



# **Our Project Team**



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# **Original Scope**

The **Sandy Beach Lighthouse Relocation Project** was initiated to move the historic lighthouse and its associated buildings 2,900 feet southeast due to coastal erosion. The project aimed to preserve the lighthouse's structural integrity, maintain its historic designation, and minimize environmental impact while completing the move within 18 months and a \$12 million budget.



# **Project Update & New Scope**

Unexpected contamination at the final site—due to a buried oil tank—has triggered mandatory environmental remediation, increasing costs and extending the project timeline. Adjustments to the budget and schedule are now required.

# **Updated Messaging Suggestions for Locals**

"We understand how important the Sandy Beach shoreline is to our community. To ensure minimal disruption, we are keeping designated sections of the beach open while safely conducting soil remediation. Our goal is to balance environmental safety with continued public access."





### **Status Report on Milestones**

As it currently stands, we have completed all anticipated preconstruction activities.

- These include:
  - 1. Securing necessary equipment and contractors
    - Project Bid, Subcontractor Selection, Equipment Procurement
  - 2. Establishing the clearance lane
    - Grading, Gravel, and Compression
  - 3. Stabilizing existing buildings in preparation for the move
    - Temporary beams, structural improvements, architectural consultants
  - 4. Communicating to community stakeholders
    - Press Conferences, contact with local news agencies
  - 5. Installing safety barriers and signage
    - New path to access beach, contracted security team



### **National Landmark Status Recertification**

★ **Key Priority:** Maintain National Historic Landmark Status after relocation.

**Level of Confidence**: *High* 

While not common, existing National Historic Landmarks (NHLs) can be relocated and maintain their NHL status under **Exception 2**, provided the landmark maintains its original orientation/positioning **AND** that the relocation is done for the purposes of maintaining the integrity of the NHL.



### **National Landmark Status Recertification**

- National Park Service Requirement:
  - ☐ Maintain the "...horizontal and vertical relationship of the four structures..." (National Park Service, 2000).

### **Documentation Submitted and Reviewed:**

- An Updated Letter of Inquiry confirming:
  - "...the current integrity of the property," the status of the NHL boundary and any contemplated changes, and the intention to reaffirm..." (National Park Service, 2024).
  - ✓ Adherence to historical positioning



### **Unanticipated Obstacles**

While we have made steady progress, we have encountered some unanticipated delays and obstacles.

#### **These include:**

- Weather Conditions
  - Larger than anticipated # of tropical storms and hurricanes
- Worker Shortages
  - Active homeowner construction and renovation during warmer weather
- Increased cost of materials
  - Uncertainty surrounding price increases due to new tariffs
- Petroleum By-Product
  - Buried oil tank extraction and soil replacement



Sweeping new tariffs put future construction projects at risk

BuildForce National Forecast: Boom or bust? Uncertainty reigns supreme for construction amid tariffs

### **Initial Financial Plan**

Total Project Budget: \$12,000,000

Expense Category	Estimated Cost		
Preliminary Surveys & Engineering	\$600,000		
Site Preparation & Environmental Safeguarding	\$900,000		
Stabilization & Reinforcement	\$2,000,000		
Heavy Lifting & Moving Equipment	\$3,500,000		
Construction & Re-establishment	\$3,000,000		
Personnel & Labor	\$1,200,000		
Community Outreach & Communication	\$300,000		
Estimated Project Cost	\$11,500,000		

# **Updated Financial Plan**

Expense Category	New Estimated Cost	Cost Increase (from original estimate)
Preliminary Surveys & Engineering	\$600,000	\$0
Site Preparation & Environmental Safeguarding	\$2,100,000	+ \$1,200,000
Stabilization & Reinforcement	\$2,000,000	\$0
Heavy Lifting & Moving Equipment	\$3,500,000	\$0
Construction & Re-establishment	\$3,000,000	\$0
Personnel & Labor	\$1,500,000	+ \$300,000
Community Outreach & Communication	\$300,000	\$0
Updated Estimated Project Cost	\$13,000,000	+ \$1,500,000



### **Earned Value Measurements**

Milestone Category	% Complete	EV	AC	AC PV		sv
Preliminary Surveys & Engineering	100%	\$600,000	\$600,000	\$600,000	\$0	\$0
Site Preparation & Environmental Safeguarding	50%	\$450,000	\$500,000	\$550,000	-\$50,000	-\$100,000
Stabilization & Reinforcement	0%	\$0	\$0	\$0	\$0	\$0
Heavy Lifting & Moving Equipment	30%	\$1,050,000	\$1,050,000	\$1,050,000	\$0	\$0
Construction & Re-establishment	10%	\$300,000	\$0	\$300,000	+ \$300,000	\$0
Personnel & Labor	20%	\$240,000	\$300,000	\$240,000	-\$60,000	\$0
Community Outreach & Communication	25%	\$75,000	\$75,000	\$75,000	\$0	\$0

# **Updated Key Budget Categories**

### 1. Heavy Lifting & Moving Equipment - \$3,500,000 (unchanged)

- Equipment rentals (cranes, transport vehicles, etc.): \$1,500,000
- Custom lifting mechanisms for historic buildings: \$1,000,000
- Transportation logistics: \$1,000,000

#### 2. Stabilization & Reinforcement - \$2,000,000 (unchanged)

- Lifting and stabilization beams: \$1,000,000
- Reinforcement for Keeper's quarters, oil house, and cisterns: \$500,000
- On-site structural stabilization: \$500,000

#### 3. Site Preparation & Environmental Safeguarding - \$2,100,000 (increased by \$1.2M)

- Excavation and site clearing: \$500,000
- Environmental impact studies and wildlife protection: \$250,000
- Gravel road construction: \$150,000
- New: Buried oil tank investigation and removal: \$400,000
- New: Hazardous waste soil remediation: \$800,000



# **Updated Key Budget Categories Cont.**

#### 4. Construction & Re-establishment - \$3,000,000 (unchanged)

- Rebuilding foundations at new site: \$1,500,000
- Reconnection of utilities: \$500,000
- Rebuilding oil house and cisterns: \$500,000
- Miscellaneous (roads, pathways, etc.): \$500,000

#### 5. Personnel & Labor - \$1,500,000 (increased by \$0.3M)

- Project management and consultants: \$650,000 (Increased by \$150,000)
- Skilled labor: \$650,000 (Increased by \$150,000)
- Preservation specialists: \$200,000

#### 6. Community Outreach & Communication - \$300,000 (unchanged)

- Engagement programs: \$150,000
- Public relations: \$100,000
- Events upon completion: \$50,000



# Impact Assessment & Response Plan

### Impact of Unanticipated Events:

- **Cost Increase:** +\$1,500,000 due to environmental remediation and excavation.
- **Schedule Delay:** Estimated additional 3–6 weeks for investigation, removal, and soil replacement.
- **Stakeholder Risk:** Increased concern from the city council and community about budget overruns and safety.

### **Response Strategy:**

- 1. Transparent Communication Plan
- 2. Prioritize Environmental Safety
- **3.** Schedule Recovery Measures
- **4.** Financial Planning
- **5.** Public Relations & Community Trust



# **Schedule Options**

### **OPTION 1:**

Soil Remediation of Misc Buildings Completed First:

- Total Schedule Add- 2-3 weeks
- Cost: Labor for Weekends



### **OPTION 2:**

Soil Remediation of Lighthouse Completed First:

- Total Schedule Add- 1-2 weeks
- Cost: Labor for Weekends



### **OPTION 3:**

Soil Remediation Completed All at Once:

- Total Schedule Add- 5 weeks
- Cost:Labor and Schedule extension







### **OPTION 2:**

Soil Remediation of Lighthouse Completed First:

- Total Schedule Add= 1 week
  - Lighthouse Moved During other Soil Remediation
- Cost: Labor for Weekends

Original
Completion
Date
8/01/26

Coordinate with Contractors Stabalize Lighthouse Soil Remediation-Lighthouse Roll LightHouse Disconnect Utilities Secure or Remove Furniture Stablie for Transport Soil Remediation Cistern and Keeper's Quarters Lift Structures on Transport Transport to new Site Re-Establish Structure at New Site

Otr 2, 2026

Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep

Qtr 3, 2026

Qtr 4, 2

Otr 4, 2025

New

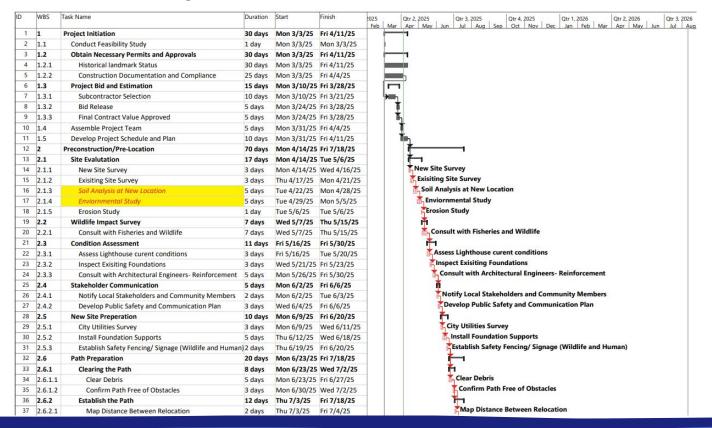
Completion

Date

8/10/26

Qtr 1, 2026

# **Updated Gantt Chart**





# **Updated Gantt Chart**

)	WBS	Task Name	Duration	Start	Finish	2025 Feeb	Qtr 2, 2025   Qtr 3, 2025   Qtr 4, 2025   Qtr 1, 2026   Qtr 2, 2026   Qtr 3, 2026   Qtr 3, 2026   Qtr 4, 2026
38	2.6.2.2	Determine Path Grading	2 days	Mon 7/7/25	Tue 7/8/25	reb	Determine Path Grading
39	2.6.2.3	Lay Gravel	5 days	Wed 7/9/25	Tue 7/15/25		Lay Gravel
40	2.6.2.4	Compress Gravel	3 days	Wed 7/16/25	Fri 7/18/25		Compress Gravel
41	3	Relocation Execution	-	Mon 7/21/25			*
42	3.1	Equipment and Logisitics		Mon 7/21/25			<u>*</u>
43	3.1.1			Mon 7/21/25			Hire Contractor and Secure Transport Equipment
44	3.1.2	Develop Transportation Plan		Mon 8/4/25			Develop Transportation Plan
45	3.2				Mon 12/22/25		
46	3.2.1		CONTRACTOR OF THE PARTY OF THE	And the second second	Mon 9/22/25		
47	3.2.1.1	Disconnect Utilities		Mon 8/11/25			Disconnect Utilities
48	3.2.1.2	Secure or Remove Furniture	5 days	Mon 8/18/25			Secure or Remove Furniture
49	3.2.1.3	Dig out Foundation		Mon 8/25/25			Dig out Foundation
50	3.2.1.4			Wed 9/3/25			Install Beams Through Foundation
51	3.2.1.5	Jack up Foundation and Place on Rollers		Fri 9/12/25			Jack up Foundation and Place on Rollers
52	3.2.2		0.51	1.0	Mon 12/22/25		*
53	3.2.2.1		-	Tue 9/23/25			Coordinate with Contractors
54	3.2.2.2				Mon 10/20/25		Stabalize Lighthouse
55	3.2.2.3				Mon 11/24/25		Soil Remediation- Lighthouse
56	3.2.2.4				Mon 12/22/25		Roll LightHouse
57	3.3			Tue 12/23/25			*
58	3.3.1	Prep	and the last of th	Tue 12/23/25			<u>*</u>
59	3.3.1.1	Disconnect Utilities			Mon 12/29/25		i Disconnect Utilities
60	3.3.1.2	Secure or Remove Furniture		Tue 12/30/25			Secure or Remove Furniture
61	3.3.1.3	Stablie for Transport	0.0.0802000	Mon 1/5/26			stablie for Transport
62	3.3.1.4			Mon 1/12/26			Soil Remediation Cistern and Keeper's Quarters
63	3.3.2	Lift Structures on Transport		Mon 2/16/26			Lift Structures on Transport
64	3.3.3	Transport to new Site		Mon 2/23/26			Transport to new Site
65	3.3.4	Re-Establish Structure at New Site	30 days	Mon 3/9/26	Fri 4/17/26		Re-Establish Structure at New Site
66	3.3.5			Mon 4/20/26			
67	3.3.5.1	Drain, Clean and Inspect Cisterns		Mon 4/20/26			Train, Clean and Inspect Cisterns
68	3.3.5.2		7 days	Mon 4/27/26	Tue 5/5/26		Transport to New Location
69	3.3.5.3			Wed 5/6/26			Reinstall and Reconnection
70	4			Tue 12/23/25		1	
71	4.1		or and the last of	Tue 12/23/25	Contract to the Contract of th		<b>—</b>
72	4.1.1	Establish Foundation	5 days	Tue 12/23/25	Mon 12/29/25		Establish Foundation
73	4.1.2	Reverse Engineer and Lower LightHouse onto Foundati		Tue 12/30/25			Reverse Engineer and Lower LightHouse onto Foundation
74	4.1.3			Tue 1/13/26			Reconnect Utilities



# **Updated Gantt Chart**

D	WBS	Task Name	Duration	Start	Finish	2025 Feb	Mar	Qtr 2, 2025
75	4.1.4	Reinstall Furniture	5 days	Tue 2/3/26	Mon 2/9/26			Keinstall Furniture
76	4.2	Strucutre Re-Assembly	20 days	Tue 2/10/26	Mon 3/9/26			*
77	4.2.1	ReinForce Foundations	15 days	Tue 2/10/26	Mon 3/2/26			ReinForce Four dations
78	4.2.2	Conduct Inspections	5 days	Tue 3/3/26	Mon 3/9/26			Tonduct Inspections
79	4.3	Site Restoration	25 days	Wed 5/27/26	Tue 6/30/26			*
80	4.3.1	Restore and Landscape	10 days	Wed 5/27/26	Tue 6/9/26			Kestore and Landscape
81	4.3.2	Enviornmental Restoration at Old Site	15 days	Wed 6/10/26	Tue 6/30/26			Enviornmental Restoration at Old Site
82	4.4	Compliance and Certification	5 days	Wed 7/1/26	Tue 7/7/26			ň
83	4.4.1	Historical Preservation	5 days	Wed 7/1/26	Tue 7/7/26			Historical Preservation
84	4.4.2	Obtain Certification Status	5 days	Wed 7/1/26	Tue 7/7/26			Notain Certification Status
85	5	Closeout	24 days	Wed 7/8/26	Mon 8/10/26			<b>*</b>
86	5.1	Final Inspections	5 days	Wed 7/8/26	Tue 7/14/26			Einal Inspections
87	5.2	Walkthrough with Stakeholders	10 days	Wed 7/15/26	Tue 7/28/26			*
88	5.2.1	Punch List	10 days	Wed 7/15/26	Tue 7/28/26			Funch List
89	5.3	Final Closeout Package	15 days	Wed 7/15/26	Tue 8/4/26			*
90	5.3.1	All Project Documentation	15 days	Wed 7/15/26	Tue 8/4/26			All Project Documentation
91	5.3.2	Final Project Report	15 days	Wed 7/15/26	Tue 8/4/26			Final Project Report
92	5.4	Community Engagement	4 days	Wed 8/5/26	Mon 8/10/26			Ťi
93	5.4.1	Public Ceremony to Commemorate	2 days	Wed 8/5/26	Thu 8/6/26			Public Ceremony to Commemo
94	5.4.2	Issue Press Release	2 days	Fri 8/7/26	Mon 8/10/26			issue Press Release



# Risk Management Plan - Risk Assessment

**Environmental** 



**Technical** 



**Financial** 



Schedule



Legal and Compliance



**Stakeholders** 



Labor and operations





# Risk Management Plan - Risk Assessment

### **Environmental**

Further remediation required

Contamination at the final placement site

fines

### **Financial**

Budget overruns Environmental from environmental waste disposal remediation

### **Technical**

Post-remediation Transport route soil instability obstructions

Damage to lighthouse during Equipment failure relocation



# Risk Management Plan - Response Plan

### **Environmental**

Conduct environmental assessment before construction.

Establish a time and budget buffer Contingency: Escalate to environmental specialists and notify stakeholders.

Implement containment systems
Creation of a protocol for
emergency spills
Contingency: Pause construction
and execute emergency
containment and soil remediation.







# Risk Management Plan - Response Plan

### **Technical**

Identify alternative routes or paths.
Contingency: Activate backup
transportation plan and reroute.



Conduct geotechnical testing and reinforcement.

**Contingency:** Redesign foundation and implement soil stabilization.

Establish a fixed-price contract with our vendors.
Contingency: Backup
Equipment.



# Risk Management Plan - Risk Assessment

# Legal and Compliance

Historical FC Preservation er Requirements

Failure to meet environmental standards

### **Stakeholders**

City Council funding withdrawal

Public backlash due to environmental concerns

### Schedule

weather-related delays (hurricane, storms)

Delays from contamination & regulatory reviews

Delay in permits

Labor strikes or work stoppages

Miscommunication with subcontractors



# Risk Management Plan - Response Plan

### Schedule

Submit permits early
Contingency: Maintain close liaison
with environmental and historical
preservation authorities

Schedule critical activities during the optimal weather window.

Contingency: Reschedule critical activities and establish an emergency response.





# Risk Management Plan-Risk Assessment

### **Labor and Operations**

General worker shortage (immigration policies)

Skilled labor shortage

Health and safety incidents

Additional geotechnical work post-remediation

Response Plan

Engage temporary staffing agencies.
Adjust work schedules
Contingency: Delay non-critical work
until labor availability improves.



### **Statement of Confidence**

Despite some unanticipated obstacles, our team is confident that we will meet our revised completion date of 8/10/26 while adhering to our originally allocated budget as closely as possible.

As discussed, we will do so by completing activities in parallel to ensure as little disruption to our previously established schedule. While this will require some additional labor and incur some costs, we have elected to prioritize timely completion of the project, as this was a key focus for the Executive Steering Committee.



# Questions?



### References

Cole, L. (2025, April 4). BuildForce National Forecast: Boom or bust? Uncertainty reigns supreme for construction amid tariffs. *Daily Commercial News*.

https://canada.constructconnect.com/dcn/news/economic/2025/04/buildforce-national-forecast-boom-or-bust-uncertainty-reigns-supreme-for-construction-amid-tariffs

Department of the Interior. National Park Service. (2000). *North Carolina NHL Cape Hatteras Light Station*. National Archives at College Park - Electronic Records. <a href="https://catalog.archives.gov/id/47718776">https://catalog.archives.gov/id/47718776</a>

Google. (2025). Gemini (Version 2.0 Flash) [Artificial intelligence system]. https://gemini.google.com/

National Park Service. (2009). NPS Policy—Cultural Resources Management Moving Historic Structures.pdf.

https://www.nps.gov/nationalmallplan/Documents/106/Handouts/3-30-09%20NPS%20Policy%20-%20Cultural%20Resources%2

<u>0Management%20Moving%20Historic%20Structures.pdf</u>



### References

National Park Service. (2024). Special Edition: Updating National Historic Landmarks.

National Park Service. (2025a). Eligibility—National Historic Landmarks (U.S. National Park Service).

https://www.nps.gov/subjects/nationalhistoriclandmarks/eligibility.htm

National Park Service. (2025b). Nomination Process—National Historic Landmarks (U.S. National Park Service).

https://www.nps.gov/subjects/nationalhistoriclandmarks/nomination-process.htm

Obando, S. (2025). Sweeping new tariffs put future construction projects at risk | Construction Dive.

https://www.constructiondive.com/news/trump-tariffs-construction-risk-liberation-day/744334/



# Supplemental Material - Risk Assessment form

Category	Risk Description	Likelihood	Impact	Detection difficulty	Risk Value
Environmental	Risk of further remediation requirements	4	4	2	32
Environmental	Movement of lighthouse might cause contamination at final site	3	4	3	36
Environmental	Impact on wildlife and marine life	3	3	3	27
Technical	Damage to lighthouse during relocation	3	5	2	30
Technical	Transport route obstructions	3	5	3	45
Technical	Equipment failure	3	5	3	45
Technical	Post-remediation soil instability	3	4	4	48
Financial	Budget overruns from environmental remediation	4	4	2	32
Financial	Environmental waste disposal fines	4	3	2	24
Stakeholder	City Council funding withdrawal	3	5	2	30
Stakeholder	Public backlash due to environmental concerns	3	3	3	27
Schedule	Delay in permits from wildlife protection agencies	3	5	3	45
Schedule	Weather-related delays (hurricane, adverse weather)	3	5	4	60
Schedule	Delays from contamination & regulatory reviews	2	4	3	24
Schedule	Labor strikes or work stoppages	2	5	3	30
Schedule	Miscommunication with subcontractors	2	2	3	12
Legal & Compliance	Historical Preservation Requirements	3	5	3	45
Legal & Compliance	Failure to meet environmental standards	3	4	2	24
Labor & Operations	Skilled labor shortage	3	5	2	30
Labor & Operations	Health and safety incidents	2	5	1	10
Labor & Operations	Additional geotechnical work post-remediation	3	2	3	18
Labor & Operations	General worker shortage (e.g., due to immigration policies)	3	4	4	48



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