

Implementing Resiliency Measures

Portsmouth's 1806 Shaw Warehouse
at Prescott Park



Topics of Discussion

- Climate Resiliency in Practice & Project Background
- Current Flooding Conditions
- Resiliency Strategy
- Shaw Warehouse Strategy
- Permitting
- Key Takeaways



Climate Resiliency in Practice



Model climate scenarios, assess risk, and develop plan and strategies



Design projects to adapt to new design criteria and manage uncertainty



Emphasize natural systems to mitigate climate impacts and create value



*We have an opportunity to do more
with our parks.*

Prescott Park

Photo Credit: Carol
Highsmith

The park hosts thousands of visitors each year for regular daily use, a seasonal performing arts festival, and other annual events.



*Prescott Park was formerly
industrial waterfront.*



1980s



Park land was stitched together over time.





Public input has been frequent and critical to the park's success.



Prescott Park Master Plan, 2017



PEIRCE ISLAND ROAD

MECHANIC STREET

MARCY STREET

MEMORIAL BRIDGE

LIBERTY LAWN

HOVEY FOUNTAIN

NEW FORMAL GARDEN

ART

TRIAL GARDENS

ART

STAGE

THE SHAW

PERFORMANCE LAWN

PUBLIC FORUM

WATERFRONT

THE SHEAFE

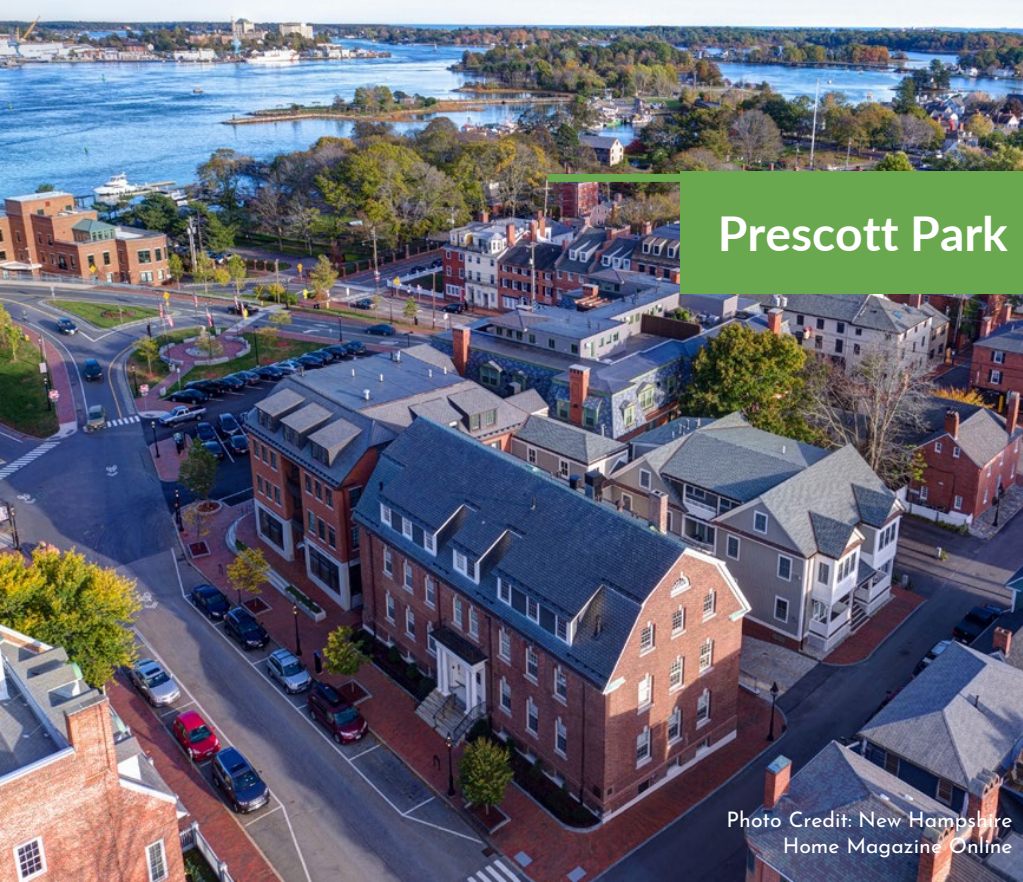
WHALE SCULPTURE

BOARDWALK

FOUR TREE ISLAND

0 50 100 200FT





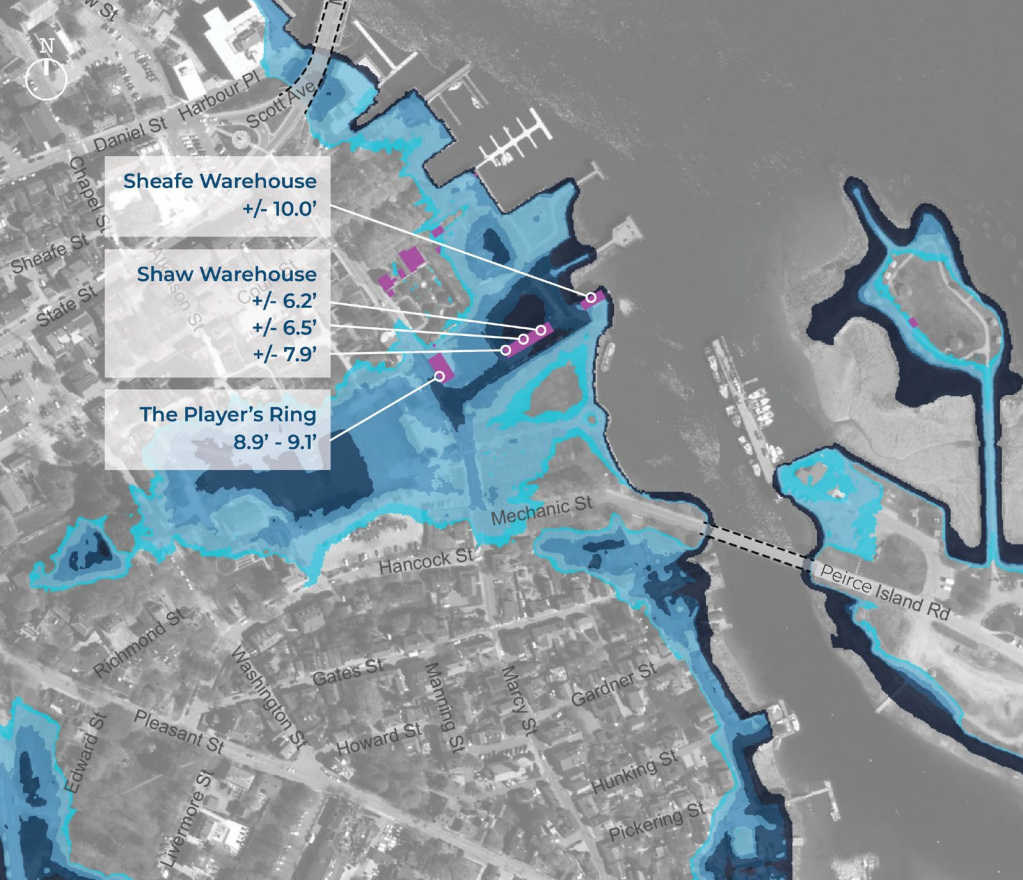
Prescott Park

Prescott Park is the first line of defense for the city's historic South End.

Climate resiliency plays a key role in this park's design.

Photo Credit: New Hampshire Home Magazine Online



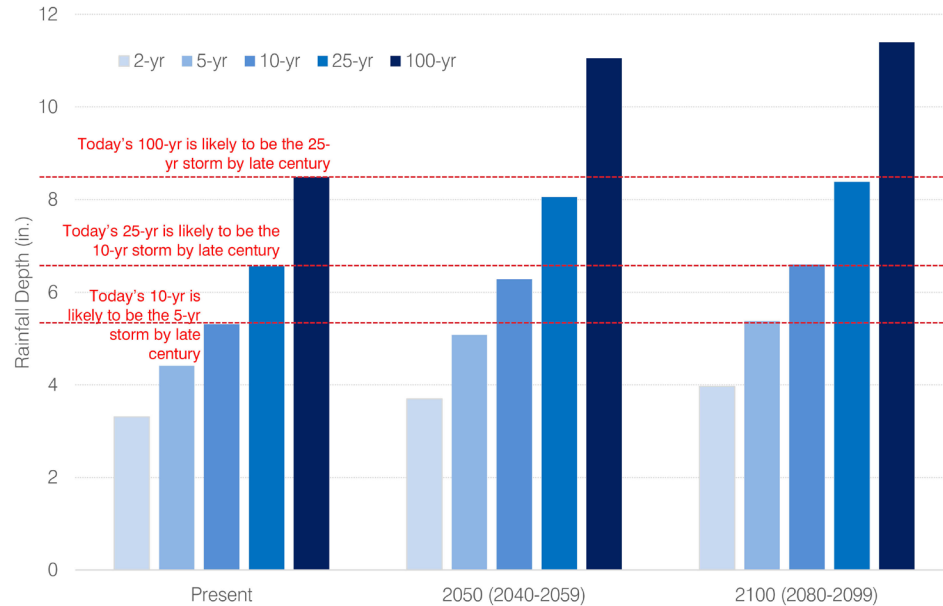


Flooding conditions today significantly impact the park and neighborhood.

At left, a high tide during a 100-year storm is modeled.



Stormwater Flooding Impacts



Source: Climate change projections for Portsmouth by Dr. Cameron Wake as part of NHDES publication on New Hampshire Coastal Flood Risk Summary Part 1: Science, released September 3rd, 2019





PROTECT the park by:

- Improving sea wall infrastructure
- Adding tide gates
- Managing on-site stormwater





RETREAT from sea level rise by:

- Raising and shifting critical historic and cultural infrastructure (the Shaw Warehouse) to a higher elevation





ACCOMMODATE for flooding by:

- Creating temporary above ground stormwater holding during peak storm events



Resiliency Interventions

EXISTING DRAIN MANHOLE TO BE UTILIZED AT THE MARCY STREET - WATER STREET INTERSECTION

AN UPSIZED DRAIN MANHOLE TO BE INSTALLED AT THE PLAYER'S RING

STORM DRAINS INSTALLED TO CONNECT DRY WELLS TO WATER STREET OUTFALL.

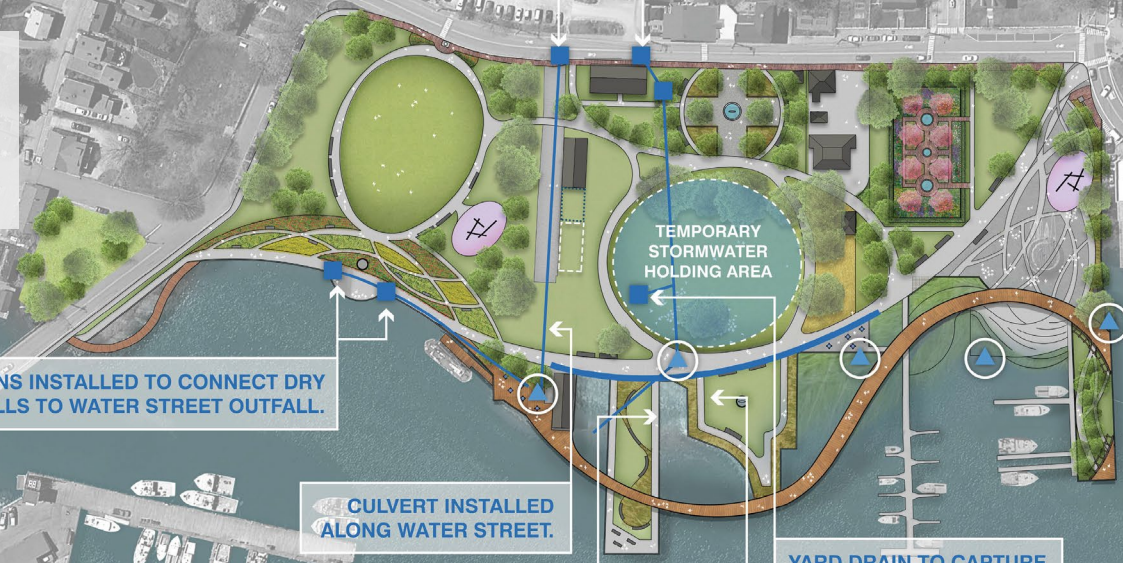
CULVERT INSTALLED ALONG WATER STREET.

OUTFALL TO BE LOWERED AND UP-SIZED TO ACCOMMODATE ADDITIONAL RUNOFF.

YARD DRAIN TO CAPTURE OVERFLOW

EXISTING 24-INCH DIA. DRAIN PIPE TO BE UPSIZED TO A 36" DIA. DRAIN

ALL EXISTING OUTFALLS WILL HAVE TIDE GATES IF NOT ALREADY IN PLACE.

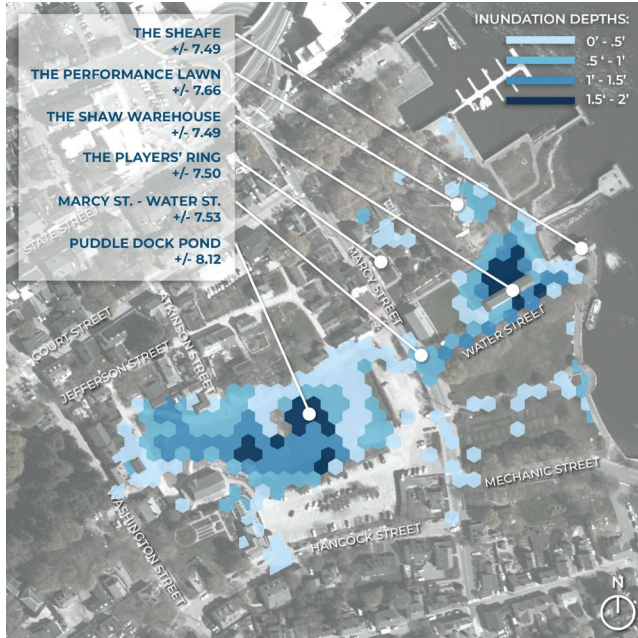


Proposed Conditions Improvements under Baseline Climate Scenario

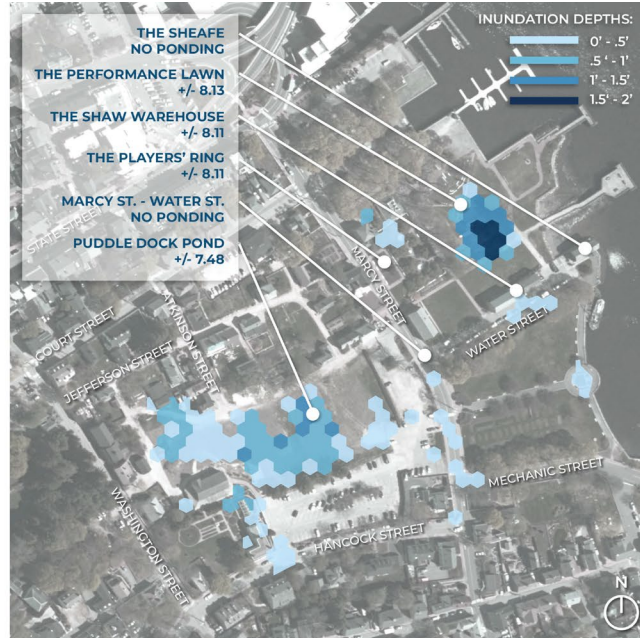
Flooding Area	Existing Conditions	Proposed Conditions	
	Flooding (MG)	Flooding (MG)	% Reduction
Prescott Park	0.295	0.000	100%
Marcy & Water St.	0.279	0.000	100%
Total	0.574	0.00	100%

Projected Improvements - 10-year Flood

Existing



Proposed



Prescott Park Master Plan, 2022

Phase 1A Limits



0 50 100 200 FT



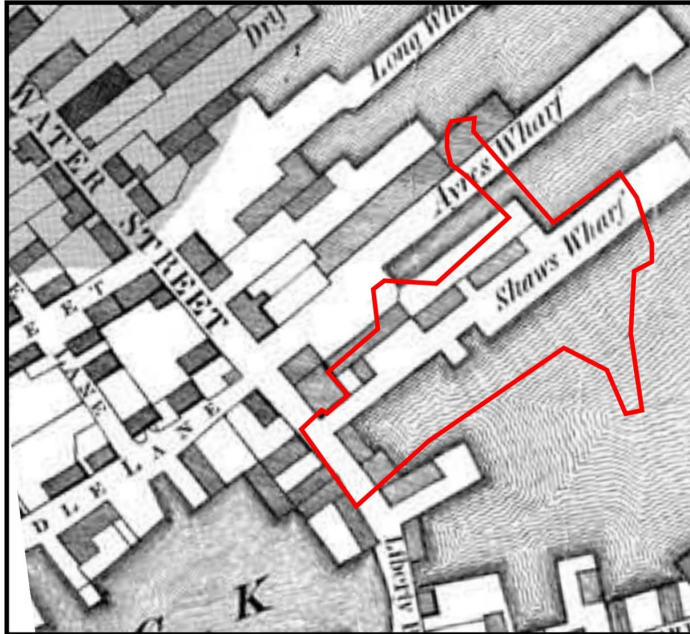
Shaw Warehouse Phase 1A Goals

- Demolish the Lean-to and Garage
- Relocate the Shaw Building based on current flood zone projections and allow for a future Addition and Stage
- Full exterior renovation due to needed structure reinforcement prior to the relocation

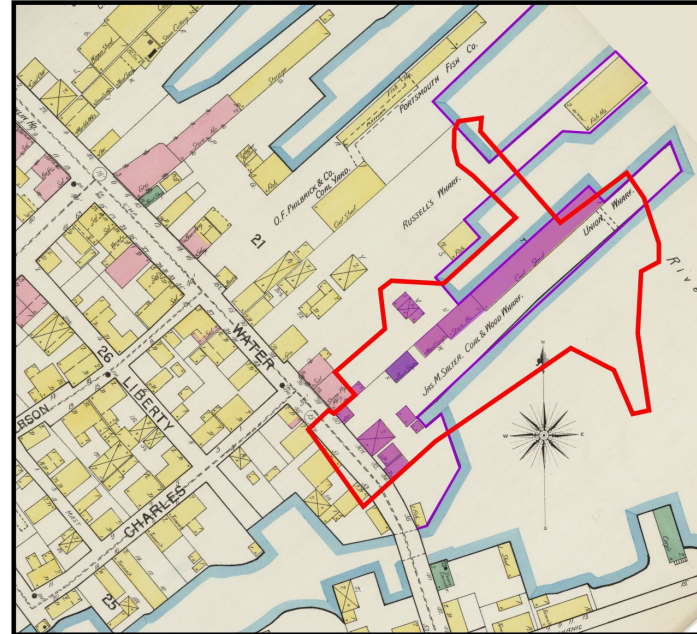


Shaw Warehouse and Site History

1813 Hales Map



1892 Sanborn Map



Mapping and Phase 1A Archeological Sensitivity Assessment and Phase 1B Intensive Archeological Investigation provided by Independent Archeological Consulting, LLC





Shaw Warehouse:

- 3-1/2 story post-and-beam
- Built in 1806
- One of three industrial properties in this area of Portsmouth
- Property was rehabilitated in 1950 for office space and restrooms
- Eligible for the State Register under Criterion C for architecture as a rare example of a vernacular warehouse building.





Lean-To built 1904 — once a small factory and boiler or engine room

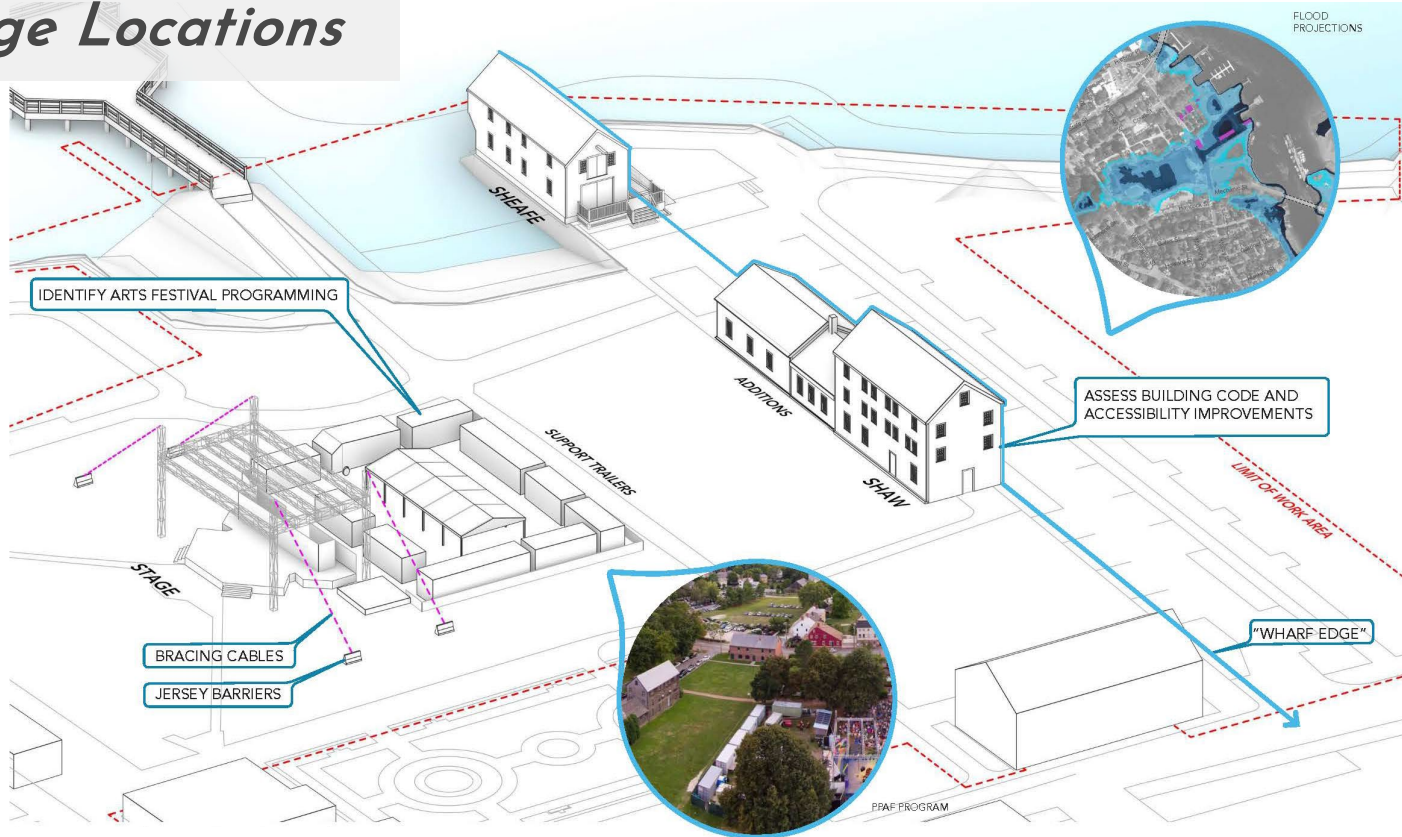


Garage Addition built 1987

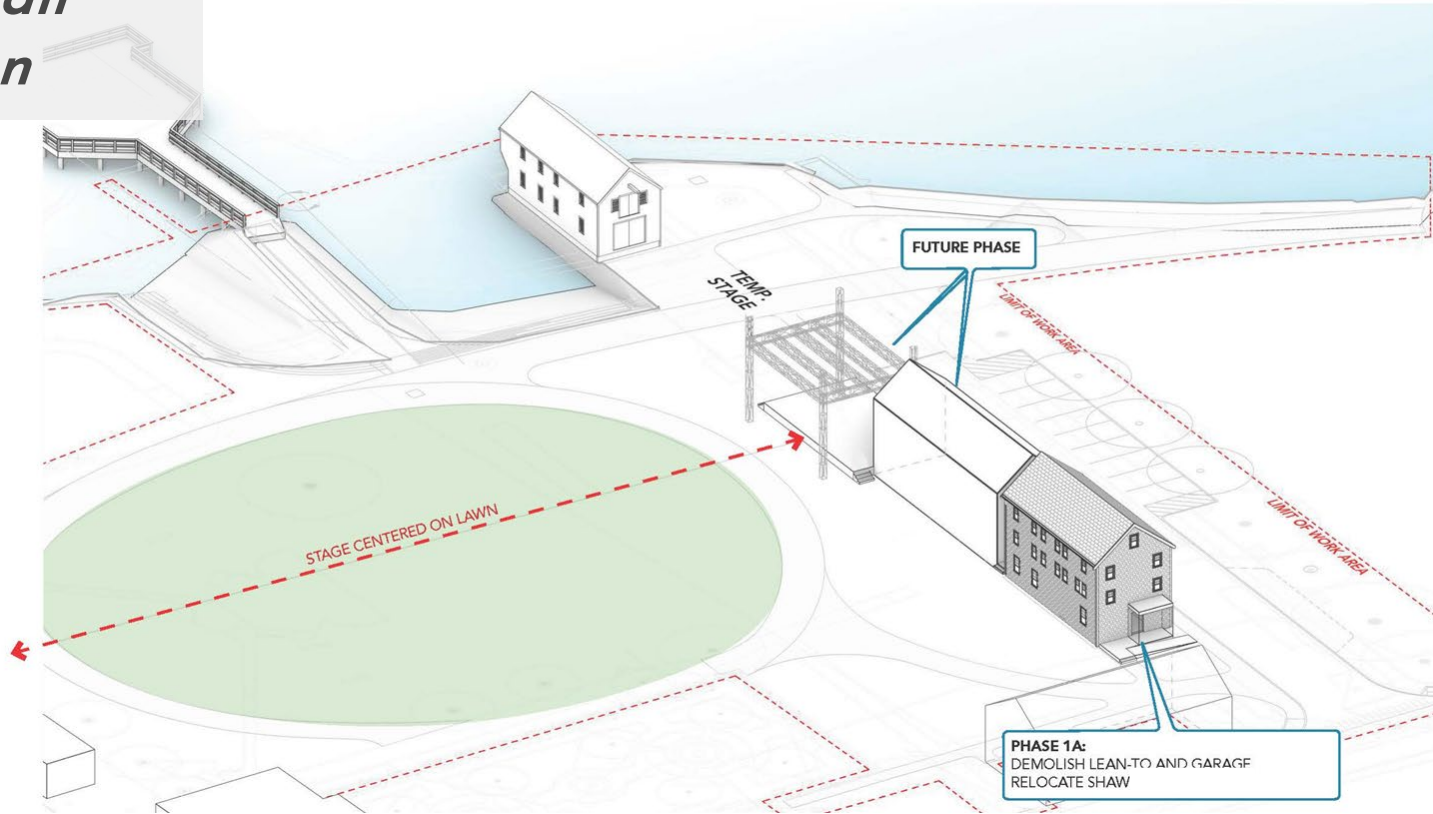
“these late additions are of no particular historical value, but the Shaw Warehouse main building is an excellent example of the sturdy waterfront warehouses required to store and process large cargos of the early 19th century”

Noted in the *NH Division of Historical Resources Determination of Eligibility*, dated March 15, 2011, in reference to the Garage and Lean-To

Existing Building & Stage Locations



Overall Vision





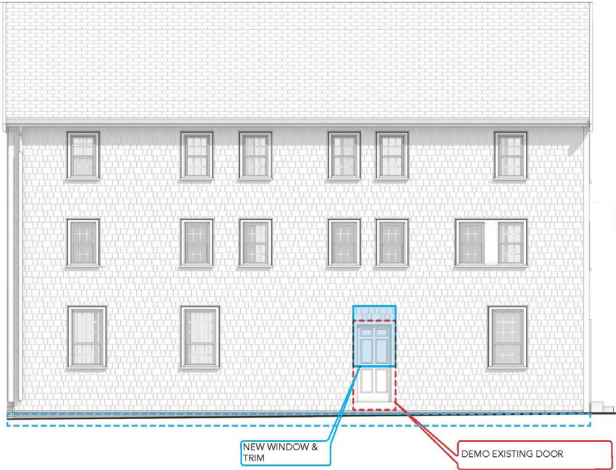
Preliminary Structural Repairs

Design guidelines will be strictly adhered to from:

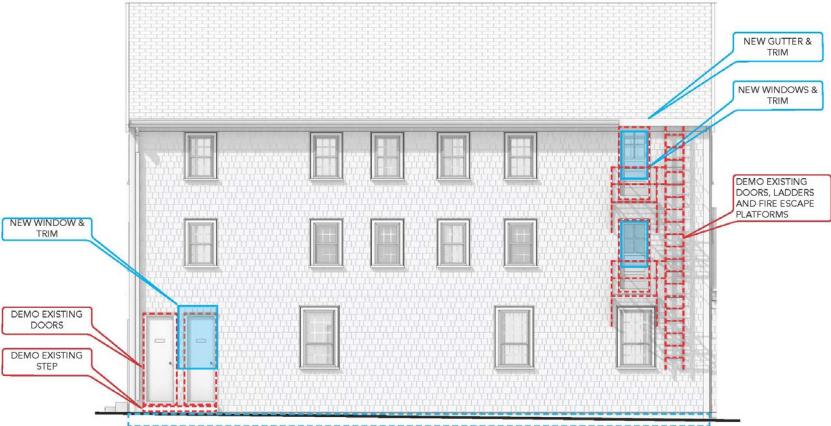
- Portsmouth's Historic District Commission
- US Dept. of the Interior Guidelines on Flood Adaptation for Rehabilitating Historic Buildings
- US Dept. of the Interior Standards for the Treatment of Historic Properties



Repairs to each façade include:



North Elevation



South Elevation

- New painted wood lined gutters and leaders
- New cedar shingle roofing with copper flashing
- New painted wood windows, casings and sills
- New painted wood corner boards and rakes
- New western red cedar shake shingles
- Demolition of the existing bathroom doors and replace with new painted wood window system.
- New reinforced concrete and stone foundation system with reinforced concrete slab. Option to salvage stone for reuse with new foundation. Stone condition to be field verified.
- Existing heavy timber structural frame to remain. Include structural repairs as required by the structural engineer.
- All planned materials for the renovation are to match existing materials with improvements as noted.



Permitting

LOCAL

- Conservation Commission
- Historic District Commission

FEDERAL

- Army Corps of Engineers Pre-Construction Notification (PCN)
- Coastal Zone Management (CZM) Consistency Determination
- US Fish and Wildlife Service Information for Planning and Consultation (IPAC) Review
- National Marine Fisheries Service Coordination

STATE

Dept. of Env. Services

- Wetlands Bureau Standard Dredge and Fill Wetlands Permit
- Shoreland Permit – 5 total (1 per lot)
- Alteration of Terrain Permit (AOT)

Dept. of Historic Resources

- Section 106 Historical / Archaeological Resource Review

Natural Heritage Bureau

- Database Check

Fish & Game

- Coordination based on NHB check



Photo Credit:
Marinas.com

Key Takeways:

- Public parks are an essential component of public infrastructure.
- Resiliency engineering and design go hand in hand.
- Determine the non-negotiables and opportunity areas. Involve stakeholders early and often.

