



FDEP's Annual Inlet Report

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Office of Resilience and Coastal Protection

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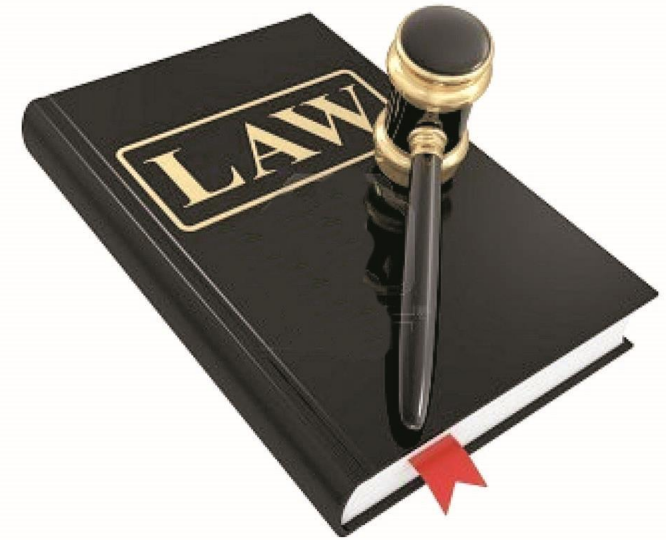
850-245-7696 and 850-245-8280



Overview: New Law on the Books

2019 Revision to Section 161.143 (5) Florida Statutes (F.S.) states:

The department shall update and maintain an annual report on its website concerning the extent to which each inlet project has succeeded in balancing the sediment budget of the inlet and adjacent beaches and in mitigating the inlet's erosive effects on adjacent beaches. The report must estimate the quantity of sediment bypassed, transferred, or otherwise placed on adjacent eroding beaches, or in such beaches' nearshore area, for the purpose of offsetting the erosive effects of inlets on the beaches of this state.





Why is There a New Inlet Law on the Books?

- The annual inlet report (report) provides accountability to the strategies listed within the Inlet Management Plans (IMP).
- The report also provides transparency of how an inlet is being managed with respect to the goal of offsetting its erosive impacts to adjacent beaches consistent with the strategies adopted by an IMP.





A Little History of Inlet Management

- Most inlets were originally created or altered in the early 1900's through the 1950's.
- The first official IMP developed by DEP and a local government (Martin County) was St. Lucie Inlet on Aug. 7th, 1995
- 16 IMPs were developed in the mid to late 1990's and a total of 14 have been developed since 2013.
- There are a total of 24 IMPs currently on the department's web page.



Early development of Port Canaveral, 1951



Why Do We Alter and Manage Inlets?



East Pass, 1959



Why Do We Alter and Manage Inlets?

- Ensures inlet navigation which provides access to coastal and offshore resources for recreational and commercial use.
- Ensure ports have safe and effective navigation which promotes economic wellbeing.
- However, the benefits of improved or managed inlets do create an impact to the coastal system.
- Section 161.142, F.S. acknowledges this. |





Why Do We Manage Inlets?

161.142, F.S. Declaration of public policy relating to improved navigation inlets

- Inlet's interrupt or alter the natural drift of beach-quality sand resources, which often results in these sand resources being deposited in nearshore areas or in the inlet channel, or in the inland waterway adjacent to the inlet, instead of providing natural nourishment to the adjacent eroding beaches.***
- The Legislature finds it is in the public interest to replicate the natural drift of sand which is interrupted or altered by inlets to be replaced and for each level of government to undertake all reasonable efforts to maximize inlet sand bypassing to ensure that beach-quality sand is placed on adjacent eroding beaches.***
- Such activities cannot make up for the historical sand deficits caused by inlets but shall be designed to balance the sediment budget of the inlet and adjacent beaches and extend the life of proximate beach-restoration projects so that periodic nourishment is needed less frequently.***





Why Do We Manage or Alter Inlets?



East Pass, 2018



DEP Team Members for the New Report

- Development Team:
- Guy Weeks, Planning Manager - Lead
- Bob Brantly, P.E., Program Administrator
- Mike Manausa, Coastal Engineer
- Sean Green, Permit Manager

- Final Review Staff:
- Laine Edwards, PhD., Deputy Director
- Gregory Garis, Program Administrator
- Bob Brantly, P.E., Program Administrator





Development of the Annual Inlet Report

- First the team gathered the inlet bypass numbers and created the inlet database.
- Thank you, local sponsors and consultants, for assisting with the accurate numbers.

ID	InletName	DredgeDate	VolumeBypass1	VolumeBypass2	AnnualTarget1	AnnualTarget2	Surplus1	Surplus2	DredgeLocation	PlacementLocation
300	St. Augustine Inlet	1/1/2014	0	92,667	185,333	-92,667	-185,333			
300	St. Augustine Inlet	1/1/2015	165,226	0	92,667	185,333	72,559	-185,333	Inlet	Nearshore Vilano
300	St. Augustine Inlet	1/1/2016	0	92,667	185,333	-92,667	-185,333			
300	St. Augustine Inlet	1/1/2017	137,281	0	92,667	185,333	44,614	-185,333	IWW and SAI	R 113 to R 117
300	St. Augustine Inlet	1/1/2018	0	747,185	92,667	185,333	-92,667	561,852	Inlet, ebb shoal	R 139.7 to R 144.4
300	St. Augustine Inlet	1/1/2019	0	0	92,667	185,333	-92,667	-185,333		
300	St. Augustine Inlet	1/1/2020	0	0	92,667	185,333	-92,667	-185,333		
500	Ponce de Leon Inlet	1/1/1997	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/1998	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/1999	0	32,000	0	43,000	0	-11,000	North Channel near IWW	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2000	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2001	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2002	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2003	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2004	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2005	115,339	0	0	43,000	115,339		Inlet	North Beach
500	Ponce de Leon Inlet	12/1/2006	0	255,429	0	43,000	0	212,429	DMMA	South Beach (R161 to R170)
500	Ponce de Leon Inlet	12/1/2007	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2008	0	432,073	0	43,000	0	389,073	IWW	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2009	137,008	0	0	43,000	137,008		Inlet	North Beach
500	Ponce de Leon Inlet	12/1/2010	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2011	0	30,000	0	43,000	0	-13,000	Inlet	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2012	51,160	0	0	43,000	51,160	-43,000	Inlet	
500	Ponce de Leon Inlet	12/1/2013	141,600	0	0	43,000	141,600	-43,000	Inlet	North Beach Nearshore
500	Ponce de Leon Inlet	12/1/2014	0	46,170	0	43,000	0	3,170	Inlet	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2015	0	130,215	0	43,000	0	87,215	Inlet	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2016	0	0	0	43,000	0	-43,000		
500	Ponce de Leon Inlet	12/1/2017	0	34,850	0	43,000	0	-8,150	Inlet	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2018	0	16,080	0	43,000	0	-26,920	Inlet	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2019	0	410,047	0	43,000	0	367,047	Inlet	South Beach Nearshore
500	Ponce de Leon Inlet	12/1/2020	0	0	40,000	20,000	-40,000	-20,000		
610	Port Canaveral Inlet	12/1/2008	0	0	0	156,000	0	-156,000		
610	Port Canaveral Inlet	12/1/2009	0	0	0	156,000	0	-156,000		
610	Port Canaveral Inlet	12/1/2010	0	683,100	0	156,000	0	527,100	North Bypass Borrow Area	
610	Port Canaveral Inlet	12/1/2011	0	78,550	0	156,000	0	-77,450	North Bypass Borrow Area	Patrick Air Force Base
610	Port Canaveral Inlet	12/1/2012	0	0	0	156,000	0	-156,000		
610	Port Canaveral Inlet	12/1/2013	0	0	0	156,000	0	-156,000		
610	Port Canaveral Inlet	12/1/2014	0	17,000	0	156,000	0	-139,000		
610	Port Canaveral Inlet	12/1/2015	0	0	0	156,000	0	-156,000		
610	Port Canaveral Inlet	12/1/2016	0	0	0	156,000	0	-156,000		



Bypassing Numbers

- All the annual inlet bypassing numbers in the inlet database can be seen from the OCULUS link found in the references section of the report.

Annual Bypass Ledger									
	Inlet Name	Managed	Fed	Vol Bypass1 (N/E)	Vol Bypass2 (S/W)	Annual Target1	Annual Target2	Surplus1	Surplus2
Bay									
	Mexico Beach Inlet								
1/1/2008	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29,350	0	32400	0	-3050	0
12/1/2009	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7,850	0	32400	0	-24550	0
12/1/2010	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	28,588	0	32400	0	-3812	0
12/1/2011	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14,538	0	32400	0	-17862	0
12/1/2012	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16,833	0	32400	0	-15567	0
12/1/2013	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29,830	0	32400	0	-2570	0
12/1/2014	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	16,723	0	32400	0	-15677	0
12/1/2015	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	29,508	0	32400	0	-2892	0
12/1/2016	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	36,696	0	32400	0	4296	0
12/1/2017	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	44,267	0	32400	0	11867	0
12/1/2018	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17,922	0	32400	0	-14478	0
12/1/2019	Mexico Beach Inlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>	38,874	0	32400	0	6474	0



Development of the Annual Inlet Report

- Formatting the data and developing the graphics for the report.

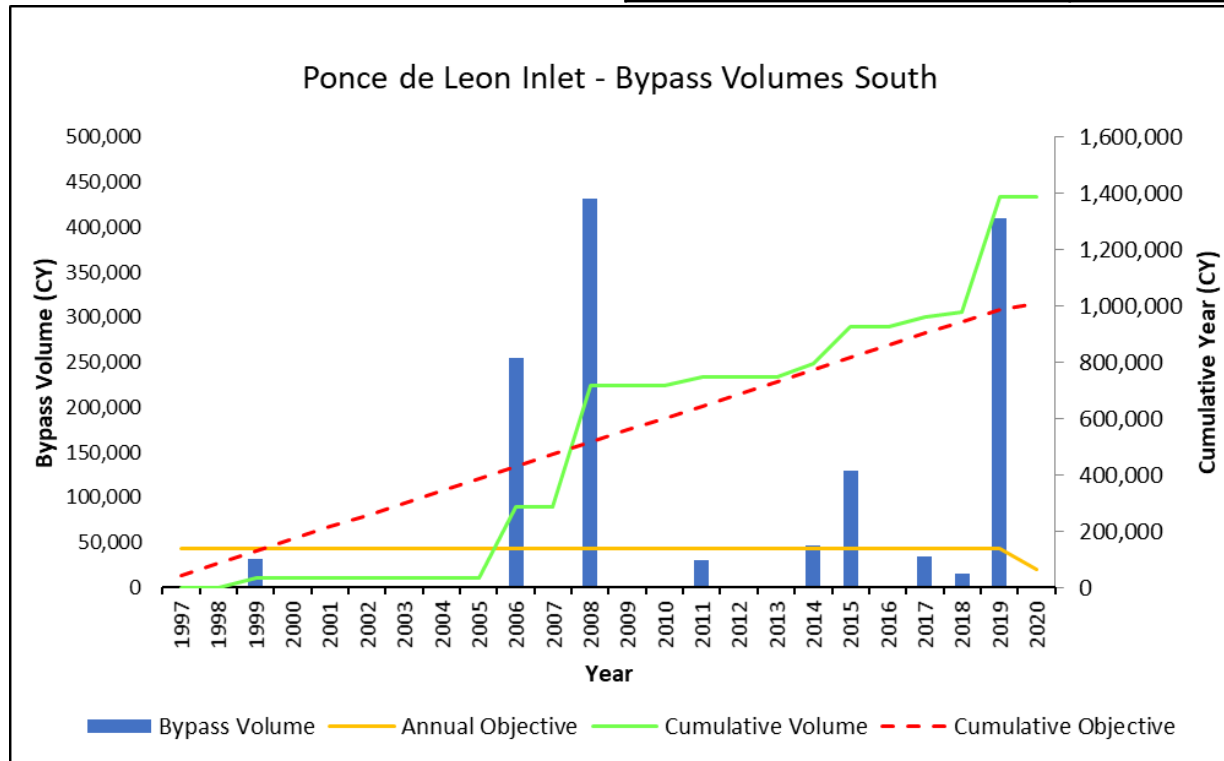
*Ponce de Leon Inlet Management Plan and **bypass objective**

Ponce de Leon Inlet bypass **summary of sand bypass volumes, since 1997

County	Inlet	Year IMP Adopted or Updated	Annual Bypass Objective North (CY)	Annual Bypass Objective South (CY)
Volusia	Ponce de Leon	1997	0	43,000
Volusia	Ponce de Leon	2020	40,000	20,000

Bypassing Matrix	North Bypass (CY)	South Bypass (CY)
Cumulative Volume Bypassed:	445,107	1,386,864
Cumulative Objective:	0	1,009,000
Annualized Volume Bypassed:	18,546	57,786
Surplus (Deficit):	0	377,864
Percent Objective Met:	N/A	137.45%

* Some bypass objectives are from the SBMP





Development of the Annual Inlet Report

- The basic template for the report was modeled after the SBMP.
- 25 altered and managed inlets that are listed in the report.
- Introduction.
- Northeast Atlantic Coast Inlets,
- Central Atlantic Coast Inlets.
- Southeast Atlantic Coast Inlets.
- Panhandle Gulf Coast Inlets.
- Southwest Gulf Coast Inlets.
- References.

A photograph of a brown, rounded rectangular object, possibly a book cover or a folder, displaying a "Table of Contents" page. The text is printed in a serif font and lists various sections and inlets with their corresponding page numbers.

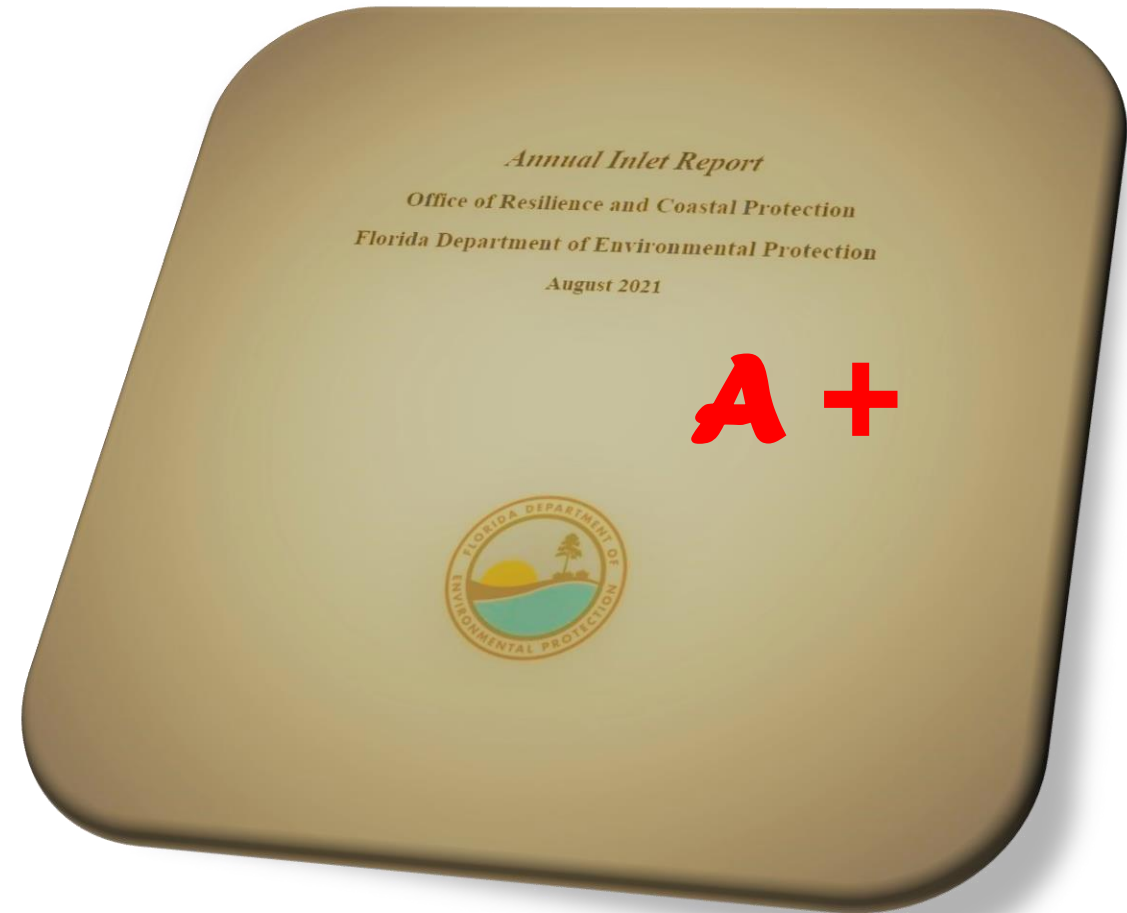
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Inlet Bypassing Numbers

- Inlet bypassing vs. inlet borrow areas for beach nourishment.
- What is the difference?
- Asking the Tough Questions: imagine giving out a student test score with a grade of 605%.
- A+++++
- How the Department gave credit for the inlet bypassing numbers.

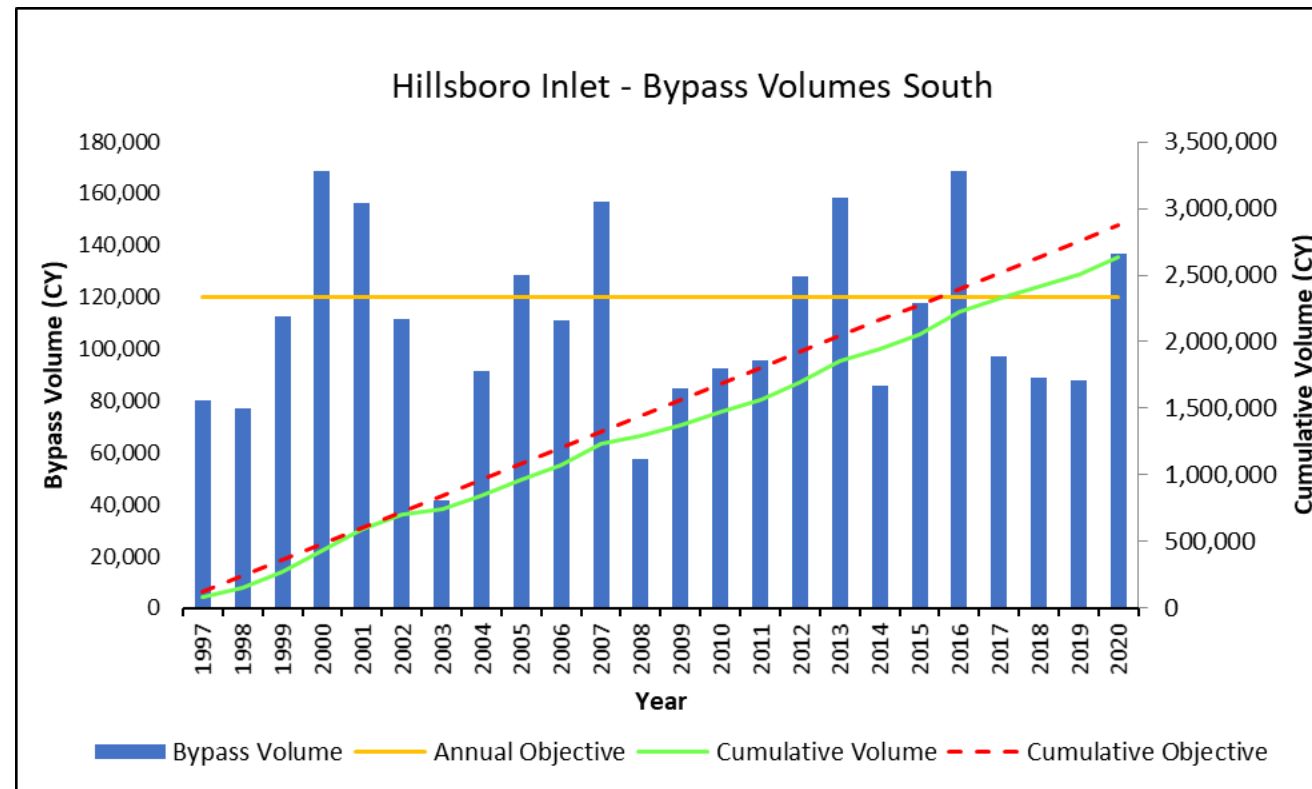




Inlet Examples - Inlet Bypassing Numbers

County	Inlet	Year IMP Adopted or Updated	Annual Bypass Objective North (CY)	Annual Bypass Objective South (CY)
Broward	Hillsboro	1997	0	120,000

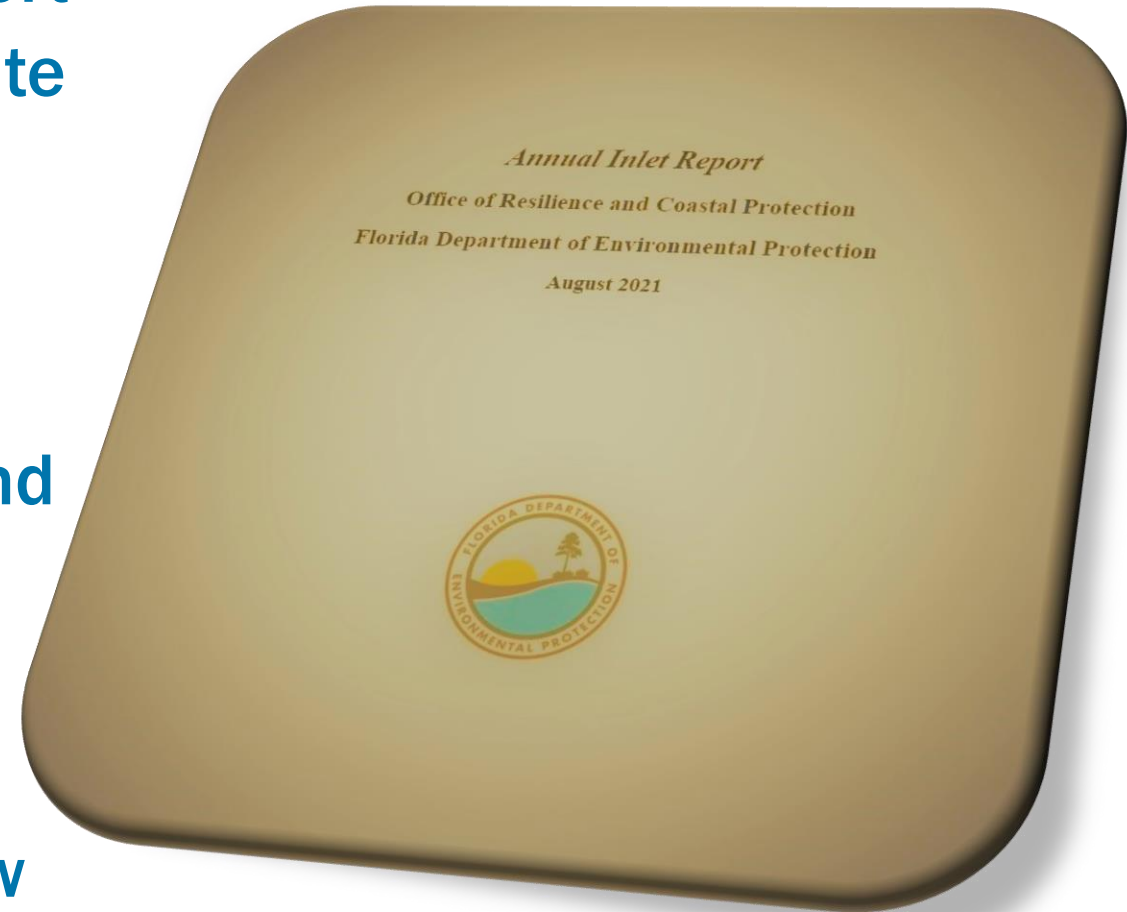
Bypassing Matrix	North Bypass (CY)	South Bypass (CY)
Cumulative Volume Bypassed:	0	2,637,981
Cumulative Objective:	0	2,880,000
Annualized Volume Bypassed:	0	109,916
Surplus (Deficit):	0	-242,019
Percent Objective Met:	N/A	91.60%





Inlet Bypassing #'s

- First, we had two projects in the report where a formula was used to separate out the inlet bypassing numbers vs. beach nourishment numbers
- St. Lucie Inlet and Stump Pass
- Both have footnotes under the second table about the cumulative volume calculation.
- The methodology used by the Department was consistent with how projects are classified in the LGFR ranking process.

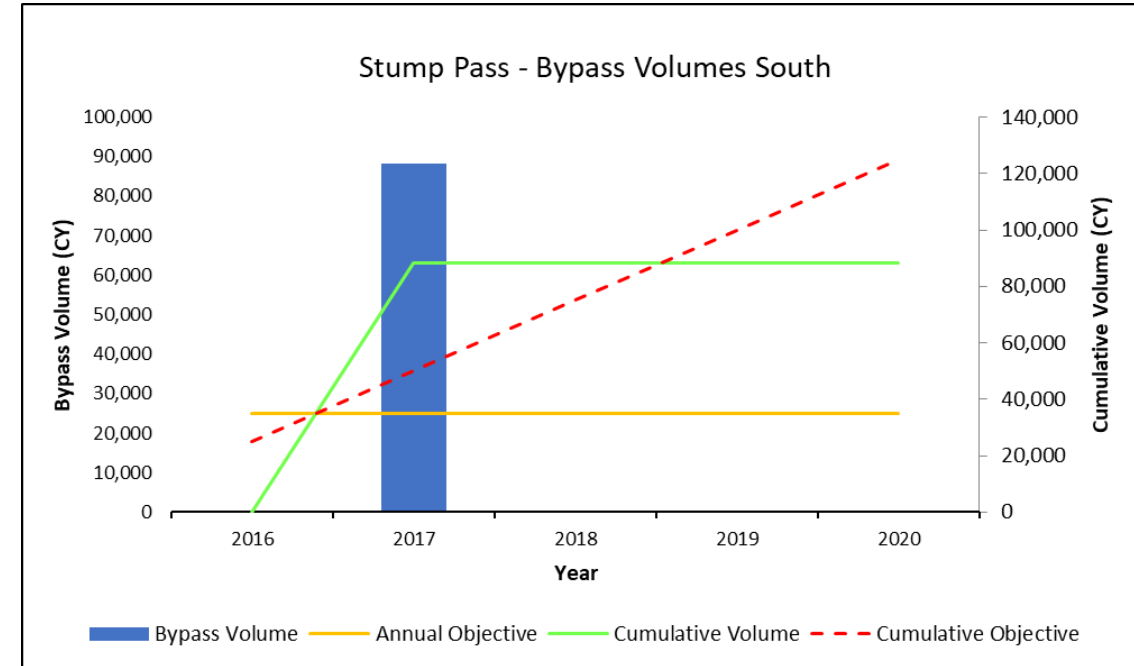
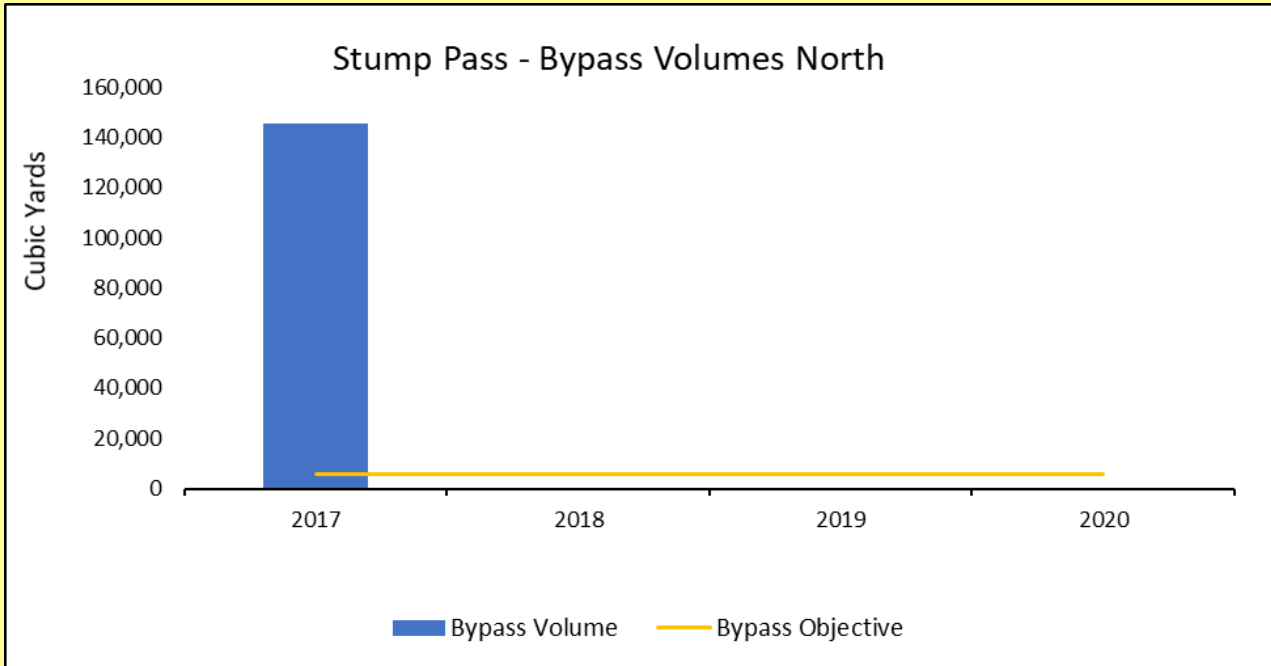




Inlet Examples - Tracking the Numbers

County	Inlet	Year IMP Adopted or Updated	Annual Bypass Objective North (CY)	Annual Bypass Objective South (CY)
Charlotte	Stump Pass	2016	6,000	25,000

Bypassing Matrix	North Bypass (CY)	South Bypass (CY)
Cumulative Volume Bypassed:	145,380	88,100
Cumulative Objective:	24,000	100,000
Annualized Volume Bypassed:	29,076	22,025
Surplus (Deficit):	121,380	-11,900
Percent Objective Met:	605.75%	88.10%





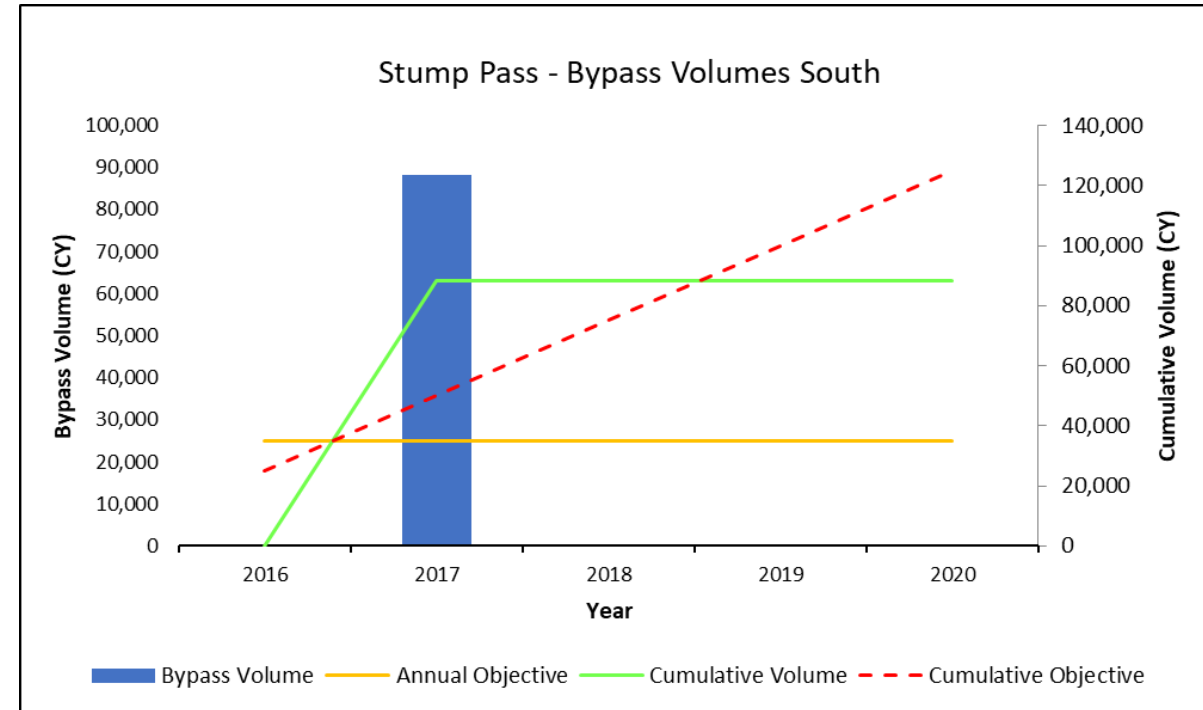
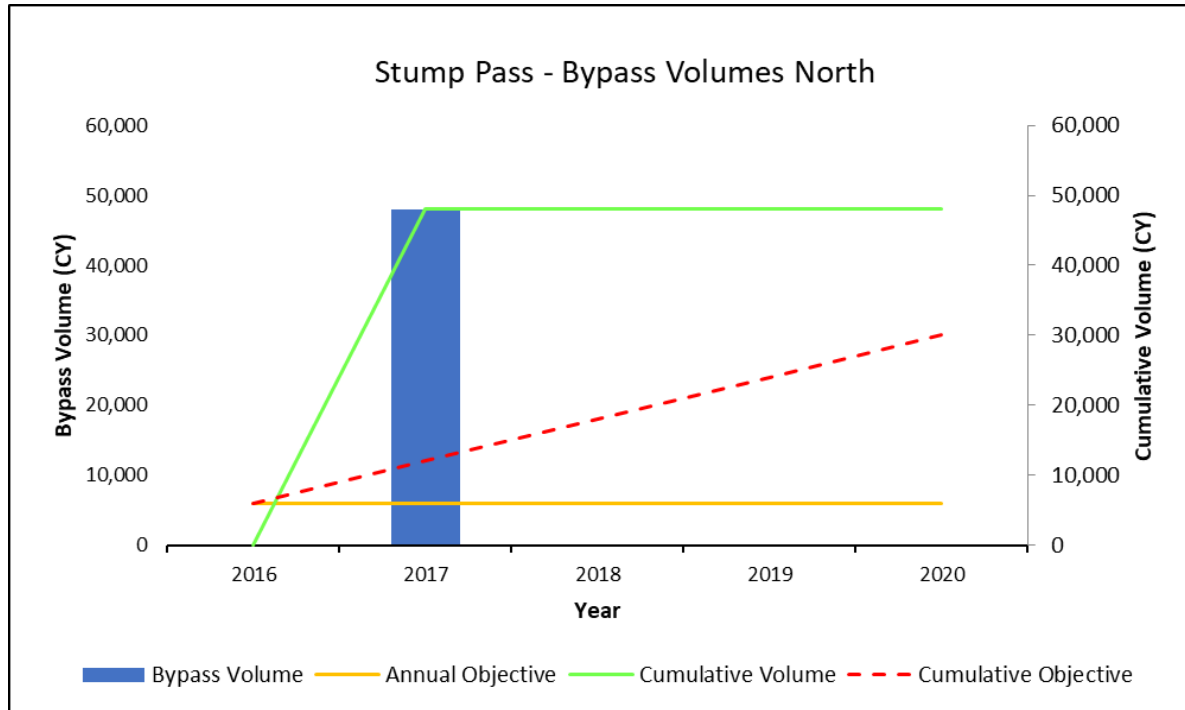
Inlet Examples - Tracking the Numbers

County	Inlet	Year IMP Adopted or Updated	Annual Bypass Objective North (CY)	Annual Bypass Objective South (CY)
Charlotte	Stump Pass	2016	6,000	25,000

**Cumulative volume formula #: is the bypass objective of 6000 X eight = 48,000.

Bypassing Matrix	North Bypass (CY)	South Bypass (CY)
Cumulative Volume Bypassed:	48,000*	88,100
Cumulative Objective:	30,000	100,000
Annualized Volume Bypassed:	9,600	22,025
Surplus (Deficit):	18,000	-11,900
Percent Objective Met:	160.00%	88.10%

*Cumulative volume is based upon nourishment interval of eight years for bypass to the north and does not include beach nourishment volume listed in the SBMP.





Giving Credit for Inlet Bypassing...!!

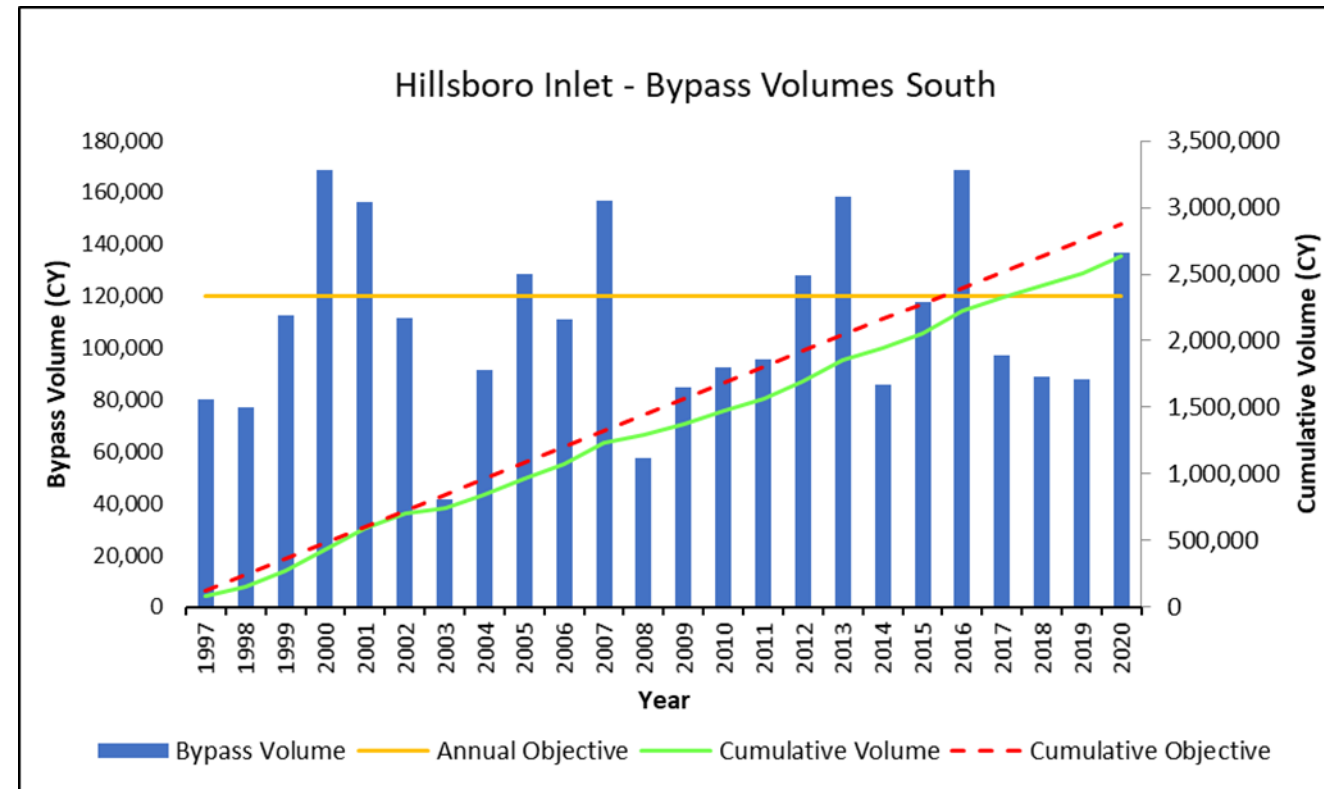
- The responsible inlet entity pays for a percentage of sand being placed on a beach project to achieve the IMP bypass objective.
- A responsible inlet entity pays for upland sand to be placed on an adjacent eroding beach.
- Using alternative sand sources is usually always stated within the IMP strategies.





Giving Credit for Inlet Bypassing...!!

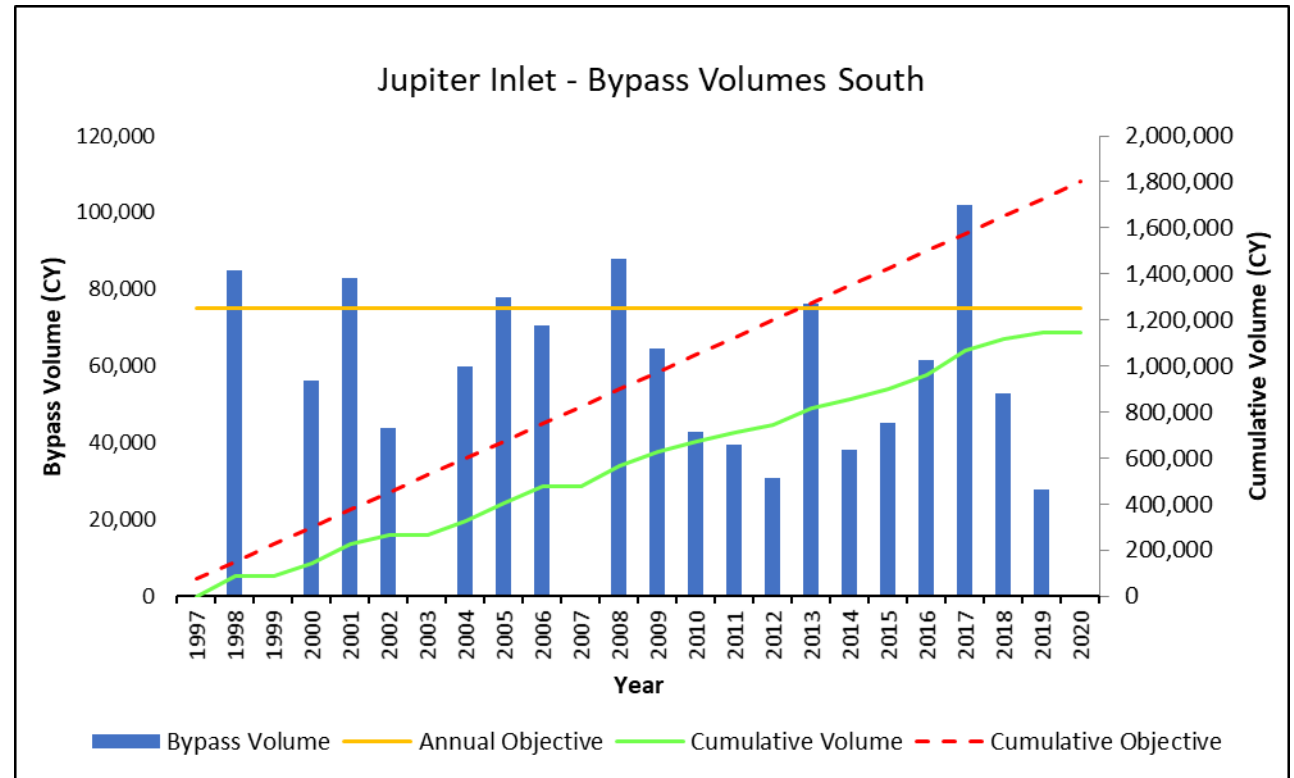
- Borrow sources: inlet complex - IWW, flood shoal, inlet channel, sand trap, ebb shoal, upland sand mine and adjacent beach.
- Timeline for the begin date (adopted IMP) and end date of inlet bypassing (2020).
- End date (year) of dredging: start in October 2019 and finish in February of **2020**.





Giving Credit for Inlet Bypassing...!!

- **Flexibility**: the Annual Inlet Report ended in 2020 this past year, but the for the LGFR process if a local entity has provided a 2021 bypassing number, but not a 2020 number, there is flexibility to count this 2021 bypass number for the LGFR process.

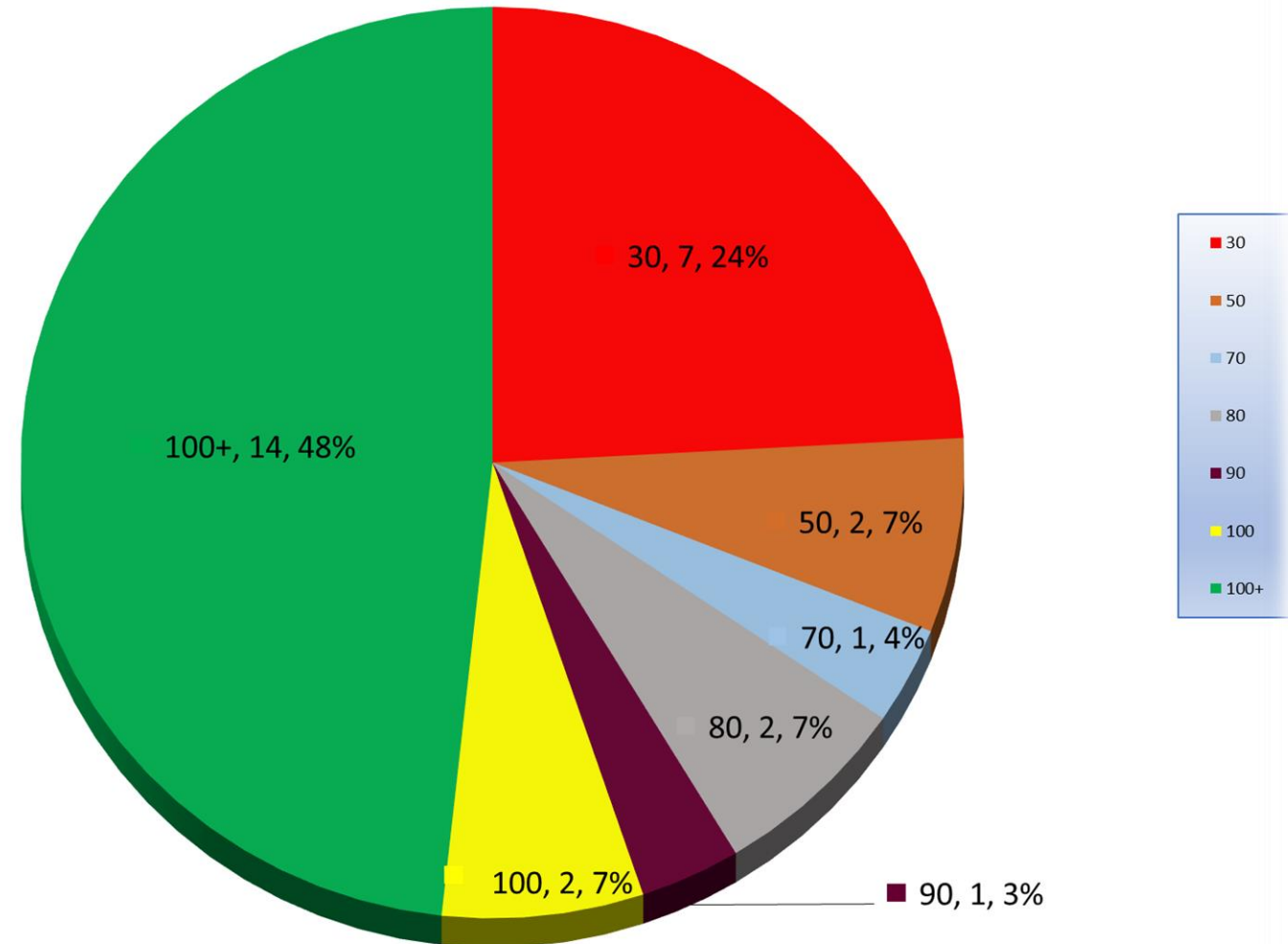




Summary of the Annual Inlet Report

Pie Chart

- 14 inlets were meeting their percent met at 100 % or over.
- 2 inlets were meeting their percent met between 91% and 100%.
- 1 inlet was between 81% and 90%.
- 2 inlets were between 71% and 80%.
- 2 inlets were between 41% and 50%.
- 7 inlets were between 0% and 40%.



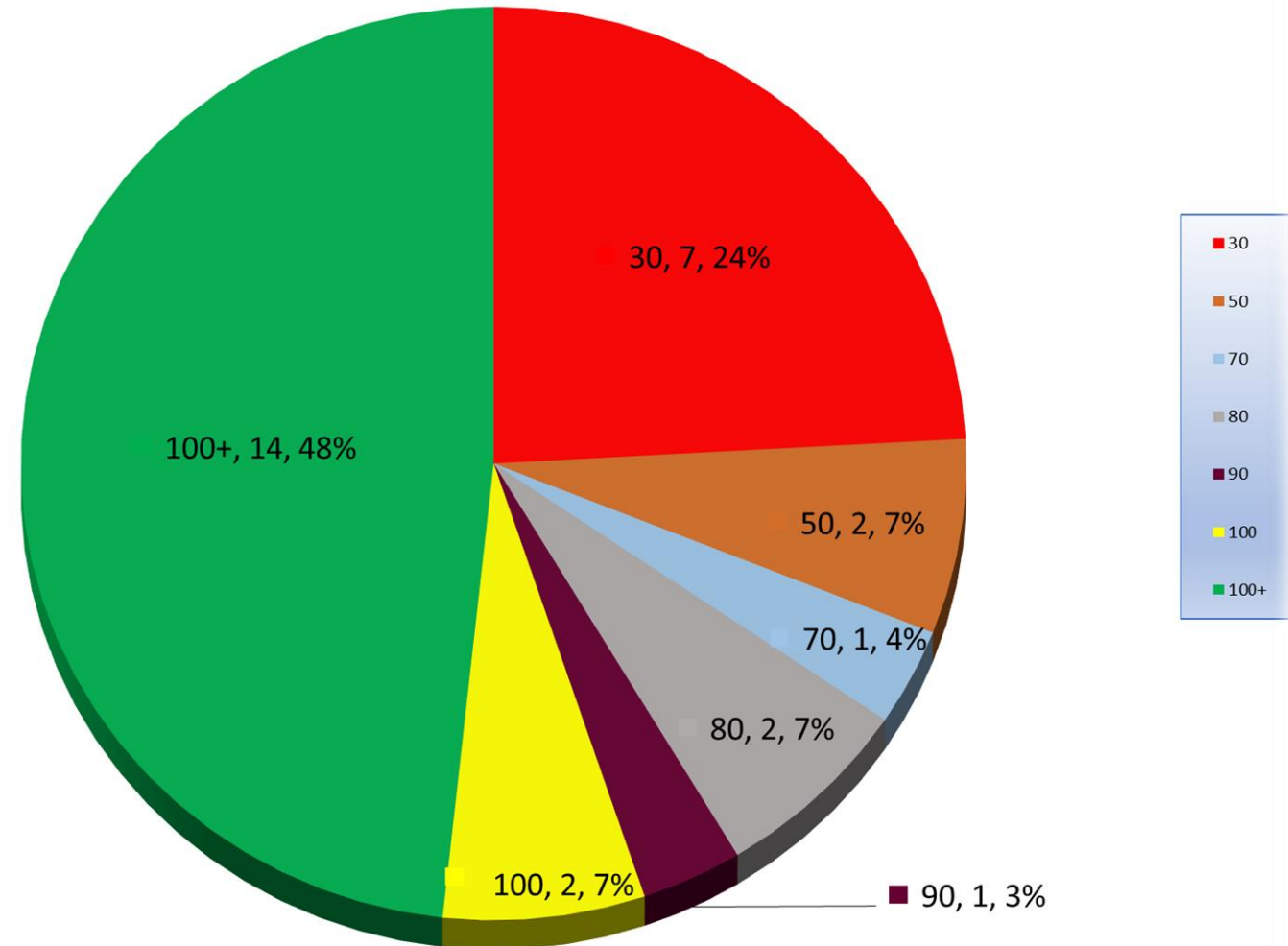
Note: 29 inlet objectives, 25 inlets in the report



Summary of the Annual Inlet Report

Pie Chart

- 48% of inlets are meeting their percent/ bypass objective met at over 100%.
- 65% of inlets are above 80% of their percent/ bypass objective met.
- 24% of inlets are in the red category, of which 3 of those inlets have brand new IMP's and have not done any bypassing since the new IMP was established. 4 inlets have federal navigation or federal projects associated with the bypassing. One of which is St. Mary's River entrance.

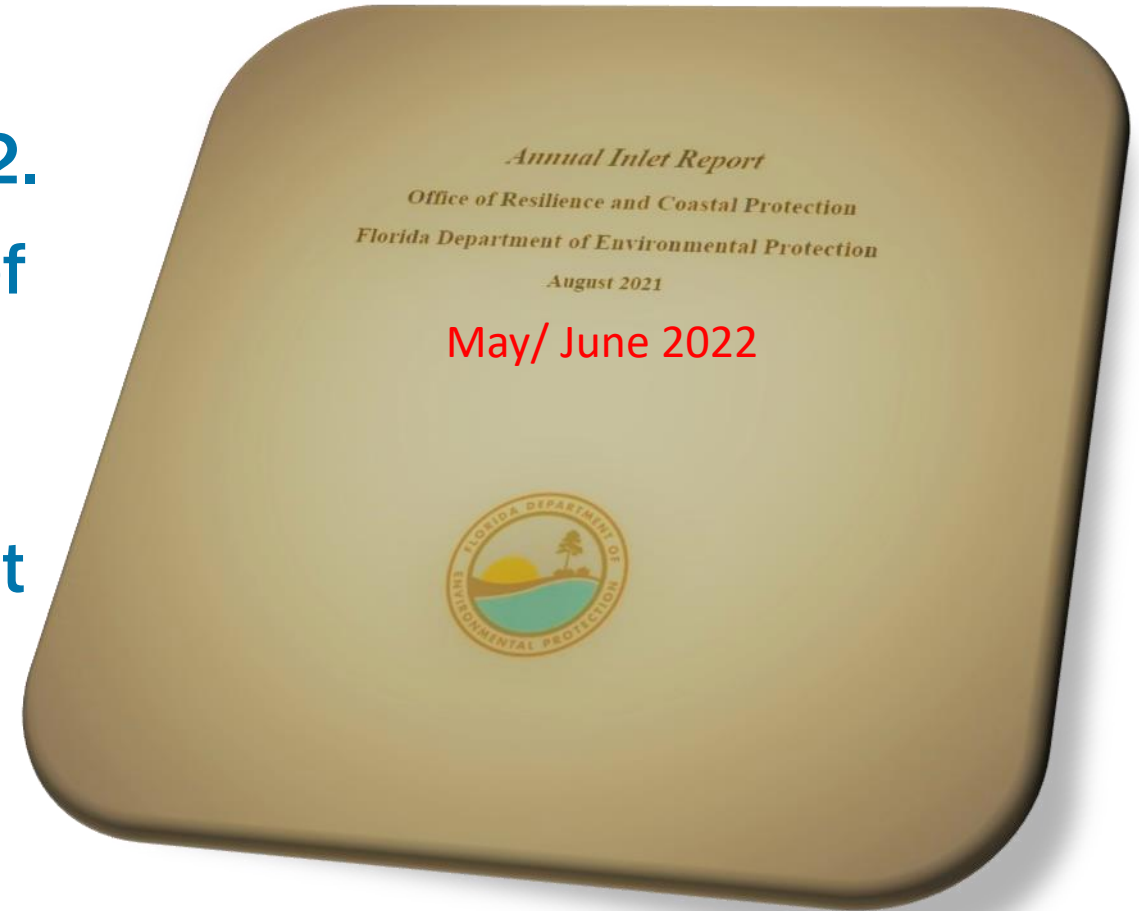


Note: 29 inlet objectives, 25 inlets in the report



Next Update for the Annual Inlet Report

- The next update for the annual inlet report is scheduled for **May/June 2022**.
- Add additional formula notes for two of the inlets.
- Add bar graphs that reflect color distinction between sand transfer plant vs flood shoal dredging.
- Add summary section for the report.
- Add new/updated IMPs.





Photos, Photos, Photos

- Please send me your construction/ action shots of Inlet Bypassing, jetty construction, sand trap construction photos...!



St. Augustine Inlet, 2018



When playing cards, at some point you must show your cards!



The FDEP Annual Inlet Report can be found at the link below:

<https://floridadep.gov/rcp/beaches-inlets-ports/content/strategic-planning-and-coordination#IMP>



Contact Information

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St. Andrews Inlet, 2020



Questions?

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Thank you!

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