

States Landing Case Study: A Watershed Management Plan Success Story

Lakes Congress

June 2, 2023

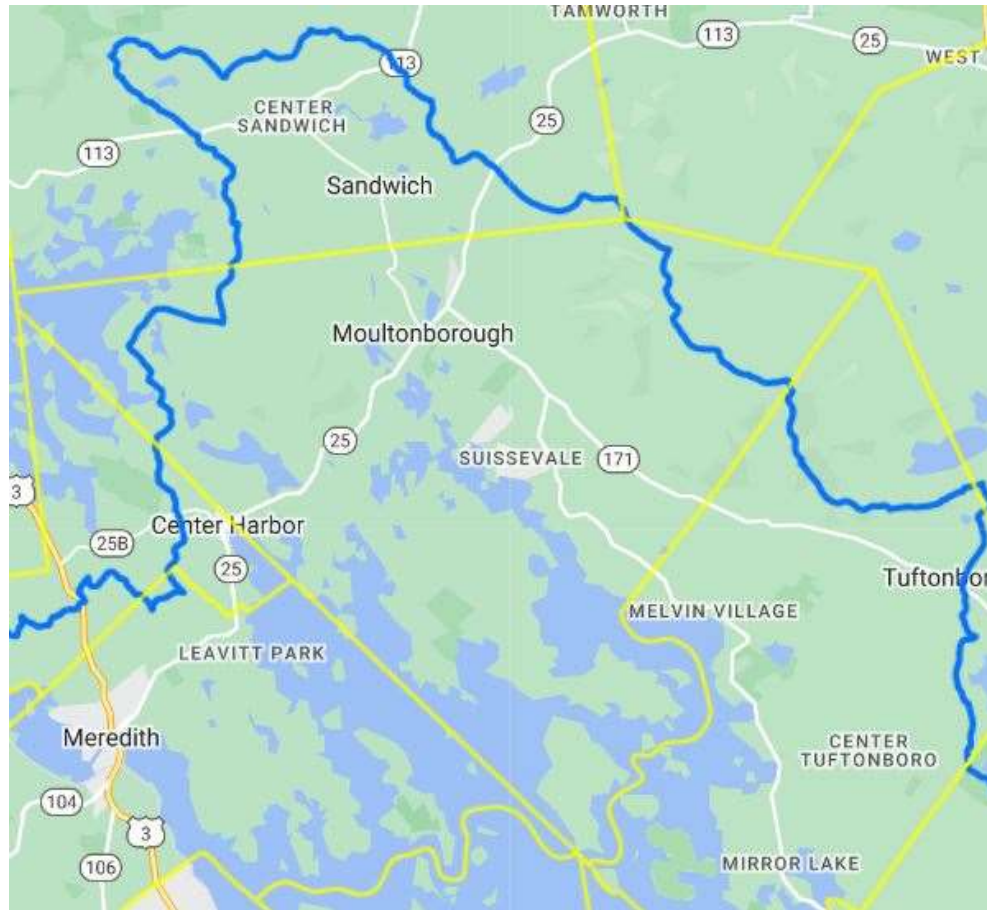


Moultonborough
New Hampshire



LAKE WINNIPESAUKEE
ASSOCIATION

Keep Winni Blue

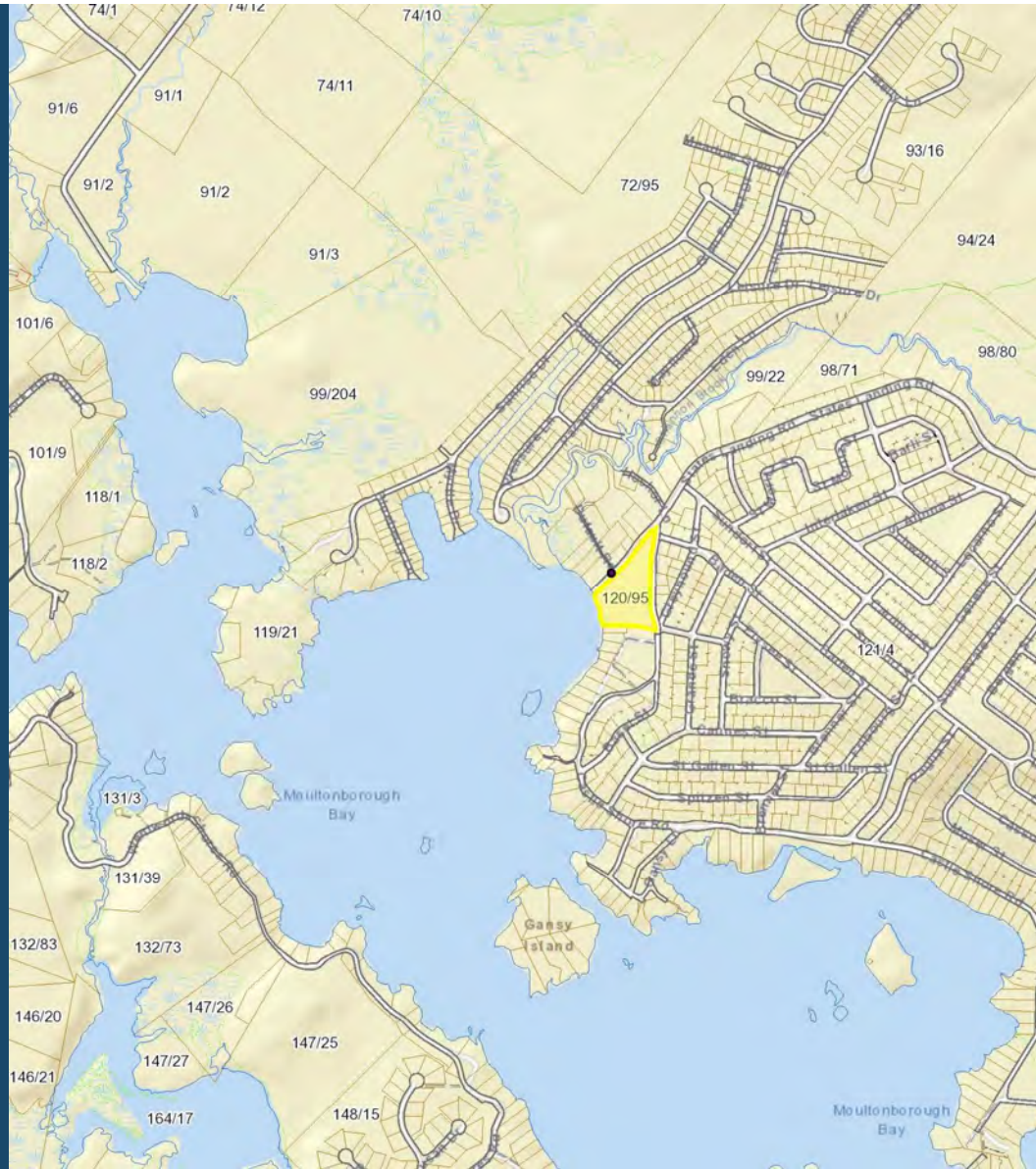


“Humans are hardwired to connect with water” — Jenny Roe

States Landing Beach

Background and history

- 6.2 acre parcel on the shores of Lake Winnepesaukee.
- ~300 feet shoreline on Moultonborough Bay
- Town beach and recreation area



The Gradual Demise of States Landing Beach

- Snow dump
- Old dock buried in the mud
- Boat ramp issues
- Sedimentation
- Plant growth



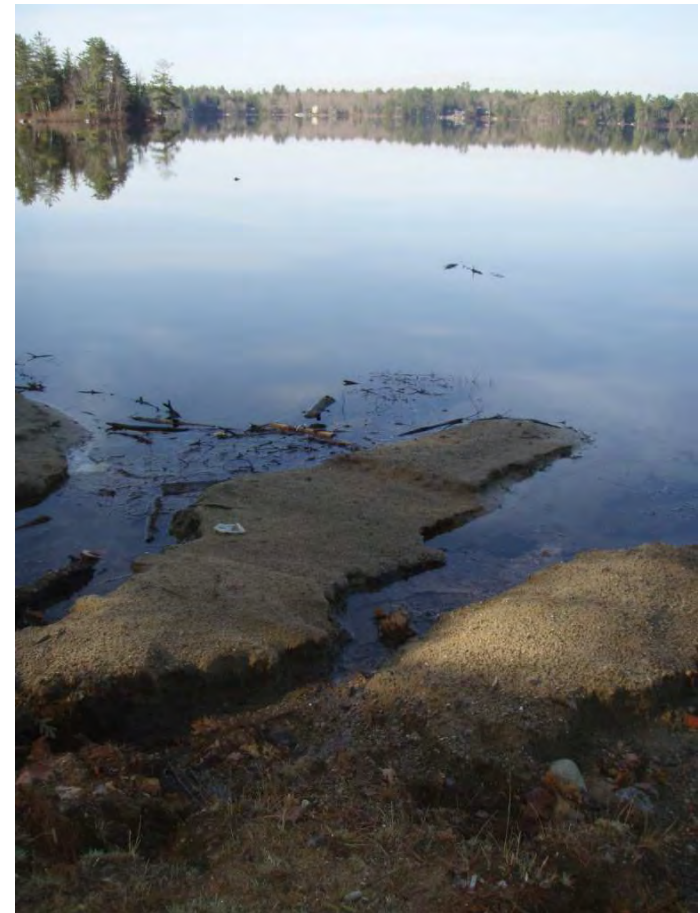
Moultonborough Recreation Strategic Plan 2009-2013 Strategies to address States Landing Beach



Address States Landing Beach

- Fix it
- Change it
- Sell it

“The eventual correction of the problem could be very expensive”



Capital Budget Process

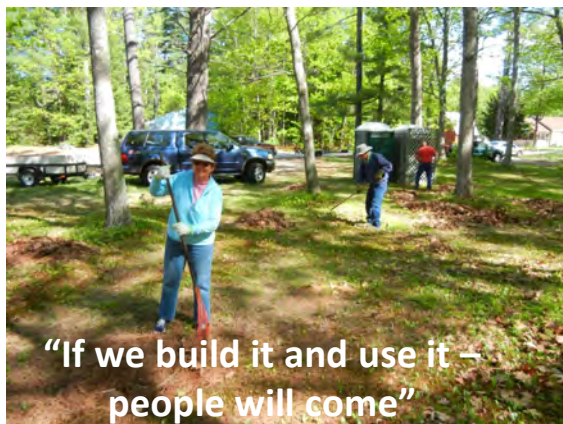


From 2009-2013 States Landing request never made it through the first round

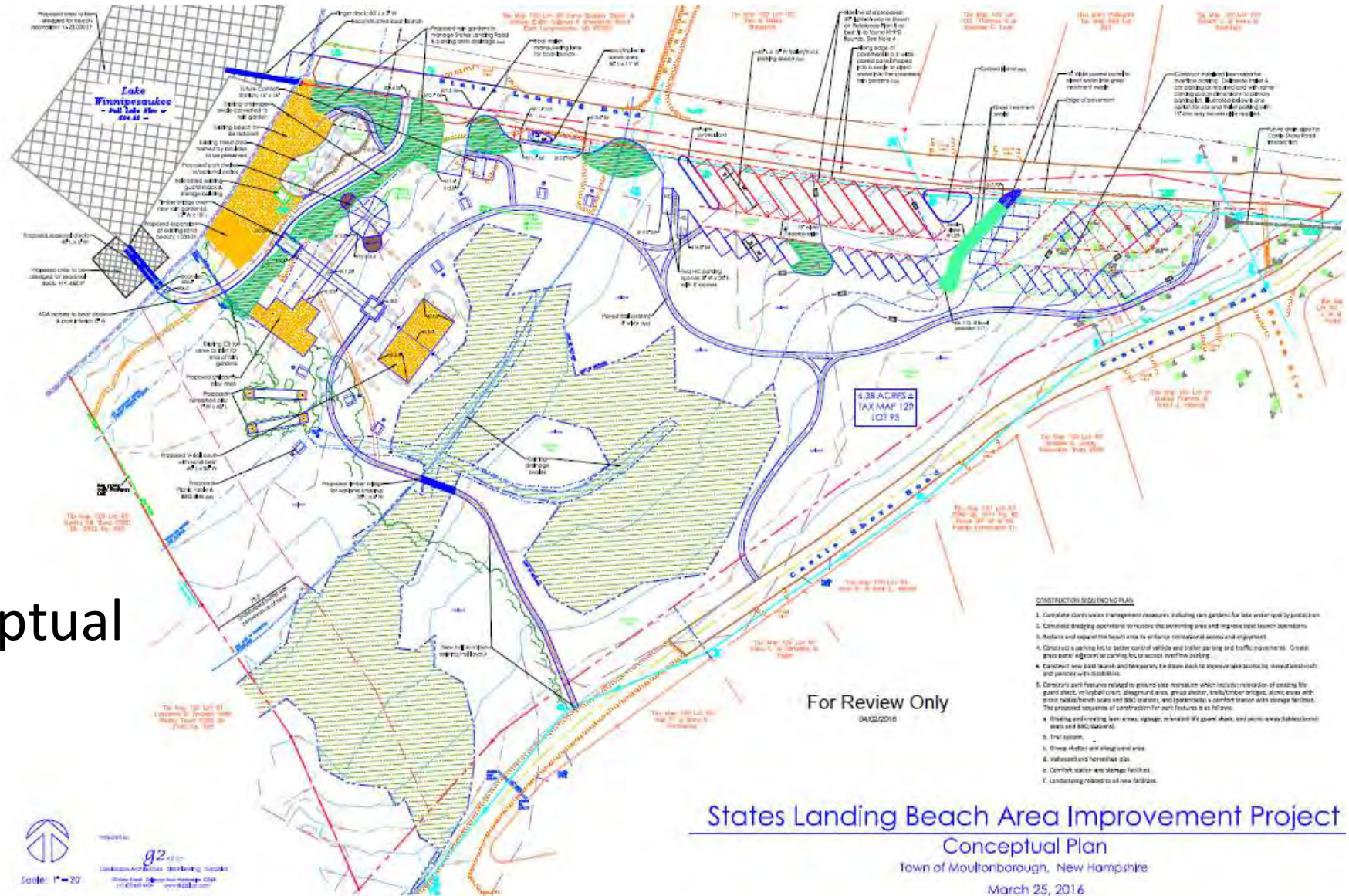
Second round – “Please don’t forget States Landing Beach”

2013 Budget Process – “Okay Let’s see if IT (States Landing) Matters”

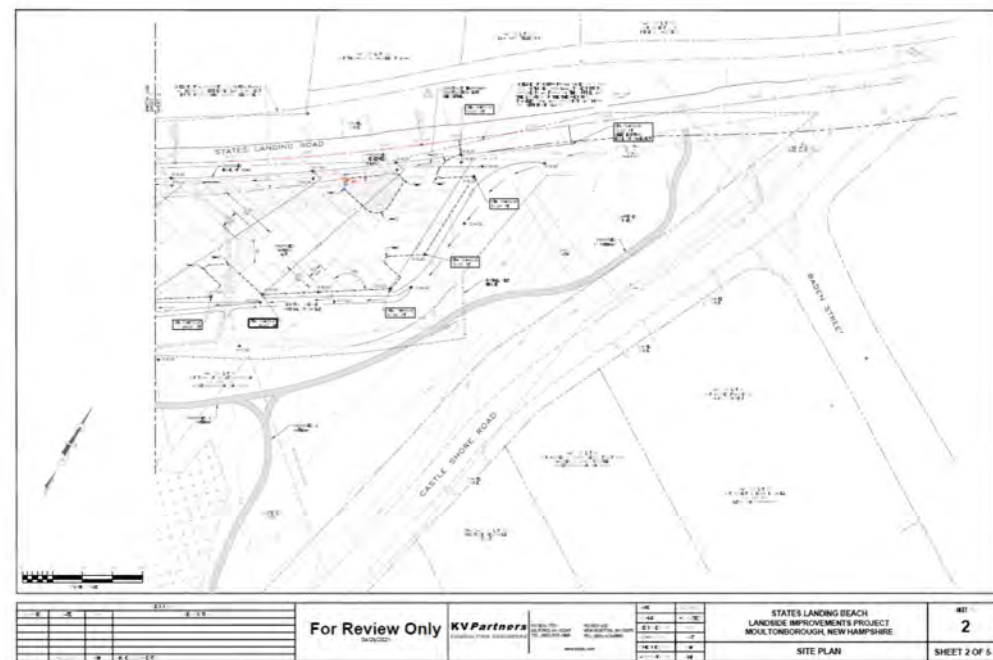
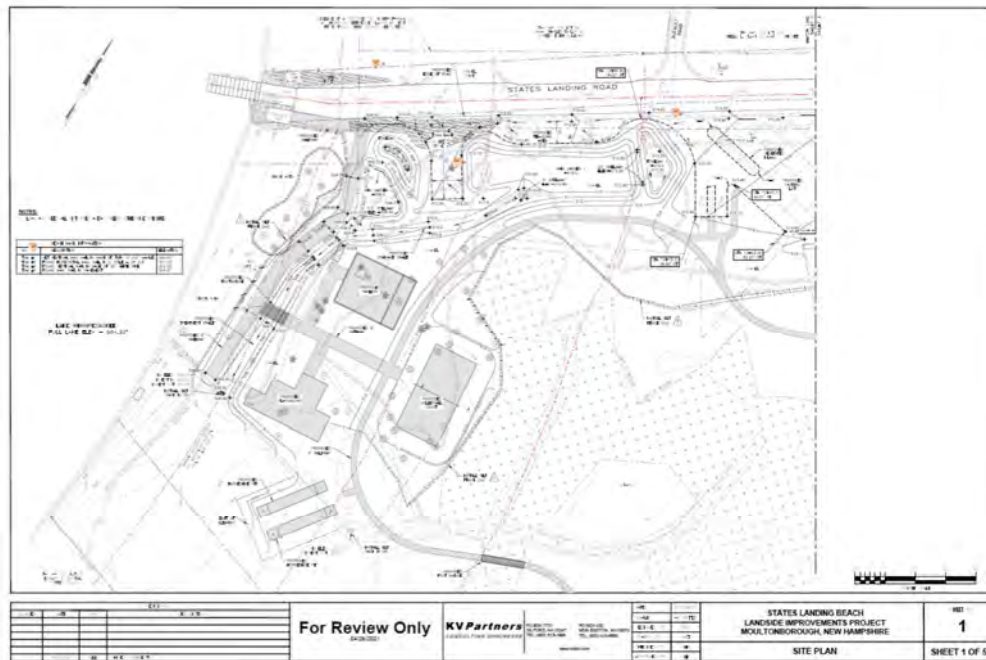
Annual Clean Up Green Up Days



Conceptual Plan



STATES LANDING FACILITY DESIGN





SWIM AREA DREDGING

(OCTOBER/NOVEMBER 2019)

A yellow Komatsu PC 290 LC-10 excavator is positioned on a muddy bank, its arm extended towards a large pile of rip-rap stones. The stones are being used to create a base for an access road. In the background, a body of water stretches towards a distant shoreline with trees and buildings. A yellow safety line is visible in the water. The sky is overcast with grey clouds. A large, dark, irregular shape, possibly a shadow or a graphic element, is superimposed over the right side of the image.

INSTALLING
ACCESS ROAD
3"-6" RIP-RAP BASE

EXCAVATION OF SWIM AREA



2,500 CUBIC YARDS OF
MATERIAL REMOVED
FROM SWIM AREA

HAULING AND STOCKPILING OF DREDGE MATERIAL

- TRUCKS LOADED AND HAULED MATERIAL TO DEWATERING AREA.
- MATERIAL LEFT IN PLACE TO DEWATER OVER WINTER (SIX MONTHS)
- MATERIAL TESTED FOR CONTAMINANTS
- CONSIDERED “LIMITED REUSE SOILS”
- ULTIMATELY DISPOSED AS FILL ON TOWN PROPERTY



BOAT RAMP & DOCK

(MAY/JUNE 2020)



COFFERDAM INSTALLATION





SHEET PILES AND DRIVE HAMMER



SHEET PILE INSTALLATION COMPLETE





DEWATERING OF WORK AREA



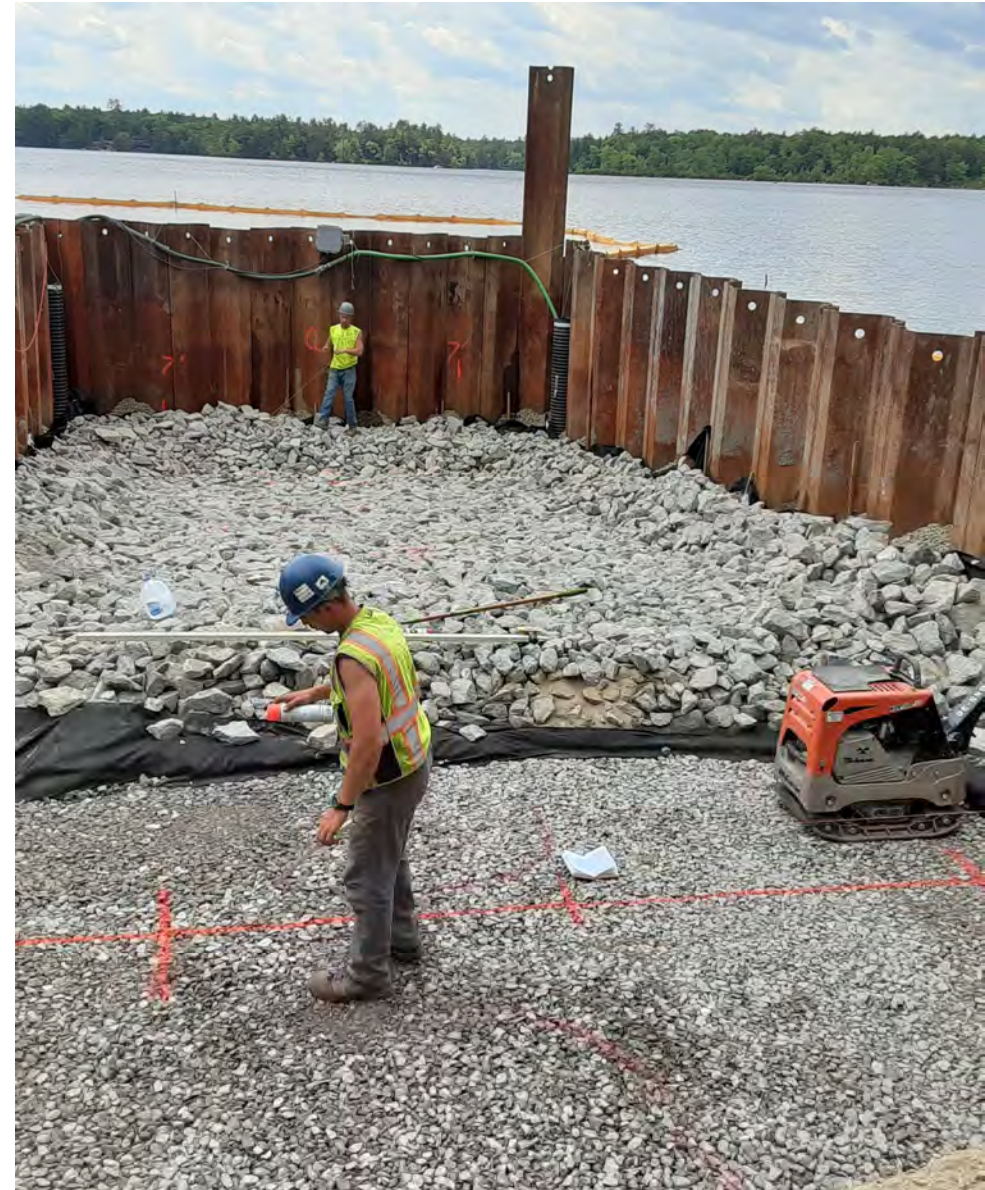
DEWATERING SUMPS





RAMP BASE MATERIAL INSTALLATION

RAMP LAYOUT FOR CONCRETE PLANKS





**SETTING RAMP ANCHOR
AND RAILS IN PLACE**



CONCRETE RAMP INSTALL



DOCK ANCHOR & DOCK INSTALL

SETTING DOCK INTO FINAL POSITION





A wide-angle photograph of a newly paved asphalt parking lot with white painted lines. The lot is situated in a wooded area with tall evergreen trees in the background. To the right, a small, single-story building with a brown roof and white siding is visible. A white car is parked near the building. The foreground shows a grassy area with shadows from the trees. The sky is clear and blue.

PARKING IMPROVEMENTS

(NOVEMBER/DECEMBER 2021 & APRIL/MAY 2022)



PARKING AREA



PARKING AREA CONSTRUCTION

- EXCAVATE SUBGRADE
- PLACE BANKRUN GRAVEL BASE
- PLACE CRUSHED GRAVEL SURFACE
- FINE GRADE
- PAVING



SUBGRADE AND BANK RUN GRAVEL
PLACEMENT



COMPACTING GRAVELS AND
PREPARING LOAM/SEED AREA
BEHIND PARKING LOT



PREPARING FINISH GRADE WITH CRUSHED GRAVEL



BASE PAVING AND SETTING GRANITE CURB



GRAVEL PARKING AREA LAYOUT

FINAL PAVED PARKING AREA

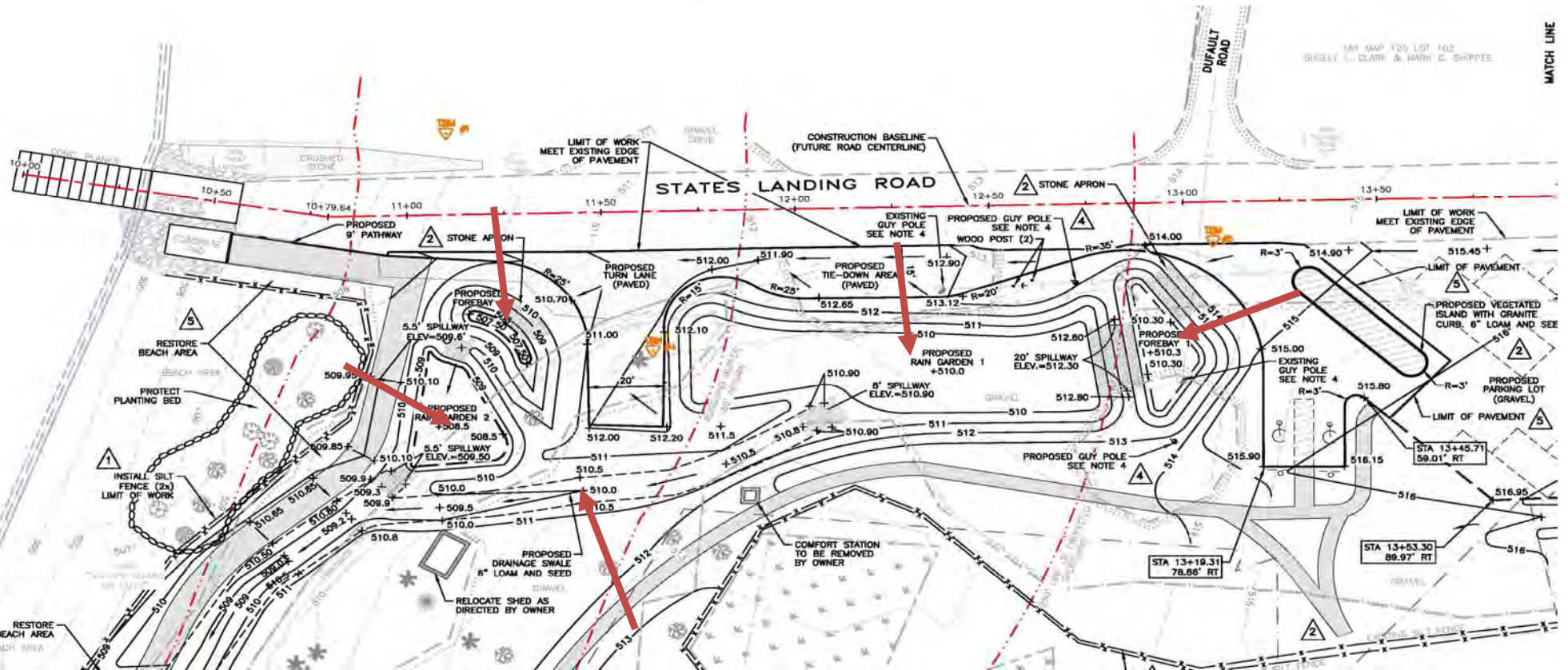


A photograph of a newly constructed rain garden. The garden is a sloped area with a stone retaining wall on the left, filled with young green shrubs and plants. In the background, there is a forest of tall trees, a small blue shed, and a paved road with a white pickup truck and orange traffic cones. The sky is overcast.

RAIN GARDENS

(MAY/JUNE 2022)

Restoration Project States Landing, Moultonborough



RAIN GARDEN AREA (BEFORE)





EXCAVATION TO SUBGRADE



SOIL FILTER LAYER

- 18" DEEP SOIL FILTER BLEND
- 20-30% TOPSOIL
- 20-30% BARK MULCH
- 50-55% SAND



FOREBAY AND RIPRAP AREA
CONSTRUCTION



FOREBAY AND RIPRAP AREA
CONSTRUCTION



DRAINAGE SWALE CONSTRUCTION



PLANTING OF THE RAIN GARDENS



PLANTING OF THE RAIN GARDENS

States Landing, Moultonborough



States Landing, Moultonborough



Restoration Project States Landing, Moultonborough



Pollutant Load Reduction

1.3 lbs. TP/yr.
20.2 lbs. TN/yr.
818.0 lbs. TSS/yr.

Project Cost - \$80,905

Grant – \$16,000

Town Cash Match - \$51,400

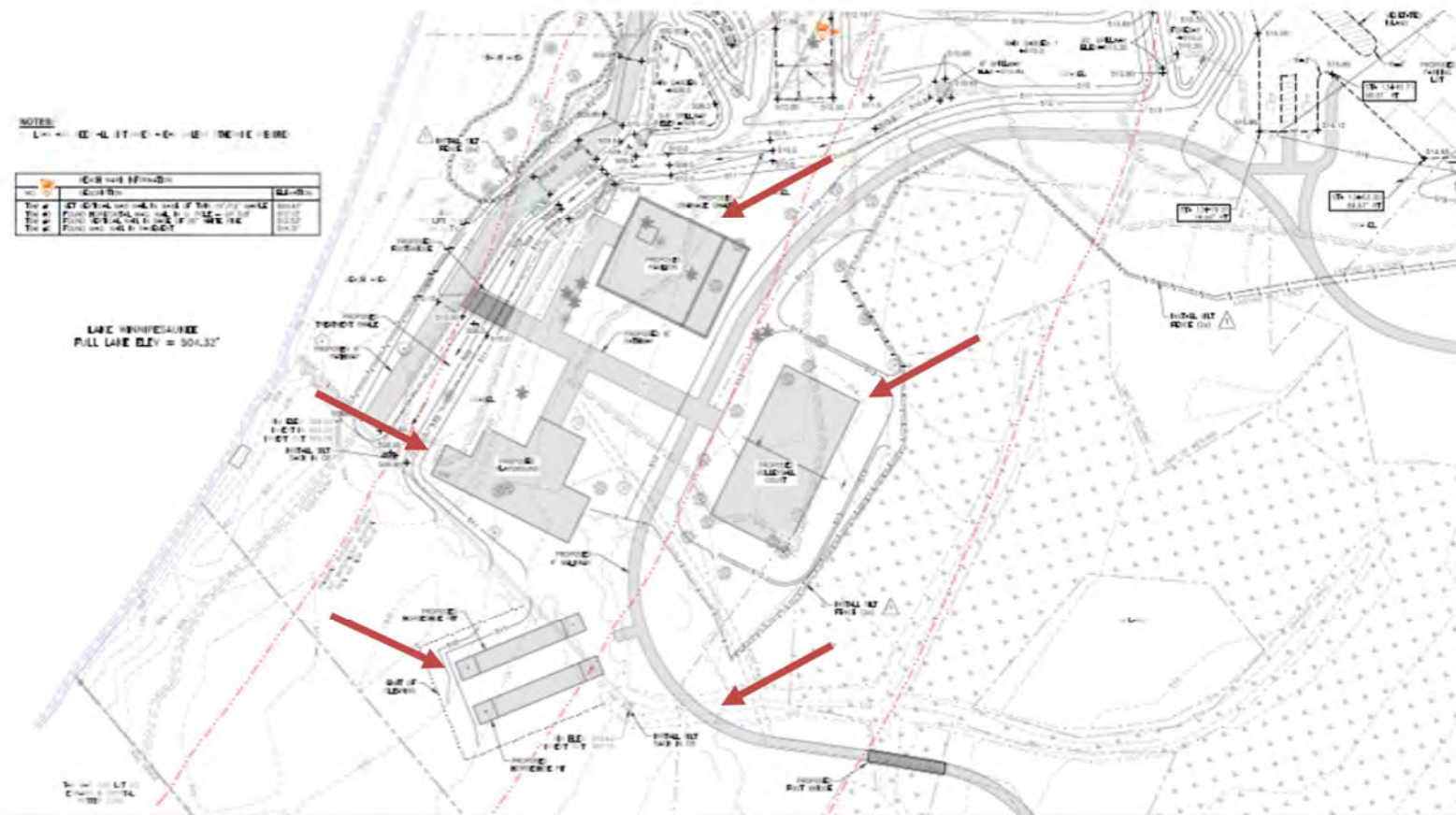
Miracle Farms In-kind - \$13,505



It Mattered



Future Plans



Pavilion & Composting Toilets



“If You Build It, They Will Come”

**Positive
Impact on
Recreational
Opportunities**



Questions?



Moultonborough
New Hampshire



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