Sea Level Affecting Marshes Model (SLAMM) Maps

Warren

Warren Map Panels	
16	24
19	28
20	29
23	

The Rhode Island Coastal Resources Management Council (CRMC) and its partners have developed Sea Level Affecting Marshes Model (SLAMM) Maps for the coastal wetlands of all 21 Rhode Island coastal communities. The purpose of these SLAMM maps is to show how coastal wetlands will likely transition and migrate onto adjacent upland areas under projected sea level rise scenarios of 1, 3 and 5 feet in the coming decades. These maps are intended to support state and local community planning efforts and to help decision makers prepare for and adapt to future coastal wetland conditions despite the inherent uncertainties associated with future rates of sea level rise.

The SLAMM maps were developed using a digital wetlands coverage derived from the 2010 National Wetlands Inventory for Rhode Island. The elevation data used in the model was developed from the 2011 USGS LIDAR elevation dataset. These maps were developed using the "protection off" mode for the model simulations, thereby depicting the highest potential for marsh migration despite current limitations such as parking lots, roads or other development. In this way the maps illustrate opportunities for conservation and potential land modification to enhance wetland migration and restoration. The SLAMM data do not consider natural processes such as coastal erosion or the impacts of coastal storms that can have significant influence on shoreline location and sediment dynamics. Despite these limitations the data still provide a valuable tool to identify those places that provide the best opportunity for future saltmarsh habitat and conservation priorities, and provide valuable information to help plan for new development and infrastructure. Additional map parameters, data sources and caveats can also be found at www.crmc.ri.gov

These SLAMM maps are Geographic Information System (GIS)-based map images exported as PDF files to reduce file size and ease of access. In total there are 149 map panels that cover the entire Rhode Island shoreline and each panel has four maps showing the initial (current) wetland condition followed by 1, 3, and 5-feet of sea level rise scenarios.

No warranty is expressed or implied by the CRMC and its SLAMM project partners related to the spatial accuracy of these maps and promote no other use of these maps and data other than as a planning tool. These maps should not be used for, and are not intended for, survey and engineering purposes. The data do not take the place of a legal survey or other primary source documentation. They were created for general reference, informational, planning, and guidance use. They are not a legally authoritative source as to the exact location of natural or manmade features.

These maps can be examined at the Council's office in Wakefield, at the Secretary of State's office, and on-line at the Council's website: www.crmc.ri.gov.







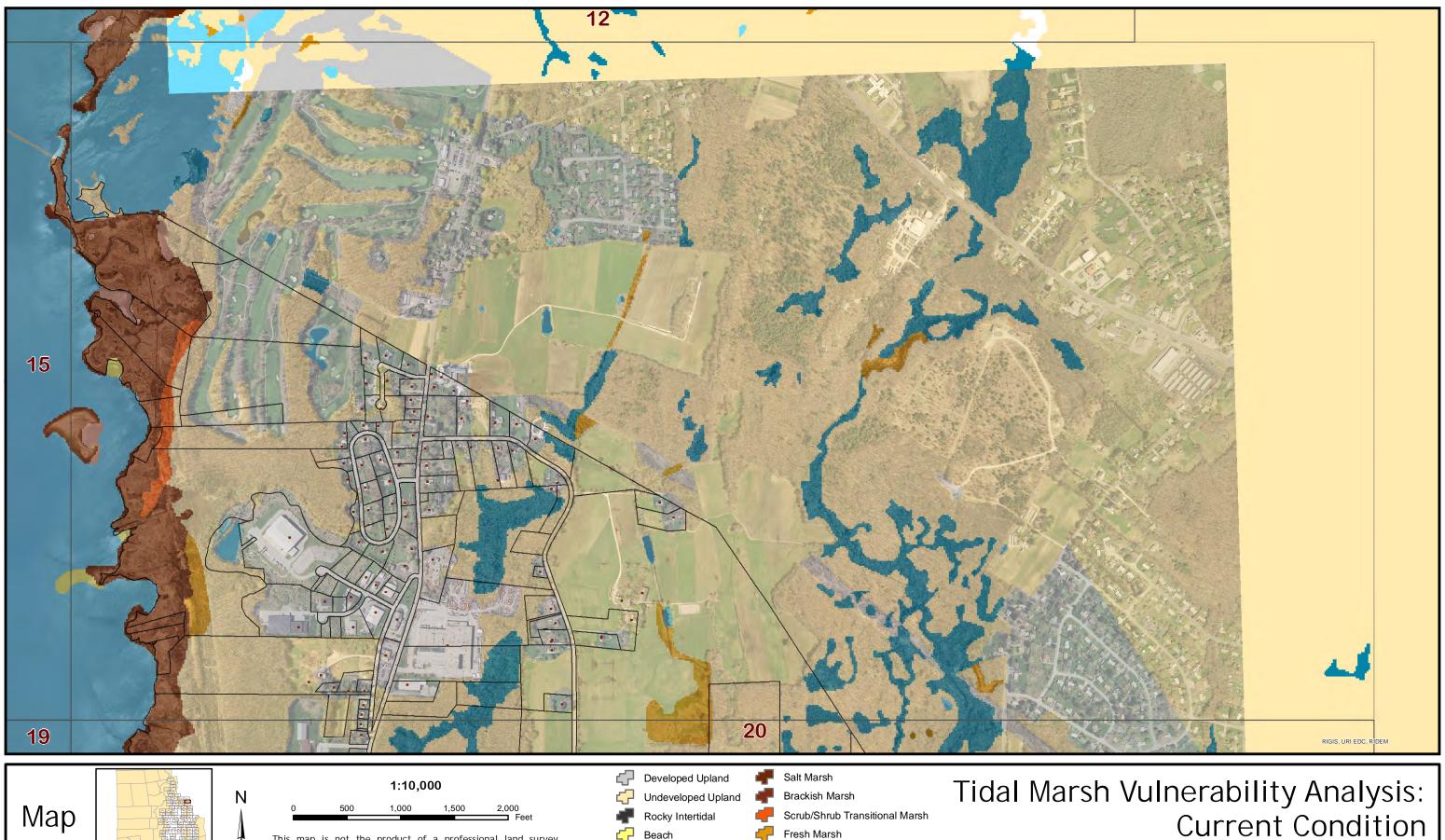


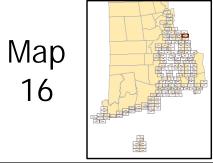












Rocky Intertidal

Beach

Tidal Flat

Open Water

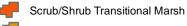
Swamp

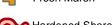
🗾 Tidal Creek

Fresh Marsh



Parcel Boundaries













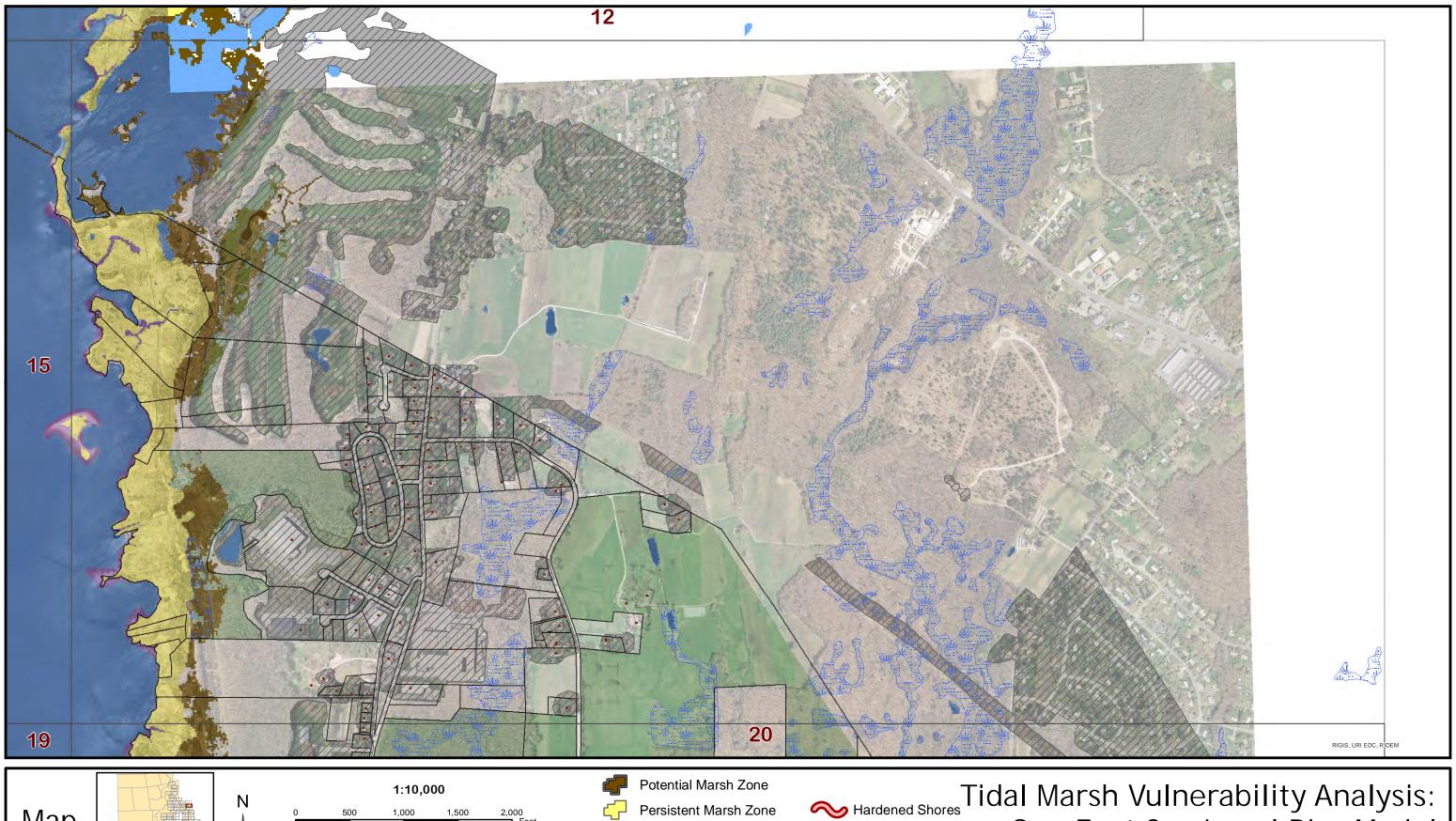


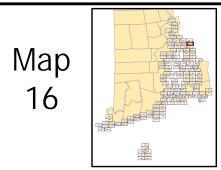


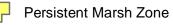




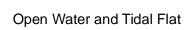














Protected Open Space







Parcel Boundaries Developed Land

CRMC Coastal Barriers











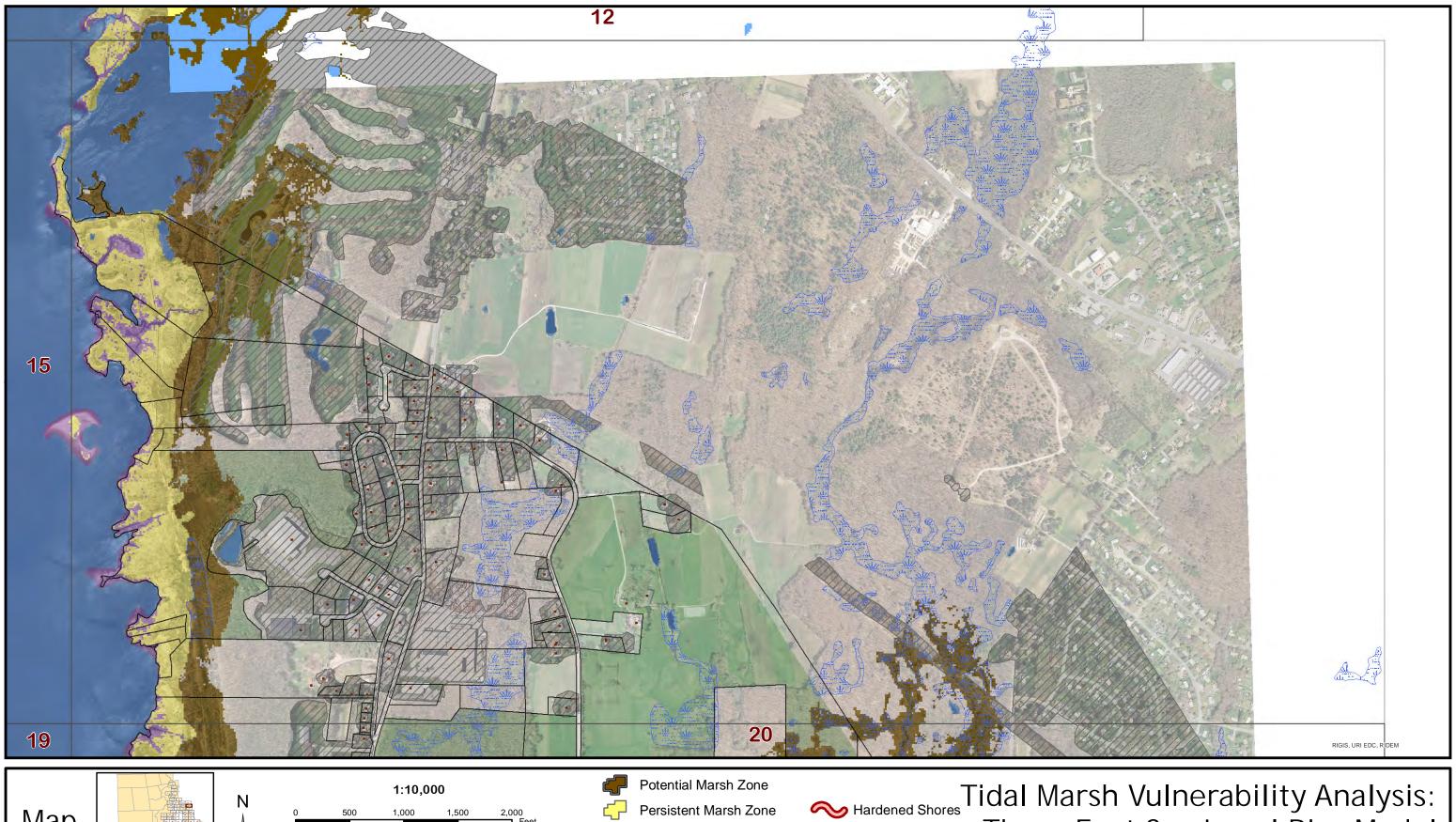
One Foot Sea Level Rise Model

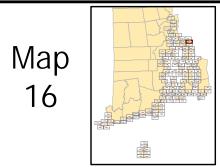






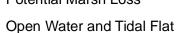










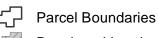




Protected Open Space







Developed Land

CRMC Coastal Barriers









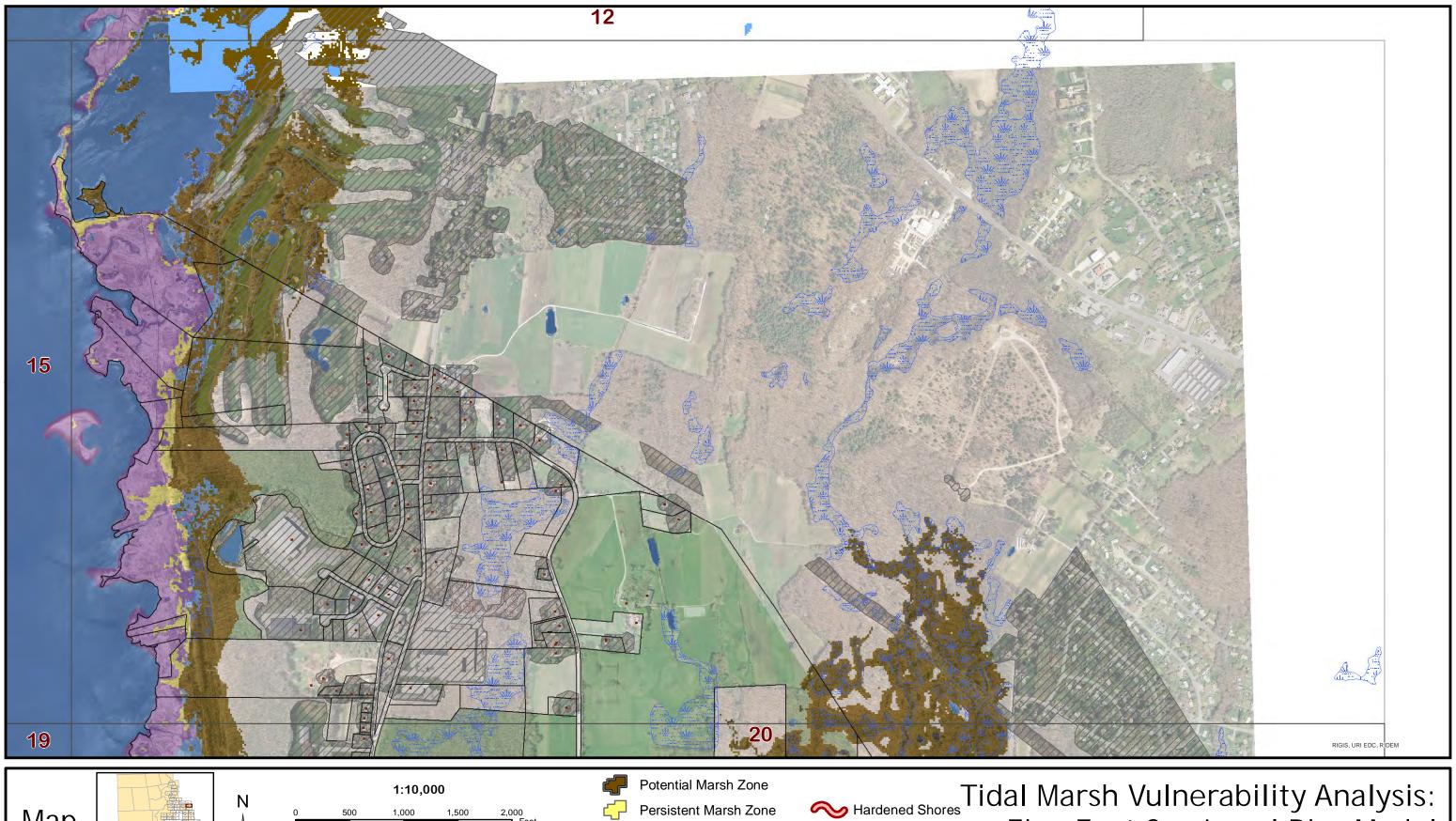
Three Foot Sea Level Rise Model

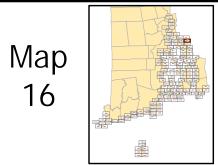


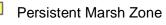












Potential Marsh Loss



Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space







CRMC Coastal Barriers







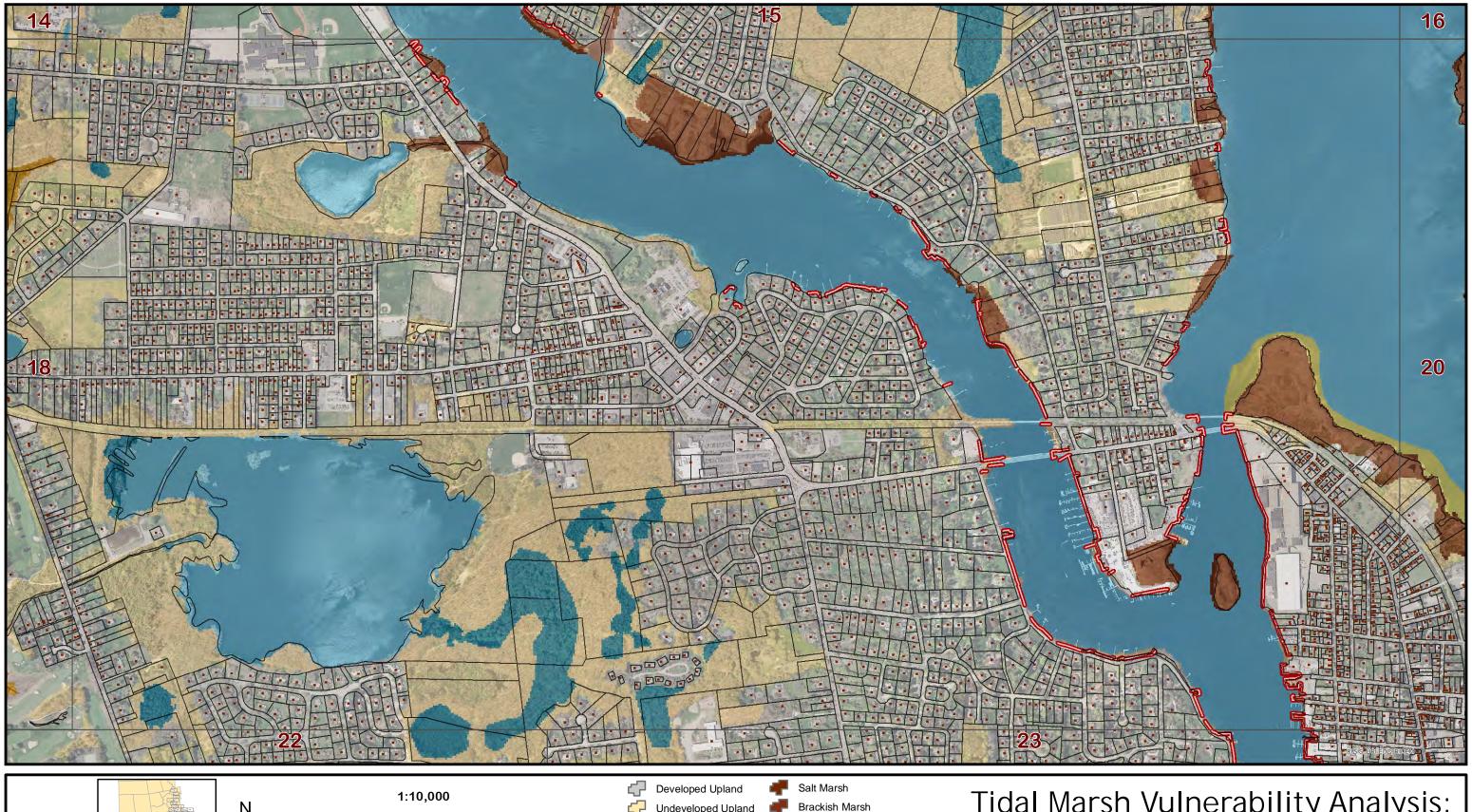


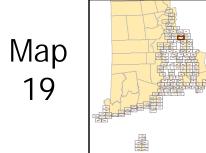
Five Foot Sea Level Rise Model











Undeveloped Upland

Rocky Intertidal









Tidal Creek







Parcel Boundaries

Fresh Marsh

Scrub/Shrub Transitional Marsh

Tidal Marsh Vulnerability Analysis: **Current Condition**





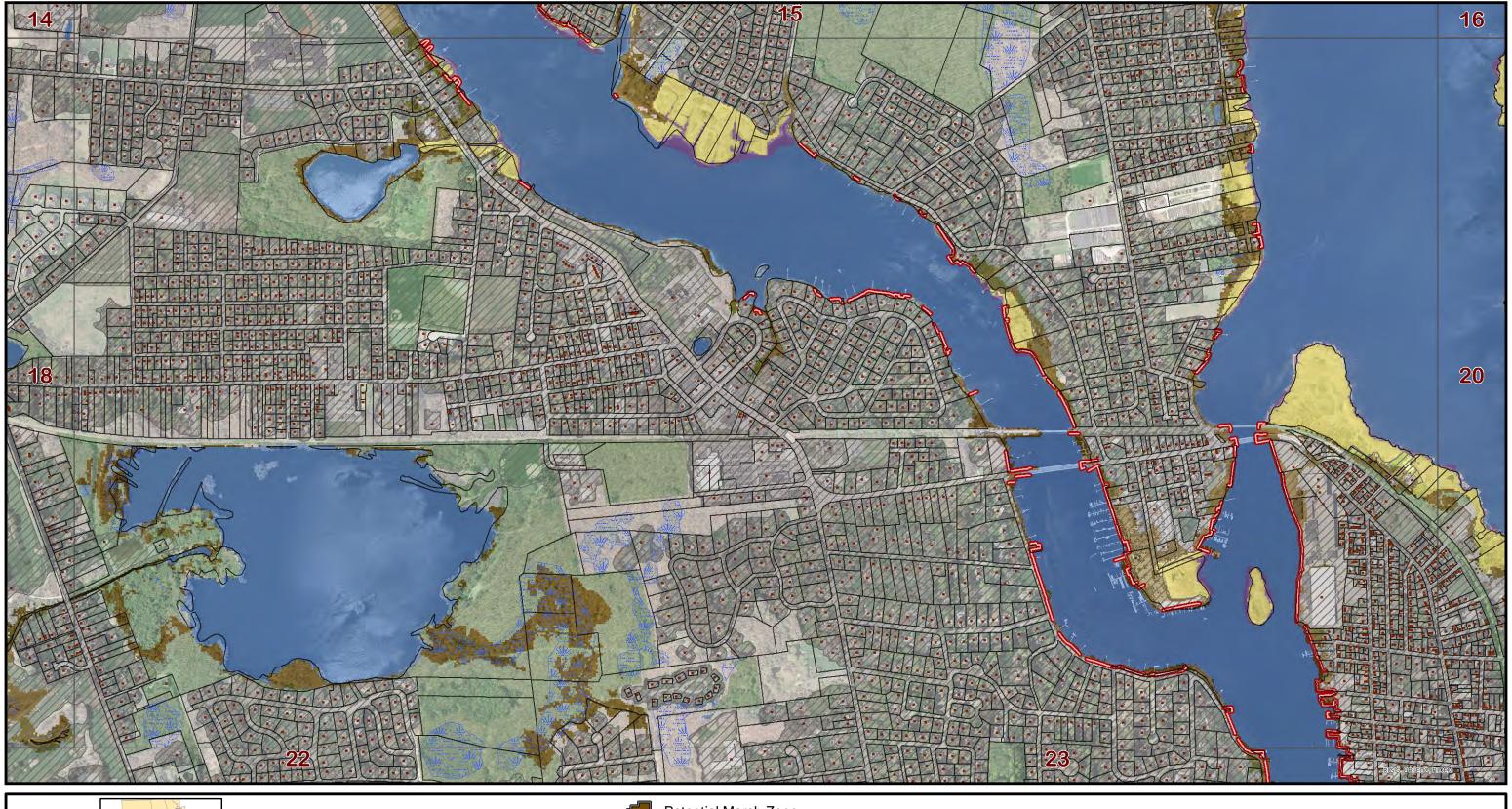


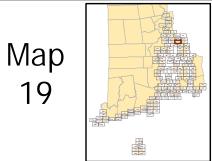












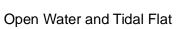
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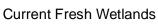
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Potential Marsh Zone









Protected Open Space







Parcel Boundaries







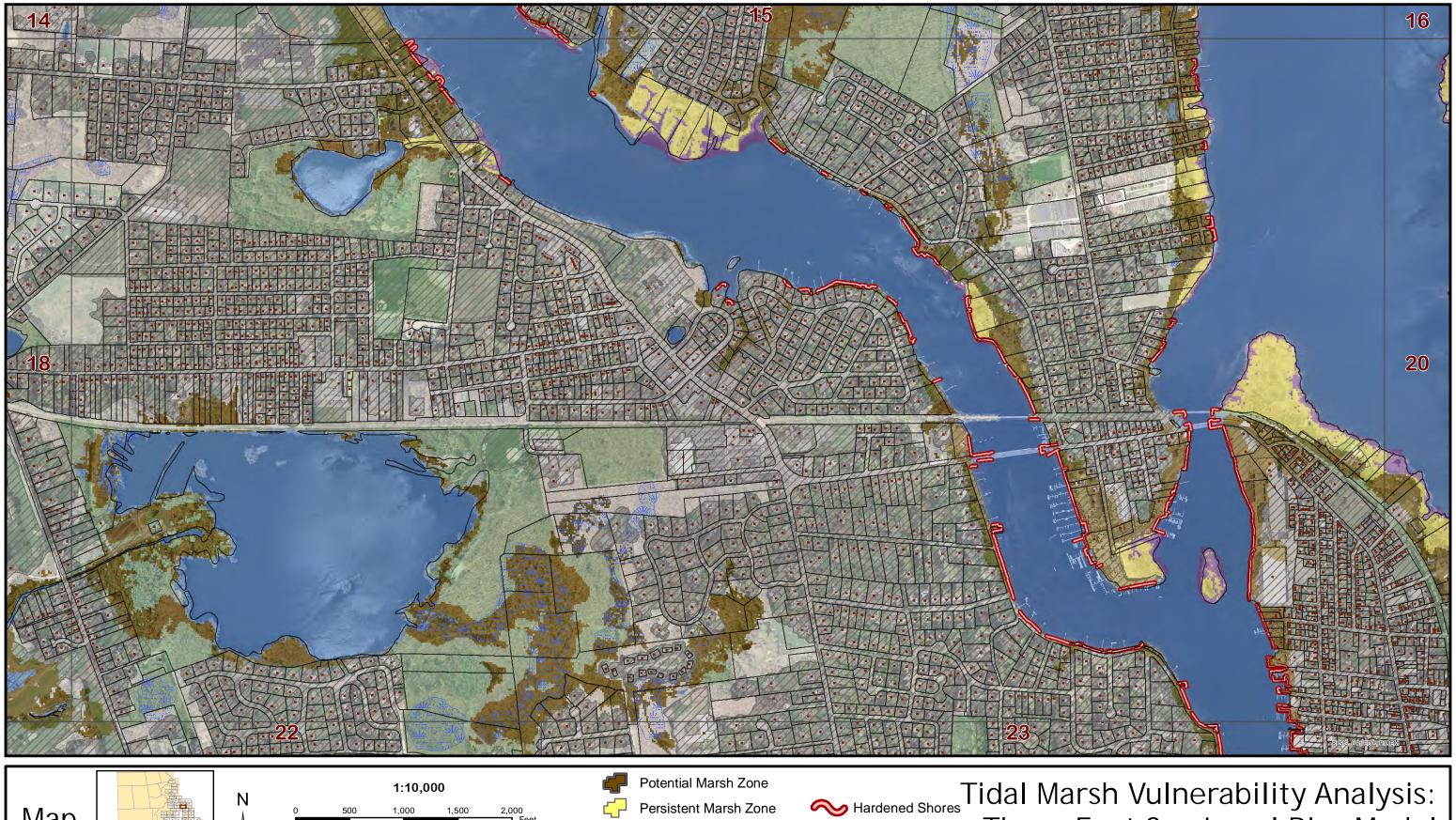












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Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



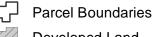
Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space

















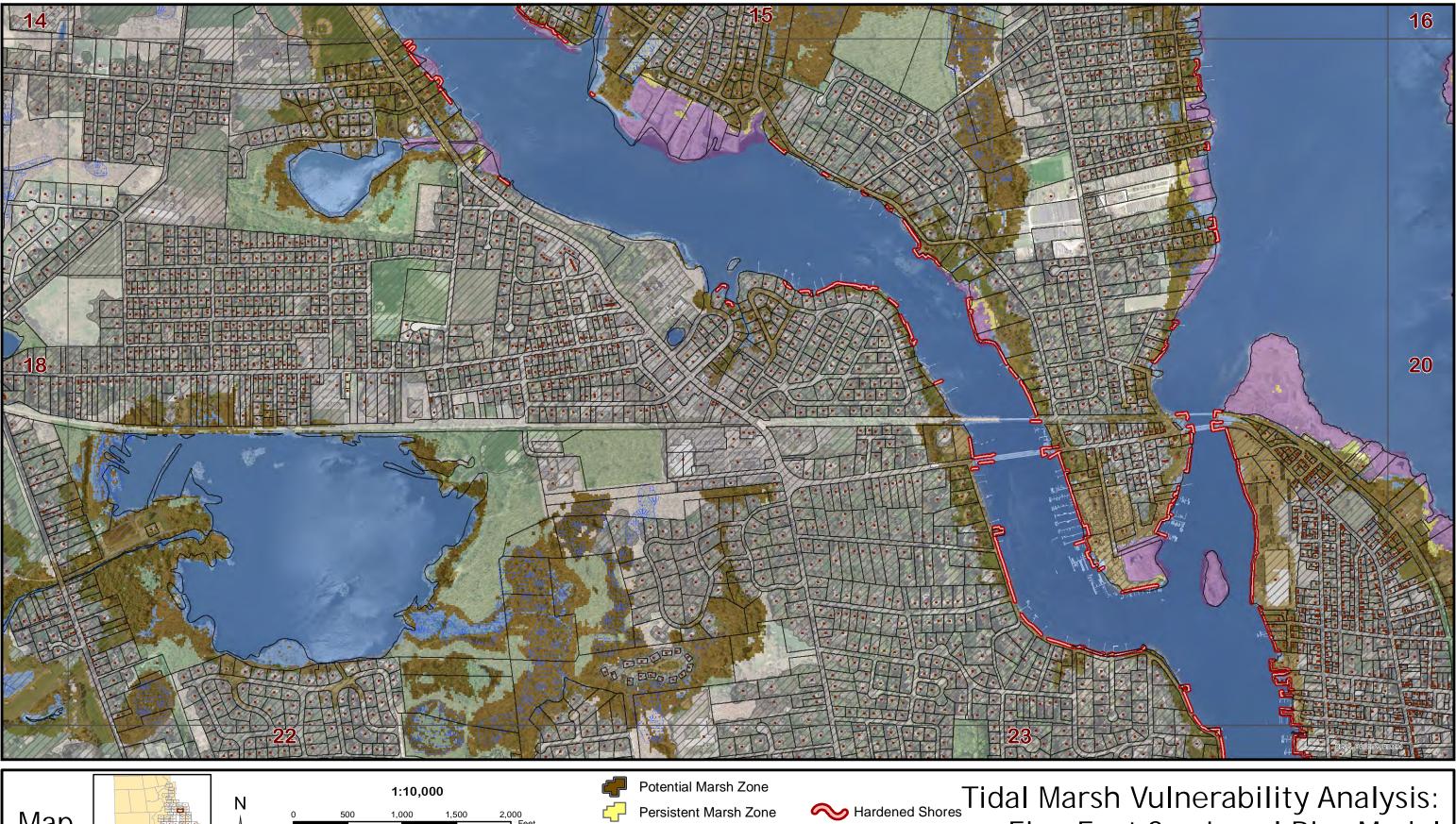
Three Foot Sea Level Rise Model











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Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space







Parcel Boundaries











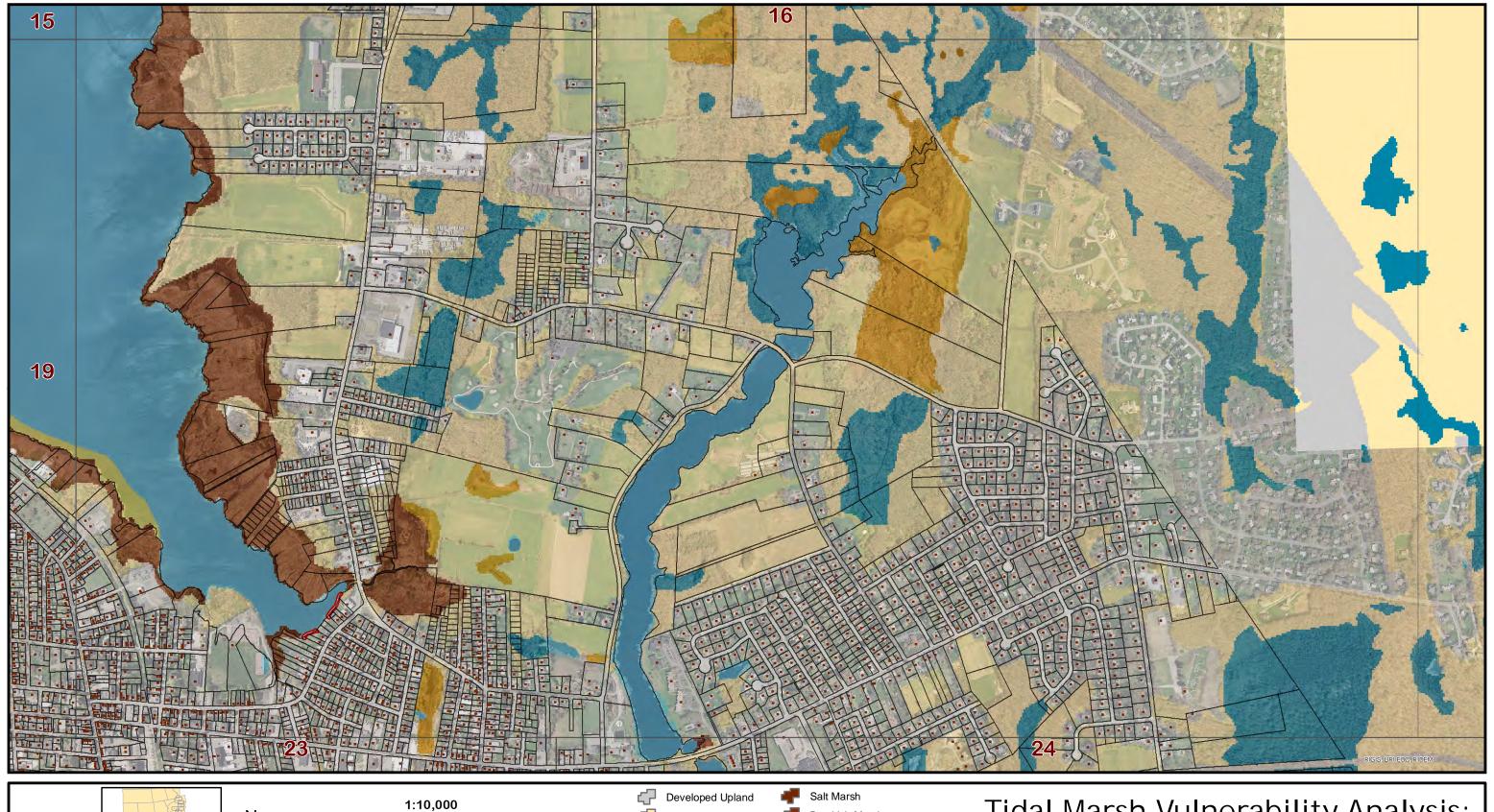
Five Foot Sea Level Rise Model

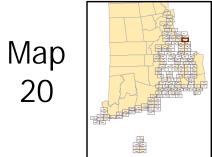












Undeveloped Upland

Rocky Intertidal

Beach

Swamp

Tidal Flat

Open Water

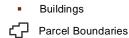
Tidal Creek

Brackish Marsh

Scrub/Shrub Transitional Marsh

Fresh Marsh





Tidal Marsh Vulnerability Analysis: **Current Condition**







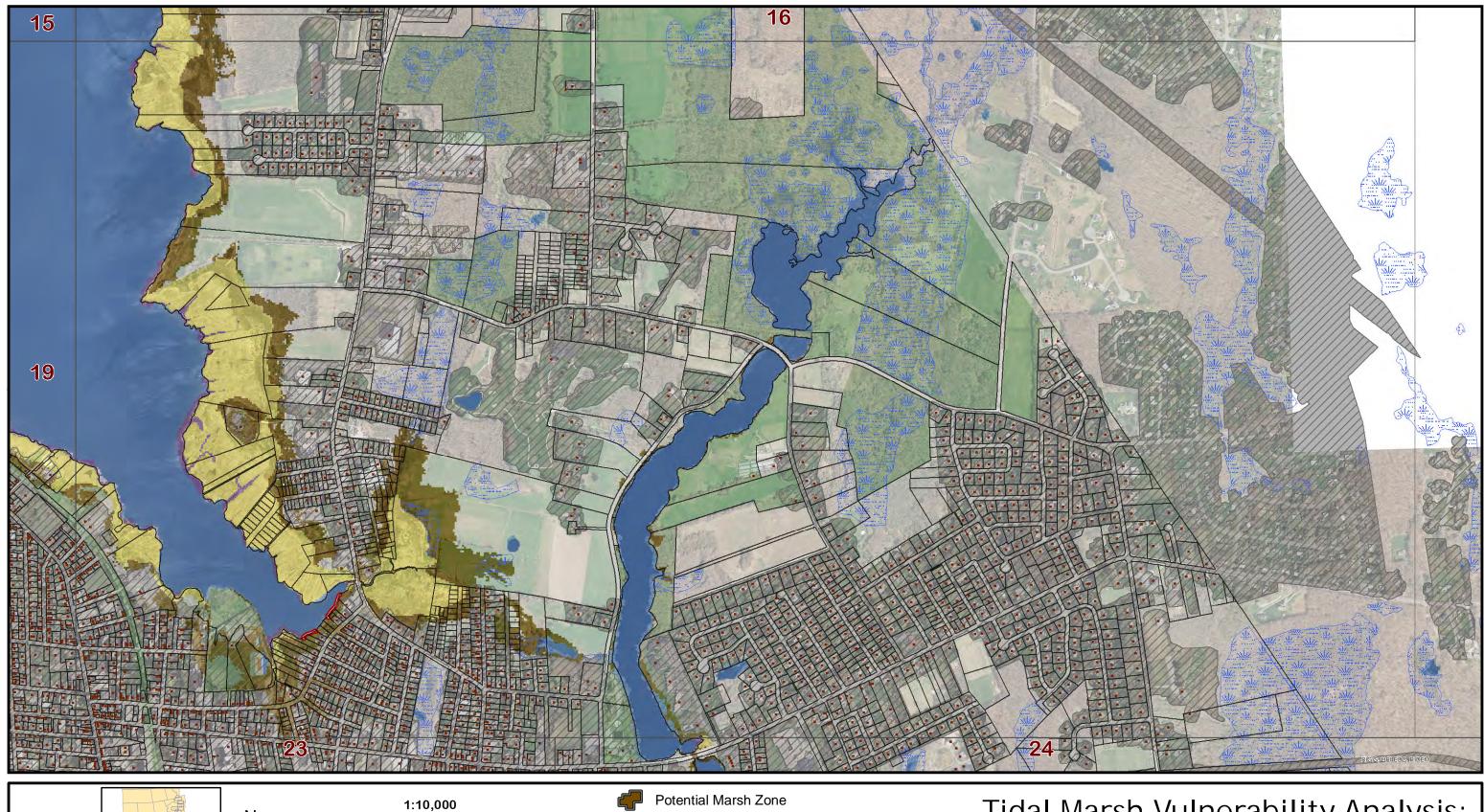


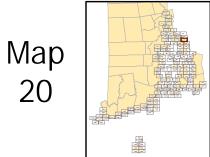








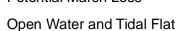


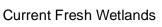


Potential Marsh Zone









Protected Open Space







Parcel Boundaries **Developed Land**







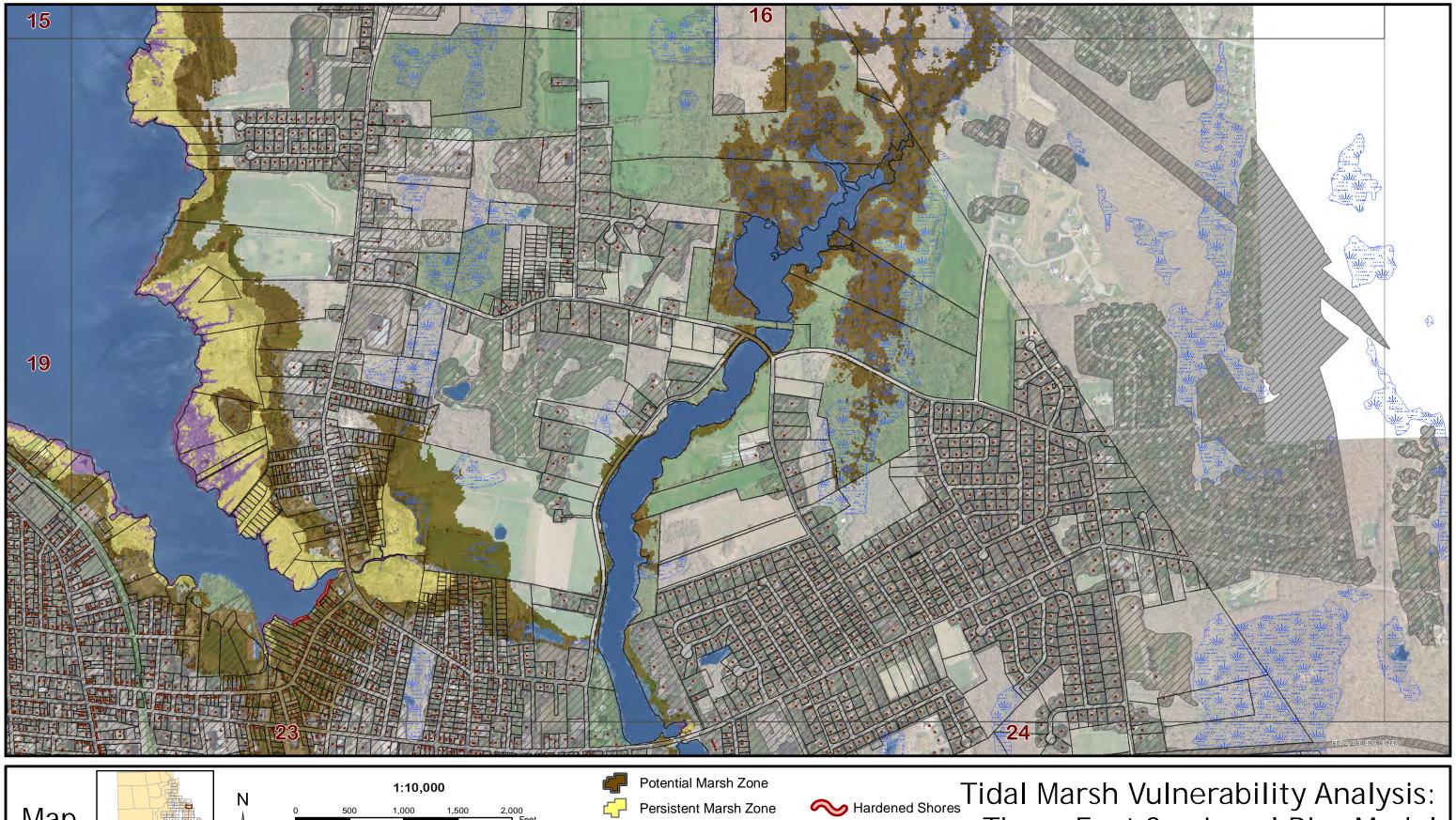


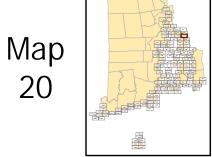










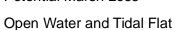




Potential Marsh Zone



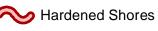






Protected Open Space





CRMC Coastal Barriers













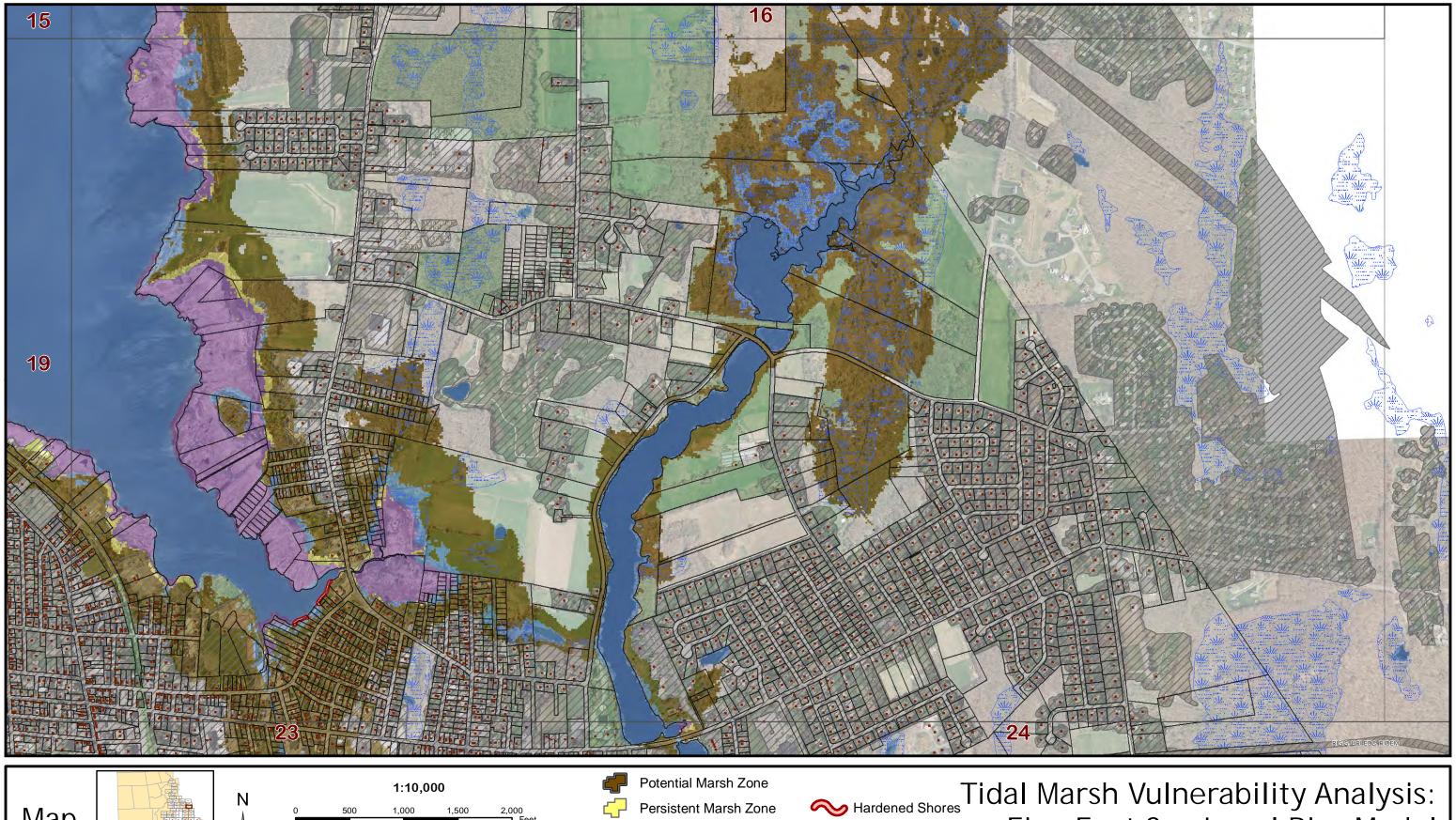
Three Foot Sea Level Rise Model

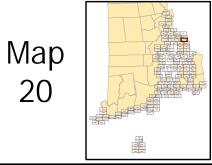








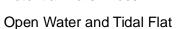


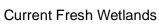






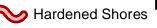






Protected Open Space





CRMC Coastal Barriers













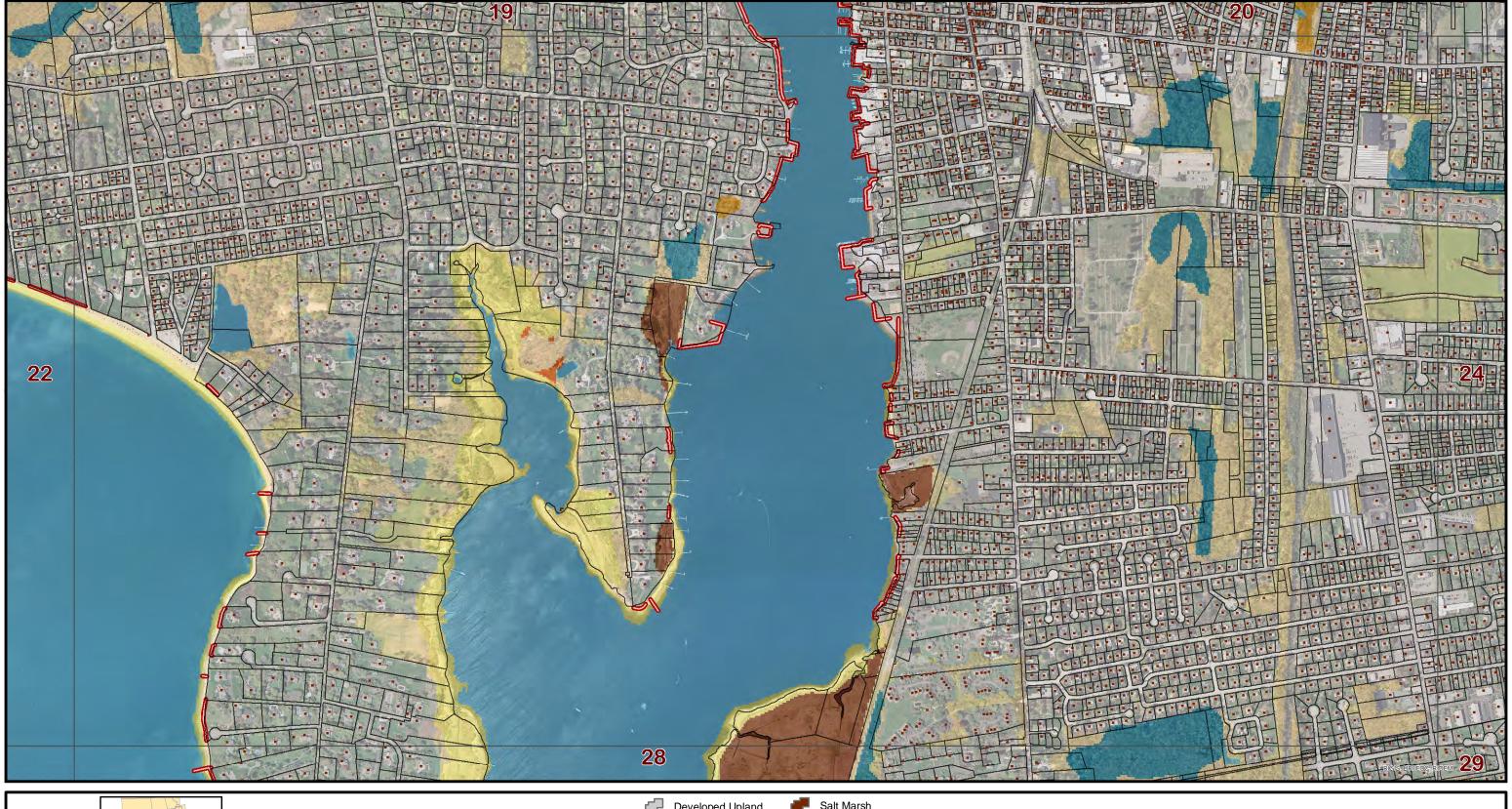
Five Foot Sea Level Rise Model

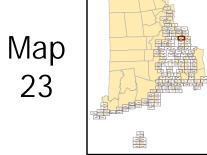












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Developed Upland

Undeveloped Upland

Rocky Intertidal





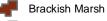




Tidal Creek

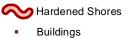


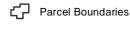












Tidal Marsh Vulnerability Analysis: **Current Condition**







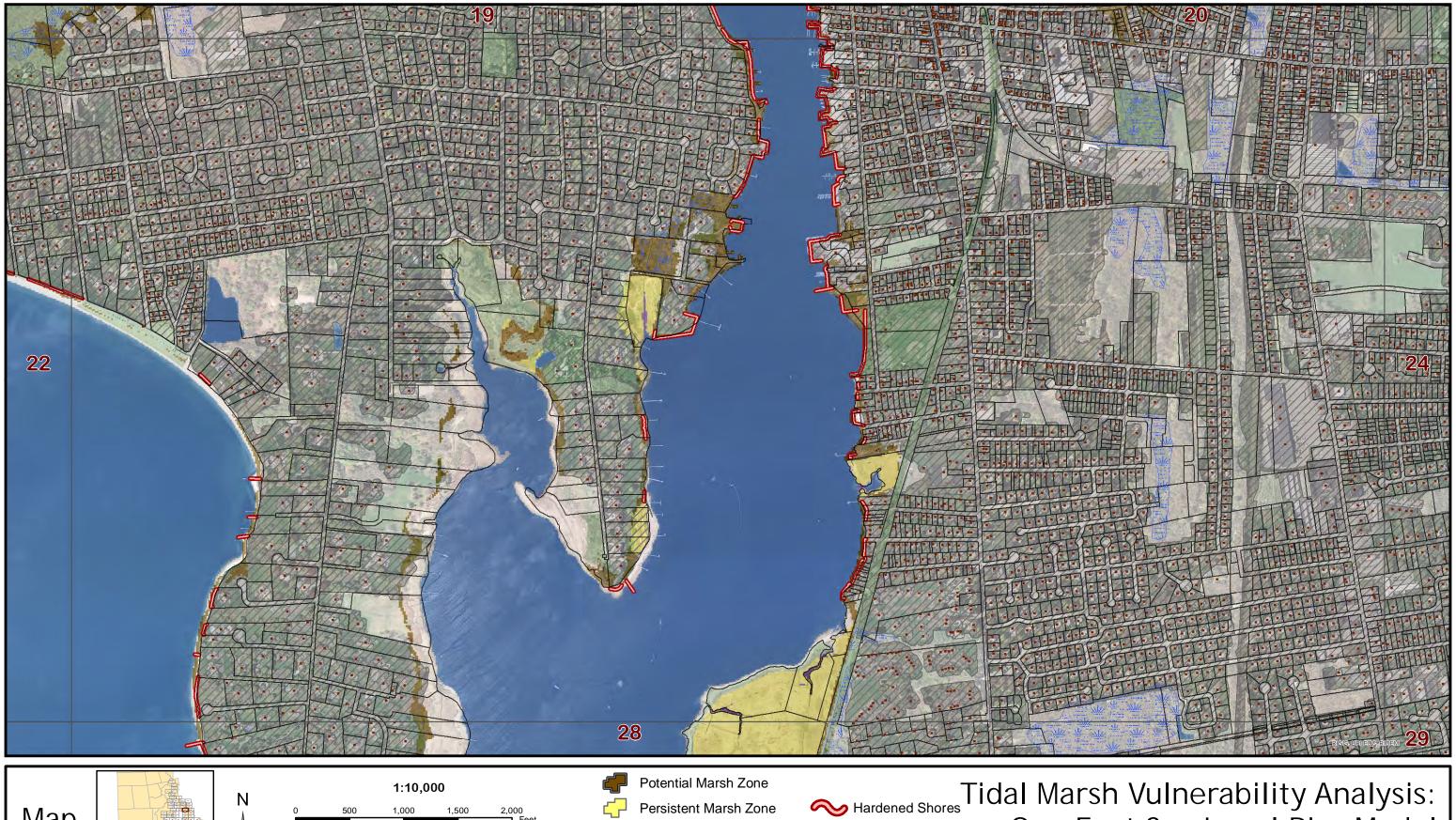


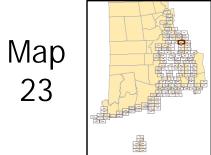












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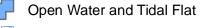
Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Current Fresh Wetlands



Protected Open Space







Parcel Boundaries **Developed Land**









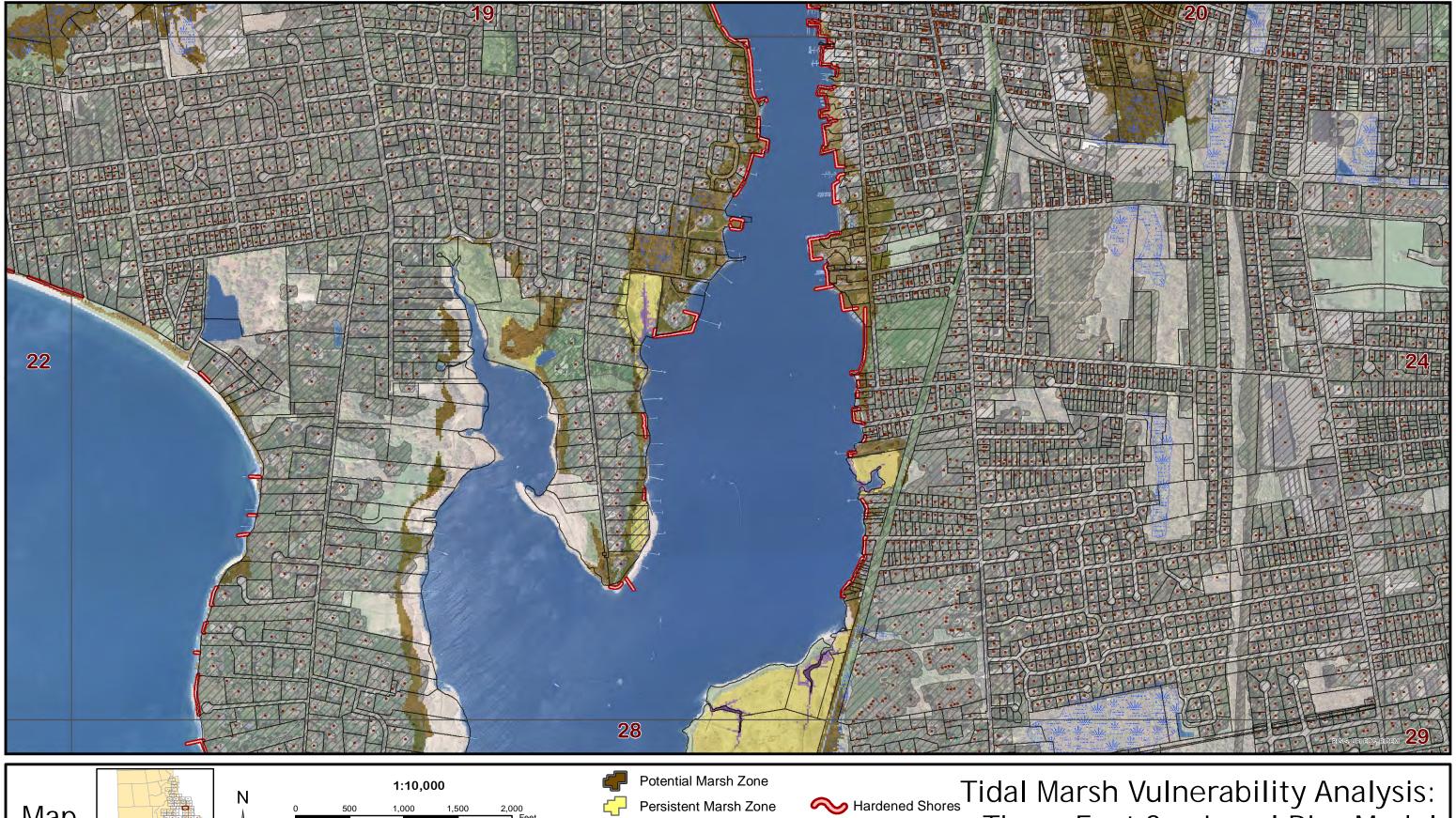
One Foot Sea Level Rise Model











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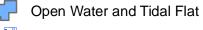
Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Current Fresh Wetlands



Protected Open Space







CRMC Coastal Barriers











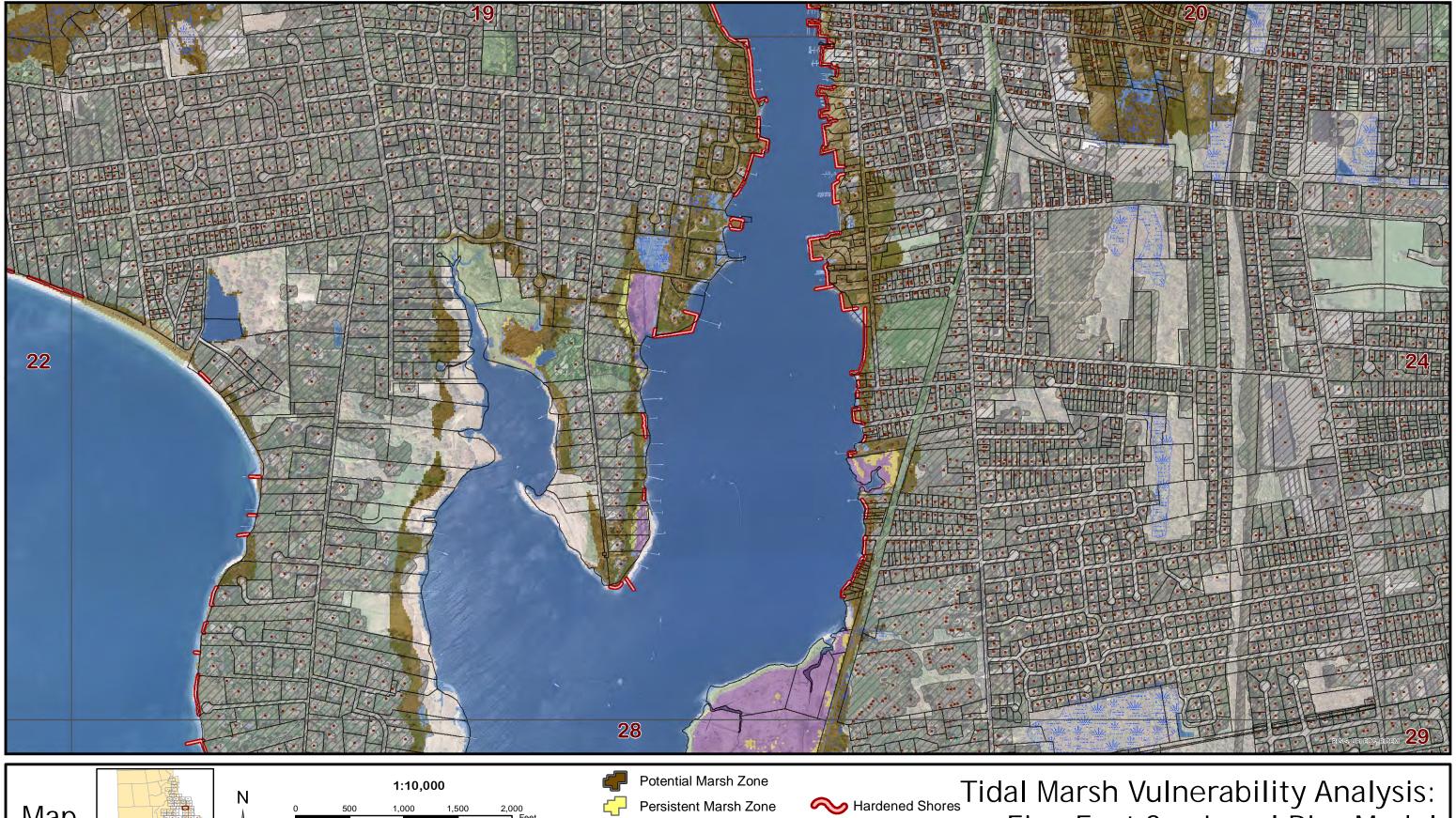
Three Foot Sea Level Rise Model

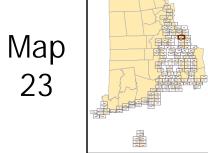






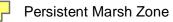




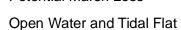




Potential Marsh Zone









Protected Open Space







Parcel Boundaries **Developed Land**

CRMC Coastal Barriers









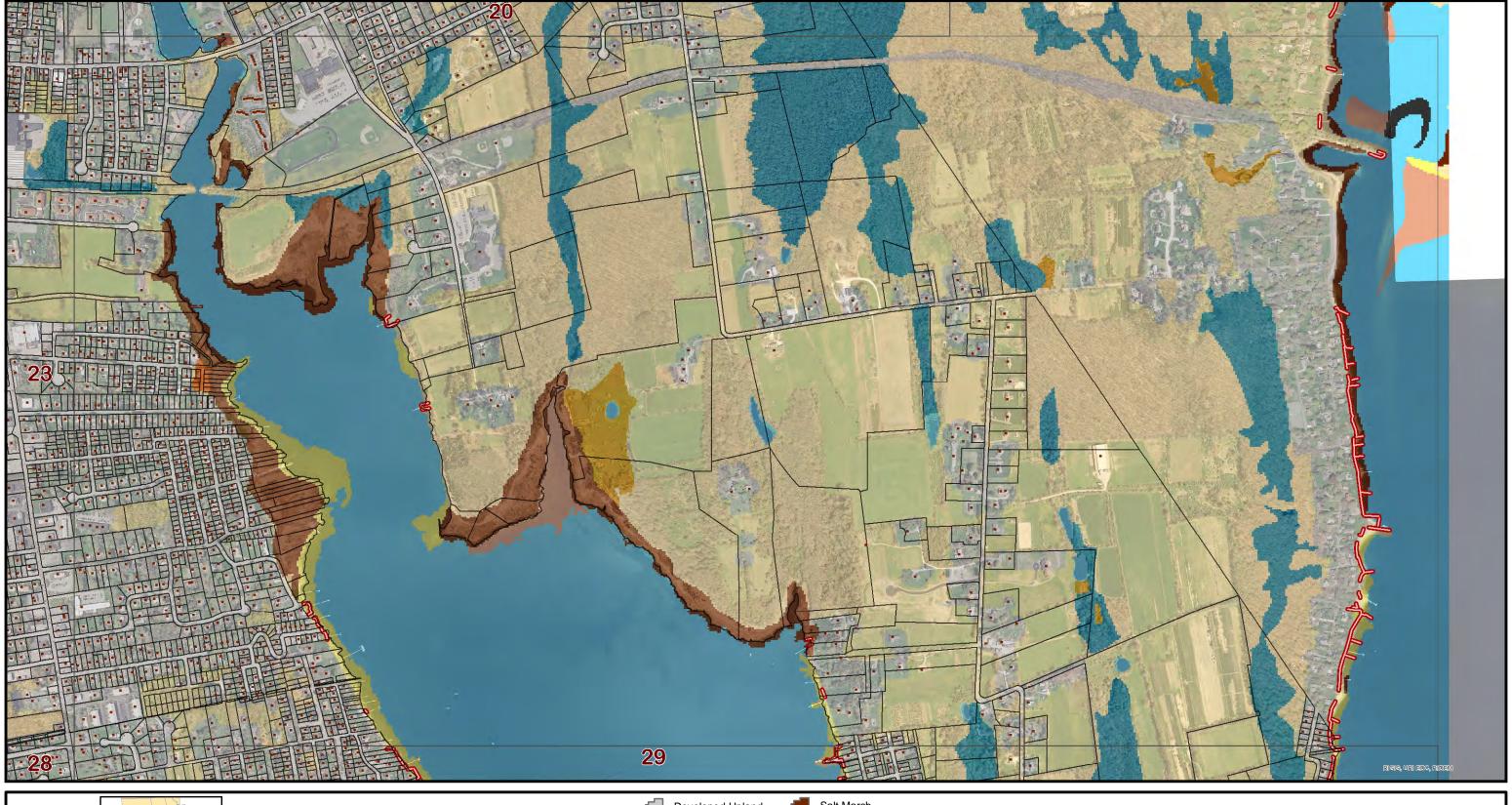
Five Foot Sea Level Rise Model

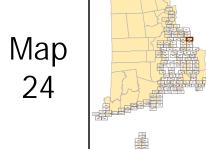












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Developed Upland

Undeveloped Upland

Rocky Intertidal



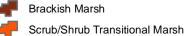




Open Water Swamp

Tidal Creek













Tidal Marsh Vulnerability Analysis: **Current Condition**







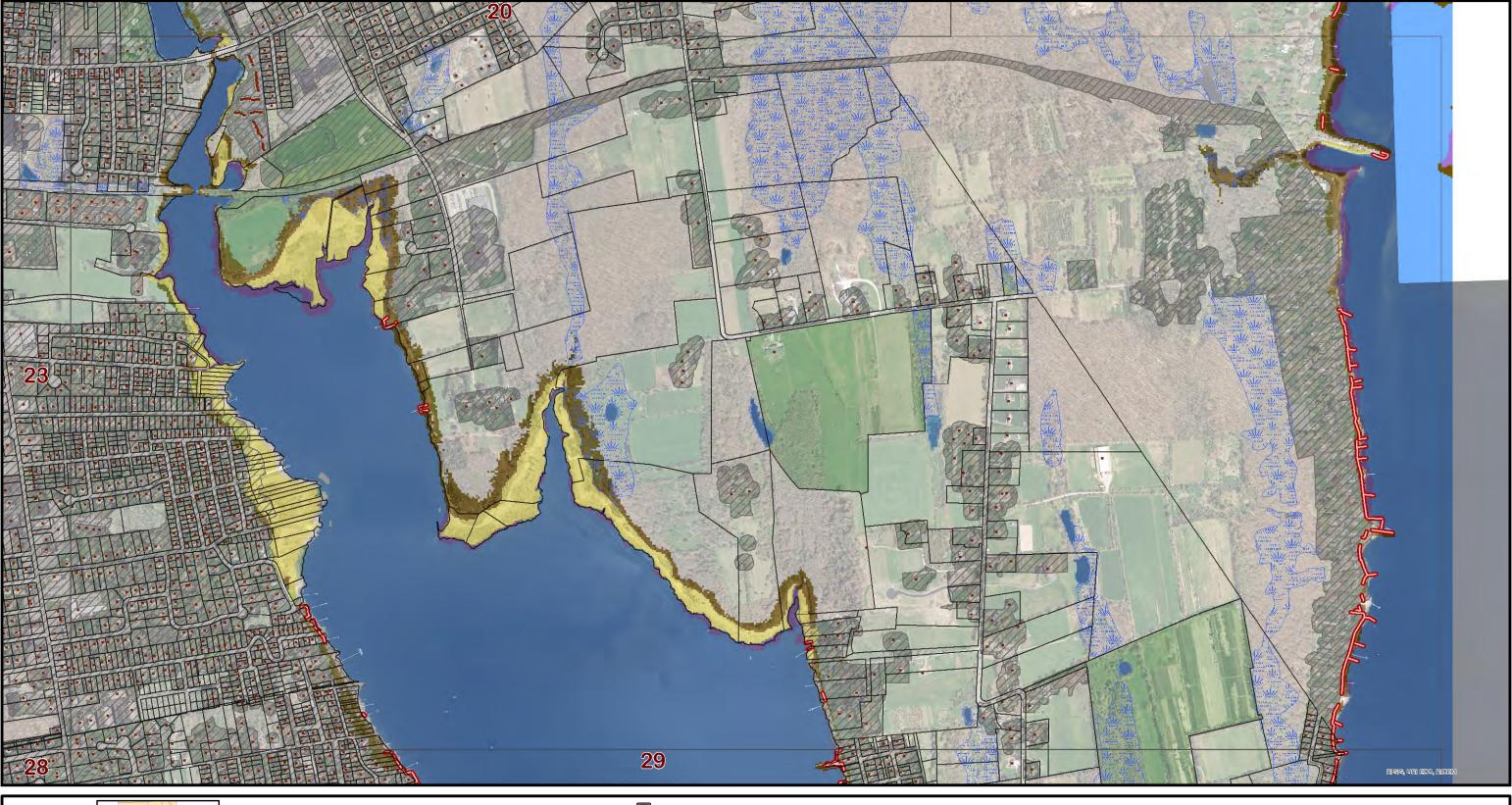
















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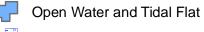
Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Current Fresh Wetlands



Protected Open Space



Tidal Marsh Vulnerability Analysis:





Parcel Boundaries **Developed Land**









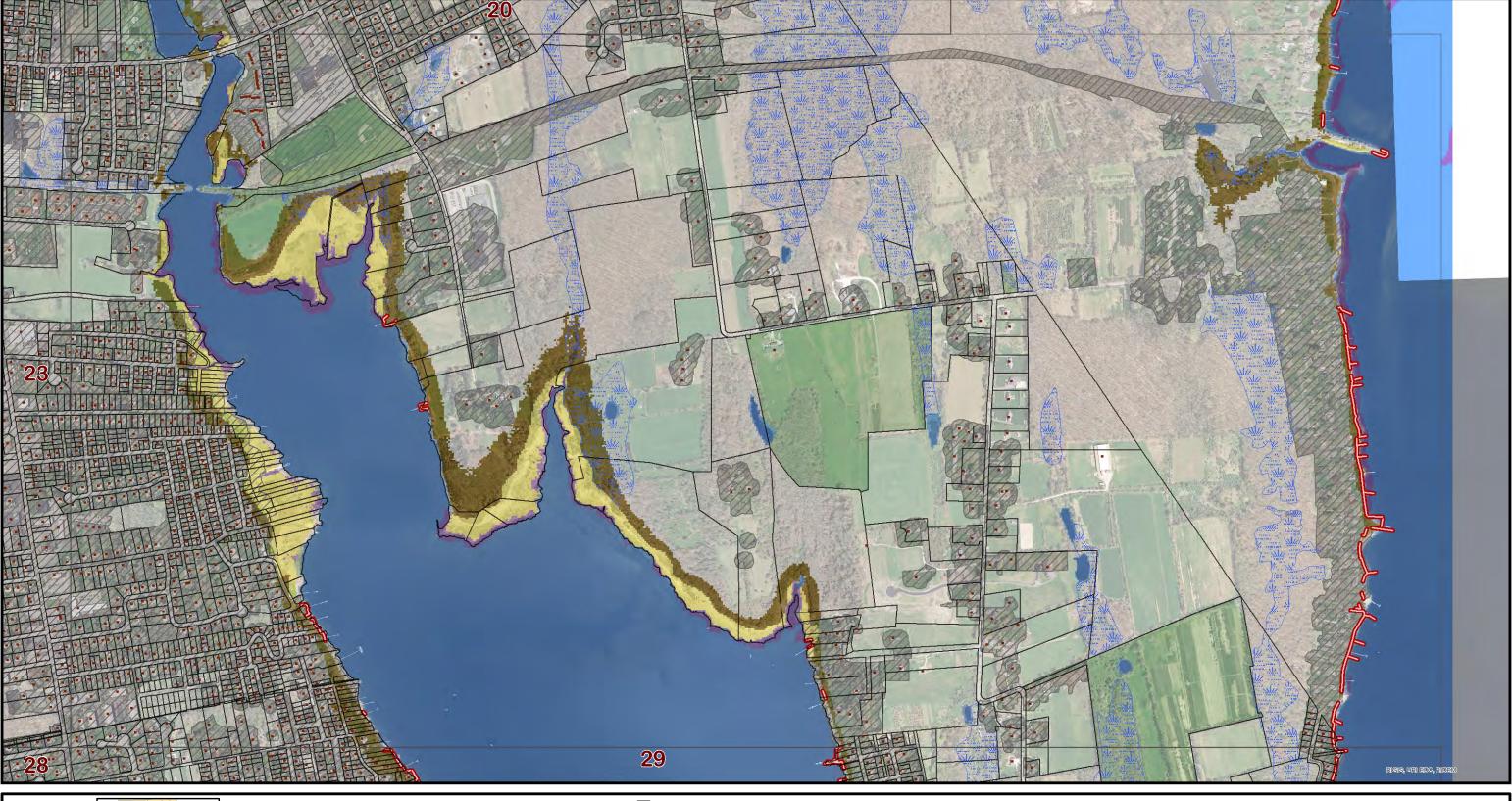
One Foot Sea Level Rise Model

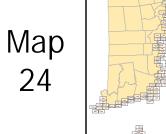














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Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Open Water and Tidal Flat **Current Fresh Wetlands**

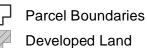


Protected Open Space



→ Hardened Shores Tidal Marsh Vulnerability Analysis:







CRMC Coastal Barriers







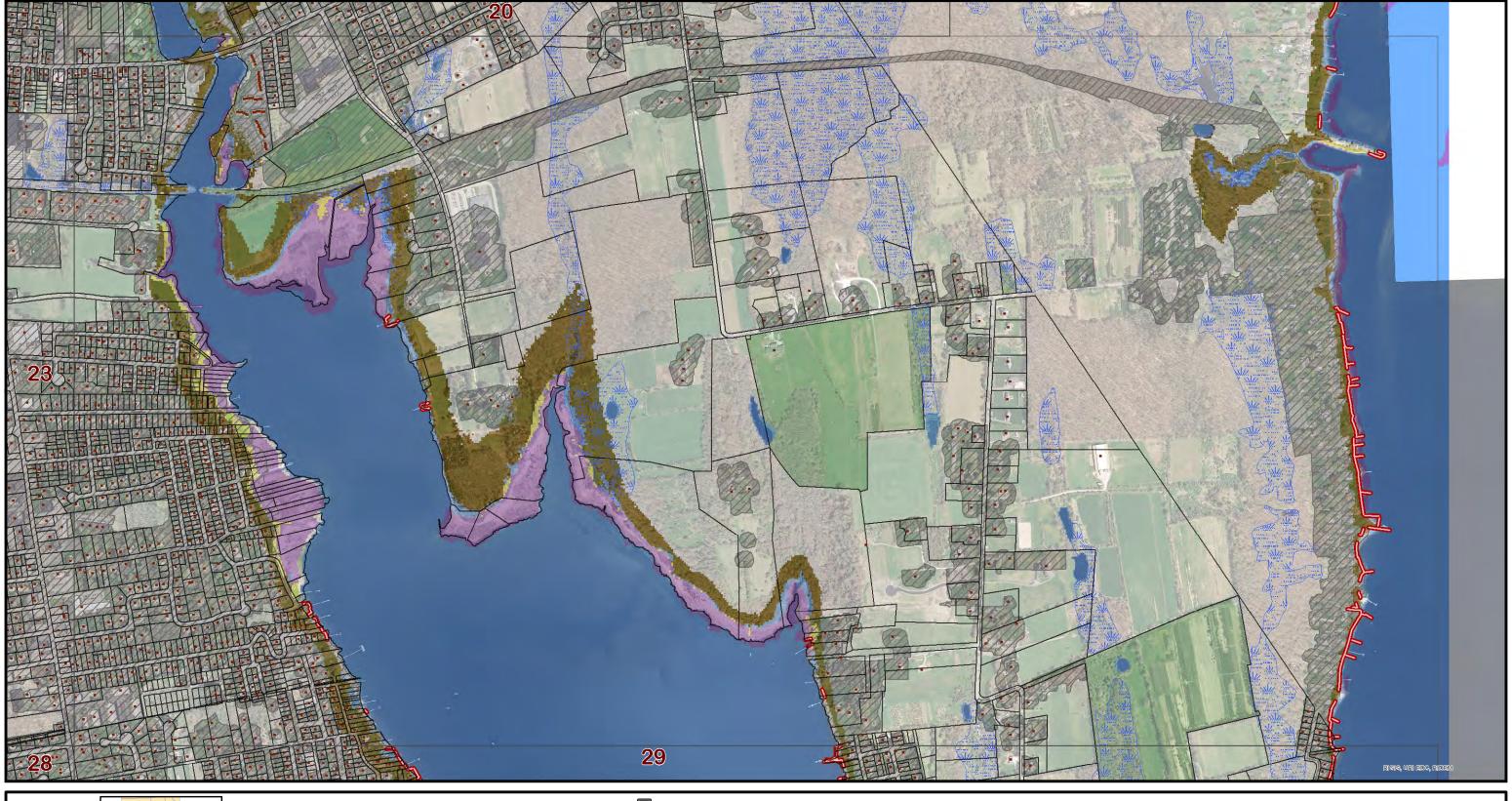
Three Foot Sea Level Rise Model

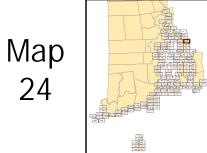














Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space



→ Hardened Shores Tidal Marsh Vulnerability Analysis:







Developed Land CRMC Coastal Barriers







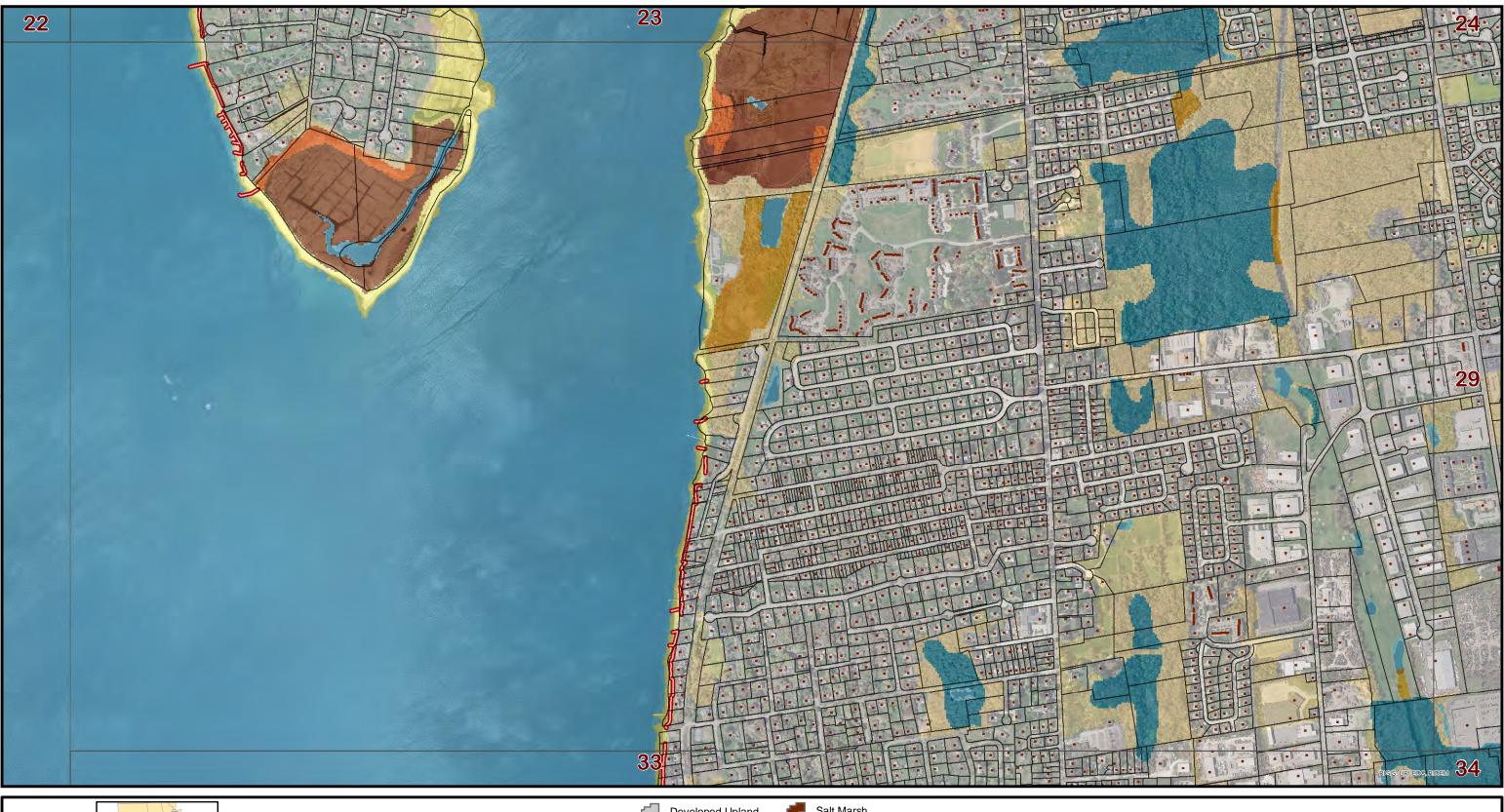














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Developed Upland

Undeveloped Upland

Rocky Intertidal



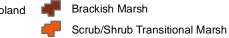




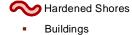


Tidal Creek











Parcel Boundaries

Tidal Marsh Vulnerability Analysis: **Current Condition**





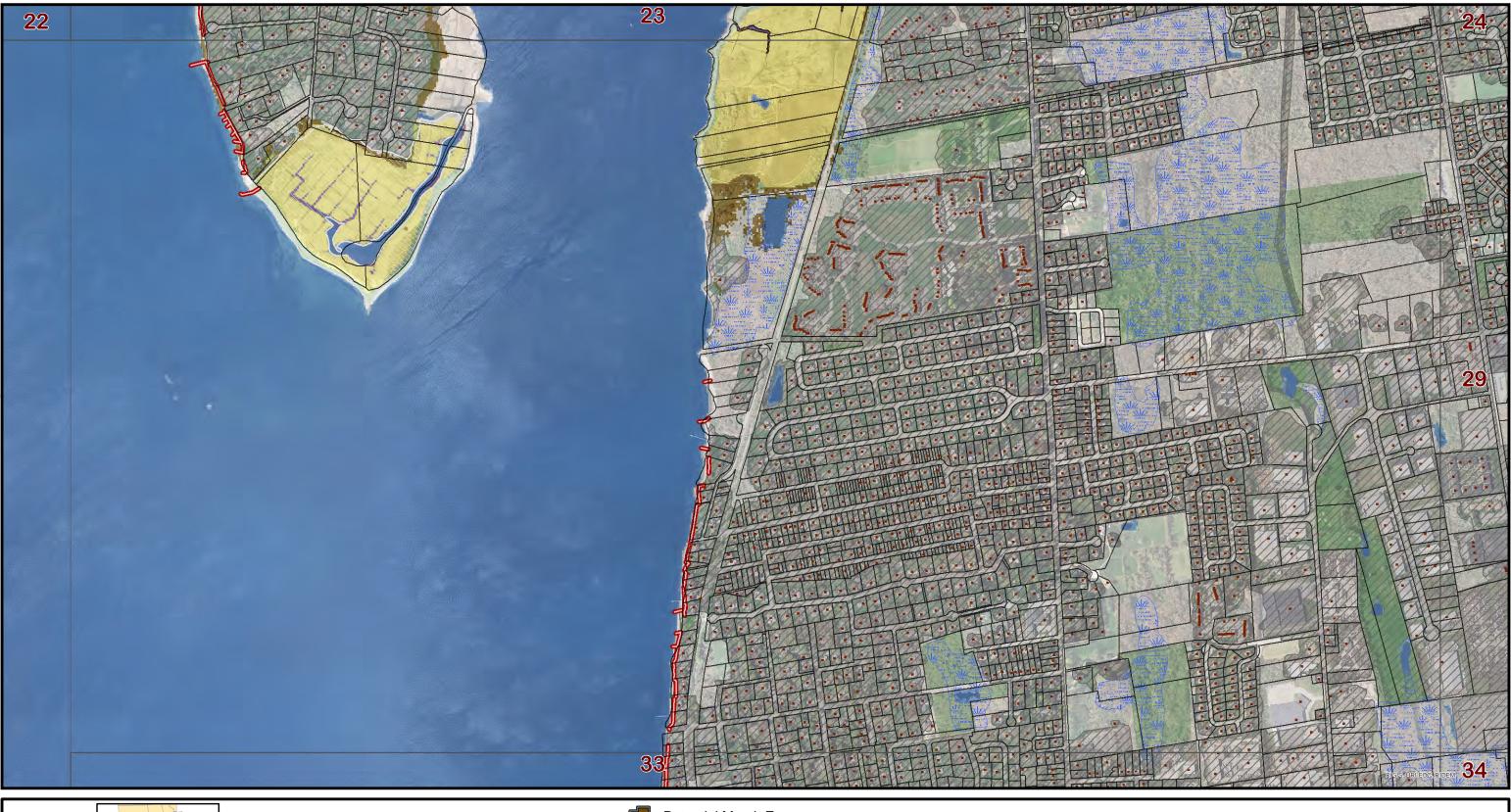


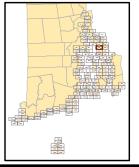












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Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space







Parcel Boundaries









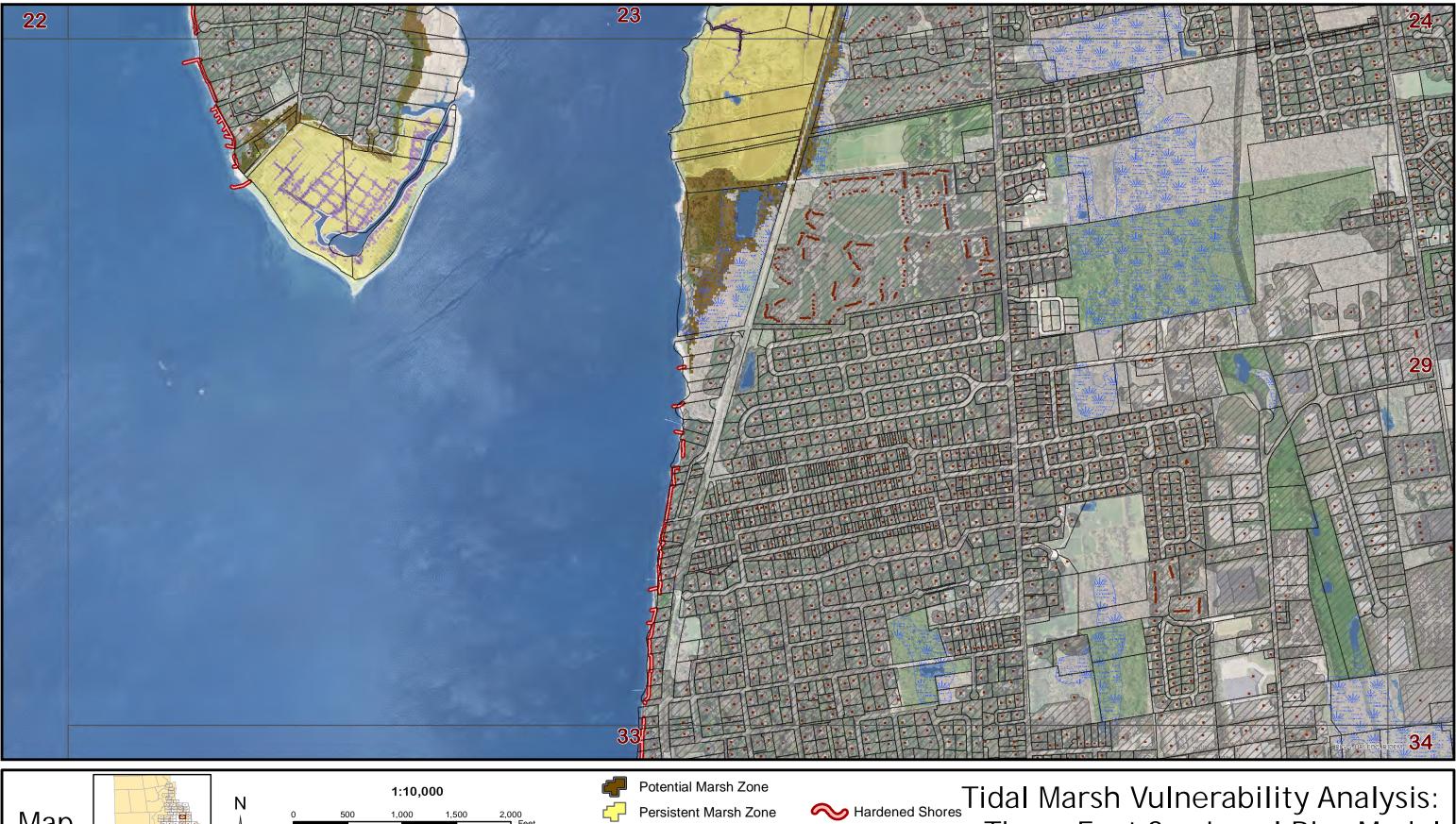


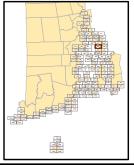












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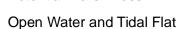
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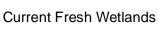


Potential Marsh Zone

























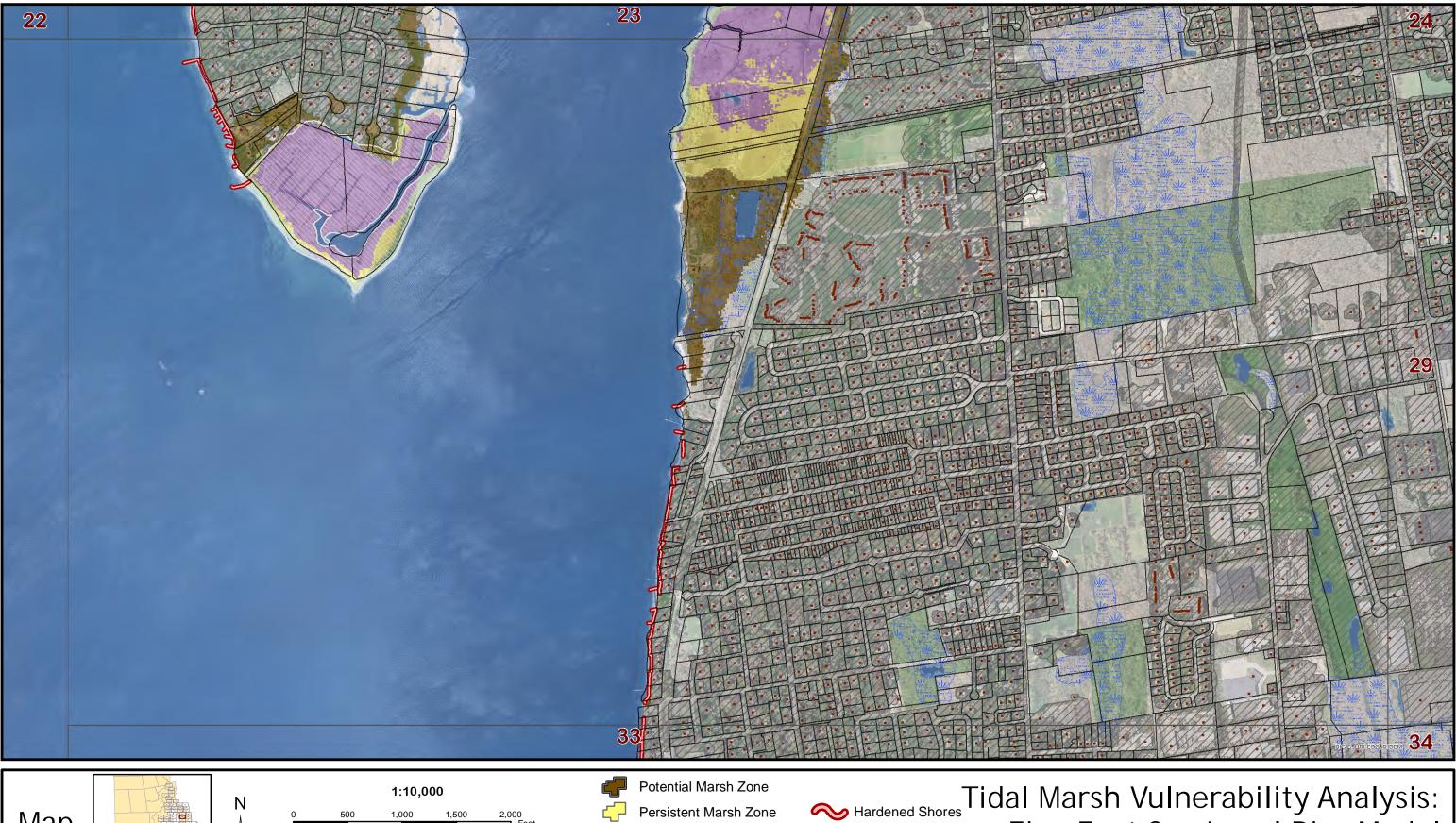
Three Foot Sea Level Rise Model













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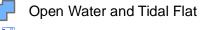
Potential Marsh Zone



Persistent Marsh Zone



Potential Marsh Loss



Current Fresh Wetlands



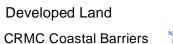
Protected Open Space







Parcel Boundaries **Developed Land**







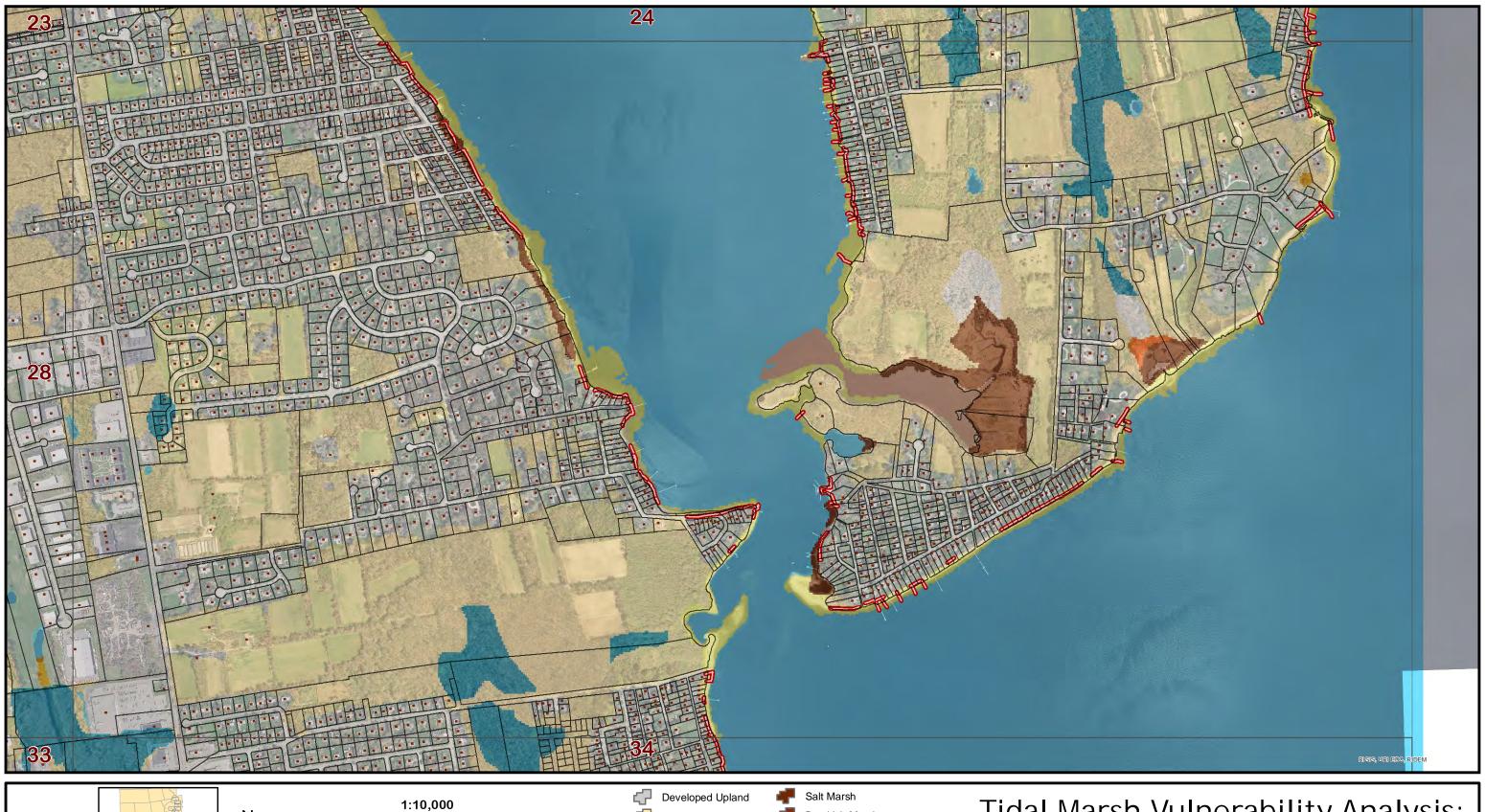


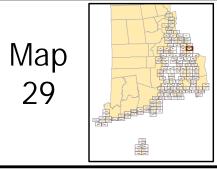












Developed Upland Undeveloped Upland Rocky Intertidal

Beach

Tidal Flat

Swamp

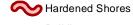
Open Water

Tidal Creek

Brackish Marsh

Scrub/Shrub Transitional Marsh

Fresh Marsh





Buildings

Tidal Marsh Vulnerability Analysis: **Current Condition**







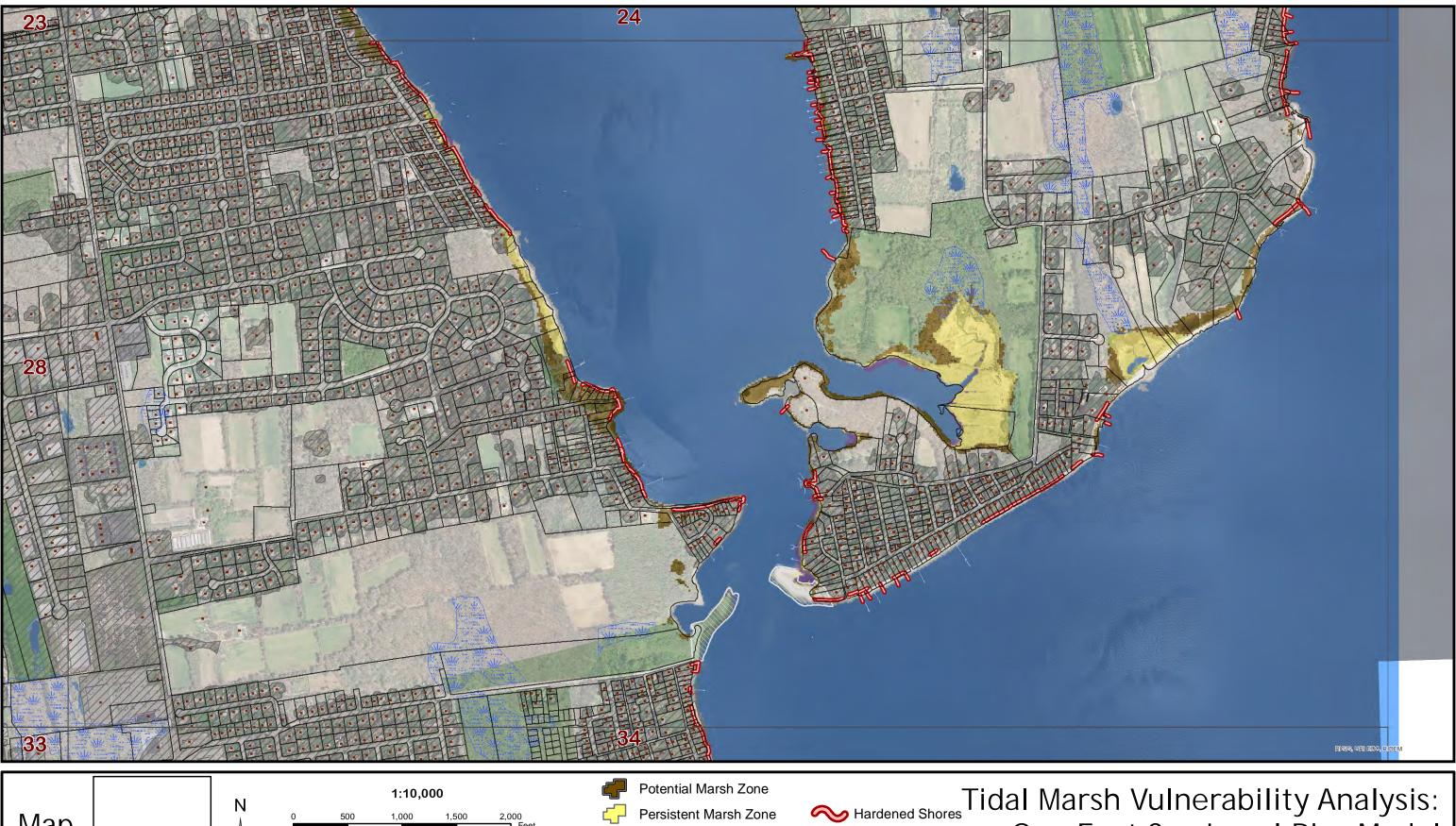


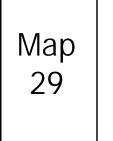








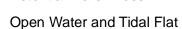


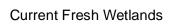






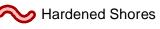






Protected Open Space









Parcel Boundaries **Developed Land**

CRMC Coastal Barriers









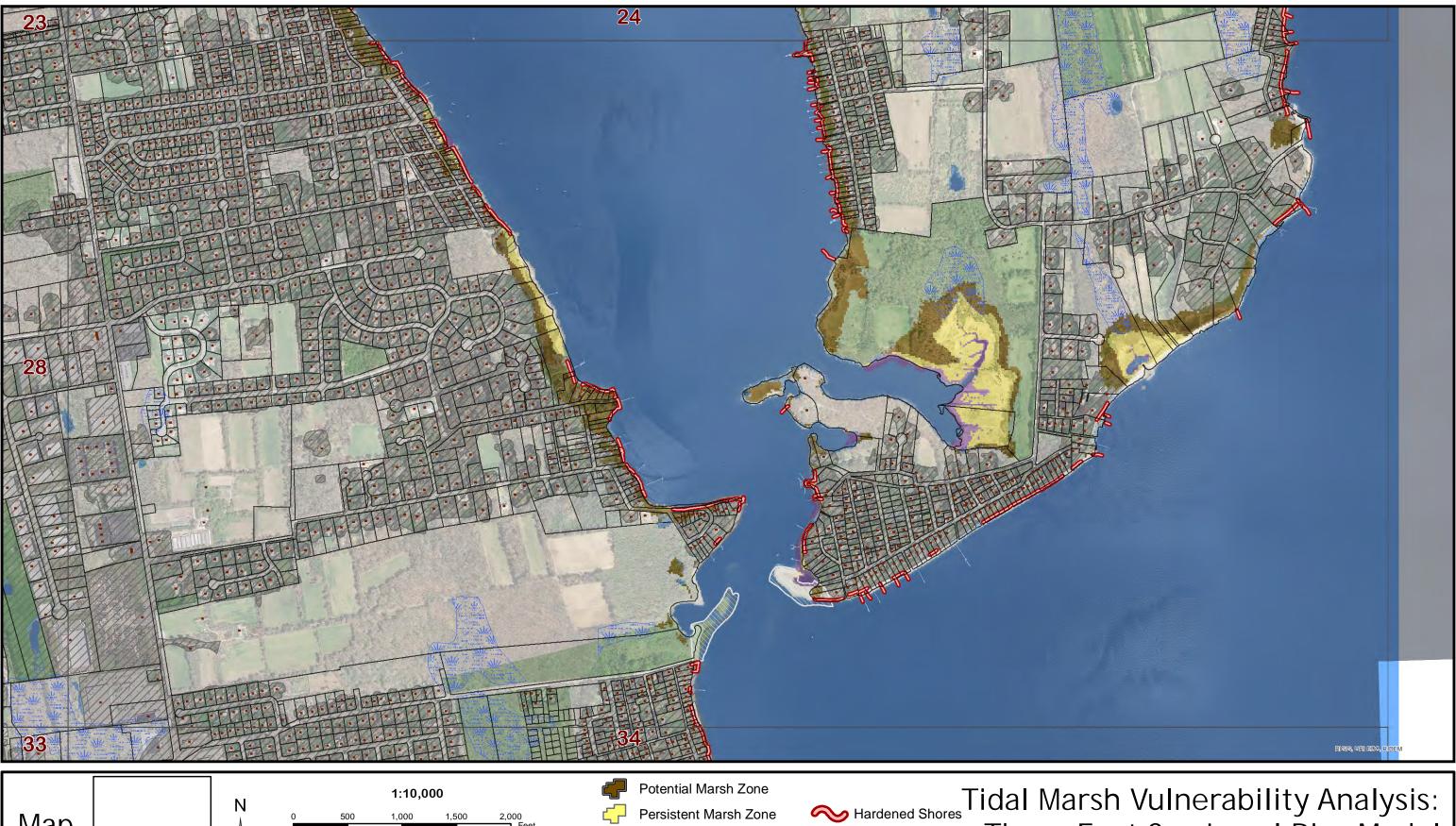
One Foot Sea Level Rise Model

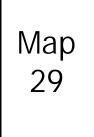


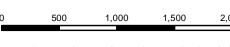














Persistent Marsh Zone



Potential Marsh Loss



Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space

















Three Foot Sea Level Rise Model

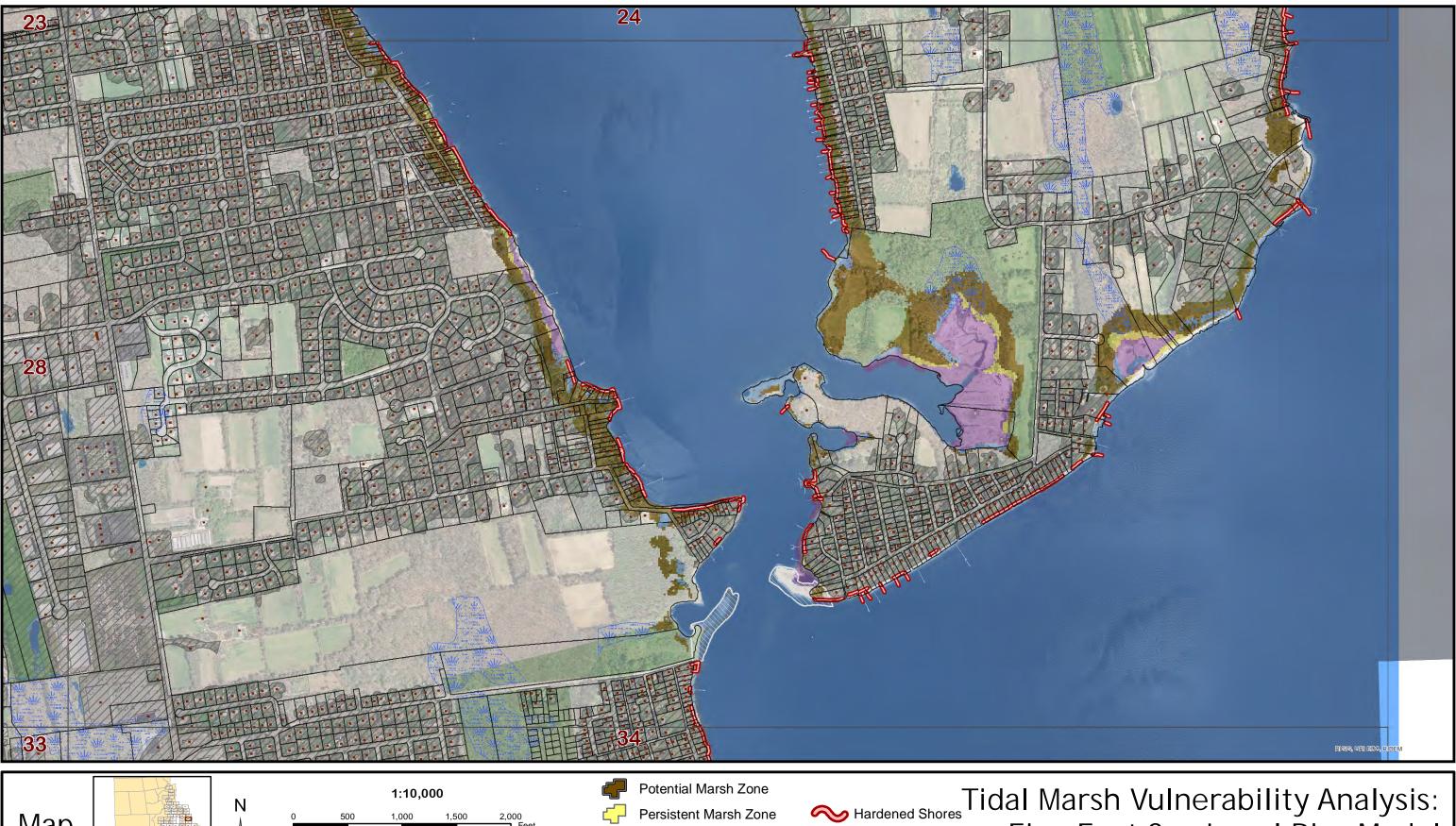


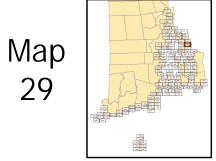














Persistent Marsh Zone



Potential Marsh Loss



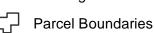
Open Water and Tidal Flat **Current Fresh Wetlands**



Protected Open Space









Developed Land CRMC Coastal Barriers









Five Foot Sea Level Rise Model







