



TOWN OF PALM BEACH

Town Manager's Office

**TENTATIVE-
SUBJECT TO
REVISION**

SHORE PROTECTION BOARD MEETING HELD VIRTUALLY VIA ZOOM WEBINAR

Click to participate:
<https://zoom.us/j/92206429383>

AGENDA

THURSDAY, JANUARY 21, 2021

9:00 AM

**TOWN COUNCIL CHAMBERS
360 SOUTH COUNTY ROAD**

WELCOME!

The progress of this meeting may be monitored by visiting the Town's website (www.townofpalmbeach.com) and selecting "Live Meeting Audio" under the "Your Government" tab. If you have questions regarding that feature, please contact the Office of Information Systems (561) 227-6315. The audio recording of the meeting will appear within 24 hours after the conclusion of the meeting under "Agendas, Minutes, and Audio."

I. CALL TO ORDER

II. ROLL CALL

Kane Baker, Shore Protection Board Member
Warren Belmar, Shore Protection Board Member
Melissa Cerialle, Shore Protection Board Member
James C. Gavigan, Shore Protection Board Member
Reuben B. Johnson, III, Shore Protection Board Member
Vladimir Rapoport, Shore Protection Board Member
Erick Reickert, Shore Protection Board Member

III. PLEDGE OF ALLEGIANCE

IV. APPROVAL OF AGENDA

V. SWEARING IN OF APPOINTED MEMBERS

VI. ELECTION OF CHAIR FOR 2021 SHORE PROTECTION BOARD

- VII. ELECTION OF VICE-CHAIR FOR 2021 SHORE PROTECTION BOARD
- VIII. APPROVAL OF THE MINUTES OF THE OCTOBER 1, 2020 AND NOVEMBER 12, 2020 MEETINGS
- IX. COMMUNICATIONS FROM CITIZENS - 3 MINUTE LIMIT PLEASE
- X. CURRENT SHORELINE CONDITIONS
[Robert Weber, Coastal Program Manager]
- XI. 2020 TOWNWIDE SEDIMENT BUDGET REVIEW AND EROSION RATES DISCUSSION
[Robert Weber, Coastal Program Manager, and Michael Jenkins, Ph.D., P.E., Coastal Engineering Principal, Applied Technology & Management, Inc.]
- XII. COASTAL PROJECTS UPDATE
[Robert Weber, Coastal Program Manager]
- Lake Worth Inlet
 - o Maintenance Dredging
 - o Sand Transfer Plant
 - 2021 Phipps Ocean Park Beach Nourishment
 - 2021 Dune Restoration in Reaches 3, 4, 7, 8, and 9
 - The Breakers/Clarke Avenue/Mid-Town Shoreline Stabilization Project
 - Groin Rehabilitation
- XIII. OVERVIEW OF EROSION CONTROL LINES
[Robert Weber, Coastal Program Manager]
- Future Extension of Mid-Town Beach Nourishment Project Area
- XIV. ESTABLISH SHORE PROTECTION BOARD GOALS FOR 2021 CALENDAR YEAR AND 10-YEAR OUTLOOK
[Patricia Strayer, P.E., Town Engineer]
- XV. SCHEDULING OF FUTURE MEETINGS
[Patricia Strayer, P.E., Town Engineer]
- Regular SPB Meeting, April 22, 2021
 - o FY 2022 Coastal Management Program Budget
 - o Easements
 - o Seawalls
- XVI. COMMUNICATIONS FROM SHORE PROTECTION BOARD MEMBERS
- XVII. ANY OTHER MATTERS
- XVIII. ADJOURNMENT

Note: Disabled persons who need an accommodation in order to participate in the Town Council Meeting are requested to contact the Town Manager's Office at 838-5410 or through the Florida Relay Service by dialing 1-800-955-8770 for voice callers or 1-800-955-8771 for TDD callers, at least two (2) working days before this meeting.



TOWN OF PALM BEACH

Town Manager's Office

MINUTES OF THE SHORE PROTECTION BOARD MEETING HELD ON THURSDAY, OCTOBER 1, 2020

I. CALL TO ORDER

The Shore Protection Board meeting was called to order on Thursday, October 1, 2020, at 9:03 a.m. This meeting was held virtually via Zoom Webinar.

Coastal Program Manager, Robert Weber reviewed guidelines for Zoom meeting while in session.

II. ROLL CALL

Chair E. Llwyd Ecclestone led roll call, all of the Board Members and alternate Board Members were present.

III. PLEDGE OF ALLEGIANCE

Chair E. Llwyd Ecclestone led the Pledge of Allegiance.

IV. APPROVAL OF AGENDA

Motion was made by Board Member Warren Belmar and seconded by Vice Chair Lewis Katz to approve the agenda. The motion carried unanimously.

V. APPROVAL OF THE MINUTES OF THE NOVEMBER 21, 2019 AND JANUARY 23, 2020 MEETINGS

Motion was made by Vice Chair Lewis Katz to approve the November 21, 2019 minutes and seconded by Board Member Warren Belmar. The motion carried unanimously.

Motion was made by Vice Chair Lewis Katz to approve the January 23, 2020 minutes and seconded by Board Member Reuben Johnson. The motion carried unanimously.

VI. COMMUNICATIONS FROM CITIZENS - 3 MINUTE LIMIT PLEASE

There were no communications from citizens.

1 **VII. CURRENT SHORELINE CONDITIONS**

2 [Robert Weber, Coastal Program Manager]

3
4 Coastal Program Manager Robert Weber provided presentation of the shoreline. Discussion
5 followed.
6

7 **VIII. COASTAL PROJECTS UPDATE**

8 [Robert Weber, Coastal Program Manager]

9
10 • Lake Worth Inlet Maintenance Dredging

11
12 The Army Corps of Engineers is planning to perform this project this winter, this
13 project is going from a large scale project to an emergency project. The Corps will be
14 taking the sand from the inlet and depositing it in the near shore. The Corps will include
15 in its budget for the winter of 2021 to put sand on the beach from the inlet. The Town
16 would then construct a “sand forepassing” project to place some of that sand between
17 Palmo Way and Colonial Lane.
18

19 • 2021 Phipps Ocean Park Beach Nourishment

20
21 The project was originally scheduled to be performed at the same time as Mid-Town
22 but due to scheduling and timing to complete by May, the project was delayed until
23 after November 1st. The Corps still has the ability to award this work to a contractor to
24 start in November. Due to additional time, bids were sent out and staff is hoping for a
25 better price then the Corps was able to obtain so work can start as early as November
26 to completely replace the losses from Hurricane Irma. Staff is looking to stockpile
27 material sand to Sloan’s Curve, Reach 8, and stockpile about 85,000 cubic yards to
28 rebuild dunes in Reach 3 and Reach 4 of Mid-Town. Work is to be completed by May
29 1, 2021.
30

31 Chair Ecclestone would like easements on the next agenda.
32

33 • 2021 Dune Restoration in Reaches 7, 8, and 9

34
35 Coastal Program Manager Weber said the project will immediately follow the Beach
36 Nourishment Project at Phipps Ocean Park. It will occur in the later part of spring 2021,
37 85,000 cubic yards of sand will be distributed through all the dune restoration areas.
38 The project will not be completed until May 1st. The dune planting will have to be done
39 the following November, as was done in 2016 and 2017. The extra dune that was placed
40 in 2017 was lost during Hurricane Dorian. FEMA will cost share in replacement of the
41 vegetation in Reach 8 the next time there is planting.
42

43 • Dune Planting

44
45 Coastal Program Manager Weber indicated there is not much of an update with EIS to
46 provide. Staff was hoping to have the record of decision issued from Army Corps
47 months ago. The National Marine Fishery Service is an advisory agency to the Corps.
48 They continue to correspond with the Army Corps and they will be providing

1 information. They have yet to provide their comments to Army Corps, there is no
2 timetable with this advisory agency.

3 4 **IX. MID-TOWN, RECENT AND UPCOMING PROJECTS AND ACTIVITIES**

5 [Robert Weber, Coastal Program Manager]
6

- 7 • Construction of 2020 Mid-Town Beach Nourishment

8
9 Three (3) hopper dredges were used to transport sand from a borrow area offshore of
10 Singer Island to deposit on our beaches in Mid-Town which was funded 50% by the
11 Federal Government. Staff was able to do it so quickly because of all the work staff did
12 over the years leading up to it. Documents, agreements, and easements were in place.
13 It is now a Federal project and the Town does not have to rely on FEMA if there is a
14 storm. The Corps will come back themselves and address renourishment.

15
16 Board Member Melissa Ceriale gave recognition to Coastal Program Manager Robert
17 Weber for the wonderful job he is doing with everything.
18

19 Coastal Program Manager Weber stated there is a public hearing process after the mean
20 high water survey is performed. A hearing to establish an erosion control line could
21 take up to a year and, if we want to do it, the Town needs to get started. It is just as
22 important that the homeowners do not object the erosion control line.
23

24 **Motion was made by Board Member Warren Belmar for the Board to urge Town**
25 **Council to authorize staff to commence work for an erosion control line. Motion**
26 **was seconded by Board Member James Gavigan. The motion carried**
27 **unanimously.**
28

- 29 • Future South Extension of Mid-Town Beach Nourishment Project Area

30 Coastal Program Manager Weber advised this topic was addressed earlier.
31
32

- 33 • Mid-Town Seawall Replacement Design and Permitting

34
35 Coastal Program Manager Weber shared that the seawall is in need of replacement.
36 The Town Council awarded a contract. The regulatory approval process may take a
37 year to complete. This area is in need of a new seawall for protection to last another
38 50+ years.
39

40 Board Member Belmar asked is there a code provision with respect for building or
41 replacing a seawall. Director Brazil replied code requires property owner properly
42 maintain their seawall or replace it, if necessary, it is in code.
43

- 44 • 2021 Dune Restoration in Reaches 3 and 4

45
46 Coastal Program Manager Weber advised this topic was addressed earlier.
47

- 48 • The Breakers/Clarke Avenue/Mid-Town Shoreline Stabilization Project

1
2 Coastal Program Manager Weber presented an update on the Technical Advisory
3 Committee. DEP is suggesting the Town can move forward with the request to
4 rehabilitate groins in this area for Mid-Town. There is still more monitoring to be done
5 to be more conclusive for addressing The Breakers' T-head structures. DEP suggests
6 to continue to monitor and they have not given a conclusion as far as those structures.
7

8 Board Member Melissa Ceriale left meeting at 11:05am.
9

10 **X. SCHEDULING OF FUTURE MEETINGS**

11 [Patricia Strayer, P.E., Town Engineer]

- 12 • Regular SPB Meeting, November 19, 2020
- 13 o Shore Protection Board Annual Report to Town Council
- 14

15 Patricia Strayer, P.E., Town Engineer, presented November 19, 2020 as next Shore Protection
16 Board meeting. Chair Ecclestone indicated that he is not available. Alternate dates were made
17 for consideration for meetings November 12, 2020 and December 3, 2020.
18

19 **Motion made by Board Member Warren Belmar to hold meetings November 12, 2020**
20 **and December 3, 2020. Motion seconded by Vice Chair Lewis Katz. The motion carried**
21 **unanimously with the exception of Board Member Melissa Ceriale she did not weigh in**
22 **as she had left the meeting and was unavailable.**
23

24 Patricia Strayer proposed the following meeting dates for 2021; January 21st, April 22nd and
25 November 18th.
26

27 **Motion made by Board Member Warren Belmar accepting the recommended dates for**
28 **2021 meeting dates and seconded by Vice Chair Lewis Katz. The motion carried**
29 **unanimously. Board Member Melissa Ceriale did not weigh in as she had left the meeting**
30 **and was unavailable.**
31

32 Antonette Fabrizi, Meeting Moderator, indicated those Board Members that will term out is as
33 follows: E. Llwyd Ecclestone's final term will term out December 2020, and Vice Chair Lewis
34 Katz's final term will term out December 2020.
35

36 **XI. COMMUNICATIONS FROM SHORE PROTECTION BOARD MEMBERS**
37

38 Board Member Reuben Johnson shared (1) while Chair E. Llwyd Ecclestone is still on the
39 Board, the Board was going to work hard for easements and hopes to do more as it is a big item
40 in Town. The Renourishment Project could be a \$50 million item for the tax payers of the
41 Town, do not drop; and (2) concerning the groins issue, Member Johnson asked if the Board
42 needs to go to Town Council to do the research to find out over the years, what is the sharing
43 with the Town and residents who have the groins. Research is needed regarding whose
44 responsibility it is and what portion the property owner should be paying.
45

46 Board Member James Gavigan commented following up eminent domain. A jury would create
47 value if going to trial. The big point is the access to the beach between Wells and Sunrise and
48 that there are issues that need to be considered.

1
2 Board Member Warren Belmar had nothing to add at this time.

3
4 Alternate Board Member Vladimir Rapoport shared that he admires the job Coastal Program
5 Manager Robert Weber is doing.
6

7 Board Member Kane Baker said he would like to learn more about the erosion control line
8 pertaining to the DEP. The Board needs to be more comfortable managing them and having a
9 better relationship. The groin at the end of Estée Lauder's house was removed years ago and
10 that caused a problem for Clarke and still hasn't been remedied. The groin should be put back
11 as it would benefit The Breakers and south, the sand needs to be kept there at that point.
12

13 Chair E. Llwyd Ecclestone would like to see The Breakers situation settled. Mr. Ecclestone
14 asked if the erosion control lines are typical. Director Brazil replied it is area specific, it
15 depends on the shore line.
16

17 **XII. ANY OTHER MATTERS**

18
19 There were no other matters presented.
20

21 **XVII. ADJOURNMENT**
22

23 **There being no further business, the Shore Protection Board of October 1, 2020, was**
24 **adjourned at 11:30am. Motion made by Vice Chair Lewis Katz, seconded by Board**
25 **Member Reuben Johnson.**
26

27
28 APPROVED:
29
30
31

32
33 Chairman
34
35

36
37 *Meeting audio is located at:*

38 [https://zoom.us/rec/share/74iA981a9WqrJRp2YWJMdGSOdUF8vgF5inO1BNFmBQxmkljyxcIScPeNrz1kuPA5.0w3](https://zoom.us/rec/share/74iA981a9WqrJRp2YWJMdGSOdUF8vgF5inO1BNFmBQxmkljyxcIScPeNrz1kuPA5.0w3W-JMeuPUwjtpb?startTime=1601557426000)
39 [W-JMeuPUwjtpb?startTime=1601557426000](https://zoom.us/rec/share/74iA981a9WqrJRp2YWJMdGSOdUF8vgF5inO1BNFmBQxmkljyxcIScPeNrz1kuPA5.0w3W-JMeuPUwjtpb?startTime=1601557426000)



TOWN OF PALM BEACH

Town Manager's Office

MINUTES OF THE SHORE PROTECTION BOARD MEETING HELD ON THURSDAY, NOVEMBER 12, 2020

I. CALL TO ORDER

The Shore Protection Board meeting was called to order on Thursday, November 12, 2020, at 9:02 a.m. This meeting was held virtually via Zoom Webinar.

Robert Weber, Coastal Program Manager, reviewed guidelines for Zoom meeting while meeting is in session. Mr. Weber also shared Town Council's memo item regarding Boards and Commissions reduction of Board members.

II. ROLL CALL

All of the Board Members and alternate Board Members were present.

III. PLEDGE OF ALLEGIANCE

Chair E. Llwyd Ecclestone led the Pledge of Allegiance.

IV. APPROVAL OF AGENDA

Motion was made by Board Member Warren Belmar to approve agenda as amended and seconded by Vice Chairman, Lewis Katz. Motion carried unanimously.

V. APPROVAL OF THE MINUTES OF THE OCTOBER 1, 2020 MEETING

Board Member Reuben Johnson would like minutes to be revised for clarification and brought to the January 21, 2021 meeting.

VI. COMMUNICATIONS FROM CITIZENS - 3 MINUTE LIMIT PLEASE

Diane Buehler, Friends of Palm Beach Cleaning Group, presented her findings pertaining to the beach cleanup. Ms. Buehler thanked the Board for their support and education over the years and will continue to do her part cleaning the beaches.

1 **VII. CURRENT SHORELINE CONDITIONS**

2 [Robert Weber, Coastal Program Manager]

3
4 Coastal Program Manager, Robert Weber, provided a presentation of the shoreline condition.
5 Discussion followed.
6

7 **Motion was made by Board Member Melissa Ceriale to have Town Council engage in a**
8 **conversation with the Shore Protection Board and use the Board's knowledge of the**
9 **issues regarding Wells Road. Motion seconded by Vice Chairman Lewis Katz. Motion**
10 **carried unanimously.**
11

12 **VIII. COASTAL PROJECTS UPDATE**

13 [Robert Weber, Coastal Program Manager]

14
15 • Lake Worth Inlet Maintenance Dredging

16
17 Coastal Program Manager, Robert Weber, stated The Corps' contractor is currently
18 dredging the channel and depositing the sand within the -17 foot contour off the Town's
19 shoreline at the north end. As of November 3, more than 30,000 cubic yards of sand had
20 been dredged. The "emergency" event is expected to finish with a dredged volume of
21 109,000 cubic yards of sand sometime before the Thanksgiving holiday on November 26,
22 2020.
23

24 • 2021 Phipps Ocean Park Beach Nourishment

25
26 This project was awarded to Weeks Marine and will start in September. They will be
27 replacing all sand from Hurricanes Matthew and Irma.
28

29 • Dune Planting

30
31 The dune plantings will be planted as soon as possible.
32

33 • Reach 8

34
35 There has been no movement since last Shore Protection Board meeting. Staff is
36 working with the consultant to develop a response.
37

38 • Future South Extension of Mid-Town Beach Nourishment

39
40 GHD is the consultant for this project. Due to recent tropical storms, there has been
41 delays but the project is moving forward.
42

43 • The Breakers/Clarke Avenue Mid-Town Shoreline Stabilization Project

44
45 Comments are back from DEP's technical advisory committee. The consultations were
46 not conclusive enough. DEP has asked staff to continue to see how beaches respond to
47 storms.
48

1
2
3
4 **IX. DRAFT ANNUAL SHORE PROTECTION BOARD REPORT TO COUNCIL**

5 [Robert Weber, Coastal Program Manager]
6

- 7
 - Summary of Term Limits for Shore Protection Board Members

8
9 Project Coastal Manager, Robert Weber, reviewed and discussed the Annual Shore
10 Protection Board Report item that will be presented at the December 8, 2020 Town
11 Council meeting.
12

13 Chair E. Lloyd Ecclestone suggested that alternate Board Members become regular
14 Board Members.
15

16 **Motion made by Board Member Melissa Ceriale to accept the Town Council item**
17 **as revised. Motion seconded by Vice Chair Lewis Katz. Motion carried**
18 **unanimously.**
19

20 **X. NEXT MEETING**

21 [Patricia Strayer, P.E., Town Engineer]
22

23 Next Shore Protection Board meeting will be held on January 21, 2021 from 9:00am – 12:00pm
24

25 **XI. COMMUNICATIONS FROM SHORE PROTECTION BOARD MEMBERS**

26
27 Board Member Melissa Ceriale honored Chairman E. Lloyd Ecclestone and Vice Chairman
28 Lewis Katz for their time served on the Board.
29

30 Board Member Reuben Johnson shared his appreciation for Chairman E. Lloyd Ecclestone and
31 Vice Chairman Lewis Katz.
32

33 Vice Chairman Lewis Katz thanked Coastal Program Manager, Robert Weber, and Public
34 Works Director, Paul Brazil.
35

36 **XII. ANY OTHER MATTERS**

37
38 Board Member Warren Belmar inquired on the recommendation to reduce the size of the Board
39 and Commissions. Coastal Program Manager, Robert Weber, shared the memo that was
40 presented at the Town Council meeting November 10, 2020.
41

42 **Motion was made by Vice Chairman Lewis Katz suggesting the Shore Protection Board**
43 **be kept to seven (7) Board Members due to the complexity. Motion was seconded by**
44 **Board Member Melissa Ceriale. Motion carried unanimously.**
45
46
47
48

1 **XVII. ADJOURNMENT**

2
3 **There being no further business, the Shore Protection Board of November 12, 2020, was**
4 **adjourned at 12:25pm. Motion made by Vice Chair Lewis Katz, seconded by Board**
5 **Member Reuben Johnson.**
6

7
8 APPROVED:
9

10
11
12
13
14
15
16
17
18
19
20

Chairman

Meeting audio is located at:

https://zoom.us/rec/share/NFktgDNNozdiGEHLe78dGXZ_Q0IzTF8ph88e8pJ1WkWdMqMbx0mD0BiInw5g1tKIS.NYkBl83qUc8zDQ4l

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: January 21, 2021

TO: Shore Protection Board

FROM: Kirk W. Blouin, Town Manager

VIA: Robert Weber, Coastal Program Manager

RE: 2020 Town-wide Sediment Budget Review and Erosion Rates Discussion
Item XI.

DATE: January 19, 2021

STAFF RECOMMENDATION

Town staff requests that the Shore Protection Board (SPB) review the attached information and provides direction deemed necessary.

GENERAL INFORMATION

Each year, the Town contracts with a consultant to complete Town-wide physical surveys. This year, the survey was performed by Applied Technology & Management, Inc. (ATM). These surveys are generally conducted in the late summer/fall season. This data is used to compare the short-term change (annual) and the long-term change (20+ years, since the 1990 baseline) of both shoreline position and sand volume.

ATM organizes all physical monitoring data into a Town-wide report that is referred to as the Sediment Budget. The purpose of the Sediment Budget is to provide an analysis of the Town-wide coastal processes including volumetric change data. This analysis aids the Town in planning and implementing appropriate shore protection projects.

The Executive Summary of the Sediment Budget is attached. An explanation of the attached text, maps and figures will be provided in a presentation by ATM at the January 21, 2021 SPB meeting.

Although the Executive Summary and the maps have been produced for the SPB (see attached), the Town-wide 2020 Physical Monitoring Report has not yet been finalized by ATM. Following ATM's completion of the final report, Woods Hole Group (WHG) will provide an independent review of the data and produce a supplement document to the 2020 Sediment Budget. WHG's review of the Sediment Budget is part of their overall annual review of the entire coastal program as specified in the Town's 10-Year Coastal Management Program.

FUNDING/FISCAL IMPACTS

There are no funding or fiscal impacts from this item. The Coastal Management Program budget includes funding for the annual physical monitoring and reporting efforts.

Attachments

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, P.E., Director of Public Works
Patricia Strayer, P.E, Town Engineer
Michael Jenkins, Ph.D., P.E., Applied Technology & Management, Inc.
Bob Hamilton, P.E., Woods Hole Group, Inc.

Town of Palm Beach

Town-Wide 2020

Physical Monitoring Report

Executive Summary

Prepared By:



Prepared For:



Palm Beach Island Beach Management Agreement (BMA)

IPA Permit Number: 0328802-002-BMA &

IPA Permit Number: 0328802-003-BMA

January 2021

Town of Palm Beach
2020 Town-Wide Physical Monitoring Report

EXECUTIVE SUMMARY

This report provides a summary of the Town of Palm Beach shoreline and beach volumetric performance based on physical monitoring data collected in August 2020 as compared to previous monitoring surveys. Additional analysis is provided regarding shoreline conditions north of the Lake Worth Inlet.

Analysis of the 2020 Town-wide survey data suggests that during the most recent monitoring period, the Town's beaches exhibited overall losses in volume throughout the Town, with a total net volumetric loss of 462,203 cubic yards (cy), as measured out to a depth of -26.2 feet. The losses were observed in Reaches 1, 5, 7 and 8 with the greatest losses observed in Reach 7 (Phipps) with a loss of 386,322 cy; followed by Reach 5 with losses of 320,160 cy. Comparatively smaller losses were observed in Reach 1 with a loss of 140,232 cy and Reach 8 with a loss of 40,790 cy.

The gains above the depth of closure (DOC, -26.2 ft. contour) were greatest in Reaches 3 & 4 (Mid-Town) with gains measuring 354,222 cy. Reaches 2 and 6 saw less significant gains of 60,465 cy and 10,614 cy respectively. The gains within Reaches 3 & 4 and the southern end of Reach 2 are directly associated with the 2020 nourishment project which placed material along the Mid-Town segment of the Town's shoreline over this monitoring period. The beach project placed approximately 838,647 cy of sand in 2020.

Gains above the mean high-water line (MHW) were observed in all reaches within the Town with the exception of Reach 1. The greatest gains of 266,280 cy total were observed in Reaches 2, 3 & 4 and directly related to the placement of sand within the Mid-Town region of the Town. Additional gains were observed above MHW in Reach 6 of 39,645 cy. Lesser gains were also observed in the south end of Reach 7 and north end of Reach 8 with a total of 21,954 cy. Reach 1 lost 20,941 cy above MHW.

There is a total overall loss of 462,203 cy in the region of the profile above the DOC. While the DOC is generally the limit in which observable changes occur, analysis of the full profile out to the -40-foot contour showed overall losses seaward of the DOC of 787,954 cy. Additionally, overall losses were observed between the -13 ft. contour and the -26.2 ft. contour (nearshore) of 434,102 cy. Overall gains were only observed above MHW with a total gain of 152,818 cy.

Long term, the Town's beaches have shown positive trends in both shoreline position and average beach volume, although these gains are not evenly distributed. In comparison to 1990 conditions, approximately 8.9 miles or 73 percent of the Town's shoreline has exhibited shoreline advance. This shoreline advance is similar to 2018. Since 1990, the Town's beaches have exhibited a net volumetric gain of 3,977,182 cy.

Over this monitoring period, approximately 9.3 miles (76 percent) of the Town's shoreline has experienced net volumetric gains [above the -26.2 feet contour referenced to the North American Vertical Datum (NAVD88) of 1988]. This represents a decrease in comparison to the 2019 estimate of 11.7 miles (96 percent).

The 2020 sediment budget suggests that over this time period, the beaches of the Town (out to a depth of -26.2 feet) have gained sand at a rate of 137,144 cubic yards per year (cy/yr), on average, since 1990. The long-term construction of beach projects in Mid-Town and Phipps have contributed significantly to this positive rate, adding approximately 228,934 cy/yr, on average, to the system. Accounting for this placement, the beaches of the Town have exhibited a net volumetric deficit on the order of 91,790 cy/yr over this time period. This value is an increase in the deficit estimate in comparison to the 2019 deficit value of 55,694 cy/yr. The 2020 volumetric deficit quantifies the annual volumetric need for the Town's shoreline and does not account for inlet sand bypassing at Lake Worth Inlet (both through maintenance dredging and the STP). This analysis suggests that a volume on the order of 91,790 cy/yr must be placed on an average-annual basis to maintain the current volume of sand within the Town's boundaries (independent of sand bypassing operations at the inlet).

Table ES 1. Data Analysis Results

Location	Change
Short-Term Changes – August 2019 to August 2020	
Average (MHW) Shoreline Change:	
Reach 1: (R-76 to R-78)	-21.6 feet
Reach 2: (R-78 to R-90+400)	-2.6 feet
Reaches 3 & 4: (R-90+400 to R-102+300)	48.7 feet
Reach 5: (R-102+300 to R-110+100)	-31.1 feet
Reach 6: (R-110+100 to R-116+500)	22.6 feet
Reach 7: (R-116+500 to R-128+500)	-23.3 feet
Reach 8: (R-128+500 to R-134)	-6.2 feet
Town-Wide	1.3 feet
Volumetric Changes (to -26.2* feet):	
Reach 1: (R-76 to R-78)	-140,232 cy
Reach 2: (R-78 to R-90+400)	60,465 cy
Reaches 3 & 4: (R-90+400 to R-102+300)	354,222 cy
Reach 5: (R-102+300 to R-110+100)	-320,160 cy
Reach 6: (R-110+100 to R-116+500)	10,614 cy
Reach 7: (R-116+500 to R-128+500)	-386,322 cy
Reach 8: (R-128+500 to R-134)	-40,790 cy
Town-Wide	-462,203 cy
Long-Term Changes – August 1990 to August 2020	
Average (MHW) Shoreline Change:	
Reach 1: (R-76 to R-78)	42.7 feet
Reach 2: (R-78 to R-90+400)	37.6 feet
Reaches 3 & 4: (R-90+400 to R-102+300)	96.6 feet
Reach 5: (R-102+300 to R-110+100)	23.2 feet
Reach 6: (R-110+100 to R-116+500)	49.0 feet
Reach 7: (R-116+500 to R-128+500)	20.8 feet
Reach 8: (R-128+500 to R-134)	-3.7 feet
Town-Wide	41.3 feet
Volumetric Changes (to -26.2* feet):	
Reach 1: (R-76 to R-78)	483,889 cy
Reach 2: (R-78 to R-90+400)	36,571 cy
Reaches 3 & 4: (R-90+400 to R-102+300)	1,413,878 cy
Reach 5: (R-102+300 to R-110+100)	713,100 cy
Reach 6: (R-110+100 to R-116+500)	395,067 cy
Reach 7: (R-116+500 to R-128+500)	880,359 cy
Reach 8: (R-128+500 to R-134)	54,317 cy
Town-Wide	3,977,182 cy

*Note – All years prior to 2012 calculated to 26.5 feet referenced to the National Geodetic Vertical Datum (NGVD).

SUMMARY OF SHORELINE PERFORMANCE BY REACH

Reach 1: (R-76 to R-78)

Reach 1 experienced a net shoreline recession of 21.6 feet during this monitoring period. Total volumetric losses were 140,232 cy, with 57 percent of the loss occurring between the -13.1 foot contour and the DOC (-26.2 ft NAVD88). Gains of 25,927 cy were observed beyond the DOC to -40 feet.

Overall, this reach has exhibited a long-term substantial net shoreline advance of 42.7 feet and volumetric gain (to the DOC) of 483,889 cy since 1990. This long-term advance in shoreline and volume is associated with discharge by the STP within this reach and direct placement of material from inlet maintenance operations.

Reach 2: (R-78 to R-90+400)

Over this monitoring period, the Reach 2 shoreline had an average recession of 2.6 feet. In total, the reach gained a net volume of 60,465 cy over the past year. Volumetric gains occurred throughout the reach and were most significant within the offshore between the -13.1 foot depth contour and the DOC.

Since 1990, the reach has exhibited a net shoreline advance of 37.6 feet, although this gain primarily occurs within the northernmost portion of the reach between R-78 and R-80. Overall, this reach has gained a net volume of 36,571 cy since 1990. Reach 2 historically exhibits the most significant net long-term loss of volume between R-86 and R-88.

Reaches 3 & 4: (R-90+400 to R-102+300)

This segment comprises both north and south segments of the Mid-Town Beach Renourishment project. Over this monitoring period, the reach exhibited a net shoreline advance of 48.7 feet. Gains were observed within the entire segment. These gains can be attributed to the recent Mid-Town beach nourishment in early 2020 which placed 838,647 cy of material. In total this segment gained 354,222 cy above the DOC.

Since 1990, this shoreline segment has exhibited a net increase in volume of 1,413,878 cy and an average advance in shoreline position of 96.6 feet due to direct sand placement. These significant gains are directly attributable to repeated renourishment efforts within this area.

Reach 5: (R-102+300 to R-110+100)

Over the current monitoring period, Reach 5 has experienced a net average shoreline recession of 31.1 feet, with losses occurring throughout the reach except the southern extent (R-109 to R-110+100) where minor gains were observed. The reach exhibited a net volumetric loss of 320,160 cy. While losses were observed throughout every region of the profile, losses were greatest in the nearshore region between the -13.1 ft. contour and the -26.2 ft. contour with losses of 206,577 cy.

Long term, this area has experienced a net shoreline advance of 23.2 feet since 1990 and has gained approximately 713,100 cy (above -26.2 feet NAVD) throughout the entire shoreline segment. Gains in shoreline position and volume are directly attributable to the movement of material into Reach 5 from repeated Mid-Town beach nourishment projects within Reaches 3 & 4. Lacking regular renourishment of the Mid-Town Project, this reach would likely revert to a net

erosion/recession condition consistent with conditions present prior to the initiation of the beach nourishment program.

Reach 6: (R-110+100 to R-116+500)

Over the most recent monitoring period, Reach 6 exhibited a net shoreline advance of 22.6 feet, with the highest advancement occurring at R-111 with a gain of 56.4. This gain occurred in the vicinity of the Florida Department of Transportation (FDOT) revetment. Reach 6 exhibited a net volumetric gain (to the DOC) of 10,614 cy over this monitoring period.

Since 1990, Reach 6 has exhibited a shoreline advancement of 49.0 feet and volumetric gains of 395,067 cy of material.

In general, Reach 6 has remained stable, with a long-term trend of shoreline advance and volumetric gains. Much of this behavior can be attributed to the downdrift effect of the Mid-Town nourishment projects, which have provided a sediment source to both Reaches 5 and 6. The monitoring data suggest that the functional limit of this beneficial downdrift effect occurs within Reach 6, in the vicinity of the FDOT revetment (between R-111 and R-116).

Reach 7: (R-116+500 to R-128+500)

Over the most recent monitoring period, the Reach 7 shoreline has experienced a net recession of 23.3 feet, with largest losses observed in the northern extreme of the reach from R-117 to R-121. Over this monitoring period, Reach 7 lost a net volume of 386,322 cy. Overall losses were observed throughout the reach in all regions of the profile out to the DOC.

Since 1990, Reach 7 has exhibited a net average shoreline advance of 20.8 feet. The reach has exhibited a net volumetric gain of 880,359 cy above the DOC since 1990. Gains have occurred throughout the reach, and are attributable to repeated nourishment of the beach in this reach.

Reach 8: (R-128+500 to R-134)

Over the past year, Reach 8 exhibited a net shoreline recession of 6.2 feet. Shoreline losses occurred throughout the reach with the exception of R-129. This reach exhibited a net volumetric loss above the DOC of 40,790 cy over this monitoring period. The beach experienced a net volumetric loss above MHW of 3,386 cy. Net gains of 54,174 cy were observed in the offshore portion, between the -13.1 and the -26.2-foot contour.

Since 1990, Reach 8 has exhibited a net average shoreline recession of 3.7 feet. Since 1990, the reach has exhibited a net volumetric gain of 54,317 cy (to the DOC).

Beaches North of Lake Worth Inlet

Given concerns regarding the potential interruption of the sand supply of sand to the Sand Transfer Plant (STP), the Town's monitoring program has been extended north to include monuments updrift of the inlet. Over this monitoring period, the 7,152-foot shoreline segment north of the inlet (from R-68 to R-75) exhibited a net volumetric gain of 245,071 cy. This result suggests an increasing supply of sand updrift of the STP and represents a continued change in the trend of net volumetric loss for this area that occurred from 2016 to 2018. Review of the profile at R-75 shows evidence of infilling of the expanded settling basin but suggests that there is still capacity for additional deposition.

LOCATION: G:\WESTPALMBEACH_SHORES\DRAWINGS\PROJECTS\20-5535_TDRP_TOWN-WIDE_MONITORING\TOWN_WIDE\T-90-20_WSHORE_CHANGES_R-1-2.DWG
DATE: 12/15/2020
DRAWN BY: JLM
CHECKED BY: JLM
APPROVED BY: JLM

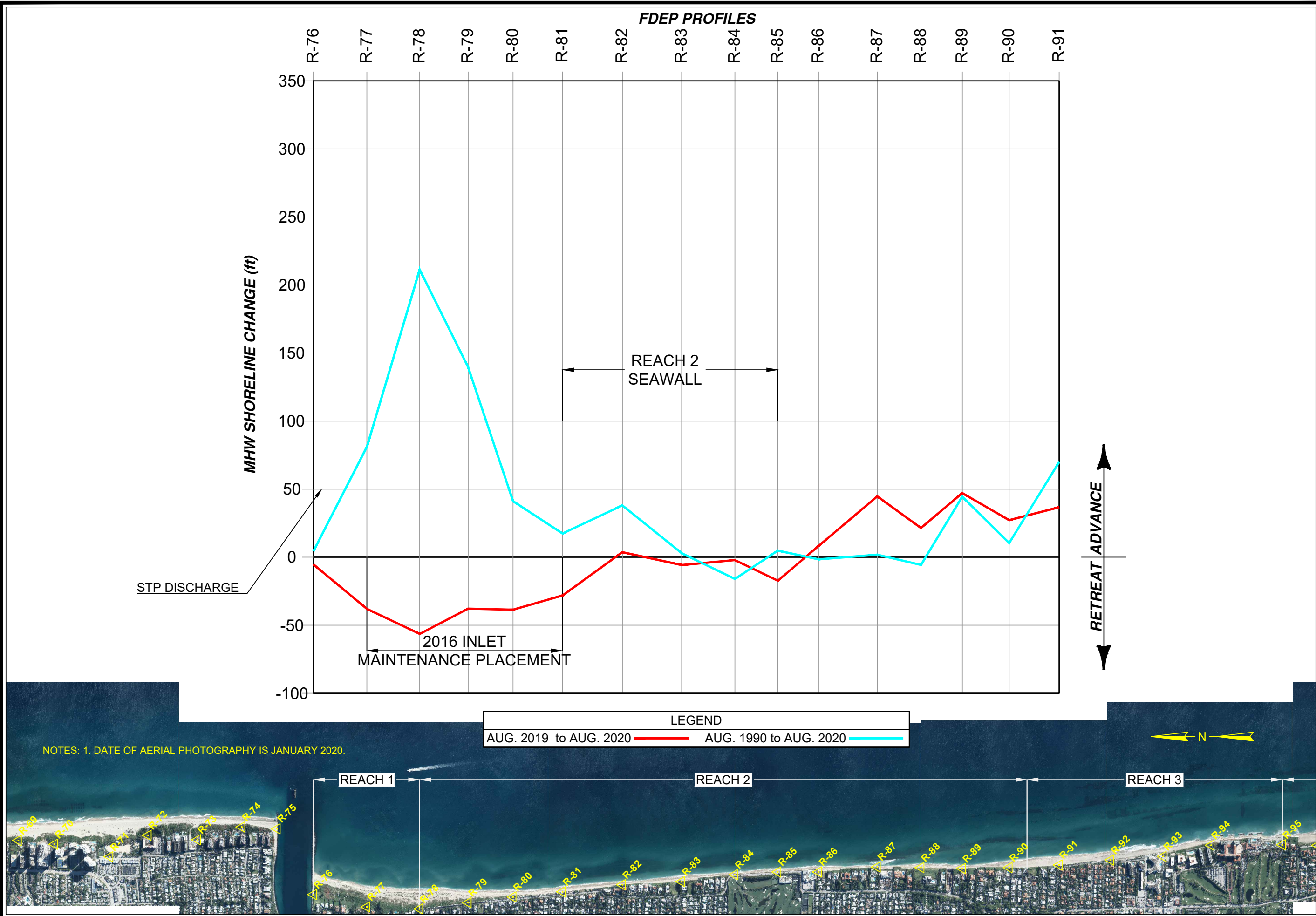
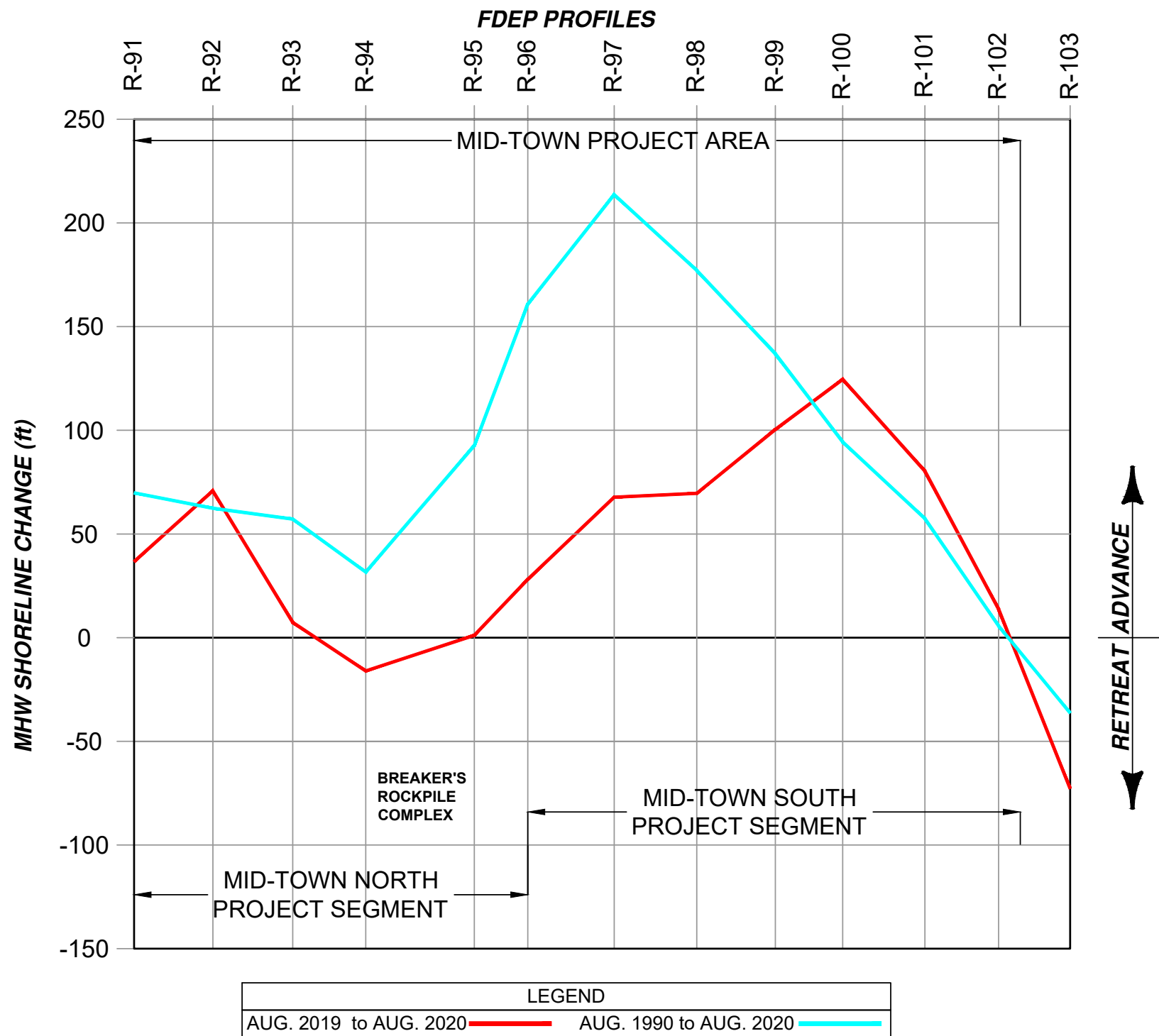


Figure 1a
Shoreline Changes



LOCATION: G:\WESTPALBEACH_SOURCES\DRAWINGS\PROJECTS\20-3533_TDRP_TOWN-WIDE_MONITORING\TOWN_WIDE\90-20_WSHORE_CHANGES_R_3-LDWG
DATE: 11/11/2020 10:00:00 AM
DRAWN BY: JLM
CHECKED BY: JLM
APPROVED BY: JLM



NOTES: 1. DATE OF AERIAL PHOTOGRAPHY IS JANUARY 2020.

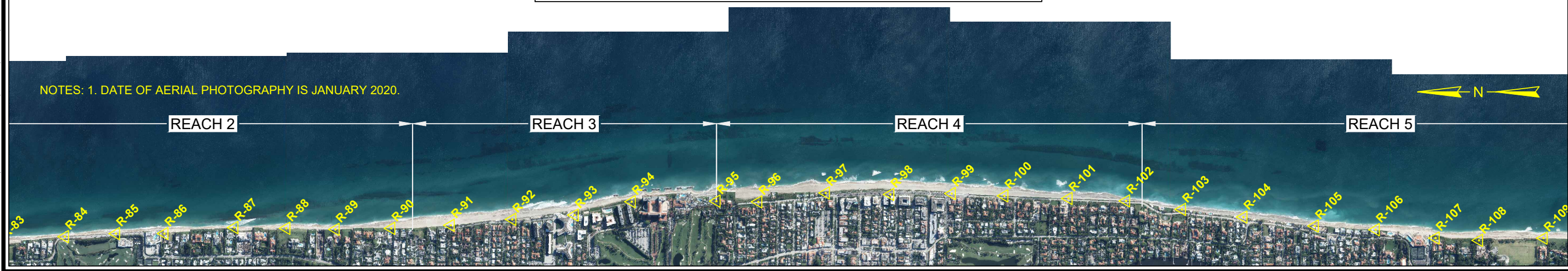


Figure 1b
Shoreline Changes



LOCATION: G:\WESTPALM BEACH SHORES\DRAWINGS\PROJECTS\20-5533-TOPE TOWN-WIDE MONITORING\TOWN WIDE\90-20 WSHORE CHANGES_R 9-6.DWG
DWG#



NOTES: 1. DATE OF AERIAL PHOTOGRAPHY IS JANUARY 2020.



Figure 1c
Shoreline Changes

01/25/2025 10:58:10 AM C:\WATER\BACH\SHARES\DRAWINGS\PROJECTS\20-3535\TOPS\TOWN-WIDE MONITORING\TOWN WIDE\T_90-20\WHSORE CHANGES_R 7-8.DWG

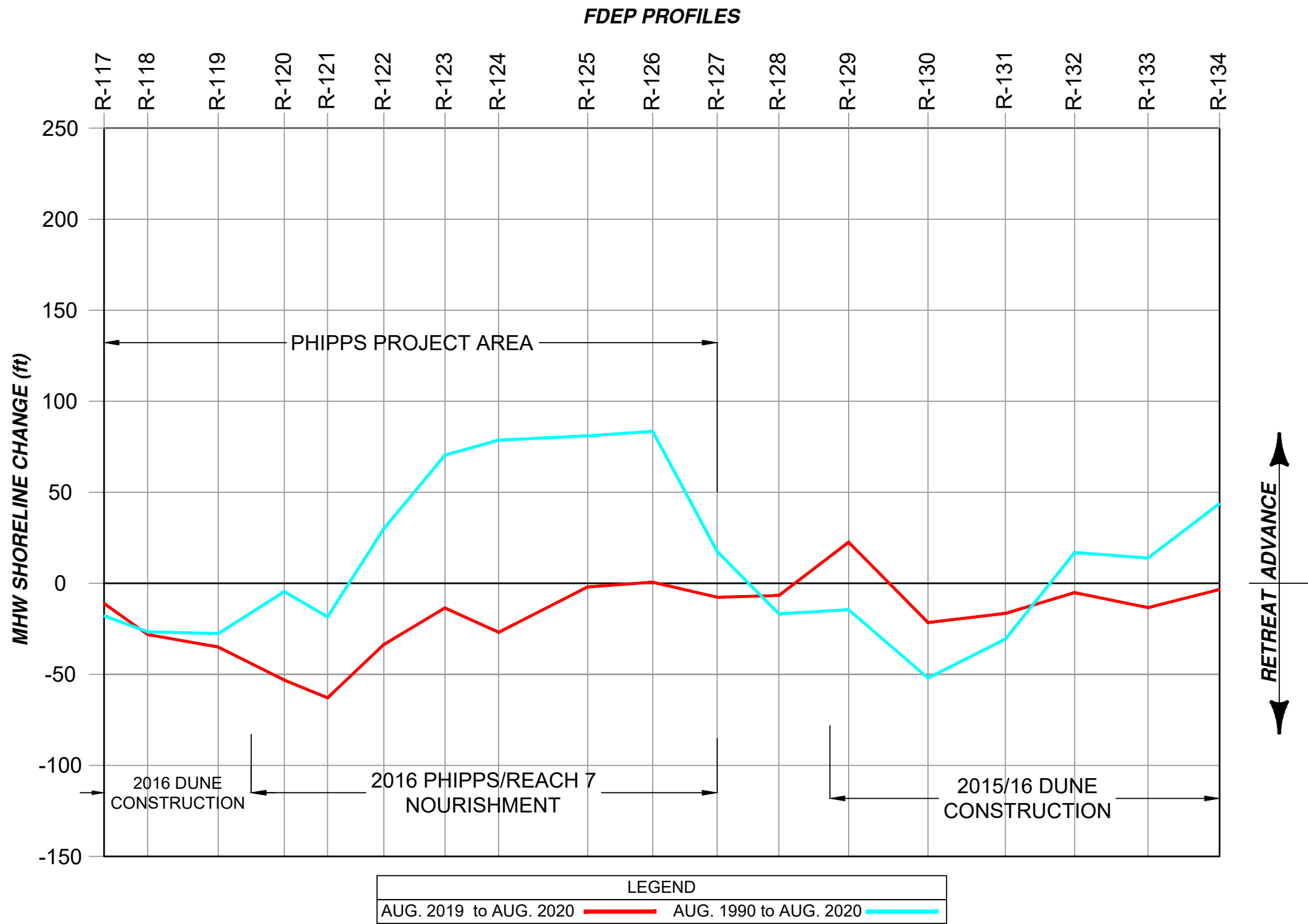


Figure 1d
Shoreline Changes

C:\Users\G\OneDrive\Documents\Projects\20-3535\TOPS\TOWN-WIDE MONITORING\TOWN WIDE\T-19-20 VOL CHANGES_R1-2.dwg



AUG. 2019 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD

(CY)

(REPRESENTS THOUSANDS)

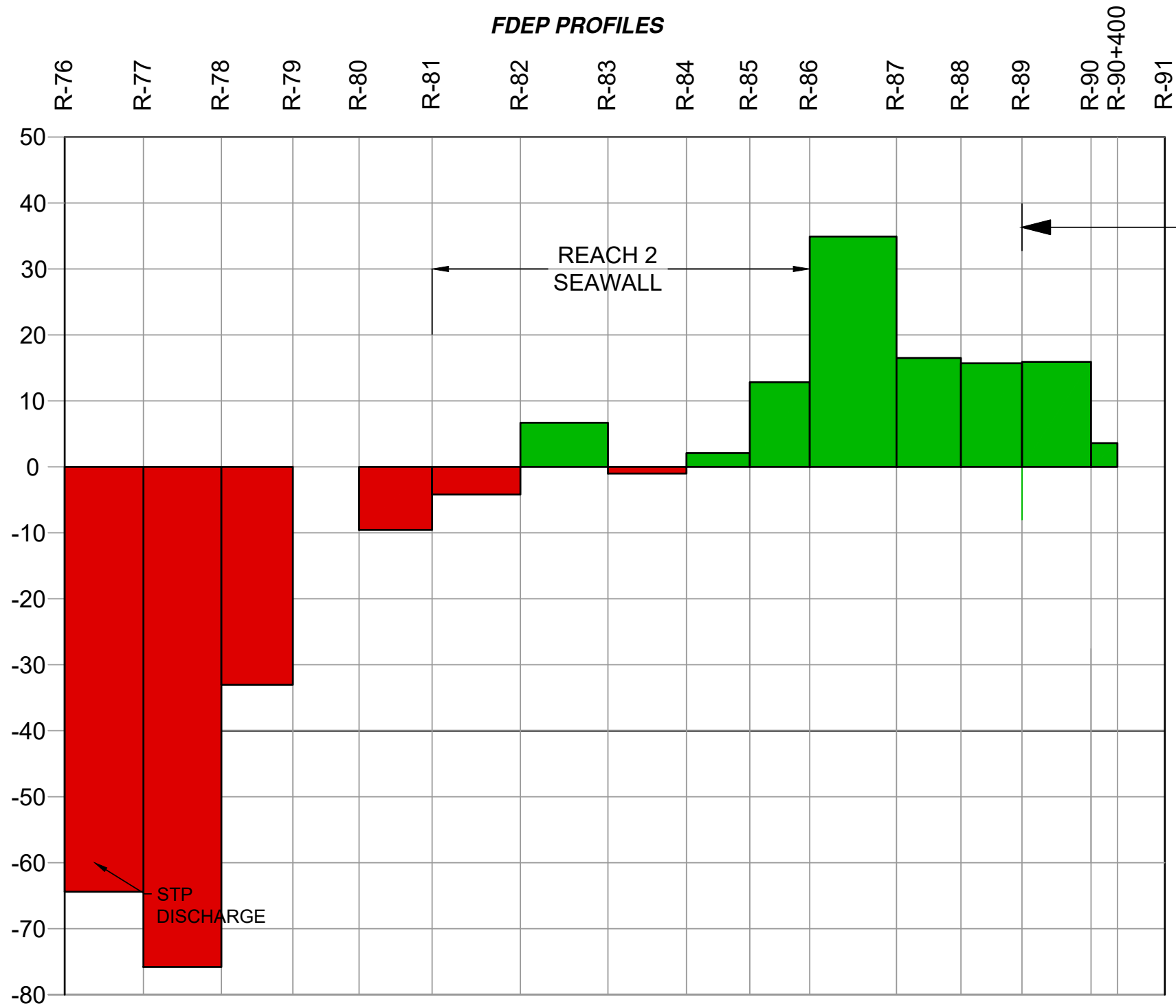
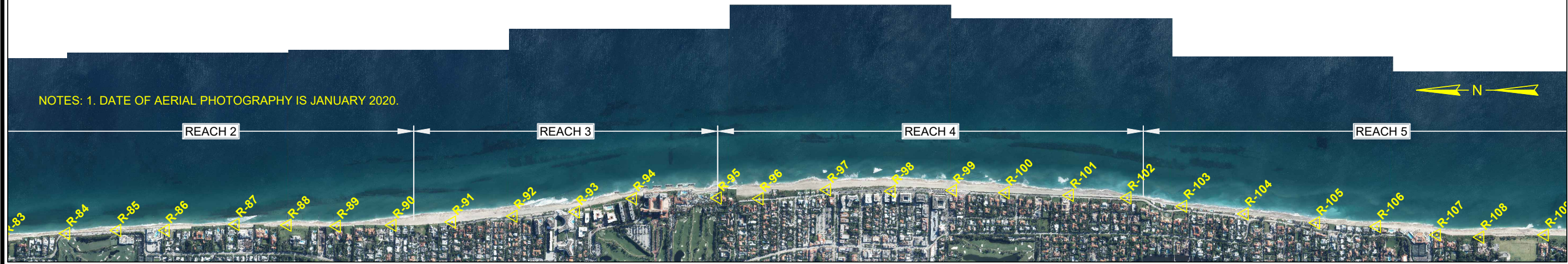


Figure 2a
Aug. 2019 - Aug. 2020 Volume Changes



AUG. 2019 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD

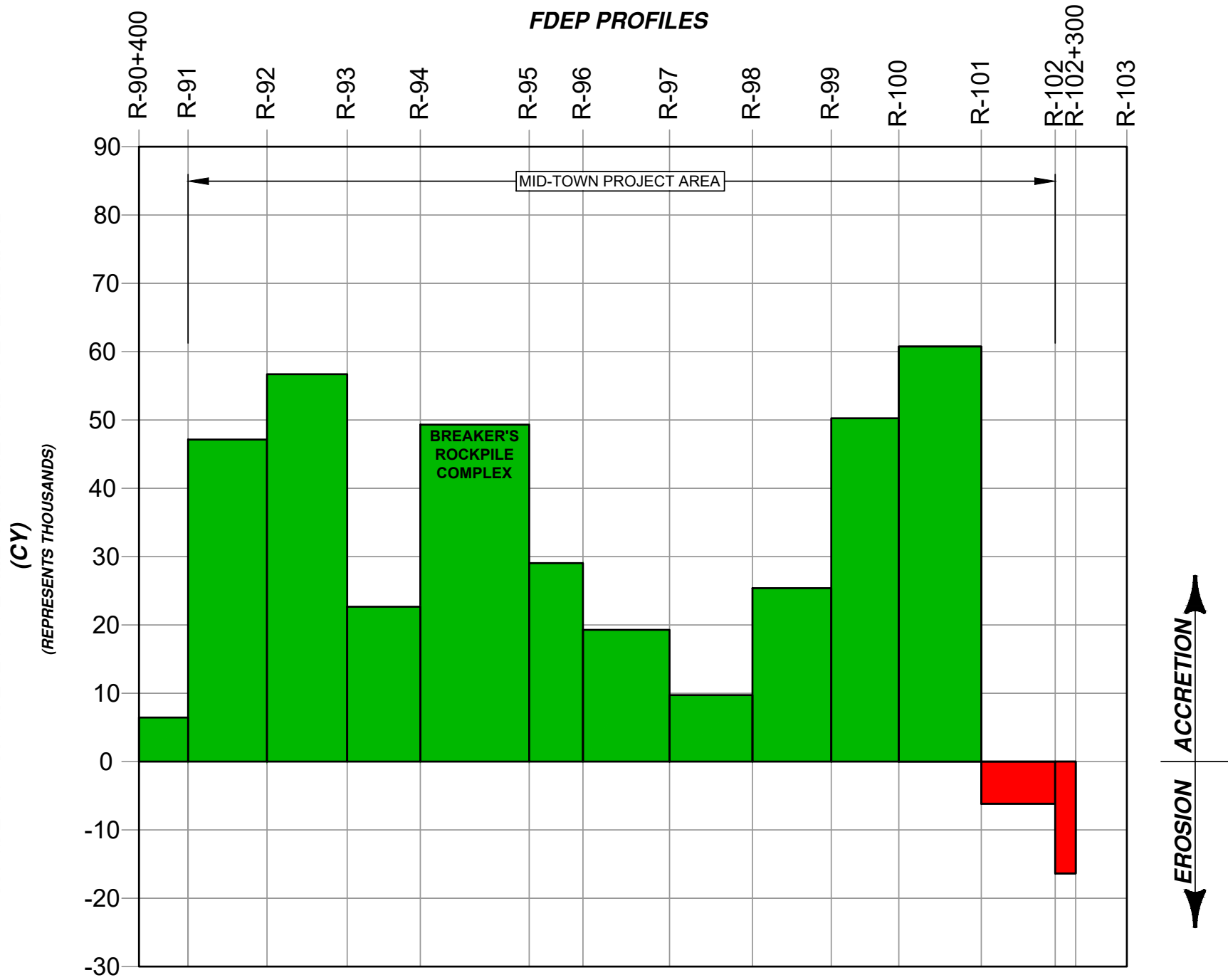


Figure 2b
Aug. 2019 - Aug. 2020 Volume Changes



**AUG. 2019 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD
(CY)**

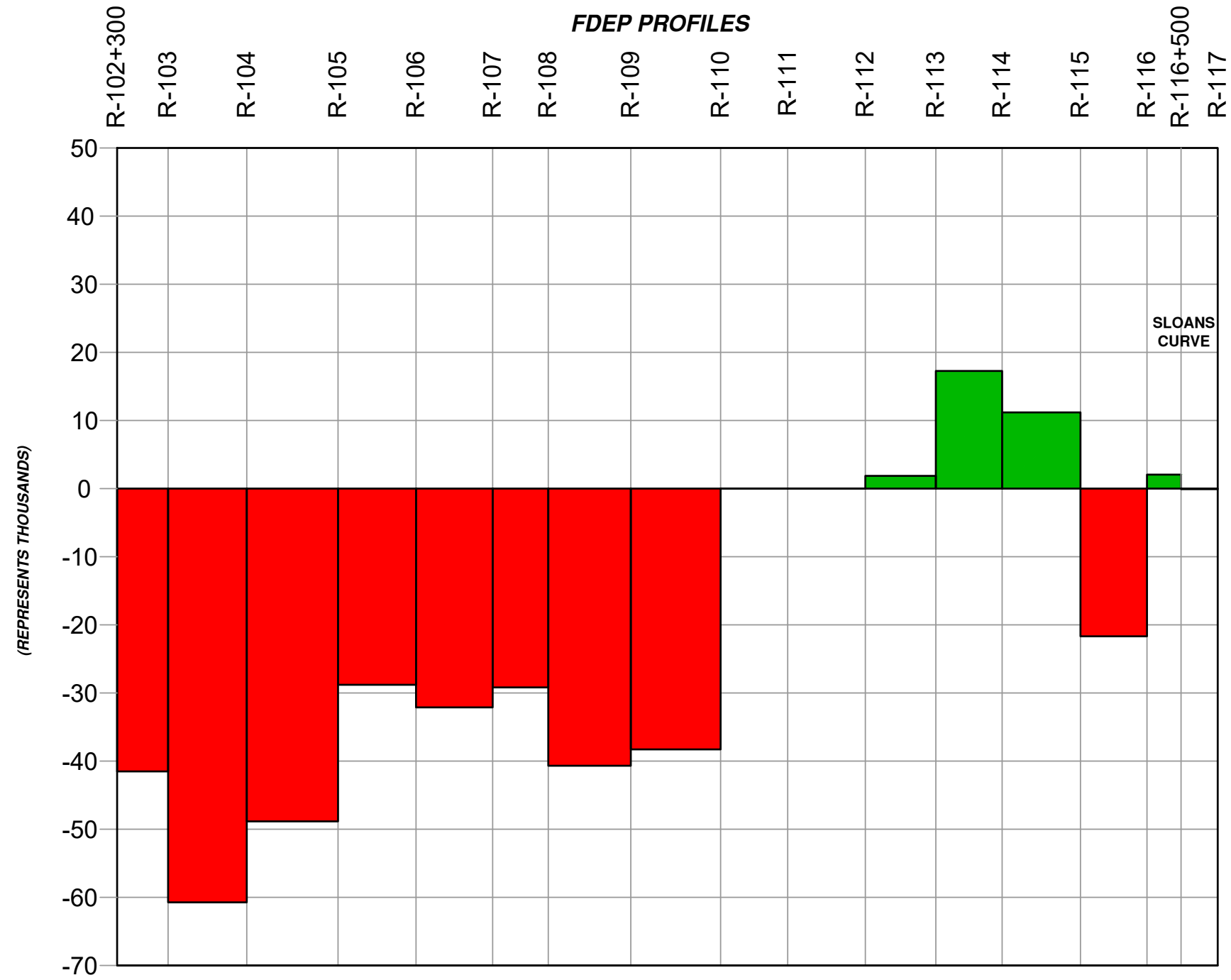


Figure 2c
Aug. 2019 - Aug. 2020 Volume Changes



AUG. 2019 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD

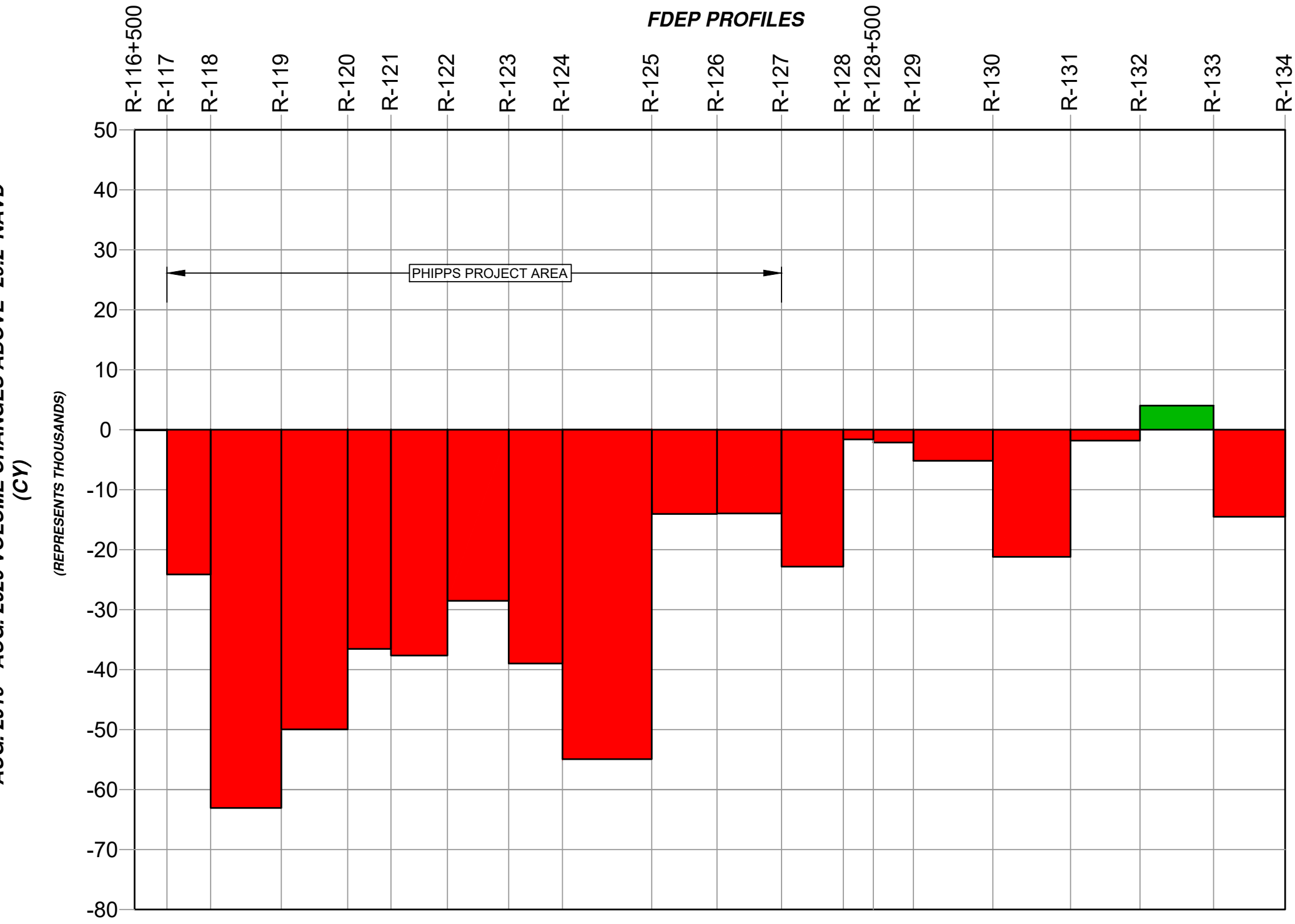
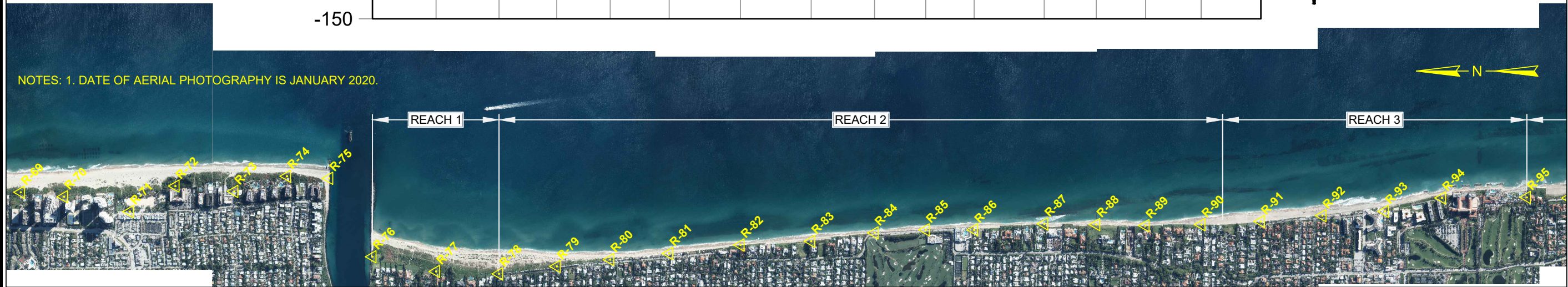


Figure 2d
Aug. 2019 - Aug. 2020 Volume Changes

NOTES: 1. DATE OF AERIAL PHOTOGRAPHY IS JANUARY 2020.



AUG. 1990 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD
(CY)

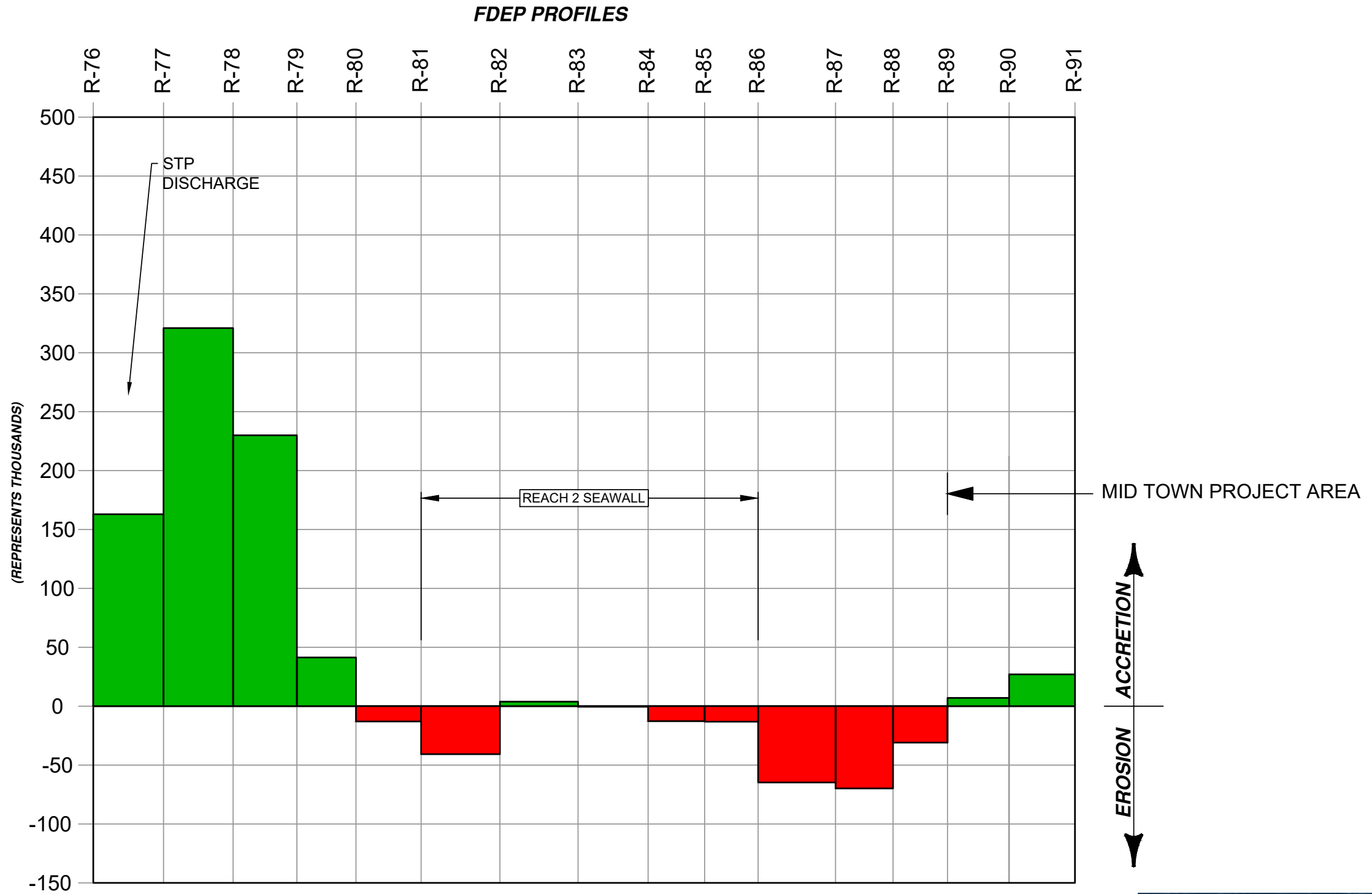


Figure 3a
Aug. 1990 - Aug. 2020 Volume Changes



AUG. 1990 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD
(CY)

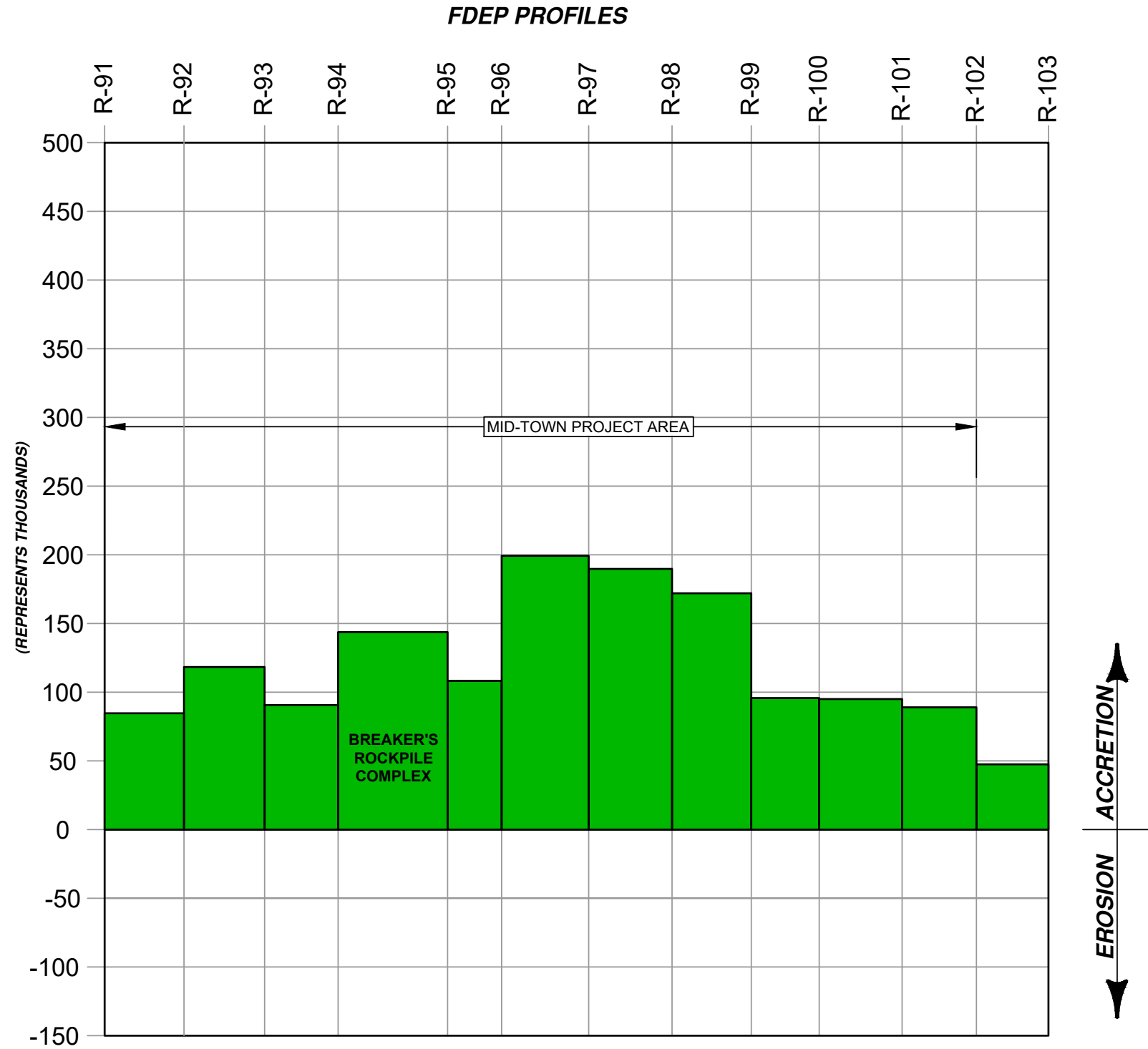
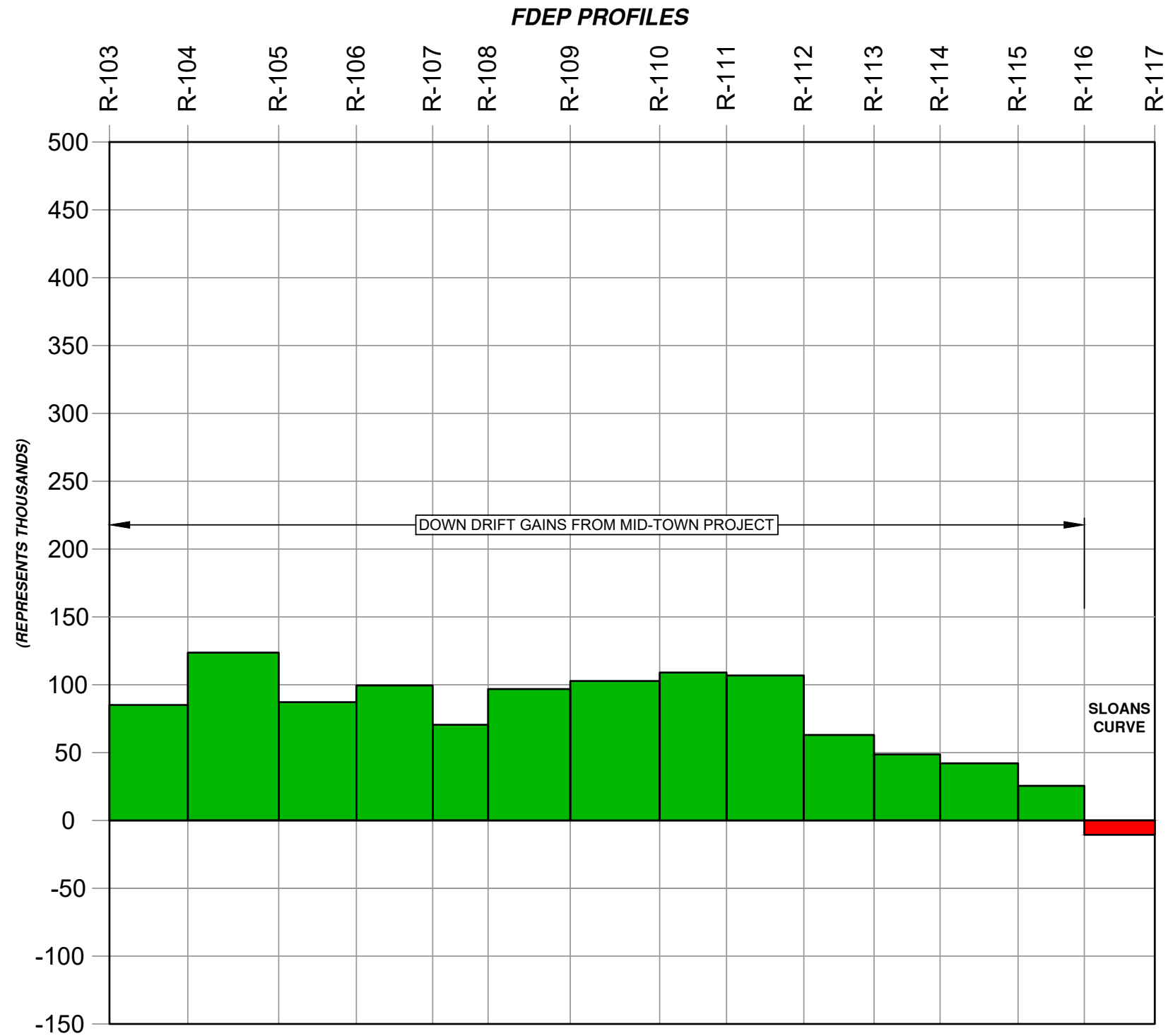


Figure 3b
Aug. 1990 - Aug. 2020 Volume Changes



AUG. 1990 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD

(CY)

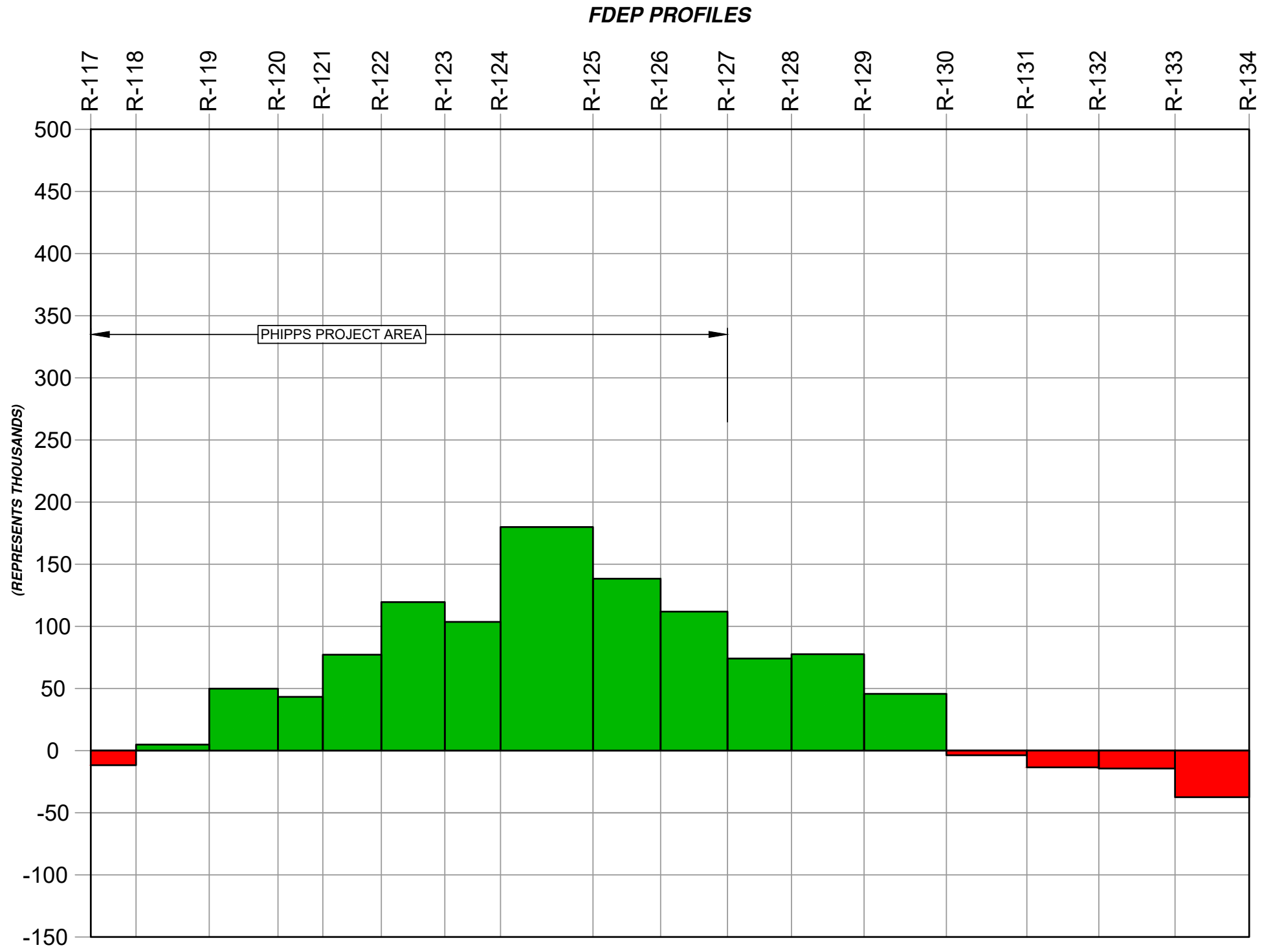


EROSION ACCRETION

Figure 3c
Aug. 1990 - Aug. 2020 Volume Changes



**AUG. 1990 - AUG. 2020 VOLUME CHANGES ABOVE -26.2' NAVD
(CY)**



EROSION ACCRETION

Figure 3d
Aug. 1990 - Aug. 2020 Volume Changes

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: January 21, 2021

TO: Shore Protection Board

FROM: Kirk W. Blouin, Town Manager

VIA: Robert Weber, Coastal Program Manager

RE: Coastal Projects Update
Item XII.

DATE: January 19, 2021

STAFF RECOMMENDATION

Town staff requests the Shore Protection Board (SPB) review the attached information and provide any additional input deemed necessary.

GENERAL INFORMATION

Listed below is a brief update of the ongoing activities for the Coastal Management Program. Town staff will provide more details of each item during the SPB meeting.

Lake Worth Inlet Maintenance Dredging

- The Corps' contractor completed dredging of the navigation channel and a portion of the settling basins and deposited the sand within the -17 foot contour off the Town's shoreline at the north end in December 2020.
- In total, nearly 200,000 cubic yards of sand was dredged and deposited in the nearshore.
- The Corps is scheduling a return to the Lake Worth Inlet in late 2021 to perform a maintenance dredging that will include the channel and all areas of the settling basins.
- The large-scale project will include dry beach placement in Reach 1 and the northernmost portion of Reach 2.

Sand Transfer Plant

- On January 19, 2021, Palm Beach County informed Town staff that they discontinued bypassing efforts on January 14 due to a broken portion of the discharge line.
- Town staff has met with a contractor and is expected to receive an estimate this week to complete the work. Once the estimate has been received, a time table for repairs can be provided.
- Over the past several months, the plant has had down time due to various mechanical and structural repairs.
- The Town has received a proposal from GHD, Inc. to perform an integrity assessment of the facility's components and develop a scheduled capital improvement program to keep the plant operational.

2021 Phipps Ocean Park Beach Nourishment and Dune Restoration in Reaches 7, 8, and 9

- This project was included in the Corps' bid solicitation for Mid-Town. The contractor was unable to complete the work before May 2020, so the project was delayed until the current construction season.
- Construction is expected to occur largely between February and April 2021.
- Town Council awarded a contract to Weeks Marine during their October 13, 2020 regular meeting to construct the Phipps Ocean Park Beach Nourishment Project.
- The project will include a volume of approximately 485,000 cubic yards, all of which is eligible for FEMA cost-sharing due to hurricanes Matthew and Irma.
- In addition, the project includes the stockpiling of sand at Phipps Ocean Park to be later hauled to Reach 8 and Reach 9 (in the Town of South Palm Beach) for dune restoration.
- The Town has solicited bids for the truck-hauling portion and the bid opening is Friday, January 22, 2021.
- The truck-hauling work for dune restoration is expected to begin once the sand stockpile has been placed by the dredging contractor and will occur through the month of April 2021.

The Breakers/Clarke Avenue/Mid-Town Shoreline Stabilization Project

- FDEP concluded that more monitoring of the area should be conducted before justifications can be made for a structural solution in this area.
- Meanwhile, the Town will continue to add sand in this vicinity through beach nourishment and dune restoration.
- Restoration of the groins in Mid-Town may be considered in 2022 and the current 2021 construction season is expected to be exhausted with the upcoming dune restoration project.

Groin Rehabilitation

- Town staff has been working with FDEP staff to have all the groins set for removal and replacement, as permitted in the Federal permit, to be included within the Beach Management Agreement (BMA) through the ongoing update.
- Although the BMA does include groin rehabilitation, the groin rehabilitation plan was not completed until 2015 and the BMA was signed in 2013.
- Two groups of residents, one in Reach 3 and one in Reach 5, are considering performing the removal and restoration of groins in their respective areas utilizing the Town's state and federal regulatory authorizations. The Town is discussing this matter with both the private residences and the regulatory agencies.

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, P.E., Director of Public Works
Patricia Strayer, P.E., Town Engineer

TOWN OF PALM BEACH

Information for Shore Protection Board Meeting on: January 21, 2021

TO: Shore Protection Board

FROM: Kirk W. Blouin, Town Manager

VIA: Robert Weber, Coastal Program Manager

RE: 2021 Goals for Shore Protection Board
Item XIV.

DATE: January 19, 2021

STAFF RECOMMENDATION

Town staff requests the Shore Protection Board (SPB) consider a list of goals for 2021.

GENERAL INFORMATION

During the January SPB meeting, the SPB members discuss and develop board-specific actions to take during the ongoing calendar year. Following the meeting in January 2018, some input was provided individually by the SPB members via email or phone to Town staff. A list was created based on the input received and a discussion item was made for the following meeting.

For 2019, the SPB took this item a step further and held a public workshop in which the SPB reviewed and updated the eight (8) goals and objectives identified by the SPB in 2009. As a result of the workshop, the SPB updated or reaffirmed the following 2009 goals:

1. Continue bypassing 100% of the littoral drift across the inlet through a combination of sand bypassing and inlet dredging and placement of dredged sand on or near the dry beach extending south of Reach 1.
2. Pursue placing dry sand on hot spots (north part of Reach 7, south part of Reach 8) from inlet borrow areas to protect threatened property. *Achieved*
3. Implement permitted coastal hard structure technology where appropriate.
4. Review previous Shore Protection Board's recommendations and conclusions for lessons learned. *Achieved*
5. Initiate discussion, dialogue and problem solving through a series of guest speakers from government officials, industry experts, environmentalists and other municipalities to obtain real solutions to shore protection that include other municipalities and county. Make recommendations accordingly. *Achieved*
6. Continue to work with state and Federal agencies and governments to implement projects to protect its shoreline.
7. Where applicable, cause regulatory agencies to re-designate certain reaches as "Engineered Beach" and "Critically Eroded", e.g. Reach 1 should be an Engineered Beach, etc. *Achieved*

8. Investigate whether seawalls should be replaced in erosion prone areas not currently protected by such as “last resort” property protection. *Achieved*

Five of the eight goals were achieved. The SPB added two new goals: Coastal Vulnerability & Resiliency and Communication.

In 2020, the board unanimously expanded on Goal No. 3 to pursue approval of the groin rehabilitation with the Town Council and to clarify financial responsibility for groin rehabilitation. However, the global health crisis caused the Shore Protection Board meetings to be postponed for a large portion of 2020 and limited work was completed on this item.

Due to the 2020 Mid-Town Beach Nourishment and implementation of other projects, staff had requested that the board consider minimal efforts in 2020 toward long-term goals to appropriately dedicate the time needed to complete construction projects. Due to the 2021 Phipps Ocean Park Beach Nourishment and the various dune restoration projects, staff again makes this same request for 2021.

Should the board decide to create a new list of goals at the January 2021 meeting, Town staff can provide a suggested action plan at the April 22, 2021 SPB meeting.

During the November 12, 2021 SPB meeting, the board requested that staff provide a general outline of the projects to be constructed during the next 10-years. Town staff will be prepared to discuss this outlook at the January 21, 2021 SPB meeting.

cc: Jay Boodheshwar, Deputy Town Manager
H. Paul Brazil, P.E., Director of Public Works
Patricia Strayer, P.E., Town Engineer