



BAYSIDE BULKHEAD REPLACEMENT AND FLOOD MITIGATION IMPROVEMENTS

May 22, 2024



Presented By:



➤ **The Borough's Flood Mitigation and Storm Sewer Master Plan was adopted in the Spring 2019 and developed for the purpose of:**

- ➔ • Educating the Borough, public and private property owners of the existing flooding challenges facing the Borough.
- ➔ • Establishing recommendations to mitigate the adverse impact of flooding and other coastal hazards that affect the Borough.
- ➔ • Providing flood mitigation infrastructure options to guide the Borough when considering capital improvements.
- ➔ • Complying with the Federal Emergency Management Agency (FEMA) Community Rating System (CRS) Program with the potential of enhancing that status.
- ➔ • Participate and coordinate flood mitigation efforts with Federal, State, County and local entities.
- ➔ • **Providing flood mitigation infrastructure options to guide the Borough when considering and prioritizing capital improvements.**

Proposed FMSSMP Improvement Recommendations

1. Capital Infrastructure Improvements

Elevate Borough Bulkheads – Elevation 8.0 NAVD88

Elevate Roadways at Bayside Street Ends

Bayside Tide Control:

OPTION	ADVANTAGES	DISAVANTAGES	REGULATORY PERMITS REQUIRED	COST
a). Passive Control Valve	<ul style="list-style-type: none"> No power required Installed landward of bulkhead Can be maintained on land No real estate/property issues Not visible – installed underground 	<ul style="list-style-type: none"> Reliability on a firm closure/seal Maintenance Inability to evacuate surface <u>rain water</u> during high tide 	Yes	\$
b). Manually Operated Control Valves	<ul style="list-style-type: none"> No power required Installed landward of bulkhead Can be maintained on land No real estate/property issues Not visible – installed underground 	<ul style="list-style-type: none"> Requires manual labor to close valve High labor intensive Maintenance Inability to evacuate surface <u>rain water</u> during high tide 	Yes	\$\$
c). SCADA Operated Control Valves	<ul style="list-style-type: none"> Controlled remotely Reliability Low labor intensive No real estate/property issues Installed landward of bulkhead 	<ul style="list-style-type: none"> Requires Power Requires backup generator Cost Visible above ground controls Inability to evacuate surface <u>rain water</u> during high tide 	Yes	\$\$\$
d). Storm Sewer Pump Stations	<ul style="list-style-type: none"> Ability to pump surface <u>rain water</u> during high tide Reliability Low labor intensive Installed landward of bulkhead 	<ul style="list-style-type: none"> Requires Power Requires backup generator Real estate issues Cost to operate Visible above ground structures 	Yes	\$\$\$\$

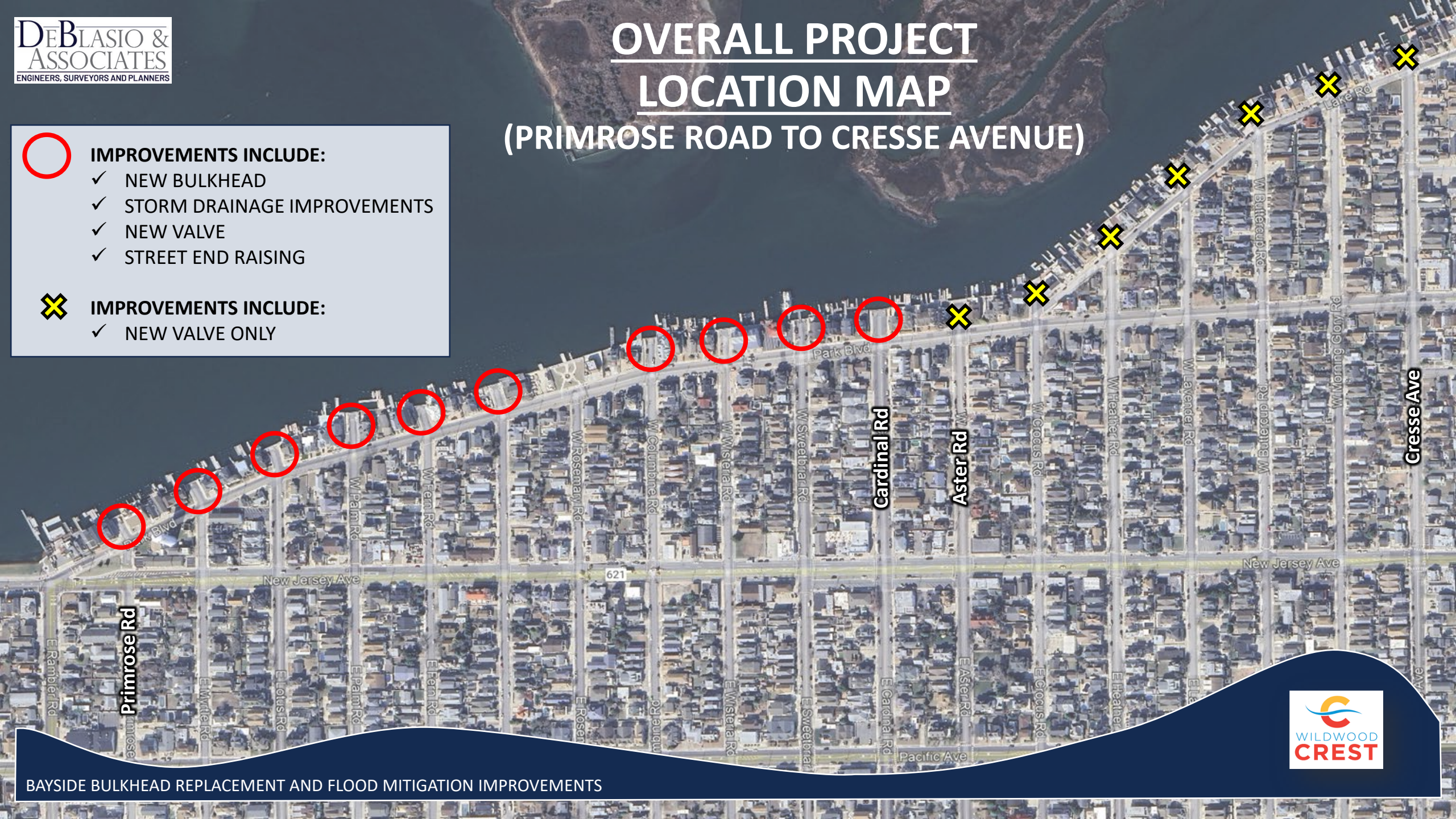
OVERALL PROJECT LOCATION MAP (PRIMROSE ROAD TO CRESSE AVENUE)

 **IMPROVEMENTS INCLUDE:**

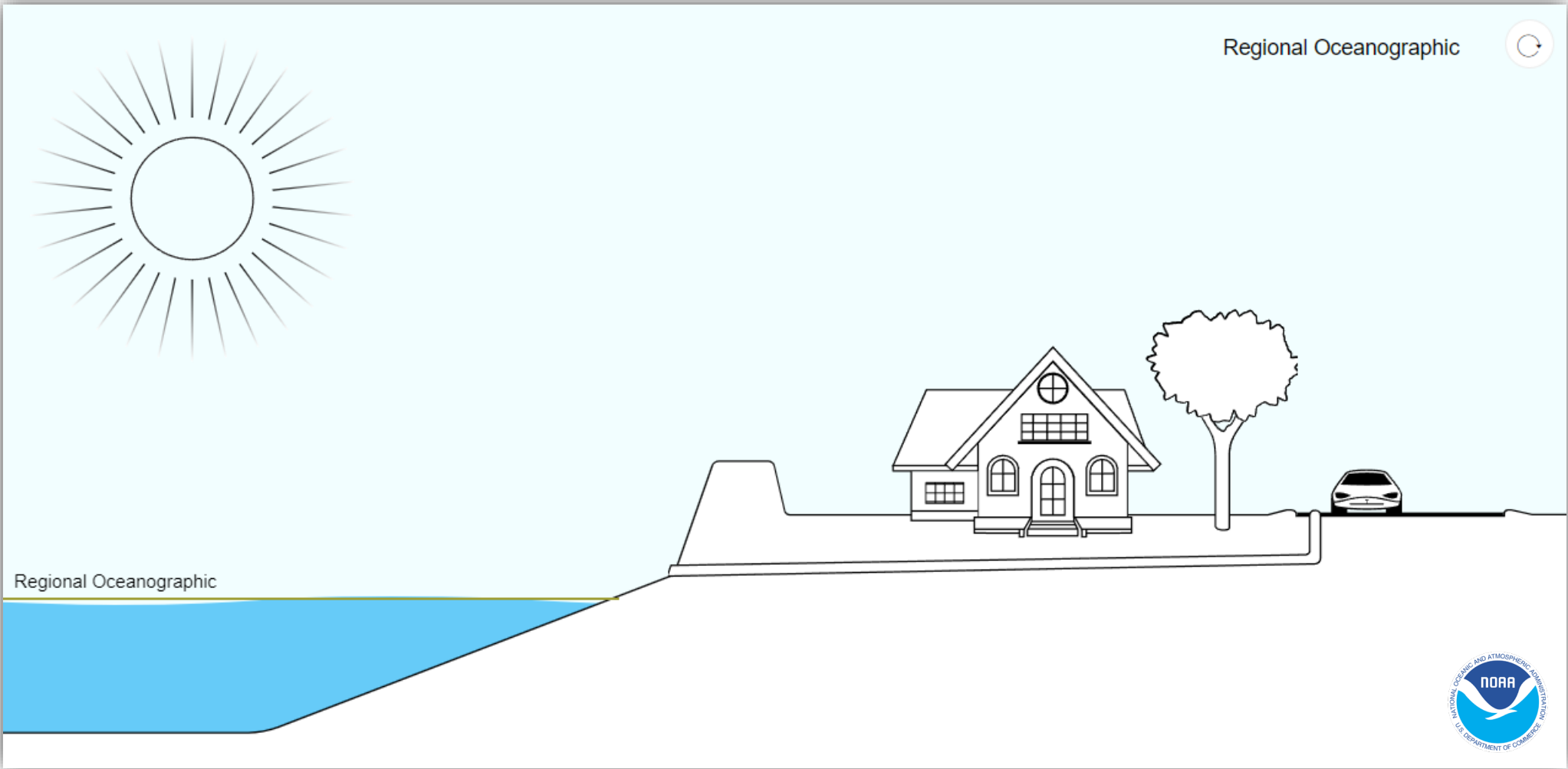
- ✓ NEW BULKHEAD
- ✓ STORM DRAINAGE IMPROVEMENTS
- ✓ NEW VALVE
- ✓ STREET END RAISING

 **IMPROVEMENTS INCLUDE:**

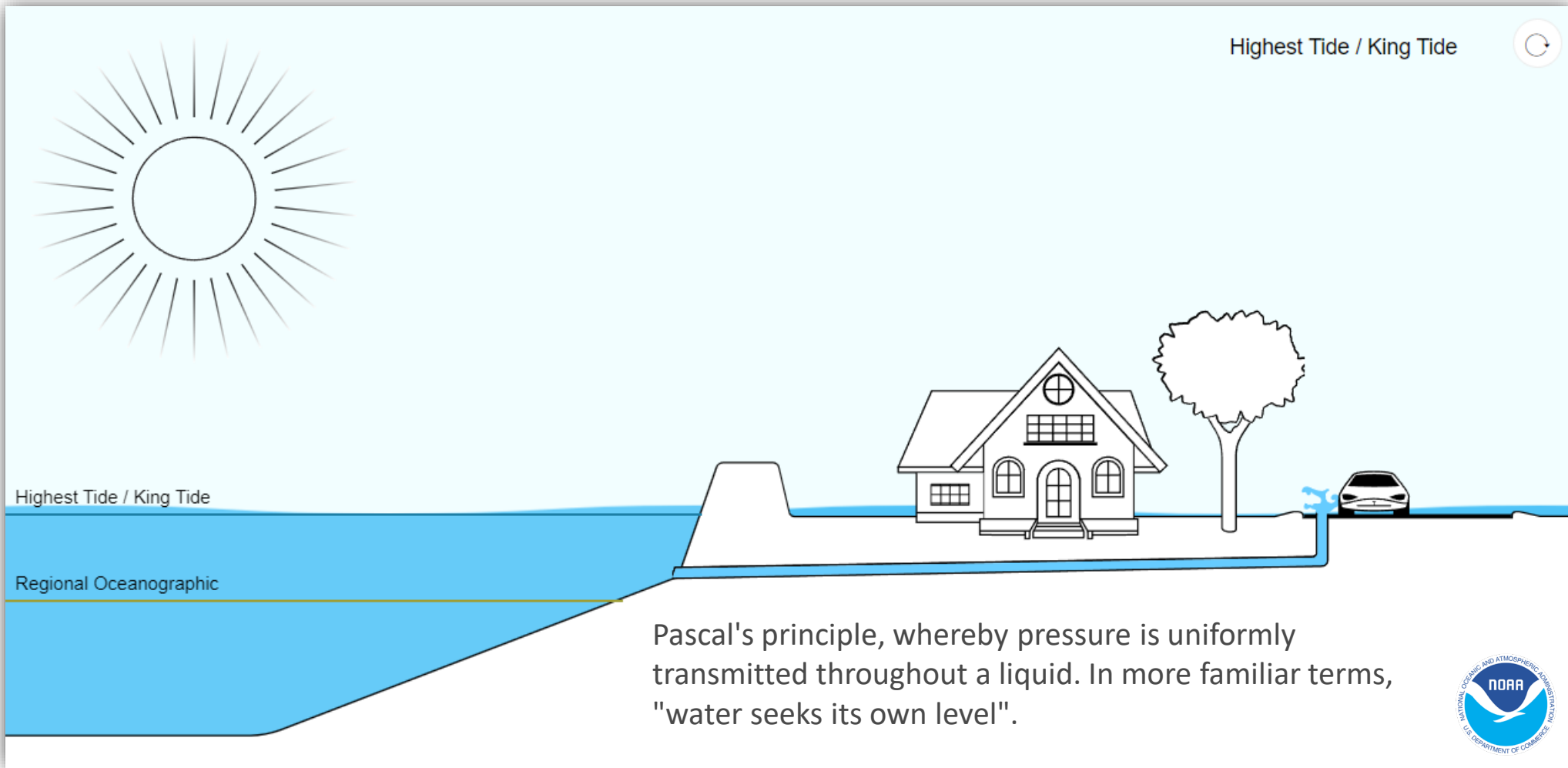
- ✓ NEW VALVE ONLY



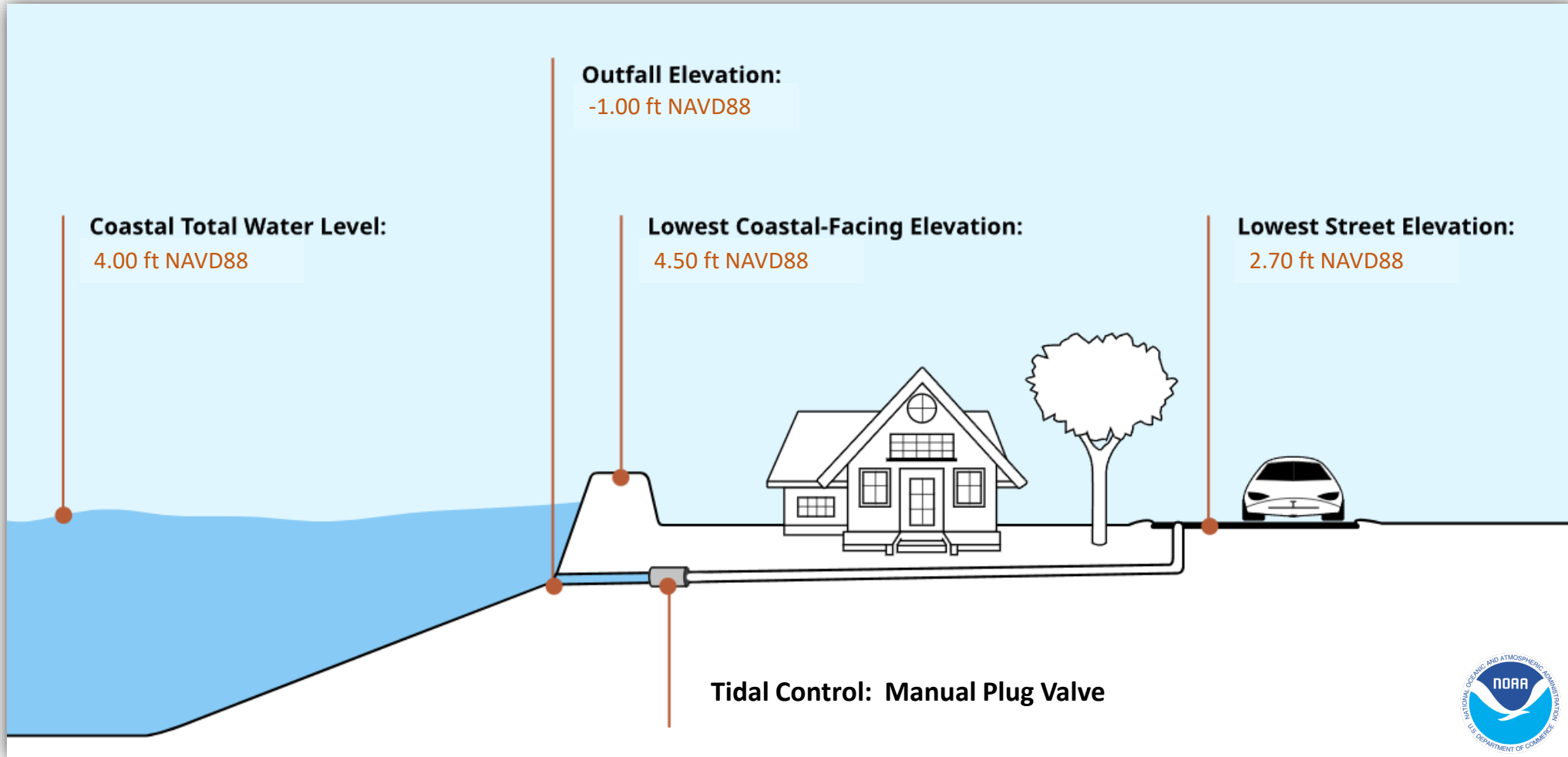
Tidal Flooding



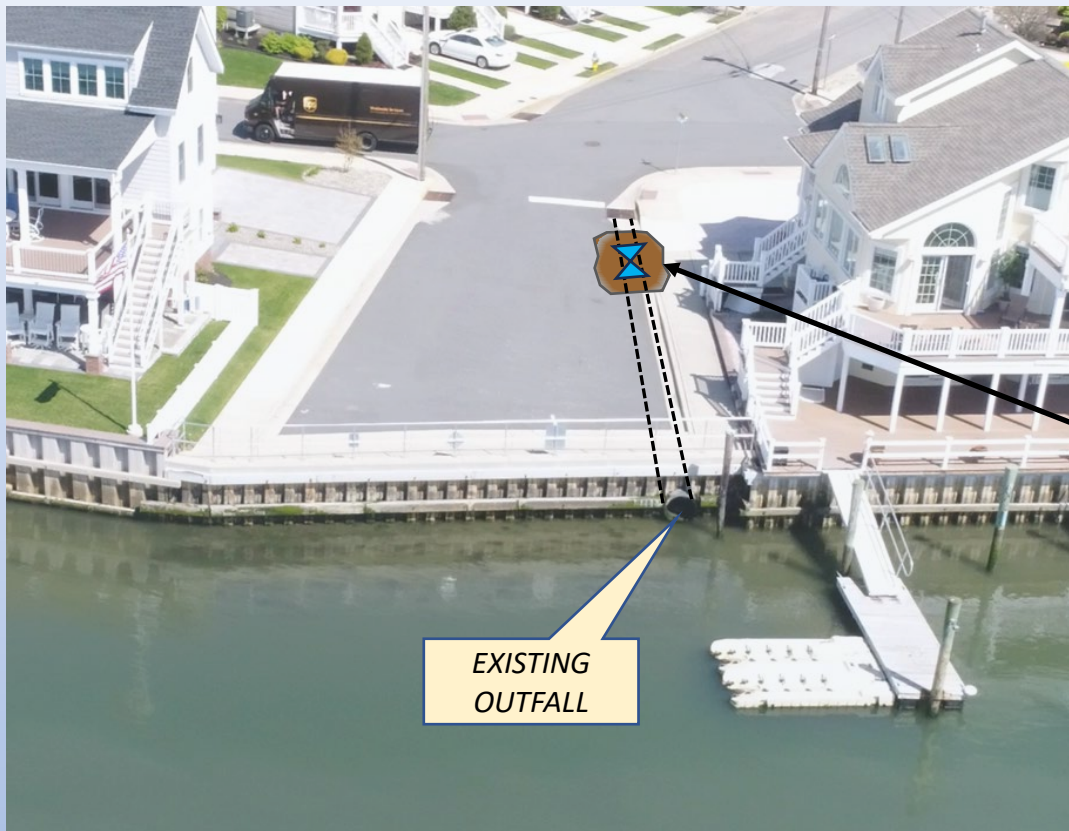
Tidal Flooding



➤ BAYSIDE TIDE CONTROL INSTALLATION (PRIMROSE ROAD TO CRESSE AVENUE)



➤ BAYSIDE TIDE CONTROL INSTALLATION (PRIMROSE ROAD TO CRESSE AVENUE)



EXISTING
OUTFALL

TYPICAL BAYSIDE STREET END

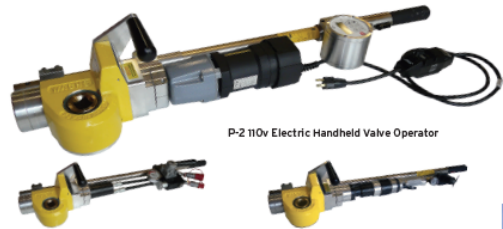


INSTALLATION OF MANUALLY
OPERATED TIDE CONTROL VALVE

WACHS Utility Products
A Division of **ITT**[®]
The Valve Maintenance Experts™

P-2

HANDHELD VALVE OPERATOR



P-2 110v Electric Handheld Valve Operator

P-2 Hydraulic Handheld Valve Operator

P-2 Pneumatic Handheld Valve Operator

The P-2 Handheld Valve Operator offers increased productivity, operator safety and valve protection. Perfect for hard to reach valves, valve exercising and fast shut downs. Delivers controlled power to operated valves from 6in to 60in. Available in High Speed—500ft-lb Torque and Low Speed—800ft-lb Torque models with optional adjustable Torque Control on VITALS models.

RUGGED CONSTRUCTION

- Lightweight, yet designed for heavy day to day use.
- Maximum valve protection with adjustable VITALS Torque Control.*
- Safety features include GFI (ground fault interrupter), speed control, and automatic shut-off.*
- "Finger tip" controls provide rotating direction and automatic shut-off.
- Built in "easy view" LCD counter with automatic forward/reverse provides accurate valve rotation count.
- Easy one man setup and operation-no operating tools required.
- Ergonomic carrying and operating handles ensure operator convenience.
- Machine weight rests on valve key collar, not on the operator, greatly reducing muscle strain and fatigue.
- Gives the operator a sensitive feel of the valve, encouraging the repetitive back and forth motion required for proper valve rehabilitation.

STANDARD EQUIPMENT:



P-2 Handheld Valve Operator shown with handwheel adapter accessory



Highly portable handheld design allows operation of valves from 6-60in

WACHS Utility Products
A Division of **ITT**[®]
The Valve Maintenance Experts™

ERV-750

MOUNTED VALVE EXERCISER

sales@turnvalves.com



Standard ERV-750 #79-000-01
High Stack ERV-750 #79-000-07

ERV-750 Automated Extended Reach Valve Operator, features Wachs hands free operation with Intelligent Automation. The extendable arm provides the full 750 ft/lbs of torque, even when fully extended. The support system utilizes dual pivot points to reach over to any curbside valve box or hydrant. Locking disc brake holds the full torque of the machine while operating. Frame is heavy duty 3in square steel tube construction. System includes a mechanical lock securing the machine during travel.

FEATURES

- 750 ft/lbs of torque with hands free, "no assumption" operation
- Dual hydraulic locking disc brakes with push button release
- 13ft of reach from the mounting pedestal
- 3in square steel tube construction
- Mechanical lock system for storage during travel
- Variable Speed 5-30 RPM (30 RPM at recommended flow)
- Optional Bluetooth connectivity*
- Modular design, single hydraulic motor & drive gear on a ball bearing lockable slide offers increased efficiency & compact dimensions
- Power supply requirements of 4-12 GPM @ 2000psi (8 GPM recommended)
- Fully compatible with VITALS software which enables full data logging and sync between the HC-100 and your Network PC*
- Telescoping valve key operates standard AWWA 2in nut

*Requires ruggedized HC-100 controller & logger with built-in GPS, sold separately.



High stack version of the ERV-750 is available for bumper mounting.



ERV-750 easily reaches any curbside valve box or hydrant within 13ft of the mount.

➤ NEW BULKHEAD INSTALLATION



**EXISTING
BULKHEAD
ELEVATION = 4.92**

EXISTING CONDITION – WISTERIA ROAD



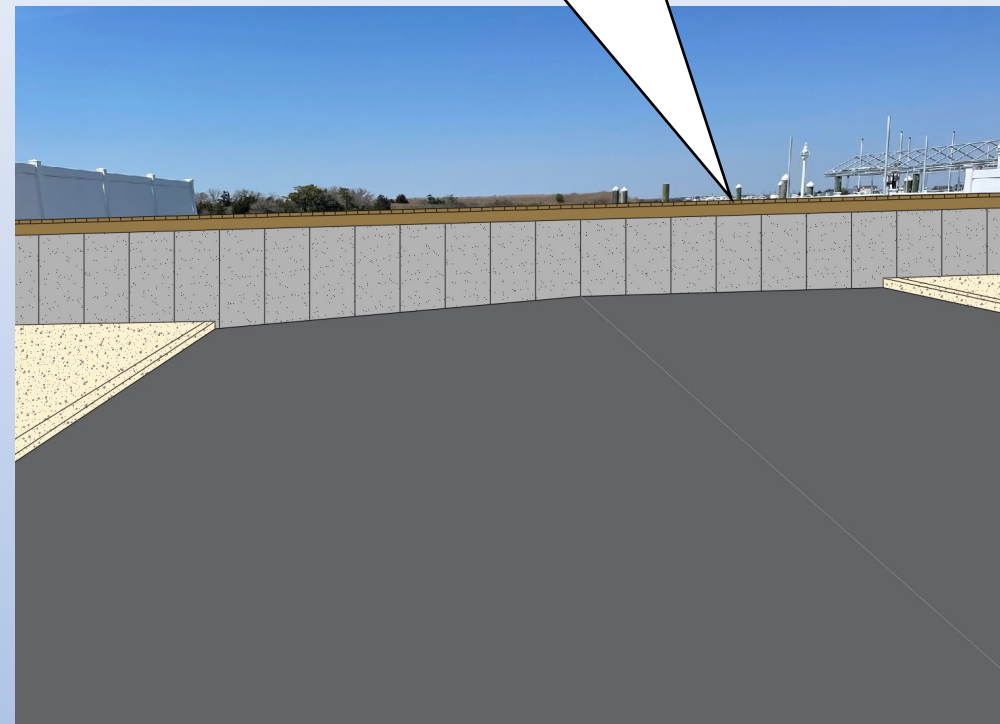
➤ **NEW BULKHEAD INSTALLATION**
(PRIMROSE ROAD TO CARDINAL ROAD)

EXISTING BULKHEAD
ELEVATION = 5.15



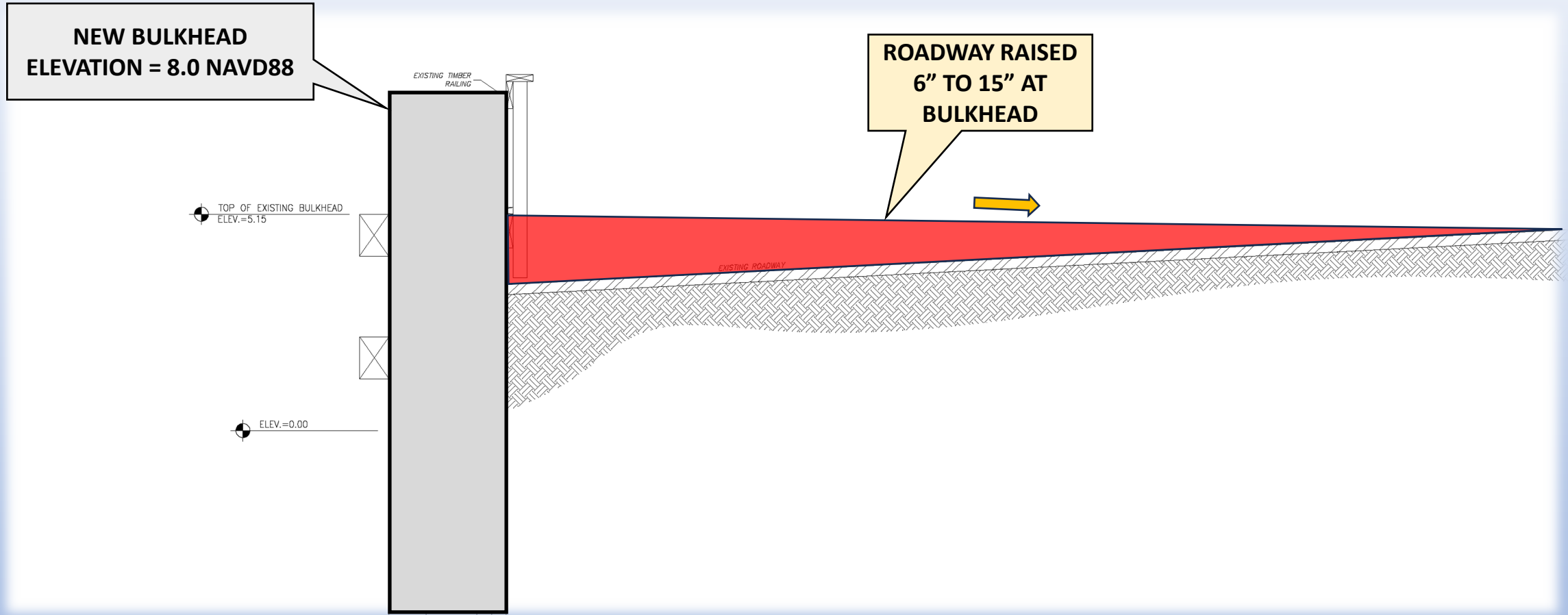
BEFORE – COLUMBINE ROAD

NEW BULKHEAD
ELEVATION = 8.0 NAVD88



AFTER – COLUMBINE ROAD

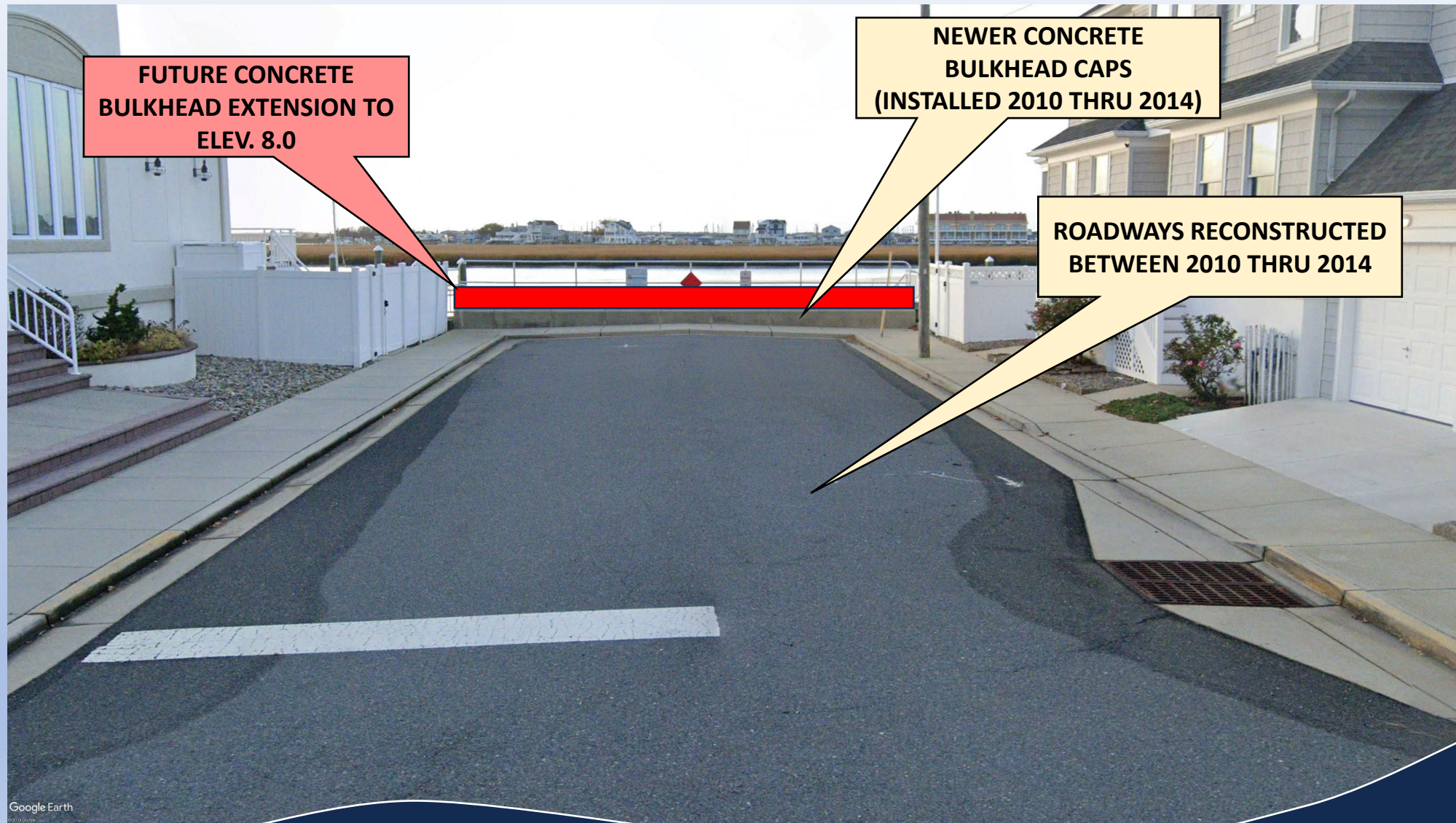
➤ **STREET END RAISING**
(PRIMROSE ROAD TO CARDINAL ROAD)



EXISTING SECTION VIEW



➤ STREET ENDS NOT RECEIVING NEW BULKHEADS & STREET RAISING (ASTER ROAD TO CRESSE AVENUE)



Google Earth
© 2013 Google



- **TOTAL CONSTRUCTION COST ≈ \$6 MILLION**
- **PROJECT SCHEDULE:**
 - **OUT TO BID SUMMER OF 2024**
 - **CONSTRUCTION STARTS FALL OF 2024**
 - **PROJECT COMPLETION SUMMER OF 2025**



➤ GRANTS

- **THE BOROUGH APPLIED FOR A FEMA GRANT FOR TWO PUMP STATIONS WITH A TOTAL CONSTRUCTION COST OF \$12 MILLION.**
- **THE BOROUGH HAS SUCCESSFULLY WORKED WITH CONGRESSMAN VAN DREW'S OFFICE TO EARMARK A \$4.1 MILLION DOLLAR GRANT TO OFFSET THE PUMP STATION PROJECT.**



Comments & Questions

- Presentation will be posted on Borough's Website:
 - <https://wildwoodcrest.org>
- Detailed comments & questions can be submitted via email to:
 - engineering@wildwoodcrest.org

