

# APPENDIX A

## Appendix A

### Detailed Criteria Definitions

Part I			Weighting
Criteria	Definition		
1 Identified Complaint Areas	Major Flooding (Upper Watershed = MED; Lower Watershed = HIGH) Constant Flooding or Maintenance (Upper = LOW; Lower = MED) [(#HIGH x 150) + (#MED x 15) + (#LOW x 5)] / Developed Area = SCORE (Percentile of SCORE of all systems) x 30 pts		30
2 Locations of Completed or Planned CIP Projects	Completed (Expansion or Upgrade/Retrofit = LOW; Maintenance or Unknown = MED) Planned (Expansion or Unknown = MED; Maintenance or Upgrade/Retrofit = HIGH) (#HIGH x 4) + (#MED x 2) + (#LOW x -1) = SCORE (Percentile of SCORE of all systems) x 20 pts or 5 pts if NO CIP		20
3 Existing Infrastructure Capacity per Acre of Developed Area	(1 - Percentile of all systems) x 20 pts		20
4 Portion of the Drainage Area Designed to Pass a 10yr Storm	(%Designed 10yr EXCEPT when Upstream of 2yr)x 0 pts + (%Designed Other) x 15 pts		15
5 Infrastructure Condition	%Good x 0 pts + %Fair x 5 pts + (% Poor or %Crushed or %Blocked) x 15 pts OR IF ABOVE NOT AVAILABLE (Percentile Age of all systems) x 15 pts		15
		<b>Total Regular Points</b>	<b>100</b>
		if system total in top 50%, include next 3 criteria	

Part II			Weighting
Criteria	Definition		
6 Roadway Type	%VDOT 1 or 2) x 15 pts + %(VDOT 3 or 9) x 12 pts + %VDOT 4 x 10 pts + %(VDOT 5 or 8) x 8 pts + %(VDOT 6 or 7) x 3 pts + %VDOT 10 x 1 pt		15
7 Critical infrastructure	None = 0 pts; Upper Watershed = 3 pts; Lower Watershed = 5 pts each		15
8 Strategic Growth or Business Development Areas	%Within x 10 pts		10
		<b>Possible Additional Points</b>	<b>40</b>
		<b>Total Possible Points</b>	<b>140</b>

# APPENDIX B

**Appendix B**  
**Initial Ranking of Drainage Basins by Score**

Watershed Number	Outfall ID	Capacity per Developed Area	Designed to Pass 10yr Storm	Complaint Areas	Infrastructure Condition	CIP Locations	Score	Business Development Focus Areas	Road Classification	Critical Infrastructure	Total Score
5	E11404	9	15	23	14	20	81	5	5	0	91
3	H021028	13	15	29	10	5	72	10	8	0	90
7	O13121	18	15	28	5	20	86	0	3	0	89
5	C0734	9	15	27	7	17	75	2	7	5	89
2	G041	4	15	13	12	20	64	10	7	8	89
8	E143699	7	15	22	11	20	75	5	7	0	87
1	F0181	18	15	21	15	5	74	10	3	0	87
2	G04362	19	15	19	5	14	72	10	5	0	87
3	D016	13	15	25	14	5	72	10	5	0	87
3	I024000&013	9	15	26	12	5	67	10	7	0	84
5	F1110	19	15	25	15	5	79	0	4	0	83
8	F18661	4	15	27	14	14	74	2	7	0	83
1	UNK11	16	15	28	5	5	69	8	6	0	83
2	UNK2	17	15	22	8	5	67	10	6	0	83
5	C099	19	15	25	5	14	78	0	4	0	82
7	N1388&N1391	13	15	26	5	19	78	0	4	0	82
9	N164300	5	15	26	5	20	71	0	11	0	82
5	G1190	19	15	25	14	5	78	0	3	0	81
9	L16500	18	15	26	5	14	78	0	3	0	81
5	F111	16	15	26	15	5	77	0	4	0	81
5	C0922	18	15	24	5	14	76	0	5	0	81
5	C09150&54	13	15	18	11	19	76	0	5	0	81
5	F071	17	15	20	14	5	71	4	4	0	79
7	N14200	13	15	20	5	14	67	2	10	0	79
8	H17132	11	15	30	5	5	66	10	3	0	79
8	C14500	6	15	0	14	17	52	5	7	15	79
5	F09203	20	15	30	5	5	75	0	3	0	78
2	G05302	17	15	20	5	5	62	10	6	0	78
8	F15530	6	15	15	4	20	60	6	7	5	78
5	H14148	10	15	26	13	5	69	4	4	0	77
5	F1141	7	15	16	12	19	69	3	5	0	77
5	G0868	12	15	20	5	14	66	0	6	5	77
7	M1325&M133	17	15	24	5	5	66	7	4	0	77
2	H042101	11	15	17	5	14	62	10	5	0	77
9	N15799	7	15	19	4	17	62	7	8	0	77
9	N16510	7	15	18	5	17	62	3	12	0	77
5	F09500	19	15	29	5	5	73	0	3	0	76
6	M071531	16	15	23	4	14	72	0	4	0	76
7	L1557	18	15	29	4	5	71	0	5	0	76
5	E09100&1031	16	15	29	5	5	70	0	6	0	76
5	F10433	17	15	30	5	5	72	0	3	0	75
6	L10638&41	19	15	28	5	5	72	0	3	0	75
5	I09500	19	15	27	5	5	71	0	4	0	75
5	G1124	18	15	27	5	5	70	0	5	0	75
4	M06181	14	15	18	5	14	66	2	7	0	75
5	D07240	19	15	22	5	5	66	5	4	0	75
4	K0546	7	15	14	5	20	61	10	4	0	75
5	G0810	19	15	24	5	5	68	0	6	0	74
4	N06200	12	15	15	5	17	64	0	5	5	74
5	G118	19	0	29	15	5	68	0	5	0	73
8	G152555	7	15	12	14	19	67	0	6	0	73
8	B131	1	15	23	9	17	65	3	5	0	73
8	D1486&143000	8	15	14	13	14	64	4	5	0	73
8	E18910	12	13	26	8	5	64	0	9	0	73
5	G0880	2	15	21	5	17	60	4	9	0	73
2	H042031	10	15	14	5	14	58	10	5	0	73
2	G065004	14	15	30	5	5	69	0	3	0	72
5	H08110	17	15	27	5	5	69	0	3	0	72
5	G0838	14	15	20	5	14	68	0	4	0	72
7	L12128	19	15	24	5	5	68	0	4	0	72
7	M121003	16	10	27	5	5	63	1	8	0	72
9	O144001	10	15	16	5	17	63	4	5	0	72
2	H063102	20	15	23	5	5	68	0	3	0	71
6	M071562	18	15	25	5	5	68	0	3	0	71
6	L081822	18	15	25	5	5	68	0	3	0	71
7	O142	15	15	19	5	14	68	0	3	0	71
6	K10197	15	15	18	5	14	67	0	4	0	71
5	F12630	5	11	15	10	19	60	5	6	0	71
5	F09206	15	9	30	5	5	64	0	6	0	70
5	F131	8	15	17	9	14	63	3	4	0	70

Watershed Number	Outfall ID	Capacity per Developed Area	Designed to Pass 10yr Storm	Complaint Areas	Infrastructure Condition	CIP Locations	Score	Business Development Focus Areas	Road Classification	Critical Infrastructure	Total Score
5	J11574	5	15	19	5	17	61	1	8	0	70
7	K13505	1	12	22	5	20	60	4	6	0	70
5	D11390	20	15	0	15	5	55	10	5	0	70
2	H063422	20	15	21	5	5	66	0	3	0	69
7	L1529	18	15	23	5	5	66	0	3	0	69
2	G0740941	10	15	27	5	5	62	1	6	0	69
9	L16400	15	9	22	5	5	56	5	8	0	69
3	I03649	4	15	13	8	14	54	10	5	0	69
2	G05412	1	15	23	5	5	49	10	10	0	69
7	O1350	12	15	28	5</						

**Appendix B**  
**Initial Ranking of Drainage Basins by Score**

Watershed Number	Outfall ID	Capacity per Developed Area	Designed to Pass 10yr Storm	Complaint Areas	Infrastructure Condition	CIP Locations	Score	Business Development Focus Areas	Road Classification	Critical Infrastructure	Total Score
9	N16400	13	15	0	5	14	47				47
4	J0516	5	15	16	5	5	46				46
5	H11154	10	4	15	12	5	46				46
7	UNK71	16	15	0	10	5	46				46
7	L12271	5	14	17	5	5	46				46
7	L14500	14	1	0	14	17	46				46
9	O15417	12	15	0	5	14	46				46
2	G063414	20	15	0	5	5	45				45
2	E06500	4	6	16	5	14	45				45
5	H133010&H131	2	15	18	5	5	45				45
5	I09930	11	15	0	5	14	45				45
7	L14101	11	15	0	5	14	45				45
8	G15847	16	15	0	9	5	45				45
8	F17581	11	15	0	14	5	45				45
2	G04338	19	15	0	5	5	44				44
2	H063245	9	6	19	5	5	44				44
3	H01500	10	15	0	14	5	44				44
4	J0668	6	6	13	5	14	44				44
6	L081610	11	11	13	4	5	44				44
6	M071569	10	15	0	5	14	44				44
7	UNK72	8	12	0	5	19	44				44
7	K15105	18	15	0	5	5	43				43
8	D14124	18	15	0	5	5	43				43
8	H16960	17	7	0	5	14	43				43
8	E16178	3	15	18	2	5	43				43
8	G17201	4	7	16	2	14	43				43
3	L04901	17	15	0	5	5	42				42
4	J06464&459	3	15	0	5	19	42				42
5	I10200	17	15	0	5	5	42				42
5	I10452	17	15	0	5	5	42				42
5	F08410	17	15	0	5	5	42				42
5	H143	3	12	17	5	5	42				42
5	G07105	1	15	16	5	5	42				42
7	J1633	2	15	15	5	5	42				42
8	I15723	0	6	27	4	5	42				42
3	J03311	16	15	0	5	5	41				41
5	J12523	16	15	0	5	5	41				41
5	D10322&384	7	15	0	14	5	41				41
5	G132	8	15	0	13	5	41				41
7	L1322	15	15	0	6	5	41				41
7	K13396	14	2	0	5	20	41				41
3	K045&L041	15	15	0	5	5	40				40
3	M04401	15	15	0	5	5	40				40
4	J06192&592	6	15	0	5	14	40				40
5	I12555	0	15	15	5	5	40				40
6	K081061	15	15	0	5	5	40				40
6	L10360	15	15	0	5	5	40				40
8	B11403	8	15	0	12	5	40				40
2	H051003	12	15	0	7	5	39				39
4	M0570	14	15	0	5	5	39				39
5	F13102	8	15	0	11	5	39				39
7	K14301	14	15	0	5	5	39				39
9	O15259	14	15	0	5	5	39				39
5	F1185	13	15	0	5	5	38				38
7	L1539	13	15	0	5	5	38				38
8	I17198	2	1	29	1	5	38				38
1	UNK12	2	15	0	6	14	37				37
3	M05190	12	15	0	5	5	37				37
4	L0638	12	15	0	5	5	37				37
6	N071658	12	15	0	5	5	37				37
6	L0961	12	15	0	5	5	37				37
8	B111	2	15	0	15	5	37				37
8	F17545	5	15	0	12	5	37				37
7	M12141	11	15	0	5	5	36				36
8	D14860	9	15	0	7	5	36				36
2	H063123	11	14	0	5	5	35				35
4	J05101	10	15	0	5	5	35				35
5	I14485	10	15	0	10	5	35				35
5	D10528	5	15	0	5	5	35				35
6	N071738	10	15	0	5	5	35				35

Watershed Number	Outfall ID	Capacity per Developed Area	Designed to Pass 10yr Storm	Complaint Areas	Infrastructure Condition	CIP Locations	Score	Business Development Focus Areas	Road Classification	Critical Infrastructure	Total Score
7	M15150	6	6	15	3	5	35				35
8	I151	14	3	0	4	14	35				35
1	UNK13	1	7	17	4	5	34				34
2	H053003	5	10	0	5	14	34				34
5	I08500	0	15	0	5	14	34				34
6	L071136	9	15	0	5	5	34				34
8	G1659	1	15	0	13	5	34				34
8	H16155	1	15	0	13	5	34				34
8	E155546	3	15	0	2	14	34				34
3	I03700	3	6	14	5	5	33				33
5	I082032	8	15	0	5	5	33				33
7	N12182	7	15	0	5	5	32				32
7	M12317	7	15	0	5	5	32				32
5	E07406	5	15	0	6	5	31				31
5	G11106	1	15	0	10	5	31				31
7	L161	10	15	0	1	5	31				31
7	M12602	7	0	14	5	5	31				31
1	G01400	0	15								

# APPENDIX C

**Appendix C**  
**Composite Planning District Scores**  
 (sorted by watershed then score)

<b>Line</b>	<b>Planning District Name (Number)</b>	<b>Score (Adjusted)</b>	
<b>WILLOUGHBY BAY WATERSHED</b>			
1	GLENWOOD PARK	(28)	83
2	WILLOUGHBY	(1)	77
3	SEWELLS POINT	(27)	44
4	NAVAL BASE	(26)	37
<b>MASON CREEK WATERSHED</b>			
5	PAMLICO	(8)	87
6	NORTHSIDE	(11)	68
7	COMMODORE PARK	(10)	67
8	OAKDALE FARMS	(16)	55
9	WARDS CORNER	(25)	54
10	SUSSEX	(32)	54
11	OCEANAIR	(12)	51
12	MERRIMAC PARK	(9)	89 (40)
13	TITUSTOWN	(31)	38
<b>OCEAN VIEW WATERSHED</b>			
14	WEST OCEAN VIEW	(2)	79
15	PINEWELL	(3)	65
16	CAPE VIEW	(5)	55
17	OCEANVIEW	(4)	47
<b>LITTLE CREEK WATERSHED</b>			
18	WILLOW TERRACE	(13)	65
19	NORTH CAMELLIA	(19)	64
20	SNUG HARBOR	(14)	62
21	ROOSEVELT GARDENS	(18)	62
22	BEL-AIRE	(17)	60
23	PRETTY LAKE	(6)	55
24	SHORE DRIVE	(7)	54
25	NORTH CHESAPEAKE BLVD.	(15)	44
<b>LAFAYETTE RIVER WATERSHED</b>			
26	PARK PLACE	(52)	75
27	NORTH COLLEY	(54)	75
28	LAKWOOD	(35)	73
29	COLONIAL PLACE	(53)	73
30	NORTH SHORE	(30)	72
31	NAVAL BASE ROAD	(39)	71
32	SUBURBAN	(33)	64
33	DENBY PARK	(38)	62
34	SOUTHERN SHOPPING CENTER	(24)	60
35	LAYFAYETTE	(51)	58
36	LINDENWOOD	(67)	58
37	TALBOT PARK	(36)	57
38	NORVIEW	(45)	52
39	CROMWELL ROAD INDUSTRIAL	(74)	52
40	EDGEWATER - LARCHMONT	(37)	51
41	SEWELLS GARDENS	(43)	51
42	ESTABROOK	(47)	51
43	BALLENTINE PARK	(50)	44
44	ROSEMONT	(41)	39

**Appendix C**  
**Composite Planning District Scores**  
 (sorted by watershed then score)

<b>Line</b>	<b>Planning District Name (Number)</b>	<b>Score (Adjusted)</b>
45	LAMBERTS POINT / ODU	(55) 38
46	CHESAPEAKE MANOR	(40) 37
47	CORONADO	(42) 35
48	ROLAND PARK	(34) 29
<b>LAKE WHITEHURST WATERSHED</b>		
49	NORVELLA	(46) 55
50	SOUTH CAMELLIA	(20) 53
51	EAST NORVIEW	(44) 53
52	AZALEA	(22) 45
53	NORFOLK INTERNATIONAL AIRPORT	(23) 65 (40)
54	LARRYMORE	(21) 35
<b>BROAD CREEK WATERSHED</b>		
55	LAKE TERRACE	(77) 78
56	MAPLE HALL - HOLLYWOOD	(78) 73
57	COLEMAN PLACE	(49) 61
58	RIVER OAKS	(75) 57
59	FOXHALL	(48) 52
60	JANAF - MILITARY CIRCLE	(87) 52
61	POPLAR HALLS	(84) 46
62	INGLESIDE	(83) 44
63	INDUSTRIAL PARK	(73) 42
64	LAKE TAYLOR	(76) 36
65	CROWN POINT	(86) 34
<b>ELIZABETH RIVER WATERSHED</b>		
66	HUNTERSVILLE	(66) 81
67	TIDEWATER - YOUNG PARK	(65) 78
68	EAST GHENT	(63) 77
69	WEST 21st STREET	(57) 76
70	WEST GHENT	(61) 76
71	NORTH GHENT	(62) 75
72	TIDEWATER DRIVE INDUSTRIAL	(68) 74
73	EAST 21st STREET / MONTICELLO	(58) 69
74	MEDICAL CENTER	(60) 67
75	BERKLEY	(90) 66
76	LAMBERTS POINT INDUSTRIAL	(56) 65
77	BRAMBLETON	(69) 64
78	GHENT	(64) 59
79	CHESTERFIELD	(72) 51
80	DOWNTOWN	(59) 49
81	CAMPOSTELLA	(89) 49
82	LIBERTY - ROBERTS PARK	(70) 42
83	CAMPOSTELLA HEIGHTS	(88) 39
<b>EASTERN ELIZABETH RIVER WATERSHED</b>		
84	EASTON	(80) 70
85	GLENROCK	(85) 68
86	KEMPSVILLE	(79) 62
87	RIVER FORREST	(81) 59

# APPENDIX D

## Appendix D

### Cost Basis

#### Category One - Drainage Improvement Projects

Sample Projects from Other Localities	Final Construction Cost	12% Design	3% Environmental Permitting	3% Land Acquisition	Subtotal	25% General Contingency	Project Length	Price Per Foot
Golden Rd	\$245,180.00	\$29,421.60	\$7,355.40	\$7,355.40	\$289,312.40	\$361,640.50	1500	\$241.09
Howard Road Phase 1	\$583,122.00	\$69,974.64	\$17,493.66	\$17,493.66	\$688,083.96	\$860,104.95	1800	\$477.84
Tuckahoe Park Phase 1	\$550,657.00	\$66,078.84	\$16,519.71	\$16,519.71	\$649,775.26	\$812,219.08	1700	\$477.78
Tuckahoe Park Phase 1B	\$350,849.00	\$42,101.88	\$10,525.47	\$10,525.47	\$414,001.82	\$517,502.28	1400	\$369.64
Magnus Lane	\$290,000.00	\$34,800.00	\$8,700.00	\$8,700.00	\$342,200.00	\$427,750.00	1800	\$237.64
Marvin Drive	\$115,000.00	\$13,800.00	\$3,450.00	\$3,450.00	\$135,700.00	\$169,625.00	500	\$339.25
Howard Road Phase 2	\$612,314.00	\$73,477.68	\$18,369.42	\$18,369.42	\$722,530.52	\$903,163.15	1900	\$475.35
Byron Avenue	\$233,859.00	\$28,063.08	\$7,015.77	\$7,015.77	\$275,953.62	\$344,942.03	800	\$431.18
Crestview	\$419,683.00	\$50,361.96	\$12,590.49	\$12,590.49	\$495,225.94	\$619,032.43	1300	\$476.18
Wildwood	\$249,165.00	\$29,899.80	\$7,474.95	\$7,474.95	\$294,014.70	\$367,518.38	1200	\$306.27
							avg	\$383.22
							med	\$400.41
								\$400

#### Additional Cost for Water Line Replacement:

	Estimated Construction Cost	12% Design	0% Environmental Permitting	3% Land Acquisition	Subtotal	25% General Contingency	Project Length	Price Per Foot
8" Waterline	\$60,000.00	\$7,200.00	\$0.00	\$0.00	\$67,200.00	\$84,000.00	1000	\$84.00
Water service connections w/ meter boxes and corporation stops	\$30,000.00	\$3,600.00	\$0.00	\$0.00	\$33,600.00	\$42,000.00	1000	\$42.00
							Total:	\$126

#### Additional Cost for Streetscape Elements:

	Estimated Construction Cost	12% Design	0% Environmental Permitting	3% Land Acquisition	Subtotal	25% General Contingency	Project Length	Price Per Foot
Curb and Gutter, both sides	\$30,000.00	\$3,600.00	\$0.00	\$900.00	\$34,500.00	\$43,125.00	1000	\$43.13
Sidewalk, both sides	\$35,000.00	\$4,200.00	\$0.00	\$1,050.00	\$40,250.00	\$50,312.50	1000	\$50.31
Additional yard grading	\$15,000.00	\$1,800.00	\$0.00	\$450.00	\$17,250.00	\$21,562.50	1000	\$21.56
Street Trees	\$10,000.00	\$1,200.00	\$0.00	\$300.00	\$11,500.00	\$14,375.00	1000	\$14.38
							Total:	\$129

## Appendix D

### Cost Basis

#### Category Two - Road and Drainage Improvement Projects

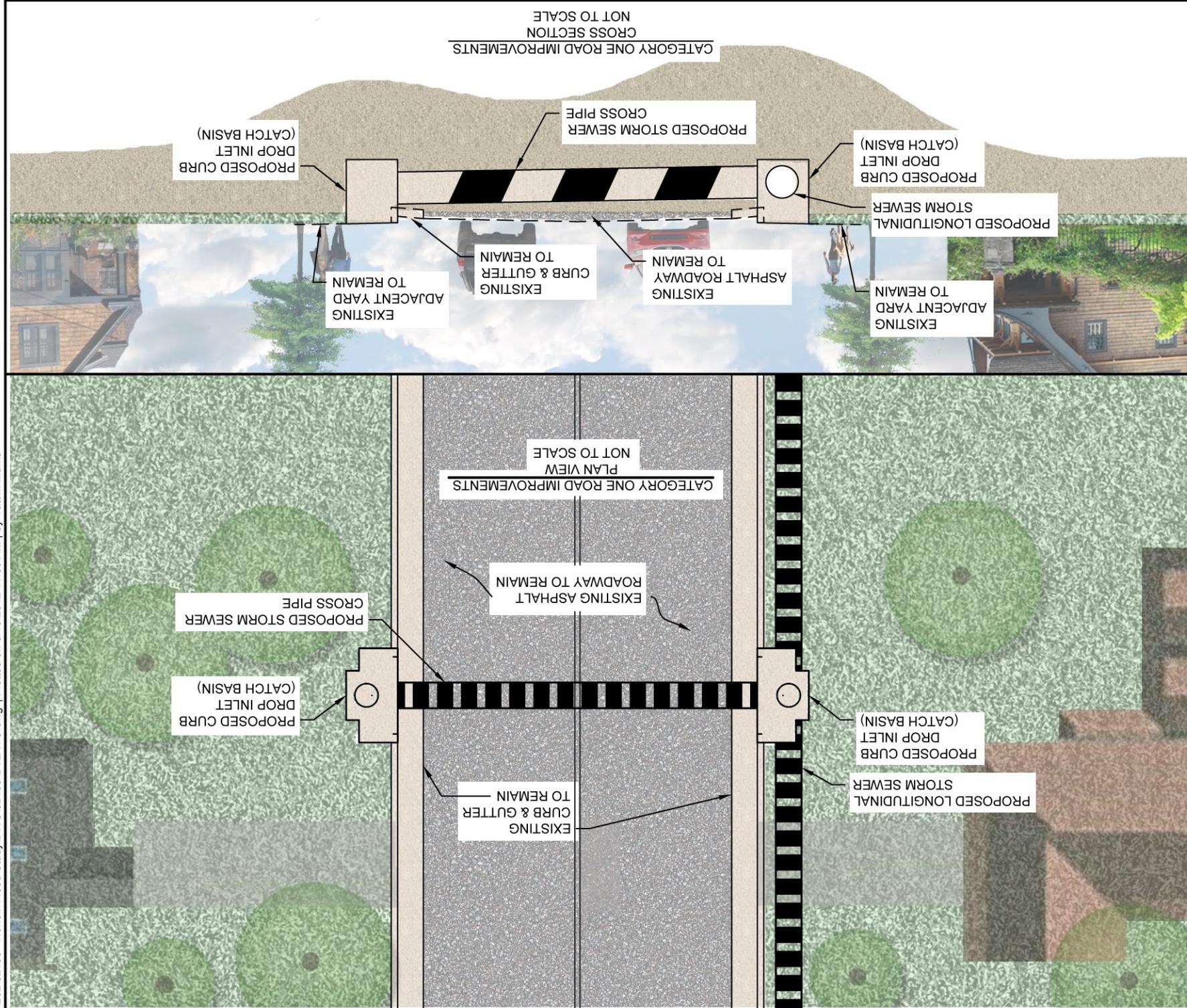
Sample Projects from Other Localities	Final Construction Cost	12% Design	3% Environmental Permitting	3% Land Acquisition	Subtotal	25% General Contingency	Project Length	Price Per Foot
Crestwood	\$1,235,892.25	\$148,307.07	\$37,076.77	\$37,076.77	\$1,458,352.86	\$1,822,941.07	2100	\$868.07
Ronnie Avenue	\$293,000.00	\$35,160.00	\$8,790.00	\$8,790.00	\$345,740.00	\$432,175.00	700	\$617.39
Lakeside Avenue Phase 2	\$1,845,716.00	\$221,485.92	\$55,371.48	\$55,371.48	\$2,177,944.88	\$2,722,431.10	2900	\$938.77
							avg	\$808.08
							med	\$868.07
								\$900

#### Additional Cost for Water Line Replacement:

	Estimated Construction Cost	12% Design	0% Environmental Permitting	3% Land Acquisition	Subtotal	25% General Contingency	Project Length	Price Per Foot
8" Waterline	\$100,000.00	\$12,000.00	\$0.00	\$0.00	\$112,000.00	\$140,000.00	1000	\$140.00
Water service connections w/ meter boxes and corporation stops	\$50,000.00	\$6,000.00	\$0.00	\$0.00	\$56,000.00	\$70,000.00	1000	\$70.00
							Total:	\$210

#### Additional Cost for Streetscape Elements:

	Estimated Construction Cost	12% Design	0% Environmental Permitting	3% Land Acquisition	Subtotal	25% General Contingency	Project Length	Price Per Foot
Sidewalk, both sides	\$35,000.00	\$4,200.00	\$0.00	\$1,050.00	\$40,250.00	\$50,312.50	1000	\$50.31
Additional yard grading	\$15,000.00	\$1,800.00	\$0.00	\$450.00	\$17,250.00	\$21,562.50	1000	\$21.56
Street Trees	\$15,000.00	\$1,800.00	\$0.00	\$450.00	\$17,250.00	\$21,562.50	1000	\$21.56
							Total:	\$93



# TIMMONS GROUP

## CITY-WIDE DRAINAGE MASTER PLAN

CITY OF NORFOLK, VIRGINIA

### CATEGORY ONE ROAD IMPROVEMENTS

THIS DRAWING REBANDED AT THE  
Corporate Headquarters  
2000 Boulder Parkway | Richmond, VA 23225  
TEL: 804-220-5500 FAX: 804-562-0116 [www.timmons.com](http://www.timmons.com)

REVISION DESCRIPTION

DATE

4/23/2012

DRAWN BY

T. MARKS

DESIGNED BY

A. GOULD

CHECKED BY

A. GOULD

SCALE

NTS





# APPENDIX E

**Appendix E**  
**Planning District Cost Projections**

Line	Planning District Name (Number)	Planning District Number	Score	Land Area (ac)	Drainage Improvement Costs					Water Line Relocation (Required)	Streetscape (Optional Enhancements)	Resulting Total Cost Range		Improved Roadway Lengths by Operator and Category									
					Public	State	Federal	Private	Total			(i + j)	(i + j + k)	Public Cat 1	Private Cat 1	Federal Cat 1	Public Cat 2A	State Cat 2A	Public Cat 2B	Private Cat 2B	Federal Cat 2B	Total	
1	AZALEA	(22)	22	45	475	\$4,861,221	\$0	\$0	\$0	\$4,861,221	\$1,270,335	\$867,439	\$6,131,555	\$6,998,994	0.79	0.00	0.00	0.54	0.00	0.13	0.00	0.00	1.46
2	BALLENTEINE PARK	(50)	50	44	278	\$4,040,013	\$0	\$0	\$0	\$4,040,013	\$1,028,174	\$646,933	\$5,068,186	\$5,715,119	0.50	0.00	0.00	0.41	0.00	0.22	0.00	0.00	1.13
3	BEL-AIRE	(17)	17	60	352	\$3,025,896	\$0	\$649,277	\$11,416	\$3,686,588	\$1,031,676	\$841,123	\$4,718,265	\$5,559,388	0.89	0.01	0.09	0.08	0.00	0.16	0.00	0.09	1.33
4	BERKLEY	(90)	90	66	650	\$10,481,848	\$0	\$0	\$166,034	\$10,647,882	\$2,723,658	\$1,742,088	\$13,371,541	\$15,113,629	1.34	0.05	0.00	1.54	0.00	0.07	0.01	0.00	3.01
5	BRAMBLETON	(69)	69	64	540	\$11,547,630	\$0	\$0	\$198,661	\$11,746,291	\$3,052,351	\$2,049,882	\$14,798,642	\$16,848,524	1.71	0.09	0.00	1.64	0.00	0.03	0.00	0.00	3.48
6	CAMPOSTELLA	(89)	89	49	304	\$3,231,102	\$0	\$0	\$97,888	\$3,328,989	\$869,696	\$593,393	\$4,198,685	\$4,792,078	0.49	0.05	0.00	0.43	0.00	0.03	0.00	0.00	1.00
7	CAMPOSTELLA HEIGHTS	(88)	88	39	396	\$1,556,743	\$0	\$0	\$32,442	\$1,589,185	\$415,865	\$285,130	\$2,005,050	\$2,290,180	0.26	0.00	0.00	0.16	0.00	0.05	0.01	0.00	0.48
8	CAPE VIEW	(5)	5	55	126	\$1,700,419	\$0	\$0	\$13,041	\$1,713,461	\$441,021	\$287,660	\$2,154,481	\$2,442,141	0.24	0.00	0.00	0.23	0.00	0.02	0.00	0.00	0.49
9	CHESAPEAKE MANOR	(40)	40	37	198	\$2,052,854	\$0	\$0	\$0	\$2,052,854	\$558,138	\$424,510	\$2,610,991	\$3,035,502	0.46	0.00	0.00	0.22	0.00	0.01	0.00	0.00	0.69
10	CHESTERFIELD	(72)	72	51	252	\$1,576,045	\$0	\$0	\$0	\$1,576,045	\$438,519	\$352,797	\$2,014,564	\$2,367,361	0.41	0.00	0.00	0.14	0.00	0.01	0.00	0.00	0.56
11	COLEMAN PLACE	(49)	49	61	242	\$7,785,159	\$0	\$0	\$0	\$7,785,159	\$1,962,972	\$1,197,450	\$9,748,131	\$10,945,580	0.85	0.00	0.00	0.77	0.00	0.50	0.00	0.00	2.11
12	COLONIAL PLACE	(53)	53	73	322	\$12,172,260	\$0	\$0	\$0	\$12,172,260	\$3,268,031	\$2,405,976	\$15,440,291	\$17,846,267	2.48	0.00	0.00	1.36	0.00	0.10	0.00	0.00	3.94
13	COMMODORE PARK	(10)	10	67	151	\$2,952,712	\$0	\$0	\$0	\$2,952,712	\$773,717	\$532,557	\$3,726,429	\$4,258,985	0.49	0.00	0.00	0.36	0.00	0.04	0.00	0.00	0.89
14	CORONADO	(42)	42	35	179	\$2,263,022	\$0	\$0	\$0	\$2,263,022	\$617,596	\$474,190	\$2,880,619	\$3,354,808	0.52	0.00	0.00	0.25	0.00	0.00	0.00	0.00	0.76
15	CROMWELL ROAD INDUSTRIAL	(74)	74	52	218	\$2,625,682	\$0	\$0	\$0	\$2,625,682	\$665,332	\$412,678	\$3,291,015	\$3,703,693	0.31	0.00	0.00	0.28	0.00	0.13	0.00	0.00	0.72
16	CROWN POINT	(86)	86	34	397	\$2,949,669	\$0	\$0	\$46,331	\$2,996,000	\$733,208	\$401,212	\$3,729,208	\$4,130,421	0.20	0.00	0.00	0.34	0.00	0.19	0.01	0.00	0.74
17	DENBY PARK	(38)	38	62	180	\$4,065,581	\$0	\$0	\$0	\$4,065,581	\$1,052,368	\$698,494	\$5,117,949	\$5,816,443	0.60	0.00	0.00	0.50	0.00	0.09	0.00	0.00	1.19
18	DOWNTOWN*	(59)	59	49	362	\$35,089,636	\$0	\$0	\$19,009	\$35,108,645	\$2,863,651	\$1,566,348	\$37,972,296	\$39,538,643	0.76	0.01	0.00	2.08	0.00	0.04	0.00	0.00	2.89
19	EAST 21st STREET / MONTICELLO	(58)	58	69	267	\$10,303,233	\$0	\$0	\$0	\$10,303,233	\$2,583,072	\$1,545,002	\$12,886,305	\$14,431,306	1.04	0.00	0.00	1.59	0.00	0.12	0.00	0.00	2.74
20	EAST GHENT	(63)	63	77	132	\$4,705,482	\$0	\$0	\$775,720	\$5,481,202	\$1,468,437	\$1,074,920	\$6,949,639	\$8,024,559	0.73	0.37	0.00	0.66	0.00	0.00	0.00	0.00	1.76
21	EAST NORVIEW	(44)	44	53	129	\$979,051	\$0	\$0	\$0	\$979,051	\$255,281	\$173,186	\$1,234,332	\$1,407,518	0.16	0.00	0.00	0.11	0.00	0.03	0.00	0.00	0.29
22	EASTON	(80)	80	70	246	\$3,803,522	\$0	\$0	\$0	\$3,803,522	\$947,798	\$554,882	\$4,751,320	\$5,306,203	0.35	0.00	0.00	0.23	0.00	0.41	0.00	0.00	0.99
23	EDGEWATER - LARCHMONT	(37)	37	51	609	\$8,148,529	\$0	\$0	\$19,749	\$8,168,278	\$2,178,466	\$1,575,448	\$10,346,744	\$11,922,192	1.57	0.01	0.00	0.92	0.00	0.09	0.00	0.00	2.60
24	ESTABROOK	(47)	47	51	381	\$6,437,954	\$0	\$0	\$0	\$6,437,954	\$1,665,013	\$1,102,221	\$8,102,967	\$9,205,188	0.94	0.00	0.00	0.71	0.00	0.23	0.00	0.00	1.88
25	FOXHALL	(48)	48	52	355	\$4,747,877	\$0	\$0	\$0	\$4,747,877	\$1,197,989	\$732,551	\$5,945,866	\$6,678,417	0.52	0.00	0.00	0.70	0.00	0.06	0.00	0.00	1.29
26	GHENT	(64)	64	59	185	\$7,352,865	\$0	\$0	\$344,510	\$7,697,375	\$1,985,196	\$1,302,989	\$9,682,571	\$10,985,560	0.93	0.16	0.00	1.13	0.00	0.00	0.00	0.00	2.23
27	GLENROCK	(85)	85	68	166	\$2,737,738	\$0	\$0	\$19,866	\$2,757,604	\$671,148	\$359,308	\$3,428,752	\$3,788,060	0.15	0.01	0.00	0.05	0.00	0.46	0.00	0.00	0.67
28	GLENWOOD PARK	(28)	28	83	176	\$4,523,044	\$0	\$546,003	\$350,946	\$5,419,993	\$1,399,330	\$921,464	\$6,819,324	\$7,740,788	0.70	0.00	0.08	0.16	0.00	0.48	0.07	0.00	

**Appendix E**  
**Planning District Cost Projections**

Line	Planning District Name (Number)	Planning District Number	Score	Land Area (ac)	Drainage Improvement Costs					Water Line Relocation (Required)	Streetscape (Optional Enhancements)	Resulting Total Cost Range		Improved Roadway Lengths by Operator and Category									
					Public	State	Federal	Private	Total			(i + j)	(i + j + k)	Public Cat 1	Private Cat 1	Federal Cat 1	Public Cat 2A	State Cat 2A	Public Cat 2B	Private Cat 2B	Federal Cat 2B	Total	
66	RIVER OAKS	(75)	75	57	437	\$5,046,734	\$0	\$0	\$0	\$5,046,734	\$1,267,811	\$763,670	\$6,314,545	\$7,078,215	0.52	0.00	0.00	0.56	0.00	0.27	0.00	0.00	1.35
67	ROLAND PARK	(34)	34	29	232	\$2,051,281	\$0	\$0	\$0	\$2,051,281	\$544,050	\$387,525	\$2,595,331	\$2,982,855	0.38	0.00	0.00	0.26	0.00	0.00	0.00	0.00	0.64
68	ROOSEVELT GARDENS	(18)	18	62	376	\$3,452,422	\$0	\$0	\$0	\$3,452,422	\$1,037,686	\$979,686	\$4,490,108	\$5,469,794	1.35	0.00	0.00	0.13	0.00	0.00	0.00	0.00	1.47
69	ROSEMONT	(41)	41	39	378	\$4,056,315	\$0	\$0	\$0	\$4,056,315	\$1,081,562	\$781,686	\$5,137,877	\$5,919,563	0.78	0.00	0.00	0.48	0.00	0.03	0.00	0.00	1.29
70	SEWELLS GARDENS	(43)	43	51	415	\$3,229,442	\$0	\$0	\$49,089	\$3,278,532	\$899,562	\$699,926	\$4,178,093	\$4,878,019	0.78	0.00	0.00	0.32	0.00	0.02	0.01	0.00	1.12
71	SEWELLS POINT	(27)	27	44	774	\$190,615	\$0	\$1,890,779	\$1,438,168	\$3,519,562	\$879,881	\$521,085	\$4,399,443	\$4,920,528	0.00	0.06	0.28	0.04	0.00	0.00	0.27	0.28	0.93
72	SHORE DRIVE	(7)	7	54	449	\$3,144,120	\$0	\$0	\$148,986	\$3,293,105	\$840,843	\$534,726	\$4,133,949	\$4,668,674	0.35	0.07	0.00	0.20	0.00	0.31	0.00	0.00	0.93
73	SNUG HARBOR	(14)	14	62	354	\$5,096,032	\$0	\$0	\$22,539	\$5,118,571	\$1,424,729	\$1,147,225	\$6,543,300	\$7,690,525	1.33	0.00	0.00	0.34	0.00	0.14	0.00	0.00	1.82
74	SOUTH CAMELLIA	(20)	20	53	471	\$6,338,228	\$0	\$46,773	\$0	\$6,385,001	\$1,607,072	\$974,414	\$7,992,073	\$8,966,488	0.67	0.00	0.01	0.95	0.00	0.09	0.00	0.01	1.72
75	SOUTHERN SHOPPING CENTER*	(24)	24	60	160	\$15,813,320	\$0	\$0	\$0	\$15,813,320	\$1,488,203	\$878,605	\$17,301,523	\$18,180,129	0.57	0.00	0.00	0.95	0.00	0.06	0.00	0.00	1.57
76	SUBURBAN	(33)	33	64	428	\$4,972,367	\$0	\$0	\$0	\$4,972,367	\$1,367,857	\$1,071,045	\$6,340,224	\$7,411,269	1.20	0.00	0.00	0.45	0.00	0.06	0.00	0.00	1.72
77	SUSSEX	(32)	32	54	356	\$3,536,198	\$0	\$0	\$0	\$3,536,198	\$963,690	\$737,304	\$4,499,889	\$5,237,193	0.80	0.00	0.00	0.28	0.00	0.11	0.00	0.00	1.19
78	TALBOT PARK	(36)	36	57	535	\$3,554,607	\$0	\$0	\$0	\$3,554,607	\$968,184	\$739,738	\$4,522,791	\$5,262,528	0.80	0.00	0.00	0.23	0.00	0.16	0.00	0.00	1.20
79	TIDEWATER - YOUNG PARK*	(65)	65	78	243	\$23,579,923	\$0	\$0	\$0	\$23,579,923	\$2,492,760	\$1,446,008	\$26,072,682	\$27,518,690	0.89	0.00	0.00	1.68	0.00	0.04	0.00	0.00	2.60
80	TIDEWATER DRIVE INDUSTRIAL	(68)	68	74	246	\$9,297,391	\$0	\$0	\$0	\$9,297,391	\$2,391,758	\$1,557,490	\$11,689,149	\$13,246,639	1.29	0.00	0.00	1.28	0.00	0.10	0.00	0.00	2.67
81	TITUSTOWN	(31)	31	38	109	\$1,082,121	\$0	\$0	\$0	\$1,082,121	\$310,675	\$267,955	\$1,392,796	\$1,660,751	0.34	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.42
82	WARDS CORNER	(25)	25	54	114	\$1,521,598	\$0	\$0	\$0	\$1,521,598	\$398,612	\$274,166	\$1,920,210	\$2,194,376	0.25	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.46
83	WEST 21st STREET	(57)	57	76	195	\$12,202,037	\$0	\$0	\$0	\$12,202,037	\$3,037,589	\$1,771,975	\$15,239,626	\$17,011,601	1.10	0.00	0.00	1.85	0.00	0.23	0.00	0.00	3.18
84	WEST GHENT	(61)	61	76	179	\$6,315,745	\$1,991,361	\$0	\$0	\$8,307,106	\$2,218,113	\$1,609,261	\$10,525,219	\$12,134,480	1.62	0.00	0.00	0.58	0.42	0.03	0.00	0.00	2.65
85	WEST OCEAN VIEW	(2)	2	79	281	\$18,561,729	\$0	\$0	\$0	\$18,561,729	\$4,567,836	\$2,553,447	\$23,129,565	\$25,683,012	1.37	0.00	0.00	3.22	0.00	0.07	0.00	0.00	4.67
86	WILLOUGHBY	(1)	1	77	302	\$6,281,867	\$0	\$0	\$0	\$6,281,867	\$1,661,356	\$1,174,017	\$7,943,223	\$9,117,240	1.13	0.00	0.00	0.35	0.00	0.47	0.00	0.00	1.95
87	WILLOW TERRACE	(13)	13	65	326	\$5,821,655	\$0	\$0	\$0	\$5,821,655	\$1,614,247	\$1,288,218	\$7,435,902	\$8,724,120	1.48	0.00	0.00	0.40	0.00	0.16	0.00	0.00	2.05
	<b>TOTALS</b>					<b>\$524,797,435</b>	<b>\$7,790,401</b>	<b>\$21,619,677</b>	<b>\$7,437,468</b>	<b>\$561,644,980</b>	<b>\$133,070,422</b>	<b>\$87,933,568</b>	<b>\$694,715,402</b>	<b>\$782,648,970</b>	<b>69.84</b>	<b>2.05</b>	<b>3.15</b>	<b>58.18</b>	<b>1.64</b>	<b>11.37</b>	<b>0.66</b>	<b>3.15</b>	<b>150.03</b>

\* These Planning Districts had CIP projects already identified that exceeded the cost projection; the time-adjusted cost of those CIP projects have been added to the public total.

## APPENDIX F

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
1	HALIFAX LANE	\$1,216,000	BERKLEY (90)	1	✓		✓	✓
2	COLONIAL AV THAT TURNS INTO MAYFLOWER	\$354,000	COLONIAL PLACE (53)	1	✓		✓	✓
3	NEW JERSEY NEAR TIDE VALVE	\$91,000	COLONIAL PLACE (53)	1	✓		✓	✓
4	GRANBY STREET BETWEEN BAYVIEW BOULEVARD AND BAY AVENUE*	\$403,000	COMMODORE PARK (10)	1	✓	✓		✓
5	HOUSTON AVENUE (EASTON PLACE)	\$229,000	EASTON (80)	1	✓	✓	✓	✓
6	WALNUT HILL & SYLVAN	\$78,000	EDGEWATER-LARCHMONT (37)	1	✓		✓	✓
7	TIDEWATER DRIVE / GOFF STREET	\$1,673,000	HUNTERSVILLE (66)	1	✓		✓	✓
8	JANAF PLACE	\$288,000	LAKE TERRACE (77)	1	✓		✓	✓
9	HOLLYWOOD	\$3,308,000	MAPLE HALL-HOLLYWOOD (78)	1	✓		✓	✓
10	LAND STREET	\$406,000	MAPLE HALL-HOLLYWOOD (78)	1	✓		✓	✓
11	EAST WESTMONT AVENUE / STRATFORD STREET	\$67,000	NORTHSIDE (11)	1	✓		✓	✓
12	GRANBY STREET BETWEEN BAYVIEW BOULEVARD AND BAY AVENUE*	\$403,000	NORTHSIDE (11)	1	✓	✓		✓
13	GRANBY STREET BETWEEN BAYVIEW BOULEVARD AND BAY AVENUE*	\$403,000	PAMLICO (8)	1	✓	✓		✓
14	ADDERLEY ST NEIGHBORHOOD	\$1,157,000	RIVER FORREST (81)	1	✓		✓	✓
15	CURLEW DRIVE	\$700,000	RIVER FORREST (81)	1	✓	✓	✓	✓
16	HARGROVE STREET	\$283,000	RIVER FORREST (81)	1	✓		✓	✓
17	LEVINE COURT	\$246,000	RIVER FORREST (81)	1	✓		✓	✓
18	HEUTTE & MARTONE	\$141,000	SOUTH CAMELLIA (20)	1	✓		✓	✓
19	SUBURBAN PARKWAY	\$1,238,000	SUBURBAN (33)	1	✓		✓	✓
20	TIDEWATER DRIVE OUTFALL	\$13,551,000	TIDEWATER-YOUNG PARK (65)	1	✓		✓	✓
21	AZALEA GARDEN RD - TALLYHO TER - HOLLYBRIAR POINT	\$264,000	AZALEA (22)	2	✓			✓
22	BRADLEY AV - BUDD DR	\$50,000	AZALEA (22)	2	✓			✓
23	LESLIE AV - GAMAGE DR - BUDD DR	\$72,000	AZALEA (22)	2	✓			✓
24	LEAD ST - JAMAICA AV - CARY AV	\$232,000	BRAMBLETON (69)	2	✓			✓
25	MALTBY AV - GOFF ST*	\$422,000	BRAMBLETON (69)	2	✓			✓
26	ARLINGTON - MONTCLAIR AV	\$50,000	CAMPOSTELLA HEIGHTS (88)	2	✓			✓
27	CAROLINA AV & MAYFLOWER	\$179,000	COLONIAL PLACE (53)	2	✓		✓	
28	COLONIAL PLACE	\$413,000	COLONIAL PLACE (53)	2	✓		✓	
29	COLONIAL PLACE SHORELINE	\$104,000	COLONIAL PLACE (53)	2	✓			✓
30	DELAWARE NEAR GREENWAY	\$4,272,000	COLONIAL PLACE (53)	2	✓		✓	
31	E 40TH ST - HOLLY AV	\$89,000	COLONIAL PLACE (53)	2	✓			✓
32	E 42ND ST - HOLLY AV	\$118,000	COLONIAL PLACE (53)	2	✓			✓
33	GEORGIA AV & MAYFLOWER	\$179,000	COLONIAL PLACE (53)	2	✓			✓
34	GOSNOLD AVENUE / MICHIGAN AVENUE	\$179,000	COLONIAL PLACE (53)	2	✓			✓
35	LLEWELLYN AV*	\$1,626,000	COLONIAL PLACE (53)	2	✓			✓
36	VIRGINIA AV & MAYFLOWER	\$179,000	COLONIAL PLACE (53)	2	✓			✓
37	COMMODORE DR - BURRAGE RD	\$50,000	COMMODORE PARK (10)	2	✓			✓
38	E & W CHESTER ST - EVANS ST - CAP LANE*	\$406,000	COMMODORE PARK (10)	2	✓			✓
39	BRAMBLETON AVENUE	\$228,000	DOWNTOWN (59)	2	✓			✓
40	MONTICELLO SYSTEM TO THE HAGUE	\$23,406,000	DOWNTOWN (59)	2	✓			✓
41	VIRGINIA BEACH BLVD SOUTH OF HOPE VI	\$3,492,000	DOWNTOWN (59)	2	✓			✓
42	13TH - 11TH - GRANBY ST - ARMISTEAD AV*	\$166,000	EAST 21st STREET-MONTICELLO (58)	2	✓			✓
43	GHENT	\$1,626,000	EAST GHENT (63)	2	✓			✓
44	LLEWELLYN AV - BOUSH ST - W VIRGINIA BEACH BLVD	\$324,000	EAST GHENT (63)	2	✓			✓
45	CURLEW DR - BANGOR AV - N ABILENE AV	\$479,000	EASTON (80)	2	✓			✓
46	CATALPA ST - POWHATAN AV	\$50,000	EDGEWATER-LARCHMONT (37)	2	✓			✓

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
47	LARCHMONT	\$745,000	EDGEWATER-LARCHMONT (37)	2	✓		✓	
48	POWHATAN LOW SPOT NEAR CATALPA	\$1,971,000	EDGEWATER-LARCHMONT (37)	2	✓		✓	
49	SURREY CRESCENT	\$1,231,000	EDGEWATER-LARCHMONT (37)	2	✓		✓	
50	SURRY - RICHMOND CRESCENT	\$50,000	EDGEWATER-LARCHMONT (37)	2	✓			✓
51	CHESAPEAKE BLVD - AMHERST ST	\$50,000	ESTABROOK (47)	2	✓			✓
52	CHESAPEAKE BLVD - HENRICO ST	\$50,000	ESTABROOK (47)	2	✓			✓
53	MANTEO STREET	\$154,000	GHENT (64)	2	✓		✓	
54	W ONLEY RD - STOCKLEY GARDENS - W PRINCESS ANNE RD	\$65,000	GHENT (64)	2	✓			✓
55	HONAKER AV	\$50,000	GLENROCK (85)	2	✓			✓
56	POPLAR HALL DR - CHAMBERS ST - LUCAS AV**	\$835,000	GLENROCK (85)	2	✓			✓
57	ROGERS - GLEN MYRTLE - EVERGREEN AV	\$4,394,000	GLENWOOD PARK (28)	2	✓			✓
58	ROGERS AVENUE	\$314,000	GLENWOOD PARK (28)	2	✓		✓	
59	13TH - 11TH - GRANBY ST - ARMISTEAD AV*	\$79,000	HUNTERSVILLE (66)	2	✓			✓
60	CHURCH ST - JOHNSON AV - C AV	\$2,433,000	HUNTERSVILLE (66)	2	✓			✓
61	E VIRGINIA BEACH - SAINT PAULS BLVD - LINCOLN ST*	\$159,000	HUNTERSVILLE (66)	2	✓			✓
62	HUNTERSVILLE	\$11,784,000	HUNTERSVILLE (66)	2	✓		✓	
63	MALTBY AV - GOFF ST*	\$414,000	HUNTERSVILLE (66)	2	✓			✓
64	GLEN ROCK	\$604,000	JANAF-MILITARY CIRCLE (87)	2	✓			✓
65	POPLAR HALL DR - CHAMBERS ST - LUCAS AV**	\$15,000	JANAF-MILITARY CIRCLE (87)	2	✓			✓
66	VA BEACH BLVD UPGRADE (POPLAR HALL DR TO NEWTOWN RD)	\$123,000	JANAF-MILITARY CIRCLE (87)	2	✓			✓
67	CLARENCE ST - HUDSON AV - REEL ST - ADAIR AV	\$373,000	KEMPSVILLE (79)	2	✓			✓
68	DITCH (EAST OF KEMPSVILLE ROAD)	\$246,000	KEMPSVILLE (79)	2	✓			✓
69	E VIRGINIA BEACH BLVD - KEMPSVILLE RD**	\$21,000	KEMPSVILLE (79)	2	✓			✓
70	ELIZABETH AV - MILITARY HWY*	\$38,000	LAKE TAYLOR (76)	2	✓			✓
71	LOWERY RD - CHILD CARE CT - JANAF PL*	\$28,000	LAKE TAYLOR (76)	2	✓			✓
72	LOWERY RD -PASCAL PL*	\$27,000	LAKE TAYLOR (76)	2	✓			✓
73	E VIRGINIA BEACH BLVD - KEMPSVILLE RD**	\$29,000	LAKE TERRACE (77)	2	✓			✓
74	FRAMENT AV - JANAF PL - PASCAL PL	\$288,000	LAKE TERRACE (77)	2	✓			✓
75	GAINOR PL - JANAF PL - JARRETT RD	\$601,000	LAKE TERRACE (77)	2	✓			✓
76	LOCKAMY LANE	\$265,000	LAKE TERRACE (77)	2	✓		✓	
77	LOWERY RD - CHILD CARE CT - JANAF PL*	\$60,000	LAKE TERRACE (77)	2	✓			✓
78	LOWERY RD -PASCAL PL*	\$68,000	LAKE TERRACE (77)	2	✓			✓
79	OLD PHILLIPS RD	\$118,000	LAKE TERRACE (77)	2	✓		✓	
80	TARRALL - BOYCE - TIDEWATER - CROMWELL DR	\$436,000	LAKEWOOD (35)	2	✓			✓
81	HOLLAND AV - HUNTINGTON CRESCENT	\$58,000	LAYFAYETTE (51)	2	✓			✓
82	SAINT DENIS - POPE - BAPAUME AV - TIDEWATER DR	\$50,000	LAYFAYETTE (51)	2	✓			✓
83	THISTLE ST - LEAD ST - SAINT JULIAN AV**	\$37,000	LINDENWOOD (67)	2	✓			✓
84	LAND ST - WAILES AV - ADAIR AV	\$65,000	MAPLE HALL-HOLLYWOOD (78)	2	✓			✓
85	TAYLOR DRIVE (O13121)	\$702,000	MAPLE HALL-HOLLYWOOD (78)	2	✓		✓	
86	CAMELLIA ROAD	\$59,000	NORTH CAMELLIA (19)	2	✓			✓
87	DOMINION AVENUE	\$862,000	NORTH CAMELLIA (19)	2	✓			✓
88	KILLAM AVENUE / WEST 51ST STREET	\$96,000	NORTH COLLEY (54)	2	✓			✓
89	BAYLOR - HAMPTON BLVD	\$401,000	NORTH SHORE (30)	2	✓			✓
90	MAURY ARCH	\$175,000	NORTH SHORE (30)	2	✓			✓
91	NORTH SHORE RD - HAMPTON BLVD	\$617,000	NORTH SHORE (30)	2	✓			✓
92	NORTH SHORE ROAD / MAURY ARCH	\$678,000	NORTH SHORE (30)	2	✓			✓

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
93	RUNNYMEDE ROAD / HAMPTON BOULEVARD	\$265,000	NORTH SHORE (30)	2	✓		✓	
94	E & W CHESTER ST - EVANS ST - CAP LANE*	\$796,000	NORTHSIDE (11)	2	✓			✓
95	WINSHIRE ST - STRATFORD ST	\$706,000	NORTHSIDE (11)	2	✓			✓
96	LYNN ST - CROFT ST - N MILITARY HWY	\$50,000	NORVELLA (46)	2	✓			✓
97	BURKSDALE RD - DIXIE DR - DIGGS RD	\$553,000	OAKDALE FARMS (16)	2	✓			✓
98	WEST GLEN - E LITTLE CREEK - KEENE RD	\$50,000	OAKDALE FARMS (16)	2	✓			✓
99	TIDEWATER DRIVE / OLD OCEANVIEW ROAD	\$160,000	OCEANAIR (12)	2	✓		✓	
100	1ST VIEW - HICKORY - PEACHTREE ST	\$794,000	PAMLICO (8)	2	✓			✓
101	E & W CHESTER ST - EVANS ST - CAP LANE*	\$14,000	PAMLICO (8)	2	✓			✓
102	ORANGE AVENUE	\$230,000	PAMLICO (8)	2	✓	✓		
103	ORANGE AVENUE (PHASE 2)	\$1,161,000	PAMLICO (8)	2	✓			✓
104	WEST GILPIN AVENUE / ST. GEORGE AVENUE	\$160,000	PAMLICO (8)	2	✓			✓
105	COLONIAL AV NORTH OF RR	\$3,827,000	PARK PLACE (52)	2	✓			✓
106	HAMPTON BLVD - BOWDEN'S FERRY RD**	\$23,000	PARK PLACE (52)	2	✓			✓
107	LLEWELLYN	\$1,705,000	PARK PLACE (52)	2	✓			✓
108	LLEWELLYN AV*	\$44,000	PARK PLACE (52)	2	✓			✓
109	LENOX - NORFOLK AV	\$50,000	PINEWELL (3)	2	✓			✓
110	LENOX AVENUE	\$345,000	PINEWELL (3)	2	✓		✓	
111	BERRY HILL RD - BARNHOLLOW RD - BROOKVILLE RD	\$50,000	POPLAR HALLS (84)	2	✓			✓
112	POPLAR HALL DR - BEACON HILL CIRCLE	\$50,000	POPLAR HALLS (84)	2	✓			✓
113	POPLAR HALL DR - CHAMBERS ST - LUCAS AV**	\$93,000	RIVER FORREST (81)	2	✓			✓
114	SHOREWOOD DR - LEVINE CT	\$200,000	RIVER FORREST (81)	2	✓			✓
115	E PRINCESS ANNE RD - RIVER OAKS DR	\$50,000	RIVER OAKS (75)	2	✓			✓
116	ELIZABETH AV - MILITARY HWY*	\$151,000	RIVER OAKS (75)	2	✓			✓
117	LEWIS RD - ANDES CT	\$104,000	RIVER OAKS (75)	2	✓			✓
118	ELON CT - KNOX RD	\$50,000	SEWELLS GARDENS (43)	2	✓			✓
119	REDMON ROAD	\$277,000	SHORE DRIVE (7)	2	✓		✓	
120	EDGEWOOD (K0546)	\$613,000	SNUG HARBOR (14)	2	✓			✓
121	MODOC AVENUE	\$751,000	SNUG HARBOR (14)	2	✓			✓
122	AZALEA GARDEN RD - JASPER CT	\$50,000	SOUTH CAMELLIA (20)	2	✓			✓
123	E LITTLE CREEK - CAMELLIA RD	\$50,000	SOUTH CAMELLIA (20)	2	✓			✓
124	E LITTLE CREEK - DUNNING - RANSOM RD	\$50,000	SOUTH CAMELLIA (20)	2	✓			✓
125	MARTONE RD - HEUTTE DR - TARPON PL	\$142,000	SOUTH CAMELLIA (20)	2	✓			✓
126	CARL ST - BRICKBY RD - KIRBY CRESCENT	\$184,000	SUBURBAN (33)	2	✓			✓
127	GALVESTON BLVD - SUBURBAN PKWY - BRICKBY RD	\$102,000	SUBURBAN (33)	2	✓			✓
128	GLEN ECHO DR - GRANBY ST	\$123,000	SUBURBAN (33)	2	✓			✓
129	MIDFIELD STREET	\$154,000	SUBURBAN (33)	2	✓		✓	
130	SUBURBAN ARCH	\$76,000	SUBURBAN (33)	2	✓			✓
131	RESTMERE RD - W LITTLE CREEK RD	\$144,000	SUSSEX (32)	2	✓			✓
132	AFTON AV - SEVERN RD - GRANBY ST	\$454,000	TALBOT PARK (36)	2	✓			✓
133	E CHARLOTTE ST - TIDEWATER DR - E CITY HALL AV*	\$100,000	TIDEWATER DRIVE INDUSTRIAL (68)	2	✓			✓
134	MALTBY AV - GOFF ST*	\$1,051,000	TIDEWATER DRIVE INDUSTRIAL (68)	2	✓			✓
135	MAY AV - SPRING ST - E ONLEY RD	\$435,000	TIDEWATER DRIVE INDUSTRIAL (68)	2	✓			✓
136	RUFFNER BOX CULVERT	\$4,687,000	TIDEWATER DRIVE INDUSTRIAL (68)	2	✓		✓	
137	THISTLE ST - LEAD ST - SAINT JULIAN AV**	\$13,000	TIDEWATER DRIVE INDUSTRIAL (68)	2	✓			✓
138	E CHARLOTTE ST - TIDEWATER DR - E CITY HALL AV*	\$1,411,000	TIDEWATER-YOUNG PARK (65)	2	✓			✓

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### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
139	E VIRGINIA BEACH - SAINT PAULS BLVD - LINCOLN ST*	\$2,558,000	TIDEWATER-YOUNG PARK (65)	2	✓			✓
140	HAMPTON BLVD - BOWDENS FERRY RD**	\$29,000	WEST 21st STREET (57)	2	✓			✓
141	WEST OCEAN AV - PORTVIEW - 1ST VIEW ST	\$1,038,000	WEST OCEAN VIEW (2)	2	✓			✓
142	10TH VIEW ST - LITTLE BAY AV	\$95,000	WILLOUGHBY (1)	2	✓			✓
143	LEA VIEW AV - 15TH VIEW ST	\$50,000	WILLOUGHBY (1)	2	✓			✓
144	ALFRED LANE	\$3,616,000	WILLOW TERRACE (13)	2	✓		✓	
145	CHESAPEAKE BLVD - VIRGILINA AV - BEACH VIEW ST	\$890,000	WILLOW TERRACE (13)	2	✓			✓
146	E BAYVIEW BLVD - FISHERMAN RD - STURGIS RD	\$234,000	WILLOW TERRACE (13)	2	✓			✓
147	TAYLORS LANE	\$172,000	WILLOW TERRACE (13)	2	✓		✓	
148	CAPE HENRY AV BETWEEN BALLENTINE AND MCKANN	\$400,000	BALLENTINE PARK (50)	3		✓		
149	ROBERTS ROAD DRAINAGE IMPROVEMENTS*	\$275,000	BRAMBLETON (69)	3		✓		
150	SPARTAN VILLAGE	\$7,000,000	BRAMBLETON (69)	3		✓		
151	1300 BLOCK OF CONOGA ST DRAINAGE IMPROVEMENTS	\$725,000	CAMPOSTELLA (89)	3		✓		✓
152	EAST OCEAN VIEW MASTER PLAN & IMPROVEMENTS**	\$360,000	CAPE VIEW (5)	3		✓		
153	2500 BLOCK OF PALMETTO ST DRAINAGE IMPROVEMENTS†	\$400,000	COLEMAN PLACE (49)	3		✓		✓
154	DENVER ST - AZALEA GARDEN WATERSHED	\$906,000	COLEMAN PLACE (49)	3		✓		
155	JUNIPER ST - AZALEA GARDEN WATERSHED	\$600,000	COLEMAN PLACE (49)	3		✓		
156	SEWELLS POINT AND AZALEA GARDEN RD*	\$2,247,000	COLEMAN PLACE (49)	3		✓		
157	ASPIN ST - NORCOVA AVE WATERSHED	\$79,000	COLEMAN PLACE (49)	3		✓		
158	PETERSON DITCH IMPROVEMENTS†	\$150,000	CROMWELL ROAD INDUSTRIAL (74)	3		✓		✓
159	PETERSON DITCH IMPROVEMENTS†	\$150,000	ESTABROOK (47)	3		✓		
160	SEWELLS POINT AND AZALEA GARDEN RD*	\$1,082,000	FOXHALL (48)	3		✓		
161	SEWELLS POINT AND AZALEA GARDEN RD*	\$832,000	INDUSTRIAL PARK (73)	3		✓		
162	SOUTH END OF VILLAGE AVENUE	\$254,000	INDUSTRIAL PARK (73)	3		✓		
163	NORTH END OF VILLAGE AVENUE*	\$238,000	INDUSTRIAL PARK (73)	3		✓		
164	BROOKSIDE COURT AND VILLAGE AVE OUTFALL*	\$279,000	INDUSTRIAL PARK (73)	3		✓		
165	ROBERTS ROAD DRAINAGE IMPROVEMENTS*	\$275,000	LIBERTY-ROBERTS PARK (70)	3		✓		
166	EAST OCEAN VIEW MASTER PLAN & IMPROVEMENTS**	\$360,000	PRETTY LAKE (6)	3		✓		
167	ADDERLY STREET AND WELLMAN STREET	\$100,000	RIVER FORREST (81)	3		✓		
168	SOUTH CAPE HENRY AVENUE AND ASPIN ST DRAINAGE IMPROVEMENTS	\$150,000	RIVER OAKS (75)	3		✓		
169	SOUTH CAPE HENRY AVENUE - NORCOVA AVE WATERSHED	\$37,000	RIVER OAKS (75)	3		✓		
170	NORTH END OF VILLAGE AVENUE*	\$257,000	RIVER OAKS (75)	3		✓		
171	BROOKSIDE COURT AND VILLAGE AVE OUTFALL*	\$202,000	RIVER OAKS (75)	3		✓		
172	EAST OCEAN VIEW MASTER PLAN & IMPROVEMENTS**	\$360,000	ROOSEVELT GARDENS (18)	3		✓		
173	EAST OCEAN VIEW MASTER PLAN & IMPROVEMENTS**	\$360,000	SHORE DRIVE (7)	3		✓		
174	PARKDALE DITCH**	\$50,000	SUBURBAN (33)	3		✓		✓
175	ROBERTS ROAD DRAINAGE IMPROVEMENTS*	\$275,000	TIDEWATER DRIVE INDUSTRIAL (68)	3		✓		
176	PARKDALE DITCH**	\$50,000	WARDS CORNER (25)	3		✓		✓
177	MELLWOOD COURT	\$60,000	EAST NORVIEW (44)	4			✓	✓
178	SOUTH NEWTOWN ROAD	\$148,000	EASTON (80)	4			✓	✓
179	BEAMON RD AT AZALEA GARDEN	\$533,000	NORVIEW (45)	4			✓	✓
180	AVENUE J & MERRITT ST*	\$1,116,000	ROSEMONT (41)	4			✓	✓
181	AVENUE J & MERRITT ST*	\$996,000	SOUTHERN SHOPPING CENTER (24)	4			✓	✓
182	GATES AVENUE DITCH	\$253,000	WEST GHENT (61)	4			✓	✓
183	HARMON STREET / GIFFORD STREET	\$95,000	LARRYMORE (21)	5			✓	
184	GAMAGE COURT	\$240,000	AZALEA (22)	5			✓	

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
185	DANA ST - BALLENTINE BLVD	\$2,124,000	BALLENTINE PARK (50)	5				✓
186	CALVIN CT - HALPRIN DR*	\$17,000	BEL-AIRE (17)	5				✓
187	DITCHES BETWEEN BUFFALO & MEADOW CREEK	\$433,000	BEL-AIRE (17)	5				✓
188	HALPRIN DR - DOMINION AV*	\$30,000	BEL-AIRE (17)	5				✓
189	MEADOW CREEK	\$652,000	BEL-AIRE (17)	5				✓
190	LIGON STREET / PEARL STREET	\$308,000	BERKLEY (90)	5				✓
191	PENDLETON STREET	\$2,115,000	BERKLEY (90)	5				✓
192	STATE STREET	\$86,000	BERKLEY (90)	5				✓
193	CLAIBORNE AVENUE & REEVES	\$834,000	BRAMBLETON (69)	5				✓
194	CORPREW - MARATHON AV	\$54,000	BRAMBLETON (69)	5				✓
195	KIMBALL TERRACE AT TARMAC	\$200,000	BRAMBLETON (69)	5				✓
196	KIMBALL TERRACE EAST OF OHIO CREEK OUTFALL	\$200,000	BRAMBLETON (69)	5				✓
197	OHIO CREEK MANUAL VALVE	\$250,000	BRAMBLETON (69)	5				✓
198	PARK AVENUE / VA BEACH BOULEVARD	\$166,000	BRAMBLETON (69)	5				✓
199	REEVES AVENUE / WILLOUGHBY AVENUE (LYONS)	\$209,000	BRAMBLETON (69)	5				✓
200	BERKLEY - SELDEN AV - WILSON RD*	\$1,474,000	CAMPOSTELLA (89)	5				✓
201	CAMPOSTELLA RD - VERNON DR - MELON ST	\$1,310,000	CAMPOSTELLA (89)	5				✓
202	CONOGA STREET	\$792,000	CAMPOSTELLA (89)	5				✓
203	GREEN LEAF DR - CAMPOSTELLA RD	\$50,000	CAMPOSTELLA (89)	5				✓
204	BERKLEY - SELDEN AV - WILSON RD*	\$320,000	CAMPOSTELLA HEIGHTS (88)	5				✓
205	E INDIAN RIVER RD - POPPLETON ST	\$386,000	CAMPOSTELLA HEIGHTS (88)	5				✓
206	MONTCLAIR AVENUE DITCH	\$408,000	CAMPOSTELLA HEIGHTS (88)	5				✓
207	TIFTON STREET	\$351,000	CHESAPEAKE MANOR (40)	5				✓
208	3425 WESTMINSTER AV (BRANSCOME)	\$246,000	CHESTERFIELD (72)	5				✓
209	KIMBALL TER - WESTMINSTER AV - VICTORIA AV	\$1,329,000	CHESTERFIELD (72)	5				✓
210	WESTMINSTER AV AT BRANSCOME	\$50,000	CHESTERFIELD (72)	5				✓
211	CAPE HENRY AV - WYOMING AV - ARKANSAS AV	\$580,000	COLEMAN PLACE (49)	5				✓
212	COLEMAN PLACE	\$4,928,000	COLEMAN PLACE (49)	5				✓
213	E PRINCESS ANNE RD - RUSH ST - AZALEA GARDEN RD*	\$257,000	COLEMAN PLACE (49)	5				✓
214	GREATER PETERSON ST**	\$2,184,000	COLEMAN PLACE (49)	5				✓
215	LLEWELLYN AVENUE / CONNECTICUT AVENUE	\$283,000	COLONIAL PLACE (53)	5				✓
216	NEAR HOLLY AV	\$200,000	COLONIAL PLACE (53)	5				✓
217	NEW JERSEY AVENUE	\$234,000	COLONIAL PLACE (53)	5				✓
218	NEW JERSEY AVENUE / MAYFLOWER ROAD	\$1,762,000	COLONIAL PLACE (53)	5				✓
219	CULFOR CRESCENT	\$179,000	COMMODORE PARK (10)	5				✓
220	EXECUTIVE DRIVE	\$50,000	COMMODORE PARK (10)	5				✓
221	PARTRIDGE STREET / PHILPOTTS ROAD	\$209,000	CORONADO (42)	5				✓
222	CAPE HENRY AVENUE (NEAR RR TRACKS)	\$1,072,000	CROMWELL ROAD INDUSTRIAL (74)	5				✓
223	CHESAPEAKE BLVD - ARIZONA AV - LAFAYETTE BLVD	\$518,000	CROMWELL ROAD INDUSTRIAL (74)	5				✓
224	GREATER PETERSON ST**	\$966,000	CROMWELL ROAD INDUSTRIAL (74)	5				✓
225	RABY RD / LANCE RD / HARMONY RD DITCHES	\$170,000	CROWN POINT (86)	5				✓
226	MACDONALD RD - PENNINGTON RD*	\$3,481,000	DENBY PARK (38)	5				✓
227	MONTICELLO AVENUE / MARKET STREET	\$6,160,000	DOWNTOWN (59)	5				✓
228	26TH STREET, 27TH STREET / LLEWELLYN AVENUE	\$222,000	EAST 21st STREET-MONTICELLO (58)	5				✓
229	NORVIEW AV DITCH*	\$265,000	EAST NORVIEW (44)	5				✓
230	PICADILLY ST - EDWARD ST - MELLWOOD CT**	\$34,000	EAST NORVIEW (44)	5				✓

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
231	SHADYWOOD ROAD	\$148,000	EAST NORVIEW (44)	5		✓		
232	EDISON AVENUE/EASTON PLACE	\$786,000	EASTON (80)	5		✓		
233	S NEWTOWN RD - NEWARK AV - LYNDHURST AV	\$121,000	EASTON (80)	5				✓
234	49TH STREET OUTFALL†	\$500,000	EDGEWATER-LARCHMONT (37)	5		✓		
235	CAMBRIDGE CRESCENT / CARROLL PLACE	\$628,000	EDGEWATER-LARCHMONT (37)	5		✓		
236	CARROLL PLACE OFF OF JAMESTOWN CRESCENT	\$100,000	EDGEWATER-LARCHMONT (37)	5		✓		
237	HAMPTON BOULEVARD (SOUTH OF LEXAN AVENUE)	\$942,000	EDGEWATER-LARCHMONT (37)	5		✓		
238	JAMESTOWN CRESCENT	\$394,000	EDGEWATER-LARCHMONT (37)	5		✓		
239	MYRTLE PARK IMPROVEMENTS	\$100,000	EDGEWATER-LARCHMONT (37)	5		✓		
240	ROLFE & CATALPA	\$100,000	EDGEWATER-LARCHMONT (37)	5		✓		
241	GLEN AV - ROBIN HOOD RD	\$160,000	ESTABROOK (47)	5				✓
242	GREATER PETERSON ST**	\$260,000	ESTABROOK (47)	5		✓		
243	SEWELLS POINT RD - BEAMON RD - AZALEA GARDEN RD**	\$275,000	ESTABROOK (47)	5		✓		
244	S. CAPE HENRY RR DITCH	\$362,000	FOXHALL (48)	5				✓
245	SEWELLS POINT RD - BEAMON RD - AZALEA GARDEN RD**	\$1,071,000	FOXHALL (48)	5		✓		
246	WOLFE ST - ASHBY ST - ARTHUR CIRCLE*	\$2,908,000	FOXHALL (48)	5		✓		
247	E PRINCESS ANNE RD - RUSH ST - AZALEA GARDEN RD*	\$831,000	INDUSTRIAL PARK (73)	5		✓		
248	KINWOOD AV - E VIRGINIA BEACH BLVD	\$1,146,000	INDUSTRIAL PARK (73)	5		✓		
249	NORFOLK SQUARE	\$75,000	INDUSTRIAL PARK (73)	5				✓
250	EASTON AVENUE	\$500,000	INGLESIDE (83)	5		✓		
251	INGLESIDE	\$269,000	INGLESIDE (83)	5		✓		
252	MANGROVE AV	\$100,000	INGLESIDE (83)	5		✓		
253	PEAKE RD - INGLESIDE RD - RIVERSIDE DR	\$431,000	INGLESIDE (83)	5				✓
254	SCOTT ST - SEAY AV - GATLING AV	\$2,890,000	INGLESIDE (83)	5				✓
255	STAPLETON & WESTMINSTER AVENUE	\$100,000	INGLESIDE (83)	5				✓
256	STONEY POINT SOUTH	\$3,293,000	KEMPSVILLE (79)	5		✓		
257	WELLVILLE STREET (ROUGHTON PONTIAC)	\$191,000	KEMPSVILLE (79)	5		✓		
258	ARMISTEAD BRIDGE RD - GATES AV	\$50,000	LAMBERTS POINT INDUSTRIAL (56)	5				✓
259	WEYANOKE ST - RED GATE AV*	\$33,000	LAMBERTS POINT INDUSTRIAL (56)	5		✓		
260	LISA DRIVE	\$116,000	LARRYMORE (21)	5		✓		
261	BAPAUME AV - SILBERT ROAD	\$2,870,000	LAYFAYETTE (51)	5		✓		
262	BOURBON AVENUE	\$3,038,000	LAYFAYETTE (51)	5				✓
263	MARNE - ARGONNE - BELLEVUE AV	\$2,714,000	LAYFAYETTE (51)	5				✓
264	TIDEWATER DRIVE (FROM BRIDGE TO BRIDGE)	\$2,589,000	LAYFAYETTE (51)	5				✓
265	E PRINCESS ANNE RD - BAYNE AV - MERRIMAC AV	\$58,000	LIBERTY-ROBERTS PARK (70)	5				✓
266	E VIRGINIA BEACH BLVD - BELLMORE AV - MYRTLE AV	\$550,000	LIBERTY-ROBERTS PARK (70)	5				✓
267	MIDDLE TOWN ARCH	\$758,000	LIBERTY-ROBERTS PARK (70)	5				✓
268	COURTNEY - CARONA AV - WALL ST	\$2,037,000	LINDENWOOD (67)	5				✓
269	LINDENWOOD AV	\$692,000	LINDENWOOD (67)	5				✓
270	ABC DEAD ENDS	\$100,000	NAVAL BASE (26)	5		✓		
271	HAMPTON BOULEVARD	\$234,000	NAVAL BASE (26)	5		✓		
272	WILLOUGHBY	\$3,616,000	NAVAL BASE (26)	5		✓		
273	NORVA PARK - E KENMORE DR - SUBURBAN PKWY**	\$2,012,000	NAVAL BASE ROAD (39)	5				✓
274	LYNNBROOK DR - LYNNBROOK CT	\$3,789,000	NORTH CAMELLIA (19)	5				✓
275	BRENTWOOD DITCH	\$1,150,000	NORTH CHESAPEAKE BLVD. (15)	5				✓
276	CHESAPEAKE BOULEVARD	\$166,000	NORTH CHESAPEAKE BLVD. (15)	5				✓

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
277	NORTH OF BANCER RD - SOUTH OF LEONARD RD	\$50,000	NORTH CHESAPEAKE BLVD. (15)	5				✓
278	OLD OCEAN VIEW - BANCER RD**	\$15,000	NORTH CHESAPEAKE BLVD. (15)	5				✓
279	WESTCLIFF DR - E LITTLE CREEK RD - DOVERCOURT RD**	\$154,000	NORTH CHESAPEAKE BLVD. (15)	5				✓
280	AZALEA GARDEN ROAD (SOUTH OF MILITARY HIGHWAY)	\$339,000	NORVELLA (46)	5				✓
281	MILITARY HIGHWAY CULVERTS	\$128,000	NORVELLA (46)	5				✓
282	NORVELLA AV - JANET DR	\$50,000	NORVELLA (46)	5				✓
283	NORVIEW AV DITCH*	\$128,000	NORVELLA (46)	5				✓
284	WAYCROSS ROAD DITCH	\$128,000	NORVELLA (46)	5				✓
285	EAST NORVIEW NEIGHBORHOOD	\$3,421,000	NORVIEW (45)	5				✓
286	ELMHURST NEIGHBORHOOD DITCHES & DRIVEWAY PIPES	\$2,016,000	NORVIEW (45)	5				✓
287	HERBERT ST - KENNEBECK AV - ELMHURST AV	\$403,000	NORVIEW (45)	5				✓
288	NORVELLA AVENUE	\$87,000	NORVIEW (45)	5				✓
289	SEWELLS POINT RD - BEAMON RD - AZALEA GARDEN RD**	\$674,000	NORVIEW (45)	5				✓
290	SOUTH AVENUE	\$271,000	NORVIEW (45)	5				✓
291	TEXAS AV - HUMBOLDT ST - SEWELLS POINT RD	\$151,000	NORVIEW (45)	5				✓
292	OLD OCEANVIEW ROAD / CREAMER ROAD	\$308,000	OCEANAIR (12)	5				✓
293	HULL VIEW AV - E BALVIEW AV - CHESAPEAKE ST**	\$1,244,000	OCEANVIEW (4)	5				✓
294	30TH STREET / LLEWELLYN AVENUE	\$1,743,000	PARK PLACE (52)	5				✓
295	BRICKELL ROAD	\$422,000	POPLAR HALLS (84)	5				✓
296	SHOREWOOD COURT	\$200,000	RIVER FORREST (81)	5				✓
297	E PRINCESS ANNE RD - MILTATE AV - FLEETWOOD AV	\$646,000	RIVER OAKS (75)	5				✓
298	KILMER LANE RR DITCH	\$1,143,000	RIVER OAKS (75)	5				✓
299	S. CAPE HENRY RR DITCH (KERREY AV TO NELMS AV)	\$640,000	RIVER OAKS (75)	5				✓
300	WOLFE ST - ASHBY ST - ARTHUR CIRCLE*	\$1,364,000	RIVER OAKS (75)	5				✓
301	CALVIN CT - HALPRIN DR*	\$65,000	ROOSEVELT GARDENS (18)	5				✓
302	HALPRIN DR - DOMINION AV*	\$48,000	ROOSEVELT GARDENS (18)	5				✓
303	PICADILLY ST - EDWARD ST - MELLWOOD CT**	\$957,000	ROSEMONT (41)	5				✓
304	ALEXANDER ST	\$1,040,000	SEWELLS GARDENS (43)	5				✓
305	PICADILLY SQUARE	\$530,000	SEWELLS GARDENS (43)	5				✓
306	PICADILLY ST - EDWARD ST - MELLWOOD CT**	\$564,000	SEWELLS GARDENS (43)	5				✓
307	QUAIL / PARTRIDGE VALLEY GUTTER	\$649,000	SEWELLS GARDENS (43)	5				✓
308	BAKER STREET	\$434,000	SEWELLS POINT (27)	5				✓
309	SHORE DR - WISTERIA PL - DUNNING RD	\$140,000	SHORE DRIVE (7)	5				✓
310	TURNER RD	\$50,000	SHORE DRIVE (7)	5				✓
311	FISHERMANS RD - JENIFER ST - RADNOR RD	\$55,000	SNUG HARBOR (14)	5				✓
312	KEARNEY RD - PORTAL RD	\$61,000	SNUG HARBOR (14)	5				✓
313	CAMELLIA SHORES	\$203,000	SOUTH CAMELLIA (20)	5				✓
314	SHORE DR (LITTLE CREEK TO HEUTTE DR) DITCH	\$525,000	SOUTH CAMELLIA (20)	5				✓
315	LITTLE CREEK ROAD / TIDEWATER DRIVE	\$9,855,000	SOUTHERN SHOPPING CENTER (24)	5				✓
316	MACDONALD RD - PENNINGTON RD*	\$301,000	SOUTHERN SHOPPING CENTER (24)	5				✓
317	OLD OCEAN VIEW - BANCER RD**	\$459,000	SOUTHERN SHOPPING CENTER (24)	5				✓
318	WESTCLIFF DR - E LITTLE CREEK RD - DOVERCOURT RD**	\$11,000	SOUTHERN SHOPPING CENTER (24)	5				✓
319	NORTH SHORE RD - GRANBY ST**	\$1,768,000	SUBURBAN (33)	5				✓
320	NORVA PARK - E KENMORE DR - SUBURBAN PKWY**	\$130,000	SUBURBAN (33)	5				✓
321	ARMFIELD CIRCLE	\$437,000	SUSSEX (32)	5				✓
322	BRADFORD AVENUE	\$302,000	SUSSEX (32)	5				✓

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
323	HARITON COURT	\$277,000	SUSSEX (32)	5		✓		
324	NEWPORT - GLOUCESTER AV	\$62,000	SUSSEX (32)	5		✓		
325	TERMINAL BOULEVARD (DITCH)	\$203,000	SUSSEX (32)	5		✓		
326	WEST LITTLE CREEK - GRANTHAM RD*	\$43,000	SUSSEX (32)	5		✓		
327	CATHERINE & CARLISLE	\$500,000	TALBOT PARK (36)	5		✓		
328	RIVER ROAD	\$39,000	TALBOT PARK (36)	5		✓		
329	MEADS ROAD	\$86,000	TITUSTOWN (31)	5		✓		
330	WEST LITTLE CREEK - GRANTHAM RD*	\$34,000	TITUSTOWN (31)	5		✓		
331	NORTH SHORE RD - GRANBY ST**	\$738,000	WARDS CORNER (25)	5		✓		
332	NORVA PARK - E KENMORE DR - SUBURBAN PKWY**	\$62,000	WARDS CORNER (25)	5		✓		
333	YORKTOWN DITCH	\$350,000	WARDS CORNER (25)	5		✓		
334	NORTH OF 21ST STREET	\$530,000	WEST 21st STREET (57)	5		✓		
335	VALVE IN BOX (GREENWAY COURT)	\$4,759,000	WEST GHENT (61)	5		✓		
336	WEYANOE ST - RED GATE AV*	\$125,000	WEST GHENT (61)	5		✓		
337	EAST OCEAN VIEW	\$2,174,000	WEST OCEAN VIEW (2)	5		✓		
338	MASON CREEK OUTFALL	\$3,616,000	WEST OCEAN VIEW (2)	5		✓		
339	9TH VIEW OUTFALL	\$3,616,000	WILLOUGHBY (1)	5		✓		
340	HULL VIEW AV - E BALVIEW AV - CHESAPEAKE ST**	\$430,000	WILLOW TERRACE (13)	5		✓		
341	OUTFALL ID L10638&41	\$134,000	AZALEA (22)	6	✓			
342	OUTFALL ID M10644*	\$303,000	AZALEA (22)	6	✓			
343	OUTFALL ID F18661	\$1,339,000	BERKLEY (90)	6	✓			
344	OUTFALL ID F15530*	\$1,031,000	BRAMBLETON (69)	6	✓			
345	OUTFALL ID H14148**	\$1,389,000	BRAMBLETON (69)	6	✓			
346	OUTFALL ID H17132	\$66,000	CAMPOSTELLA HEIGHTS (88)	6	✓			
347	OUTFALL ID K0546**	\$442,000	CAPE VIEW (5)	6	✓			
348	OUTFALL ID E101	\$759,000	COLONIAL PLACE (53)	6	✓			
349	OUTFALL ID E111	\$1,142,000	COLONIAL PLACE (53)	6	✓			
350	OUTFALL IDS E1123&E1131	\$1,142,000	COLONIAL PLACE (53)	6	✓			
351	OUTFALL ID E11404**	\$1,269,000	COLONIAL PLACE (53)	6	✓			
352	OUTFALL ID F111	\$413,000	COLONIAL PLACE (53)	6	✓			
353	OUTFALL ID F1110	\$928,000	COLONIAL PLACE (53)	6	✓			
354	OUTFALL ID G04338	\$1,089,000	COMMODORE PARK (10)	6	✓			
355	OUTFALL ID G04362	\$752,000	COMMODORE PARK (10)	6	✓			
356	OUTFALL ID E143699*	\$4,799,000	EAST 21st STREET-MONTICELLO (58)	6	✓			
357	OUTFALL ID E143699*	\$1,707,000	EAST GHENT (63)	6	✓			
358	OUTFALL ID N164300*	\$30,000	EASTON (80)	6	✓			
359	OUTFALL ID N16510**	\$2,297,000	EASTON (80)	6	✓			
360	OUTFALL ID C099	\$212,000	EDGEWATER-LARCHMONT (37)	6	✓			
361	OUTFALL ID I1180	\$470,000	ESTABROOK (47)	6	✓			
362	OUTFALL ID D14124	\$1,467,000	GHENT (64)	6	✓			
363	OUTFALL ID D14860	\$1,821,000	GHENT (64)	6	✓			
364	OUTFALL ID E143699*	\$225,000	GHENT (64)	6	✓			
365	OUTFALL ID N15799	\$338,000	GLENROCK (85)	6	✓			
366	OUTFALL ID N164300*	\$347,000	GLENROCK (85)	6	✓			
367	OUTFALL ID N16510**	\$60,000	GLENROCK (85)	6	✓			
368	OUTFALL ID F15530*	\$708,000	HUNTERSVILLE (66)	6	✓			

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
369	OUTFALL IDS N1388&N1391*	\$12,000	JANAF-MILITARY CIRCLE (87)	6	✓			
370	OUTFALL ID N16510**	\$14,000	JANAF-MILITARY CIRCLE (87)	6	✓			
371	OUTFALL ID N16510**	\$5,811,000	KEMPSVILLE (79)	6	✓			
372	OUTFALL ID O1350**	\$114,000	KEMPSVILLE (79)	6	✓			
373	OUTFALL ID O142	\$172,000	KEMPSVILLE (79)	6	✓			
374	OUTFALL ID M121003*	\$36,000	LAKE TAYLOR (76)	6	✓			
375	OUTFALL IDS M1325&M133*	\$337,000	LAKE TAYLOR (76)	6	✓			
376	OUTFALL IDS M1325&M133*	\$376,000	LAKE TERRACE (77)	6	✓			
377	OUTFALL IDS N1388&N1391*	\$3,992,000	LAKE TERRACE (77)	6	✓			
378	OUTFALL ID N14200*	\$1,931,000	LAKE TERRACE (77)	6	✓			
379	OUTFALL ID G1124	\$1,808,000	LAKEWOOD (35)	6	✓			
380	OUTFALL ID G118	\$218,000	LAKEWOOD (35)	6	✓			
381	OUTFALL ID G1190	\$224,000	LAYFAYETTE (51)	6	✓			
382	OUTFALL ID H12148	\$782,000	LAYFAYETTE (51)	6	✓			
383	OUTFALL ID H14148**	\$363,000	LINDENWOOD (67)	6	✓			
384	OUTFALL ID N14200*	\$137,000	MAPLE HALL-HOLLYWOOD (78)	6	✓			
385	OUTFALL ID O1350**	\$953,000	MAPLE HALL-HOLLYWOOD (78)	6	✓			
386	OUTFALL ID D14860	\$3,681,000	MEDICAL CENTER (60)	6	✓			
387	OUTFALL ID G041**	\$184,000	MERRIMAC PARK (9)	6	✓			
388	OUTFALL ID G041**	\$67,000	NAVAL BASE (26)	6	✓			
389	OUTFALL ID G0838*	\$40,000	NAVAL BASE ROAD (39)	6	✓			
390	OUTFALL ID N06200**	\$429,000	NORTH CAMELLIA (19)	6	✓			
391	OUTFALL ID D11390	\$1,854,000	NORTH COLLEY (54)	6	✓			
392	OUTFALL ID E11404**	\$2,586,000	NORTH COLLEY (54)	6	✓			
393	OUTFALL ID C0734	\$2,233,000	NORTH SHORE (30)	6	✓			
394	OUTFALL ID D07240	\$1,653,000	NORTH SHORE (30)	6	✓			
395	OUTFALL ID G041**	\$392,000	NORTHSIDE (11)	6	✓			
396	OUTFALL ID G05302	\$1,650,000	NORTHSIDE (11)	6	✓			
397	OUTFALL ID H042031**	\$2,235,000	NORTHSIDE (11)	6	✓			
398	OUTFALL ID H042031**	\$514,000	NORTHSIDE (11)	6	✓			
399	OUTFALL ID UNK2*	\$630,000	NORTHSIDE (11)	6	✓			
400	OUTFALL ID M10644*	\$16,000	NORVELLA (46)	6	✓			
401	OUTFALL ID G065004	\$277,000	OAKDALE FARMS (16)	6	✓			
402	OUTFALL ID H063102	\$321,000	OAKDALE FARMS (16)	6	✓			
403	OUTFALL ID H063422	\$80,000	OAKDALE FARMS (16)	6	✓			
404	OUTFALL ID G041**	\$28,000	OCEANAIR (12)	6	✓			
405	OUTFALL ID H042031**	\$1,063,000	OCEANAIR (12)	6	✓			
406	OUTFALL ID H042031**	\$692,000	OCEANAIR (12)	6	✓			
407	OUTFALL ID H042031**	\$44,000	OCEANVIEW (4)	6	✓			
408	OUTFALL ID J03311*	\$921,000	OCEANVIEW (4)	6	✓			
409	OUTFALL ID K0546**	\$812,000	OCEANVIEW (4)	6	✓			
410	OUTFALL ID G041**	\$12,428,000	PAMLICO (8)	6	✓			
411	OUTFALL ID UNK2*	\$133,000	PAMLICO (8)	6	✓			
412	OUTFALL ID E11404**	\$6,828,000	PARK PLACE (52)	6	✓			
413	OUTFALL ID F1141	\$3,086,000	PARK PLACE (52)	6	✓			
414	OUTFALL ID G041**	\$24,000	PINEWELL (3)	6	✓			

## Appendix F

### Priority Drainage Areas and Projects

(sorted by Class then Planning District Name)

Line	Project or Drainage Area Name	Cost Estimate	Planning District Name (Number)	Class	High DA Score	Priority Project	CIP	Complaint Area
415	OUTFALL ID H042031**	\$79,000	PINEWELL (3)	6	✓			
416	OUTFALL ID I024000&013*	\$368,000	PINEWELL (3)	6	✓			
417	OUTFALL ID L1529	\$177,000	POPLAR HALLS (84)	6	✓			
418	OUTFALL ID L1532	\$90,000	POPLAR HALLS (84)	6	✓			
419	OUTFALL ID L1557	\$109,000	POPLAR HALLS (84)	6	✓			
420	OUTFALL ID L16400	\$631,000	RIVER FORREST (81)	6	✓			
421	OUTFALL ID L16500	\$95,000	RIVER FORREST (81)	6	✓			
422	OUTFALL ID N16510**	\$25,000	RIVER FORREST (81)	6	✓			
423	OUTFALL ID L12128	\$383,000	RIVER OAKS (75)	6	✓			
424	OUTFALL ID M121003*	\$1,014,000	RIVER OAKS (75)	6	✓			
425	OUTFALL ID I09500	\$50,000	SEWELLS GARDENS (43)	6	✓			
426	OUTFALL ID UNK11	\$64,000	SEWELLS POINT (27)	6	✓			
427	OUTFALL ID N06200**	\$62,000	SHORE DRIVE (7)	6	✓			
428	OUTFALL ID N06556**	\$39,000	SHORE DRIVE (7)	6	✓			
429	OUTFALL ID L081808	\$490,000	SOUTH CAMELLIA (20)	6	✓			
430	OUTFALL ID M06181	\$535,000	SOUTH CAMELLIA (20)	6	✓			
431	OUTFALL ID M071531	\$437,000	SOUTH CAMELLIA (20)	6	✓			
432	OUTFALL ID M071562	\$232,000	SOUTH CAMELLIA (20)	6	✓			
433	OUTFALL ID N06200**	\$39,000	SOUTH CAMELLIA (20)	6	✓			
434	OUTFALL ID N06556**	\$450,000	SOUTH CAMELLIA (20)	6	✓			
435	OUTFALL ID G0810	\$421,000	SUBURBAN (33)	6	✓			
436	OUTFALL ID G0825	\$551,000	SUBURBAN (33)	6	✓			
437	OUTFALL ID G0838*	\$1,700,000	SUBURBAN (33)	6	✓			
438	OUTFALL ID H08110	\$78,000	SUBURBAN (33)	6	✓			
439	OUTFALL ID F071	\$535,000	SUSSEX (32)	6	✓			
440	OUTFALL IDS E09100&1031	\$373,000	TALBOT PARK (36)	6	✓			
441	OUTFALL ID F09203	\$36,000	TALBOT PARK (36)	6	✓			
442	OUTFALL ID F09500	\$392,000	TALBOT PARK (36)	6	✓			
443	OUTFALL ID F10433	\$56,000	TALBOT PARK (36)	6	✓			
444	OUTFALL ID G0868	\$23,000	TALBOT PARK (36)	6	✓			
445	OUTFALL ID H14148**	\$2,611,000	TIDEWATER DRIVE INDUSTRIAL (68)	6	✓			
446	OUTFALL ID E143699*	\$1,151,000	TIDEWATER-YOUNG PARK (65)	6	✓			
447	OUTFALL ID E11404**	\$3,207,000	WEST 21st STREET (57)	6	✓			
448	OUTFALL ID G041**	\$10,427,000	WEST OCEAN VIEW (2)	6	✓			
449	OUTFALL ID H021028	\$620,000	WEST OCEAN VIEW (2)	6	✓			
450	OUTFALL IDS I024000&013*	\$6,242,000	WEST OCEAN VIEW (2)	6	✓			
451	OUTFALL ID D016	\$560,000	WILLOUGHBY (1)	6	✓			
452	OUTFALL ID F0181	\$1,048,000	WILLOUGHBY (1)	6	✓			
453	OUTFALL ID H042031**	\$1,235,000	WILLOW TERRACE (13)	6	✓			
454	OUTFALL ID J03311*	\$39,000	WILLOW TERRACE (13)	6	✓			
455	OUTFALL ID K0546**	\$933,000	WILLOW TERRACE (13)	6	✓			

\* Priority project area crosses planning district boundaries.

\*\* Priority project area crosses PD and watershed group boundaries.

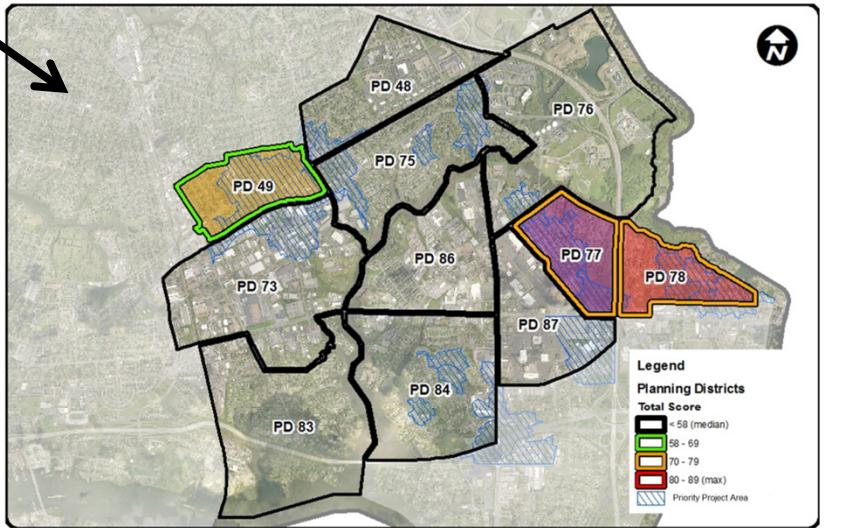
† Construction pending

# APPENDIX G

# City-Wide Drainage Master Plan

**Watershed Map:** illustrates the grouping of Planning Districts by watershed. Planning Districts with the top three scores ranked as most severe are shown filled with magenta (#1 ranked PD), red (#2 ranked PD), and orange (#3 ranked PD). The color of the PD outline corresponds to the overall PD score as shown in the legend.

**Estimated Improvement Costs by Planning District:** a table with cost breakdown into public, private, state, federal, and total improvement costs for each planning district as well as the name and cost of priority project areas.



Estimated Planning District Improvement Costs and Priority Areas						
Planning District Number	Name	Land Area (ac)	Drainage Improvement Cost (\$ in thousands)			Priority Project Area (Est. Cost \$ in thousands)
			Public	Private	State	
77	Lake Terrace	221	\$6,733	--	--	\$6,733
78	Maple Hall - Hollywood	219	\$3,722	--	--	\$3,722
49	Coleman Place	242	\$7,785	--	--	\$7,785
75	River Oaks	438	\$5,047	--	--	\$5,047
87	Janaf - Military Circle	323	\$2,391	\$359	--	\$2,750
48	Foxhall	355	\$4,748	--	--	\$4,748
84	Poplar Hall	456	\$2,101	\$78	--	\$2,179
83	Ingleiside	492	\$3,332	--	--	\$3,332
73	Industrial Park	631	\$3,693	\$25	--	\$3,718
76	Lake Taylor	687	\$2,989	\$419	--	\$3,408
86	Crown Point	397	\$2,950	\$46	--	\$2,996

\*Priority project area crosses planning district (PD) boundaries

**Watershed Description:** a short description of the watershed including drainage point and land use.

## WS #7 Broad Creek Watershed

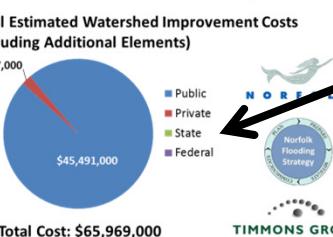
### Watershed Description:

The Broad Creek Watershed is located in the southeastern portion of the City of Norfolk. It drains south to the Elizabeth River by way of Broad Creek. The watershed is made up of residential, commercial, and industrial land uses.

The map to the left depicts a total of eleven planning districts that are located within the general watershed area.

### Planning District Prioritization Criteria

Planning District Number	Flooding/Maint. Complaints	CIP Project Locations	Minimal System Capacity	Not Designed for 10yr Storm	Poor/Old Infrastructure	Evacuation Routes	Critical Infrastructure	Business Development Areas	Planning District Score
77	VV	VV	VV	VV	V	V	V	V	78 1st Ranked
78	VV	VV	VV	VV	V	V	V	V	73 2nd Ranked
49	VV	VV	V	VV	V	V	V	V	61 3rd Ranked
75	VV	V	V	VV	V	V	V	V	57
87	VV	V	V	VV	V	V	V	V	52
48	VV	V	V	VV	V	V	V	V	52
84	V	V	VV	VV	V	V	V	V	46
83	VV	V	V	VV	V	V	V	V	44
73	VV	VV	VV	VV	V	V	V	V	42
76	V	V	VV	VV	V	V	V	V	36
86	V	V	VV	VV	V	V	V	V	34



### Cost Analysis:

The City of Norfolk is divided into Planning Districts (PDs), which are geographic areas which generally group neighborhoods or areas of similar land use. These districts are used by the City for zoning and long-range planning purposes. Therefore, it was deemed appropriate to provide drainage improvement costs at the PD level. Since drainage area boundaries do not correspond to PD boundaries, drainage area scores were aggregated at the PD level based on the contributing drainage areas within each Planning District.

To estimate the total cost of drainage improvement within the City of Norfolk as well as at a Planning District level, Timmons Group divided improvement projects into 2 categories:

1. Category One: problem areas can be addressed by retrofitting the storm sewer system and curb drop inlets. To develop construction cost projections, previous drainage projects of a similar nature were used to develop a cost per linear foot of roadway and included contingencies for design, permitting, and land acquisition. Timmons Group estimates \$400 per linear foot for these category one projects.
2. Category Two: Drainage area improvements must be addressed by regrading the road and providing off-site drainage improvements, in addition to adding storm sewer and curb drop inlets. The cost estimate for this type of project is estimated at \$900 per linear foot.

The resulting cost to make improvements throughout the entire City is estimated at \$548.9M. The City would be responsible for 93.3% or \$512.0M and state, federal, and private entities would account for the remaining 6.7% of the cost. These costs include items required to improve the drainage system and roadway, as necessary, along 1/6 of the approximate 900 qualifying road miles in the City.

However, other costs that commonly accrue in conjunction with utility improvement projects have not yet been considered. Additional cost elements for necessary water line replacement and optional streetscape elements were also added. The cost of these additional items ranges from \$126 to \$303 per linear foot. Inclusion of these additional elements could increase the overall costs by up to 40%, bringing the total estimated cost to between \$681.2M and \$768.7M.

The City contracted with Timmons Group to conduct an analysis that identified areas throughout the City of Norfolk requiring stormwater infrastructure improvements based on readily available complaint information and the extent, capacity, and condition of the existing infrastructure. Next, budgetary costs were developed and priority project areas identified for each planning district to optimize the use of City funds to reduce precipitation flooding.

### Analyzing each Drainage Area:

The first step in this project was to identify drainage areas within the City, or the geographical areas where water from a rain event drains to a single point, usually an outfall to a river, lake, wetland, or bay. A total of 253 drainage areas in watersheds throughout the City were identified and analyzed in this study.

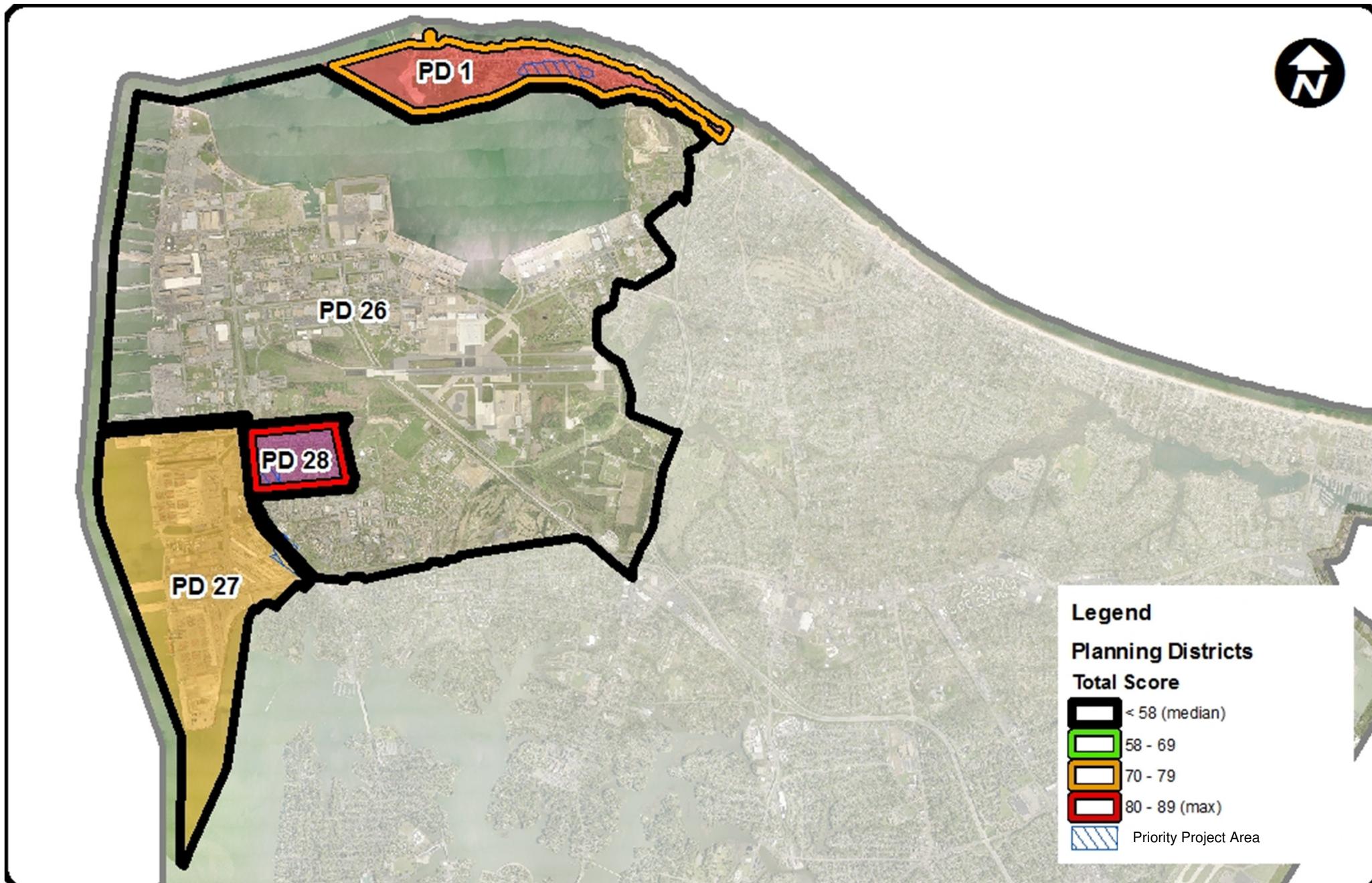
A scoring system was developed based on eight (8) criteria in order to quantitatively rank each area on technical merits. Each drainage area was evaluated based on the following criteria:

1. Identified Problem Areas: areas of systemic and/or chronic flooding as well as locations requiring intense regular maintenance. High scores were assigned to drainage areas with areas of severe flooding or maintenance needs.
2. Locations of Completed or Planned Capital Improvement Program (CIP) Projects: those projects chosen and budgeted by the City. Scores were assigned to drainage areas based on the number and type of CIP projects. High scores were assigned to areas with a larger number of planned activities, especially retrofits and upgrades.
3. Existing Infrastructure Capacity: the size and extent of existing pipes and ditches to convey stormwater was calculated and then divided by the developed portion of the drainage area to determine the capacity per acre of developed area. High scores were assigned to drainage areas with minimal capacity.
4. Portion of the Drainage Area Designed to Convey a 10yr Storm: the 10yr storm – or 5.5 inches of rain in 24 hrs – is a design standard goal that provides a level of flooding protection only currently provided to highways and some major roads and recently developed areas in Norfolk. Higher scores were assigned to drainage areas with increasing portions of infrastructure not designed to convey a 10yr storm.
5. Infrastructure Condition: the condition of the existing infrastructure was based on the inventory data (good, fair, poor) or the age of the pipe. High scores were given to drainage areas with older infrastructure in poor condition.

Drainage areas that scored in the top 50% - which indicates that they are in most need of improvement – were subjected to three additional criteria:

1. Road Classification: a road category breakdown was used to identify drainage areas with major roads that if flooded, may impact provision of emergency services or evacuation. High scores were assigned to drainage areas with a larger portion of major roads.
2. Critical Infrastructure: fire and police stations as well as hospitals are considered critical infrastructure. Higher scores were given to drainage areas with more of these facilities located further downstream in the drainage area.
3. Presence of Business Development Focus Areas: include enterprise zones, economic districts, or business and technology parks that if easily flooded may be more difficult to develop. High scores were given to drainage areas with larger portions covered by business development focus areas.

The portion of a planning district to be improved – ranging from 25% to 85% – increases with increasing score and will address, at a minimum, all previously identified problem areas.



# WS #1 Willoughby Bay Watershed

## Watershed Description:

The Willoughby Bay Watershed is located in the northwestern tip of the City of Norfolk. It drains north to the Chesapeake Bay by way of Mason Creek. The watershed encompasses the naval base and some surrounding residential neighborhoods .

The map to the left depicts a total of four planning districts that are located within the general watershed area.

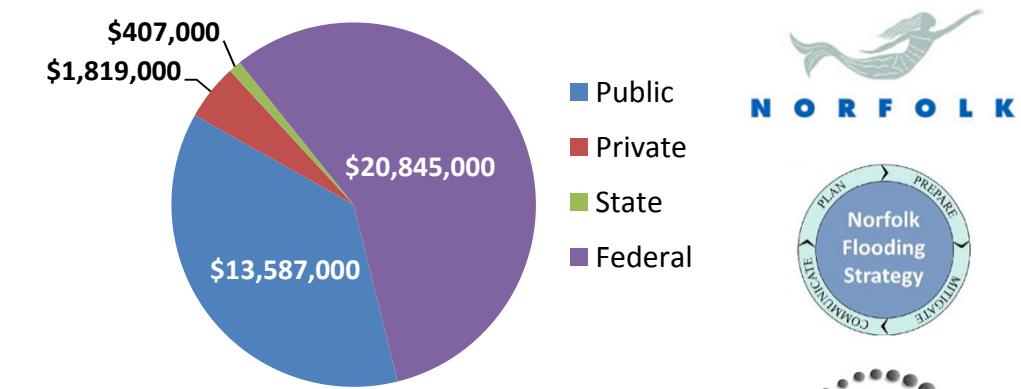
## Planning District Prioritization Criteria

## Estimated Planning District Improvement Costs and Priority Areas

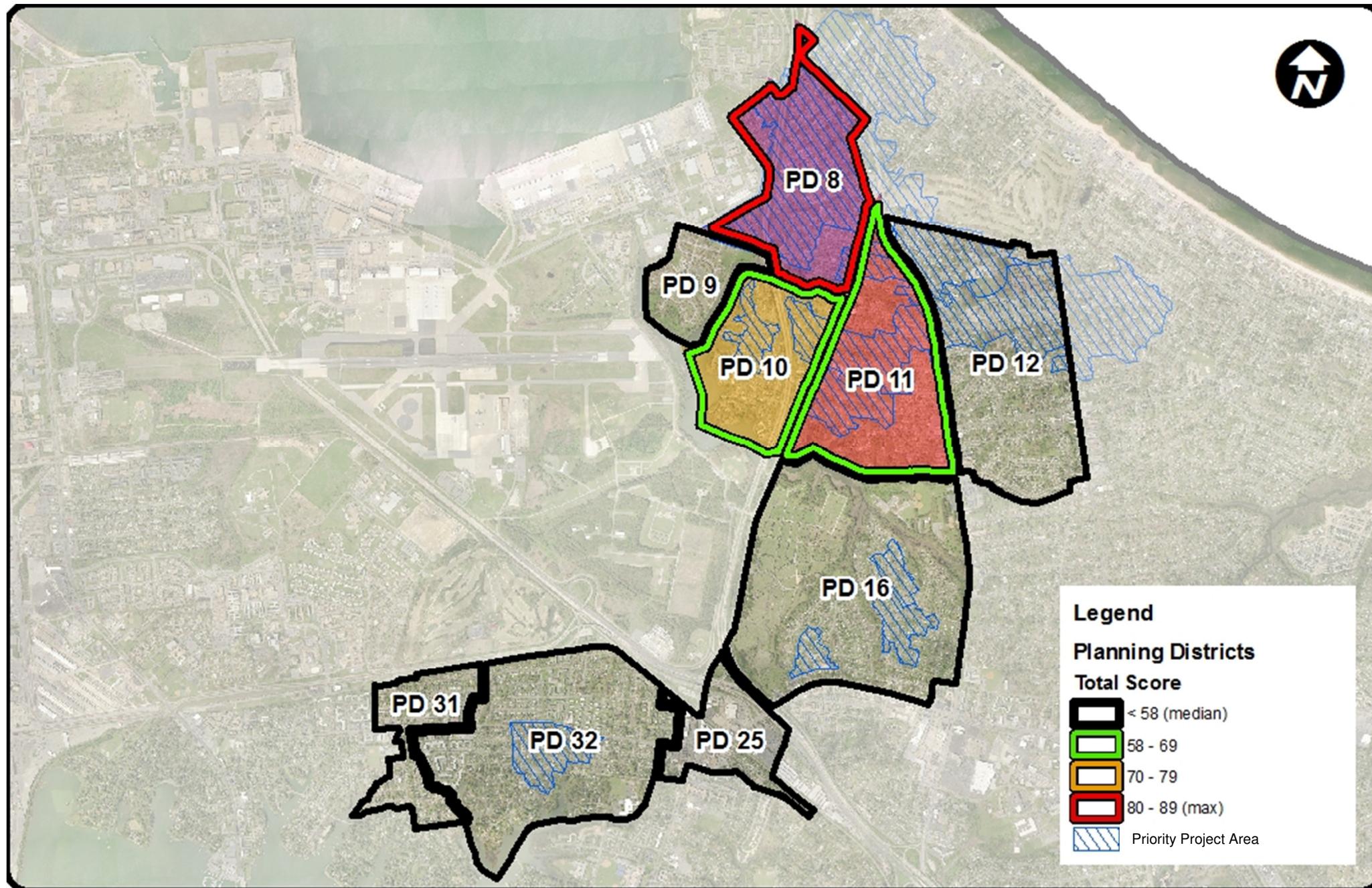
Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
28	Glenwood Park	177	\$4,523	\$351	--	\$546	\$5,420	\$1,399 - \$2,321	Rogers Avenue (\$314)
1	Willoughby	302	\$6,282	--	--	--	\$6,282	\$1,1661 - \$2,835	10th View S/Little Bay Ave (\$95)
27	Sewells point	774	\$191	\$1,438	--	\$1,891	\$3,520	\$880 - \$1,401	Baker St (\$434)
26	Naval Base	4,418	\$2,591	\$30	\$407	\$18,408	\$21,436	\$5,492 - \$9,024	

\* Priority project area crosses planning district (PD) boundaries

## Total Estimated Watershed Improvement Costs (including Additional Elements)



**Total Cost: \$52,239,000**



#### Estimated Planning District Improvement Costs and Priority Areas

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
8	Pamlico	247	\$11,785	--	--	\$42	\$11,827	\$3,160 - \$5,457	Granby St (Bayview Blvd & Bay Av)* (\$403)
11	Northside	261	\$7,324	--	--	--	\$7,324	\$1,818 - \$2,867	Granby St (Bayview Blvd & Bay Av)* (\$403)
10	Commodore Park	151	\$2,953	--	--	--	\$2,953	\$774 - \$1,306	Granby St (Bayview Blvd & Bay Av)* (\$403)
16	Oakdale Farms	492	\$4,001	--	--	--	\$4,001	\$1,041 - \$1,743	Burksdale Rd/Dixie Dr/Diggs Rd (\$553)
32	Sussex	357	\$3,536	--	--	--	\$3,536	\$964 - \$1,701	Restmere Rd/W Little Creek Rd (\$144)
25	Wards Corner	114	\$1,522	--	--	--	\$1,522	\$399 - \$673	
12	Oceanair	360	\$3,060	\$78	--	--	\$3,138	\$863 - \$1,539	Tidwater Dr/Old Oceanview Rd (\$160)
9	Merrimac Park	79	\$420	\$378	--	\$37	\$835	\$231 - \$414	
31	Titustown	110	\$1,082	--	--	--	\$1,082	\$311 - \$580	

\* Priority project area crosses planning district (PD) boundaries

## WS #2 Mason Creek Watershed

### Watershed Description:

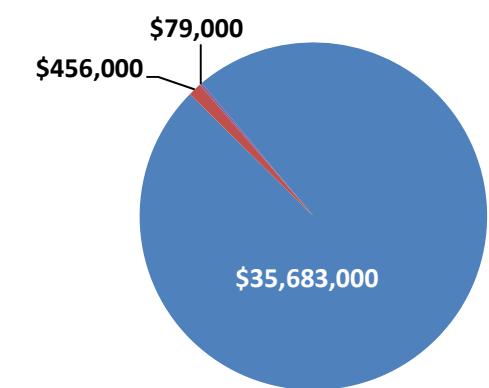
The Mason Creek Watershed is located in the northern portion of the City of Norfolk. It drains by way of Oastes and Mason Creeks, north to the Chesapeake Bay. The watershed is mostly made up of residential neighborhoods and also includes golf courses, parks, and the Forest Lawn Cemetery.

The map to the left depicts a total of nine planning districts that are located within the general watershed area.

### Planning District Prioritization Criteria

Planning District Number	Flooding/Maint. Complaints	CLP Project Locations	Minimal System Capacity	Not Designed for 10yr Storm	Poor/Old Infrastructure	Evacuation Routes	Critical Infrastructure	Business Development Areas	Planning District Score
8	vv	vvv	v	vvv	vvv	vvv	vv	vvv	87
11	vv	v	vvv	vvv	v	vv	v	vvv	68
10	vv	v	vvv	vvv	v	v	v	v	67
16	vv	v	vvv	vvv	v	v	v	v	55
32	vv	v	vv	vvv	v	v	v	v	54
25	vv	v	vvv	vvv	v	v	v	v	54
12	v	vv	vvv	vvv	v	v	v	vv	51
9			vv	v					40
31	v	v	v	vvv	v	v	v		38

### Total Estimated Watershed Improvement Costs (including Additional Elements)



Total Cost: \$52,497,000

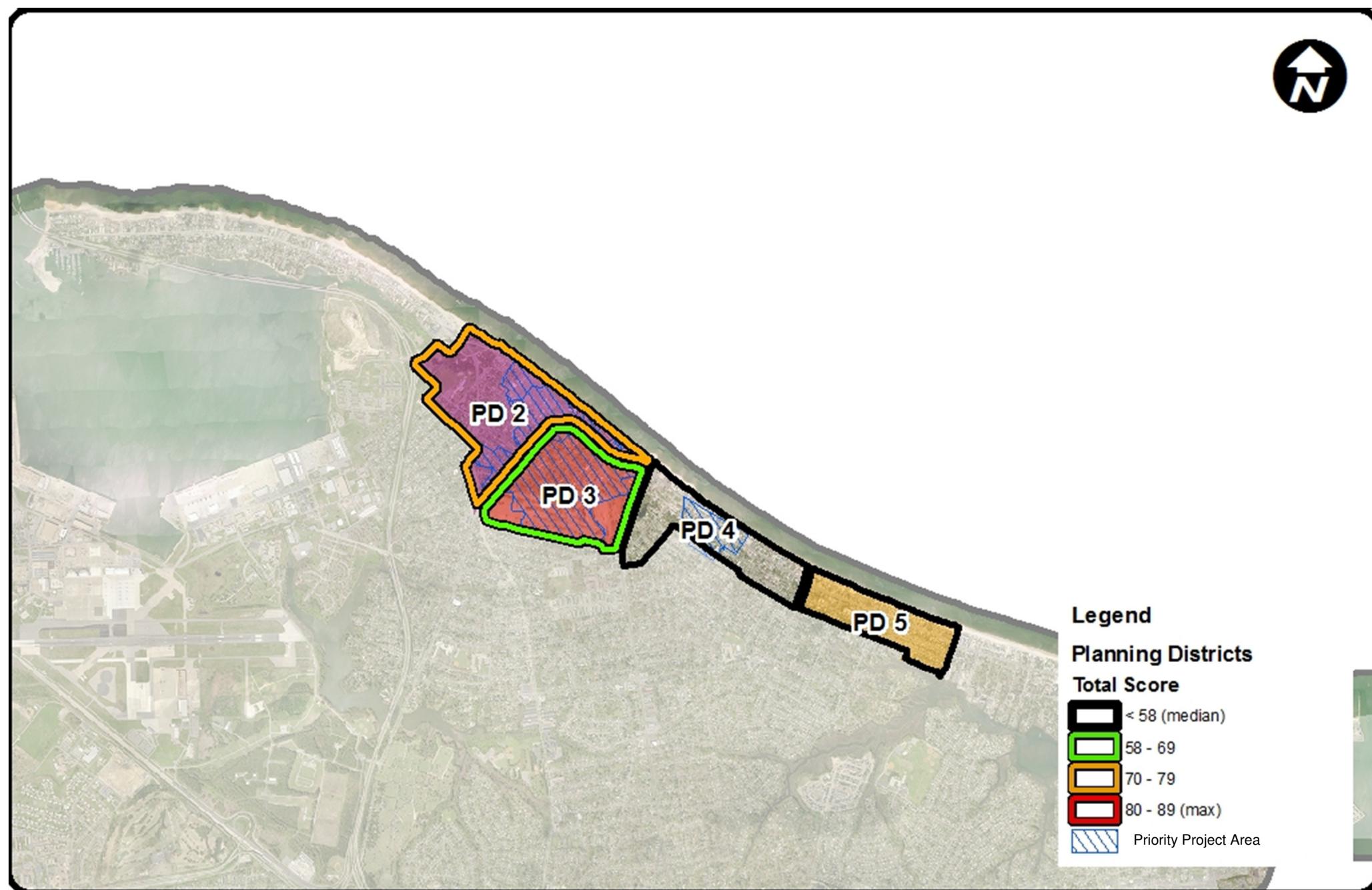


N O R F O L K



TIMMONS GROUP

YOUR VISION ACHIEVED THROUGH OURS.



## WS #3 Ocean View Watershed

## Watershed Description:

The Ocean View Watershed is located in the northeastern portion of the City of Norfolk. It drains to Little Creek and north to the Chesapeake Bay. The watershed is mostly made up of residential neighborhoods.

The map to the left depicts a total of four planning districts that are located within the general watershed area.

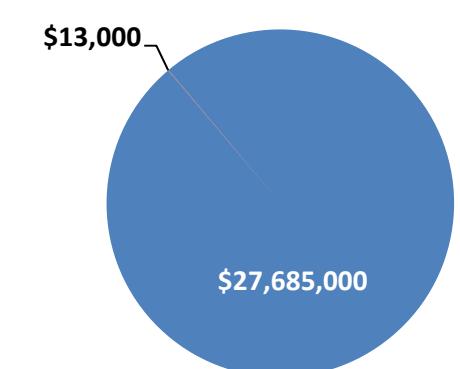
## Planning District Prioritization Criteria

## Estimated Planning District Improvement Costs and Priority Areas

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
2	West Ocean View	281	\$18,562	--	--	--	\$18,562	\$4,568 - \$7,121	West Ocean Av/Portview/1st View St (\$1,038)
3	Pinewell	219	\$5,016	--	--		\$5,016	\$1,253 - \$1,995	Lenox Av (\$345)
5	Cape View	127	\$1,700	\$13	--	--	\$1,713	\$441 - \$729	East Ocean View Master Plan** (\$30)
4	Oceanview	172	\$2,407	--	--	--	\$2,407	\$616 - \$1,011	Hull View Av/E Balview/Chesapeake St** (\$1,244)

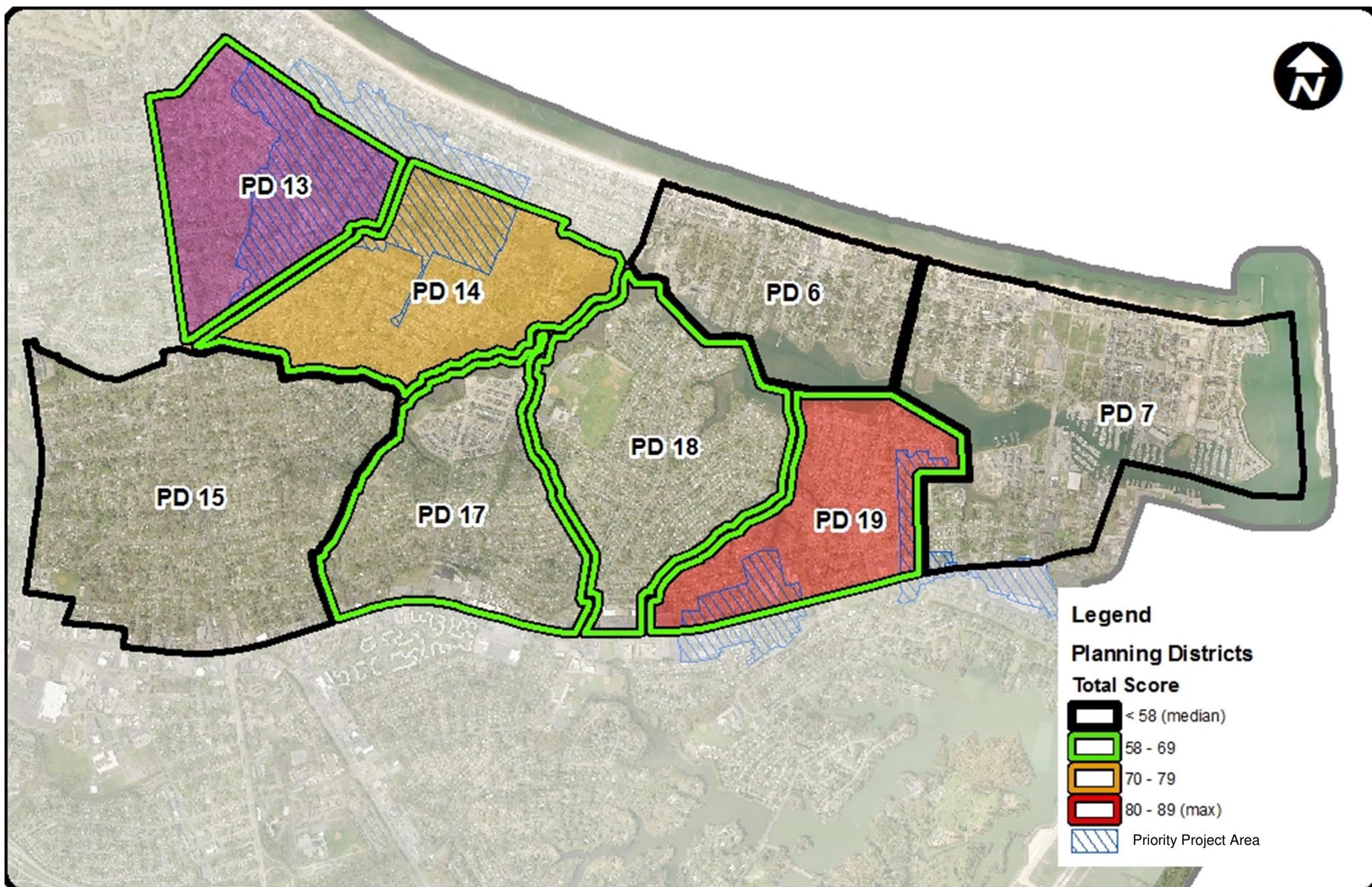
\*\* Priority project area crosses planning district (PD) and watershed group boundaries

## Total Estimated Watershed Improvement Costs (including Additional Elements)



**Total Cost: \$38,554,000**





## WS #4 Little Creek Watershed

## Watershed Description:

The Little Creek Watershed is located in the northeastern portion of the City of Norfolk. It drains north to the Chesapeake Bay by way of Talbot Branch and Little Creek. The watershed is mostly made up of residential neighborhoods.

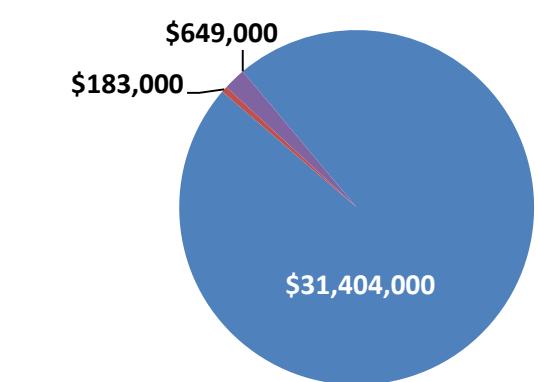
The map to the left depicts a total of eight planning districts that are located within the general watershed area.

## Planning District Prioritization Criteria

## Estimated Planning District Improvement Costs and Priority Areas

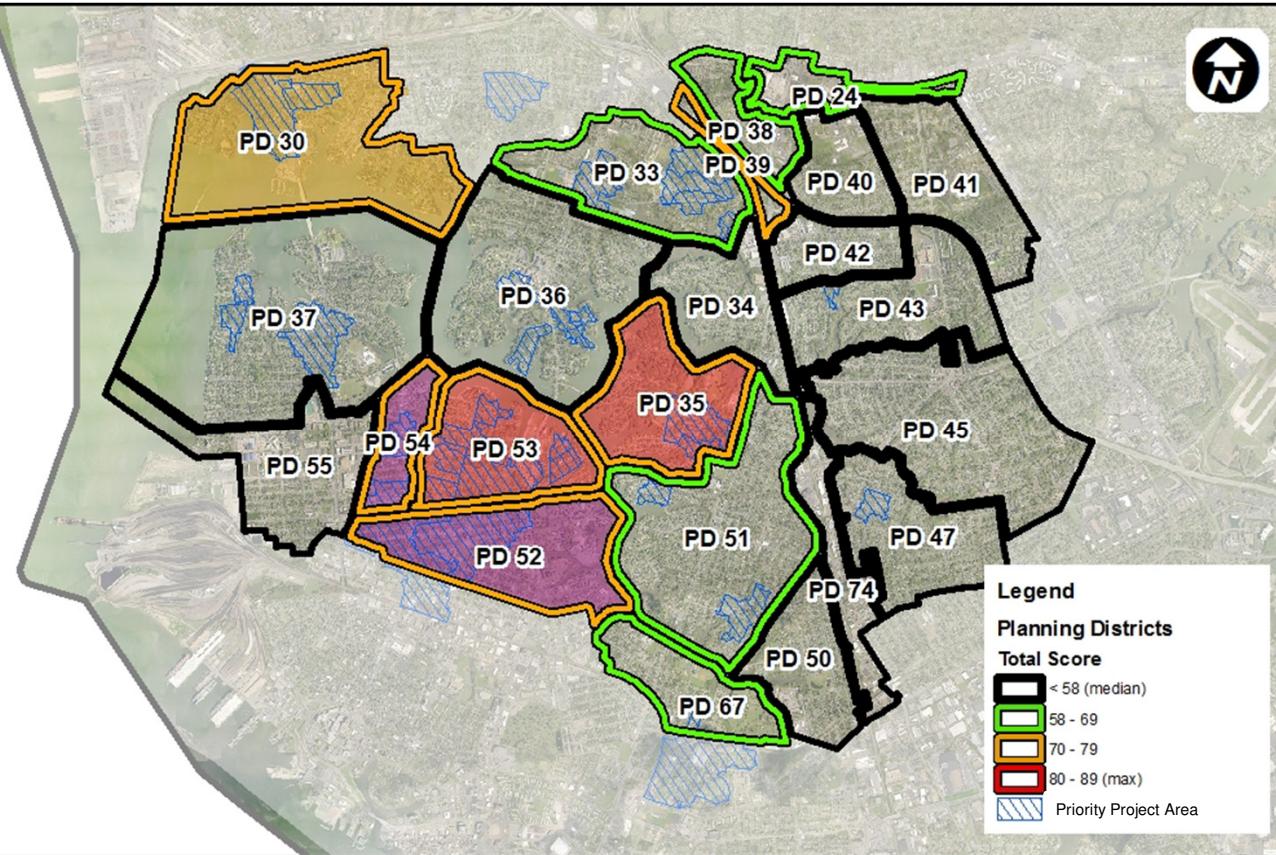
Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
13	Willow Terrace	326	\$5,821	--	--	--	\$5,821	\$1,614 - \$2,902	Alfred Ln (\$3,616)
19	North Camellia	259	\$4,076	--	--		\$4,076	\$1,123 - \$2,005	Dominion Av (\$862)
14	Snug Harbor	354	\$5,096	\$23	--	--	\$5,119	\$1,425 - \$2,572	Modoc Av (\$751)
18	Roosevelt Gardens	376	\$3,452	--	--	--	\$3,452	\$1,038 - \$2,017	
17	Bel-aire	353	\$3,026	\$11	--	\$649	\$3,686	\$1,032 - \$1,873	
6	Pretty Lake	228	\$2,790	--	--	--	\$2,790	\$680 - \$1,045	
7	Shore Drive	450	\$3,144	\$149	--	--	\$3,293	\$841 - \$1,376	Redmon Rd (\$277)
15	North Chesapeake Blvd	624	\$3,999	--	--	--	\$3,999	\$1,170 - \$2,220	

## Total Estimated Watershed Improvement Costs (including Additional Elements)

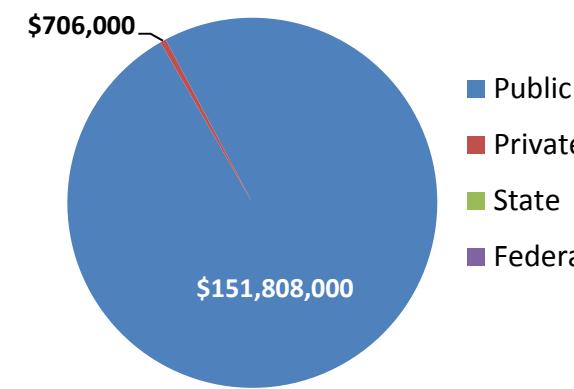


**Total Cost: \$48,248,000**





### Total Estimated Watershed Improvement Costs (including Additional Elements)



Total Cost: \$215,244,000

### Estimated Planning District Improvement Costs and Priority Areas

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
54	North Colley	133	\$5,018	--	--	--	\$5,018	\$1,314 - \$2,216	Killiam Av/West 51st St (\$96)
52	Park Place	473	\$19,904	\$212	--		\$20,116	\$5,191 - \$8,606	Llewellyn (\$1,075)
35	Lakewood	332	\$7,515	--	--	--	\$7,515	\$1874 - \$2,975	Tarrall/Boyce/Tidewater/Cromwell Dr (\$436)
53	Colonial Place	322	\$12,172	--	--	--	\$12,172	\$3,268 - \$5,674	Colonial Av that turns into Mayflower (\$354)
30	North Shore	473	\$15,138	\$335	--	--	\$15,473	\$3,943 - \$6,436	North Shore/Maury Arch (\$678)
39	Naval Base Road	79	\$3,008	--	--	--	\$3,008	\$735 - \$1,135	
33	Suburban	428	\$4,972	--	--	--	\$4,972	\$1,268 - \$2,439	Suburban Pkwy (1,238)
38	Denby Park	181	\$4,066	--	--	--	\$4,066	\$1,052 - \$1,751	
24	Southern Shopping Center	161	\$15,813	--	--	--	\$15,813	\$1,488 - \$2,367	
51	Layfayette	700	\$8,954	--	--	--	\$8,954	\$2,317 - \$3,853	Holland Av/Huntington Crescent (\$58)
67	Lindenwood	271	\$3,766	--	--	--	\$3,766	\$1,055 - \$1,916	Thistle St/Lead St/St Julian Av** (\$37)
36	Talbot Park	535	\$3,555	--	--	--	\$3,555	\$968 - \$1,708	Afton Av/Severn Rd/Granby St (\$454)
45	Norview	713	\$9,817	--	--	--	\$9,817	\$2,525 - \$4,168	
74	Cromwell Road Industrial	218	\$2,626	--	--	--	\$2,626	\$665 - \$1,078	
37	Edgewater - Larchmont	609	\$8,148	\$20	--	--	\$8,168	\$2,178 - \$3,754	Walnut Hill & Sylvan (\$78)
43	Sewells Gardens	415	\$3,229	\$49	--	--	\$3,278	\$900 - \$1,599	Elon Ct/Knox Rd (\$50)
47	Estabrook	381	\$6,438	--	--	--	\$6,438	\$1,665 - \$2,767	Chesapeake Blvd - Amherst St (\$50)
50	Ballentine Park	278	\$4,040	--	--	--	\$4,040	\$1,028 - \$1,675	
41	Rosemont	378	\$4,056	--	--	--	\$4,056	\$1,082 - \$1,863	
55	Lamberts Point - ODU	373	\$3,206	\$90	--	--	\$3,296	\$941 - \$1,743	
40	Chesapeake Manor	199	\$2,053	--	--	--	\$2,053	\$558 - \$983	
42	Coronado	179	\$2,263	--	--	--	\$2,263	\$618 - \$1,092	
34	Roland Park	232	\$2,051	--	--	--	\$2,051	\$544 - \$932	

\*\* Priority project area crosses planning district (PD) and watershed group boundaries

## WS #5 Lafayette River Watershed

### Watershed Description:

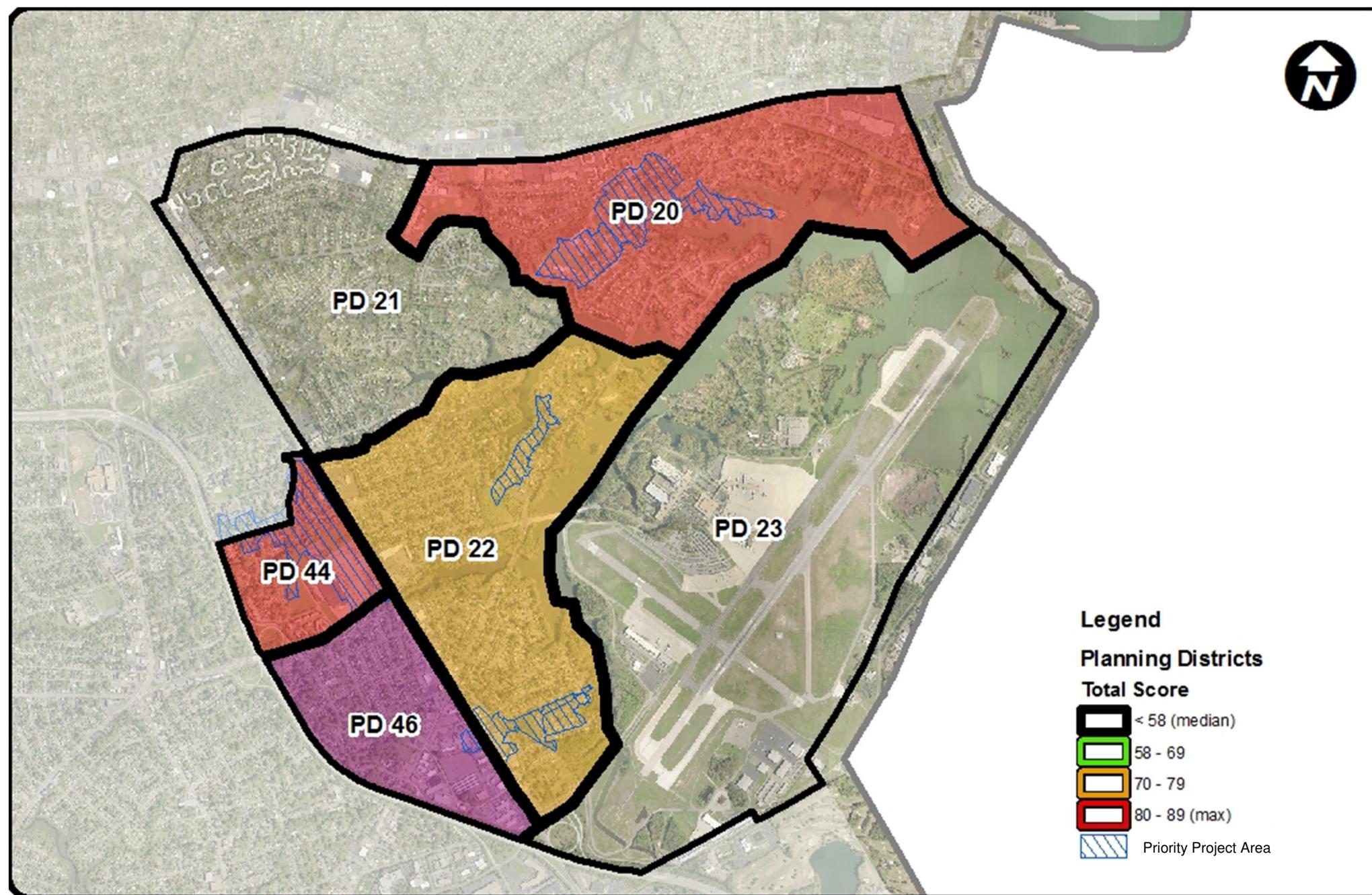
The Lafayette River Watershed is located in the western portion of the City of Norfolk. It is a tributary of the Elizabeth River and drains to the west by way of Wayne Creek and the Lafayette River. The watershed encompasses Old Dominion University and is mostly made up of residential neighborhoods with some industrial sections.

The map to the left depicts a total of twenty-three planning districts that are located within the general watershed area.

### Planning District Prioritization Criteria

Planning District Number	Flooding/Maint. Complaints	CLP Project Locations	Minimal System Capacity	Not Designed for 10yr Storm	Poor/Old Infrastructure	Evacuation Routes	Critical Infrastructure	Business Development Areas	Planning District Score
54	vv	vv	vvv	vvv	vv	vv	vv	75	1st Ranked
52	vv	vvv	vv	vvv	vv	vv	vv	75	1st Ranked
35	vvv	v	vvv	vvv	vv	vv	v	73	2nd Ranked
53	vv	vv	vvv	vvv	vvv	vv	v	73	2nd Ranked
30	vvv	vv	vv	vvv	v	vv	v	72	3rd Ranked
39	vvv	vvv	v	vvv	v	vvv	vv	71	
33	vvv	v	vvv	vvv	v	vv	v	64	
38	vv	v	vv	vvv	v	vv	v	62	
24	vv	vv	vv	vvv	v	vv	vv	60	
51	vv	v	vv	vv	vv	v	v	58	
67	vv	v	vv	vvv	vvv	v	v	58	
36	vv	v	vvv	vvv	v	vv	v	57	
45	vv	vv	v	vvv	v	v	v	52	
74	vvv	v	v	vvv	v	v	v	52	
37	v	v	vv	vvv	vv	v		51	
43	v	vvv	vv	vvv	v	vv	v	51	
47	vv	v	vv	vvv	v	v	v	51	
50	vv	v	vv	vvv	v			44	
41	v	v	v	vvv	v	v	v	39	
55	v	v	v	vvv	vvv	v	v	38	
40	v	vv	v	vvv	v	v	v	37	
42	v	v	vv	vvv	v	v		35	
34		v	v	vvv	v			30	





# WS #6 Lake Whitehurst Watershed

## Watershed Description:

The Lake Whitehurst Watershed is located in the northeastern portion of the City of Norfolk. It drains to Lake Whitehurst which then drains north to the Chesapeake Bay through the Little Creek Channel. The watershed is made up of residential and industrial land uses and encompasses the Norfolk International Airport.

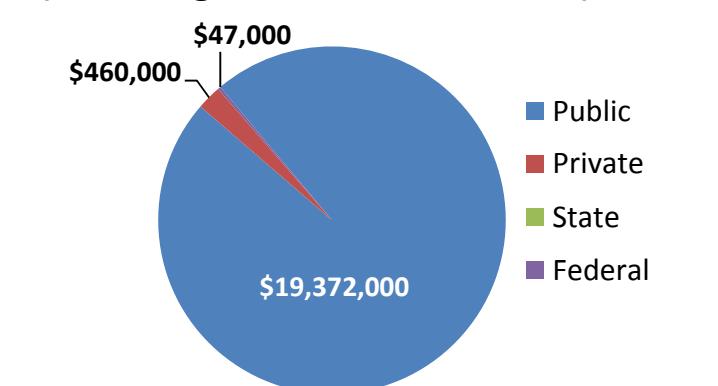
The map to the left depicts a total of six planning districts that are located within the general watershed area.

## Planning District Prioritization Criteria

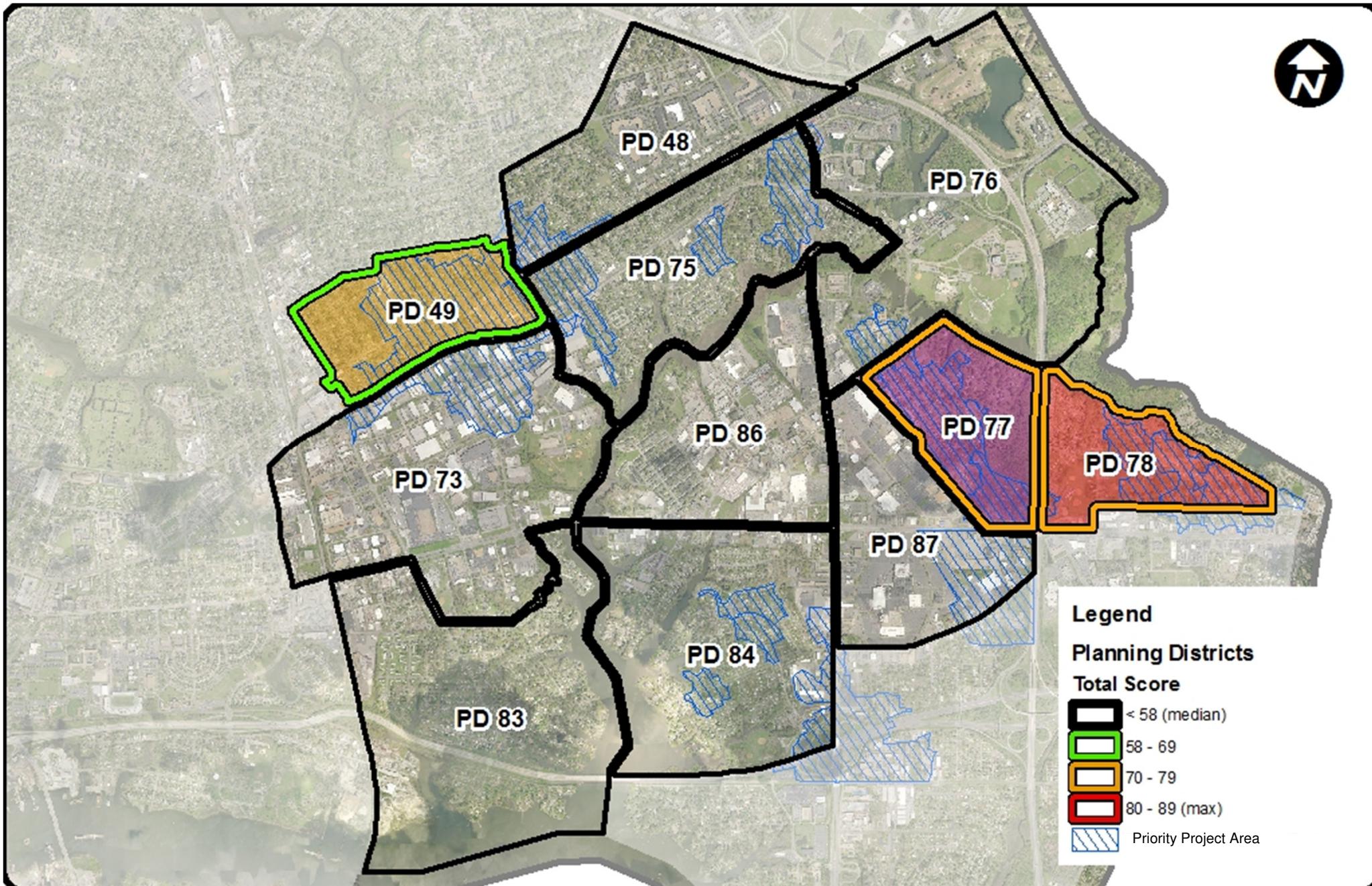
## Estimated Planning District Improvement Costs and Priority Areas

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
46	Norvella	221	\$1,540	--	--	--	\$1,540	\$414 - \$721	Lynn St/Croft St/N Military Hwy (\$50)
20	South Camellia	472	\$6,338	--	--	\$47	\$6,385	\$1,607 - \$2,581	Huette & Martone (\$141)
44	East Norview	130	\$979	--	--	--	\$979	\$255 - \$428	Mellwood Court (\$60)
22	Azalea	475	\$4,861	--	--	--	\$4,861	\$1,270 - \$2,138	Azalea Garden Rd/Tallyho Ter/Hollybriar Pt (\$264)
23	Norfolk International Airport	1034	\$2,633	\$460	--	--	\$3,093	\$730 - \$1,070	
21	Larrymore	519	\$3,021	--	--	--	\$3,021	\$839 - \$1,513	

## Total Estimated Watershed Improvement Costs (including Additional Elements)



**Total Cost: \$28,331,000**



### Estimated Planning District Improvement Costs and Priority Areas

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
77	Lake Terrace	221	\$6,733	--	--	--	\$6,733	\$1,678 - \$2,661	Janaf Place (\$288)
78	Maple Hall - Hollywood	219	\$3,722	--	--	--	\$3,722	\$1,072 - \$2,002	Hollywood (\$3,308)
49	Coleman Place	242	\$7,785	--	--	--	\$7,785	\$1,963 - \$3,160	Sewells Point and Azalea Garden Rd (\$2,247)
75	River Oaks	438	\$5,047	--	--	--	\$5,047	\$1,268 - \$2,031	Elizabeth Av/Military Hwy* (\$151)
87	Janaf - Military Circle	323	\$2,391	\$359	--	--	\$2,750	\$707 - \$1,164	Glen Rock (\$604)
48	Foxhall	355	\$4,748	--	--	--	\$4,748	\$1,198 - 1,931	
84	Poplar Halls	456	\$2,101	\$78	--	--	\$2,179	\$634 - \$1,196	Berry Hill/Barnhollow/Brookeville Rds (\$50)
83	Ingleside	492	\$3,332	--	--	--	\$3,332	\$920 - \$1,648	
73	Industrial Park	631	\$3,693	\$25	--	--	\$3,718	\$893 - \$1,346	
76	Lake Taylor	687	\$2,989	\$419	--	--	\$3,408	\$830 - \$1,277	Elizabeth Av/Military Hwy* (\$38)
86	Crown Point	397	\$2,950	\$46	--	--	\$2,996	\$733 - \$1,164	

\* Priority project area crosses planning district (PD) boundaries

## WS #7 Broad Creek Watershed

### Watershed Description:

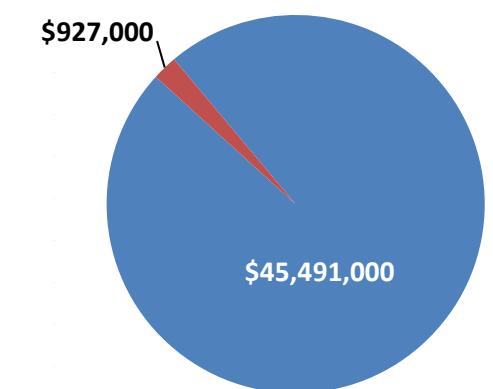
The Broad Creek Watershed is located in the southeastern portion of the City of Norfolk. It drains south to the Elizabeth River by way of Broad Creek. The watershed is made up of residential, commercial, and industrial land uses.

The map to the left depicts a total of eleven planning districts that are located within the general watershed area.

### Planning District Prioritization Criteria

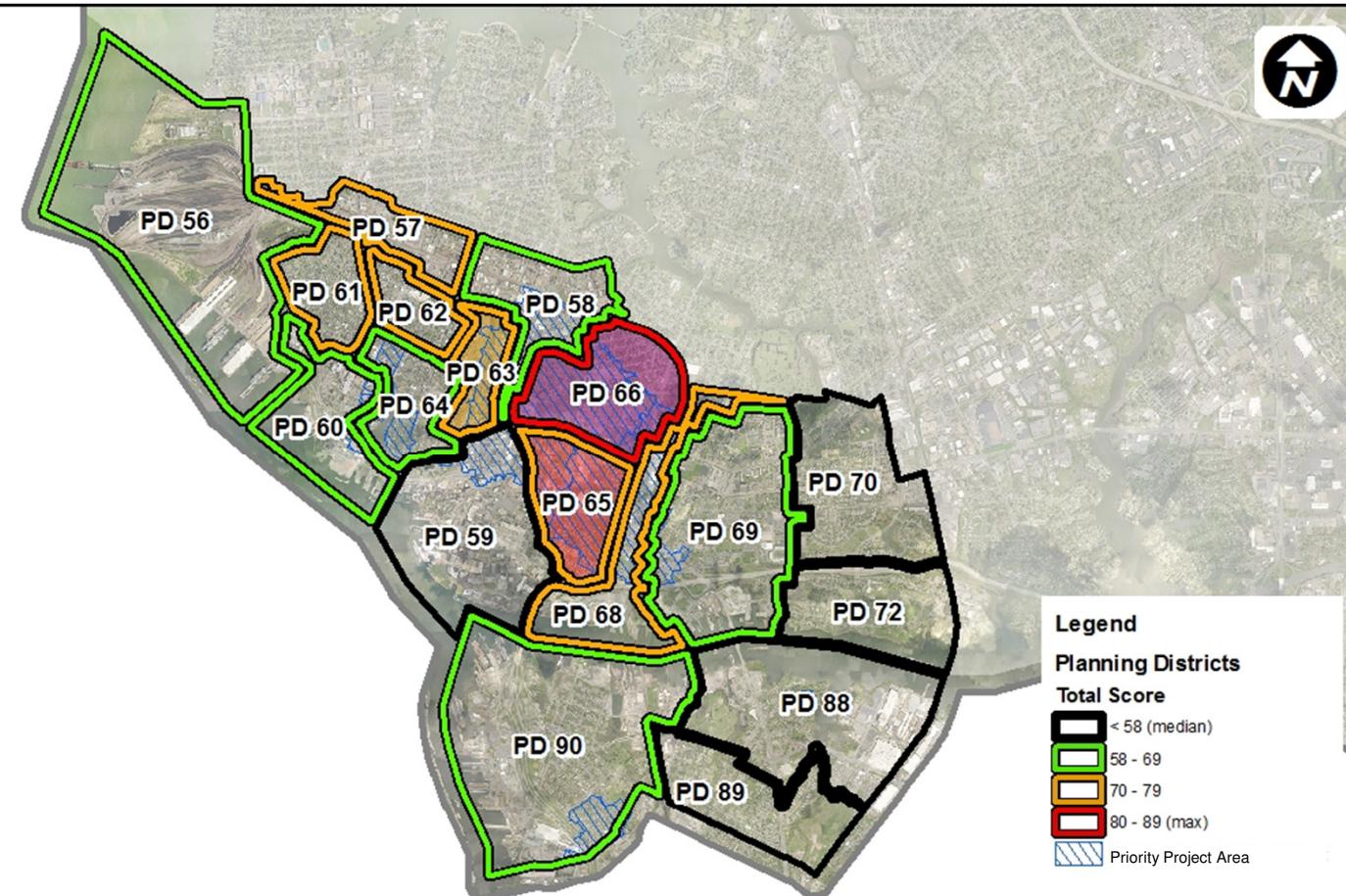
Planning District Number	Flooding/Maint. Complaints	CLP Project Locations	Minimal System Capacity	Not Designed for 10yr Storm	Poor/Old Infrastructure	Evacuation Routes	Critical Infrastructure	Business Development Areas	Planning District Score
77	vvv	vvv	vvv	v	vv	v	78	1st Ranked	
78	vvv	vv	vvv	vvv	v	vv	73	2nd Ranked	
49	vvv	vv	v	vvv	v	vv	61	3rd Ranked	
75	vv	v	vv	vvv	v	v	57		
87	vv	v	v	vvv	v	vv	52		
48	vv	vv	v	vvv	v	v	52		
84	v	v	vvv	vvv	v	v	46		
83	vv	v	v	vvv	v		44		
73	vv	vv	vv	vv	v	v	42		
76	v	v	vv	vv	v	v	36		
86	v	vv	vvv	v			34		

### Total Estimated Watershed Improvement Costs (including Additional Elements)

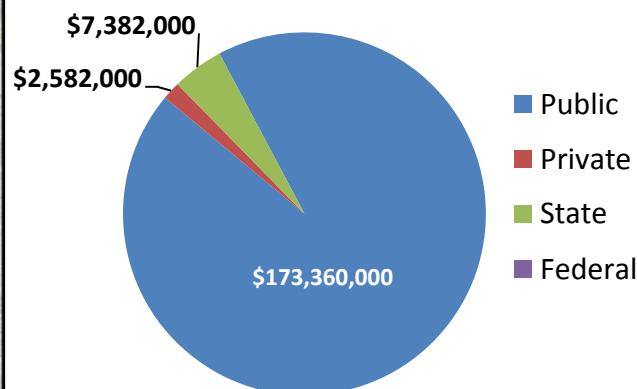


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### Total Estimated Watershed Improvement Costs (including Additional Elements)



**Total Cost: \$244,284,000**

### Estimated Planning District Improvement Costs and Priority Areas

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
66	Huntersville	333	\$19,528	--	--	--	\$19,528	\$4,977 - \$8,122	Tidewater Dr/Goff St (\$1,673)
65	Tidewater - Young Park	244	\$23,580	--	--	--	\$23,580	\$2,493 - \$3,938	Tidewater Dr Outfall (\$13,551)
63	East Ghent	132	\$4,705	\$776	--	--	\$5,481	\$1,468 - \$2,543	Ghent (\$1,626)
57	West 21st Street	196	\$12,202	--	--	--	\$12,202	\$3,038 - \$4,810	
61	West Ghent	180	\$6,316	--	\$1,991	--	\$8,307	\$2,218 - \$3,827	
62	North Ghent	128	\$7,672	--	--	--	\$7,672	\$1,981 - \$3,285	
68	Tidewater Drive Industrial	247	\$9,297	--	--	--	\$9,297	\$2,392 - \$3,949	Ruffner Box Culvert (\$4,687)
58	East 21st St. Monticello	267	\$10,303	--	--	--	\$10,303	\$2,583 - \$4,810	13th/11th/Granby/Armistead Av* (\$166)
60	Medical Center	197	\$5,329	\$129	\$5,037	--	\$10,495	\$2,546 - \$3,890	
90	Berkley	650	\$10,482	\$166	--	--	\$10,648	\$2,724 - \$4,466	Halifax Lane (\$1,216)
56	Lamberts Pt Industrial	653	\$483	\$819	\$354	--	\$1,656	\$478 - \$896	
69	Brambleton	540	\$11,547	\$199	--	--	\$11,746	\$3,052 - \$5,102	Lead St/Jamaica Av/Cary Av (\$232)
64	Ghent	183	\$7,353	\$344	--	--	\$7,697	\$1,985 - \$2,388	Manteo St (\$154)
72	Chesterfield	252	\$1,576	--	--	--	\$1,576	\$439 - \$791	
59	Downtown	363	\$35,090	\$19	--	--	\$35,109	\$2,864 - \$4,430	Monticello System to The Hague (\$23,406)
89	Campostella	304	\$3,231	\$98	--	--	\$3,329	\$870 - \$1,463	
70	Liberty - Roberts Park	402	\$3,109	--	--	--	\$3,109	\$802 - \$1,328	
88	Campostella Heights	396	\$1,557	\$32	--	--	\$1,589	\$416 - \$701	Arlington/Montclair Av (\$50)

\* Priority project area crosses planning district (PD) boundaries

## WS #8 Elizabeth River Watershed

### Watershed Description:

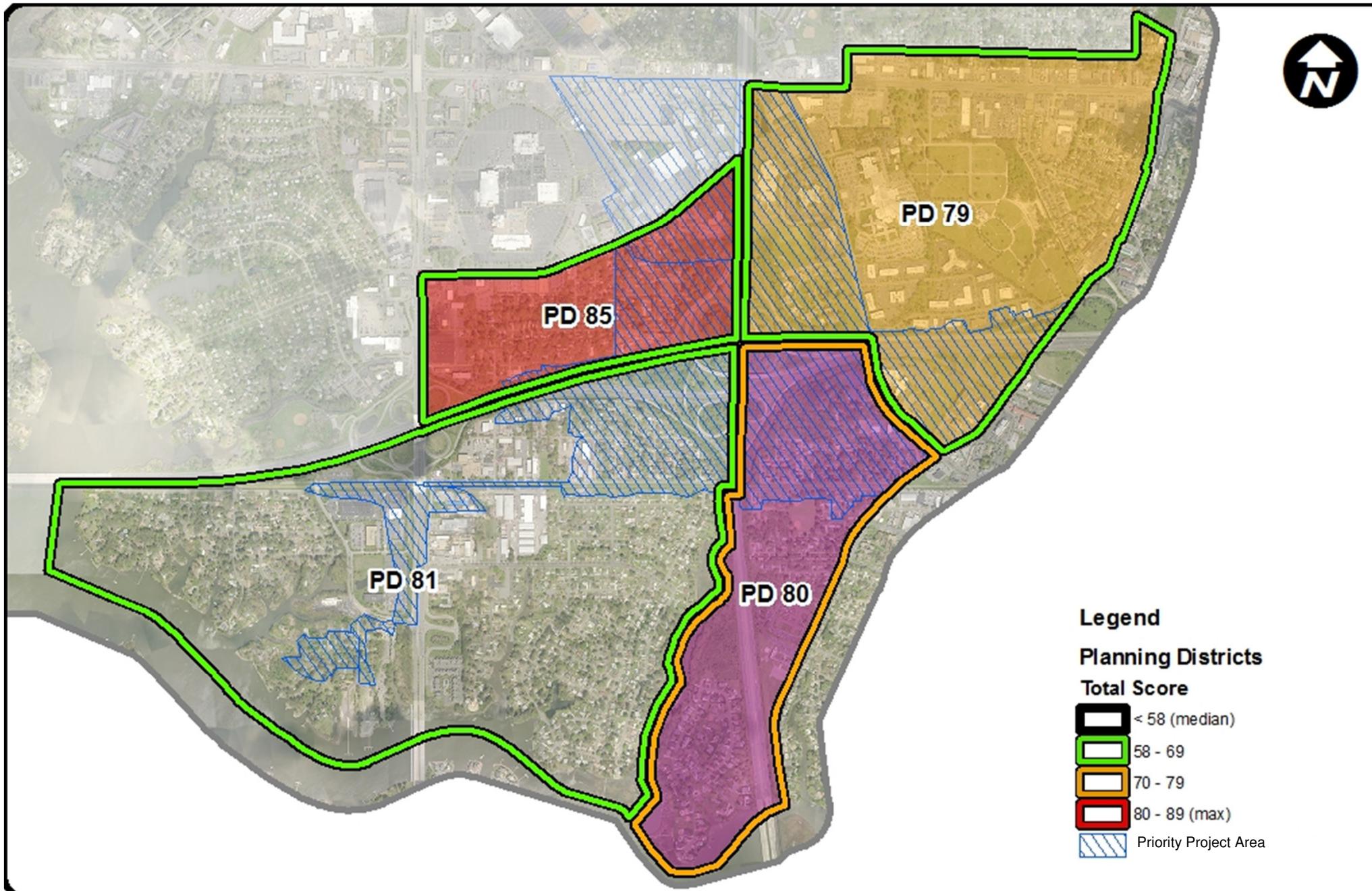
The Elizabeth River Watershed is located in the southwestern portion of the City of Norfolk. It drains to the southwest to the Elizabeth River. The watershed encompasses downtown Norfolk and Norfolk State University and is made up of residential, commercial, and industrial land uses.

The map to the left depicts a total of twenty-three planning districts that are located within the general watershed area.

### Planning District Prioritization Criteria

Planning District Number	Flooding/Maint. Complaints	CLP Project Locations	Minimal System Capacity	Not Designed for 10yr Storm	Poor/Old Infrastructure	Evacuation Routes	Critical Infrastructure	Business Development Areas	Planning District Score
66	vvv	vvv	vv	vvv	v	vvv	v	vv	81
65	vv	vvv	vv	vvv	v	vvv	v	vv	78
63	vvv	vv	vv	vvv	vv	vv	vv	vv	77
57	vvv	vvv	v	vvv	vv	vv	v	vv	76
61	vvv	vvv	v	vvv	vvv	vv	vv	vv	76
62	v	vv	vv	vvv	vvv	vv	vv	vv	75
68	vv	vv	vv	vvv	vv	vv	v	vv	74
58	vv	vv	vv	vvv	vv	vv	v	vv	69
60	v	vv	vv	vvv	vvv	v	vvv	vv	67
90	vv	v	vv	vvv	vvv	vv	v	vv	66
56	vv	vv	v	vvv	vv	vv	v	vv	65
69	vv	vv	vv	vvv	vvv	v	v	v	64
64	vv	v	vv	vvv	vv	vv	v	v	59
72	vv	v	v	vvv	vv	v			51
59	v	vv	v	vvv	v	v			49
89	vv	v	vv	vv	v	v			49
70	vv	v	vv	vv	v	v			42
88	vv	v	vv	v	v	v			39





## WS #9 Eastern Elizabeth River Watershed

## Watershed Description:

The Eastern Elizabeth River Watershed is located in the southeastern portion of the City of Norfolk. It drains to the eastern branch of the Elizabeth River by way of Mill Dam and Nosehs Creeks. The watershed is mostly made up of residential neighborhoods with some commercial and industrial sections.

The map to the left depicts a total of four planning districts that are located within the general watershed area.

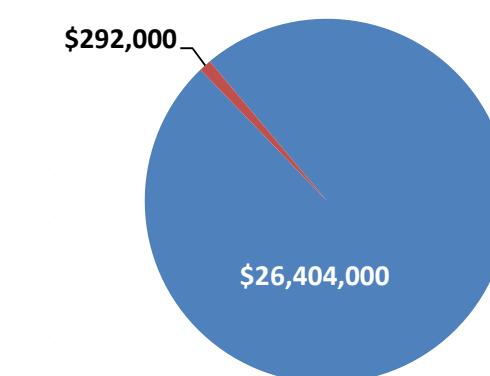
## Planning District Prioritization Criteria

## Estimated Improvement Costs by Planning District

Planning District			Drainage Improvement Cost (\$ in thousands)					Additional Element Cost (\$ in thousands)	Priority Project Area (Est. Cost \$ in thousands)
Number	Name	Land Area (ac)	Public	Private	State	Federal	Total Cost		
80	Easton	246	\$3,804	--	--	--	\$3,804	\$948 - \$1,503	Houston Av (Easton Place) (\$200)
85	Glenrock	166	\$2,738	\$20	--	--	\$2,758	\$671 - \$1,030	Poplar Hall Dr/Chambers St/Lucas Av** (\$835)
79	Kempsville	459	\$14,229	\$272	--	--	\$14,501	\$3,517 - \$5,374	Ditch (East of Kempsville Rd) (\$246)
81	River Forrest	606	\$5,633	--	--	--	\$5,633	\$1,527 - \$2,680	Curlew Dr (\$700)

\*\* Priority project area crosses planning district (PD) and watershed group boundaries

## Total Estimated Watershed Improvement Costs (including Additional Elements)



**Total Cost: \$37,282,000**

