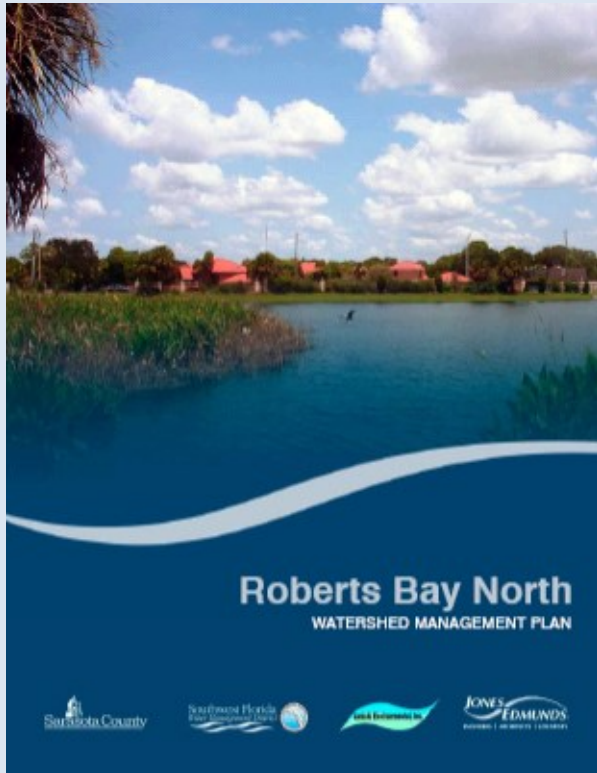




Roberts Bay North Watershed Management Plan

August 2010

[Download complete plan \(47.7 MB\)](#)

[Download individual chapters below](#)

[Table of Contents](#)

The Roberts Bay North WMP is a regional initiative that promotes and furthers the implementation of the Sarasota County Comprehensive Plan, the Sarasota Bay Estuary Program's (SBEP) Comprehensive Conservation and Management Plan (CCMP), and the SWFWMD's Southern Coastal Comprehensive Watershed Management Plan. The purpose of this initiative is to develop and implement a watershed management plan for Roberts Bay North and its watershed which effectively addresses water quality, hydrology, floodplain management, ecosystem management, and sustainable surface water supply issues.

[Executive Summary](#) (793 KB)

[Chapter 1](#) (3.55 MB)

[Chapter 4](#) (10.1 MB)

[Chapter 7](#) (4.86 MB)

[APPENDIX A, B, C](#) (7.2 MB)

[Chapter 2](#) (889 KB)

[Chapter 5](#) (3.12 MB)

[Chapter 8](#) (10.4 MB)

[APPENDIX D](#) (3.12 MB)

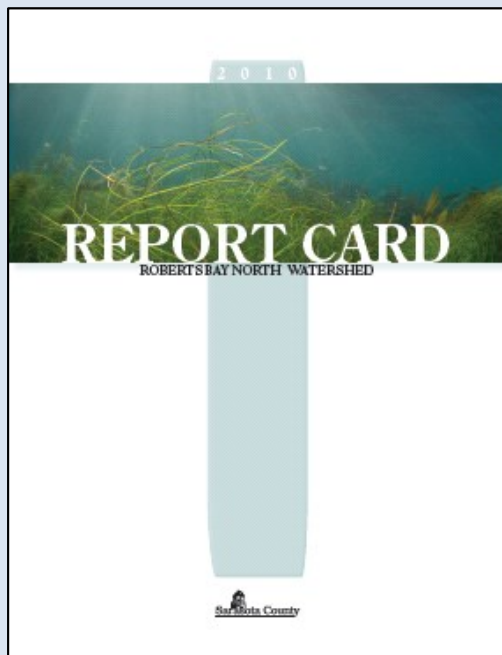
[Chapter 3](#) (7.36 MB)

[Chapter 6](#) (2.44 MB)

[Chapter 9](#) (628 KB)

[APPENDIX E & F](#) (4.10 MB)

Summary



[click to open](#)

How Can You Help?



[click to open](#)

TABLE OF CONTENTS

[Executive Summary](#) (793 KB)

[Chapter 1](#) (3.55 MB)

PROJECT BACKGROUND AND PHYSICAL SETTING

1.1 BACKGROUND	1-1
1.2 PURPOSE AND OBJECTIVE	1-1
1.3 WATERSHED	1-2
1.3.1 Political Jurisdictions	1-2
1.3.2 Boundary	1-4
1.3.3 Topography	1-8
1.3.4 Physiographic Region	1-8
1.3.5 Surface Hydrology	1-13
1.3.6 Geology and Hydrogeology	1-15
1.3.7 Soils and Sediment	1-18
1.3.8 Land Use	1-19
1.4 ESTUARY	1-33
1.4.1 Boundary	1-33
1.4.2 Designated Use	1-35
1.4.3 Bathymetry	1-36
1.4.4 Circulation and Coastal Passes	1-36
1.4.5 Sediment	1-38
1.5 PUBLIC LANDS	1-38
1.6 THREATENED AND ENDANGERED SPECIES ..	1-40
1.7 RECREATIONAL FACILITIES.....	1-42
1.8 PUBLIC EDUCATION	1-47

[Chapter 2](#) (889 KB)

GOALS AND OBJECTIVES

2.1 NATURAL SYSTEMS	2-2
2.1.1 Proposed Goals, Objectives, and Approaches	2-2
2.1.2 Previous Goals, Objectives, and Recommendations	2-3
2.2 WATER QUALITY	2-5
2.2.1 Proposed Goals, Objectives, and Approaches	2-5

2.2.2 Previous Goals, Objectives, and Recommendations	2-7
--	-----

2.3 WATER SUPPLY	2-10
------------------------	------

2.3.1 Proposed Goals, Objectives, and Approaches	2-10
---	------

2.3.2 Previous Goals, Objectives, and Recommendations	2-11
--	------

2.4 FLOOD PROTECTION	2-13
----------------------------	------

2.4.1 Proposed Goals, Objectives, and Approaches	2-13
---	------

2.4.2 Previous Goals, Objectives, and Recommendations	2-13
--	------

[Chapter 3](#) (7.36 MB)

NATURAL SYSTEMS

3.1 WATERSHED	3-1
---------------------	-----

3.1.1 Critical Natural Resources	3-1
--	-----

3.1.2 Freshwater Inflow	3-4
-------------------------------	-----

3.1.3 Habitat Improvement	3-44
---------------------------------	------

3.1.4 Vegetative Buffer Analysis	3-79
--	------

3.1.5 Preservation Area Mapping	3-85
---------------------------------------	------

3.2 ESTUARY	3-86
-------------------	------

3.2.1 Critical Natural Resources	3-88
--	------

[Chapter 4](#) (10.1 MB)

WATER QUALITY

4.1 STATUS AND TRENDS	4-2
-----------------------------	-----

4.1.1 Estuarine Water Quality	4-2
-------------------------------------	-----

4.1.2 Watershed Water Quality	4-9
-------------------------------------	-----

4.1.3 Water Quality Conditions of Concern ..	4-18
--	------

4.2 WATER QUALITY TARGETS	4-23
---------------------------------	------

4.2.1 Seagrass-Related and Water Quality Standard-Based Targets	4-25
--	------

4.2.2 Salinity Targets	4-28
------------------------------	------

4.3 POLLUTANT-LOADING ANALYSIS	4-37
--------------------------------------	------

4.3.1 Estimation of Pollutant Loading to Roberts Bay North	4-39
---	------

Chapter 4 (continued)

4.3.2 Analysis of the Sources and Temporal and Spatial Variability in Pollutant Loadings to Roberts Bay North	4-45
4.4 ANALYSIS OF THE RESPONSES IN ROBERTS BAY NORTH TO POLLUTANT LOADINGS	4-60
4.4.1 Nutrient Loading to Estuaries	4-60
4.4.2 Influence of Circulation and Residence Times	4-61
4.4.3 Nutrient Loading and its Impact on Estuaries	4-62
4.4.4 Response in Roberts Bay North to Variation in Nutrient Loading	4-65
4.4.5 Relationship Between Water Quality Conditions in Roberts Bay North Tributaries to Variation in Pollutant Loading	4-69
4.4.6 Freshwater and Pollutant-Load Targets and Reduction Goals for Roberts Bay North	4-72
4.4.7 Comparison of the Proposed Nitrogen Loading Target to Future Nitrogen Loading to Roberts Bay North	4-72
4.5 CONCLUSIONS AND RECOMMENDATIONS ..	4-74
4.5.1 Recommended Water Quality Improvement Programs	4-74
4.5.2 Recommended Water Quality Improvement Projects	4-77

[Chapter 5](#) (3.12 MB)

WATER SUPPLY

5.1 INTRODUCTION	5-1
5.2 POTENTIAL PROJECTS	5-7
5.2.1 Regional-Scale Projects	5-9
5.2.2 Subregional-Scale Projects	5-11
5.2.3 Local-Scale Projects	5-18
5.3 RECOMMENDATIONS	5-19

[Chapter 6](#) (2.44MB)

FLOOD PROTECTION

6.1 BACKGROUND	6-1
6.2 FLOOD PROTECTION STATE LEGISLATION AND LOCAL ORDINANCES	6-4

6.2.1 Legislation	6-4
6.2.2 Ordinances	6-5
6.2.3 Flood Protection and Floodplain Management	6-5
6.2.4 Planning Studies and Efforts	6-6
6.3 WATERSHED MASTER PLANNING	6-8
6.3.1 Flood Protection Level of Service (FPLOS)	6-10
6.3.2 Watershed Modeling and Map Modernization	6-12
6.3.3 Capital Improvement Projects	6-13
6.3.4 Celery Fields Regional Stormwater Facility (CFRSF)	6-13
6.4 CONCLUSION	6-21

[Chapter 7](#) (4.86 MB)

STORMWATER MANAGEMENT FACILITY MAINTENANCE

7.1 INTRODUCTION	7-1
7.2 FACILITIES AND RELATED PROGRAMS	7-3
7.2.1 Facilities	7-3
7.2.2 Related Programs	7-3
7.3 WATER QUALITY MAINTENANCE PRACTICES AND CONSIDERATIONS	7-5
7.3.1 Current Practices	7-6
7.3.2 Field Observations of Maintenance Practices	7-7
7.3.3 Considerations for Vegetation Removal	7-9
7.4 BEST MANAGEMENT PRACTICES	7-13
7.4.1 Structural BMPs	7-14
7.4.2 Non-Structural BMPs.....	7-16
7.4.3 Source Control	7-19
7.4.4 BMP Efficiencies	7-22
7.4.5 Cost/Benefit Analysis	7-27
7.5 RECOMMENDATIONS	7-30
7.5.1 Inspection and Permit Compliance	7-31
7.5.2 Facility Maintenance and BMPs	7-32
7.5.3 Other	7-35

[Chapter 8](#) (10.4 MB)

PROJECT ANALYSIS

8.1 INTRODUCTION	8-1
8.2 MEASURES OF BENEFITS	8-2
8.3 BENEFIT VALUE.....	8-2
8.4 PROJECT BENEFITS	8-3
8.5 STATUS OF PROJECTS FROM PREVIOUS PLANS	8-7
8.6 PROGRAM RECOMMENDATIONS	8-11
8.6.1 RBP01: Public Outreach and Education	8-13
8.6.2 RBP12: National Pollutant Discharge Elimination System (NPDES)	8-13
8.6.3 RBP15: Facilitating Agricultural Resource Management Systems	8-13
8.6.4 RBP16: Preservation Areas	8-14
8.6.5 RBP32: Septic Replacement Program .	8-14
8.6.6 RBP35: Septic to Cistern	8-15
8.6.7 RBP19: Strategic Maintenance Manual ...	8-15
8.6.8 RBP08: Stormwater Manual	8-16
8.6.9 RBP26: Composting Pilot Study	8-16
8.6.10 RBP31: Low Impact Development (LID)	8-16
8.6.11 RBP17: Exotic Species Management Program	8-17
8.7 CONCEPTUAL LEVEL PROJECT SHEETS AND COST ESTIMATES	8-18

[Chapter 9](#) (628 KB)

MONITORING AND IMPLEMENTATION

9.1 ENVIRONMENTAL MONITORING	9-1
9.2 WATERSHED REPORT CARD	9-5
9.2.1 Report Card Scoring	9-10
9.3 MONITORING OF RECOMMENDED PROJECTS AND PROGRAMS.....	9-12
9.4 ACTION PLAN DATABASE: TRACKING PROGRESS	9-13

[APPENDIX A, B, C](#) (7.20 MB)

APPENDIX A – Existing Management Programs

APPENDIX B – Pollutant Load Results

APPENDIX C – Sediment Management Plan

[APPENDIX D](#) (3.12 MB)

Appendix D – Report Card

[APPENDIX E & F](#) (4.10 MB)

Appendix E – Water Budget Data

Appendix F – Bibliography