

Revetments as a Last Line of Defense

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www.startwithmiller.com

What we bring to the table...

- 55 years of experience along the shores of the Great Lakes
- Over a century of professional staff experience in storm water mitigation and naturalized design
- Over 40 Great Lakes beaches redesigned under grant funding to reduce contamination and restore natural dynamics

Egg Harbor Beach

BEFORE



AFTER



Ridges Sanctuary Beach

BEFORE



AFTER



Samuel Myers Park

BEFORE



AFTER



Sheboygan's Harbor Centre (South Pier)

BEFORE

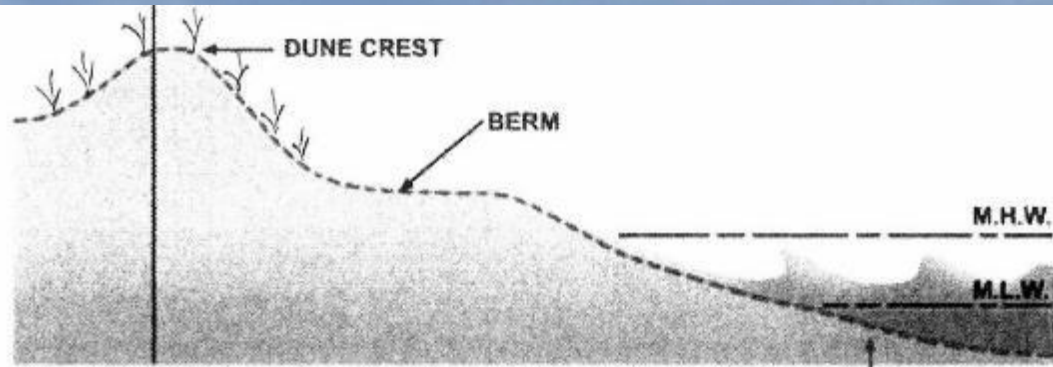


AFTER

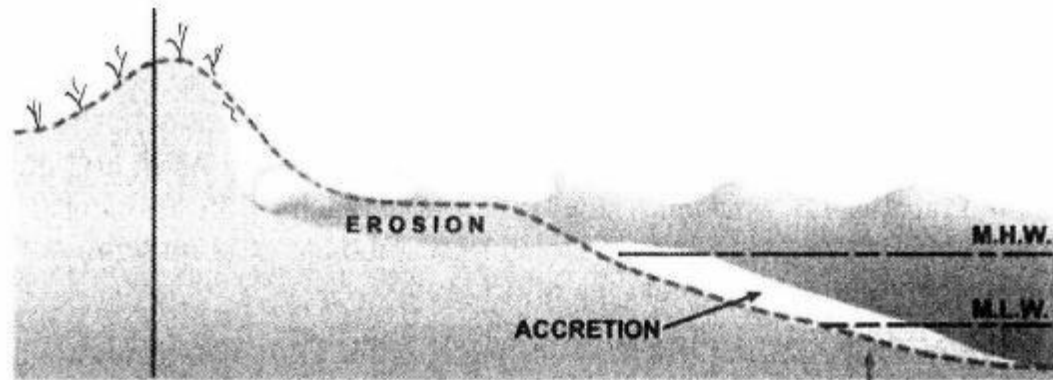


October 2016

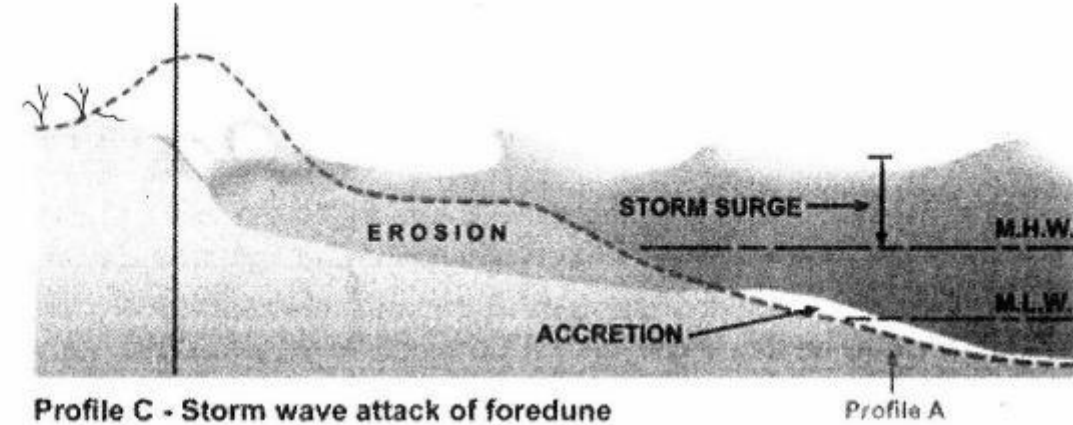




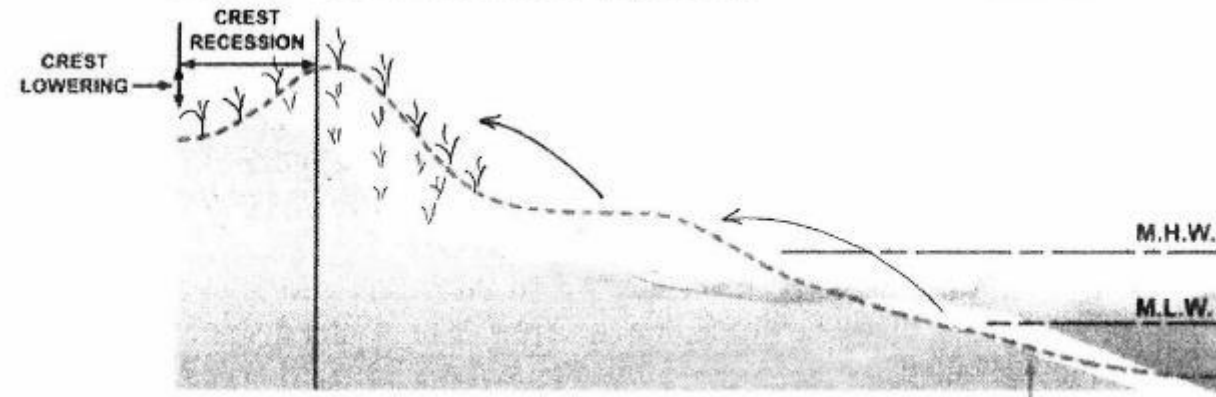
Profile A - Normal wave action



Profile B - Initial attack of storm waves



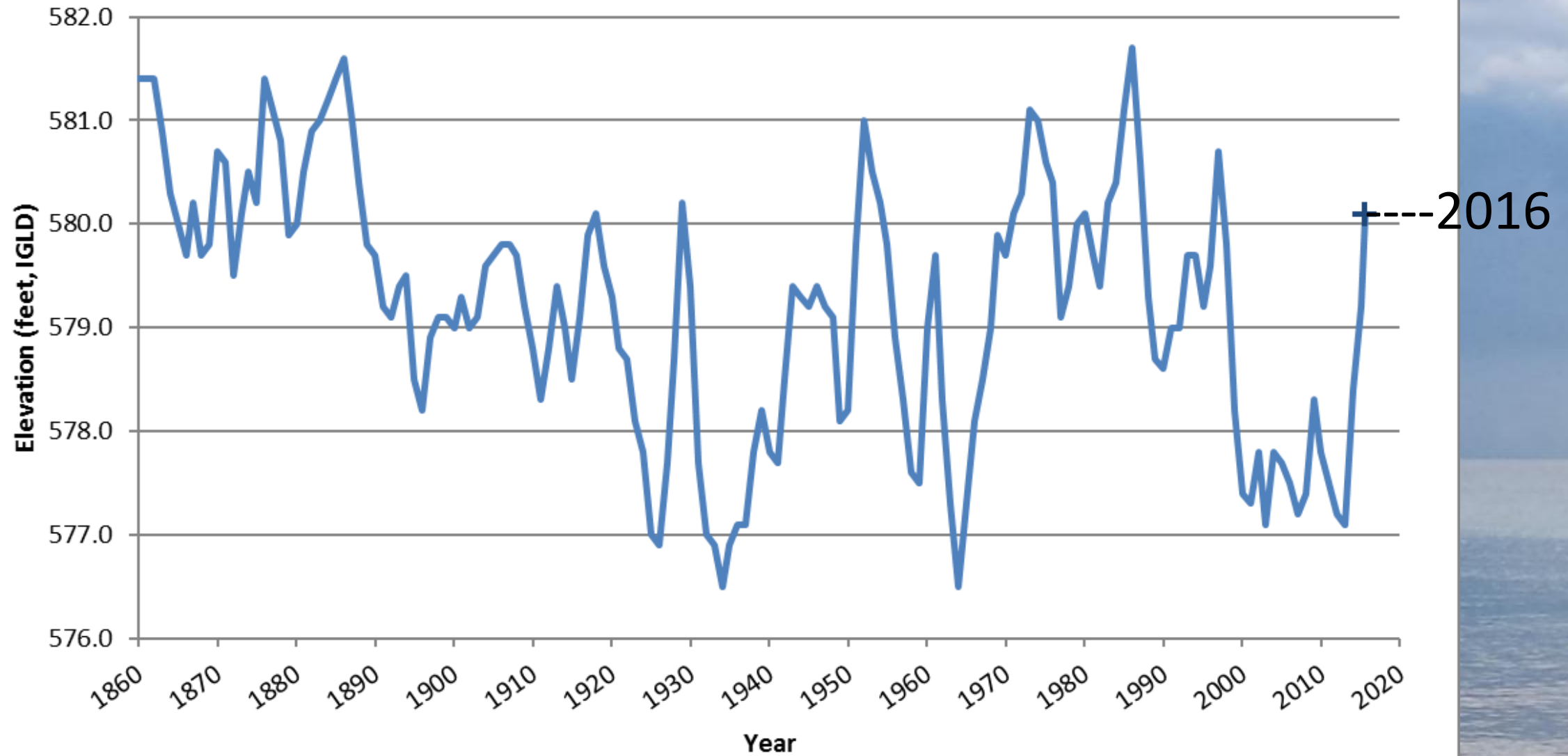
Profile C - Storm wave attack of foredune



Profile D - After storm wave attack, normal wave action

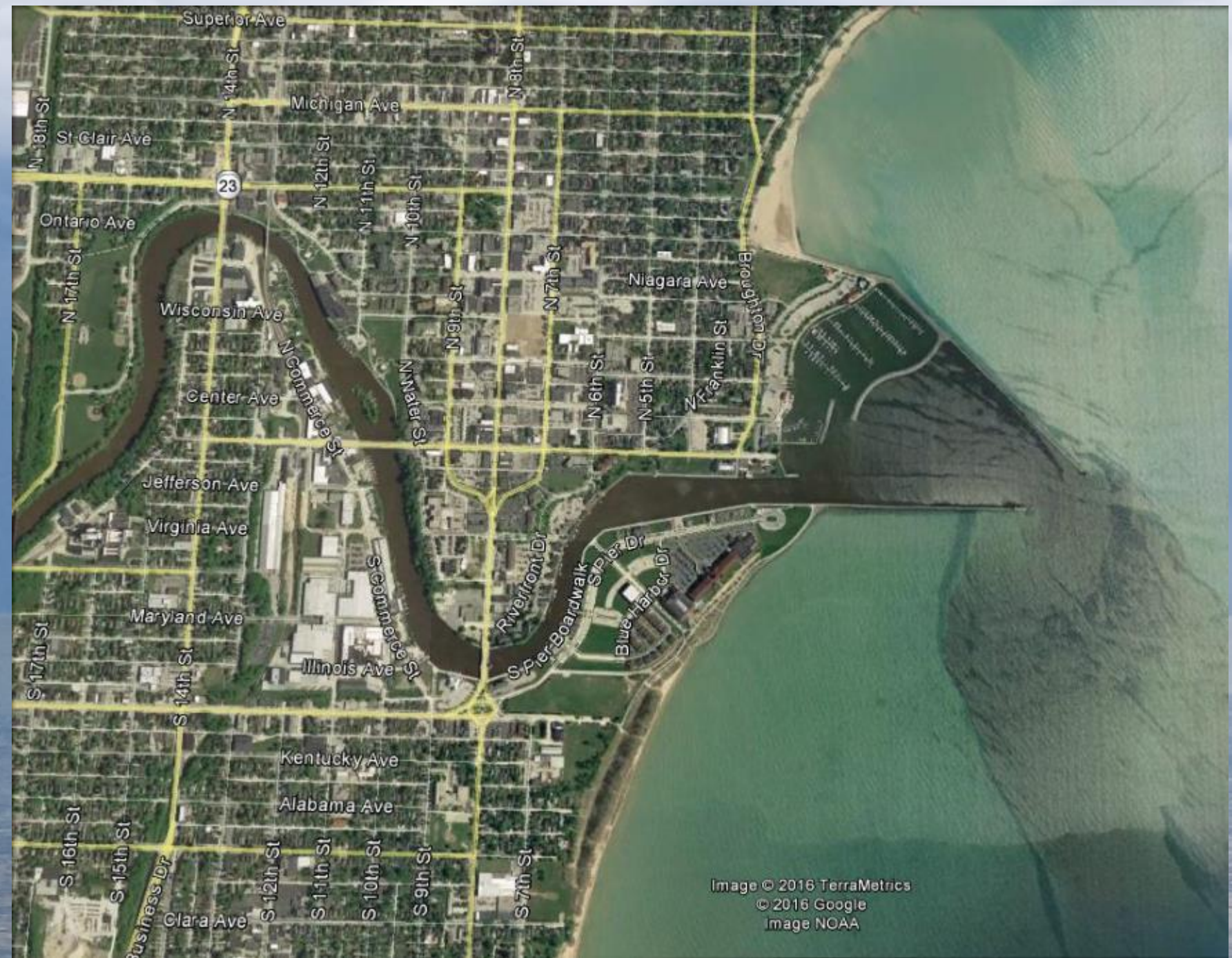
Lake Michigan - Huron

Annual Average Water Levels





Littoral Drift



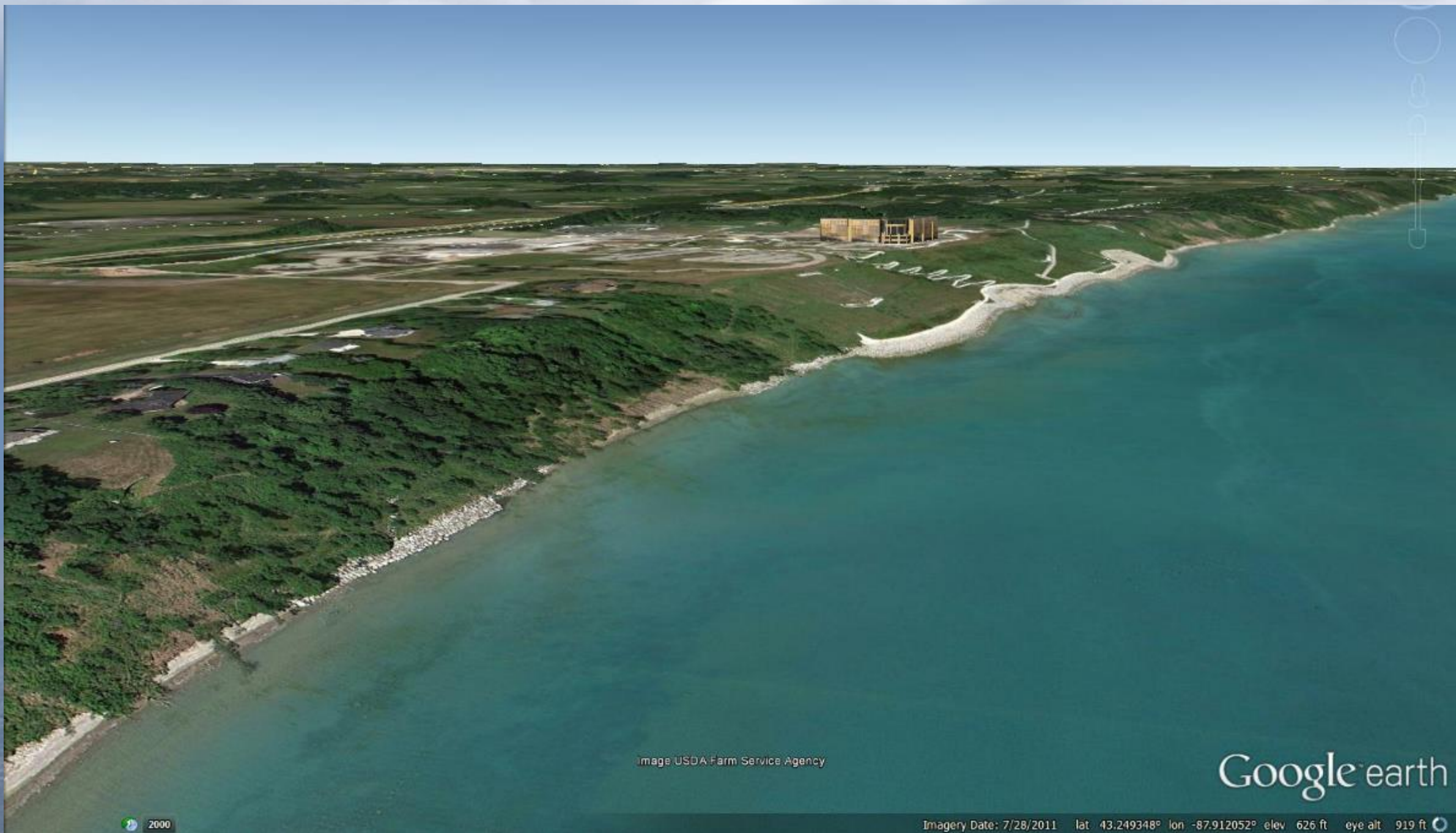


Image USDA Farm Service Agency

Google earth

2000

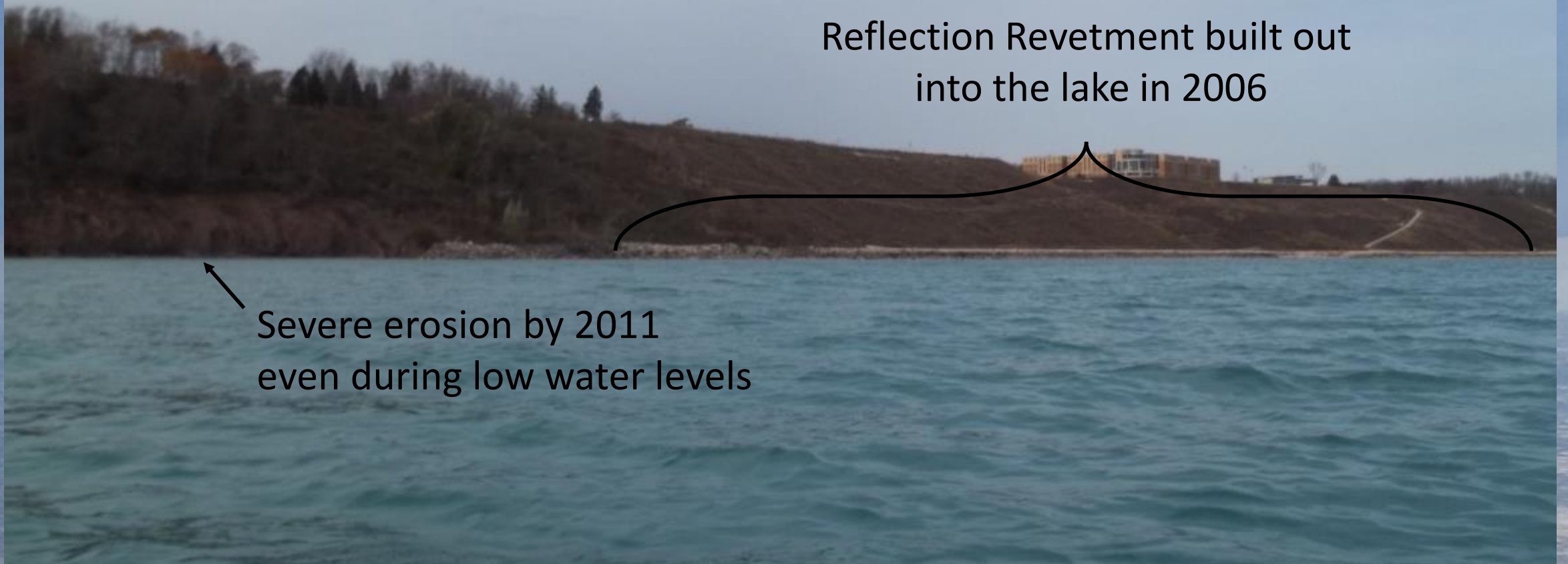
Imagery Date: 7/28/2011 lat 43.249348° lon -87.912052° elev 626 ft eye alt 919 ft

Direction of Littoral Drift



Reflection Revetment built out
into the lake in 2006

Severe erosion by 2011
even during low water levels



Updrift



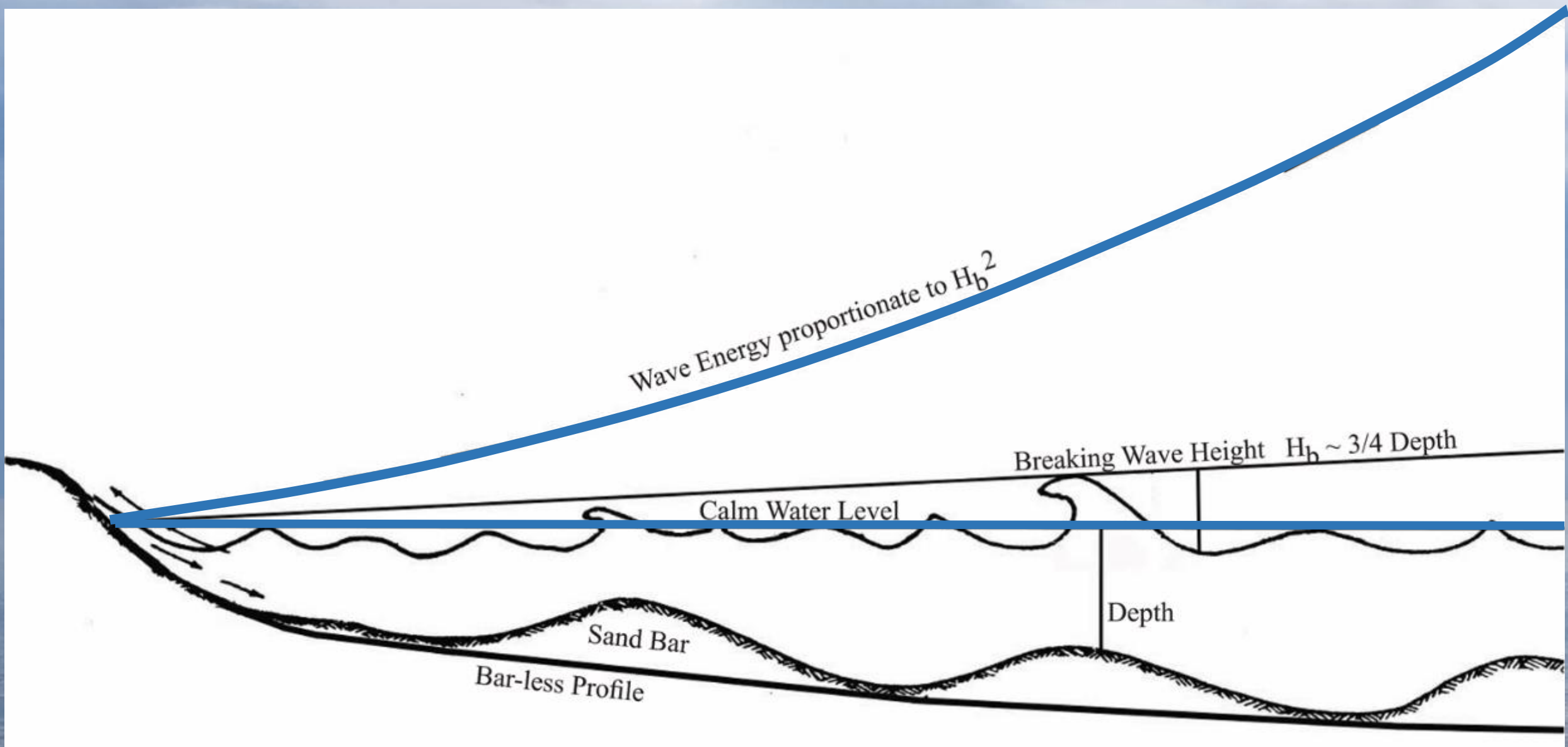
2011

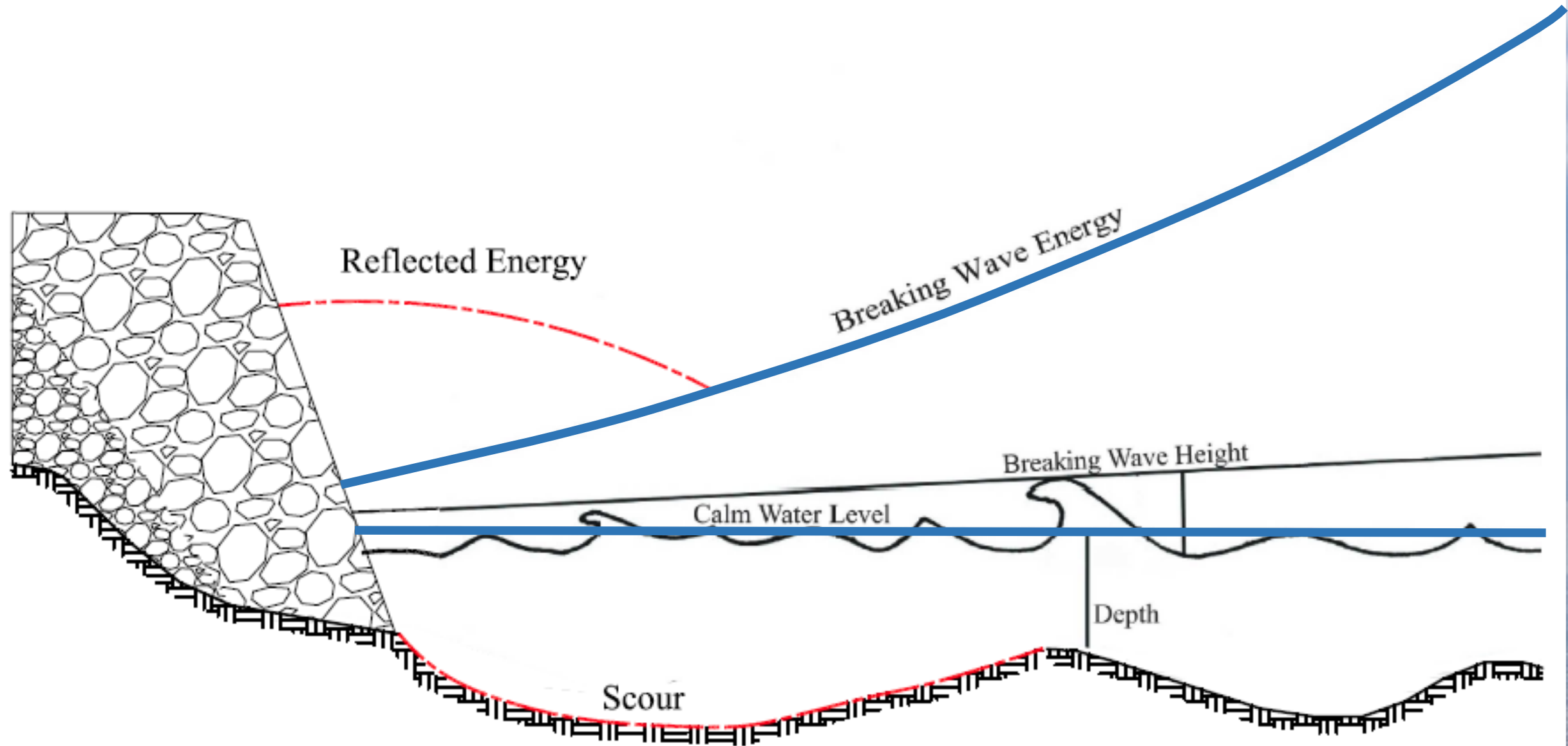
Downdrift Erosion

Revetment reflection causes
near shore sand drift to
bypass adjacent shoreline



11/30/2011





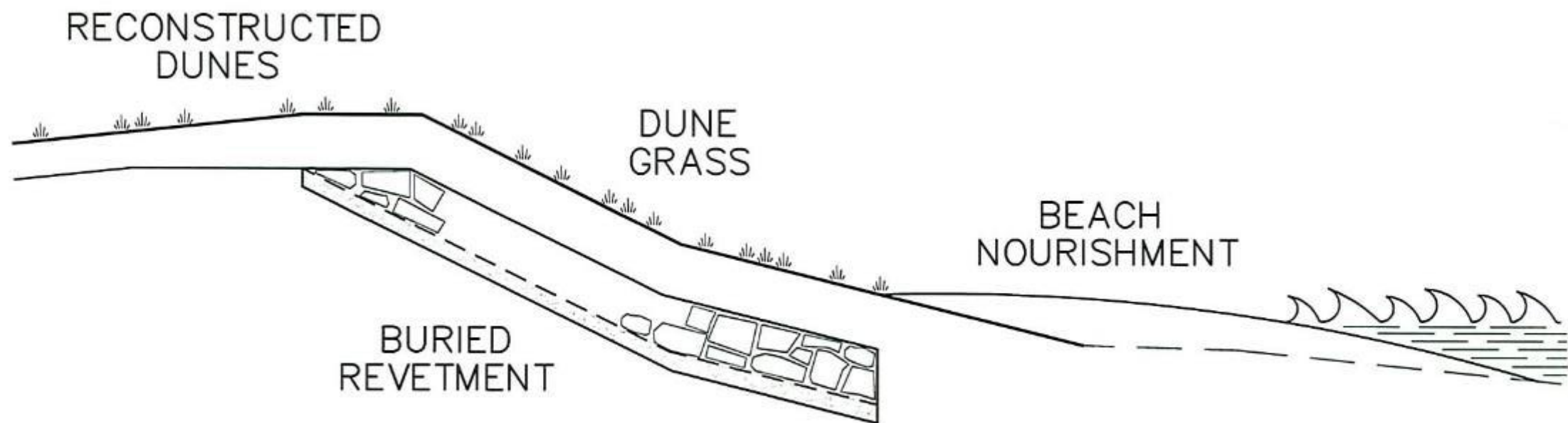
Give the lake and beach plenty of room to exercise
its natural dynamics without interference at
common water levels

THIS



NOT THIS

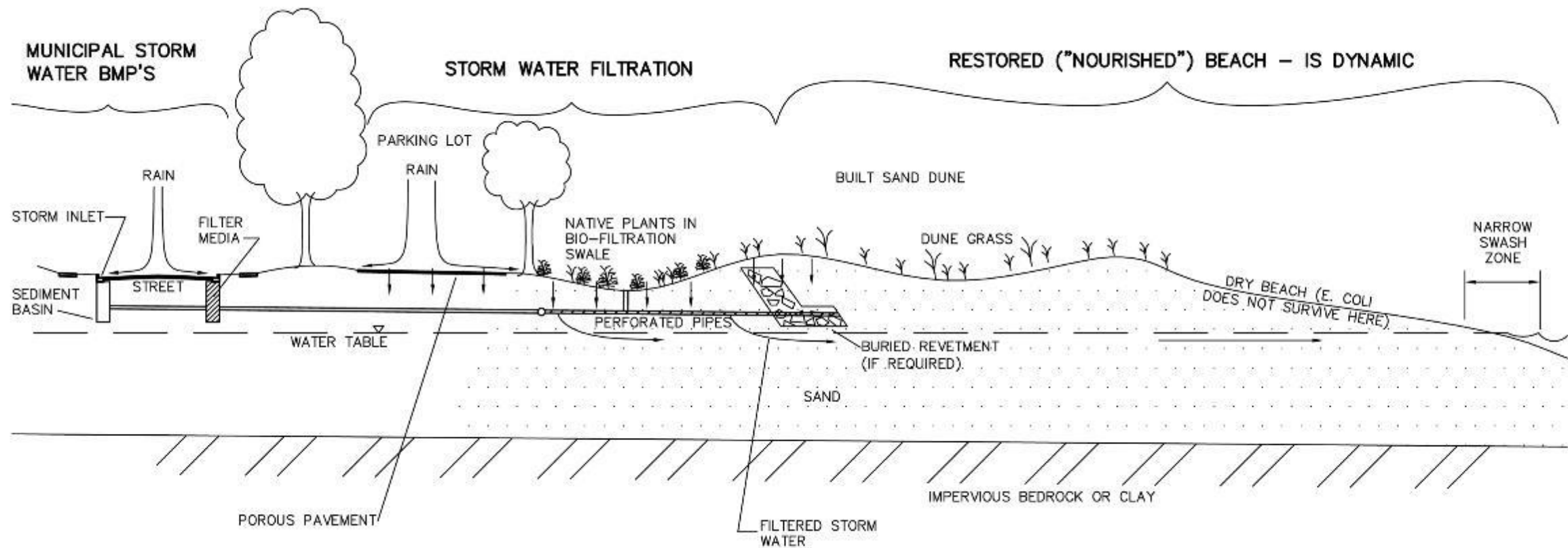




Inland (“Buried”) Revetment Construction







Questions?

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