted" pollutant loading provides sub-basin pollutant loads for the raw pollutant loads minus the treatment provided by existing onsite BMPs. General BMP analysis was provided for the project as described below. Areas within the Environmental Resource Permit (ERP) and Surface Water Management Permit (SWMP) shapefile coverages were assumed to have functioning stormwater BMP treatment facilities. Descriptions of the ERP and SWMP data are located in **Appendix A**. ERP and SWMP data was downloaded from the SFWMD GIS webpage:

http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=1128

http://my.sfwmd.gov/gisapps/sfwmdxwebdc/dataview.asp?query=unq_id=1652

Aerial review of the ERP and SWMP shapefiles was used to estimate the BMP type for each ERP/ SWMP area. BMPs were assigned as dry retention or wet detention based on the presence or absence of a wet pond on the aerials (dated 2011). The BMP treatment for areas within the ERP and SWMP shapefiles that did not have visible dry or wet ponds was assigned dry retention pond treatment assuming that French drains or other enclosed treatment methods were present. Pollutant load reductions were assigned based on the BMP designation. All wet pond pollution removal efficiencies were based on an assumed 14 day hydraulic residence time. Dry pond pollution removal efficiencies were based on 1" or 1.25" of retention due to SFWMD permitting criteria. If the ERP/SWMP area was greater than 80% impervious, 1.25" of retention was assumed. Otherwise, 1" of retention treatment was assumed for the ERP-services area.

Table 6
BMP Removal Efficiencies

	Removal Efficiency: % Removal						
Pond Type	TN	TP	BOD	TSS	Cu	Pb	Zn
Wet, 14 day detention	33.32	61.76	75	77	69	84	85
Dry 1.0" retention	**	**	99	99	99	99	99
Dry 1.25" retention	**	**	99.9	99.9	99.9	99.9	99.9

**values looked up from Appendix F (Zone 5) from March 2010 draft document

BMP removal efficiencies are presented in **Table 6**.Estimated TN and TP load reductions for wet ponds are based on the methodology presented in Figures 13.2 and 13.3. TN and TP load reductions for dry ponds are based on the methodology in **Appendix F** (Zone 5) of the March 2010 FDEP/WMD draft document previously noted. BOD, TSS, Cu, Pb and Zn load reductions are based on Table 5-1 and Table 5-2 from "Evaluation of Current Stormwater Design Criteria within the State of Florida". "Adjusted" sub-basin pollutant loads for the major City drainage basins are summarized in **Table 7. Figure 2** identifies the major drainage basins that were used for stormwater pollutant load summaries.

Table 7
Estimated Stormwater Pollutant Loads (Adjusted for BMP inclusion)

Major Basin Name	Major Basin Area (acres)	Estimated Existing Annual TN Load (tons)	Estimated Existing Annual TP Load (tons)	Estimated Existing Annual BOD Load (tons)	Estimated Existing Annual TSS Load (tons)	Estimated Existing Annual Cu Load (tons)	Estimated Existing Annual Pb Load (tons)	Estimated Existing Annual Zn Load (tons)
CE	3810.384	8.640	1.619	39.949	258.794	0.069	0.023	0.364
CW	2330.127	5.672	0.977	29.995	210.710	0.060	0.018	0.316
I95	320.693	1.218	0.153	4.575	32.812	0.027	0.009	0.107
NE	2344.820	1.980	0.401	3.074	18.745	0.007	0.002	0.030
NW	3534.101	8.008	1.459	35.944	255.733	0.062	0.022	0.354
SE	2311.151	7.186	1.384	37.750	239.263	0.064	0.021	0.343
SW	3848.479	10.300	2.104	54.183	395.140	0.090	0.032	0.527

The pollutant load "intensity" was computed to allow for a relative comparison of the loadings from the various sub-basins in the watershed. **Appendix C** includes the pollutant load estimates and the estimated pollutant load per acre or "yield" (lbs/acre) for the individual sub-basins with assumed BMP reductions incorporated into the totals. The estimated pollutant yields for the major drainage basins are summarized in **Table 7a**. Major drainage basin SW, the largest sub-basin in size, has the highest overall estimated pollution loading for all pollutants and major basin I95 has the highest nitrogen yield.

Table 7a
Estimated Stormwater Pollutant Yields (Adjusted for BMP inclusion)

Major Basin Name	Major Basin Area (acres)	Estimated Existing Annual TN Yield (lbs/acre)	Estimated Existing Annual TPYield (lbs/acre)	Estimated Existing Annual BOD Yield (lbs/acre)	Estimated Existing Annual TSS Yield (lbs/acre)	Estimated Existing Annual Cu Yield (lbs/acre)	Estimated Existing Annual Pb Yield (lbs/acre)	Estimated Existing Annual Zn Yield (lbs/acre)
CE	3810.384	4.535	0.850	20.968	135.836	0.036	0.012	0.191
CW	2330.127	4.869	0.838	25.746	180.857	0.051	0.015	0.271
I95	320.693	7.595	0.954	28.531	204.635	0.169	0.058	0.670
NE	2344.820	1.689	0.342	2.622	15.988	0.006	0.002	0.025
NW	3534.101	4.532	0.826	20.341	144.723	0.035	0.013	0.200
SE	2311.151	6.219	1.198	32.668	207.051	0.056	0.018	0.297
SW	3848.479	5.353	1.093	28.158	205.349	0.047	0.017	0.274

The estimated sub-basin nitrogen yields inclusive of BMP load reductions are presented in **Figure 3**. Nitrogen yields were broken into three categories for comparison purposes: low (0-3.5 lbs/acre), medium (3.5-9.5 lbs/acre) and high (>9.5 lbs/acre). Fifteen sub-basins were designated as "high" nitrogen yield sub-basins. Most of the "high" nitrogen loading sub-basins contained high density residential land use areas. This land use category has a relatively high TN event mean concentration compared to the other land uses.

The Pompano Canal is a water body segment that has been verified as impaired by the State of Florida for Total Nitrogen and Total Phosphorus. This water body segment is identified as "WBID 3271" by the Florida Department of Environmental Protection (FDEP). The following is a generalized attempt to provide an estimated contribution of pollutant loads to Pompano Canal from the various portions of the City's watershed. This may help the City in its prioritization of areas for nutrient load reductions as required by the TMDL.

Figure 4 identifies the major drainage basin limits within WBID 3271. Pollution loading for WBID 3271 was estimated by summing sub-basin pollutant loads for the sub-basins within WBID 3271. The provided sub-basin boundaries do not exactly match the boundary of WBID3271 which is typical since WBID boundaries are often based on older, coarser information than updated sub-basin maps. Contributing sub-basins were selected based on the best fit within the WBID 3271 boundary.

The estimated annual stormwater runoff within the WBID limits is 6838acre-feet based on the model used in this report and those values are included in Table 7b. This value compares well with the average annual flow of 6661± acre-feet reported in the TMDL document. The pollutant loading per major basin and pollutant loading per acre for WBID 3271 are summarized in Table 8 and 8a, respectively. Sub-basin loading estimates for WBID 3271 are located in **Appendix D**.

Table 7b
Estimated Annual Runoff Volume within WBID 3271

Major Basin Name	Runoff (acre-ft)
CE	1954.6
CW	1881.2
I95	588.2
NE	267.6
NW	471.9
SE	562.5
SW	1111.6
Total	6837.8

The estimated pollutant loadings do not specifically identify any major drainage basins within the Pompano Canal WBID limits as being obvious problem basins. The SE basin has levels of nutrient yields that are higher than the other basins, excluding the I95 basin. However, it is clear from the 2006 wet season sampling data reported in the TMDL that the northern portions of the WBID contributed water of higher TN concentration for that particular year. In fact, seven of the eight monitored events in 2006 showed TN values at the long term monitoring station FLBROW110 that were between the levels from the major canals to the north and to the west and which contribute flows to this particular station. There were no consistent source trends evident for that same year for TP. In terms of TN yields, sub-basins I-95, SE and NW generated the highest estimated values, while sub-basins SE, NW and SW produced the highest estimated TP yields (Table 8a).

AMEC could not establish clear agreements between the estimated pollutant loads and the monitoring observations made in the TMDL document. Such an effort could not easily be achieved with the limited data collection efforts made in association with development of the TMDL. It is noted a coarse-level estimate of permanent pool storage was made and it suggests there may be a hydraulic residence time of approximately 7 to 12 days in the major conveyance canals located within the WBID. This residence time provides a moderate level of treatment for nutrients and is certainly beneficial in reducing the land-generated pollutant loads prior to discharge from the WBID through the G57 control structure.

For the City of Pompano Beach to determine the largest sources of nutrient loads within these sub-basins, potential “hot-spots” could be identified using a combination of more detailed land use modeling and targeted water quality monitoring. Nutrient “source tracking” efforts could also be implemented. Such efforts are beyond the scope of this initial, planning-level evaluation, but are often used to follow up on the information provided by initial evaluations such as these.

The more detailed loading assessments could consider groundwater inputs as well as surface water runoff. The TMDL document references the fact that water levels in the C-1 canal located along the I-95 corridor are maintained to reduce saltwater intrusion and to counter the drawdown effects of the City's wellfield. The TMDL document suggests that this reduces the input of nutrients into the waterbody from groundwater. However further consideration of potential groundwater inputs throughout the entire watershed should be made since groundwater inputs to other segments of the system likely exist.

Greater capture of stormwater runoff within a watershed can reduce the surface water runoff component of pollutant loads to receiving waterbodies, since the loads are directly proportional to the runoff volume. However such efforts must be balanced with preserving flood control and minimizing the potential for increased groundwater pollutant loads that may occur with increased stormwater retention and infiltration.

Table 8
Estimated Stormwater Pollutant Loads for WBID 3271
(Adjusted for BMP inclusion)

Major Basin Name	Major Basin Area (acres)	Estimated Existing Annual TN Load (tons)	Estimated Existing Annual TP Load (tons)	Estimated Existing Annual BOD Load (tons)	Estimated Existing Annual TSS Load (tons)	Estimated Existing Annual Cu Load (tons)	Estimated Existing Annual Pb Load (tons)	Estimated Existing Annual Zn Load (tons)
CE	1245.905	3.423	0.627	16.712	107.700	0.027	0.009	0.149
CW	992.979	2.574	0.437	12.693	83.267	0.025	0.007	0.127
I95	264.247	0.974	0.121	3.610	25.883	0.022	0.007	0.086
NE	227.901	0.226	0.042	0.371	2.217	0.001	0.000	0.003
NW	214.939	0.676	0.147	4.230	30.196	0.007	0.003	0.042
SE	233.374	0.857	0.191	4.718	33.463	0.006	0.003	0.043
SW	419.907	1.190	0.221	7.512	55.289	0.016	0.005	0.084

Table 8a
Estimated Stormwater Pollutant Loads for WBID 3271 per area
(Adjusted for BMP inclusion)

Major Basin Name	Major Basin Area (acres)	Estimated Existing Annual TN Yield (lbs/acre)	Estimated Existing Annual TP Yield (lbs/acre)	Estimated Existing Annual BODYield (lbs/acre)	Estimated Existing Annual TSS Yield (lbs/acre)	Estimated Existing Annual Cu Yield (lbs/acre)	Estimated Existing Annual Pb Yield (lbs/acre)	Estimated Existing Annual Zn Yield (lbs/acre)
CE	1245.905	5.494	1.007	26.827	172.886	0.043	0.015	0.239
CW	992.979	5.185	0.880	25.566	167.711	0.050	0.015	0.255
I95	264.247	7.368	0.918	27.322	195.902	0.164	0.056	0.648
NE	227.901	1.979	0.371	3.252	19.458	0.009	0.002	0.030
NW	214.939	6.290	1.365	39.359	280.970	0.061	0.024	0.389
SE	233.374	7.346	1.636	40.437	286.776	0.053	0.023	0.366
SW	419.907	5.669	1.050	35.779	263.338	0.074	0.023	0.400

4.0 PROJECT DELIVERABLE

The following information is provided on the DVD included in this report for the overall City of Pompano Beach Stormwater Master Plan.

File Description:

- Soils- polygon shapefile of the soils within the City of Pompano Beach Stormwater Master Plan project boundary
- Land use- polygon shapefile of the land use within the City of Pompano Beach Stormwater Master Plan project boundary
- ERP_- polygon shapefile of the ERP areas within the City of Pompano Beach Stormwater Master Plan project boundary
- SWMP- polygon shapefile of the SWMP areas within the City of Pompano Beach Stormwater Master Plan project boundary
- Sub-basins- polygon shapefile of the sub-basins within the City of Pompano Beach Stormwater Master Plan project boundary
- BLUS_Raw_Pollution_Loads- Basin/ Land use/ Soils intersect excel file used to calculate raw non adjusted pollutant loading, multiple sheets BLUS and Summary of Pollutant Loads included (used to determine Pollutant Load Estimates)
- BLUS_ERP_Pollution_Loads- Basin/ Land use/ Soils intersect excel file used to calculate adjusted pollutant loading for ERP/ SWMP areas, multiple sheets BLUS and Summary of Adjusted Pollutant Loads included (used to determine Existing BMP Load Reduction Estimates)
- BLUS_Non_ERP_Pollution_Loads- Basin/ Land use/ Soils intersect excel file used to calculate non adjusted pollutant loading, multiple sheets BLUS and Summary of Pollutant Loads included (used to determine Existing BMP Load Reduction Estimates)
- Existing_BMP_Load_Reduction_Estimates- excel file adds the summary loads from ERP_Pollution_Loads and Non_ERP_Pollution_Loads
- WBID_3271_Loading- Provides pollutant loading estimate for WBID 3271, sub-basin load estimates within WBID 3271 and major basin loading within WBID 3271

5.0 REFERENCES

Harper, H.H., Baker, D.M. (2007). "Evaluation of Current Stormwater Design Criteria within the State of Florida- Final Report." FDEP Contract No. SO108

United States Department of Agriculture (1986). *Urban hydrology for small watersheds*. Technical Release 55 (TR-55) (Second Edition ed.). Natural Resources Conservation Service, Conservation Engineering Division.

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Appendix A

Appendix A
Soils and Land Use Descriptions

Soils Data: FDEP Soils SSURGO – SFWMD, SSURGO depicts information about the kinds and distribution of soils on the landscape. The soil map and data used in the SSURGO product were prepared by soil scientists as part of the National Cooperative Soil Survey. This soil survey contains information that can be applied in managing farms and wetlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation. This soil survey depicts information about the kinds and distribution of soils on the landscape. The soil map and data used in the SSURGO product were prepared by soil scientists as part of the National Cooperative Soil Survey

Land use: Obtained Land Use from Chen Moore & Associates

Environmental Resource Permits: Environmental Resource Permits (ERP) are issued in those portions of Broward, Charlotte, Collier, Glades, Hendry, Highlands, Lee, Martin, Miami-Dade, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Polk, and St. Lucie under the jurisdiction of South Florida Water Management District (SFWMD). An ERP is required before beginning any construction activity that would affect wetlands, alter surface water flows or contribute to water pollution. An ERP covers activities such as dredging and filling in wetlands, constructing flood protection facilities, providing stormwater containment and treatment, site grading, building dams or reservoirs, and other activities affecting state waters. The ERP combines wetland resources permitting with management and storage of surface waters permitting into a single permit, to streamline the permitting process.

Surface Water Management Permits: Surface Water Management Permits (SWM) are issued in those portions of Broward, Charlotte, Collier, Glades, Hendry, Highlands, Lee, Martin, Miami-Dade, Monroe, Okeechobee, Orange, Osceola, Palm Beach, Polk, St. Lucie under the jurisdiction of South Florida Water Management District (SFWMD). The SWM is required before beginning any construction activity that would directly or indirectly affect wetlands, alter surface water flows or contribute to water pollution, A SWM Permit covers activities such as dredging and filling in wetlands, constructing flood protection facilities, providing stormwater containment and treatment, site grading, building dams or reservoirs, and other activities affecting state waters. The SWM Permit combines with ERP wetland resources permitting into a single permit, to streamline the permitting process.

Appendix B

Appendix B
Pollutant Load Estimates by Individual Drainage Basin for the City of Pompano Beach Stormwater Master Plan

Sub-Basin	Sub-basin Area	Major Basins	Estimated Existing Annual TN Load (lb)	Estimated Existing Annual TP Load (lb)	Estimated Existing Annual BOD Load (lb)	Estimated Existing Annual TSS Load (lb)	Estimated Existing Annual Cu Load (lb)	Estimated Existing Annual Pb Load (lb)	Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
Andrews_01	9.394046	NW	81.1	11.3	423.2	3100.3	1.78	0.58	7.66	8.63	1.21	45.05	330.02	0.19	0.06	0.82
Andrews_02	3.962014	NW	37.1	4.6	143.7	1032.5	0.86	0.30	3.42	9.36	1.17	36.27	260.60	0.22	0.07	0.86
Andrews_03	2.21288	NW	20.6	2.6	80.7	580.5	0.48	0.16	1.90	9.30	1.17	36.48	262.32	0.22	0.07	0.86
Atlantic_01	5.62941	SE	53.6	6.9	207.5	1484.9	1.21	0.42	4.83	9.51	1.23	36.86	263.78	0.22	0.07	0.86
Atlantic_02	3.769725	SW	36.1	4.5	136.9	981.7	0.84	0.29	3.32	9.56	1.19	36.30	260.42	0.22	0.08	0.88
Atlantic_03	4.719891	SW	46.2	5.7	175.4	1258.4	1.08	0.37	4.25	9.79	1.22	37.17	266.61	0.23	0.08	0.90
Atlantic_04	3.544742	SW	33.2	4.1	128.7	924.4	0.77	0.26	3.06	9.36	1.17	36.30	260.78	0.22	0.07	0.86
Atlantic_05	27.38735	SW	191.3	26.5	691.4	5211.5	3.81	1.27	14.79	6.98	0.97	25.25	190.29	0.14	0.05	0.54
CE_001_01	3.582388	CE	17.6	3.0	76.1	366.7	0.15	0.04	0.60	4.92	0.84	21.23	102.37	0.04	0.01	0.17
CE_002_01	32.01449	CE	130.7	24.4	909.7	7151.4	2.01	0.56	10.42	4.08	0.76	28.42	223.38	0.06	0.02	0.33
CE_003_01	22.36557	CE	83.8	13.0	422.7	3277.7	0.16	0.10	2.96	3.75	0.58	18.90	146.55	0.01	0.00	0.13
CE_003_02	17.12524	CE	119.0	19.9	513.5	2519.5	1.00	0.25	4.01	6.95	1.16	29.98	147.12	0.06	0.01	0.23
CE_003_03	14.87217	CE	55.7	8.7	296.0	1844.5	0.63	0.17	2.94	3.75	0.59	19.90	124.02	0.04	0.01	0.20
CE_003_04	21.945	CE	110.5	18.5	479.7	2320.7	0.98	0.25	3.83	5.04	0.84	21.86	105.75	0.04	0.01	0.17
CE_003_05	34.10069	CE	208.9	37.6	1077.3	6737.2	1.34	0.42	8.28	6.12	1.10	31.59	197.57	0.04	0.01	0.24
CE_003_06	24.86631	CE	185.4	44.4	1063.2	7148.1	0.95	0.55	8.11	7.46	1.78	42.75	287.46	0.04	0.02	0.33
CE_004_01	30.91444	CE	150.6	25.2	643.1	3053.8	1.30	0.33	5.05	4.87	0.82	20.80	98.78	0.04	0.01	0.16
CE_005_01	48.6472	CE	347.2	82.5	1972.4	13101.7	1.90	1.04	15.19	7.14	1.70	40.55	269.32	0.04	0.02	0.31
CE_006_01	9.856169	CE	95.3	24.0	564.1	3883.8	0.45	0.30	4.29	9.67	2.43	57.23	394.05	0.05	0.03	0.44
CE_006_02	15.62914	CE	143.3	36.0	848.8	5846.4	0.68	0.45	6.48	9.17	2.30	54.31	374.07	0.04	0.03	0.41
CE_006_03	13.74169	CE	90.0	22.5	529.8	3646.8	0.42	0.28	4.03	6.55	1.64	38.55	265.38	0.03	0.02	0.29
CE_006_04	6.819728	CE	37.4	9.1	223.3	1545.8	0.20	0.12	1.77	5.48	1.34	32.74	226.67	0.03	0.02	0.26
CE_007_01	19.08793	CE	98.8	16.5	421.7	2001.7	0.85	0.21	3.31	5.17	0.87	22.09	104.87	0.04	0.01	0.17
CE_008_01	49.40864	CE	362.8	86.9	1839.7	15945.1	0.94	0.63	12.30	7.34	1.76	37.23	322.72	0.02	0.01	0.25
CE_008_02	34.2237	CE	235.3	51.9	1382.5	10061.7	0.86	0.58	10.32	6.87	1.52	40.40	294.00	0.03	0.02	0.30
CE_008_03	3.728401	CE	30.0	7.5	177.6	1222.9	0.14	0.09	1.35	8.05	2.02	47.64	327.99	0.04	0.03	0.36
CE_008_04	40.637	CE	201.6	45.6	1301.5	9217.2	1.72	0.74	11.93	4.96	1.12	32.03	226.82	0.04	0.02	0.29
CE_008_05	9.800943	CE	96.5	24.1	568.3	3912.4	0.45	0.30	4.32	9.85	2.46	57.99	399.18	0.05	0.03	0.44
CE_008_06	11.37356	CE	63.1	14.0	352.6	2445.0	0.34	0.19	2.82	5.55	1.23	31.00	214.98	0.03	0.02	0.25
CE_008_07	27.73382	CE	196.1	42.8	1198.7	8911.0	0.68	0.46	8.98	7.07	1.54	43.22	321.30	0.02	0.02	0.32

Sub-Basin	Sub-basin Area	Major Basins	Estimated Existing Annual TN Load (lb)	Estimated Existing Annual TP Load (lb)	Estimated Existing Annual BOD Load (lb)	Estimated Existing Annual TSS Load (lb)	Estimated Existing Annual Cu Load (lb)	Estimated Existing Annual Pb Load (lb)	Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CE_009_01	7.009707	CE	39.8	6.1	154.7	746.1	0.31	0.08	1.19	5.68	0.86	22.07	106.43	0.04	0.01	0.17
CE_009_02	14.28018	CE	88.3	14.3	364.1	1744.4	0.74	0.19	2.88	6.19	1.00	25.50	122.15	0.05	0.01	0.20
CE_009_03	23.80836	CE	127.0	21.3	542.5	2574.9	1.10	0.27	4.26	5.34	0.89	22.78	108.15	0.05	0.01	0.18
CE_010_01	18.31385	CE	177.5	44.5	1053.6	7260.2	0.86	0.56	8.07	9.69	2.43	57.53	396.43	0.05	0.03	0.44
CE_010_02	25.08381	CE	212.4	47.4	1377.5	9783.3	2.06	0.85	13.37	8.47	1.89	54.92	390.02	0.08	0.03	0.53
CE_010_03	14.52141	CE	105.3	19.1	773.2	5693.0	1.79	0.55	9.43	7.25	1.32	53.25	392.04	0.12	0.04	0.65
CE_010_04	15.49588	CE	124.9	26.1	847.5	6102.8	1.53	0.55	9.02	8.06	1.68	54.69	393.83	0.10	0.04	0.58
CE_010_05	18.44778	CE	148.9	27.6	1000.7	7293.5	2.38	0.78	12.40	8.07	1.49	54.24	395.36	0.13	0.04	0.67
CE_010_06	11.67689	CE	76.0	13.6	609.7	4561.0	1.30	0.38	7.13	6.51	1.16	52.21	390.60	0.11	0.03	0.61
CE_010_07	12.83254	CE	91.0	19.7	632.0	4542.5	1.01	0.37	6.32	7.09	1.54	49.25	353.98	0.08	0.03	0.49
CE_010_08	8.721766	CE	60.6	13.3	414.1	2989.2	0.60	0.23	3.99	6.95	1.52	47.48	342.73	0.07	0.03	0.46
CE_011_01	166.3126	CE	891.6	123.6	4447.4	32507.4	16.71	5.51	74.26	5.36	0.74	26.74	195.46	0.10	0.03	0.45
CE_012_01	207.8994	CE	1533.3	190.4	5814.0	41721.9	35.77	12.29	140.80	7.38	0.92	27.97	200.68	0.17	0.06	0.68
CE_013_01	495.4897	CE	1749.1	283.4	4568.4	39369.3	22.65	7.14	77.73	3.53	0.57	9.22	79.46	0.05	0.01	0.16
CE_014_01	58.80208	CE	415.6	70.7	3363.3	25099.1	8.10	2.28	41.82	7.07	1.20	57.20	426.84	0.14	0.04	0.71
CE_015_01	37.4633	CE	185.7	30.7	914.5	5100.9	1.93	0.50	8.36	4.96	0.82	24.41	136.16	0.05	0.01	0.22
CE_016_01	85.34738	CE	438.3	73.3	2202.5	12502.0	4.84	1.28	21.02	5.14	0.86	25.81	146.48	0.06	0.02	0.25
CE_017_01	44.82284	CE	586.4	57.7	2714.1	17074.4	3.47	0.08	36.85	13.08	1.29	60.55	380.93	0.08	0.00	0.82
CE_017_01_W	1.601612	CE	0.3	0.0	0.6	3.3	0.00	0.00	0.00	0.18	0.01	0.35	2.08	0.00	0.00	0.00
CE_017_02	44.62	CE	412.9	29.7	1086.7	7380.0	1.53	0.38	8.87	9.25	0.67	24.35	165.40	0.03	0.01	0.20
CE_017_03	33.71324	CE	170.5	27.8	712.5	3442.2	1.52	0.39	5.92	5.06	0.83	21.13	102.10	0.05	0.01	0.18
CE_017_04	13.15709	CE	69.7	11.1	291.5	1506.0	0.80	0.23	3.11	5.30	0.84	22.15	114.46	0.06	0.02	0.24
CE_017_05	19.5536	CE	101.8	16.8	458.7	2392.7	1.05	0.28	4.27	5.21	0.86	23.46	122.37	0.05	0.01	0.22
CE_017_06	40.28968	CE	208.2	38.6	944.8	5080.5	1.61	0.49	7.34	5.17	0.96	23.45	126.10	0.04	0.01	0.18
CE_017_07	32.93598	CE	205.9	40.2	982.7	6260.6	1.91	0.69	9.50	6.25	1.22	29.84	190.08	0.06	0.02	0.29
CE_017_08	27.84866	CE	146.7	27.6	1015.7	7853.3	1.20	0.44	9.61	5.27	0.99	36.47	282.00	0.04	0.02	0.35
CE_017_09	53.36829	CE	268.5	45.4	1544.3	10625.5	3.16	0.99	16.76	5.03	0.85	28.94	199.10	0.06	0.02	0.31
CE_017_10	9.533797	CE	70.5	13.5	450.5	3271.9	0.99	0.35	5.37	7.39	1.42	47.25	343.19	0.10	0.04	0.56
CE_018_01	96.70078	CE	418.7	102.5	1544.6	17579.4	1.03	0.47	9.49	4.33	1.06	15.97	181.79	0.01	0.00	0.10
CE_019_01	20.5265	CE	137.2	22.6	894.4	6390.0	2.41	0.70	11.49	6.68	1.10	43.57	311.30	0.12	0.03	0.56
CE_019_02	32.24828	CE	214.1	41.5	1309.7	9678.4	0.86	0.40	9.90	6.64	1.29	40.61	300.12	0.03	0.01	0.31
CE_020_01	36.54582	CE	223.1	38.6	1255.9	8321.7	2.39	0.73	12.65	6.10	1.06	34.36	227.70	0.07	0.02	0.35
CE_020_02	64.3796	CE	349.7	62.0	1660.3	10172.4	3.65	1.06	16.23	5.43	0.96	25.79	158.01	0.06	0.02	0.25

Sub-Basin	Sub-basin Area	Major Basins	Estimated Existing Annual TN Load (lb)	Estimated Existing Annual TP Load (lb)	Estimated Existing Annual BOD Load (lb)	Estimated Existing Annual TSS Load (lb)	Estimated Existing Annual Cu Load (lb)	Estimated Existing Annual Pb Load (lb)	Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CE_020_03	47.72308	CE	316.7	56.0	2054.3	14933.7	3.73	1.19	21.91	6.64	1.17	43.05	312.92	0.08	0.02	0.46
CE_021_01	10.1831	CE	73.7	12.3	545.5	3979.8	1.38	0.39	6.89	7.24	1.20	53.56	390.83	0.14	0.04	0.68
CE_022_01	10.47126	CE	75.9	12.7	324.2	1539.0	0.66	0.16	2.54	7.25	1.21	30.96	146.97	0.06	0.02	0.24
CE_023_01	18.26133	CE	63.9	15.8	174.2	2085.6	0.17	0.04	0.65	3.50	0.87	9.54	114.21	0.01	0.00	0.04
CE_024_01	16.94129	CE	116.0	19.1	764.9	5332.2	1.98	0.57	9.48	6.85	1.13	45.15	314.75	0.12	0.03	0.56
CE_024_02	25.60276	CE	192.7	34.3	1429.3	10581.1	3.33	1.01	17.52	7.53	1.34	55.83	413.28	0.13	0.04	0.68
CE_024_03	47.32999	CE	450.5	105.4	2614.1	18154.6	3.33	1.70	23.75	9.52	2.23	55.23	383.58	0.07	0.04	0.50
CE_025_01	6.089234	CE	43.7	7.3	186.4	884.9	0.38	0.09	1.46	7.17	1.20	30.61	145.32	0.06	0.02	0.24
CE_026_01	5.762357	CE	41.8	7.0	178.5	847.1	0.36	0.09	1.40	7.25	1.22	30.97	147.01	0.06	0.02	0.24
CE_027_01	5.795293	CE	39.7	6.7	169.7	805.4	0.34	0.09	1.33	6.86	1.15	29.28	138.98	0.06	0.01	0.23
CE_028_01	4.34489	CE	21.1	3.5	90.3	428.6	0.18	0.05	0.71	4.87	0.82	20.78	98.63	0.04	0.01	0.16
CE_029_01	2.961644	CE	15.7	2.6	67.1	318.6	0.14	0.03	0.53	5.31	0.89	22.66	107.57	0.05	0.01	0.18
CE_030_01	3.310366	CE	16.3	2.7	69.4	329.7	0.14	0.04	0.55	4.91	0.82	20.98	99.58	0.04	0.01	0.16
CE_031_01	9.170222	CE	62.9	10.5	268.6	1275.2	0.54	0.14	2.11	6.86	1.15	29.29	139.06	0.06	0.01	0.23
CE_032_01	44.22649	CE	286.8	47.6	1406.4	7892.9	3.23	0.87	13.77	6.49	1.08	31.80	178.47	0.07	0.02	0.31
CE_033_01	3.891331	CE	18.7	3.1	79.8	378.9	0.16	0.04	0.63	4.80	0.80	20.51	97.37	0.04	0.01	0.16
CE_034_01	4.176658	CE	20.2	3.4	86.1	408.5	0.17	0.04	0.68	4.83	0.81	20.61	97.81	0.04	0.01	0.16
CE_035_01	8.888515	CE	42.3	7.1	180.6	857.2	0.37	0.09	1.42	4.76	0.80	20.32	96.44	0.04	0.01	0.16
CE_036_01	18.3622	CE	120.1	19.6	679.9	4369.0	1.76	0.50	7.98	6.54	1.07	37.03	237.94	0.10	0.03	0.43
CE_037_01	8.745136	CE	42.7	7.2	182.2	865.1	0.37	0.09	1.43	4.88	0.82	20.84	98.92	0.04	0.01	0.16
CE_038_01	29.67112	CE	201.6	33.8	860.8	4086.2	1.74	0.44	6.76	6.79	1.14	29.01	137.72	0.06	0.01	0.23
CE_039_01	14.17129	CE	83.1	14.1	536.2	3564.4	1.20	0.33	5.84	5.86	1.00	37.84	251.52	0.08	0.02	0.41
CE_040_01	26.48522	CE	247.9	57.5	1453.6	10109.8	1.91	0.94	13.35	9.36	2.17	54.88	381.71	0.07	0.04	0.50
CE_040_02	21.64719	CE	194.9	47.9	833.2	7411.2	1.06	0.52	6.84	9.00	2.21	38.49	342.36	0.05	0.02	0.32
CE_040_03	20.89284	CE	175.7	32.9	1113.2	7998.0	2.64	0.90	13.71	8.41	1.58	53.28	382.81	0.13	0.04	0.66
CE_041_01	16.77326	CE	149.3	37.5	883.5	6083.0	0.70	0.47	6.72	8.90	2.24	52.67	362.66	0.04	0.03	0.40
CE_041_02	10.18824	CE	100.5	23.6	631.1	4430.3	0.73	0.35	5.47	9.86	2.32	61.95	434.85	0.07	0.03	0.54
CE_042_01	5.395213	CE	41.1	7.9	194.6	1069.2	0.31	0.10	1.51	7.63	1.46	36.07	198.18	0.06	0.02	0.28
CE_042_02	18.17848	CE	114.4	21.6	536.6	2918.0	0.87	0.28	4.17	6.29	1.19	29.52	160.52	0.05	0.02	0.23
CE_043_01	6.874515	CE	77.4	19.5	457.9	3152.7	0.36	0.24	3.49	11.26	2.83	66.61	458.61	0.05	0.04	0.51
CE_044_01	28.46445	CE	173.9	33.0	914.6	5582.6	1.70	0.55	8.52	6.11	1.16	32.13	196.13	0.06	0.02	0.30
CE_045_01	2.385552	CE	17.1	2.9	72.9	346.1	0.15	0.04	0.57	7.16	1.20	30.56	145.09	0.06	0.02	0.24
CE_046_01	8.494409	CE	33.1	7.6	102.7	981.6	0.14	0.03	0.52	3.90	0.89	12.10	115.56	0.02	0.00	0.06

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CE_047_01	7.192673	CE	42.2	7.1	180.4	856.2	0.37	0.09	1.42	5.87	0.98	25.08	119.03	0.05	0.01	0.20
CE_048_01	46.40529	CE	329.6	71.0	2017.1	13836.5	3.12	1.23	19.22	7.10	1.53	43.47	298.17	0.07	0.03	0.41
CE_049_01	12.72297	CE	72.4	12.1	309.0	1466.8	0.63	0.16	2.43	5.69	0.95	24.29	115.29	0.05	0.01	0.19
CE_050_01	4.596173	CE	24.2	4.1	103.3	490.4	0.21	0.05	0.81	5.26	0.88	22.48	106.70	0.05	0.01	0.18
CE_051_01	5.056347	CE	25.0	4.2	106.8	506.8	0.22	0.05	0.84	4.94	0.83	21.11	100.22	0.04	0.01	0.17
CE_052_01	4.986732	CE	24.4	4.1	104.4	495.3	0.21	0.05	0.82	4.90	0.82	20.93	99.33	0.04	0.01	0.16
CE_053_01	21.38136	CE	104.1	17.4	444.4	2109.7	0.90	0.23	3.49	4.87	0.82	20.79	98.67	0.04	0.01	0.16
CE_053_02	22.04839	CE	140.5	24.5	919.5	6299.1	2.11	0.61	10.46	6.37	1.11	41.70	285.70	0.10	0.03	0.47
CE_053_03	27.64355	CE	171.2	28.5	1115.4	7635.0	2.75	0.77	13.23	6.19	1.03	40.35	276.19	0.10	0.03	0.48
CE_053_04	18.62259	CE	92.2	15.5	415.6	2095.6	0.86	0.22	3.46	4.95	0.83	22.32	112.53	0.05	0.01	0.19
CE_054_01	14.91423	CE	72.7	12.2	327.0	1645.0	0.67	0.17	2.71	4.87	0.82	21.92	110.30	0.05	0.01	0.18
CE_055_01	5.076648	CE	24.9	4.2	106.3	504.5	0.22	0.05	0.83	4.90	0.82	20.94	99.38	0.04	0.01	0.16
CE_056_01	12.50621	CE	60.9	10.2	259.8	1233.4	0.53	0.13	2.04	4.87	0.82	20.78	98.63	0.04	0.01	0.16
CE_057_01	6.177852	CE	29.8	5.0	127.4	604.9	0.26	0.06	1.00	4.83	0.81	20.63	97.92	0.04	0.01	0.16
CE_058_01	8.003808	CE	38.9	6.5	166.1	788.2	0.34	0.08	1.30	4.86	0.81	20.75	98.48	0.04	0.01	0.16
CE_059_01	9.875622	CE	48.2	8.1	205.9	977.2	0.42	0.10	1.62	4.88	0.82	20.84	98.95	0.04	0.01	0.16
CE_060_01	6.439153	CE	31.8	5.3	135.7	644.0	0.27	0.07	1.06	4.93	0.83	21.07	100.01	0.04	0.01	0.17
CE_061_01	12.2531	CE	68.9	13.6	334.0	1891.6	0.50	0.17	2.59	5.62	1.11	27.26	154.38	0.04	0.01	0.21
CE_061_02	13.0358	CE	88.0	18.7	536.2	3614.2	0.82	0.31	4.97	6.75	1.43	41.14	277.25	0.06	0.02	0.38
CE_061_03	5.907424	CE	28.6	4.8	122.0	579.2	0.25	0.06	0.96	4.84	0.81	20.66	98.05	0.04	0.01	0.16
CE_062_01	27.83358	CE	201.8	40.5	1448.1	10420.5	2.69	0.88	15.44	7.25	1.46	52.03	374.39	0.10	0.03	0.55
CE_063_01	5.669508	CE	38.8	6.7	321.4	2399.9	0.75	0.21	3.92	6.85	1.18	56.68	423.29	0.13	0.04	0.69
CE_064_01	4.34046	CE	30.2	5.2	249.9	1865.8	0.58	0.16	3.05	6.95	1.20	57.56	429.86	0.13	0.04	0.70
CE_065_01	11.9409	CE	58.6	9.8	250.3	1188.2	0.51	0.13	1.96	4.91	0.82	20.96	99.50	0.04	0.01	0.16
CE_066_01	22.76319	CE	169.5	36.2	877.1	5339.4	1.10	0.46	6.75	7.45	1.59	38.53	234.56	0.05	0.02	0.30
CE_067_01	8.217456	CE	39.7	6.7	169.5	804.7	0.34	0.09	1.33	4.83	0.81	20.63	97.92	0.04	0.01	0.16
CE_068_01	19.73396	CE	102.8	17.8	449.4	2268.7	0.83	0.23	3.49	5.21	0.90	22.77	114.96	0.04	0.01	0.18
CE_069_01	9.606159	CE	60.6	13.1	316.3	1944.4	0.39	0.17	2.43	6.31	1.36	32.93	202.41	0.04	0.02	0.25
CE_070_01	4.223084	CE	35.8	9.0	212.1	1460.0	0.17	0.11	1.61	8.49	2.13	50.21	345.72	0.04	0.03	0.38
CE_071_01	10.92168	CE	87.4	22.0	517.3	3561.8	0.41	0.27	3.94	8.01	2.01	47.37	326.12	0.04	0.03	0.36
CE_072_01	8.852861	CE	43.4	7.3	187.2	899.1	0.38	0.10	1.49	4.90	0.82	21.14	101.56	0.04	0.01	0.17
CE_072_02	38.38297	CE	184.9	31.0	795.2	3833.2	1.58	0.40	6.23	4.82	0.81	20.72	99.87	0.04	0.01	0.16
CE_072_03	43.78111	CE	226.7	40.6	1030.1	5360.7	1.86	0.53	8.13	5.18	0.93	23.53	122.44	0.04	0.01	0.19

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CE_072_04	50.01847	CE	258.0	43.7	1305.9	7356.8	2.75	0.72	12.04	5.16	0.87	26.11	147.08	0.06	0.01	0.24
CE_073_01	10.09922	CE	84.4	21.2	499.2	3437.3	0.40	0.27	3.80	8.36	2.10	49.43	340.35	0.04	0.03	0.38
CE_074_01	7.213662	CE	72.0	17.0	454.7	3191.7	0.52	0.25	3.94	9.99	2.36	63.03	442.45	0.07	0.04	0.55
CE_075_01	24.22469	CE	203.8	51.2	1205.6	8300.2	0.96	0.64	9.18	8.41	2.11	49.77	342.63	0.04	0.03	0.38
CE_076_01	14.33033	CE	123.1	30.9	728.2	5013.9	0.58	0.39	5.54	8.59	2.16	50.82	349.88	0.04	0.03	0.39
CE_077_01	10.31369	CE	109.4	27.5	647.7	4464.1	0.51	0.34	4.93	10.61	2.66	62.80	432.83	0.05	0.03	0.48
CE_078_01	22.95917	CE	216.5	54.4	1280.8	8818.0	1.02	0.68	9.75	9.43	2.37	55.78	384.07	0.04	0.03	0.42
CE_078_02	7.066224	CE	62.9	15.8	372.4	2564.1	0.30	0.20	2.83	8.91	2.24	52.70	362.86	0.04	0.03	0.40
CE_078_03	5.693837	CE	54.3	13.7	321.4	2213.1	0.26	0.17	2.45	9.54	2.40	56.45	388.68	0.04	0.03	0.43
CE_079_01	8.936758	CE	96.9	24.4	573.3	3947.4	0.46	0.30	4.36	10.84	2.73	64.15	441.70	0.05	0.03	0.49
CE_080_01	23.98063	CE	181.2	37.2	1321.2	9604.8	2.40	0.80	14.07	7.56	1.55	55.10	400.52	0.10	0.03	0.59
CE_080_02	7.97352	CE	54.2	9.2	435.2	3243.5	1.00	0.28	5.26	6.80	1.15	54.58	406.78	0.13	0.04	0.66
CE_080_03	13.67649	CE	117.1	26.0	692.6	4849.6	0.78	0.38	5.90	8.57	1.90	50.64	354.59	0.06	0.03	0.43
CE_081_01	1.322038	CE	9.2	1.6	76.0	567.8	0.18	0.05	0.93	6.95	1.20	57.51	429.49	0.13	0.04	0.70
CE_081_02	11.35875	CE	75.8	13.0	584.8	4339.3	1.30	0.37	6.92	6.67	1.15	51.49	382.03	0.11	0.03	0.61
CE_081_03	16.3646	CE	150.6	36.9	916.5	6363.8	0.87	0.50	7.40	9.20	2.26	56.00	388.87	0.05	0.03	0.45
CE_082_01	9.253789	CE	76.3	17.0	483.6	3619.7	0.27	0.18	3.65	8.24	1.84	52.26	391.16	0.03	0.02	0.39
CE_083_01	14.22758	CE	89.7	14.9	379.1	1801.5	0.76	0.19	2.96	6.31	1.05	26.64	126.62	0.05	0.01	0.21
CE_083_02	8.049338	CE	46.1	7.5	190.0	905.5	0.38	0.09	1.47	5.73	0.93	23.61	112.49	0.05	0.01	0.18
CE_084_01	13.12384	CE	63.4	10.6	270.8	1285.4	0.55	0.14	2.13	4.83	0.81	20.63	97.94	0.04	0.01	0.16
CE_085_01	18.94137	CE	180.7	44.7	1053.9	7215.4	0.86	0.56	8.01	9.54	2.36	55.64	380.93	0.05	0.03	0.42
CE_085_02	21.02377	CE	115.3	21.6	536.5	2927.7	0.86	0.27	4.15	5.49	1.03	25.52	139.26	0.04	0.01	0.20
CE_085_03	10.13219	CE	49.4	8.3	211.0	1001.6	0.43	0.11	1.66	4.88	0.82	20.83	98.85	0.04	0.01	0.16
CE_086_01	9.97165	CE	112.5	28.3	665.3	4580.5	0.53	0.35	5.06	11.28	2.83	66.72	459.35	0.05	0.04	0.51
CE_087_01	3.167223	CE	16.3	3.0	75.7	407.2	0.13	0.04	0.59	5.13	0.96	23.89	128.57	0.04	0.01	0.19
CE_088_01	25.30987	CE	183.8	30.8	811.1	4018.4	1.69	0.43	6.72	7.26	1.22	32.05	158.77	0.07	0.02	0.27
CE_088_02	8.373106	CE	56.9	9.5	243.0	1153.3	0.49	0.12	1.91	6.80	1.14	29.02	137.74	0.06	0.01	0.23
CE_089_01	14.66141	CE	109.8	17.8	776.8	5787.1	2.13	0.64	10.54	7.49	1.21	52.98	394.72	0.15	0.04	0.72
CEOUT_01	63.88017	CE	452.0	75.3	2327.2	13513.7	5.29	1.42	23.16	7.08	1.18	36.43	211.55	0.08	0.02	0.36
Copans_01	4.964894	NW	45.4	6.0	202.5	1473.3	1.01	0.34	4.18	9.15	1.21	40.79	296.74	0.20	0.07	0.84
Copans_02	2.929614	NW	27.4	3.7	116.3	854.8	0.55	0.19	2.34	9.34	1.27	39.69	291.76	0.19	0.07	0.80
Copans_03	5.513247	NW	52.9	6.8	213.7	1545.9	1.18	0.40	4.75	9.59	1.23	38.76	280.39	0.21	0.07	0.86
CW_001_01	44.37959	CW	306.0	52.5	2521.7	18827.5	5.93	1.65	30.91	6.90	1.18	56.82	424.24	0.13	0.04	0.70

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CW_002_01	14.13533	CW	55.2	7.8	361.8	2677.3	0.81	0.22	4.21	3.91	0.55	25.59	189.40	0.06	0.02	0.30
CW_002_02	22.03607	CW	169.3	31.1	1201.9	9214.0	1.83	0.62	12.42	7.68	1.41	54.54	418.13	0.08	0.03	0.56
CW_003_01	65.30034	CW	392.8	65.6	3141.4	23430.4	7.30	2.03	38.12	6.01	1.01	48.11	358.81	0.11	0.03	0.58
CW_003_02	14.98625	CW	103.1	17.7	851.1	6355.1	2.00	0.56	10.41	6.88	1.18	56.79	424.06	0.13	0.04	0.69
CW_004_01	62.20817	CW	339.9	56.0	2671.7	19914.7	6.19	1.72	32.32	5.46	0.90	42.95	320.13	0.10	0.03	0.52
CW_004_02	68.97419	CW	492.5	86.1	3878.0	29153.9	8.35	2.42	45.78	7.14	1.25	56.22	422.68	0.12	0.04	0.66
CW_004_03	57.45439	CW	428.3	78.1	3150.2	24025.9	5.29	1.69	33.66	7.45	1.36	54.83	418.17	0.09	0.03	0.59
CW_005_01	41.32284	CW	301.4	51.3	2440.1	18208.0	5.88	1.65	30.36	7.29	1.24	59.05	440.63	0.14	0.04	0.73
CW_005_02	18.29947	CW	129.7	21.6	1004.4	7482.7	2.57	0.74	12.97	7.09	1.18	54.88	408.90	0.14	0.04	0.71
CW_006_01	30.28444	CW	198.6	33.8	1623.5	12118.0	3.79	1.05	19.78	6.56	1.12	53.61	400.14	0.13	0.03	0.65
CW_007_01	50.39901	CW	314.9	53.0	2306.2	17329.0	4.94	1.47	27.20	6.25	1.05	45.76	343.84	0.10	0.03	0.54
CW_008_01	26.21983	CW	158.9	25.3	1139.6	8476.9	2.99	0.87	14.91	6.06	0.96	43.46	323.30	0.11	0.03	0.57
CW_008_02	30.45045	CW	221.1	39.5	1487.6	11397.3	2.36	0.82	15.71	7.26	1.30	48.85	374.29	0.08	0.03	0.52
CW_008_03	20.5125	CW	142.7	23.2	1054.8	7845.0	2.88	0.84	14.17	6.96	1.13	51.42	382.45	0.14	0.04	0.69
CW_009_01	55.0589	CW	368.4	61.0	2865.8	21354.2	7.08	2.01	36.12	6.69	1.11	52.05	387.84	0.13	0.04	0.66
CW_010_01	22.4525	CW	180.5	34.8	1288.8	9986.4	1.36	0.51	11.74	8.04	1.55	57.40	444.78	0.06	0.02	0.52
CW_011_01	36.41415	CW	228.8	45.7	1250.3	8881.3	0.95	0.51	9.38	6.28	1.25	34.34	243.90	0.03	0.01	0.26
CW_012_01	33.06027	CW	201.2	33.6	1604.4	11965.3	3.74	1.04	19.50	6.09	1.02	48.53	361.92	0.11	0.03	0.59
CW_013_01	33.70383	CW	267.9	53.6	1756.2	13696.7	0.78	0.48	13.19	7.95	1.59	52.11	406.38	0.02	0.01	0.39
CW_014_01	22.5418	CW	106.3	16.4	724.9	5248.7	1.60	0.45	8.32	4.71	0.73	32.16	232.84	0.07	0.02	0.37
CW_014_02	33.17772	CW	189.9	28.4	1030.9	6709.4	2.17	0.59	10.50	5.72	0.86	31.07	202.23	0.07	0.02	0.32
CW_015_01	28.9726	CW	216.4	38.8	1153.1	7351.4	1.54	0.47	9.31	7.47	1.34	39.80	253.74	0.05	0.02	0.32
CW_016_01	30.43782	CW	219.8	37.6	1393.8	9334.0	3.21	0.91	15.61	7.22	1.24	45.79	306.66	0.11	0.03	0.51
CW_017_01	26.50462	CW	200.6	34.7	1456.9	10761.9	3.69	1.12	18.70	7.57	1.31	54.97	406.04	0.14	0.04	0.71
CW_017_02	24.33092	CW	177.1	31.7	1386.2	10275.6	3.17	0.93	16.73	7.28	1.30	56.97	422.33	0.13	0.04	0.69
CW_017_03	10.62721	CW	70.9	10.3	271.0	1404.3	0.71	0.20	2.76	6.67	0.97	25.50	132.14	0.07	0.02	0.26
CW_017_04	12.0926	CW	79.3	13.3	338.6	1607.2	0.69	0.17	2.66	6.56	1.10	28.00	132.91	0.06	0.01	0.22
CW_017_05	3.177373	CW	28.9	3.6	115.9	829.9	0.65	0.22	2.59	9.10	1.15	36.49	261.18	0.20	0.07	0.82
CW_017_06	7.500895	CW	59.4	8.8	358.8	2645.4	1.26	0.39	5.70	7.92	1.17	47.83	352.68	0.17	0.05	0.76
CW_018_01	10.58909	CW	32.1	4.0	174.8	1286.8	0.35	0.10	1.90	3.04	0.38	16.50	121.52	0.03	0.01	0.18
CW_018_02	18.86727	CW	77.8	11.4	530.7	3934.6	1.20	0.33	6.24	4.12	0.60	28.13	208.54	0.06	0.02	0.33
CW_019_01	15.90824	CW	136.6	27.6	910.5	7188.3	0.36	0.24	6.83	8.59	1.73	57.24	451.86	0.02	0.02	0.43
CW_019_02	12.72425	CW	109.6	22.1	730.8	5769.5	0.29	0.19	5.48	8.62	1.74	57.43	453.42	0.02	0.02	0.43

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CW_020_01	37.68003	CW	261.9	58.4	1455.5	10145.8	1.24	0.74	11.25	6.95	1.55	38.63	269.26	0.03	0.02	0.30
CW_021_01	43.11424	CW	314.7	59.2	2028.4	15817.3	1.78	0.78	17.71	7.30	1.37	47.05	366.87	0.04	0.02	0.41
CW_022_01	57.8841	CW	385.5	67.1	2759.9	20930.6	5.03	1.57	30.37	6.66	1.16	47.68	361.60	0.09	0.03	0.52
CW_022_02	21.39908	CW	190.6	36.5	1196.8	9377.8	1.03	0.50	10.61	8.91	1.70	55.93	438.23	0.05	0.02	0.50
CW_023_01	15.96586	CW	94.0	16.7	673.2	4946.8	1.41	0.43	7.67	5.89	1.04	42.17	309.84	0.09	0.03	0.48
CW_024_01	42.3841	CW	476.2	119.5	2813.5	19374.4	2.26	1.50	21.48	11.24	2.82	66.38	457.12	0.05	0.04	0.51
CW_025_01	5.505554	CW	40.1	6.8	174.5	855.4	0.34	0.09	1.37	7.29	1.23	31.69	155.37	0.06	0.02	0.25
CW_026_01	20.74826	CW	202.9	40.8	1018.6	6646.5	2.07	0.84	10.94	9.78	1.97	49.09	320.34	0.10	0.04	0.53
CW_026_02	28.43383	CW	206.5	34.6	881.8	4185.9	1.79	0.45	6.92	7.26	1.22	31.01	147.22	0.06	0.02	0.24
CW_027_01	21.47793	CW	192.6	15.4	579.7	4072.2	0.99	0.28	5.09	8.97	0.72	26.99	189.60	0.05	0.01	0.24
CW_028_01	12.55631	CW	98.8	19.5	664.3	4748.1	1.33	0.45	7.38	7.87	1.55	52.91	378.14	0.11	0.04	0.59
CW_028_02	9.859109	CW	67.3	11.3	287.2	1363.4	0.58	0.15	2.25	6.82	1.14	29.13	138.29	0.06	0.01	0.23
CW_028_03	26.14254	CW	97.0	12.7	342.7	1941.2	0.48	0.13	2.35	3.71	0.49	13.11	74.26	0.02	0.01	0.09
CW_028_04	26.48323	CW	105.8	13.5	350.7	1808.7	0.80	0.22	3.10	4.00	0.51	13.24	68.30	0.03	0.01	0.12
CW_029_01	42.58158	CW	253.5	43.8	1416.7	9145.9	2.91	0.87	14.44	5.95	1.03	33.27	214.79	0.07	0.02	0.34
CW_030_01	29.8156	CW	127.8	17.0	435.5	2117.9	0.79	0.20	3.06	4.29	0.57	14.61	71.03	0.03	0.01	0.10
CW_031_01	51.51359	CW	359.3	60.1	1928.8	11531.4	4.38	1.18	19.58	6.98	1.17	37.44	223.85	0.08	0.02	0.38
CW_033_01	70.79272	CW	451.0	74.6	3518.5	26204.4	8.49	2.39	43.67	6.37	1.05	49.70	370.16	0.12	0.03	0.62
CW_034_01	125.2357	CW	518.6	99.7	2091.9	16624.6	4.80	1.56	21.51	4.14	0.80	16.70	132.75	0.04	0.01	0.17
CW_036_01	36.72178	CW	173.3	24.2	716.1	4175.3	1.88	0.54	7.86	4.72	0.66	19.50	113.70	0.05	0.01	0.21
CW_036_02	48.40043	CW	323.0	52.8	1367.6	6639.8	2.76	0.69	10.83	6.67	1.09	28.26	137.18	0.06	0.01	0.22
CW_037_01	41.30756	CW	282.5	48.6	2339.3	17468.6	5.47	1.52	28.56	6.84	1.18	56.63	422.89	0.13	0.04	0.69
CW_038_01	24.11921	CW	176.7	30.4	1013.8	7018.1	1.88	0.60	10.49	7.33	1.26	42.03	290.97	0.08	0.02	0.44
CW_038_02	32.56264	CW	219.2	35.4	907.3	4380.0	1.92	0.49	7.45	6.73	1.09	27.86	134.51	0.06	0.02	0.23
CW_038_03	52.59722	CW	352.5	58.1	1619.7	8543.6	3.33	0.86	13.90	6.70	1.10	30.79	162.43	0.06	0.02	0.26
CW_038_04	13.23316	CW	96.4	16.2	417.0	2028.3	0.82	0.21	3.27	7.28	1.23	31.51	153.27	0.06	0.02	0.25
CW_038_05	17.42423	CW	111.9	20.1	627.2	4356.9	0.64	0.23	4.97	6.42	1.15	36.00	250.05	0.04	0.01	0.29
CW_039_01	15.5779	CW	112.7	19.1	673.6	4452.8	1.47	0.42	7.26	7.24	1.23	43.24	285.84	0.09	0.03	0.47
CW_039_02	29.72161	CW	223.3	36.2	975.4	5098.3	2.45	0.68	9.78	7.51	1.22	32.82	171.54	0.08	0.02	0.33
CW_040_01	17.73635	CW	137.2	23.1	888.2	6593.7	2.05	0.66	10.97	7.73	1.30	50.08	371.76	0.12	0.04	0.62
CW_041_01	33.06452	CW	172.4	27.6	1308.3	9739.3	3.01	0.84	15.72	5.21	0.83	39.57	294.56	0.09	0.03	0.48
CW_042_01	9.352095	CW	66.4	11.4	543.6	4058.2	1.29	0.36	6.70	7.10	1.21	58.13	433.93	0.14	0.04	0.72
CW_042_02	12.74339	CW	87.1	15.0	721.1	5385.2	1.69	0.47	8.80	6.83	1.18	56.59	422.59	0.13	0.04	0.69

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CW_042_03	10.46456	CW	70.2	12.0	575.7	4297.9	1.36	0.38	7.09	6.71	1.15	55.02	410.71	0.13	0.04	0.68
CW_042_04	25.4269	CW	207.5	23.6	1003.2	7310.7	2.33	0.67	11.67	8.16	0.93	39.45	287.52	0.09	0.03	0.46
CW_042_05	18.99418	CW	150.1	18.8	832.4	6112.1	1.87	0.53	9.60	7.90	0.99	43.82	321.79	0.10	0.03	0.51
CW_042_06	15.93183	CW	121.9	20.9	999.4	7460.3	2.37	0.66	12.30	7.65	1.31	62.73	468.27	0.15	0.04	0.77
CW_043_01	36.27483	CW	248.8	42.2	2008.0	14982.2	4.86	1.37	25.04	6.86	1.16	55.36	413.02	0.13	0.04	0.69
CW_043_02	29.08777	CW	226.3	41.6	1615.2	12375.8	2.50	0.84	16.79	7.78	1.43	55.53	425.46	0.09	0.03	0.58
CW_044_01	62.62303	CW	169.5	20.5	701.6	5462.0	1.30	0.36	6.85	2.71	0.33	11.20	87.22	0.02	0.01	0.11
CW_044_01_W	13.86973	CW	25.9	6.9	51.9	932.9	0.00	0.00	0.00	1.87	0.50	3.74	67.26	0.00	0.00	0.00
CW_045_01	16.44977	CW	58.8	3.6	116.7	778.0	0.12	0.03	0.65	3.58	0.22	7.10	47.29	0.01	0.00	0.04
CW_046_01	19.94401	CW	142.6	29.5	942.6	6762.2	1.49	0.55	9.32	7.15	1.48	47.26	339.06	0.07	0.03	0.47
Cypress_01	10.21575	SE	106.3	25.5	631.4	4324.3	0.64	0.35	5.13	10.40	2.50	61.80	423.29	0.06	0.03	0.50
Cypress_02	16.14131	SE	116.5	21.2	708.3	5185.5	1.71	0.51	8.37	7.22	1.31	43.88	321.26	0.11	0.03	0.52
Cypress_03	7.284887	SE	53.4	9.2	244.0	1297.2	0.42	0.11	1.90	7.33	1.26	33.49	178.07	0.06	0.02	0.26
Dixie_01	20.76239	NE	155.5	24.2	818.1	5867.1	2.51	0.84	11.86	7.49	1.16	39.40	282.58	0.12	0.04	0.57
Dixie_02	25.60145	CE	167.8	26.1	1038.1	7546.3	3.33	1.03	15.37	6.55	1.02	40.55	294.76	0.13	0.04	0.60
Dixie_03	14.75148	CE	107.8	15.8	639.6	4706.9	2.30	0.72	10.33	7.31	1.07	43.36	319.08	0.16	0.05	0.70
Dixie_04	20.99766	CE	136.9	25.0	647.6	4322.5	1.83	0.70	8.68	6.52	1.19	30.84	205.85	0.09	0.03	0.41
Dixie_04_W	0.377146	CE	3.0	0.7	17.5	120.4	0.01	0.01	0.13	7.84	1.97	46.36	319.22	0.04	0.02	0.35
Dixie_05	10.13795	CE	59.4	8.8	308.8	2245.5	1.22	0.41	5.35	5.86	0.87	30.46	221.49	0.12	0.04	0.53
Dixie_05_W	0.906647	CE	0.2	0.0	0.3	1.6	0.00	0.00	0.00	0.24	0.01	0.29	1.74	0.00	0.00	0.00
Dixie_06	3.166077	CE	26.1	3.3	101.4	728.8	0.61	0.21	2.40	8.23	1.03	32.03	230.19	0.19	0.07	0.76
Dixie_07	11.54277	SE	95.2	15.8	602.7	4468.1	1.66	0.54	8.27	8.25	1.37	52.21	387.09	0.14	0.05	0.72
Dixie_08	24.66473	SE	178.4	31.1	1409.4	10516.5	3.24	0.93	17.13	7.23	1.26	57.14	426.38	0.13	0.04	0.69
Dixie_09	33.07989	SE	233.5	40.6	1921.2	14328.8	4.44	1.24	23.31	7.06	1.23	58.08	433.16	0.13	0.04	0.70
Dixie_10	20.92132	SE	144.8	24.7	1187.7	8866.0	2.79	0.78	14.53	6.92	1.18	56.77	423.78	0.13	0.04	0.69
Dixie_11	7.598893	SE	53.9	9.2	441.5	3296.1	1.05	0.29	5.44	7.09	1.21	58.11	433.76	0.14	0.04	0.72
FXE1_01	841.5338	SW	5258.9	886.7	33290.4	240610.6	84.71	26.10	420.77	6.25	1.05	39.56	285.92	0.10	0.03	0.50
FXE1_02	173.5067	SW	1297.5	228.2	9411.3	71280.1	18.85	5.89	108.84	7.48	1.32	54.24	410.82	0.11	0.03	0.63
I95_1E	19.25103	I95	164.9	21.2	636.7	4493.2	3.69	1.27	14.62	8.57	1.10	33.07	233.40	0.19	0.07	0.76
I95_1EN	12.90214	I95	108.4	13.4	411.3	2950.6	2.53	0.87	9.97	8.40	1.04	31.88	228.69	0.20	0.07	0.77
I95_1ES	7.21512	I95	61.3	7.6	232.6	1668.5	1.43	0.49	5.64	8.49	1.05	32.24	231.24	0.20	0.07	0.78
I95_1W	28.2732	I95	234.7	29.5	927.4	6672.0	5.45	1.86	21.66	8.30	1.04	32.80	235.98	0.19	0.07	0.77
I95_1WS	22.25823	I95	182.3	22.6	691.8	4962.5	4.26	1.46	16.76	8.19	1.02	31.08	222.95	0.19	0.07	0.75

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I95_2E	32.89496	I95	218.2	26.0	785.5	5531.6	4.54	1.55	17.90	6.63	0.79	23.88	168.16	0.14	0.05	0.54
I95_2N	41.33549	I95	348.1	43.2	1321.4	9478.4	8.13	2.80	32.02	8.42	1.05	31.97	229.30	0.20	0.07	0.77
I95_2W	17.76572	I95	145.7	18.1	552.9	3966.3	3.39	1.17	13.37	8.20	1.02	31.12	223.25	0.19	0.07	0.75
I95_3	32.93166	I95	277.0	35.2	1102.7	7959.7	6.29	2.16	25.22	8.41	1.07	33.49	241.71	0.19	0.07	0.77
I95_4	15.14539	I95	126.1	16.4	526.6	3797.5	2.87	0.98	11.58	8.33	1.08	34.77	250.74	0.19	0.06	0.76
I95_5	34.27418	I95	288.0	35.7	1093.0	7840.4	6.73	2.31	26.48	8.40	1.04	31.89	228.76	0.20	0.07	0.77
I95_6	50.14965	I95	444.8	58.1	1770.9	12721.6	9.93	3.44	39.95	8.87	1.16	35.31	253.67	0.20	0.07	0.80
I95_7	6.29655	I95	44.2	5.2	159.0	1135.7	0.95	0.33	3.75	7.01	0.83	25.25	180.36	0.15	0.05	0.60
NE_001_01	144.8406	NE	826.4	141.8	4307.8	25350.8	9.34	2.59	42.14	5.71	0.98	29.74	175.03	0.06	0.02	0.29
NE_002_01	45.92071	NE	277.7	51.0	1886.9	14125.2	2.80	0.94	18.85	6.05	1.11	41.09	307.60	0.06	0.02	0.41
NE_003_01	154.9245	NE	1075.3	218.6	6189.4	41242.7	9.20	3.44	56.02	6.94	1.41	39.95	266.21	0.06	0.02	0.36
NE_004_01	136.6991	NE	954.5	203.1	5922.0	43585.9	5.70	2.77	50.53	6.98	1.49	43.32	318.85	0.04	0.02	0.37
NE_005_01	67.58152	NE	592.5	133.0	3822.1	27112.7	5.58	2.34	36.73	8.77	1.97	56.56	401.18	0.08	0.03	0.54
NE_005_02	35.19703	NE	336.6	84.1	1998.7	13826.2	1.57	1.04	15.20	9.56	2.39	56.79	392.82	0.04	0.03	0.43
NE_005_03	87.30658	NE	835.7	208.2	4971.9	34478.6	3.86	2.57	37.81	9.57	2.38	56.95	394.91	0.04	0.03	0.43
NE_005_04	53.41642	NE	509.0	127.9	3011.5	20734.7	2.40	1.60	22.92	9.53	2.39	56.38	388.17	0.04	0.03	0.43
NE_006_01	41.05748	NE	205.3	34.5	953.6	4965.4	1.97	0.50	8.15	5.00	0.84	23.23	120.94	0.05	0.01	0.20
NE_007_01	13.05215	NE	77.2	14.5	360.2	1952.2	0.60	0.19	2.84	5.91	1.11	27.60	149.57	0.05	0.01	0.22
NE_007_02	63.77265	NE	425.2	78.3	2055.0	12305.6	3.79	1.28	18.97	6.67	1.23	32.22	192.96	0.06	0.02	0.30
NE_007_02_W	0.810817	NE	13.0	3.3	77.0	530.3	0.06	0.04	0.59	16.06	4.04	94.99	654.01	0.08	0.05	0.72
NE_007_03	31.37412	NE	193.1	35.4	915.5	5091.0	1.45	0.44	7.10	6.16	1.13	29.18	162.27	0.05	0.01	0.23
NE_007_04	19.90677	NE	135.9	25.0	624.8	3312.2	1.07	0.32	4.89	6.83	1.26	31.39	166.39	0.05	0.02	0.25
NE_007_05	44.84483	NE	173.7	38.9	975.3	6575.7	0.91	0.48	7.49	3.87	0.87	21.75	146.63	0.02	0.01	0.17
NE_007_06	41.32785	NE	205.5	34.8	904.9	4535.1	1.71	0.44	7.07	4.97	0.84	21.89	109.73	0.04	0.01	0.17
NE_008_01	12.81167	NE	60.9	12.8	183.3	1548.4	0.31	0.11	1.26	4.75	1.00	14.31	120.86	0.02	0.01	0.10
NE_009_01	52.56871	NE	402.1	78.7	2823.2	20934.6	4.93	1.69	30.17	7.65	1.50	53.71	398.23	0.09	0.03	0.57
NE_010_01	57.04148	NE	521.5	122.6	3248.6	22780.5	3.94	1.90	28.80	9.14	2.15	56.95	399.37	0.07	0.03	0.50
NE_010_02	28.2737	NE	210.2	36.9	1567.6	11591.4	3.80	1.14	19.61	7.43	1.31	55.44	409.97	0.13	0.04	0.69
NE_010_03	28.2667	NE	261.2	63.1	1569.3	10900.5	1.66	0.90	13.18	9.24	2.23	55.52	385.63	0.06	0.03	0.47
NE_010_04	44.24035	NE	422.8	103.3	2471.8	17123.4	2.31	1.40	19.97	9.56	2.33	55.87	387.05	0.05	0.03	0.45
NE_011_01	20.68546	NE	194.0	45.3	1112.3	7711.9	1.43	0.74	10.16	9.38	2.19	53.77	372.82	0.07	0.04	0.49
NE_012_01	24.35313	NE	109.6	19.9	437.6	2466.4	0.83	0.21	3.21	4.50	0.82	17.97	101.28	0.03	0.01	0.13
NE_013_01	29.83512	NE	289.2	72.7	1711.1	11780.6	1.36	0.91	13.02	9.69	2.44	57.35	394.86	0.05	0.03	0.44

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NE_014_01	32.23736	NE	308.7	74.5	1774.6	12244.7	1.91	1.09	15.05	9.58	2.31	55.05	379.83	0.06	0.03	0.47
NE_015_01	47.92832	NE	460.2	112.1	2665.2	18385.2	2.67	1.58	22.00	9.60	2.34	55.61	383.60	0.06	0.03	0.46
NE_015_02	69.37149	NE	593.3	120.2	3881.8	29930.8	3.04	1.49	32.64	8.55	1.73	55.96	431.46	0.04	0.02	0.47
NE_015_03	41.31082	NE	400.2	100.5	2368.7	16318.3	1.88	1.26	18.03	9.69	2.43	57.34	395.01	0.05	0.03	0.44
NE_016_01	26.97507	NE	131.5	22.0	561.7	2666.6	1.14	0.28	4.41	4.88	0.82	20.82	98.86	0.04	0.01	0.16
NE_017_01	44.99348	NE	284.9	47.5	1608.2	10027.8	3.77	1.03	17.23	6.33	1.06	35.74	222.87	0.08	0.02	0.38
NE_018_01	94.44337	NE	644.0	121.0	3701.1	26079.1	3.36	1.31	28.96	6.82	1.28	39.19	276.13	0.04	0.01	0.31
NE_019_01	92.15977	NE	589.6	105.8	3017.8	18741.4	3.88	1.21	23.37	6.40	1.15	32.75	203.36	0.04	0.01	0.25
NE_020_01	35.97127	NE	271.3	50.5	1790.4	12538.2	3.85	1.21	20.15	7.54	1.40	49.77	348.56	0.11	0.03	0.56
NE_021_01	122.6493	NE	473.5	78.9	2051.0	10319.8	4.03	1.05	16.57	3.86	0.64	16.72	84.14	0.03	0.01	0.14
NE_022_01	53.71412	NE	348.4	76.3	1925.7	15792.5	3.49	1.18	19.33	6.49	1.42	35.85	294.01	0.06	0.02	0.36
NEOUT_02	184.6265	NE	1388.7	300.7	7863.3	52964.0	10.69	4.67	70.08	7.52	1.63	42.59	286.87	0.06	0.03	0.38
NEOUT_03	130.2123	NE	710.1	126.6	3635.3	22954.0	6.07	1.97	32.95	5.45	0.97	27.92	176.28	0.05	0.02	0.25
NEOUT_04	67.35535	NE	385.0	65.7	2122.5	13720.5	4.33	1.28	21.75	5.72	0.97	31.51	203.70	0.06	0.02	0.32
NW_001_01	28.52861	NW	208.3	25.8	790.7	5671.5	4.87	1.67	19.16	7.30	0.91	27.71	198.80	0.17	0.06	0.67
NW_002_01	14.12063	NW	110.0	9.9	294.8	1375.9	0.25	0.14	1.22	7.79	0.70	20.87	97.44	0.02	0.01	0.09
NW_002_02	25.59024	NW	187.9	29.3	1342.5	9727.0	3.00	0.86	15.60	7.34	1.14	52.46	380.10	0.12	0.03	0.61
NW_003_01	102.5368	NW	1199.1	124.3	4655.7	28642.2	3.87	0.74	43.07	11.69	1.21	45.41	279.34	0.04	0.01	0.42
NW_004_01	76.69231	NW	502.8	101.4	3350.9	26453.1	1.33	0.89	25.16	6.56	1.32	43.69	344.92	0.02	0.01	0.33
NW_005_01	31.36276	NW	216.5	37.1	1778.7	13278.6	4.20	1.17	21.85	6.90	1.18	56.71	423.39	0.13	0.04	0.70
NW_006_01	14.78607	NW	101.6	17.5	839.5	6268.7	1.97	0.55	10.26	6.87	1.18	56.78	423.96	0.13	0.04	0.69
NW_007_01	21.18958	NW	110.1	18.2	809.9	6078.8	1.64	0.47	9.19	5.20	0.86	38.22	286.88	0.08	0.02	0.43
NW_008_01	50.88928	NW	423.7	98.8	2723.3	19200.9	3.36	1.54	24.28	8.33	1.94	53.51	377.31	0.07	0.03	0.48
NW_009_01	21.92151	NW	185.9	43.9	1179.8	8289.1	1.38	0.66	10.29	8.48	2.00	53.82	378.13	0.06	0.03	0.47
NW_010_01	15.19897	NW	121.3	24.8	803.7	6307.7	0.34	0.22	6.04	7.98	1.63	52.88	415.01	0.02	0.01	0.40
NW_011_01	1.53131	NW	10.4	1.8	86.1	642.5	0.20	0.06	1.05	6.82	1.17	56.20	419.61	0.13	0.04	0.69
NW_012_01	38.85455	NW	262.9	44.1	2070.4	15434.6	5.17	1.47	26.31	6.77	1.13	53.29	397.24	0.13	0.04	0.68
NW_012_01_W	7.292349	NW	3.2	0.6	26.6	198.8	0.06	0.02	0.32	0.44	0.08	3.65	27.26	0.01	0.00	0.04
NW_013_01	33.87505	NW	255.6	49.1	1826.0	14134.4	2.02	0.74	16.85	7.55	1.45	53.91	417.25	0.06	0.02	0.50
NW_013_02	43.48251	NW	301.9	58.1	2140.7	16587.5	2.30	0.86	19.62	6.94	1.34	49.23	381.47	0.05	0.02	0.45
NW_014_01	20.91099	NW	143.6	24.7	1188.3	8872.7	2.78	0.77	14.50	6.87	1.18	56.83	424.31	0.13	0.04	0.69
NW_015_01	34.76845	NW	222.2	38.2	1835.1	13702.3	4.31	1.20	22.45	6.39	1.10	52.78	394.10	0.12	0.03	0.65
NW_016_01	38.58649	NW	294.6	53.5	2176.2	16573.7	3.77	1.19	23.53	7.63	1.39	56.40	429.52	0.10	0.03	0.61

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NW_016_01_W	0.543854	NW	3.8	0.7	31.0	231.9	0.07	0.02	0.37	6.97	1.21	56.92	426.44	0.13	0.04	0.68
NW_017_01	25.30242	NW	177.3	30.2	1438.0	10730.5	3.46	0.97	17.86	7.01	1.19	56.83	424.09	0.14	0.04	0.71
NW_017_01_W	1.34089	NW	9.2	1.6	76.3	569.7	0.18	0.05	0.93	6.87	1.18	56.89	424.86	0.13	0.04	0.69
NW_018_01	45.08944	NW	278.9	45.5	2135.6	15693.9	4.83	1.36	25.27	6.19	1.01	47.36	348.06	0.11	0.03	0.56
NW_018_01_W	2.639756	NW	18.0	3.1	148.7	1110.5	0.35	0.10	1.82	6.80	1.17	56.34	420.69	0.13	0.04	0.69
NW_018_02	17.31967	NW	119.1	20.5	983.9	7346.5	2.31	0.64	12.04	6.88	1.18	56.81	424.17	0.13	0.04	0.69
NW_018_03	23.12457	NW	162.6	27.2	1277.5	9522.6	3.21	0.91	16.30	7.03	1.18	55.24	411.79	0.14	0.04	0.70
NW_018_04	19.46548	NW	135.5	23.0	1091.9	8146.2	2.65	0.75	13.63	6.96	1.18	56.09	418.50	0.14	0.04	0.70
NW_018_04_W	0.492796	NW	3.2	0.6	26.6	199.0	0.06	0.02	0.33	6.53	1.12	54.07	403.77	0.13	0.04	0.66
NW_018_05	16.53593	NW	104.2	18.1	851.2	6374.6	1.91	0.54	10.20	6.30	1.09	51.48	385.50	0.12	0.03	0.62
NW_018_06	20.17948	NW	158.4	31.6	1181.4	8638.0	2.25	0.73	12.91	7.85	1.56	58.54	428.06	0.11	0.04	0.64
NW_019_01	10.54746	NW	78.5	12.2	526.3	3900.1	1.62	0.49	7.67	7.44	1.16	49.89	369.76	0.15	0.05	0.73
NW_020_01	30.64866	NW	222.9	42.7	1683.4	12365.1	3.49	1.08	19.24	7.27	1.39	54.93	403.45	0.11	0.04	0.63
NW_021_01	55.75598	NW	472.1	108.6	2704.2	18792.5	3.76	1.85	25.53	8.47	1.95	48.50	337.05	0.07	0.03	0.46
NW_022_01	13.5667	NW	93.3	16.0	771.1	5758.2	1.81	0.50	9.43	6.88	1.18	56.84	424.43	0.13	0.04	0.70
NW_026_01	47.92945	NW	327.1	55.4	2629.9	19619.0	6.40	1.81	32.91	6.83	1.16	54.87	409.33	0.13	0.04	0.69
NW_027_01	128.5348	NW	215.4	20.0	761.7	5220.5	1.51	0.46	7.48	8.85	0.82	31.31	214.58	0.06	0.02	0.31
NW_028_01	24.32907	NW	111.0	19.1	918.9	6861.6	2.15	0.60	11.22	7.42	1.28	61.41	458.55	0.14	0.04	0.75
NW_028_02	14.96385	NW	59.6	7.7	327.3	2402.1	0.91	0.27	4.36	3.62	0.47	19.90	146.03	0.06	0.02	0.26
NW_029_01	16.44886	NW	182.5	31.4	1511.0	11283.7	3.53	0.98	18.45	6.59	1.13	54.54	407.30	0.13	0.04	0.67
NW_030_01	27.7036	NW	4.8	0.8	39.8	297.4	0.09	0.03	0.49	1.27	0.22	10.52	78.53	0.02	0.01	0.13
NW_030_01_W	3.786934	NW	364.7	38.2	1548.1	10630.9	1.12	0.61	10.77	4.18	0.44	17.73	121.75	0.01	0.01	0.12
NW_031_01	87.31756	NW	564.6	52.5	2580.4	15963.1	3.40	0.01	36.36	19.93	1.85	91.09	563.50	0.12	0.00	1.28
NW_032_01	28.32833	NW	332.7	35.7	1742.8	11405.5	2.82	0.33	23.67	16.29	1.75	85.30	558.25	0.14	0.02	1.16
NW_033_01	20.43074	NW	379.0	65.2	3135.1	23411.1	7.34	2.04	38.30	6.86	1.18	56.76	423.87	0.13	0.04	0.69
NW_034_01	55.23232	NW	3652.8	463.9	21388.6	165256.1	20.54	8.35	187.24	5.55	0.70	32.49	251.05	0.03	0.01	0.28
NWOUT_01	658.2676	NW	5271.5	1098.9	27596.1	201410.1	46.15	18.29	267.32	5.94	1.24	31.07	226.78	0.05	0.02	0.30
NWOUT_02	888.1354	NW	2290.9	465.5	11642.7	73417.1	19.44	7.73	108.01	7.27	1.48	36.94	232.91	0.06	0.02	0.34
NWOUT_03	315.2158	NW	1504.5	261.9	7558.7	48745.9	13.32	4.44	72.36	6.26	1.09	31.43	202.70	0.06	0.02	0.30
NWOUT_04	240.4835	NW	74.9	9.6	316.3	2286.4	1.72	0.58	6.93	8.68	1.12	36.65	264.88	0.20	0.07	0.80
Pwrlne_01	8.632012	NW	138.5	18.1	575.0	4180.4	3.03	1.04	12.41	9.20	1.20	38.20	277.71	0.20	0.07	0.82
Pwrlne_02	15.05309	NW	15.8	2.0	61.0	438.4	0.37	0.13	1.46	8.70	1.09	33.54	240.86	0.20	0.07	0.80
Pwrlne_03	1.819987	CW	19.7	3.3	84.1	399.3	0.17	0.04	0.66	4.85	0.81	20.71	98.30	0.04	0.01	0.16

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SE_001_01	4.061606	SE	25.8	4.3	110.2	523.2	0.22	0.06	0.87	4.65	0.78	19.88	94.35	0.04	0.01	0.16
SE_002_01	5.545605	SE	30.1	5.0	128.6	610.4	0.26	0.07	1.01	4.96	0.83	21.17	100.51	0.04	0.01	0.17
SE_003_01	6.073188	SE	88.8	16.6	561.3	4043.4	0.67	0.23	4.92	6.30	1.18	39.81	286.82	0.05	0.02	0.35
SE_004_01	14.09723	SE	160.8	29.8	1040.4	7257.5	1.75	0.54	10.21	6.11	1.13	39.56	275.98	0.07	0.02	0.39
SE_005_01	26.29733	SE	278.3	56.3	2047.8	14958.9	3.75	1.24	21.97	7.15	1.45	52.63	384.49	0.10	0.03	0.56
SE_005_02	38.90614	SE	71.4	12.8	562.8	4252.2	1.09	0.32	6.32	6.95	1.25	54.84	414.32	0.11	0.03	0.62
SE_005_03	10.26311	SE	126.1	20.5	933.7	6944.9	2.54	0.74	12.52	7.06	1.15	52.27	388.78	0.14	0.04	0.70
SE_006_01	17.8631	SE	95.5	24.0	564.9	3889.2	0.45	0.30	4.30	8.72	2.19	51.61	355.30	0.04	0.03	0.39
SE_007_01	10.94629	SE	200.6	33.3	1195.3	8061.2	2.88	0.84	13.92	6.32	1.05	37.67	254.04	0.09	0.03	0.44
SE_009_01	31.73129	SE	362.6	47.0	1840.1	13274.6	4.04	1.22	20.79	7.95	1.03	40.35	291.05	0.09	0.03	0.46
SE_009_02	45.60889	SE	97.5	16.3	416.3	1976.3	0.84	0.21	3.27	4.87	0.82	20.81	98.80	0.04	0.01	0.16
SE_010_01	20.00226	SE	156.0	26.3	665.2	3317.1	1.25	0.33	5.14	5.13	0.87	21.88	109.10	0.04	0.01	0.17
SE_011_01	30.40481	SE	87.8	18.8	617.1	4448.8	1.02	0.37	6.27	7.95	1.70	55.92	403.12	0.09	0.03	0.57
SE_012_01	11.03591	SE	112.0	19.6	494.6	2472.3	0.93	0.25	3.87	5.03	0.88	22.20	110.98	0.04	0.01	0.17
SE_013_01	22.27664	SE	73.1	12.2	312.0	1481.1	0.63	0.16	2.45	4.74	0.79	20.25	96.10	0.04	0.01	0.16
SE_014_01	15.41115	SE	22.6	3.8	96.5	457.9	0.20	0.05	0.76	4.83	0.81	20.62	97.88	0.04	0.01	0.16
SE_015_01	4.678281	SE	47.1	7.3	310.9	2301.9	0.98	0.30	4.60	7.90	1.22	52.15	386.13	0.16	0.05	0.77
SE_016_01	5.961462	SE	16.3	3.7	88.7	567.3	0.10	0.05	0.68	6.18	1.40	33.61	215.07	0.04	0.02	0.26
SE_017_01	2.637845	SE	39.5	6.6	168.8	801.3	0.34	0.09	1.32	4.78	0.80	20.41	96.86	0.04	0.01	0.16
SE_018_01	8.272968	SE	107.5	19.1	506.0	2707.3	0.95	0.27	4.19	5.33	0.95	25.10	134.27	0.05	0.01	0.21
SE_019_01	20.16274	SE	156.8	26.9	1289.3	9625.4	3.04	0.85	15.83	7.05	1.21	57.99	432.96	0.14	0.04	0.71
SE_020_01	22.23176	SE	45.9	7.7	196.2	931.3	0.40	0.10	1.54	4.91	0.82	20.96	99.48	0.04	0.01	0.16
SE_021_01	9.361469	SE	427.9	76.6	2259.6	14347.4	4.01	1.27	21.23	6.70	1.20	35.37	224.60	0.06	0.02	0.33
SE_022_01	63.88063	SE	687.9	148.6	3909.3	26023.3	5.83	2.43	35.86	8.62	1.86	48.97	325.99	0.07	0.03	0.45
SE_023_01	79.82883	SE	138.2	29.9	826.4	5521.2	1.17	0.46	7.33	6.64	1.44	39.73	265.41	0.06	0.02	0.35
SE_024_01	20.80245	SE	73.2	17.0	406.3	2649.5	0.41	0.21	3.11	6.86	1.60	38.09	248.36	0.04	0.02	0.29
SE_025_01	10.66788	SE	50.5	12.5	295.9	2019.8	0.25	0.16	2.25	7.60	1.89	44.51	303.82	0.04	0.02	0.34
SE_026_01	6.648012	SE	48.8	12.3	288.9	1988.7	0.23	0.15	2.20	7.75	1.95	45.84	315.61	0.04	0.02	0.35
SE_027_01	6.301249	SE	19.7	5.0	116.8	804.0	0.09	0.06	0.89	8.77	2.20	51.86	357.09	0.04	0.03	0.39
SE_028_01	2.251478	SE	44.2	11.1	261.3	1799.3	0.21	0.14	1.99	7.54	1.89	44.60	307.09	0.04	0.02	0.34
SE_029_01	5.859335	SE	57.6	14.5	340.6	2345.2	0.27	0.18	2.59	7.83	1.97	46.31	318.82	0.04	0.02	0.35
SE_030_01	7.355901	SE	280.4	46.1	2119.7	15778.2	5.61	1.63	27.93	7.47	1.23	56.48	420.43	0.15	0.04	0.74
SE_031_01	37.52925	SE	20.6	5.2	121.7	837.7	0.10	0.06	0.93	9.35	2.35	55.30	380.70	0.04	0.03	0.42

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SE_032_01	2.200391	SE	28.7	7.2	169.9	1170.0	0.14	0.09	1.29	8.05	2.02	47.62	327.88	0.04	0.03	0.36
SE_033_01	3.56847	SE	57.7	14.5	341.4	2350.4	0.27	0.18	2.60	8.57	2.15	50.70	349.09	0.04	0.03	0.39
SE_034_01	6.732926	SE	154.7	38.4	929.6	6430.0	0.82	0.50	7.31	9.98	2.48	59.96	414.74	0.05	0.03	0.47
SE_035_01	15.50369	SE	10.9	1.8	46.7	221.8	0.09	0.02	0.37	4.85	0.81	20.70	98.26	0.04	0.01	0.16
SE_036_01	2.257486	SE	25.7	4.3	109.9	521.7	0.22	0.06	0.86	4.84	0.81	20.67	98.13	0.04	0.01	0.16
SE_037_01	5.315826	SE	20.4	3.4	87.3	414.2	0.18	0.04	0.68	4.87	0.82	20.78	98.66	0.04	0.01	0.16
SE_038_01	4.198842	SE	77.8	19.5	460.2	3168.7	0.37	0.24	3.50	9.07	2.28	53.63	369.26	0.04	0.03	0.41
SE_039_01	8.581164	SE	145.7	35.4	896.7	6243.2	0.91	0.49	7.39	9.72	2.36	59.84	416.65	0.06	0.03	0.49
SE_040_01	14.98448	SE	80.1	20.1	474.0	3263.8	0.38	0.25	3.61	7.80	1.96	46.14	317.64	0.04	0.02	0.35
SE_041_01	10.27506	SE	267.9	52.2	1483.9	10262.8	1.62	0.67	12.26	8.26	1.61	45.78	316.59	0.05	0.02	0.38
SE_042_01	32.41724	SE	96.0	18.0	491.4	2864.5	0.86	0.27	4.23	6.55	1.23	33.53	195.45	0.06	0.02	0.29
SE_043_01	14.65582	SE	168.2	30.2	757.3	3895.2	1.36	0.39	5.91	7.54	1.35	33.94	174.58	0.06	0.02	0.26
SE_043_02	22.31145	SE	55.0	9.2	236.6	1136.2	0.47	0.12	1.86	7.18	1.21	30.87	148.26	0.06	0.02	0.24
SE_043_03	7.663769	SE	137.9	23.1	588.8	2794.9	1.19	0.30	4.62	7.26	1.22	31.01	147.22	0.06	0.02	0.24
SE_043_04	18.98447	SE	109.9	18.4	469.5	2228.5	0.95	0.24	3.68	7.26	1.22	31.01	147.22	0.06	0.02	0.24
SE_043_05	15.13744	SE	205.1	43.1	1464.5	10595.0	2.52	0.88	15.19	8.49	1.79	60.63	438.63	0.10	0.04	0.63
SE_044_01	24.15463	SE	37.9	7.0	175.1	933.9	0.30	0.09	1.36	7.42	1.38	34.32	183.01	0.06	0.02	0.27
SE_045_01	5.102878	SE	170.5	42.9	1009.0	6946.8	0.80	0.54	7.68	10.23	2.57	60.54	416.83	0.05	0.03	0.46
SE_046_01	16.66599	SE	272.5	64.4	1567.8	10921.8	1.74	0.96	13.57	10.39	2.46	59.75	416.23	0.07	0.04	0.52
SE_046_02	26.23982	SE	357.7	85.7	2151.3	15136.7	1.98	1.15	17.46	10.60	2.54	63.75	448.57	0.06	0.03	0.52
SE_046_03	33.74464	SE	43.7	11.0	258.4	1778.9	0.21	0.14	1.97	10.81	2.72	63.96	440.35	0.05	0.03	0.49
SE_047_01	4.039722	SE	65.9	11.6	291.9	1465.6	0.55	0.15	2.28	7.37	1.29	32.63	163.81	0.06	0.02	0.26
SE_048_01	8.946444	SE	29.4	4.9	125.6	596.3	0.25	0.06	0.99	7.24	1.21	30.92	146.83	0.06	0.02	0.24
SE_049_01	4.061008	SE	58.7	9.8	250.6	1189.7	0.51	0.13	1.97	7.18	1.20	30.68	145.63	0.06	0.02	0.24
SE_050_01	8.16946	SE	126.0	21.4	543.4	2621.4	1.08	0.28	4.26	7.31	1.24	31.53	152.09	0.06	0.02	0.25
SE_051_01	17.23642	SE	86.5	19.2	496.9	3264.3	0.63	0.27	4.15	8.67	1.92	49.80	327.15	0.06	0.03	0.42
SE_052_01	9.978002	SE	214.5	50.5	1364.1	9592.3	1.64	0.77	12.02	9.82	2.31	62.47	439.29	0.07	0.04	0.55
SE_053_01	21.83623	SE	143.3	33.5	923.7	6514.6	1.15	0.52	8.25	9.54	2.23	61.50	433.76	0.08	0.03	0.55
SE_054_01	15.01896	SE	90.6	21.8	564.6	3945.0	0.60	0.31	4.75	9.04	2.18	56.32	393.54	0.06	0.03	0.47
SE_055_01	10.02439	SE	85.8	20.7	534.2	3731.2	0.57	0.29	4.49	8.19	1.97	50.94	355.82	0.05	0.03	0.43
SE_056_01	10.48623	SE	99.7	23.7	623.4	4405.6	0.62	0.33	5.18	8.08	1.92	50.52	356.98	0.05	0.03	0.42
SE_057_01	12.34118	SE	125.5	31.5	742.4	5111.5	0.59	0.39	5.65	11.14	2.80	65.91	453.82	0.05	0.03	0.50
SE_058_01	11.26321	SE	93.0	18.4	538.5	3599.5	0.71	0.25	4.58	6.22	1.23	36.00	240.63	0.05	0.02	0.31

Sub-Basin	Sub-basin Area	Major Basins	Estimated Existing Annual TN Load (lb)	Estimated Existing Annual TP Load (lb)	Estimated Existing Annual BOD Load (lb)	Estimated Existing Annual TSS Load (lb)	Estimated Existing Annual Cu Load (lb)	Estimated Existing Annual Pb Load (lb)	Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
SE_059_01	14.95873	SE	94.5	15.9	479.6	2703.0	1.02	0.27	4.45	5.19	0.87	26.31	148.25	0.06	0.01	0.24
SE_060_01	18.23274	SE	70.3	11.8	333.9	1774.6	0.70	0.18	2.92	5.04	0.85	23.96	127.33	0.05	0.01	0.21
SE_061_01	13.93733	SE	98.6	16.1	461.4	2557.9	1.15	0.32	4.78	5.35	0.87	25.04	138.83	0.06	0.02	0.26
SE_061_02	18.42399	SE	175.2	28.4	1032.6	6845.7	2.74	0.79	12.60	6.23	1.01	36.73	243.47	0.10	0.03	0.45
SE_061_03	28.1168	SE	100.0	17.6	701.7	5159.4	1.76	0.55	8.98	7.64	1.35	53.61	394.20	0.13	0.04	0.69
SE_061_04	13.08823	SE	178.8	29.6	915.7	5532.6	2.14	0.61	9.64	5.88	0.97	30.13	182.02	0.07	0.02	0.32
SE_061_05	30.39571	SE	392.4	65.9	1888.8	10876.1	4.39	1.20	18.71	5.35	0.90	25.73	148.17	0.06	0.02	0.25
SE_061_06	73.40123	SE	39.8	8.8	212.1	1330.8	0.24	0.11	1.63	7.13	1.58	37.99	238.38	0.04	0.02	0.29
SE_062_01	5.582526	SE	29.2	4.9	124.6	591.5	0.25	0.06	0.98	4.82	0.81	20.59	97.72	0.04	0.01	0.16
SE_063_01	6.05338	SE	34.5	5.8	147.3	699.0	0.30	0.07	1.16	4.85	0.81	20.72	98.33	0.04	0.01	0.16
SE_064_01	7.108353	SE	39.4	6.6	168.4	799.2	0.34	0.09	1.32	4.73	0.79	20.21	95.95	0.04	0.01	0.16
SE_065_01	8.32961	SE	51.6	8.6	220.4	1046.0	0.45	0.11	1.73	4.74	0.79	20.23	96.01	0.04	0.01	0.16
SE_066_01	10.89533	SE	8.2	1.4	35.0	166.2	0.07	0.02	0.27	4.88	0.82	20.83	98.86	0.04	0.01	0.16
SE_067_01	1.680995	SE	40.7	7.0	303.4	2169.1	0.70	0.19	3.55	6.44	1.10	48.04	343.43	0.11	0.03	0.56
SE_068_01	6.315843	SE	60.4	10.1	257.9	1224.2	0.52	0.13	2.02	4.81	0.81	20.55	97.53	0.04	0.01	0.16
SE_069_01	12.55154	SE	42.6	7.2	247.6	1544.9	0.54	0.14	2.54	6.40	1.08	37.24	232.38	0.08	0.02	0.38
SE_070_01	6.648153	SE	194.1	45.2	1255.5	8863.5	1.58	0.71	11.29	9.66	2.25	62.48	441.09	0.08	0.04	0.56
SE_071_01	20.09453	SE	170.4	36.7	887.3	5438.6	1.09	0.46	6.83	7.24	1.56	37.70	231.11	0.05	0.02	0.29
SE_072_01	23.53238	SE	73.1	12.2	572.7	4268.5	1.44	0.41	7.32	7.00	1.17	54.89	409.14	0.14	0.04	0.70
SE_072_02	10.43281	SE	6.7	1.1	54.2	404.4	0.13	0.04	0.67	6.92	1.18	56.13	418.88	0.14	0.04	0.70
SE_072_02_W	0.965441	SE	78.1	18.2	437.9	3027.5	0.58	0.30	4.05	10.10	2.35	56.65	391.65	0.07	0.04	0.52
SE_072_03	7.730299	SE	92.0	17.5	614.8	4779.6	0.65	0.26	5.69	7.80	1.49	52.13	405.31	0.06	0.02	0.48
SE_072_04	11.79233	SE	4.3	0.6	20.8	155.5	0.08	0.03	0.35	1.98	0.29	9.52	71.14	0.03	0.01	0.16
SE_072_04_W	2.185402	SE	155.5	35.9	1011.8	7178.1	1.27	0.57	9.12	9.67	2.23	62.94	446.51	0.08	0.04	0.57
SE_072_05	16.07612	SE	29.1	5.0	125.8	611.0	0.25	0.06	0.99	5.14	0.88	22.28	108.18	0.04	0.01	0.17
SE_073_01	5.64812	SE	21.3	3.6	91.0	432.2	0.18	0.05	0.71	4.77	0.80	20.39	96.77	0.04	0.01	0.16
SE_074_01	4.466332	SE	26.9	4.5	114.7	544.3	0.23	0.06	0.90	4.98	0.83	21.27	100.96	0.04	0.01	0.17
SE_075_01	5.39107	SE	21.6	3.6	92.3	438.0	0.19	0.05	0.72	5.02	0.84	21.42	101.69	0.04	0.01	0.17
SE_076_01	4.307415	SE	17.9	3.0	76.6	363.7	0.16	0.04	0.60	4.86	0.81	20.74	98.44	0.04	0.01	0.16
SE_077_01	3.695135	SE	71.4	12.9	287.3	1590.1	0.55	0.14	2.13	5.70	1.03	22.93	126.94	0.04	0.01	0.17
SE_077_02	12.5261	SE	17.0	2.9	72.8	345.5	0.15	0.04	0.57	4.86	0.82	20.77	98.61	0.04	0.01	0.16
SE_078_01	3.503536	SE	12.7	2.1	54.2	257.3	0.11	0.03	0.43	4.88	0.82	20.85	98.99	0.04	0.01	0.16
SE_078_02	2.599522	SE	37.2	6.2	158.9	754.2	0.32	0.08	1.25	4.89	0.82	20.88	99.09	0.04	0.01	0.16

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SE_079_01	7.611098	SE	14.2	2.4	60.5	287.1	0.12	0.03	0.47	4.97	0.83	21.23	100.79	0.04	0.01	0.17
SE_080_01	2.848279	SE	35.2	5.9	150.5	714.5	0.30	0.08	1.18	4.87	0.82	20.81	98.77	0.04	0.01	0.16
SE_080_02	7.233709	SE	207.6	34.8	886.6	4208.7	1.80	0.45	6.96	6.90	1.16	29.46	139.84	0.06	0.01	0.23
SE_081_01	30.09726	SE	78.7	13.2	336.1	1595.3	0.68	0.17	2.64	6.45	1.08	27.55	130.77	0.06	0.01	0.22
SE_082_01	12.19971	SE	30.5	5.1	130.4	619.0	0.26	0.07	1.02	4.94	0.83	21.09	100.10	0.04	0.01	0.17
SE_083_01	6.183839	SE	45.9	7.7	196.0	930.4	0.40	0.10	1.54	4.84	0.81	20.68	98.19	0.04	0.01	0.16
SE_084_01	9.475347	SE	36.9	6.2	157.6	748.3	0.32	0.08	1.24	5.01	0.84	21.38	101.50	0.04	0.01	0.17
SE_085_01	7.372058	SE	29.6	5.0	126.2	599.1	0.26	0.06	0.99	4.76	0.80	20.31	96.43	0.04	0.01	0.16
SE_086_01	6.213185	SE	58.4	9.8	249.6	1184.7	0.51	0.13	1.96	5.06	0.85	21.61	102.56	0.04	0.01	0.17
SE_087_01	11.55182	SE	60.3	10.1	257.3	1221.3	0.52	0.13	2.02	4.90	0.82	20.92	99.32	0.04	0.01	0.16
SE_088_01	12.29652	SE	48.9	8.2	208.9	991.7	0.42	0.11	1.64	4.93	0.83	21.04	99.89	0.04	0.01	0.17
SE_089_01	9.928125	SE	37.9	6.3	161.7	767.5	0.33	0.08	1.27	4.85	0.81	20.71	98.28	0.04	0.01	0.16
SE_090_01	7.808561	SE	87.3	19.5	467.7	2949.1	0.53	0.25	3.59	7.08	1.58	37.92	239.14	0.04	0.02	0.29
SE_091_01	12.33223	SE	95.3	16.0	406.9	1931.6	0.82	0.21	3.19	7.26	1.22	31.00	147.13	0.06	0.02	0.24
SE_092_01	13.12872	SE	216.1	36.2	922.9	4380.9	1.87	0.47	7.24	7.14	1.20	30.51	144.83	0.06	0.02	0.24
SE_093_01	30.24953	SE	37.6	6.3	160.7	762.9	0.33	0.08	1.26	6.42	1.08	27.42	130.17	0.06	0.01	0.22
SE_094_01	5.861246	SE	33.3	5.6	142.2	674.8	0.29	0.07	1.12	6.13	1.03	26.18	124.29	0.05	0.01	0.21
SE_095_01	5.429313	SE	30.9	5.2	131.8	625.8	0.27	0.07	1.03	5.09	0.85	21.73	103.17	0.04	0.01	0.17
SE_096_01	6.065629	SE	229.5	51.7	1441.0	10178.5	2.11	0.91	13.87	9.92	2.23	62.29	440.01	0.09	0.04	0.60
SE_097_01	23.13244	SE	40.5	6.8	173.1	821.7	0.35	0.09	1.36	5.22	0.87	22.27	105.72	0.05	0.01	0.17
SE_098_01	7.772603	SE	34.9	5.9	149.2	708.1	0.30	0.08	1.17	4.79	0.80	20.44	97.02	0.04	0.01	0.16
SE_099_01	7.298203	SE	42.0	7.0	179.5	851.9	0.36	0.09	1.41	4.79	0.80	20.44	97.01	0.04	0.01	0.16
SE_100_01	8.780837	SE	46.6	7.8	199.0	944.6	0.40	0.10	1.56	4.90	0.82	20.91	99.27	0.04	0.01	0.16
SE_101_01	9.514827	SE	39.6	6.6	169.1	802.6	0.34	0.09	1.33	4.76	0.80	20.32	96.44	0.04	0.01	0.16
SE_102_01	8.322516	SE	78.9	13.7	368.8	2028.2	0.60	0.17	2.86	6.27	1.09	29.28	161.04	0.05	0.01	0.23
SE_103_01	12.5942	SE	79.3	13.7	364.2	1951.4	0.62	0.17	2.83	5.87	1.01	26.94	144.34	0.05	0.01	0.21
SE_104_01	13.52001	SE	67.2	11.3	286.8	1361.3	0.58	0.15	2.25	5.53	0.93	23.62	112.12	0.05	0.01	0.19
SE_105_01	12.14109	SE	75.4	12.6	322.0	1528.3	0.65	0.16	2.53	5.02	0.84	21.44	101.78	0.04	0.01	0.17
SE_106_01	15.01636	SE	129.2	28.4	732.2	4760.8	0.93	0.40	6.07	8.60	1.89	48.75	317.01	0.06	0.03	0.40
SE_107_01	15.01777	SE	170.0	37.3	1027.9	6930.1	1.41	0.57	9.10	8.24	1.81	49.85	336.08	0.07	0.03	0.44
SE_107_02	20.62046	SE	198.3	33.3	849.2	4053.0	1.71	0.43	6.66	7.26	1.22	31.09	148.38	0.06	0.02	0.24
SE_107_03	27.31464	SE	102.5	17.2	437.6	2077.0	0.89	0.22	3.43	7.26	1.22	31.01	147.22	0.06	0.02	0.24
SE_107_04	14.10833	SE	351.6	76.4	2295.8	16371.0	3.63	1.43	22.88	8.28	1.80	54.06	385.51	0.09	0.03	0.54

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SE_108_01	42.46534	SE	198.9	37.1	1560.8	11530.5	3.32	0.99	18.07	7.53	1.40	59.11	436.66	0.13	0.04	0.68
SE_109_01	26.40591	SE	56.5	9.5	241.5	1146.3	0.49	0.12	1.90	4.80	0.80	20.49	97.25	0.04	0.01	0.16
SE_110_01	11.78664	SE	22.8	3.8	97.2	461.5	0.20	0.05	0.76	4.85	0.81	20.69	98.22	0.04	0.01	0.16
SE_111_01	4.699074	SE	38.7	7.6	186.9	1053.2	0.28	0.10	1.45	7.78	1.52	37.54	211.56	0.06	0.02	0.29
SE_112_01	4.978459	SE	149.1	33.3	888.1	5962.1	1.14	0.49	7.65	8.15	1.82	48.54	325.82	0.06	0.03	0.42
SE_113_01	18.29861	SE	63.8	10.7	272.4	1292.8	0.55	0.14	2.14	5.25	0.88	22.41	106.36	0.05	0.01	0.18
SE_115_01	12.15511	SE	71.2	11.9	304.0	1442.9	0.62	0.15	2.39	5.08	0.85	21.70	103.00	0.04	0.01	0.17
SE_115_02	14.00888	SE	15.1	2.5	64.3	305.4	0.13	0.03	0.50	4.98	0.83	21.27	100.98	0.04	0.01	0.17
SE_117_01	3.024009	SE	15.5	2.6	66.4	315.1	0.13	0.03	0.52	4.87	0.82	20.80	98.74	0.04	0.01	0.16
SE_118_01	3.191528	SE	173.8	38.0	1044.0	7677.8	0.99	0.53	8.98	9.68	2.12	58.15	427.63	0.06	0.03	0.50
SE_119_01	17.95439	SE	36.9	6.2	157.6	747.9	0.32	0.08	1.24	4.87	0.82	20.80	98.73	0.04	0.01	0.16
SE_120_01	7.575139	SE	25.4	4.3	108.7	515.8	0.22	0.06	0.85	4.85	0.81	20.73	98.41	0.04	0.01	0.16
SE_121_01	5.241216	SE	20.5	3.4	87.4	414.8	0.18	0.04	0.69	5.05	0.85	21.56	102.36	0.04	0.01	0.17
SE_122_01	4.05227	SE	23.8	4.0	101.6	482.5	0.21	0.05	0.80	4.77	0.80	20.35	96.61	0.04	0.01	0.16
SE_123_01	4.994609	SE	56.4	9.5	240.8	1143.2	0.49	0.12	1.89	4.87	0.82	20.78	98.64	0.04	0.01	0.16
SE_124_01	11.58976	SE	26.7	4.5	113.8	540.3	0.23	0.06	0.89	4.82	0.81	20.58	97.69	0.04	0.01	0.16
SE_125_01	5.530871	SE	43.3	9.9	237.2	1526.6	0.25	0.12	1.82	7.52	1.72	41.15	264.88	0.04	0.02	0.32
SE_126_01	5.763446	SE	30.1	5.0	128.5	610.0	0.26	0.07	1.01	4.75	0.80	20.30	96.38	0.04	0.01	0.16
SE_127_01	6.328756	SE	47.1	10.8	257.9	1661.6	0.27	0.14	1.98	7.42	1.70	40.63	261.75	0.04	0.02	0.31
SE_128_01	6.348121	SE	29.1	4.9	124.1	589.1	0.25	0.06	0.97	4.84	0.81	20.69	98.21	0.04	0.01	0.16
SE_129_01	5.998814	SE	133.2	22.8	1030.1	7482.7	2.38	0.66	12.24	6.60	1.13	51.04	370.77	0.12	0.03	0.61
SE_130_01	20.18121	SE	86.8	14.9	718.6	5366.3	1.68	0.47	8.77	6.59	1.13	54.54	407.24	0.13	0.04	0.67
SE_131_01	13.17703	SE	162.1	27.2	692.2	3285.8	1.40	0.35	5.43	4.85	0.81	20.72	98.33	0.04	0.01	0.16
SEOUT_01	33.41547	SE	48.4	6.0	184.3	1322.4	1.13	0.39	4.46	9.10	1.13	34.61	248.32	0.21	0.07	0.84
SMPLE_01	5.325293	NW	15.4	2.2	79.7	582.8	0.34	0.11	1.45	8.31	1.17	43.05	314.70	0.18	0.06	0.78
SMPLE_02	1.851925	NW	13.0	1.7	61.7	449.3	0.29	0.10	1.22	8.62	1.16	41.03	298.81	0.19	0.06	0.81
SMPLE_03	1.503695	NW	22.3	2.9	100.9	732.7	0.51	0.17	2.08	8.74	1.15	39.54	287.06	0.20	0.07	0.82
SMPLE_04	2.552531	NW	15.8	2.0	59.9	429.9	0.37	0.13	1.45	9.79	1.22	37.17	266.61	0.23	0.08	0.90
SMPLE_05	1.61258	NW	18.3	2.0	61.9	439.5	0.36	0.12	1.41	9.82	1.10	33.15	235.48	0.19	0.07	0.76
SMPLE_06	1.866512	NW	43.9	5.6	182.4	1317.1	1.01	0.34	4.07	8.88	1.14	36.87	266.20	0.20	0.07	0.82
SMPLE_07	4.947758	NW	329.4	80.8	1915.0	13202.1	1.85	1.11	15.58	9.71	2.38	56.47	389.32	0.05	0.03	0.46
SW_001_01	33.91115	SW	431.6	100.8	2006.5	14700.2	2.12	1.12	14.86	8.25	1.93	38.36	281.08	0.04	0.02	0.28
SW_002_01	52.29933	SW	325.5	77.2	1596.0	11522.3	1.58	0.88	11.90	8.56	2.03	41.97	302.99	0.04	0.02	0.31

Sub-Basin	Sub-basin Area	Major Basins	Estimated Existing Annual TN Load (lb)	Estimated Existing Annual TP Load (lb)	Estimated Existing Annual BOD Load (lb)	Estimated Existing Annual TSS Load (lb)	Estimated Existing Annual Cu Load (lb)	Estimated Existing Annual Pb Load (lb)	Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
SW_002_02	38.02914	SW	250.1	58.1	1143.6	8417.8	1.23	0.64	8.45	8.05	1.87	36.80	270.88	0.04	0.02	0.27
SW_002_03	31.07603	SW	263.3	60.3	1140.7	8529.0	1.30	0.64	8.37	7.72	1.77	33.45	250.07	0.04	0.02	0.25
SW_002_04	34.10636	SW	66.2	16.6	391.6	2696.1	0.31	0.21	2.98	10.84	2.72	64.13	441.54	0.05	0.03	0.49
SW_003_01	6.106193	SW	182.9	42.9	1019.5	7291.8	1.17	0.57	8.43	7.68	1.80	42.79	306.02	0.05	0.02	0.35
SW_003_02	23.82774	SW	156.0	35.6	664.0	4990.8	0.77	0.38	4.86	7.23	1.65	30.78	231.39	0.04	0.02	0.23
SW_003_03	21.56922	SW	776.2	176.7	3290.6	24763.6	3.85	1.87	24.06	7.21	1.64	30.58	230.15	0.04	0.02	0.22
SW_003_04	107.5983	SW	291.4	73.0	1720.3	11833.7	1.39	0.92	13.15	9.43	2.36	55.68	383.05	0.05	0.03	0.43
SW_004_01	30.89377	SW	370.7	93.1	2192.2	15086.7	1.75	1.16	16.68	8.78	2.21	51.94	357.44	0.04	0.03	0.40
SW_005_01	42.20808	SW	87.5	15.1	713.9	5341.2	1.67	0.46	8.70	6.84	1.18	55.82	417.60	0.13	0.04	0.68
SW_006_01	12.79032	SW	81.4	14.0	673.9	5032.0	1.58	0.44	8.23	6.88	1.18	56.99	425.57	0.13	0.04	0.70
SW_007_01	11.82428	SW	86.7	14.9	707.4	5291.7	1.66	0.46	8.62	6.82	1.18	55.65	416.30	0.13	0.04	0.68
SW_008_01	12.71129	SW	81.8	14.1	677.1	5056.6	1.58	0.44	8.27	6.88	1.18	57.00	425.66	0.13	0.04	0.70
SW_009_01	11.87957	SW	230.3	39.9	1898.6	14166.7	4.41	1.23	23.09	6.89	1.19	56.84	424.07	0.13	0.04	0.69
SW_010_01	33.4061	SW	307.1	52.8	2542.8	18988.8	5.94	1.65	31.04	6.84	1.18	56.65	423.05	0.13	0.04	0.69
SW_011_01	44.88583	SW	202.1	50.8	1195.8	8232.7	0.95	0.63	9.10	8.69	2.18	51.41	353.94	0.04	0.03	0.39
SW_012_01	23.25999	SW	625.1	106.0	5034.8	37562.7	12.22	3.44	62.90	6.89	1.17	55.52	414.23	0.13	0.04	0.69
SW_013_01	90.68025	SW	520.3	118.8	2230.4	16729.4	2.58	1.26	16.34	4.88	1.11	20.91	156.81	0.02	0.01	0.15
SW_014_01	106.6853	SW	270.4	54.3	910.6	6620.1	1.62	0.53	6.56	3.79	0.76	12.75	92.71	0.02	0.01	0.09
SW_014_02	71.40278	SW	499.4	104.7	3418.5	24633.6	6.06	2.18	36.02	8.33	1.75	57.02	410.91	0.10	0.04	0.60
SW_015_01	59.94853	SW	298.1	71.4	1577.2	11233.2	1.56	0.86	12.17	7.18	1.72	37.97	270.43	0.04	0.02	0.29
SW_015_02	41.53795	SW	450.9	110.4	2533.8	17689.3	2.30	1.39	19.66	8.35	2.05	46.95	327.76	0.04	0.03	0.36
SW_016_01	53.97038	SW	510.0	100.6	1101.2	10671.1	2.81	0.80	7.34	3.91	0.77	8.45	81.90	0.02	0.01	0.06
SW_017_01	130.3023	SW	264.5	60.5	1338.9	9517.5	1.80	0.90	11.87	7.39	1.69	37.41	265.96	0.05	0.03	0.33
SW_018_01	35.78537	SW	69.0	17.3	408.2	2810.6	0.33	0.22	3.11	9.25	2.32	54.72	376.73	0.04	0.03	0.42
SW_019_01	7.46046	SW	109.8	27.6	649.7	4473.1	0.52	0.34	4.94	7.70	1.93	45.55	313.63	0.04	0.02	0.35
SW_020_01	14.26249	SW	104.5	25.4	604.2	4167.1	0.61	0.36	5.01	7.69	1.87	44.45	306.59	0.05	0.03	0.37
SW_021_01	13.59172	SW	276.7	45.6	2101.5	15646.0	5.52	1.60	27.58	6.70	1.10	50.88	378.84	0.13	0.04	0.67
SW_022_01	41.30036	SW	701.5	146.0	2002.5	17266.4	3.63	1.26	13.62	4.07	0.85	11.62	100.23	0.02	0.01	0.08
SW_023_01	172.275	SW	294.4	74.0	1741.8	11992.3	1.39	0.92	13.26	8.67	2.18	51.31	353.27	0.04	0.03	0.39
SW_023_02	33.94638	SW	645.8	109.7	5217.3	38927.9	12.61	3.55	65.01	6.17	1.05	49.81	371.65	0.12	0.03	0.62
SW_024_01	104.7424	SW	99.1	17.0	820.2	6125.0	1.92	0.53	10.01	6.93	1.19	57.41	428.72	0.13	0.04	0.70
SW_026_01	14.28669	SW	84.1	14.5	696.6	5202.0	1.63	0.45	8.50	6.88	1.18	57.00	425.64	0.13	0.04	0.70
SW_026_02	12.22167	SW	178.9	29.9	1396.6	10407.8	3.54	1.01	17.91	7.16	1.19	55.85	416.21	0.14	0.04	0.72

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SW_027_01	25.0065	SW	183.6	31.2	1480.0	11041.7	3.59	1.01	18.47	7.08	1.20	57.08	425.84	0.14	0.04	0.71
SW_027_02	25.92922	SW	86.2	14.5	681.0	5077.2	1.70	0.48	8.65	7.10	1.19	56.05	417.91	0.14	0.04	0.71
SW_027_03	12.14901	SW	227.7	38.3	1804.4	13456.3	4.47	1.27	22.83	7.05	1.19	55.85	416.52	0.14	0.04	0.71
SW_027_04	32.3061	SW	867.7	163.7	5371.9	42092.3	4.15	2.06	45.98	5.02	0.95	31.07	243.43	0.02	0.01	0.27
SW_028_01	172.9161	SW	108.1	21.8	720.4	5687.0	0.28	0.19	5.40	6.47	1.30	43.11	340.37	0.02	0.01	0.32
SW_028_02	16.70838	SW	120.2	24.2	801.2	6325.0	0.32	0.21	6.01	4.71	0.95	31.42	248.04	0.01	0.01	0.24
SW_028_03	25.49996	SW	301.0	51.1	2426.0	18100.8	5.87	1.65	30.24	6.90	1.17	55.64	415.13	0.13	0.04	0.69
SW_029_01	43.60259	SW	452.4	82.3	3119.5	23980.5	4.07	1.41	30.23	6.80	1.24	46.88	360.39	0.06	0.02	0.45
SW_029_02	66.53989	SW	526.2	106.5	3503.0	27613.6	1.40	0.93	26.28	8.73	1.77	58.15	458.35	0.02	0.02	0.44
SW_029_03	60.24537	SW	164.4	39.4	1018.3	7113.0	1.08	0.56	8.55	9.13	2.19	56.57	395.12	0.06	0.03	0.48
SW_029_04	18.00198	SW	166.4	41.2	977.0	6731.4	0.80	0.52	7.49	10.71	2.65	62.86	433.11	0.05	0.03	0.48
SW_029_05	15.542	SW	54.4	7.5	277.0	1995.4	0.49	0.16	2.79	3.97	0.55	20.19	145.48	0.04	0.01	0.20
SW_029_06	13.71556	SW	143.1	33.7	913.6	6426.5	1.09	0.51	8.03	9.09	2.14	58.02	408.08	0.07	0.03	0.51
SW_029_07	15.74816	SW	358.2	88.7	2158.2	14938.5	1.93	1.16	17.05	9.43	2.33	56.80	393.15	0.05	0.03	0.45
SW_029_08	37.99716	SW	366.9	87.9	2243.5	15992.5	1.67	1.06	17.27	8.69	2.08	53.14	378.81	0.04	0.03	0.41
SW_029_09	42.21763	SW	290.5	63.2	1732.3	12643.5	1.93	0.97	15.62	8.85	1.92	52.75	384.98	0.06	0.03	0.48
SW_029_10	32.84222	SW	63.3	10.9	524.2	3914.4	1.23	0.34	6.40	6.89	1.18	57.02	425.82	0.13	0.04	0.70
SW_029_11	9.19264	SW	254.4	51.3	1699.1	13406.8	0.70	0.45	12.82	8.72	1.76	58.25	459.65	0.02	0.02	0.44
SW_029_12	29.16736	SW	446.1	90.0	2973.9	23477.0	1.17	0.78	22.30	8.68	1.75	57.89	457.03	0.02	0.02	0.43
SW_029_13	51.36817	SW	76.7	13.2	634.6	4738.8	1.48	0.41	7.75	6.92	1.19	57.28	427.76	0.13	0.04	0.70
SW_029_14	11.07828	SW	86.8	15.0	715.5	5349.3	1.65	0.46	8.67	6.97	1.20	57.43	429.34	0.13	0.04	0.70
SW_029_15	12.45923	SW	3.3	0.6	27.4	204.3	0.06	0.02	0.33	6.87	1.18	56.89	424.86	0.13	0.04	0.69
SW_029_15_W	0.480897	SW	70.4	11.7	545.1	4061.3	1.40	0.40	7.04	7.07	1.18	54.74	407.81	0.14	0.04	0.71
SW_029_16	9.958785	SW	106.8	18.1	861.8	6430.2	2.09	0.59	10.75	7.09	1.20	57.18	426.66	0.14	0.04	0.71
SW_029_17	15.07109	SW	322.3	80.9	1901.3	13099.3	1.52	1.01	14.47	9.60	2.41	56.65	390.32	0.05	0.03	0.43
SW_030_01	33.56006	SW	217.0	50.1	1350.6	9899.4	0.84	0.56	10.21	8.03	1.85	49.99	366.36	0.03	0.02	0.38
SW_031_01	27.0209	SW	126.0	24.7	805.1	5942.8	1.42	0.53	8.72	7.31	1.44	46.72	344.90	0.08	0.03	0.51
SW_031_02	17.23071	SW	129.6	32.0	775.5	5419.4	0.59	0.39	5.89	9.35	2.31	55.97	391.10	0.04	0.03	0.43
SW_032_01	13.8569	SW	53.3	12.2	330.9	2327.5	0.45	0.20	3.08	8.83	2.03	54.83	385.69	0.07	0.03	0.51
SW_033_01	6.034724	SW	59.0	14.8	349.2	2404.2	0.28	0.19	2.66	9.88	2.48	58.47	402.60	0.05	0.03	0.45
SW_034_01	5.971679	SW	32.3	8.1	191.1	1315.8	0.15	0.10	1.45	8.95	2.25	52.96	364.65	0.04	0.03	0.40
SW_034_02	3.608461	SW	238.3	59.9	1409.7	9705.9	1.12	0.75	10.73	9.90	2.49	58.56	403.22	0.05	0.03	0.45
SW_035_01	24.07071	SW	111.1	27.9	657.0	4523.6	0.52	0.35	5.00	10.26	2.58	60.68	417.76	0.05	0.03	0.46

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SW_035_02	10.82833	SW	278.7	45.4	2051.5	15250.4	5.59	1.64	27.55	7.23	1.18	53.20	395.49	0.14	0.04	0.71
SW_036_01	38.56124	SW	60.9	9.6	421.3	3125.1	1.25	0.38	5.99	7.11	1.12	49.17	364.79	0.15	0.04	0.70
SW_037_01	8.566985	SW	245.8	61.8	1453.7	10009.8	1.16	0.77	11.06	9.61	2.41	56.80	391.11	0.05	0.03	0.43
SW_038_01	25.59357	SW	426.2	105.3	2395.5	16697.7	2.03	1.28	18.14	8.03	1.98	45.13	314.57	0.04	0.02	0.34
SW_039_01	53.08183	SW	470.0	112.9	2685.8	18252.6	2.74	1.56	21.87	9.09	2.18	51.97	353.17	0.05	0.03	0.42
SW_040_01	51.68201	SW	7.9	2.0	46.9	323.1	0.04	0.02	0.36	2.29	0.58	13.58	93.48	0.01	0.01	0.10
SW_040_01_W	3.45622	SW	242.3	58.8	1287.9	9103.2	1.17	0.70	9.70	7.37	1.79	39.18	276.94	0.04	0.02	0.30
SW_041_01	32.87108	SW	116.4	29.2	688.6	4740.6	0.55	0.37	5.24	9.69	2.43	57.32	394.64	0.05	0.03	0.44
SW_042_01	12.01247	SW	63.4	15.9	375.4	2584.4	0.30	0.20	2.86	9.48	2.38	56.07	386.05	0.04	0.03	0.43
SW_043_01	6.694325	SW	192.0	33.1	1587.0	11856.1	3.69	1.03	19.32	6.95	1.20	57.47	429.31	0.13	0.04	0.70
SW_044_01	27.61688	SW	4.6	0.8	37.9	282.8	0.09	0.02	0.46	6.87	1.18	56.89	424.86	0.13	0.04	0.69
SW_044_01_W	0.665709	SW	140.6	26.1	1062.4	8113.3	1.67	0.53	10.99	7.60	1.41	57.41	438.44	0.09	0.03	0.59
SW_044_02	18.50478	SW	234.0	34.3	1067.4	7606.2	3.37	1.19	15.63	8.95	1.31	40.82	290.91	0.13	0.05	0.60
US1_01	26.14572	SE	5.5	1.4	32.4	223.3	0.03	0.02	0.25	1.88	0.47	11.10	76.41	0.01	0.01	0.08
WAT_01	2.922774	WATER	14.8	2.6	122.8	917.2	0.29	0.08	1.50	0.38	0.07	3.18	23.75	0.01	0.00	0.04
WAT_02	38.6203	WATER	19.5	4.9	115.4	794.9	0.09	0.06	0.88	0.99	0.25	5.85	40.25	0.00	0.00	0.04
WAT_03	19.75021	WATER	26.9	4.9	121.8	632.0	0.22	0.06	0.95	1.44	0.26	6.51	33.80	0.01	0.00	0.05
WAT_04	18.69829	WATER	13.0	2.7	83.8	629.1	0.08	0.04	0.73	0.52	0.11	3.33	25.00	0.00	0.00	0.03
WAT_05	25.16399	WATER	27.4	4.7	227.0	1695.5	0.53	0.15	2.77	0.65	0.11	5.37	40.11	0.01	0.00	0.07
WAT_06	42.26663	WATER	922.0	188.3	6749.4	49112.0	12.37	4.12	72.22	7.17	1.46	52.51	382.09	0.10	0.03	0.56
WAT_07	7.313358	WATER	11.6	2.0	50.5	248.6	0.10	0.03	0.40	1.58	0.27	6.91	34.00	0.01	0.00	0.05
WAT_08	12.82433	WATER	37.6	6.4	254.1	1869.2	0.69	0.22	3.43	2.93	0.50	19.82	145.75	0.05	0.02	0.27
WAT_09	3.750707	WATER	3.7	0.5	13.8	67.0	0.03	0.01	0.10	0.99	0.14	3.68	17.86	0.01	0.00	0.03
WAT_10	22.30291	WATER	21.2	3.7	129.8	1008.4	0.09	0.04	1.05	0.95	0.17	5.82	45.21	0.00	0.00	0.05

Appendix C

Appendix C
"Adjusted" Pollutant Load Estimates by Individual Drainage Basin for the City of Pompano Beach Stormwater Master Plan

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
Andrews_01	9.394046	NW	40.4	5.5	128.6	935.8	0.62	0.20	2.56	4.3	0.6	13.7	99.6	0.07	0.02	0.27
Andrews_02	3.962014	NW	37.1	4.6	143.9	1033.7	0.86	0.30	3.42	9.4	1.2	36.3	260.9	0.22	0.07	0.86
Andrews_03	2.21288	NW	12.6	1.6	39.3	282.4	0.24	0.08	0.94	5.7	0.7	17.8	127.6	0.11	0.04	0.43
Atlantic_01	5.62941	SE	23.1	3.1	48.2	343.2	0.25	0.09	1.03	4.1	0.5	8.6	61.0	0.04	0.02	0.18
Atlantic_02	3.769725	SW	13.1	1.6	17.4	124.8	0.11	0.04	0.42	3.5	0.4	4.6	33.1	0.03	0.01	0.11
Atlantic_03	4.719891	SW	12.7	1.6	0.2	1.3	0.00	0.00	0.00	2.7	0.3	0.0	0.3	0.00	0.00	0.00
Atlantic_04	3.544742	SW	17.1	2.1	41.7	299.4	0.25	0.09	1.00	4.8	0.6	11.8	84.5	0.07	0.02	0.28
Atlantic_05	27.38735	SW	119.4	16.5	379.2	2843.9	1.97	0.66	7.79	4.4	0.6	13.8	103.8	0.07	0.02	0.28
CE_001_01	3.582388	CE	17.6	3.0	76.2	367.5	0.15	0.04	0.60	4.9	0.8	21.3	102.6	0.04	0.01	0.17
CE_002_01	32.01449	CE	103.0	19.7	624.3	5020.0	1.35	0.37	6.93	3.2	0.6	19.5	156.8	0.04	0.01	0.22
CE_003_01	22.36557	CE	39.9	4.6	49.3	338.0	0.02	0.01	0.19	1.8	0.2	2.2	15.1	0.00	0.00	0.01
CE_003_02	17.12524	CE	119.1	19.9	513.6	2518.8	1.00	0.25	4.01	7.0	1.2	30.0	147.1	0.06	0.01	0.23
CE_003_03	14.87217	CE	55.7	8.7	296.1	1845.5	0.63	0.17	2.95	3.7	0.6	19.9	124.1	0.04	0.01	0.20
CE_003_04	21.945	CE	110.5	18.5	479.6	2319.3	0.98	0.25	3.83	5.0	0.8	21.9	105.7	0.04	0.01	0.17
CE_003_05	34.10069	CE	208.9	37.6	1077.4	6738.2	1.34	0.42	8.28	6.1	1.1	31.6	197.6	0.04	0.01	0.24
CE_003_06	24.86631	CE	185.4	44.4	1062.9	7145.5	0.95	0.55	8.11	7.5	1.8	42.7	287.4	0.04	0.02	0.33
CE_004_01	30.91444	CE	150.6	25.2	642.9	3053.6	1.30	0.33	5.04	4.9	0.8	20.8	98.8	0.04	0.01	0.16
CE_005_01	48.6472	CE	347.1	82.4	1972.0	13097.7	1.90	1.04	15.18	7.1	1.7	40.5	269.2	0.04	0.02	0.31
CE_006_01	9.856169	CE	95.4	24.0	564.1	3883.9	0.45	0.30	4.29	9.7	2.4	57.2	394.1	0.05	0.03	0.44
CE_006_02	15.62914	CE	143.3	36.0	848.9	5847.2	0.68	0.45	6.48	9.2	2.3	54.3	374.1	0.04	0.03	0.41
CE_006_03	13.74169	CE	84.8	21.2	493.6	3397.7	0.39	0.26	3.75	6.2	1.5	35.9	247.3	0.03	0.02	0.27
CE_006_04	6.819728	CE	37.4	9.1	223.3	1545.7	0.20	0.12	1.77	5.5	1.3	32.7	226.6	0.03	0.02	0.26
CE_007_01	19.08793	CE	98.7	16.5	421.7	2001.6	0.85	0.21	3.31	5.2	0.9	22.1	104.9	0.04	0.01	0.17
CE_008_01	49.40864	CE	223.7	55.0	891.0	7050.6	0.62	0.41	6.18	4.5	1.1	18.0	142.7	0.01	0.01	0.13
CE_008_02	34.2237	CE	135.6	30.1	556.7	3817.7	0.43	0.29	4.09	4.0	0.9	16.3	111.6	0.01	0.01	0.12
CE_008_03	3.728401	CE	26.0	6.5	149.9	1031.9	0.12	0.08	1.14	7.0	1.8	40.2	276.8	0.03	0.02	0.31
CE_008_04	40.637	CE	201.7	45.6	1302.3	9222.6	1.72	0.74	11.93	5.0	1.1	32.0	227.0	0.04	0.02	0.29
CE_008_05	9.800943	CE	91.3	22.8	532.2	3663.9	0.42	0.28	4.05	9.3	2.3	54.3	373.8	0.04	0.03	0.41
CE_008_06	11.37356	CE	63.1	14.0	352.2	2442.8	0.34	0.19	2.81	5.5	1.2	31.0	214.8	0.03	0.02	0.25
CE_008_07	27.73382	CE	70.9	15.5	221.6	1625.9	0.13	0.09	1.66	2.6	0.6	8.0	58.6	0.00	0.00	0.06

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CE_009_01	7.009707	CE	39.8	6.1	154.7	746.4	0.31	0.08	1.20	5.7	0.9	22.1	106.5	0.04	0.01	0.17
CE_009_02	14.28018	CE	88.4	14.3	364.2	1744.7	0.74	0.19	2.88	6.2	1.0	25.5	122.2	0.05	0.01	0.20
CE_009_03	23.80836	CE	127.1	21.3	542.6	2575.4	1.10	0.27	4.26	5.3	0.9	22.8	108.2	0.05	0.01	0.18
CE_010_01	18.31385	CE	175.3	43.9	1035.8	7137.6	0.84	0.55	7.93	9.6	2.4	56.6	389.7	0.05	0.03	0.43
CE_010_02	25.08381	CE	205.7	46.5	1340.7	9520.5	1.86	0.78	12.57	8.2	1.9	53.4	379.5	0.07	0.03	0.50
CE_010_03	14.52141	CE	92.0	17.1	677.7	4992.9	1.44	0.44	7.84	6.3	1.2	46.7	343.8	0.10	0.03	0.54
CE_010_04	15.49588	CE	119.9	25.4	821.6	5917.0	1.37	0.50	8.39	7.7	1.6	53.0	381.8	0.09	0.03	0.54
CE_010_05	18.44778	CE	145.0	27.1	981.4	7155.1	2.25	0.74	11.91	7.9	1.5	53.2	387.9	0.12	0.04	0.65
CE_010_06	11.67689	CE	76.0	13.6	609.5	4559.5	1.30	0.38	7.12	6.5	1.2	52.2	390.5	0.11	0.03	0.61
CE_010_07	12.83254	CE	91.0	19.7	631.8	4540.6	1.01	0.37	6.32	7.1	1.5	49.2	353.8	0.08	0.03	0.49
CE_010_08	8.721766	CE	60.6	13.3	414.1	2989.1	0.60	0.23	3.99	7.0	1.5	47.5	342.7	0.07	0.03	0.46
CE_011_01	166.3126	CE	475.9	70.3	2240.8	16337.4	5.46	1.59	27.28	2.9	0.4	13.5	98.2	0.03	0.01	0.16
CE_012_01	207.8994	CE	295.5	36.7	71.4	514.3	0.44	0.15	1.72	1.4	0.2	0.3	2.5	0.00	0.00	0.01
CE_013_01	495.4897	CE	1209.1	195.9	1546.0	12339.8	8.41	1.66	18.60	2.4	0.4	3.1	24.9	0.02	0.00	0.04
CE_014_01	58.80208	CE	118.3	19.6	96.7	704.0	0.46	0.15	1.93	2.0	0.3	1.6	12.0	0.01	0.00	0.03
CE_015_01	37.4633	CE	185.8	30.7	915.1	5107.0	1.94	0.50	8.37	5.0	0.8	24.4	136.3	0.05	0.01	0.22
CE_016_01	85.34738	CE	438.3	73.3	2202.5	12501.6	4.84	1.28	21.04	5.1	0.9	25.8	146.5	0.06	0.02	0.25
CE_017_01	44.82284	CE	398.9	40.6	860.6	5382.3	1.23	0.09	7.24	8.9	0.9	19.2	120.1	0.03	0.00	0.16
CE_017_01_W	1.601612	CE	0.3	0.0	0.6	3.6	0.00	0.00	0.00	0.2	0.0	0.4	2.3	0.00	0.00	0.00
CE_017_02	44.62	CE	408.5	28.8	957.5	6489.6	1.32	0.34	6.86	9.2	0.6	21.5	145.4	0.03	0.01	0.15
CE_017_03	33.71324	CE	160.1	26.4	662.8	3151.1	1.33	0.33	5.17	4.7	0.8	19.7	93.5	0.04	0.01	0.15
CE_017_04	13.15709	CE	11.3	1.8	5.1	31.0	0.02	0.01	0.08	0.9	0.1	0.4	2.4	0.00	0.00	0.01
CE_017_05	19.5536	CE	15.5	2.6	4.4	22.4	0.01	0.00	0.04	0.8	0.1	0.2	1.1	0.00	0.00	0.00
CE_017_06	40.28968	CE	32.1	5.9	9.4	50.8	0.02	0.00	0.07	0.8	0.1	0.2	1.3	0.00	0.00	0.00
CE_017_07	32.93598	CE	31.9	6.2	9.4	59.6	0.02	0.01	0.08	1.0	0.2	0.3	1.8	0.00	0.00	0.00
CE_017_08	27.84866	CE	22.5	4.2	10.0	77.4	0.01	0.00	0.09	0.8	0.2	0.4	2.8	0.00	0.00	0.00
CE_017_09	53.36829	CE	41.2	7.0	14.3	98.1	0.02	0.01	0.14	0.8	0.1	0.3	1.8	0.00	0.00	0.00
CE_017_10	9.533797	CE	11.1	2.1	4.3	31.1	0.01	0.00	0.05	1.2	0.2	0.4	3.3	0.00	0.00	0.01
CE_018_01	96.70078	CE	125.9	26.4	343.3	2927.6	0.74	0.28	4.12	1.3	0.3	3.6	30.3	0.01	0.00	0.04
CE_019_01	20.5265	CE	96.6	16.2	602.9	4186.3	1.39	0.38	6.91	4.7	0.8	29.4	203.9	0.07	0.02	0.34
CE_019_02	32.24828	CE	74.9	13.8	155.1	774.5	0.29	0.08	1.21	2.3	0.4	4.8	24.0	0.01	0.00	0.04
CE_020_01	36.54582	CE	185.5	32.2	979.4	6211.5	1.80	0.50	9.21	5.1	0.9	26.8	170.0	0.05	0.01	0.25
CE_020_02	64.3796	CE	320.6	58.0	1484.9	8885.8	2.83	0.78	12.73	5.0	0.9	23.1	138.0	0.04	0.01	0.20

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CE_020_03	47.72308	CE	269.0	47.0	1660.5	11854.6	3.34	1.01	18.26	5.6	1.0	34.8	248.4	0.07	0.02	0.38
CE_021_01	10.1831	CE	52.7	8.6	316.4	2277.1	0.85	0.25	4.11	5.2	0.8	31.1	223.6	0.08	0.02	0.40
CE_022_01	10.47126	CE	76.0	12.7	324.4	1539.7	0.66	0.16	2.55	7.3	1.2	31.0	147.0	0.06	0.02	0.24
CE_023_01	18.26133	CE	64.0	15.8	174.6	2087.2	0.17	0.04	0.65	3.5	0.9	9.6	114.3	0.01	0.00	0.04
CE_024_01	16.94129	CE	116.1	19.1	765.3	5335.7	1.98	0.57	9.49	6.9	1.1	45.2	315.0	0.12	0.03	0.56
CE_024_02	25.60276	CE	53.4	9.3	217.6	1617.1	0.56	0.16	2.82	2.1	0.4	8.5	63.2	0.02	0.01	0.11
CE_024_03	47.32999	CE	100.8	23.2	62.0	444.5	0.18	0.07	0.88	2.1	0.5	1.3	9.4	0.00	0.00	0.02
CE_025_01	6.089234	CE	43.6	7.3	186.2	883.9	0.38	0.09	1.46	7.2	1.2	30.6	145.2	0.06	0.02	0.24
CE_026_01	5.762357	CE	41.8	7.0	178.7	848.3	0.36	0.09	1.40	7.3	1.2	31.0	147.2	0.06	0.02	0.24
CE_027_01	5.795293	CE	39.7	6.7	169.7	805.6	0.34	0.09	1.33	6.9	1.1	29.3	139.0	0.06	0.01	0.23
CE_028_01	4.34489	CE	21.2	3.5	90.3	428.8	0.18	0.05	0.71	4.9	0.8	20.8	98.7	0.04	0.01	0.16
CE_029_01	2.961644	CE	15.7	2.6	67.2	318.8	0.14	0.03	0.53	5.3	0.9	22.7	107.6	0.05	0.01	0.18
CE_030_01	3.310366	CE	16.3	2.7	69.5	330.0	0.14	0.04	0.55	4.9	0.8	21.0	99.7	0.04	0.01	0.16
CE_031_01	9.170222	CE	62.8	10.5	268.3	1273.6	0.54	0.14	2.11	6.9	1.1	29.3	138.9	0.06	0.01	0.23
CE_032_01	44.22649	CE	287.1	47.6	1407.5	7899.0	3.23	0.87	13.79	6.5	1.1	31.8	178.6	0.07	0.02	0.31
CE_033_01	3.891331	CE	18.7	3.1	79.9	379.1	0.16	0.04	0.63	4.8	0.8	20.5	97.4	0.04	0.01	0.16
CE_034_01	4.176658	CE	20.2	3.4	86.1	408.9	0.17	0.04	0.68	4.8	0.8	20.6	97.9	0.04	0.01	0.16
CE_035_01	8.888515	CE	42.3	7.1	180.7	857.7	0.37	0.09	1.42	4.8	0.8	20.3	96.5	0.04	0.01	0.16
CE_036_01	18.3622	CE	104.6	17.4	572.9	3588.0	1.29	0.35	5.97	5.7	0.9	31.2	195.4	0.07	0.02	0.33
CE_037_01	8.745136	CE	42.6	7.1	182.1	864.4	0.37	0.09	1.43	4.9	0.8	20.8	98.8	0.04	0.01	0.16
CE_038_01	29.67112	CE	201.7	33.8	861.3	4088.2	1.74	0.44	6.76	6.8	1.1	29.0	137.8	0.06	0.01	0.23
CE_039_01	14.17129	CE	83.2	14.1	536.7	3566.8	1.20	0.33	5.85	5.9	1.0	37.9	251.7	0.08	0.02	0.41
CE_040_01	26.48522	CE	177.1	39.8	956.7	6684.4	1.50	0.68	9.54	6.7	1.5	36.1	252.4	0.06	0.03	0.36
CE_040_02	21.64719	CE	194.8	47.9	832.7	7408.2	1.06	0.52	6.84	9.0	2.2	38.5	342.2	0.05	0.02	0.32
CE_040_03	20.89284	CE	90.7	16.7	500.4	3657.4	1.17	0.38	6.13	4.3	0.8	24.0	175.1	0.06	0.02	0.29
CE_041_01	16.77326	CE	149.2	37.5	882.9	6078.8	0.70	0.47	6.72	8.9	2.2	52.6	362.4	0.04	0.03	0.40
CE_041_02	10.18824	CE	83.1	19.5	493.0	3457.5	0.56	0.27	4.25	8.2	1.9	48.4	339.4	0.06	0.03	0.42
CE_042_01	5.395213	CE	41.2	7.9	195.1	1071.8	0.31	0.10	1.51	7.6	1.5	36.2	198.7	0.06	0.02	0.28
CE_042_02	18.17848	CE	91.6	17.8	425.9	2394.3	0.65	0.22	3.30	5.0	1.0	23.4	131.7	0.04	0.01	0.18
CE_043_01	6.874515	CE	77.4	19.5	458.0	3153.4	0.36	0.24	3.49	11.3	2.8	66.6	458.7	0.05	0.04	0.51
CE_044_01	28.46445	CE	132.0	25.8	667.2	4099.9	1.08	0.36	5.79	4.6	0.9	23.4	144.0	0.04	0.01	0.20
CE_045_01	2.385552	CE	17.1	2.9	72.8	345.7	0.15	0.04	0.57	7.1	1.2	30.5	144.9	0.06	0.02	0.24
CE_046_01	8.494409	CE	33.1	7.5	102.6	980.9	0.13	0.03	0.52	3.9	0.9	12.1	115.5	0.02	0.00	0.06

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CE_047_01	7.192673	CE	42.3	7.1	180.7	857.8	0.37	0.09	1.42	5.9	1.0	25.1	119.3	0.05	0.01	0.20
CE_048_01	46.40529	CE	223.3	49.6	1339.2	9453.0	1.87	0.77	12.50	4.8	1.1	28.9	203.7	0.04	0.02	0.27
CE_049_01	12.72297	CE	25.1	4.2	81.0	384.3	0.16	0.04	0.64	2.0	0.3	6.4	30.2	0.01	0.00	0.05
CE_050_01	4.596173	CE	11.5	1.9	42.0	199.1	0.08	0.02	0.33	2.5	0.4	9.1	43.3	0.02	0.00	0.07
CE_051_01	5.056347	CE	16.2	2.7	64.3	305.4	0.13	0.03	0.50	3.2	0.5	12.7	60.4	0.03	0.01	0.10
CE_052_01	4.986732	CE	24.5	4.1	104.4	495.7	0.21	0.05	0.82	4.9	0.8	20.9	99.4	0.04	0.01	0.16
CE_053_01	21.38136	CE	74.4	12.5	299.6	1422.2	0.61	0.15	2.35	3.5	0.6	14.0	66.5	0.03	0.01	0.11
CE_053_02	22.04839	CE	102.8	18.3	539.3	3470.4	1.10	0.32	5.45	4.7	0.8	24.5	157.4	0.05	0.01	0.25
CE_053_03	27.64355	CE	155.4	26.3	1005.4	6831.7	2.27	0.62	11.19	5.6	1.0	36.4	247.1	0.08	0.02	0.40
CE_053_04	18.62259	CE	53.3	8.9	213.6	1069.9	0.44	0.11	1.77	2.9	0.5	11.5	57.4	0.02	0.01	0.09
CE_054_01	14.91423	CE	54.3	9.1	221.0	1050.1	0.45	0.11	1.74	3.6	0.6	14.8	70.4	0.03	0.01	0.12
CE_055_01	5.076648	CE	24.9	4.2	106.3	504.7	0.22	0.05	0.83	4.9	0.8	20.9	99.4	0.04	0.01	0.16
CE_056_01	12.50621	CE	48.1	8.1	198.0	939.7	0.40	0.10	1.55	3.8	0.6	15.8	75.1	0.03	0.01	0.12
CE_057_01	6.177852	CE	29.8	5.0	127.3	604.3	0.26	0.06	1.00	4.8	0.8	20.6	97.8	0.04	0.01	0.16
CE_058_01	8.003808	CE	34.7	5.8	145.6	691.3	0.29	0.07	1.14	4.3	0.7	18.2	86.4	0.04	0.01	0.14
CE_059_01	9.875622	CE	45.2	7.6	191.0	906.6	0.39	0.10	1.50	4.6	0.8	19.3	91.8	0.04	0.01	0.15
CE_060_01	6.439153	CE	28.6	4.8	120.1	570.1	0.24	0.06	0.94	4.4	0.7	18.7	88.5	0.04	0.01	0.15
CE_061_01	12.2531	CE	51.8	10.7	252.9	1506.3	0.34	0.13	1.95	4.2	0.9	20.6	122.9	0.03	0.01	0.16
CE_061_02	13.0358	CE	86.6	18.4	522.6	3513.6	0.78	0.30	4.77	6.6	1.4	40.1	269.5	0.06	0.02	0.37
CE_061_03	5.907424	CE	24.3	4.1	101.1	480.0	0.20	0.05	0.79	4.1	0.7	17.1	81.3	0.03	0.01	0.13
CE_062_01	27.83358	CE	155.3	32.6	1025.9	7387.6	1.72	0.61	10.48	5.6	1.2	36.9	265.4	0.06	0.02	0.38
CE_063_01	5.669508	CE	35.0	6.0	279.0	2083.2	0.65	0.18	3.41	6.2	1.1	49.2	367.4	0.12	0.03	0.60
CE_064_01	4.34046	CE	30.2	5.2	249.9	1866.3	0.58	0.16	3.05	7.0	1.2	57.6	430.0	0.13	0.04	0.70
CE_065_01	11.9409	CE	58.6	9.8	250.1	1187.0	0.51	0.13	1.96	4.9	0.8	20.9	99.4	0.04	0.01	0.16
CE_066_01	22.76319	CE	150.9	31.5	731.8	4339.7	0.98	0.38	5.65	6.6	1.4	32.1	190.6	0.04	0.02	0.25
CE_067_01	8.217456	CE	39.6	6.6	169.2	803.3	0.34	0.09	1.33	4.8	0.8	20.6	97.8	0.04	0.01	0.16
CE_068_01	19.73396	CE	102.9	17.9	449.8	2270.7	0.83	0.23	3.49	5.2	0.9	22.8	115.1	0.04	0.01	0.18
CE_069_01	9.606159	CE	60.5	13.1	316.1	1943.3	0.39	0.17	2.43	6.3	1.4	32.9	202.3	0.04	0.02	0.25
CE_070_01	4.223084	CE	35.7	9.0	211.5	1456.0	0.17	0.11	1.61	8.5	2.1	50.1	344.8	0.04	0.03	0.38
CE_071_01	10.92168	CE	87.4	22.0	516.9	3558.9	0.41	0.27	3.93	8.0	2.0	47.3	325.9	0.04	0.03	0.36
CE_072_01	8.852861	CE	43.4	7.3	187.1	898.5	0.38	0.10	1.48	4.9	0.8	21.1	101.5	0.04	0.01	0.17
CE_072_02	38.38297	CE	184.9	31.0	795.2	3834.0	1.58	0.40	6.23	4.8	0.8	20.7	99.9	0.04	0.01	0.16
CE_072_03	43.78111	CE	216.6	38.9	983.6	5126.9	1.77	0.51	7.77	4.9	0.9	22.5	117.1	0.04	0.01	0.18

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CE_072_04	50.01847	CE	236.9	40.1	1165.8	6492.2	2.45	0.64	10.62	4.7	0.8	23.3	129.8	0.05	0.01	0.21
CE_073_01	10.09922	CE	84.3	21.2	498.9	3434.7	0.40	0.26	3.80	8.3	2.1	49.4	340.1	0.04	0.03	0.38
CE_074_01	7.213662	CE	58.0	13.6	348.2	2452.2	0.42	0.20	3.08	8.0	1.9	48.3	339.9	0.06	0.03	0.43
CE_075_01	24.22469	CE	203.6	51.2	1204.4	8292.5	0.96	0.64	9.17	8.4	2.1	49.7	342.3	0.04	0.03	0.38
CE_076_01	14.33033	CE	123.0	30.9	727.8	5010.7	0.58	0.39	5.54	8.6	2.2	50.8	349.7	0.04	0.03	0.39
CE_077_01	10.31369	CE	83.1	20.9	453.7	3123.4	0.36	0.24	3.45	8.1	2.0	44.0	302.8	0.04	0.02	0.33
CE_078_01	22.95917	CE	216.3	54.4	1279.8	8811.6	1.02	0.68	9.74	9.4	2.4	55.7	383.8	0.04	0.03	0.42
CE_078_02	7.066224	CE	62.9	15.8	372.0	2561.2	0.30	0.20	2.83	8.9	2.2	52.6	362.5	0.04	0.03	0.40
CE_078_03	5.693837	CE	54.3	13.7	321.4	2212.7	0.26	0.17	2.45	9.5	2.4	56.4	388.6	0.04	0.03	0.43
CE_079_01	8.936758	CE	96.8	24.3	572.8	3943.6	0.46	0.30	4.36	10.8	2.7	64.1	441.3	0.05	0.03	0.49
CE_080_01	23.98063	CE	161.5	33.8	1103.8	7981.4	1.89	0.66	11.41	6.7	1.4	46.0	332.8	0.08	0.03	0.48
CE_080_02	7.97352	CE	50.4	8.6	402.3	2999.7	0.93	0.26	4.87	6.3	1.1	50.5	376.2	0.12	0.03	0.61
CE_080_03	13.67649	CE	103.1	23.0	596.6	4181.7	0.68	0.33	5.12	7.5	1.7	43.6	305.8	0.05	0.02	0.37
CE_081_01	1.322038	CE	5.2	0.9	31.1	232.5	0.07	0.02	0.38	4.0	0.7	23.5	175.8	0.06	0.02	0.29
CE_081_02	11.35875	CE	65.9	11.4	480.2	3558.8	1.06	0.30	5.65	5.8	1.0	42.3	313.3	0.09	0.03	0.50
CE_081_03	16.3646	CE	135.2	33.2	800.9	5557.6	0.75	0.43	6.44	8.3	2.0	48.9	339.6	0.05	0.03	0.39
CE_082_01	9.253789	CE	76.2	17.0	483.4	3618.1	0.27	0.18	3.65	8.2	1.8	52.2	391.0	0.03	0.02	0.39
CE_083_01	14.22758	CE	89.7	14.9	378.8	1800.2	0.76	0.19	2.96	6.3	1.0	26.6	126.5	0.05	0.01	0.21
CE_083_02	8.049338	CE	46.1	7.5	189.9	904.8	0.38	0.09	1.47	5.7	0.9	23.6	112.4	0.05	0.01	0.18
CE_084_01	13.12384	CE	60.0	10.1	254.4	1207.4	0.52	0.13	2.00	4.6	0.8	19.4	92.0	0.04	0.01	0.15
CE_085_01	18.94137	CE	159.2	39.3	895.6	6124.8	0.73	0.47	6.80	8.4	2.1	47.3	323.4	0.04	0.03	0.36
CE_085_02	21.02377	CE	111.9	20.9	514.4	2801.6	0.83	0.26	3.98	5.3	1.0	24.5	133.3	0.04	0.01	0.19
CE_085_03	10.13219	CE	49.4	8.3	211.0	1001.6	0.43	0.11	1.66	4.9	0.8	20.8	98.9	0.04	0.01	0.16
CE_086_01	9.97165	CE	112.6	28.3	666.4	4588.0	0.53	0.35	5.07	11.3	2.8	66.8	460.1	0.05	0.04	0.51
CE_087_01	3.167223	CE	16.2	3.0	75.7	407.5	0.13	0.04	0.59	5.1	1.0	23.9	128.7	0.04	0.01	0.19
CE_088_01	25.30987	CE	176.6	29.5	722.3	3466.9	1.50	0.37	5.68	7.0	1.2	28.5	137.0	0.06	0.01	0.22
CE_088_02	8.373106	CE	56.9	9.5	243.0	1153.7	0.49	0.12	1.91	6.8	1.1	29.0	137.8	0.06	0.01	0.23
CE_089_01	14.66141	CE	92.8	15.6	683.9	5118.4	1.60	0.46	8.40	6.3	1.1	46.6	349.1	0.11	0.03	0.57
CEOUT_01	63.88017	CE	419.4	70.4	2058.0	11548.5	4.37	1.14	19.00	6.6	1.1	32.2	180.8	0.07	0.02	0.30
Copans_01	4.964894	NW	19.0	2.6	48.2	357.6	0.17	0.06	0.79	3.8	0.5	9.7	72.0	0.03	0.01	0.16
Copans_02	2.929614	NW	7.4	1.0	0.6	4.5	0.00	0.00	0.01	2.5	0.3	0.2	1.5	0.00	0.00	0.00
Copans_03	5.513247	NW	18.1	2.3	20.9	150.9	0.10	0.03	0.41	3.3	0.4	3.8	27.4	0.02	0.01	0.07
CW_001_01	44.37959	CW	92.7	15.9	200.3	1495.2	0.48	0.13	2.47	2.1	0.4	4.5	33.7	0.01	0.00	0.06

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CW_002_01	14.13533	CW	46.4	6.7	293.8	2177.2	0.66	0.18	3.45	3.3	0.5	20.8	154.0	0.05	0.01	0.24
CW_002_02	22.03607	CW	148.6	27.9	1039.9	7999.2	1.37	0.47	10.14	6.7	1.3	47.2	363.0	0.06	0.02	0.46
CW_003_01	65.30034	CW	114.5	19.2	121.4	906.3	0.28	0.08	1.48	1.8	0.3	1.9	13.9	0.00	0.00	0.02
CW_003_02	14.98625	CW	45.5	7.8	196.4	1466.4	0.46	0.13	2.40	3.0	0.5	13.1	97.8	0.03	0.01	0.16
CW_004_01	62.20817	CW	204.4	34.0	1112.9	8222.8	2.67	0.69	12.87	3.3	0.5	17.9	132.2	0.04	0.01	0.21
CW_004_02	68.97419	CW	415.2	72.1	3099.1	23140.4	7.08	1.95	36.91	6.0	1.0	44.9	335.5	0.10	0.03	0.54
CW_004_03	57.45439	CW	327.2	59.5	2240.8	16986.3	4.02	1.20	24.18	5.7	1.0	39.0	295.6	0.07	0.02	0.42
CW_005_01	41.32284	CW	294.4	50.0	2363.8	17637.7	5.71	1.60	29.43	7.1	1.2	57.2	426.8	0.14	0.04	0.71
CW_005_02	18.29947	CW	114.0	18.9	840.4	6259.1	2.18	0.63	10.93	6.2	1.0	45.9	342.0	0.12	0.03	0.60
CW_006_01	30.28444	CW	146.3	24.8	1008.1	7522.9	2.35	0.65	12.26	4.8	0.8	33.3	248.4	0.08	0.02	0.40
CW_007_01	50.39901	CW	98.3	16.5	242.8	1816.1	0.54	0.15	2.89	2.0	0.3	4.8	36.0	0.01	0.00	0.06
CW_008_01	26.21983	CW	63.0	10.0	208.6	1549.1	0.58	0.17	2.84	2.4	0.4	8.0	59.1	0.02	0.01	0.11
CW_008_02	30.45045	CW	144.9	25.6	477.3	3505.4	1.04	0.33	5.05	4.8	0.8	15.7	115.1	0.03	0.01	0.17
CW_008_03	20.5125	CW	44.2	7.1	44.6	327.6	0.18	0.06	0.78	2.2	0.3	2.2	16.0	0.01	0.00	0.04
CW_009_01	55.0589	CW	333.5	55.5	2538.7	18926.8	6.20	1.75	31.81	6.1	1.0	46.1	343.8	0.11	0.03	0.58
CW_010_01	22.4525	CW	111.4	21.7	334.1	2460.7	0.35	0.11	2.33	5.0	1.0	14.9	109.6	0.02	0.00	0.10
CW_011_01	36.41415	CW	196.2	38.6	879.0	6262.1	0.68	0.30	6.25	5.4	1.1	24.1	172.0	0.02	0.01	0.17
CW_012_01	33.06027	CW	169.5	28.1	1260.9	9400.4	2.93	0.81	15.29	5.1	0.9	38.1	284.3	0.09	0.02	0.46
CW_013_01	33.70383	CW	131.4	26.1	492.7	3748.7	0.27	0.14	3.71	3.9	0.8	14.6	111.2	0.01	0.00	0.11
CW_014_01	22.5418	CW	94.5	14.9	664.8	4895.4	1.49	0.42	7.82	4.2	0.7	29.5	217.2	0.07	0.02	0.35
CW_014_02	33.17772	CW	183.5	27.4	993.3	6462.3	2.13	0.57	10.24	5.5	0.8	29.9	194.8	0.06	0.02	0.31
CW_015_01	28.9726	CW	216.4	38.8	1153.0	7350.8	1.54	0.47	9.31	7.5	1.3	39.8	253.7	0.05	0.02	0.32
CW_016_01	30.43782	CW	205.5	35.1	1298.4	8663.0	2.91	0.79	14.18	6.8	1.2	42.7	284.6	0.10	0.03	0.47
CW_017_01	26.50462	CW	157.2	26.4	1064.1	7906.3	2.82	0.83	14.05	5.9	1.0	40.1	298.3	0.11	0.03	0.53
CW_017_02	24.33092	CW	168.7	30.4	1317.0	9764.3	2.93	0.85	15.63	6.9	1.3	54.1	401.3	0.12	0.04	0.64
CW_017_03	10.62721	CW	51.9	7.8	184.4	983.5	0.55	0.16	2.16	4.9	0.7	17.4	92.5	0.05	0.02	0.20
CW_017_04	12.0926	CW	25.8	4.3	38.4	182.1	0.08	0.02	0.30	2.1	0.4	3.2	15.1	0.01	0.00	0.02
CW_017_05	3.177373	CW	28.9	3.6	115.9	829.7	0.65	0.22	2.59	9.1	1.1	36.5	261.1	0.20	0.07	0.82
CW_017_06	7.500895	CW	59.4	8.8	358.8	2645.5	1.26	0.39	5.70	7.9	1.2	47.8	352.7	0.17	0.05	0.76
CW_018_01	10.58909	CW	9.8	1.2	2.5	19.0	0.00	0.00	0.02	0.9	0.1	0.2	1.8	0.00	0.00	0.00
CW_018_02	18.86727	CW	19.6	2.8	1.2	8.1	0.00	0.00	0.01	1.0	0.1	0.1	0.4	0.00	0.00	0.00
CW_019_01	15.90824	CW	91.0	18.4	227.5	1652.3	0.11	0.04	1.02	5.7	1.2	14.3	103.9	0.01	0.00	0.06
CW_019_02	12.72425	CW	73.1	14.7	182.7	1327.0	0.09	0.03	0.82	5.7	1.2	14.4	104.3	0.01	0.00	0.06

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
CW_020_01	37.68003	CW	184.6	41.1	498.6	3360.5	0.46	0.18	2.83	4.9	1.1	13.2	89.2	0.01	0.00	0.08
CW_021_01	43.11424	CW	258.3	48.8	1545.6	12057.0	1.18	0.52	12.91	6.0	1.1	35.8	279.7	0.03	0.01	0.30
CW_022_01	57.8841	CW	208.3	38.1	978.3	7643.6	0.83	0.38	8.51	3.6	0.7	16.9	132.0	0.01	0.01	0.15
CW_022_02	21.39908	CW	154.8	30.2	924.4	7269.5	0.59	0.32	7.58	7.2	1.4	43.2	339.7	0.03	0.01	0.35
CW_023_01	15.96586	CW	28.0	4.3	15.2	97.9	0.01	0.00	0.06	1.8	0.3	1.0	6.1	0.00	0.00	0.00
CW_024_01	42.3841	CW	476.1	119.5	2812.5	19367.9	2.26	1.50	21.47	11.2	2.8	66.4	457.0	0.05	0.04	0.51
CW_025_01	5.505554	CW	40.1	6.8	174.6	857.1	0.34	0.09	1.37	7.3	1.2	31.7	155.7	0.06	0.02	0.25
CW_026_01	20.74826	CW	99.0	18.6	264.6	1414.1	0.63	0.19	2.61	4.8	0.9	12.8	68.2	0.03	0.01	0.13
CW_026_02	28.43383	CW	174.8	29.3	705.9	3350.6	1.43	0.36	5.54	6.1	1.0	24.8	117.8	0.05	0.01	0.19
CW_027_01	21.47793	CW	194.5	16.4	613.1	4326.3	1.27	0.38	6.19	9.1	0.8	28.5	201.4	0.06	0.02	0.29
CW_028_01	12.55631	CW	68.4	14.3	333.8	2280.9	0.56	0.24	3.35	5.4	1.1	26.6	181.7	0.04	0.02	0.27
CW_028_02	9.859109	CW	67.3	11.3	287.2	1363.5	0.58	0.15	2.25	6.8	1.1	29.1	138.3	0.06	0.01	0.23
CW_028_03	26.14254	CW	79.4	11.7	305.5	1725.8	0.46	0.13	2.29	3.0	0.4	11.7	66.0	0.02	0.00	0.09
CW_028_04	26.48323	CW	105.9	13.5	351.0	1811.4	0.80	0.22	3.11	4.0	0.5	13.3	68.4	0.03	0.01	0.12
CW_029_01	42.58158	CW	246.6	42.7	1364.3	8821.5	2.79	0.84	13.90	5.8	1.0	32.0	207.2	0.07	0.02	0.33
CW_030_01	29.8156	CW	103.8	13.7	322.9	1574.1	0.58	0.15	2.25	3.5	0.5	10.8	52.8	0.02	0.00	0.08
CW_031_01	51.51359	CW	281.5	46.8	1209.2	6537.4	2.74	0.73	11.40	5.5	0.9	23.5	126.9	0.05	0.01	0.22
CW_033_01	70.79272	CW	412.2	68.6	3156.3	23514.6	7.58	2.13	39.09	5.8	1.0	44.6	332.2	0.11	0.03	0.55
CW_034_01	125.2357	CW	378.4	68.8	1073.9	9412.1	3.05	0.84	10.92	3.0	0.5	8.6	75.2	0.02	0.01	0.09
CW_036_01	36.72178	CW	142.6	19.9	547.5	3106.2	1.15	0.31	4.94	3.9	0.5	14.9	84.6	0.03	0.01	0.13
CW_036_02	48.40043	CW	259.7	42.4	1021.0	4975.0	2.06	0.52	8.11	5.4	0.9	21.1	102.8	0.04	0.01	0.17
CW_037_01	41.30756	CW	229.6	39.5	1759.4	13138.5	4.11	1.14	21.48	5.6	1.0	42.6	318.1	0.10	0.03	0.52
CW_038_01	24.11921	CW	152.2	27.0	877.8	6138.5	1.29	0.41	8.11	6.3	1.1	36.4	254.5	0.05	0.02	0.34
CW_038_02	32.56264	CW	177.3	28.8	683.0	3252.9	1.37	0.34	5.30	5.4	0.9	21.0	99.9	0.04	0.01	0.16
CW_038_03	52.59722	CW	310.9	51.1	1388.7	7445.9	2.86	0.74	12.09	5.9	1.0	26.4	141.6	0.05	0.01	0.23
CW_038_04	13.23316	CW	94.4	15.8	401.2	1907.8	0.81	0.20	3.15	7.1	1.2	30.3	144.2	0.06	0.02	0.24
CW_038_05	17.42423	CW	67.3	11.7	244.8	1397.3	0.47	0.12	2.14	3.9	0.7	14.1	80.2	0.03	0.01	0.12
CW_039_01	15.5779	CW	97.5	16.4	522.5	3306.1	1.20	0.33	5.60	6.3	1.1	33.5	212.2	0.08	0.02	0.36
CW_039_02	29.72161	CW	202.3	33.6	867.7	4334.3	1.81	0.46	7.23	6.8	1.1	29.2	145.8	0.06	0.02	0.24
CW_040_01	17.73635	CW	90.3	15.3	533.9	3884.4	1.26	0.36	6.45	5.1	0.9	30.1	219.0	0.07	0.02	0.36
CW_041_01	33.06452	CW	92.2	14.9	344.3	2495.9	0.86	0.19	3.59	2.8	0.5	10.4	75.5	0.03	0.01	0.11
CW_042_01	9.352095	CW	65.2	11.2	530.8	3962.3	1.26	0.35	6.54	7.0	1.2	56.8	423.7	0.13	0.04	0.70
CW_042_02	12.74339	CW	71.8	12.4	556.3	4154.1	1.30	0.36	6.79	5.6	1.0	43.7	326.0	0.10	0.03	0.53

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CW_042_03	10.46456	CW	70.2	12.0	575.6	4297.1	1.36	0.38	7.09	6.7	1.1	55.0	410.6	0.13	0.04	0.68
CW_042_04	25.4269	CW	168.7	17.0	588.0	4211.8	1.37	0.41	6.62	6.6	0.7	23.1	165.6	0.05	0.02	0.26
CW_042_05	18.99418	CW	150.1	18.8	832.5	6113.1	1.87	0.53	9.61	7.9	1.0	43.8	321.8	0.10	0.03	0.51
CW_042_06	15.93183	CW	76.8	13.2	495.6	3700.2	1.17	0.33	6.09	4.8	0.8	31.1	232.3	0.07	0.02	0.38
CW_043_01	36.27483	CW	205.5	34.8	1543.8	11515.6	3.78	1.07	19.38	5.7	1.0	42.6	317.5	0.10	0.03	0.53
CW_043_02	29.08777	CW	192.2	35.8	1270.6	9783.3	1.73	0.61	12.61	6.6	1.2	43.7	336.3	0.06	0.02	0.43
CW_044_01	62.62303	CW	103.9	14.2	529.4	3965.6	1.17	0.33	6.16	1.7	0.2	8.5	63.3	0.02	0.01	0.10
CW_044_01_W	13.86973	CW	25.9	6.9	51.8	930.2	0.00	0.00	0.00	1.9	0.5	3.7	67.1	0.00	0.00	0.00
CW_045_01	16.44977	CW	41.2	2.7	63.5	441.4	0.11	0.03	0.57	2.5	0.2	3.9	26.8	0.01	0.00	0.03
CW_046_01	19.94401	CW	57.0	11.1	192.7	1435.3	0.44	0.12	2.32	2.9	0.6	9.7	72.0	0.02	0.01	0.12
Cypress_01	10.21575	SE	102.2	24.9	589.4	4011.9	0.54	0.32	4.60	10.0	2.4	57.7	392.7	0.05	0.03	0.45
Cypress_02	16.14131	SE	91.7	16.8	468.2	3401.4	0.90	0.26	4.64	5.7	1.0	29.0	210.7	0.06	0.02	0.29
Cypress_03	7.284887	SE	53.4	9.2	243.9	1295.8	0.42	0.11	1.90	7.3	1.3	33.5	177.9	0.06	0.02	0.26
Dixie_01	20.76239	NE	27.7	4.2	8.6	60.4	0.04	0.01	0.15	1.3	0.2	0.4	2.9	0.00	0.00	0.01
Dixie_02	25.60145	CE	133.1	21.7	841.7	6141.3	2.18	0.64	10.83	5.2	0.8	32.9	239.9	0.09	0.03	0.42
Dixie_03	14.75148	CE	75.2	11.8	463.3	3443.1	1.21	0.35	6.04	5.1	0.8	31.4	233.4	0.08	0.02	0.41
Dixie_04	20.99766	CE	101.8	20.7	456.6	2951.4	0.65	0.29	4.04	4.8	1.0	21.7	140.6	0.03	0.01	0.19
Dixie_04_W	0.377146	CE	3.0	0.7	17.5	120.4	0.01	0.01	0.13	7.8	2.0	46.4	319.2	0.04	0.02	0.35
Dixie_05	10.13795	CE	36.8	6.0	184.1	1349.7	0.46	0.15	2.36	3.6	0.6	18.2	133.1	0.05	0.01	0.23
Dixie_05_W	0.906647	CE	0.2	0.0	0.3	1.6	0.00	0.00	0.00	0.2	0.0	0.3	1.7	0.00	0.00	0.00
Dixie_06	3.166077	CE	12.7	1.6	29.2	211.4	0.16	0.05	0.64	4.0	0.5	9.2	66.8	0.05	0.02	0.20
Dixie_07	11.54277	SE	95.2	15.8	602.9	4469.0	1.66	0.54	8.27	8.3	1.4	52.2	387.2	0.14	0.05	0.72
Dixie_08	24.66473	SE	172.2	30.3	1375.0	10268.6	3.04	0.87	16.34	7.0	1.2	55.7	416.3	0.12	0.04	0.66
Dixie_09	33.07989	SE	233.5	40.6	1921.1	14328.5	4.44	1.24	23.31	7.1	1.2	58.1	433.1	0.13	0.04	0.70
Dixie_10	20.92132	SE	141.1	24.1	1148.7	8576.4	2.68	0.75	14.01	6.7	1.2	54.9	409.9	0.13	0.04	0.67
Dixie_11	7.598893	SE	53.9	9.2	441.6	3296.7	1.05	0.29	5.44	7.1	1.2	58.1	433.8	0.14	0.04	0.72
FXE1_01	841.5338	SW	3712.7	636.1	21043.9	147956.9	49.61	14.93	249.80	4.4	0.8	25.0	175.8	0.06	0.02	0.30
FXE1_02	173.5067	SW	953.0	170.3	5018.4	37840.0	8.70	2.48	48.71	5.5	1.0	28.9	218.1	0.05	0.01	0.28
I95_1E	19.25103	I95	74.6	9.4	202.7	1453.4	1.25	0.43	4.90	3.9	0.5	10.5	75.5	0.06	0.02	0.25
I95_1EN	12.90214	I95	53.5	6.6	121.3	870.1	0.75	0.26	2.94	4.1	0.5	9.4	67.4	0.06	0.02	0.23
I95_1ES	7.21512	I95	46.2	5.7	154.7	1109.5	0.95	0.33	3.75	6.4	0.8	21.4	153.8	0.13	0.05	0.52
I95_1W	28.2732	I95	224.0	27.9	842.3	6044.4	5.15	1.77	20.30	7.9	1.0	29.8	213.8	0.18	0.06	0.72
I95_1WS	22.25823	I95	182.3	22.6	691.8	4962.5	4.26	1.46	16.76	8.2	1.0	31.1	222.9	0.19	0.07	0.75

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I95_2E	32.89496	I95	214.3	25.8	778.4	5489.5	4.55	1.56	17.91	6.5	0.8	23.7	166.9	0.14	0.05	0.54
I95_2N	41.33549	I95	348.1	43.2	1321.3	9478.0	8.13	2.80	32.02	8.4	1.0	32.0	229.3	0.20	0.07	0.77
I95_2W	17.76572	I95	145.7	18.1	553.0	3966.9	3.39	1.17	13.37	8.2	1.0	31.1	223.3	0.19	0.07	0.75
I95_3	32.93166	I95	277.0	35.2	1104.0	7969.5	6.29	2.16	25.22	8.4	1.1	33.5	242.0	0.19	0.07	0.77
I95_4	15.14539	I95	110.4	14.4	445.7	3217.4	2.36	0.80	9.61	7.3	1.0	29.4	212.4	0.16	0.05	0.63
I95_5	34.27418	I95	271.0	33.6	1004.5	7205.1	6.18	2.12	24.34	7.9	1.0	29.3	210.2	0.18	0.06	0.71
I95_6	50.14965	I95	444.5	58.0	1770.5	12720.0	9.94	3.44	39.96	8.9	1.2	35.3	253.6	0.20	0.07	0.80
I95_7	6.29655	I95	44.2	5.2	159.4	1138.6	0.96	0.33	3.76	7.0	0.8	25.3	180.8	0.15	0.05	0.60
NE_001_01	144.8406	NE	795.4	136.5	3999.9	23091.7	8.63	2.39	38.45	5.5	0.9	27.6	159.4	0.06	0.02	0.27
NE_002_01	45.92071	NE	42.8	7.9	18.9	141.5	0.03	0.01	0.19	0.9	0.2	0.4	3.1	0.00	0.00	0.00
NE_003_01	154.9245	NE	166.0	33.8	79.0	529.3	0.12	0.04	0.71	1.1	0.2	0.5	3.4	0.00	0.00	0.00
NE_004_01	136.6991	NE	159.2	32.8	112.3	819.6	0.34	0.13	1.66	1.2	0.2	0.8	6.0	0.00	0.00	0.01
NE_005_01	67.58152	NE	124.9	27.9	56.6	400.9	0.20	0.07	0.90	1.8	0.4	0.8	5.9	0.00	0.00	0.01
NE_005_02	35.19703	NE	71.9	18.0	20.0	138.3	0.02	0.01	0.15	2.0	0.5	0.6	3.9	0.00	0.00	0.00
NE_005_03	87.30658	NE	178.6	44.5	49.7	344.8	0.04	0.03	0.38	2.0	0.5	0.6	3.9	0.00	0.00	0.00
NE_005_04	53.41642	NE	108.8	27.3	30.1	207.3	0.02	0.02	0.23	2.0	0.5	0.6	3.9	0.00	0.00	0.00
NE_006_01	41.05748	NE	31.7	5.3	9.7	50.4	0.02	0.01	0.08	0.8	0.1	0.2	1.2	0.00	0.00	0.00
NE_007_01	13.05215	NE	11.9	2.2	3.6	19.5	0.01	0.00	0.03	0.9	0.2	0.3	1.5	0.00	0.00	0.00
NE_007_02	63.77265	NE	275.9	49.7	580.4	3332.3	1.80	0.47	5.86	4.3	0.8	9.1	52.3	0.03	0.01	0.09
NE_007_02_W	0.810817	NE	13.0	3.3	77.2	531.5	0.06	0.04	0.59	16.1	4.0	95.2	655.5	0.08	0.05	0.72
NE_007_03	31.37412	NE	29.8	5.5	9.2	50.9	0.01	0.00	0.07	0.9	0.2	0.3	1.6	0.00	0.00	0.00
NE_007_04	19.90677	NE	21.0	3.9	6.3	33.3	0.01	0.00	0.05	1.1	0.2	0.3	1.7	0.00	0.00	0.00
NE_007_05	44.84483	NE	27.3	6.1	9.8	65.8	0.01	0.00	0.08	0.6	0.1	0.2	1.5	0.00	0.00	0.00
NE_007_06	41.32785	NE	31.7	5.4	9.1	45.4	0.02	0.00	0.07	0.8	0.1	0.2	1.1	0.00	0.00	0.00
NE_008_01	12.81167	NE	40.6	8.5	45.8	355.8	0.10	0.02	0.19	3.2	0.7	3.6	27.8	0.01	0.00	0.01
NE_009_01	52.56871	NE	67.4	13.0	11.7	84.8	0.06	0.02	0.24	1.3	0.2	0.2	1.6	0.00	0.00	0.00
NE_010_01	57.04148	NE	110.1	26.0	31.7	222.1	0.04	0.02	0.27	1.9	0.5	0.6	3.9	0.00	0.00	0.00
NE_010_02	28.2737	NE	35.3	6.1	10.8	78.0	0.06	0.02	0.24	1.2	0.2	0.4	2.8	0.00	0.00	0.01
NE_010_03	28.2667	NE	55.4	13.4	15.9	110.7	0.02	0.01	0.14	2.0	0.5	0.6	3.9	0.00	0.00	0.00
NE_010_04	44.24035	NE	89.4	21.9	24.3	168.0	0.02	0.01	0.19	2.0	0.5	0.5	3.8	0.00	0.00	0.00
NE_011_01	20.68546	NE	41.5	9.7	11.6	80.2	0.02	0.01	0.11	2.0	0.5	0.6	3.9	0.00	0.00	0.01
NE_012_01	24.35313	NE	16.9	3.1	4.4	24.7	0.01	0.00	0.03	0.7	0.1	0.2	1.0	0.00	0.00	0.00
NE_013_01	29.83512	NE	61.8	15.5	17.1	117.8	0.01	0.01	0.13	2.1	0.5	0.6	3.9	0.00	0.00	0.00

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NE_014_01	32.23736	NE	65.6	15.9	17.0	117.1	0.01	0.01	0.13	2.0	0.5	0.5	3.6	0.00	0.00	0.00
NE_015_01	47.92832	NE	99.0	24.1	27.7	191.5	0.03	0.02	0.23	2.1	0.5	0.6	4.0	0.00	0.00	0.00
NE_015_02	69.37149	NE	101.3	20.5	14.3	107.3	0.03	0.01	0.17	1.5	0.3	0.2	1.5	0.00	0.00	0.00
NE_015_03	41.31082	NE	85.5	21.5	23.7	163.5	0.02	0.01	0.18	2.1	0.5	0.6	4.0	0.00	0.00	0.00
NE_016_01	26.97507	NE	20.3	3.4	5.6	26.7	0.01	0.00	0.04	0.8	0.1	0.2	1.0	0.00	0.00	0.00
NE_017_01	44.99348	NE	55.6	8.8	68.2	474.7	0.35	0.12	1.42	1.2	0.2	1.5	10.6	0.01	0.00	0.03
NE_018_01	94.44337	NE	88.4	16.1	33.4	220.1	0.15	0.05	0.61	0.9	0.2	0.4	2.3	0.00	0.00	0.01
NE_019_01	92.15977	NE	92.9	16.6	44.6	255.8	0.08	0.02	0.40	1.0	0.2	0.5	2.8	0.00	0.00	0.00
NE_020_01	35.97127	NE	35.6	6.4	18.6	132.6	0.10	0.03	0.41	1.0	0.2	0.5	3.7	0.00	0.00	0.01
NE_021_01	122.6493	NE	77.6	12.7	40.5	246.4	0.16	0.05	0.65	0.6	0.1	0.3	2.0	0.00	0.00	0.01
NE_022_01	53.71412	NE	225.9	49.7	468.7	3568.7	1.05	0.19	2.85	4.2	0.9	8.7	66.4	0.02	0.00	0.05
NEOUT_02	184.6265	NE	214.6	46.5	82.5	558.8	0.12	0.05	0.75	1.2	0.3	0.4	3.0	0.00	0.00	0.00
NEOUT_03	130.2123	NE	103.8	18.5	30.4	192.0	0.06	0.02	0.29	0.8	0.1	0.2	1.5	0.00	0.00	0.00
NEOUT_04	67.35535	NE	58.3	10.0	20.2	129.6	0.04	0.01	0.19	0.9	0.1	0.3	1.9	0.00	0.00	0.00
NW_001_01	28.52861	NW	197.9	24.6	737.9	5292.7	4.54	1.56	17.88	6.9	0.9	25.9	185.5	0.16	0.05	0.63
NW_002_01	14.12063	NW	103.3	9.1	263.7	1184.1	0.13	0.10	0.74	7.3	0.6	18.7	83.9	0.01	0.01	0.05
NW_002_02	25.59024	NW	110.8	18.0	302.5	2068.9	0.87	0.13	2.24	4.3	0.7	11.8	80.8	0.03	0.01	0.09
NW_003_01	102.5368	NW	563.1	66.1	802.3	4709.6	0.37	0.19	2.89	5.5	0.6	7.8	45.9	0.00	0.00	0.03
NW_004_01	76.69231	NW	502.8	101.4	3350.6	26451.3	1.33	0.88	25.16	6.6	1.3	43.7	344.9	0.02	0.01	0.33
NW_005_01	31.36276	NW	113.3	19.4	510.1	3734.3	1.28	0.31	5.68	3.6	0.6	16.3	119.1	0.04	0.01	0.18
NW_006_01	14.78607	NW	101.6	17.5	839.3	6267.3	1.97	0.55	10.27	6.9	1.2	56.8	423.9	0.13	0.04	0.69
NW_007_01	21.18958	NW	94.6	16.1	693.7	5220.5	1.39	0.40	7.86	4.5	0.8	32.7	246.4	0.07	0.02	0.37
NW_008_01	50.88928	NW	421.5	98.6	2710.4	19106.8	3.34	1.53	24.15	8.3	1.9	53.3	375.5	0.07	0.03	0.47
NW_009_01	21.92151	NW	169.3	41.1	1017.6	7078.7	1.00	0.56	8.32	7.7	1.9	46.4	322.9	0.05	0.03	0.38
NW_010_01	15.19897	NW	71.6	14.8	332.2	2584.5	0.15	0.10	2.50	4.7	1.0	21.9	170.0	0.01	0.01	0.16
NW_011_01	1.53131	NW	10.4	1.8	85.9	641.1	0.20	0.06	1.05	6.8	1.2	56.1	418.6	0.13	0.04	0.69
NW_012_01	38.85455	NW	241.2	40.4	1667.7	12347.9	4.30	1.18	20.74	6.2	1.0	42.9	317.8	0.11	0.03	0.53
NW_012_01_W	7.292349	NW	3.1	0.5	25.9	193.5	0.06	0.02	0.32	0.4	0.1	3.6	26.5	0.01	0.00	0.04
NW_013_01	33.87505	NW	191.5	36.3	1232.2	9454.8	1.74	0.57	12.28	5.7	1.1	36.4	279.1	0.05	0.02	0.36
NW_013_02	43.48251	NW	272.1	52.9	1750.7	13640.5	1.43	0.60	14.65	6.3	1.2	40.3	313.7	0.03	0.01	0.34
NW_014_01	20.91099	NW	117.7	20.3	706.1	5175.9	1.74	0.42	7.83	5.6	1.0	33.8	247.5	0.08	0.02	0.37
NW_015_01	34.76845	NW	70.1	12.0	183.2	1367.2	0.44	0.12	2.26	2.0	0.3	5.3	39.3	0.01	0.00	0.06
NW_016_01	38.58649	NW	266.8	48.7	1877.7	14343.3	3.07	1.00	19.87	6.9	1.3	48.7	371.7	0.08	0.03	0.51

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
NW_016_01_W	0.543854	NW	3.8	0.7	31.0	231.9	0.07	0.02	0.37	7.0	1.2	56.9	426.5	0.13	0.04	0.68
NW_017_01	25.30242	NW	177.3	30.2	1438.1	10731.9	3.46	0.97	17.86	7.0	1.2	56.8	424.1	0.14	0.04	0.71
NW_017_01_W	1.34089	NW	9.2	1.6	76.3	569.7	0.18	0.05	0.93	6.9	1.2	56.9	424.9	0.13	0.04	0.69
NW_018_01	45.08944	NW	197.8	32.3	753.1	5291.0	1.97	0.38	6.82	4.4	0.7	16.7	117.3	0.04	0.01	0.15
NW_018_01_W	2.639756	NW	18.0	3.1	148.7	1110.4	0.35	0.10	1.82	6.8	1.2	56.3	420.7	0.13	0.04	0.69
NW_018_02	17.31967	NW	33.5	5.7	53.8	401.0	0.13	0.04	0.67	1.9	0.3	3.1	23.2	0.01	0.00	0.04
NW_018_03	23.12457	NW	139.8	23.3	1031.4	7685.4	2.63	0.75	13.28	6.0	1.0	44.6	332.3	0.11	0.03	0.57
NW_018_04	19.46548	NW	86.8	14.6	563.8	4202.6	1.41	0.40	7.18	4.5	0.8	29.0	215.9	0.07	0.02	0.37
NW_018_04_W	0.492796	NW	3.2	0.6	26.6	199.0	0.06	0.02	0.33	6.5	1.1	54.1	403.8	0.13	0.04	0.66
NW_018_05	16.53593	NW	67.0	11.6	223.0	1554.5	0.62	0.10	1.80	4.1	0.7	13.5	94.0	0.04	0.01	0.11
NW_018_06	20.17948	NW	128.8	26.5	858.2	6221.8	1.50	0.52	8.98	6.4	1.3	42.5	308.3	0.07	0.03	0.45
NW_019_01	10.54746	NW	49.8	7.4	239.3	1762.5	0.88	0.28	3.92	4.7	0.7	22.7	167.1	0.08	0.03	0.37
NW_020_01	30.64866	NW	184.8	36.2	1274.1	9315.1	2.45	0.79	13.98	6.0	1.2	41.6	303.9	0.08	0.03	0.46
NW_021_01	55.75598	NW	453.8	106.3	2607.4	18097.4	3.18	1.65	23.25	8.1	1.9	46.8	324.6	0.06	0.03	0.42
NW_022_01	13.5667	NW	65.7	11.3	317.3	2298.4	0.81	0.18	3.29	4.8	0.8	23.4	169.4	0.06	0.01	0.24
NW_026_01	47.92945	NW	117.3	19.5	317.8	2358.1	0.94	0.28	4.49	2.4	0.4	6.6	49.2	0.02	0.01	0.09
NW_027_01	128.5348	NW	713.2	150.8	4578.4	32979.0	7.50	2.73	46.34	5.5	1.2	35.6	256.6	0.06	0.02	0.36
NW_028_01	24.32907	NW	138.3	16.0	394.0	2715.1	0.78	0.23	4.07	5.7	0.7	16.2	111.6	0.03	0.01	0.17
NW_028_02	14.96385	NW	115.4	12.8	509.8	3717.3	1.05	0.29	5.48	7.7	0.9	34.1	248.4	0.07	0.02	0.37
NW_029_01	16.44886	NW	16.3	2.0	5.8	42.2	0.01	0.00	0.07	1.0	0.1	0.4	2.6	0.00	0.00	0.00
NW_030_01	27.7036	NW	121.9	21.0	382.0	2628.1	1.10	0.16	2.83	4.4	0.8	13.8	94.9	0.04	0.01	0.10
NW_030_01_W	3.786934	NW	4.8	0.8	39.8	297.5	0.09	0.03	0.49	1.3	0.2	10.5	78.6	0.02	0.01	0.13
NW_031_01	87.31756	NW	308.9	31.3	828.4	4893.7	0.84	0.39	4.79	3.5	0.4	9.5	56.0	0.01	0.00	0.05
NW_032_01	28.32833	NW	173.1	16.0	43.0	265.1	0.03	0.00	0.33	6.1	0.6	1.5	9.4	0.00	0.00	0.01
NW_033_01	20.43074	NW	195.7	21.5	375.8	2288.2	0.82	0.07	3.23	9.6	1.1	18.4	112.0	0.04	0.00	0.16
NW_034_01	55.23232	NW	320.3	55.1	2399.3	17883.9	5.64	1.55	29.02	5.8	1.0	43.4	323.8	0.10	0.03	0.53
NWOUT_01	658.2676	NW	1487.9	191.9	2614.4	19652.6	2.84	0.96	20.67	2.3	0.3	4.0	29.9	0.00	0.00	0.03
NWOUT_02	888.1354	NW	4266.4	909.6	19071.4	138106.5	26.99	11.26	165.39	4.8	1.0	21.5	155.5	0.03	0.01	0.19
NWOUT_03	315.2158	NW	2052.1	412.1	9809.2	60372.1	17.13	6.57	91.05	6.5	1.3	31.1	191.5	0.05	0.02	0.29
NWOUT_04	240.4835	NW	374.1	59.0	660.3	4585.9	3.53	1.20	14.11	1.6	0.2	2.7	19.1	0.01	0.01	0.06
Pwrlne_01	8.632012	NW	57.1	7.2	198.3	1424.6	1.19	0.41	4.70	6.6	0.8	23.0	165.0	0.14	0.05	0.54
Pwrlne_02	15.05309	NW	100.9	13.0	353.3	2547.8	2.02	0.69	8.08	6.7	0.9	23.5	169.3	0.13	0.05	0.54
Pwrlne_03	1.819987	CW	10.9	1.4	33.7	242.1	0.20	0.07	0.79	6.0	0.7	18.5	133.0	0.11	0.04	0.44

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
SE_001_01	4.061606	SE	19.7	3.3	84.1	399.0	0.17	0.04	0.66	4.8	0.8	20.7	98.2	0.04	0.01	0.16
SE_002_01	5.545605	SE	25.8	4.3	110.1	522.6	0.22	0.06	0.86	4.6	0.8	19.9	94.2	0.04	0.01	0.16
SE_003_01	6.073188	SE	30.1	5.1	128.7	611.1	0.26	0.07	1.01	5.0	0.8	21.2	100.6	0.04	0.01	0.17
SE_004_01	14.09723	SE	39.8	7.1	110.7	558.8	0.21	0.05	0.87	2.8	0.5	7.9	39.6	0.01	0.00	0.06
SE_005_01	26.29733	SE	140.9	25.4	889.1	6113.3	1.67	0.49	9.07	5.4	1.0	33.8	232.5	0.06	0.02	0.34
SE_005_02	38.90614	SE	103.7	19.1	537.8	4032.8	1.15	0.33	6.29	2.7	0.5	13.8	103.7	0.03	0.01	0.16
SE_005_03	10.26311	SE	24.6	4.5	73.4	565.3	0.09	0.03	0.70	2.4	0.4	7.1	55.1	0.01	0.00	0.07
SE_006_01	17.8631	SE	76.8	12.2	411.0	3048.1	1.24	0.37	5.88	4.3	0.7	23.0	170.6	0.07	0.02	0.33
SE_007_01	10.94629	SE	95.6	24.0	565.5	3893.6	0.45	0.30	4.30	8.7	2.2	51.7	355.7	0.04	0.03	0.39
SE_009_01	31.73129	SE	172.9	29.3	1007.2	6680.3	2.13	0.61	10.68	5.4	0.9	31.7	210.5	0.07	0.02	0.34
SE_009_02	45.60889	SE	352.1	45.7	1785.3	12882.6	3.70	1.10	19.47	7.7	1.0	39.1	282.5	0.08	0.02	0.43
SE_010_01	20.00226	SE	97.5	16.3	416.5	1977.3	0.84	0.21	3.27	4.9	0.8	20.8	98.9	0.04	0.01	0.16
SE_011_01	30.40481	SE	156.1	26.4	665.8	3320.6	1.25	0.33	5.15	5.1	0.9	21.9	109.2	0.04	0.01	0.17
SE_012_01	11.03591	SE	87.9	18.8	618.4	4458.4	1.02	0.37	6.29	8.0	1.7	56.0	404.0	0.09	0.03	0.57
SE_013_01	22.27664	SE	112.1	19.6	495.1	2475.4	0.93	0.25	3.87	5.0	0.9	22.2	111.1	0.04	0.01	0.17
SE_014_01	15.41115	SE	73.0	12.2	311.9	1480.6	0.63	0.16	2.45	4.7	0.8	20.2	96.1	0.04	0.01	0.16
SE_015_01	4.678281	SE	22.6	3.8	96.6	458.4	0.20	0.05	0.76	4.8	0.8	20.6	98.0	0.04	0.01	0.16
SE_016_01	5.961462	SE	44.3	6.9	295.6	2192.0	0.89	0.27	4.23	7.4	1.2	49.6	367.7	0.15	0.04	0.71
SE_017_01	2.637845	SE	16.3	3.7	88.6	566.8	0.10	0.05	0.68	6.2	1.4	33.6	214.9	0.04	0.02	0.26
SE_018_01	8.272968	SE	39.5	6.6	168.8	801.3	0.34	0.09	1.32	4.8	0.8	20.4	96.9	0.04	0.01	0.16
SE_019_01	20.16274	SE	107.6	19.1	506.4	2709.7	0.95	0.27	4.19	5.3	0.9	25.1	134.4	0.05	0.01	0.21
SE_020_01	22.23176	SE	38.9	6.7	1.3	9.7	0.00	0.00	0.02	1.7	0.3	0.1	0.4	0.00	0.00	0.00
SE_021_01	9.361469	SE	46.0	7.7	196.3	931.7	0.40	0.10	1.54	4.9	0.8	21.0	99.5	0.04	0.01	0.16
SE_022_01	63.88063	SE	410.4	73.4	2112.6	13311.4	3.75	1.20	19.74	6.4	1.1	33.1	208.4	0.06	0.02	0.31
SE_023_01	79.82883	SE	613.6	132.6	3340.7	22161.4	4.99	2.11	30.64	7.7	1.7	41.8	277.6	0.06	0.03	0.38
SE_024_01	20.80245	SE	138.0	29.9	825.8	5516.8	1.17	0.46	7.33	6.6	1.4	39.7	265.2	0.06	0.02	0.35
SE_025_01	10.66788	SE	73.1	17.0	406.0	2646.8	0.41	0.21	3.11	6.9	1.6	38.1	248.1	0.04	0.02	0.29
SE_026_01	6.648012	SE	50.5	12.5	295.6	2017.8	0.25	0.16	2.25	7.6	1.9	44.5	303.5	0.04	0.02	0.34
SE_027_01	6.301249	SE	44.8	11.3	261.8	1802.6	0.21	0.14	1.99	7.1	1.8	41.6	286.1	0.03	0.02	0.32
SE_028_01	2.251478	SE	19.7	4.9	116.4	801.3	0.09	0.06	0.89	8.7	2.2	51.7	355.9	0.04	0.03	0.39
SE_029_01	5.859335	SE	44.1	11.1	261.0	1797.1	0.21	0.14	1.99	7.5	1.9	44.5	306.7	0.04	0.02	0.34
SE_030_01	7.355901	SE	52.0	13.1	300.6	2069.3	0.24	0.16	2.29	7.1	1.8	40.9	281.3	0.03	0.02	0.31
SE_031_01	37.52925	SE	186.2	30.4	557.5	3831.2	1.65	0.25	4.25	5.0	0.8	14.9	102.1	0.04	0.01	0.11

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
SE_032_01	2.200391	SE	20.6	5.2	121.6	837.4	0.10	0.06	0.93	9.3	2.3	55.3	380.6	0.04	0.03	0.42
SE_033_01	3.56847	SE	28.7	7.2	170.0	1170.4	0.14	0.09	1.29	8.1	2.0	47.6	328.0	0.04	0.03	0.36
SE_034_01	6.732926	SE	57.7	14.5	341.3	2349.7	0.27	0.18	2.60	8.6	2.2	50.7	349.0	0.04	0.03	0.39
SE_035_01	15.50369	SE	113.8	28.3	628.8	4344.0	0.54	0.34	4.90	7.3	1.8	40.6	280.2	0.03	0.02	0.32
SE_036_01	2.257486	SE	1.1	0.2	0.5	2.3	0.00	0.00	0.00	0.5	0.1	0.2	1.0	0.00	0.00	0.00
SE_037_01	5.315826	SE	2.6	0.4	1.1	5.2	0.00	0.00	0.01	0.5	0.1	0.2	1.0	0.00	0.00	0.00
SE_038_01	4.198842	SE	2.1	0.3	1.0	4.9	0.00	0.00	0.01	0.5	0.1	0.2	1.2	0.00	0.00	0.00
SE_039_01	8.581164	SE	49.0	12.3	236.2	1626.3	0.19	0.13	1.80	5.7	1.4	27.5	189.5	0.02	0.01	0.21
SE_040_01	14.98448	SE	136.4	33.1	826.2	5758.0	0.85	0.45	6.85	9.1	2.2	55.1	384.3	0.06	0.03	0.46
SE_041_01	10.27506	SE	80.1	20.1	473.8	3262.3	0.38	0.25	3.61	7.8	2.0	46.1	317.5	0.04	0.02	0.35
SE_042_01	32.41724	SE	194.2	37.6	813.0	4990.2	1.19	0.45	6.76	6.0	1.2	25.1	153.9	0.04	0.01	0.21
SE_043_01	14.65582	SE	96.0	18.0	491.0	2861.0	0.86	0.27	4.22	6.6	1.2	33.5	195.2	0.06	0.02	0.29
SE_043_02	22.31145	SE	168.2	30.2	757.1	3893.3	1.36	0.39	5.91	7.5	1.4	33.9	174.5	0.06	0.02	0.26
SE_043_03	7.663769	SE	55.1	9.2	236.6	1136.7	0.47	0.12	1.86	7.2	1.2	30.9	148.3	0.06	0.02	0.24
SE_043_04	18.98447	SE	137.9	23.1	588.8	2794.9	1.19	0.30	4.62	7.3	1.2	31.0	147.2	0.06	0.02	0.24
SE_043_05	15.13744	SE	109.9	18.4	469.5	2228.5	0.95	0.24	3.68	7.3	1.2	31.0	147.2	0.06	0.02	0.24
SE_044_01	24.15463	SE	205.3	43.2	1466.0	10606.4	2.52	0.88	15.21	8.5	1.8	60.7	439.1	0.10	0.04	0.63
SE_045_01	5.102878	SE	37.9	7.0	175.3	935.2	0.30	0.09	1.36	7.4	1.4	34.4	183.3	0.06	0.02	0.27
SE_046_01	16.66599	SE	112.7	28.3	565.2	3891.6	0.45	0.30	4.30	6.8	1.7	33.9	233.5	0.03	0.02	0.26
SE_046_02	26.23982	SE	247.0	58.7	1380.3	9622.9	1.45	0.82	11.69	9.4	2.2	52.6	366.7	0.06	0.03	0.45
SE_046_03	33.74464	SE	350.4	84.6	2108.3	14832.5	1.79	1.08	16.66	10.4	2.5	62.5	439.5	0.05	0.03	0.49
SE_047_01	4.039722	SE	26.4	6.6	125.6	864.9	0.10	0.07	0.96	6.5	1.6	31.1	214.1	0.02	0.02	0.24
SE_048_01	8.946444	SE	66.0	11.6	292.2	1467.1	0.55	0.15	2.28	7.4	1.3	32.7	164.0	0.06	0.02	0.26
SE_049_01	4.061008	SE	29.4	4.9	125.4	595.3	0.25	0.06	0.98	7.2	1.2	30.9	146.6	0.06	0.02	0.24
SE_050_01	8.16946	SE	58.7	9.8	250.5	1189.2	0.51	0.13	1.97	7.2	1.2	30.7	145.6	0.06	0.02	0.24
SE_051_01	17.23642	SE	126.0	21.4	543.5	2621.0	1.08	0.28	4.26	7.3	1.2	31.5	152.1	0.06	0.02	0.25
SE_052_01	9.978002	SE	86.6	19.2	497.2	3265.6	0.63	0.27	4.15	8.7	1.9	49.8	327.3	0.06	0.03	0.42
SE_053_01	21.83623	SE	196.7	46.3	1214.8	8548.5	1.46	0.68	10.70	9.0	2.1	55.6	391.5	0.07	0.03	0.49
SE_054_01	15.01896	SE	126.1	30.2	745.0	5199.1	0.78	0.41	6.22	8.4	2.0	49.6	346.2	0.05	0.03	0.41
SE_055_01	10.02439	SE	90.7	21.8	564.8	3946.9	0.60	0.31	4.76	9.0	2.2	56.3	393.7	0.06	0.03	0.47
SE_056_01	10.48623	SE	82.7	20.1	500.6	3480.3	0.49	0.27	4.08	7.9	1.9	47.7	331.9	0.05	0.03	0.39
SE_057_01	12.34118	SE	99.7	23.7	623.5	4406.1	0.62	0.33	5.18	8.1	1.9	50.5	357.0	0.05	0.03	0.42
SE_058_01	11.26321	SE	125.4	31.5	742.0	5108.7	0.59	0.39	5.65	11.1	2.8	65.9	453.6	0.05	0.03	0.50

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
SE_059_01	14.95873	SE	93.1	18.4	539.0	3603.9	0.71	0.25	4.58	6.2	1.2	36.0	240.9	0.05	0.02	0.31
SE_060_01	18.23274	SE	94.6	15.9	480.0	2706.7	1.02	0.27	4.45	5.2	0.9	26.3	148.5	0.06	0.01	0.24
SE_061_01	13.93733	SE	70.3	11.8	334.2	1776.4	0.70	0.18	2.93	5.0	0.8	24.0	127.5	0.05	0.01	0.21
SE_061_02	18.42399	SE	88.1	14.7	398.7	2111.4	0.83	0.21	3.48	4.8	0.8	21.6	114.6	0.05	0.01	0.19
SE_061_03	28.1168	SE	150.9	25.2	894.4	5866.6	2.00	0.54	9.64	5.4	0.9	31.8	208.6	0.07	0.02	0.34
SE_061_04	13.08823	SE	86.0	15.9	624.3	4603.1	1.31	0.40	7.17	6.6	1.2	47.7	351.7	0.10	0.03	0.55
SE_061_05	30.39571	SE	150.6	25.2	719.2	4070.4	1.53	0.40	6.69	5.0	0.8	23.7	133.9	0.05	0.01	0.22
SE_061_06	73.40123	SE	367.7	62.7	1743.0	9820.5	3.62	0.94	15.57	5.0	0.9	23.7	133.8	0.05	0.01	0.21
SE_062_01	5.582526	SE	39.9	8.8	212.7	1335.0	0.24	0.11	1.63	7.1	1.6	38.1	239.1	0.04	0.02	0.29
SE_063_01	6.05338	SE	29.2	4.9	124.7	591.8	0.25	0.06	0.98	4.8	0.8	20.6	97.8	0.04	0.01	0.16
SE_064_01	7.108353	SE	34.5	5.8	147.3	699.2	0.30	0.07	1.16	4.9	0.8	20.7	98.4	0.04	0.01	0.16
SE_065_01	8.32961	SE	39.4	6.6	168.4	799.5	0.34	0.09	1.32	4.7	0.8	20.2	96.0	0.04	0.01	0.16
SE_066_01	10.89533	SE	51.6	8.6	220.4	1046.3	0.45	0.11	1.73	4.7	0.8	20.2	96.0	0.04	0.01	0.16
SE_067_01	1.680995	SE	8.2	1.4	34.9	165.9	0.07	0.02	0.27	4.9	0.8	20.8	98.7	0.04	0.01	0.16
SE_068_01	6.315843	SE	40.7	7.0	303.4	2168.6	0.70	0.19	3.55	6.4	1.1	48.0	343.4	0.11	0.03	0.56
SE_069_01	12.55154	SE	60.4	10.1	257.8	1223.9	0.52	0.13	2.02	4.8	0.8	20.5	97.5	0.04	0.01	0.16
SE_070_01	6.648153	SE	42.6	7.2	247.7	1545.0	0.54	0.14	2.54	6.4	1.1	37.3	232.4	0.08	0.02	0.38
SE_071_01	20.09453	SE	193.8	45.1	1254.1	8853.3	1.58	0.71	11.27	9.6	2.2	62.4	440.6	0.08	0.04	0.56
SE_072_01	23.53238	SE	118.0	23.5	461.2	2505.7	0.75	0.24	3.58	5.0	1.0	19.6	106.5	0.03	0.01	0.15
SE_072_02	10.43281	SE	45.3	7.6	132.4	911.8	0.42	0.07	1.14	4.3	0.7	12.7	87.4	0.04	0.01	0.11
SE_072_02_W	0.965441	SE	6.7	1.1	54.2	404.1	0.13	0.04	0.67	6.9	1.2	56.1	418.5	0.14	0.04	0.70
SE_072_03	7.730299	SE	51.0	12.1	126.3	821.8	0.18	0.07	0.87	6.6	1.6	16.3	106.3	0.02	0.01	0.11
SE_072_04	11.79233	SE	54.4	10.6	126.1	914.1	0.10	0.03	0.64	4.6	0.9	10.7	77.5	0.01	0.00	0.05
SE_072_04_W	2.185402	SE	4.4	0.6	20.9	156.3	0.08	0.03	0.35	2.0	0.3	9.6	71.5	0.04	0.01	0.16
SE_072_05	16.07612	SE	146.9	33.7	898.2	6376.2	1.19	0.50	8.14	9.1	2.1	55.9	396.6	0.07	0.03	0.51
SE_073_01	5.64812	SE	29.1	5.0	126.3	613.9	0.25	0.06	0.99	5.2	0.9	22.4	108.7	0.04	0.01	0.18
SE_074_01	4.466332	SE	21.3	3.6	91.0	431.9	0.18	0.05	0.71	4.8	0.8	20.4	96.7	0.04	0.01	0.16
SE_075_01	5.39107	SE	26.9	4.5	114.7	544.3	0.23	0.06	0.90	5.0	0.8	21.3	101.0	0.04	0.01	0.17
SE_076_01	4.307415	SE	21.6	3.6	92.3	438.3	0.19	0.05	0.72	5.0	0.8	21.4	101.8	0.04	0.01	0.17
SE_077_01	3.695135	SE	17.9	3.0	76.6	363.5	0.16	0.04	0.60	4.9	0.8	20.7	98.4	0.04	0.01	0.16
SE_077_02	12.5261	SE	71.4	12.9	287.0	1589.6	0.55	0.14	2.12	5.7	1.0	22.9	126.9	0.04	0.01	0.17
SE_078_01	3.503536	SE	17.1	2.9	72.8	345.8	0.15	0.04	0.57	4.9	0.8	20.8	98.7	0.04	0.01	0.16
SE_078_02	2.599522	SE	12.7	2.1	54.2	257.4	0.11	0.03	0.43	4.9	0.8	20.9	99.0	0.04	0.01	0.16

Sub-Basin	Sub-basin Area	Major Basin	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)	Estimated Existing Annual TN Load (lb) per acre	Estimated Existing Annual TP Load (lb) per acre	Estimated Existing Annual BOD Load (lb) per acre	Estimated Existing Annual TSS Load (lb) per acre	Estimated Existing Annual Cu Load (lb) per acre	Estimated Existing Annual Pb Load (lb) per acre	Estimated Existing Annual Zn Load (lb) per acre
SE_079_01	7.611098	SE	37.2	6.2	159.0	754.6	0.32	0.08	1.25	4.9	0.8	20.9	99.1	0.04	0.01	0.16
SE_080_01	2.848279	SE	14.1	2.4	60.3	286.0	0.12	0.03	0.47	5.0	0.8	21.2	100.4	0.04	0.01	0.17
SE_080_02	7.233709	SE	35.3	5.9	150.6	715.0	0.31	0.08	1.18	4.9	0.8	20.8	98.8	0.04	0.01	0.16
SE_081_01	30.09726	SE	207.6	34.8	886.4	4207.6	1.80	0.45	6.96	6.9	1.2	29.5	139.8	0.06	0.01	0.23
SE_082_01	12.19971	SE	78.7	13.2	336.0	1594.9	0.68	0.17	2.64	6.4	1.1	27.5	130.7	0.06	0.01	0.22
SE_083_01	6.183839	SE	30.5	5.1	130.3	618.7	0.26	0.07	1.02	4.9	0.8	21.1	100.1	0.04	0.01	0.17
SE_084_01	9.475347	SE	45.9	7.7	196.0	930.4	0.40	0.10	1.54	4.8	0.8	20.7	98.2	0.04	0.01	0.16
SE_085_01	7.372058	SE	36.9	6.2	157.6	748.0	0.32	0.08	1.24	5.0	0.8	21.4	101.5	0.04	0.01	0.17
SE_086_01	6.213185	SE	29.5	5.0	126.2	598.9	0.26	0.06	0.99	4.8	0.8	20.3	96.4	0.04	0.01	0.16
SE_087_01	11.55182	SE	58.5	9.8	249.7	1185.4	0.51	0.13	1.96	5.1	0.8	21.6	102.6	0.04	0.01	0.17
SE_088_01	12.29652	SE	60.3	10.1	257.3	1221.3	0.52	0.13	2.02	4.9	0.8	20.9	99.3	0.04	0.01	0.16
SE_089_01	9.928125	SE	48.9	8.2	208.9	991.7	0.42	0.11	1.64	4.9	0.8	21.0	99.9	0.04	0.01	0.17
SE_090_01	7.808561	SE	37.9	6.3	161.7	767.5	0.33	0.08	1.27	4.8	0.8	20.7	98.3	0.04	0.01	0.16
SE_091_01	12.33223	SE	87.3	19.5	467.8	2949.4	0.53	0.25	3.59	7.1	1.6	37.9	239.2	0.04	0.02	0.29
SE_092_01	13.12872	SE	95.4	16.0	407.2	1932.8	0.82	0.21	3.20	7.3	1.2	31.0	147.2	0.06	0.02	0.24
SE_093_01	30.24953	SE	216.2	36.2	923.2	4382.2	1.87	0.47	7.25	7.1	1.2	30.5	144.9	0.06	0.02	0.24
SE_094_01	5.861246	SE	37.7	6.3	161.2	765.0	0.33	0.08	1.26	6.4	1.1	27.5	130.5	0.06	0.01	0.22
SE_095_01	5.429313	SE	33.4	5.6	142.5	676.2	0.29	0.07	1.12	6.1	1.0	26.2	124.6	0.05	0.01	0.21
SE_096_01	6.065629	SE	30.9	5.2	131.9	626.1	0.27	0.07	1.04	5.1	0.9	21.7	103.2	0.04	0.01	0.17
SE_097_01	23.13244	SE	171.7	38.2	951.8	6743.6	1.50	0.62	9.50	7.4	1.7	41.1	291.5	0.07	0.03	0.41
SE_098_01	7.772603	SE	40.6	6.8	173.2	822.0	0.35	0.09	1.36	5.2	0.9	22.3	105.8	0.05	0.01	0.17
SE_099_01	7.298203	SE	34.9	5.9	149.2	708.3	0.30	0.08	1.17	4.8	0.8	20.4	97.1	0.04	0.01	0.16
SE_100_01	8.780837	SE	42.0	7.0	179.5	852.1	0.36	0.09	1.41	4.8	0.8	20.4	97.0	0.04	0.01	0.16
SE_101_01	9.514827	SE	46.6	7.8	199.0	944.6	0.40	0.10	1.56	4.9	0.8	20.9	99.3	0.04	0.01	0.16
SE_102_01	8.322516	SE	39.6	6.6	169.2	803.0	0.34	0.09	1.33	4.8	0.8	20.3	96.5	0.04	0.01	0.16
SE_103_01	12.5942	SE	78.9	13.7	368.7	2027.5	0.60	0.17	2.86	6.3	1.1	29.3	161.0	0.05	0.01	0.23
SE_104_01	13.52001	SE	79.4	13.7	364.5	1953.7	0.62	0.17	2.84	5.9	1.0	27.0	144.5	0.05	0.01	0.21
SE_105_01	12.14109	SE	67.2	11.3	287.1	1362.7	0.58	0.15	2.25	5.5	0.9	23.6	112.2	0.05	0.01	0.19
SE_106_01	15.01636	SE	75.4	12.6	322.1	1528.8	0.65	0.16	2.53	5.0	0.8	21.4	101.8	0.04	0.01	0.17
SE_107_01	15.01777	SE	124.5	27.5	680.8	4381.2	0.83	0.36	5.48	8.3	1.8	45.3	291.7	0.05	0.02	0.37
SE_107_02	20.62046	SE	170.0	37.3	1028.7	6939.3	1.41	0.57	9.11	8.2	1.8	49.9	336.5	0.07	0.03	0.44
SE_107_03	27.31464	SE	198.3	33.3	849.3	4054.2	1.71	0.43	6.66	7.3	1.2	31.1	148.4	0.06	0.02	0.24
SE_107_04	14.10833	SE	102.5	17.2	437.6	2077.0	0.89	0.22	3.43	7.3	1.2	31.0	147.2	0.06	0.02	0.24

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SE_108_01	42.46534	SE	351.6	76.4	2295.2	16366.4	3.63	1.43	22.88	8.3	1.8	54.0	385.4	0.09	0.03	0.54
SE_109_01	26.40591	SE	192.0	35.9	1483.8	10954.9	3.14	0.94	17.12	7.3	1.4	56.2	414.9	0.12	0.04	0.65
SE_110_01	11.78664	SE	56.6	9.5	241.5	1146.3	0.49	0.12	1.90	4.8	0.8	20.5	97.3	0.04	0.01	0.16
SE_111_01	4.699074	SE	22.8	3.8	97.3	461.8	0.20	0.05	0.76	4.8	0.8	20.7	98.3	0.04	0.01	0.16
SE_112_01	4.978459	SE	27.0	4.8	101.5	484.2	0.20	0.05	0.80	5.4	1.0	20.4	97.3	0.04	0.01	0.16
SE_113_01	18.29861	SE	142.5	31.6	837.9	5616.4	1.10	0.46	7.26	7.8	1.7	45.8	306.9	0.06	0.03	0.40
SE_115_01	12.15511	SE	63.7	10.7	271.9	1290.8	0.55	0.14	2.13	5.2	0.9	22.4	106.2	0.05	0.01	0.18
SE_115_02	14.00888	SE	71.2	11.9	304.1	1443.3	0.62	0.15	2.39	5.1	0.9	21.7	103.0	0.04	0.01	0.17
SE_117_01	3.024009	SE	15.0	2.5	64.2	304.9	0.13	0.03	0.50	5.0	0.8	21.2	100.8	0.04	0.01	0.17
SE_118_01	3.191528	SE	15.6	2.6	66.5	315.5	0.13	0.03	0.52	4.9	0.8	20.8	98.9	0.04	0.01	0.16
SE_119_01	17.95439	SE	112.3	25.6	540.5	3918.8	0.36	0.24	4.10	6.3	1.4	30.1	218.3	0.02	0.01	0.23
SE_120_01	7.575139	SE	36.9	6.2	157.8	748.9	0.32	0.08	1.24	4.9	0.8	20.8	98.9	0.04	0.01	0.16
SE_121_01	5.241216	SE	25.4	4.3	108.6	515.5	0.22	0.05	0.85	4.9	0.8	20.7	98.4	0.04	0.01	0.16
SE_122_01	4.05227	SE	20.5	3.4	87.4	414.9	0.18	0.04	0.69	5.1	0.8	21.6	102.4	0.04	0.01	0.17
SE_123_01	4.994609	SE	23.7	4.0	101.3	481.0	0.21	0.05	0.80	4.8	0.8	20.3	96.3	0.04	0.01	0.16
SE_124_01	11.58976	SE	56.5	9.5	241.2	1144.7	0.49	0.12	1.89	4.9	0.8	20.8	98.8	0.04	0.01	0.16
SE_125_01	5.530871	SE	26.6	4.5	113.8	540.1	0.23	0.06	0.89	4.8	0.8	20.6	97.7	0.04	0.01	0.16
SE_126_01	5.763446	SE	43.3	9.9	237.2	1526.8	0.25	0.12	1.82	7.5	1.7	41.2	264.9	0.04	0.02	0.32
SE_127_01	6.328756	SE	30.1	5.0	128.5	609.9	0.26	0.07	1.01	4.8	0.8	20.3	96.4	0.04	0.01	0.16
SE_128_01	6.348121	SE	47.1	10.8	258.0	1661.7	0.27	0.14	1.98	7.4	1.7	40.6	261.8	0.04	0.02	0.31
SE_129_01	5.998814	SE	29.1	4.9	124.1	589.1	0.25	0.06	0.97	4.8	0.8	20.7	98.2	0.04	0.01	0.16
SE_130_01	20.18121	SE	133.1	22.8	1029.7	7479.4	2.38	0.66	12.23	6.6	1.1	51.0	370.6	0.12	0.03	0.61
SE_131_01	13.17703	SE	18.7	3.2	0.8	6.3	0.00	0.00	0.01	1.4	0.2	0.1	0.5	0.00	0.00	0.00
SEOUT_01	33.41547	SE	16.3	2.7	7.0	33.1	0.01	0.00	0.05	0.5	0.1	0.2	1.0	0.00	0.00	0.00
SMPLE_01	5.325293	NW	21.9	2.7	50.3	360.9	0.31	0.11	1.21	4.1	0.5	9.4	67.8	0.06	0.02	0.23
SMPLE_02	1.851925	NW	8.1	1.3	47.0	350.3	0.11	0.03	0.57	4.4	0.7	25.4	189.2	0.06	0.02	0.31
SMPLE_03	1.503695	NW	3.8	0.5	2.8	20.1	0.02	0.01	0.06	2.5	0.3	1.9	13.4	0.01	0.00	0.04
SMPLE_04	2.552531	NW	8.8	1.2	22.3	163.1	0.10	0.03	0.41	3.4	0.5	8.7	63.9	0.04	0.01	0.16
SMPLE_05	1.61258	NW	4.8	0.6	0.6	4.2	0.00	0.00	0.01	3.0	0.4	0.4	2.6	0.00	0.00	0.01
SMPLE_06	1.866512	NW	6.6	0.7	1.7	10.8	0.00	0.00	0.01	3.5	0.4	0.9	5.8	0.00	0.00	0.01
SMPLE_07	4.947758	NW	21.9	2.9	68.2	497.8	0.31	0.10	1.31	4.4	0.6	13.8	100.6	0.06	0.02	0.27
SW_001_01	33.91115	SW	138.3	32.8	510.8	3533.8	0.72	0.36	4.85	4.1	1.0	15.1	104.2	0.02	0.01	0.14
SW_002_01	52.29933	SW	356.8	82.3	1440.5	10758.3	1.64	0.81	10.57	6.8	1.6	27.5	205.7	0.03	0.02	0.20

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SW_002_02	38.02914	SW	263.4	61.6	1105.1	8141.3	1.19	0.62	8.16	6.9	1.6	29.1	214.1	0.03	0.02	0.21
SW_002_03	31.07603	SW	250.2	58.1	1144.1	8421.4	1.23	0.64	8.45	8.1	1.9	36.8	271.0	0.04	0.02	0.27
SW_002_04	34.10636	SW	263.3	60.3	1140.9	8530.9	1.30	0.64	8.37	7.7	1.8	33.5	250.1	0.04	0.02	0.25
SW_003_01	6.106193	SW	66.2	16.6	391.5	2695.8	0.31	0.21	2.98	10.8	2.7	64.1	441.5	0.05	0.03	0.49
SW_003_02	23.82774	SW	114.3	27.1	468.8	3328.4	0.44	0.25	3.53	4.8	1.1	19.7	139.7	0.02	0.01	0.15
SW_003_03	21.56922	SW	146.0	33.3	575.0	4287.6	0.67	0.32	4.13	6.8	1.5	26.7	198.8	0.03	0.01	0.19
SW_003_04	107.5983	SW	749.6	171.7	3236.0	24141.6	3.67	1.83	23.76	7.0	1.6	30.1	224.4	0.03	0.02	0.22
SW_004_01	30.89377	SW	232.7	58.3	1257.7	8660.2	1.02	0.67	9.63	7.5	1.9	40.7	280.3	0.03	0.02	0.31
SW_005_01	42.20808	SW	330.0	82.9	1873.4	12898.0	1.49	0.99	14.26	7.8	2.0	44.4	305.6	0.04	0.02	0.34
SW_006_01	12.79032	SW	31.4	5.4	70.8	531.9	0.17	0.05	0.86	2.5	0.4	5.5	41.6	0.01	0.00	0.07
SW_007_01	11.82428	SW	54.7	9.4	177.9	1229.7	0.51	0.08	1.37	4.6	0.8	15.0	104.0	0.04	0.01	0.12
SW_008_01	12.71129	SW	72.1	12.4	537.2	4007.2	1.26	0.35	6.50	5.7	1.0	42.3	315.3	0.10	0.03	0.51
SW_009_01	11.87957	SW	73.5	12.7	580.0	4331.3	1.36	0.38	7.08	6.2	1.1	48.8	364.6	0.11	0.03	0.60
SW_010_01	33.4061	SW	212.2	36.6	1716.4	12814.6	4.00	1.11	20.93	6.4	1.1	51.4	383.6	0.12	0.03	0.63
SW_011_01	44.88583	SW	299.9	51.6	2465.9	18413.9	5.76	1.60	30.10	6.7	1.1	54.9	410.2	0.13	0.04	0.67
SW_012_01	23.25999	SW	201.8	50.7	1193.9	8219.7	0.95	0.63	9.09	8.7	2.2	51.3	353.4	0.04	0.03	0.39
SW_013_01	90.68025	SW	552.4	94.5	4374.9	32665.6	10.28	2.86	53.56	6.1	1.0	48.2	360.2	0.11	0.03	0.59
SW_014_01	106.6853	SW	503.3	115.5	2163.6	15993.9	2.39	1.21	15.90	4.7	1.1	20.3	149.9	0.02	0.01	0.15
SW_014_02	71.40278	SW	255.8	50.7	810.8	5931.1	1.54	0.48	5.80	3.6	0.7	11.4	83.1	0.02	0.01	0.08
SW_015_01	59.94853	SW	258.2	52.7	1495.4	10888.6	2.75	0.91	16.02	4.3	0.9	24.9	181.6	0.05	0.02	0.27
SW_015_02	41.53795	SW	234.2	56.1	812.3	5628.6	0.84	0.39	5.38	5.6	1.4	19.6	135.5	0.02	0.01	0.13
SW_016_01	53.97038	SW	450.9	110.5	2534.2	17691.6	2.30	1.39	19.66	8.4	2.0	47.0	327.8	0.04	0.03	0.36
SW_017_01	130.3023	SW	503.8	99.7	1073.3	10461.4	2.65	0.75	6.74	3.9	0.8	8.2	80.3	0.02	0.01	0.05
SW_018_01	35.78537	SW	237.7	56.8	1221.2	8626.8	1.10	0.66	9.20	6.6	1.6	34.1	241.1	0.03	0.02	0.26
SW_019_01	7.46046	SW	68.9	17.3	407.5	2805.9	0.32	0.22	3.10	9.2	2.3	54.6	376.1	0.04	0.03	0.42
SW_020_01	14.26249	SW	109.9	27.6	650.5	4478.4	0.52	0.35	4.95	7.7	1.9	45.6	314.0	0.04	0.02	0.35
SW_021_01	13.59172	SW	100.2	24.8	580.8	4000.8	0.50	0.32	4.52	7.4	1.8	42.7	294.4	0.04	0.02	0.33
SW_022_01	41.30036	SW	184.9	30.2	646.2	4550.8	2.18	0.50	7.33	4.5	0.7	15.6	110.2	0.05	0.01	0.18
SW_023_01	172.275	SW	675.5	140.9	1928.7	16557.5	3.46	1.21	13.15	3.9	0.8	11.2	96.1	0.02	0.01	0.08
SW_023_02	33.94638	SW	294.5	74.0	1741.9	11993.1	1.39	0.92	13.26	8.7	2.2	51.3	353.3	0.04	0.03	0.39
SW_024_01	104.7424	SW	560.3	95.0	4137.9	30796.3	10.16	2.82	51.24	5.3	0.9	39.5	294.0	0.10	0.03	0.49
SW_026_01	14.28669	SW	44.9	7.7	227.7	1700.5	0.53	0.15	2.78	3.1	0.5	15.9	119.0	0.04	0.01	0.19
SW_026_02	12.22167	SW	42.4	7.3	204.3	1525.4	0.48	0.13	2.49	3.5	0.6	16.7	124.8	0.04	0.01	0.20

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SW_027_01	25.0065	SW	165.2	27.9	1290.0	9622.9	3.15	0.89	16.16	6.6	1.1	51.6	384.8	0.13	0.04	0.65
SW_027_02	25.92922	SW	154.0	26.3	1166.2	8704.9	2.78	0.78	14.39	5.9	1.0	45.0	335.7	0.11	0.03	0.56
SW_027_03	12.14901	SW	61.6	10.4	408.4	3045.5	1.01	0.28	5.14	5.1	0.9	33.6	250.7	0.08	0.02	0.42
SW_027_04	32.3061	SW	169.9	28.6	1159.8	8649.7	2.87	0.81	14.66	5.3	0.9	35.9	267.7	0.09	0.03	0.45
SW_028_01	172.9161	SW	414.4	73.7	1747.8	13531.3	2.39	1.00	17.87	2.4	0.4	10.1	78.3	0.01	0.01	0.10
SW_028_02	16.70838	SW	24.0	4.8	7.2	56.9	0.00	0.00	0.05	1.4	0.3	0.4	3.4	0.00	0.00	0.00
SW_028_03	25.49996	SW	80.2	16.2	201.7	1465.8	0.10	0.03	0.91	3.1	0.6	7.9	57.5	0.00	0.00	0.04
SW_029_01	43.60259	SW	273.8	46.7	2170.9	16204.8	5.16	1.44	26.76	6.3	1.1	49.8	371.6	0.12	0.03	0.61
SW_029_02	66.53989	SW	316.8	58.2	1923.0	14763.7	2.58	0.87	18.79	4.8	0.9	28.9	221.9	0.04	0.01	0.28
SW_029_03	60.24537	SW	356.0	72.2	2035.3	16024.6	0.82	0.55	15.27	5.9	1.2	33.8	266.0	0.01	0.01	0.25
SW_029_04	18.00198	SW	164.5	39.4	1019.0	7117.8	1.08	0.56	8.56	9.1	2.2	56.6	395.4	0.06	0.03	0.48
SW_029_05	15.542	SW	77.1	19.0	258.6	1780.2	0.21	0.14	1.98	5.0	1.2	16.6	114.5	0.01	0.01	0.13
SW_029_06	13.71556	SW	31.1	4.2	132.7	975.5	0.28	0.08	1.49	2.3	0.3	9.7	71.1	0.02	0.01	0.11
SW_029_07	15.74816	SW	143.2	33.8	913.6	6426.0	1.09	0.51	8.02	9.1	2.1	58.0	408.0	0.07	0.03	0.51
SW_029_08	37.99716	SW	358.2	88.7	2158.1	14937.6	1.93	1.16	17.05	9.4	2.3	56.8	393.1	0.05	0.03	0.45
SW_029_09	42.21763	SW	366.9	87.9	2243.5	15992.7	1.67	1.06	17.27	8.7	2.1	53.1	378.8	0.04	0.03	0.41
SW_029_10	32.84222	SW	275.2	61.2	1650.2	12055.4	1.46	0.80	13.71	8.4	1.9	50.2	367.1	0.04	0.02	0.42
SW_029_11	9.19264	SW	59.5	10.2	482.7	3604.8	1.13	0.31	5.89	6.5	1.1	52.5	392.1	0.12	0.03	0.64
SW_029_12	29.16736	SW	238.4	48.0	1556.2	12279.7	0.64	0.41	11.74	8.2	1.6	53.4	421.0	0.02	0.01	0.40
SW_029_13	51.36817	SW	344.6	69.5	2013.1	15891.2	0.80	0.53	15.10	6.7	1.4	39.2	309.4	0.02	0.01	0.29
SW_029_14	11.07828	SW	74.5	12.8	610.8	4561.1	1.43	0.40	7.46	6.7	1.2	55.1	411.7	0.13	0.04	0.67
SW_029_15	12.45923	SW	41.3	7.1	186.6	1378.2	0.45	0.11	2.14	3.3	0.6	15.0	110.6	0.04	0.01	0.17
SW_029_15_W	0.480897	SW	3.3	0.6	27.4	204.3	0.06	0.02	0.33	6.9	1.2	56.9	424.9	0.13	0.04	0.69
SW_029_16	9.958785	SW	38.4	6.2	198.7	1474.1	0.59	0.18	2.81	3.9	0.6	19.9	148.0	0.06	0.02	0.28
SW_029_17	15.07109	SW	63.8	10.8	402.4	3002.3	0.97	0.27	5.01	4.2	0.7	26.7	199.2	0.06	0.02	0.33
SW_030_01	33.56006	SW	322.3	80.9	1901.4	13099.8	1.52	1.01	14.47	9.6	2.4	56.7	390.3	0.05	0.03	0.43
SW_031_01	27.0209	SW	144.6	33.4	337.5	2276.2	0.26	0.09	1.53	5.4	1.2	12.5	84.2	0.01	0.00	0.06
SW_031_02	17.23071	SW	61.1	12.1	127.5	851.4	0.31	0.06	0.87	3.5	0.7	7.4	49.4	0.02	0.00	0.05
SW_032_01	13.8569	SW	86.4	21.3	194.0	1247.2	0.18	0.06	0.89	6.2	1.5	14.0	90.0	0.01	0.00	0.06
SW_033_01	6.034724	SW	35.2	8.1	85.8	560.7	0.14	0.04	0.52	5.8	1.3	14.2	92.9	0.02	0.01	0.09
SW_034_01	5.971679	SW	39.4	9.9	87.3	552.9	0.09	0.03	0.40	6.6	1.7	14.6	92.6	0.01	0.00	0.07
SW_034_02	3.608461	SW	21.5	5.4	47.8	302.6	0.05	0.02	0.22	6.0	1.5	13.2	83.8	0.01	0.00	0.06
SW_035_01	24.07071	SW	170.6	42.9	508.0	3331.8	0.46	0.21	2.95	7.1	1.8	21.1	138.4	0.02	0.01	0.12

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SW_035_02	10.82833	SW	74.0	18.6	164.2	1040.0	0.16	0.06	0.75	6.8	1.7	15.2	96.0	0.01	0.01	0.07
SW_036_01	38.56124	SW	200.9	33.5	1358.7	10122.1	3.38	0.97	17.22	5.2	0.9	35.2	262.5	0.09	0.03	0.45
SW_037_01	8.566985	SW	45.8	7.1	279.1	2067.3	0.87	0.26	4.09	5.3	0.8	32.6	241.3	0.10	0.03	0.48
SW_038_01	25.59357	SW	245.8	61.8	1453.7	10009.6	1.16	0.77	11.06	9.6	2.4	56.8	391.1	0.05	0.03	0.43
SW_039_01	53.08183	SW	228.2	55.6	731.8	5175.2	0.72	0.38	5.11	4.3	1.0	13.8	97.5	0.01	0.01	0.10
SW_040_01	51.68201	SW	407.5	99.1	1976.5	13229.2	1.81	1.02	14.53	7.9	1.9	38.2	256.0	0.04	0.02	0.28
SW_040_01_W	3.45622	SW	7.9	2.0	46.9	323.2	0.04	0.02	0.36	2.3	0.6	13.6	93.5	0.01	0.01	0.10
SW_041_01	32.87108	SW	186.7	46.2	793.1	5400.6	0.67	0.39	5.57	5.7	1.4	24.1	164.3	0.02	0.01	0.17
SW_042_01	12.01247	SW	23.6	5.9	10.7	73.9	0.01	0.01	0.08	2.0	0.5	0.9	6.1	0.00	0.00	0.01
SW_043_01	6.694325	SW	42.3	10.6	93.8	594.0	0.09	0.03	0.43	6.3	1.6	14.0	88.7	0.01	0.00	0.06
SW_044_01	27.61688	SW	128.0	22.1	553.3	3983.1	1.42	0.30	5.49	4.6	0.8	20.0	144.2	0.05	0.01	0.20
SW_044_01_W	0.665709	SW	4.6	0.8	37.9	282.8	0.09	0.02	0.46	6.9	1.2	56.9	424.9	0.13	0.04	0.69
SW_044_02	18.50478	SW	64.7	12.3	215.4	1697.2	0.10	0.06	1.65	3.5	0.7	11.6	91.7	0.01	0.00	0.09
US1_01	26.14572	SE	171.7	26.5	729.1	5175.2	1.35	0.50	7.63	6.6	1.0	27.9	197.9	0.05	0.02	0.29
WAT_01	2.922774	WATER	5.5	1.4	32.4	223.3	0.03	0.02	0.25	1.9	0.5	11.1	76.4	0.01	0.01	0.08
WAT_02	38.6203	WATER	14.8	2.6	122.8	917.0	0.29	0.08	1.50	0.4	0.1	3.2	23.7	0.01	0.00	0.04
WAT_03	19.75021	WATER	19.6	4.9	116.0	798.9	0.09	0.06	0.88	1.0	0.2	5.9	40.4	0.00	0.00	0.04
WAT_04	18.69829	WATER	26.8	4.8	121.1	625.5	0.22	0.06	0.94	1.4	0.3	6.5	33.5	0.01	0.00	0.05
WAT_05	25.16399	WATER	12.9	2.7	83.5	626.6	0.08	0.04	0.73	0.5	0.1	3.3	24.9	0.00	0.00	0.03
WAT_06	42.26663	WATER	27.4	4.7	227.0	1695.5	0.53	0.15	2.77	0.6	0.1	5.4	40.1	0.01	0.00	0.07
WAT_07	7.313358	WATER	11.6	2.0	50.8	249.9	0.10	0.03	0.40	1.6	0.3	6.9	34.2	0.01	0.00	0.05
WAT_08	12.82433	WATER	31.6	5.4	192.8	1411.5	0.54	0.17	2.64	2.5	0.4	15.0	110.1	0.04	0.01	0.21
WAT_09	3.750707	WATER	3.7	0.5	13.7	66.5	0.03	0.01	0.10	1.0	0.1	3.7	17.7	0.01	0.00	0.03
WAT_10	22.30291	WATER	21.4	3.8	131.0	1017.9	0.10	0.04	1.07	1.0	0.2	5.9	45.6	0.00	0.00	0.05

Appendix D

Appendix D
"Adjusted" Pollutant Load Estimates by Individual Drainage Basin for the City of Pompano Beach Stormwater Master Plan
WBID 3271

Sub-Basin	Sub-basin Area	Major Basins	Adjusted Estimated Existing Annual TN Load (lb)	Adjusted Estimated Existing Annual TP Load (lb)	Adjusted Estimated Existing Annual BOD Load (lb)	Adjusted Estimated Existing Annual TSS Load (lb)	Adjusted Estimated Existing Annual Cu Load (lb)	Adjusted Estimated Existing Annual Pb Load (lb)	Adjusted Estimated Existing Annual Zn Load (lb)
Atlantic_01	5.629398	SE	23.1	3.1	48.2	343.2	0.3	0.1	1.0
Atlantic_02	3.769718	SW	13.1	1.6	17.4	124.8	0.1	0.0	0.4
Atlantic_03	4.719881	SW	12.7	1.6	0.2	1.3	0.0	0.0	0.0
Atlantic_04	3.544734	SW	17.1	2.1	41.7	299.4	0.3	0.1	1.0
CE_001_01	3.582382	CE	17.6	3.0	76.2	367.5	0.2	0.0	0.6
CE_002_01	32.01443	CE	103.0	19.7	624.3	5020.0	1.3	0.4	6.9
CE_003_01	22.36552	CE	39.9	4.6	49.3	338.0	0.0	0.0	0.2
CE_003_02	17.1252	CE	119.1	19.9	513.6	2518.8	1.0	0.3	4.0
CE_003_03	14.87214	CE	55.7	8.7	296.1	1845.5	0.6	0.2	2.9
CE_003_04	21.94495	CE	110.5	18.5	479.6	2319.3	1.0	0.2	3.8
CE_003_05	34.10062	CE	208.9	37.6	1077.4	6738.2	1.3	0.4	8.3
CE_003_06	24.86627	CE	185.4	44.4	1062.9	7145.5	1.0	0.6	8.1
CE_004_01	30.91438	CE	150.6	25.2	642.9	3053.6	1.3	0.3	5.0
CE_005_01	48.64711	CE	347.1	82.4	1972.0	13097.7	1.9	1.0	15.2
CE_006_01	9.856149	CE	95.4	24.0	564.1	3883.9	0.4	0.3	4.3
CE_006_02	15.62911	CE	143.3	36.0	848.9	5847.2	0.7	0.5	6.5
CE_006_03	13.74166	CE	84.8	21.2	493.6	3397.7	0.4	0.3	3.8
CE_006_04	6.819714	CE	37.4	9.1	223.3	1545.7	0.2	0.1	1.8

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CE_007_01	19.0879	CE	98.7	16.5	421.7	2001.6	0.9	0.2	3.3
CE_008_01	49.40854	CE	223.7	55.0	891.0	7050.6	0.6	0.4	6.2
CE_008_02	34.22363	CE	135.6	30.1	556.7	3817.7	0.4	0.3	4.1
CE_008_03	3.728393	CE	26.0	6.5	149.9	1031.9	0.1	0.1	1.1
CE_008_04	40.63691	CE	201.7	45.6	1302.3	9222.6	1.7	0.7	11.9
CE_008_05	9.800922	CE	91.3	22.8	532.2	3663.9	0.4	0.3	4.0
CE_008_06	11.37353	CE	63.1	14.0	352.2	2442.8	0.3	0.2	2.8
CE_008_07	27.73377	CE	70.9	15.5	221.6	1625.9	0.1	0.1	1.7
CE_009_01	7.009696	CE	39.8	6.1	154.7	746.4	0.3	0.1	1.2
CE_009_02	14.28016	CE	88.4	14.3	364.2	1744.7	0.7	0.2	2.9
CE_009_03	23.80833	CE	127.1	21.3	542.6	2575.4	1.1	0.3	4.3
CE_010_01	18.31381	CE	175.3	43.9	1035.8	7137.6	0.8	0.6	7.9
CE_010_02	25.08376	CE	205.7	46.5	1340.7	9520.5	1.9	0.8	12.6
CE_010_03	14.52138	CE	92.0	17.1	677.7	4992.9	1.4	0.4	7.8
CE_010_04	15.49585	CE	119.9	25.4	821.6	5917.0	1.4	0.5	8.4
CE_010_05	18.44774	CE	145.0	27.1	981.4	7155.1	2.3	0.7	11.9
CE_010_06	11.67686	CE	76.0	13.6	609.5	4559.5	1.3	0.4	7.1
CE_010_07	12.83251	CE	91.0	19.7	631.8	4540.6	1.0	0.4	6.3
CE_010_08	8.721748	CE	60.6	13.3	414.1	2989.1	0.6	0.2	4.0
CE_015_01	37.46322	CE	185.8	30.7	915.1	5107.0	1.9	0.5	8.4
CE_017_01	44.82278	CE	398.9	40.6	860.6	5382.3	1.2	0.1	7.2
CE_017_01_W	1.60161	CE	0.3	0.0	0.6	3.6	0.0	0.0	0.0

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CE_017_02	44.61993	CE	408.5	28.8	957.5	6489.6	1.3	0.3	6.9
CE_017_03	33.71319	CE	160.1	26.4	662.8	3151.1	1.3	0.3	5.2
CE_017_04	13.15707	CE	11.3	1.8	5.1	31.0	0.0	0.0	0.1
CE_017_05	19.55357	CE	15.5	2.6	4.4	22.4	0.0	0.0	0.0
CE_017_06	40.28963	CE	32.1	5.9	9.4	50.8	0.0	0.0	0.1
CE_017_10	9.533784	CE	11.1	2.1	4.3	31.1	0.0	0.0	0.0
CE_020_03	47.72299	CE	269.0	47.0	1660.5	11854.6	3.3	1.0	18.3
CE_072_01	8.852848	CE	43.4	7.3	187.1	898.5	0.4	0.1	1.5
CE_072_02	38.38292	CE	184.9	31.0	795.2	3834.0	1.6	0.4	6.2
CE_072_03	43.78105	CE	216.6	38.9	983.6	5126.9	1.8	0.5	7.8
CE_072_04	50.0184	CE	236.9	40.1	1165.8	6492.2	2.4	0.6	10.6
CE_083_01	14.22755	CE	89.7	14.9	378.8	1800.2	0.8	0.2	3.0
CE_083_02	8.049325	CE	46.1	7.5	189.9	904.8	0.4	0.1	1.5
CE_087_01	3.167219	CE	16.2	3.0	75.7	407.5	0.1	0.0	0.6
CE_088_01	25.30983	CE	176.6	29.5	722.3	3466.9	1.5	0.4	5.7
CE_088_02	8.373094	CE	56.9	9.5	243.0	1153.7	0.5	0.1	1.9
CE_089_01	14.66138	CE	92.8	15.6	683.9	5118.4	1.6	0.5	8.4
CW_008_01	26.21979	CW	63.0	10.0	208.6	1549.1	0.6	0.2	2.8
CW_008_02	30.45039	CW	144.9	25.6	477.3	3505.4	1.0	0.3	5.1
CW_008_03	20.51247	CW	44.2	7.1	44.6	327.6	0.2	0.1	0.8
CW_014_02	33.17765	CW	183.5	27.4	993.3	6462.3	2.1	0.6	10.2
CW_015_01	28.97254	CW	216.4	38.8	1153.0	7350.8	1.5	0.5	9.3

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CW_016_01	30.43775	CW	205.5	35.1	1298.4	8663.0	2.9	0.8	14.2
CW_017_01	26.50456	CW	157.2	26.4	1064.1	7906.3	2.8	0.8	14.0
CW_017_02	24.33087	CW	168.7	30.4	1317.0	9764.3	2.9	0.9	15.6
CW_017_03	10.62719	CW	51.9	7.8	184.4	983.5	0.6	0.2	2.2
CW_017_04	12.09257	CW	25.8	4.3	38.4	182.1	0.1	0.0	0.3
CW_017_05	3.177366	CW	28.9	3.6	115.9	829.7	0.6	0.2	2.6
CW_017_06	7.50088	CW	59.4	8.8	358.8	2645.5	1.3	0.4	5.7
CW_020_01	37.67995	CW	184.6	41.1	498.6	3360.5	0.5	0.2	2.8
CW_021_01	43.11415	CW	258.3	48.8	1545.6	12057.0	1.2	0.5	12.9
CW_022_01	57.88398	CW	208.3	38.1	978.3	7643.6	0.8	0.4	8.5
CW_022_02	21.39904	CW	154.8	30.2	924.4	7269.5	0.6	0.3	7.6
CW_025_01	5.505543	CW	40.1	6.8	174.6	857.1	0.3	0.1	1.4
CW_026_01	20.74822	CW	99.0	18.6	264.6	1414.1	0.6	0.2	2.6
CW_026_02	28.43377	CW	174.8	29.3	705.9	3350.6	1.4	0.4	5.5
CW_028_01	12.55628	CW	68.4	14.3	333.8	2280.9	0.6	0.2	3.4
CW_028_02	9.859088	CW	67.3	11.3	287.2	1363.5	0.6	0.1	2.3
CW_028_03	26.14249	CW	79.4	11.7	305.5	1725.8	0.5	0.1	2.3
CW_028_04	26.48318	CW	105.9	13.5	351.0	1811.4	0.8	0.2	3.1
CW_029_01	42.58149	CW	246.6	42.7	1364.3	8821.5	2.8	0.8	13.9
CW_030_01	29.81554	CW	103.8	13.7	322.9	1574.1	0.6	0.1	2.3
CW_031_01	51.51348	CW	281.5	46.8	1209.2	6537.4	2.7	0.7	11.4
CW_033_01	70.79257	CW	412.2	68.6	3156.3	23514.6	7.6	2.1	39.1

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CW_036_01	36.7217	CW	142.6	19.9	547.5	3106.2	1.1	0.3	4.9
CW_036_02	48.40033	CW	259.7	42.4	1021.0	4975.0	2.1	0.5	8.1
CW_038_01	24.11916	CW	152.2	27.0	877.8	6138.5	1.3	0.4	8.1
CW_038_02	32.56257	CW	177.3	28.8	683.0	3252.9	1.4	0.3	5.3
CW_038_04	13.23313	CW	94.4	15.8	401.2	1907.8	0.8	0.2	3.1
CW_039_01	15.57786	CW	97.5	16.4	522.5	3306.1	1.2	0.3	5.6
CW_039_02	29.72154	CW	202.3	33.6	867.7	4334.3	1.8	0.5	7.2
CW_040_01	17.73631	CW	90.3	15.3	533.9	3884.4	1.3	0.4	6.5
CW_045_01	16.44973	CW	41.2	2.7	63.5	441.4	0.1	0.0	0.6
CW_046_01	19.94397	CW	57.0	11.1	192.7	1435.3	0.4	0.1	2.3
Cypress_01	10.21573	SE	102.2	24.9	589.4	4011.9	0.5	0.3	4.6
Dixie_02	25.60141	CE	133.1	21.7	841.7	6141.3	2.2	0.6	10.8
Dixie_03	14.75145	CE	75.2	11.8	463.3	3443.1	1.2	0.3	6.0
Dixie_04	20.99761	CE	101.8	20.7	456.6	2951.4	0.7	0.3	4.0
Dixie_04_W	0.377146	CE	3.0	0.7	17.5	120.4	0.0	0.0	0.1
Dixie_05	10.13793	CE	36.8	6.0	184.1	1349.7	0.5	0.1	2.4
Dixie_05_W	0.906646	CE	0.2	0.0	0.3	1.6	0.0	0.0	0.0
Dixie_06	3.16607	CE	12.7	1.6	29.2	211.4	0.2	0.1	0.6
Dixie_07	11.54274	SE	95.2	15.8	602.9	4469.0	1.7	0.5	8.3
Dixie_08	24.66468	SE	172.2	30.3	1375.0	10268.6	3.0	0.9	16.3
I95_1E	19.251	I95	74.6	9.4	202.7	1453.4	1.2	0.4	4.9
I95_1EN	12.90213	I95	53.5	6.6	121.3	870.1	0.7	0.3	2.9

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I95_1ES	7.21511	I95	46.2	5.7	154.7	1109.5	1.0	0.3	3.7
I95_1W	28.27316	I95	224.0	27.9	842.3	6044.4	5.1	1.8	20.3
I95_1WS	22.25819	I95	182.3	22.6	691.8	4962.5	4.3	1.5	16.8
I95_2E	32.8949	I95	214.3	25.8	778.4	5489.5	4.5	1.6	17.9
I95_2N	41.33543	I95	348.1	43.2	1321.3	9478.0	8.1	2.8	32.0
I95_2W	17.76569	I95	145.7	18.1	553.0	3966.9	3.4	1.2	13.4
I95_3	32.93159	I95	277.0	35.2	1104.0	7969.5	6.3	2.2	25.2
I95_4	15.14535	I95	110.4	14.4	445.7	3217.4	2.4	0.8	9.6
I95_5	34.27411	I95	271.0	33.6	1004.5	7205.1	6.2	2.1	24.3
NE_007_01	13.05213	NE	11.9	2.2	3.6	19.5	0.0	0.0	0.0
NE_007_02	63.77256	NE	275.9	49.7	580.4	3332.3	1.8	0.5	5.9
NE_007_02_W	0.810816	NE	13.0	3.3	77.2	531.5	0.1	0.0	0.6
NE_007_03	31.37408	NE	29.8	5.5	9.2	50.9	0.0	0.0	0.1
NE_007_04	19.90675	NE	21.0	3.9	6.3	33.3	0.0	0.0	0.0
NE_007_05	44.84477	NE	27.3	6.1	9.8	65.8	0.0	0.0	0.1
NE_007_06	41.3278	NE	31.7	5.4	9.1	45.4	0.0	0.0	0.1
NE_008_01	12.81165	NE	40.6	8.5	45.8	355.8	0.1	0.0	0.2
NW_020_01	30.64861	NW	184.8	36.2	1274.1	9315.1	2.5	0.8	14.0
NW_021_01	55.7559	NW	453.8	106.3	2607.4	18097.4	3.2	1.7	23.2
NW_027_01	128.5348	NW	713.2	150.8	4578.4	32979.0	7.5	2.7	46.3
SE_020_01	22.23171	SE	38.9	6.7	1.3	9.7	0.0	0.0	0.0
SE_046_01	16.66595	SE	112.7	28.3	565.2	3891.6	0.5	0.3	4.3

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SE_046_02	26.23977	SE	247.0	58.7	1380.3	9622.9	1.4	0.8	11.7
SE_046_03	33.74457	SE	350.4	84.6	2108.3	14832.5	1.8	1.1	16.7
SE_047_01	4.039714	SE	26.4	6.6	125.6	864.9	0.1	0.1	1.0
SE_058_01	11.26318	SE	125.4	31.5	742.0	5108.7	0.6	0.4	5.6
SE_072_02	10.43279	SE	45.3	7.6	132.4	911.8	0.4	0.1	1.1
SE_072_02_W	0.965439	SE	6.7	1.1	54.2	404.1	0.1	0.0	0.7
SE_072_03	7.730283	SE	51.0	12.1	126.3	821.8	0.2	0.1	0.9
SE_072_04	11.79231	SE	54.4	10.6	126.1	914.1	0.1	0.0	0.6
SE_072_04_W	2.185397	SE	4.4	0.6	20.9	156.3	0.1	0.0	0.4
SE_072_05	16.07609	SE	146.9	33.7	898.2	6376.2	1.2	0.5	8.1
SE_119_01	17.95435	SE	112.3	25.6	540.5	3918.8	0.4	0.2	4.1
SW_022_01	41.30027	SW	184.9	30.2	646.2	4550.8	2.2	0.5	7.3
SW_024_01	104.7422	SW	560.3	95.0	4137.9	30796.3	10.2	2.8	51.2
SW_026_01	14.28666	SW	44.9	7.7	227.7	1700.5	0.5	0.1	2.8
SW_026_02	12.22164	SW	42.4	7.3	204.3	1525.4	0.5	0.1	2.5
SW_027_01	25.00645	SW	165.2	27.9	1290.0	9622.9	3.1	0.9	16.2
SW_027_02	25.92916	SW	154.0	26.3	1166.2	8704.9	2.8	0.8	14.4
SW_027_03	12.14899	SW	61.6	10.4	408.4	3045.5	1.0	0.3	5.1
SW_027_04	32.30604	SW	169.9	28.6	1159.8	8649.7	2.9	0.8	14.7
SW_029_09	42.21755	SW	366.9	87.9	2243.5	15992.7	1.7	1.1	17.3
SW_029_10	32.84215	SW	275.2	61.2	1650.2	12055.4	1.5	0.8	13.7
SW_029_14	11.07825	SW	74.5	12.8	610.8	4561.1	1.4	0.4	7.5

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SW_029_15_W	0.480896	SW	3.3	0.6	27.4	204.3	0.1	0.0	0.3
SW_029_16	9.958765	SW	38.4	6.2	198.7	1474.1	0.6	0.2	2.8
SW_029_17	15.07106	SW	63.8	10.8	402.4	3002.3	1.0	0.3	5.0
SW_044_01	27.61682	SW	128.0	22.1	553.3	3983.1	1.4	0.3	5.5
SW_044_01_W	0.665708	SW	4.6	0.8	37.9	282.8	0.1	0.0	0.5

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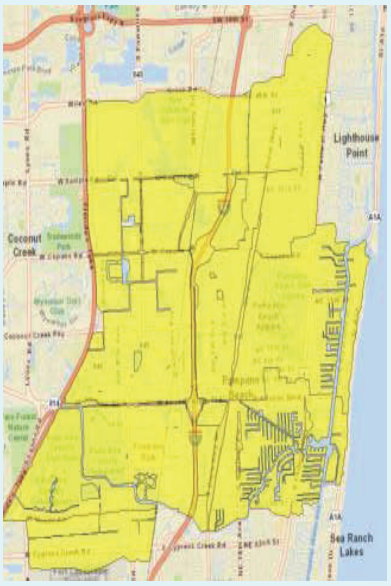
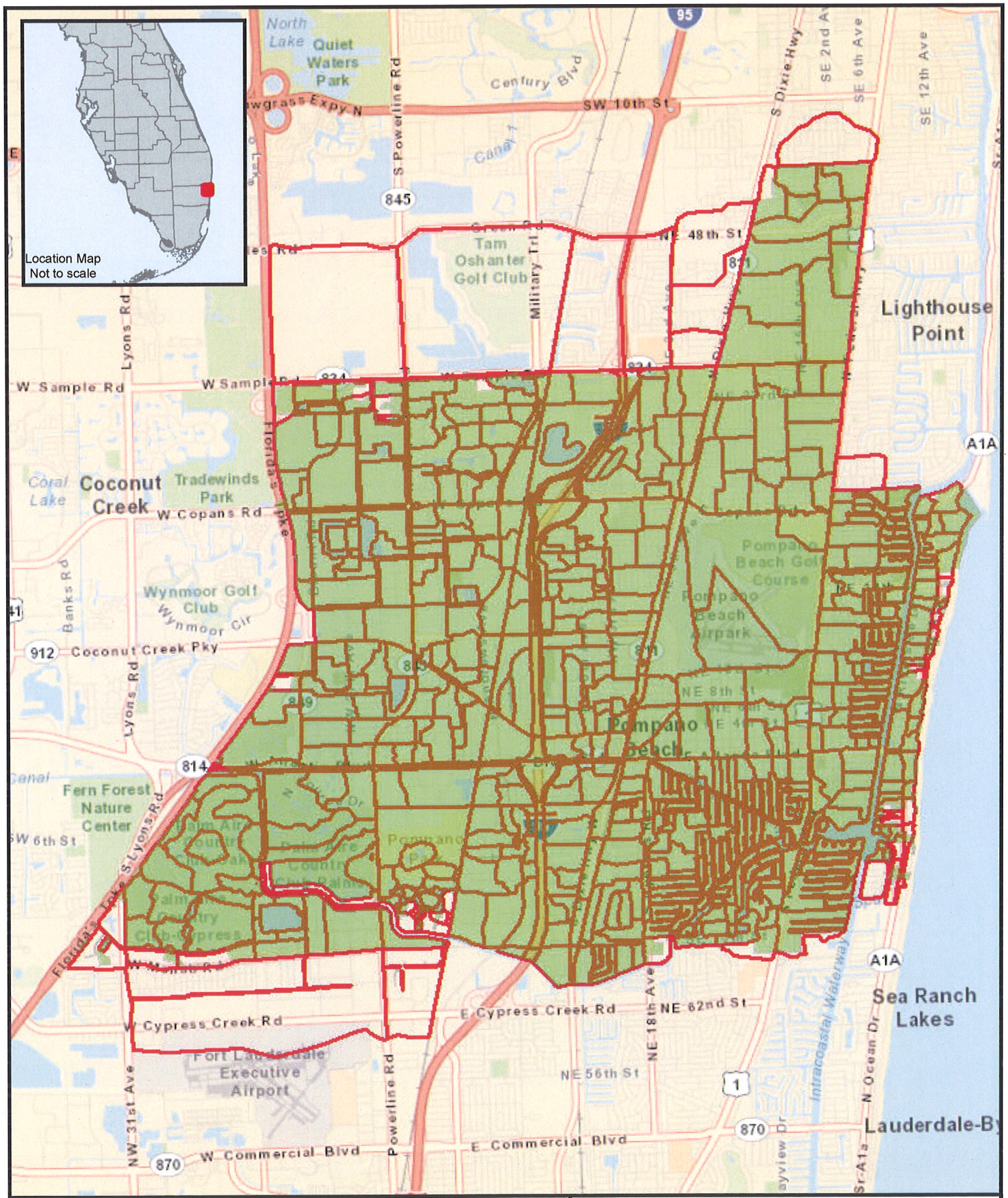
Lakeland, Florida 33803
1.877.550.4224





Notes:

1- Project No.: 600045
2- Data Source -
ESRI World StreetMap
WBIDS - FDEP
Sub-basin Limits- Chen Moore & Associates
3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 05/23/2012
Revised:
Checked By: TK

Explanation of Features

N

Pompano Beach City Limit

Sub-Basin Limits

0 0.5 1 2 Miles

amec

Figure 1: Drainage Sub-Basins
City of Pompano Beach
Broward County, Florida

AMEC Environment & Infrastructure, Inc.
2000 E. Edgewood Drive Ste #215 - Lakeland, FL 33803 - CA-5392 - (863) 667-2345

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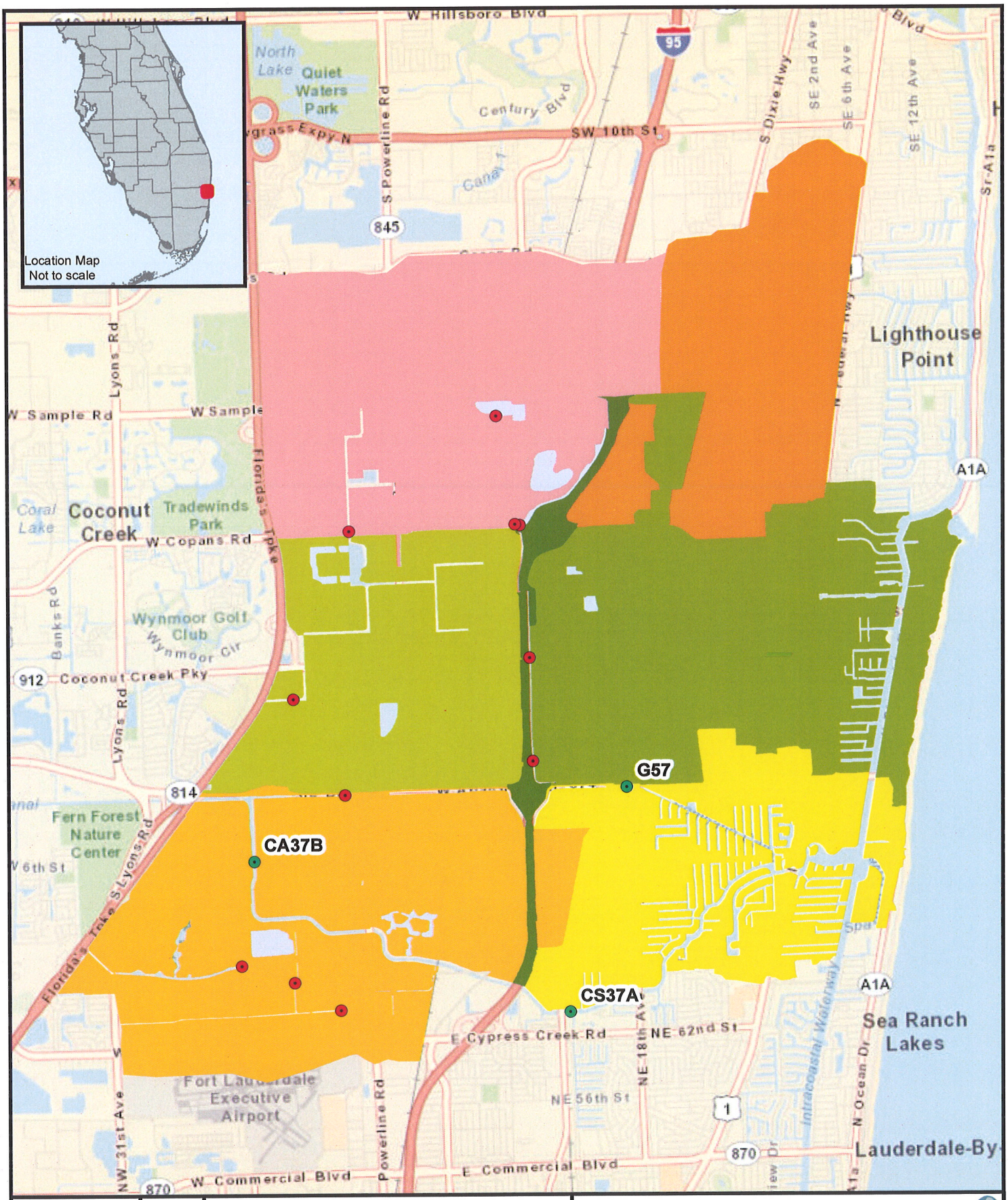

Notes:

1- Project No.: 600045

2- Data Source -
ESRI World StreetMap
WBIDS - FDEP

3- This map is intended to be used for planning purposes only. It is not a survey.

Date: 05/23/2012
Revised:
Checked By: TK

Explanation of Features

- Major Water Control Structures
- Water Control Structures in Secondary Canals

Major Drainage Basins

- CE
- CW
- I95
- NE
- NW
- SE
- SW
- WATER

N

0 0.3 0.6 Miles

amec

Figure 2: Major Drainage Basins
City of Pompano Beach
Broward County, Florida

AMEC Environment & Infrastructure, Inc.
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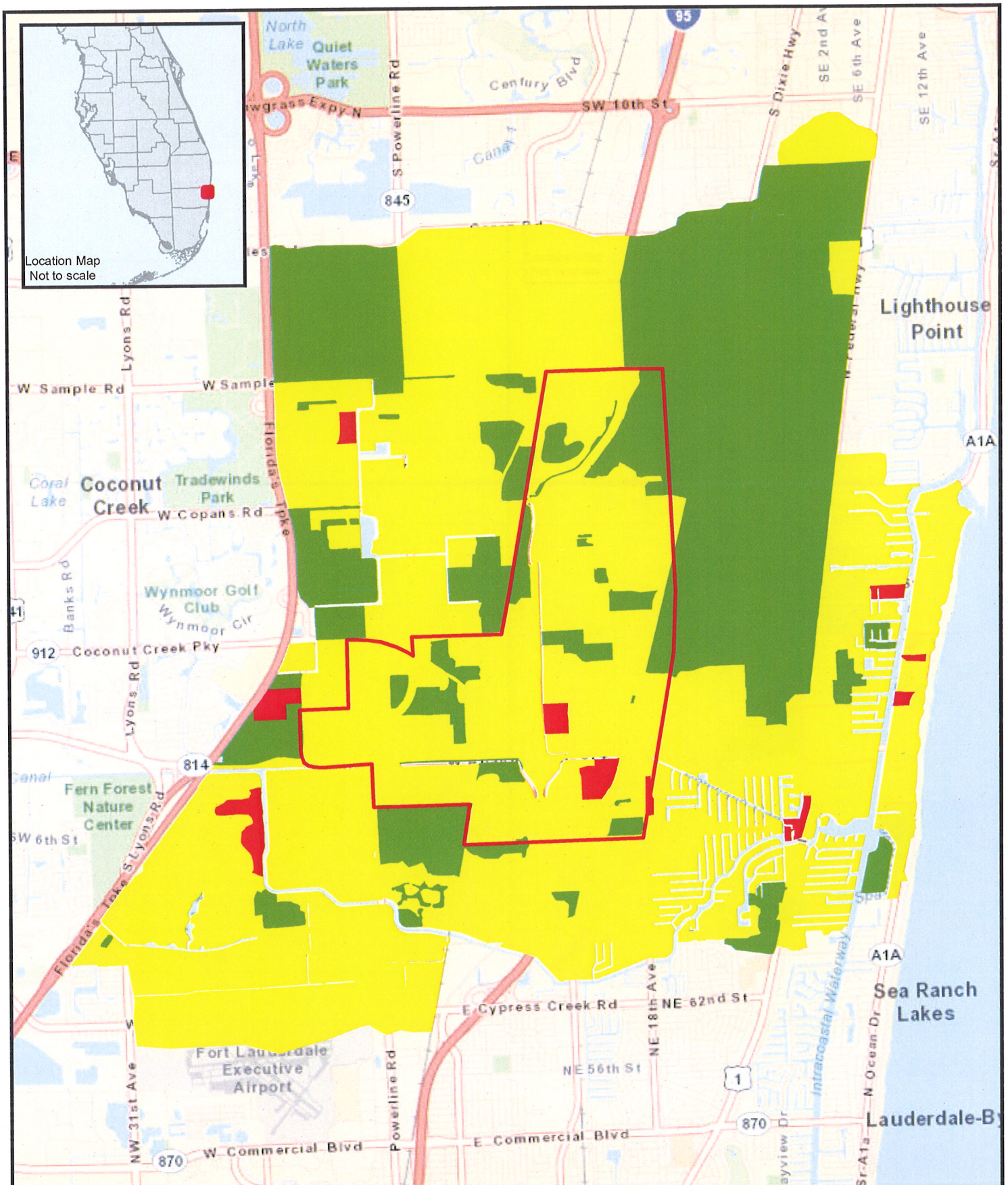
Path: R:\MM\Pompano\Maps\Loc_8x11P2_Major_Basins_Figure2.mxd



Notes:

1- Project No.: 600045
2- Data Source - ESRI World StreetMap WBIDS - FDEP
3- This map is intended to be used for planning purposes only. It is not a survey.
4- Loadings- based on single method adjusted for BMPs (but no field verified). Please refer to report for details.

Date: 05/23/2012
Revised:
Checked By:TK

Explanation of Features

N

Drainage Sub-Basins — WBID 3271

Estimated Nitrogen Loading lbs/acre

- High: >9.5
- Medium: 3.5-9.5
- Low: 0-3.5

0 0.5 1 Miles

amec

Figure 3: Sub-Basin Nitrogen Loading
City of Pompano Beach
Broward County, Florida

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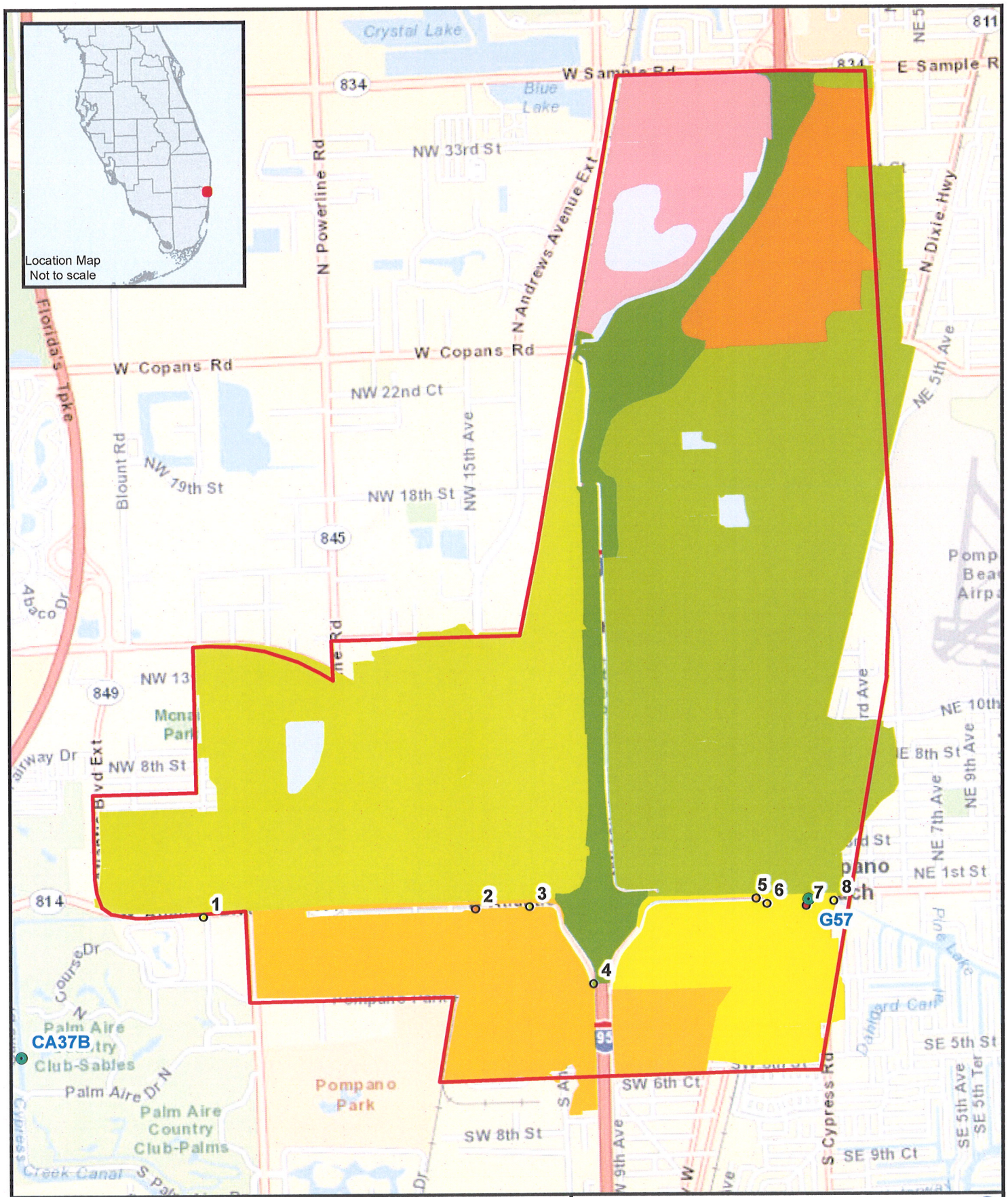


Notes:

1- Project No.: 600045
2- Data Source - ESRI World StreetMap WBIDS - FDEP Water Quality Sampling Stations- FDEP
3- This map is intended to be used for planning purposes only. It is not a survey.
4- Please refer to report for dicussion of landuse-based pollutant load calculation within WBID 3271. WBID boundary doesn't exactly match drainage basin limits

Date: 05/23/2012
Revised:
Checked By:TK

Explanation of Features

N

WBID 3271
Major Water Control Structures

Water Quality Sampling Locations

Station Name
1-21FLWQA UPS of G65
2-21FLBROW2E
3-21FLBROW2F
4-21FLWQA UPS of I-95
5-21FLBROW110
6-21FLA28030591
7-112WRD
8-21FLBROW2C
9-21FLBROW5
10-21FLBROW6

Sub-basins within WBID 3271

Major Basins
CE
CW
I95
NE
NW
SE
SW
WATER

0 0.25 0.5 Miles

amec

Figure 4: Major Drainage Basin Limits within WBID 3271
City of Pompano Beach
Broward County, Florida

AMEC Environment & Infrastructure, Inc.
2000 E. Edgewood Drive Ste #215 - Lakeland, FL 33803 - CA-5392 - (863) 667-2345

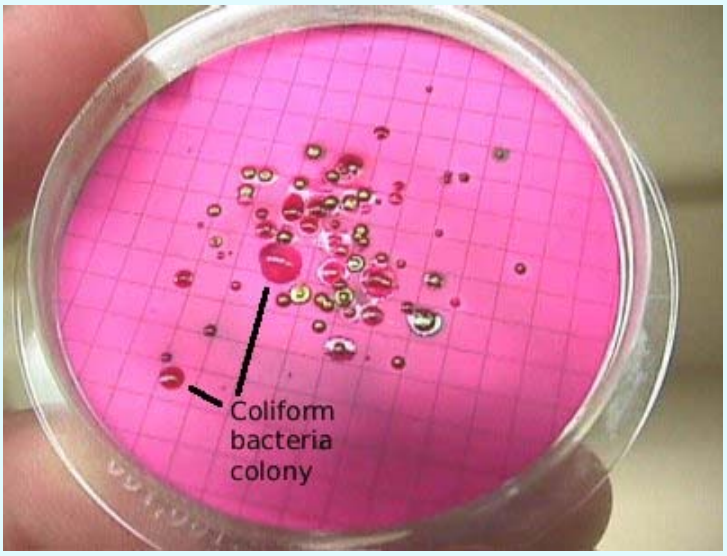
Appendix A-9

Fecal Coliform Impairment Report (AMEC)

Prepared for

Chen-Moore & Associates

Addressing Fecal Coliform Impairments for the City of Pompano Beach



Project No.: 600045
Date: May 2012

Addressing Fecal Coliform Impairments for the City of Pompano Beach

Prepared for:

Chen-Moore & Associates
Fort Lauderdale, Florida

Prepared by:

AMEC
2000 E. Edgewood Drive, Suite 215
Lakeland, Florida 33803

AMEC Project No. 600045

May 2012

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1.0 Addressing Fecal Coliform Impairments

1.1 Background

For water quality management purposes, the Florida Department of Environmental Protection (FDEP) defines the City of Pompano Beach as lying within two major hydrologic basins: the Lake Worth Lagoon–Palm Beach Coast Basin (FDEP 2006a) and the Biscayne Bay–Southeast Coast Basin (FDEP 2006b). Within each of these basins, FDEP has delineated a number of hydrologic sub-units which are identified using Water Body ID (WBID) numbers. The area within the city's jurisdiction includes portions of the following hydrologic sub-units in those two basins:

- WBID 3264 (Hillsboro Canal) and WBID 3226F (Atlantic Intracoastal Waterway Above Pompano) in the Lake Worth Lagoon-Palm Beach Coast Basin, and
- WBID 3270 (C-14/Cypress Creek/Pompano Canal), WBID 3271 (Pompano Canal), WBID 3226G1 (Atlantic Intracoastal Waterway – Broward County North Segment), and a very small portion of WBID 3274 (C-13 East/Middle River) in the Biscayne Bay-Southeast Coast Basin.

Three of these WBIDs (3270, 3271 and 3274) are currently designated by FDEP as impaired due to elevated concentrations of fecal coliform bacteria. The waterbodies received this designation because, during a recent multi-year verification period, >10% of the water quality samples collected at one or more locations there were found to contain >400 colony-forming-units (CFU) of fecal coliforms per 100 ml water sample.

The State of Florida adopted the 400 CFU fecal coliform criterion, and other water quality criteria which are summarized in Chap. 62-302.250 of the Florida Administrative Code[1], in order to comply with the "fishable, swimmable" requirements of the federal Clean Water Act. The intent of the fecal coliform criterion is to reduce human health risks in cases where waterborne pathogens could potentially be present in waterbodies that are used for recreation, shellfish harvesting, or potable water supply.

1.2 Limitations of Fecal Coliforms as Water Quality Indicators

In most cases, the fecal coliform bacteria that are detected in surface water samples are not human pathogens. Instead, they are bacterial "indicator organisms" (IOs) which are used as a warning signal that water may have come into contact with fecal material from humans or other warm-blooded vertebrates, and may therefore contain disease-causing organisms that pose a potential risk to public health (NRC 2004).

Fecal coliforms have been used as water quality indicators for more than 100 years, and have been proven to provide accurate and cost-effective warnings of fecal contamination under

[1] https://www.flrules.org/gateway/chapterhome.asp?chapter=62-302

many circumstances. Beginning in the 1800s, with the initial understanding that a number of major diseases such as cholera and typhoid are waterborne and associated with fecal contamination, coliform measurements have been used to ensure the safety of municipal water supplies. Relatively simple and inexpensive laboratory tests were developed for coliforms in the 1880s, and in 1914 the U.S. Public Health Service enacted a standard requiring that "drinking waters not show evidence of the coliform organism" (NRC 2004). Such standards — along with the widespread adoption of sanitary practices for the handling and disposal of sewage, and the filtration and chlorination of water supplies — have given the U.S. one of the cleanest and safest supplies of drinking water in the world (NRC 2004).

Over time, as it became widely understood that contaminated water can play a key role in disease transmission, interest in the IO-based approach spread from drinking water protection to the protection of recreational (i.e., swimming, boating, recreational fishing) waters. In the early 1920s, an epidemic of typhoid fever at a children's summer camp in the northeastern U.S. was "unquestionably attributed to bathing in polluted waters" (NRC 2004). In the early 1950s, states began enacting guidelines for recreational waters, with the most common being a requirement that total coliforms not exceed 1,000 CFU per 100 ml water sample. As time went on, fecal coliforms replaced total coliforms as the preferred IO for general water quality monitoring, and in 1968 (using a total-to-fecal ratio of 5:1) a national advisory panel recommended a new two-part standard: the monthly geometric mean of fecal coliforms should remain <200 CFU/100 ml, and the number should be <400 CFU/100ml in 90 percent of the samples. These values were adopted by the EPA in 1968 (NRC 2004) and serve as the basis for Florida's current criteria.

Soon after they were adopted, these values began to be questioned on several technical grounds. Field studies showed weak or inconsistent correlations between coliform counts (total and fecal) and the incidence of waterborne disease among recreational users. Outside the laboratory, pathogenic viruses and protozoa were found to survive longer than the short-lived coliforms in natural waters, indicating that the absence of coliforms could not necessarily be taken as evidence that a waterbody is uncontaminated. The opposite situation was documented to occur in tropical and subtropical environments, where *E. coli* and other coliforms can occur naturally (i.e., in the absence of fecal contamination) in sediments, water and on vegetation. Thus, outside the temperate zone, the presence of coliform bacteria in a water sample cannot necessarily be taken as evidence of fecal contamination.

Rose et al. (2001), in a recent study conducted in the Tampa Bay area, provided the following summary of this issue:

> *"Risks to swimmers using polluted beaches have been a major issue associated with the setting of ambient water quality standards and discharge limits to recreational sites. Public health concerns in recreational waters in the tropics and subtropics differ from those of cooler waters. Prevention of disease depends on the use of appropriate fecal indicators. However, the finding that the most widely used fecal contamination indicator, fecal coliforms and more specifically E. coli, grow naturally on vegetation in warm climates clearly brings into question whether these or other indicators developed for*

temperate climates are applicable in Florida and other southeastern areas… In recent years, total and fecal coliform bacterial indicators have not been able to consistently indicate the persistence of pathogens, especially viruses in surface waters."

Similar points have been made, at the national and international levels, in reports issued by the National Research Council (NRC 2000, 2004), the World Health Organization (WHO 2000, 2003), the European Union (EP/CEU 2006) and the U.S. Environmental Protection Agency (EPA 2007), which have pointed out a number of limitations affecting the accuracy of fecal coliforms and other existing indicators in estimating human health risks. Fujioka and colleagues (1985, 1997, 1999, 2001) have reported a number of instances in tropical waters in which none of the commonly-used bacterial indicators have proven adequate. Given these limitations, it is evident that fecal coliform counts alone cannot be relied upon by FDEP or its local partners when developing management strategies to address microbial water quality and its potential impacts on human health, or when evaluating the effectiveness of the management actions that are taken to implement those strategies. Additional information regarding the sources of the fecal coliform bacteria that are detected in surface water bodies (e.g., whether the sources are humans, pets, livestock, birds, other wildlife, soil, aquatic sediments, or vegetation), and the risks those sources pose to human health, will need to be collected and assessed to ensure that appropriate management actions are identified, prioritized, and conducted.

Fortunately, the shortcomings of the existing bacteriological indicators are well known within the public health and water quality management communities, and work is being carried out by a number of organizations to develop cost-effective indicators that provide more accurate estimates of human health risks. Currently, however, no single indicator or analytical method has been found that possesses the major attributes — such as greater accuracy in estimating risk, reasonable cost, and feasibility for day-to-day use by laboratory personnel in local monitoring programs — that would be needed to justify abandoning the existing bacteriological indicators and developing new water quality criteria based on alternatives (e.g., Fujioka 1997, Wade et al. 2003, EPA 2007).

Until cost-effective alternatives are found and adopted, local management programs will need to continue using the existing indicators and other available information as effectively as possible in their efforts to reduce human health risks associated with waterborne pathogens in recreational waters (NRC 2004). A conceptual framework for doing so has been developed by the World Health Organization (WHO 2000, 2003) and applied in a number of developed and developing countries on several continents. Some elements of that conceptual framework are shown in **Figures 1.1 and 1.2**.

Because monitoring of indicator organisms such as fecal coliform bacteria provides only limited information regarding health risks, the WHO framework also relies on information provided by periodic "sanitary inspections" or contaminant source surveys, which are defined as "a search for, and evaluation of, existing and potential microbiological hazards that could affect the safe use of a particular stretch of recreational water or bathing beach" (WHO 2000). Under the WHO approach—which is commonly referred to as the "Annapolis

protocol" due to its initial development at an international conference held in Annapolis, Maryland in the late 1990s—the information provided by sanitary inspections and water quality monitoring data are combined to provide a graded, risk-based assessment of a given waterbody, as shown conceptually in **Figure 1.2**. The key feature of the approach is the recognition that funding and other resources are inherently limited, and that resources devoted to addressing these sorts of water quality issues should be focused on the locations and sources that pose potential human health risks, which will often be a subset of the locations where IO counts happen to exceed a regulatory criterion.

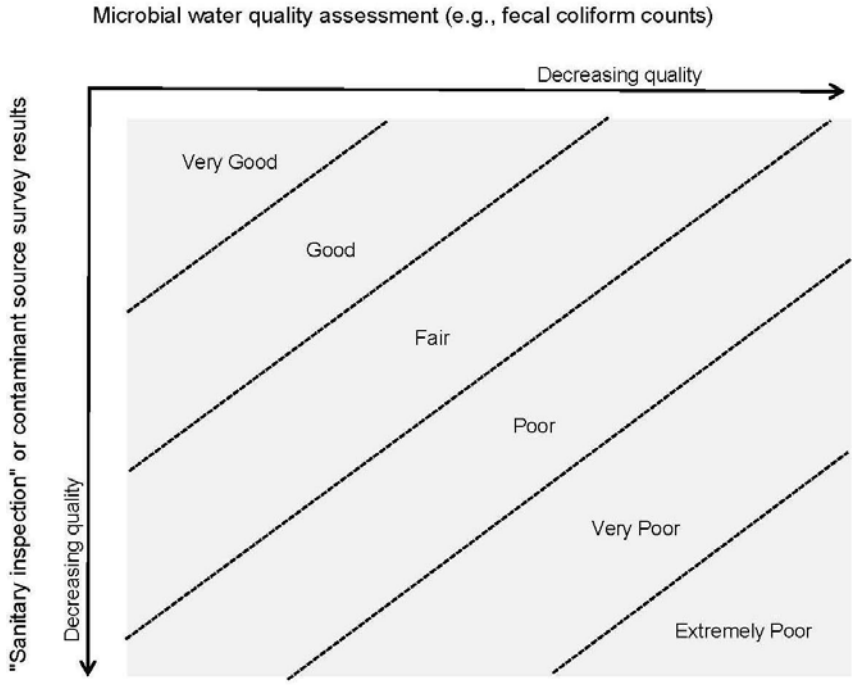

Figure 1.1. Schematic approach for prioritizing and managing health-related and other risks associated with recreational uses of surface water bodies. (Source: WHO 2003)

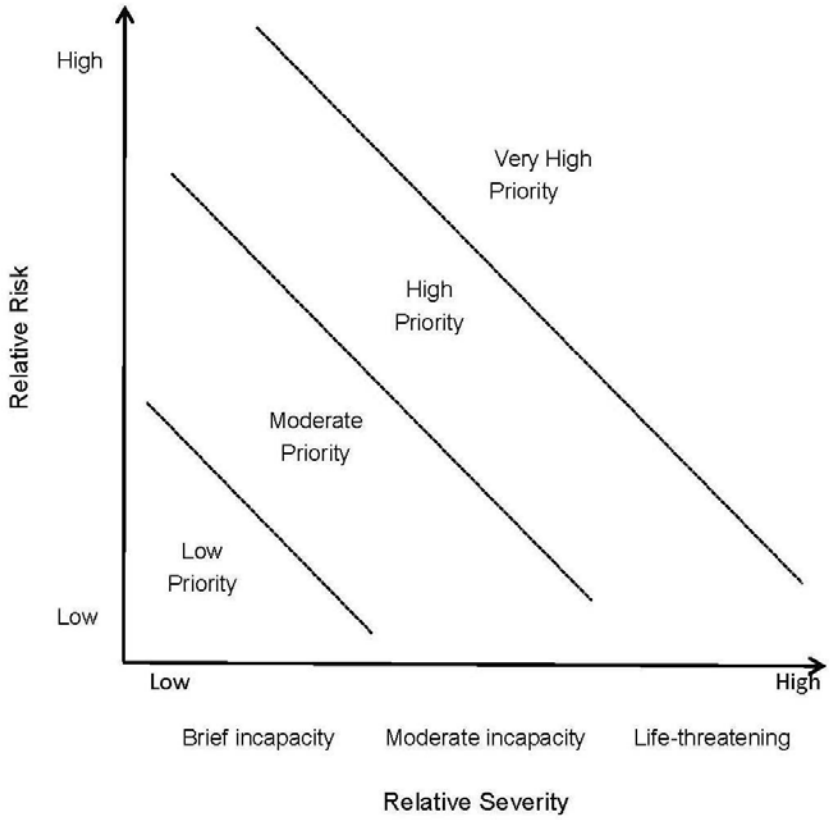

Figure 1.2. WHO waterbody classification matrix based on water quality monitoring data and sanitary inspections. (Sources: WHO 2000, 2003)

1.3 FDEP's Recommended Strategy for Addressing Fecal Coliform Impairments

FDEP (2011a) has incorporated the concepts of the Annapolis protocol in a guidance document that was developed to help local stakeholders address fecal coliform impairments in recreational waters. The main objectives of the FDEP guidance include helping stakeholders identify and characterize local fecal coliform sources, determine the actions necessary to address them, develop a monitoring plan to demonstrate success, and deciding if the plan should be an adopted Basin Management Action Plan (BMAP). The document represents guidance rather than FDEP rulemaking. Updated background information and other documents are posted periodically on the FDEP website, at http://www.dep.state.fl.us/water/watersheds/bmap.htm.

The FDEP guidance recommends the following sequence of steps:

1.3.1 Understanding the Basin

The initial step in assessing a fecal coliform impairment or preparing a TMDL implementation plan is to gain an understanding of the basin. The FDEP document notes that, if a TMDL has already been developed for the basin, it will provide a good starting point for understanding the extent of the impairment, potential sources, and required reductions needed to meet water quality standards.

It is also important to compile existing information from available data sources in the basin. Ideally, in cases where GIS technology is available, the information can be compiled into a GIS geodatabase to allow computer-based analyses. Alternatively, CADD files or paper maps can be used. Compiling and viewing all the available data in one place can help analysts identify potential sources and areas that have had repetitive problems, and is a valuable tool for selecting appropriate projects to address sources.

FDEP recommends that the following types of information be collected and compiled:

- Sewer infrastructure – location of pipes, pipe material, manholes, lift stations, valves, and wastewater treatment facilities; information on any past problems and upgrades;
- Sanitary sewer overflow (SSO) database – location of each SSO, impact to surface waters, amount of sewage spilled, cause of the overflow, and correction of the root cause;
- Private systems – any available information on private sewer infrastructure such as lift stations and package plants;
- Stormwater infrastructure – location of canals, ditches, treatment ponds, outfalls, inlets, and control structures;
- Septic tanks – location of tanks and repair permits. Information collated at the County level is available as GIS data layers from FDOH, and can be accessed at

http://www.doh.state.fl.us/environment/programs/ehgis/EhGisDownload.htm;

- Information from existing reports on basin soils, land-use patterns, hydrology, etc.; and
- Water quality and rainfall data.

1.3.2 Identifying and Assembling the Appropriate Stakeholders

The FDEP guidance notes that, when creating a plan to eliminate sources of fecal coliforms, it is important to identify and engage all appropriate stakeholders who have authority to address the sources. In most cases these are a mix of local entities and state agencies. Local entities who typically have authority to address bacteria sources include municipal separate storm sewer system (MS4) permittees, local government public works departments, utilities (owners of the sewer collection system and wastewater treatment facilities), and the county health department. These entities are responsible for ensuring that the stormwater system, sewer system, and septic tanks in the area (which are major categories of fecal coliform sources) are functioning properly.

In addition, state agencies that may be involved include FDEP, the Florida Department of Agriculture and Consumer Services (FDACS), the Florida Department of Health (FDOH), and the appropriate Florida Department of Transportation (FDOT) district.

FDEP staff are available to help stakeholders ensure that appropriate source assessment tools are used, that management actions are sufficient to address the potential sources, and that the completed plan includes the necessary actions to address the water quality impairment. Stakeholders are encouraged to contact the FDEP Basin Coordinator at the beginning of the process to coordinate this assistance. FDACS staff will be involved if there is an agricultural operation in the area (such as a cow/calf or equine farm) that may generate fecal coliforms, and can work with the operators to implement appropriate best management practices (BMPs). If FDOT roadways are present in the area, their stormwater systems must be properly maintained to prevent the conveyance and regrowth of fecal coliform bacteria, which is the same standard that all MS4s and local stormwater systems in the area must meet. FDOH should be involved to ensure that septic tanks in the basin are functioning properly and to take any necessary enforcement actions.

1.3.3 Source Identification Tools

Typical fecal coliform sources include sewer infrastructure, onsite sewage treatment and disposal systems (OSTDS, or septic tanks), urban stormwater (MS4 discharges), other stormwater and nonpoint sources, and wildlife. A centralized sewer system may contribute fecal coliform pollution to the environment through the slow and continuous leakage from the sanitary sewer infrastructure, treatment failure in wastewater treatment plants, and SSOs. An OSTDS can contribute to fecal coliform contamination if it is failing, which means it is not functioning in a sanitary manner and may result in the

transport of untreated or partially treated wastewater to groundwater and subsequently to surface waters. Stormwater may be a source by conveying fecal coliform bacteria through stormwater runoff, or if there are illicit connections to the stormwater system that discharge fecal coliform (i.e., septic tanks that are directly piped to the stormwater system). Nonpoint sources of fecal coliform include pet waste, homeless populations, and certain types of agricultural operations. In addition, wildlife can be a source of fecal coliform bacteria; however, this source is considered to be uncontrollable and part of the natural background condition of the basin.

1.3.3.1 Walk the Waterbody

The "walk the waterbody" process is a field reconnaissance effort that provides a better understanding of a watershed, including the hydrology of the basin and its contributing tributaries, where infrastructure (sewer and stormwater) is located, and what potential sources are contributing fecal coliforms to the waterbody. It is the equivalent of the "sanitary inspection" or "contaminant source survey" component of the WHO (2000) Annapolis Protocol. As in the WHO Protocol, its purpose is to search for and evaluate existing and potential microbiological hazards that could affect the safe use of a particular stretch of recreational water. It is particularly helpful for impaired waterbodies in which the source(s) of the fecal coliform loading are not readily apparent. Detailed information on planning and conducting the process is available in Appendix B of the FDEP guidance document (at http://www.dep.state.fl.us/water/watersheds/bmap.htm).

1.3.3.2 Decision matrix and ranking tool

A decision matrix and ranking tool has been developed to assist local stakeholders in determining the level of impairment in a waterbody and to guide management actions to address fecal coliform impairments. As noted earlier, this framework is based on technical approaches and resource management strategies recommended by the National Research Council (NRC) (2000, 2004), World Health Organization (WHO) (2000, 2003), European Parliament/Council of the European Union (EP/CEU) (2006), and EPA (1986, 2007). This decision-support tool incorporates fecal coliform levels, the presence and relative magnitudes of human fecal contamination, and other potential sources of human pathogens. Appendix C of the FDEP (2011a) guidance document provides more detailed information on the tool and how to develop a location-specific matrix.

1.3.3.3 Source Identification

The identification of fecal coliform sources should be a tiered or phased process, which is explained in detail in Appendix D of the FDEP (2011a) guidance document. Phase I of the approach is the initial screening, which includes the compilation and synthesis of relevant documents and local knowledge, and a review of existing data to guide the field reconnaissance and sampling stages of the project. Phase II uses a

decision tree and builds on the results of Phase I. It seeks to minimize cost and time by using lower-cost, more basic methods first, followed (if necessary) by higher-cost, more sophisticated methods if additional source identification information is needed. The decision tree is used in conjunction with background knowledge of the watershed and land use patterns to document and assess the contribution of various potential fecal coliform sources to waterbodies. Because pathogens from human sources tend to present the highest potential health risks, identifying the type of source (human, livestock, or wildlife) affects the evaluation of risk. Source identification is critical to implementing management actions to improve water quality and protect human health.

1.3.3.4 Wildlife Surveys

In some areas, wildlife can be a significant source of fecal coliform, especially in watersheds with significant acreages of wetlands, upland forest, or wooded corridors. While wildlife is a contributing source of fecal coliform loading to a waterbody, this is considered a background concentration and uncontrollable source. Stakeholders are not asked to remove or discourage wildlife in and near waterbodies. However, it is helpful to record instances or indicators of wildlife to help correlate potential sources with fecal coliform concentrations.

Wildlife surveys can be used to help determine what portion of the fecal coliform impairment might be attributed to natural conditions. Links to more detailed information on conducting these surveys are provided in the FDEP (2011a) guidance document.

1.3.4 Evaluating Data Sufficiency

The data collected using the tools above should be compiled and analyzed to determine the completeness of the database. This data evaluation may show that there are gaps in the understanding of fecal coliform sources and transport in the watershed, and that additional assessments may be needed. Other options can be used to gather additional data to further evaluate the basin conditions, and to ensure that the management actions focus on the correct sources.

1.3.5 Management Actions

Once the watershed has been evaluated and potential sources have been identified, stakeholders will need to implement management actions to address these sources. If an assessment of existing efforts by stakeholders in the basin demonstrates that the current practices are sufficient to address the potential sources, then this should be documented and monitoring begun to ensure that the necessary fecal coliform reductions are occurring. However, if additional work is needed to sufficiently address the impairment, FDEP (2011a) recommends that stakeholders develop an implementation plan describing the additional management actions that will be implemented and timelines for completion. The sections

below include examples of the projects and programs that have been used in other basins to reduce fecal coliform loading. The identified fecal coliform sources will guide the most appropriate management actions to be taken.

1.3.5.1 Structural Activities

There are several types of stormwater and sanitary sewer structural projects that can reduce fecal coliform loading to waterbodies. Flood control projects are one option. These projects not only help to reduce the amount of nonpoint source pollution to a waterbody after a rain event but also to prevent flooding in septic tank areas, alleviating conditions that can cause septic tank failures. In addition, flooding can cause infiltration of the sanitary sewer system, leading to overflows; therefore, controlling flooding also benefits the sewer system. Prior to implementing a flood control project to control fecal coliform, the ecological impacts of the action must be understood.

Several types of standard stormwater treatment BMPs such as wet ponds and swales can also reduce fecal coliform loading. These projects capture and treat stormwater before it is discharged to surface waters, reducing the amount of fecal coliform.

Upgrades to the sanitary sewer system can also address fecal coliform. Replacing and upgrading old sewer lines, rehabilitating or relining manholes, rebuilding pump stations, and replacing air release valves (ARVs) are types of projects that make the system more efficient and reduce the likelihood of an SSO from faulty infrastructure.

1.3.5.2 Nonstructural Activities

The following sections outline several types of nonstructural activities that address fecal coliform loading, and are explained in more detail in the FDEP (2011a) guidance document:

- Fats, Oils, and Grease (FOG) Program
- SSO Root Cause Program
- Wastewater Capacity, Management, Operations, and Maintenance (CMOM) Program
- Utilities Inspection and Maintenance Programs
- Litter Removal Program
- Public Education and Outreach Programs
- Local Ordinances

While all of the management actions listed above are useful to reduce fecal coliform loading, stakeholders will need to choose a combination of these activities based on the conditions in their watershed. Management actions must be selected to address the

potential sources identified during the basin evaluation process. Projects can be most effective in areas that do not already have stormwater treatment and in areas with older sewer or septic tank infrastructure that could be upgraded or replaced. Adding stormwater treatment to flood-prone areas would help to reduce fecal coliform loading from stormwater runoff and any septic tanks in the area, while also reducing the amount of infiltration in the sanitary sewer system. Stakeholders are encouraged to analyze the costs and benefits of potential projects to select the most cost-effective options. Once the projects have been selected, a timeline for project implementation should be determined to provide a reasonable schedule to achieve water quality benefits.

1.3.5.3 Reporting Management Actions

In order to determine if the identified management actions are sufficient to address the potential fecal coliform sources in the watershed, FDEP encourages stakeholders to summarize them in a consistent format to aid the evaluation process. Each stakeholder is encouraged to provide information on past and current projects and programs, as well as any planned projects and programs that could reduce fecal coliform loading. These efforts should be matched to the potential fecal coliform source(s) they address. Summarizing the existing and planned management actions compared with the sources in the watershed is helpful in identifying any sources that are not adequately addressed. The types of management actions encouraged by FDEP are summarized in **Tables 1.1 and 1.2**.

Table 1.1. Management actions encouraged by FDEP to address fecal coliform impairments. (Source: FDEP 2011a)

Category	Action
Onsite Sewage Treatment and Disposal Systems (OSTDS)	Ordinances Enforcement Program Implementation Permit Review (new and repair permits) Failure Area Evaluation Septic Tank Inspection Septic Tank Phase-Out Public Education (e.g., PSAs) Surface Water Sampling (Conditions and Trends)
Central Sewer Systems	Sewer Line Upgrades Manhole Inspection and Rehab Pump Station Inspection and Maintenance Air Release Valve (ARV) Inspection/Maintenance Program Implementation Private Lift Station Inspection and Enforcement SSO Investigations Surface Water Sampling (Conditions and Trends)
Stormwater Systems	Flood Control Capital Projects Capital Projects/Stormwater Quality BMPs Stormwater System Ditch and Canal Maintenance Stormwater Pond Maintenance and Improvements Stormwater Pipe Cleaning and Maintenance Potential Illicit Connection (PIC) Identification Illicit Connection Removal Public Education and Outreach Program Implementation Surface Water Sampling (Conditions and Trends)
Other Source Reduction Activities	Pet Waste Ordinances Public Education and Outreach Surface Water Sampling (Conditions and Trends)
Special Source Assessment Activities	Intensive Water Quality Sampling to Track Sources Microbial Source Tracking Thermal Imaging to Identify PICs

Table 1.2. Standard and provisional stormwater quality BMPs currently recognized by FDEP. (Source: FDEP 2011a)

Standard Stormwater Quality BMPs	Provisional Stormwater Quality BMPs:
• Retention BMPs (includes basins, exfiltration trenches, etc.) • Wet detention ponds • BMP treatment trains using a combination of BMPs • Dry detention • Baffle box • Nutrient removal baffle box (2nd generation) • Catch basin inserts/inlet filters • Grass swales with swale blocks or raised culverts • Grass swales without swale blocks or raised culverts • Alum injection • Stormwater reuse	• Stormceptor • Continuous deflective separation (CDS) units • Floating islands • Street sweeping • Public education

1.3.6 Sufficiency of Effort Evaluation

Summarizing the existing and planned actions will help stakeholders and FDEP determine whether those actions have been or will be sufficient to address the fecal coliform impairment, or if additional actions appear needed. To aid in this evaluation, FDEP recommends that all stakeholder activities be organized by the type of source they address. When comparing the actions with each fecal coliform source, stakeholders should determine whether the cumulative actions are sufficient to remove or reduce the fecal coliform source, or if additional actions are necessary. They should work together to determine what additional actions are needed and to identify the appropriate stakeholder(s) responsible for implementing the action. In addition, stakeholders should identify any data gaps or uncertainties related to the fecal coliform sources, and the TMDL implementation plan should include a description of assessment efforts to address these needs. FDEP's sufficiency of effort evaluation will not be an assessment of each entity's individual activities; instead, it will focus on whether the activities submitted by all the entities corresponded to the potential sources identified and whether the total efforts were adequate to eliminate the known sources, assess unknown sources, and prevent the development of new sources.

1.3.7 Plan Implementation and Documentation

To ensure that the management plan includes all the necessary information to show how fecal coliform sources will be removed or reduced, data gaps will be filled, and the waterbody monitored to show progress towards the TMDL, certain elements should be included. The FDEP (2011) guidance document notes that a helpful tool for preparing an implementation plan is the EPA's Handbook for Developing Watershed Plans to Restore and Protect Our Waters, which outlines the following nine elements essential for a watershed plan:

1. An identification of the causes and sources or groups of similar sources that will need to be controlled to achieve the load reductions estimated in the watershed-based plan.

2. An estimate of the load reductions expected for the management measures described under Item (3) below.

3. A description of the nonpoint source management measures that will need to be implemented to achieve the load reductions estimated under Item (2) above and an identification of the critical areas in which those measures will be needed to implement the plan.

4. An estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied on to implement the plan.

5. An information/education component that will be used to enhance public understanding of the project and encourage early and continued public participation in selecting, designing, and implementing the nonpoint source management measures that will be implemented.

6. A schedule for implementing the nonpoint source management measures identified in this plan that is reasonably expeditious.

7. A description of interim, measurable milestones for determining whether nonpoint source management measures or other control actions are being implemented.

8. A set of criteria that can be used to determine whether loading reductions are being achieved over time and substantial progress is being made toward attaining water quality standards and, if not, the criteria for determining whether this watershed-based plan needs to be revised or, if a nonpoint source TMDL has been established, whether the TMDL needs to be revised.

9. A monitoring component to evaluate the effectiveness of the implementation efforts over time, measured against the criteria established under Item (8) above.

Additional information can be found in the full version of the EPA handbook at http://www.epa.gov/owow/nps/watershed_handbook/ .

The FDEP (2011a) guidance document also includes information on the recommended format of any fecal coliform management plans and annual progress reports that will be submitted to FDEP for review.

1.3.8 Potential for Plan Adoption as a BMAP

While developing a plan to address fecal coliform impairments or TMDLs, stakeholders may consider having FDEP adopt the plan as a formal FDEP BMAP. The FDEP (2011a) guidance document notes several potential benefits of having an adopted BMAP as opposed to a more informal TMDL implementation plan.

FDEP (2011a) notes that an adopted BMAP shows that a formal plan is in place to reduce fecal coliform concentrations to meet a TMDL. This can provide assurance to EPA that actions approved by FDEP will be taken to improve an impaired waterbody. In addition, the BMAP provides an enforcement mechanism for FDEP, ensuring that each of the stakeholders meet their commitments so that all responsible entities are helping to address the problem.

Another benefit is that an adopted BMAP provides an avenue or an advantage for tapping a variety of potential funding sources. Examples of funding assistance available to local stakeholders include:

- Clean Water State Revolving Fund loan program;
- Small Community Wastewater Facilities Grants Program;
- Section 319 Grant Program;
- FDEP TMDL funding;
- Community Budget Issue Request;
- Small Cities Community Development Block Grant Program; and
- Water management district funding programs.

Additional details about these funding and other funding sources are provided in Appendix K of the FDEP (2011a) guidance document.

FDEP staff, including the Basin Coordinator, can also provide technical assistance to stakeholders as part of the BMAP process. Among other things, this support includes document management and formatting, coordination for water quality data in STORET, and assistance in obtaining FDEP Secretarial adoption.

1.4 Recommendations

1.4.1 Background

As noted earlier and shown in Figure 1.3, the City's jurisdiction includes portions of three hydrologic units (WBIDs 3270, 3271 and 3274) that are currently designated as impaired by FDEP due to elevated concentrations of fecal coliform bacteria. The waterbodies received this designation because, during a recent multi-year verification period, >10% of the water quality samples collected at one or more locations were found to contain fecal coliform concentrations >400 CFU/100ml. The data evaluations that led to these impairment designations were performed by FDEP during two different time periods (January 1, 1998 through June 30, 2005 for WBID 3274, and January 1, 2003 through June 30, 2010 for WBIDs 3270 and 3271).

FDEP (2011b) provided the following overview of the hydrology of these basins:

> *The WBIDs addressed [here are] comprised of a highly engineered and managed complex system of canals. As a result, hydrology… is highly manipulated by a series of water control structures, pumps and levees that have altered the natural hydroperiods and flows of these watersheds, and have resulted in effective management of water in the region allowing for the current urban development and agricultural landscape…*
>
> *These canals were built to meet population needs by controlling water levels and movement for water supply, flood control, drainage and navigation, in addition to providing water necessary to maintain natural communities in lakes, wetlands, rivers and estuaries… Water levels are managed to maintain ground water control during dry periods, particularly important for water supply needs by preventing saltwater intrusion. During dry periods, stored water can be delivered throughout the county to help meet local urban and agricultural needs and prevent saltwater intrusion. During wet periods, canals function to remove excess water from drainage basins to prevent flooding.*
>
> *Within urban areas, canals are used primarily for flood control. However, secondary uses include drainage of land for development, wellfield recharge for local municipalities and discharge of excess water to and from the Water Conservation Areas (WCAs) of the Everglades…, with primary canals functioning as an outlet for excess water from the Everglades and Lake Okeechobee during wet periods*

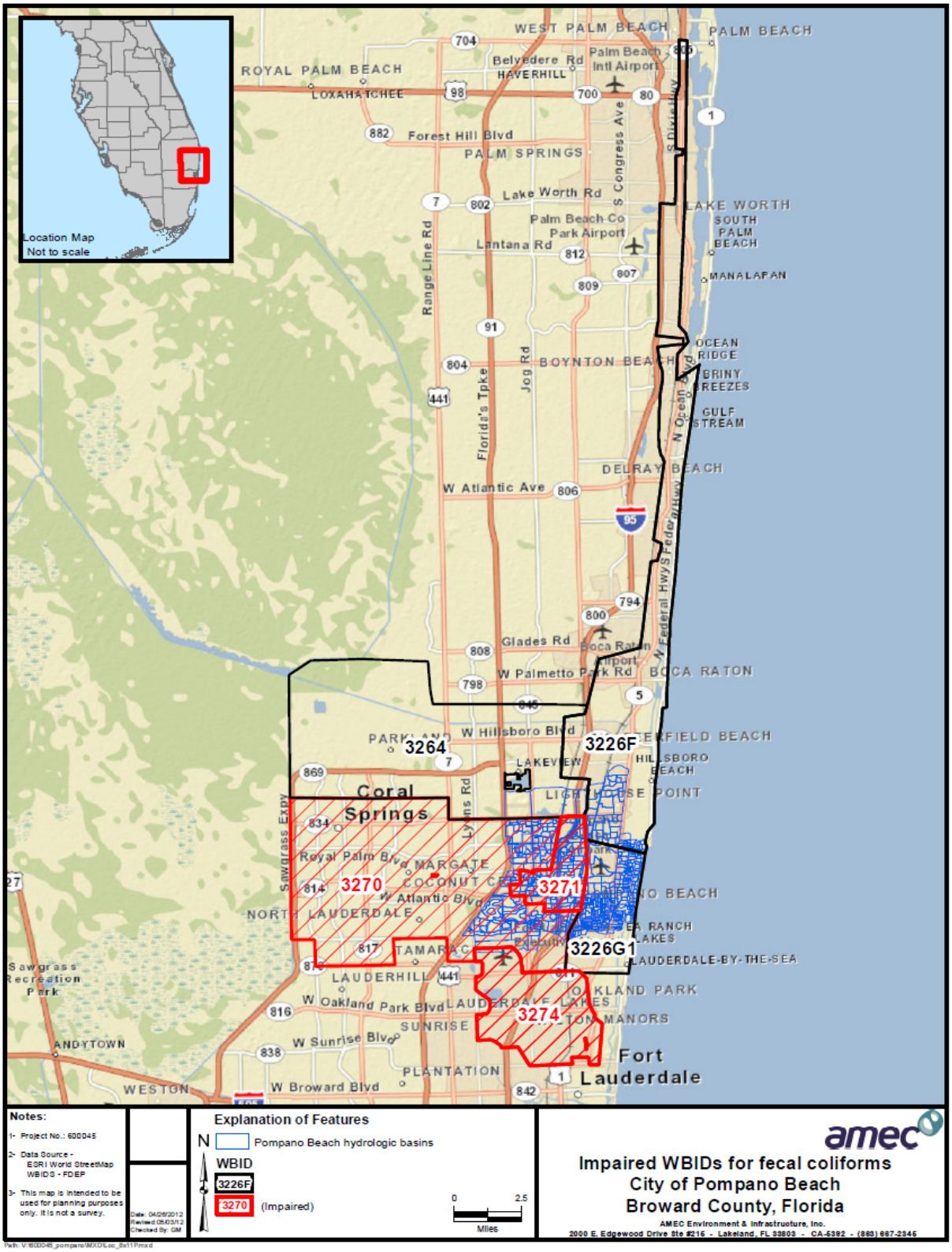

Figure 1.3. Location map showing the hydrologic basins within the City's jurisdiction and the WBIDs impaired for fecal coliforms that are addressed in this report.

> *Canals are notably different from most natural waterbodies. As a result of their design, management and maintenance, these systems provide limiting environmental conditions for aquatic life. In addition, water levels and flow are exposed to extreme fluctuations; canals are designed to move high flows accompanied with high velocities. Depending on operational needs, water flow through a canal may be as if in a stream or as if in a reservoir. During periods of drought and dry season operations, canals may be stagnant for extended periods and some may have little or no water (SFWMD, 2010).*

Despite these complicating factors, however, water in the canals is expected to meet the water quality criteria that are applicable to the canals' designated uses, including the fecal coliform criteria that are intended to help protect human health.

1.4.2 WBID 3271 (Pompano Canal)

This is a relatively small basin (surface area = 7.2 mi^2) that lies entirely within the City's jurisdiction, extending from west of Powerline Road east to Cypress Road (BCEPD 2007). More than 70 percent of its land use is urban and built-up, which includes high-density residential, commercial, industrial, and institutional development, and more than 12 percent of the land use is transportation and utilities related. Together, these categories account for 84.6 percent of the land use in the watershed, placing it among the most heavily urbanized basins in Broward County (FDEP, 2006).

In addition to its fecal coliform impairment, WBID 3271 has also been designated as impaired for dissolved oxygen (DO), nutrients and chlorophyll-*a*. A TMDL addressing the latter impairments was finalized by FDEP in 2007. Through its wasteload allocation (WLA), the TMDL calls for 15.8% reductions in total nitrogen (TN) and 13.6% reductions in total phosphorus (TP) loads. These load reductions were assigned to the Phase I MS4 permit (# FLS 000016-003) in which the City (along with Broward County and numerous other entities) is a co-permittee (FDEP 2007).

Pursuant to Part VIII.B.2 of the MS4 permit, the City and its co-permittees selected the WBID 3271 nutrient impairment as its top priority for TMDL implementation (Broward County 2012). In order to achieve the load reductions called for in the TMDL, the co-permittees have adopted the following task schedule and timeline (Broward County 2012):

- TMDL Prioritization Report – March 1, 2012
- TMDL Monitoring and Assessment Plan – September 1, 2012
- TMDL Monitoring – September 1, 2014
- TMDL Implementation Plan – September 1, 2015

To date, no draft or final TMDL documents have been released by FDEP or EPA addressing the fecal coliform impairment in WBID 3271. However, because fecal coliform sources also tend to be sources of nutrients, which also affect chlorophyll and DO levels, taking steps to address the fecal coliform impairments will also have the potential to help address the other impairments.

Given that WBID 3271 is designated as impaired for fecal coliforms, we would recommend that the City consider incorporating a fecal coliform component in the TMDL implementation work that it is already planning to do in coming years as part its MS4 program. As part of that work, the City and County (and possibly other co-permittees) will already be conducting several of the steps that were recommended in the FDEP (2011a) fecal coliform guidance document, including:

- Understanding the basin
- Identifying and assembling the appropriate stakeholders
- Source Identification (for nutrient loads)
- Evaluating data sufficiency
- Developing monitoring and assessment plan
- Identifying management actions (structural and non-structural), and
- Developing implementation plan

Additional work elements that could be carried out to begin addressing the fecal coliform impairment would include:

- Identification of PICs
- Walk-the-waterbody
- Fecal coliform decision matrix
- Implement management actions addressing known/detected fecal sources
- Wildlife surveys (if appropriate in this urban setting)
- Public education and outreach addressing fecal coliform issues
- Local ordinances (e.g., addressing pet waste)

These actions would have minimal impact on the cost of the MS4's TMDL implementation effort, and would offer the dual benefit to the City of addressing both nutrient-related and fecal coliform-related impairments.

1.4.3 WBID 3270 (C14/Cypress Creek Canal)

This basin, located in northern Broward County, has a surface area of 56.1 mi^2 and lies within the Atlantic Coastal Ridge and Everglades physiographic regions (FDEP 2011b).

Approximately 80% of the basin consists of urban and medium-to-high-density residential land uses (FDEP 2011b).

The western portion of the canal was designed for 1 in 10-year flood protection and the eastern portion for 1 in 30-year flood protection (SFWMD 2010). In addition to flood protection, the C-14 canal and water control structures associated with it supply water, maintain the water table, transport excess water from the WCA-2A to tidewater, and intercept and control seepage from the WCA-2A (SFWMD 2010). Although, in general, water flow in the C-14 Canal is to the eastern estuarine waters from the WCA-2A, the S-37B structure can act as a separator based on specific hydrological conditions.

The WBID is designated as impaired for fecal coliforms by FDEP and EPA, and a proposed TMDL addressing the impairment has been developed (FDEP 2011b). The proposed TMDL, which has not yet been finalized, assigns a 22% reduction in fecal coliform loading to the applicable MS4, in which the City is a co-permittee. The TMDL document provides the following overview of fecal coliform levels in the basin during the years 2003 through 2010:

> *"The highest quarterly exceedance rate and highest quarterly average fecal coliform concentration were observed during the rainy and warmer season (26.3% and 555.8 counts/100mL, respectively). The lowest exceedance rate was observed during the first quarter, the cooler and drier season (5.3%). Episodic exceedances in fecal coliform concentrations occurred throughout the period of observation (2003-2010). With the exception of March, fecal coliform exceedances were observed in the C-14 canal in all the other months in which measured fecal coliform concentrations were available. The highest monthly average fecal coliform concentration was observed in September (980 counts/100mL)."*
>
> *"Historical data show that fecal coliform exceedances occurred over all hydrologic conditions. The highest percentage of exceedances occurred after periods of large and extreme precipitation events (50% and 42% respectively). The lowest percentage of exceedances occurred after periods of no measurable precipitation (8%). Given that high exceedance rates and high concentrations followed most of the sampled precipitation events, and that there are no point source dischargers within the WBID boundary other than a permitted point source (e.g., a WWTP) which transports wastewater to the Atlantic Ocean via ocean outfalls, it can be assumed that various nonpoint sources are a major contributing factor to high fecal coliform concentrations in the WBID. While the lowest percentage of exceedances occurred after periods of no or little rainfall, the exceedance rate should not be considered insignificant as this might be an indication that local sources are contributing to elevated fecal coliform concentrations."*

Given that the WBID has been designated as impaired for fecal coliforms and a proposed TMDL has been developed by FDEP and EPA, we would recommend that the City begin taking steps to address the fecal coliform impairment. As with WBID 3271, the

applicable initial actions would be to identify the appropriate stakeholders, develop an understanding of the basin, and identify and address fecal coliform sources that pose potential human health risks. Given that only a small portion of the WBID lies within the City, the work could focus solely on that portion of the WBID unless other local partners (e.g., MS4 co-permittees) indicate an interest in addressing the impairment on a WBID-wide basis.

Another option the City may wish to explore with its MS4 co-permittees is the development of a Reasonable Assurance (RA) plan addressing the impairment. Although this approach would have higher up-front costs, since it would involve the development of a management plan and its review and approval by FDEP, the potential benefit would be the avoidance of a formal TMDL and its associated long-term regulatory requirements and costs.

1.4.4 WBID 3274 (Middle River Canal)

This basin is designated as impaired for fecal coliforms by FDEP and EPA, and a proposed TMDL addressing the impairment has been published by both agencies (FDEP 2011b). The proposed TMDL, which has not yet been finalized, assigns a 67% reduction in fecal coliform loading to the applicable MS4, in which the City is a co-permittee. The TMDL document provides the following overview of fecal coliform levels in the basin during the years 2003 through 2010:

> *Quarterly exceedance rates were observed in all four quarters, with the highest quarterly exceedance rate observed in the rainy, warmer season (42.9%) and the highest quarterly average fecal coliform concentration observed in the fourth quarter (1,184.4 counts/100mL). Episodic exceedances in fecal coliform concentrations occurred throughout the period of observation (2003-2010). With the exception of October, exceedances were observed year-round, with the greatest exceedance rates observed in September (80%). The highest monthly average fecal coliform concentration was observed in November (1,648.8 counts/100mL).*
>
> *Although no significant increasing or decreasing trend was observed in WBID 3274 during the Cycle 2 verified period, as mentioned above, a significant increasing trend for the entire period of record in the WBID 3274 was observed.*
>
> *Fecal coliform concentrations that exceeded the State criteria were observed in all six sampling stations within the WBID. Elevated concentrations (greater than 1,000 counts/100mL) were recorded at all stations, with the highest concentration recorded at Station 21FLBROW111 (9,600 counts/100mL), located in the South Fork of the Middle River. High exceedance rates were recorded at Stations 21FLBROW111 (n=28) and 21FLDOH BROWARD31 (n=28) (46.4 % and 37.5%, respectively).*

None of the monitoring stations mentioned in the TMDL document are located within the City, and it appears that a very small portion of this basin falls within the City's

jurisdiction. It would be a relatively simple matter to determine if that small area is making a meaningful contribution to the fecal coliform impairments that are occurring elsewhere in the WBID. We would therefore recommend that the City carry out a basic Walk the Waterbody evaluation of the small area within its jurisdiction, to determine if any additional fecal coliform management activities are warranted there.

1.4.5 Other recommendations

As an additional step in examining potential fecal coliform exceedances within the City's jurisdiction, AMEC downloaded and evaluated fecal coliform data from the EPA STORET database for the period January 1, 2000 through March 31, 2012. During that period, exceedances of the 400 CFU/100 ml fecal coliform criterion were noted at three stations:

- Station 21FLBROW6 (Cypress Creek Canal at Dixie Highway, WBID 3270)
- Station 21FLBROW110 (Pompano Canal at Dixie Highway, WBID 3271), and
- Station 21FLBROW 5 (Pompano Canal at Federal Highway; WBID 3226G1).

Two of these stations are located within WBIDs 3270 and 3271, which are discussed above. The third is located in WBID 3226G1 (North Broward ICW), which is not currently designated as impaired for fecal coliforms.

Although fecal coliform counts at the third station were not consistently elevated, values >1,000 CFU/100 ml were observed periodically during 2000, 2003 and 2005. These values are sufficiently high to indicate a possible human health risk if contributing fecal sources are present in the area that could be potential sources of human pathogens. If the City undertakes Walk the Waterbody or other source identification activities for WBIDs 3270 and/or 3271 in coming years, as recommended above, we would recommend that it also consider including the area in the vicinity of station 21FLBROW5 in those evaluations. The additional cost would be minimal, and would provide information that would be helpful during future discussions with FDEP and EPA regarding water quality conditions in WBID 3226G1.

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