



**City of Ocean City  
Lagoon/Back Bay Dredging –  
Town Hall Meeting**



*Total Estimated Dredge Material  
required for North to South of the  
City*

**500,000 Cubic Yards of Dredge  
Material**

*Includes: North to South of the  
City, channels and private boat  
slips*

# Why Dredging?

(Snug Harbor - Pictured)



# Why Dredging? (Continued)



# Background – Dredging in the Past

- ***Going back to the creation of the current lagoons, there were no rules and/or regulations for dredging.***
- ***Most of the lagoons were created by dredging and the material dredged was used as fill to create the current uplands.***
- ***Prior to current rules and regulations, the City owned a dredge for maintaining back bays and lagoons and pumped the material onto the north end beaches. In the 1970s, regulations prevented this from continuing.***

# Background – Dredging in the Past (Continued)

- **Currently, rules and regulations require dredge materials from lagoons/back bays to be stored in a Contained Disposal Facility (CDF).**
- **The City owns 4 sites, 2 in the very deep south end, one near 34<sup>th</sup> Street (Site 83) and one under Route 52 Causeway (Route 52 CDF).**
- **Maintenance dredging mainly utilized Site 83 due to its size and location and the fact that it already existed.**
- **City dredging projects occurred about every 7-10 years.**

# Dredging – Since 2000s

## 2002 to 2003 - Mobile Dredging and Pumping Company

Clubhouse Lagoon	28,770 Cubic Yards
South Harbor	51,605 Cubic Yards
Sunny Harbor	23,960 Cubic Yards
Venetian Bayou	18,195 Cubic Yards
<u>Carnival Bayou</u>	<u>28,490 Cubic Yards</u>
Total Cubic Yards	151,020 Cubic Yards
Total Cost	\$1,499,093.22

Note: Dredge Material to Site 83

# Dredging – Since 2000s (Continued)

2005 - Mobile Dredging and  
Pumping Company

<u>Northpoint Lagoon</u>	<u>16,750 Cubic Yards</u>
Total Cost	\$488,244.00

Note: Dredge Material to Egg Harbor  
Township – Site Currently Full

# Dredging – Since 2000s (Continued)

## 2012 to 2014 – Hydro-Marine Construction Company

Clubhouse Lagoon,  
Bluefish Lagoon,  
South Harbor,  
Sunny Harbor, and a  
Portion of Venetian  
Bayou

Approximately 65,000  
Cubic Yards

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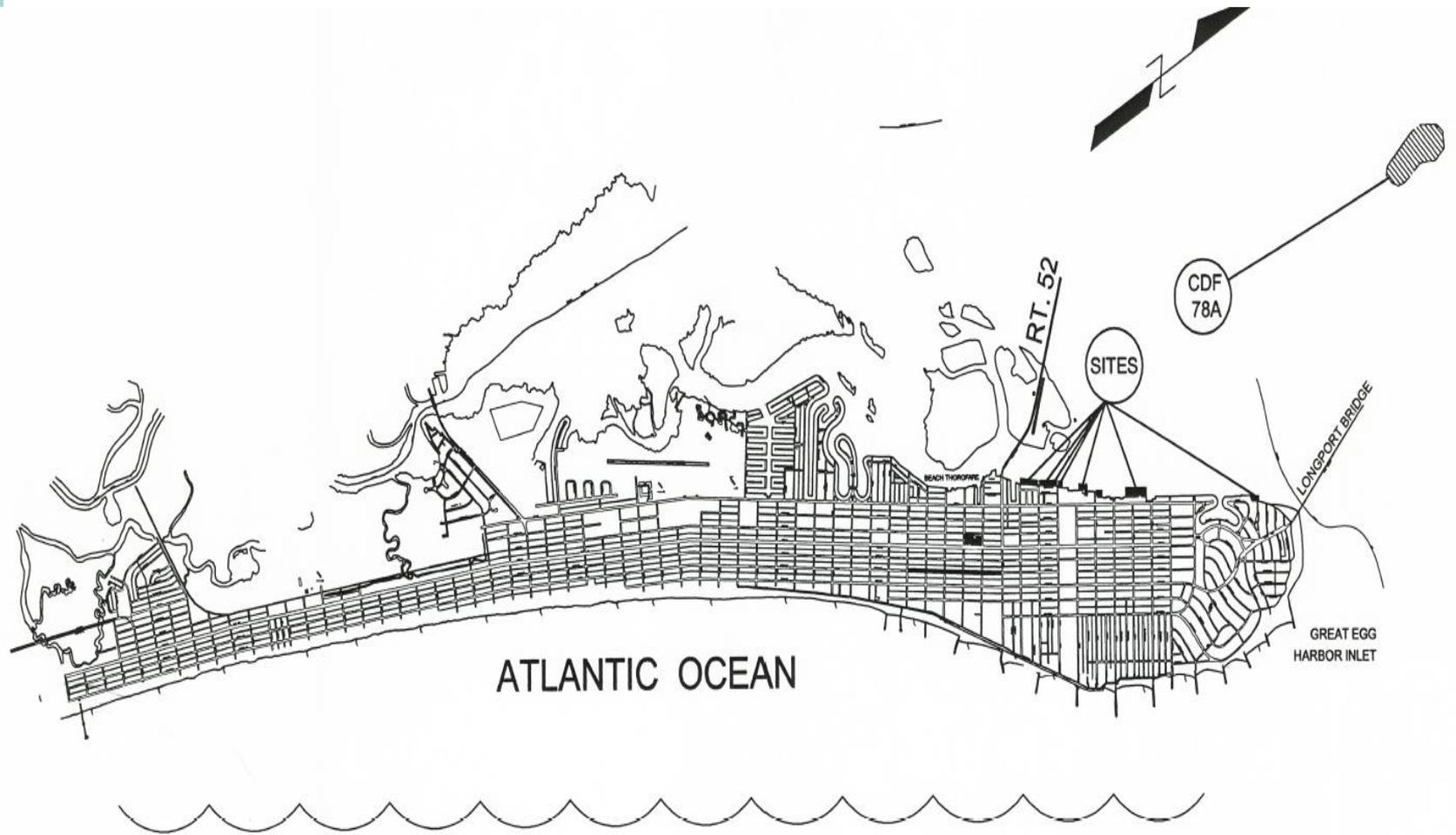
**Total Cost**

**\$1,832,667.71**

# Dredging – Since 2000s (Continued)

- ***The last dredging contract for the lagoons/back bays was awarded to Hydro Marine and was permitted and designed by Duffield Associates in 2010 - 2014. The contract was cut short due to a lack of available volume at Site 83 and anywhere else. There were also other issues at Site 83.***
- ***The last contract left about 44,000 cubic yards of material un-dredged near West 16<sup>th</sup> Street and about 16,000 cubic yards in Snug Harbor. It is likely that these volumes have increased as they represent pre-Sandy estimates.***

# Condo Associations/Private Areas



# Dredging Sites

Site 83  
250,000 Cu.Yd.  
Capacity  
(Approximately 13  
acre site)



# Site 83 – Ongoing Work



# Dredging Sites (Continued - Route 52)



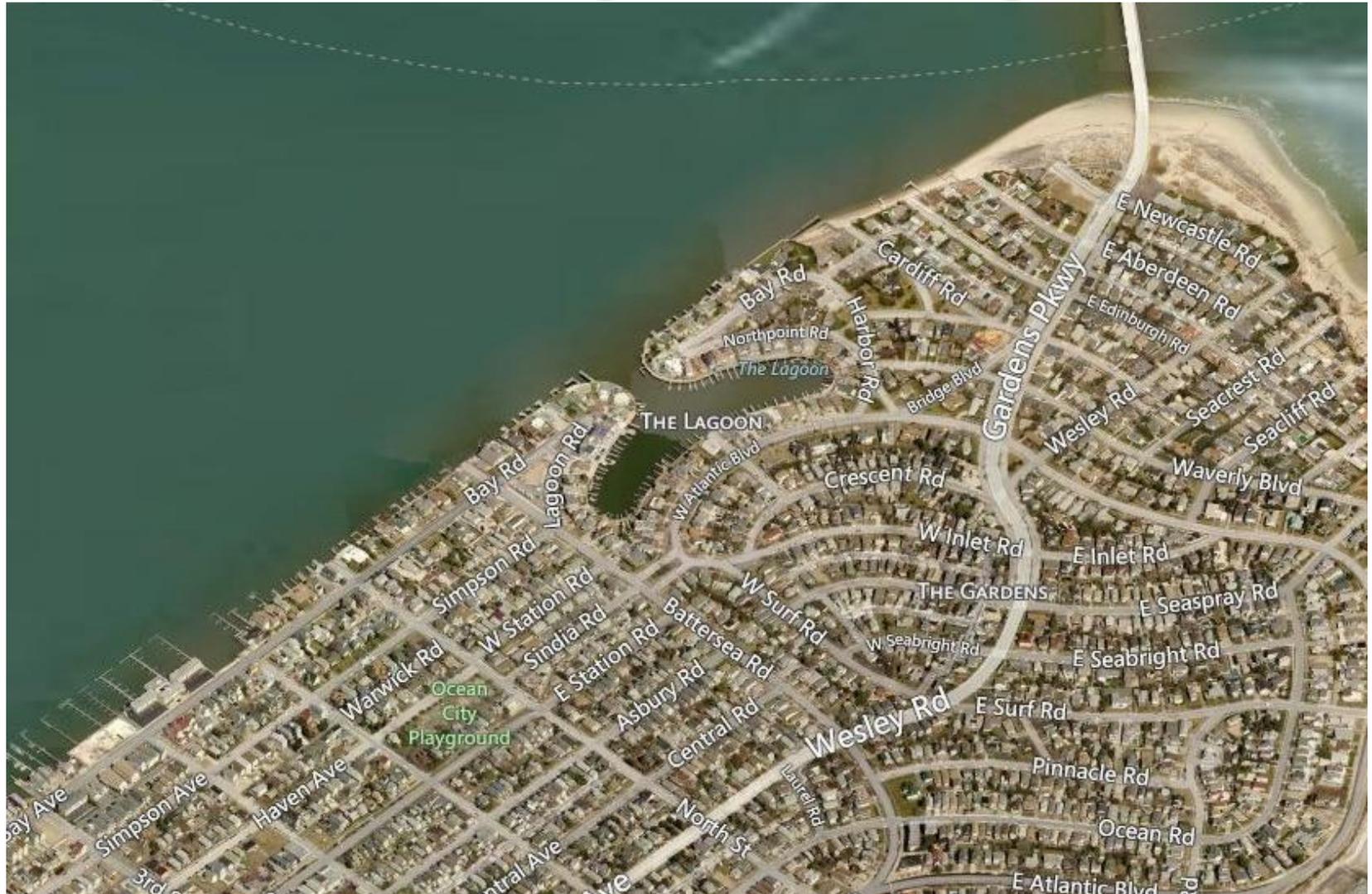
Route 52  
7,000 Cu.Yd.  
Capacity (Less  
than 1 acre  
site)

# Lagoon/Back Bay Sites:

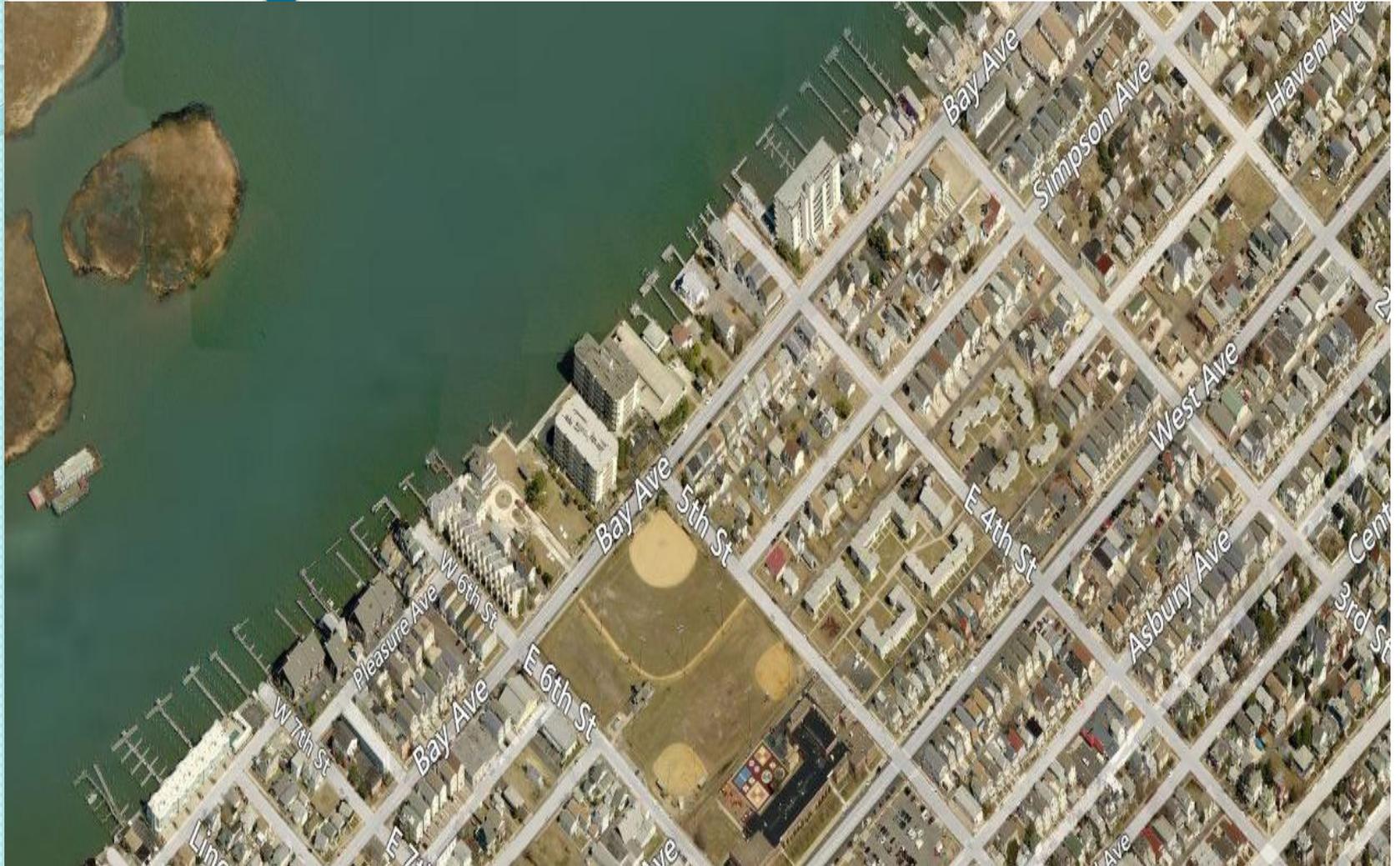
(Listed in order from North to South)

- Northpoint Lagoon – City of Ocean City
- Snug Harbor – Snug Harbor Association
- Glen Cove – City of Ocean City
- Carnival Bayou – State of NJ
- Venetian Bayou – State of NJ
- Sunny Harbor – City of Ocean City
- South Harbor – City of Ocean City  
(Including: Marcus, Tonga, Midway, Salvador, Cayman, Verde, and Pitcairn)
- Bluefish Lagoon – City of Ocean City
- Clubhouse Lagoon – City of Ocean City
- Waterview Blvd. – City of Ocean City

# North End to 3<sup>rd</sup> Street/Northpoint Lagoon/Marine Village Harbor/Navigable Route



# 3<sup>rd</sup> to 8<sup>th</sup> Street/Bay Front Condos/ Navigable Route



# Glen Cove/Snug Harbor/ Navigable Route



# Carnival Bayou & Venetian Bayou (16<sup>th</sup> to 18<sup>th</sup> Streets)



# Sunny & South Harbor/ Navigable Route



# Clubhouse Lagoon/Bluefish Lagoon



# Waterview Boulevard



# Preparing for Dredging

The following funds were part of the 2015-2019 adopted Capital Plan for dredging:

<u>Year</u>	<u>Budgeted</u>
2015	\$5,000,000
2016	\$3,000,000
2017	\$1,000,000
2018	\$1,000,000
<u>Total</u>	<u>\$10,000,000</u>

Total Capital Plan 2015-2019 = \$79,616,300

Dredging makes up approximately 12.6% of the entire 5 Year Capital Plan and is the largest financial commitment the City has ever made towards dredging.

# Current Activity – Contracts in Place

Surveying/Permitting: \$24,460

Sampling/Testing/  
Reporting: \$426,778

\$154,095.96 (spent to date)

\$272,682.04 (available)

Tipping Fee at Disposal  
Site: \$500,000

Site 83 - Material Removal: \$2,689,000

Total = \$3,640,238

# Material to be Removed

Site 83: 50,000 cubic yards of dredge material (Under current contract)

**Note:**

*Total estimated material North to South of the City excluding channels and private boat slips is approximately 300,000 cubic yards.*

*If private boat slips are included the estimate could realistically approach 500,000 cubic yards.*

# Testing

***There are 3 levels of testing to allow the material to be moved and used as a beneficial reuse material:***

- ***Commercial grade – least stringent.***
- ***Residential grade – typically required for most uses. This level is required for use in Wildwood.***
- ***Sub Aqueous (Underwater) grade – most stringent, used for wetlands enhancement projects.***

# Testing (Continued)

Testing is required in two phases:

1. The material must be tested prior to dredging; and
2. The material must be tested prior to removal from the CDF to be transported offsite.

# Types of Dredging

## Mechanical:

- ***Typically small areas, small lagoons and areas around docks.***
- ***Costs about \$29 per cubic yard based on latest bids.***
- ***Dredging can occur between July 1 and December 31 of each calendar year.***
- ***Removal varies as to the percent content of water. Material weighs less and occupies less volume when dry. Mechanical dredging inherently dewateres during the process and takes less time to dry.***

## Hydraulic:

- ***Hydraulic dredging is the most cost effective method of dredging provided that a larger volume of dredging is available to reduce the cubic yard cost by spreading the cost out over a larger volume.***
- ***Costs vary per volume but typically have costs around \$10 per cubic yard.***
- ***Dredging can occur between July 1 and December 31 of each calendar year.***
- ***Removal varies as to the percent content of water. Material weighs less and occupies less volume when dry. Since hydraulic dredging is about 90% water, dewatering and drying takes much longer than mechanical.***

# ***Future Costs of Emptying Site***

## ***83:***

- ***Construct a temporary road to Site 83 – about \$700,000***
- ***250,000 +/- cubic yards of material – over \$10,000,000 based on recent bids***
- ***Cost to further test material - \$300,000***

# Potential Temporary Road to Site 83



# Avenues Pursued:

- Scenario 1: Use of existing, active, upland disposal site (used within last 5 years). Dredged material is not contaminated, very fine sand, high organics. **NO**
- Scenario 2: Use of abandoned, inactive, upland disposal site (not used within last 5 years, revegetated with phragmites). Dredged material is not contaminated, silt and very fine sand, high organics. **NO**
- Scenario 3: Use of abandoned, inactive, upland disposal site (not used within last 10-15 years, revegetated with native grasses). Dredged material is not contaminated, silt and very fine sand, high organics. **NO**
- Scenario 4: Use of on-beach disposal. Dredging limited to certain times of year. Dredged material is not contaminated, clean sand with size distribution suitable for beach nourishment. **NO**
- Scenario 5: Use of on-beach disposal. Dredging limited to certain times of year. Dredged material is not contaminated, silt and fine sand, high organics, fine size distribution makes time on beach short. **NO**
- Scenario 6: Creation of salt water wetlands. Dredged material is not contaminated, silt and fine sand, high organics. **NO**

# Avenues Pursued (Continued):

- Scenario 7: Creation of upland habitat. Dredged material is not contaminated, silt and fine sand, high organics. **NO**
- Scenario 8: Creation of underwater habitat. Dredged material is not contaminated, silt and fine sand, high organics. **NO**
- Scenario 9: Use of active, upland disposal site with management. Use of material for clean land fill, municipal landfill cover, etc. Material trucked from disposal site to point of use. Dredged material is not contaminated, silt and fine sand, high organics. **NO**
- Scenario 10: Use of offshore disposal with barge. No unusual attempts made to contain the material. Dredged material is not contaminated, silt and fine sand, high organics. **NO**
- Scenario 11: Use of offshore disposal with barge. Material is disposed at given location, area is later covered with clean sand. Dredged material is not contaminated, silt and fine sand, high organics. **NO**
- Scenario 12: Use of on-beach disposal into geo-tubes. Dredging limited to certain times of year. Dredged material is not contaminated, silt and fine sand, high organics. Geo-tubes used for dune core and to fortify beach structures. **NO**

# Courses of Action

- **The City is pursuing both short term and long term solutions to alleviate the dredging situation for lagoons/back bays including emptying a portion of Site 83 (currently under contract).**
- **The City is pursuing permits to construct a temporary road to Site 83 to fully empty it.**
- **The City has partnered with the City of Wildwood to accept the material to be used for capping a dormant landfill.**
- **From the most recent bids on Back Bay Dredging, the lowest base bid received was for \$2,632,425.00 which would dredge approximately 72,200 cubic yards of dredge material. Current available capital for 2015 is \$2,287,948.62.**



# Courses of Action (Continued)

- **The City is pursuing permits for a grant received from National Fish and Wildlife for wetlands enhancement. This project will hopefully allow us to restore wetlands shorelines to 1977 boundaries provided that the dredge material meets the sediment testing required from NJDEP. It is hopeful that with our matching amount we can replace about 150,000 cubic yards of marsh line eroded since 1977. We have a 2 year window from June 1, 2015 to complete this. We have been working closely with the State and Federal regulators to provide a plan that can be permitted and constructed. This has required several revisions to accommodate the comments of the regulators and we are close to submitting a final permit application package.**
- **The City is also pursuing various partnerships and relationships to dredge on a macro scale, find and develop a common location to take dredge materials. This includes pursuing local uses for the material that may have unforeseen benefits such as agricultural uses, fill material, and dune core construction.**
- **The City is pursuing the feasibility and likelihood of receiving permits to expand the Rt. 52 CDF which offers a huge benefit of having both barge access and highway access for filling and emptying. The major current drawback is that the size is prohibitive to allow any worthwhile dredging operation.**
- **The City is participating in a dredging working group committed to revising regulations, assisting other municipalities and counties with a united front, and finding a common solution that can be sustained at a reasonable cost.**

# Beach vs Bay

Why is the beach on a dredging schedule and not the Bay?

## Federally Funded

(The entire beachfront is covered by Army Corp agreements at either 8.75% or 12.5% City cost share)

# South End Spoil Sites Along Intercoastal Waterway

*(The 2 southernmost CDFs are full and out of reach for most back bay and lagoon dredging)*



# Avalon Temporary Road



# Concerns & Restrictions Moving Forward

- ***Unless regulations are changed the same difficulties being experienced right now will continue and the high cost of dredging lagoons/ back bays will continue to rise.***
- ***By observation, it can be seen that areas recently dredged have been filling in at a more rapid pace than expected. This is likely due to several factors such as post Sandy conditions that have gone unaddressed or even unnoticed; recent bridge construction throughout the area may cause changes in velocity and direction of tidal flows.***
- ***Major concerns are escalating costs and regulations that drive up the costs.***

# Concerns & Restrictions Moving Forward (Continued)

- ***We need to plan for today as well as the next 50 years.***
- ***There are many restrictions holding us back. State and Federal regulations currently treat Ocean City's back bay dredging similar to Northern NJ (Industrial Areas).***
- ***Requiring all dredging to occur between July 1 and December 31 is a restriction due to winter flounder prohibitions. There is a chance that this restriction will be lifted but it cannot be assumed this will happen. There may be other species where restrictions will still be required.***

# Options for the Future

- ***The City is exploring all options for dredging including sustainable CDF emptying, finding a sustainable beneficial reuse of dredge material that is feasible, and determining a cost sharing plan that is fair and equitable for all users.***
- ***Find alternate dredge disposal areas such as subaqueous dredge holes that can be filled to a beneficial level.***
- ***Continue to seek partners to receive the material such as solar farms, landfills, abandoned quarries, fill material for low lying areas, sod farm topsoil replenishment, wetlands enhancement, thin layer disposal, dune core construction, sacrificial beach fill to name a few.***
- ***We would like to develop a County wide dredging or even a state wide dredging plan where the State or Federal Government obtains permits for the municipalities and assists in paying for the costs.***

# Summary

- **Significant Costs to the City;**
- **Road blocks to using grant funds to provide relief using the spray method of dredging;**
- **Dredging lagoons/back bays was not an issue prior to rules and regulations being put in place. Increased rules and regulations have squeezed budgets and have increased the cost of dredging activities state wide;**
- **The current issue is a lack of available empty space in our current CDF's and the need to empty the CDF's to create the area; and**
- **The time restrictions further increase the costs and increase the overall length of time to accomplish basic dredging needs.**



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Presentation found online: <http://www.ocnj.us/MAYOR/>