



Town of Belleair

901 Ponce de Leon Blvd.
Belleair, FL 33756

Meeting Agenda Infrastructure Board

Wednesday, January 20, 2021

5:00 PM

Town Hall

Please enter the link below to join the webinar:

<https://us02web.zoom.us/j/88289727345>

Or Telephone:

Dial(for higher quality, dial a number based on your current location):

US: +1 301 715 8592 or +1 312 626 6799 or +1 646 558 8656 or +1 253 215 8782 or +1 346

248 7799 or +1 669 900 9128 Dial *9 to "raise hand"

Webinar ID: 882 8972 7345

Persons are advised that, if they decide to appeal any decision made at this meeting/hearing, they will need a record of the proceedings, and, for such purposes, they may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

CITIZENS COMMENTS

(Discussion of items not on the agenda. Each speaker will be allowed 3 minutes to speak.)

APPROVAL OF MINUTES

[21-0006](#) Approval of October 26, 2020 and October 30, 2020 Meeting Minutes

Attachments: [Infra 10-26-2020](#)

[Infra 10-30-2020](#)

GENERAL AGENDA

[21-0018](#) Draft Bridge & Seawall Evaluation Report

Attachments: [2021-01-08 Belleair Bridge Seawall Inspection Report draft \(2\).pdf](#)

[21-0015](#) Discussion of Capital Improvements Master Plan: Rankings and Cost Estimates

Attachments: [CIP Master Plan - Cost Estimates 10-22-20](#)

[CIP - Copy of Old Drafts for Reference](#)

[21-0019](#) Continued Discussion of Future Water Supply Options

Attachments:

[Town of Belleair WTP - RO PER_EXEC SUMM](#)

[Town of Belleair Draft Executive Summary 10.14.2020](#)

[2019CAFR-Pinellas County](#)

[Rate Study Slides](#)

[Possible Well Sites and Well Main Line.pdf](#)

OTHER BUSINESS

COMMISSION ADVISOR REPORT

ADJOURNMENT

ANY PERSON WITH A DISABILITY REQUIRING REASONABLE ACCOMMODATIONS IN ORDER TO PARTICIPATE IN THIS MEETING, SHOULD CALL (727) 588-3769 OR FAX A WRITTEN REQUEST TO (727) 588-3767.



Town of Belleair

901 Ponce de Leon Blvd.
Belleair, FL 33756

Legislation Text

File #: 21-0006, **Version:** 1



Town of Belleair

901 Ponce de Leon Blvd.
Belleair, FL 33756

Meeting Minutes Infrastructure Board

Monday, October 26, 2020

5:00 PM

Town Hall

Zoom Webinar ID: 893 5378 1101

Meeting called to order at 5:03 PM with Chairman Pace presiding.

ROLL CALL

Present 4 - Chairman Doug Pace, George Mariani, James White, and Gayle Grady

Absent 3 - John Hail, Shon Flaharty, and Joe Oder

CITIZENS COMMENTS

No comments

APPROVAL OF MINUTES

[20-0235](#) Approval of August 31, 2020 Meeting Minutes

George Mariani moved to approved the minutes. Seconded by Gayle Grady.

Aye: 4 - Chairman Pace, Mariani, White, and Grady

Absent: 3 - Hail, Flaharty, and Oder

GENERAL AGENDA

[20-0214](#) Discussion of Capital Improvements Master Plan: Rankings and Cost Estimates

JP Murphy-Town Manager-provided brief introduction and overview; engineer to provide proposed recommendations.

Mr. Mariani questioned time-frame of capital project review; Mr. Murphy stated it is ongoing and will be reviewed annually as part of budget process.

Keith Bodeker-Construction Project Supervisor-commented on projects.

Phil Locke-McKim and Creed, Engineer of Record-discussed general approach and methodology; infrastructure priority criteria ratings and considerations used for developing PCI (pavement condition); presented updated cost estimates for roadway projects.

Mr. Murphy questioned if board is in agreement with methodology; requested engineer to suggest top 3 projects.

Mr. Locke-indicated priorities are presented from an engineering perspective only,

many other factors; town can choose how to proceed, temporary options to do in some areas; safety is priority.

Discussion ensued regarding rating system and parties involved; subjectivity; Mr. Locke addressed that it should be a collaborative effort, this is strictly based on engineer evaluations, board and commission can modify as see fit.

Mr. Locke clarified this list is only roadway projects not bridges, bluff, creek, etc.

Mr. Murphy discussed potential for cooperative funding on projects; seeking feedback regarding ranking.

Mr. Bodeker spoke on staff approach regarding maintenance.

Board discussion regarding using staff to help identify ratings and top 10 projects. Mr. Murphy spoke about projects and safety and roadway concerns; ratings are appropriate from the town staff perspective.

Mr. Murphy spoke on calculations for project costs; percentage factored in.

Mr. Pace inquired from the board their thoughts regarding the ranking charts and items to be considered or removed.

Commissioner Kurey spoke on engineering rankings, data, and inflation rate.

Discussion ensued regarding increase to construction materials and costs; not enough information with current environment to predict inflation; seeking sources to predict inflation accurately; staff will research percentage rate further and bring back for board review.

[20-0268](#)

Discussion of Draft Reverse Osmosis Preliminary Engineering Report and Water Rate Study

Mr. Murphy stated this was discussed at the last meeting, however some members questioned if a sub-committee could be formed; seeking if there was interest to do so.

Discussion ensued regarding looking into costs at more depth; previous options regarding phasing; upcoming meetings for public input; changes to preliminary report regarding phasing of RO and regulatory compliance with current water data; updated executive summary will be prepared; rates updates will be included as well; cooperative funding with SWFWMD; possibility of having to move up time-frame for going online with RO.

Mr. Murphy suggests having a subcommittee meeting; must be noticed; will schedule in the next few days.

OTHER BUSINESS

Mr. Mariani left at 6:51 PM.

Mr. White thanked Commissioner Kurey regarding his assistance with sidewalk repair on Druid Rd.

COMMISSION ADVISOR REPORT

Commissioner Kurey thanked staff for sidewalk repair; questioned if Mr. Locke will be in attendance of resident meetings; thanked everyone for their support regarding the passing of his father; LPGA tournament permit approved; importance of CIP and RO to Town.

ADJOURNMENT

Meeting adjourned in due form at 6:57 PM.

James White moved to adjourn. Seconded by Gayle Grady.

Aye: 3 - Chairman Pace, White , and Grady

Absent: 4 - Mariani, Hail, Flaharty, and Oder

APPROVED:

Chairman



Town of Belleair

901 Ponce de Leon Blvd.
Belleair, FL 33756

Meeting Minutes Infrastructure Board

Friday, October 30, 2020

2:30 PM

Town Hall

R.O. Discussion

Note

Welcome. We are glad to have you join us. If you wish to speak, please wait to be recognized, then step to the podium and state your name and address. We also ask that you please turn-off all cell phones.

Keith Bodeker opened the meeting at 2:33 PM.

ROLL CALL

Commissioner Kurey and Deputy Mayor Rettstatt were also in attendance.

Present 5 - George Mariani, John Hail, James White, Gayle Grady, and Joe Oder

Absent 2 - Chairman Doug Pace, and Shon Flaharty

CITIZENS COMMENTS

No Citizens comments

GENERAL AGENDA

20-0269 Discussion of Draft Reverse Osmosis Preliminary Engineering Report and Water Rate Study

Phil Locke-McKim and Creed, Engineer of Record-Provided high-level overview of preliminary engineering report; discussed regulations and water quality, total dissolved solids; Town has very hard water; discussed saltwater intrusion; RO needs to be online in 2024.

Discussion ensued regarding total dissolved solids with regulatory requirements; costs to residents if going with RO; water quality with RO.

Mr. Murphy commented on quality of service level and response with going with RO Vs County.

Mr. Locke spoke on rates and unknown rates should a switch to the County occur; provided a schematic of the water treatment plant, described filtration process; recommends pilot study period; phased implementation plan has been revised; suggests the Town make a decision on RO plant by end of 2020.

Nick Smith-Raftelis-provided overview of rate study; utilized updated PER to developed

a forecast; discussed assumptions regarding operating costs, payment to debt service for SRF loans; discussed change from originally projected rates based on new timeline necessary; changes to capital timeline will affect rates; rate comparison with other municipalities, Belleair currently lowest and below average; showed specific comparison with Pinellas County; there may be transfer and other associated fees incurred by the Town should a change to Pinellas County.

Discussion ensued regarding costs that the customer may or may not see; County costs that may be passed on from Tampa Bay water; other local entities that are RO.

Mr. Smith addressed questions regarding loans and rates through SRF program.

Mr. Murphy spoke on SWFWMD funding; previously rejected full scale plan; will provide cooperative funding for injection well; possibility for federal funds; will be working with lobbyist (Lee Moffit) on this project.

Discussion regarding funding and rates; reserves; potential for fund allocation if do not move forward with project.

Mr. Murphy questioned 30% contingency. Mr. Locke discussed comparison to similar project bid tabs; confident will not exceed presented budget; wells included in costs.

Mr. Smith stated pilot study costs are recognized in forecast; Mr. Locke noted should Town elect owner direct purchase, equipment would be tax exempt.

Mr. Locke feels presented costs are on conservative side of project; should Town decide to move forward, the sooner the better to avoid additional increases and inflation; discussed timeline for design and compliance.

Discussion regarding design build projects; availability and timeline of equipment; engineer recommendation of making a decision by end of the year. Mr. White stated he was in favor of going with RO.

Mr. Murphy spoke on injection well; waiting to see if RO will be done or not; Mr. Bodeker spoke on timeline of injection well completion.

Mr. Locke addressed question regarding upgrading current plant; RO is needed to meet regulations and compliance; DEP concerns.

Board discussions regarding options; wells and water quality; questioned next steps. Mr. Murphy would like a sense of the board's thoughts; upcoming community meetings for public input.

Further discussion regarding information to present to public; show rates comparing clear dollar for dollar increases and absolute amounts.

Mr. White left meeting at 4:14 PM.

Discussion ensued regarding reclaim water and shallow wells.

Mr. Murphy questioned direction from each board member; Mr. Oder in favor of RO, Mr. Hail in favor as well, Ms. Grady in support of RO, Mr. Mariani is also in support of RO.

ADJOURNMENT

Meeting adjourned in due form at 4:19 PM.

Mr. Hail moved to adjourn. Seconded by Mr. Oder.

Aye: 4 - Mariani, Hail, Grady, and Oder

Absent: 3 - Chairman Pace, White , and Flaharty

APPROVED:

Chairman



Legislation Text

File #: 21-0018, **Version:** 1

Summary

To: Infrastructure Board
From: JP Murphy
Date: 1/15/2021

Subject:

Draft Bridge & Seawall Evaluation Report

Summary:

Phil Locke will be discussing the findings of the Bridge and Seawall Evaluation Report. Please find the report attached to the item and the executive summary below.

Moffat and Nichol's Bridge and Seawall Evaluations report dated January 5, 2021. The evaluations included assessments of the general structural condition of the bridges and wing walls, as well as the adjacent seawalls. Cracks, spalls, scouring, and signs of settlement, movement, or wall failure were documented as well. The bridges were found to have minimal damage and only preservation measures and continued basic maintenance, such as patching cracks/spalls noted in the routine inspection reports is recommended. Additionally, we see no indication of scour at any of the bridges, including the bridges currently noted as Scour Critical by the FDOT. The recommendations for the bridge repairs and associated budgetary costs are as follows:

- Winston Drive Bridge over Graff Canal: repair 3' x 5' void as soon as possible \$9,300
- North Pine Circle Bridge over Roth's Canal and wing walls: general maintenance repairs - \$39,250

The Thompson Park Seawall is in "Serious" condition and is recommended to be replaced on a moderate priority basis. The estimated cost to replace the seawall is \$210,680. This repair is not unexpected and is a currently budgeted need at \$250,000.

The Winston Park Seawall is in "Satisfactory" condition and it is recommended that a French drain be installed behind the seawall where loss of fill has occurred. The estimated cost is \$5,000.



ENGINEERS

SURVEYORS

PLANNERS

January 8, 2021

Mr. JP Murphy
Town Manager
901 Ponce DeLeon Blvd
Belleair, FL 34616

Re: **Bridge and Seawall Evaluations**

Dear JP:

Please find enclosed, Moffat and Nichol's **Bridge and Seawall Evaluations** report dated **January 5, 2021**. The evaluations included assessments of the general structural condition of the bridges and wingwalls, as well as the adjacent seawalls. Cracks, spalls, scouring, and signs of settlement, movement, or wall failure were documented as well.

The bridges were found to have minimal damage and only preservation measures and continued basic maintenance, such as patching cracks/spalls noted in the routine inspection reports is recommended. Additionally, we see no indication of scour at any of the bridges, including the bridges currently noted as Scour Critical by the FDOT. The recommendations for the bridge repairs and associated budgetary costs are as follows:

- Winston Drive Bridge over Graff Canal: repair 3' x 5' void as soon as possible - \$9,300
- North Pine Circle Bridge over Roth's Canal and wingwalls: general maintenance repairs - \$39,250

The Thompson Park Seawall is in "Serious" condition and is recommended to be replaced on a moderate priority basis. The estimated cost to replace the seawall is \$210,680.

The Winston Park Seawall is in "Satisfactory" condition and it is recommended that a French drain be installed behind the seawall where loss of fill has occurred. The estimated cost is \$5,000.

Please let me know if you have any questions or concerns.

Sincerely,

McKIM & CREED, Inc.
Phillip J. Locke, P.E.
Senior Project Manager

1365 Hamlet Avenue
Clearwater, FL 33765

727.442.7196.

Fax 727.461.3827

www.mckimcreed.com

BRIDGE AND SEAWALL EVALUATIONS

Town of Belleair, FL

DRAFT

REPORT

Produced For McKim & Creed

January 5, 2021

DOCUMENT VERIFICATION

Client	McKim & Creed
Project name	Belleair Bridge and Seawall Evaluations
Document title	Belleair Bridge and Seawall Evaluations
Document sub-title	Town of Belleair, FL
Status	Draft
Date	December 9, 2020
Project number	201263
File reference	Q:\TA\201263\0400_REP\460 Inspection\2021-01-05 Belleair Bridge Seawall Inspection Report.docx

Revision	Description	Issued by	Date	Checked
00	Client Review	I. Canner	12/03/2020	S. Williams
01	Draft Submittal	I. Canner	12/09/2020	I. Canner
02	Draft Submittal	I. Canner	01/05/2021	I. Canner

Produced by:
Moffatt & Nichol
501 E. Kennedy Blvd
Tampa, FL 33602
(813) 258-8818
www.moffattnichol.com

EXECUTIVE SUMMARY

Moffatt & Nichol (M&N) conducted an inspection of five (5) Bridges and two (2) seawalls for the Town of Belleair in Belleair, FL on October 21 and 22, 2020. The bridge and seawalls names and numbers are below:

- Bridge No. 155000 and wingwalls, Winston Drive over Graff Canal
- Bridge No. 155001 and wingwalls, North Pine Circle over Roths Canal
- Bridge No. 155003, Bayview Drive over Exotic Creek
- Bridge No. 155004, Overbrook Drive over Ikes Creek
- Bridge No. 150062, Indian Rocks Rd. (CR-233) over Ikes Creek
- Seawall at Thompson Park, adjacent to North Pine Circle
- Seawall at Winston Park, adjacent to Winston Drive

The scope of the inspection was to assess the general structural condition of the bridges and wingwalls, as well as the adjacent seawalls, and to document any cracks, spalls, and signs of settlement, movement, or wall failure. M&N measured the existing structural elements and visually evaluated the foundations.

The inspection utilized the 2019 FDOT Bridge Inspection Reports (Reports) to establish a rate of structural deterioration, channel degradation and scour. M&N confirmed the state of all deficiencies outlined in the FDOT reports and noted any changes or additional defects. The bridge inspections followed the procedures outlined in the "*Bridge Inspector's Reference Manual (BIRM)*" published by the Federal Highway Administration (FHWA). For the seawall inspections, M&N followed the procedures outlined in the "*Waterfront Facilities Inspection and Assessment*" published by the American Society of Civil Engineers (ASCE).

Bridges

Overall, the five (5) bridges inspected had minimal damages beyond those described in the Reports. Bridges 155000 and 155001 were noted by FDOT to be Scour Critical, and no scour was found at these two bridges or any other bridge on the list during this field assessment. There was a minimal amount of undermining on the northwest wingwall of Bridge No 150062 that poses no threat to the structural integrity of the bridge. It was noted that some bridge maintenance repairs have been completed since the 2019 routine FDOT inspection. Each of these bridges were designed for a service life of approximately 75 years.

Thompson Park Seawall

The Thompson Park Seawall has a condition assessment rating of SERIOUS. There are various areas of backfill loss with voiding behind the seawall along its entire length. These areas mostly occur at the concrete panel joints that have spalled and opened. Additionally, there is a 50-foot section of wall with up to six inches of lateral movement which has resulted in a large void and backfill loss. Additionally, there are a multitude of full-height cracks in the concrete cap and panels, along with spalls at every panel joint. The tie-rods here are all exposed and have coating failure with flaking corrosion, and one tie-rod 22 feet from the bridge has failed.

Winston Park Seawall

The Winston Park Seawall has a condition assessment rating of SATISFACTORY. There were minor to moderate defects and deterioration observed, but no evidence of overstressing. The concrete cap has been replaced since the installation of the seawall and is in good condition, along with the sidewalks on the upland side of the cap. However, the concrete wall panels are of original construction and have several spalls at the connection joints. One spall located 72 feet from Bridge 155000 has a two-foot-deep

void behind the wall due to backfill loss. None of the spalls were observed to have exposed steel reinforcing.

Repairs and Recommendations

Thompson Park Seawall

M&N recommends replacing the Thompson Park Seawall on a moderate-priority basis. Until the seawall is replaced, M&N recommends that vehicular live loading be restricted along the seawall, and that the wall be regularly monitored for additional lateral movement.

- Estimated Seawall Replacement Cost - \$210,680

Winston Park Seawall

M&N recommends installing one French Drain behind the seawall where loss of fill was observed. In doing so, future voiding behind the seawall at those locations may be reduced. It is also recommended to fill any voiding with grout to prevent the settlement of the newly poured sidewalk on the upland side of the concrete cap. Per the ASCE Waterfront Inspection Manual, M&N recommends the seawall at Winston Park to be inspected again in 5 years.

- Estimated French Drain Cost - \$5,000

Bridges

M&N recommends considering bridge preservation measures and to continue basic maintenance, such as patching cracks/spalls noted in the routine inspection reports.

Per the BIRM, M&N recommends inspection of the Bridges on a 24-month routine inspection cycle and a 60-month underwater inspection cycle, for bridge components in greater than four (4) feet of water.

- Bridge 155000 Estimated Repair Cost - \$9,300
- Bridge 155001 Estimated Repair Cost - \$39,250

TABLE OF CONTENTS

DOCUMENT VERIFICATION	2
EXECUTIVE SUMMARY	3
Bridges	3
Thompson Park Seawall.....	3
Winston Park Seawall.....	3
Repairs and Recommendations	4
1.0 INTRODUCTION	9
2.0 SCOPE OF WORK	10
2.1 Bridge and Wingwalls	11
2.2 Seawall Inspections	11
3.0 CONDITION ASSESSMENT CRITERIA	12
3.1 Bridge Condition Assessment.....	12
3.2 Seawall Condition Assessment	13
4.0 BRIDGE 155000 – WINSTON DRIVE	14
4.1 Structure Description	14
4.2 Findings and Observations	14
4.3 Soundings	15
4.4 Repair Recommendations	17
4.5 Site Photos	18
5.0 SEAWALL AT WINSTON PARK – WINSTON DRIVE	22
5.1 Structure Description	22
5.2 Findings and Observations	22
5.3 Repair Recommendations	23
5.4 Site Photos	24
6.0 BRIDGE 155001 – NORTH PINE CIRCLE	25
6.1 Structure Description	25
6.2 Findings and Observations	25
6.3 Soundings	26
6.4 Repair Recommendations	28
6.5 Site Photos	29
7.0 SEAWALL AT THOMPSON PARK – NORTH PINE CIRCLE	34
7.1 Structure Description	34
7.2 Findings and Observations	34
7.3 Repair and Recommendations	35
7.4 Site Photos	36
8.0 BRIDGE 155003 – BAYVIEW DRIVE	41
8.1 Structure Description	41
8.2 Findings and Observations	41
8.3 Soundings	42
8.4 Repair Recommendations	44
8.5 Site Photo	45

9.0	BRIDGE 155004 – OVERLOOK DRIVE	47
9.1	Structure Description	47
9.2	Findings and Observations	48
9.3	Soundings	48
9.4	Repair Recommendations	50
9.5	Site Photo	51
10.0	BRIDGE 150062 – INDIAN ROCKS ROAD	55
10.1	Structure Description	55
10.2	Findings and Observations	55
10.3	Soundings	56
10.4	Repair Recommendations	58
10.5	Site Photo	59
11.0	CONCLUSIONS AND RECOMMENDATIONS	62

APPENDIX A NBIS CONDITION RATINGS

APPENDIX B ASCE CONDITION STATE RATINGS

APPENDIX C OPINION OF PROBABLE CONSTRUCTION COST

LIST OF FIGURES

Figure 2-1: Town of Belleair, Bridge and Seawall Vicinity Map	10
Figure 4-1: Bridge 155000 at Winston Drive	14
Figure 4-2: Aerial view of Bridge 155000 at Winston Drive	18
Figure 4-3: Southwest Wall – 4 inches of movement and 36 inch deep void	18
Figure 4-4: Southwest Wall – Opening in the panel and cap with void	19
Figure 4-5: Corrosion to steel at unpatched form tie holes in face of abutment	19
Figure 4-6: Typical spall at the underside of bridge slab beams	20
Figure 4-7: Cracks along expansion joint where the approach slab meets the bridge	20
Figure 4-8: Cracks in wingwalls	21
Figure 4-9: Diagonal crack with corrosion staining at the first joint from the bridge on the southeast corner where the wingwall meets the seawall	21
Figure 5-1: Overall view of the Winston Park Seawall	22
Figure 5-2: Void behind seawall at wall joint	24
Figure 5-3: Crack in concrete panel cap at wall joint	24
Figure 6-1: Bridge 155001 at North Pine Circle	25
Figure 6-2: Aerial view of Bridge 155001 at North Pine Circle	29
Figure 6-3: Cracks in abutments with epoxy injection repair	29
Figure 6-4: Cracks in the southeast wingwall due corroded utility	30
Figure 6-5: Typical view of Abutment	30
Figure 6-6: Under side coating failure	31
Figure 6-7: Typical random area of corrosion on underside of Beam Slab panels	31
Figure 6-8: Typical spall in underside of Beam Slab panels	32
Figure 6-9: Cracks in wingwall / concrete panel wall connection on the southeast side of bridge. There is failure of the cap here with exposed steel reinforcing	32
Figure 6-10: Area of delamination on underside of bridge deck	33
Figure 7-1: Overall view of the Thompson Park Seawall	34
Figure 7-2 Wall failure resulting in large deflection between wall panels	36
Figure 7-3 Deep void and loss of fill at wall failure	36
Figure 7-4: Missing tieback hardware	37
Figure 7-5: Typical tieback hardware, heavily corroded	37
Figure 7-6 Evidence of fill loss behind seawall cap and longitudinal cracks with corrosion staining in top of concrete cap	38
Figure 7-7: Typical spalling at concrete seawall panel joints	38
Figure 7-8: Partially covered outfall at the private property line north of the park	39
Figure 7-9: Example area of abrasion along seawall in splash zone	39
Figure 7-10: Typical spalling and cracking of cap underside	40
Figure 8-1: Bridge 155003 at Bayview Drive	41
Figure 8-2: Aerial view of Bridge 155003 at Bayview Drive	45
Figure 8-3: Sidewalk repair	45
Figure 8-4: Area of delamination in beam	46
Figure 8-5: Channel and concrete rubble embankments	46
Figure 9-1: Bridge 155004 at Bayview Drive	47
Figure 9-2: Aerial view of Bridge 155004 at Overbrook Drive	51
Figure 9-3: Misalignment between culvert segments with up to ten (10) inches of penetration	51
Figure 9-4: Opening between culvert segments	52
Figure 9-5: Construction spalling along ceiling edge of culvert opening	52
Figure 9-6: Bridge Section & overgrown vegetation	53
Figure 9-7: Aggradation within culvert	53
Figure 9-8: Area of settlement and misalignment between headwall and wingwall	54
Figure 9-9: Example of exposed toe on the upstream side of the structure	54
Figure 10-1: Bridge 150062 at Bayview Drive	55

Figure 10-2: Aerial view of Bridge 155062 at Indian Rocks Road	59
Figure 10-3: Transverse cracks in bridge deck	59
Figure 10-4: Undermining at northwest wingwall three (3) inches in height with up to two (2) feet of penetration	60
Figure 10-5: Honeycombing under arch near the mudline	60
Figure 10-6: Concrete edge spall underside of arch	61
Figure 10-7: Bridge Section with obsolete crash barrier and sidewalk rail	61

LIST OF TABLES

Table 4-1: Bridge 155000 Channel Soundings	15
Table 4-2: Bridge 155000 Channel Soundings – Fascia Comparisons	15
Table 6-1: Bridge 155001 Channel Soundings	26
Table 6-2: Bridge 155001 Channel Soundings – Fascia Comparisons	26
Table 8-1: Bridge 155003 Channel Soundings	42
Table 8-2: Bridge 155003 Channel Soundings – Fascia Comparisons	42
Table 9-1: Bridge 155004 Channel Soundings	48
Table 9-2: Bridge 155004 Channel Soundings – Fascia Comparisons	48
Table 10-1: Bridge 155062 Channel Soundings	56
Table 10-2: Bridge 155062 Channel Soundings – Fascia Comparisons	56

LIST OF GRAPHS

Graph 4-1 Bridge 155000 Right Fascia Cross Section	16
Graph 4-2 Bridge 155000 Left Fascia Cross Section	16
Graph 6-1 Bridge 155001 Right Fascia Cross Section	27
Graph 6-2 Bridge 155001 Left Fascia Cross Section	27
Graph 8-1 Bridge 155003 Right Fascia Cross Section	43
Graph 8-2 Bridge 155003 Left Fascia Cross Section	43
Graph 9-1 Bridge 155004 Right Fascia Cross Section	49
Graph 9-2 Bridge 155004 Left Fascia Cross Section	49
Graph 10-1 Bridge 155062 Right Fascia Cross Section	57
Graph 10-2 Bridge 155062 Left Fascia Cross Section	57

1.0 INTRODUCTION

The Town of Belleair is located directly south of Clearwater, FL along Clearwater Harbor. The company McKim & Creed is developing a Capitol Improvement Master Plan for the Town of Belleair which includes budgetary repair costs for several bridges and seawalls. The Town identified five short-span bridges and two parks with seawalls as areas of concern.

McKim & Creed requested M&N to perform a site visit to observe the general condition of the bridges and seawalls and to provide recommendations, including budgetary costs for repair or replacement, as necessary. The Town of Belleair provided the 2019 FDOT Bridge Inspection Reports generated from routine inspections.

The inspection team consisted of a Team Leader certified by both the National Bridge Inspection Standards (NIBS) and the Florida Department of Transportation (FDOT), and a qualified team member. Among the team's certifications are a Florida Registered Engineer with a vast amount of bridge and seawall inspection experience, a Certified Bridge Inspector (CBI), and a National Highway Institute (NHI)-certified Underwater Bridge Inspector. The wading inspections were performed by a certified commercial diver with experience in underwater bridge inspection and scour evaluations. Additionally, representatives from the Town of Belleair and McKim & Creed were on site periodically.

In this report you will find a section entirely for each Bridge and Seawall starting at Section 4. Within those sections, you will find a brief overview of the bridge / seawall history and construction type, and then a synopsis of the condition of the structure along with photos.

2.0 SCOPE OF WORK

The following structures have been requested for structural assessment. The location of the bridges and seawalls can be seen in Figure 2-1.

- Bridge No. 155000 and wingwalls, Winston Drive over Graff Canal
- Bridge No. 155001 and wingwalls, North Pine Circle over Roths Canal
- Bridge No. 155003, Bayview Drive over Exotic Creek
- Bridge No. 155004, Overbrook Drive over Ikes Creek
- Bridge No. 150062, Indian Rocks Rd. (CR-233) over Ikes Creek
- Seawall at Thompson Park, adjacent to North Pine Circle
- Seawall at Winston Park, adjacent to Winston Drive

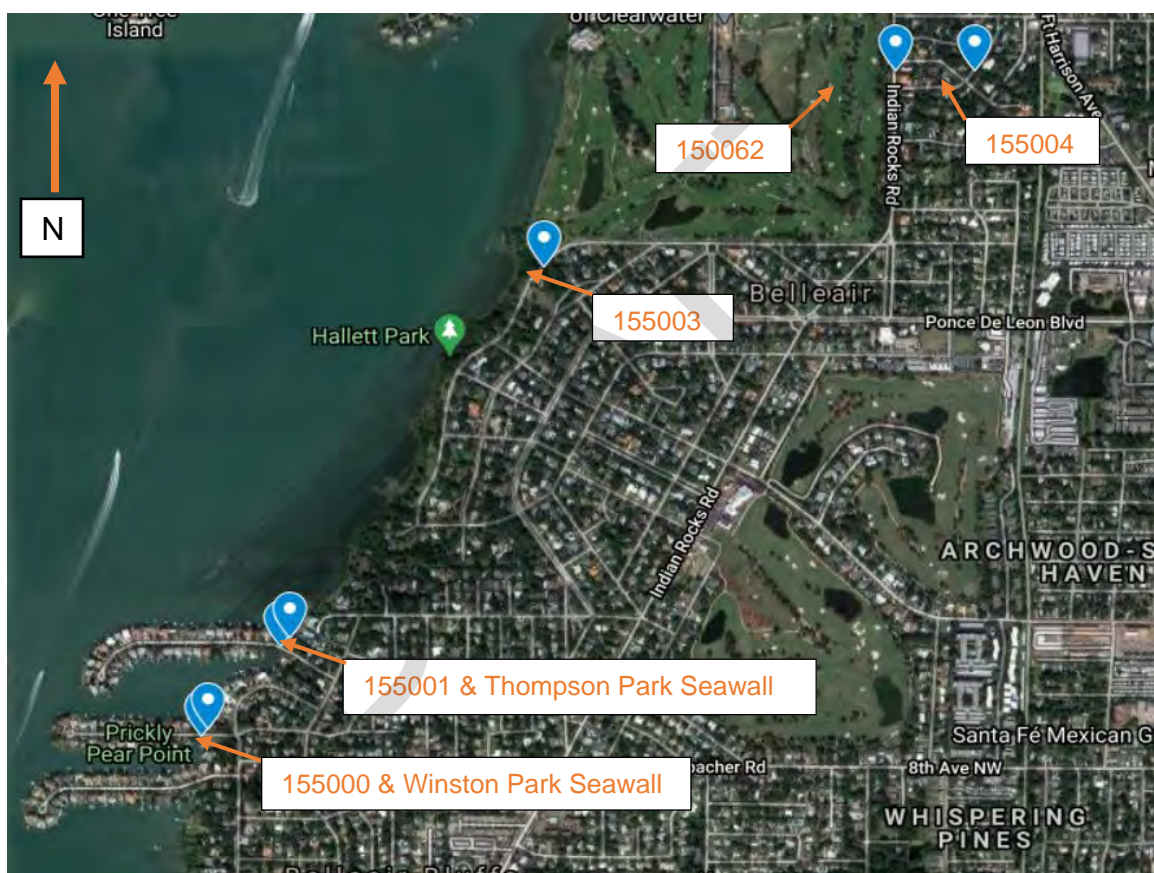


Figure 2-1: Town of Belleair, Bridge and Seawall Vicinity Map

2.1 Bridge and Wingwalls

The purpose of the bridge inspections is to observe the general structural condition of the bridges and wingwalls for cracks, spalls, and signs of settlement, movement, or wall failure. M&N measured the existing bridge and wingwall dimensions, including the bridge structural elements and visually evaluated the foundations.

The bridge inspection utilized the 2019 FDOT Bridge Inspection Reports to establish a rate of structural deterioration and channel degradation. M&N confirmed the state of deficiencies outlined in the reports and noted any changes.

The 2019 FDOT Inspection Reports indicated that Bridge No. 155000 and 155001 are scour critical and have unknown foundations, however M&N found no evidence of scour or undermining while inspecting the mudline around the bridge foundations.

2.2 Seawall Inspections

The purpose of the seawall inspections was to observe the general structural condition of the seawalls and areas behind the walls for cracks, spalls and signs of settlement, movement, or wall failure.

The existing concrete sheet pile walls are constructed with tongue and groove joints. A common cause of settlement behind concrete seawalls is damaged or worn construction joints, which allow fine soils to migrate through the joints. The site visit included observation of the sheet pile panel joints for damage and soil voids behind the wall.

Based on the results of the site visit, M&N has prepared a planning level Opinion of Probable Construction Cost (OPCC) for repair and/or replacement of the seawalls. The OPCC may be used to determine a budgetary unit cost for either repair/rehabilitation or replacement, as appropriate, to include in the Master Plan document. The cost estimate is based on FDOT guidelines and historical unit costs for seawall rehabilitation and repairs for similar projects in the local area.

3.0 CONDITION ASSESSMENT CRITERIA

Two inspection standards were used for assigning condition ratings to the bridges and seawalls.

3.1 Bridge Condition Assessment

The “*NBIS Bridge Inspection Reference Manual*” was utilized as a guide to perform the tasks outlined in the scope of work for the bridges. An overall condition rating system was used for the various bridge components as outlined in this manual. These rating systems provide a standard classification for all bridges and is produced by the Federal Highway Administration (FHWA). The rating system gives an overall condition rating for each structural system based on the observed and inspected conditions. Excerpts from this manual outlining the overall condition assessment ratings are as follows with additional information available in Appendix A:

Rating		Description
9	Excellent	
8	Very Good	No problems noted
7	Good	Some minor problems
6	Satisfactory	Structural elements show some minor deterioration
5	Fair	All primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	Poor	Advanced section loss, deterioration, spalling or scour
3	Serious	Loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical	Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	Imminent Failure	Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic, but corrective action may put back in light service.
0	Failed	Out of service, beyond corrective action

3.2 Seawall Condition Assessment

The “*Waterfront Facilities Inspection and Assessment*” manual was utilized as a guide to perform the tasks outlined in the scope of work for the seawalls. An overall condition rating system, as well as individual element ratings for various structural and marine components, are outlined in this manual. These rating systems provide a standard classification for all waterfront facilities. The rating system gives an overall condition rating for each structural system based on the observed and inspected conditions.

The ratings are referred to as the ‘Condition Assessment Rating’ referenced from the ASCE No. 130 manual. These ratings were used for the seawalls only. They indicate the condition of the entire structure and its ability to perform its intended function. Not every element making up the structure will meet the requirements of the overall rating; therefore, localized load restrictions may be recommended for areas where isolated deterioration has reduced the structural capacity of the structure.

Rating		Description
6	Good	No problems or only minor problems noted. Structural elements may show some very minor deterioration, but no overstressing observed. No repairs are required.
5	Satisfactory	Minor to moderate defects and deterioration observed, but no overstressing observed. No repairs are required
4	Fair	All primary structural elements are sound, but minor to moderate defects and deterioration observed. Localized areas of moderate to advanced deterioration may be present but do not significantly reduce the load bearing capacity of the structure. Repairs are recommended, but the priority of the recommended repairs is low.
3	Poor	Advanced deterioration or overstressing observed on widespread portions of the structure, but does not significantly reduce the load-bearing capacity of the structure. Repairs may need to be carried out with moderate urgency.
2	Serious	Advanced deterioration, overstressing, or breakage may have significantly affected the load bearing capacity of primary structural components. Local failures are possible, and loading restrictions may be necessary. Repairs may need to be carried out on a high-priority basis with urgency.
1	Critical	Very advanced deterioration, overstressing, or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur, and load restrictions should be implemented as necessary. Repairs may need to be carried out on a very high-priority basis with strong urgency.

Element-level damage ratings are utilized to assess specific components of each structure based on the component’s material type or function. Damage ratings are specified as no deterioration, minor, moderate, major, and severe. The specifics and reasoning for each of the ratings and material types are outlined in the “*Waterfront Facilities Inspection and Assessment*” manual. Excerpts from this manual outlining the overall condition assessment ratings as well as element-level damage ratings pertinent to the inspections performed are detailed in Appendix B.

4.0 BRIDGE 155000 – WINSTON DRIVE



Figure 4-1: Bridge 155000 at Winston Drive

4.1 Structure Description

Bridge 155000 at Winston Drive, shown in Figures 4-1 and 4-2, was built in 1950 and spans a non-navigable waterway on the east shore of Clearwater Harbor. The bridge is a simply supported, single span structure measuring 28.25 feet wide with a length of 25 feet. The superstructure consists of six (6) 48-inch wide, prestressed concrete slab beams with concrete deck and asphalt overlay. The bridge has 32-inch side barriers with single bullet rails along the full length of the main span. The shoreline adjacent to the bridge has 11-foot-long wingwalls at each corner of the abutments. This bridge is identical to Bridge 155001 at North Pine Circle.

A NBIS routine inspection was conducted in 2019 that identified areas of concerns which included but were not limited to concrete spalls, cracks, and delamination in various sections of the superstructure and substructure elements. Exposed steel reinforcing bars are present and rust spots with some corrosion were also listed. The structure was listed as scour critical. Minor maintenance repairs were completed since the 2019 FDOT inspection, including spall repairs at the abutments and bridge reflectors were added to the concrete barriers at the beginning and end of the concrete barriers.

4.2 Findings and Observations

The bridge and wingwalls inspection found minor to moderate defects on the underside of the bridge deck and wingwalls. The overall condition ratings for the structure are:

- 59-Superstructure = 7
- 60-Substructure = 7
- 61-Channel = 7
- 113-Scour = 8 (Field Observations Only)

The condition of the structure has not significantly changed since the 2019 FDOT inspection. The following field observations were noted during the inspection:

The southwest wingwall/seawall is cracked with an opening up to three (3) inches wide with four (4) inches of lateral movement at the top of the wall. A large void, approximately three (3) feet long and five (5) feet deep was observed behind the wall, as seen in Figure 4-3 and Figure 4-4.

- Cracks in the superstructure decks, underside of the slab units and substructure abutments are noted with some areas of exposed reinforcing, as seen in Figure 4-5 and Figure 4-6.
- The approach slabs are not visible because they are completely covered by the asphalt topping.
- There are transverse cracks along the expansion joints that are fully covered by asphalt topping, as seen in Figure 4-7.
- An under-water inspection of the abutments found no signs of scour or undermining of the foundations. There were no indications that the structure should be labeled as scour critical. A scour rating of 8 was given based on field observations only. A scour calculation/evaluation was not performed.
- Some concrete damage on the traffic railing barriers that was previously noted in the Reports has since been repaired.
- Joints in all wingwalls are offset up to one (1) inch.
- There is typical cracking in the wingwalls, as seen in Figure 4-8.
- A diagonal crack is present in the seawall where it transitions from the wingwall on the northeast side of the structure, as seen in Figure 4-9.
- The beam bearing pads were not visible at the time of inspection.
- The type and size of the bridge supports could not be identified because they were located behind the concrete abutment that extended to the mudline.

4.3 Soundings

Soundings were taken at each bridge fascia and at offsets of 25 and 50 feet from the bridge. All fascia sounding measurements were taken from the top of rail and are in decimal feet. All offset sounding measurements were taken from the waterline and are in decimal feet. Refer to Table 4-1 through Table 4-2 and Graph 4-1 through Graph 4-2 for channel bottom comparisons. Sounding measurement differences over three (3) feet are in bold print and are positive (+) for aggradation and negative (-) for scour. The channel bottom profile comparison was made by comparing the latest FDOT topside sounding data from January 15, 2019.

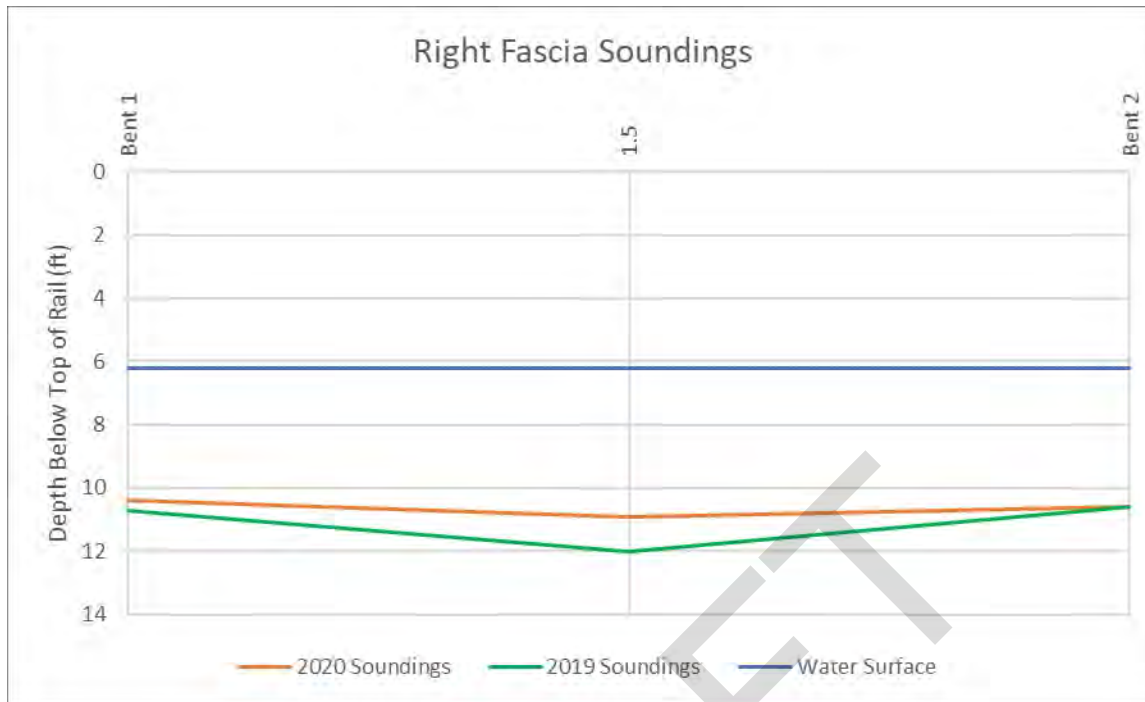
Table 4-1: Bridge 155000 Channel Soundings

50FT Right	25FT Right	Fascia Right	STATION	Fascia Left	25FT Left	50FT Left
5.4	4.7	10.4	Bent 1	10.3	4.8	5.0
5.1	4.8	10.9	1.5	10.8	4.7	5.1
4.8	4.2	10.6	Bent 2	10.3	3.8	3.9

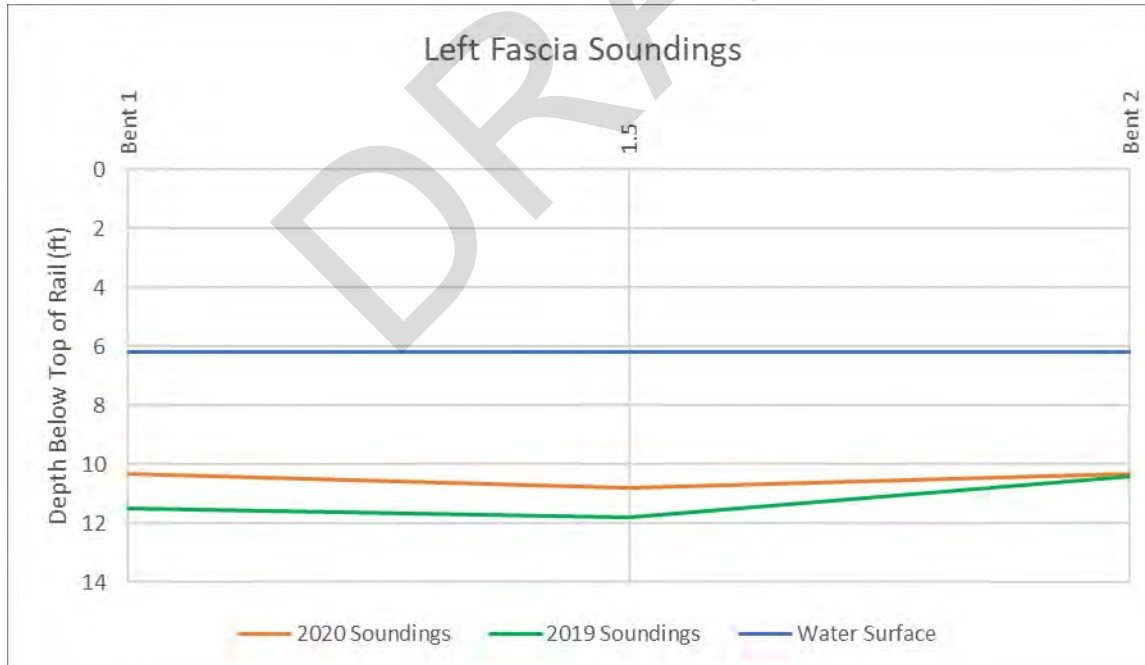
Table 4-2: Bridge 155000 Channel Soundings – Fascia Comparisons

STATION	Fascia Left 2020	Fascia Left 2019	Fascia Left Change	Fascia Right 2020	Fascia Right 2019	Fascia Right Change
Bent 1	10.3	11.5	+1.2	10.4	10.7	+0.3
1.5	10.8	11.8	+1.0	10.9	12.0	+1.1
Bent 2	10.3	10.4	+0.1	10.6	10.6	0.0

Graph 4-1 Bridge 155000 Right Fascia Cross Section



Graph 4-2 Bridge 155000 Left Fascia Cross Section



4.4 Repair Recommendations

Most of the findings observed in the field and noted in the FDOT report are normal issues that will not compromise the structural integrity of the bridge and wingwalls. The observations and findings for this bridge are of low priority repairs. It is recommended to routinely perform basic maintenance such as concrete spall or crack repairs, cleaning areas of debris and joint repairs at this bridge location.

One area of higher priority is the southwest wingwall. The crack opening in this wall caused leakage to occur which created a large void on the embankment. The 3-foot by 5-foot void is a hazard to pedestrians and should be repaired promptly.

- Bridge 155000 Estimated Repair Cost - \$9,300

The structure should be monitored every 24 months per BIRM for additional irregularities that could further deteriorate the structural elements. Bridge 155000 was built in 1950 and is currently 70 years old. Based on the age, typical design life of bridges, its exposure to salt water, and its current condition, the bridge may show structural deterioration in the next five (5) to 10 years that requires maintenance repairs.

DRAFT

4.5 Site Photos

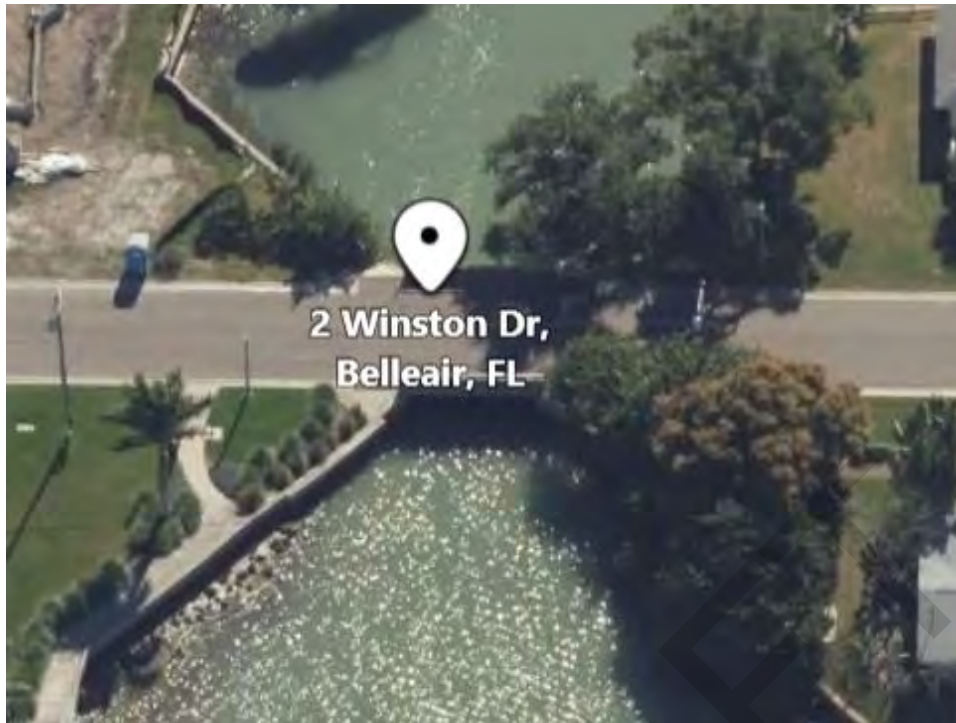


Figure 4-2: Aerial view of Bridge 155000 at Winston Drive



Figure 4-3: Southwest Wall – 4 inches of movement and 36 inch deep void



Figure 4-4: Southwest Wall – Opening in the panel and cap with void



Figure 4-5: Corrosion to steel at unpatched form tie holes in face of abutment



Figure 4-6: Typical spall at the underside of bridge slab beams



Figure 4-7: Cracks along expansion joint where the approach slab meets the bridge



Figure 4-8: Cracks in wingwalls



Figure 4-9: Diagonal crack with corrosion staining at the first joint from the bridge on the southeast corner where the wingwall meets the seawall.

5.0 SEAWALL AT WINSTON PARK – WINSTON DRIVE



Figure 5-1: Overall view of the Winston Park Seawall

5.1 Structure Description

The seawall structure in Figure 5-1 is an extension of the northeast wingwall at Bridge 155000 that borders Clearwater Harbor and Winston Park. It functions as a retaining system for the embankment that is Winston Park. This retaining system consists of cantilever steel sheet piles and anchored 4-foot wide concrete panels. The seawall measured approximately 162 feet long with a height from top of coping to mudline of five (5) feet. The wall has a 2-foot by 2-foot concrete cap at the top of the wall panels and a 5-foot wide concrete sidewalk immediately landward from the cap. Based on the condition observed, the concrete cap and steel sheet pile wall section were installed recently.

5.2 Findings and Observations

The seawall inspection found minor to moderate defects in the wall panels and minor defects to the cap. The overall condition ratings for the structure are:

- Seawall cap is in GOOD condition.
- Seawall panels are in FAIR condition.

The following field observations of the condition of the structure were noted during the inspection:

- The 25-foot section of steel sheet pile wall had no visible defects. The section seemed to have been repaired where the sheet piles were driven in front of damaged concrete panels.
- Voids seen from the water side of the concrete panels were mainly between the joints of the panels and measured up to two (2) feet deep. Spalls were observed as large as four (4) inches wide for the full joint height of the panel, as seen in Figure 5-2.
- Several horizontal and vertical hairline cracks are present. Some span the entire width of the seawall panels, as seen in Figure 5-3.

- There are hairline cracks throughout the entire cap with additional spalling in some areas of the underside.
- At the outfall 4-foot diameter pipe, there is an area of scour present. The scour was two to three (2-3) feet deep relative to the adjacent channel bottom with an overall water depth of five (5) feet. The scour cone encompasses approximately 36 linear feet of the seawall.

5.3 Repair Recommendations

The findings observed in the field are normal issues that will not compromise the structural integrity of the seawall. The observations and findings for this wall are of low priority repairs. It is recommended to routinely perform basic maintenance such as concrete spall or crack repairs, cleaning areas of debris and joint repairs. Filling void spaces behind the wall could also be treated as low priority routine maintenance.

To prevent the continued loss of fill at the seawall joints, the installation of a localized French drain is recommended at the one problem area noted. The drain will allow water to flow through the wall but will catch the soils and reduce future fill loss. The drain installation involves excavating out a 4-foot by 4-foot section centered at the problematic wall joint. The excavation should extend down below the waterline. A sheet of geocomposite drain is then placed against the inside of the seawall such that the wall joint is fully covered. Then, a layer of geotextile is placed before filling and compacting #57 stone inside the hole. The geotextile is then wrapped over the top of the stone before placing a final lift of soils and sod.

Additionally, a weep hole filter may be installed at the problematic seawall joint which allows water to flow out from behind the wall but not the soils. Installation of the weep hole filter includes a concrete patch at the seawall joint.

- Estimated cost of French drain and weep hole filter - \$5,000

The structure should be monitored every five (5) years per ASCE Waterfront Inspection Manual for additional deterioration that could require maintenance repairs to the structural elements.

5.4 Site Photos



Figure 5-2: Void behind seawall at wall joint



Figure 5-3: Crack in concrete panel cap at wall joint

6.0 BRIDGE 155001 – NORTH PINE CIRCLE



Figure 6-1: Bridge 155001 at North Pine Circle

6.1 Structure Description

Bridge 155001 at North Pine Circle, shown in Figures 6-1 and 6-2, was built in 1950 and spans a non-navigable waterway on the east shore of Clearwater Harbor. The bridge is a simply supported, single span structure measuring 28.25 feet wide with a length of 25 feet. The superstructure consists of six (6) 48-inch wide precast prestressed concrete slab beams with concrete deck and asphalt overlay. The bridge has 32-inch side barriers with single bullet rails along the full length of the bridge main span. The shoreline adjacent to the bridge has 11-foot long wingwalls at each corner of the abutments. A utility penetrates the southeast wingwall adjacent to the abutment as seen in Figure 6-4. This bridge is identical to the Bridge 155000 at Winston Drive.

A NBIS routine inspection was conducted in 2019 that identified areas of concern which included but were not limited to concrete spalls, cracks, and delamination in various sections of the superstructure and substructure elements. Exposed steel reinforcing bars are present and rust spots with some corrosion were also listed. The structure was listed as scour critical. Minor maintenance repairs were completed since the 2019 FDOT inspection, including spall repairs at the abutments (Figure 6-5) and bridge reflectors were added to the concrete barriers at the beginning and end of the concrete barriers. An example of these repairs can be seen in Figure 6-3.

6.2 Findings and Observations

The bridge and wingwalls inspection found minor to moderate defects on the underside of the bridge deck and wingwalls. The overall condition ratings for the structure are:

- 59-Superstructure = 5
- 60-Substructure = 7
- 61-Channel = 7
- 113-Scour = 8 (Field Observations Only)

The condition of the structure has not significantly changed since the 2019 FDOT inspection. The following field observations were noted during the inspection:

- Failure of protective coating on the underside of the concrete slab unit, as seen in Figure 6-6.
- Cracks in the superstructure decks, underside of the slab units and substructure abutments are noted with some areas of corroded reinforcing as seen in Figure 6-7 and spalling as seen in Figure 6-8.
- The approach slabs are not visible because they are completely covered by the asphalt topping.
- There are transverse cracks along the expansion joints that are fully covered by asphalt topping.
- There is exposed rebar with corrosion on the underside of the cap at the southeast wingwall to private seawall transition, as seen in Figure 6-9.
- Multiple areas of delamination were found on the underside of the bridge deck corresponding to the delamination noted in the 2019 FDOT report, as seen in Figure 6-10.
- An under-water inspection of the abutments found no signs of scour or undermining of the foundations. There were no indications that the structure should be labeled as scour critical. A scour rating of 8 was given based on field observations only. A scour calculation/evaluation was not performed.
- Some concrete damage noted in the 2019 NBIS Inspection Report on the traffic railing barriers were repaired.
- The beam bearing pads were not visible
- The type and size of the bridge supports could not be identified because they were located behind the concrete abutment that extended to the mudline.
- Joints in all wingwalls are offset up to one (1) inch and one area on the southwest corner of the bridge has a diagonal crack and exposed reinforcing in the concrete cap, as seen in Figure 6-9.

6.3 Soundings

Soundings were taken at each bridge fascia and at offsets of 25 and 50 feet from the bridge. All fascia sounding measurements were taken from the top of rail and are in decimal feet. All offset sounding measurements were taken from the waterline and are in decimal feet. Refer to Table 6-1 through Table 6-2 and Graph 6-1 through Graph 6-2 for channel bottom comparisons. Sounding measurement differences over three (3) feet are in bold print and are positive (+) for aggradation and negative (-) for scour. The channel bottom profile comparison was made by comparing the latest FDOT topside sounding data from January 15, 2019.

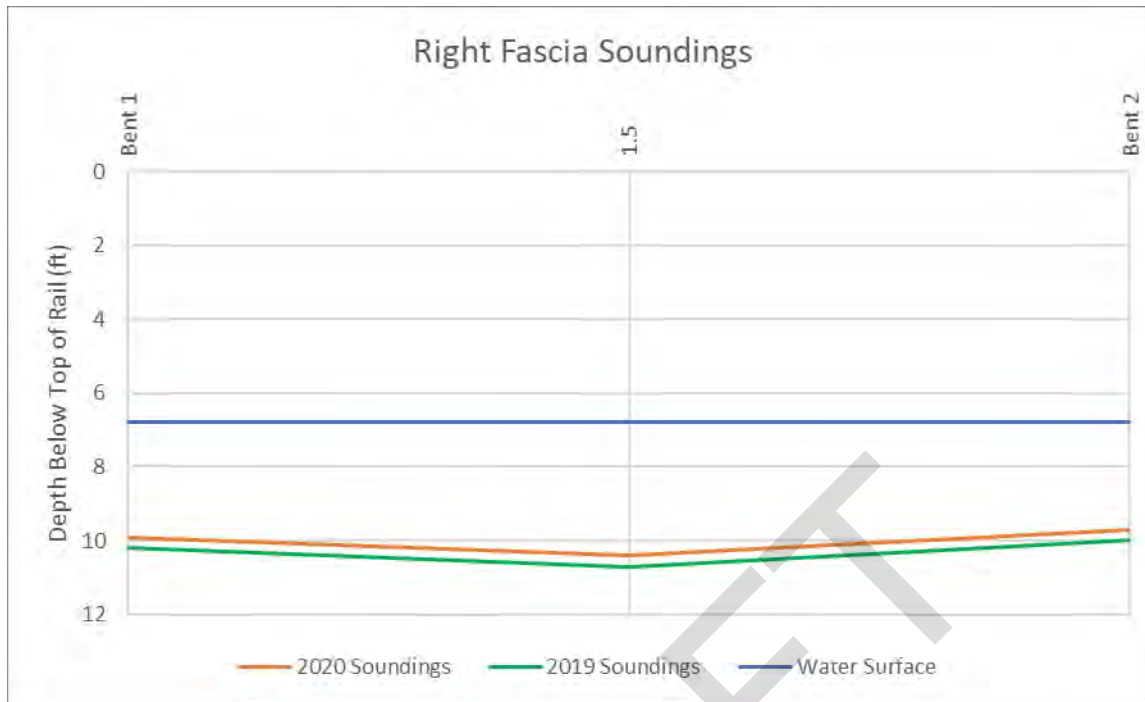
Table 6-1: Bridge 155001 Channel Soundings

50FT Right	25FT Right	Fascia Right	STATION	Fascia Left	25FT Left	50FT Left
3.7	3.3	9.9	Bent 1	10.3	4.8	4.5
3.6	3.3	10.4	1.5	10.6	5.0	5.2
2.9	2.7	9.7	Bent 2	10.2	4.4	4.7

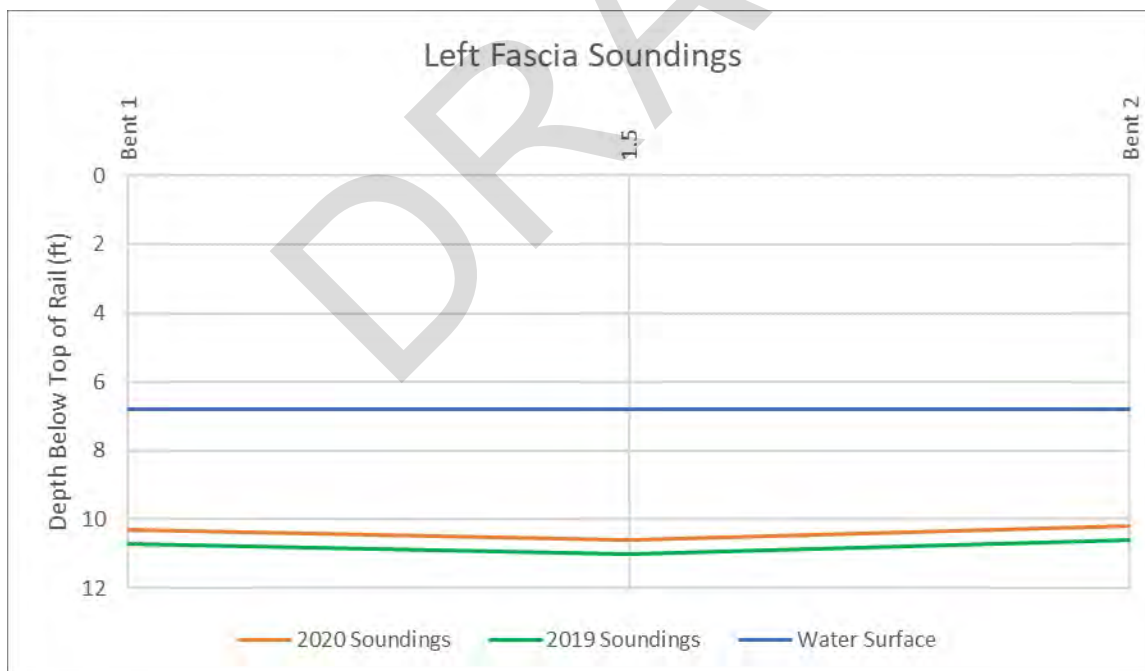
Table 6-2: Bridge 155001 Channel Soundings – Fascia Comparisons

STATION	Fascia Left 2020	Fascia Left 2019	Fascia Left Change	Fascia Right 2020	Fascia Right 2019	Fascia Right Change
Bent 1	10.3	10.7	+0.4	9.9	10.2	+0.3
1.5	10.6	11.0	+0.4	10.4	10.7	+0.3
Bent 2	10.2	10.6	+0.4	9.7	10.0	+0.3

Graph 6-1 Bridge 155001 Right Fascia Cross Section



Graph 6-2 Bridge 155001 Left Fascia Cross Section



6.4 Repair Recommendations

The findings observed in the field and noted in the 2019 FDOT inspection report are normal issues that will not compromise the structural integrity of the bridge and wingwalls. The observations and findings for this bridge are of low priority repairs. It is recommended to routinely perform basic maintenance such as concrete spall or crack repairs, cleaning areas of debris and joint repairs.

- Bridge 155001 Estimated Repair Cost - \$39,250

The structure should be monitored every 24 months per BIRM for addition irregularities that could further deteriorate of the structural elements. Bridge 155001 was built in 1950 and is currently 70 years old. Based on the age, typical design life of bridges, its exposure to salt water, and its current condition, the bridge may show structural deterioration in the next five (5) to 10 years that requires maintenance repairs.

DRAFT

6.5 Site Photos



Figure 6-2: Aerial view of Bridge 155001 at North Pine Circle



Figure 6-3: Cracks in abutments with epoxy injection repair



Figure 6-4: Cracks in the southeast wingwall due corroded utility



Figure 6-5: Typical view of Abutment



Figure 6-6: Under side coating failure



Figure 6-7: Typical random area of corrosion on underside of Beam Slab panels



Figure 6-8: Typical spall in underside of Beam Slab panels



Figure 6-9: Cracks in wingwall / concrete panel wall connection on the southeast side of bridge. There is failure of the cap here with exposed steel reinforcing.



Figure 6-10: Area of delamination on underside of bridge deck.

7.0 SEAWALL AT THOMPSON PARK – NORTH PINE CIRCLE



Figure 7-1: Overall view of the Thompson Park Seawall

7.1 Structure Description

The seawall structure shown in Figure 7-1 is an extension of Bridge 155001 northeast wingwall that borders Clearwater Harbor and Thompson Park. It functions as a retaining system for the embankment that is Thompson Park. This retaining system consists of anchored four (4) foot wide concrete panels. The anchors are 2-inch diameter steel rods with a 6-inch by 6-inch steel washer plate. Behind the concrete panels is a mechanically stabilized earth (MSE) system constructed of geotextile material. The seawall measured approximately 162 feet long with a height of four (4) feet to the mudline. The wall has a 2-foot by 2-foot concrete cap at the top of the wall panels.

7.2 Findings and Observations

The seawall inspection found moderate to severe defects in the wall panels and moderate defects to the cap. The overall condition ratings for the structure are:

- Seawall cap is in FAIR condition.
- Seawall panels are in SERIOUS condition

The following field observations of the condition of the structure were noted during the inspection:

- The seawall has failed approximately 91 feet from the bridge abutment. The wall has up to six (6) inches of lateral movement at the cap and concrete panel joint. Behind this area there is a void with up to four (4) feet of penetration with geotextile fabric exposed, as seen in Figure 7-2 and Figure 7-3.
- One tie rod has failed, and all the remaining rods have signs of heavy corrosion with flaking and moderate section loss present on the washer plate, bolt, and tie rod hardware, as seen in Figure 7-4 and Figure 7-5.

- Several voids were observed from the topside behind the concrete panels. They range in size from two (2) feet in length along the seawall by six (6) inches deep, to as large as seven (7) feet in length by three (3) feet deep. An example of a void can be seen in Figure 7-6.
- Voids seen from the water side of the concrete panels were located at the panel joint connections. The largest void observed had up to four (4) feet of penetration with loss of backfill.
- All concrete panel connection joints have spalling and typical gaps of one (1) inch, as seen in Figure 7-7.
- Seawall at the adjacent property line partially covers a drainage outfall, as seen in Figure 7-8.
- There is full length edge spalling of the concrete cap.
- There is a 30-foot section of seawall with abrasion starting 60 feet from the Bridge abutment located two (2) feet above the mudline, measuring six (6) inches high by two (2) inches deep, as seen in Figure 7-9. This is in the splash zone / tidal zone.
- Hairline cracks throughout the entire cap with additional spalling in some areas of the underside with exposed steel reinforcement, as seen in Figure 7-10.

7.3 Repair and Recommendations

M&N recommends replacing the Thompson Park Seawall on a moderate-priority basis. Until the seawall is replaced, M&N recommends that vehicular live loading be restricted along the seawall, and that the wall be regularly monitored for additional lateral movement.

A full replacement of the seawall may be achieved by driving a new wall in front of the existing one and filling the space between the walls with #57 stone. Additionally, raising the grade at the park approximately two (2) feet to match the adjacent property elevation will ensure the resilience of the wall to meet future environmental demands. M&N recommends a sheet pile wall made of fiber reinforced polymers (FRP) with a concrete cap that is anchored by a buried deadman and connected with steel tie-rods. An itemized construction cost estimate is included in Appendix C.

- Estimated Seawall Replacement Cost - \$210,680

Prior to the replacement of the wall, M&N recommends geotechnical investigation, sampling and testing near the seawall to identify the stratigraphy and strengths of the soils being retained. Additionally, a jet probe is recommended along the water side face of the existing wall to verify the tip elevation of the concrete walls and to identify the top of any firm layers that may affect the driving of the replacement wall.

The permitting agencies with jurisdiction regarding over-water construction are the Florida Department of Environmental Protection (FDEP) and the U.S. Army Corp of Engineers (USACE). If the replacement wall is installed no further than 18 inches from the face of the existing wall, the construction qualifies as a maintenance repair and is exempt from the full permitting process. It is recommended that the permitting agencies be contacted ahead of any scheduled construction to verify any additional requirements.

The structure should be monitored every two (2) years per ASCE Waterfront Inspection Manual for additional deterioration that could require maintenance repairs to the structural elements.

7.4 Site Photos



Figure 7-2 Wall failure resulting in large deflection between wall panels



Figure 7-3 Deep void and loss of fill at wall failure



Figure 7-4: Missing tieback hardware



Figure 7-5: Typical tieback hardware, heavily corroded



Figure 7-6 Evidence of fill loss behind seawall cap and longitudinal cracks with corrosion staining in top of concrete cap.



Figure 7-7: Typical spalling at concrete seawall panel joints



Figure 7-8: Partially covered outfall at the private property line north of the park



Figure 7-9: Example area of abrasion along seawall in splash zone



Figure 7-10: Typical spalling and cracking of cap underside

8.0 BRIDGE 155003 – BAYVIEW DRIVE



Figure 8-1: Bridge 155003 at Bayview Drive

8.1 Structure Description

Bridge 155003 at Bayview Drive, shown in Figures 8-1 and 8-2, was built in 1992 and spans Exotic Creek, a non-navigable waterway that flows into Clearwater Harbor. The bridge is a simply supported, single span structure measuring 37 feet wide with a length of 50 feet. Approach slabs are 20 feet long at each abutment. The superstructure consists of five (5) prestressed precast concrete double tee beams with concrete deck overlay. The bridge has 6-foot wide sidewalks and 32-inch barriers with double bullet rails along the length of the bridge main span and approach slabs on each side. Wingwalls at each corner of the abutments protect the embankment slope.

A NBIS routine inspection was conducted in 2019 that identified areas of concern which included but were not limited to concrete spalls, cracks, and delamination in various sections of the superstructure and substructure elements. Exposed steel reinforcing bars are present and rust spots with some corrosion were also listed. Minor maintenance repairs were completed since the 2019 FDOT inspection, including grinding and leveling uneven sidewalks as seen in Figure 8-3 and object markers were added to the concrete barriers at the beginning and end of the concrete barriers.

8.2 Findings and Observations

The bridge and wingwalls inspection found only minor defects on the underside of the bridge deck and wingwalls. The overall condition ratings for the structure are:

- 59-Superstructure = 7
- 60-Substructure = 7
- 61-Channel = 8
- 113-Scour = 8 (Field Observations Only)

The condition of the structure has not significantly changed since the 2019 FDOT inspection. The following field observations were noted during the inspection:

- Cracks in the superstructure deck, sidewalks, barriers, and underside of tee beams are noted with some areas of exposed reinforcing. There is an additional area of delamination in the underside of the Double-T Beam, as seen in Figure 8-4.
- Deteriorated expansion joints at beginning and end of the bridge.
- Several minor construction spalls in the beam legs.
- The type of piles supporting the abutments are not able to be identified due to the rock rubble slope protection in the channel, see Figure 8-5.
- Heavy vegetation growth at wingwalls/abutments.

8.3 Soundings

Soundings were taken at each bridge fascia and at offsets of 25 and 50 feet from the bridge. All fascia sounding measurements were taken from the top of rail and are in decimal feet. All offset sounding measurements were taken from the waterline and are in decimal feet. Refer to Table 8-1 through Table 8-2 and Graph 8-1 through Graph 8-2 for channel bottom comparisons. Sounding measurement differences over three (3) feet are in bold print and are positive (+) for aggradation and negative (-) for scour. The channel bottom profile comparison was made by comparing the latest FDOT topside sounding data from January 16, 2019.

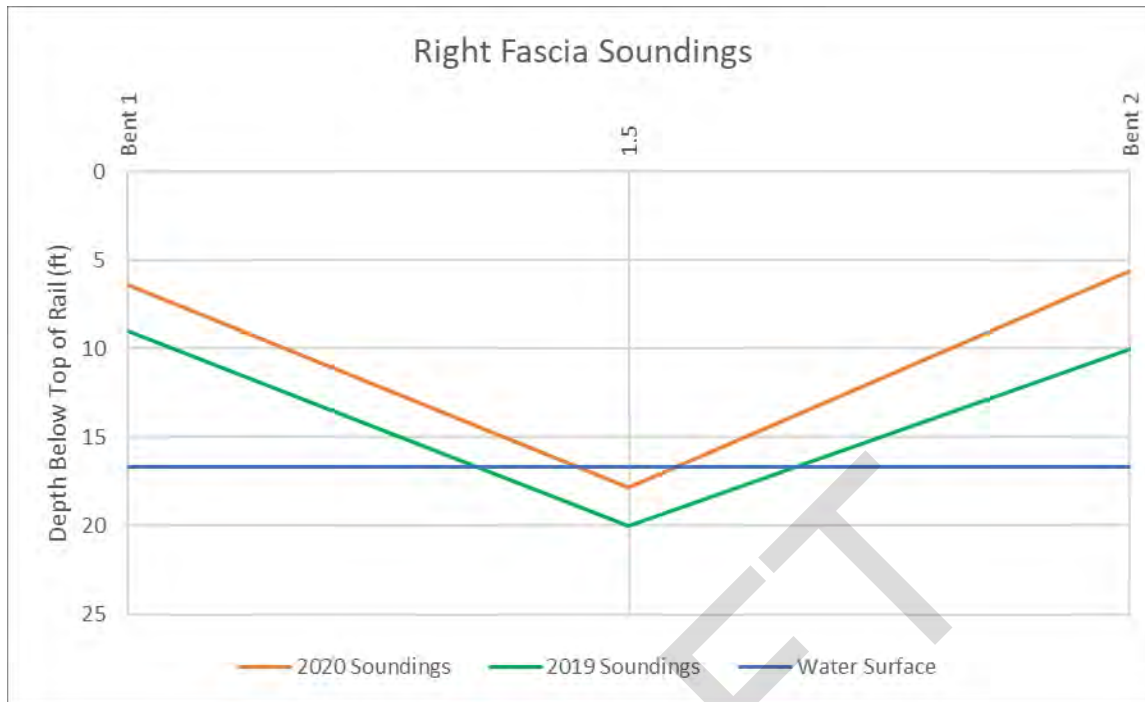
Table 8-1: Bridge 155003 Channel Soundings

50FT Right	25FT Right	Fascia Right	STATION	Fascia Left	25FT Left	50FT Left
--	--	6.4	Bent 1	6.5	--	--
1.0	1.0	17.8	1.5	16.8	--	--
--	--	5.6	Bent 2	6.0	--	--

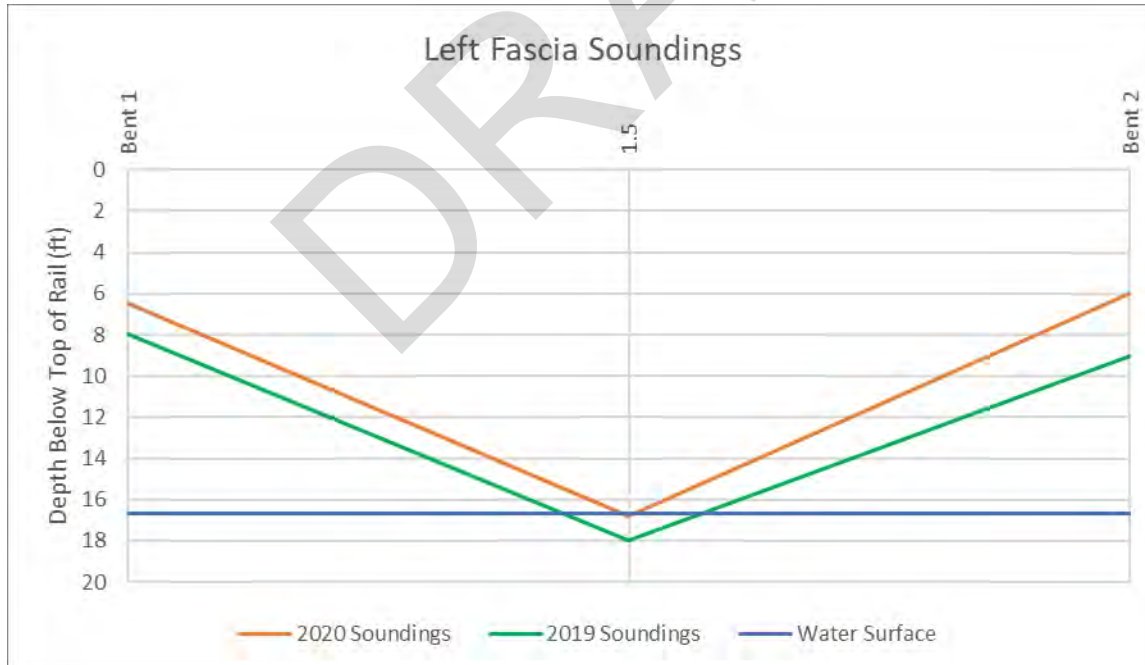
Table 8-2: Bridge 155003 Channel Soundings – Fascia Comparisons

STATION	Fascia Left 2020	Fascia Left 2019	Fascia Left Change	Fascia Right 2020	Fascia Right 2019	Fascia Right Change
Bent 1	6.5	8.0	+1.5	6.4	9.0	+2.6
1.5	16.8	18.0	+1.2	17.8	20.0	+2.2
Bent 2	6.0	9.0	+3.0	5.6	10.0	+4.4

Graph 8-1 Bridge 155003 Right Fascia Cross Section



Graph 8-2 Bridge 155003 Left Fascia Cross Section



8.4 Repair Recommendations

The findings observed in the field and noted in the 2019 FDOT inspection report are normal issues that will not compromise the structural integrity of the bridge and wingwalls. The observations and findings for this bridge are of low priority repairs. It is recommended to routinely perform basic maintenance such as concrete spall or crack repairs, cleaning areas of debris and joint repairs to name a few.

The structure should be monitored every 24 months per BIRM for additional irregularities that could further deteriorate the structural elements. Bridge 155003 was built in 1992 and is currently 28 years old. Based on the age, typical design life of bridges, its exposure to salt water, and its current condition, it is not expected for this bridge to require major maintenance repairs in the next 20 years.

DRAFT

8.5 Site Photo

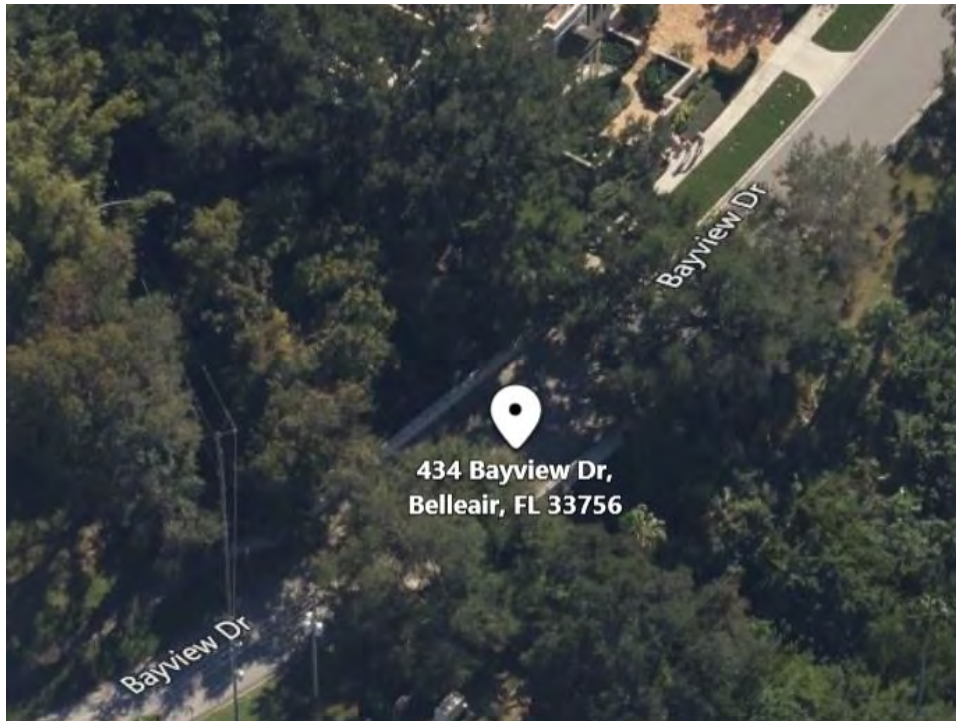


Figure 8-2: Aerial view of Bridge 155003 at Bayview Drive



Figure 8-3: Sidewalk repair



Figure 8-4: Area of delamination in beam



Figure 8-5: Channel and concrete rubble embankments

9.0 BRIDGE 155004 – OVERLOOK DRIVE



Figure 9-1: Bridge 155004 at Bayview Drive

9.1 Structure Description

Bridge 155004 at Overbrook Drive, shown in Figures 9-1 and 9-2 was built in 1994 and spans Ikes Creek, a non-navigable waterway in a residential neighborhood. The bridge is a single opening culvert that consists of five (5) precast concrete segments. The structure measures 28 feet wide with a length of 24 feet. Traffic guardrails are offset four (4) feet from the side headwalls where the edge of asphalt pavement begins. Wingwalls at each corner of the culvert headwalls protect the embankment slope.

A NBIS routine inspection was conducted in 2019 that identified areas of concern which included but were not limited to concrete spalls and hairline cracks in various sections of the precast segments. Openings and misalignments between precast segments and the wingwall joints were listed. Since the 2019 FDOT inspection, it appears that no preventative maintenance has been completed to the structure.

9.2 Findings and Observations

The bridge and wingwalls inspection found minor to moderate defects on the culvert ceiling and wingwalls. The overall condition ratings for the structure are:

- 61-Channel = 7
- 62-Culvert = 7
- 113-Scour = 8 (Field Observations Only)

The condition of the structure has not significantly changed since the 2019 FDOT inspection. The following field observations were noted during the inspection:

- Cracks in the culvert asphalt overlay.
- There are openings between precast segments up to one (1) inch, misalignment of up to 1.25 inches and approximately ten (10) inches of penetration. No evidence of falling debris is present, as seen in Figure 9-3 and Figure 9-4.
- Several minor construction spalls in the precast segments, as seen in Figure 9-5.
- Dense/heavy vegetation growth over wingwalls and headwalls parapet, as seen in Figure 9-6.
- There is aggradation of soil up to three (3) feet high in the channel along the south wall, as seen in Figure 9-7.
- Minor settlement of two (2) inches at the northwest wingwall with an open joint up to one (1) inch wide, as seen in Figure 9-8.
- The toe of the precast culvert section is exposed up to five (5) inches on the upstream and up to three (3) inches on the downstream sides of the structure, as seen in Figure 9-9.

9.3 Soundings

Soundings were taken at each bridge fascia and at offsets of 25 and 50 feet from the bridge. All fascia sounding measurements were taken from the top of headwall and are in decimal feet. All offset sounding measurements were taken from the waterline and are in decimal feet. Refer to Table 9-1 through Table 9-2 and Graph 9-1 through Graph 9-2 for channel bottom comparisons. Sounding measurement differences over three (3) feet are in bold print and are positive (+) for aggradation and negative (-) for scour. The channel bottom profile comparison was made by comparing the latest FDOT topside sounding data from January 16, 2019.

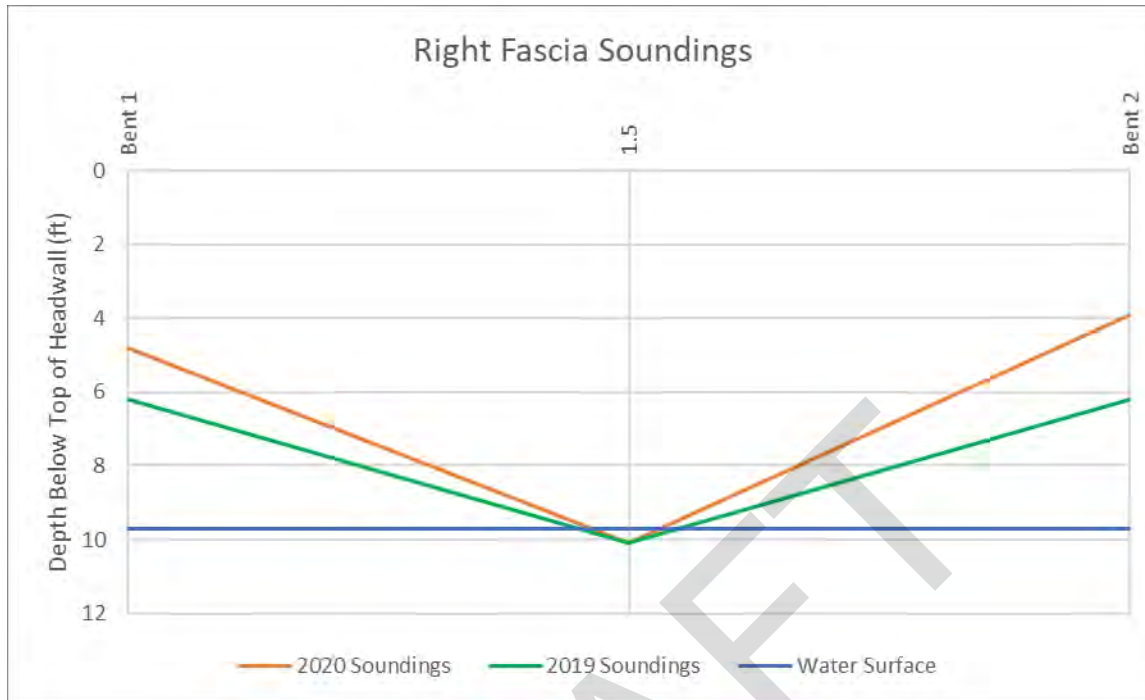
Table 9-1: Bridge 155004 Channel Soundings

50FT Right	25FT Right	Fascia Right	STATION	Fascia Left	25FT Left	50FT Left
--	--	4.8	Bent 1	8.4	--	--
0.5	0.5	10.1	1.5	9.8	0.5	0.5
--	--	3.9	Bent 2	8.0	--	--

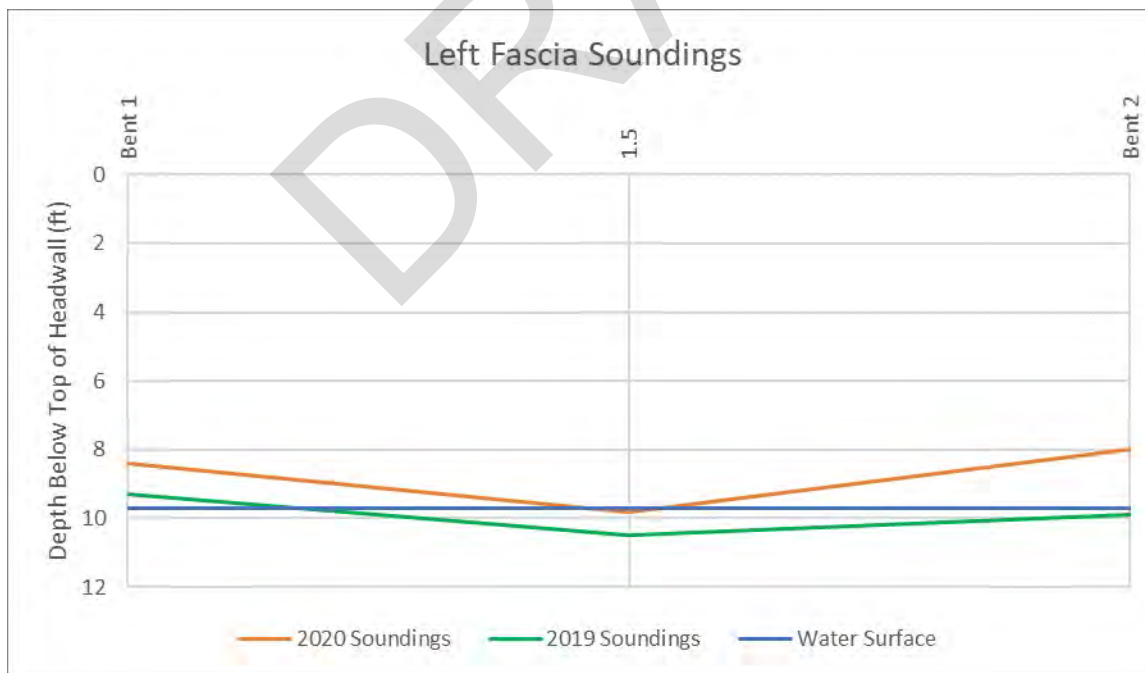
Table 9-2: Bridge 155004 Channel Soundings – Fascia Comparisons

STATION	Fascia Left 2020	Fascia Left 2019	Fascia Left Change	Fascia Right 2020	Fascia Right 2019	Fascia Right Change
Bent 1	8.4	9.3	+0.9	4.8	6.2	+1.4
1.5	9.8	10.5	+0.7	10.1	10.1	0.0
Bent 2	8.0	9.9	+1.9	3.9	6.2	+2.3

Graph 9-1 Bridge 155004 Right Fascia Cross Section



Graph 9-2 Bridge 155004 Left Fascia Cross Section



9.4 Repair Recommendations

The findings observed in the field and noted in the 2019 FDOT inspection report are normal issues that will not compromise the structural integrity of the precast culvert and wingwalls. The observations and findings for this bridge are of low priority repairs. It is recommended to routinely perform basic maintenance such as concrete spall or crack repairs, cleaning areas of debris and joint repairs to name a few.

The northwest wingwall has settled two (2) inches and there is minimal toe exposure at the upstream and downstream end of the culvert. While no immediate repair is required, M&N recommends the wall be monitored for additional settlement along with the depth of toe exposure during high flow events. Additionally, it is recommended to monitor the roadway for signs of sinkholes due to a small void found between the precast culvert sections.

The structure should be monitored every 24 months per BIRM for addition irregularities that could further deteriorate of the structural elements. Bridge 155004 was built in 1994 and is currently 26 years old. Based on the age, typical design life of bridges, its exposure to salt water, and its current condition, it is not expected for this bridge to require major maintenance repairs in the next 20 years.

9.5 Site Photo

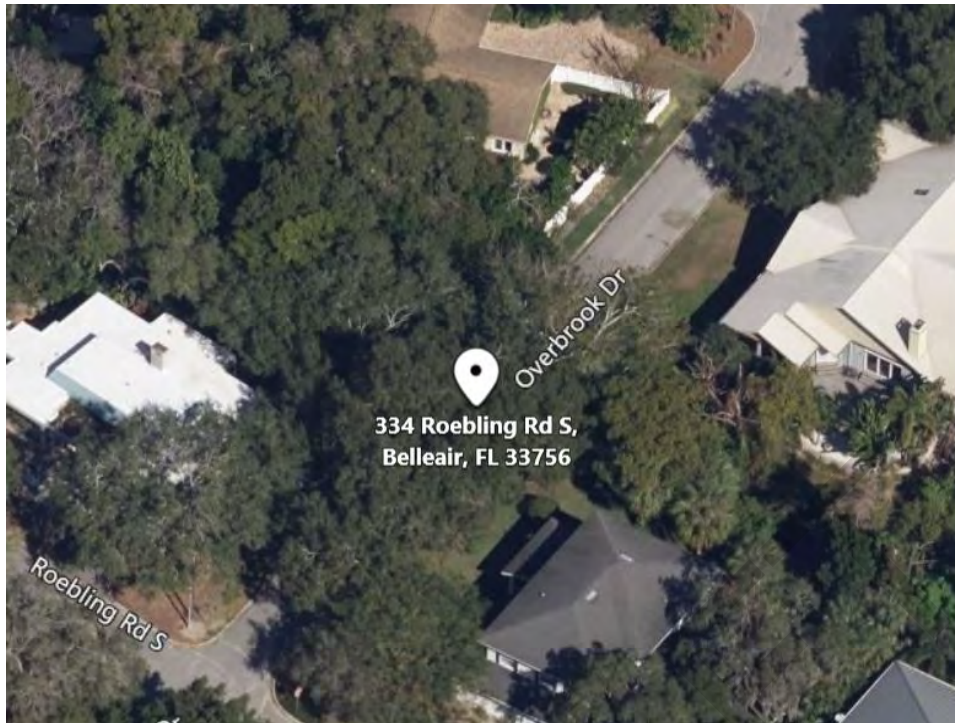


Figure 9-2: Aerial view of Bridge 155004 at Overbrook Drive



Figure 9-3: Misalignment between culvert segments with up to ten (10) inches of penetration



Figure 9-4: Opening between culvert segments



Figure 9-5: Construction spalling along ceiling edge of culvert opening



Figure 9-6: Bridge section & overgrown vegetation



Figure 9-7: Aggradation within culvert



Figure 9-8: Area of settlement and misalignment between headwall and wingwall



Figure 9-9: Example of exposed toe on the upstream side of the structure

10.0 BRIDGE 150062 – INDIAN ROCKS ROAD



Figure 10-1: Bridge 150062 at Bayview Drive

10.1 Structure Description

Bridge 150062 at Indian Rocks Road, shown in Figures 10-1 and 10-2 was built in 1927 and spans Ikes Creek, a non-navigable waterway in a residential neighborhood. The bridge is an arch structure with a 27-foot channel opening that supports the roadway deck. The span measures 31 feet wide with a length of 57.5 feet. The bridge includes an asphalt overlay roadway surface and a four (4) foot raised concrete sidewalk on the east end. Concrete barriers are along the main span of the traffic lanes and the sidewalk is protected by a galvanized pipe railing at the edge of the deck. Wingwalls at each corner of the abutments protect the embankment slope.

A NBIS routine inspection was conducted in 2019 that identified areas of concerns which included but were not limited to concrete spalls and honeycombing including cracks in various sections of the superstructure and substructure elements. Rust staining with some corrosion and areas of undermining were also listed for the retaining walls. The structure was listed as functionally obsolete. Since the 2019 FDOT inspection, it appears that no preventative maintenance has been completed to the structure except for the added object marker to the west concrete barrier.

10.2 Findings and Observations

The bridge and wingwalls inspection found minor to moderate defects on the deck, underside of the arch and wingwalls. The channel rating was downgraded from a 9 to a 7 due to the area of undermining at the northwest wingwall. The overall condition ratings for the structure are:

- 59-Superstructure = 7
- 60-Substructure = 7
- 61-Channel = 7
- 113-Scour = 8 (Field Observation Only)

The condition of the structure has not significantly changed since the 2019 FDOT inspection. The following field observations were noted during the inspection:

- Transverse and longitudinal cracks are present on the superstructure asphalt overlay, as seen in Figure 10-3.
- There is an area of undermining at the northwest wingwall that measures up to three (3) inches high that has up to two (2) feet of penetration, as seen in Figure 10-4.
- Areas of honeycombing in the underside of the arch substructure are present near the mudline, as seen in Figure 10-5.
- Cracks in the barriers and underside of the concrete arch are noted with some minor areas of spalling, as seen in Figure 10-6.
- The surface corrosion of the pedestrian rail was repaired, but new areas of corrosion are present.
- Hairline cracks are noted at the connection where all four(4) wingwalls meet the arch structure.

10.3 Soundings

Soundings were taken at each bridge fascia and at offsets of 25 and 50 feet from the bridge. All fascia sounding measurements were taken from the top of rail and are in decimal feet. All offset sounding measurements were taken from the waterline and are in decimal feet. Refer to Table 10-1 through Table 10-2 and Graph 10-1 through Graph 10-2 for channel bottom comparisons. Sounding measurement differences over three (3) feet are in bold print and are positive (+) for aggradation and negative (-) for scour. The channel bottom profile comparison was made by comparing the latest FDOT topside sounding data from January 16, 2019.

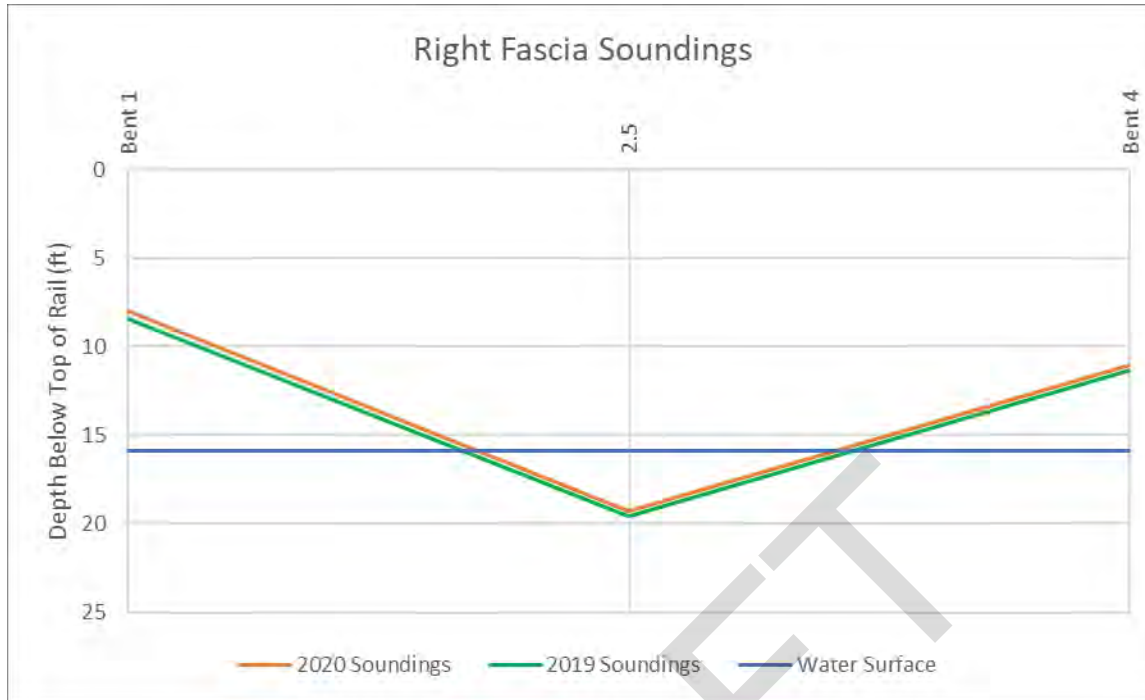
Table 10-1: Bridge 150062 Channel Soundings

50FT Right	25FT Right	Fascia Right	STATION	Fascia Left	25FT Left	50FT Left
		8.0	Bent 1	8.4		
0.5	0.5	19.3	2.5	19.6	0.5	0.5
		11.0	Bent 4	7.6		

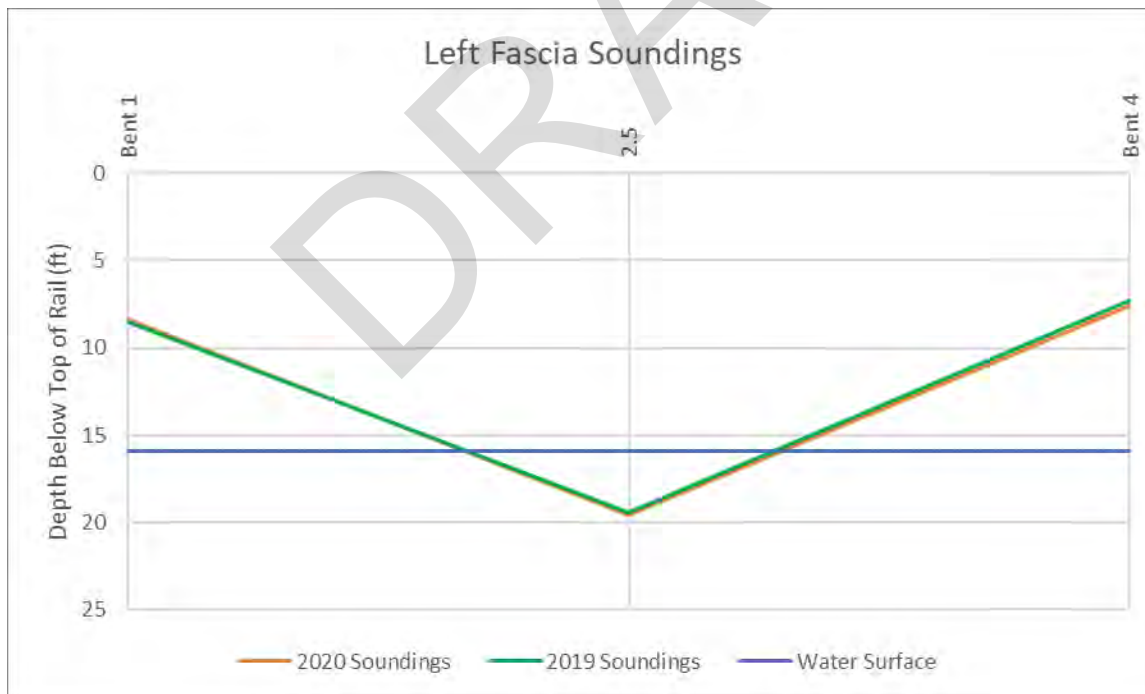
Table 10-2: Bridge 150062 Channel Soundings – Fascia Comparisons

STATION	Fascia Left 2020	Fascia Left 2019	Fascia Left Change	Fascia Right 2020	Fascia Right 2019	Fascia Right Change
Bent 1	8.4	8.5	+0.1	8.0	8.4	+0.4
2.5	19.6	19.4	-0.2	19.3	19.6	+0.3
Bent 4	7.6	7.3	-0.3	11.0	11.3	+0.3

Graph 10-1 Bridge 155062 Right Fascia Cross Section



Graph 10-2 Bridge 155062 Left Fascia Cross Section



10.4 Repair Recommendations

The findings observed in the field and noted in the 2019 FDOT inspection report are normal issues that will not compromise the structural integrity of the bridge and wingwalls. The observations and findings for this bridge are of low priority repairs. It is recommended to routinely perform basic maintenance such as concrete spall or crack repairs, cleaning areas of debris and joint sealant repairs.

The northwest wingwall has some minimal undermining. Currently no corrective action is necessary. The area should be monitored and if it increases, a repair to the wall foundation will be required by injecting grout into the undermined area to fill the void.

In the 2019 FDOT report, the structure was listed as functionally obsolete. No shoulders are present on the bridge and the concrete barriers are not adequate for the current crash rating. The pipe railing to the edge of the east sidewalk is not sufficient to protect pedestrians from slipping off the deck into the channel, as seen in Figure 10-7. A study should be conducted to consider if the structure will need to be replaced or routine maintenance will be sufficient to extend the useful service life of the bridge.

The structure should be monitored every 24 months per BIRM for addition deterioration that could require maintenance repairs to the structural elements.

DRAFT

10.5 Site Photo

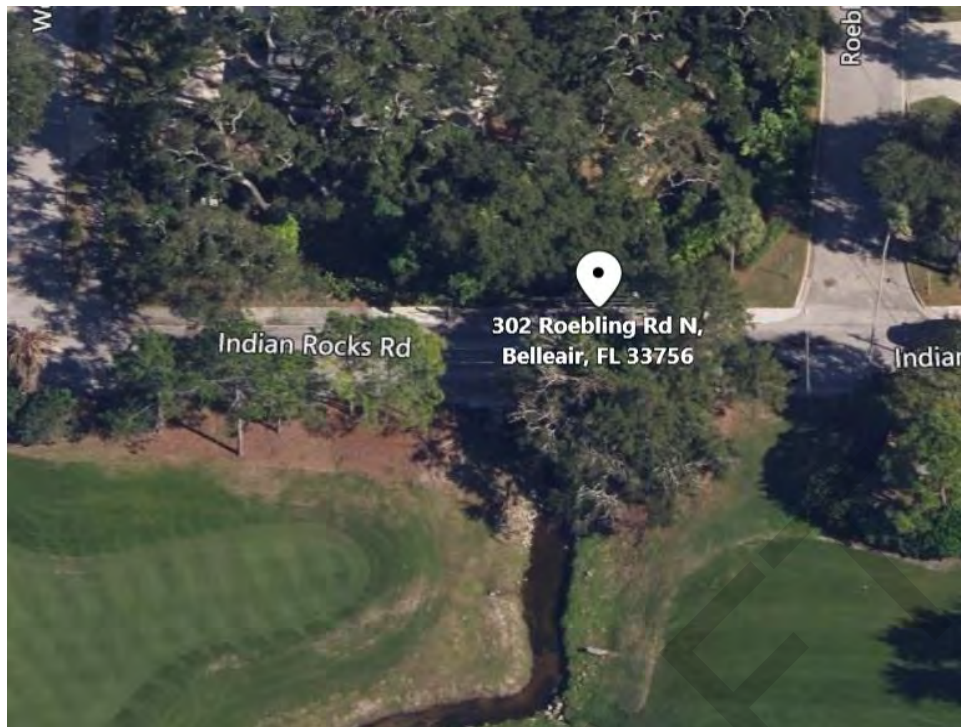


Figure 10-2: Aerial view of Bridge 155062 at Indian Rocks Road



Figure 10-3: Transverse cracks in bridge deck



Figure 10-4: Undermining at northwest wingwall three (3) inches in height with up to two (2) feet of penetration



Figure 10-5: Honeycombing under arch near the mudline



Figure 10-6: Concrete edge spall underside of arch



Figure 10-7: Bridge Section with obsolete crash barrier and sidewalk rail

11.0 CONCLUSIONS AND RECOMMENDATIONS

For the two walls inspected, the Thompson Park seawall has a condition rating of **SERIOUS** and the Winston Park seawall has a condition rating of **SATISFACTORY**. The Thompson Park seawall will need to be repaired on a moderate priority basis to prevent any additional movement or future failure to the structure. The Winston Park seawall has minor deficiencies that do not compromise its structural integrity and could be corrected on a non-priority basis.

- Estimated Thompson Park Seawall Replacement Cost - **\$210,680**
- Estimated Winston Park French Drain Cost - **\$5,000**

Overall, there were no major or significant structural deficiencies found during the inspection of the superstructure, substructures and wingwalls of any bridge. Minor defects and deterioration were observed, but do not compromise their structural integrity. Although not an immediate concern, on a non-priority basis, M&N recommends routine maintenance such as crack and spall repairs as a means of preservation. If repairs are done promptly, additional deterioration of exposed reinforcement can be drastically reduced in an aggressive environment.

- Bridge 155000 Estimated Repair Cost - **\$9,300**
- Bridge 155001 Estimated Repair Cost - **\$39,250**

APPENDIX A

NBIS CONDITION RATINGS



NBI & AASHTO Bridge Elements and Ratings



NBI Items 58 through 60 General Condition Ratings

➤	Item 58 – Deck
➤	Item 59 – Superstructure
➤	Item 60 – Substructure
Code	Description
N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION – no problems noted.
7	GOOD CONDITION – some minor problems.
6	SATISFACTORY CONDITION – structural elements show some minor deterioration.
5	FAIR CONDITION – all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	POOR CONDITION – advanced section loss, deterioration, spalling or scour.
3	SERIOUS CONDITION – loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	CRITICAL CONDITION – advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	“IMMINENT” FAILURE CONDITION – major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	FAILED CONDITION – out of service – beyond corrective action.

BME (BRIDGE MANAGEMENT ELEMENTS)

Joints		
El. No.	Element Name	Units
300	Strip Seal Expansion Joint	LENGTH (ft.)
301	Pourable Joint Seal	LENGTH (ft.)
302	Compression Joint Seal	LENGTH (ft.)
303	Assembly Joint/Seal (Modular)	LENGTH (ft.)
304	Open Expansion Joint	LENGTH (ft.)
305	Assembly Joint without Seal	LENGTH (ft.)
306	Other Joint	LENGTH (ft.)

Wearing Surface and Protective Systems		
El. No.	Element Name	Units
510	Wearing Surface	AREA (sq. ft.)
515	Steel Protective Coating	AREA (sq. ft.)
520	Concrete Reinforcing Steel Protective System	AREA (sq. ft.)
521	Concrete Protective Coating	AREA (sq. ft.)

NBE (NATIONAL BRIDGE ELEMENTS)

Deck/Slabs		
El. No.	Element Name	Units
12	Reinforced Concrete Deck	AREA (sq. ft.)
13	Prestressed Concrete Deck	AREA (sq. ft.)
15	Prestressed Concrete Top Flange	AREA (sq. ft.)
16	Reinforced Concrete Top Flange	AREA (sq. ft.)
28	Steel Deck—Open Grid	AREA (sq. ft.)
29	Steel Deck—Concrete Filled	AREA (sq. ft.)
30	Steel Deck—Corrugated/Orthotropic/Etc.	AREA (sq. ft.)
31	Timber Deck	AREA (sq. ft.)
38	Reinforced Concrete Slab	AREA (sq. ft.)
54	Timber Slab	AREA (sq. ft.)
60	Other Material Deck	AREA (sq. ft.)
65	Other Material Slab	AREA (sq. ft.)

Superstructures		
El. No.	Element Name	Units
102	Closed Web/Box Girder, Steel	LENGTH (ft.)
104	Closed Web/Box Girder, Prestressed Concrete	LENGTH (ft.)
105	Closed Web/Box Girder, Reinforced Concrete	LENGTH (ft.)
106	Closed Web/Box Girder, Other	LENGTH (ft.)
107	Girder/Beam, Steel	LENGTH (ft.)
109	Girder/Beam, Prestressed Concrete	LENGTH (ft.)
110	Girder/Beam, Reinforced Concrete	LENGTH (ft.)
111	Girder/Beam, Timber	LENGTH (ft.)
112	Girder/Beam, Other	LENGTH (ft.)
113	Stringer, Steel	LENGTH (ft.)
115	Stringer, Prestressed Concrete	LENGTH (ft.)
116	Stringer, Reinforced Concrete	LENGTH (ft.)
117	Stringer, Timber	LENGTH (ft.)
118	Stringer, Other	LENGTH (ft.)
120	Truss, Steel	LENGTH (ft.)
135	Truss, Timber	LENGTH (ft.)
136	Truss, Other	LENGTH (ft.)
141	Arch, Steel	LENGTH (ft.)
142	Arch, Other	LENGTH (ft.)
143	Arch, Prestressed Concrete	LENGTH (ft.)
144	Arch, Reinforced Concrete	LENGTH (ft.)
145	Arch, Masonry	LENGTH (ft.)
146	Arch, Timber	LENGTH (ft.)
147	Cable – Main, Steel	LENGTH (ft.)
148	Cable – Secondary, Steel	EACH
149	Cable – Secondary, Other	EACH
152	Floor Beam, Steel	LENGTH (ft.)
154	Floor Beam, Prestressed Concrete	LENGTH (ft.)
155	Floor Beam, Reinforced Concrete	LENGTH (ft.)
156	Floor Beam, Timber	LENGTH (ft.)
157	Floor Beam, Other	LENGTH (ft.)
161	Pin, Pin and Hanger Assembly, or both	EACH
162	Gusset Plate	EACH

Substructures		
El. No.	Element Name	Units
202	Columns, Steel	EACH
203	Columns, Other	EACH
204	Columns, Prestressed Concrete	EACH
205	Columns, Reinforced Concrete	EACH
206	Columns, Timber	EACH
207	Column Tower (Trestle), Steel	LENGTH (ft.)
208	Column Tower (Trestle), Timber	LENGTH (ft.)
210	Pier Wall, Reinforced Concrete	LENGTH (ft.)
211	Pier Wall, Other	LENGTH (ft.)
212	Pier Wall, Timber	LENGTH (ft.)
213	Pier Wall, Masonry	LENGTH (ft.)
215	Abutment, Reinforced Concrete	LENGTH (ft.)
216	Abutment, Timber	LENGTH (ft.)
217	Abutment, Masonry	LENGTH (ft.)
218	Abutment, Other	LENGTH (ft.)
219	Abutment, Steel	LENGTH (ft.)
220	Pile Cap/Footing	LENGTH (ft.)
225	Pile, Steel	EACH
226	Pile, Prestressed Concrete	EACH
227	Pile, Reinforced Concrete	EACH
228	Pile, Timber	EACH
229	Pile, Other	EACH
231	Pier Cap, Steel	LENGTH (ft.)
233	Pier Cap, Prestressed Concrete	LENGTH (ft.)
234	Pier Cap, Reinforced Concrete	LENGTH (ft.)
235	Pier Cap, Timber	LENGTH (ft.)
236	Pier Cap, Other	LENGTH (ft.)

Bridge Rails		
El. No.	Element Name	Units
330	Metal Bridge Railing	LENGTH (ft.)
331	Reinforced Concrete Bridge Railing	LENGTH (ft.)
332	Timber Bridge Railing	LENGTH (ft.)
333	Other Bridge Railing	LENGTH (ft.)
334	Masonry Bridge Railing	LENGTH (ft.)

Bearings		
El. No.	Element Name	Units
310	Elastomeric Bearing	EACH
311	Movable Bearing (roller, sliding, etc.)	EACH
312	Enclosed/Concealed Bearing	EACH
313	Fixed Bearing	EACH
314	Pot Bearing	EACH
315	Disk Bearing	EACH
316	Other Bearing	EACH

Decks and Slabs (NBE)		
El. No.	Element Name	Units
12	Reinforced Concrete Deck	AREA (sq. ft.)
13	Prestressed Concrete Deck	AREA (sq. ft.)
15	Prestressed Concrete Top Flange	AREA (sq. ft.)
16	Reinforced Concrete Top Flange	AREA (sq. ft.)
28	Steel Deck—Open Grid	AREA (sq. ft.)
29	Steel Deck—Concrete Filled Grid	AREA (sq. ft.)
30	Steel Deck—Corrugated/Orthotropic/Etc.	AREA (sq. ft.)
31	Timber Deck	AREA (sq. ft.)
38	Reinforced Concrete Slab	AREA (sq. ft.)
54	Timber Slab	AREA (sq. ft.)
60	Other Material Deck	AREA (sq. ft.)
65	Other Material Slab	AREA (sq. ft.)

Bridge Rails (NBE)		
El. No.	Element Name	Units
330	Metal Bridge Railing	LENGTH (ft.)
331	Reinforced Concrete Bridge Railing	LENGTH (ft.)
332	Timber Bridge Railing	LENGTH (ft.)
333	Other Bridge Railing	LENGTH (ft.)
334	Masonry Bridge Railing	LENGTH (ft.)

Joints (BME)		
El. No.	Element Name	Units
300	Strip Seal Expansion Joint	LENGTH (ft.)
301	Pourable Joint Seal	LENGTH (ft.)
302	Compression Joint Seal	LENGTH (ft.)
303	Assembly Joint/Seal (Modular)	LENGTH (ft.)
304	Open Expansion Joint	LENGTH (ft.)
305	Assembly Joint without Seal	LENGTH (ft.)
306	Other Joint	LENGTH (ft.)

Approach Slabs (BME)		
El. No.	Element Name	Units
320	Prestressed Concrete Approach Slab	AREA (sq. ft.)
321	Reinforced Concrete Approach Slab	AREA (sq. ft.)

Wearing Surface, Protective Systems, and Concrete Reinforcing Steel Protective Systems (BME)		
El. No.	Element Name	Units
510	Wearing Surfaces	AREA (sq. ft.)
515	Steel Protective Coating	AREA (sq. ft.)
520	Concrete Reinforcing Steel Protective System	AREA (sq. ft.)
521	Concrete Protective Coating	AREA (sq. ft.)

Superstructure (NBE)		
El. No.	Element Name	Units
102	Closed Web/Box Girder, Steel	LENGTH (ft.)
104	Closed Web/Box Girder, Prestressed Concrete	LENGTH (ft.)
105	Closed Web/Box Girder, Reinforced Concrete	LENGTH (ft.)
106	Closed Web/Box Girder, Other	LENGTH (ft.)
107	Open Girder/Beam, Steel	LENGTH (ft.)
109	Open Girder/Beam, Prestressed Concrete	LENGTH (ft.)
110	Open Girder/Beam, Reinforced Concrete	LENGTH (ft.)
111	Open Girder/Beam, Timber	LENGTH (ft.)
112	Open Girder/Beam, Other	LENGTH (ft.)
113	Stringer, Steel	LENGTH (ft.)
115	Stringer, Prestressed Concrete	LENGTH (ft.)
116	Stringer, Reinforced Concrete	LENGTH (ft.)
117	Stringer, Timber	LENGTH (ft.)
118	Stringer, Other	LENGTH (ft.)
120	Truss, Steel	LENGTH (ft.)
135	Truss, Timber	LENGTH (ft.)
136	Truss, Other	LENGTH (ft.)
141	Arch, Steel	LENGTH (ft.)
142	Arch, Other	LENGTH (ft.)
143	Arch, Prestressed Concrete	LENGTH (ft.)
144	Arch, Reinforced Concrete	LENGTH (ft.)
145	Arch, Masonry	LENGTH (ft.)
146	Arch, Timber	LENGTH (ft.)
147	Cable – Primary/Main, Steel	LENGTH (ft.)
148	Cable – Secondary, Steel	EACH
149	Cable – Secondary, Other	EACH
152	Floor Beam, Steel	LENGTH (ft.)
154	Floor Beam, Prestressed Concrete	LENGTH (ft.)
155	Floor Beam, Reinforced Concrete	LENGTH (ft.)
156	Floor Beam, Timber	LENGTH (ft.)
157	Floor Beam, Other	LENGTH (ft.)
161	Pin, Pin and Hanger Assembly, or both, Steel	EACH
162	Gusset Plate, Steel	EACH

Bearings (NBE)		
El. No.	Element Name	Units
310	Elastomeric Bearing	EACH
311	Movable Bearing (roller, sliding, etc.)	EACH
312	Enclosed/Concealed Bearing	EACH
313	Fixed Bearing	EACH
314	Pot Bearing	EACH
315	Disk Bearing	EACH
316	Other Bearing	EACH

Substructure (NBE)		
El. No.	Element Name	Units
202	Columns, Steel	EACH
203	Columns, Other	EACH
204	Columns, Prestressed Concrete	EACH
205	Columns, Reinforced Concrete	EACH
206	Columns, Timber	EACH
207	Column Tower (Trestle), Steel	LENGTH (ft.)
208	Column Tower (Trestle), Timber	LENGTH (ft.)
210	Pier Wall, Reinforced Concrete	LENGTH (ft.)
211	Pier Wall, Other	LENGTH (ft.)
212	Pier Wall, Timber	LENGTH (ft.)
213	Pier Wall, Masonry	LENGTH (ft.)
215	Abutment, Reinforced Concrete	LENGTH (ft.)
216	Abutment, Timber	LENGTH (ft.)
217	Abutment, Masonry	LENGTH (ft.)
218	Abutment, Other	LENGTH (ft.)
219	Abutment, Steel	LENGTH (ft.)
220	Pile Cap/Footing, Reinforced Concrete	LENGTH (ft.)
225	Pile, Steel	EACH
226	Pile, Prestressed Concrete	EACH
227	Pile, Reinforced Concrete	EACH
228	Pile, Timber	EACH
229	Pile, Other	EACH
231	Pier Cap, Steel	LENGTH (ft.)
233	Pier Cap, Prestressed Concrete	LENGTH (ft.)
234	Pier Cap, Reinforced Concrete	LENGTH (ft.)
235	Pier Cap, Timber	LENGTH (ft.)
236	Pier Cap, Other	LENGTH (ft.)

Culverts (NBE)		
El. No.	Element Name	Units
240	Culvert, Steel	LENGTH (ft.)
241	Culvert, Reinforced Concrete	LENGTH (ft.)
242	Culvert, Timber	LENGTH (ft.)
243	Culvert, Other	LENGTH (ft.)
244	Culvert, Masonry	LENGTH (ft.)
245	Culvert, Prestressed Concrete	LENGTH (ft.)

NBE - National Bridge Elements are used nationwide to determine the overall condition and safety of primary load carrying members.

BME - Bridge Management Elements are elements commonly included in an agency's systematic preventive maintenance program.

Reinforced Concrete - Condition State Definitions				
Defect	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
Delamination / Spall / Patched Area (1080)	None.	Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound.	Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Does not warrant structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Exposed Rebar (1090)	None.	Present without measurable section loss.	Present with measurable section loss, but does not warrant structural review.	
Efflorescence / Rust Staining (1120)	None.	Surface white without build-up or leaching without rust staining.	Heavy build-up with rust staining.	
Cracking (1130)	Insignificant cracks or moderate width cracks that have been sealed. *See Element commentary below.	Unsealed moderate width cracks or unsealed moderate pattern (map) cracking. *See Element commentary below.	Wide cracks or heavy pattern (map) cracking. *See Element commentary below.	
Abrasion / Wear (1190)	No abrasion or wearing.	Abrasion or wearing has exposed coarse aggregate but the aggregate remains secure in the concrete.	Coarse aggregate is loose or has popped out of the concrete matrix due to abrasion or wear.	
Distortion (1900)	None.	Distortion not requiring mitigation or mitigated distortion.	Distortion that requires mitigation that has not been addressed but does not warrant structural review.	
Settlement (4000)	None.	Exists within tolerable limits or arrested with no observed structural distress.	Exceeds tolerable limits but does not warrant structural review.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.
Scour (6000)	None.	Exists within tolerable limits or has been arrested with effective countermeasures.	Exceeds tolerable limits, but is less than the critical limits determined by scour evaluation and does not warrant structural review.	
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	

*Element commentary: Reinforced concrete cracks less than 0.012 inches can be considered insignificant, cracks ranging 0.012 to 0.05 inches can be considered moderate, and cracks greater than 0.05 inches can be considered wide.

Prestressed Concrete - Condition State Definitions				
Defect	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
Delamination / Spall / Patched Area (1080)	None	Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound.	Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Does not warrant structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Exposed Rebar (1090)	None	Present without measurable section loss.	Present with measurable section loss, but does not warrant structural review.	
Exposed Prestressing (1100)	None	Present without section loss	Present with section loss, but does not warrant structural review.	
Cracking (1110)	Insignificant cracks or moderate width cracks that have been sealed. **See Element commentary below.	Unsealed moderate width cracks or unsealed moderate pattern (map) cracking. **See Element commentary below.	Wide cracks or heavy pattern (map) cracking. **See Element commentary below.	
Efflorescence / Rust Staining (1120)	None	Surface white without build-up or leaching without rust staining.	Heavy build-up with rust staining.	
Abrasion / Wear (1190)	No abrasion or wearing	Abrasion or wearing has exposed coarse aggregate but the aggregate remains secure in the concrete.	Coarse aggregate is loose or has popped out of the concrete matrix due to abrasion or wear.	
Distortion (1900)	None	Distortion not requiring mitigation or mitigated distortion.	Distortion that requires mitigation that has not been addressed but does not warrant structural review.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.
Settlement (4000)	None	Exists within tolerable limits or arrested with no observed structural distress.	Exceeds tolerable limits but does not warrant structural review.	
Scour (6000)	None	Exists within tolerable limits or has been arrested with effective countermeasures.	Exceeds tolerable limits, but is less than the critical limits determined by scour evaluation and does not warrant structural review.	
Damage (7000)	Not applicable	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.

**Element commentary: Prestressed concrete cracks less than 0.004 inches can be considered insignificant, cracks ranging 0.004 to 0.009 inches can be considered moderate, and cracks greater than 0.009 inches can be considered wide.

Concrete Protective Coating - Condition State Definitions				
Defect	CS 1 – Good	CS 2 – Fair	CS 3 – Poor	CS 4 – Severe
Wear (3510)	None.	Underlying concrete not exposed, coating showing wear from UV exposure, friction course missing.	Underlying concrete is not exposed, thickness of the coating is reduced.	Underlying concrete exposed, treated cracks are exposed.
Effectiveness (3540)	Fully effective.	Substantially effective.	Limited effectiveness.	The protective system has failed or is no longer effective.
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.
Masonry - Condition State Definitions				
Delamination / Spall / Patched Area (1080)	None.	Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound.	Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Does not warrant structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Efflorescence / Rust Staining (1120)	None.	Surface white without build-up or leaching without rust staining.	Heavy build-up with rust staining.	
Mortar Breakdown (1610)	None.	Cracking or voids in less than 10% of joints.	Cracking or voids in 10% or more of the of joints	
Split / Spall (1620)	None.	Block or stone has split or spalled with no shifting.	Block or stone has split or spalled with shifting but does not warrant a structural review.	
Patched Area (1630)	None.	Sound patch.	Unsound patch.	
Masonry Displacement (1640)	None.	Block or stone has shifted slightly out of alignment.	Block or stone has shifted significantly out of alignment or is missing but does not warrant structural review.	
Distortion (1900)	None.	Distortion not requiring mitigation or mitigated distortion.	Distortion that requires mitigation that has not been addressed but does not warrant structural review.	
Settlement (4000)	None.	Exists within tolerable limits or arrested with no observed structural distress.	Exceeds tolerable limits but does not warrant structural review.	
Scour (6000)	None	Exists within tolerable limits or has been arrested with effective countermeasures.	Exceeds tolerable limits, but is less than the critical limits determined by scour evaluation and does not warrant structural review.	
Damage (7000)	Not applicable	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.

Concrete Reinforcing Steel Protective Systems				
Defect	CS 1 – Good	CS 2 – Fair	CS 3 – Poor	CS 4 – Severe
Effectiveness (3600)	Fully effective.	Substantially effective.	Limited effectiveness.	The protective system has failed or is no longer effective.
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.
Joints - Condition State Definitions				
Leakage (2310)	None.	Minimal. Minor dripping through the joint.	Moderate. More than a drip and less than free flow of water.	Free flow of water through the joint.
Seal Adhesion (2320)	Fully Adhered.	Adhered for more than 50% of the joint height.	Adhered 50% or less of joint height but still some adhesion.	Complete loss of adhesion.
Seal Damage (2330)	None.	Seal abrasion without punctures.	Punctured or ripped or partially pulled out.	Punctured completely through, pulled out, or missing.
Seal Cracking (2340)	None.	Surface crack.	Crack that partially penetrates the seal.	Crack that fully penetrates the seal.
Debris Impaction (2350)	No debris to a shallow cover of loose debris may be evident but does not affect the performance of the joint.	Partially filled with hard-packed material, but still allowing free movement.	Completely filled and impacts joint movement.	Completely filled and prevents joint movement.
Adjacent Deck or Header (2360)	Sound. No spall, delamination or unsound patch.	Edge delamination or spall 1 in. or less deep or 6 in. or less in diameter. No exposed rebar. patched area that is sound.	Spall greater than 1 in. deep or greater than 6 in. diameter. Exposed rebar. Delamination or unsound patched area that makes the joint loose.	Spall, delamination, unsound patched area or loose joint anchor that prevents the joint from functioning as intended.
Metal Deterioration or Damage (2370)	None.	Freckled rust, metal has no cracks, or impact damage. Connection may be loose but functioning as intended.	Section loss, missing or broken fasteners, cracking of the metal or impact damage but joint still functioning.	Metal cracking, section loss, damage or connection failure that prevents the joint from functioning as intended.
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.

Steel - Condition State Definitions				
Defect	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
Corrosion (1000)	None.	Freckled Rust. Corrosion of the steel has initiated.	Section loss is evident or pack rust is present but does not warrant structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Cracking (1010)	None.	Crack that has self-arrested or has been arrested with effective arrest holes, doubling plates, or similar.	Identified crack exists that is not arrested but does not warrant structural review.	
Connection (1020)	Connection is in place and functioning as intended.	Loose fasteners or pack rust without distortion is present but the connection is in place and functioning as intended.	Missing bolts, rivets, fasteners, broken welds, or pack rust with distortion but does not warrant a structural review.	
Distortion (1900)	None.	Distortion not requiring mitigation or mitigated distortion.	Distortion that requires mitigation that has not been addressed but does not warrant structural review.	
Settlement (4000)	None.	Exists within tolerable limits or arrested with no observed structural distress.	Exceeds tolerable limits but does not warrant structural review.	
Scour (6000)	None.	Exists within tolerable limits or has been arrested with effective countermeasures.	Exceeds tolerable limits, but is less than the critical limits determined by scour evaluation and does not warrant structural review.	
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.
Steel Protective Coating - Condition State Definitions				
Chalking (3410)	None.	Surface Dulling.	Loss of Pigment.	Not Applicable.
Peeling / Bubbling / Cracking (3420)	None.	Finish coats only.	Finish and primer coats.	Exposure of bare metal.
Oxide Film Degradation Color / Texture Adherence (weathering steel patina) (3430)	Yellow-orange or light brown for early development. Chocolate-brown to purple-brown for fully developed. Tightly adhered, capable of withstanding hammering or vigorous wire brushing.	Granular texture.	Small flakes, less than 1/2 in. diameter.	Dark black color. Large flakes, 1/2 in. diameter or greater, or laminar sheets or nodules.
Effectiveness (3440)	Fully effective.	Substantially effective.	Limited effectiveness.	Failed, no protection of the underlying metal
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.

Timber - Condition State Definitions				
Defect	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
Connection (1020)	Connection is in place and functioning as intended.	Loose fasteners or pack rust without distortion is present but the connection is in place and functioning as intended.	Missing bolts, rivets, fasteners, broken welds, or pack rust with distortion but does not warrant a structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Decay / Section Loss (1140)	None.	Affects less than 10% of the member section.	Affects 10% or more of the member but does not warrant structural review.	
Check / Shake (1150)	Surface penetration less than <u>5%</u> of the member thickness regardless of location.	Penetrates 5% - 50% of the thickness of the member and not in a tension zone.	Penetrates more than 50% of the thickness of the member or more than 5% of the member thickness in a tension zone. Does not warrant structural review.	
Crack (1160)	None.	Crack that has been arrested through effective measures.	Identified crack exists that is not arrested, but does not require structural review.	
Split / Delamination (1170)	None.	Length less than the member depth or arrested with effective actions taken to mitigate.	Length equal to or greater than the member depth, but does not require structural review.	
Abrasion / Wear (1180)	None or no measurable section loss.	Section loss less than 10% of the member thickness	Section loss 10% or more of the member thickness but does not warrant structural review.	
Distortion (1900)	None.	Distortion not requiring mitigation or mitigated distortion.	Distortion that requires mitigation that has not been addressed but does not warrant structural review.	
Settlement (4000)	None.	Exists within tolerable limits or arrested with no observed structural distress.	Exceeds tolerable limits but does not warrant structural review.	
Scour (6000)	None.	Exists within tolerable limits or has been arrested with effective countermeasures.	Exceeds tolerable limits, but is less than the critical limits determined by scour evaluation and does not warrant structural review.	
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	

Other Materials - Condition State Definitions				
Defect	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
Corrosion (1000)	None.	Freckled Rust. Corrosion of the steel has initiated.	Section loss is evident or pack rust is present but does not warrant structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Cracking (Steel) (1010)	None.	Crack that has self-arrested or has been arrested with effective arrest holes, doubling plates, or similar.	Identified crack exists that is not arrested but does not warrant structural review.	
Connection (1020)	Connection is in place and functioning as intended.	Loose fasteners or pack rust without distortion is present but the connection is in place and functioning as intended.	Missing bolts, rivets, broken welds, fasteners or pack rust with distortion but does not warrant a structural review.	
Delamination / Spall / Patched Area (1080)	None.	Delaminated. Spall 1 in. or less deep or 6 in. or less in diameter. Patched area that is sound.	Spall greater than 1 in. deep or greater than 6 in. diameter. Patched area that is unsound or showing distress. Does not warrant structural review.	
Efflorescence / Rust Staining (1120)	None	Surface white without build-up or leaching without rust staining.	Heavy build-up with rust staining.	
Cracking (Reinforced Concrete and Other) (1130)	Insignificant cracks or moderate width cracks that have been sealed.*see Element commentary	Unsealed moderate width cracks or unsealed moderate pattern (map) cracking. *see Element commentary.	Wide cracks or heavy pattern (map) cracking. *see Element commentary.	
Deterioration (1220)	None.	Initiated breakdown or deterioration.	Significant deterioration or breakdown, but does not warrant structural review.	
Distortion (1900)	None.	Distortion not requiring mitigation or mitigated distortion.	Distortion that requires mitigation that has not been addressed but does not warrant structural review.	
Movement (2210)	Free to move.	Minor restriction.	Restricted but not warranting structural review.	
Alignment (2220)	Lateral and vertical alignment is as expected for the temperature conditions.	Tolerable lateral or vertical alignment that is inconsistent with the temperature conditions.	Approaching the limits of lateral or vertical alignment for the bearing but does not warrant a structural review.	
Bulging, Splitting, or Tearing (2230)	None.	Bulging less than 15% of the thickness.	Bulging 15% or more of the thickness. Splitting or tearing. Bearing's surfaces are not parallel. Does not warrant structural review.	
Loss of Bearing Area (2240)	None.	Less than 10%.	10% or more but does not warrant structural review.	

Other Materials - Condition State Definitions				
Defect	CS 1 – Good	CS 2 – Fair	CS 3 – Poor	CS 4 – Severe
Leakage (2310)	None.	Minimal. Minor dripping through the joint.	Moderate. More than a drip and less than free flow of water.	Free flow of water through the joint.
Seal Adhesion (2320)	Fully Adhered.	Adhered for more than 50% of the joint height.	Adhered 50% or less of joint height but still some adhesion.	Complete loss of adhesion.
Seal Damage (2330)	None.	Seal abrasion without punctures.	Punctured or ripped or partially pulled out.	Punctured completely through, pulled out, or missing.
Seal Cracking (2340)	None.	Surface crack.	Crack that partially penetrates the seal.	Crack that fully penetrates the seal.
Debris Impaction (2350)	No debris to a shallow cover of loose debris may be evident but does not affect the performance of the joint.	Partially filled with hard-packed material, but still allowing free movement.	Completely filled and impacts joint movement.	Completely filled and prevents joint movement.
Adjacent Deck or Header (2360)	Sound. No spall, delamination or unsound patch.	Edge delamination or spall 1 in. or less deep or 6 in. or less in diameter. No exposed rebar. patched area that is sound.	Spall greater than 1 in. deep or greater than 6 in. diameter. Exposed rebar. Delamination or unsound patched area that makes the joint loose.	Spall, delamination, unsound patched area or loose joint anchor that prevents the joint from functioning as intended.
Metal Deterioration or Damage (2370)	None.	Freckled rust, metal has no cracks, or impact damage. Connection may be loose but functioning as intended.	Section loss, missing or broken fasteners, cracking of the metal or impact damage but joint still functioning.	Metal cracking, section loss, damage or connection failure that prevents the joint from functioning as intended.
Settlement (4000)	None.	Exists within tolerable limits or arrested with no observed structural distress.	Exceeds tolerable limits but does not warrant structural review.	The condition warrants a structural review to determine the effect on strength or serviceability of the element or bridge; OR a structural review has been completed and the defects impact strength or serviceability of the element or bridge.
Scour (6000)	None	Exists within tolerable limits or has been arrested with effective countermeasures.	Exceeds tolerable limits, but is less than the critical limits determined by scour evaluation and does not warrant structural review.	
Damage (7000)	Not applicable	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	
				The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.

Wearing Surface - Condition State Definitions				
Defect	CS 1 – Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
Delamination / Spall / Patched Area / Pothole (3210)	None.	Delaminated. Spall less than 1 in. deep or less than 6 in. diameter. Patched area that is sound. Partial depth pothole.	Spall 1 in. deep or greater or 6 in. diameter or greater. Patched area that is unsound or showing distress. Full depth pothole.	The wearing surface is no longer effective.
Crack (3220)	Width less than 0.012 in. or spacing greater than 3.0 ft.	Width 0.012–0.05 in. or spacing of 1.0–3.0 ft.	Width of more than 0.05 in. or spacing of less than 1.0 ft.	
Effectiveness (3230)	Fully effective. No evidence of leakage or further deterioration of the protected element.	Substantially effective. Deterioration of the protected element has slowed.	Limited effectiveness. Deterioration of the protected element has progressed.	
Damage (7000)	Not applicable.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 2 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 3 under the appropriate material defect entry.	The element has impact damage. The specific damage caused by the impact has been captured in Condition State 4 under the appropriate material defect entry.

[illegible]

Item 56 - Minimum Lateral Underclearance on Left 3 digits
(XX.X meters) (code only for divided highways, 1-way
streets, and ramps; not applicable to railroads)

Using a 3-digit number, record and code the minimum lateral underclearance on the left (median side for divided highways) to the nearest tenth of a meter (with an assumed decimal point). The lateral clearance should be measured from the left edge of the roadway (excluding shoulders) to the nearest substructure unit, to a rigid barrier, or to the toe of slope steeper than 1 to 3. Refer to examples on page 34 under Item 55 - Minimum Lateral Underclearance on Right.

In the case of a dual highway, the median side clearances of both roadways should be measured and the smaller distance recorded and coded. If there is no obstruction in the median area, a notation of "open" should be recorded and 999 should be coded. For clearances greater than 30 meters, code 998. Coding of actual clearances greater than 30 meters to an exact measurement is optional. Code 000 to indicate not applicable.

Item 57

(Reserved)

Items 58 through 62 - Indicate the Condition Ratings

In order to promote uniformity between bridge inspectors, these guidelines will be used to rate and code Items 58, 59, 60, 61, and 62. The use of the AASHTO Guide for Commonly Recognized (CoRe) Structural Elements is an acceptable alternative to using these rating guidelines for Items 58, 59, 60, and 62, provided the FHWA translator computer program is used to convert the inspection data to NBI condition ratings for NBI data submittal.

Condition ratings are used to describe the existing, in-place bridge as compared to the as-built condition. Evaluation is for the materials related, physical condition of the deck, superstructure, and substructure components of a bridge. The condition evaluation of channels and channel protection and culverts is also included. Condition codes are properly used when they provide an overall characterization of the general condition of the entire component being rated. Conversely, they are improperly used if they attempt to describe localized or nominally occurring instances of deterioration or disrepair. Correct assignment of a condition code must, therefore, consider both the severity of the deterioration or disrepair and the extent to which it is widespread throughout the component being rated.

The load-carrying capacity will not be used in evaluating condition items. The fact that a bridge was designed for less than current legal loads and may be posted shall have no influence upon condition ratings.

Portions of bridges that are being supported or strengthened by temporary members will be rated based on their actual condition; that is, the temporary members are not considered in the rating of the item. (See Item 103 - Temporary Structure Designation for the definition of a temporary bridge.)

Completed bridges not yet opened to traffic, if rated, shall be coded as if open to traffic

Condition Ratings (cont'd)

The following general condition ratings shall be used as a guide in evaluating Items 58, 59, and 60:

<u>Code</u>	<u>Description</u>
N	NOT APPLICABLE
9	EXCELLENT CONDITION
8	VERY GOOD CONDITION - no problems noted.
7	GOOD CONDITION - some minor problems.
6	SATISFACTORY CONDITION - structural elements show some minor deterioration.
5	FAIR CONDITION - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	POOR CONDITION - advanced section loss, deterioration, spalling or scour.
3	SERIOUS CONDITION - loss of section, deterioration, spalling or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	CRITICAL CONDITION - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be present or scour may have removed substructure support. Unless closely monitored it may be necessary to close the bridge until corrective action is taken.
1	"IMMINENT" FAILURE CONDITION - major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	FAILED CONDITION - out of service - beyond corrective action.

Item 58 - Deck

1 digit

This item describes the overall condition rating of the deck. Rate and code the condition in accordance with the above general condition ratings. Code N for culverts and other structures without decks e.g., filled arch bridge.

Concrete decks should be inspected for cracking, scaling, spalling, leaching, chloride contamination, potholing, delamination, and full or partial depth failures. Steel grid decks should be inspected for broken welds, broken grids, section loss, and growth of filled grids from corrosion. Timber decks should be inspected for splitting, crushing, fastener failure, and deterioration from rot.

The condition of the wearing surface/protective system, joints, expansion devices, curbs, sidewalks, parapets, fascias, bridge rail, and scuppers shall not be considered in the overall deck evaluation. However, their condition should be noted on the inspection form.

Item 58 - Deck (cont'd)

Decks integral with the superstructure will be rated as a deck only and not how they may influence the superstructure rating (for example, rigid frame, slab, deckgirder or T-beam, voided slab, box girder, etc.). Similarly, the superstructure of an integral deck-type bridge will not influence the deck rating.

Item 59 - Superstructure

1 digit

This item describes the physical condition of all structural members. Rate and code the condition in accordance with the previously described general condition ratings. Code N for all culverts.

The structural members should be inspected for signs of distress which may include cracking, deterioration, section loss, and malfunction and misalignment of bearings.

The condition of bearings, joints, paint system, etc. shall not be included in this rating, except in extreme situations, but should be noted on the inspection form.

On bridges where the deck is integral with the superstructure, the superstructure condition rating may be affected by the deck condition. The resultant superstructure condition rating may be lower than the deck condition rating where the girders have deteriorated or been damaged.

Fracture critical components should receive careful attention because failure could lead to collapse of a span or the bridge.

Item 60 - Substructure

1 digit

This item describes the physical condition of piers, abutments, piles, fenders, footings, or other components. Rate and code the condition in accordance with the previously described general condition ratings. Code N for all culverts.

All substructure elements should be inspected for visible signs of distress including evidence of cracking, section loss, settlement, misalignment, scour, collision damage, and corrosion. The rating given by Item 113 - Scour Critical Bridges, may have a significant effect on Item 60 if scour has substantially affected the overall condition of the substructure.

The substructure condition rating shall be made independent of the deck and superstructure.

Integral-abutment wingwalls to the first construction or expansion joint shall be included in the evaluation. For non-integral superstructure and substructure units, the substructure shall be considered as the portion below the bearings. For structures where the substructure and superstructure are integral, the substructure shall be considered as the portion below the superstructure.

Item 61 - Channel and Channel Protection

1 digit

This item describes the physical conditions associated with the flow of water through the bridge such as stream stability and the condition of the channel, riprap, slope protection, or stream control devices including spur dikes. The inspector should be particularly concerned with visible signs of excessive water velocity which may affect undermining of slope protection, erosion of banks, and realignment of the stream which may result in immediate or potential problems. Accumulation of drift and debris on the superstructure and substructure should be noted on the inspection form but not included in the condition rating.

Rate and code the condition in accordance with the previously described general condition ratings and the following descriptive codes:

<u>Code</u>	<u>Description</u>
N	Not applicable. Use when bridge is not over a waterway (channel).
9	There are no noticeable or noteworthy deficiencies which affect the condition of the channel.
8	Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.
7	Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.
6	Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the channel slightly.
5	Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.
4	Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.
3	Bank protection has failed. River control devices have been destroyed. Stream bed aggradation, degradation or lateral movement has changed the channel to now threaten the bridge and/or approach roadway.
2	The channel has changed to the extent the bridge is near a state of collapse.
1	Bridge closed because of channel failure. Corrective action may put back in light service.
0	Bridge closed because of channel failure. Replacement necessary.

Item 62 - Culverts

1 digit

This item evaluates the alignment, settlement, joints, structural condition, scour, and other items associated with culverts. The rating code is intended to be an overall condition evaluation of the culvert. Integral wingwalls to the first construction or expansion joint shall be included in the evaluation. For a detailed discussion regarding the inspection and rating of culverts, consult Report No. FHWA-IP-86-2, Culvert Inspection Manual, July 1986.

Item 58 - Deck, Item 59 - Superstructure, and Item 60 - Substructure shall be coded N for all culverts.

Rate and code the condition in accordance with the previously described general condition ratings and the following descriptive codes:

<u>Code</u>	<u>Description</u>
N	Not applicable. Use if structure is not a culvert.
9	No deficiencies.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
7	Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, or pipes. Metal culverts have a smooth symmetrical curvature with superficial corrosion and no pitting.
6	Deterioration or initial disintegration, minor chloride contamination, cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls, or pipes. Metal culverts have a smooth curvature, non-symmetrical shape, significant corrosion or moderate pitting.
5	Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls, or pipes. Metal culverts have significant distortion and deflection in one section, significant corrosion or deep pitting.
4	Large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill. Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls or pipes. Metal culverts have significant distortion and deflection throughout, extensive corrosion or deep pitting.

(codes continued on the next page)

Item 62 - Culverts (cont'd)

- 3 Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls or pipes. Metal culverts have extreme distortion and deflection in one section, extensive corrosion, or deep pitting with scattered perforations.
- 2 Integral wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Metal culverts have extreme distortion and deflection throughout with extensive perforations due to corrosion.
- 1 Bridge closed. Corrective action may put back in light service.
- 0 Bridge closed. Replacement necessary.

Item 63 - Method Used to Determine Operating Rating

1 digit

Use one of the codes below to indicate which load rating method was used to determine the Operating Rating coded in Item 64 for this structure.

<u>Code</u>	<u>Description</u>
1	Load Factor (LF)
2	Allowable Stress (AS)
3	Load and Resistance Factor (LRFR)
4	Load Testing
5	No rating analysis performed

Item 113 - Scour Critical Bridges

1 digit

Use a single-digit code as indicated below to identify the current status of the bridge regarding its vulnerability to scour. Scour analyses shall be made by hydraulic/geotechnical/structural engineers. Details on conducting a scour analysis are included in the FHWA Technical Advisory 5140.23 titled, "Evaluating Scour at Bridges." Whenever a rating factor of 4 or below is determined for this item, the rating factor for Item 60 - Substructure may need to be revised to reflect the severity of actual scour and resultant damage to the bridge. A scour critical bridge is one with abutment or pier foundations which are rated as unstable due to (1) observed scour at the bridge site or (2) a scour potential as determined from a scour evaluation study.

Code Description

- N Bridge not over waterway.
- U Bridge with "unknown" foundation that has not been evaluated for scour. Since risk cannot be determined, flag for monitoring during flood events and, if appropriate, closure.
- T Bridge over "tidal" waters that has not been evaluated for scour, but considered low risk. Bridge will be monitored with regular inspection cycle and with appropriate underwater inspections. ("Unknown" foundations in "tidal" waters should be coded U.)
- 9 Bridge foundations (including piles) on dry land well above flood water elevations.
- 8 Bridge foundations determined to be stable for assessed or calculated scour conditions; calculated scour is above top of footing. (Example A)
- 7 Countermeasures have been installed to correct a previously existing problem with scour. Bridge is no longer scour critical.
- 6 Scour calculation/evaluation has not been made. (Use only to describe case where bridge has not yet been evaluated for scour potential.)
- 5 Bridge foundations determined to be stable for calculated scour conditions; scour within limits of footing or piles. (Example B)
- 4 Bridge foundations determined to be stable for calculated scour conditions; field review indicates action is required to protect exposed foundations from effects of additional erosion and corrosion.
- 3 Bridge is scour critical; bridge foundations determined to be unstable for calculated scour conditions:
 - Scour within limits of footing or piles. (Example B)
 - Scour below spread-footing base or pile tips. (Example C)

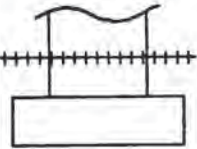
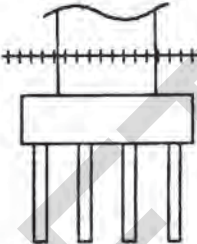
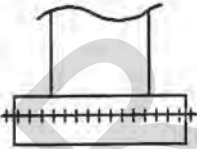
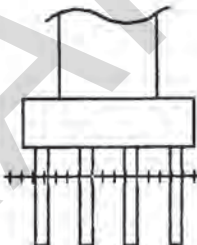
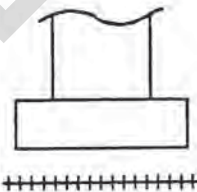
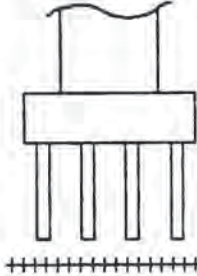
(codes continued on the next page)

Item 113 - Scour Critical Bridges (cont'd)

Code Description

- 2 Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations. Immediate action is required to provide scour countermeasures.
- 1 Bridge is scour critical; field review indicates that failure of piers/abutments is imminent. Bridge is closed to traffic.
- 0 Bridge is scour critical. Bridge has failed and is closed to traffic.

EXAMPLES:

	<u>CALCULATED SCOUR DEPTH</u>		<u>ACTION NEEDED</u>
A. Above top of footing			None - indicate rating of 8 for this item
B. Within limits of footing or piles			Conduct foundation structural analysis
C. Below pile tips or spread-footing base			Provide for monitoring and scour countermeasures as necessary
	SPREAD FOOTING (NOT FOUNDED IN ROCK)	PILE FOOTING	
	+++++ = Calculated scour depth		

APPENDIX B

ASCE CONDITION STATE RATINGS

Table 2-14. Condition Assessment Ratings

Rating	Description
6 Good	No visible damage or only minor damage noted. Structural elements may show very minor deterioration, but no overstressing observed. No repairs are required.
5 Satisfactory	Limited minor to moderate defects or deterioration observed but no overstressing observed. No repairs are required.
4 Fair	All primary structural elements are sound but minor to moderate defects or deterioration observed. Localized areas of moderate to advanced deterioration may be present but do not significantly reduce the load-bearing capacity of the structure. Repairs are recommended, but the priority of the recommended repairs is low.
3 Poor	Advanced deterioration or overstressing observed on widespread portions of the structure but does not significantly reduce the load-bearing capacity of the structure. Repairs may need to be carried out with moderate urgency.
2 Serious	Advanced deterioration, overstressing, or breakage may have significantly affected the load-bearing capacity of primary structural components. Local failures are possible, and loading restrictions may be necessary. Repairs may need to be carried out on a high-priority basis with urgency.
1 Critical	Very advanced deterioration, overstressing, or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur, and load restrictions should be implemented as necessary. Repairs may need to be carried out on a very high-priority basis with strong urgency.

Table 2-5. Damage Ratings for Steel Elements

Damage Rating		Existing Damage ^a	Exclusions [Defects Requiring Elevation to the Next Higher Damage Rating(s)]
NI	Not Inspected	<ul style="list-style-type: none"> • Not inspected, inaccessible, or passed by^b 	
ND	No Defects	<ul style="list-style-type: none"> • Protective coating or wrap intact • Light surface rust • No apparent loss of material 	
MN	Minor	<ul style="list-style-type: none"> • Protective coating or wrap damaged and loss of thickness up to 15% of nominal at any location • Less than 50% of perimeter or circumference affected by corrosion at any elevation or cross section • Loss of thickness up to 15% of nominal at any location 	<p>Minor damage not appropriate if</p> <ul style="list-style-type: none"> • Changes in straight line configuration or local buckling • Corrosion loss exceeding fabrication tolerances (at any location)
MD	Moderate	<ul style="list-style-type: none"> • Protective coating or wrap damaged and loss of thickness 15 to 30% of nominal at any location • More than 50% of perimeter or circumference affected by corrosion at any elevation or cross section • Loss of thickness 15 to 30% of nominal at any location 	<p>Moderate damage not appropriate if</p> <ul style="list-style-type: none"> • Changes in straight line configuration or local buckling • Loss of thickness exceeding 30% of nominal at any location

(Continued)

Table 2-5. Damage Ratings for Steel Elements (*Continued*)

Damage Rating		Existing Damage ^a	Exclusions [Defects Requiring Elevation to the Next Higher Damage Rating(s)]
MJ	Major	<ul style="list-style-type: none"> • Protective coating or wrap damaged and loss of nominal thickness 30 to 50% at any location • Partial loss of flange edges or visible reduction of wall thickness on pipe piles • Loss of nominal thickness 30 to 50% at any location 	Major damage not appropriate if <ul style="list-style-type: none"> • Changes in straight line configuration or local buckling • Perforations or loss of wall thickness exceeding 50% of nominal
SV	Severe	<ul style="list-style-type: none"> • Protective coating or wrap damaged and loss of wall thickness exceeding 50% of nominal at any location • Structural bends or buckling, breakage and displacement at supports, loose or lost connections • Loss of wall thickness exceeding 50% of nominal at any location 	

^aAny defect listed is sufficient to identify relevant damage grade.

^bIf not inspected due to inaccessibility or passed by, note as such.

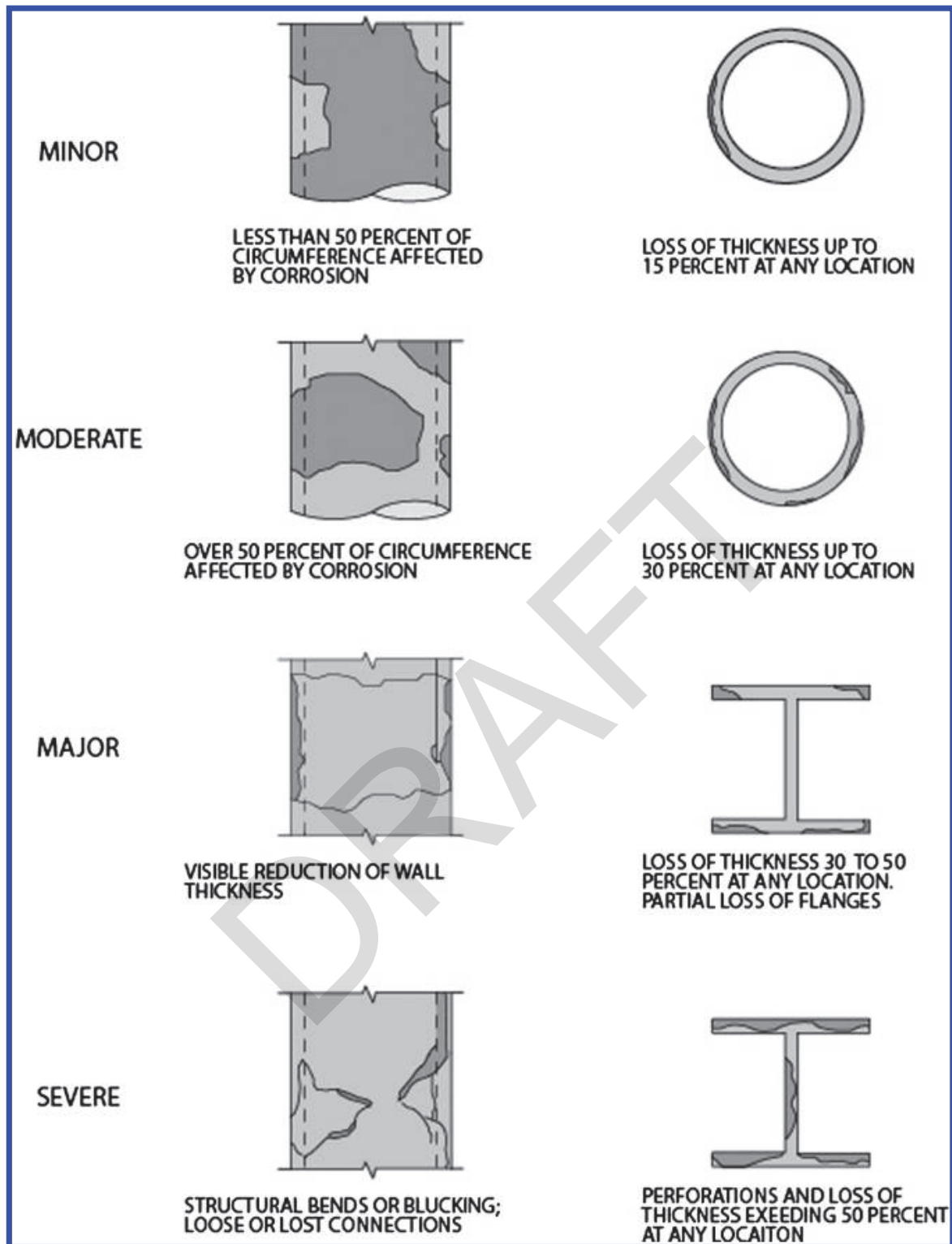


Fig. 2-3. Damage ratings for steel elements

Source: Courtesy of CH2M HILL, Inc. and COWI, Inc., reproduced with permission.

Table 2-6. Damage Ratings for Reinforced Concrete Elements

Damage Rating		Existing Damage ^a	Exclusions [Defects Requiring Elevation to the Next Higher Damage Rating(s)]
NI	Not Inspected	<ul style="list-style-type: none"> • Not inspected, inaccessible, or passed by^b 	
ND	No Defects	<ul style="list-style-type: none"> • Good original hard surface, hard material, sound 	
MN	Minor	<ul style="list-style-type: none"> • Mechanical abrasion or impact spalls up to 1 in. in depth • Occasional corrosion stains or small pop-out corrosion spalls • General cracks up to 1/16 in. in width 	<p>Minor damage not appropriate if</p> <ul style="list-style-type: none"> • Structural damage • Corrosion cracks • Chemical deterioration^c
MD	Moderate	<ul style="list-style-type: none"> • Structural cracks up to 1/16 in. in width • Corrosion cracks up to 1/4 in. in width • Chemical deterioration: Random cracks up to 1/16 in. in width; "Soft" concrete and/or rounding of corners up to 1 in. deep • Mechanical abrasion or impact spalls greater than 1 in. in depth 	<p>Moderate damage not appropriate if</p> <ul style="list-style-type: none"> • Structural breakage and/or spalls • Exposed reinforcement • Loss of cross section due to chemical deterioration beyond rounding of corner edges

MJ	Major	<ul style="list-style-type: none"> • Structural cracks 1/16 in. to 1/4 in. in width and partial breakage (through section cracking with structural spalls) • Corrosion cracks wider than 1/4 in. and open or closed corrosion spalls (excluding pop-outs) • Multiple cracks and disintegration of surface layer due to chemical deterioration • Mechanical abrasion or impact spalls exposing the reinforcing 	<p>Major damage not appropriate if</p> <ul style="list-style-type: none"> • Loss of cross section exceeding 30% due to any cause
SV	Severe	<ul style="list-style-type: none"> • Structural cracks wider than 1/4 in. or complete breakage • Complete loss of concrete cover due to corrosion of reinforcing steel with more than 30% of diameter loss for any main reinforcing bar • Loss of bearing and displacement at connections • Loss of concrete cover (exposed steel) due to chemical deterioration • Loss of more 30% of cross section due to any cause 	

^a Any defect listed is sufficient to identify relevant damage grade.

^b If not inspected due to inaccessibility or passed by, note as such.

^c Chemical deterioration: Sulfate attack, alkali-silica reaction, alkali-aggregate reaction, alkali-carbonate reaction ettringite distress, or other chemical/concrete deterioration.

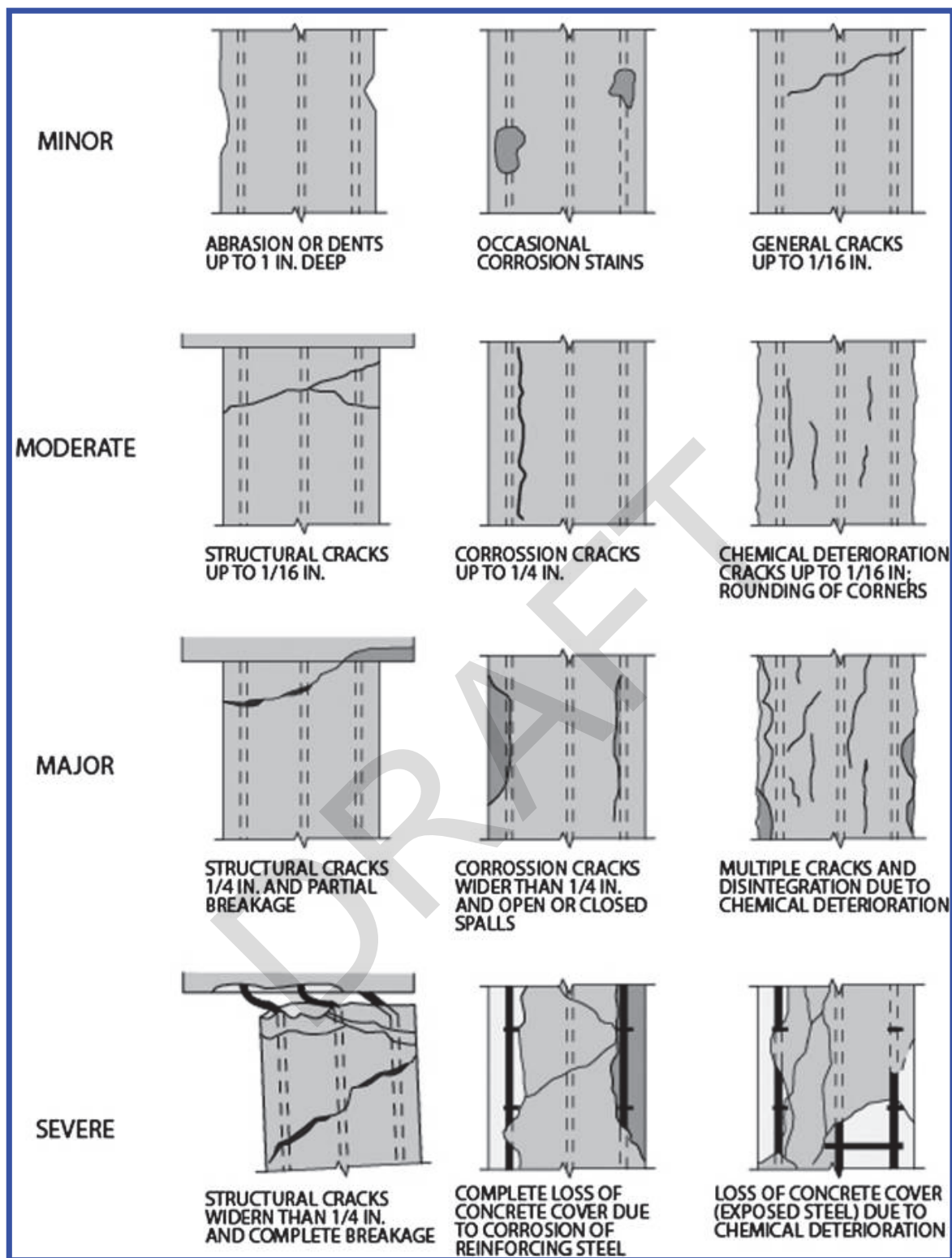


Fig. 2-4. Damage ratings for reinforced concrete elements

Source: Courtesy of CH2M HILL, Inc. and COWI, Inc., reproduced with permission.

Table 2-7. Damage Ratings for Prestressed Concrete Elements

Damage Rating		Existing Damage ^a	Exclusions [Defects Requiring Elevation to the Next Higher Damage Rating(s)]
NI	Not Inspected	<ul style="list-style-type: none"> • Not inspected, inaccessible, or passed by^b 	
ND	No Defects	<ul style="list-style-type: none"> • Good original hard surface, hard material, sound 	
MN	Minor	<ul style="list-style-type: none"> • Minor mechanical or impact spalls up to 0.5 in. deep 	<p>Minor damage not appropriate if</p> <ul style="list-style-type: none"> • Structural damage • Corrosion damage • Chemical deterioration^c • Cracks of any type or size
MD	Moderate	<ul style="list-style-type: none"> • Structural cracks up to 1/32 in. in width • Chemical deterioration: Random cracks up to 1/32 in. in width 	<p>Moderate damage not appropriate if</p> <ul style="list-style-type: none"> • Structural breakage and/or spalls • Corrosion cracks • Loss of cross section in any form • “Softening” of concrete

(Continued)

Table 2-7. Damage Ratings for Prestressed Concrete Elements (*Continued*)

Damage Rating		Existing Damage ^a	Exclusions [Defects Requiring Elevation to the Next Higher Damage Rating(s)]
MJ	Major	<ul style="list-style-type: none"> • Structural cracks 1/32 in. to 1/8 in. in width • Any corrosion cracks generated by strands or cables • Chemical deterioration: cracks wider than 1/8 in. 	Major damage not appropriate if <ul style="list-style-type: none"> • Exposed prestressing steel
SV	Severe	<ul style="list-style-type: none"> • “Softening” of concrete up to 1 in. deep • Structural cracks wider than 1/8 in. and at least partial breakage or loss of bearing • Corrosion spalls over any prestressing steel • Partial spalling and loss of cross section due to chemical deterioration 	

^a Any defect listed is sufficient to identify relevant damage grade.

^b If not inspected due to inaccessibility or passed by, note as such.

^c Chemical deterioration: Sulfate attack, alkali-silica reaction, alkali-aggregate reaction, alkali-carbonate reaction ettringite distress, or other chemical/concrete deterioration.

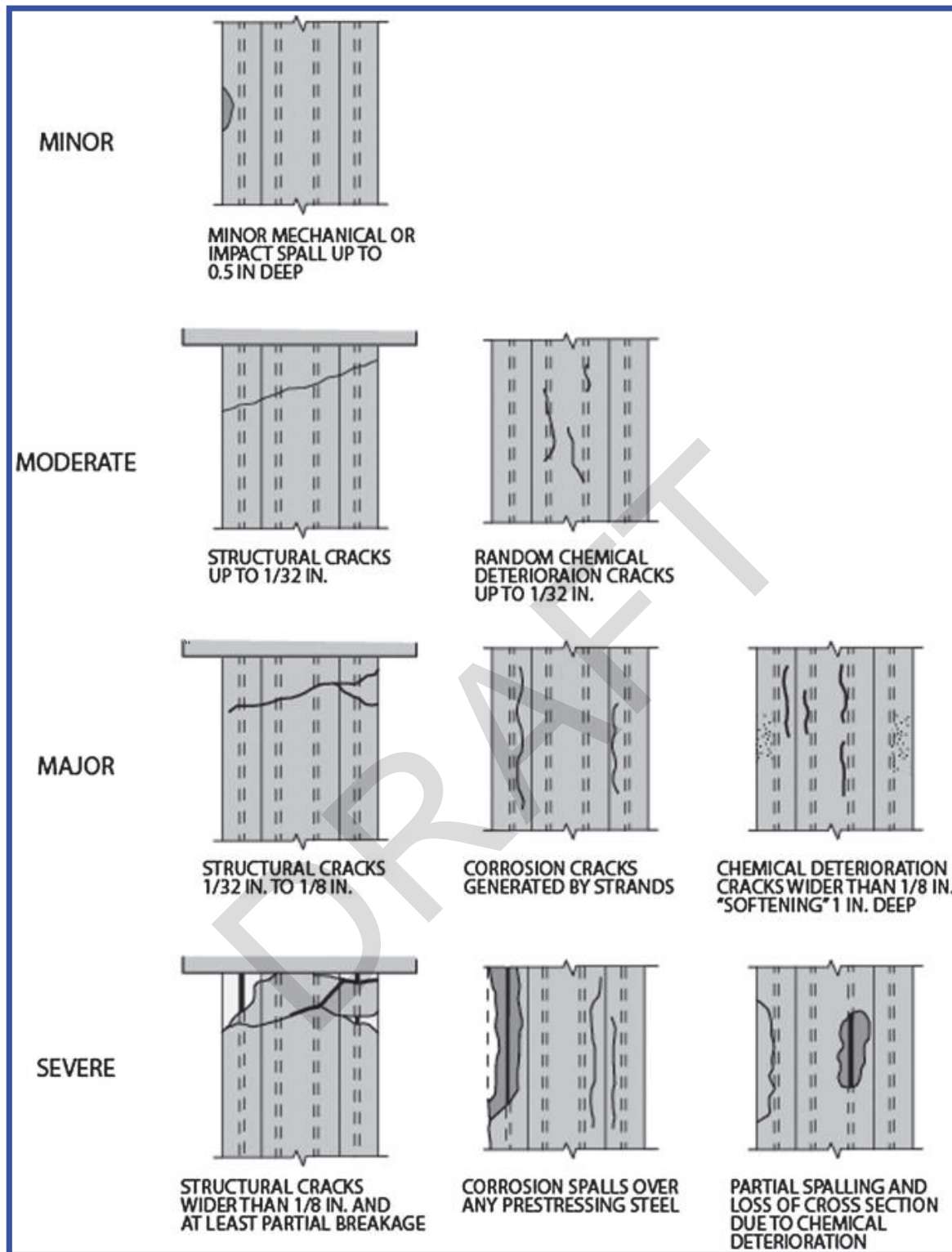


Fig. 2-5. Damage ratings for prestressed concrete elements

Source: Courtesy of CH2M HILL, Inc. and COWI, Inc., reproduced with permission.

APPENDIX C
OPINION OF PROBABLE CONSTRUCTION COST

Seawall at Thompson Park - North Pine Circle

Date prepared: November 17, 2020
M&N Job Number: 201263

Item	Description	Quantity	Unit	Unit Price	Extension
	Thompson Park Seawall Construction	163	LF	\$1,300	
1	Marine Construction				
	Mobilization/Demobilization	1	LS	\$25,000.00	\$25,000
	Furnish UC-30 FRP Composite Sheetpile	3,260	SF	\$15.00	\$48,900
	Install UC-30 FRP Composite Sheetpile	10	DAY	\$5,000.00	\$50,000
	Grout Sock	2	EA	\$2,500.00	\$5,000
	Selective Demolition of Existing Cap	1	LS	\$4,500.00	\$4,500
	Excavation	40	CY	\$50.00	\$2,000
	Furnish & Install Steel Tie Rods	14	EA	\$150.00	\$2,100
	Furnish & Install Precast Deadman	14	EA	\$250.00	\$3,500
	Concrete Cap	163	LF	\$150.00	\$24,450
	#57 Stone Fill	54	CY	\$120.00	\$6,480
	Structural Fill	150	CY	\$80.00	\$12,000
	Sod	4,500	SF	\$1.50	\$6,750
	Subtotal				\$190,680
2	Design Contingency	10.0%			\$20,000
	Total				\$210,680
	Estimate Range	30.0%			\$273,884
		-20.0%			\$168,544

When reviewing the above estimated costs it is important to note the following:

- The costs have been developed based on historical and current data using in-house sources, information from previous studies as well as budget price quotations solicited from local suppliers and contractors.
- Indirect costs (engineering, project management, owners overhead, third party QA/QC) are not included
- This cost estimate is an 'Opinion of Probable construction Cost' made by a consultant. In providing opinions of construction cost, it is recognized that neither the client nor the consultant has control over the cost of labor, equipment, materials, or the contractor's means and methods of determining constructibility, pricing, or schedule. This opinion of construction cost is based on the consultant's reasonable professional judgement and experience and does not constitute a warranty, expressed or implied, that contractor's bids or negotiated prices for the work will not vary from the client's.

Bridge 155000 - Winston Drive

Date prepared: November 18, 2020
M&N Job Number: 201263

Item	Description	Quantity	Unit	Unit Price	Extension
1	Marine Construction				
	Mobilization/Demobilization	1	LS	\$5,000.00	\$5,000
	Repair Existing Seawall (10 LF)	10	LF	\$55.50	\$555
	Geotextile Fabric (Heavy weight)	1	Roll	\$450.00	\$450
	Stone	2	CY	\$120.00	\$240
	Concrete Cap	10	LF	\$150.00	\$1,500
	#57 Stone Fill	2	CY	\$120.00	\$240
	Structural Fill	2	CY	\$80.00	\$160
	Sod	50	SF	\$1.50	\$75
	Subtotal				\$8,300
2	Design Contingency	10.0%			\$1,000
	Total				\$9,300
	Estimate Range	30.0%			\$12,090
		-20.0%			\$7,440

When reviewing the above estimated costs it is important to note the following:

- The costs have been developed based on historical and current data using in-house sources, information from previous studies as well as budget price quotations solicited from local suppliers and contractors.
- Indirect costs (engineering, project management, owners overhead, third party QA/QC) are not included
- This cost estimate is an 'Opinion of Probable construction Cost' made by a consultant. In providing opinions of construction cost, it is recognized that neither the client nor the consultant has control over the cost of labor, equipment, materials, or the contractor's means and methods of determining constructibility, pricing, or schedule. This opinion of construction cost is based on the consultant's reasonable professional judgement and experience and does not constitute a warranty, expressed or implied, that contractor's bids or negotiated prices for the work will not vary from the client's.

Bridge 155001 - North Pine Circle

Date prepared: November 18, 2020
M&N Job Number: 201263

Item	Description	Quantity	Unit	Unit Price	Extension
1	Marine Construction				
	Mobilization/Demobilization	1	LS	\$5,000.00	\$5,000
	Blast Clean and paint underside of deck	700	SF	\$25.00	\$17,500
	Spall / Delam repair underside of deck (assume 6" deep)	26	CF	\$500.00	\$12,750
	Subtotal				\$35,250
2	Design Contingency	10.0%			\$4,000
	Total				\$39,250
	Estimate Range	30.0%			\$51,025
		-20.0%			\$31,400

When reviewing the above estimated costs it is important to note the following:

- The costs have been developed based on historical and current data using in-house sources, information from previous studies as well as budget price quotations solicited from local suppliers and contractors.
- Indirect costs (engineering, project management, owners overhead, third party QA/QC) are not included
- This cost estimate is an 'Opinion of Probable construction Cost' made by a consultant. In providing opinions of construction cost, it is recognized that neither the client nor the consultant has control over the cost of labor, equipment, materials, or the contractor's means and methods of determining constructibility, pricing, or schedule. This opinion of construction cost is based on the consultant's reasonable professional judgement and experience and does not constitute a warranty, expressed or implied, that contractor's bids or negotiated prices for the work will not vary from the client's.



Legislation Text

File #: 21-0015, **Version:** 1

Summary

To: Infrastructure Board
From: JP Murphy, Town Manager
Date: 8/28/2020

Subject:

Discussion of Capital Improvements Master Plan

Summary:

General Progress update to be provided by Phil Lock. He will be reviewing their engineering approach to development of the Capital Improvement Master Plan for approval by the board. Once the methodology is approved staff will revise and rebalance a draft 5 year CIP budget based on project ranking, cost and timing of cash flows. Mr. Locke will provide more detail at the meeting. Please see the attached ranking sheets and conceptual cost estimate breakdowns.



Inflation Rate: 4%

Multiplier: 1.0400 1.0816 1.1249 1.1699 1.2167 1.2653

Weighting Factor (1 - 4; higher is more important)									
3	1	3	2	3	3	4	3	2	2

Criteria (rating : 0 - 10; higher number = higher priority)

Project	20/21	21/22	22/23	23/24	24/25	25/26	26/27	27/+	PCI	Pavement Quality Improvement	Project Cost/Ease of Implementation	Construction Cost Efficiency "Dig Once"	Safe Multi- Modal Connectivity	Public Perception / Support	Drainage / Erosion Control Improvements	Public Safety	Overall Impact/ Risk Reduction	Funding / Cost- Sharing	Water Main Improvements	RATINGS TOTALS	Priority Ranking (1 to 19)	Cost Estimate
Palmetto (Phase 2) North																						
IRR Bayview to Belleview (Alt 1- Mill & Resurface)									74	6	9	2	2	10	0	4	2	6	0	101	15	
IRR Bayview to Belleview (Alt 2-Bike Path/Rd Flooding at Bridge)									74	10	4	4	8	8	4	8	4	6	0	154	2	\$747,000
Osceola East of IRR									60	10	5	8	4	5	6	4	4	0	10	148	4	\$1,722,000
Indian Rocks Road (Poinsettia to Rosery)									76	7	7	4	6	7	8	5	4	6	0	141	8	\$796,000
The Mall/Gardenia									71	8	6	6	5	8	7	4	4	0	8	147	5	\$1,438,000
Orlando/Ponce (Ponce from Manatee to Oleander 1)									60	9	2	8	4	4	6	4	4	0	8	135	12	\$2,486,000
Ocala/Ponce (Ponce from Manatee to Oleander 2)									65	9	6	8	4	4	6	4	4	0	8	139	10	\$1,626,000
Carl									54	10	4	8	4	6	6	4	4	0	8	146	6	\$1,315,000
Ponce from Roundabout to Trail									86	10	1	10	6	7	7	5	4	0	8	163	1	\$2,710,000
IRR (Rosery to Mehlenbacher)									75	10	6	9	6	5	6	5	4	6	0	152	3	\$1,498,000
Pinellas/Ponce(Phase 3)									71	9	6	8	4	6	7	5	4	0	2	140	9	\$1,014,000
Magnolia Wall/One Way (Concept)									78	6	2	2	0	6	4	6	6	0	0	98	17	\$141,000
Wildwood/Woodlawn									69	6	9	2	2	3	2	2	4	0	0	72	18	\$128,000
Pinellas/Ponce(Phase 4)									82	9	3	4	2	6	4	3	4	0	0	100	16	\$1,435,000
Bayview Drive Bridge to IRR									63	10	10	2	3	9	5	5	2	0	0	120	14	\$93,000
Poinsettia									77	5	10	2	1	3	2	2	2	0	0	62	19	\$52,000
Orlando/Osceola (Osceola from Oleander to Manatee 1)									76	9	5	7	2	5	8	4	4	0	6	136	11	\$1,043,000
Ocala/Osceola (Osceola from Oleander to Manatee 2)									77	9	6	7	4	4	5	4	4	0	8	133	13	\$1,130,000
Ponce from Manatee to Rosery									68	9	5	9	5	5	6	4	4	0	6	142	7	\$1,592,063
Professional Services																						
Construction																						
Belleair Creek (Ponce to Bridge)										0	1	0	3	2	5	3	5	3	0	61		
Study																						
Professional Services (Conceptual)																						
Construction (Conceptual)																						
Point Repairs																						
Bridge Repairs										1	1	3	2	2	4	4	5	2	1	72		
Professional Services																						
Engineering																						
Scour Protection																						
Seawall Repairs																						
Grout/Deck Repair																						
Replacement																						
Seawall Replacements										0	1	1	0	3	2	3	3	2	0	44		
Thompson Park																						
Professional Services																						
Construction																						
Winston Park																						
Professional Services																						
Construction																						
Coe Rd.																						
Professional Services																						
Construction																						
The Bluff										0	2	1	3	4	4	3	5	4	0	70		
Study																						
Point Repairs																						
Professional Services (Conceptual)																						
Construction (Conceptual)																						
Seawall Replacement																						
IRR by Creek (Bayview to Ponce)										3	5	1	1	3	2	1	1	1	0	43		
PERIOD SUM	\$ 3,886,000	\$ 956,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -														



**Town of Belleair
Infrastructure Master Plan
Wednesday, October 21, 2020
Infrastructure Prioritization Criteria**

No.	Criteria	Rating Considerations	Weighting Factor ¹	Weighting Factor Considerations
1	Pavement Quality Improvement	Includes goals of improving PCI to min of 70; all roads >50 PCI; considers existing pavement condition & appearance; mill/resurface = 3; rebuild = 5	3	Improved roadway structure
2	Project Cost/Ease of Implementation	Includes project costs (lower cost is higher rated); permitting requirements; etc.; considers cost of not making the improvements (i.e., maintenance costs)	1	Lower weighting factor - functionality considered higher than cost
3	Construction Cost Efficiency "Dig Once"	Higher rating for projects including multiple infrastructure components (paving improvements, lighting, stormwater, water mains, sidewalks, etc.)	3	Ensures that utility conflicts are reduced as compared to separate projects in same area
4	Safe Multi-Modal Connectivity	Biking/walking paths, general transportation safety, sidewalks (i.e., roadway widening)	2	Encourages alternative transportation; helps with traffic management
5	Public Perception / Support	Appearance, environmental benefits, overall community benefits	3	Lower weighting considers functionality
6	Drainage / Erosion Control Improvements	Higher rating for roadway projects that address ongoing flooding issues and erosion improvements projects such as the Bluff and Belleair Creek	3	Reduced flooding provides safety and bank stabilization reduces maintenance costs and risks
7	Public Safety	Overall community safety	4	Considers overall safety (i.e., lighting, flooding, bridges, Bluff, bike paths, etc.)
8	Overall Impact/Risk Reduction	Higher ratings for projects that address unknown financial and other consequential risks (i.e. bridge failure, creek bank failure)	3	Critical to inform Board of projected infrastructure improvements and budgetary costs
9	Funding / Cost-Sharing	Higher ratings for projects that include, or may include, funding from outside agencies	2	Obvious financial benefits; needs to consider and compare project needs vs financial benefits
10	Water Main Improvements	Higher rating for projects that replace CIP/galvanized pipe and/or address hydraulic deficiencies	2	Maintaining potable water service

1) Scale of 1-4; level of importance pertaining to the respective criteria; higher is more important



Project Cost Summary

Worksheet #	Project	Estimated Capital Cost	Previous Town Capital Cost	Difference
1	Bayview Drive Bridge to IRR	\$93,000		
4	Carl	\$1,315,000	\$600,000	119%
5	IRR Poinsettia to Rosery	\$796,000	\$750,000	6%
6	IRR Rosery to Mehlenbacher	\$1,498,000	\$1,500,000	0%
8	IRR Bayview to Belleview (Alt 2 -Mill & Resurface and Bike Path)	\$747,000	\$1,531,160	-51%
10	Magnolia Wall/One Way (Concept)	\$141,000	\$185,000	-24%
11	Ocala/Osceola (Osceola from Oleander to Manatee 2)	\$1,130,000	\$1,500,000	-25%
12	Ocala/Ponce (Ponce from Manatee to Oleander 2)	\$1,626,000	\$1,200,000	36%
13	Orlando/Osceola (Osceola from Oleander to Manatee 1)	\$1,043,000	\$1,600,000	-35%
14	Orlando/Ponce (Ponce from Manatee to Oleander 1)	\$2,486,000	\$2,014,100	23%
15	Osceola East of IRR	\$1,722,000	\$525,000	228%
16	Pinellas/Ponce (Phase 3)	\$1,014,000	\$1,200,000	-16%
17	Pinellas/Ponce (Phase 4)	\$1,435,000	\$1,500,000	-4%
18	Poinsettia	\$52,000	\$50,000	4%
19	Ponce from Manatee to Rosery	\$1,592,063	\$1,595,000	0%
20	Ponce from Roundabout to Trail	\$2,710,000	\$2,035,000	33%
23	The Mall/Gardenia	\$1,438,000	\$1,361,250	6%
24	Wildwood/Woodlawn	\$128,000	\$182,488	-30%
2	Belleair Creek (Ponce to Bridge)	\$5,000,000	\$5,000,000	0%
3	Bridge Repairs	\$5,000,000	\$5,000,000	0%
21	Seawall Replacements	\$750,000	\$750,000	0%
22	The Bluff	\$5,000,000	\$5,000,000	0%

01 Bayview Drive Bridge to IRR

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$7,000	\$7,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$2,000	\$2,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF	2428	\$2.50	\$6,070
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS			\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY	3102	\$3.50	\$10,859
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	407	\$106	\$43,142
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	7.6	Gate Valves	EA	\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve	EA	\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
				TOTAL	\$70,271
				CONTINGENCY (20%)	\$14,054
				BASE CONSTRUCTION COST	\$84,325
				ADMINISTRATIVE & ENGINEERING (10%)	\$8,432
				TOTAL ESTIMATED CONSTRUCTION COST	\$92,757

02 Belleair Creek (Ponce to Bridge)

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation						
1.1	Mobilization			LS	1	\$1,000	\$1,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$1,000	\$1,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF		\$2.50	\$0
1.6	Inlet Protection System			EA		\$140	\$0
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0	Earthwork						
2.1	Demolition			LS			\$0
2.2	Regular Excavation			CY		\$23	\$0
3.0	Drainage						
3.1	Underdrain, Type III			LF		\$56	\$0
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA		\$18,000	\$0
3.4	Curb Inlet			EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF		\$130	\$0
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF		\$135	\$0
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0	Paving And Marking						
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)			SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
5.0	Utilities- Sanitary						
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0	Utilities- Reclaimed Water						
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0	Utilities- Potable Water						
7.1	2" Water Service Sleeve			EA		\$1,600	\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF			\$0
8/inter	7.6	Gate Valves		EA		\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve		EA		\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA		\$5,000	\$0
8.0	Lighting						
8.1	Remove & Reinstall Light Pole (Section IV, 9)			EA		\$500	\$0
8.2	Light Pole Complete Relocate			EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)			EA		\$500	\$0
8.4	PVC Conduit			LF		\$30	\$0
8.5	Wire			LF		\$1.50	\$0
8.6	Electrical Risers			EA		\$3,250	\$0
8.7	Remove Old Electrical Services			EA		\$520	\$0
8.8	Pull Boxes			EA		\$350	\$0
TOTAL							\$3,200
CONTINGENCY (20%)							\$640
BASE CONSTRUCTION COST							\$3,840
ADMINISTRATIVE & ENGINEERING (10%)							\$384
TOTAL ESTIMATED CONSTRUCTION COST							\$4,224

03 Bridge Repairs

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$1,000	\$1,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$1,000	\$1,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF		\$2.50	\$0
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS			\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.6	Gate Valves	EA		\$1,500	\$0
7.7	Tapping Sleeve and Valve	EA		\$1,600	\$0
7.8	Fire Hydrant Assemblies (Section IV, 41)	EA		\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
				TOTAL	\$3,200
				CONTINGENCY (20%)	\$640
				BASE CONSTRUCTION COST	\$3,840
				ADMINISTRATIVE & ENGINEERING (10%)	\$384
				TOTAL ESTIMATED CONSTRUCTION COST	\$4,224

	BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
	1.0	Mobilization and Site Preparation				
	1.1	Mobilization	LS	1	\$89,000	\$89,000
	1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$21,000	\$21,000
	1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
	1.4	Erosion Control (Section IV, 38)	LS	1		\$0
	1.5	Sediment Barrier	LF	2084	\$2.50	\$5,210
	1.6	Inlet Protection System	EA	12	\$140	\$1,680
	1.7	Clearing & Grubbing	AC		\$69,000	\$0
	1.8	Tree Removal	EA	4	\$250	\$1,000
	2.0	Earthwork				
	2.1	Demolition	LS	1		\$0
	2.2	Regular Excavation	CY	1042	\$23	\$23,966
	3.0	Drainage				
	3.1	Underdrain, Type III	LF	1042	\$56	\$58,352
	3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
	3.3	Manholes, J-8, <10'	EA	3	\$18,000	\$54,000
	3.4	Curb Inlet	EA	12	\$7,000	\$84,000
	3.5	15" RCP (Section III, 19)	LF		\$120	\$0
	3.6	18" RCP (Section III, 19)	LF		\$125	\$0
	3.7	24" RCP (Section III, 19)	LF	1197	\$130	\$155,610
	3.8	30" RCP (Section III, 19)	LF		\$132	\$0
	3.9	36" RCP (Section III, 19)	LF		\$135	\$0
	3.10	42" RCP (Section III, 19)	LF		\$175	\$0
	3.11	48" RCP (Section III, 19)	LF		\$185	\$0
	4.0	Paving And Marking				
	4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY	2894	\$13	\$37,622
	4.2	8" Crushed Concrete Base (Section IV, 22)	SY	2894	\$21	\$60,774
	4.3	12" Stabilized Sub-Base (Section IV, 22)	SY	2894	\$11	\$31,834
	4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF	2084	\$20	\$41,680
	4.9	Brick Drive Replacement (Section IV, 30)	SF	2400	\$9	\$20,400
	4.5	Concrete Sidewalk and Driveways, 6" Thick	SY	540	\$80	\$43,164
	4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA	10	\$1,300	\$13,000
	4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	50	\$31	\$1,550
	4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
	4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0
8/inter	0570 1 2	Performance Turf, Sod	SY	2084	\$14	\$29,176
4/inter	0590 70 1	Irrigation System Repairs	LS	1	\$7,500	\$7,500
	5.0	Utilities- Sanitary				
	5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
	6.0	Utilities- Reclaimed Water				
	6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
	6.2	18" RCP	LF		\$85	\$0
	7.0	Utilities- Potable Water				
	7.1	2" Water Service Sleeve	EA	18	\$1,600	\$28,800
	7.3	6" PVC Water Main C-900 (Section IV, 41)	LF	1214	\$80	\$97,120
	7.4	8" PVC Water Main C-900 (Section IV, 41)	LF		\$100	\$0
	7.5	10" PVC Water Main C-900 (Section IV, 41)	LF		\$130	\$0
	7.6	Gate Valves	EA	20	\$1,500	\$30,000
	7.7	Tapping Sleeve and Valve	EA	10	\$1,600	\$16,000
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA		\$5,000	\$0
	8.0	Lighting				
	8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
	8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
	8.3	New Light Poles (Furnished By Town)	EA	8	\$500	\$4,000
	8.4	PVC Conduit	LF	1214	\$30	\$36,420
	8.5	Wire	LF	1214	\$1.50	\$1,821
	8.6	Electrical Risers	EA		\$3,250	\$0
	8.7	Remove Old Electrical Services	EA		\$520	\$0
	8.8	Pull Boxes	EA		\$350	\$0
					TOTAL	\$995,879
					CONTINGENCY (20%)	\$199,176
					BASE CONSTRUCTION COST	\$1,195,055
					ADMINISTRATIVE & ENGINEERING (10%)	\$119,506
					TOTAL ESTIMATED CONSTRUCTION COST	\$1,314,561

05 IRR Poinsettia to Rosery

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$54,000	\$54,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$13,000	\$13,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF	3222	\$2.50	\$8,055
1.6	Inlet Protection System	EA	6	\$140	\$840
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY	1611	\$23	\$37,053
3.0	Drainage				
3.1	Underdrain, Type III	LF	1611	\$56	\$90,216
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA	6	\$7,000	\$42,000
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF	1716	\$130	\$223,080
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	50	\$31	\$1,550
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY	4475	\$3.50	\$15,663
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	600	\$106	\$63,600
0570 1 2	Performance Turf, Sod	SY	3222	\$14	\$45,108
0590 70 1	Irrigation System Repairs	LS	1	\$7,500	\$7,500
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.2	4" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	Gate Valves	EA		\$1,500	\$0
4/inter	Tapping Sleeve and Valve	EA		\$1,600	\$0
	Fire Hydrant Assemblies (Section IV, 41)	EA		\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
				TOTAL	\$602,865
				CONTINGENCY (20%)	\$120,573
				BASE CONSTRUCTION COST	\$723,437
				ADMINISTRATIVE & ENGINEERING (10%)	\$72,344
				TOTAL ESTIMATED CONSTRUCTION COST	\$795,781

06 IRR Rosery to Mehlenbacher

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$101,000	\$101,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$24,000	\$24,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF	2934	\$2.50	\$7,335
1.6	Inlet Protection System			EA	6	\$140	\$840
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	1467	\$23	\$33,741
3.0		Drainage					
3.1	Underdrain, Type III			LF	1467	\$56	\$82,152
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA	1	\$18,000	\$18,000
3.4	Curb Inlet			EA	6	\$7,000	\$42,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF	1572	\$130	\$204,360
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF		\$135	\$0
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	4075	\$13	\$52,975
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	4075	\$21	\$85,575
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	4075	\$11	\$44,825
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	2934	\$20	\$58,680
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF	25	\$31	\$775
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	2934	\$14	\$41,076
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	25	\$1,600	\$40,000
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	1175	\$80	\$94,000
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF	1660	\$100	\$166,000
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF		\$130	\$0
8/inter	7.6	Gate Valves		EA	8	\$1,500	\$12,000
4/inter	7.7	Tapping Sleeve and Valve		EA	4	\$1,600	\$6,400
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA	2	\$5,000	\$10,000
8.0		Lighting					
8.1	Remove & Reinstall Light Pole (Section IV, 9)			EA		\$500	\$0
8.2	Light Pole Complete Relocate			EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)			EA		\$500	\$0
8.4	PVC Conduit			LF		\$30	\$0
8.5	Wire			LF		\$1.50	\$0
8.6	Electrical Risers			EA		\$3,250	\$0
8.7	Remove Old Electrical Services			EA		\$520	\$0
8.8	Pull Boxes			EA		\$350	\$0
TOTAL							\$1,134,434
CONTINGENCY (20%)							\$226,887
BASE CONSTRUCTION COST							\$1,361,321
ADMINISTRATIVE & ENGINEERING (10%)							\$136,132
TOTAL ESTIMATED CONSTRUCTION COST							\$1,497,453

07 IRR Bayview to Belleview (Alt 1- Mill & Resurface)

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$16,000	\$16,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$4,000	\$4,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF	5594	\$2.50	\$13,985
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY	7769	\$3.50	\$27,192
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	1020	\$106	\$108,120
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	7.6	Gate Valves	EA	\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve	EA	\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
				TOTAL	\$170,497
				CONTINGENCY (20%)	\$34,099
				BASE CONSTRUCTION COST	\$204,596
				ADMINISTRATIVE & ENGINEERING (10%)	\$20,460
				TOTAL ESTIMATED CONSTRUCTION COST	\$225,055

08 IRR Bayview to Belleview (Alt 2-Bike Path/Rd Flooding at Bridge)

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$51,000	\$51,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$12,000	\$12,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF	5594	\$2.50	\$13,985
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY	3108	\$13	\$40,404
4.2	8" Crushed Concrete Base (Section IV, 22)	SY	3108	\$21	\$65,268
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY	3108	\$11	\$34,188
	Bridge for Bike Path	EA	1	\$100,000	\$100,000
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF	5594	\$20	\$111,880
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY	7769	\$3.50	\$27,192
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	1020	\$106	\$108,120
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	7.6 Gate Valves	EA		\$1,500	\$0
4/inter	7.7 Tapping Sleeve and Valve	EA		\$1,600	\$0
	7.8 Fire Hydrant Assemblies (Section IV, 41)	EA		\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
TOTAL					\$565,237
CONTINGENCY (20%)					\$113,047
BASE CONSTRUCTION COST					\$678,284
ADMINISTRATIVE & ENGINEERING (10%)					\$67,828
TOTAL ESTIMATED CONSTRUCTION COST					\$746,112

09 IRR by Creek

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$1,000	\$1,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$1,000	\$1,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS			\$0
1.5	Sediment Barrier	LF		\$2.50	\$0
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.6	Gate Valves	EA		\$1,500	\$0
7.7	Tapping Sleeve and Valve	EA		\$1,600	\$0
7.8	Fire Hydrant Assemblies (Section IV, 41)	EA		\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
				TOTAL	\$3,200
				CONTINGENCY (20%)	\$640
				BASE CONSTRUCTION COST	\$3,840
				ADMINISTRATIVE & ENGINEERING (10%)	\$384
				TOTAL ESTIMATED CONSTRUCTION COST	\$4,224

10 Magnolia Wall/One Way (Concept)

BID ITEM		MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation				
1.1		Mobilization	LS	1	\$10,000	\$10,000
1.2		Maintenance of Traffic (Section IV, 44)	LS	1	\$3,000	\$3,000
1.3		Project Sign (Section III, 22)	EA	9	\$1,200	\$10,800
1.4		Erosion Control (Section IV, 38)	LS			\$0
1.5		Sediment Barrier	LF	2470	\$2.50	\$6,175
1.6		Inlet Protection System	EA		\$140	\$0
1.7		Clearing & Grubbing	AC		\$69,000	\$0
1.8		Tree Removal	EA		\$250	\$0
2.0		Earthwork				
2.1		Demolition	LS			\$0
2.2		Regular Excavation	CY		\$23	\$0
3.0		Drainage				
3.1		Underdrain, Type III	LF		\$56	\$0
3.2		Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3		Manholes, J-8, <10'	EA		\$18,000	\$0
3.4		Curb Inlet	EA		\$7,000	\$0
3.5		15" RCP (Section III, 19)	LF		\$120	\$0
3.6		18" RCP (Section III, 19)	LF		\$125	\$0
3.7		24" RCP (Section III, 19)	LF		\$130	\$0
3.8		30" RCP (Section III, 19)	LF		\$132	\$0
3.9		36" RCP (Section III, 19)	LF		\$135	\$0
3.10		42" RCP (Section III, 19)	LF		\$175	\$0
3.11		48" RCP (Section III, 19)	LF		\$185	\$0
4.0		Paving And Marking				
4.1		2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2		8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3		12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4		Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5		Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6		ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7		Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	918	\$31	\$28,458
4.8		Milling Exist Asph Pavt, 1" Avg Depth	SY	2744	\$3.50	\$9,604
4.9		Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	360	\$106	\$38,160
5.0		Utilities- Sanitary				
5.1		8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0		Utilities- Reclaimed Water				
6.1		18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2		18" RCP	LF		\$85	\$0
7.0		Utilities- Potable Water				
7.1		2" Water Service Sleeve	EA		\$1,600	\$0
7.3		6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4		8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5		10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter		Gate Valves	EA		\$1,500	\$0
4/inter		Tapping Sleeve and Valve	EA		\$1,600	\$0
		Fire Hydrant Assemblies (Section IV, 41)	EA		\$5,000	\$0
8.0		Lighting				
8.1		Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2		Light Pole Complete Relocate	EA		\$25,000	\$0
8.3		New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4		PVC Conduit	LF		\$30	\$0
8.5		Wire	LF		\$1.50	\$0
8.6		Electrical Risers	EA		\$3,250	\$0
8.7		Remove Old Electrical Services	EA		\$520	\$0
8.8		Pull Boxes	EA		\$350	\$0
TOTAL						\$106,197
CONTINGENCY (20%)						\$21,239
BASE CONSTRUCTION COST						\$127,436
ADMINISTRATIVE & ENGINEERING (10%)						\$12,744
TOTAL ESTIMATED CONSTRUCTION COST						\$140,180

11 Ocala/Osceola (Osceola from Oleander to Manatee 2)

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$77,000	\$77,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$18,000	\$18,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF	2092	\$3	\$5,230
1.6	Inlet Protection System			EA	8	\$140	\$1,120
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	1046	\$23	\$24,058
3.0		Drainage					
3.1	Underdrain, Type III			LF	1046	\$56	\$58,576
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA	1	\$18,000	\$18,000
3.4	Curb Inlet			EA	8	\$7,000	\$56,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF		\$130	\$0
3.8	30" RCP (Section III, 19)			LF	777	\$132	\$102,564
3.9	36" RCP (Section III, 19)			LF	353	\$135	\$47,655
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	2906	\$13	\$37,778
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	2906	\$21	\$61,026
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	2906	\$11	\$31,966
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	2092	\$20	\$41,840
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF	50	\$31	\$1,550
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$4	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	2092	\$14	\$29,288
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	13	\$1,600	\$20,800
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	2040	\$80	\$163,200
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF		\$130	\$0
8/inter	7.6	Gate Valves		EA	20	\$1,500	\$30,000
4/inter	7.7	Tapping Sleeve and Valve		EA	10	\$1,600	\$16,000
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA	1	\$5,000	\$5,000
8.0		Lighting					
	8.1	Remove & Reinstall Light Pole (Section IV, 9)		EA		\$500	\$0
	8.2	Light Pole Complete Relocate		EA		\$25,000	\$0
	8.3	New Light Poles (Furnished By Town)		EA		\$500	\$0
	8.4	PVC Conduit		LF		\$30	\$0
	8.5	Wire		LF		\$2	\$0
	8.6	Electrical Risers		EA		\$3,250	\$0
	8.7	Remove Old Electrical Services		EA		\$520	\$0
	8.8	Pull Boxes		EA		\$350	\$0
TOTAL							\$855,351
CONTINGENCY (20%)							\$171,070
BASE CONSTRUCTION COST							\$1,026,421
ADMINISTRATIVE & ENGINEERING (10%)							\$102,642
TOTAL ESTIMATED CONSTRUCTION COST							\$1,129,063

12 Ocala/Ponce (Ponce from Manatee to Oleander 2)

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$110,000	\$110,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$26,000	\$26,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF	2104	\$2.50	\$5,260
1.6	Inlet Protection System			EA	6	\$140	\$840
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	1052	\$23	\$24,196
3.0		Drainage					
3.1	Underdrain, Type III			LF	1052	\$56	\$58,912
3.2	Nutrient Box 12'x20'			EA	1	\$299,700	\$299,700
3.3	Manholes, J-8, <10'			EA		\$18,000	\$0
3.4	Curb Inlet			EA	6	\$7,000	\$42,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF	702	\$130	\$91,260
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF	412	\$135	\$55,620
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	3834	\$13	\$49,842
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	3834	\$21	\$80,514
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	3834	\$11	\$42,174
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	3432	\$20	\$68,640
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF	24	\$31	\$744
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	2104	\$14	\$29,456
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	15	\$1,600	\$24,000
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	711	\$80	\$56,880
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF	736	\$130	\$95,680
8/inter	7.6	Gate Valves		EA	12	\$1,500	\$18,000
4/inter	7.7	Tapping Sleeve and Valve		EA	6	\$1,600	\$9,600
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA		\$5,000	\$0
8.0		Lighting					
	8.1	Remove & Reinstall Light Pole (Section IV, 9)		EA		\$500	\$0
	8.2	Light Pole Complete Relocate		EA		\$25,000	\$0
	8.3	New Light Poles (Furnished By Town)		EA		\$500	\$0
	8.4	PVC Conduit		LF	1052	\$30	\$31,560
	8.5	Wire		LF	1052	\$1.50	\$1,578
	8.6	Electrical Risers		EA		\$3,250	\$0
	8.7	Remove Old Electrical Services		EA		\$520	\$0
	8.8	Pull Boxes		EA		\$350	\$0
TOTAL							\$1,231,156
CONTINGENCY (20%)							\$246,231
BASE CONSTRUCTION COST							\$1,477,387
ADMINISTRATIVE & ENGINEERING (10%)							\$147,739
TOTAL ESTIMATED CONSTRUCTION COST							\$1,625,126

13 Orlando/Osceola (Osceola from Oleander to Manatee 1)

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$71,000	\$71,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$17,000	\$17,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS			\$0
1.5	Sediment Barrier			LF	1862	\$2.50	\$4,655
1.6	Inlet Protection System			EA	8	\$140	\$1,120
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	931	\$23	\$21,413
3.0		Drainage					
3.1	Underdrain, Type III			LF	931	\$56	\$52,136
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA	4	\$18,000	\$72,000
3.4	Curb Inlet			EA	8	\$7,000	\$56,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, I 9)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF	662	\$130	\$86,060
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF	361	\$135	\$48,735
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	2379	\$13	\$30,927
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	2379	\$21	\$49,959
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	2379	\$11	\$26,169
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	1862	\$20	\$37,240
4.5	Concrete Sidewalk and Drivewavs, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF	23	\$31	\$713
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Cone, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	1862	\$14	\$26,068
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	11	\$1,600	\$17,600
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	1509	\$80	\$120,720
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF		\$130	\$0
8/inter	7.6	Gate Valves		EA	16	\$1,500	\$24,000
4/inter	7.7	Tapping Sleeve and Valve		EA	8	\$1,600	\$12,800
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA	1	\$5,000	\$5,000
8.0		Lighting					
	8.1	Remove & Reinstall Light Pole (Section IV, 9)		EA		\$500	\$0
	8.2	Light Pole Complete Relocate		EA		\$25,000	\$0
	8.3	New Light Poles (Furnished By Town)		EA		\$500	\$0
	8.4	PVC Conduit		LF		\$30	\$0
	8.5	Wire		LF		\$1.50	\$0
	8.6	Electrical Risers		EA		\$3,250	\$0
	8.7	Remove Old Electrical Services		EA		\$520	\$0
	8.8	Pull Boxes		EA		\$350	\$0
TOTAL							\$790,015
CONTINGENCY (20%)							\$158,003
BASE CONSTRUCTION COST							\$948,018
ADMININSTRATIVE & ENGINEERING (10%)							\$94,802
TOTAL ESTIMATED CONSTRUCTION COST							\$1,042,820

14 Orlando/Ponce (Ponce from Manatee to Oleander 1)

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$168,000	\$168,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$39,000	\$39,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF	3510	\$2.50	\$8,775
1.6	Inlet Protection System			EA	14	\$140	\$1,960
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	1755	\$23	\$40,365
3.0		Drainage					
3.1	Underdrain, Type III			LF	1755	\$56	\$98,280
3.2	Nutrient Box 12'x20'			EA	1	\$299,700	\$299,700
3.3	Manholes, J-8, <10'			EA	3	\$18,000	\$54,000
3.4	Curb Inlet			EA	14	\$7,000	\$98,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF	1071	\$130	\$139,230
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF	386	\$135	\$52,110
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	5636	\$13	\$73,268
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	5636	\$21	\$118,356
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	5636	\$11	\$61,996
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	5424	\$20	\$108,480
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	3510	\$14	\$49,140
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	26	\$1,600	\$41,600
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	2248	\$80	\$179,840
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF	1005	\$130	\$130,650
8/inter	7.6	Gate Valves		EA	20	\$1,500	\$30,000
4/inter	7.7	Tapping Sleeve and Valve		EA	10	\$1,600	\$16,000
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA	2	\$5,000	\$10,000
8.0		Lighting					
8.1	Remove & Reinstall Light Pole (Section IV, 9)			EA		\$500	\$0
8.2	Light Pole Complete Relocate			EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)			EA		\$500	\$0
8.4	PVC Conduit			LF	1755	\$30	\$52,650
8.5	Wire			LF	1755	\$1.50	\$2,633
8.6	Electrical Risers			EA		\$3,250	\$0
8.7	Remove Old Electrical Services			EA		\$520	\$0
8.8	Pull Boxes			EA		\$350	\$0
TOTAL							\$1,882,733
CONTINGENCY (20%)							\$376,547
BASE CONSTRUCTION COST							\$2,259,279
ADMINISTRATIVE & ENGINEERING (10%)							\$225,928
TOTAL ESTIMATED CONSTRUCTION COST							\$2,485,207

15 Osceola East of IRR

BID ITEM		MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
8/inter 4/inter	1.0	Mobilization and Site Preparation				
	1.1	Mobilization	LS	1	\$117,000	\$117,000
	1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$27,000	\$27,000
	1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
	1.4	Erosion Control (Section IV, 38)	LS	1		\$0
	1.5	Sediment Barrier	LF	3288	\$2.50	\$8,220
	1.6	Inlet Protection System	EA	10	\$140	\$1,400
	1.7	Clearing & Grubbing	AC		\$69,000	\$0
	1.8	Tree Removal	EA		\$250	\$0
	2.0	Earthwork				
	2.1	Demolition	LS	1		\$0
	2.2	Regular Excavation	CY	1644	\$23	\$37,812
	3.0	Drainage				
	3.1	Underdrain, Type III	LF	1644	\$56	\$92,064
	3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
	3.3	Manholes, J-8, <10'	EA	1	\$18,000	\$18,000
	3.4	Curb Inlet	EA	10	\$7,000	\$70,000
	3.5	15" RCP (Section III, 19)	LF		\$120	\$0
	3.6	18" RCP (Section III, I 9)	LF		\$125	\$0
	3.7	24" RCP (Section III, 19)	LF	858	\$130	\$111,540
	3.8	30" RCP (Section III, 19)	LF	876	\$132	\$115,632
	3.9	36" RCP (Section III, 19)	LF		\$135	\$0
	3.10	42" RCP (Section III, 19)	LF		\$175	\$0
	3.11	48" RCP (Section III, 19)	LF		\$185	\$0
	4.0	Paving And Marking				
	4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY	4749	\$13	\$61,737
	4.2	8" Crushed Concrete Base (Section IV, 22)	SY	4749	\$21	\$99,729
	4.3	12" Stabilized Sub-Base (Section IV, 22)	SY	4749	\$11	\$52,239
	4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF	3288	\$20	\$65,760
	4.5	Concrete Sidewalk and Drivewavs, 6" Thick	SY		\$80	\$0
	4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
	4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	78	\$31	\$2,418
	4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
	4.9	Superpave Asphaltic Cone, Traffic C (resurfacing)	TN		\$106	\$0
	4.10	Performance Turf, Sod	SY	3288	\$14	\$46,032
	4.11	Irrigation System Repairs	LS	1	\$7,500	\$7,500
	5.0	Utilities- Sanitary				
	5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
	6.0	Utilities- Reclaimed Water				
	6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
	6.2	18" RCP	LF		\$85	\$0
	7.0	Utilities- Potable Water				
	7.1	2" Water Service Sleeve	EA	20	\$1,600	\$32,000
	7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
	7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
	7.5	10" PVC Water Main C-900 (Section IV, 41)	LF	2343	\$130	\$304,590
	7.6	Gate Valves	EA	12	\$1,500	\$18,000
	7.7	Tapping Sleeve and Valve	EA	6	\$1,600	\$9,600
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	1	\$5,000	\$5,000
	8.0	Lighting				
	8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
	8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
	8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
	8.4	PVC Conduit	LF		\$30	\$0
	8.5	Wire	LF		\$1.50	\$0
	8.6	Electrical Risers	EA		\$3,250	\$0
	8.7	Remove Old Electrical Services	EA		\$520	\$0
	8.8	Pull Boxes	EA		\$350	\$0
TOTAL						\$1,304,473
CONTINGENCY (20%)						\$260,895
BASE CONSTRUCTION COST						\$1,565,368
ADMINISTRATIVE & ENGINEERING (10%)						\$156,537
TOTAL ESTIMATED CONSTRUCTION COST						\$1,721,904

16 Pinellas/Ponce (Phase 3)

	BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
	1.0	Mobilization and Site Preparation				
	1.1	Mobilization	LS	1	\$69,000	\$69,000
	1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$16,000	\$16,000
	1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
	1.4	Erosion Control (Section IV, 38)	LS	1		\$0
	1.5	Sediment Barrier	LF	1880	\$2.50	\$4,700
	1.6	Inlet Protection System	EA	8	\$140	\$1,120
	1.7	Clearing & Grubbing	AC		\$69,000	\$0
	1.8	Tree Removal	EA		\$250	\$0
	2.0	Earthwork				
	2.1	Demolition	LS	1		\$0
	2.2	Regular Excavation	CY	940	\$23	\$21,620
	3.0	Drainage				
	3.1	Underdrain, Type III	LF	940	\$56	\$52,640
	3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
	3.3	Manholes, J-8, <10'	EA	4	\$18,000	\$72,000
	3.4	Curb Inlet	EA	8	\$7,000	\$56,000
	3.5	15" RCP (Section III, 19)	LF		\$120	\$0
	3.6	18" RCP (Section III, 19)	LF		\$125	\$0
	3.7	24" RCP (Section III, 19)	LF		\$130	\$0
	3.8	30" RCP (Section III, 19)	LF	1052	\$132	\$138,864
	3.9	36" RCP (Section III, 19)	LF		\$135	\$0
	3.10	42" RCP (Section III, 19)	LF		\$175	\$0
	3.11	48" RCP (Section III, 19)	LF		\$185	\$0
	4.0	Paving And Marking				
	4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY	2507	\$13	\$32,591
	4.2	8" Crushed Concrete Base (Section IV, 22)	SY	2507	\$21	\$52,647
	4.3	12" Stabilized Sub-Base (Section IV, 22)	SY	2507	\$11	\$27,577
	4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF	2442	\$20	\$48,840
	4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
	4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
	4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	47	\$31	\$1,457
	4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
	4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0
	4.10	Performance Turf, Sod	SY	1880	\$14	\$26,320
	4.11	Irrigation System Repairs	LS	1	\$7,500	\$7,500
	5.0	Utilities- Sanitary				
	5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
	6.0	Utilities- Reclaimed Water				
	6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
	6.2	18" RCP	LF		\$85	\$0
	7.0	Utilities- Potable Water				
	7.1	2" Water Service Sleeve	EA	13	\$1,600	\$20,800
	7.3	6" PVC Water Main C-900 (Section IV, 41)	LF	1058	\$80	\$84,640
	7.4	8" PVC Water Main C-900 (Section IV, 41)	LF		\$100	\$0
	7.5	10" PVC Water Main C-900 (Section IV, 41)	LF		\$130	\$0
8/inter	7.6	Gate Valves	EA	12	\$1,500	\$18,000
4/inter	7.7	Tapping Sleeve and Valve	EA	6	\$1,600	\$9,600
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	1	\$5,000	\$5,000
	8.0	Lighting				
	8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
	8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
	8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
	8.4	PVC Conduit	LF		\$30	\$0
	8.5	Wire	LF		\$1.50	\$0
	8.6	Electrical Risers	EA		\$3,250	\$0
	8.7	Remove Old Electrical Services	EA		\$520	\$0
	8.8	Pull Boxes	EA		\$350	\$0
					TOTAL	\$768,116
					CONTINGENCY (20%)	\$153,623
					BASE CONSTRUCTION COST	\$921,739
					ADMINISTRATIVE & ENGINEERING (10%)	\$92,174
					TOTAL ESTIMATED CONSTRUCTION COST	\$1,013,913

17 Pinellas/Ponce (Phase 4)

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$97,000	\$97,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$23,000	\$23,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF	3640	\$2.50	\$9,100
1.6	Inlet Protection System			EA	12	\$140	\$1,680
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	1820	\$23	\$41,860
3.0		Drainage					
3.1	Underdrain, Type III			LF		\$56	\$0
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA		\$18,000	\$0
3.4	Curb Inlet			EA	12	\$7,000	\$84,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF	1940	\$130	\$252,200
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF		\$135	\$0
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	3741	\$13	\$48,633
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	3741	\$21	\$78,561
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	3741	\$11	\$41,151
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	3640	\$20	\$72,800
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF	56	\$31	\$1,736
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	3640	\$14	\$50,960
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	18	\$1,600	\$28,800
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	2329	\$80	\$186,320
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF		\$130	\$0
8/inter	7.6	Gate Valves		EA	24	\$1,500	\$36,000
4/inter	7.7	Tapping Sleeve and Valve		EA	12	\$1,600	\$19,200
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA	1	\$5,000	\$5,000
8.0		Lighting					
8.1	Remove & Reinstall Light Pole (Section IV, 9)			EA		\$500	\$0
8.2	Light Pole Complete Relocate			EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)			EA		\$500	\$0
8.4	PVC Conduit			LF		\$30	\$0
8.5	Wire			LF		\$1.50	\$0
8.6	Electrical Risers			EA		\$3,250	\$0
8.7	Remove Old Electrical Services			EA		\$520	\$0
8.8	Pull Boxes			EA		\$350	\$0
TOTAL							\$1,086,701
CONTINGENCY (20%)							\$217,340
BASE CONSTRUCTION COST							\$1,304,041
ADMINISTRATIVE & ENGINEERING (10%)							\$130,404
TOTAL ESTIMATED CONSTRUCTION COST							\$1,434,445

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$4,000	\$4,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$1,000	\$1,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF		\$2.50	\$0
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	9	\$31	\$279
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY	1766	\$3.50	\$6,181
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	250	\$106	\$26,500
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.2	4" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	7.6	Gate Valves	EA	\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve	EA	\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
TOTAL					\$39,160
CONTINGENCY (20%)					\$7,832
BASE CONSTRUCTION COST					\$46,992
ADMINISTRATIVE & ENGINEERING (10%)					\$4,699
TOTAL ESTIMATED CONSTRUCTION COST					\$51,691

19 Ponce from Manatee to Rosery

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0		Mobilization and Site Preparation					
1.1	Mobilization			LS	1	\$108,000	\$108,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$25,000	\$25,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF	2278	\$2.50	\$5,695
1.6	Inlet Protection System			EA	7	\$140	\$980
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0		Earthwork					
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY	1139	\$23	\$26,197
3.0		Drainage					
3.1	Underdrain, Type III			LF	1139	\$56	\$63,784
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA		\$18,000	\$0
3.4	Curb Inlet			EA	12	\$7,000	\$84,000
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF	734	\$125	\$91,750
3.7	24" RCP (Section III, 19)			LF	633	\$130	\$82,290
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF		\$135	\$0
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0		Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY	4872	\$13	\$63,336
4.2	8" Crushed Concrete Base (Section IV, 22)			SY	4872	\$21	\$102,312
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY	4872	\$11	\$53,592
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF	4556	\$20	\$91,120
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF	120	\$31	\$3,720
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
4.10	Performance Turf, Sod			SY	2278	\$14	\$31,892
4.11	Irrigation System Repairs			LS	1	\$7,500	\$7,500
5.0		Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0		Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0		Utilities- Potable Water					
7.1	2" Water Service Sleeve			EA	15	\$1,600	\$24,000
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF	2278	\$80	\$182,240
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF	890	\$130	\$115,700
8/inter	7.6	Gate Valves		EA	16	\$1,500	\$24,000
4/inter	7.7	Tapping Sleeve and Valve		EA	8	\$1,600	\$12,800
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA	1	\$5,000	\$5,000
8.0		Lighting					
8.1	Remove & Reinstall Light Pole (Section IV, 9)			EA		\$500	\$0
8.2	Light Pole Complete Relocate			EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)			EA		\$500	\$0
8.4	PVC Conduit			LF		\$30	\$0
8.5	Wire			LF		\$1.50	\$0
8.6	Electrical Risers			EA		\$3,250	\$0
8.7	Remove Old Electrical Services			EA		\$520	\$0
8.8	Pull Boxes			EA		\$350	\$0
TOTAL							\$1,206,108
CONTINGENCY (20%)							\$241,222
BASE CONSTRUCTION COST							\$1,447,330
ADMINISTRATIVE & ENGINEERING (10%)							\$144,733
TOTAL ESTIMATED CONSTRUCTION COST							\$1,592,063

20 Ponce from Roundabout to Trail

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE	
1.0	Mobilization and Site Preparation					
1.1	Mobilization	LS	1	\$183,000	\$183,000	
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$43,000	\$43,000	
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200	
1.4	Erosion Control (Section IV, 38)	LS	1		\$0	
1.5	Sediment Barrier	LF	3820	\$2.50	\$9,550	
1.6	Inlet Protection System	EA	28	\$140	\$3,920	
1.7	Clearing & Grubbing	AC		\$69,000	\$0	
1.8	Tree Removal	EA		\$250	\$0	
2.0	Earthwork					
2.1	Demolition	LS	1		\$0	
2.2	Regular Excavation	CY	1910	\$23	\$43,930	
3.0	Drainage					
3.1	Underdrain, Type III	LF	1910	\$56	\$106,960	
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0	
3.3	Manholes, J-8, <10'	EA	1	\$18,000	\$18,000	
3.4	Curb Inlet	EA	28	\$7,000	\$196,000	
3.5	15" RCP (Section III, 19)	LF		\$120	\$0	
3.6	18" RCP (Section III, 19)	LF		\$125	\$0	
3.7	24" RCP (Section III, 19)	LF	832	\$130	\$108,160	
3.8	30" RCP (Section III, 19)	LF	1037	\$132	\$136,884	
3.9	36" RCP (Section III, 19)	LF	535	\$135	\$72,225	
3.10	42" RCP (Section III, 19)	LF		\$175	\$0	
3.11	48" RCP (Section III, 19)	LF		\$185	\$0	
4.0	Paving And Marking					
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY	7980	\$13	\$103,740	
4.2	8" Crushed Concrete Base (Section IV, 22)	SY	7980	\$21	\$167,580	
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY	7980	\$11	\$87,780	
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF	3820	\$20	\$76,400	
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0	
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0	
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	234	\$31	\$7,254	
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0	
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0	
4.10	Performance Turf, Sod	SY	3820	\$14	\$53,480	
4.11	Irrigation System Repairs	LS	1	\$7,500	\$7,500	
5.0	Utilities- Sanitary					
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0	
6.0	Utilities- Reclaimed Water					
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0	
6.2	18" RCP	LF		\$85	\$0	
7.0	Utilities- Potable Water					
7.1	2" Water Service Sleeve	EA	22	\$1,600	\$35,200	
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF	1963	\$80	\$157,040	
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF		\$100	\$0	
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF	890	\$130	\$115,700	
	14" PVC Water Main	LF	1262	\$190	\$239,780	
8/inter	7.6	Gate Valves	EA	32	\$1,500	\$48,000
4/inter	7.7	Tapping Sleeve and Valve	EA	16	\$1,600	\$25,600
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	1	\$5,000	\$5,000
8.0	Lighting					
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0	
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0	
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0	
8.4	PVC Conduit	LF		\$30	\$0	
8.5	Wire	LF		\$1.50	\$0	
8.6	Electrical Risers	EA		\$3,250	\$0	
8.7	Remove Old Electrical Services	EA		\$520	\$0	
8.8	Pull Boxes	EA		\$350	\$0	
TOTAL					\$2,052,883	
CONTINGENCY (20%)					\$410,577	
BASE CONSTRUCTION COST					\$2,463,460	
ADMINISTRATIVE & ENGINEERING (10%)					\$246,346	
TOTAL ESTIMATED CONSTRUCTION COST					\$2,709,806	

21 Seawall Replacements

BID ITEM		MOBILIZATION AND SITE PREPARATION		UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation						
1.1	Mobilization			LS	1	\$1,000	\$1,000
1.2	Maintenance of Traffic (Section IV, 44)			LS	1	\$1,000	\$1,000
1.3	Project Sign (Section III, 22)			EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)			LS	1		\$0
1.5	Sediment Barrier			LF		\$2.50	\$0
1.6	Inlet Protection System			EA		\$140	\$0
1.7	Clearing & Grubbing			AC		\$69,000	\$0
1.8	Tree Removal			EA		\$250	\$0
2.0	Earthwork						
2.1	Demolition			LS	1		\$0
2.2	Regular Excavation			CY		\$23	\$0
3.0	Drainage						
3.1	Underdrain, Type III			LF		\$56	\$0
3.2	Nutrient Box 12'x20'			EA		\$299,700	\$0
3.3	Manholes, J-8, <10'			EA		\$18,000	\$0
3.4	Curb Inlet			EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)			LF		\$120	\$0
3.6	18" RCP (Section III, 19)			LF		\$125	\$0
3.7	24" RCP (Section III, 19)			LF		\$130	\$0
3.8	30" RCP (Section III, 19)			LF		\$132	\$0
3.9	36" RCP (Section III, 19)			LF		\$135	\$0
3.10	42" RCP (Section III, 19)			LF		\$175	\$0
3.11	48" RCP (Section III, 19)			LF		\$185	\$0
4.0	Paving And Marking						
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)			SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)			SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)			SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb			LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick			SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)			EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)			LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth			SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)			TN		\$106	\$0
5.0	Utilities- Sanitary						
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)			LF		\$110	\$0
6.0	Utilities- Reclaimed Water						
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)			LF		\$165	\$0
6.2	18" RCP			LF		\$85	\$0
7.0	Utilities- Potable Water						
7.1	2" Water Service Sleeve			EA		\$1,600	\$0
7.2	4" PVC Water Main C-900 (Section IV, 41)			LF			\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)			LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)			LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)			LF			\$0
8/inter	7.6	Gate Valves		EA		\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve		EA		\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)		EA		\$5,000	\$0
8.0	Lighting						
8.1	Remove & Reinstall Light Pole (Section IV, 9)			EA		\$500	\$0
8.2	Light Pole Complete Relocate			EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)			EA		\$500	\$0
8.4	PVC Conduit			LF		\$30	\$0
8.5	Wire			LF		\$1.50	\$0
8.6	Electrical Risers			EA		\$3,250	\$0
8.7	Remove Old Electrical Services			EA		\$520	\$0
8.8	Pull Boxes			EA		\$350	\$0
TOTAL							\$3,200
CONTINGENCY (20%)							\$640
BASE CONSTRUCTION COST							\$3,840
ADMINISTRATIVE & ENGINEERING (10%)							\$384
TOTAL ESTIMATED CONSTRUCTION COST							\$4,224

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$1,000	\$1,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$1,000	\$1,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF		\$2.50	\$0
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.2	4" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	7.6	Gate Valves	EA	\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve	EA	\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$1.50	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
				TOTAL	\$3,200
				CONTINGENCY (20%)	\$640
				BASE CONSTRUCTION COST	\$3,840
				ADMINISTRATIVE & ENGINEERING (10%)	\$384
				TOTAL ESTIMATED CONSTRUCTION COST	\$4,224

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$97,000	\$97,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$23,000	\$23,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF	1996	\$2.50	\$4,990
1.6	Inlet Protection System	EA	14	\$140	\$1,960
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY	998	\$23	\$22,954
3.0	Drainage				
3.1	Underdrain, Type III	LF	998	\$56	\$55,888
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA	14	\$7,000	\$98,000
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF	421	\$125	\$52,625
3.7	24" RCP (Section III, 19)	LF	858	\$130	\$111,540
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY	3881	\$13	\$50,453
4.2	8" Crushed Concrete Base (Section IV, 22)	SY	3881	\$21	\$81,501
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY	3881	\$11	\$42,691
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF	3328	\$20	\$66,560
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF	17	\$31	\$527
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY		\$3.50	\$0
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN		\$106	\$0
4.10	Performance Turf, Sod	SY	1996	\$14	\$27,944
4.11	Irrigation System Repairs	LS	1	\$7,500	\$7,500
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA	8	\$1,600	\$12,800
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF	1280	\$80	\$102,400
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF		\$100	\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF		\$130	\$0
8/inter 4/inter	12" PVC Water Main	LF	788	\$190.00	\$149,720
	Gate Valves	EA	16	\$1,500	\$24,000
	Tapping Sleeve and Valve	EA	8	\$1,600	\$12,800
	Fire Hydrant Assemblies (Section IV, 41)	EA	2	\$5,000	\$10,000
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF	988	\$30	\$29,640
8.5	Wire	LF	988	\$1.50	\$1,482
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
TOTAL					\$1,089,175
CONTINGENCY (20%)					\$217,835
BASE CONSTRUCTION COST					\$1,307,010
ADMINISTRATIVE & ENGINEERING (10%)					\$130,701
TOTAL ESTIMATED CONSTRUCTION COST					\$1,437,711

BID ITEM	MOBILIZATION AND SITE PREPARATION	UNIT	QUANTITY	UNIT PRICE	TOTAL PRICE
1.0	Mobilization and Site Preparation				
1.1	Mobilization	LS	1	\$9,000	\$9,000
1.2	Maintenance of Traffic (Section IV, 44)	LS	1	\$2,000	\$2,000
1.3	Project Sign (Section III, 22)	EA	1	\$1,200	\$1,200
1.4	Erosion Control (Section IV, 38)	LS	1		\$0
1.5	Sediment Barrier	LF	5558	\$3	\$13,895
1.6	Inlet Protection System	EA		\$140	\$0
1.7	Clearing & Grubbing	AC		\$69,000	\$0
1.8	Tree Removal	EA		\$250	\$0
2.0	Earthwork				
2.1	Demolition	LS	1		\$0
2.2	Regular Excavation	CY		\$23	\$0
3.0	Drainage				
3.1	Underdrain, Type III	LF		\$56	\$0
3.2	Nutrient Box 12'x20'	EA		\$299,700	\$0
3.3	Manholes, J-8, <10'	EA		\$18,000	\$0
3.4	Curb Inlet	EA		\$7,000	\$0
3.5	15" RCP (Section III, 19)	LF		\$120	\$0
3.6	18" RCP (Section III, 19)	LF		\$125	\$0
3.7	24" RCP (Section III, 19)	LF		\$130	\$0
3.8	30" RCP (Section III, 19)	LF		\$132	\$0
3.9	36" RCP (Section III, 19)	LF		\$135	\$0
3.10	42" RCP (Section III, 19)	LF		\$175	\$0
3.11	48" RCP (Section III, 19)	LF		\$185	\$0
4.0	Paving And Marking				
4.1	2.5" FDOT Type S-1 Asphalt(Section IV, 23)	SY		\$13	\$0
4.2	8" Crushed Concrete Base (Section IV, 22)	SY		\$21	\$0
4.3	12" Stabilized Sub-Base (Section IV, 22)	SY		\$11	\$0
4.4	Curb, Curb and Gutter, Valley Gutter Curb	LF		\$20	\$0
4.5	Concrete Sidewalk and Driveways, 6" Thick	SY		\$80	\$0
4.6	ADA Ramps (Total of 4836 SF Concrete.)	EA		\$1,300	\$0
4.7	Pavement Markings- 24" White Stop Bar (Section IV, 60)	LF		\$31	\$0
4.8	Milling Exist Asph Pavt, 1" Avg Depth	SY	3992	\$4	\$13,972
4.9	Superpave Asphaltic Concrete, Traffic C (resurfacing)	TN	530	\$106	\$56,180
5.0	Utilities- Sanitary				
5.1	8" DIP Sanitary w/Fittings (Section IV, 20)	LF		\$110	\$0
6.0	Utilities- Reclaimed Water				
6.1	18" DIP For Reclaim Conflict w/Fittings (Section IV, 41)	LF		\$165	\$0
6.2	18" RCP	LF		\$85	\$0
7.0	Utilities- Potable Water				
7.1	2" Water Service Sleeve	EA		\$1,600	\$0
7.2	4" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.3	6" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.4	8" PVC Water Main C-900 (Section IV, 41)	LF			\$0
7.5	10" PVC Water Main C-900 (Section IV, 41)	LF			\$0
8/inter	7.6	Gate Valves	EA	\$1,500	\$0
4/inter	7.7	Tapping Sleeve and Valve	EA	\$1,600	\$0
	7.8	Fire Hydrant Assemblies (Section IV, 41)	EA	\$5,000	\$0
8.0	Lighting				
8.1	Remove & Reinstall Light Pole (Section IV, 9)	EA		\$500	\$0
8.2	Light Pole Complete Relocate	EA		\$25,000	\$0
8.3	New Light Poles (Furnished By Town)	EA		\$500	\$0
8.4	PVC Conduit	LF		\$30	\$0
8.5	Wire	LF		\$2	\$0
8.6	Electrical Risers	EA		\$3,250	\$0
8.7	Remove Old Electrical Services	EA		\$520	\$0
8.8	Pull Boxes	EA		\$350	\$0
TOTAL					\$96,247
CONTINGENCY (20%)					\$19,249
BASE CONSTRUCTION COST					\$115,496
ADMINISTRATIVE & ENGINEERING (10%)					\$11,550
TOTAL ESTIMATED CONSTRUCTION COST					\$127,046

Revenues	19/20	20/21	21/22	22/23	23/24
Infrastructure Mill (1.2500)	\$997,509	\$1,057,630	\$1,154,550	\$1,203,150	\$1,236,050
Penny for Pinellas	\$508,165	\$451,500	\$460,550	\$469,750	\$550,050
Electric Utility Tax	\$425,000	\$430,000	\$430,000	\$430,000	\$430,000
SWFWMD Grant					
<i>Pinellas</i>	\$1,375,000				
<i>Bayview</i>					
<i>Belleair Creek</i>					
<i>Bluff</i>		\$135,000			
LAP (Federal) Funding (Targets)					
Other Governments				\$500,000	\$3,000,000
Stormwater Management Grant					
Intergovernmental Services Rendered					
Stormwater Fee	\$333,948	\$333,948	\$333,948	\$333,948	\$337,400
Interest	\$71,781				
Donations	\$50,000				
Miscellaneous	\$7,589				
BCC Lease	\$350,000	\$22,500			
Reserves Prior Years					
Transfers In					
PY PO Rev					
AHLF Property Sale	\$1,508,225				
Loan Proceeds	\$4,688,336				
AMOUNT TO BALANCE		\$835,290			
Totals	\$10,315,553	\$3,265,868	\$2,379,048	\$2,936,848	\$5,553,500

Expenditures	19/20	20/21	21/22	22/23	23/24
Park Improvements	\$21,971	\$75,000	\$25,000	\$25,000	\$25,000
Hunter Park					
Pavement Management	\$60,000				
Beautification & Entrances					
Street Light Replacement	\$25,000	\$25,000	\$25,000	\$25,000	\$25,000
Capital Parks					
<i>Magnolia/Wall/Tackett</i>					
Street Signs	\$10,000				
Refund Exp					
Harold's Lake Cleanout				\$225,000	
ABM Electrical and Roofing					
ABM Field Lighting					
ABM Base Scope					
Small Roadway Projects					
<i>Pavement Management/Resurfacing</i>		\$80,000	\$80,000	\$80,000	\$80,000
<i>Sidewalk/Curb Management</i>	\$177,672	\$20,000	\$20,000	\$20,000	\$20,000
<i>Point Repairs</i>	\$144,376	\$142,500	\$147,500	\$147,500	\$168,100

Indian Rocks Road

Projects Years 1-5	19/20	20/21	21/22	22/23	23/24
Pinellas/Ponce(Phase 2)					
Professional Services					
Construction	\$2,913,224	\$557,624			
Rosery Rd					
Palmetto					
Professional Services					
Construction	\$950,640	\$29,709			
Palmetto (Phase 2) North					
Professional Services					
Construction	\$1,817,135				
Belleair Creek					
Carl					
Professional Sevices	122669				
Construction		\$800,000			
Shirley/Varona/Sunny/Barb (Op)					
Belforest					
Construction					
Bayview Bridge to IRR					
Professional Services		\$16,320	\$163,200		
Construction				\$199,000	\$1,161,000
IRR Ponce to Melenbacher					
Professional Services					
Construction					
The Bluff					
Study		\$270,000			
Point Repairs					
Professional Services (Conceptual)			\$300,000		
Construction (Conceptual)				\$2,500,000	\$2,500,000
Seawall Replacement				\$220,000	
Belleair Creek (Ponce to Bridge)					
Study					
Professional Services (Conceptual)					\$850,000
Construction (Conceptual)					
Point Repairs					
Ponce from Roundabout to Trail					
Professional Services (Conceptual)					
Construction (Conceptual)			\$1,017,500	\$1,017,500	
Pinellas/Ponce(Phase 3)					
Professional Sevices					
Construction					
Bridge Repairs					
Engineering					

Scour Protection
Seawall Repairs
Grout/Deck Repair
Replacement

Magnolia Wall/One Way (Concept)

Professional Services
Construction

IRR (Poinsettia to Rosery)

Professional Sevices
Construction
Point Repairs/Overlay

\$750,000

Projects	Years Beyond 6 Years (Conceptual)	19/20	20/21	21/22	22/23
----------	-----------------------------------	-------	-------	-------	-------

Seawall Replacements

Thompson Park
Winston Park
Coe Rd.

Pinellas/Ponce(Phase 4)

Professional Sevices
Construction

IRR (Rosery to Mehlenbacher)

Professional Sevices
Construction

The Mall/Gardenia

Professional Services
Construction

Osceola East of IRR

Professional Services
Construction

IRR Bayview to Belleview

Professional Services
Construction

Ponce from Manatee to Oleander

Professional Services
Construction

Wildwood/Woodlawn

Professional Services
Construction

IRR Hunter Bayview to Poinsettia

Professional Services
Construction

Poinsettia

Construction

Osecola from Oleander to Manatee

Professional Services
Construction

Ponce from Manatee to Rosery

Professional Services

Construction

Other Expenses

Transfer to Reserves

Transfer to 001

BB&T Debt Service	\$603,141	\$794,000	\$794,000	\$794,000	\$794,000
------------------------------	-----------	-----------	-----------	-----------	-----------

ABM Loan Debt Service	\$78,716	\$79,000	\$79,000	\$79,000	\$79,000
------------------------------	----------	----------	----------	----------	----------

GF Debt Service

Totals	\$6,924,544	\$2,889,153	\$3,401,200	\$5,332,000	\$5,702,100
---------------	--------------------	--------------------	--------------------	--------------------	--------------------

Fund Balance

19/20

20/21

21/22

22/23

23/24

Total Expenditures

\$6,924,544

\$2,889,153

\$3,401,200

\$5,332,000

\$5,702,100

Total Revenue

\$10,315,553

\$3,265,868

\$2,379,048

\$2,936,848

\$5,553,500

Ending Fund Balance

\$9,757,790

\$10,134,505

\$9,112,353

\$6,717,201

\$6,568,601



Legislation Text

File #: 21-0019, **Version:** 1

Summary

To: Infrastructure Board
From: Stefan Massol, Director of Support Services
Date: 1/21/2021

Subject:

Discussion of Future Water Supply Options



Summary:

This is a continuation of last meeting's discussion on reverse osmosis, also examining the system transfer scenario.

Background/Problem Discussion: Previously the board received a presentation from McKim & Creed and Raftelis who provided an engineering and rate study analysis of reverse osmosis for the Town of Belleair. Enclosed in our packet is the executive summary of the engineering study, a copy of the rate study analysis performed by Raftelis, and the most recent audited financial statements for Pinellas County's Water Fund.

Financial Implications: This information is provided in the enclosed attachments. Additionally, Pinellas County is working on an updated system transfer scenario, including any amounts to be transferred between entities for infrastructure improvements. Also, staff is working to determine any impacts to the Town's General Fund that would result from a system transfer scenario, both to revenues and expenditures.

Recommendation: None, this item is for discussion purposes only.



REVERSE OSMOSIS WTP PRELIMINARY ENGINEERING REPORT

SUBMITTED TO:

TOWN OF BELLEAIR DRAFT EXECUTIVE SUMMARY - UPDATED OCTOBER 30, 2020

SUBMITTED BY:

MCKIM & CREED | CLEARWATER, FL



MCKIM & CREED
ENGINEERS SURVEYORS PLANNERS

Executive Summary

The Town of Belleair (Town) operates an existing water treatment plant (WTP) that was designed to produce 2.2 million gallons per day (MGD). The WTP treats groundwater from seven (7) existing wells and produces an average flow of approximately 800,000 gallons per day (gpd) of potable water to supply the Town's utility customers. The levels of chloride and total dissolved solids (TDS) in the wells have been increasing and are projected to continue increasing in the future. Because of these conditions, the potable water produced by the plant has chloride and TDS levels that periodically approach the Florida Department of Environmental Protection (FDEP) secondary drinking water limit of 250 mg/L and 500 mg/L, respectively.

Additionally, the WTP is nearing the end of its useful life and there are items that need to be addressed as soon as possible. This Preliminary Engineering Report (PER) included evaluations of the Town's existing water supply and treatment systems and considered the following:

1. Drinking water regulations
2. Condition of WTP existing systems and equipment
3. Condition of wells; above- and below-ground
4. Current and projected potable water demands
5. Groundwater supply and quality projections
6. Ability of existing systems to treat projected water quality

If the Town wishes to continue with potable water production, a new Reverse Osmosis (RO) treatment plant is recommended to reduce chloride and TDS concentrations and to address ongoing operational, maintenance and safety concerns at the WTP.

Besides developing preliminary engineering requirements for the proposed RO WTP systems, this PER was developed to provide the Town with capital and operations & maintenance (O&M) costs for the proposed WTP. Also, a potential phased implementation plan was developed that focuses on using the existing WTP infrastructure to the extent possible to reduce initial capital costs. In addition, the phased approach implements new treatment processes and modifications, only as needed, to address chloride and TDS levels projected to increase over time.

The use of a "conventional" RO process was compared with a relatively new high-recovery RO process called "Closed-Circuit RO (CCRO)." In general, the conventional RO process is able to utilize approximately 80% of the water supplied to the process to produce drinking water; whereas the CCRO process is able utilize approximately 90 to 95-percent. The evaluation and comparison of the two (2) processes are detailed in this PER.

Total capital costs for the proposed RO plant were developed and compared with a phased approach. These costs are shown in **Tables ES-1 and ES-2**.

Table ES-1– Proposed Facility Cost Summary

Item	Traditional RO System	High-Recovery CCRO System
Mobilization/Demobilization	\$175,000	\$175,000
Sitework & Demolition	\$325,000	\$325,000
Booster Pump Station	\$142,000	\$142,000
Pressurized Filters and Backwash Holding Tank	\$969,000	\$969,000
Chemical Building	\$84,000	\$84,000
Chemical Systems	\$362,000	\$362,000
RO System	\$1,044,000	\$1,488,000
RO Building	\$434,000	\$434,000
High Service Pump Station	\$338,000	\$338,000
Deep Injection Well	\$750,000	-----
Yard Piping	\$500,000	\$500,000
Electrical	\$738,000	\$677,000
Instrumentation	\$554,000	\$508,000
Upper Floridian Wells (4) and Well Rehabilitation	\$1,450,000	\$1,450,000
Total Construction Cost	\$7,865,000	\$7,452,000
Contingency (30%)	\$2,360,000	\$2,236,000
Sub Total	\$10,225,000	\$9,688,000
Engineering - Design and Legal (15%)	\$1,534,000	\$1,454,000
TOTAL PROJECT COST	\$11,759,000	\$11,142,000

Table ES-2 – Phased Implementation Plan Summary

Phase / Description of Major Systems	Approximate Implementation Year	Project Cost
Phase 1		
1) Clearwell Roof Rehabilitation 2) Additional Well 3) Deep Injection Well 4) Booster Pump Station 5) Filtration System 6) Chemical Systems 7) Yard Piping 8) RO System 9) RO Building 10) Additional Chemical Systems	2024	\$10,378,000
Phase 2		
1) RO System Addition 2) RO Building Addition 3) New High Service Pump Station 4) Yard Piping	2034	\$2,282,000
TOTAL COST WITH PHASED IMPLEMENTATION		\$12,660,000

Based on the evaluations performed in this PER, McKim & Creed recommends that the Town either begins constructing the proposed RO treatment (either in phases or overall plant) or decommissions the existing WTP and begin utilizing potable water from Pinellas County by the end of calendar year 2020. The recommended schedule would allow either the complete, or the phased approach, to be on-line by the first quarter of 2024.

TOWN OF **Belleair**

Water Rate Study

Draft Executive Summary / October 14, 2020

This page intentionally left blank to facilitate two-sided printing.

October 14, 2020

Honorable Mayor and Members
of the Town Commission
Town of Belleair
901 Ponce de Leon Boulevard
Belleair, FL 33756

Subject: Water Rate Study

Ladies and Gentlemen:

Raftelis Financial Consultants, Inc. ("Raftelis") has completed our review of the sufficiency of the water user rates (the "Study") for the Town of Belleair, Florida (the "Town"), and has summarized the results in this report for your consideration. This report summarizes the development of identified rate adjustments for water service that are considered necessary, along with other appropriate sources of funds, to meet the projected revenue requirements (expenditure and funding needs for the utility enterprise and referred to as the "revenue requirements") for the accounting period beginning October 1 and ending September 30 (the "Fiscal Year") for Fiscal Years 2020 through 2025 (the "Forecast Period"), the initial rate evaluation period and for a long-term planning period ending Fiscal Year 2035 (the "Study Period").

The most important objective of the Study was to develop proposed utility rates that fully recover the projected water utility revenue requirements in order to maintain sound financial operations and finance the anticipated capital needs of the water system (the "System"). The Town is in the process of evaluating its long-term water supply options, which includes the construction of a new reverse osmosis ("RO") treatment plant. A primary goal of the study is to assure that the System has sufficient funds to not only fully fund the cost of providing service but also to repay the additional debt that will be issued associated with the financing of this project. Other goals and objectives considered in the Study include the following:

- The proposed rates should promote and maintain an acceptable financial position consistent with performance criteria used by credit rating agencies and the utility industry to minimize financial risk. This guideline entails the following in support of promoting a sustainable rate plan:
 - Compliance with the rate covenants in the proposed loan agreements with the Florida Department of Environmental Protection (i.e., State Revolving Fund loan program).
 - Maintenance of adequate operating and capital reserves.
 - Maintenance of ongoing capital reinvestment margins to balance equity and debt financing of capital improvements.
- The proposed rates should be based on fully recovering the identified revenue requirements of the System (i.e., full cost recovery principle).

- To the extent practical, any rate adjustments should be phased in to limit customer "rate shock" (large rate adjustments due to recapturing the effects of inflation and significant capital investment impacting the cost of providing service).
- The proposed rates should be consistent with historical rate structures as appropriate.
- The proposed rates, to the extent practical, should be comparable or competitive with those of neighboring utility systems.

Additionally, the Town is evaluating the option of decommissioning the existing water treatment plant and becoming a retail customer of Pinellas County. A preliminary evaluation of the overall estimated rate impacts of becoming Pinellas County retail water customers were analyzed and compared to the RO treatment plant option.

Following this letter, we have provided an executive summary that provides an overview of the Study results and outlines our recommendations and conclusions. The remainder of the report provides additional details regarding the rate and financial analysis conducted on behalf of the Town.

We appreciate the opportunity to be of service to the Town and would like to thank the Town staff for their valuable assistance and cooperation over the course of this Study.

We appreciate the opportunity to be of service to the Town.

Respectfully submitted,

Raftelis Financial Consultants, Inc.

Robert J. Ori

Executive Vice President

Nick T. Smith, CGFM

Consultant

RJO/nts

Attachments

List of Tables

Table ES-1	Summary of Existing and Identified Water Rates
Table ES-2	Utility System Financial Overview
Table ES-3	Comparison of Monthly Charges for Residential Water Service to Pinellas County
Table 1	Projected System Net Revenue Requirements
Table 2	Projected Operating Expenses
Table 3	Escalation Factors
Table 4	Estimated Multi-Year Capital Improvement Program and Funding Sources
Table 5	Projected Cash Balances by Fund and Interesting Earnings
Table 6	Comparison of Typical Monthly Residential Bills for Water Service
Table 7	Projected Debt Service Coverage

Executive Summary and Recommendations

Executive Summary

The Town of Belleair's (the "Town") water utility system (the "System") provides an essential service on a continuous basis to over 1,500 water customers. Wastewater service is provided by Pinellas County (the "County"), and therefore is not discussed or evaluated in this report. The Town's utility operates in a highly regulated environment. Regulatory agencies for the utility include the Florida Department of Environmental Protection ("FDEP") and the Southwest Florida Water Management District ("SWFWMD") and permits issued through these regulatory agencies require satisfactory operating performance.

The Town's System is established as a utility enterprise fund. As such, the System should have revenues equal to the costs of the services provided, and the Town should attempt to establish rates that are always sufficient to cover the cost of operating, maintaining, repairing, and financing the System (referred to as the "revenue requirements"). According to the Governmental Accounting Standards Board:

Enterprise Funds should be used to account for operations that are financed and operated in a manner similar to private business enterprises – where the intent of the governing body is that costs of providing services to the general public on a continuing basis should be financed or recovered primarily through user charges.

General accounting policies and prudent utility management recommend that the System have revenues (financial resources) at least equal to the costs of providing services by the System.

To help ensure that water rates on a prospective basis will be sufficient to recover the cost of operating, maintaining, and repairing, the System and meeting anticipated rate covenants associated with the financing of the System capital improvements, the Town retained Raftelis Financial Consultants, Inc. ("Raftelis") to perform a review of the sufficiency of the water user rates to meet such requirements (the "Study"). The current Study includes a multi-year projection of the System revenue requirements (i.e., the projected expenditures and funding needs of the System) and the determination of the ability of the rate revenues to fund such needs (referred to as the "revenue sufficiency evaluation"). Specifically, Raftelis was tasked to: i) provide a projection of the revenue requirements for the System for the accounting period beginning October 1 and ending September 30 (the "Fiscal Year") for Fiscal Years 2020 through 2025 (the "Forecast Period"), the initial rate evaluation period, and for a long-term planning period ending Fiscal Year 2035 (the "Study Period"); and ii) provide a projection of future annual rate adjustments considered necessary to fund the projected revenue requirements through the end of the Forecast Period and estimated for the Study Period for the Town's consideration.

Based on the assumptions and analyses reflected in this report, which should be read in its entirety, it is projected that the current water rates of the System will not be sufficient to meet projected revenue requirements identified for the Study Period. Based on our studies and evaluations, additional rate adjustments are projected to be required to fully fund the identified revenue requirements of the System.

The primary reasons for the identified rate adjustments include:

1. Providing sufficient revenues to fund the capital improvement program ("CIP") of the System. As identified by the Town's consulting engineer in the *Reverse Osmosis WTP Preliminary Engineering Report* ("PER"), there exists a need to replace the existing water treatment facilities. The proposed reverse

osmosis ("RO") water treatment plant is estimated to require funding of approximately \$11.8 million if the entire project is completed at once. However, a phased approach to the capital plan was developed by the Town's consulting engineers and which results in an estimated capital funding need of approximately \$16.1 million (engineering estimates adjusted for inflation). The phased approach has been recognized in the Study to allow rates to be adjusted over time and to avoid rate shock to the extent possible. The remainder of the CIP consists of allowances for other departmental capital such as meters and other water distribution improvements. The projected funding of the capital program during the Study Period is summarized as follows:

Projected Funding Sources for Multi-Year CIP [*]		
Description	Amount	Percent
Identified Capital Improvements	\$17,623,887	
Assumed Funding Sources:		
Rate Revenues (annual operations)	\$1,487,866	8.5%
Operating Reserves	4,024,584	22.8%
State Revolving Fund ("SRF")		
Loans (Three loans)	12,111,437	68.7%
Total Funding Sources	\$17,632,887	100.0%

[*] Amounts derived from Table 4 at the end of this report.

2. Continuing to fund the costs of operations. Operating expenses are projected to continue to increase during the Study Period due to, among other things, the following:
 - a. Continued inflationary effects on the costs of electricity, chemicals, fuel, and other major expenditures for the utility as part of the normal cost of operations;
 - b. Increased labor costs, including additional personnel anticipated to be required to operate the proposed RO water treatment plant; and
 - c. Incremental increases to operating expenses, in addition to the cost of additional personnel, related to the implementation and bringing into service the capital improvements at the proposed RO treatment plant (e.g., increased electrical costs).

The Congressional Budget Office has projected the national consumer price index ("CPI") to increase by approximately 1.8% per year during the Study Period based on projections published as of July 2020.

3. The need to maintain appropriate debt service coverage ratios, adequate operating margins, and reserves to maintain the financial condition of the System reduce the overall financial risk to the utility and the ability to repay the allocated debt of the System. A minimum debt service coverage requirement of 115% was recognized to maintain compliance with terms of an loan agreement to be entered into associated with the financing of the RO water treatment plant through low-interest loans secured with the State Revolving Fund (SRF) loan program as administered by the FDEP. Additionally, in the development of the revenue requirements, certain financial targets or benchmarks were recognized which promotes the long-term sustainability of rates. Raftelis has recognized minimum cash reserve balances of \$450,000 within the water fund based on Town policy and a target cash or reserve balances equal to 120 days of rate revenue for working capital (operating reserves)

For the Town's water system, this Study recognizes the following annual rate revenue adjustments:

Summary of Recognized Annual Rate Revenue Adjustments [1]		
Fiscal Year	Water Revenue Adjustments	Effective Monthly Increase for Typical Residential Customer [2]
For the Forecast Period		
2021	0.00%	\$0.00
2022	7.00%	4.23
2023	7.00%	4.51
2024	7.00%	4.80
2025	7.00%	5.15
For the Remainder of the Study Period		
2026	7.00%	\$5.51
2027	7.00%	5.87
2028	7.00%	6.34
2029	4.25%	4.11
2030	4.25%	4.24
2031	4.25%	4.44
2032	4.25%	4.60
2033	4.25%	4.87
2034	4.25%	5.03
2035	4.25%	5.24

[1] The presentation of the revenue sufficiency analysis and results in the report assume that the rate adjustments shown above become effective on October 1 (beginning) of each Fiscal Year.

[2] Typical monthly residential bill assumed to require a billed water flow of 10,000 gallons.

We recommend that the Town perform annual rate reviews to ensure that the user rates are still sufficient given possible changes in economic conditions, customer usage trends, regulatory requirements, etc.

The Town's existing water rates are competitive with those of neighboring Florida utilities. A comparison of bills under the Town's existing water system rates with those of surveyed neighboring utilities is summarized as follows:

Residential Water Service – Monthly Billed Flow (Gallons) [1]							
Description	0	2,000	5,000	10,000 [3]	15,000	20,000	50,000
Town of Belleair: [2]							
Existing FY 2020	\$12.99	\$16.89	\$27.31	\$59.91	\$92.51	\$125.11	\$353.21
Utility Survey: [2]							
Survey Average	\$14.51	\$20.89	\$30.98	\$73.43	\$118.49	\$167.86	\$542.68
Minimum	6.80	16.29	25.11	58.10	83.75	109.40	391.55
Maximum	23.16	31.14	39.66	98.16	174.88	266.93	1,064.63

[1] The detailed survey can be found in Table 6 at the end of this report.

[2] Based on a survey of 11 neighboring utilities as discussed in this report and reflect rates that are currently in effect as of July 2020; with the majority of the utilities providing rates that have a base and volumetric or flow charge). The rates reflected in the development of the utility survey have not been adjusted for any possible or approved rate adjustments anticipated for the Fiscal Year 2021 or beyond; several utilities included in the survey are anticipating an increase in rates for 2021 through the application of a price index or as identified through a rate study process.

[3] 10,000 gallons represents the average monthly usage level for the typical residential customer.

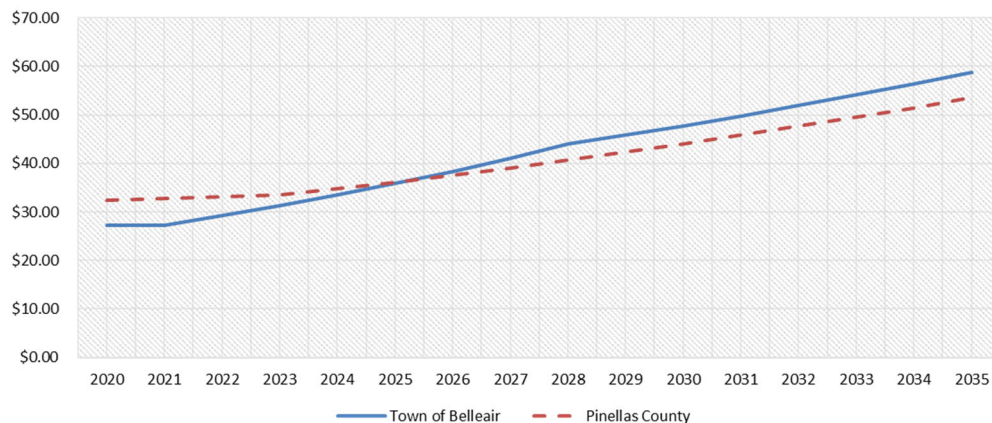
Table ES-2 at the end of this executive summary provides a graphical overview of the projected System financial results assuming the acceptance and implementation of the proposed rate adjustments by the Town (the "management dashboard"). This table indicates the following for all projected Fiscal Years, assuming the identified user rate adjustments for all Fiscal Years are implemented:

1. Maintenance of adequate debt service coverage.
2. Maintenance of adequate operating reserves (liquidity).
3. Maintenance of adequate net revenue margins necessary for debt repayment and capital reinvestment.

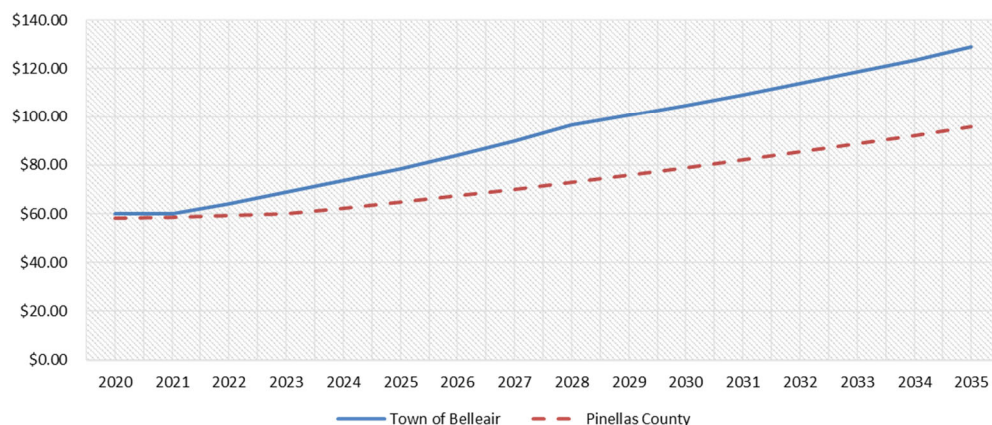
Based on the assumptions relied upon in the preparation of the financial forecast and assuming the implementation of the identified revenue adjustments and the projections as contained herein, the utility should remain in a positive financial position throughout the Study Period.

As previously mentioned, the Town is also evaluating the option of receiving retail water service from Pinellas County. Under this option the Town would no longer provide water service and existing Town water customers would become retail customers of and be charged the County's rates for service. Below are comparisons of the Town's rates, based on the identified rate adjustments, to the County's estimated rates. The comparisons represent residential water bills at 5,000 and 10,000 gallons of usage.

Residential Bill Comparison at 5,000 Gallons



Residential Bill Comparison at 10,000 Gallons



As can be seen on the charts above and based on our preliminary analysis, the Town's monthly water rates are estimated to produce bills that may be higher than the bills assumed to be incurred through the application of the County's water rates.

Conclusions and Recommendations

Based on our studies, assumptions, considerations, and analyses as summarized herein, we are of the opinion that:

1. The Town's revenues under existing rates are not anticipated to recover the projected System revenue requirements for the Forecast Period ending Fiscal Year 2025 and for the Study Period ending 2035.
2. The Town should consider implementing the water rate adjustments identified for the Forecast Period which are anticipated to meet the projected revenue requirements of the System. The revenue requirements are based on the Town's estimated cash expenditure and funding needs and reflect the cost of operations, the financing of capital improvements, the payment of debt service on the Town's existing and anticipated utility indebtedness, and the maintenance of adequate operating reserves for the System.
3. It is projected that the Town's rates may need to be increased beyond the Forecast Period to fully fund the construction of the new RO water treatment plant based on the estimates as contained in the PER.
4. The implementation of the identified rates as reflected in the Study are projected to be adequate to meet the rate covenant requirements (e.g., debt service coverage) of the Town's outstanding and anticipated utility indebtedness.
5. The Town should perform annual rate reviews to ensure that the user rates are still sufficient given possible changes in economic conditions, the capital plan, customer usage trends, regulatory requirements, etc.

TABLES

Table ES-1

**Town of Belleair, Florida
Water Rate Study**

Summary of Existing and Identified Water Rates

Line No.	Description	Existing	Projected Fiscal Year Ending September 30,														
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1	Identified Rate Adjustments		0.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Water System																	
	Base Charges																
2	Residential	\$12.99	\$12.99	\$13.90	\$14.87	\$15.91	\$17.02	\$18.21	\$19.48	\$20.84	\$21.73	\$22.65	\$23.61	\$24.61	\$25.66	\$26.75	\$27.89
3	Commercial	25.98	25.98	27.80	29.75	31.83	34.06	36.44	38.99	41.72	43.49	45.34	47.27	49.28	51.37	53.55	55.83
	Usage Charges (per 1,000 Gallons)																
	Residential																
4	Tier 1 (1,000 - 4,000)	\$1.95	\$1.95	\$2.09	\$2.24	\$2.40	\$2.57	\$2.75	\$2.94	\$3.15	\$3.28	\$3.42	\$3.57	\$3.72	\$3.88	\$4.04	\$4.21
5	Tier 2 (4,001 - 25,000)	6.52	6.52	6.98	7.47	7.99	8.55	9.15	9.79	10.48	10.93	11.39	11.87	12.37	12.90	13.45	14.02
6	Tier 3 (Above 25,000)	7.82	7.82	8.37	8.96	9.59	10.26	10.98	11.75	12.57	13.10	13.66	14.24	14.85	15.48	16.14	16.83
7	Multi-Meter (per additional meter)	3.48	3.48	3.72	3.98	4.26	4.56	4.88	5.22	5.59	5.83	6.08	6.34	6.61	6.89	7.18	7.49
	Commercial																
8	Tier 1 (1,000 - 25,000)	\$6.52	\$6.52	\$6.98	\$7.47	\$7.99	\$8.55	\$9.15	\$9.79	\$10.48	\$10.93	\$11.39	\$11.87	\$12.37	\$12.90	\$13.45	\$14.02
9	Tier 2 (Above 25,000)	7.82	7.82	8.37	8.96	9.59	10.26	10.98	11.75	12.57	13.10	13.66	14.24	14.85	15.48	16.14	16.83
10	Multi-Meter (per additional meter)	3.48	3.48	3.72	3.98	4.26	4.56	4.88	5.22	5.59	5.83	6.08	6.34	6.61	6.89	7.18	7.49



Table ES-2
Town of Belleair, Florida
Water Rate Study
Utility System Financial Overview



	Fiscal Year Ending September 30,															
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
CURRENT YEAR REVENUE ADJUSTMENTS																
Water System Rate Revenue Adjustments	0.00%	0.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Effective Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Residential Rates																
Base Charge	\$12.99	\$12.99	\$13.90	\$14.87	\$15.91	\$17.02	\$18.21	\$19.48	\$20.84	\$21.73	\$22.65	\$23.61	\$24.61	\$25.66	\$26.75	\$27.89
Tier 1 Usage Charge	\$1.95	\$1.95	\$2.09	\$2.24	\$2.40	\$2.57	\$2.75	\$2.94	\$3.15	\$3.28	\$3.42	\$3.57	\$3.72	\$3.88	\$4.04	\$4.21
Tier 2 Usage Charge	\$6.52	\$6.52	\$6.98	\$7.47	\$7.99	\$8.55	\$9.15	\$9.79	\$10.48	\$10.93	\$11.39	\$11.87	\$12.37	\$12.90	\$13.45	\$14.02
Tier 3 Usage Charge	\$7.82	\$7.82	\$8.37	\$8.96	\$9.59	\$10.26	\$10.98	\$11.75	\$12.57	\$13.10	\$13.66	\$14.24	\$14.85	\$15.48	\$16.14	\$16.83
Residential Bill (5,000 Gallons)	\$27.31	\$27.31	\$29.24	\$31.30	\$33.50	\$35.85	\$38.36	\$41.03	\$43.92	\$45.78	\$47.72	\$49.76	\$51.86	\$54.08	\$56.36	\$58.75
Residential Bill (10,000 Gallons)	\$59.91	\$59.91	\$64.14	\$68.65	\$73.45	\$78.60	\$84.11	\$89.98	\$96.32	\$100.43	\$104.67	\$109.11	\$113.71	\$118.58	\$123.61	\$128.85
Unrestricted Cash Position - End of Year -Working Capital	\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945	\$2,478,900
Debt Service Coverage- Junior	0%	0%	0%	0%	286%	332%	382%	232%	132%	139%	146%	154%	149%	170%	160%	125%
Debt Service Coverage- All-in	1292%	1149%	1448%	1218%	240%	279%	321%	195%	123%	129%	136%	154%	149%	170%	160%	125%

Figure ES-1. Revenue Requirements

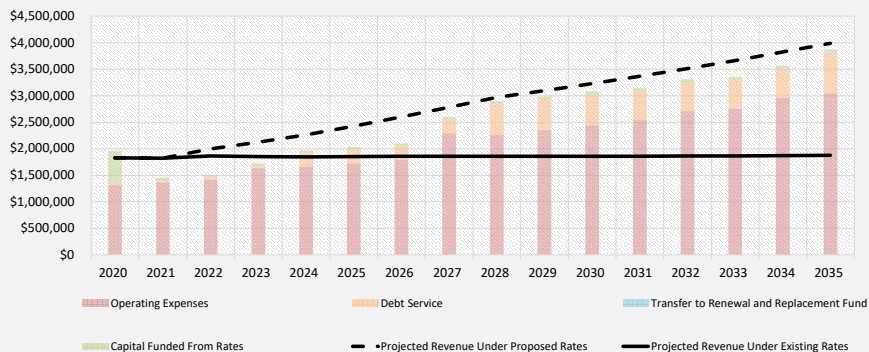


Figure ES-2. Ending Cash Balance - Operating Fund

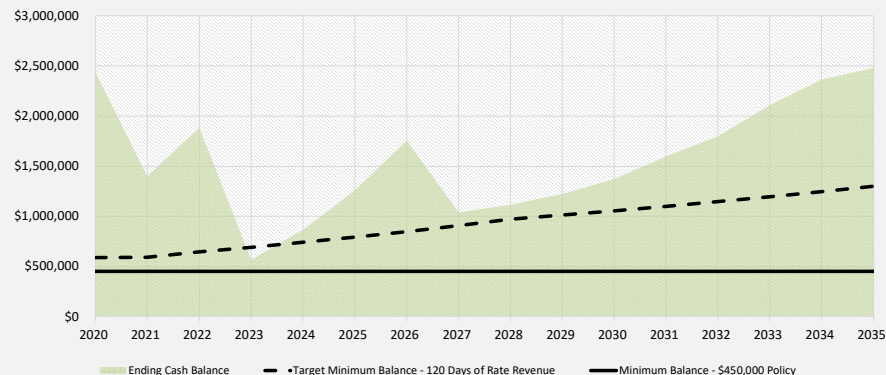


Figure ES-3. Capital Improvement Program Projected Funding Sources (Total CIP = \$17,623,887)

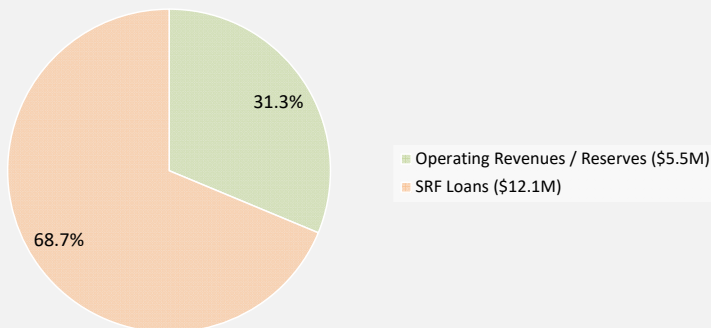


Figure ES-4. Capital Improvement Program Spending Curve

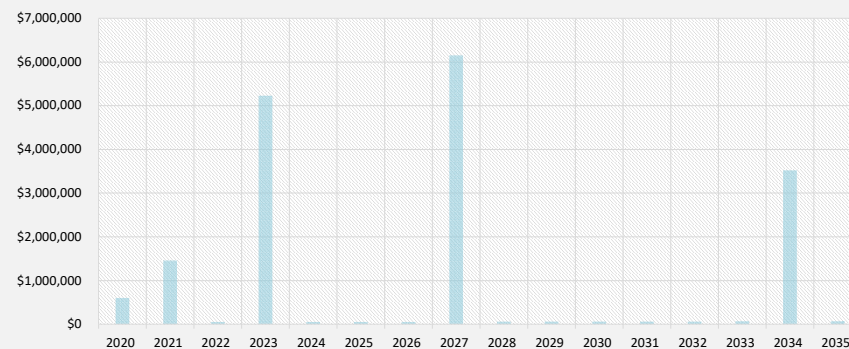




Table ES-2
Town of Belleair, Florida
Water Rate Study
Utility System Financial Overview



	Fiscal Year Ending September 30,															
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
CURRENT YEAR REVENUE ADJUSTMENTS																
Water System Rate Revenue Adjustments	0.00%	0.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Effective Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Residential Rates																
Base Charge	\$12.99	\$12.99	\$13.90	\$14.87	\$15.91	\$17.02	\$18.21	\$19.48	\$20.84	\$21.73	\$22.65	\$23.61	\$24.61	\$25.66	\$26.75	\$27.89
Tier 1 Usage Charge	\$1.95	\$1.95	\$2.09	\$2.24	\$2.40	\$2.57	\$2.75	\$2.94	\$3.15	\$3.28	\$3.42	\$3.57	\$3.72	\$3.88	\$4.04	\$4.21
Tier 2 Usage Charge	\$6.52	\$6.52	\$6.98	\$7.47	\$7.99	\$8.55	\$9.15	\$9.79	\$10.48	\$10.93	\$11.39	\$11.87	\$12.37	\$12.90	\$13.45	\$14.02
Tier 3 Usage Charge	\$7.82	\$7.82	\$8.37	\$8.96	\$9.59	\$10.26	\$10.98	\$11.75	\$12.57	\$13.10	\$13.66	\$14.24	\$14.85	\$15.48	\$16.14	\$16.83
Residential Bill (5,000 Gallons)	\$27.31	\$27.31	\$29.24	\$31.30	\$33.50	\$35.85	\$38.36	\$41.03	\$43.92	\$45.78	\$47.72	\$49.76	\$51.86	\$54.08	\$56.36	\$58.75
Residential Bill (10,000 Gallons)	\$59.91	\$59.91	\$64.14	\$68.65	\$73.45	\$78.60	\$84.11	\$89.98	\$96.32	\$100.43	\$104.67	\$109.11	\$113.71	\$118.58	\$123.61	\$128.85
Unrestricted Cash Position - End of Year -Working Capital	\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945	\$2,478,900
Debt Service Coverage- Junior	0%	0%	0%	0%	286%	332%	382%	232%	132%	139%	146%	154%	149%	170%	160%	125%
Debt Service Coverage- All-in	1292%	1149%	1448%	1218%	240%	279%	321%	195%	123%	129%	136%	154%	149%	170%	160%	125%

Figure ES-5. Debt to Net Plant Investment

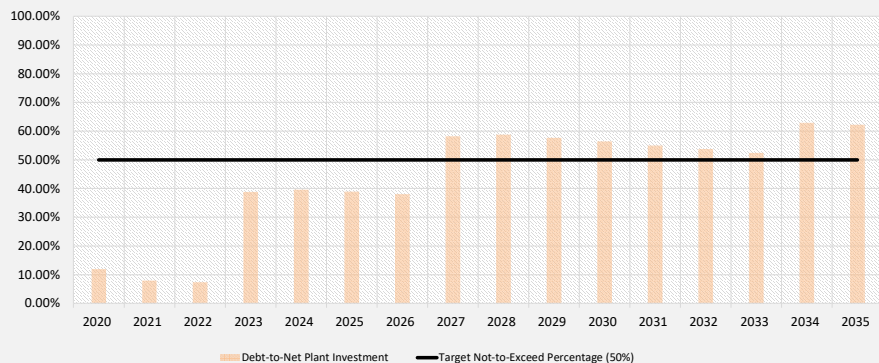


Figure ES-6. Free Cash Flow to Depreciation

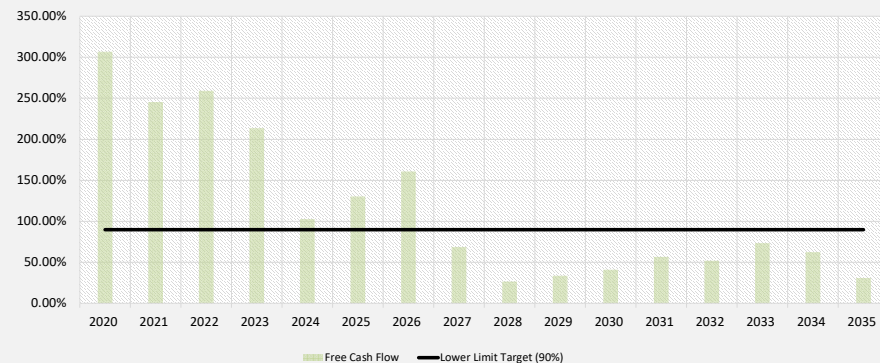


Figure ES-7. Net Revenue Margin

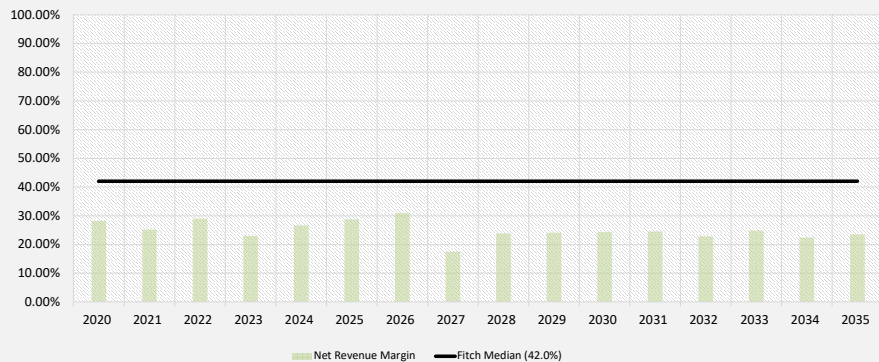


Figure ES-8. Total Existing and Projected Debt Outstanding - Start of Year

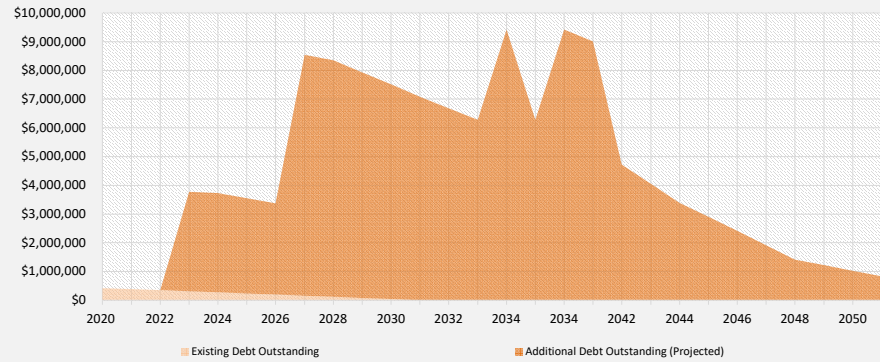




Table ES-2
Town of Belleair, Florida
Water Rate Study



Utility System Financial Overview

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Fiscal Year Ending September 30,																
CURRENT YEAR REVENUE ADJUSTMENTS																
Water System Rate Revenue Adjustments	0.00%	0.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
Effective Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Residential Rates																
Base Charge	\$12.99	\$12.99	\$13.90	\$14.87	\$15.91	\$17.02	\$18.21	\$19.48	\$20.84	\$21.73	\$22.65	\$23.61	\$24.61	\$25.66	\$26.75	\$27.89
Tier 1 Usage Charge	\$1.95	\$1.95	\$2.09	\$2.24	\$2.40	\$2.57	\$2.75	\$2.94	\$3.15	\$3.28	\$3.42	\$3.57	\$3.72	\$3.88	\$4.04	\$4.21
Tier 2 Usage Charge	\$6.52	\$6.52	\$6.98	\$7.47	\$7.99	\$8.55	\$9.15	\$9.79	\$10.48	\$10.93	\$11.39	\$11.87	\$12.37	\$12.90	\$13.45	\$14.02
Tier 3 Usage Charge	\$7.82	\$7.82	\$8.37	\$8.96	\$9.59	\$10.26	\$10.98	\$11.75	\$12.57	\$13.10	\$13.66	\$14.24	\$14.85	\$15.48	\$16.14	\$16.83
Residential Bill (5,000 Gallons)	\$27.31	\$27.31	\$29.24	\$31.30	\$33.50	\$35.85	\$38.36	\$41.03	\$43.92	\$45.78	\$47.72	\$49.76	\$51.86	\$54.08	\$56.36	\$58.75
Residential Bill (10,000 Gallons)	\$59.91	\$59.91	\$64.14	\$68.65	\$73.45	\$78.60	\$84.11	\$89.98	\$96.32	\$100.43	\$104.67	\$109.11	\$113.71	\$118.58	\$123.61	\$128.85
Unrestricted Cash Position - End of Year -Working Capital	\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945	\$2,478,900
Debt Service Coverage- Junior	0%	0%	0%	0%	286%	332%	382%	232%	132%	139%	146%	154%	149%	170%	160%	125%
Debt Service Coverage- All-in	1292%	1149%	1448%	1218%	240%	279%	321%	195%	123%	129%	136%	154%	149%	170%	160%	125%

Figure ES-9. Projected Subordinate Lien Debt Service Coverage

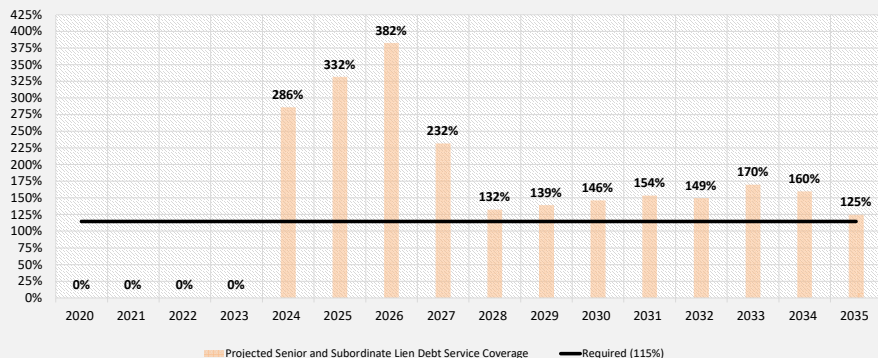


Figure ES-10. Projected All-In Debt Service Coverage

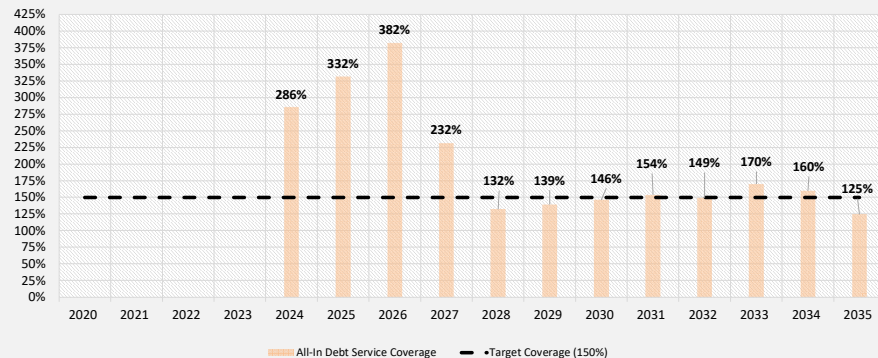


Figure ES-11. Comparison of Monthly Charges for Residential Water Service for Customers Using 5,000 Gallons per Month

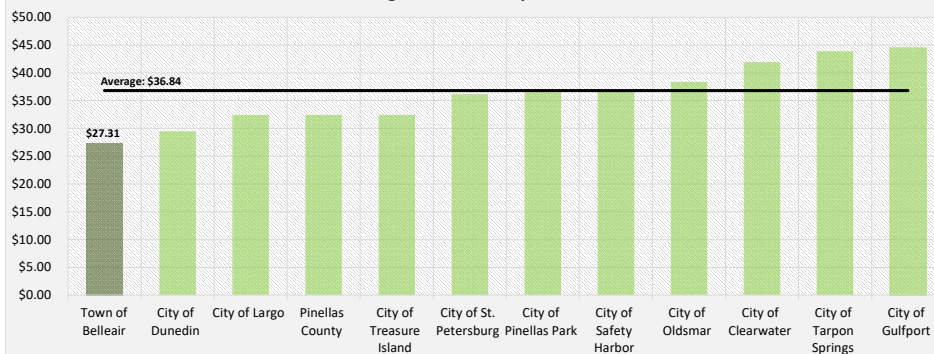


Figure ES-12. Comparison of Monthly Charges for Residential Water Service for Customers Using 10,000 Gallons per Month

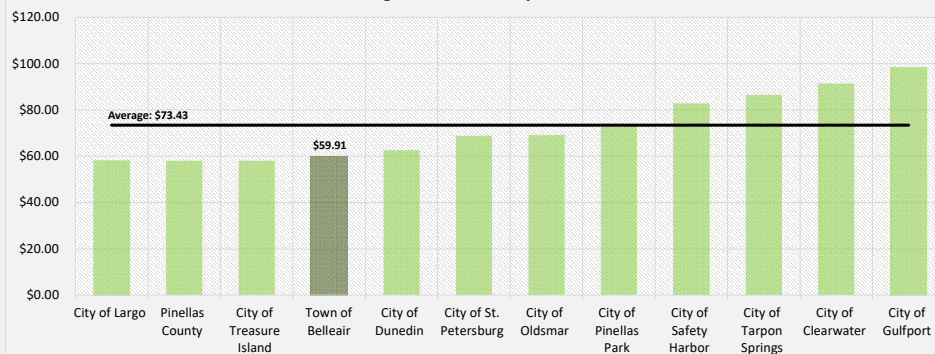


Table ES-3

**Town of Belleair, Florida
Water Rate Study**

Comparison of Typical Monthly Residential Bills for Water Service to Pinellas County

Line No.	Description	Residential Service for a 5/8" or 3/4" Meter										
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons	10,000 Gallons	15,000 Gallons	20,000 Gallons	50,000 Gallons	75,000 Gallons	100,000 Gallons
Town of Belleair												
1	2020	\$12.99	\$16.89	\$20.79	\$27.31	\$40.35	\$59.91	\$92.51	\$125.11	\$353.21	\$548.71	\$744.21
2	2021	12.99	16.89	20.79	27.31	40.35	59.91	92.51	125.11	353.21	548.71	744.21
3	2022	13.90	18.08	22.26	29.24	43.20	64.14	99.04	133.94	378.09	587.34	796.59
4	2023	14.87	19.35	23.83	31.30	46.24	68.65	106.00	143.35	404.70	628.70	852.70
5	2024	15.91	20.71	25.51	33.50	49.48	73.45	113.40	153.35	433.05	672.80	912.55
6	2025	17.02	22.16	27.30	35.85	52.95	78.60	121.35	164.10	463.35	719.85	976.35
7	2026	18.21	23.71	29.21	38.36	56.66	84.11	129.86	175.61	495.86	770.36	1,044.86
8	2027	19.48	25.36	31.24	41.03	60.61	89.98	138.93	187.88	530.58	824.33	1,118.08
9	2028	20.84	27.14	33.44	43.92	64.88	96.32	148.72	201.12	567.77	882.02	1,196.27
10	2029	21.73	28.29	34.85	45.78	67.64	100.43	155.08	209.73	591.88	919.38	1,246.88
11	2030	22.65	29.49	36.33	47.72	70.50	104.67	161.62	218.57	617.02	958.52	1,300.02
12	2031	23.61	30.75	37.89	49.76	73.50	109.11	168.46	227.81	643.16	999.16	1,355.16
13	2032	24.61	32.05	39.49	51.86	76.60	113.71	175.56	237.41	670.51	1,041.76	1,413.01
14	2033	25.66	33.42	41.18	54.08	79.88	118.58	183.08	247.58	699.08	1,086.08	1,473.08
15	2034	26.75	34.83	42.91	56.36	83.26	123.61	190.86	258.11	728.86	1,132.36	1,535.86
16	2035	27.89	36.31	44.73	58.75	86.79	128.85	198.95	269.05	759.90	1,180.65	1,601.40
Pinellas County												
17	2020	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
18	2021	6.87	17.23	27.59	32.77	43.13	58.67	84.57	110.47	265.87	395.37	524.87
19	2022	6.94	17.40	27.86	33.09	43.55	59.24	85.39	111.54	268.44	399.19	529.94
20	2023	7.01	17.57	28.13	33.41	43.97	59.81	86.21	112.61	271.01	403.01	535.01
21	2024	7.29	18.27	29.25	34.74	45.72	62.19	89.64	117.09	281.79	419.04	556.29
22	2025	7.58	19.00	30.42	36.13	47.55	64.68	93.23	121.78	293.08	435.83	578.58
23	2026	7.88	19.76	31.64	37.58	49.46	67.28	96.98	126.68	304.88	453.38	601.88
24	2027	8.20	20.56	32.92	39.10	51.46	70.00	100.90	131.80	317.20	471.70	626.20
25	2028	8.53	21.39	34.25	40.68	53.54	72.83	104.98	137.13	330.03	490.78	651.53
26	2029	8.87	22.25	35.63	42.32	55.70	75.77	109.22	142.67	343.37	510.62	677.87
27	2030	9.22	23.14	37.06	44.02	57.94	78.82	113.62	148.42	357.22	531.22	705.22
28	2031	9.59	24.07	38.55	45.79	60.27	81.99	118.19	154.39	371.59	552.59	733.59
29	2032	9.97	25.03	40.09	47.62	62.68	85.27	122.92	160.57	386.47	574.72	762.97
30	2033	10.37	26.03	41.69	49.52	65.18	88.67	127.82	166.97	401.87	597.62	793.37
31	2034	10.78	27.06	43.34	51.48	67.76	92.18	132.88	173.58	417.78	621.28	824.78
32	2035	11.21	28.15	45.09	53.56	70.50	95.91	138.26	180.61	434.71	646.46	858.21

Table 1

Town of Belleair, Florida
Water Rate Study

Projected System Net Revenue Requirements

Line No.	Description	Fiscal Year Ending September 30,															
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	Operating Expenses:																
1	Total Operating Expenses	\$1,314,948	\$1,363,157	\$1,416,042	\$1,634,537	\$1,661,799	\$1,726,924	\$1,794,807	\$2,292,579	\$2,261,573	\$2,351,739	\$2,445,818	\$2,543,958	\$2,712,114	\$2,753,355	\$2,965,922	\$3,049,701
	Other Revenue Requirements:																
	Debt Service																
	SRF Loans																
2	2023 SRF Loan Issue	\$0	\$0	\$0	\$0	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779	\$210,779
3	2027 SRF Loan Issue	0	0	0	0	0	0	0	0	326,186	326,186	326,186	326,186	326,186	326,186	326,186	326,186
4	2034 SRF Loan Issue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216,887
	Subordinate Lien																
5	Interfund Loan - General Fund	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	0	0	0	0	0
6	Total Debt Service	\$40,000	\$40,000	\$40,000	\$40,000	\$250,779	\$250,779	\$250,779	\$250,779	\$576,966	\$576,966	\$576,966	\$536,966	\$536,966	\$536,966	\$536,966	\$753,853
	Other Miscellaneous Revenue Requirements:																
7	Departmental Capital Funded from Rate Revenues	\$603,066	\$50,450	\$51,300	\$52,400	\$53,550	\$54,800	\$56,050	\$57,350	\$58,650	\$60,000	\$61,400	\$62,800	\$64,250	\$65,750	\$67,250	\$68,800
8	Total Other Miscellaneous Revenue Requirements	\$603,066	\$50,450	\$51,300	\$52,400	\$53,550	\$54,800	\$56,050	\$57,350	\$58,650	\$60,000	\$61,400	\$62,800	\$64,250	\$65,750	\$67,250	\$68,800
9	Gross Revenue Requirements	\$1,958,014	\$1,453,607	\$1,507,342	\$1,726,937	\$1,966,128	\$2,032,503	\$2,101,636	\$2,600,709	\$2,897,189	\$2,988,705	\$3,084,183	\$3,143,724	\$3,313,330	\$3,356,071	\$3,570,138	\$3,872,354
	Less Other Income and Funds from Other Sources:																
10	Unrestricted Interest Earnings	\$32,100	\$21,700	\$17,500	\$12,900	\$7,800	\$11,500	\$16,400	\$17,100	\$14,700	\$15,600	\$17,000	\$18,800	\$21,700	\$24,200	\$28,000	\$31,900
11	Other Revenues	6,600	2,511	7,694	1,000	1,000	1,000	2,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
12	Total Other Income	\$38,700	\$24,211	\$25,194	\$13,900	\$8,800	\$12,500	\$18,400	\$18,100	\$15,700	\$16,600	\$18,000	\$19,800	\$22,700	\$25,200	\$29,000	\$32,900
13	Total Net Revenue Requirements	\$1,919,314	\$1,429,396	\$1,482,148	\$1,713,037	\$1,957,328	\$2,020,003	\$2,083,236	\$2,582,609	\$2,881,489	\$2,972,105	\$3,066,183	\$3,123,924	\$3,290,630	\$3,330,871	\$3,541,138	\$3,839,454
14	Revenue Under Existing Rates	\$1,793,006	\$1,798,550	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121
15	Prior Year Rate Adjustments	0	0	0	128,878	266,778	414,331	572,213	741,146	921,905	1,115,317	1,240,966	1,371,954	1,508,510	1,650,869	1,799,279	1,953,996
16	Total Applicable Rate Revenue	\$1,793,006	\$1,798,550	\$1,841,121	\$1,969,999	\$2,107,899	\$2,255,452	\$2,413,334	\$2,582,267	\$2,763,026	\$2,956,438	\$3,082,087	\$3,213,075	\$3,349,631	\$3,491,990	\$3,640,400	\$3,795,117
17	Rate Adjustments	0.00%	0.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%	4.25%
18	Effective Months	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
19	Percent of Current Year Effective	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
20	Revenue From Current Rate Adjustment	\$0	\$0	\$128,878	\$137,900	\$147,553	\$157,882	\$168,933	\$180,759	\$193,412	\$125,649	\$130,989	\$136,556	\$142,359	\$148,410	\$154,717	\$161,292
21	Total Rate Revenue	\$1,793,006	\$1,798,550	\$1,969,999	\$2,107,899	\$2,255,452	\$2,413,334	\$2,582,267	\$2,763,026	\$2,956,438	\$3,082,087	\$3,213,075	\$3,349,631	\$3,491,990	\$3,640,400	\$3,795,117	\$3,956,409
	Revenue Surplus/(Deficiency) Under Proposed Rates																
22	Amount	(\$126,308)	\$369,154	\$487,852	\$394,862	\$298,124	\$393,331	\$499,032	\$180,418	\$74,949	\$109,982	\$146,892	\$225,707	\$201,361	\$309,529	\$253,979	\$116,955
23	% Rate Increase	(7.04%)	20.53%	24.76%	18.73%	13.22%	16.30%	19.33%	6.53%	2.54%	3.57%	4.57%	6.74%	5.77%	8.50%	6.69%	2.96%

Table 2
Town of Belleair, Florida
Water Rate Study
Projected Operating Expenses

No.	Code	Description	Adjusted	Escalation	Fiscal Year Ending September 30,														
			2020	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
<u>Generation - 610</u>																			
Personnel																			
1	51200	Salaries	\$53,200	Labor	\$55,328	\$57,541	\$59,843	\$62,236	\$64,726	\$67,315	\$70,008	\$72,808	\$75,720	\$78,749	\$81,899	\$85,175	\$88,582	\$92,125	\$95,810
2	51201	Part-time Salaries	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	51210	Unused Medical	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	51400	Overtime	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	51500	Sick Leave	800	Labor	832	865	900	936	973	1,012	1,053	1,095	1,139	1,184	1,232	1,281	1,332	1,385	1,441
6	52100	FICA	4,050	Labor	4,212	4,380	4,556	4,738	4,927	5,125	5,330	5,543	5,764	5,995	6,235	6,484	6,744	7,013	7,294
7	52200	Retirement - 401K General Pension	4,750	Labor	4,940	5,138	5,343	5,557	5,779	6,010	6,251	6,501	6,761	7,031	7,312	7,605	7,909	8,225	8,554
8	52300	Life/Hosp. Insurance	12,300	MedIns	13,161	14,082	15,068	16,123	17,251	18,459	19,751	21,134	22,613	24,196	25,890	27,702	29,641	31,716	33,936
9	52301	Medical Benefit	1,450	MedIns	1,552	1,660	1,776	1,901	2,034	2,176	2,328	2,491	2,666	2,852	3,052	3,266	3,494	3,739	4,001
10	53100	Physical Exams	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	AddPer	Additional Personnel	0	Calculated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12		Subtotal	\$76,550		\$80,025	\$83,667	\$87,486	\$91,491	\$95,691	\$100,097	\$104,720	\$109,571	\$114,663	\$120,008	\$125,619	\$131,512	\$137,702	\$144,204	\$151,036
Operating																			
13	53151	Professional Services	\$11,500	Inflation	\$11,604	\$11,801	\$12,049	\$12,314	\$12,597	\$12,887	\$13,183	\$13,486	\$13,796	\$14,114	\$14,438	\$14,770	\$15,110	\$15,458	\$15,813
14	54000	Travel & Per Diem	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	54100	Telephone	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	54200	Postage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	54300	Electricity	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	54301	Water	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	54302	Sanitation	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	54303	Sewer	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	54315	Energy-Street Light	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	54400	Equip. Rental	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	54614	Drainage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	54620	Maintenance - Vehicle	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25	54630	Maintenance - Building	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	54670	Maintment - Equipment	1,000	Repair	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344	1,384	1,426	1,469	1,513	1,558
27	54900	Ordinance Codes	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28	55100	Office Supplies	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
29	55210	Operating Supplies	2,000	Inflation	2,018	2,052	2,095	2,142	2,191	2,241	2,293	2,345	2,399	2,455	2,511	2,569	2,628	2,688	2,750
30	55213	Meter Replacement	10,000	Repair	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	13,842	14,258	14,685	15,126	15,580
31	55214	Meter Replacement	4,250	Repair	4,378	4,509	4,644	4,783	4,927	5,075	5,227	5,384	5,545	5,712	5,883	6,059	6,241	6,429	6,621
32	55220	Gasoline & Oil	0	Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33	55221	Tools	800	Inflation	807	821	838	857	876	896	917	938	960	982	1,004	1,028	1,051	1,075	1,100
34	55230	Chemicals	0	Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
35	55240	Uniforms	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
36	55260	Protective Clothing	700	Inflation	706	718	733	750	767	784	802	821	840	859	879	899	920	941	963
37	55410	Memberships	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38	55420	Training, Aids	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
39	56405	Computer System	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40	57301	Miscellaneous	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
41	59200	Repay Loan to General Fund	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42		Subtotal	\$30,250		\$30,843	\$31,571	\$32,380	\$33,225	\$34,110	\$35,018	\$35,951	\$36,909	\$37,893	\$38,904	\$39,942	\$41,009	\$42,104	\$43,229	\$44,385
Capital																			
43	58101	Capital Purchase	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
44	59900	Depreciation	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fees																			
46	58001	Transfer of Reserves	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
47	59904	Support Service Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
48	59906	Admin Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
49		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
50		Total Generation	\$106,800		\$110,867	\$115,238	\$119,865	\$124,716	\$129,801	\$135,115	\$140,671	\$146,480	\$152,556	\$158,912	\$165,562	\$172,521	\$179,806	\$187,433	\$195,421
<u>Treatment and Testing - 620</u>																			
Personnel																			
51	51200	Salaries	\$16,800	Labor	\$17,472	\$18,171	\$18,898	\$19,654	\$20,440	\$21,257	\$22,108	\$22,992	\$23,912	\$24,868	\$25,863	\$26,897	\$27,973	\$29,092	\$30,256
52	51201	Part-time Salaries	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53	51210	Unused Medical	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
54	51400	Overtime	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55	51500	Sick Leave	250	Labor	260	270	281	292	304	316	329	342	356	370	385	400	416	433	450
56	52100	FICA	1,300	Labor	1,352	1,406	1,462	1,521	1,582	1,645	1,711	1,779	1,850	1,924	2,001	2,081	2,165	2,251	2,341
57	52200	Retirement - 401K General Pension	1,500	Labor	1,560	1,622	1,687	1,755	1,825	1,898	1,974	2,053	2,135	2,220	2,309	2,402	2,498	2,598	2,701
58	52300	Life/Hosp. Insurance	4,100	MedIns	4,387	4,694	5,023	5,374	5,750	6,153	6,584	7,045	7,538	8,065	8,630	9,234	9,880	10,572	11,312
59	52301	Medical Benefit	500	MedIns	535	572	613	655	701	750	803	859	919	984	1,052	1,126	1,205	1,289	1,380
60	53100	Physical Exams	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2
Town of Belleair, Florida
Water Rate Study
Projected Operating Expenses

No.	Code	Description	Adjusted	Escalation	Fiscal Year Ending September 30,														
			2020	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
61	AddPer	Additional Personnel	0	Calculated	0	0	0	0	0	0	177,650	184,756	192,146	199,832	207,825	216,138	224,784	233,775	243,126
62		Subtotal	\$24,450		\$25,566	\$26,736	\$27,964	\$29,251	\$30,602	\$32,020	\$211,158	\$219,826	\$228,856	\$238,264	\$248,065	\$258,279	\$268,921	\$280,010	\$291,566
Operating																			
63	53151	Professional Services	\$0	Inflation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
64	54000	Travel & Per Diem	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
65	54100	Telephone	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	54200	Postage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	54300	Electricity	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
68	54301	Water	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
69	54302	Sanitation	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	54303	Sewer	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
71	54315	Energy-Street Light	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
72	54400	Equip. Rental	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73	54614	Drainage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
74	54620	Maintenance - Vehicle	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
75	54630	Maintenance - Building	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
76	54670	Maintment - Equipment	24,630	Repair	25,369	26,130	26,914	27,721	28,553	29,409	30,292	31,201	32,137	33,101	34,094	35,116	36,170	37,255	38,373
77	54900	Ordinance Codes	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78	55100	Office Supplies	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	55210	Operating Supplies	2,000	Inflation	2,018	2,052	2,095	2,142	2,191	2,241	2,293	2,345	2,399	2,455	2,511	2,569	2,628	2,688	2,750
80	55213	Meter Replacement	10,000	Repair	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	13,842	14,258	14,685	15,126	15,580
81	55214	Meter Replacement	4,300	Repair	4,429	4,562	4,699	4,840	4,985	5,134	5,288	5,447	5,611	5,779	5,952	6,131	6,315	6,504	6,699
82	55220	Gasoline & Oil	0	Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83	55221	Tools	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
84	55230	Chemicals	29,000	Chemicals	30,450	31,973	33,571	35,250	37,012	38,863	40,806	42,846	44,989	47,238	49,600	52,080	54,684	57,418	60,289
85	55240	Uniforms	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
86	55260	Protective Clothing	700	Inflation	706	718	733	750	767	784	802	821	840	859	879	899	920	941	963
87	55410	Memberships	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88	55420	Training, Aids	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
89	56405	Computer System	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	57301	Miscellaneous	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	59200	Repay Loan to General Fund	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92		Subtotal	\$70,630		\$73,272	\$76,044	\$78,940	\$81,957	\$85,100	\$88,373	\$91,780	\$95,328	\$99,022	\$102,870	\$106,878	\$111,052	\$115,401	\$119,932	\$124,653
Capital																			
93	58101	Capital Purchase	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
94	59900	Depreciation	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Fees																			
96	58001	Transfer of Reserves	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
97	59904	Support Service Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	59906	Admin Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
100		Total Treatment and Testing	\$95,080		\$98,838	\$102,780	\$106,903	\$111,208	\$115,702	\$120,393	\$302,938	\$315,154	\$327,878	\$341,134	\$354,943	\$369,331	\$384,322	\$399,942	\$416,219
Meter Management - 630																			
Personnel																			
101	51200	Salaries	\$139,250	Labor	\$144,820	\$150,613	\$156,637	\$162,903	\$169,419	\$176,196	\$183,244	\$190,573	\$198,196	\$206,124	\$214,369	\$222,944	\$231,861	\$241,136	\$250,781
102	51201	Part-time Salaries	13,150	Labor	13,676	14,223	14,792	15,384	15,999	16,639	17,305	17,997	18,717	19,465	20,244	21,054	21,896	22,772	23,682
103	51210	Unused Medical	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	51400	Overtime	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	51500	Sick Leave	2,050	Labor	2,132	2,217	2,306	2,398	2,494	2,594	2,698	2,806	2,918	3,035	3,156	3,282	3,413	3,550	3,692
106	52100	FICA	11,450	Labor	11,908	12,384	12,880	13,395	13,931	14,488	15,067	15,670	16,297	16,949	17,627	18,332	19,065	19,828	20,621
107	52200	Retirement - 401K General Pension	14,550	Labor	15,132	15,737	16,367	17,021	17,702	18,410	19,147	19,913	20,709	21,538	22,399	23,295	24,227	25,196	26,204
108	52300	Life/Hosp. Insurance	37,250	MedIns	39,858	42,648	45,633	48,827	52,245	55,902	59,815	64,002	68,483	73,276	78,406	83,894	89,767	96,050	102,774
109	52301	Medical Benefit	4,550	MedIns	4,869	5,209	5,574	5,964	6,382	6,828	7,306	7,818	8,365	8,951	9,577	10,247	10,965	11,732	12,554
110	53100	Physical Exams	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	AddPer	Additional Personnel	0	Calculated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
112		Subtotal	\$222,250		\$232,394	\$243,032	\$254,189	\$265,892	\$278,172	\$291,057	\$304,582	\$318,778	\$333,684	\$349,337	\$365,777	\$383,048	\$401,194	\$420,264	\$440,308
Operating																			
113	53151	Professional Services	\$33,500	Inflation	\$33,802	\$34,376	\$35,098	\$35,870	\$36,695	\$37,539	\$38,403	\$39,286	\$40,189	\$41,114	\$42,059	\$43,027	\$44,016	\$45,029	\$46,064
114	54000	Travel & Per Diem	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	54100	Telephone	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	54200	Postage	6,000	Inflation	6,054	6,157	6,286	6,425	6,572	6,723	6,878	7,036	7,198	7,364	7,533	7,706	7,884	8,065	8,250
117	54300	Electricity	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	54301	Water	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119	54302	Sanitation	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	54303	Sewer	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2
Town of Belleair, Florida
Water Rate Study
Projected Operating Expenses

No.	Code	Description	Adjusted	Escalation	Fiscal Year Ending September 30,														
			2020	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
121	54315	Energy-Street Light	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
122	54400	Equip. Rental	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123	54614	Drainage	57,000	Inflation	57,513	58,491	59,719	61,033	62,437	63,873	65,342	66,845	68,382	69,955	71,564	73,210	74,894	76,616	78,378
124	54620	Maintenance - Vehicle	1,000	Repair	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344	1,384	1,426	1,469	1,513	1,558
125	54630	Maintenance - Building	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
126	54670	Maintment - Equipment	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127	54900	Ordinance Codes	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
128	55100	Office Supplies	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
129	55210	Operating Supplies	2,000	Inflation	2,018	2,052	2,095	2,142	2,191	2,241	2,293	2,345	2,399	2,455	2,511	2,569	2,628	2,688	2,750
130	55213	Meter Replacement	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131	55214	Meter Replacement	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132	55220	Gasoline & Oil	0	Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
133	55221	Tools	550	Inflation	555	564	576	589	602	616	630	645	660	675	691	706	723	739	756
134	55230	Chemicals	0	Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	55240	Uniforms	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136	55260	Protective Clothing	700	Inflation	706	718	733	750	767	784	802	821	840	859	879	899	920	941	963
137	55410	Memberships	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138	55420	Training, Aids	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
139	56405	Computer System	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	57301	Miscellaneous	8,000	Inflation	8,072	8,209	8,382	8,566	8,763	8,965	9,171	9,382	9,597	9,818	10,044	10,275	10,511	10,753	11,000
141	59200	Repay Loan to General Fund	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142		Subtotal	\$108,750		\$109,750	\$111,629	\$113,983	\$116,499	\$119,186	\$121,936	\$124,749	\$127,626	\$130,571	\$133,583	\$136,665	\$139,818	\$143,044	\$146,344	\$149,720
143	58101	Capital Purchase	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
144	59900	Depreciation	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
146	58001	Transfer of Reserves	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
147	59904	Support Service Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
148	59906	Admin Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
150		Total Meter Management	\$331,000		\$342,144	\$354,660	\$368,171	\$382,391	\$397,358	\$412,993	\$429,330	\$446,405	\$464,255	\$482,920	\$502,442	\$522,866	\$544,238	\$566,608	\$590,028
Distribution - 640																			
151	51200	Personnel Salaries	\$99,750	Labor	\$103,740	\$107,890	\$112,205	\$116,693	\$121,361	\$126,216	\$131,264	\$136,515	\$141,975	\$147,654	\$153,561	\$159,703	\$166,091	\$172,735	\$179,644
152	51201	Part-time Salaries	4,500	Labor	4,680	4,867	5,062	5,264	5,475	5,694	5,922	6,159	6,405	6,661	6,928	7,205	7,493	7,793	8,104
153	51210	Unused Medical	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154	51400	Overtime	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	51500	Sick Leave	1,150	Labor	1,196	1,244	1,294	1,345	1,399	1,455	1,513	1,574	1,637	1,702	1,770	1,841	1,915	1,991	2,071
156	52100	FICA	7,800	Labor	8,112	8,436	8,774	9,125	9,490	9,869	10,264	10,675	11,102	11,546	12,008	12,488	12,988	13,507	14,047
157	52200	Retirement - 401K General Pension	8,950	Labor	9,308	9,680	10,068	10,470	10,889	11,325	11,778	12,249	12,739	13,248	13,778	14,329	14,902	15,499	16,118
158	52300	Life/Hosp. Insurance	22,500	MedIns	24,075	25,760	27,563	29,493	31,557	33,766	36,130	38,659	41,365	44,261	47,359	50,674	54,222	58,017	62,078
159	52301	Medical Benefit	2,650	MedIns	2,836	3,034	3,246	3,474	3,717	3,977	4,255	4,553	4,872	5,213	5,578	5,968	6,386	6,833	7,311
160	53100	Physical Exams	0	Labor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
161	AddPer	Additional Personnel	0	Calculated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
162		Subtotal	\$147,300		\$153,947	\$160,912	\$168,212	\$175,865	\$183,888	\$192,302	\$201,126	\$210,383	\$220,095	\$230,286	\$240,981	\$252,209	\$263,996	\$276,374	\$289,375
163	53151	Operating Professional Services	\$0	Inflation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
164	54000	Travel & Per Diem	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	54100	Telephone	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
166	54200	Postage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
167	54300	Electricity	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168	54301	Water	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
169	54302	Sanitation	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	54303	Sewer	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
171	54315	Energy-Street Light	18,000	WatProdInfl	18,204	18,703	19,096	19,516	19,965	20,424	20,894	21,374	21,866	22,369	22,883	23,410	23,948	24,499	25,062
172	54400	Equip. Rental	2,750	Inflation	2,775	2,822	2,881	2,945	3,012	3,082	3,152	3,225	3,299	3,375	3,453	3,532	3,613	3,696	3,781
173	54614	Drainage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
174	54620	Maintenance - Vehicle	1,000	Repair	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344	1,384	1,426	1,469	1,513	1,558
175	54630	Maintenance - Building	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
176	54670	Maintment - Equipment	10,000	Repair	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	13,842	14,258	14,685	15,126	15,580
177	54900	Ordinance Codes	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178	55100	Office Supplies	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	55210	Operating Supplies	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	55213	Meter Replacement	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181	55214	Meter Replacement	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
182	55220	Gasoline & Oil	0	Gas	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183	55221	Tools	3,000	Inflation	3,027	3,078	3,143	3,212											

Table 2
Town of Belleair, Florida
Water Rate Study
Projected Operating Expenses

No.	Code	Description	Adjusted	Escalation	Fiscal Year Ending September 30,														
			2020	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
184	55230	Chemicals	0	Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185	55240	Uniforms	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
186	55260	Protective Clothing	700	Inflation	706	718	733	750	767	784	802	821	840	859	879	899	920	941	963
187	55410	Memberships	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
188	55420	Training, Aids	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
189	56405	Computer System	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
190	57301	Miscellaneous	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
191	59200	Repay Loan to General Fund	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
192		Subtotal	\$35,450		\$36,042	\$36,992	\$37,873	\$38,803	\$39,782	\$40,786	\$41,816	\$42,873	\$43,956	\$45,068	\$46,208	\$47,377	\$48,577	\$49,807	\$51,069
193	58101	Capital Purchase	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
194	59900	Depreciation	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
195		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
196	58001	Fees Transfer of Reserves	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
197	59904	Support Service Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
198	59906	Admin Fees	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
199		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
200		Total Distribution	\$182,750		\$189,988	\$197,903	\$206,085	\$214,668	\$223,670	\$233,088	\$242,943	\$253,256	\$264,051	\$275,353	\$287,189	\$299,586	\$312,573	\$326,181	\$340,444
<u>Employee Adminstration</u>																			
201	51200	Personnel Salaries	\$56,050	Labor	\$58,292	\$60,624	\$63,049	\$65,571	\$68,193	\$70,921	\$73,758	\$76,708	\$79,777	\$82,968	\$86,286	\$89,738	\$93,327	\$97,060	\$100,943
202	51201	Part-time Salaries	2,500	Labor	2,600	2,704	2,812	2,925	3,042	3,163	3,290	3,421	3,558	3,701	3,849	4,003	4,163	4,329	4,502
203	51210	Unused Medical	1,361	Labor	1,415	1,472	1,531	1,592	1,656	1,722	1,791	1,863	1,937	2,015	2,095	2,179	2,266	2,357	2,451
204	51400	Overtime	8,000	Labor	8,320	8,653	8,999	9,359	9,733	10,123	10,527	10,949	11,386	11,842	12,316	12,808	13,321	13,853	14,408
205	51500	Sick Leave	750	Labor	780	811	844	877	912	949	987	1,026	1,067	1,110	1,155	1,201	1,249	1,299	1,351
206	52100	FICA	4,450	Labor	4,628	4,813	5,006	5,206	5,414	5,631	5,856	6,090	6,334	6,587	6,851	7,125	7,410	7,706	8,014
207	52200	Retirement - 401K General Pension	5,050	Labor	5,252	5,462	5,681	5,908	6,144	6,390	6,645	6,911	7,188	7,475	7,774	8,085	8,409	8,745	9,095
208	52300	Life/Hosp. Insurance	10,850	MedIns	11,610	12,422	13,292	14,222	15,218	16,283	17,423	18,642	19,947	21,344	22,838	24,436	26,147	27,977	29,935
209	52301	Medical Benefit	1,250	MedIns	1,338	1,431	1,531	1,638	1,753	1,876	2,007	2,148	2,298	2,459	2,631	2,815	3,012	3,223	3,449
210	53100	Physical Exams	300	MedIns	321	343	368	393	421	450	482	515	552	590	631	676	723	774	828
211	AddPer	Additional Personnel	0	Calculated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
212		Subtotal	\$90,561		\$94,555	\$98,736	\$103,111	\$107,691	\$112,486	\$117,508	\$122,766	\$128,274	\$134,044	\$140,090	\$146,425	\$153,065	\$160,026	\$167,323	\$174,975
213	53151	Operating Professional Services	\$0	Inflation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
214	54000	Travel & Per Diem	2,500	Inflation	2,523	2,565	2,619	2,677	2,738	2,801	2,866	2,932	2,999	3,068	3,139	3,211	3,285	3,360	3,438
215	54100	Telephone	4,000	Inflation	4,036	4,105	4,191	4,283	4,382	4,482	4,585	4,691	4,799	4,909	5,022	5,138	5,256	5,377	5,500
216	54200	Postage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
217	54300	Electricity	60,000	ElecTreatW	61,642	63,830	65,426	67,062	68,738	70,457	72,218	74,023	75,874	77,771	79,715	81,708	83,751	85,844	87,991
218	54301	Water	300	Inflation	303	308	314	321	329	336	344	352	360	368	377	385	394	403	413
219	54302	Sanitation	2,300	Inflation	2,321	2,360	2,410	2,463	2,519	2,577	2,637	2,697	2,759	2,823	2,888	2,954	3,022	3,092	3,163
220	54303	Sewer	200	Inflation	202	205	210	214	219	224	229	235	240	245	251	257	263	269	275
221	54315	Energy-Street Light	0	Electric	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
222	54400	Equip. Rental	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
223	54614	Drainage	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
224	54620	Maintenance - Vehicle	1,000	Repair	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344	1,384	1,426	1,469	1,513	1,558
225	54630	Maintenance - Building	8,000	Repair	8,240	8,487	8,742	9,004	9,274	9,552	9,839	10,134	10,438	10,751	11,074	11,406	11,748	12,101	12,464
226	54670	Maintment - Equipment	10,000	Repair	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	13,842	14,258	14,685	15,126	15,580
227	54900	Ordinance Codes	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228	55100	Office Supplies	2,500	Inflation	2,523	2,565	2,619	2,677	2,738	2,801	2,866	2,932	2,999	3,068	3,139	3,211	3,285	3,360	3,438
229	55210	Operating Supplies	2,000	Inflation	2,018	2,052	2,095	2,142	2,191	2,241	2,293	2,345	2,399	2,455	2,511	2,569	2,628	2,688	2,750
230	55213	Meter Replacement	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
231	55214	Meter Replacement	0	Repair	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
232	55220	Gasoline & Oil	7,500	Gas	7,875	8,269	8,682	9,116	9,572	10,051	10,553	11,081	11,635	12,217	12,828	13,469	14,142	14,849	15,592
233	55221	Tools	3,000	Inflation	3,027	3,078	3,143	3,212	3,286	3,362	3,439	3,518	3,599	3,682	3,767	3,853	3,942	4,032	4,125
234	55230	Chemicals	0	Chemicals	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
235	55240	Uniforms	2,000	Inflation	2,018	2,052	2,095	2,142	2,191	2,241	2,293	2,345	2,399	2,455	2,511	2,569	2,628	2,688	2,750
236	55260	Protective Clothing	700	Inflation	706	718	733	750	767	784	802	821	840	859	879	899	920	941	963
237	55410	Memberships	3,000	Inflation	3,027	3,078	3,143	3,212	3,286	3,362	3,439	3,518	3,599	3,682	3,767	3,853	3,942	4,032	4,125
238	55420	Training, Aids	5,000	Inflation	5,045	5,131	5,239	5,354	5,477	5,603	5,732	5,864	5,998	6,136	6,278	6,422	6,570	6,721	6,875
239	56405	Computer System	13,250	Inflation	13,369	13,597	13,882	14,187	14,514	14,848	15,189	15,538	15,896	16,261	16,635	17,018	17,409	17,810	18,220
240	57301	Miscellaneous	0	Inflation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241	59200	Repay Loan to General Fund	0	Eliminate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
242		Subtotal	\$127,250																

Table 2
Town of Belleair, Florida
Water Rate Study
Projected Operating Expenses

No.	Code	Description	Adjusted 2020	Escalation Reference	Fiscal Year Ending September 30,														
					2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
243	58101	Capital																	
244	59900	Capital Purchase Depreciation	\$0 0	Eliminate Eliminate	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0	\$0 0
245		Subtotal	\$0		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
246	58001	Fees																	
247	59904	Transfer of Reserves	\$0	Eliminate	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
248	59906	Support Service Fees	275,300	Labor	286,312	297,764	309,675	322,062	334,945	348,342	362,276	376,767	391,838	407,511	423,812	440,764	458,395	476,731	495,800
		Admin Fees	88,750	Labor	92,300	95,992	99,832	103,825	107,978	112,297	116,789	121,461	126,319	131,372	136,627	142,092	147,775	153,686	159,834
249		Subtotal	\$364,050		\$378,612	\$393,756	\$409,507	\$425,887	\$442,922	\$460,639	\$479,065	\$498,228	\$518,157	\$538,883	\$560,438	\$582,856	\$606,170	\$630,417	\$655,633
250		Total Employee Administration	\$581,861		\$603,371	\$626,564	\$650,182	\$674,774	\$700,382	\$727,005	\$754,684	\$783,463	\$813,388	\$844,506	\$876,869	\$910,526	\$945,533	\$981,947	\$1,019,826
251		Other Adjustments																	
251		Contingency	\$12,975	Calculated	\$13,452	\$13,971	\$15,785	\$16,398	\$17,039	\$17,706	\$22,116	\$22,319	\$23,208	\$24,136	\$25,105	\$26,766	\$27,171	\$28,925	\$30,097
252		Bad Debt	4,483	Calculated	4,496	4,925	5,270	5,639	6,033	6,456	6,908	7,391	7,705	8,033	8,374	8,730	9,101	9,488	9,891
253		Incremental Operating Expenses	0	Calculated	0	0	127,276	132,006	136,939	142,051	340,991	287,107	298,698	310,823	323,475	401,788	350,611	430,397	447,774
254		Other Debt Issuance Expenses	0	Calculated	0	0	35,000	0	0	0	52,000	0	0	0	0	0	0	35,000	0
255		Subtotal	\$17,457		\$17,948	\$18,896	\$183,330	\$154,042	\$160,010	\$166,213	\$422,014	\$316,816	\$329,611	\$342,992	\$356,953	\$437,284	\$386,883	\$503,810	\$487,762
256		TOTAL UTILITY SYSTEM	\$1,314,948		\$1,363,157	\$1,416,042	\$1,634,537	\$1,661,799	\$1,726,924	\$1,794,807	\$2,292,579	\$2,261,573	\$2,351,739	\$2,445,818	\$2,543,958	\$2,712,114	\$2,753,355	\$2,965,922	\$3,049,701

Table 3
Town of Belleair, Florida
Water Rate Study
Escalation Factors

			Fiscal Year Ending September 30,														
No.	Description	Reference	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Operating Escalation Factors																	
1	Constant Factor	Constant	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
2	Inflation (CPI Price Index) [*]	Inflation	1.0090	1.0170	1.0210	1.0220	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230
3	Labor	Labor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
4	Repair and Maintenance	Repair	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300
5	Insurance - Medical	MedIns	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700	1.0700
6	Insurance - General	GenIns	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500
7	Electricity Commodity	Electric	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250
8	Electricity - Water Treatment	ElecTreatW	1.0274	1.0355	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250	1.0250
9	Gas and Fuel	Gas	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500
10	Chemicals Commodity	Chemicals	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500
11	Chemicals - Water Treatment	ChemTreatW	1.0524	1.0608	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500	1.0500
12	Elimination Factor	Eliminate	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
13	Customer Growth	WatCust	1.0052	1.0232	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
14	Change in Rate of Growth	WatUnit	0.2698	4.4313	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
15	Customer Growth + Inflation CPI	WatCustInfl	1.0143	1.0406	1.0210	1.0220	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230
16	Production Growth + Inflation CPI	WatProdInfl	1.0113	1.0274	1.0210	1.0220	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230	1.0230
17	Sales Revenues	WatRev	1.0031	1.0237	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
18	Engineering News Record Index	ENR	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300	1.0300

Footnotes:
[*] Estimates based on projections contained in "The Budget and Economic Outlook: An Update" published by the Congressional Budget Office in July 2020.

Table 4
Town of Belleair, Florida
Water Rate Study

Estimated Multi-Year Capital Improvement Program and Funding Source

No.	Description	Escalation Factor	Funding Source	Projected Fiscal Year Ending September 30,																Total
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
CAPITAL IMPROVEMENT PROGRAM																				
System Improvements																				
Phase 1 - Clearwell Roof Rehab and Additional Well																				
1	Mobilization/Demobilization	ENR	Operating	\$0	\$20,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$20,600
2	Instrumentation	ENR	Operating	0	128,750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128,750
3	Upper Floridian Well	ENR	Operating	0	257,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	257,500
4	6" Raw Water Main (200 ft)	ENR	Operating	0	20,600	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20,600
5	Phase 1 Contingency	ENR	Operating	0	128,750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	128,750
6	Phase 1 Engineering	ENR	Operating	0	83,430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83,430
Phase 2 - Multimedia Pressure Filters																				
7	Mobilization/Demobilization	ENR	SD1	\$0	\$0	\$0	\$10,930	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$10,930
8	Sitework	ENR	SD1	0	0	0	81,975	0	0	0	0	0	0	0	0	0	0	0	0	81,975
9	Booster Pump Station	ENR	SD1	0	0	0	155,206	0	0	0	0	0	0	0	0	0	0	0	0	155,206
10	Pressurized Filters and Backwash Holding Tank	ENR	SD1	0	0	0	1,059,117	0	0	0	0	0	0	0	0	0	0	0	0	1,059,117
11	Chemical Building	ENR	SD1	0	0	0	91,812	0	0	0	0	0	0	0	0	0	0	0	0	91,812
12	Chemical Systems	ENR	SD1	0	0	0	219,693	0	0	0	0	0	0	0	0	0	0	0	0	219,693
13	High Service Pump Station Rehab	ENR	SD1	0	0	0	184,717	0	0	0	0	0	0	0	0	0	0	0	0	184,717
14	Yard Piping	ENR	SD1	0	0	0	292,924	0	0	0	0	0	0	0	0	0	0	0	0	292,924
15	Electrical	ENR	SD1	0	0	0	342,109	0	0	0	0	0	0	0	0	0	0	0	0	342,109
16	Instrumentation	ENR	SD1	0	0	0	256,855	0	0	0	0	0	0	0	0	0	0	0	0	256,855
17	Upper Floridian Well (includes transmission line)	ENR	SD1	0	0	0	273,250	0	0	0	0	0	0	0	0	0	0	0	0	273,250
18	Well Rehabilitation	ENR	SD1	0	0	0	491,850	0	0	0	0	0	0	0	0	0	0	0	0	491,850
19	Phase 2 Contingency	ENR	Operating	0	0	0	1,038,350	0	0	0	0	0	0	0	0	0	0	0	0	1,038,350
20	Phase 2 Engineering	ENR	Operating	0	0	0	675,474	0	0	0	0	0	0	0	0	0	0	0	0	675,474
Phase 3 - Reverse Osmosis (without new HSPS)																				
21	Mobilization/Demobilization	ENR	Operating	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$147,720	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$147,720
22	Sitework	ENR	Operating	0	0	0	0	0	0	0	307,750	0	0	0	0	0	0	0	0	307,750
23	RO System (2 skids)	ENR	SD2	0	0	0	0	0	0	0	812,460	0	0	0	0	0	0	0	0	812,460
24	RO Building	ENR	SD2	0	0	0	0	0	0	0	400,075	0	0	0	0	0	0	0	0	400,075
25	Chemical Systems	ENR	SD2	0	0	0	0	0	0	0	198,191	0	0	0	0	0	0	0	0	198,191
26	Deep Injection Well	ENR	Operating	0	772,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	772,500
27	Yard Piping	ENR	SD2	0	0	0	0	0	0	0	254,817	0	0	0	0	0	0	0	0	254,817
28	Electrical	ENR	SD2	0	0	0	0	0	0	0	590,880	0	0	0	0	0	0	0	0	590,880
29	Instrumentation	ENR	Operating	0	0	0	0	0	0	0	443,160	0	0	0	0	0	0	0	0	443,160
30	Upper Floridian Wells	ENR	SD2	0	0	0	0	0	0	0	615,500	0	0	0	0	0	0	0	0	615,500
31	Phase 3 Contingency	ENR	SD2	0	0	0	0	0	0	0	1,408,264	0	0	0	0	0	0	0	0	1,408,264
32	Phase 3 Engineering	ENR	SD2	0	0	0	0	0	0	0	915,864	0	0	0	0	0	0	0	0	915,864
Phase 4 - New HSPS																				
33	Mobilization/Demobilization	ENR	SD3	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$113,550	\$0	\$113,550
34	Sitework	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	302,800	0	302,800
35	RO System (1 skid)	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	581,376	0	581,376
36	RO Building	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	165,026	0	165,026
37	High Service Pump Station Rehab	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	511,732	0	511,732
38	Yard Piping	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	193,792	0	193,792
39	Electrical	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	252,838	0	252,838
40	Instrumentation	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189,250	0	189,250
41	Phase 4 Contingency	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	693,412	0	693,412
42	Phase 4 Engineering	ENR	SD3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	451,172	0	451,172
43	Capital Purchases / Capital Outlay	Inflation	Rates	603,066	50,450	51,300	52,400	53,550	54,800	56,050	57,350	58,650	60,000	61,400	62,800	64,250	65,750	67,250	68,800	\$1,487,866
44	TOTAL WATER CAPITAL IMPROVEMENT PROGRAM			\$603,066	\$1,462,580	\$51,300	\$5,226,662	\$53,550	\$54,800	\$56,050	\$6,152,031	\$58,650	\$60,000	\$61,400	\$62,800	\$64,250	\$65,750	\$3,522,198	\$68,800	\$17,623,887

Table 4
Town of Belleair, Florida
Water Rate Study

Estimated Multi-Year Capital Improvement Program and Funding Source

No.	Description	Escalation Factor	Funding Source	Projected Fiscal Year Ending September 30,																Total
				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	
FUNDING SOURCES:																				
Water System Funding Sources																				
45	Operating Revenue		Rates	\$ 603,066	\$ 50,450	\$ 51,300	\$ 52,400	\$ 53,550	\$ 54,800	\$ 56,050	\$ 57,350	\$ 58,650	\$ 60,000	\$ 61,400	\$ 62,800	\$ 64,250	\$ 65,750	\$ 67,250	\$ 68,800	\$ 1,487,866
46	Operating Fund		Operating	-	1,412,130	-	1,713,824	-	-	-	898,630	-	-	-	-	-	-	-	-	4,024,584
47	Subordinate Lien Debt 1		SD1	-	-	-	3,460,438	-	-	-	-	-	-	-	-	-	-	-	-	3,460,438
48	Subordinate Lien Debt 2		SD2	-	-	-	-	-	-	-	5,196,051	-	-	-	-	-	-	-	-	5,196,051
49	Subordinate Lien Debt 3		SD3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,454,948	3,454,948
50	Subordinate Lien Debt 4		SD4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51	TOTAL WATER CAPITAL IMPROVEMENT PROGRAM			\$603,066	\$1,462,580	\$51,300	\$5,226,662	\$53,550	\$54,800	\$56,050	\$6,152,031	\$58,650	\$60,000	\$61,400	\$62,800	\$64,250	\$65,750	\$3,522,198	\$68,800	\$17,623,887

Table 5
Town of Belleair, Florida
Water Rate Study
Projected Cash Balances By Fund and Interest Earnings

Line No.	Description	Investment Reference [*]	Fiscal Year Ending September 30,															
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
ENDING CASH BALANCE BY FUND SUMMARY																		
1	OPERATING FUND	(U)	\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945	\$2,478,900
2	CUSTOMER DEPOSITS	(R)	23,504	23,804	24,104	24,404	24,704	25,004	25,304	25,604	25,904	26,204	26,504	26,804	27,104	27,404	27,704	28,004
3	TOTAL PROJECTED YEAR-END BALANCE		\$2,464,861	\$1,422,185	\$1,910,337	\$591,675	\$890,099	\$1,283,730	\$1,783,062	\$1,065,150	\$1,140,399	\$1,250,681	\$1,397,873	\$1,623,880	\$1,825,541	\$2,135,370	\$2,389,649	\$2,506,904
OPERATING FUND																		
4	Beginning Balance		\$2,567,665	\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945
5	Transfers In - Operations		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
6	Transfers In - General Fund		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7	Total Funds Available		\$2,567,665	\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945
8	Transfers Out - CIP		\$0	\$1,412,130	\$0	\$1,713,824	\$0	\$0	\$0	\$898,630	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
9	Transfers Out - Operations		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Total Transfers Out of Fund		\$0	\$1,412,130	\$0	\$1,713,824	\$0	\$0	\$0	\$898,630	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11	Transfer In / (Out) - Surplus / (Deficiency)		(\$126,308)	\$369,154	\$487,852	\$394,862	\$298,124	\$393,331	\$499,032	\$180,418	\$74,949	\$109,982	\$146,892	\$225,707	\$201,361	\$309,529	\$253,979	\$116,955
12	Interest Rate		1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
13	Interest Income on Fund		32,100	21,700	17,500	12,900	7,100	10,800	15,700	16,400	13,000	13,900	15,300	17,100	20,000	22,500	26,300	29,500
14	Use of Interest Income to Fund Revenue Requirements	(U)	32,100	21,700	17,500	12,900	7,100	10,800	15,700	16,400	13,000	13,900	15,300	17,100	20,000	22,500	26,300	29,500
15	Ending Balance		\$2,441,357	\$1,398,381	\$1,886,233	\$567,271	\$865,395	\$1,258,726	\$1,757,758	\$1,039,546	\$1,114,495	\$1,224,477	\$1,371,369	\$1,597,076	\$1,798,437	\$2,107,966	\$2,361,945	\$2,478,900
16	Target - Days of Rate Revenue		120	120	120	120	120	120	120	120	120	120	120	120	120	120	120	120
17	Target Minimum Available Cash		\$589,481	\$591,304	\$647,671	\$693,008	\$741,519	\$793,425	\$848,965	\$908,392	\$971,980	\$1,013,289	\$1,056,354	\$1,101,249	\$1,148,052	\$1,196,844	\$1,247,710	\$1,300,737
18	Target Minimum Cash Balance Met - Yes or No		Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
19	Calculated Days of Rate Revenue		497	284	349	98	140	190	248	137	138	145	156	174	188	211	227	229
20	Target Minimum Available Cash - Budget Policy		\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000	\$450,000
21	Target Minimum Cash Balance Met - Yes or No		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
CUSTOMER DEPOSITS																		
22	Beginning Balance		\$23,204	\$23,504	\$23,804	\$24,104	\$24,404	\$24,704	\$25,004	\$25,304	\$25,604	\$25,904	\$26,204	\$26,504	\$26,804	\$27,104	\$27,404	\$27,704
23	Interest Rate		1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
24	Interest Income on Fund		300	300	300	300	300	300	300	300	300	300	300	300	300	300	300	300
25	Use of Interest Income to Fund Revenue Requirements	(R)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26	Ending Balance		\$23,504	\$23,804	\$24,104	\$24,404	\$24,704	\$25,004	\$25,304	\$25,604	\$25,904	\$26,204	\$26,504	\$26,804	\$27,104	\$27,404	\$27,704	\$28,004
SINKING FUND																		
27	Sinking Fund Deposit		\$0	\$0	\$0	\$0	\$210,779	\$210,779	\$210,779	\$210,779	\$536,966	\$536,966	\$536,966	\$536,966	\$536,966	\$536,966	\$536,966	\$753,853
28	Average Balance (25% of Annual Debt Service)		0	0	0	0	52,695	52,695	52,695	52,695	134,241	134,241	134,241	134,241	134,241	134,241	134,241	188,463
29	Interest Rate		1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
30	Interest Income on Fund		\$0	\$0	\$0	\$0	\$700	\$700	\$700	\$700	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	\$1,700	\$2,400
31	Use of Interest Income to Fund Revenue Requirements	(U)	0	0	0	0	700	700	700	700	1,700	1,700	1,700	1,700	1,700	1,700	1,700	2,400
DEBT SERVICE RESERVE ACCOUNTS																		
INTEREST INCOME SUMMARY																		
32	Unrestricted Interest Income		\$32,100	\$21,700	\$17,500	\$12,900	\$7,800	\$11,500	\$16,400	\$17,100	\$14,700	\$15,600	\$17,000	\$18,800	\$21,700	\$24,200	\$28,000	\$31,900
33	Restricted Interest Income		\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300	\$300
34	Total Interest Income		\$32,400	\$22,000	\$17,800	\$13,200	\$8,100	\$11,800	\$16,700	\$17,400	\$15,000	\$15,900	\$17,300	\$19,100	\$22,000	\$24,500	\$28,300	\$32,200

Footnotes:
[*] (U) = Interest earnings unrestricted and assumed to be available to meet System expenditure requirements.
(R) = Interest earnings restricted and assumed to not be available to meet System expenditure requirements.

Table 6

**Town of Belleair, Florida
Water Revenue Sufficiency Study**

Comparison of Typical Monthly Residential Bills for Water Service*[1]

Line No.	Description	Residential Service for a 5/8" or 3/4" Meter										
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons	10,000 Gallons	15,000 Gallons	20,000 Gallons	50,000 Gallons	75,000 Gallons	100,000 Gallons
	Town of Belleair											
1	Existing Rates - Fiscal Year 2020	\$12.99	\$16.89	\$20.79	\$27.31	\$40.35	\$59.91	\$92.51	\$125.11	\$353.21	\$548.71	\$744.21
	<u>Surveyed Florida Utilities:</u>											
3	City of Clearwater	\$23.16	\$23.16	\$32.55	\$41.94	\$60.72	\$91.34	\$150.54	\$209.74	\$564.94	\$860.94	\$1,156.94
4	City of Dunedin	7.47	16.29	25.11	29.52	42.76	62.62	95.72	128.82	427.32	676.07	924.82
5	City of Gulfport	16.93	16.93	34.98	44.56	66.00	98.16	157.36	222.21	611.31	935.56	1,259.81
6	City of Largo	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
7	City of Oldsmar	13.79	19.94	32.24	38.39	50.69	69.14	110.39	163.89	484.89	752.39	1,019.89
8	Pinellas County	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
9	City of Pinellas Park	21.93	21.93	29.24	36.55	51.17	73.96	114.71	158.85	428.85	653.85	878.85
10	City of Safety Harbor	20.46	27.00	33.54	36.81	53.17	82.83	174.88	266.93	1,064.63	1,729.38	2,394.13
11	City of St. Petersburg	12.89	22.21	31.53	36.19	47.16	68.90	108.65	161.15	791.45	1,316.70	1,841.95
12	City of Tarpon Springs	22.62	31.14	39.66	43.92	60.96	86.52	139.87	206.67	806.17	1,325.67	1,845.17
13	City of Treasure Island	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
14	Surveyed Florida Utilities' Average	\$14.51	\$20.89	\$30.98	\$36.84	\$50.98	\$73.43	\$118.49	\$167.86	\$542.68	\$856.84	\$1,171.00
15	Minimum	6.80	16.29	25.11	29.52	42.71	58.10	83.75	109.40	263.30	391.55	519.80
16	Maximum	23.16	31.14	39.66	44.56	66.00	98.16	174.88	266.93	1,064.63	1,729.38	2,394.13

Footnotes:

- [*] Unless otherwise noted, amounts shown reflect residential rates in effect July 2020 and are exclusive of taxes, franchise fees or water restriction surcharges, if any, and reflect rates charged for inside the city service. All rates are as reported by the respective utility. This comparison is intended to show comparable charges for similar service for comparison purposes only and is not intended to be a complete listing of all rates and charges offered by each listed utility.

Table 7
Town of Belleair, Florida
Water Rate Study
Projected Debt Service Coverage

Line No.	Description	Fiscal Year Ending September 30,															
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
	Gross Revenues:																
1	Water System Sales Revenue - Existing Rates	\$1,793,006	\$1,798,550	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121	\$1,841,121
2	Water Rate Increases	\$0	\$0	\$128,878	\$266,778	\$414,331	\$572,213	\$741,146	\$921,905	\$1,115,317	\$1,240,966	\$1,371,954	\$1,508,510	\$1,650,869	\$1,799,279	\$1,953,996	\$2,115,288
3	Total Sales Revenues	\$1,793,006	\$1,798,550	\$1,969,999	\$2,107,899	\$2,255,452	\$2,413,334	\$2,582,267	\$2,763,026	\$2,956,438	\$3,082,087	\$3,213,075	\$3,349,631	\$3,491,990	\$3,640,400	\$3,795,117	\$3,956,409
	Other Revenues																
4	Unrestricted Interest Earnings	\$32,100	\$21,700	\$17,500	\$12,900	\$7,800	\$11,500	\$16,400	\$17,100	\$14,700	\$15,600	\$17,000	\$18,800	\$21,700	\$24,200	\$28,000	\$31,900
5	Other Revenues	6,600	2,511	7,694	1,000	1,000	1,000	2,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
6	Total Other Revenues	38,700	24,211	25,194	13,900	8,800	12,500	18,400	18,100	15,700	16,600	18,000	19,800	22,700	25,200	29,000	32,900
7	Total Gross Revenues	\$1,831,706	\$1,822,761	\$1,995,194	\$2,121,799	\$2,264,252	\$2,425,834	\$2,600,667	\$2,781,126	\$2,972,138	\$3,098,687	\$3,231,075	\$3,369,431	\$3,514,690	\$3,665,600	\$3,824,117	\$3,989,309
8	Cost of Operation and Maintenance	\$1,314,948	\$1,363,157	\$1,416,042	\$1,634,537	\$1,661,799	\$1,726,924	\$1,794,807	\$2,292,579	\$2,261,573	\$2,351,739	\$2,445,818	\$2,543,958	\$2,712,114	\$2,753,355	\$2,965,922	\$3,049,701
9	Total System Net Revenues	516,758	459,604	579,152	487,262	602,453	698,910	805,861	488,547	710,565	746,948	785,258	825,473	802,576	912,245	858,195	939,608
	COVERAGE TESTS:																
	Subordinated Debt Requirement																
10	Net Revenues After Payment of Senior Lien Debt Service	\$516,758	\$459,604	\$579,152	\$487,262	\$602,453	\$698,910	\$805,861	\$488,547	\$710,565	\$746,948	\$785,258	\$825,473	\$802,576	\$912,245	\$858,195	\$939,608
11	Subordinated Debt Requirement	0	0	0	0	210,779	210,779	210,779	210,779	536,966	536,966	536,966	536,966	536,966	536,966	536,966	753,853
12	Required Coverage	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
13	Calculated Coverage	N/A	N/A	N/A	N/A	286%	332%	382%	232%	132%	139%	146%	154%	149%	170%	160%	125%
	SRF LOAN COVERAGE TESTS:																
14	Net Revenues After Payment of Senior Lien Debt Service	\$516,758	\$459,604	\$579,152	\$487,262	\$602,453	\$698,910	\$805,861	\$488,547	\$710,565	\$746,948	\$785,258	\$825,473	\$802,576	\$912,245	\$858,195	\$939,608
15	Less Allowance for Senior Lien Debt Service Coverage (20%)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	Net Revenues Available for SRF Loan Debt	516,758	459,604	579,152	487,262	602,453	698,910	805,861	488,547	710,565	746,948	785,258	825,473	802,576	912,245	858,195	939,608
	SRF Loan Debt Service:																
17	2023 SRF Loan Issue	0	0	0	0	210,779	210,779	210,779	210,779	210,779	210,779	210,779	210,779	210,779	210,779	210,779	210,779
18	2027 SRF Loan Issue	0	0	0	0	0	0	0	0	326,186	326,186	326,186	326,186	326,186	326,186	326,186	326,186
19	2034 SRF Loan Issue	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	216,887
20	Total SRF Loan Debt Service	\$0	\$0	\$0	\$0	\$210,779	\$210,779	\$210,779	\$210,779	\$536,966	\$536,966	\$536,966	\$536,966	\$536,966	\$536,966	\$536,966	\$753,853
21	Required Coverage	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%	115%
22	Calculated Coverage (115% Required)	N/A	N/A	N/A	N/A	286%	332%	382%	232%	132%	139%	146%	154%	149%	170%	160%	125%
	Other Revenue Requirements:																
	<u>Subordinate Lien Debt</u>																
23	Interfund Loan - General Fund	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$0	\$0	\$0	\$0	\$0
24	Total Other Revenue Requirements	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	0	0	0	0	0
25	Amount Available for Capital Outlay and Other Purposes	\$476,758	\$419,604	\$539,152	\$447,262	\$351,674	\$448,131	\$555,082	\$237,768	\$133,599	\$169,982	\$208,292	\$288,507	\$265,611	\$375,279	\$321,229	\$185,755

Pinellas County, Florida
STATEMENT OF FUND NET POSITION
PROPRIETARY FUNDS
September 30, 2019

	<u>Water System</u>	<u>Sewer System</u>
ASSETS		
Current assets		
Cash	\$ 14,475,155	\$ 8,447,422
Cash with fiscal agent	-	3,875,919
Investments	82,581,154	55,288,082
Accounts and notes receivable, net	12,884,512	8,364,178
Assessments receivable	-	660
Accrued interest receivable	392,054	261,542
Due from other funds	-	-
Due from other governments	9,121,524	5,615,740
Inventory	1,103,924	478,777
Prepaid items	359,113	402,505
Total current assets	<u>120,917,436</u>	<u>82,734,825</u>
Noncurrent assets		
Restricted Assets		
Cash	-	-
Investments	-	-
Total restricted assets	<u>-</u>	<u>-</u>
Capital assets		
Land	44,355,547	5,143,919
Buildings	30,621,121	19,979,035
Improvements other than buildings	478,524,187	924,020,123
Equipment	16,699,639	17,208,937
Intangible assets	3,124,876	2,406,586
Accumulated depreciation	(232,240,095)	(360,989,783)
Construction in progress	11,762,869	23,280,724
Total capital assets, net	<u>352,848,144</u>	<u>631,049,541</u>
Other assets		
Noncurrent notes receivable	28,264,217	-
Total noncurrent assets	<u>381,112,361</u>	<u>631,049,541</u>
Total assets	<u>502,029,797</u>	<u>713,784,366</u>
DEFERRED OUTFLOWS OF RESOURCES		
Losses on debt refunding	-	3,125,939
Pension-related deferred outflows	3,215,644	3,636,327
OPEB-related deferred outflows	735,133	813,353
Total assets and deferred outflows of resources	<u>505,980,574</u>	<u>721,359,985</u>

The accompanying notes are an integral part of this statement.

Pinellas County, Florida
STATEMENT OF FUND NET POSITION
PROPRIETARY FUNDS
September 30, 2019

	<u>Water System</u>	<u>Sewer System</u>
LIABILITIES		
Current liabilities		
Vouchers payable	\$ 3,928,157	\$ 7,723,945
Contracts payable	85,941	461,111
Due to other funds	-	-
Due to other governments	1,899,094	165,658
Accrued liabilities	670,732	744,569
Claims payable	-	-
Compensated absences	951,423	1,097,749
Matured bonds payable	-	2,740,000
Matured interest payable	-	1,135,919
Unearned revenue	-	-
Deposits and other current liabilities	7,736,050	-
Total current liabilities	<u>15,271,397</u>	<u>14,068,951</u>
Noncurrent liabilities		
Revenue bonds payable plus unamortized premiums	-	123,360,418
Long-term compensated absences	190,742	220,077
Long-term claims payable	-	-
Other long-term liabilities	-	-
Other post employment benefit liability	22,684,557	25,098,276
Pension liability	<u>10,696,565</u>	<u>12,095,931</u>
Total noncurrent liabilities	<u>33,571,864</u>	<u>160,774,702</u>
Total liabilities	<u>48,843,261</u>	<u>174,843,653</u>
DEFERRED INFLOWS OF RESOURCES		
Pension-related deferred inflows	1,328,610	1,502,424
OPEB-related deferred inflows	<u>1,882,289</u>	<u>2,097,544</u>
Total liabilities and deferred inflows of resources	<u>52,054,160</u>	<u>178,443,621</u>
NET POSITION (DEFICIT)		
Net investment in capital assets	351,283,631	503,527,533
Restricted for renewal and replacement	-	-
Unrestricted net position (deficit)	<u>102,642,783</u>	<u>39,388,831</u>
Total net position (deficit)	<u>\$ 453,926,414</u>	<u>\$ 542,916,364</u>
Adjustment to reflect consolidation of internal service fund activities related to enterprise funds		
Net position of business-type activities		

The accompanying notes are an integral part of this statement.

Pinellas County, Florida
STATEMENT OF REVENUES, EXPENSES
AND CHANGES IN FUND NET POSITION
PROPRIETARY FUNDS
For the year ended September 30, 2019

	<u>Water System</u>	<u>Sewer System</u>
Operating revenues		
Charges for services	\$ 89,485,131	\$ 79,301,464
Operating expenses		
Personal services	15,788,059	19,304,298
Contractual services	2,750,252	7,844,239
Utility services	47,372,864	4,293,348
Supplies	2,622,036	5,459,043
Other operating expenses	10,387,933	10,623,946
Depreciation expense	10,858,415	20,792,915
Total operating expenses	<u>89,779,559</u>	<u>68,317,789</u>
Operating income (loss)	<u>(294,428)</u>	<u>10,983,675</u>
Nonoperating revenues (expenses)		
Interest revenues	4,750,678	2,129,369
Miscellaneous revenues	2,126,886	673,962
Interest expense	(86,973)	(5,420,878)
Miscellaneous expense	-	-
Total nonoperating revenues (expenses)	<u>6,790,591</u>	<u>(2,617,547)</u>
Income (loss) before capital contributions and transfers	6,496,163	8,366,128
Capital contributions	1,154,583	1,191,042
Transfers in	-	-
Transfers out	-	-
Change in net position	<u>7,650,746</u>	<u>9,557,170</u>
Net position (deficit) - beginning	<u>446,275,668</u>	<u>533,359,194</u>
Net position (deficit) - ending	<u>\$ 453,926,414</u>	<u>\$ 542,916,364</u>
Adjustment to reflect consolidation of internal service fund activities related to enterprise funds		
Change in net position of business-type activities		

The accompanying notes are an integral part of this statement.

Pinellas County, Florida
STATEMENT OF CASH FLOWS
PROPRIETARY FUNDS
For the year ended September 30, 2019

	<u>Water System</u>	<u>Sewer System</u>
CASH FLOWS FROM OPERATING ACTIVITIES:		
Receipts from customers	\$ 82,558,458	\$ 76,284,980
Payments to suppliers	(61,185,864)	(27,870,268)
Payments to employees	(14,075,861)	(17,493,969)
Cash received from (paid to) other sources	1,587,464	507,059
Net cash provided (used) by operating activities	<u>8,884,197</u>	<u>31,427,802</u>
CASH FLOWS FROM NON-CAPITAL FINANCING ACTIVITIES:		
Transfers in	-	-
Interest payments	(86,973)	-
Transfers out	-	-
Net cash provided (used) by noncapital financing activities	<u>(86,973)</u>	<u>-</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES:		
Acquisition and construction of capital assets	(11,075,081)	(21,277,970)
Principal paid on capital debt	-	(9,100,000)
Interest paid on capital debt	-	(5,483,616)
Proceeds from sale of capital assets	580,665	190,561
Capital contributions	732,787	795,802
Passenger Facility Charges	-	-
Net cash provided (used) by capital and related financing activities	<u>(9,761,629)</u>	<u>(34,875,223)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:		
Withdrawals from investment pool	20,991,045	20,006,446
Deposits to investment pool	(32,953,289)	(22,050,733)
Interest received on investments	2,891,809	2,063,465
Sale of investments	-	-
Purchase of investments	-	-
Net cash provided (used) by investing activities	<u>(9,070,435)</u>	<u>19,178</u>
Net change in cash and cash equivalents	(10,034,840)	(3,428,243)
Cash and cash equivalents at beginning of year	24,509,995	15,751,584
Cash and cash equivalents at end of year	<u>\$ 14,475,155</u>	<u>\$ 12,323,341</u>

The accompanying notes are an integral part of this statement.

Reverse Osmosis Water Treatment Plant Preliminary Engineering Report & Rate Study

Community Meeting

Town of Belleair
November 10, 2020



RATE STUDY ASSUMPTIONS

- Minimal customer growth for the system
 - Units associated with Belleview Place
- Operating expense growth rate of approximately 6.0% per year from Fiscal Years 2020 Through 2035
 - Includes cost escalation for inflation, merit and cost of living adjustments, additional personnel, etc.
 - Includes increased net operating expenses associated with operation of the RO treatment plant
- Assumes issuance of two low-interest State Revolving Fund (SRF) loans to fund capital plan
 - 20-year loans at 2.0% interest rate
 - Debt service payments not made until after completion of the project
 - Requires minimum debt service coverage ratio of 115%

RATE STUDY PRELIMINARY RESULTS – IDENTIFIED RATE ADJUSTMENTS

	2021	2022-2024	2025-2035
Two Phases	0.00%	13.25%	3.75%
All-At-Once	0.00%	16.00%	3.00%

- Rate Adjustments Identified to:
 - Fund increased cost of operations
 - Pay annual debt service payments associated with funding projects identified in the PER
 - Maintain debt service coverage ratios required for compliance with proposed SRF loans
 - Maintain adequate operating and capital reserves

RATE STUDY PRELIMINARY RESULTS – IDENTIFIED RATE ADJUSTMENTS

	2021	2022-2024	2025-2035
Two Phases	0.00%	13.25%	3.75%
All-At-Once	0.00%	16.00%	3.00%

- Rate Adjustments Identified to:
 - Fund increased cost of operations
 - Pay annual debt service payments associated with funding projects identified in the PER
 - Maintain debt service coverage ratios required for compliance with proposed SRF loans
 - Maintain adequate operating and capital reserves

CURRENT RATE COMPARISONS WITH OTHER UTILITIES

Comparison of Monthly Charges for Residential Water Service for Customers Using 10,000 Gallons per Month

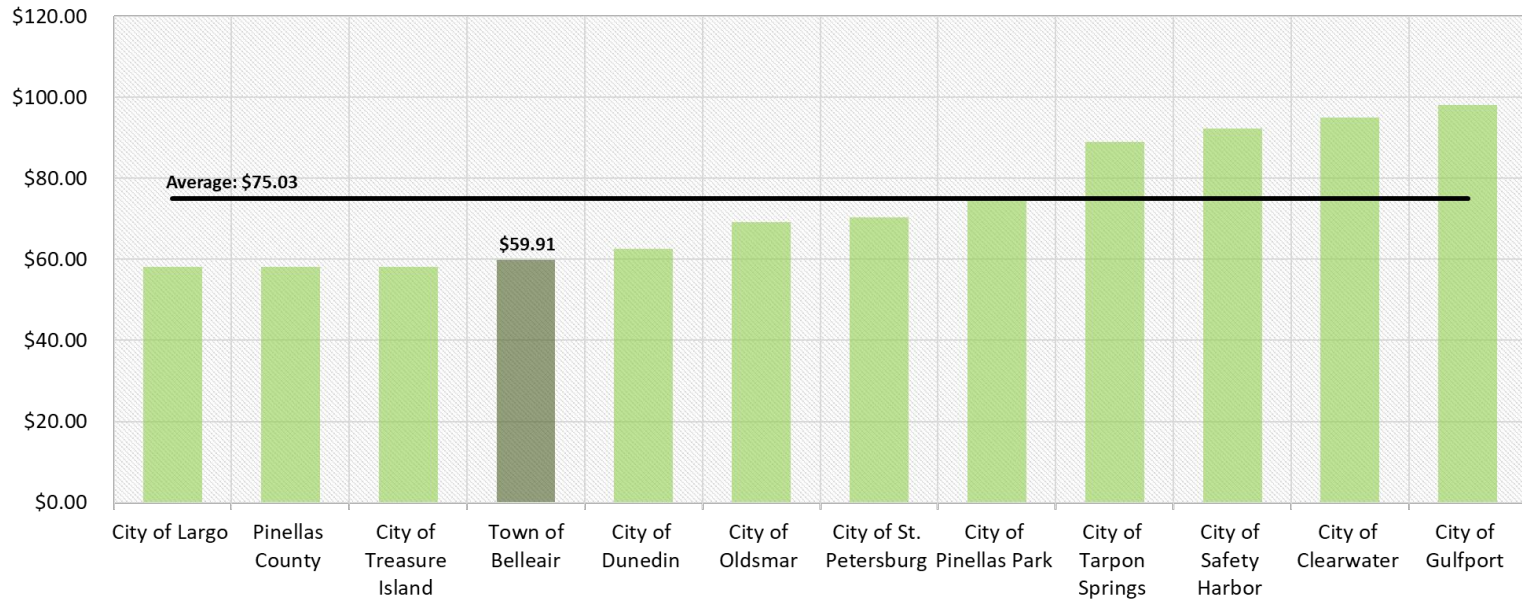


Table 6

**Town of Belleair, Florida
Water Revenue Sufficiency Study**

Comparison of Typical Monthly Residential Bills for Water Service[*]

Line No.	Description	Residential Service for a 5/8" or 3/4" Meter										
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons	10,000 Gallons	15,000 Gallons	20,000 Gallons	50,000 Gallons	75,000 Gallons	100,000 Gallons
1	Town of Belleair Existing Rates	\$12.99	\$16.89	\$20.79	\$27.31	\$40.35	\$59.91	\$92.51	\$125.11	\$353.21	\$548.71	\$744.21
2	Surveyed Florida Utilities:											
2	City of Clearwater	\$24.09	\$24.09	\$33.85	\$43.61	\$63.13	\$94.96	\$156.51	\$218.06	\$587.36	\$895.11	\$1,202.86
3	City of Dunedin	7.47	16.29	25.11	29.52	42.76	62.62	95.72	128.82	427.32	676.07	924.82
4	City of Gulfport	16.93	16.93	34.98	44.56	66.00	98.16	157.36	222.21	611.31	935.56	1,259.81
5	City of Largo	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
6	City of Oldsmar	13.79	19.94	32.24	38.39	50.69	69.14	110.39	163.89	484.89	752.39	1,019.89
7	Pinellas County	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
8	City of Pinellas Park	22.08	22.08	29.44	36.80	51.52	74.46	115.46	159.85	431.35	657.60	883.85
9	City of Safety Harbor	22.81	30.11	37.41	41.06	59.30	92.37	195.02	297.67	1,187.17	1,928.42	2,669.67
10	City of St. Petersburg	13.18	22.70	32.22	36.98	48.19	70.42	111.07	164.77	809.17	1,346.17	1,883.17
11	City of Tarpon Springs	23.24	32.00	40.75	45.13	62.64	88.90	143.72	212.35	828.34	1,362.13	1,895.91
12	City of Treasure Island	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
13	Surveyed Florida Utilities' Average	\$14.91	\$21.39	\$31.63	\$37.58	\$52.03	\$75.03	\$121.50	\$172.35	\$559.71	\$884.37	\$1,209.03
14	Minimum	6.80	16.29	25.11	29.52	42.71	58.10	83.75	109.40	263.30	391.55	519.80
15	Maximum	24.09	32.00	40.75	45.13	66.00	98.16	195.02	297.67	1,187.17	1,928.42	2,669.67

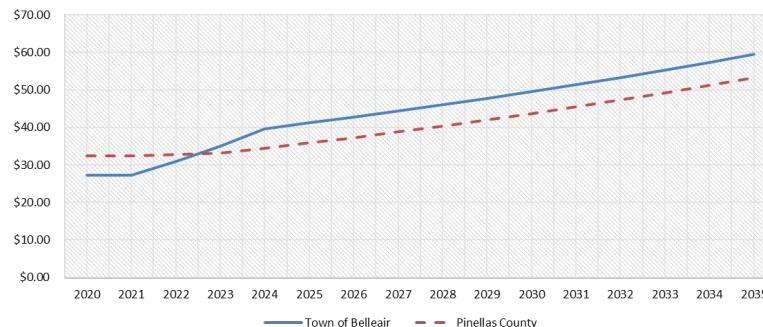
Footnotes:

- [*] Unless otherwise noted, amounts shown reflect residential rates in effect October 2020 and are exclusive of taxes, franchise fees or water restriction surcharges, if any, and reflect rates charged for inside the city service. All rates are as reported by the respective utility. This comparison is intended to show comparable charges for similar service for comparison purposes only and is not intended to be a complete listing of all rates and charges offered by each listed utility.

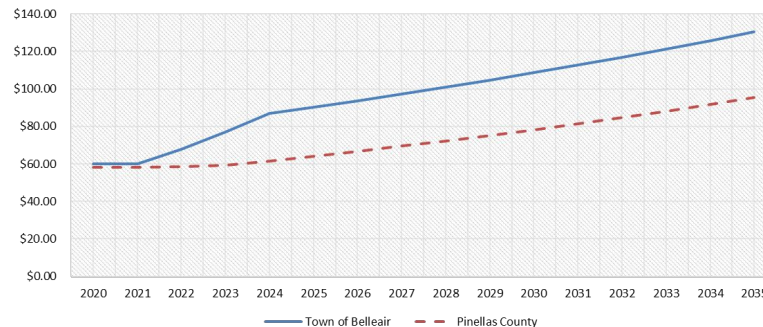
RATE COMPARISONS WITH PINELLAS COUNTY

- Assumes Identified Rate Increases from Preliminary Results for Town
- Pinellas County Assumed Rate Adjustments:
 - County did not implement retail water rate adjustments for fiscal year 2021
 - 1.0% per year for fiscal years 2022 – 2023
 - 4.0% per year thereafter
- Assumes Town Would be Retail Customer of the County
- Does Not Consider Potential for:
 - Sale of Town water distribution line assets
 - Payment of impact fees to the County
 - Costs that may still be incurred by Town

Residential Bill Comparison at 5,000 Gallons



Residential Bill Comparison at 10,000 Gallons

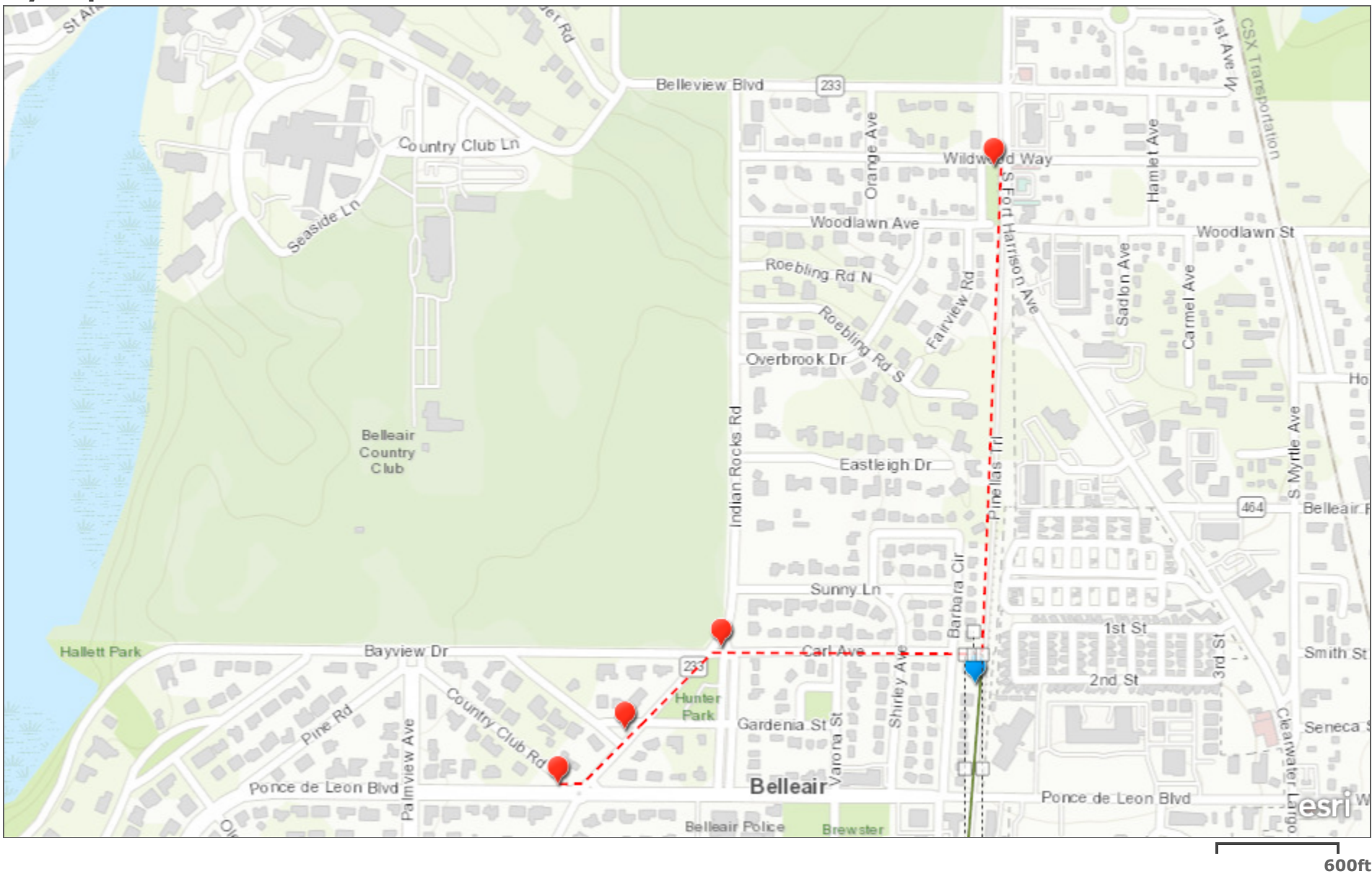


Comparison of Typical Monthly Residential Bills for Water Service to Pinellas County - All at Once Scenario

Line No.	Description	Residential Service for a 5/8" or 3/4" Meter										
		0 Gallons	2,000 Gallons	4,000 Gallons	5,000 Gallons	7,000 Gallons	10,000 Gallons	15,000 Gallons	20,000 Gallons	50,000 Gallons	75,000 Gallons	100,000 Gallons
Town of Belleair												
1	2020	\$12.99	\$16.89	\$20.79	\$27.31	\$40.35	\$59.91	\$92.51	\$125.11	\$353.21	\$548.71	\$744.21
2	2021	12.99	16.89	20.79	27.31	40.35	59.91	92.51	125.11	353.21	548.71	744.21
3	2022	15.07	19.59	24.11	31.67	46.79	69.47	107.27	145.07	409.62	636.37	863.12
4	2023	17.48	22.72	27.96	36.73	54.27	80.58	124.43	168.28	475.13	738.13	1,001.13
5	2024	20.28	26.36	32.44	42.61	62.95	93.46	144.31	195.16	551.01	856.01	1,161.01
6	2025	20.89	27.15	33.41	43.89	64.85	96.29	148.69	201.09	567.74	881.99	1,196.24
7	2026	21.52	27.96	34.40	45.19	66.77	99.14	153.09	207.04	584.74	908.49	1,232.24
8	2027	22.17	28.81	35.45	46.56	68.78	102.11	157.66	213.21	602.26	935.76	1,269.26
9	2028	22.84	29.68	36.52	47.96	70.84	105.16	162.36	219.56	620.26	963.76	1,307.26
10	2029	23.53	30.57	37.61	49.39	72.95	108.29	167.19	226.09	638.74	992.49	1,346.24
11	2030	24.24	31.50	38.76	50.89	75.15	111.54	172.19	232.84	657.74	1,021.99	1,386.24
12	2031	24.97	32.45	39.93	52.42	77.40	114.87	177.32	239.77	677.47	1,052.72	1,427.97
13	2032	25.72	33.42	41.12	53.98	79.70	118.28	182.58	246.88	697.68	1,084.18	1,470.68
14	2033	26.49	34.43	42.37	55.62	82.12	121.87	188.12	254.37	718.62	1,116.62	1,514.62
15	2034	27.28	35.46	43.64	57.29	84.59	125.54	193.79	262.04	740.29	1,150.29	1,560.29
16	2035	28.10	36.52	44.94	59.00	87.12	129.30	199.60	269.90	762.45	1,184.70	1,606.95
Pinellas County												
17	2020	\$6.80	\$17.06	\$27.32	\$32.45	\$42.71	\$58.10	\$83.75	\$109.40	\$263.30	\$391.55	\$519.80
18	2021	6.80	17.06	27.32	32.45	42.71	58.10	83.75	109.40	263.30	391.55	519.80
19	2022	6.87	17.23	27.59	32.77	43.13	58.67	84.57	110.47	265.87	395.37	524.87
20	2023	6.94	17.40	27.86	33.09	43.55	59.24	85.39	111.54	268.44	399.19	529.94
21	2024	7.22	18.10	28.98	34.42	45.30	61.62	88.82	116.02	279.22	415.22	551.22
22	2025	7.51	18.83	30.15	35.81	47.13	64.11	92.41	120.71	290.51	432.01	573.51
23	2026	7.81	19.59	31.37	37.26	49.04	66.71	96.16	125.61	302.31	449.56	596.81
24	2027	8.12	20.38	32.64	38.77	51.03	69.42	100.07	130.72	314.62	467.87	621.12
25	2028	8.44	21.20	33.96	40.34	53.10	72.24	104.14	136.04	327.44	486.94	646.44
26	2029	8.78	22.06	35.34	41.98	55.26	75.18	108.38	141.58	340.78	506.78	672.78
27	2030	9.13	22.95	36.77	43.68	57.50	78.23	112.78	147.33	354.63	527.38	700.13
28	2031	9.50	23.88	38.26	45.45	59.83	81.40	117.35	153.30	369.00	548.75	728.50
29	2032	9.88	24.84	39.80	47.28	62.24	84.68	122.08	159.48	383.88	570.88	757.88
30	2033	10.28	25.84	41.40	49.18	64.74	88.08	126.98	165.88	399.28	593.78	788.28
31	2034	10.69	26.87	43.05	51.14	67.32	91.59	132.04	172.49	415.19	617.44	819.69
32	2035	11.12	27.94	44.76	53.17	69.99	95.22	137.27	179.32	431.62	641.87	852.12

COMPARISON OF FUTURE BILLING - RO ALL AT ONCE VERSUS PC RETAIL						
		<u>2020</u>	<u>2023</u>	<u>2027</u>	<u>2030</u>	<u>2035</u>
BELLEAIR	5 TGAL	\$27.31	\$36.73	\$46.56	\$50.89	\$59.00
	10 TGAL	59.91	80.58	102.11	111.54	129.30
	20 TGAL	125.11	168.28	213.21	232.84	269.90
PINELLAS	5 TGAL	\$32.45	\$33.09	\$38.77	\$43.68	\$53.17
	10 TGAL	58.10	59.24	69.42	78.23	95.22
	20 TGAL	109.40	111.54	130.72	147.33	179.32

My Map



County of Pinellas, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA