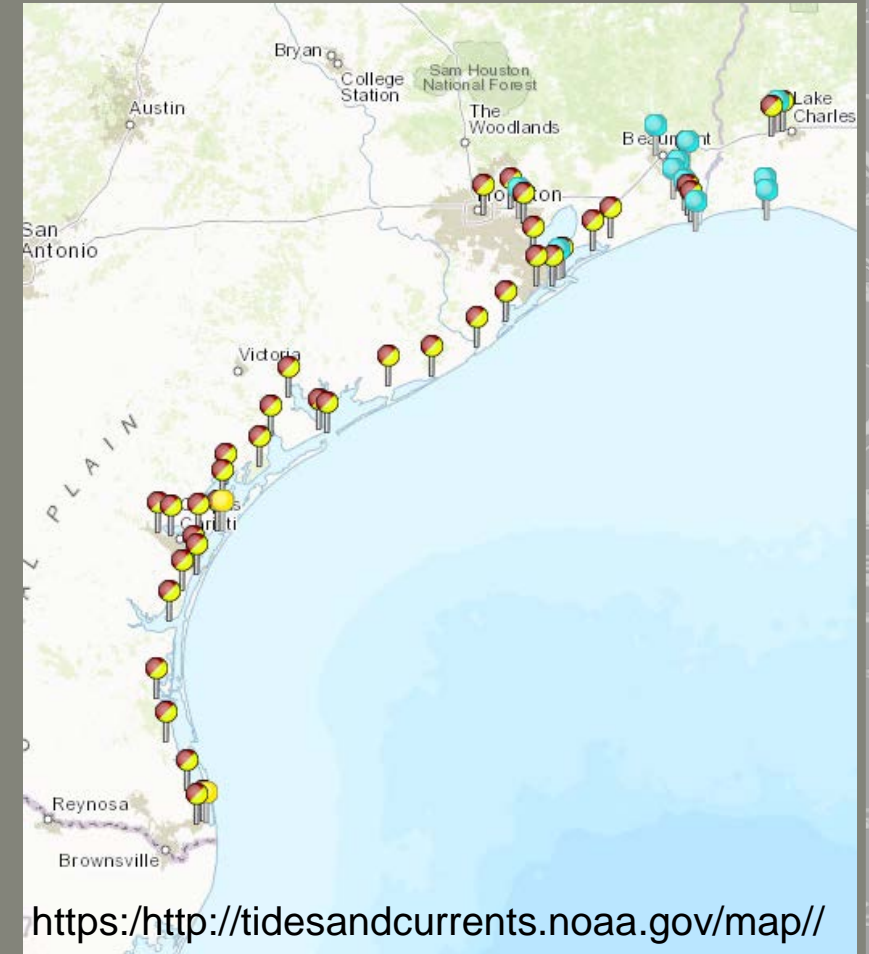


TEXAS COASTAL OCEAN OBSERVATION NETWORK (TCOON)

Coraggio Maglio, PE – USACE, Galveston District H&H
Branch Chief

Dr. Paul Hamilton, PhD – USACE (TCOON POC),
Galveston District

15 November 2016



"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."



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NEED FOR AN OBSERVATION NETWORK



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of Engineers**
Waterways Experiment
Station

Technical Report CHL-97-29
October 1997

Needs Assessment for Water-Level Gauging Along the Texas Coast for the U.S. Army Engineer District, Galveston

by Nicholas C. Kraus, WES

*Carroll I. Thurlow, Daniel J. Heilman, Anne-Lise Lindquist,
Mark W. Earle, Texas A&M University-Corpus Christi*

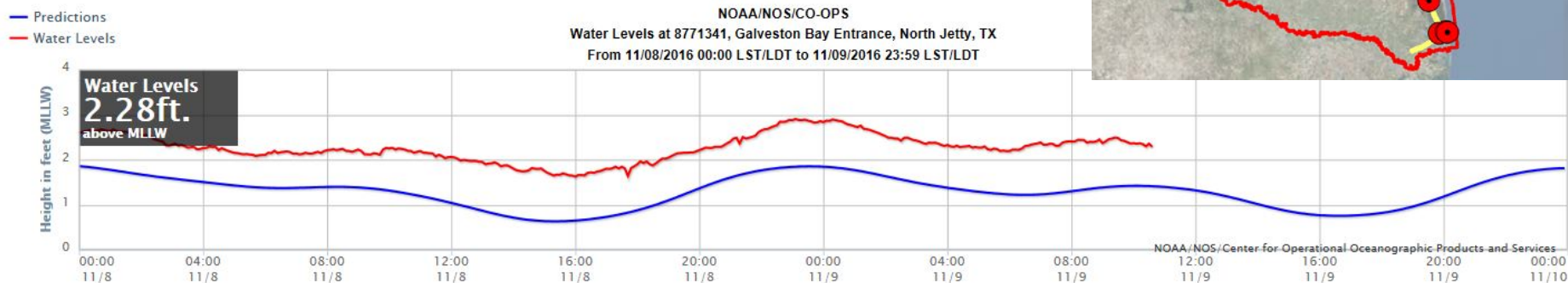
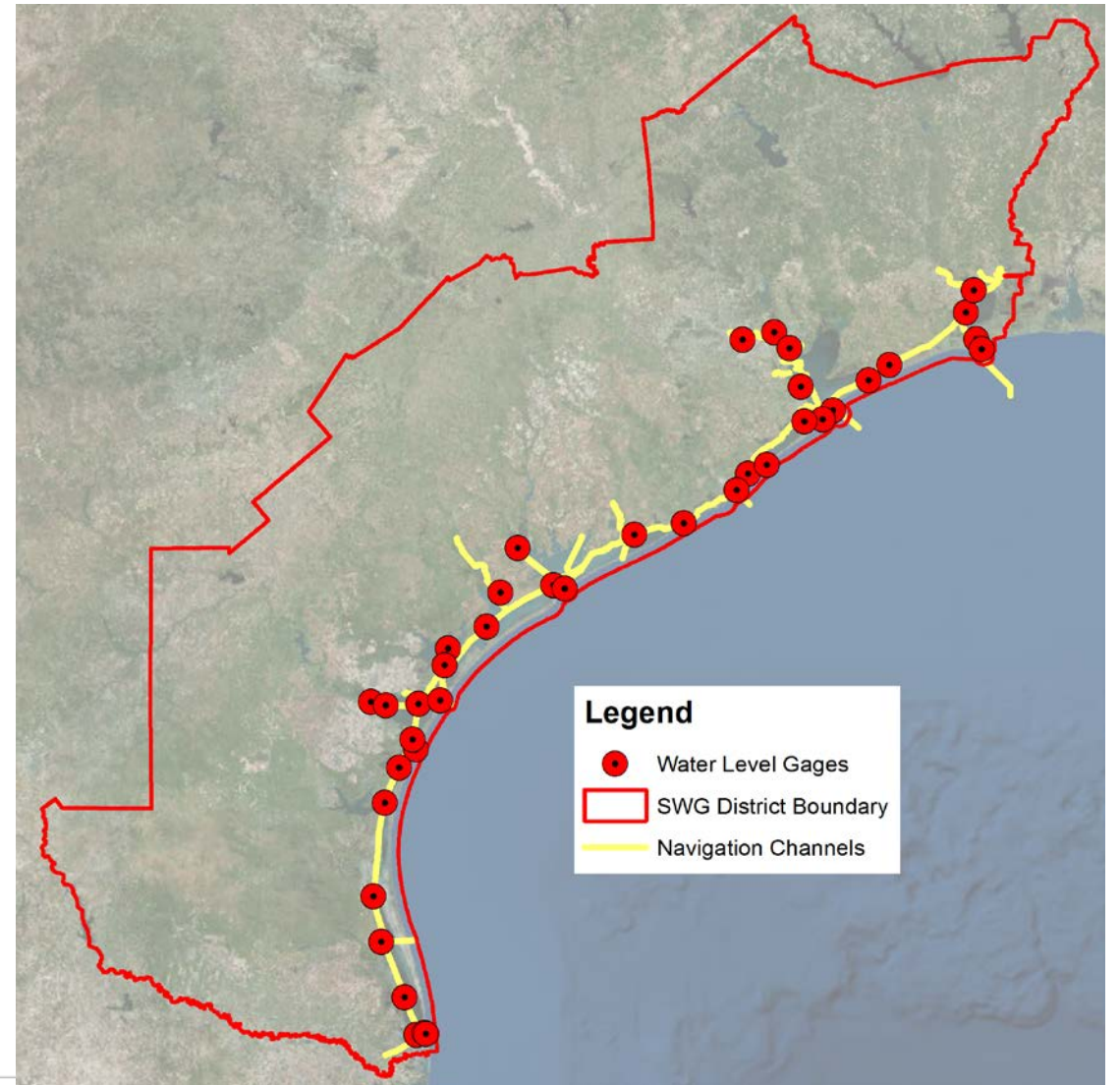


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TCOON OVERVIEW

- 5-year interagency agreement (USACE/NOAA)
 - Awarded March 2016
- Expansive network throughout Texas
 - 30 stations planned
- Major benefits for user community
 - Reduces transit delays
 - Reduces risk of groundings
 - Improves maintenance of navigable waterways
 - Improves data for coastal studies
- Real-time data available
 - Water level
 - Wind speed and direction
 - Temp & Pressure

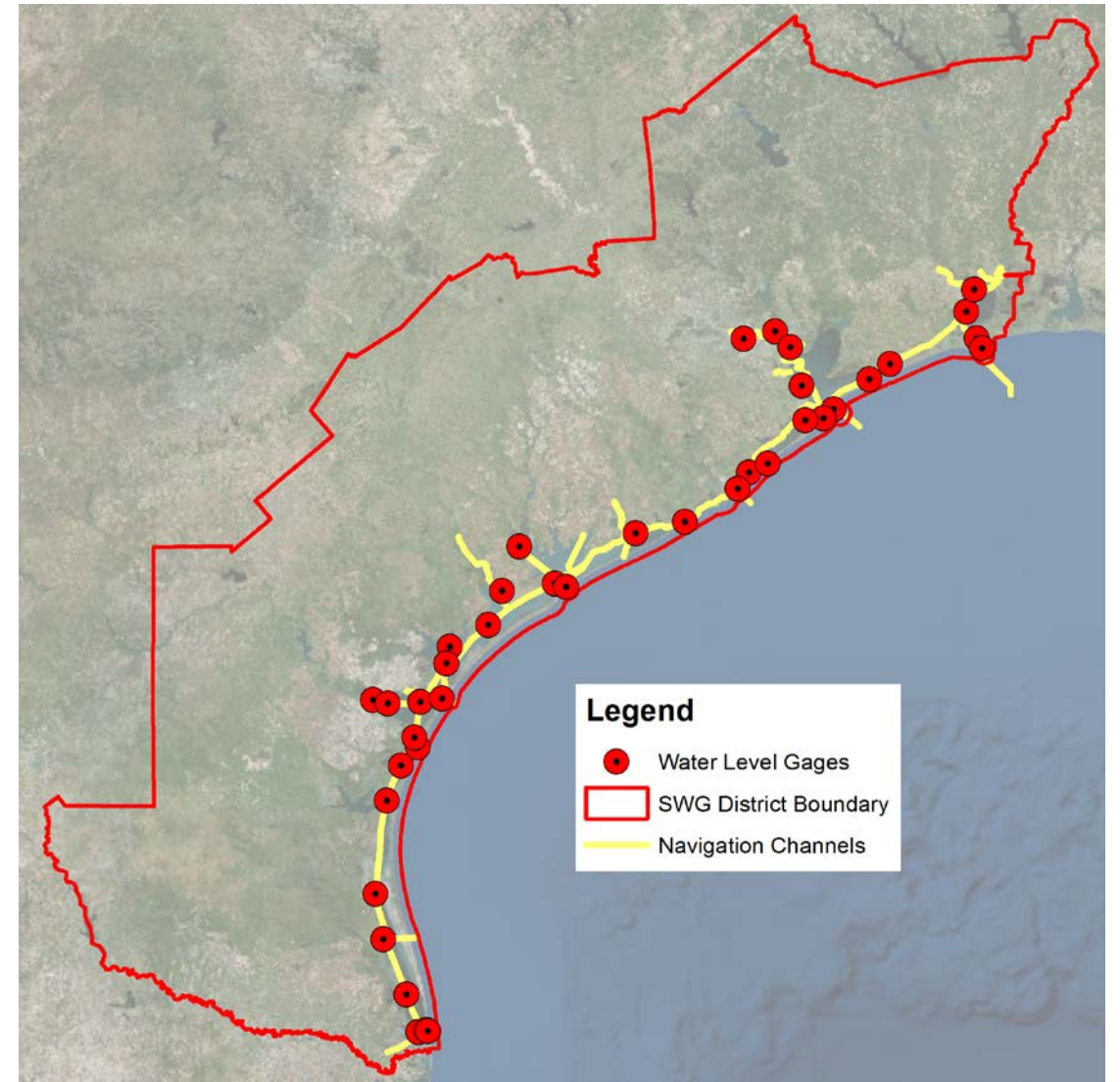


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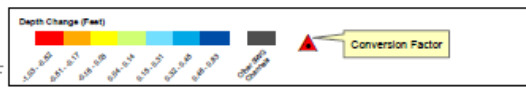
TCOON SITE STATUS

- Expansive network throughout Texas – 30 sites
 - 24 operational sites
 - 6 not displaying data currently
 - Copano Bay
 - Seadrift
 - 2 new sentinels - operational 28 Feb 17
 - Port Aransas
 - South Padre Island Brazos Santiago Pass
 - 2 sites need to be relocated – date TBD
 - Port Ingleside
 - Realitos Peninsula - shoaled

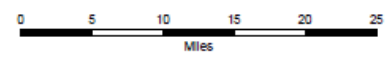


TCOON DATA IMPORTANCE

- Data allowed USACE to transition to MLLW datum from MLT



NOTES:
 1. REVISIONS ARE REFERENCED TO NEW LOW WATER AND LOWER LOW WATER VALUES IN PARALLEL NOTES.
 2. THIS PLAN SHOWS PLANNED CONVERSION FROM MLT TO MLLW. INFORMATION SHOULD BE USED FOR PLANNING PURPOSES ONLY.
 3. THIS PLAN IS PREPARED BY THE DISTRICT OFFICE OF THE U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT, GALVESTON, TEXAS.
 4. THE U.S. ARMY CORPS OF ENGINEERS IS NOT RESPONSIBLE FOR THE ACCURACY OF ANY DATA OR INFORMATION PROVIDED BY OTHER AGENCIES OR INDIVIDUALS.
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US Army Corps of Engineers
Galveston District

Author/Editor	MLT to MLLW Datum Conversion
Project No.	1454000
Scale	1:454,000
Prepared by	USACE
Checked by	USACE
Approved by	USACE
Date	October 27, 2013

MLT TO MLLW DATUM CONVERSION
 US ARMY CORPS OF ENGINEERS
 GALVESTON DISTRICT
 GSWW and Tributaries



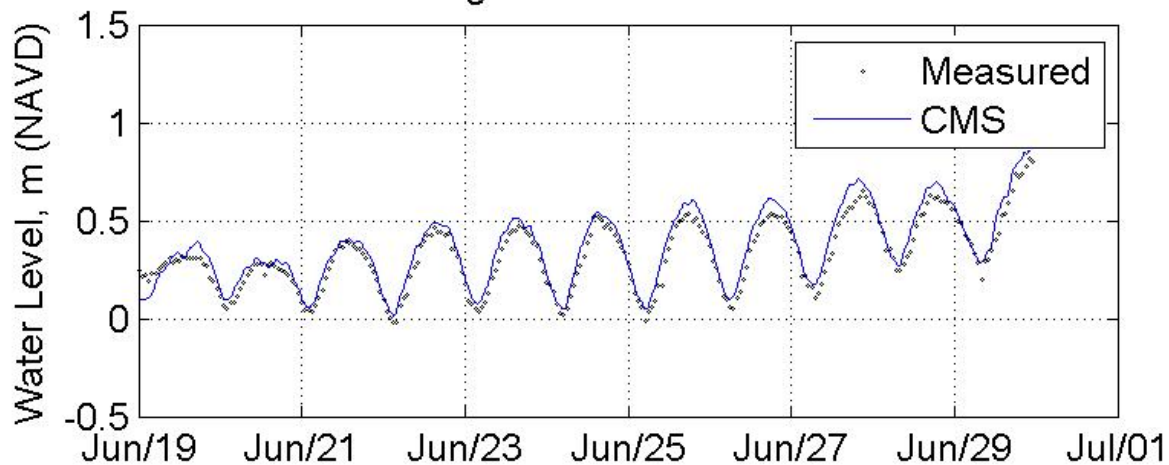
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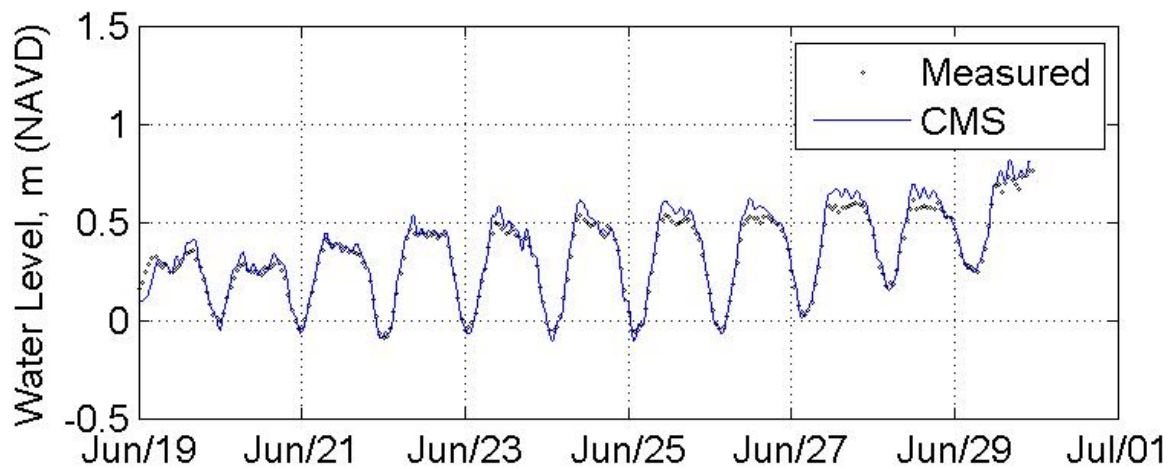
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EXAMPLE APPLICATION: MODEL VALIDATION/CALIBRATION

Eagle Point Water Level



Pier 21 Water Level



ERDC/CHL TR-11-10

Coastal and Hydraulics Laboratory



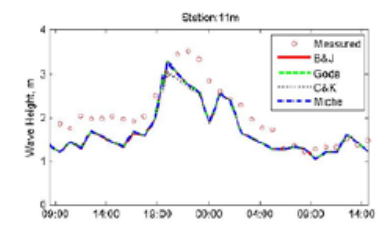
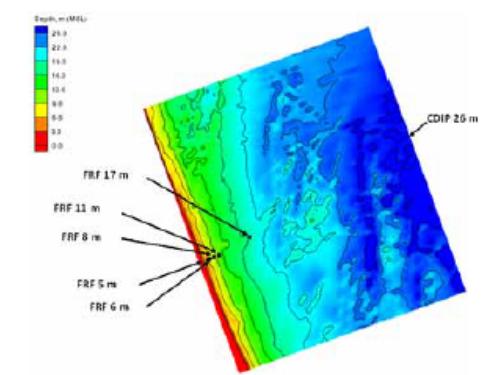
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Engineer Research and Development Center

Verification and Validation of the Coastal Modeling System

Report 2: CMS-Wave

Lihwa Lin, Zeki Demirebilek, Rob Thomas, and James Rosati, III

December 2011

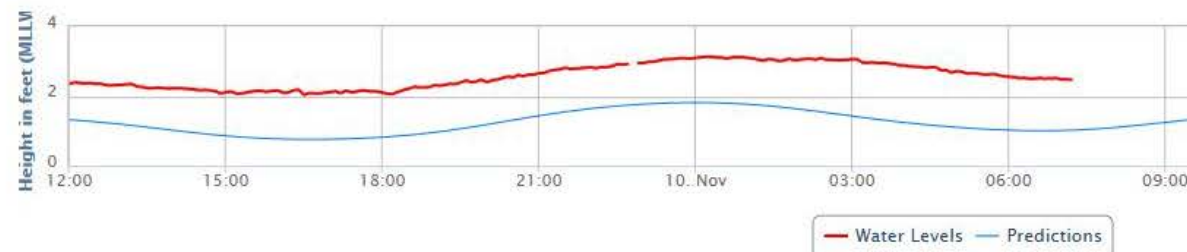


EXAMPLE APPLICATION: REAL-TIME WATER LEVEL AND METEOROLOGICAL DATA

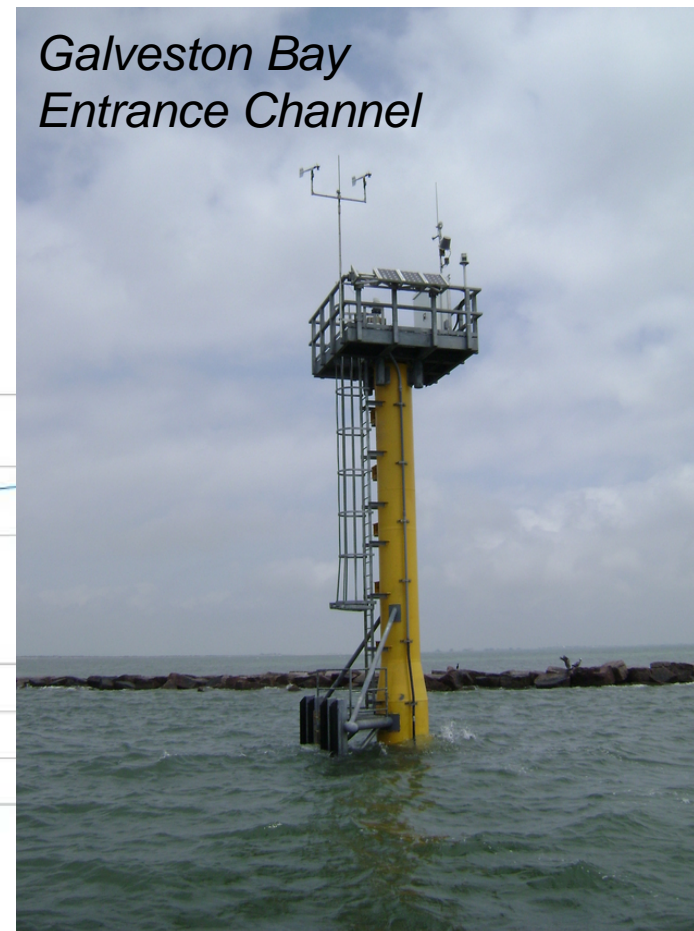
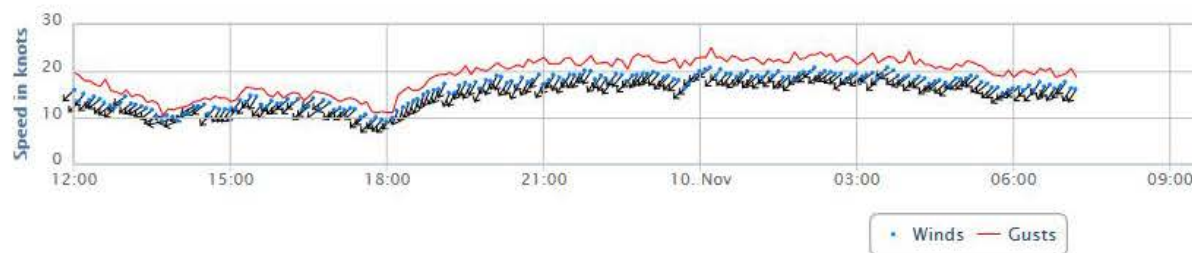
Real-time data available:

- Water level (MLLW)
- Wind (speed, gusts, direction)
- Currents (in some locations)

Water Levels
2.47ft.
above MLLW
as of 11/10/2016 07:12 LST/LDT



Winds
16.13kn.
from NNE
as of 11/10/2016 07:12 LST/LDT



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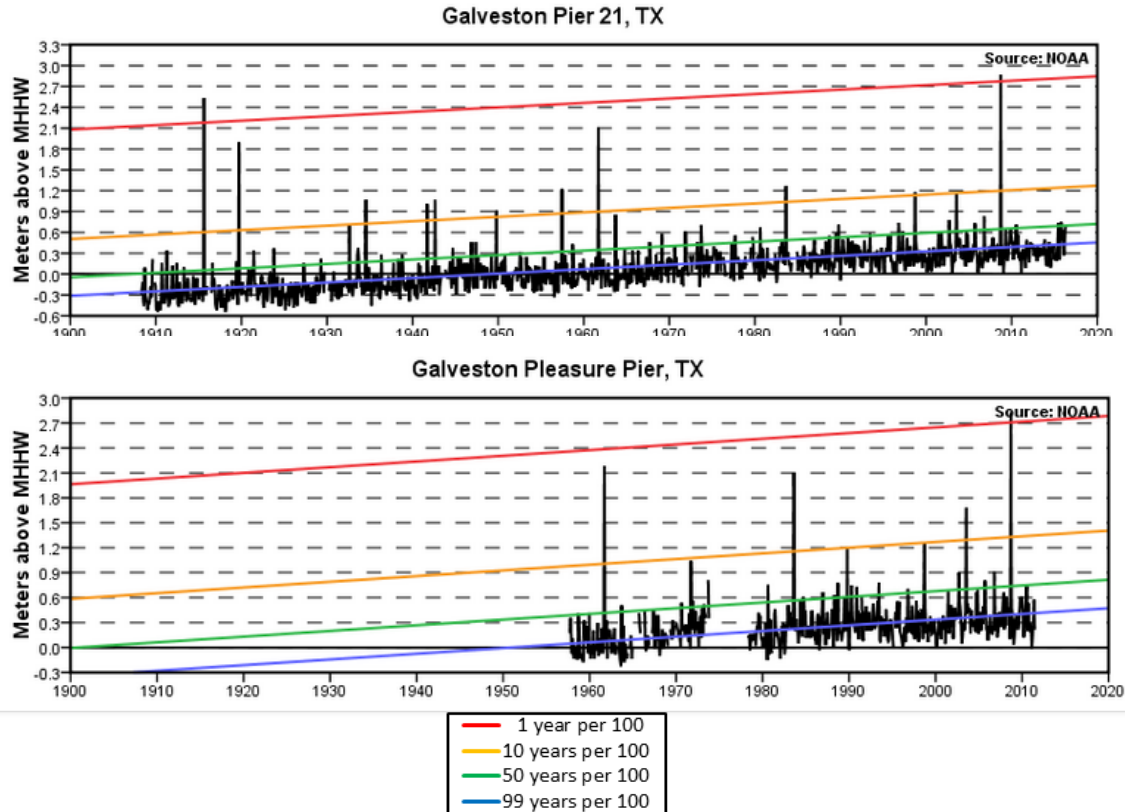


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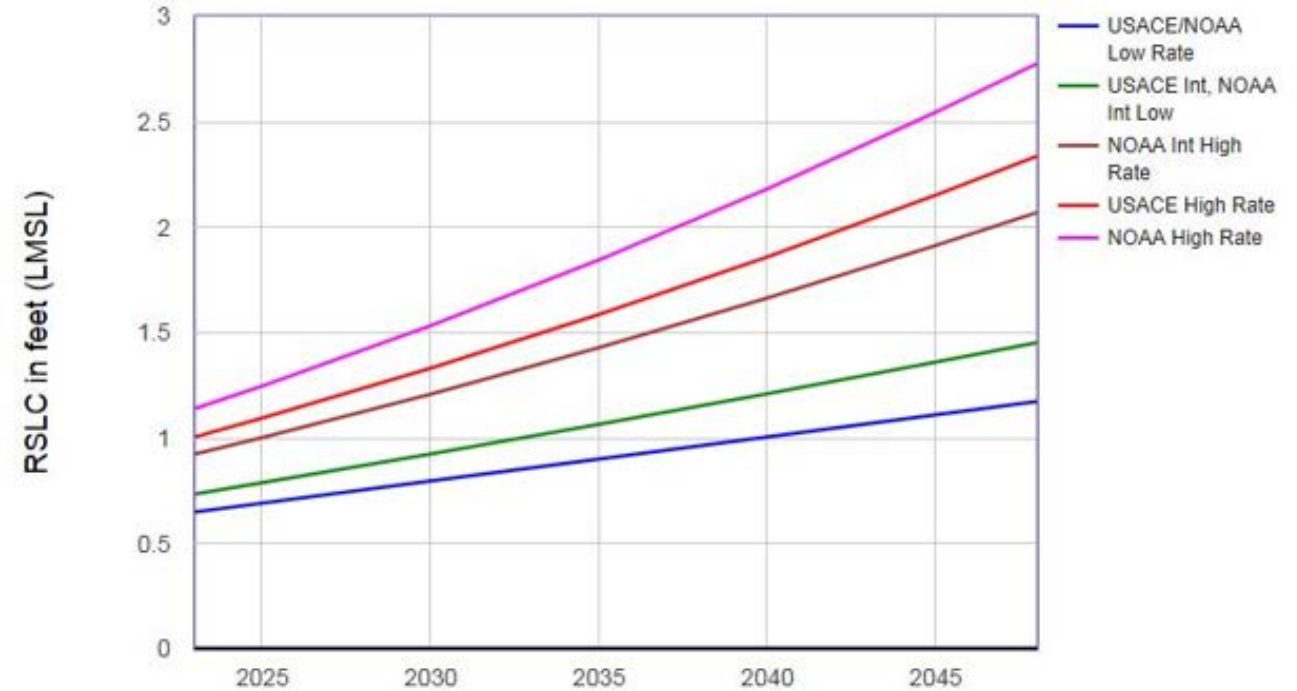
EXAMPLE APPLICATION: HISTORICAL DATA WATER LEVEL AND RELATIVE SEA LEVEL RISE

Historical data available:

- Water level
- +100 years at Pier 21



Relative Sea Level Change Projections - Gauge: 8771450, Galveston Pier 21, TX (05/01/2014)



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