

Boat Haven Stormwater System Improvements Port of Port Townsend

Commission Work Session
June 14, 2023



AGENDA

- Background
- Project Drivers
- Project Challenges
- Design Approach
- Proposed Alternatives
- Schedule



Project Background

- Boat Yard General Permit (BYGP)
- Existing Treatment
 - Perimeter sand filters
 - Proprietary filter units
 - Downspout filters
 - Chitosan pre-treatment
- How will this project benefit the Port and overall community?



Why is this Project Necessary?



Stricter BYGP requirements



Planned expansion



Risk mitigation



Environmentally friendly approach



Adaptable Design



More efficient O&M



OUR MISSION

“Ensure continuation of a vibrant marine trade economy at Boat Haven while also improving stormwater quality.”

CHALLENGES

- ▶ System must be adaptable
- ▶ Pollutant concentrations in raw stormwater
- ▶ Predominantly gravel boatyard
- ▶ Permanently submerged conveyance system
- ▶ Low facility elevation along waterfront



Design Approach



Port of Tacoma



Port of Vancouver



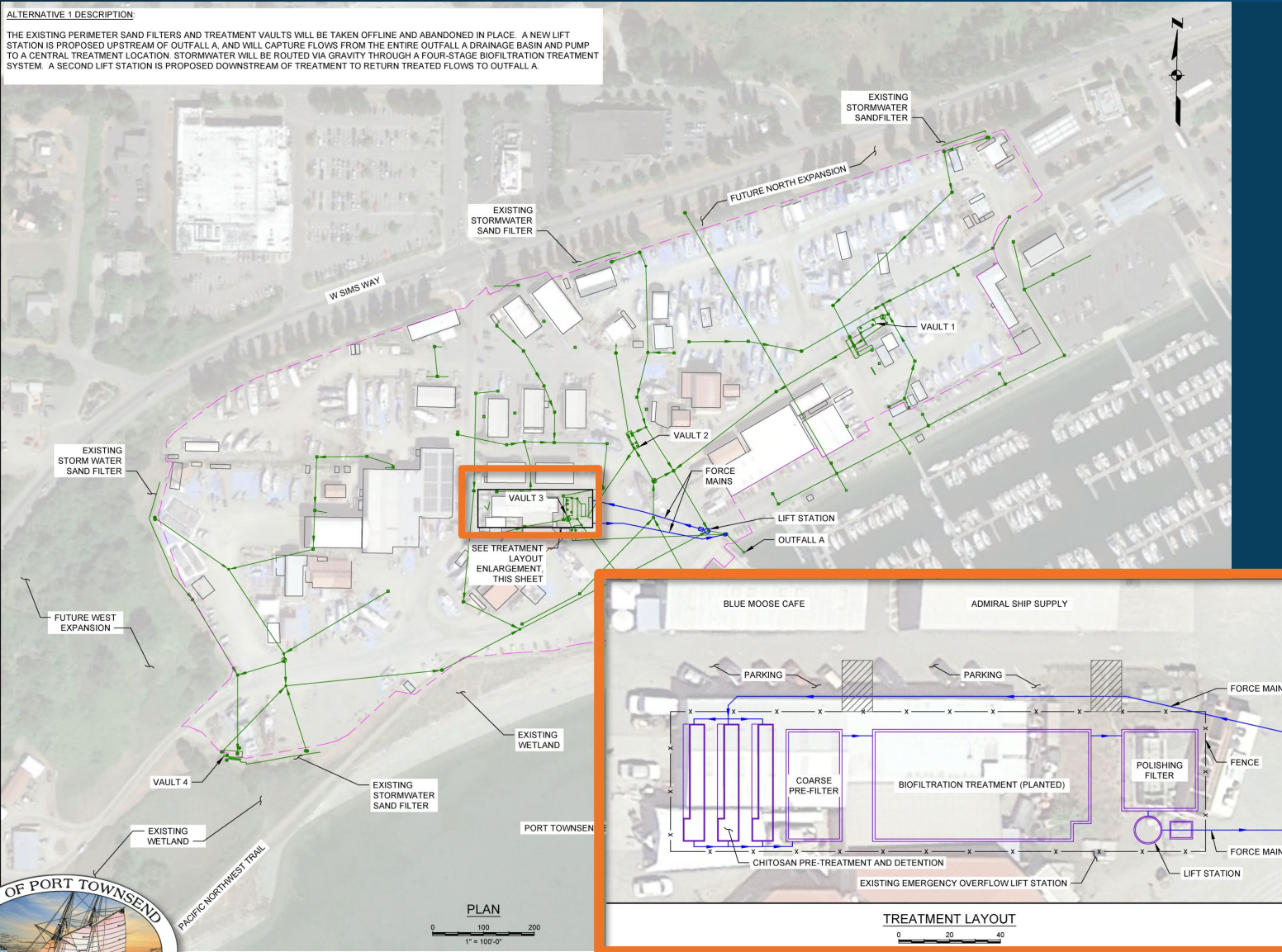
Port of Port Angeles



Alternative 1 – Central Treatment Location

ALTERNATIVE 1 DESCRIPTION

THE EXISTING PERIMETER SAND FILTERS AND TREATMENT VAULTS WILL BE TAKEN OFFLINE AND ABANDONED IN PLACE. A NEW LIFT STATION IS PROPOSED UPSTREAM OF OUTFALL A, AND WILL CAPTURE FLOWS FROM THE ENTIRE OUTFALL A DRAINAGE BASIN AND PUMP TO A CENTRAL TREATMENT LOCATION. STORMWATER WILL BE ROUTED VIA GRAVITY THROUGH A FOUR-STAGE BIOFILTRATION TREATMENT SYSTEM. A SECOND LIFT STATION IS PROPOSED DOWNSTREAM OF TREATMENT TO RETURN TREATED FLOWS TO OUTFALL A.



Benefits

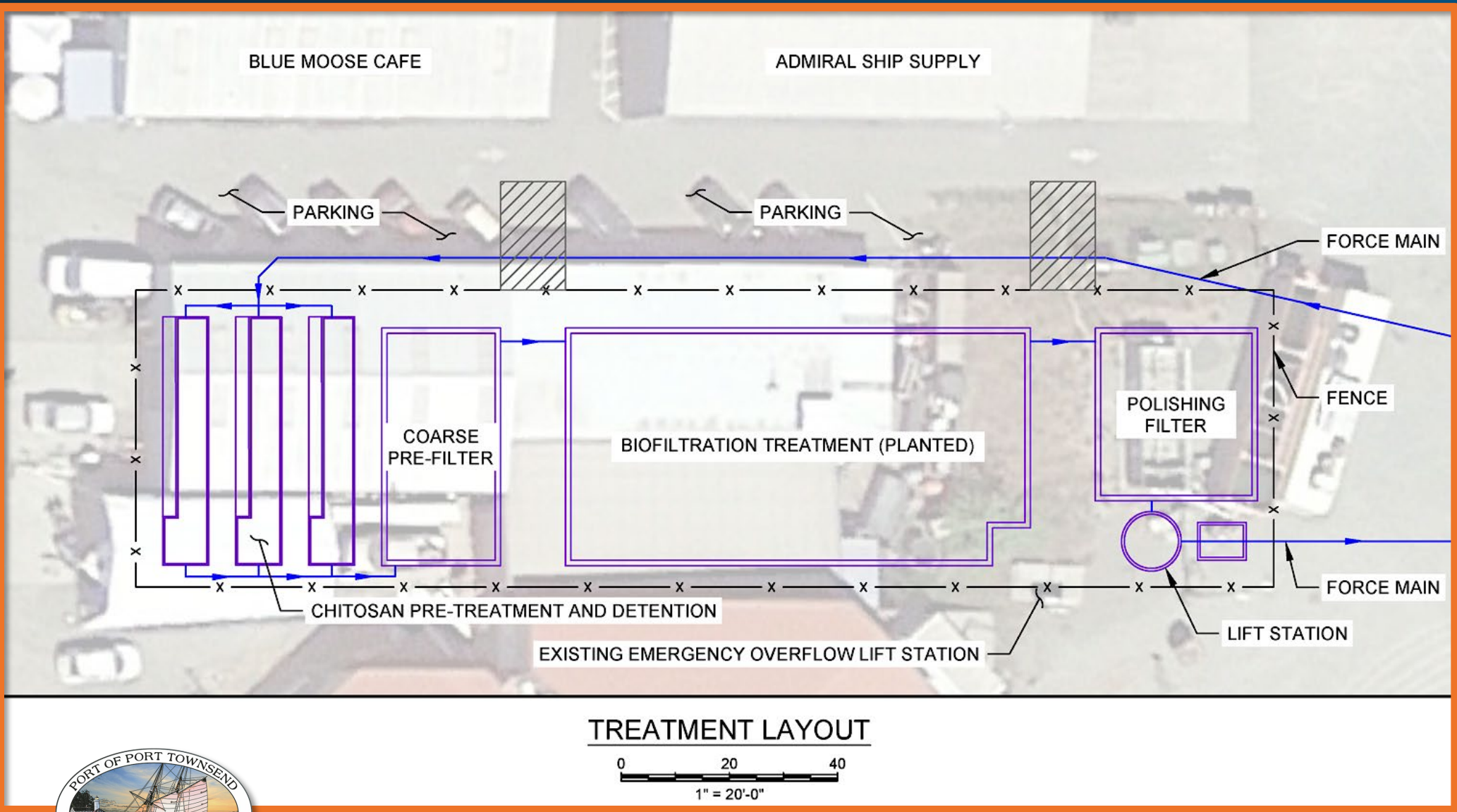
- Less trenching
- Potential re-use of existing lift station

Drawbacks

- Lost tenant workspace
- Limited maintenance access
- High traffic/activity area
- Low existing elevation



Alternative 1 – Central Treatment Location



ESTIMATED COST:
\$5,063,000

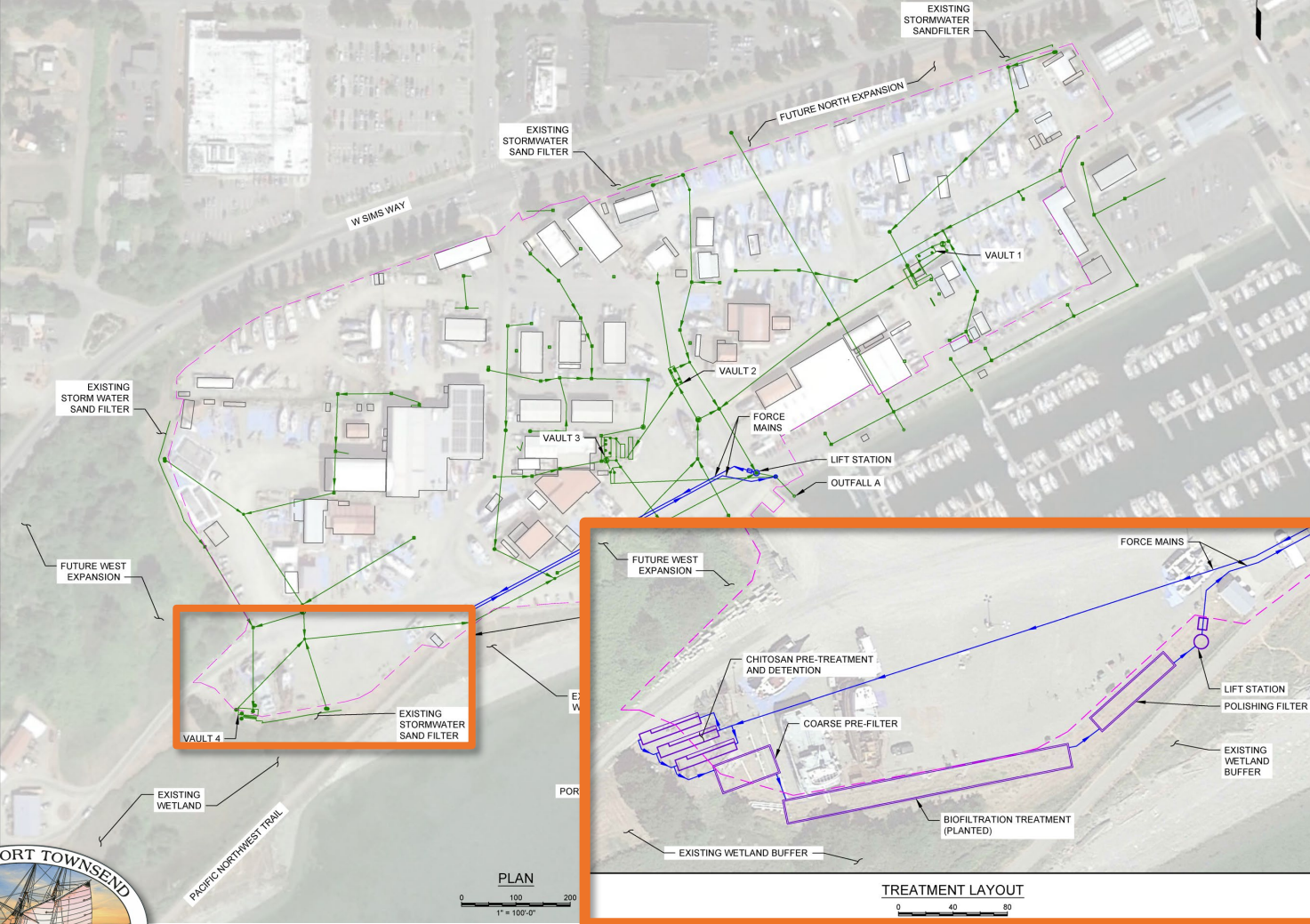
**ANNUAL O&M
ESTIMATE:**
\$39,494



Alternative 2 – Perimeter Treatment Location

ALTERNATIVE 2 DESCRIPTION

THE EXISTING PERIMETER SAND FILTERS AND TREATMENT VAULTS WILL BE TAKEN OFFLINE AND ABANDONED IN PLACE. A NEW LIFT STATION IS PROPOSED UPSTREAM OF OUTFALL A, AND WILL CAPTURE FLOWS FROM THE ENTIRE OUTFALL A DRAINAGE BASIN AND PUMP TO A PERIMETER TREATMENT LOCATION. STORMWATER WILL BE ROUTED VIA GRAVITY THROUGH A FOUR-STAGE BIOFILTRATION TREATMENT SYSTEM. A SECOND LIFT STATION IS PROPOSED DOWNSTREAM OF TREATMENT TO RETURN TREATED FLOWS TO OUTFALL A.

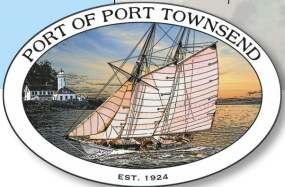


Benefits

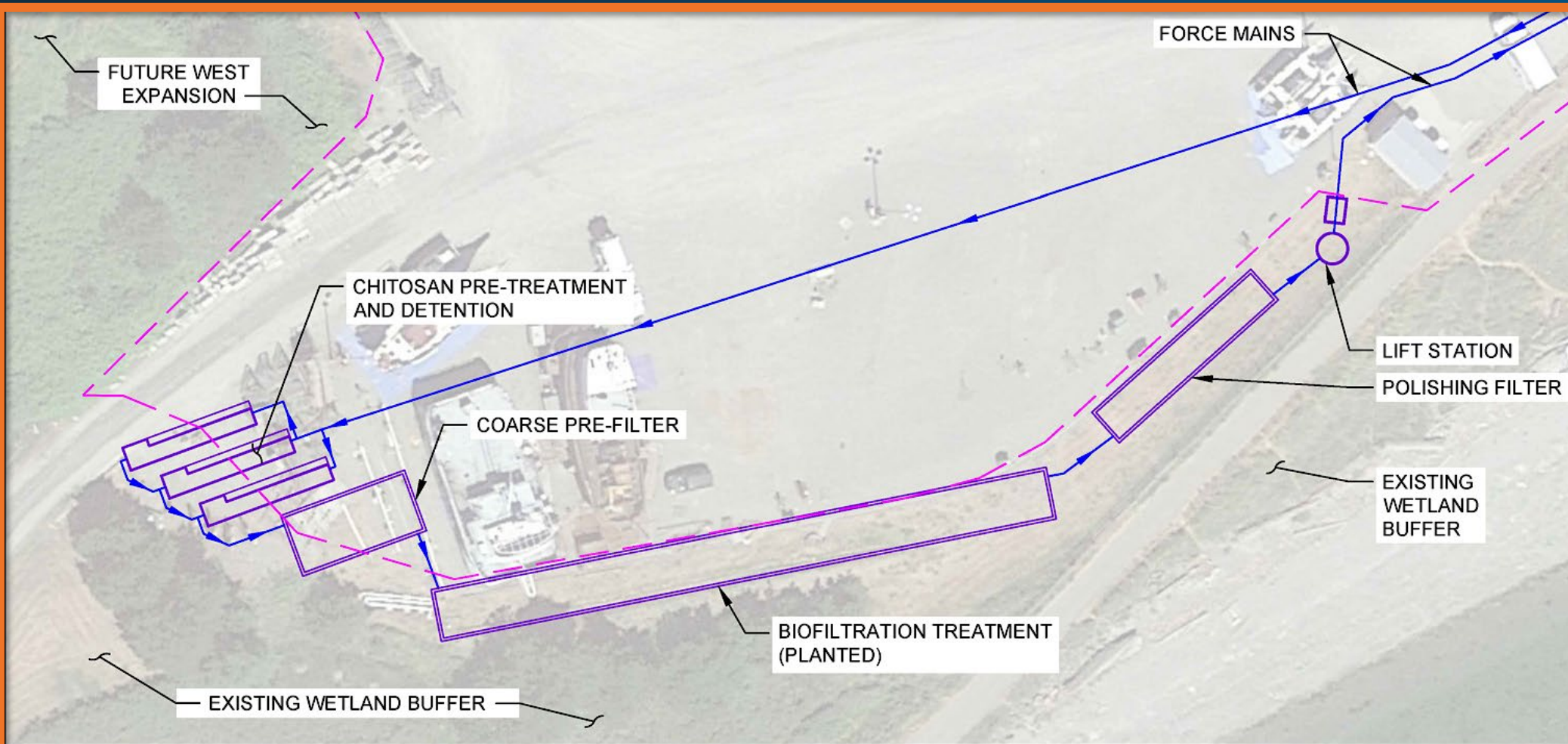
- Maintains existing site use
- Ample maintenance access
 - Limited encumberment of revenue generating space
- Potential educational resource
- Higher existing elevation
 - Low traffic area

Drawbacks

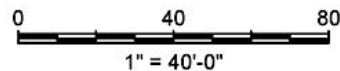
- Longer trenching distances
- High public visibility location



Alternative 2 – Perimeter Treatment Location

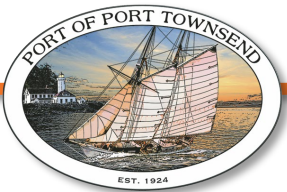


TREATMENT LAYOUT

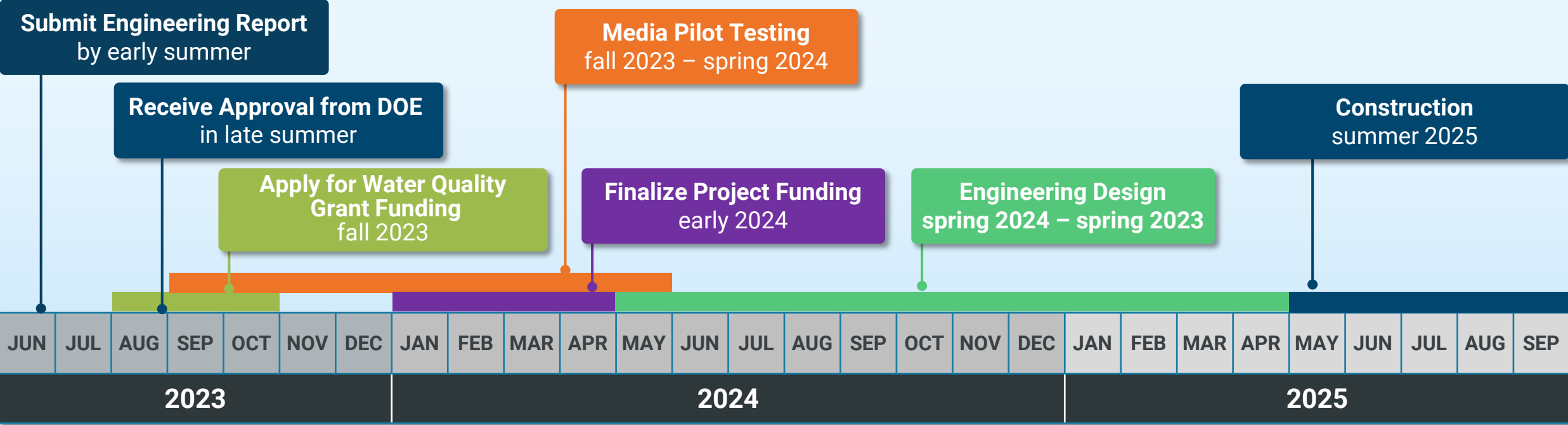


ESTIMATED COST:
\$5,168,000

ANNUAL O&M ESTIMATE:
\$39,569



Anticipated Project Schedule



Schedule subject to change based on funding



Closing



A sound investment for a vibrant boat yard and cleaner waterways
now and into the future.

