

*Final Report*

# **NYWW Ferry Maintenance Facility Site Feasibility Analysis – MOTBY and Union Dry Dock**

*Prepared for  
New Jersey Transit*

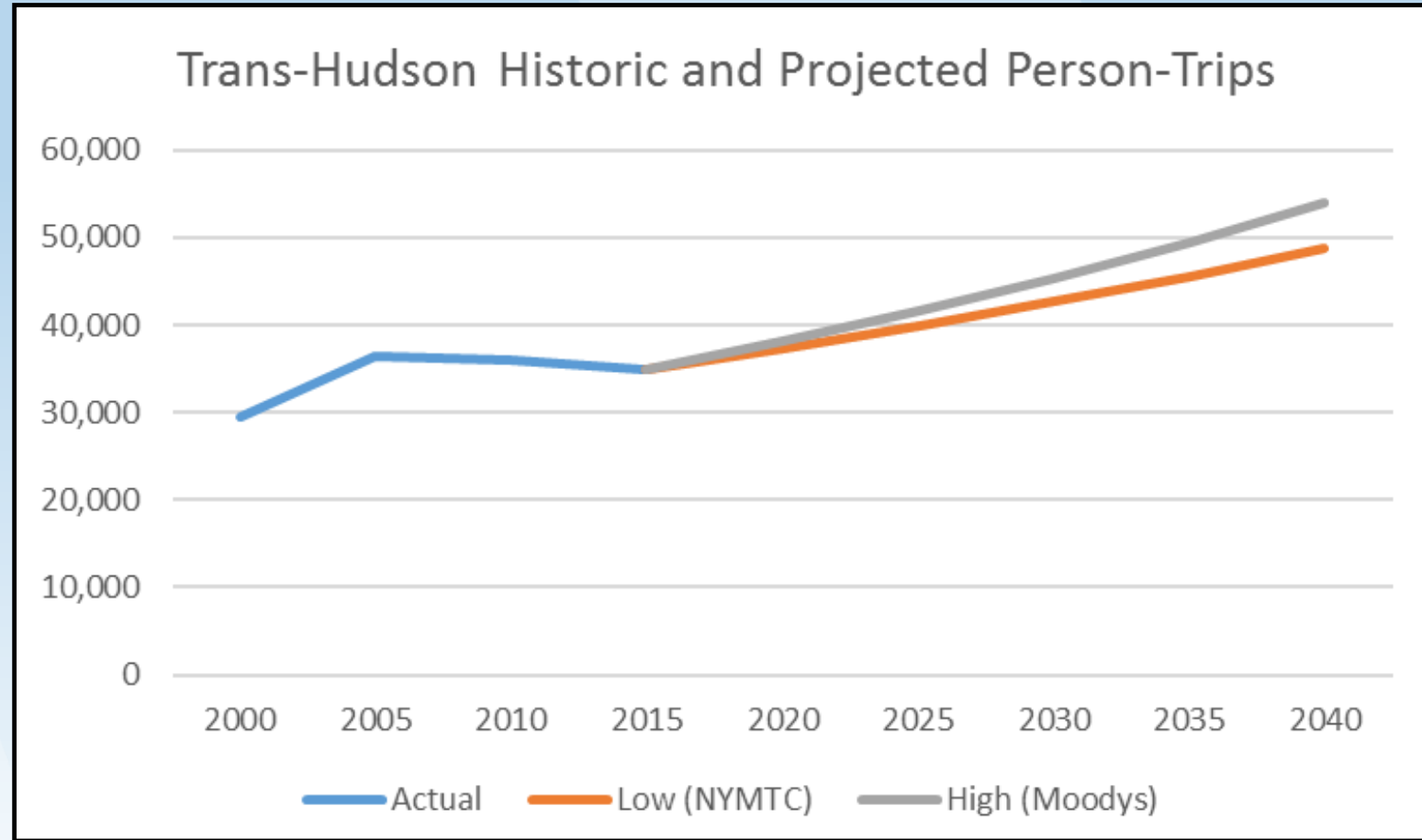
*Prepared by  
New Jersey Department of Transportation,  
WSP Inc., and KPFF Consulting Engineers*

*August 8, 2019*



# Trans-Hudson Ferry Service is Vital for New Jersey

- **Essential commuter service**
  - *Trans-Hudson ferries provide over 35,000 person-trips per year*
  - *Projected to add around 45% more person-trips per year by 2040*
- **Accessibility and Service Options**
  - *Redundancy*
  - *Direct connections*
- **Economic value**
  - *Support community redevelopment and waterfront revitalization*
  - *Provides family wages jobs*
- **Role in emergency response**
  - *Evacuation*
  - *On-water emergencies*
  - *Temporary services when needed*



# Ferry Operations Require Maintenance Facilities

## – Primary Functions

- *Overnight mooring of vessel fleet*
- *Fueling*
- *Filling potable water / pump-out of sewage, waste oil, and bilge (oily) waste*
- *Haul-out capability for routine & USCG inspections, maintenance, and repairs*
- *Operations center and crew dispatch*

## – New York Waterway (NYWW) Status

- *Losing existing maintenance facility at Weehawken near Imperial Harbor, except for a small fueling dock, to residential development*
- *Purchased Union Dry Dock site in Hoboken with plans to relocate its operation*
- *Applied for and received US Army Corps of Engineers permit to relocate Travel Lift Barge and Shop Barge as first step in relocation*

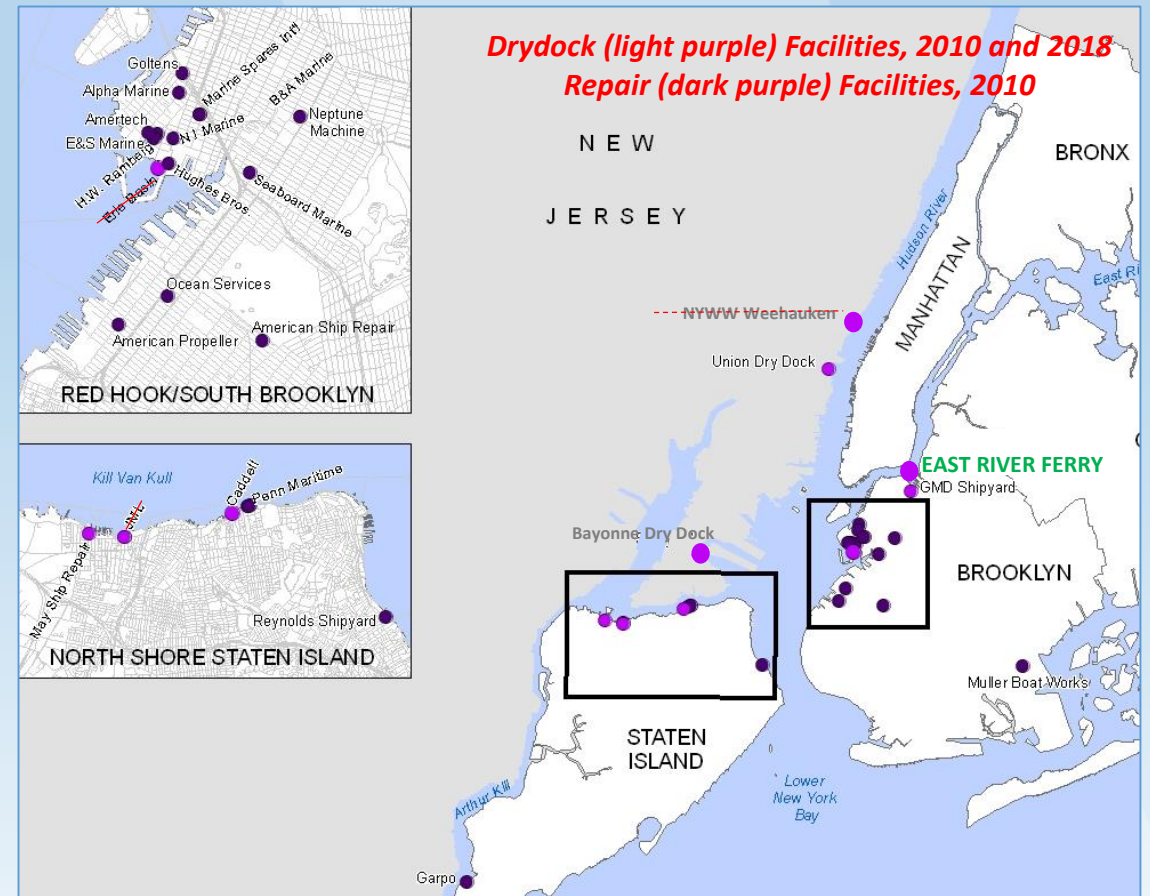


Example: East River Ferry Facility  
(under construction at Brooklyn Navy Yard)



# Ferry Maintenance Location Options are Declining

- In 2010, the region hosted eight drydock facilities; three have closed and a fourth (NYWW Weehauken) will close soon
- Ferries require specialized facilities
  - *Cannot be handled at larger shipyards like Bayonne Dry Dock, which specialize in major long-term overhauls of large vessels and do not accommodate routine maintenance of ferry vessels*
- **Most remaining undeveloped waterfront land is targeted for commercial/residential use**
  - *Preserving and improving historic industrial marine properties is best available option*
  - *Example: the new East River Ferry facility under construction at the Brooklyn Navy Yard -- \$50+ million, will open at capacity*
























**Preservation of waterfront industrial properties is crucial to support New Jersey's maritime industry, which is integral to the state's economy**



# MOTBY Locations – Three Options

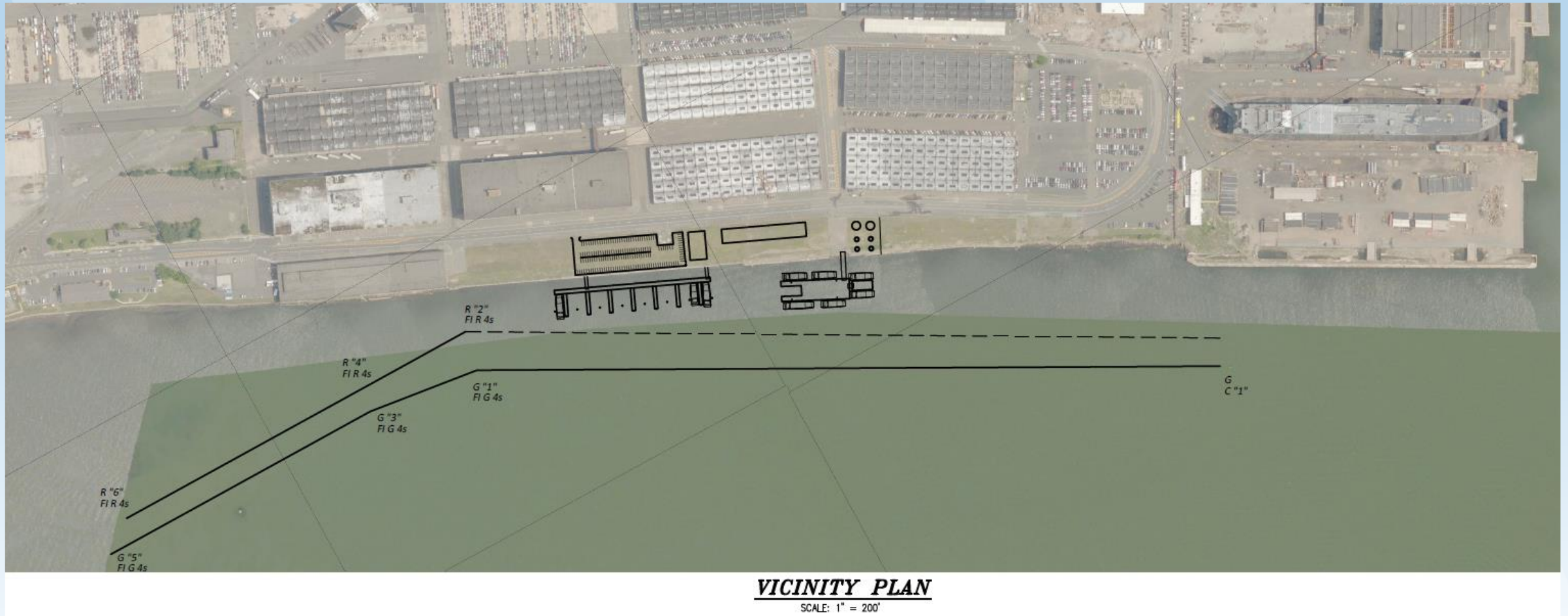


# Evaluation of MOTBY Locations

 Manageable  Significant  Prohibitive  Undetermined	Southeast	Dry Dock	North
<b>FATAL FLAW – Water Depth (12’ min) and Navigability</b>			
<b>FATAL FLAW – Property Available/Lease-Purchase Cost</b>			
<b>FATAL FLAW – Conflict with other Vessel Operations</b>			
<b>FATAL FLAW – Permitting and Environmental</b>			
<b>FATAL FLAW – Construction Cost and Timing</b>			
<b>FATAL FLAW – Vessel Operating Cost Impacts</b>			
<b>Workforce accessibility</b>			
<i>Workforce accessibility</i>			
<b>Compatibility with adjacent land uses and plans</b>			
<i>Compatibility with adjacent land uses and plans</i>			
<b>Compatibility with vehicle traffic</b>			
<i>Compatibility with vehicle traffic</i>			
<b>Shoreline stability (access to fixed and floating in-water structures)</b>			
<i>Shoreline stability (access to fixed and floating in-water structures)</i>			
<b>Upland space (for shop/admin building, storage, fuel storage, pump-out, parking)</b>			
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<b>Utilities (electric, water, sewer)</b>			
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# MOTBY Southeast Property Development Concept



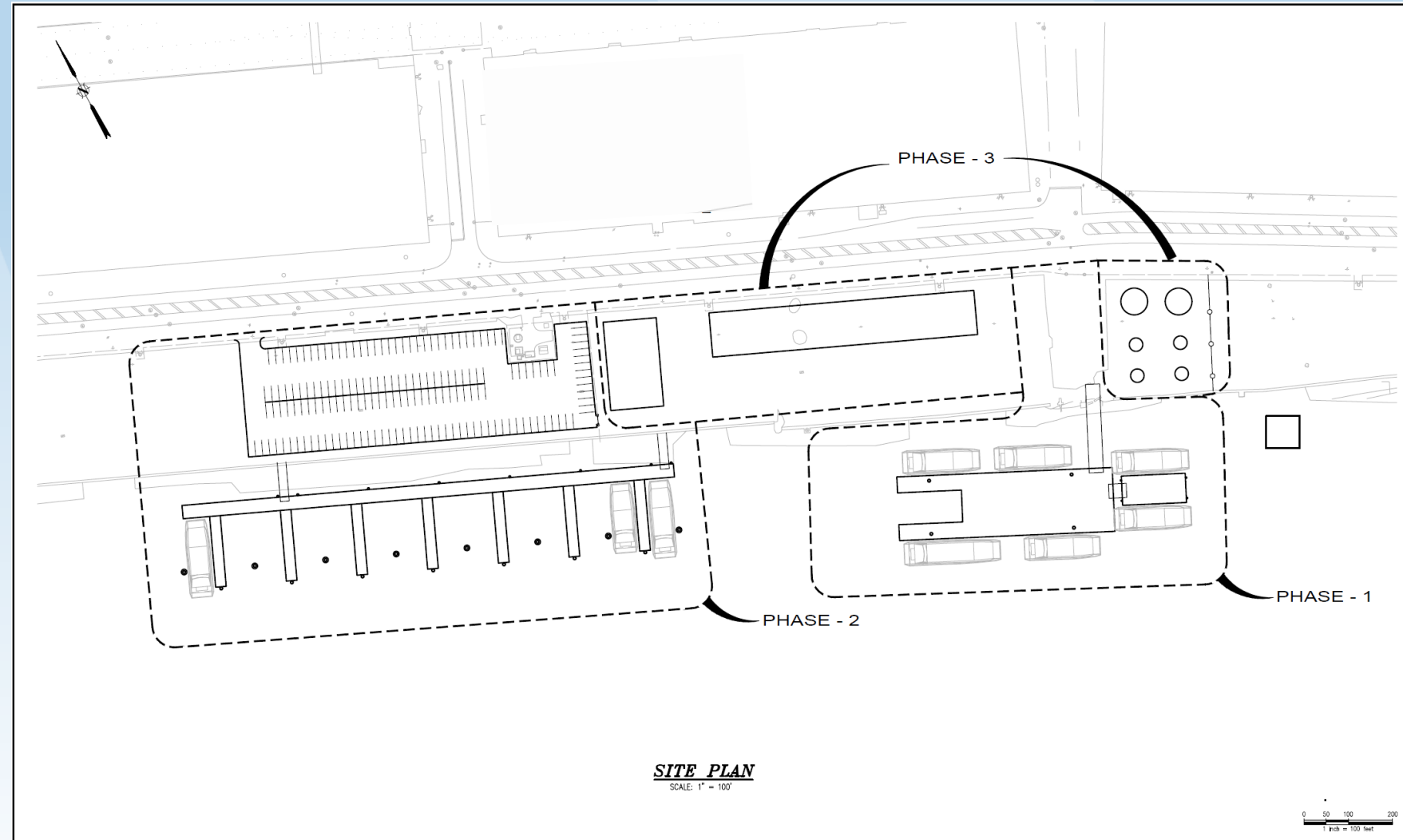
# MOTBY Southeast Property Program and Phasing

## – Program

- 20 lay-up spots, floating travel lift/drydock, and shop barge
- 12' minimum depth and 100' clear navigation channel
- ~150 parking spots
- Tank Farm for fuel, lube oil, waste oil, and bilge (oily) waste

## – Phasing

1. Relocate Travelift & Shop Barges
2. Additional overnight moorage & parking
3. New buildings and tank farm



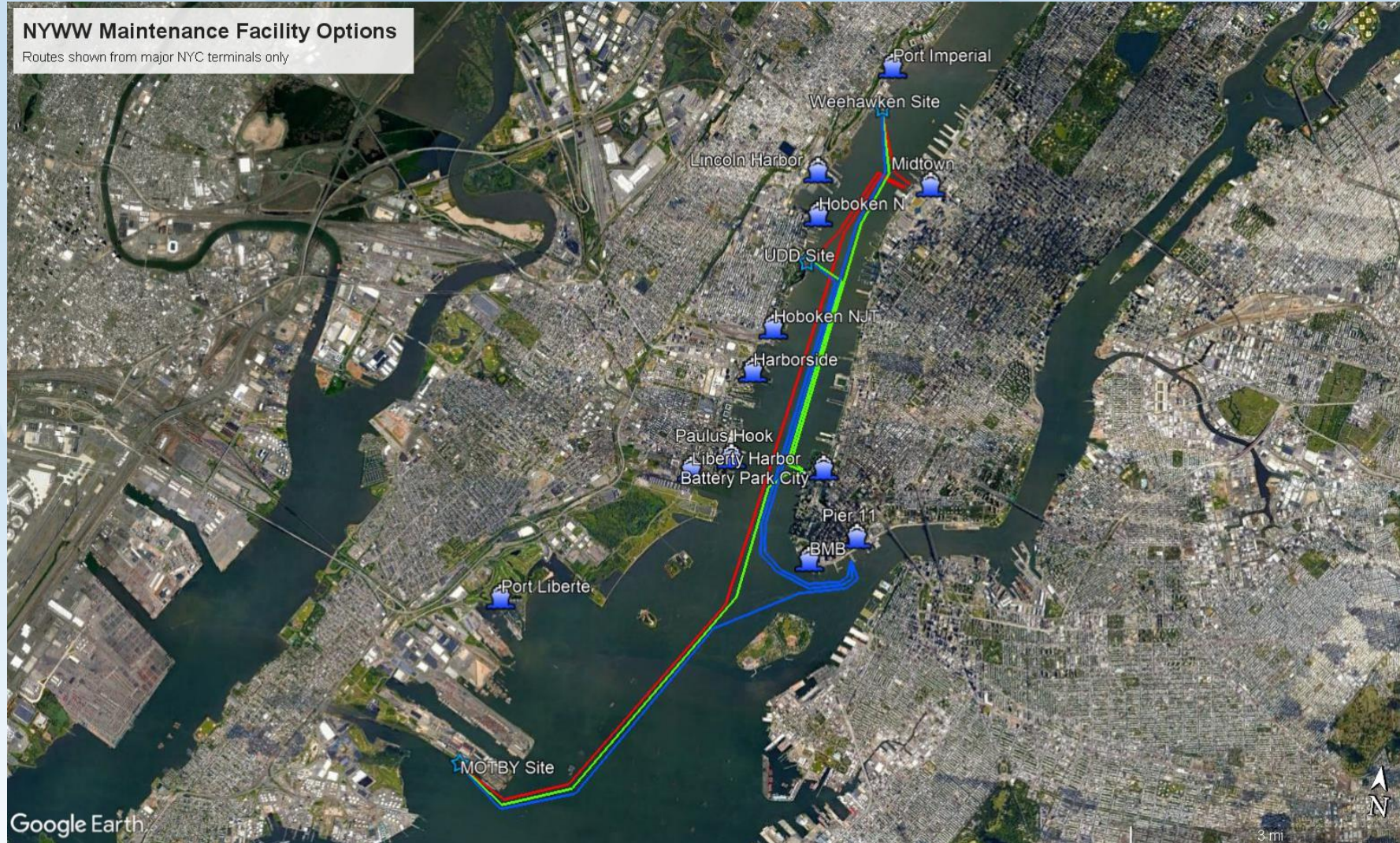


# MOTBY Southeast Property Cost and Timeline

	LOW COST (\$M)	HIGH COST (\$M)	FASTEST	SLOWEST
Construction <sup>1</sup>	(30% contingency)	(50% contingency)	(construction)	(construction)
- Phase 1	\$3.2	\$4.8	3 months	6 months
- Phase 2	\$16.2	\$24.3	6 months	12 months
- <u>Phase 3</u>	<u>\$2.3</u>	<u>\$3.5</u>	6 months	12 months
Subtotal	\$21.7	\$32.6		
Land lease (20-year term, estimated)	\$12.6 (\$630,000/year)	\$15.3 (\$765,000/year)		
Environmental (known issues with habitat and historic fill, likely manageable)	TBD	TBD	(permitting) 6 months	(permitting) 15 months
<b>Development Cost Estimate (provisional)</b>	<b>\$34.3</b>	<b>\$47.9</b>		
<b>Added NYWW Operating Cost per Year</b>	<b>\$2.8</b>	<b>\$3.3</b>		

1. Does not include environmental mitigation costs. Construction timeframes assume receipt of required permits. Phases may be sequential, or Phases 2 and 3 may be concurrent. Construction timeline does NOT include 3-5 months for preliminary design work prior to permitting.

# NYWW Incurs Added Operating Cost at MOTBY Due to Longer Distance from its Cross-Hudson Service Routes





# Comparison of MOTBY and Union Dry Dock Programs

MOTBY	Union Dry Dock
20 lay-up spots , floating travel lift/drydock, and shop barge	20 lay-up spots , floating travel lift/drydock, and shop barge
12' minimum depth and 100' clear navigation channel	12' minimum depth and 100' clear navigation channel
Tank Farm for fuel, lube oil, waste oil, and bilge (oily) waste	Tank Farm for fuel, lube oil, waste oil, and bilge (oily) waste
~150 parking spots	~50 parking spots
No potential to integrate public amenities	Potential to integrate public amenities
<u>PHASING</u> <ol style="list-style-type: none"> <li>1. Relocate Travelift &amp; Shop Barges</li> <li>2. Additional overnight moorage &amp; parking</li> <li>3. New buildings and tank farm</li> </ol>	<u>PHASING</u> <ol style="list-style-type: none"> <li>1. USACE Permit Scope: Travelift &amp; Shop Barges, vessel mooring, fuel service via trucks</li> <li>2. Public amenities, outside fence, and parking</li> <li>3. New buildings and tank farm</li> </ol>



# Union Dry Dock Property Cost and Timeline

	LOW COST (\$M)	HIGH COST (\$M)	FASTEST	SLOWEST
Construction <sup>1</sup>	(30% contingency)	(50% contingency)	(construction)	(construction)
- Phase 1	\$3.0	\$3.4	1 months	2 month
- Phase 2	\$3.8	\$4.3	12 months	18 months
- <u>Phase 3</u>	<u>\$2.5</u>	<u>\$2.9</u>	9 months	12 months
Subtotal	\$9.3	\$10.6		
Land (NYWW Owned <sup>2</sup> )	\$0	\$0		
Environmental (likely manageable); received DEP and USACE Phase 1 permits	TBD	TBD	3 months	12 months
<b>Development Cost Estimate (provisional)</b>	<b>\$9.3</b>	<b>\$10.6</b>		
<b>Added NYWW Operating Cost per Year</b>	<b>\$0</b>	<b>\$0</b>		

1. Does not include environmental mitigation costs. Construction timeframes assume receipt of required permits. Phases may be sequential, or Phases 2 and 3 may be concurrent. Construction timeline does NOT include 3-5 months for preliminary design work prior to permitting.
2. NYWW purchased the 3.15 acre Union Dry Dock property for a reported \$11.5 million in late 2017.

# Comparison of MOTBY and UDD Cost and Permitting

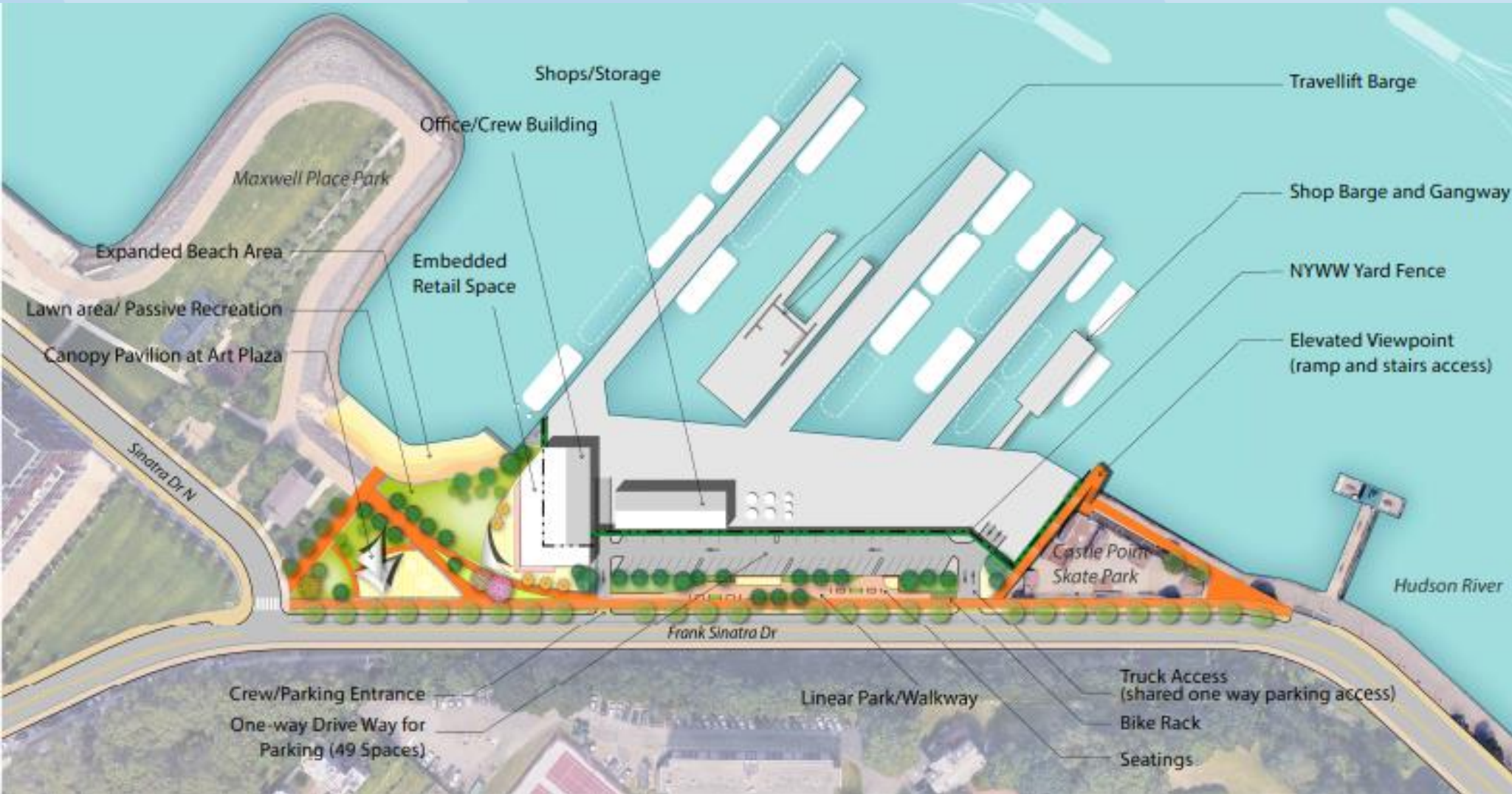
	MOTBY (\$M)	UDD (\$M)
Construction	\$21.7 to \$32.6 9 to 30 months	\$9.3 to \$10.6 2 to 30 months
Land Purchase / Lease	\$12.6 to \$15.3	Owned by NYWW
Environmental / Other	Manageable, TBD 6 to 15 months	Manageable, TBD 3 to 12 months
<b>Total</b>	<b>\$34.3 to \$47.9</b>	<b>\$9.3 to \$10.6</b>
<b>Added NYWW Operating Cost per Year</b>	<b>\$2.8 to \$3.3</b>	<b>\$0</b>

# Union Dry Dock – Issues and Responses

Issues	Design or Operational Response
<b><i>Ferry/Human-Powered Watercraft Interactions</i></b>	Design: Provide buoys and dolphin piles to delineate respective operating zones Operations: Minimize vessel movements along north side of north pier
<b><i>Noise</i></b>	Design: Locate heavy, loud repair activities at south end of the site, away from Boathouse Operations: Limit heavy repair activities to weekday during regular business hours
<b><i>Air Pollution</i></b>	Operations: Limit vessel movements at north pier on weekends Operations: Continue engine replacement program
<b><i>Fuel Spills</i></b>	Design: Install permanent spill containment boom with rapid response end closure Operations: Implement fueling best management practices
<b><i>Shoreline Erosion</i></b>	Design: Maintain existing bulkhead Design: Assess impact of expanding existing beach
<b><i>Aesthetics</i></b>	Design: Provide new buildings and walls to match architecture of adjacent community Design: Provide additional green space near community boathouse Design: Provide elevated overlook at south end of site for continuity with waterfront walk Operations: Maintain clean site



# Union Dry Dock – Issue-Responsive Plan





# Union Dry Dock – Rendering View #1 (Current)



# Union Dry Dock – Rendering View #1 (Future)





# Union Dry Dock – Rendering View #2 (Current)



# Union Dry Dock – Rendering View #2 (Future)





# Union Dry Dock – Examples of Amenity Types



Linear Park/Walkway



Embedded Retail Space



Seating and Special Pavement



Canopy Pavilion at Art Plaza



Lawn area/ Passive Recreation



Expanded Urban Beach Area



# Summary of Findings

## – Comparison of key cost/permitting metrics

- *MOTBY high estimate = \$47.9 M, plus \$2.8 to \$3.3 M in additional operating costs to NYWW each year*
- *UDD high estimate = \$10.6 M, with no additional operating costs*
- *UDD has already received DEP permit and USACE Phase 1 permit*

## – Community compatibility

- *MOTBY is compatible with industrial nature of MOTBY peninsula*
- *UDD can be designed to address community concerns and mitigate community impacts*

## – Ability to meet NYWW requirements

- *UDD provides vital regional maritime infrastructure, the last parcel of its kind within the NYWW area of operation; it is well suited to meet NYWW requirements while offering the potential to integrate significant public amenities within the overall design envelope*
- *MOTBY is an inefficient location for relocating mooring, maintenance and fueling operations for NYWW's ferries, although it may be useful in the future with expansion of other ferry services*

*This Report was prepared by WSP Inc.  
in association with KPFF Consulting  
Engineers, under contract to the New  
Jersey Department of Transportation.*