

Tonys 2025 Tybee Topics for Consideration:

1/8/2025

Item	Pri	Staff Council	Topic	Comprehensive Plan	Description
1	1	Staff	Designated Driver Campaign	Community Preservation	~ 255 DUIs in 2024, 159 DUI in 2023. Communication campaign to encourage groups to designate a driver and individuals to have a paid service plan home, (Having a Plan to get home when they go out for the evening). Inquire if businesses willing to provide free/reduced cost for non-alcoholic drinks for DD. We want everyone to get home safe!
2	2	Staff	Finances	Sustainability	Prepare for 2 years of financial impact to Tybee (businesses & govt) revenue when bridges/road being replaced.
3	2	Staff Council	Sav River Side Dune Renourish	Govt Cooperation	Renourishment Savannah River Side Dunes? Dune drop off now 5-9 ft at Byers St crossover area. 20+ ft of lateral dune erosion since 2018. Seek Ports Authority funding for dune renourishment.
4	2	Council	DOT Bridge/Causeway Replacement	Govt Cooperation	Bull River/Lazaretto Creek Bridge and RoadWay replacement plan schedule and confirm detail plans of parallel bridge build?, update and share with community. Encourage non summer and evening effort prior to going out to bid. Need road raised 1' to 11.5' to get us to 2045, 12.5' level for 2065. 10.5' flooding projected 10X/year in 2035, 25X/year in 2045.
5	2	Staff	Tybee Parking Costs	Transportation	Review Tybee Parking Plan - Request to review if parking rate discourages winter visitors to the beach and businesses? Would reduced price in winter/off-season bring more off-season visitors and in turn higher parking income and help businesses?
6	2	Staff Council	Fire Department Facilities	Community Preservation	Replace Fire Department Facilities
7	2	Staff Council	2026-2031 Comprehensive Plan	Govt Cooperation	This current priority projects review & planning should engage the 2021-2026 Comprehensive Plan and should begin effort this year for 2026-2031 Comp Plan.
8	2	Staff	Contracts Database	Govt Cooperation	Database of Active City of Tybee contracts and agreements (MOUs) with expiration & renewal dates.
9	2	Staff	City Operations Manual	Govt Cooperation	Requesting a City Operations Manual, bring all policies, procedures, plans together in one place (potential topics to add).
10	2	Staff	5 Year Capital Projects Infrastructure Plan	Govt Cooperation	Review 5 year projected capital projects (Water/Sewer/Stormwater/others?) & Financing Plan
11	2	Staff Council	Support Local Businesses	Govt Cooperation	How can Tybee continue to be supportive of local Tybee businesses.
12	3	Staff Council	Sand Bar Dredging	Govt Cooperation	Safety Issue: Reduce Drownings & mitigate safety risks: Non Fed Funds (non-COBRA) dredging of south end sand bar and replace due on beach or Sav River Side Dune? DRN coordination.
13	3	Staff Council	Nearshore Placement	Sustainability Govt Cooperation	USACE plan for annual Sav River maintenance dredging - support in general, but not in 2003 Study locations 1,2,13,14 at North end of tybee (Surfing area), which is also an area USACE recognize has a huge potential of returning to the channel dredge area.

Item	Pri	Staff Council	Topic	Comprehensive Plan	Description
14	3	Staff	Resident Smart Water Use	Sustainability	Water use technology to allow property owners access to hourly water use data. 3-4 RF antennas on island for real time data to city and S/W for customers to subscribe to data. (Would not require cost of meter replacements). Savannah via ARPA are replacing 10,000 manual read meters with smart meters.
15	3	Staff	Hometown Heroes Banner Program	Community Preservation	Past and present armed forces and first responders, To be hung for week around memorial and veterans days. Add Parades? https://hometownheroesbanners.com/ Engage American Legion?
16	3	Staff	Catastrophic Disaster Rebuild Plan	Govt Cooperation	2021-2026 Comp Plan (barge plan to move materials to rebuild if loss of bridges)
17	3	Staff Council	Sav River Deepening	Govt Cooperation	Savannah River deepened last year from 42 to 47, now asking for 52 ft depth (is there further risking salt intrusion to upper florida aquifer). We need to ensure they build up the 1890 Sav River southern Jetty! We want to be involved in this process. Impact to savannah river side dunes being cut away.
18	3	Council	Butler Safety	Transportation	Changing Yellow Flashing Crosswalks to Red Flashing (preferably overhead)/Not in favor of reducing 4 lanes to 2 lanes on Butler; have witnessed traffic move to Jones & Lewis when Butler full. Consider painted roadway crossings & street level reflectors for night
19	3	Staff Council	Stormwater Mgmt Plan	Sustainability	Seriously question the plan for 14th St parking lot reservoir. Believe a backup powered active pump Inlet Ave Outflow and increasing RCP (Pipe) sizes is more efficient method.
20	3	Staff Council	Sea Level Rise - Tidal Mitigation Efforts	Sustainability	NOAA Sea Level Rise Projections: Ft Pulaski gauge avg 7.3" rise in lat 14 years, 10" rise in last 90 years, 12" in 100 years. Projection of 10-12" sea level rise on US SE coast in next 25 years by 2050; projected linearly at 1/2" /year 10' tide shows water on Fishermans walk, Chatham Ave, Venetian Drive, 6th St & Lewis (Sand barrier placed at Alley 3) SW end of Island is at 5.5'. 10' Tide Tybee Road edge of road, 10.5' starts to cover road in portions, 11.5' road 80% covered (March 2019 raised low level road locations by up to 8", prior to then 9.6 ft flooded road.
					11'6" Tide - Bay Street, Lewis, W side of Jones, S. Campbell, SW end of island bowl is covered 12.5' tide most of island west of Jones is covered except ft screven, 13.5' Butler starts to flood, 14.5' Butler Flooded, 16.5' 85% island flooded, 18' entire island under water. NAVD88 = MLLW+4.05' Ft Pulaski, MHHW = 7.5' 1) Should we permanently add fill and raise parking lot on end of Alley 3 to protect nearby properties where sand is generally placed? 2) Need larger reinforce concrete pipes (RCP) on 6th St, flat bridge, others? Understand water trapped inland not able to flow out with tide due to smaller than needed Interactive Sea Level Rise Map: https://coast.noaa.gov/

Item	Pri	Staff Council	Topic	Comprehensive Plan	Description
21	3	Staff Council	GAO like review	Govt Cooperation	Government Accountability Office like finance review for city of Tybee and businesses impact for proposed ordinances and major city expenditures to present 5/10/20 year impacts. Seek to be at least finance neutral on changes, ie. If a change projects a financial impact - how will we gain additional funding or what services will be reduced prior to approving the change and included in the action for neutral impact.
22	3	Staff	Responsibility Matrix	Govt Cooperation	Request Responsibility Matrix showing City/County/State Police and also Fire/EMS/Coast Guard/Marine Rescue as related to Tybee/Beach/Back River/Sav River, Ocean)
23	3	Council	Encourage Young Families	Sustainability	How can Tybee be supportive of TIMA? Young families looking for schools.
24	4	Staff Council	Broken Arrow - DOE Survey	Govt Cooperation Sustainability	What is the risk of the Mark 15 Feb 5, 1958 12 ft 7600 pound enriched uranium Tybee Bomb without a trigger. (Wassaw Sound - south of little tybee), has the Department of Energy surveyed for increased radioactivity beyond element monazite higher radiation levels since 2001? Length of time for steel/tungsten alloy to rust through in salt water? Seeking Dept of Energy survey for increased radiation levels every 5 years? to verify/confirm it is not leaking uranium. Anyone monitoring water for potential radiation levels, desire to update info to public.
25	4	Council	Work Force Housing	Housing	Work Force Housing incentives for long term housing (including RT districts (Condos))
26	4	Staff	3rd - 13th St Showers	Govt Cooperation	Target SPLOST funding for 3rd - 13th St Public beach crossover showers (including foot).
27	4	Staff Council	Community Goodwill	Community Preservation	Encourage continued support of each other in the community, helping neighbors, positive, enabling - supportive to residents and visitors to the island.
28	5	Council	Cretaceous Well	Sustainability Government Cooperation	Cretaceous depth Well, Reverse Osmosis Plant (or Desalination Plant if better choice?) This is a resolved concern for me, HHI Salt Plume moving towards Sav at ~150 ft/year at 2000 water consumption rates projected 2150 to reach Sav. Tybee 1MGD, Sav area 45MGD.

Presentation Categories

Roads & Bridges (pages 5-10)

Finances, Infrastructure & City Operations (pages 11-16)

Tybee Beaches (pages 17-25)

Stormwater Management & Sea Level Rise (pages 26-37)

Community Engagement (pages 38-40)

Tybee Fresh Water Well Supply (pages 41-52)

Roads & Bridges

Bull River & Lazaretto Bridge & Causeway Replacement

Butler Pedestrian & Road Traffic Safety

Tybee Parking Costs

Barge Plan if loss of bridges

Item 5: Tybee Parking Costs

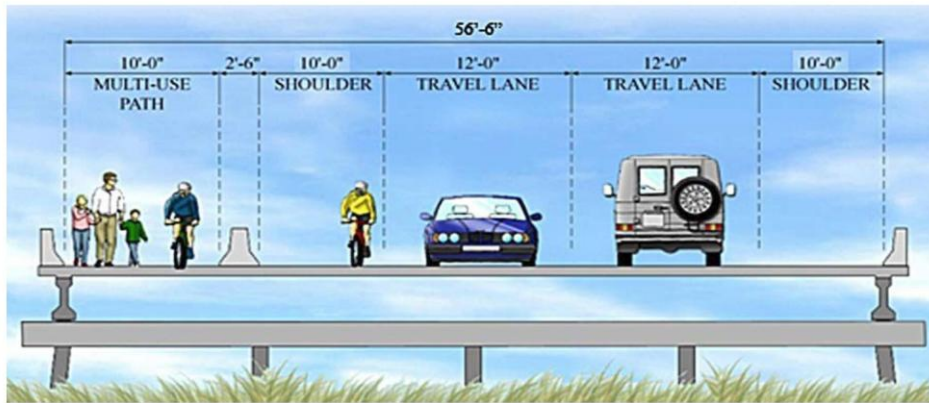
Review Tybee Parking Plan - Request to review if parking rate discourages winter visitors to the beach and businesses? Would reduced price in winter/off-season bring more off-season visitors and in turn higher parking income and help businesses?

Item 16: Catastrophic Disaster Rebuild Plan

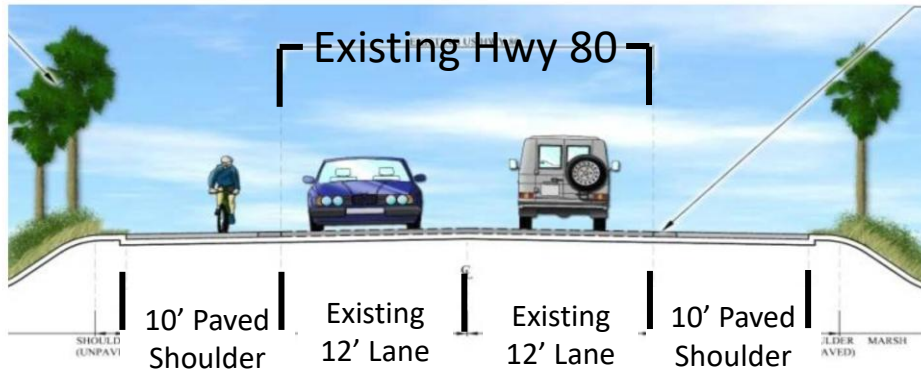
Barge plan to move materials to rebuild if loss of bridges. Also in 2021-2026 Comp Plan.

Item 4: DOT Bull/Lazaretto Bridge & Causeway Replacement

“Alternative 3”: Recommended bridge treatments at Bull River and Lazaretto Creek
By Chatham County – Savannah Metropolitan Planning Commission (MPC) and Coastal Region MPO (Core MPO)



Recommended roadway treatment on US 80 between the bridges by MPC/Core MPO.



<https://sr26us80project-gdot.hub.arcgis.com/>

<https://sr26us80project-gdot.hub.arcgis.com/>

December 2012 is the latest document on GDOT Website: The 2012 plan stated that 52 ft wide parallel bridges were to be built on the north side of the existing bridges – however, for the last year they appear to be doing core samples on the south sides? Seeking update that they still plan on parallel bridges and minimal impact for travel by residents and visitors?

Item 4: DOT Bull/Lazaretto Bridge & Causeway Replacement

Note: Nearby Projects Efforts:

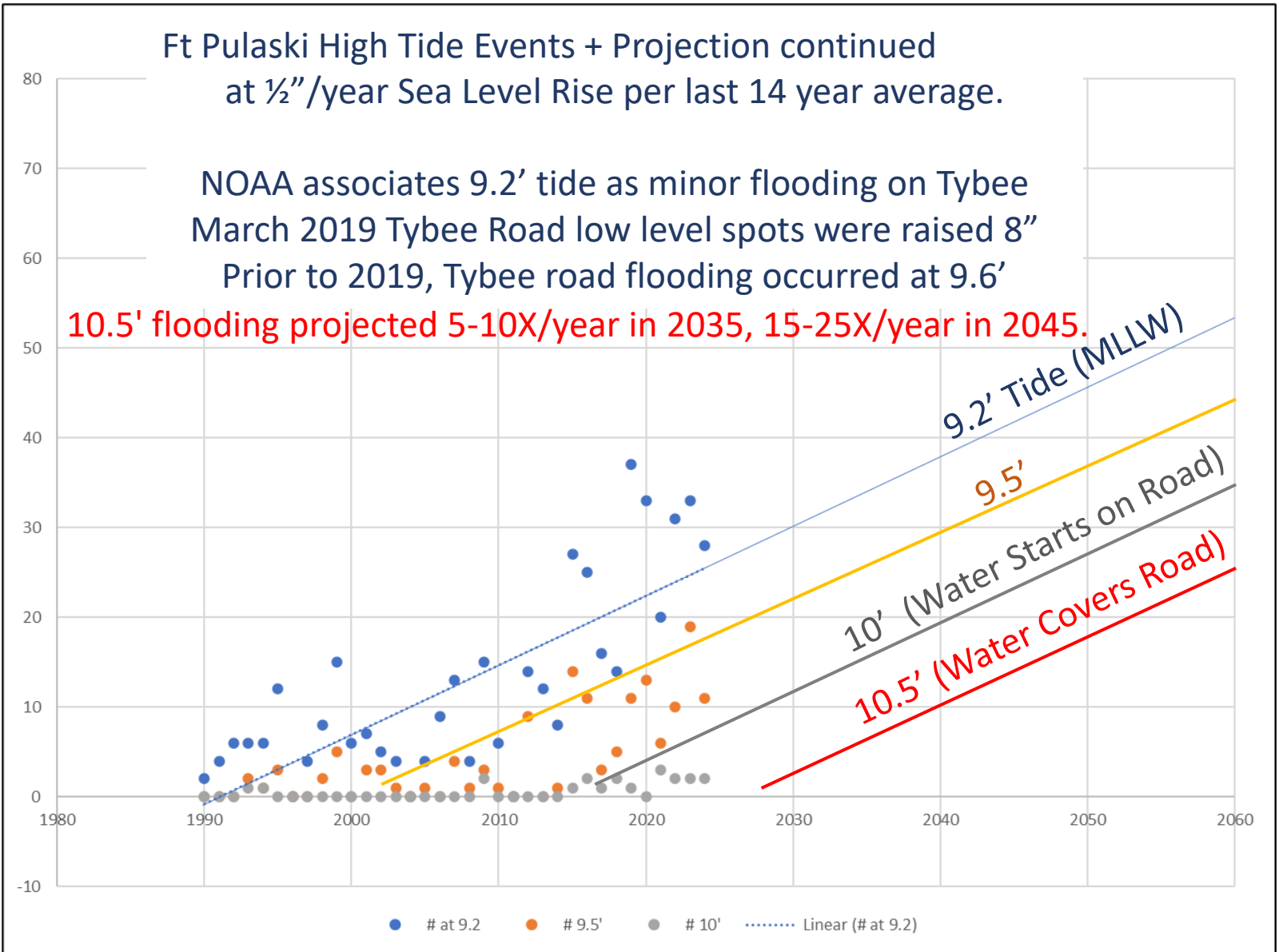
McQueens Island Trail: Damaged by Hurricane Matthew October 8, 2016
Reopened to public in May 2023, 6.5 years to repair the bicycle/pedestrian trail.



Islands Expressway Bridge: Construction began February 2, 2018
July 2022 First bridge completed & in use.
Second half of bridge now projected to be complete first quarter 2026. (8 years to build)



Item 4 Continued: Sea Level Rise – Impact on Tybee Causeway



Item 4 Continued: DOT Bull/Lazaretto Bridge & Causeway Replacement



US80 DURING A KING TIDE EVENT, 10/27/15 10.43 Ft Tide

Credit: Tybee Island Police Department

For 20 years life of road, we should be building the road at 10.5' +.5"/year *
20 years = 10.5+10" = rounded up to 11.5' to reasonably get us to 2045.

For 40 years life of road, we should be building the road at 10.5' +.5"/year *
40 years = 10.5+20" = rounded up to 12.5' to reasonably get us to 2065.

10.5' flooding projected 5-10X/year in 2035, 15-25X/year in 2045.

Item 18: Butler Safety

In favor of Red Flashing Crosswalks, can we add them overhead, do we paint roadway crosswalks & add street level reflectors for night time?

NOT in Favor of:

Reducing 4 lanes to 2 lanes:

Some concerns of GA DOT Plans:

- 1) Summer traffic pushed to Jones & Lewis.
- 2) Raised medians in center emergency lane.
- 3) Parking not planned for supply trucks.
- 4) Do not want children riding bicycles on busiest commercial road on island – keep them on 2nd ave.
- 5) Reverse Angle Parking – only used Macon GA
 - Villa Rica tried in 2016, removed 2018
 - Sav GA tried 6 months in 2009, removed.

Tybee Yellow Flashing Light Crosswalks are Dangerous



They Should be RED and preferably over the street.



Finances, Infrastructure & City Operations

General Fund Income

Hotel/Motel Taxes: Dispersed

Long Term Debt

Infrastructure

City Operations

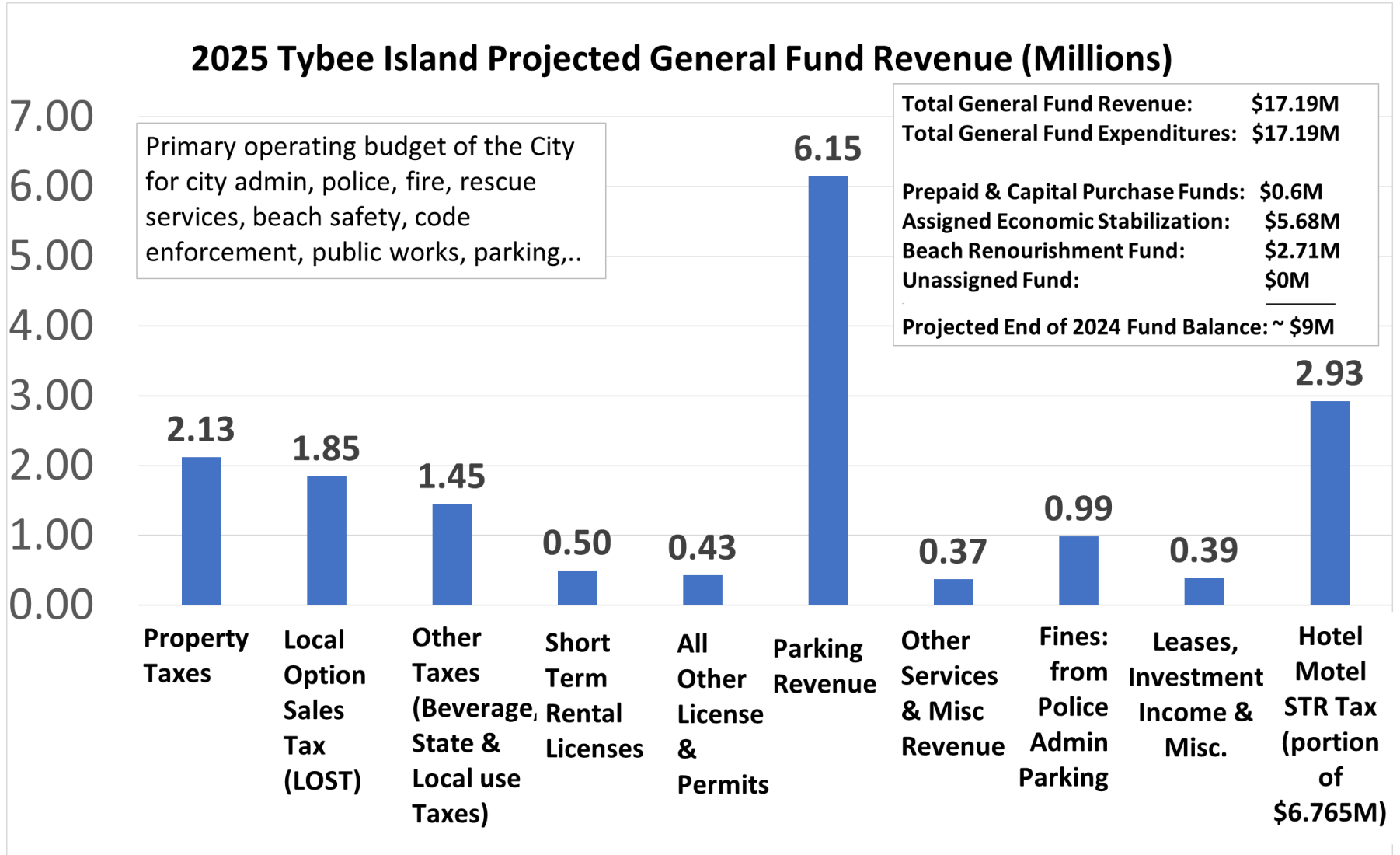
Tybee Island Responsibility Matrix

Item 2: Finances Prepare for 2+ years of financial impact to Tybee (businesses & government) revenue while bridges/road are being replaced.

Item 21: GAO like review

Government Accountability Office (Federal Government) like finance review for city of Tybee and businesses impact for proposed ordinances and major city expenditures to present 5/10/20 year impacts.

Item 2: Finances 2025 Budget General Fund Revenue

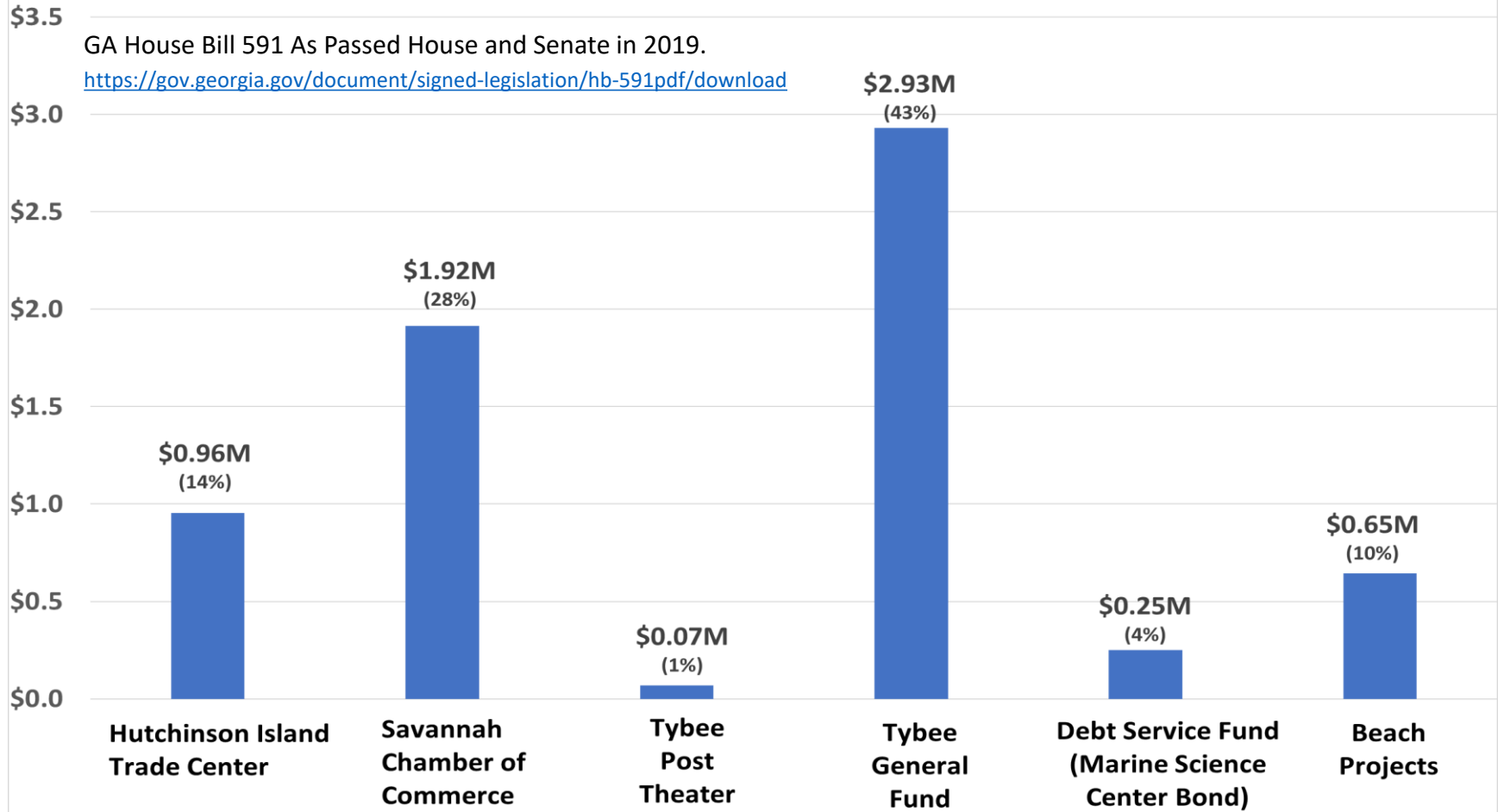


Source: City of Tybee Island, Georgia FY2025 Budget, Adopted June 27, 2024

<https://www.cityoftybee.org/DocumentCenter/View/4368/FY2025-Budget-Published>

Item 2: Finances

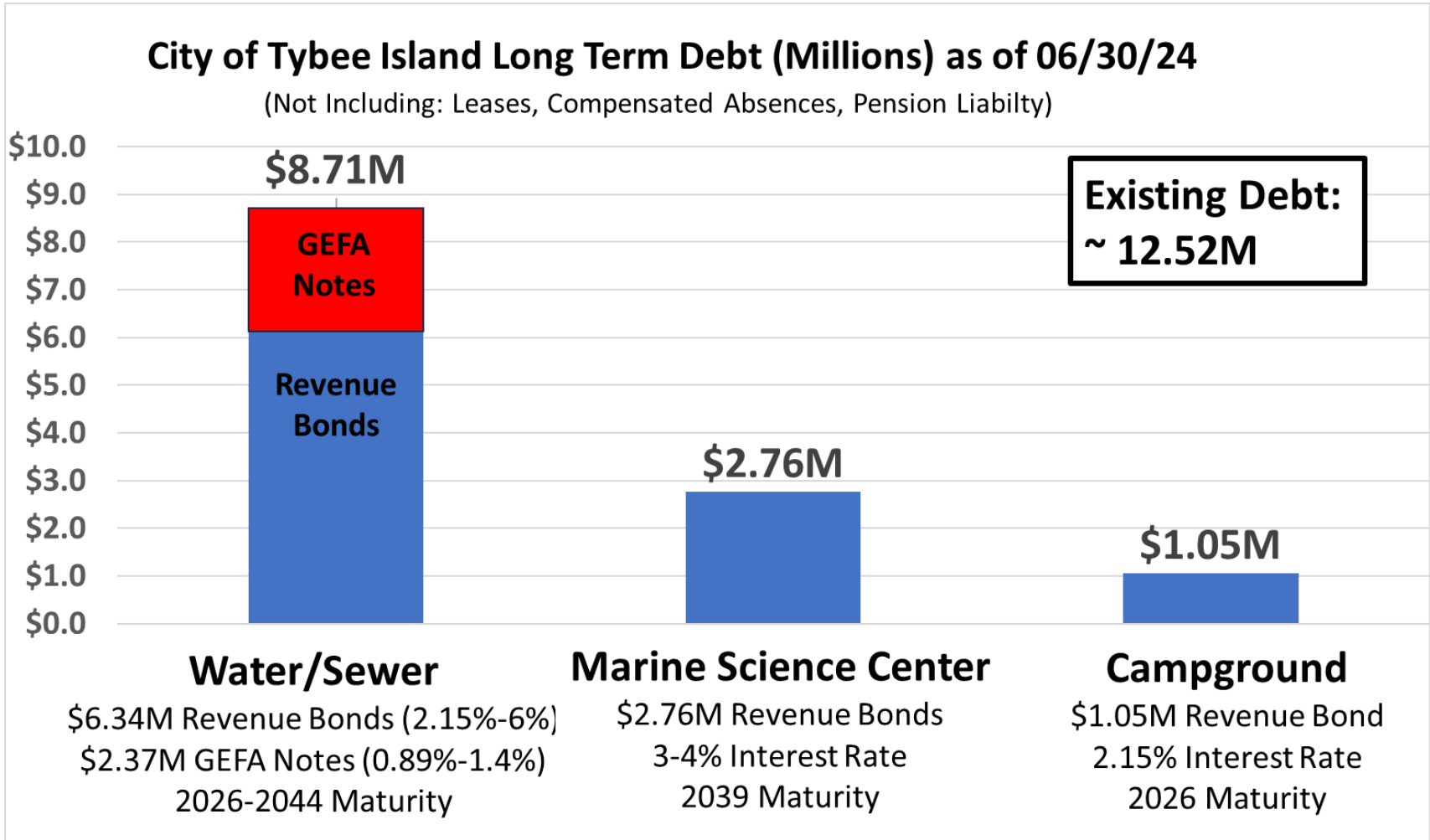
2025 Projected Tybee 7% Hotel/Motel/STR Tax: \$6.765M



Source: City of Tybee Island, Georgia 2025 Annual Budget, Adopted June 27, 2024

<https://www.cityoftybee.org/DocumentCenter/View/4368/FY2025-Budget-Published>

Item 2: Finances Long Term Debt



Source: City of Tybee Island, Georgia 2024 Audited Financial Statements

<https://www.cityoftybee.org/DocumentCenter/View/4688/2024-Audited-Financial-Statements>

Infrastructure:

Item 10: 5-10 Year Capital Projects Infrastructure Plan (including Financing) (In-Work)

Review 5-10 year projected capital projects (Water/Sewer/Stormwater/others?) & Financing Plan

Item 14: Resident Smart Water Use

Water use technology to allow property owners access to hourly water use data. 3-4 RF antennas on island for real time data to city and S/W for customers to subscribe to data. (Would not require cost of meter replacements). Savannah via ARPA are replacing 10,000 manual read meters with smart meters.

Item 26: 3rd-13th St Showers

Target SPLOST funding for 3rd - 13th St Public beach crossover showers (including foot).

City Operations:

Item 8: Contracts Database (In-Work)

Carry over from my list from last year. We need a database of active City of Tybee contracts and agreements (MOUs) with expiration & renewal dates available to all in the community that we can comprehend our city obligations.

Item 9: City Operations Manual (In-Work)

Carry over from my list from last year. Recommend that we bring all City operational policies & procedures together in one place, also available to all in the community for viewing.

Item 22: Tybee Island Responsibility Matrix (As I currently understand it?)

Item	Service	Location	Primary Responsibility	Backup Responsibility?	MOUs/Docs Defining Responsibility
1	Fire/EMS	Tybee Inland	Tybee Fire/Chatham EMS		
2	Fire/EMS	Spanish Hammocks	Chatham County Fire/EMS	Tybee Fire	
3	Fire/EMS	Maritime District (Cocos)	Tybee Fire/Chatham EMS	Chatham	
4	Fire/EMS	Beach - Ocean Side	Tybee Fire/Chatham EMS		
5	Fire/EMS	Beach - Sav River Side	Tybee Fire/Chatham EMS		
6	Fire/EMS	Beach - Back River	Tybee Fire/Chatham EMS		
7	Fire/EMS	Ocean	USCG/Tybee Fire Marine Rescue Division	Sav/USCG	
8	Fire/EMS	Savannah River	Sav/USCG	Tybee Fire	
9	Fire/EMS	Back River	Tybee Fire Marine Rescue Division/CCMP/DNR	USCG	
	Fire/EMS	Fort Pulaski	Tybee Fire/Chatham EMS	USCG	
10	Fire/EMS	McQueens Island	Chatham County Fire/EMS		
11	Fire/EMS	Bull River to Pulaski Access?	Chatham County Fire/EMS		
12	Fire/EMS	Pulaski Access to Lazaretto Bridge	Tybee Fire/EMS	Chatham	
13	Police	Tybee Inland	Tybee Police (TIPD)	CCPD, CCSO, GSP	
14	Police	Spanish Hammocks	Chatham County Police (CCPD)	TIPD	
15	Police	Maritime District (Cocos)	Tybee Police	CCPD, CCSO, GSP	
16	Police	Beach - Ocean Side	Tybee Police	CCPD, CCSO, GSP, DNR	
17	Police	Beach - Sav River Side	Tybee Police	CCPD, CCSO, GSP, DNR	
18	Police	Beach - Back River	Tybee Police	CCPD, CCSO, GSP, DNR	
19	Police	Ocean	CCMP, DNR, CG	CCMP, DNR, CG	
20	Police	Savannah River	CCMP, DNR, CG	CCMP, DNR, CG	
21	Police	Back River	CCMP, DNR, CG	CCMP, DNR, CG	
22	Police	Fort Pulaski	Park Ranger, CCPD, CCSO, GSP	CCPD, CCSO, GSP, TIPD	
23	Police	McQueens Island	Park Ranger, CCPD, CCSO, GSP	CCPD, CCSO, GSP, TIPD	
24	Police	Bull River to Pulaski Access?	Park Ranger, CCPD, CCSO, GSP	CCPD, CCSO, GSP, TIPD	
25	Police	Pulaski Access to Lazaretto Bridge	Park Ranger, CCPD, CCSO, GSP	CCPD, CCSO, GSP, TIPD	
26	Police	Lazaretto Bridge to Park of 7 Flags	TIPD, CCPD, CCSO, GSP	TIPD, CCPD, CCSO, GSP	
27	Administration	Building Code Approval	City of Tybee		
28	Administration	Building Code Inspection	Chatham County	City of Tybee	
29	Administration	Fire Code Inspection	Chatham County	Georgia Office of Commissioner of Insurance and Fire Safety	
30	Administration	Beach Use Approval	DNR	City of Tybee	
31	Administration	Flowing Water Use Approval	DNR		
32	Administration	Fresh Water Reservoirs	Army Core of Engineers	City of Tybee	
33	Administration	Beach Use Enforcement	EPD	City of Tybee	
34	Administration	Water Use Enforcement	EPD		

Tybee Beaches

Savannah River Side Dune Renourishment

Atlantic Ocean front Beach Renourishment

South Island Sandbar Safety

Nearshore Placement

Savannah River Deepening

Broken Arrow (Tybee Bomb) – DOE Survey

Item 3: Savannah River Side Dune Renourishment Needed:



Dunes were last renourished in Fall of 2017, 20 ft of lateral dune erosion in last 6 years! Costs estimates between \$500K - \$1M to renourish, ship wakes are decent contributor of the erosion – believe we should be seeking Ports Authority funding to renourish.

Ship-induced waves at Tybee Island, Georgia, US Army Core of Engineers November 2022
<https://erdc-library.erdc.dren.mil/jspui/handle/11681/46140>

Item 3: Savannah River Side Dune Renourishment Needed:

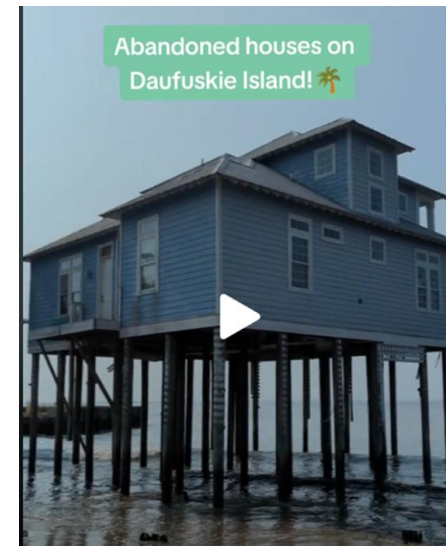
Daufskie homes overtaken by water, now uninhabitable:

How susceptible are Tybee North Beach homes and property to the same risk?

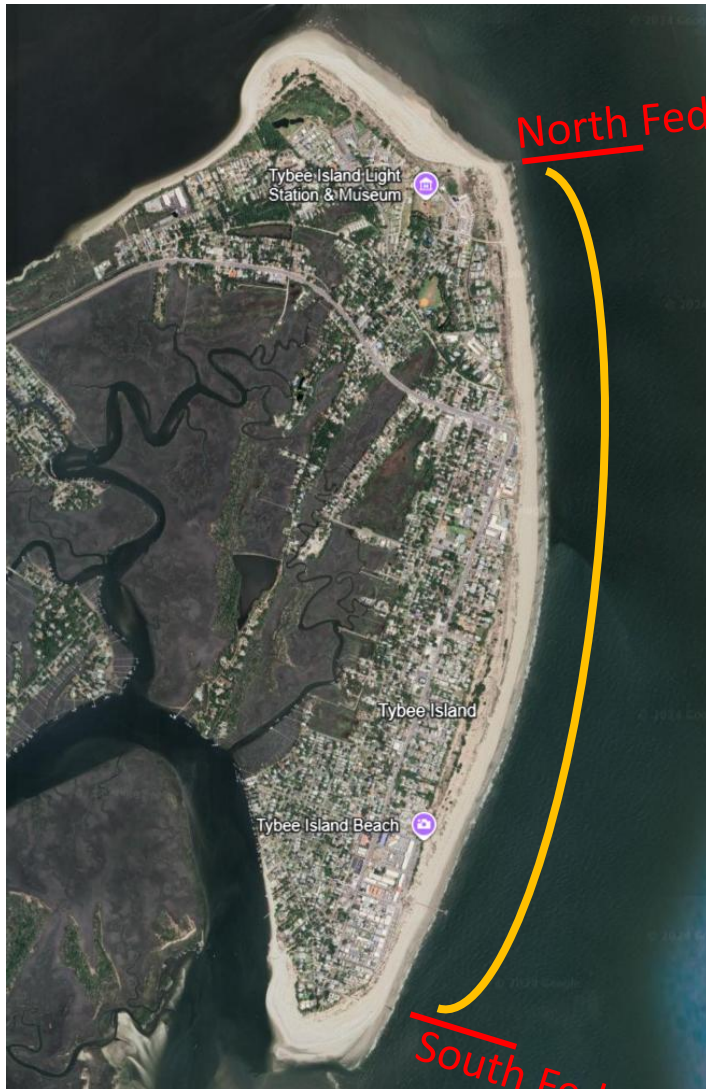


Source: Google Earth Image

https://www.tiktok.com/@dj_vanessa_bennett/video/7257168255708646702?lang=en



Item 3 Supplement: Tybee Island – Atlantic Ocean Side Beach Renourishment



North Federal Groin

December 2026

Start Tybee Beach Renourishment:

Funding: \$20M

Federal: \$12M (Approved)

State of GA: \$4M (Approved)

Chatham County: Requesting \$2M

City of Tybee: \$2M (Includes hotel-motel proceeds).

South Federal Groin

Item 12: Sand Bar Dredging: Safety Issue



Consider at a minimum dredging a channel so that beach goers can not walk onto sand bar from beach.

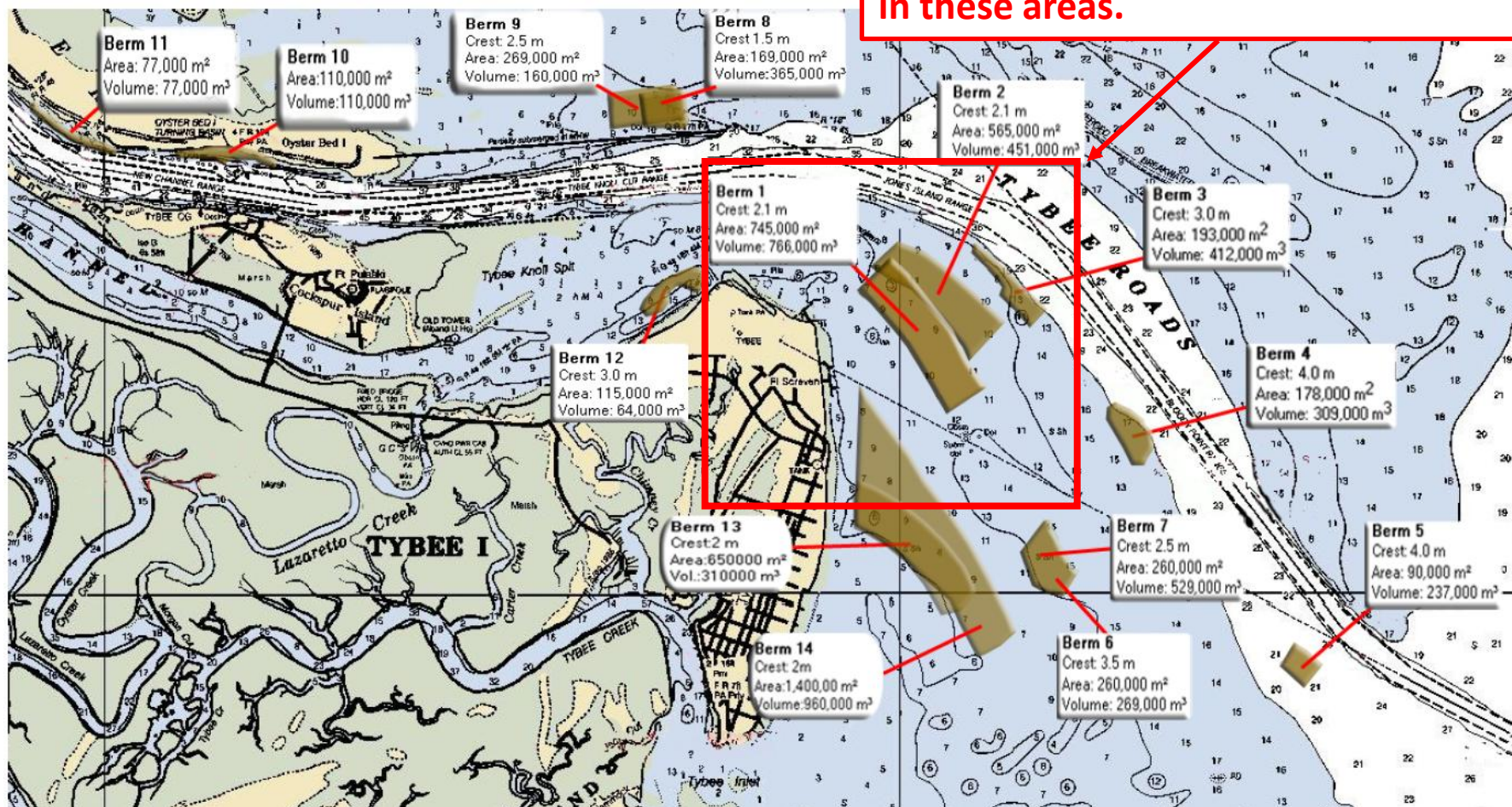
Sand Bar Accretion

The ebb tidal delta, an accumulation of sand as a result of the north-south longshore transport, sits at the south end of Tybee Island. Google Earth

Constant debate on Safety Issue for beach goers for risk of Drowning. Evaluate whether we can Non-COBRA fund (with DNR approval) the dredging of the sand bar or channel and renourish the Savannah River Side Dunes with this beach quality sand that came from our beaches.

Item 13: Nearshore Placement by USACE

Expected wave impact to Tybee Surfers in these areas.

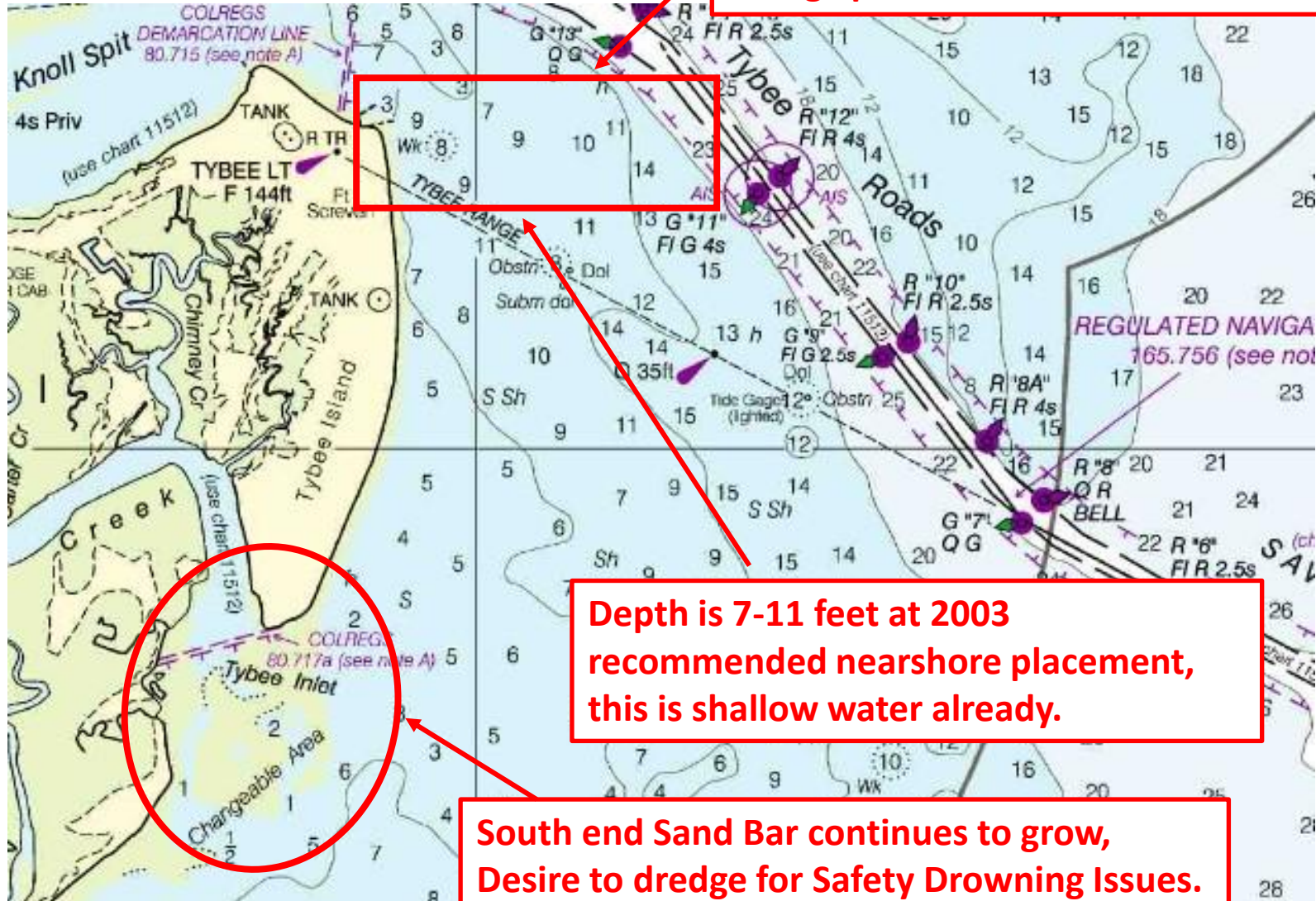


Disagree with Nearshore Placement in Berm 1, Berm 2, Berm 3, Berm 13 & Berm 14 as expected wave impact to Tybee Surfers. Note: This illustration above is from July 2003, not able to find a recent study/plan on USACE website.

<https://www.sas.usace.army.mil/Portals/61/docs/SHEP/Reports/GRR/15%20Entrance%20Channel%20Nearshore%20Placement%20of%20Dredged%20Material%20Study%20Jul03.pdf>

Item 13: Nearshore Placement by USACE

NOAA MLLW Depth Chart (feet)



Item 17: Savannah River Side Deepening:

2022 GA Ports Authority completed 25 year effort to deepen from 42 to 47 feet
Georgia Ports Authority seeking study for goal of 52 ft depth in 10 years.

As part of the deeper river and ship wake study impact of Tybee dunes, the USACE are studying the need to reinforce and raise the Savannah River South Jetty. We need to be engaged to encourage this long term solution of raising the Savannah River South Jetty for ship wakes!



U.S. Army Core of Engineers study to reinforce the Savannah River South Jetty

<https://erdc-library.erdcdren.mil/jspui/handle/11681/46140>

Short illustrations on following pages 13-14

Item 24: Broken Arrow (Tybee Bomb) – DOE Survey?:

What is the risk of the Mark 15, 12 ft long (7600 lb mass) with highly enriched uranium (U-235) core Nuclear Bomb without a trigger was dropped by a B-47 bomber in Wassaw Sound - south of Little Tybee when an F-86 plane collided with it on February 5, 1958.

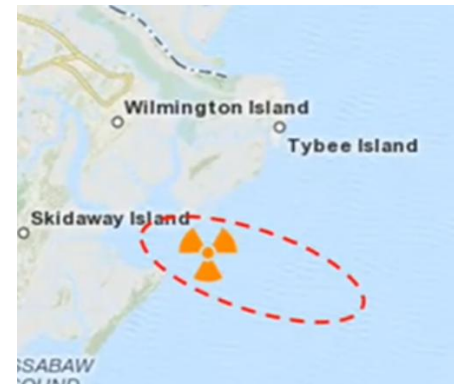
The bomb is believed to be buried in silt 5 – 15 feet deep in Wassaw Sound, south of Little Tybee.

Understood that the Department of Energy surveyed for increased radioactivity levels in 2001. Also understand a private effort to locate the bomb occurred in 2004, when naturally occurring deposits of monazite in the Wassaw Sound were found that emit higher levels of radiation.

The steel/tungsten alloy Mark 15 casing thickness is not publicly available, but 83 years in salt water appears to me plenty of time for salt water to rust through the wall, expecting to expose enriched uranium to our water ways, shores and community. **When was the last time the Dept of Energy (or others) surveyed this area for increased radiation levels.** We do not need to find the bomb, but believe we should be aware of if/when we have increased radiation levels. I am interested in periodic monitoring and public reporting of radiation levels if not done already (which I am not finding?)



A Mk 15 nuclear bomb of the type lost when jettisoned after the collision



Believed location of Tybee Bomb

Stormwater Management

- **14th St Parking Lot Reservoir**

Sea Level Rise

- **Tybee Island Sea Level Rise Adaptation Plan, April 2016**
- **Tide Projections from Ft Pulaski SLR**
- **Sea Walls**
- **Mid Island Tidal Flooding**
 - **Raised Berms?**
 - **Flood Gates?**
- **NOAA Sea Level Rise Interactive Viewer (Very Interesting)**

Item 19: Stormwater Management Plan

Thomas and Hutton helped develop the Tybee Comprehensive Stormwater Master Plan, released in Nov 2022.

Plan evaluated:

- 4.19" Annual Event
- 7.49" 10 Year Event
- 9.38" 25 Year Event
- 11.0" 50 Year Event
- 12.7" 100 Year Event
- 1,2,3 Ft Sea Level Rise

\$83M Improvements planned to target 10 Year event rainfall with SLR under consideration.

Priority 1 Plan per T&H is 14th St Parking Area Reservoir with 15th St Larger Outflow

Understand current issue is large impervious surface parking lots & south end of island draining south to west on 18th St then north to outflows on Inlet, Alley #3 & 15th St to the back river. Issue is capacity of outflows to handle this volume, which causes backup of stormwater to south end. **I am currently NOT in favor of this plan.**



November 10, 2022 T&H Infrastructure Committee Stormwater Master Plan Executive Summary:

<https://meetings.municode.com/d/f?u=https://mccmeetings.blob.core.usgovcloudapi.net/tybee-pubu/MEET-Packet-1d8d88d038114e25bffc8a65360340ae.pdf&n=AgendaPacket-Infrastructure%20Committee-November%2010,%202022%2010.00%20AM.pdf>

Item 19: Stormwater Management Plan

14th St Parking Lot Reservoir with 15th St. Outflow

Projected \$12M in 2022

If 75/25% Share, \$9M FEMA/\$3M Tybee

02/01/25 Cost Share Update: (To Be Confirmed)

FEMA Grant under Review (not approved)

15th St. Outflow: \$2.6M FEMA, \$650K Tybee

14th St. Reservoir: \$10M FEMA, \$1.5M Tybee

T&H StormTrap concrete reservoir

400 ft long, 80 ft wide, 5'8" deep
recommended under parking lot.

My Questions/Concerns/Statements:

- 1) How often has 14th st Parking flooded?
- 2) I believe **Tidal Flooding much bigger issue** several places on island starting with mid island (Lewis & W. of Jones) than 7.49" 10 year event rain fall.
- 3) I believe backup powered active pumping of stormwater out Inlet Ave is much better choice, increase Reinforced Concrete Pipe (RCP) too if required. (Expect to resolve Inlet Ave maintenance issue by pressurized water outflow.)
- 4) If FEMA grant approved – request start with 15th St Outflow and redirect existing drainage under 14th st parking lot with a pump station to 15th st outflow. **(Still not in favor of reservoir under parking lot.)**



Plan includes Reservoir under the Parking Lot - Not in favor of this plan.

Item 20: Sea Level Rise – Tidal Mitigation Efforts

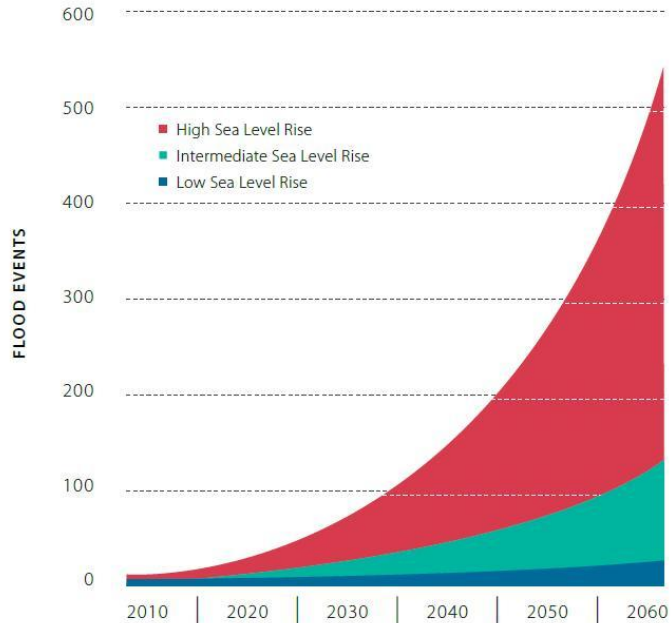
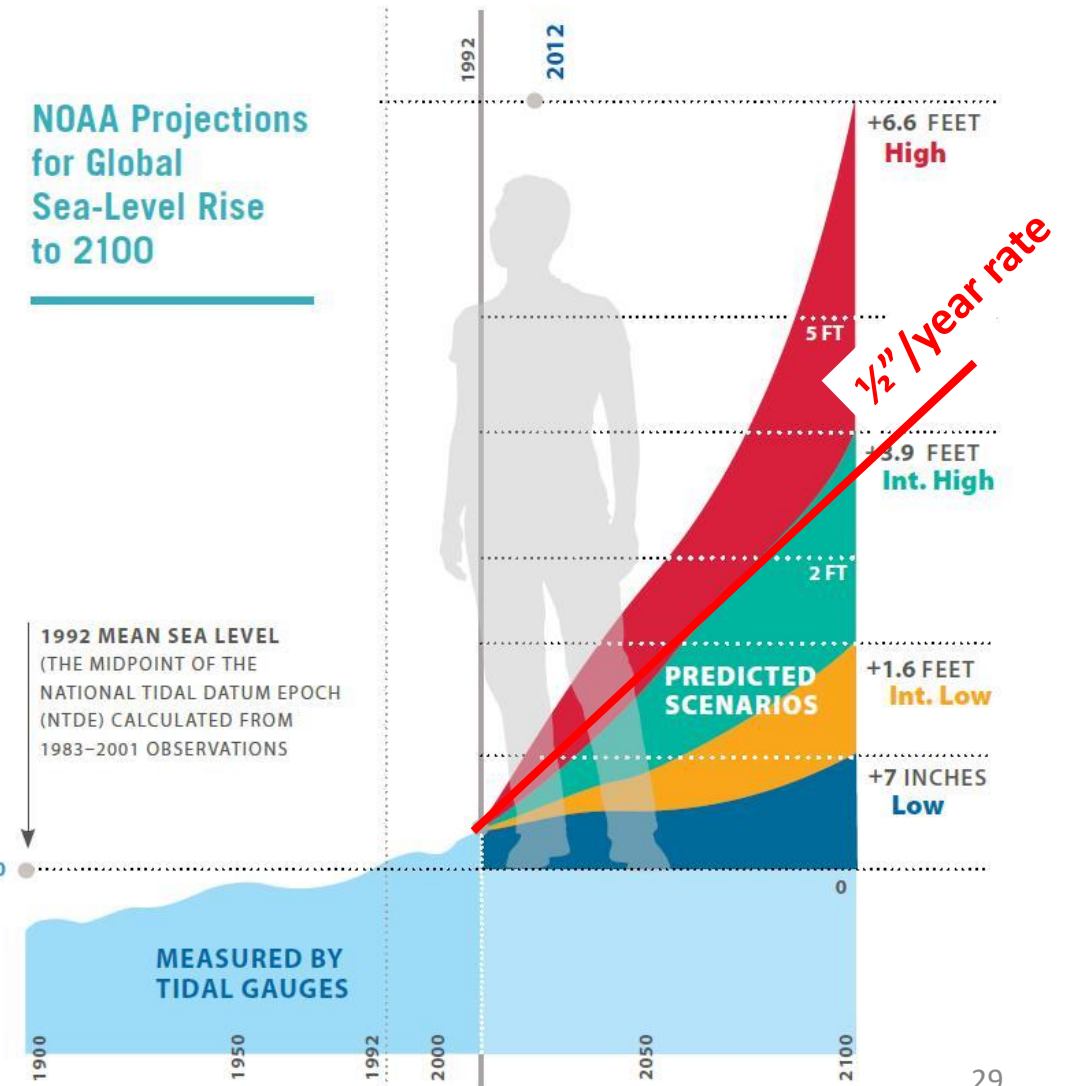


FIGURE 4.3: ANNUAL US 80 TIDAL FLOODING EVENTS WITH SEA LEVEL RISE SCENARIOS

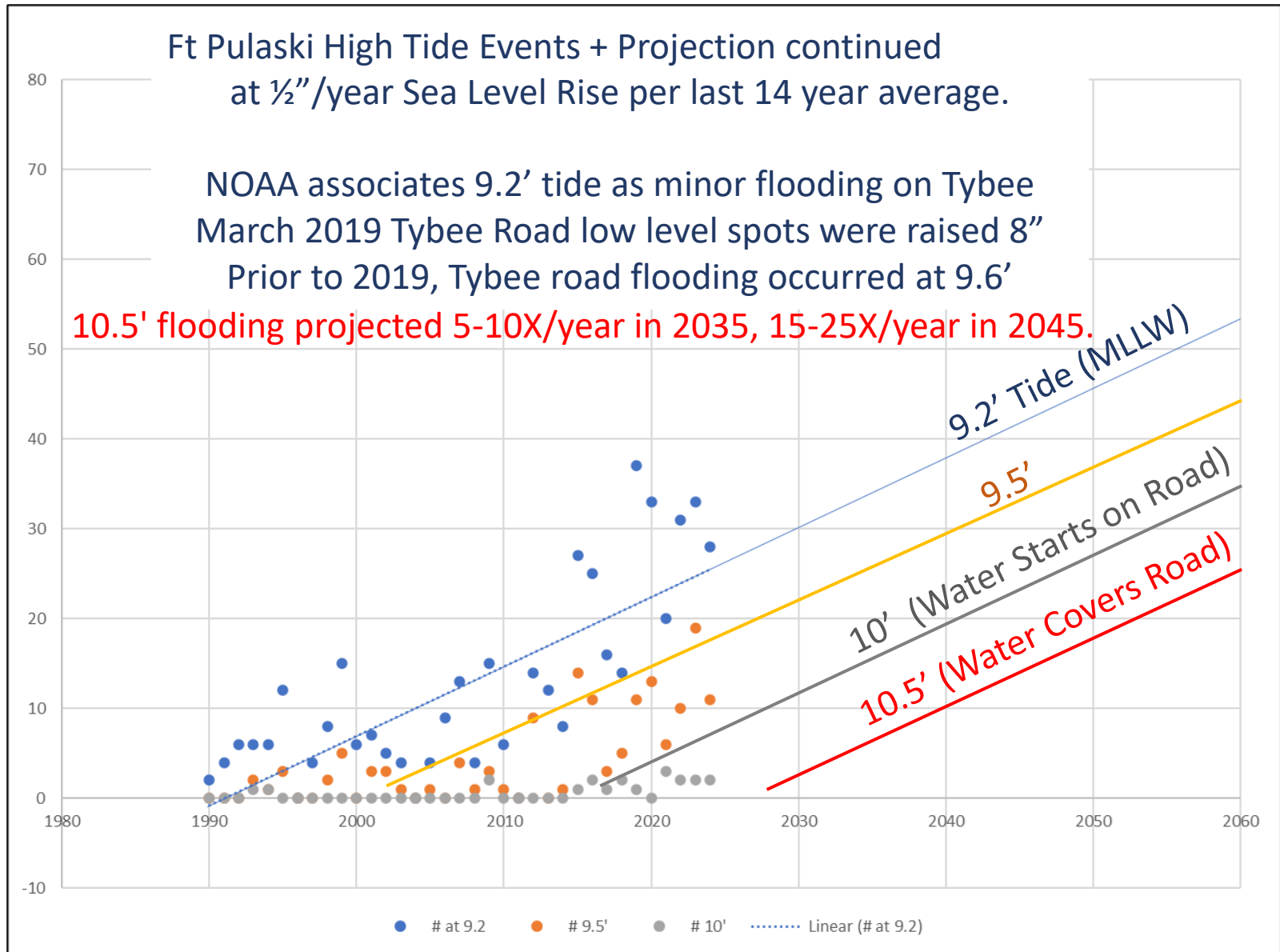
FIGURE 2.9: NOAA PROJECTIONS FOR GLOBAL SEA-LEVEL RISE TO 2100. THE LOWEST SCENARIO ASSUMES VERY MODERATE GLOBAL CLIMATE CHANGE AND A GENERAL CONTINUATION OF THE SEA-LEVEL RISE TREND OBSERVED IN THE 20TH CENTURY TIDE GAUGE RECORD. THE HIGHEST SCENARIO ASSUMES SIGNIFICANT GLOBAL CLIMATE CHANGE THAT INDUCES LARGE-SCALE MELTING OF THE GREENLAND AND ANTARCTIC ICE SHEETS.

Tybee Island Sea Level Rise Adaptation Plan, April 2016

[https://resilienttybee.com/wp-content/uploads/2022/05/Tybee SLR Adaptation Plan.pdf](https://resilienttybee.com/wp-content/uploads/2022/05/Tybee_SLR_Adaptation_Plan.pdf)



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

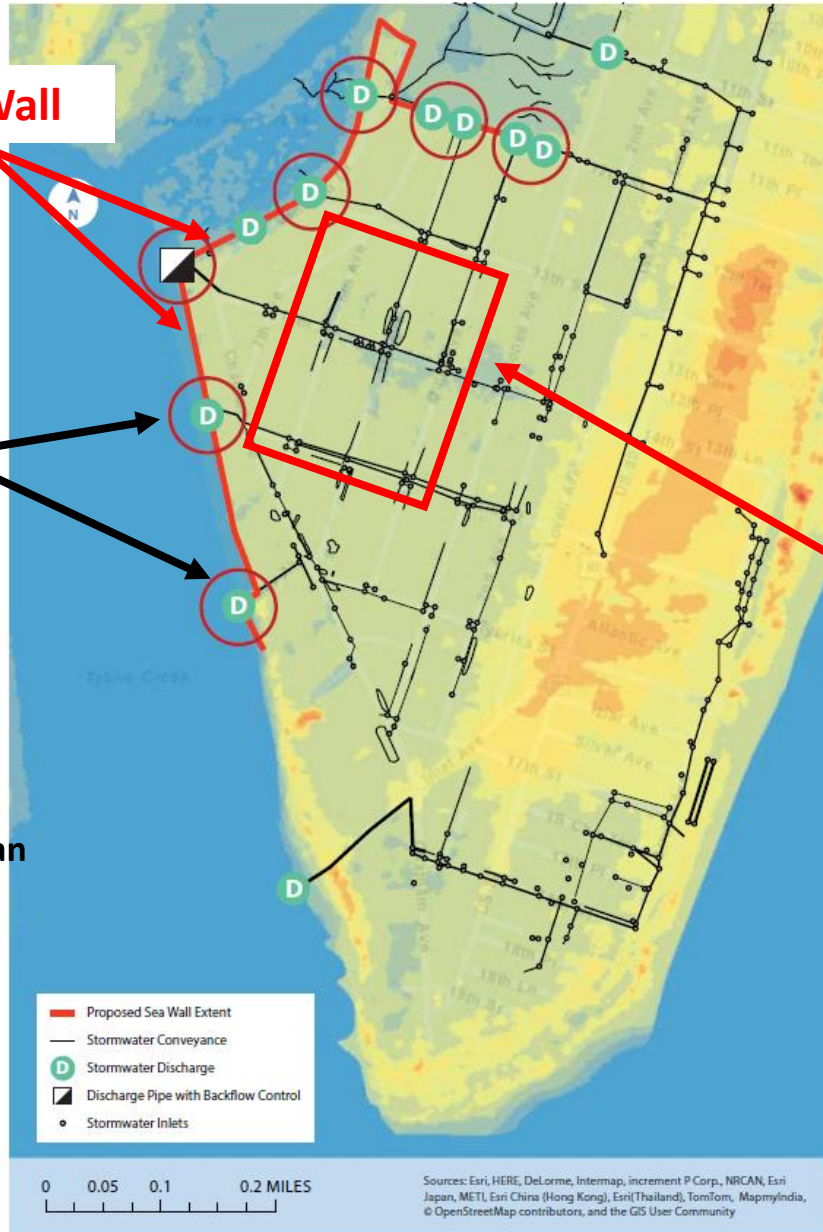
Proposed Sea Wall

Stormwater Discharge

Tybee Island Coastal Assessment June 2023

Tybee Island Natural Infrastructure Master Plan Jan 2023

<https://resilienttybee.com/wp-content/uploads/2023/04/Tybee-Natural-Infrastructure-Master-Plan.pdf>



Tybee Island Sea Level Rise Adaptation Plan, April 2016

https://resilienttybee.com/wp-content/uploads/2022/05/Tybee_SLR_Adaptation_Plan.pdf

Concern: This proposed Sea Wall (2016 \$35M estimate) from my perspective would protect Fishermans walk, Chatham Ave, Venetian Drive and the low lying properties in the area 12th – 15th st 6th ave – Jones from 10.5' to 11.5' tides; however, this does not protect mid island west of Jones. 12.5' tide mid island flooding appears would inundate this south end of the island despite the sea wall.

See follow on NOAA SLR images.

Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

Image: 10.5' Tide (MLLW)

West side of Mid Island Floods First

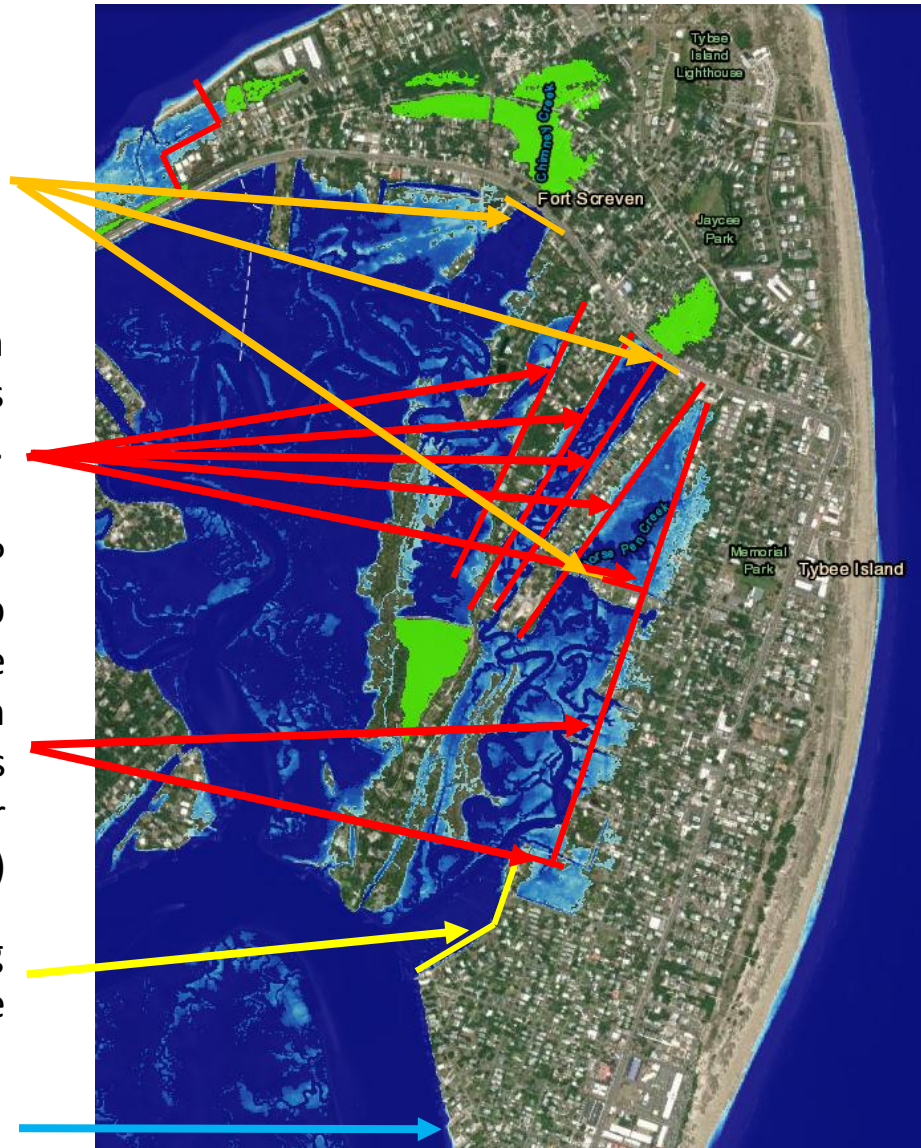
Do we increase size of culverts and install flood gates at 6th St, 1st St at flat bridge and W. of Lewis.

Do we create raised berms on private property marsh edges for Lewis, S. Campbell, 6th St.

Do we raise Jones Ave & 12th St first?
Or can we raise Miller and shore up private property marsh edges where Miller does not connect through North to South? (Either way – many homes would not be protected in greater community effort.)

NFWF Grant effort for raising Venetian Drive and living shoreline

Do we raise Alley 3 parking lot where sand is often placed to protect community area properties?



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

NOAA Sea Level Rise Viewer <https://coast.noaa.gov/digitalcoast/tools/slr.html>

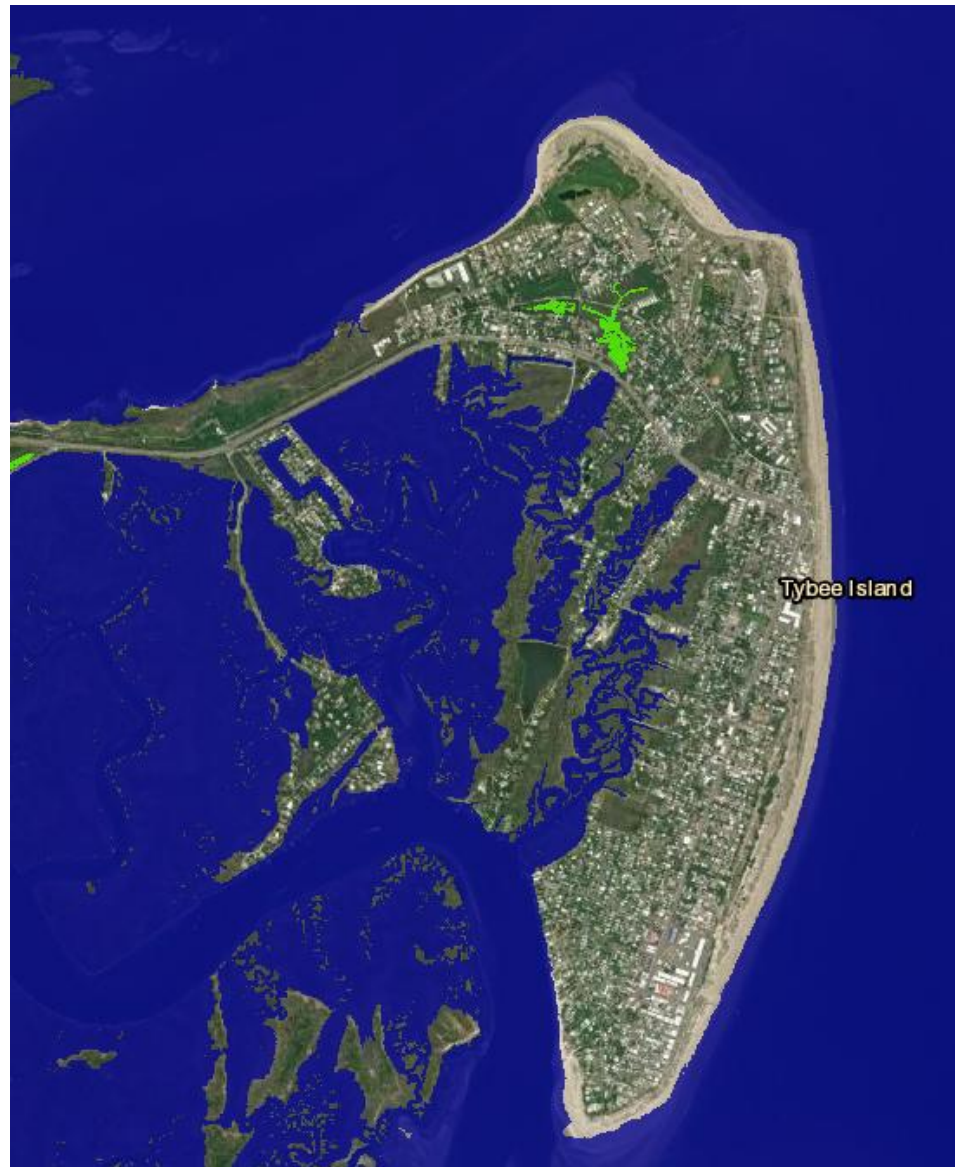
Image: **7.5' Tide** (MLLW) (NOAA app: MHHW)

**Current MHHW Level
(Mean Higher High Water)
Avg height of the highest
normal tides of the last 19 year
period.**

**This is the normal non-flooding
condition.**

(NAVD88 = MLLW+4.05' Ft Pulaski)

(MHHW = 7.5' MLLW)



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

NOAA Sea Level Rise Viewer <https://coast.noaa.gov/digitalcoast/tools/slr.html>

Image: **10.5' Tide** (MLLW) (NOAA app: 3' SLR)

Tybee Causeway is closed & covered with water in spots.

10.5' Tide: Access to Spanish Hammocks limited.

10.5' Tide shows water rising on Fishermans walk, Chatham Ave, Venetian Drive, 6th St, W. side of Jones & Lewis St



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

NOAA Sea Level Rise Viewer <https://coast.noaa.gov/digitalcoast/tools/sr.html>

Image: **11.5' Tide** (MLLW) (NOAA app: 4' SLR)

- 11.5' Tide - Bay Street is covered**
- Tybee Causeway has 80% of road covered with water.**
- 11.5' Tide: Spanish Hammocks flooding.**
- 11.5' Tide - Lewis, W side of Jones, S. Campbell, SW end of island bowl is flooded.**



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

NOAA Sea Level Rise Viewer <https://coast.noaa.gov/digitalcoast/tools/slr.html>

Image: **12.5' Tide** (MLLW) (NOAA app: 5' SLR)

Tybee Causeway water height is 2' high.

**Hurricane Matthew
10/8/16 12.45' Tide
Hurricane Irma
9/11/17 12.19' Tide**

12.5' Tide – Most all of island west of Jones except Ft. Screven is covered with water.



Item 20 Continued: Sea Level Rise – Tidal Mitigation Efforts

NOAA Sea Level Rise Viewer <https://coast.noaa.gov/digitalcoast/tools/slr.html>

Image: **14.5' Tide** (MLLW) (NOAA app: 7' SLR)
Butler Ave is flooded.



Image: **16.5' Tide** (MLLW) (NOAA app: 9' SLR)
85% of Tybee Island is flooded.



Community Engagement

Community Goodwill

Hometown Heroes Banner Program

Item 11: Support Local Businesses

How can Tybee continue to be supportive of local Tybee businesses.

Item 23: Encourage Young Families

How can encourage young families to Tybee? How can we be supportive of TIMA?

Item 25: Work Force Housing

How can we help Work Force Housing? Incentives for long term housing? Define our needs?

Item 1: Designated Driver Campaign

~ 255 DUIs in 2024, 159 DUI in 2023.

Communication campaign to encourage groups to designate a driver or individuals to have a paid service plan home before they leave home. Need to understand demographics first to focus effort appropriately. Are businesses willing to provide free/reduced cost for non-alcoholic drinks for DD. We want everyone to get home safe!

Item 6: Fire Department Facilities

Commit to schedule, funding and location for replacement of Fire Department Facilities

Item 7: 2026-2031 Comprehensive Plan

2021-2026 is the existing Comprehensive Plan that should guide us as Council and Staff by way of the included Work Programs. Time soon to begin effort on 2026-2031 Comprehensive Plan.

Item 27: Community Goodwill

What role can the city participate in fostering Community Goodwill?

- 1) Encourage continued support of each other in the community,
- 2) Helping neighbors,
- 3) Positive attitudes,
- 4) Foster engaged community
- 5) Informed community
- 6) Appreciation for Tybee
- 7) How can each of us help?
- 8) Celebrate our culture.
- 9) Volunteer with local charities
- 10) Participation in community activities
- 11) Friendly to visitors coming to Tybee, they way the large part of us were treated before we moved here.
- 12) Hometown Hero banners for first responders.
- 13) Recognize special community contributors
- 14) Support youth sporting programs.
- 15) Support our First Responders: Police, Fire, EMS
- 16) Wave at each other.
- 17) Be like BOB-O!
- 18) Help me define ways the city can foster and encourage Community Goodwill!

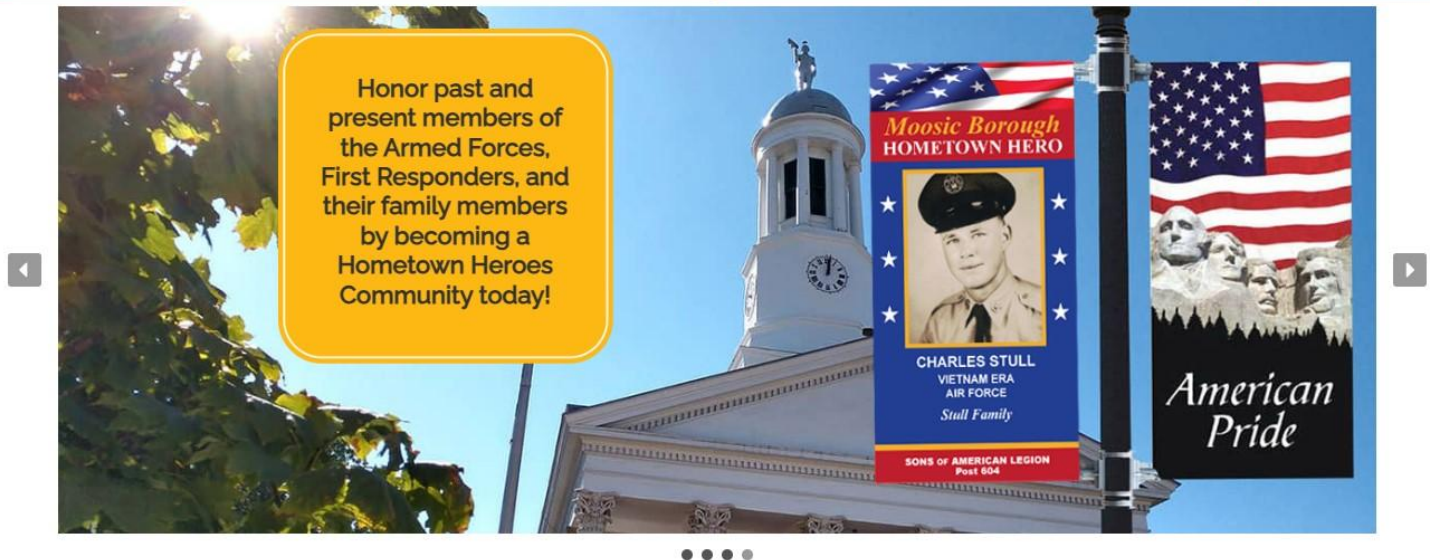
Item 15: Hometown Heroes Banner Program

<https://hometownheroesbanners.com>



TOLL-FREE: 1-844-484-7733 eMail: 

The original Hometown Heroes Banner program first ran in Harrisburg, PA in 2006.



Past and present armed forces and first responders (Fire, Police, Medical),
To be hung for weeks around memorial and veterans days.

Add Parades? Engage American Legion?

<https://hometownheroesbanners.com/>

Tybee Fresh Water Well Supply:

Cretaceous Well

Salt Intrusion Risk from Hilton Head Island

Cone of Depression, Results of Floridian Aquifer Consumption Reduction since 1998

7-10 Miles East of Tybee Thin Confining Layer Risk

USGS Monitoring Wells, 4 on Tybee

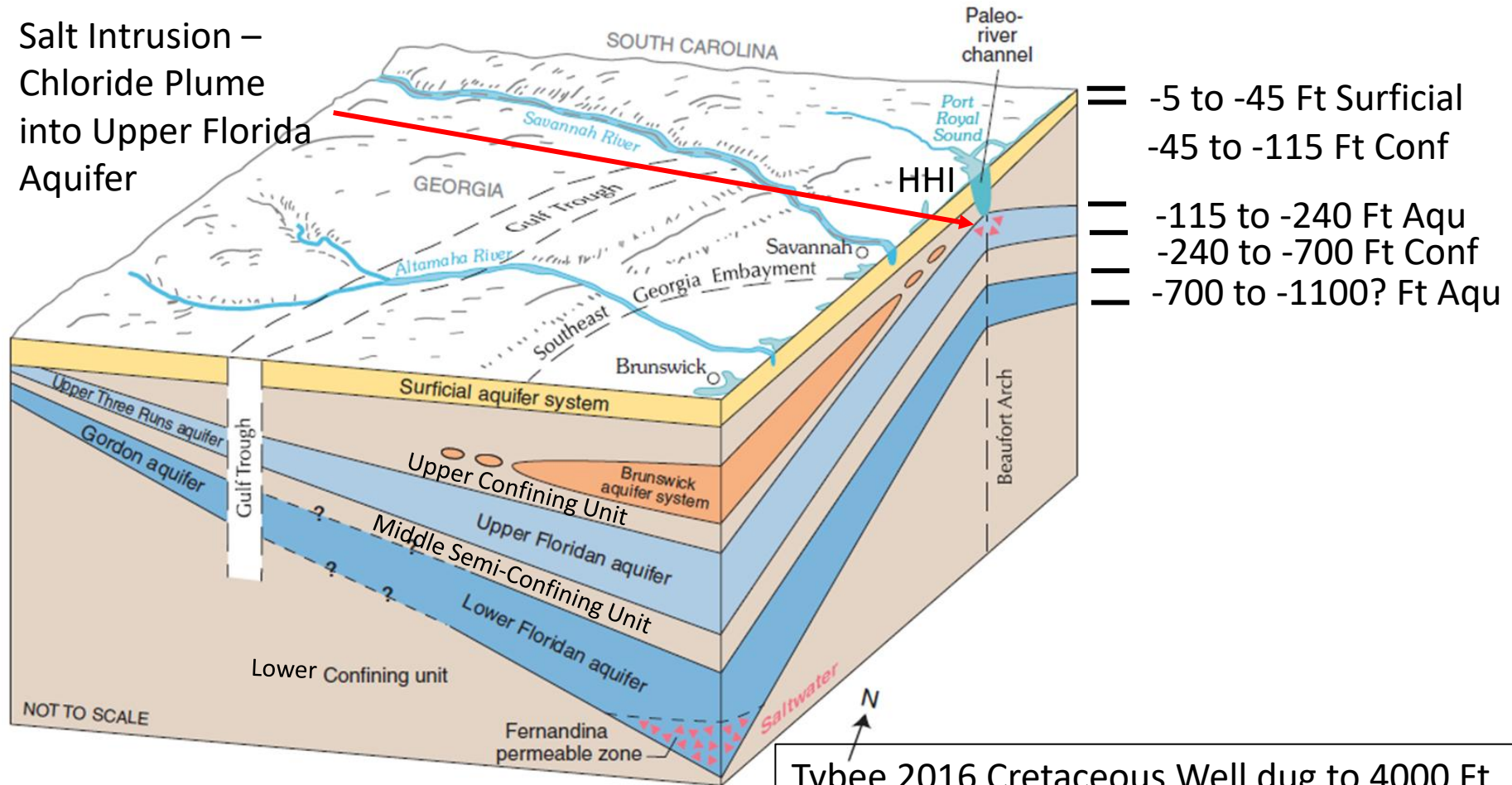
Savannah Area, Hilton Head Island & Tybee Data Points

Tybee 10 year Floridian Aquifer Monthly Average Withdrawal Rates

Salt Intrusion Document Links

Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD

Salt Intrusion – Chloride Plume into Upper Florida Aquifer



Modified Original Image Source: Georgia EPD

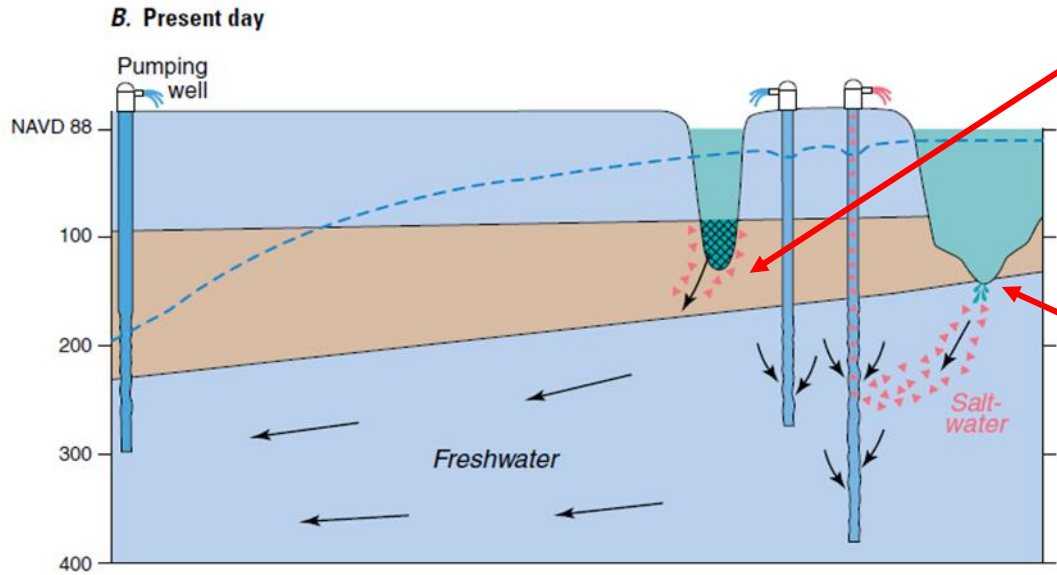
Tybee 2016 Cretaceous Well dug to 4000 Ft 10" Dia Casing failed at 3015 ft due to .250" wall casing used in lieu of .365" thick wall casing designed.

<https://epd.Georgia.gov/coastal-water-study>

<http://shep.uga.edu/reports.html>

Savannah Harbor Expansion Project

Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD



EPD states that Salt Water is entering the Floridian Aquifer by leakage through thin confining layers.

Salt Water Intrusion entering into Upper Florida Aquifer north of Hilton Head Island

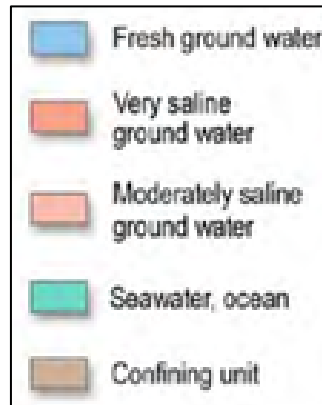
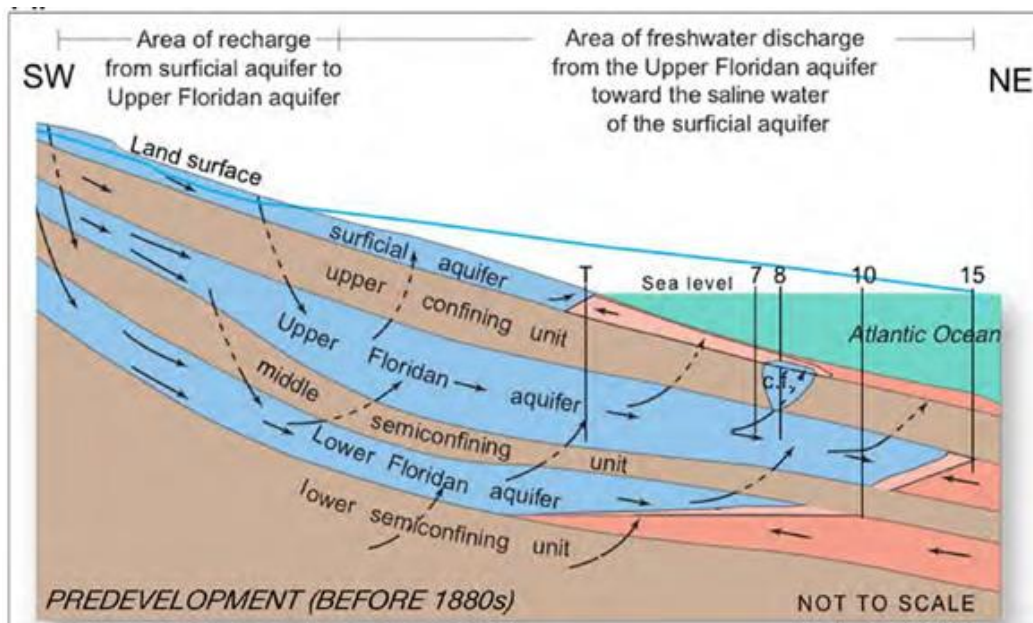
Modified Original Image Source: Georgia EPD

<https://epd.Georgia.gov/coastal-water-study>

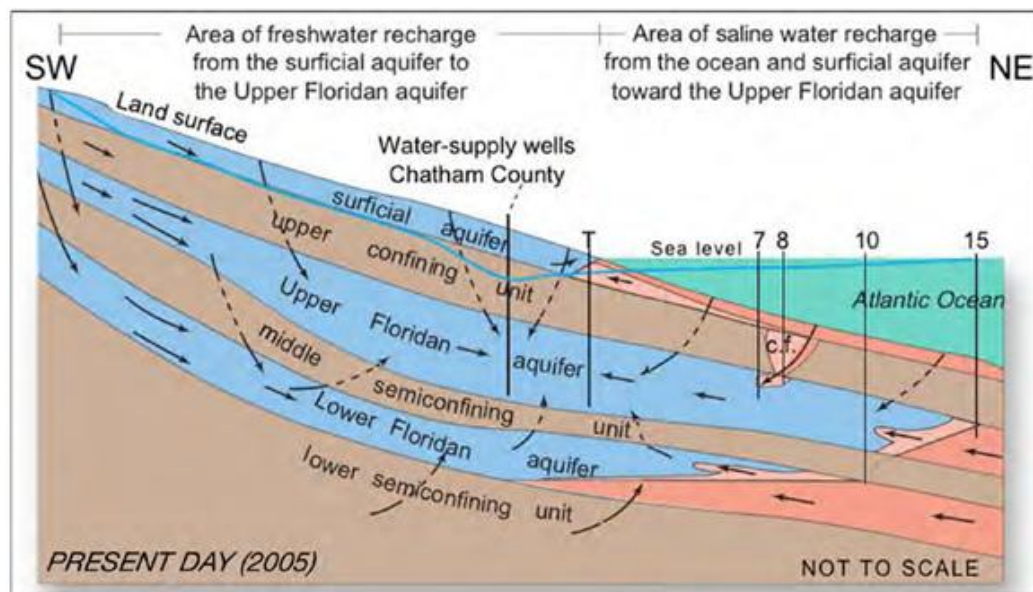
<http://shep.uga.edu/reports.html>

Savannah Harbor Expansion Project

Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD



Pre-major development of the Savannah/Hilton Head Area: Upper Floridan had pressure and flow rates that pushed fresh water up through confining layers where thin and for the large part absent for locations like the Port Royal Sound north of HHI.



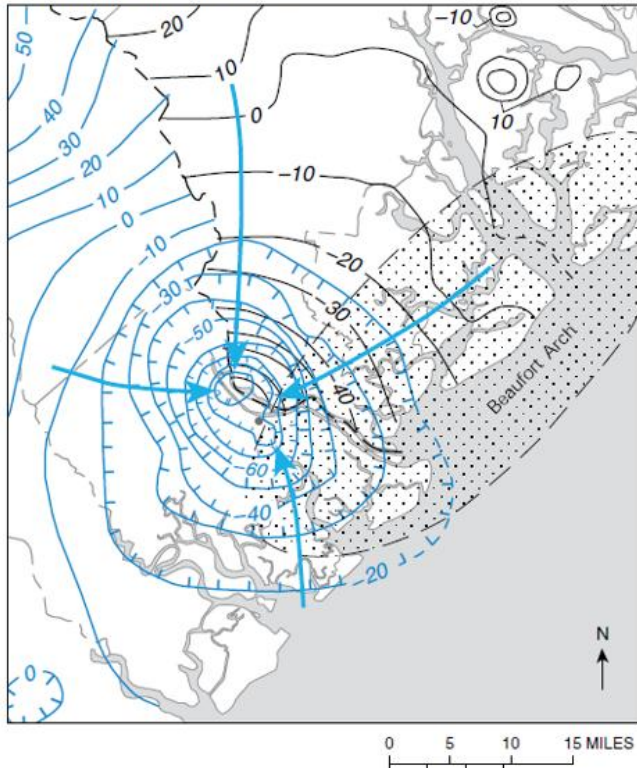
Present Day: With Floridan Aquifer fresh water consumption rate in the Savannah/Hilton Head Area reducing pressure and volume of water; Ocean salt water and saline ground water are now being pulled towards the fresh water consumption areas in lieu of being pushed away.

Source:

<https://pubs.usgs.gov/sir/2005/5134/pdf/sir2005-5134.pdf>

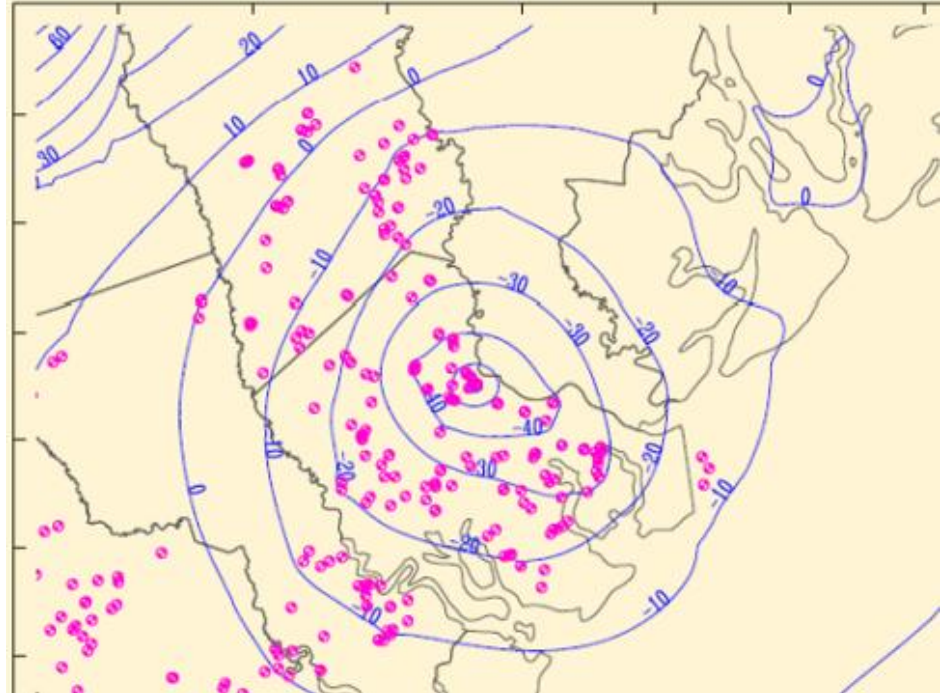
Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD

B. May and September 1998



1998 Savannah Cone of Depression at -90 ft water level depth with 69 MGD (Million Gallons per Day) Sav area consumption. Salt Intrusion (Chloride Plume) entering in Port Royal Sound (HHI) moving towards Cone of Dep.

2018 Coastal Sound Science Initiative (CSSI)



2018 Savannah Cone of Depression at -50 ft water level depth with Sav area consumption down to 45.6 MGD

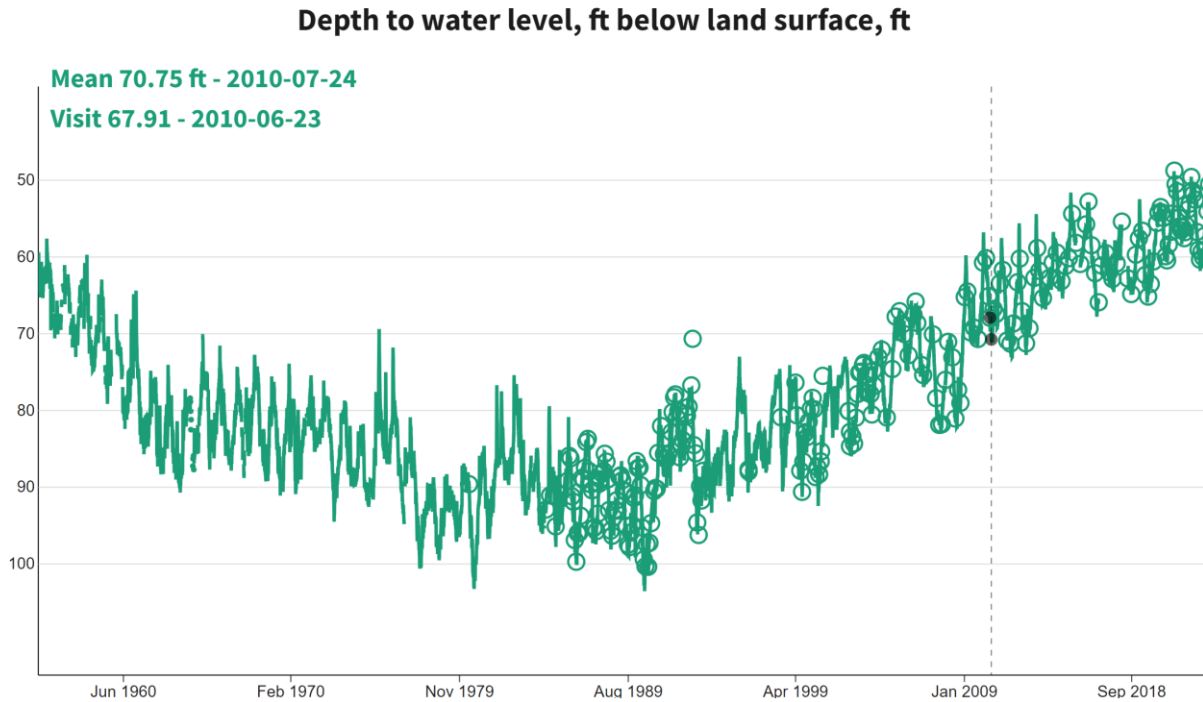
Images Source: Georgia EPD

<https://epd.Georgia.gov/coastal-water-study>

<http://shep.uga.edu/reports.html>

Savannah Harbor Expansion Project

Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD



1998 Savannah Cone of Depression at -90 ft water level depth with 69 MGD (Million Gallons per Day) Sav area consumption. Salt Intrusion (Chloride Plume) entering in Port Royal Sound (HHI) moving towards Cone of Dep.

2018 Savannah Cone of Depression at -50 ft water level depth with Sav area consumption down to 45.6 MGD

Images Source: Georgia EPD

<https://epd.Georgia.gov/coastal-water-study>

<http://shep.uga.edu/reports.html>

Savannah Harbor Expansion Project

Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD

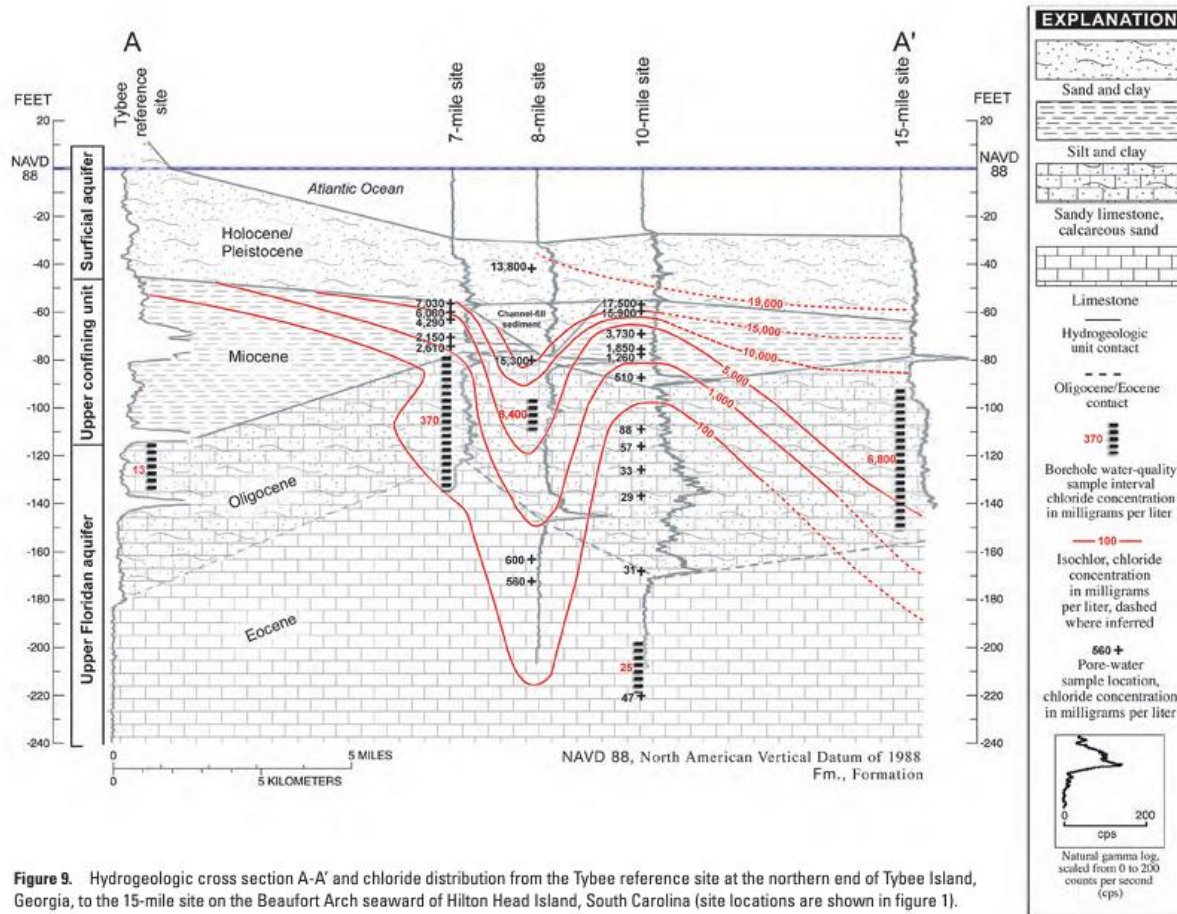
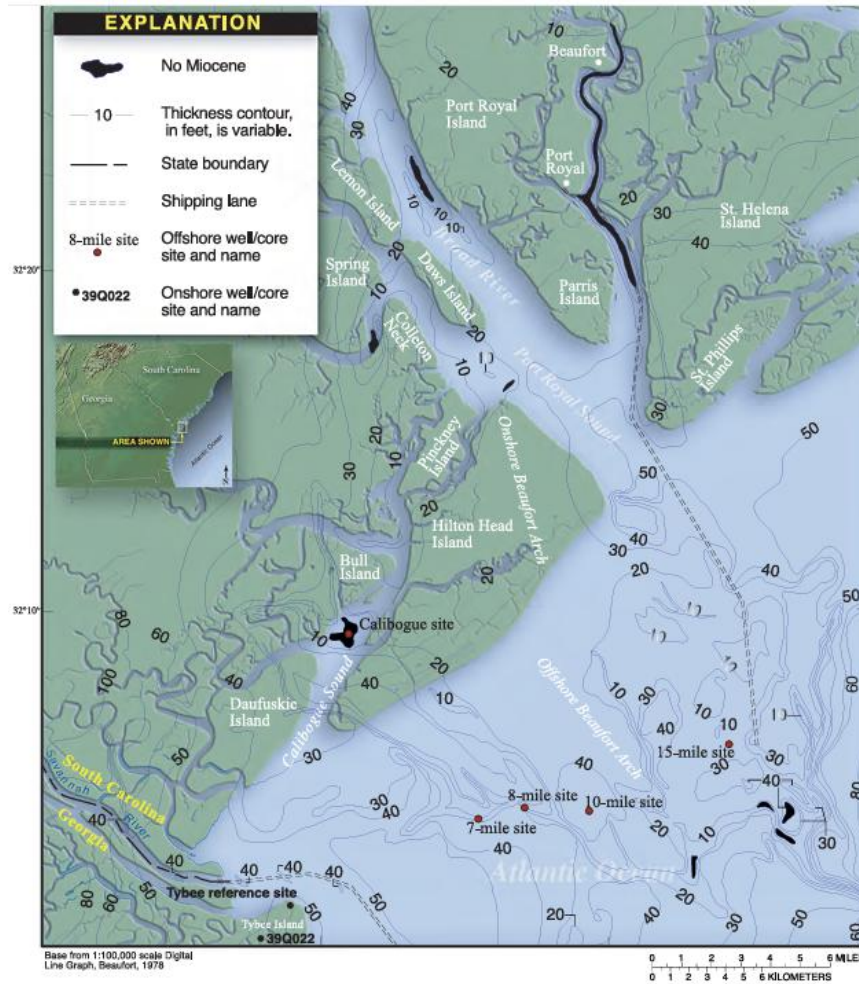


Figure 9. Hydrogeologic cross section A-A' and chloride distribution from the Tybee reference site at the northern end of Tybee Island, Georgia, to the 15-mile site on the Beaufort Arch seaward of Hilton Head Island, South Carolina (site locations are shown in figure 1).

Note: There is still some risk to Savannah Area fresh water supply. USGS has wells 7, 8, 10, 15 miles NE of Tybee measuring salinity levels where the upper confining layer (Typical 70 ft in Sav area) are 40 to 10 ft thick, increased Salt Levels showing Salt Intrusion above.

Source: <https://pubs.usgs.gov/sir/2005/5134/pdf/sir2005-5134.pdf>

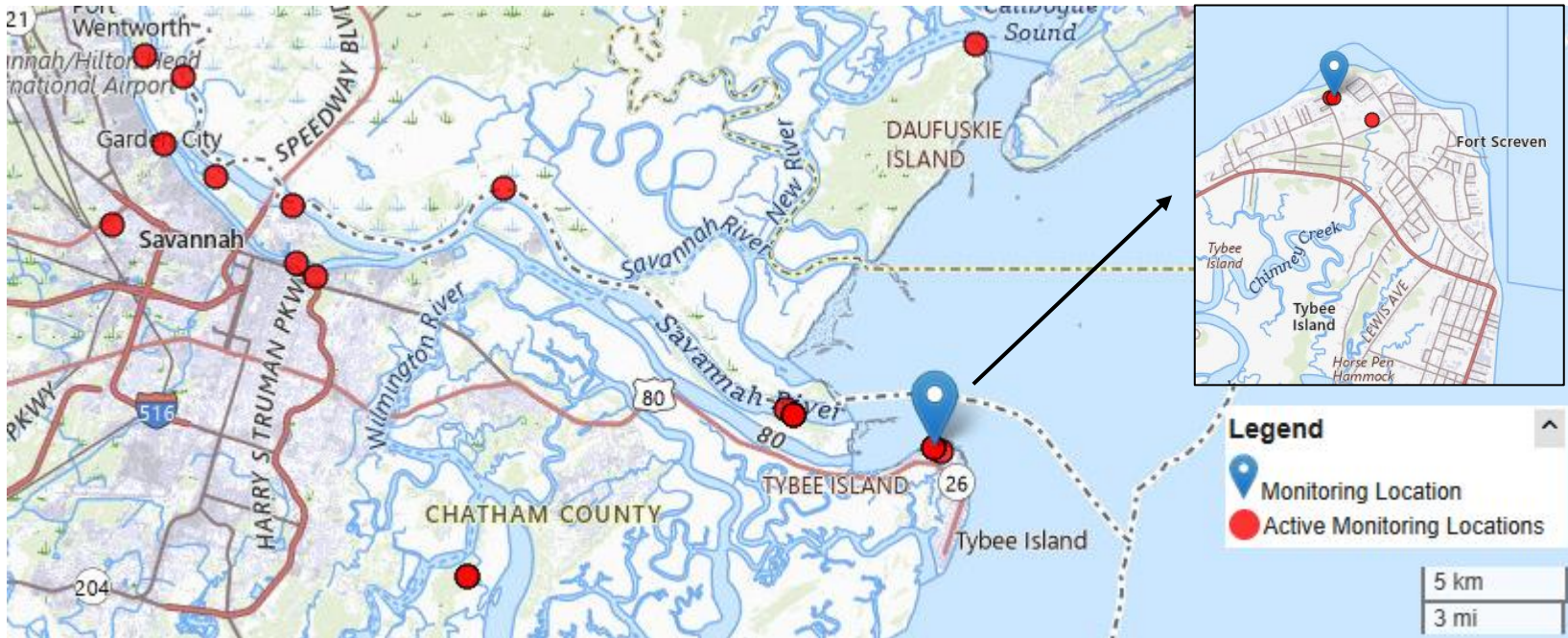
Item 28: Cretaceous Well: Resolved HHI Salt Intrusion Risk to Sav till 2125+ at 69 MGD



Thickness of Upper Confining Unit (Miocene layer) charted by USGS.
~ 70 ft thick on Tybee, 50 to 10 ft thick from Tybee to 15 miles NE of Tybee.

Source: <https://pubs.usgs.gov/sir/2005/5134/pdf/sir2005-5134.pdf>

Item 28: USGS Salt Intrusion Risk Monitoring



USGS Tybee Island Monitoring Wells:

- [Well 39Q029](#), completed in the surficial aquifer system (water levels only)
- [Well 39Q026](#), completed in the Upper Floridan confining unit (water levels and specific conductance)
- [Well 39Q027](#), completed in the Upper Floridan aquifer (water levels and specific conductance)
- [Well 39Q024](#), completed in the Lower Floridan aquifer (water levels only)

(Specific conductance is a surrogate for chloride concentration, and is used to monitor the potential movement of saltwater into the freshwater zones of the Upper Floridan aquifer.)

Source: <https://waterdata.usgs.gov/monitoring-location/320127080511203/#dataTypeId=continuous-72019-0&period=P365D&showMedian=true>

Item 28: Cretaceous Well: Resolved risk for HHI Salt Intrusion to year 2125+

Savannah Area: (Cone of Depression)

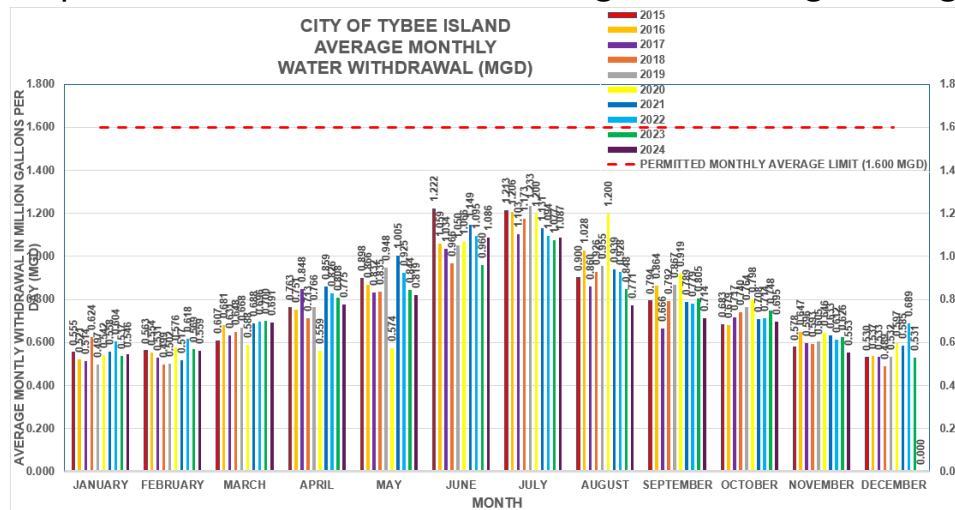
- Consuming 69 MGD in 1998 from Floridian Aquifer, reduced to 45.6 MGD in 2022
- Year 2125 projected HHI Salt Plume reaches Sav at year 2000 consumption rates from Fl Aquifer

Hilton Head:

- 3832 Ft depth Cretaceous Well in 2001, \$11M in 2009 for Reverse Osmosis Plant (cool & remove Mg, Ca)
- Chlorides entering north of HHI in Port Royal Sound (very thin confining layer)
- Salt Plume moving ~130 ft/year towards Sav per CSSI (Coastal Sound Science Initiative)
- 01/31/23 HHI lost their 10th upper Floridian aquifer well from salt intrusion since 2000.

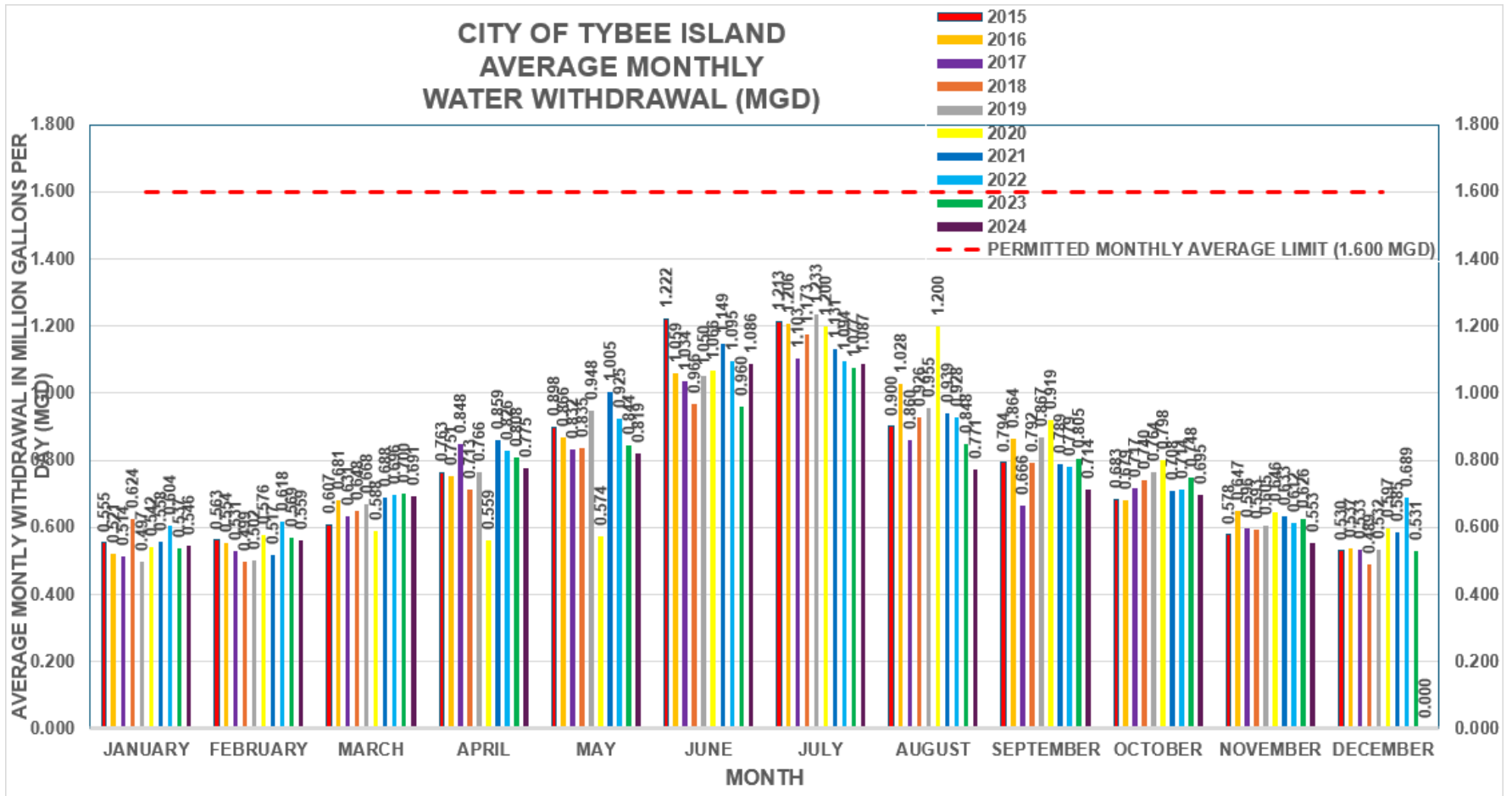
Tybee Island:

- 2016 Cretaceous Well effort failed, 4000 ft hole dug at DPW; 10" Dia Casing Failed in Aug 2016
 - .250" thick wall was used, was designed for .365" thick wall
 - GEFA approved \$6.2M for well, \$3.5M spent at time of failure
 - Tybee was to be responsible for water treatment facility, estimated \$5M-\$7M in 2016.
- 250 mg/l is the limit of salt in drinking water
- Tybee Floridian Aquifer Permit 025-0027: 0.916 mgd annual avg, 1.6 mgd monthly avg till 12/31/27



Item 28: Tybee Island Floridian Aquifer 10 Year Withdrawal

- Tybee Floridian Aquifer Permit 025-0027: 0.916 mgd annual avg, 1.6 mgd monthly avg till 12/31/27



Source: City of Tybee Island

Item 28: Salt Intrusion Risk: Additional Links:

Number	Title	Date	Link
3	Hydrogeology, Water Quality, and Saltwater Intrusion in the Upper Floridan Aquifer in the Offshore Area near Hilton Head Island, South Carolina, and Tybee Island, Georgia, 1999–2002	2005	https://pubs.usgs.gov/sir/2005/5134/pdf/sir2005-5134.pdf
4	Coastal Georgia Regional Water Plan	2023	https://waterplanning.georgia.gov/document/regional-water-plans/coastal-georgia-regional-water-plan-0
5	Georgia EPD – Coastal Water Study	2006-2024	https://epd.georgia.gov/coastal-water-study
6	US Army Corps of Engineers SHEP Monitoring Reports	2024	http://shep.uga.edu/reports.html
7	USGS South Atlantic Water Science Center – Coastal Sound Science Initiative:	1999-2024	https://ga.water.usgs.gov/www2/projects/coastal/index.html
8	Notice of Groundwater Withdrawal Permit Modifications – November 2, 2015	2022	https://epd.georgia.gov/document/publication/public-notice-revised-coastal-permits-11-2-15pdf
9	Notice of Groundwater Withdrawal Permit Modifications – November 2, 2015	2015	https://epd.georgia.gov/document/publication/public-notice-revised-coastal-permits-11-2-15pdf
10	List of Georgia EPD Non-Farm Groundwater Withdrawal Permits (Revised November 2019)	2019	https://epd.georgia.gov/document/document/list-non-farm-gw-withdrawal-permits-november-2019
11	Simulated Drawdown – Bryan / Bulloch Proposed Withdrawal - 5-mile Radius from I-16 / Hwy 119 interchange	2024	https://epd.georgia.gov/document/document/simulated-drawdown-bryan-bulloch-proposed-withdrawal-5-mile-radiuspdf
12	Coastal Sound Science Initiative Modeling of Salt Water Intrusion	2007?	https://epd.georgia.gov/document/publication/positionpapercoastalsaltwatermodelmay2010pdf
13	Saltwater Contamination in the Savannah-Hilton Head Island Area (CSSI)	2006	https://epd.georgia.gov/document/document/usgspresentationimagespdf
14	Coastal Georgia Water & Wastewater Permitting Plan for Managing Salt Water Intrusion	2006	https://epd.georgia.gov/document/document/saltwatermanagementplanjune2006pdf
15	EPD Guidance on Alternate Water Sources	2007	https://epd.georgia.gov/document/document/alternatewatersourcespdf
16	FY_2023_SHEP_Annual_Meeting_Presentation_Slides_April_08_2024	2024	https://outlookuga-my.sharepoint.com/:b:/g/personal/cgr_uga_edu/EXZYWYKorZBsICENIKTPFEBFdg_5saeZ0xaQDObHpxAug?e=TDbWfk
17	SHEP 2023 Annual Groundwater Monitoring Report	2024	https://outlookuga-my.sharepoint.com/:b:/g/personal/cgr_uga_edu/EYcedf0QI_1LrI62OOWiNIYBgOYZO7CbZYJia8N3dY9VpQ?e=Swfrle
18	USGS GA Groundwater current conditions	2024	https://waterdata.usgs.gov/ga/nwis/current/?type=gw
19	City of Tybee Island Water Pollution Control Plant (WPCP) NPDES Permit No. GA0020061	2017	https://epd.georgia.gov/document/publication/npdes-permit-no-ga0020061-signed-permitpdf
20	Tybee 2016 Cretaceous Depth Well Effort	2023	Attached
21	Savannahnow Report on well litigation	2018	https://www.savannahnow.com/story/news/2018/08/14/georgia-sues-to-recover-costs-for-defunct-well-on-tybee/11046364007/
22	WJCL Report on Tybee cretaceous well and GEFA involvement	2017	https://www.wjcl.com/article/future-of-tybee-island-well-project-in-jeopardy/8559315
23	Hilton Head Public Service District Report on 10th lost well to saltwater intrusion	2023	https://hhpsd.com/hilton-head-psd-loses-another-well-to-saltwater-intrusion-2/
24	Post and Courier Hilton Head Reverse Osmosis	2021	https://www.postandcourier.com/news/a-complex-threat-touches-southern-sc-coast-underground-saltwater/article_93d719d6-b1a6-11eb-8acd-e7bb17428ace.html