



**ALLIGATOR CREEK CONSERVATION &
RESTORATION PROJECT**

KERR-McGEE CHEMICAL CORP. SITE NATURAL RESOURCE DAMAGE ASSESSMENT

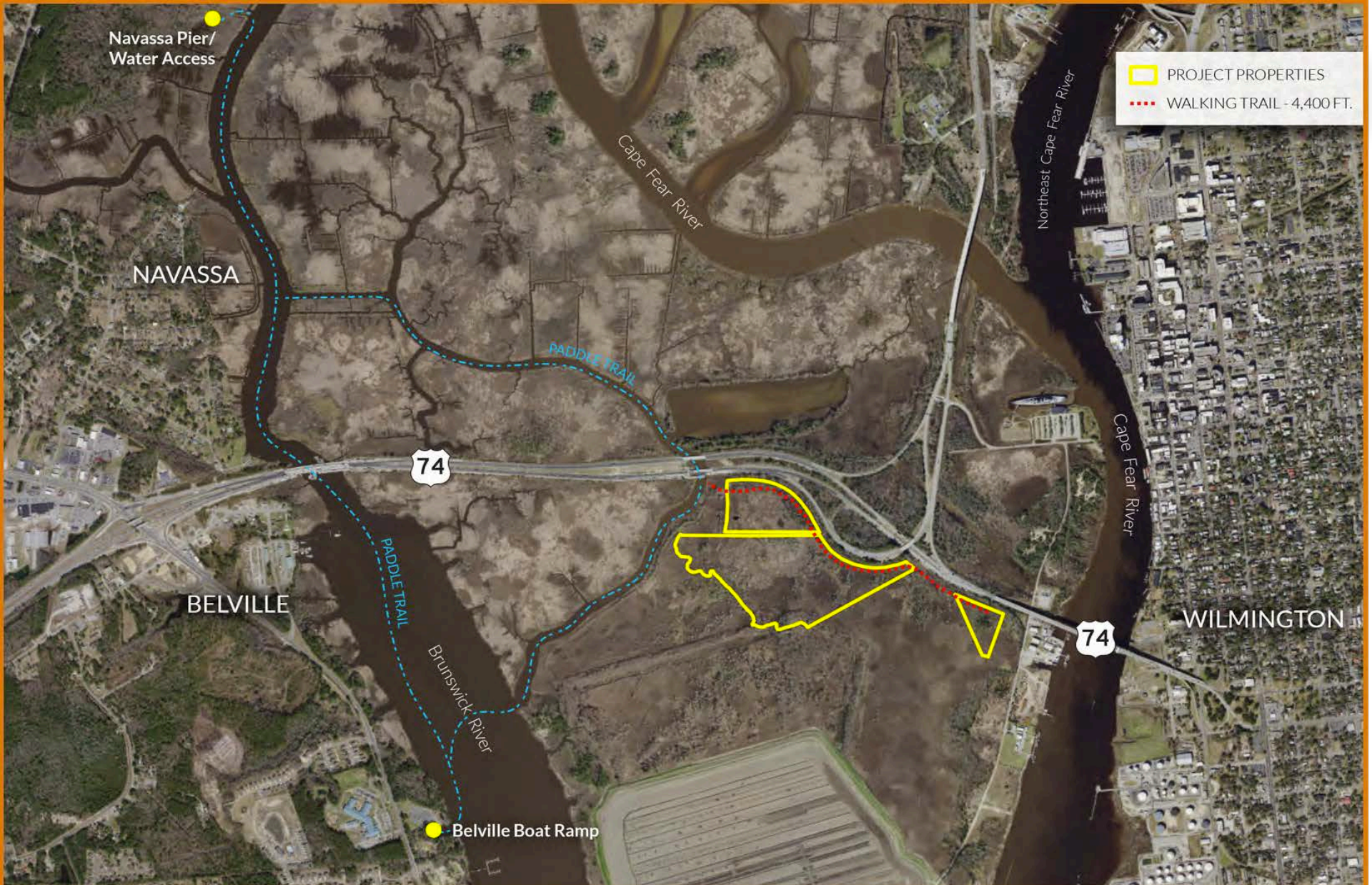
Injury assessment focused on **benthic resources**

- Direct injury
- Proxy for ecological service flows

All projects must create, restore, or enhance:

- Riverine habitat
- Coastal wetlands
- Underwater, intertidal, or shoreline habitat
- Passage for migratory fish





PROJECT PROPERTIES
 WALKING TRAIL - 4,400 FT.

Alligator Creek Restoration Regional Integration

Brunswick County, NC



SCALE 1:2200
Produced June 2019



The information depicted on this map are for illustrative purposes and do not constitute definitive property or legal descriptions. This map does not represent a legal survey.

ALLIGATOR CREEK RESTORATION AND CONSERVATION PROJECT

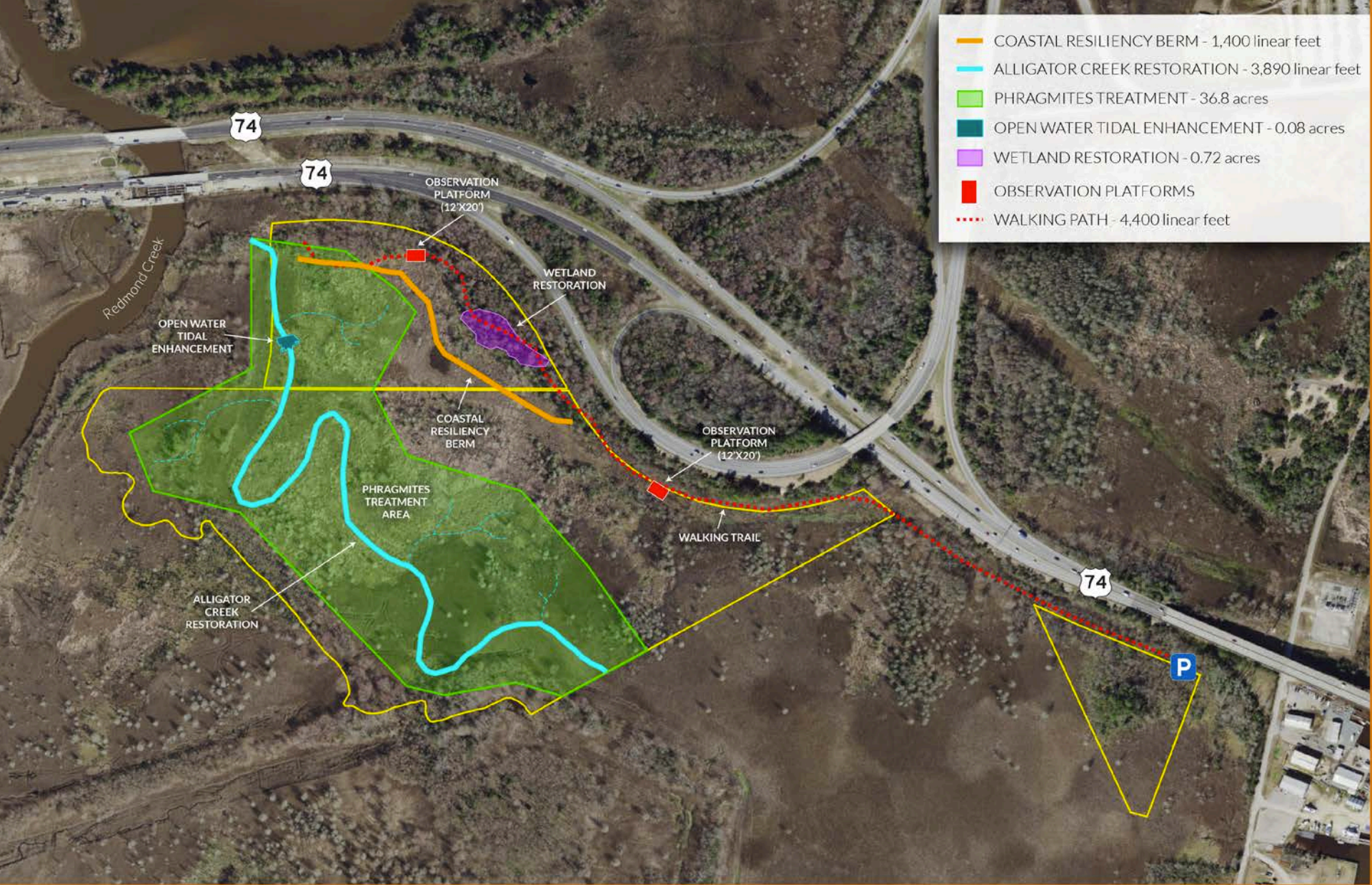
Coastal tidal creek and wetland restoration:

- Approx. 80 acres
- Restore ~3900 ft of Alligator Creek; additional smaller order creeks
- Address invasive *Phragmites australis*
- Removal of historic fill material
- Berm adjacent to uplands to address sea-level rise

Recreational/Educational components:

- Access via walking and/or paddle trail, kayak launch
- Informational signage/kiosk and viewing platforms





- COASTAL RESILIENCY BERM - 1,400 linear feet
- ALLIGATOR CREEK RESTORATION - 3,890 linear feet
- PHRAGMITES TREATMENT - 36.8 acres
- OPEN WATER TIDAL ENHANCEMENT - 0.08 acres
- WETLAND RESTORATION - 0.72 acres
- OBSERVATION PLATFORMS
- ⋯ WALKING PATH - 4,400 linear feet

Alligator Creek Restoration Detail Plan

Brunswick County, NC



SCALE 1:2,200
Produced July 2019



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Existing wetland has mixture of native tidal marsh and riverine swamp species; also has areas dominated by invasive *Phragmites*.



QUESTIONS/DISCUSSION

For further information, please contact:

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SOIL & WATER QUALITY BENEFITS

Soil/Water Attribute	Current State (LCFRP 2017)	Potential Outcome At Site
Salinity	4 PSU (0-15) Driven by discharge and tidal exchange	Salinity will increase with tidal exchange
Nitrate + Nitrite	~500 µg/L Levels > 500 are problematic	Decrease due to anaerobic denitrification and biological assimilation; possible delay at <i>Phragmites</i> treatment area
Dissolved oxygen	6.7 mg/L (4.2-10.3) < 5 is problematic, hypoxia is mixed through column	Overall potential increase with nutrient assimilation and bacterial removal
Sediments	11 NTU (4-21) High values compared to estuary	Sedimentation driven by grain size (rel. large) and availability, could help offset SLR (~2 mm/yr)
Fecal Coliform	150-200 CFU/100mL Not safe > 200	Decrease due to sedimentation, improved benthic community, microbe uptake, UV exposure
Soil type & Condition	Chowan silt loam (poorly drained, flooded 6 mo/yr) groundwater recharged by precip. and lateral inflow	Short term: Redox conditions shift to sulfate-sulfide pair; Long term: increased organic matter, decreased bulk density