JAMES BROOK TIDE GATE OPERATION & HEALTH OF JACOB’S MEADOW SALT MARSH
PUBLIC MEETING - WED 9/19/18, 7 PM – WILCUTT COMMONS
Agenda:
- Background
  - History of the meadow/ historical water controls
  - Recent improvements
  - Future improvements
- Tide Gate design operation
- Alarms
- Response and emergency contact info
- Tidal and flood mapping of the area
- Questions
JAMES BROOK TIDE GATE BACKGROUND HISTORY

- **1960** – Jacob’s Meadow open to ocean – natural tide line in meadow
- **Post 1960s** – multiple flap check valves installed to prevent tidal water inflow
- **1990’s** – installation of a self regulating tide gate in addition to flap checks to allow tidal flushing
- Flooding events have occurred in the area throughout the history of the meadow
- **2006** – BOS & Harbor Health Committee research ways to improve flushing of Jacobs Meadow and better protect public and private property
- **2010 -2011** Project bid, constructed and new tide gate commissioned
- **2012 – present** – Tide gate operational enhancements
  - Adjustment of open/close limit switches
  - Installation of datalogger in meadow, CCSCR Phragmite mapping
  - Additional alarm for valve non—movement (existing power fail and high water alarms)
  - General maintenance of gate and structure
  - Design, permitting and installation of 48” flap check emergency spill release valve
- **Future** optimization of tide gate system –
  - Replacement of tide gate valve components: slide, stem, operating nut and plastic guides seals – presently in fabrication
  - Installation – October/November 2018
  - Connectivity to Town Fiber network for remote monitoring
  - Investigation of Permanent Standby Generator
- **Tide Gate Operation Goals** remain
  - Protection of Private and Public Property and infrastructure
  - Enhance the health of the Jacob’s Meadow salt marsh
James Brook Culvert

Before

During Construction

After
James Brook Tide Gate Control Structure

Before

During Construction

After
Normal Mode - This mode moderates water elevation in the meadow, based on preset, adjustable system data input settings, for flow into and out of Jacobs Meadow
Summer setpoint - 7.7 ft MLW
Winter Setpoint – 7.0 ft MLW

Storm Mode – This mode allows the meadow to drain to the harbor whenever the tides permit while preventing tidal flow into the meadow during a significant storm.

Manual Mode – This mode controls the gate to be set at 0%, 25%, 50% or 100% open, depending on console input values.
Tide Gate Management Plan: Adaptive mechanism to balance the interests of flood mitigation and ecological restoration
WHAT IS A WETLAND? WHY IS IT IMPORTANT TO KEEP HEALTHY? HOW CAN WE PROTECT IT?

- Help mitigate flooding
- Reduce pollution
- Foster habitat for variety of species

* The Tide Gate Management Plan with salt water flushing is a requirement of both the ACOE and MaDEP Permits
Mapping
Jacobs Meadow/James Brook w/Mean High Water Delineation Extrapolated from Harbor to Meadow (El 9.5)
Jacobs Meadow/James Brook w/EL 7.0 +/- MLW Delineation
Jacobs Meadow/James Brook w/EL 7.7 +/- MLW Delineation
Jacobs Meadow/James Brook w/EL 8.0 +/- MLW Delineation
Programmed Alarms
• High water elevation
• Loss of Power
• No valve movement during a tide cycle
• Alarm triggers an automatic call to regional dispatch center to call DPW on call list

Response/Emergency contact info
• If residents see a flooding problem occurring they may contact:
  • During normal DPW business hours M-F 7A-330P
    DPW 781-383-0273
  • Non emergency Questions? email engineering@cohassetma.org

• After normal business hours emergency response phone number
  • Regional dispatch center 781 236-1020
  • Caller must state: “Cohasset Harbor Tide Gate is flooding – call Cohasset DPW to respond”

• Response to site may be up to 2 hours after normal business hours
Questions?