

Michael Baker

INTERNATIONAL

We Make a Difference



North End Drainage Improvements Flood Mitigation Design

Design Presentation

Outline

- Overview of Project
- Flooding Analysis
- Proposed Design
- Next Steps

Project Overview

- Improve Nuisance Flooding
- Pave Deteriorated Streets and Alleys
- Replace Old Drainage Infrastructure

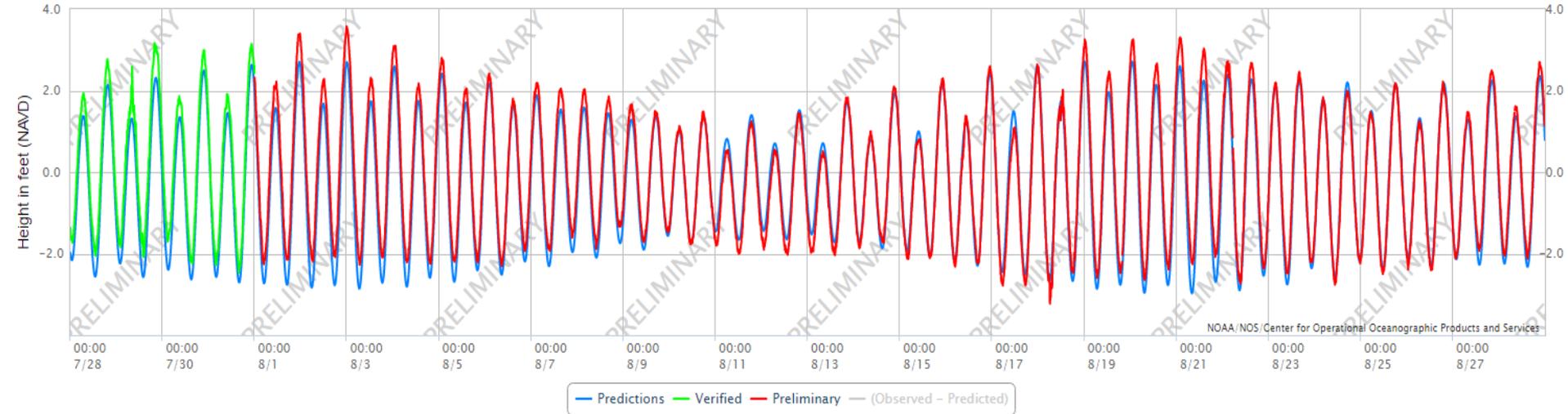
Tide Height at NOAA Station 8534720

- NAVD88
 - Average Tide Height: -0.109
 - Average High Tide: 1.892
 - Average Low Tide: -2.189
 - Winter Storm Jonas (1/23/16)
 - Maximum High Tide: 5.226
- MLLW
 - Average tide height: 2.504
 - Average High Tide: 4.507
 - Average Low Tide: 0.425
 - Winter Storm Jonas (1/23/16)
 - Maximum High Tide: 7.841

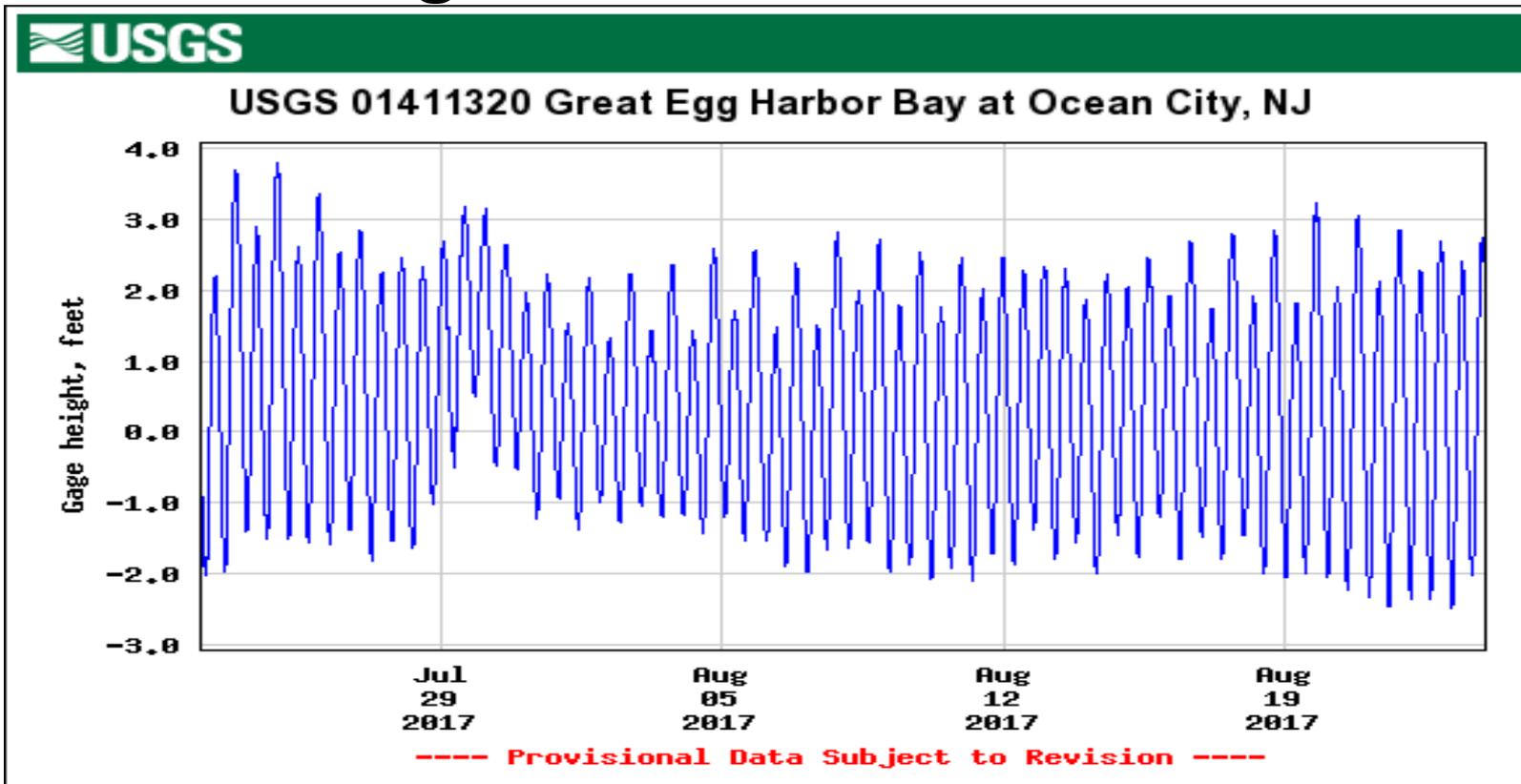
Tide Height at NOAA Station 8534720

NOAA/NOS/CO-OPS

Observed Water Levels at 8534720, Atlantic City NJ
From 2016/07/28 00:00 GMT to 2016/08/28 23:59 GMT



Tide Height at USGS Station 01411320



24 Hour Rainfall

- 115 Acre Study Area
- Comprising mostly residential plots, some commercial, large areas of impervious roadway

- 1 Year Event - 2.68 Inches of Rain - 8.37 Million Gallons of Runoff
- 2 Year Event - 3.27 Inches of Rain - 10.21 Million Gallons of Runoff
- 5 Year Event - 4.24 Inches of Rain - 13.24 Million Gallons of Runoff
- 10 Year Event - 5.08 Inches of Rain - 15.86 Million Gallons of Runoff

1 Hour Rainfall

- 115 Acre Study Area
- Comprising mostly residential plots, some commercial, large areas of impervious roadway

- 1 Year Event - 1.2 Inches of Rain - 3.75 Million Gallons of Runoff
- 2 Year Event - 1.5 Inches of Rain - 4.68 Million Gallons of Runoff
- 5 Year Event - 1.9 Inches of Rain - 5.93 Million Gallons of Runoff
- 10 Year Event - 2.2 Inches of Rain - 6.87 Million Gallons of Runoff

Flooding Analysis

- 10 Year Storm, 24 Hour Duration (5.08 inches)
- Four Scenarios Have Been Modeled
 - Free Outfall without Pump Stations
 - Free Outfall with Pump Stations
 - High Tide without Pump Stations
 - High Tide with Pump Stations

Pumping Design

- Approximately 22,000 GPM Evacuation of Water
 - Pump Station 1 – 6900 GPM
 - Pump Station 2 – 5500 GPM
 - Pump Station 3 – 9600 GPM
- 3 Phase Power Supply
- Ductile Iron Piping
- Pump Control Panel Linking to City SCADA System

Pump Locations





During Construction

- Driveway access may be interrupted for short periods of time
- Pipe work will likely be done first with uneven roadway conditions
- Paving is highly dependent on temperature

Next Steps

- Finalize Design
- Obtain Permits
- Develop Contract Plans
- Advertise and Accept a Bid

Michael Baker

INTERNATIONAL

We Make a Difference

Questions