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Side-by-Side-by-Side Comparison of Beach Restoration, Dune Restoration, and Natural Beach Response

Summer Haven
St Johns County, Florida

Michael Trudnak, P.E., Taylor Engineering
Andrew Ames, P.E., St. Johns County



Summer Haven Background

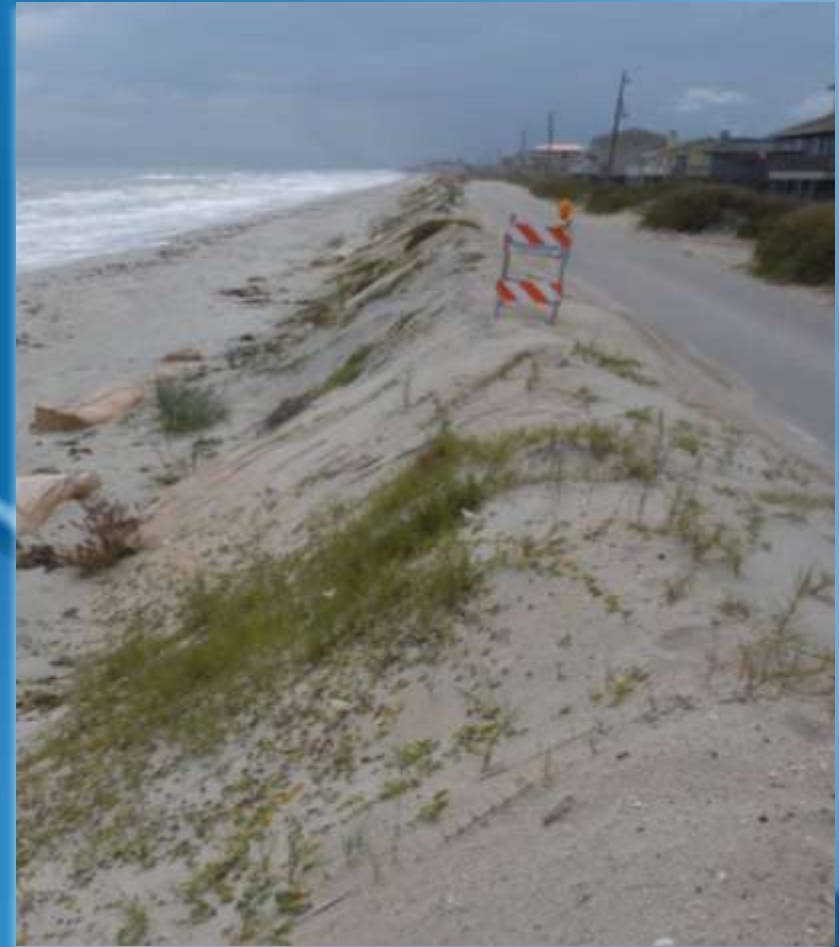
- Situated in Southern St. Johns County
- Lots originally platted in the late 1800's with access from the Summer Haven River
- SR A1A originally located along the primary dune in front of the platted lots
- Hurricane Dora impacts caused FDOT to relocate SR A1A to its current alignment
- The Old A1A alignment now serves as the access road to the lots.





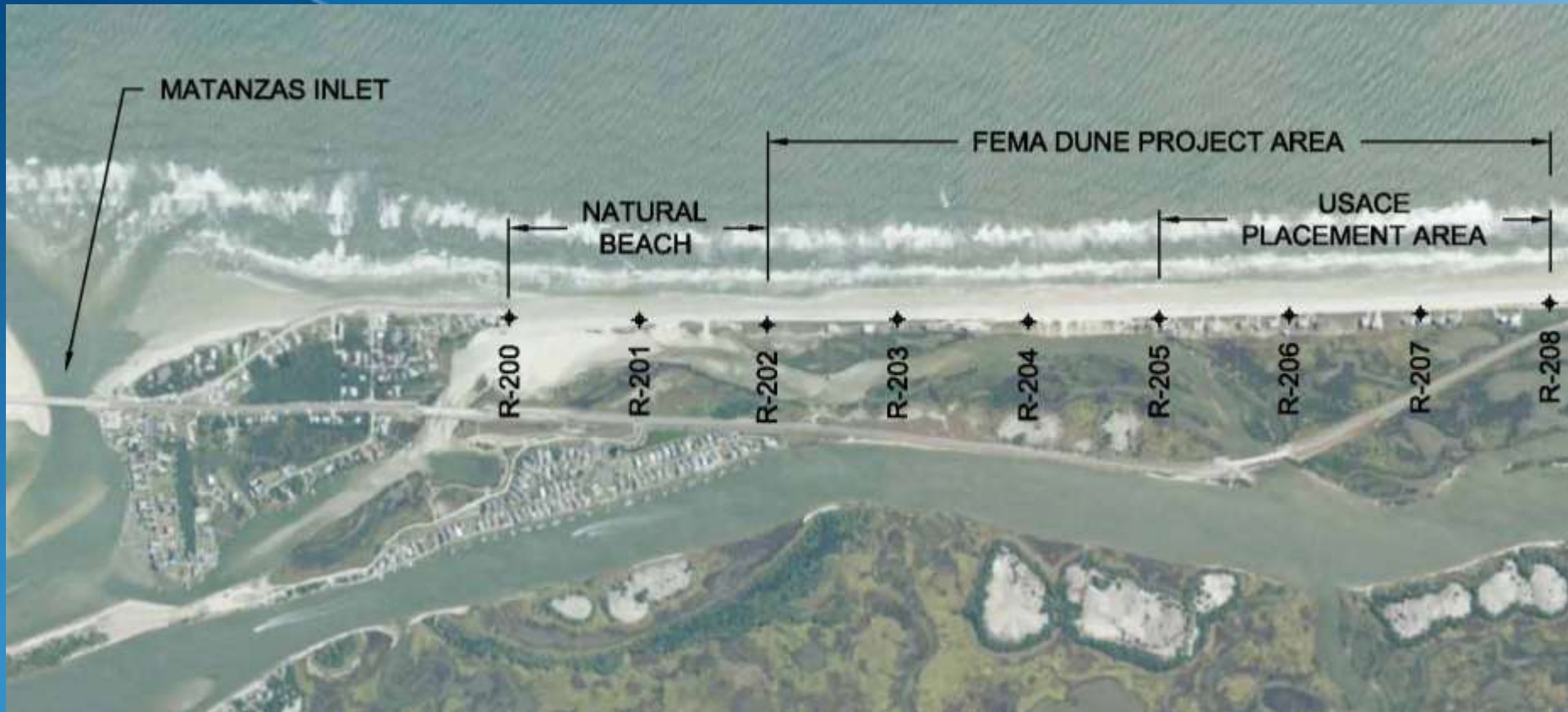
FEMA Project History

- Authorized in 1999 following Hurricane Floyd
- Rebuilt following Hurricane Jeanne (2004) and Tropical Storm Gabrielle (2007)
- Reauthorized following Tropical Storm FAY in 2008
 - Constructed Feb – March 2011



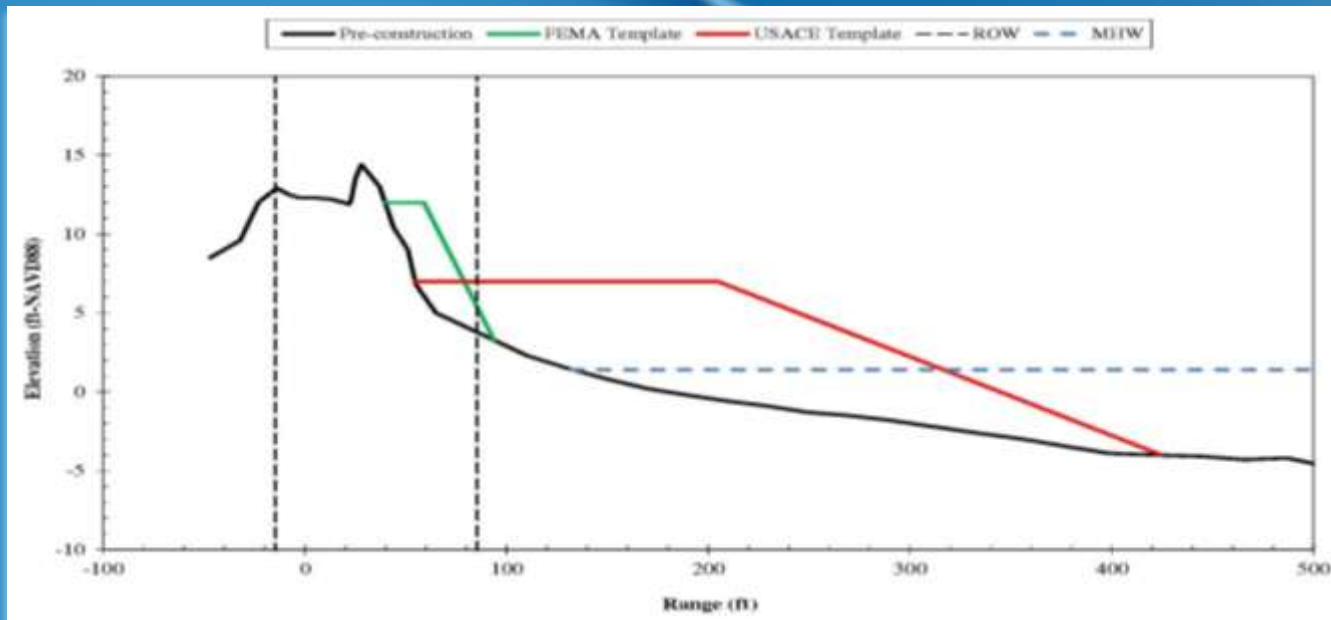


Project Area Comparison





- FEMA Berm
 - ✓ R-202 – R-208
 - ✓ 33,000 cy
 - ✓ 10 – 30 ft wide crest at +10 to +12 ft, 1V:4H dune face
 - ✓ Constr. Feb. – March 2011
- USACE Project
 - ✓ R-205 – R-208
 - ✓ 250,000 cy
 - ✓ 150-ft wide berm at +7 ft, 1V:20H foreshore slope
 - ✓ Constr. March – June 2011





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Borrow Sites

FEMA Project: FIND DMMA SJ-1

USACE Project: ICWW





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Pre-construction Conditions Near R-208 – 11/5/09





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Pre-construction Conditions Near R-207 – 11/5/09





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Pre-construction Conditions Near R-204 – 11/5/09

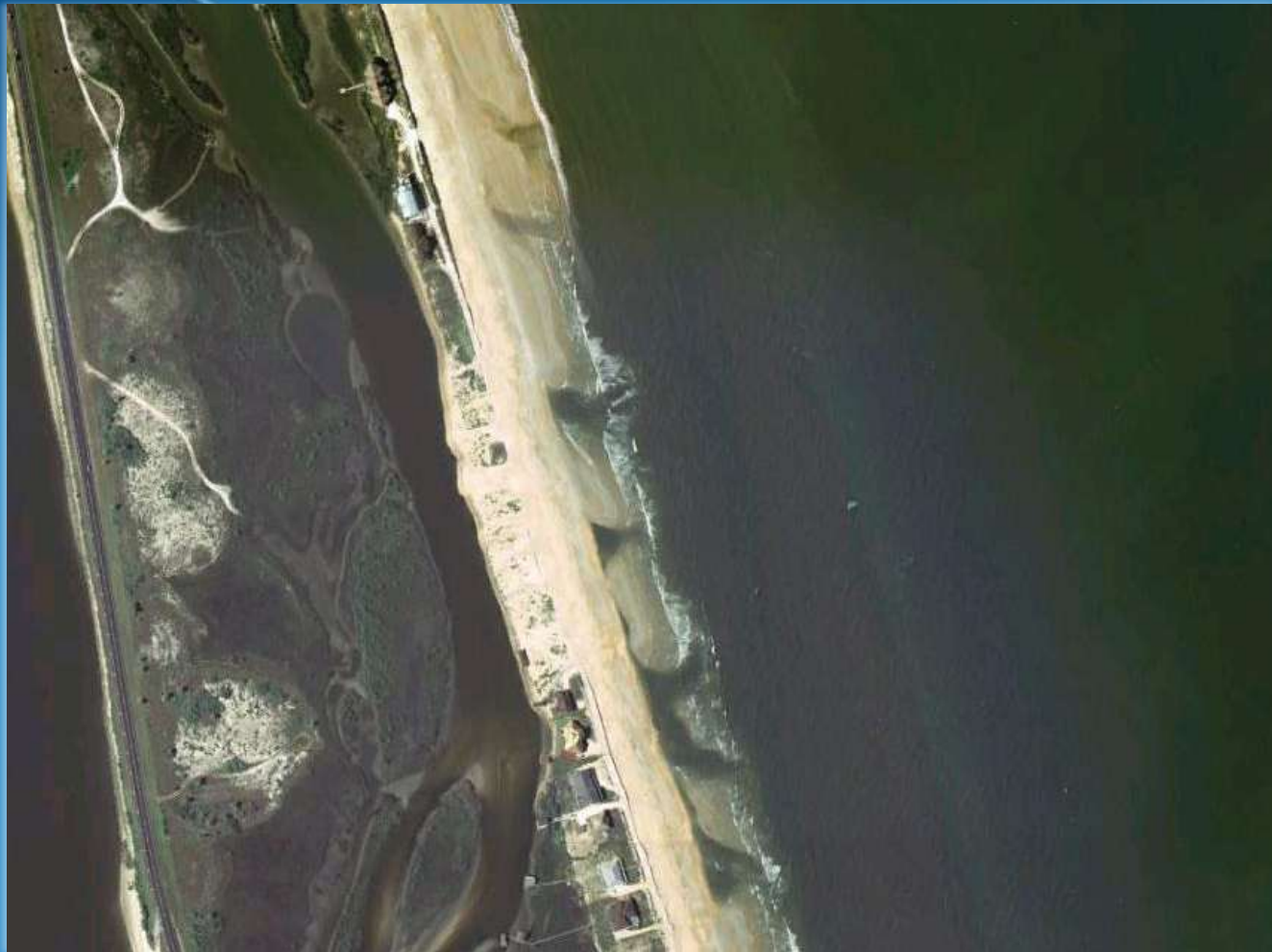




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R-204 to R-205 Washover Area – 2/28/05





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Pre-construction Conditions Near R-203 – 11/5/09





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Post-construction Conditions Near R-207 – 3/8/11





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Post-construction Conditions Near R-204 – 3/8/11





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Post-construction Conditions Near R-203 – 2/22/11





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Post Mini Nor'easter During Construction – 3/5/11





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Post Mini Nor'easter During Construction – 3/4/11





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Hurricane Irene Conditions – 8-26-11





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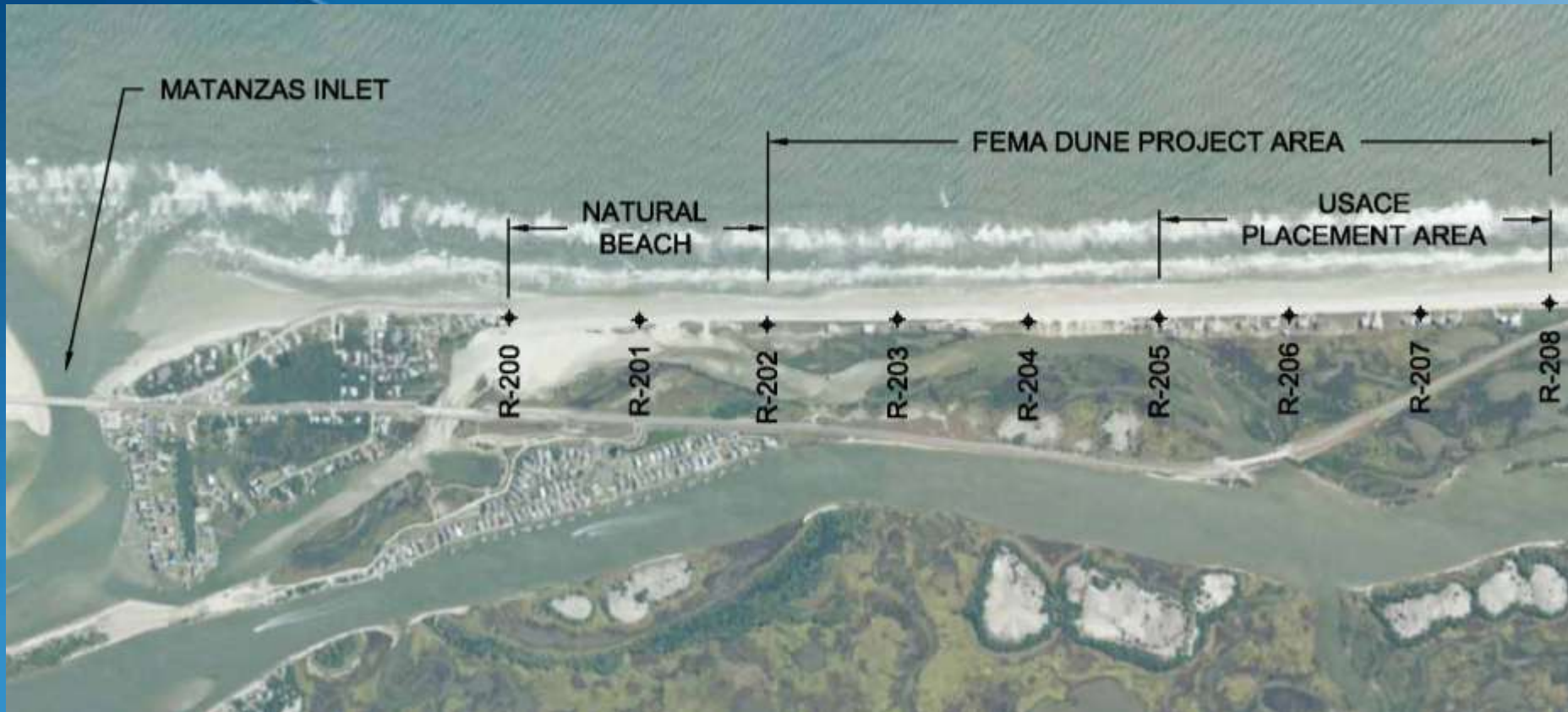
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Post-Irene Conditions Near R-203 – 8/28/11





Project Area Comparison





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Natural Area Post-Hurricane Irene – 8/28/11





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R-200 to R-202 Natural Area – 12/31/07





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Tropical Storm Fay – August 2008





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Post Tropical Storm Fay – November 2008





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R-200 to R-202 Natural Area – 2/21/10





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Breach Naturally Filled – 3-11-11





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Summer Haven River – 3-11-11





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Summer Haven River – 3-11-11





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Summer Haven River Under SR A1A – 2/11/11





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Summer Haven River – 12-6-10





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Southern Washover Post-TS Fay – 11/28/08





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Southern Washover – 11/5/09





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Southern Washover Post-Hurricane Irene – 8/28/11





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Southern Washover Post-Hurricane Irene – 8/28/11





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Southern Washover Post-2011 Nor'easters – 1/26/2012





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Southern Washover - Post 2011 Nor'easters – 1/26/11





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Northward View from Southern Washover – Post-TS Fay 11/28/08





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Northward View from Southern Washover – 11/5/09





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Northward View from Southern Washover – Post-Hurricane Irene – 8/28/11





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Northward View from Southern Washover – Post-2011 Nor'easters – 1/26/11





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Summer Haven River – 11/5/09





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Post-2011 Nor'easters – 1/26/12





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Project Area Present Conditions at R-208 – 1/26/12





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Project Area Present Conditions at R-208 – 1/26/12





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FEMA Project Present Conditions at R-207 – 1/26/12





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Present Conditions Near R-206 – 1/26/12





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Present Conditions Near R-205 – 1/26/12





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Present Conditions Near R-203 – 1/26/12





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What's Next?





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