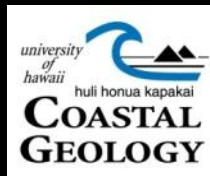
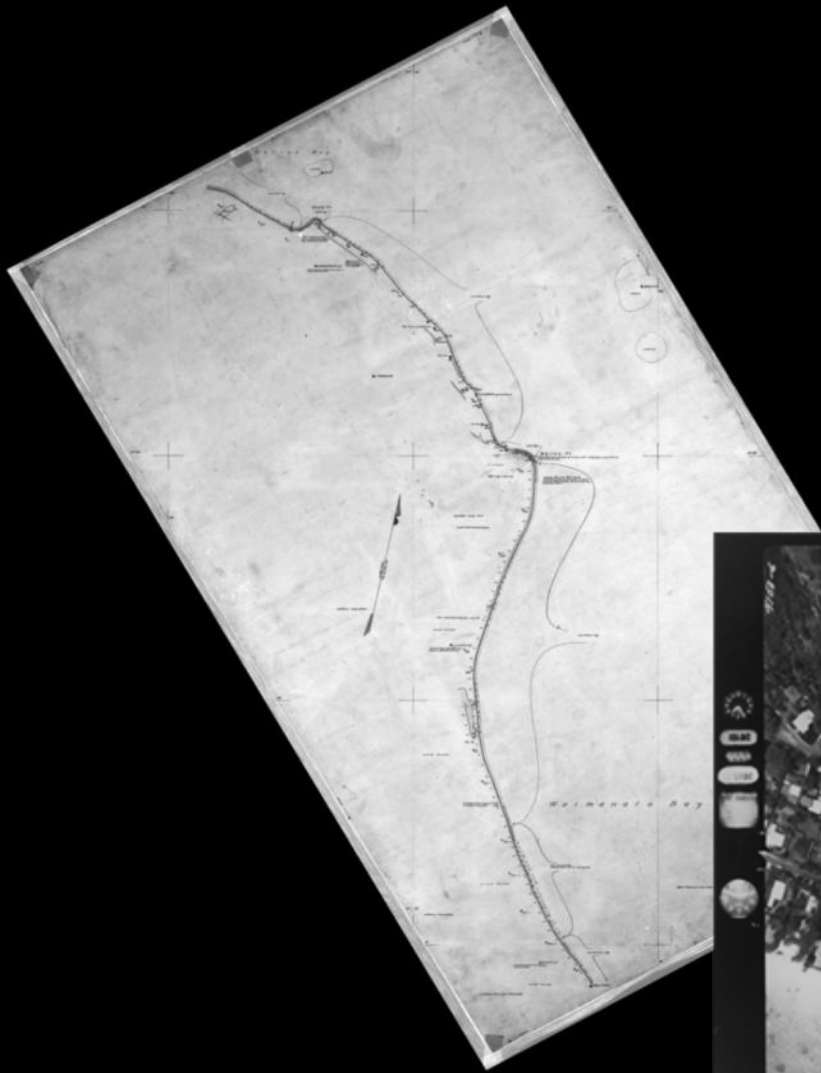


Southeast Oahu Historical Shoreline Change

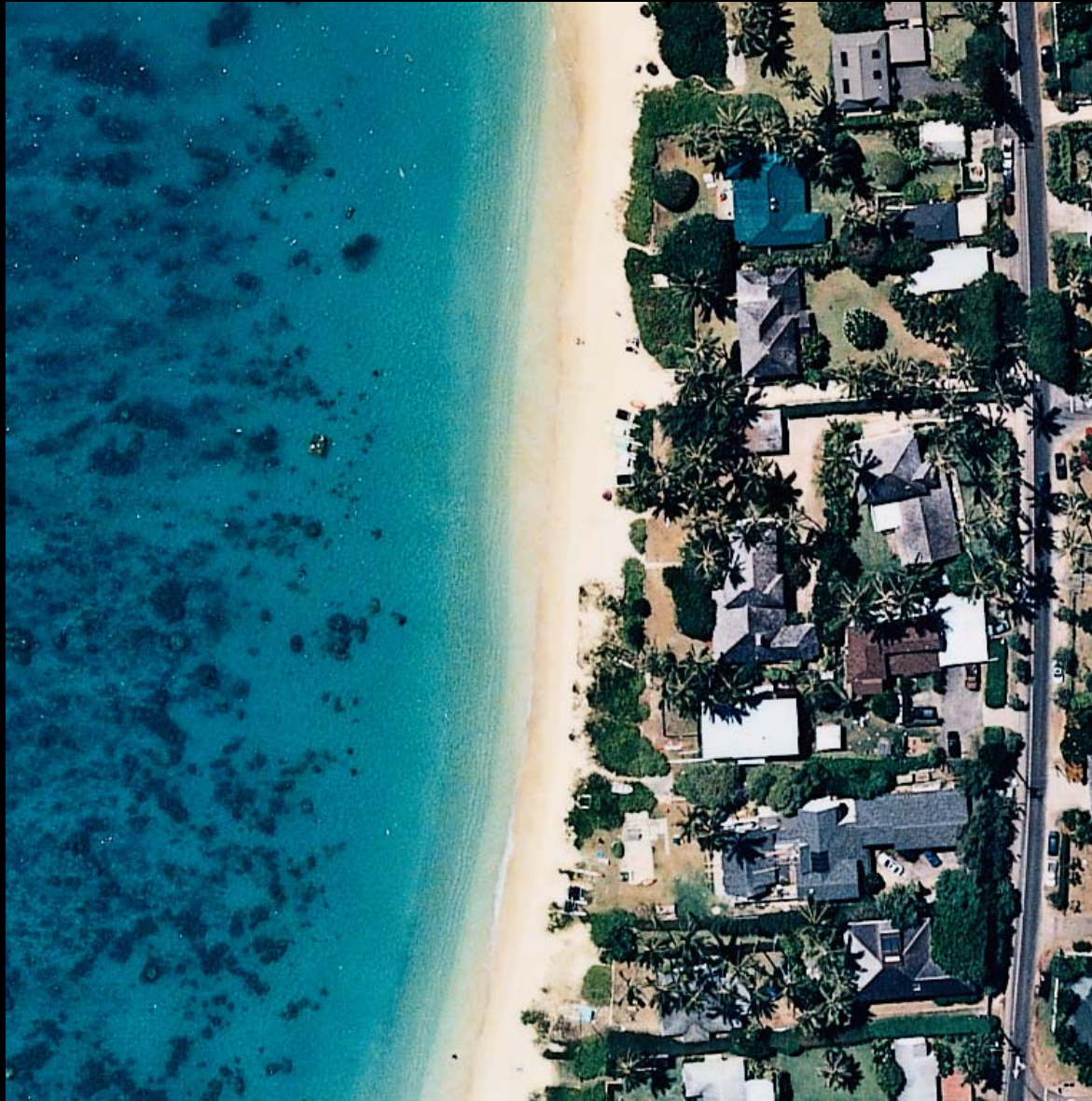
Bradley Romine, Chip Fletcher, Neil Frazer,
Ayesha Genz, Matthew Barbee, Siang-Chyn Lim, Thomas Smith



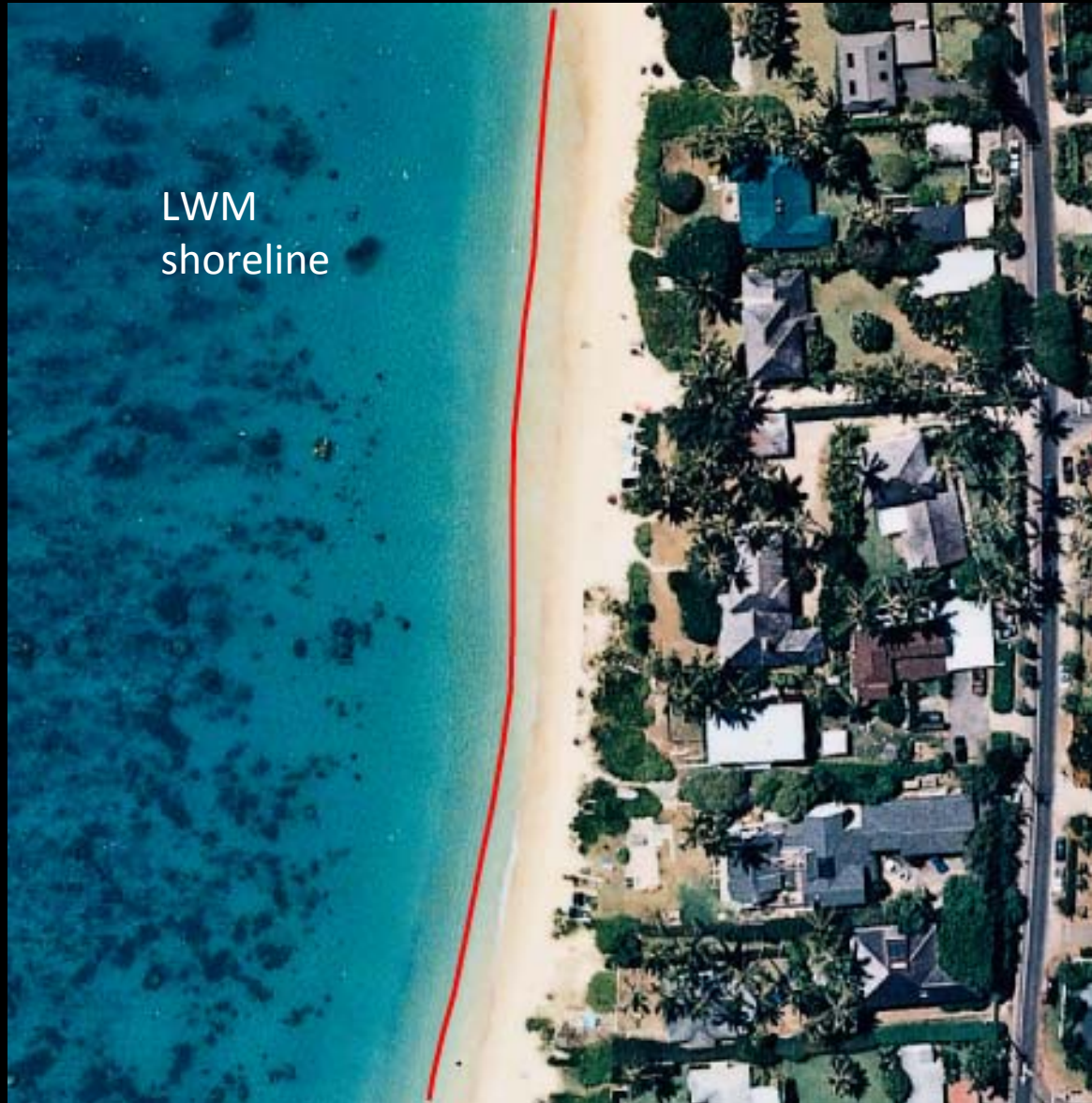
Historical Shorelines



Mapping the Shoreline

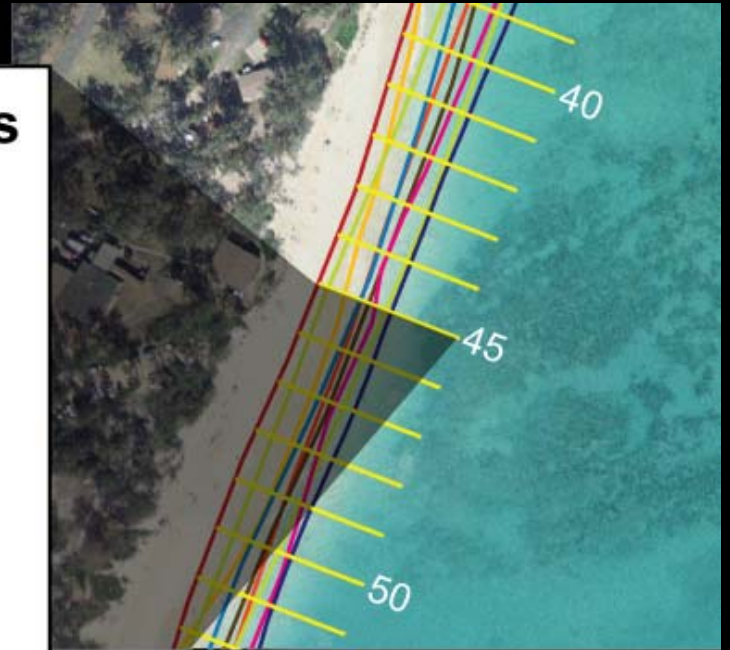
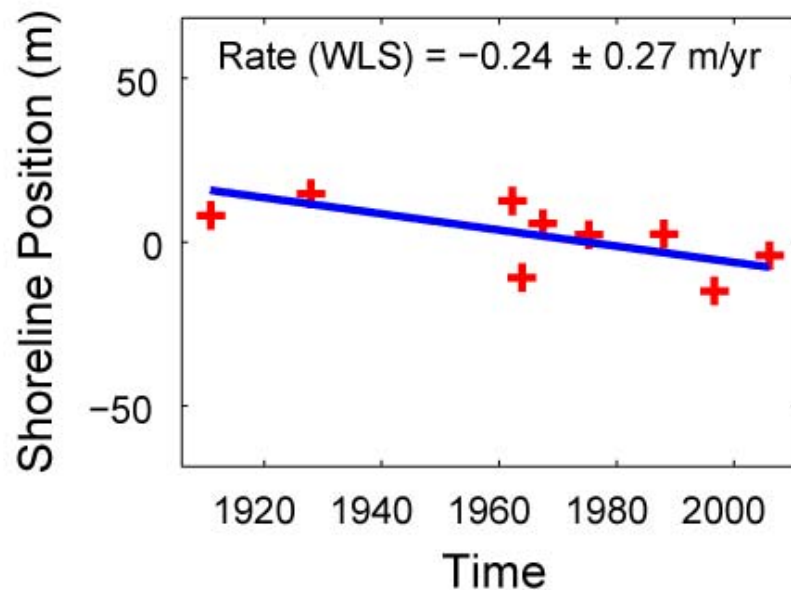


Mapping the Shoreline



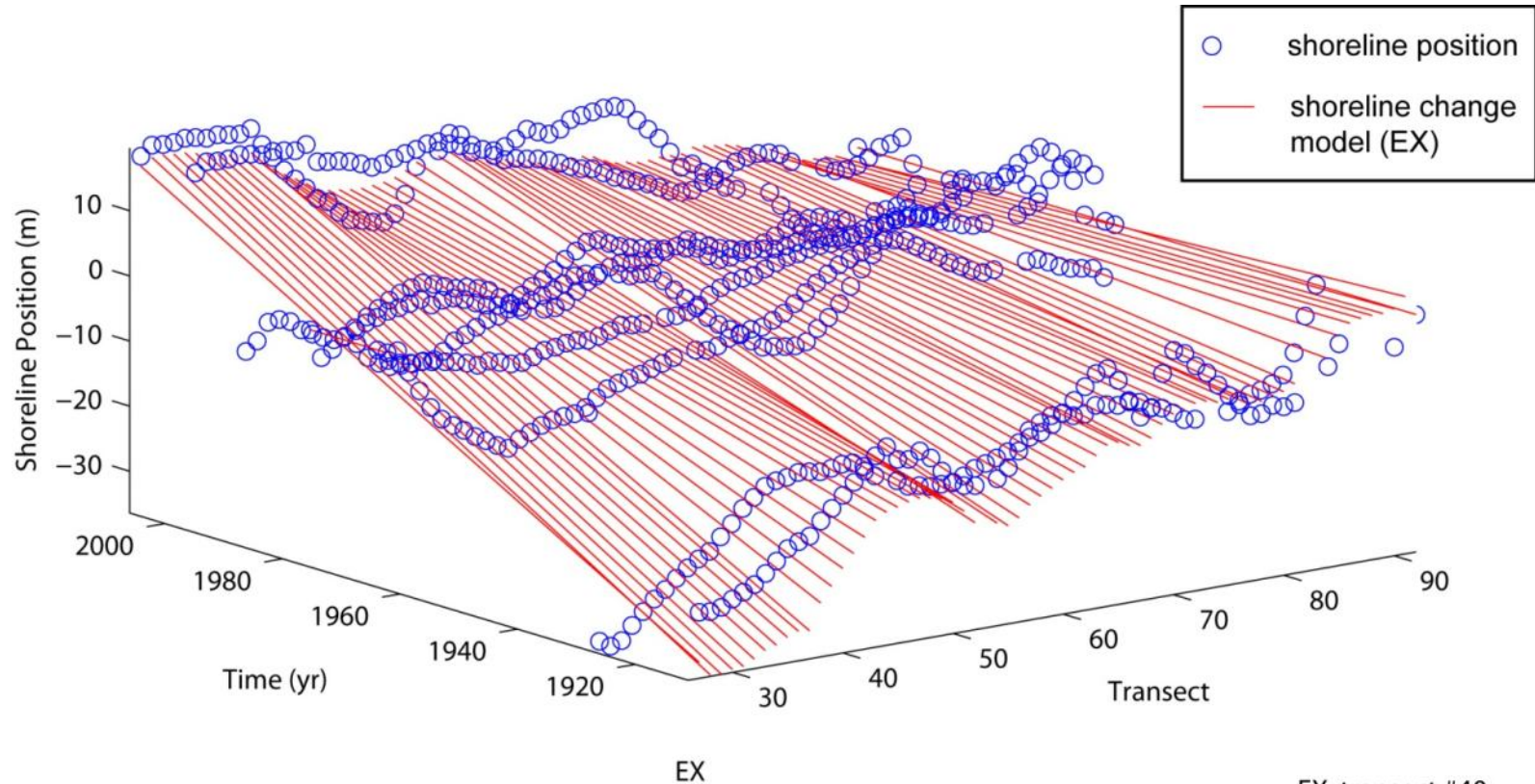
Measuring Shoreline Change

Time Series of Shoreline Positions

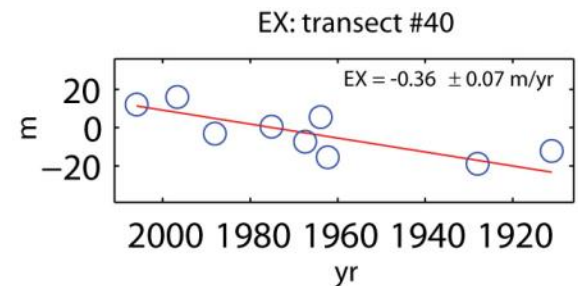


* Each data point has an uncertainty that is not depicted, but is used in the rate calculation.

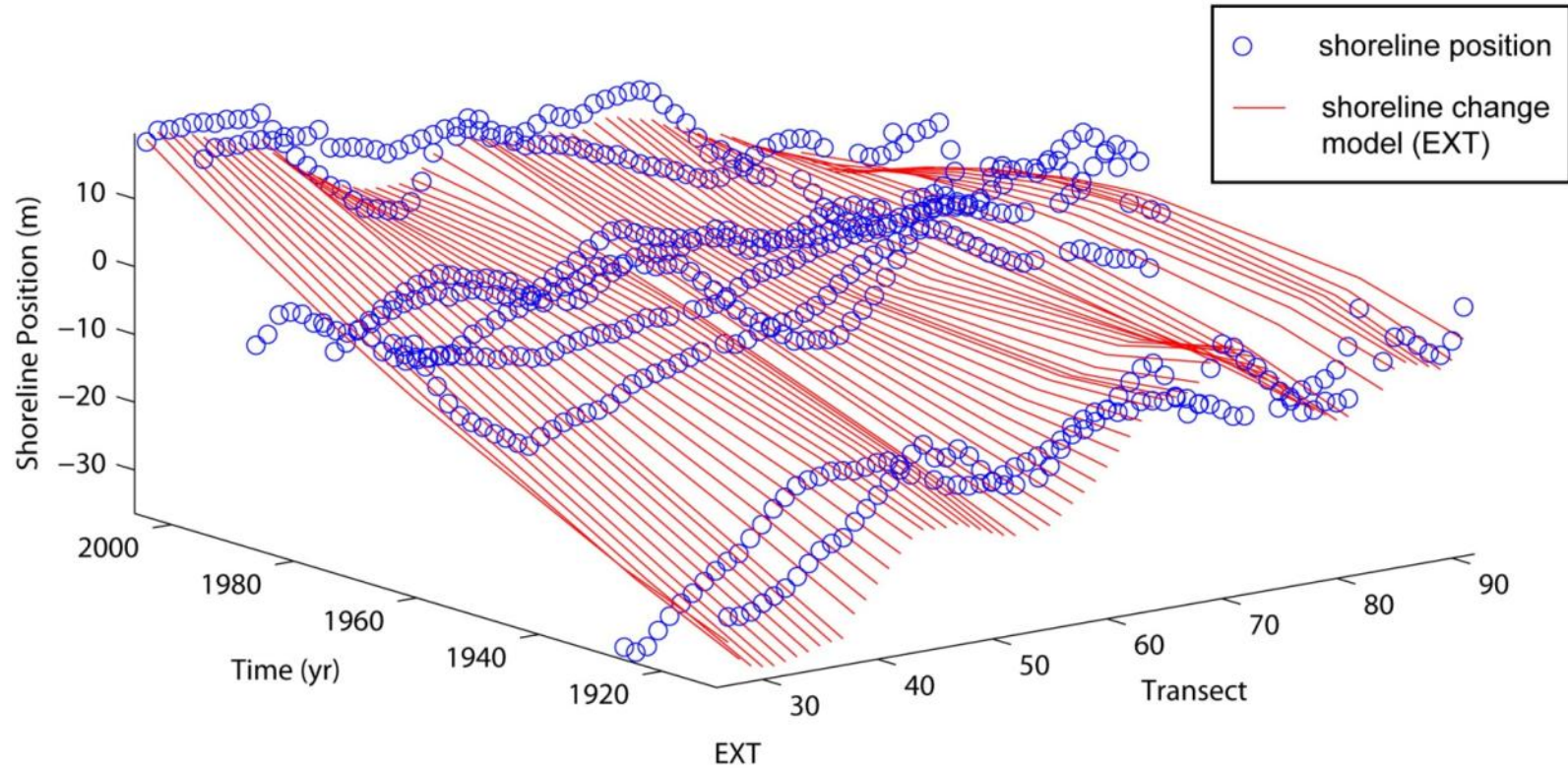
EX Polynomial Rate Method



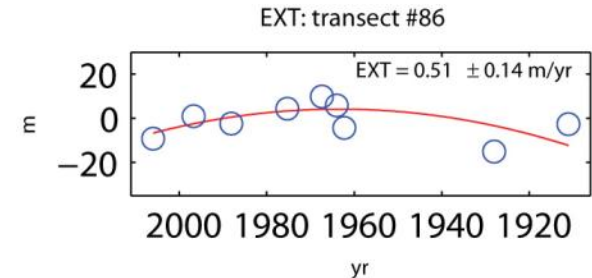
- Employs data from the entire beach to calc. a rate at each transect
- Rates are constant in time



EXT Polynomial Rate Model

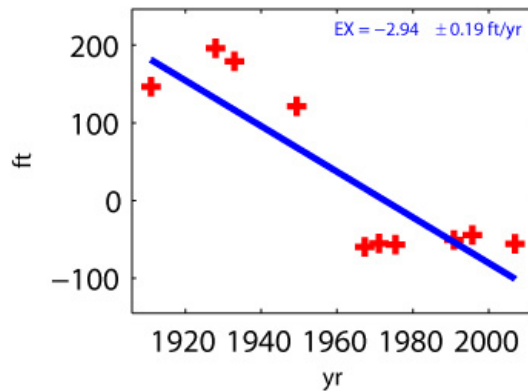


- Employs data from the entire beach to calc. a rate at each transect
- Rates can vary with time (acceleration)



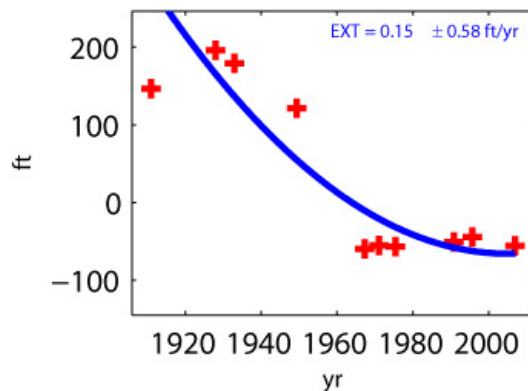
EX vs. EXT

EX



- Linear trend of whole time series of shorelines
- EX method provides a long-term rate

EXT



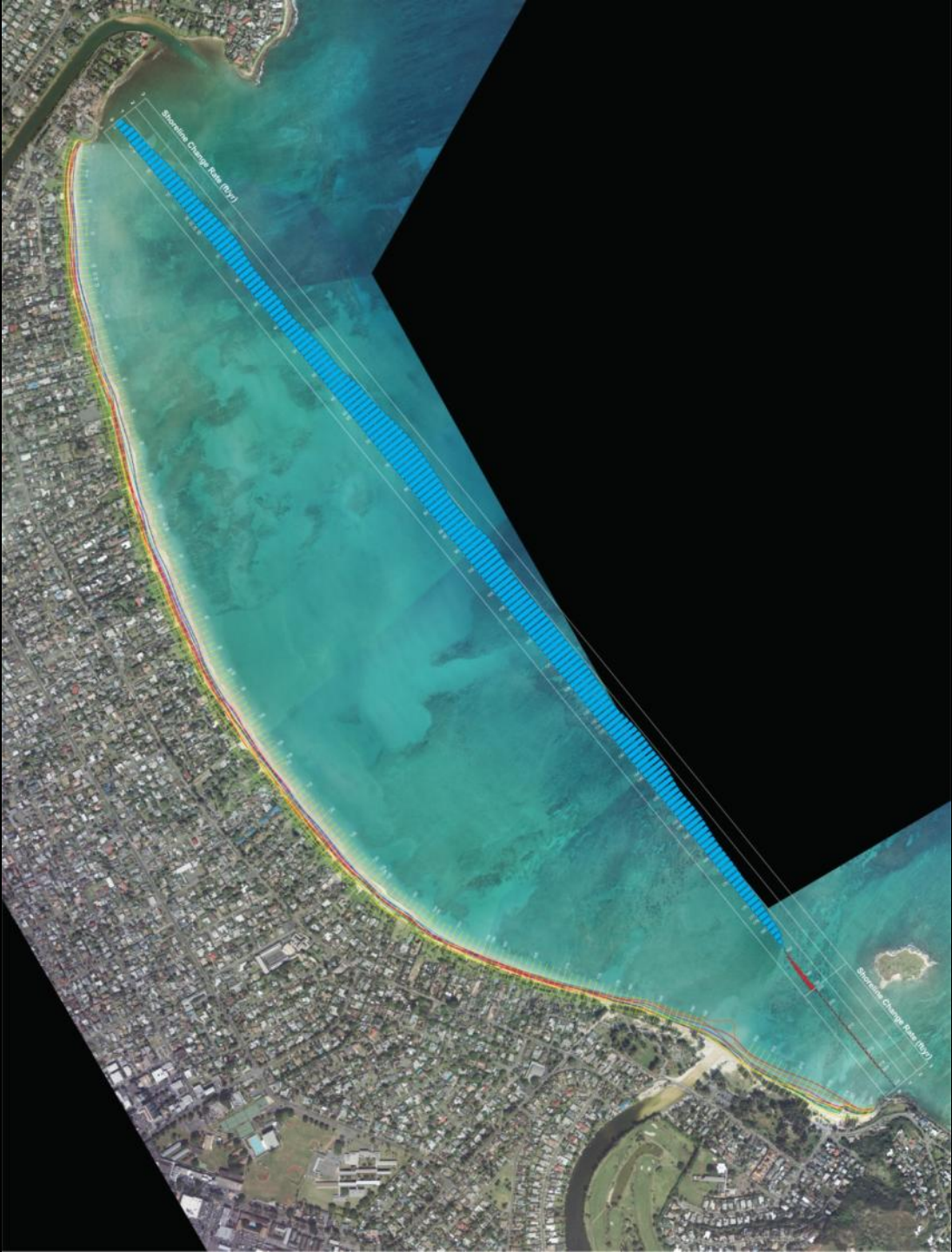
EXT may provide additional qualitative info:

- How has rate changed with time?
- More recent trends?

* We report EXT rates from the most recent shoreline time (2005): “the present rate”

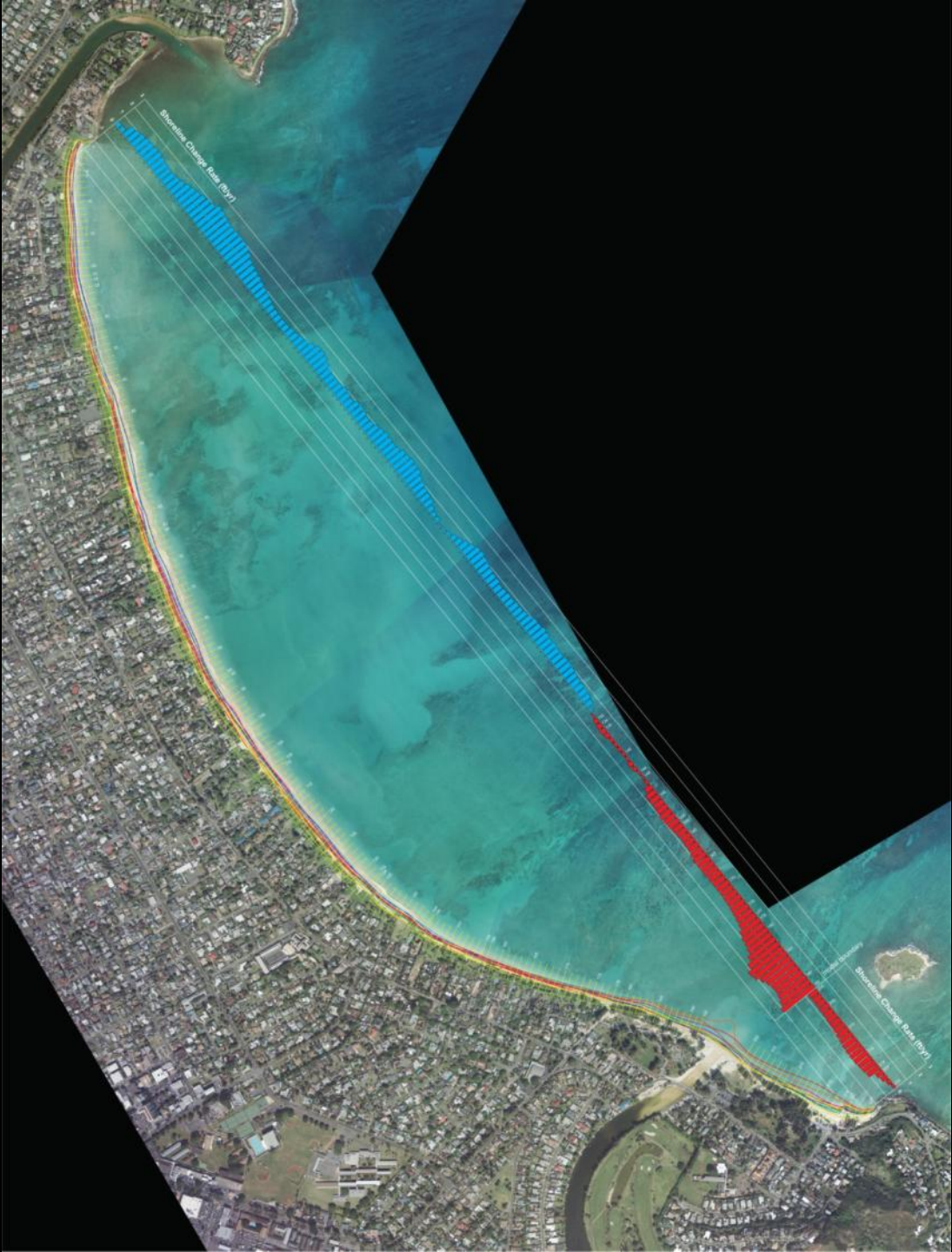
Kailua
Beach

EX rates



Kailua
Beach

EXT rates



Lanikai Beach

EX rates



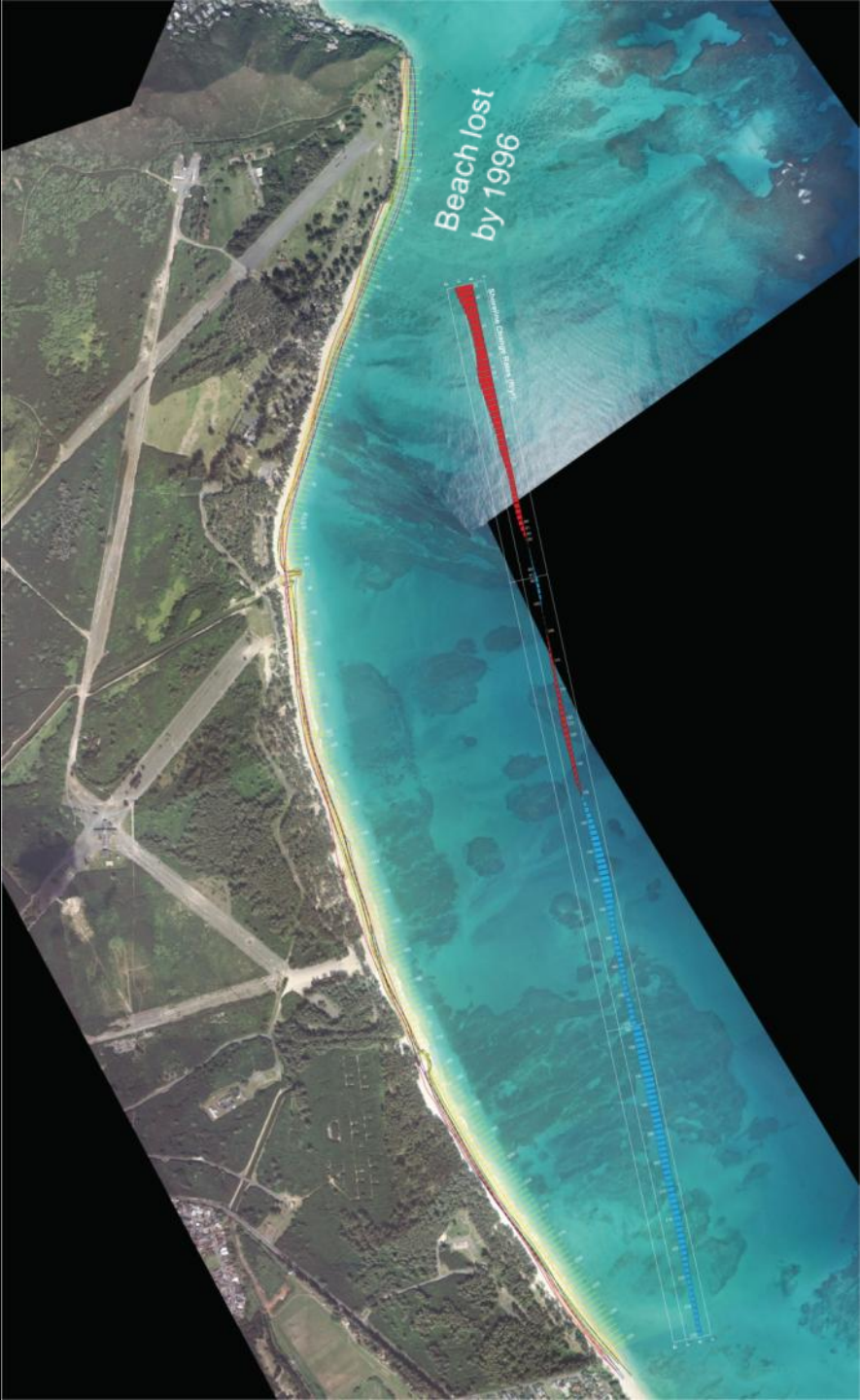
Lanikai Beach

EXT rates



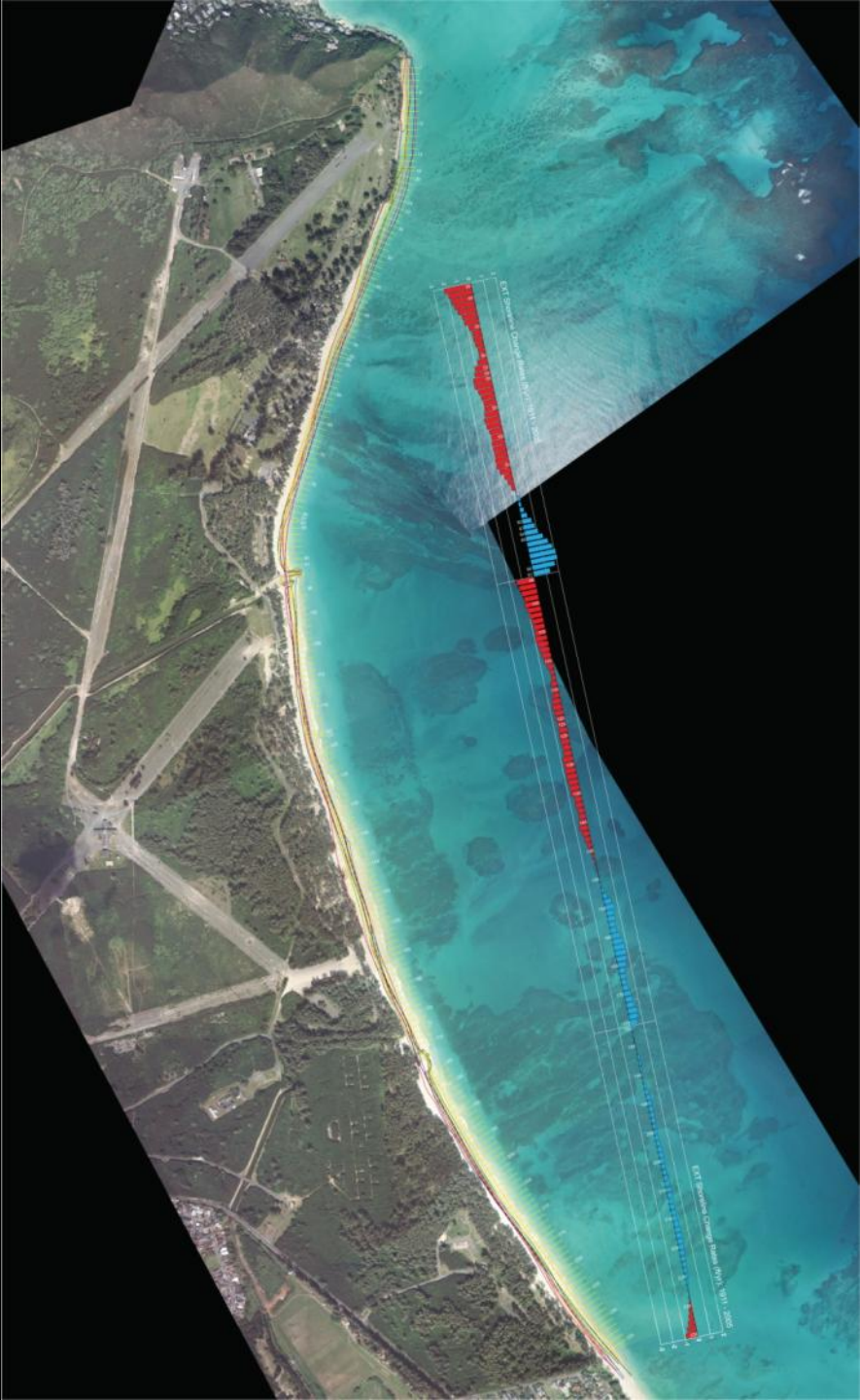
Bellows Beach

EX rates



Bellows Beach

EXT rates



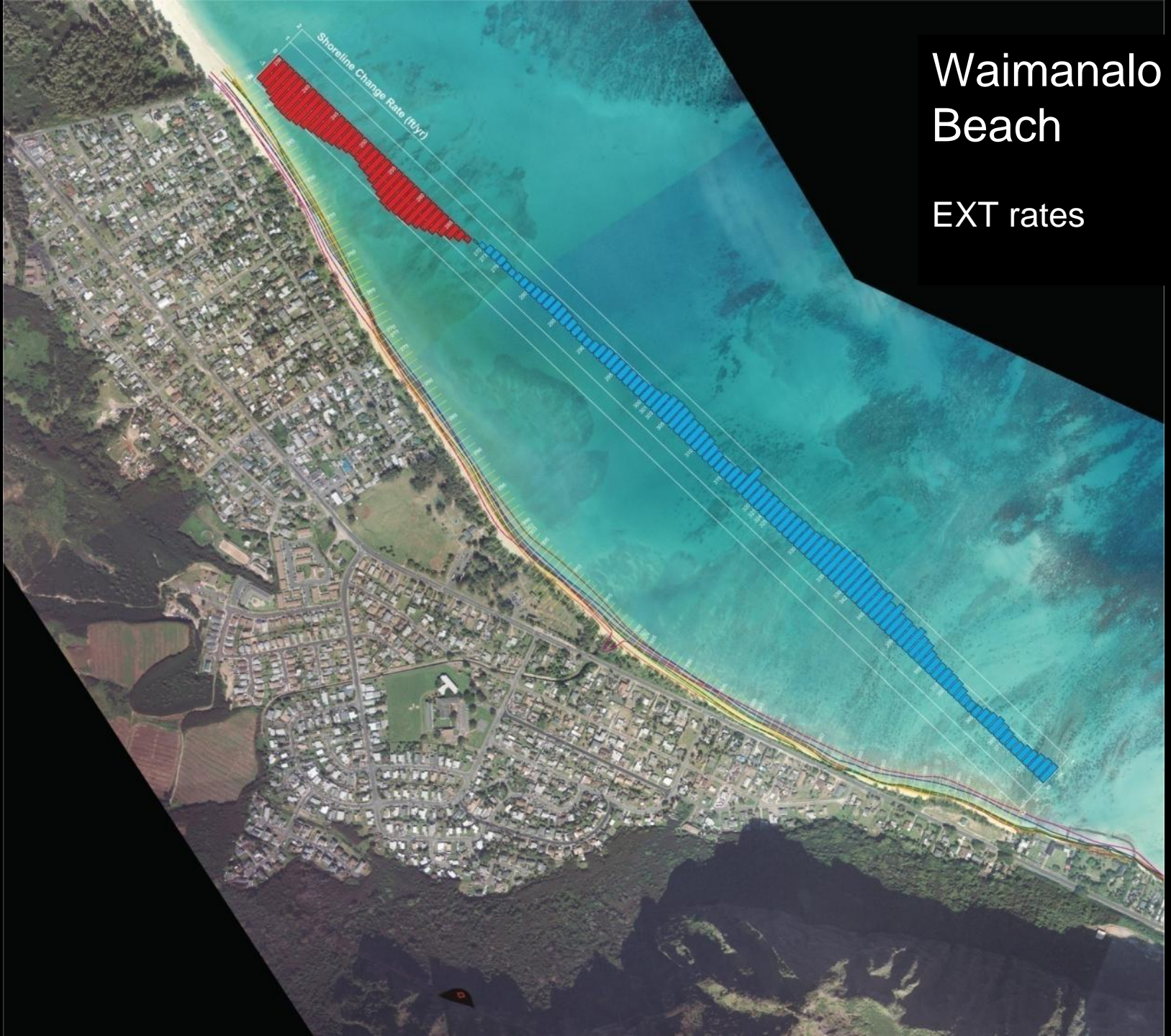
Waimanalo Beach

EX rates



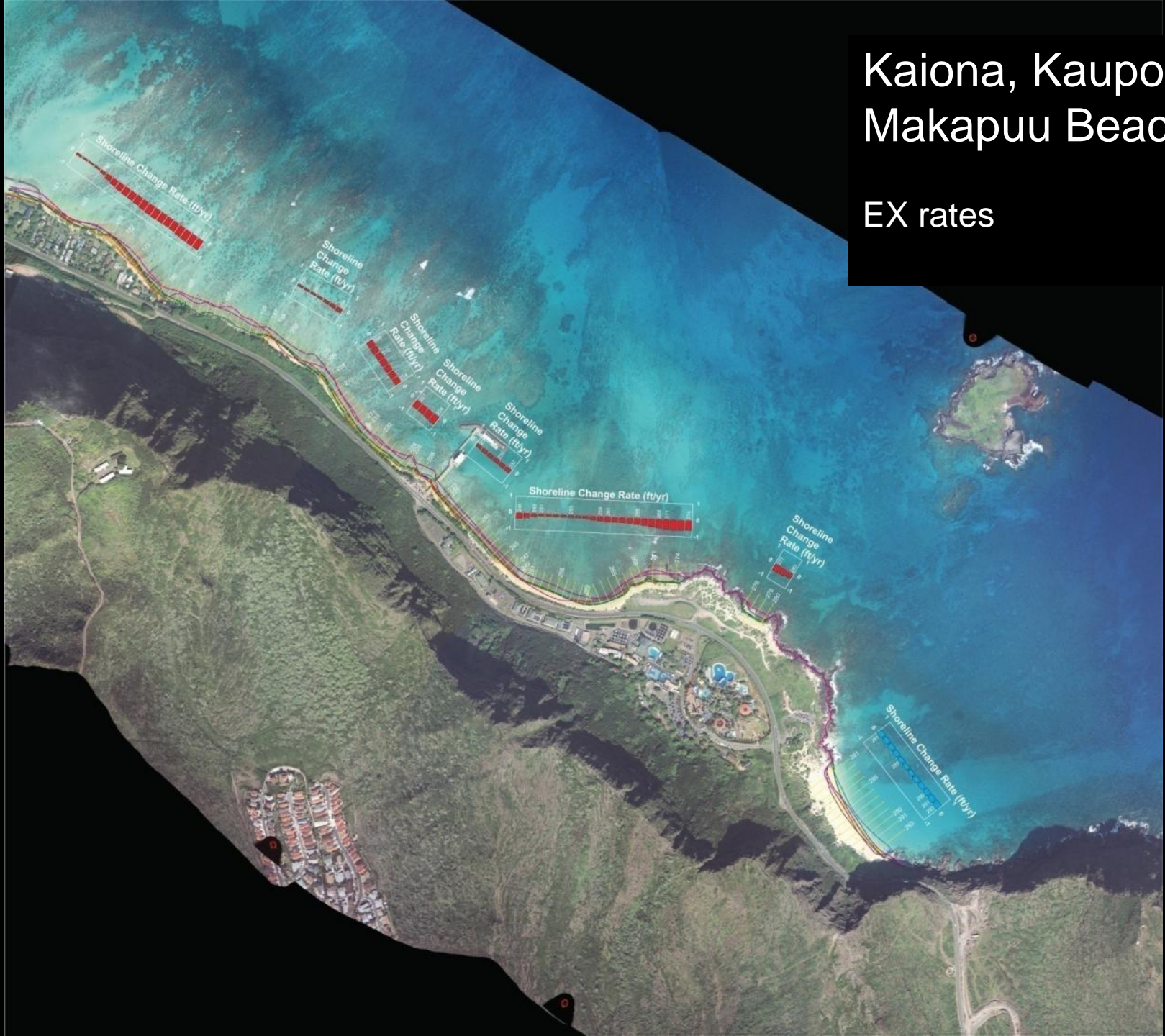
Waimanalo Beach

EXT rates



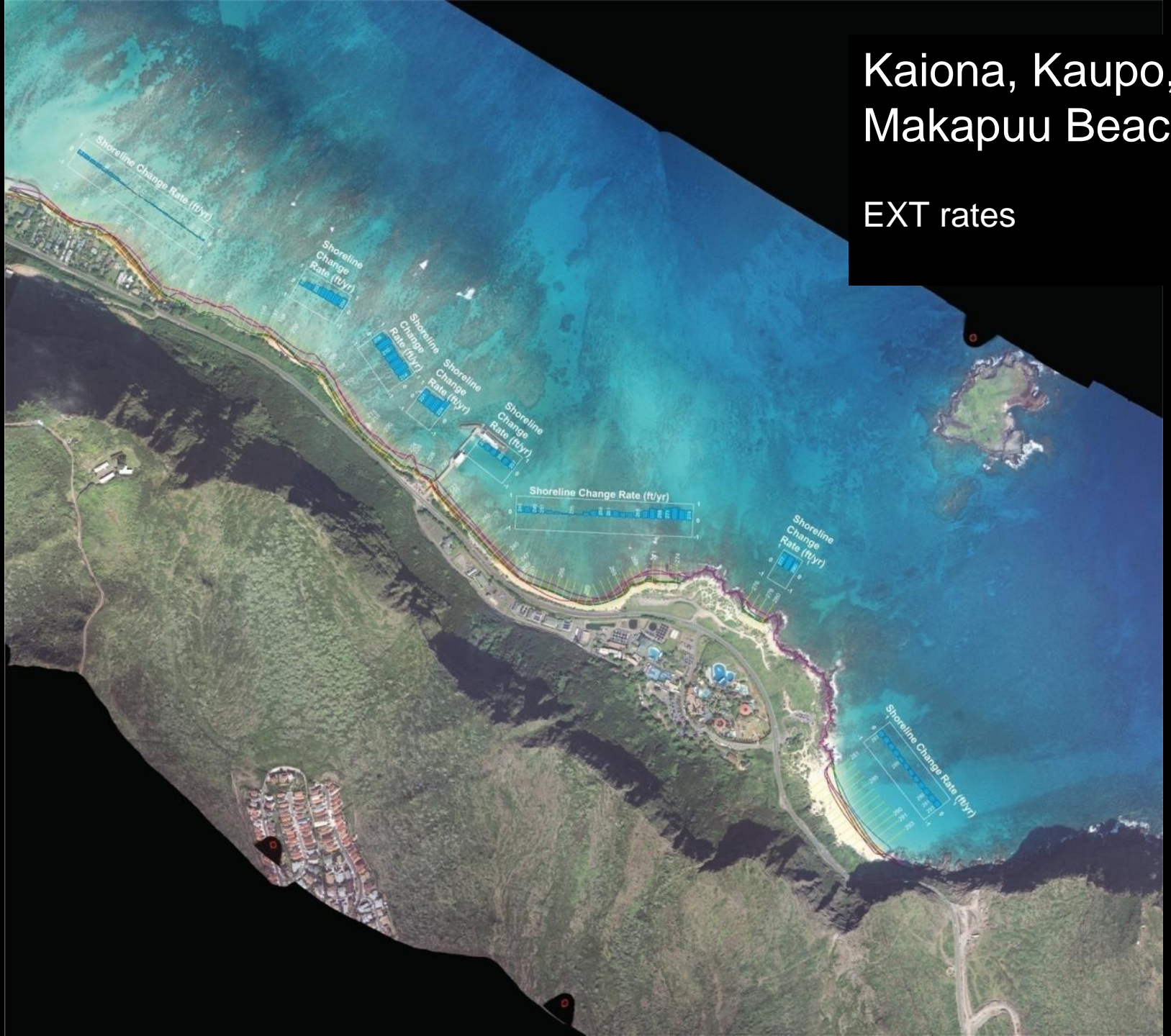
Kaiona, Kaupo, Makapuu Beaches

EX rates



Kaiona, Kaupo, Makapuu Beaches

EXT rates



Hawaii Coastal Erosion Website

Shoreline Study of Oahu, Maui, and Kauai

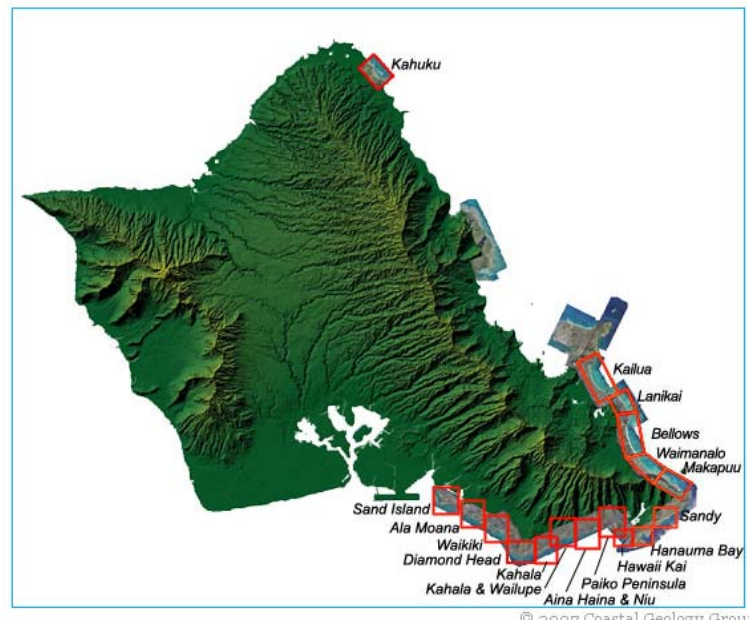
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For Planners

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- Historical T-Sheet
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- Air Photo Coverage

Oahu Shoreline Study Erosion Maps



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