

# Mapping and Modeling Subcommittee Meeting

Annual Work Plan Update 19 August 2019

## TSUNAMI SOURCE DATABASE

Goal: Develop an easy to access repository or summary of tectonic sources across state boundaries.

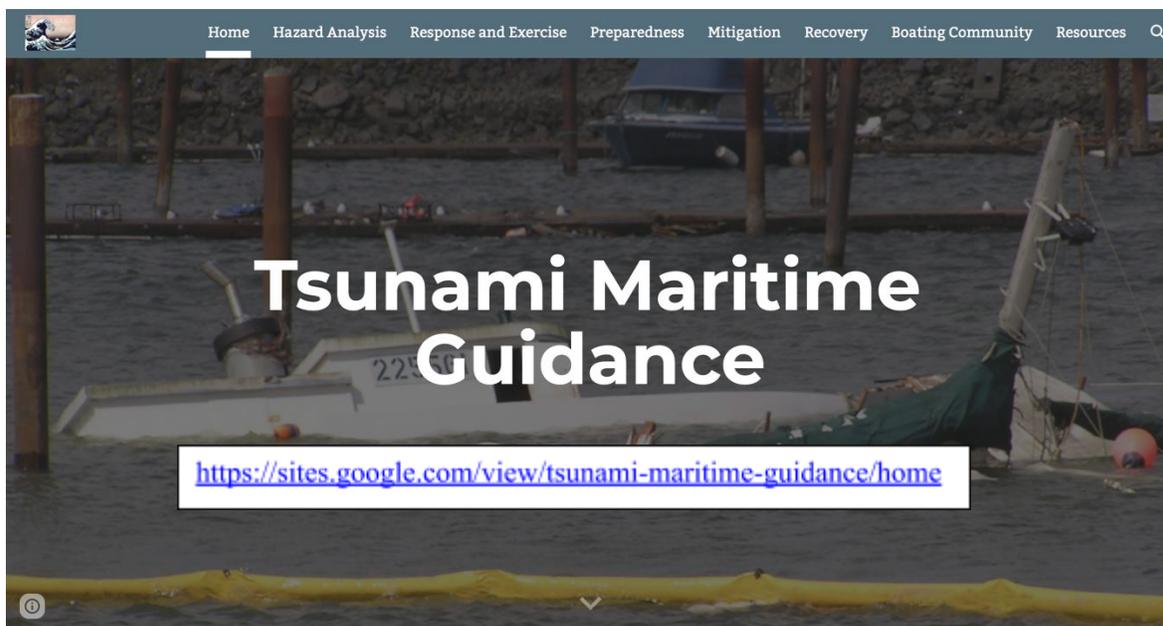
Status: Ongoing in collaboration with USGS Powell Center working group efforts

Source Information				Evacuation Use		Logic Tree/PTHA Status and Use					Information Needs/Comments
Region	Source/Segment Name	Source Type	Source Discussed at Powell Center	Reliability of Source Characterization for Evacuation Planning (A=good, B=mod, C=low)	Basic Logic Tree Attributes Designated	Source Triggering/ Recurrence Information	Work Group Logic Tree Weighting	Completed Logic Tree - Info can be coded	Probabilistic Characterization - Outputs for slip distributions	Availability for Modeling/ Planning - Packing and comprehension by users	
Alaska/Aleutians	Prince William Sound	SZ	10/2018	A	10/2018	10/2018	10/2018	2020	2020	2020	PTHA logic trees from AECOM exist; USGS collecting additional paleo. info
Alaska/Aleutians	Kodiak	SZ	10/2018	A	10/2018	10/2018	10/2018	2020	2020	2020	PTHA logic trees from AECOM exist; USGS collecting additional paleo. info
Alaska/Aleutians	unsegmented rupture	SZ	10/2018	A	10/2018	10/2018	10/2018	2020	2020	2020	PTHA logic trees from AECOM exist; USGS collecting additional paleo. info
Alaska/Aleutians	Eastern Aleutians	SZ	10/2018	A	10/2018	10/2018	10/2018	2020	2020	2020	PTHA logic trees from AECOM exist; USGS collecting additional paleo. info
Alaska/Aleutians	Central Aleutians	SZ	10/2018	A	10/2018	10/2018	10/2018	2020	2020	2020	PTHA logic trees from AECOM exist; USGS collecting additional paleo. info
Alaska/Aleutians	Western Aleutians	SZ	10/2018	A	10/2018	10/2018	10/2018	2020	2020	2020	PTHA logic trees from AECOM exist; USGS collecting additional paleo. info
Cascadia	Southern Cascadia	SZ	TBD	B							OR has recurrence logic tree; PTHA logic trees from AECOM exist; work by other Powell group
Cascadia	Full Rupture	SZ	TBD	A							OR has recurrence logic tree; PTHA logic trees from AECOM exist; work by other Powell group
East Coast	Northern Region	LS	05/2019	B	05/2019	2020	2020	2021	2021	2021	East Coast to collect more information
East Coast	Southern Region	LS	05/2019	B	05/2019	2020	2020	2021	2021	2021	East Coast to collect more information
Gulf Coast	Western Region	LS	05/2019	B	05/2019	2020	2020	2021	2021	2021	Gulf Coast to collect more information
Gulf Coast	Eastern Region	LS	05/2019	B	05/2019	2020	2020	2021	2021	2021	Gulf Coast to collect more information
Puerto Rico/USVI	PR Trench	SZ	05/2019	B	05/2019	2020	2020	2021	2021	2021	PTHA logic trees from AECOM and AIR exist
Puerto Rico	Muertos Trough	SZ	05/2019	C	05/2019	2020	2020	2021	2021	2021	PTHA logic trees from AECOM and AIR exist
Puerto Rico	landslide sources	LS	05/2019	C	05/2019	2020	2020	2021	2021	2021	
Puerto Rico	interplate faults	IPF	05/2019	C	05/2019	2020	2020	2021	2021	2021	PTHA logic trees from AECOM and AIR exist
East Atlantic	Cumbre Vieja	LS	05/2019	C	2020?	2020?	2021?	2021?	2021?	2021?	Discussed but not a primary focus of the Powell WG
East Atlantic	1755 Lisbon	SZ	05/2019	C	2020?	2020?	2021?	2021?	2021?	2021?	Discussed but not a primary focus of the Powell WG

## MARITIME GUIDANCE & CRITERIA

Goal: Provide resources to maritime communities to plan and prepare for tsunami hazard posed to harbors, ports, and waterways that are socially and economically important.

Status: Led by California, developed website that presents resources for mitigation measures that can be implemented by maritime communities before, during, and following impact of tsunami waves. California is soliciting feedback on website.



## HAZARD ASSESSMENT GAP ANALYSIS

Goal: Develop a comprehensive summary of all-partner completed activities, products, metadata, model input (sources, bathymetry, sedimentology...) and pending efforts or gaps.

Status: Spreadsheet broadly developed. Needs additional input and refinement by MES and MMS on various 'tabs' focusing on outreach and mapping modeling. A simple guidance document is also required to accompany the spreadsheet.

Future: Partner entries

HIGH LEVEL OVERVIEW													
	State	County	Community Name	Population in Tsunami Zone	TsunamiReady/TsunamiReady Tier II Recognition	TsunamiReady Expiration Date	Inundation Maps	Inundation Maps (additional info)	Evacuation map-brochure	Evacuation map-brochure (additional info)	HARBOR-SPECIFIC HAZARD MAPS	Mapped Coastline	DEM Status
INPUTS:	State	County name	Place name	# in TZ	Y (T1 or T2) / N	Date	None Proposed Underway Completed	Date completed; Type 1 / Type 2 / Type 3	None Proposed Underway Completed	Date completed; Type 1 / Type 2 / Type 3	NA None 2-response Playbook	Miles mapped	Version date; Type 1 / Type 2 / Type 3

## SEDIMENT TRANSPORT GUIDANCE

Goal: Explore the need and potential for including sediment transport in tsunami modeling for inundation and evacuation modeling and subsequent product development

Status: Unanimous agreement by MMS members to move this forward to the next stage, to develop a sediment transport workshop to discuss approaches, data, and possible steps toward a future formal benchmarking workshop. A workgroup was identified to begin planning for the first sediment workshop. Members include Stephan Grilli, Jim Kirby, Fai Cheung, Dmitry Nicolsky, Juan Horillo, Stephanie Ross, Kerry

Future: MMS proposal planned


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- **Tsunami impact** can significantly modify coastal morphology
- **Post-tsunami measurements** suggest that, during tsunami inundation, large amounts of coastal sediment is eroded and deposited onshore and offshore

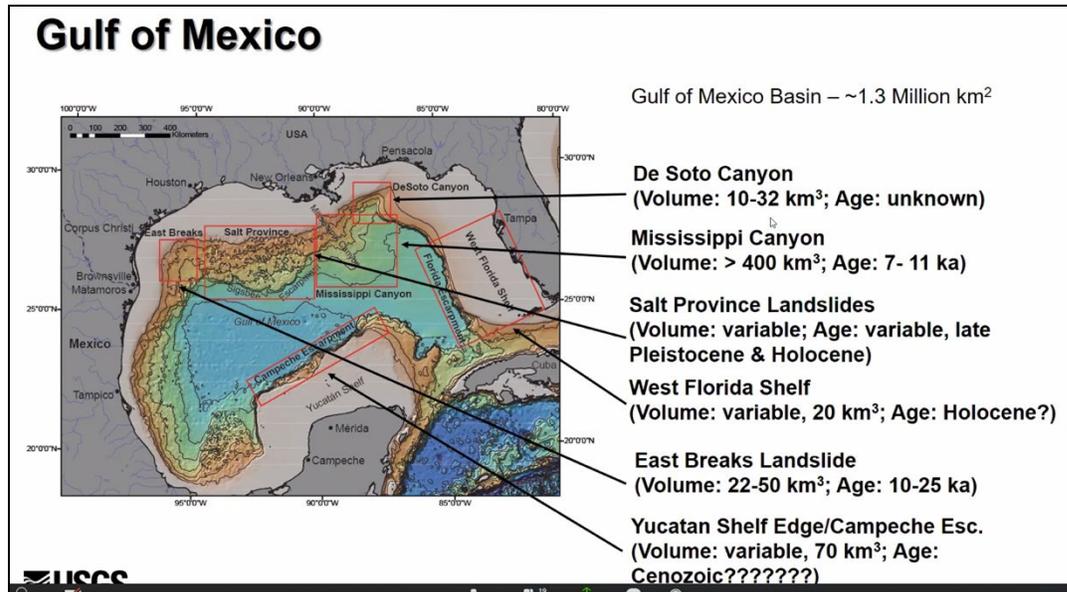


## LANDSLIDE GUIDANCE

Goal: Identify the potential hazard posed by landslides as case study and explore the potential for including in mitigation and planning products. Peer reviewed journal article summarizing approach and model results near completion.

Status: complete, draft guidance document to be circulated to MMS members for comment

Future: Models approved may proceed to modeling landslide generated tsunamis.

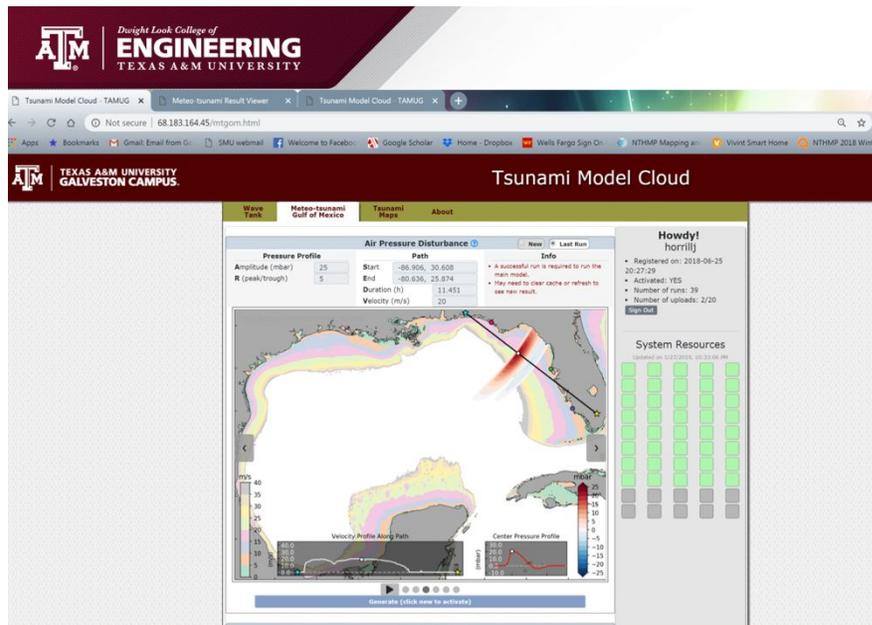


## METEOTSUNAMI GUIDANCE

Goal: Identify the potential hazard posed by meteotsunamis in the Gulf of Mexico as case study and explore the potential for including in mitigation and planning products.

Status: complete, draft guidance document circulated to MMS members for comment; Password protected web tool developed

Future: Improve web tool (add wind stress, document climatology, undertake further testing with past historical events...develop catalog of these)



## MAPPING & MODELING GUIDANCE

Goal: Establish minimum requirements to meet Strategic Plan goals and guidance on the numerical modeling of tsunami for inundation and evacuation were developed to encourage consistent products across state and territorial coastal boundaries. Guidance documents and checklists are available at: <http://nws.weather.gov/nthmp/publications.html>

Status: Completed

## NOAA CENTER FOR ENVIRONMENTAL INFORMATION (NCEI) DEM DEVELOPMENT

Goal: Provide States with digital elevation models (DEM) for numerical modeling conducted to produce inundation and evacuation maps.

Process: A draft list of state needs is developed and provided annually to NCEI. A final list is determined based on data availability.

Status: Ongoing

### DEM Development - Status

#### NTHMP CY19

- Port Graham / Nawalek, AK
- Craig / Klawock, AK
- Tillamook County, OR (in progress)
- Western WA coastal tiles update (pending data availability)

#### COASTAL Act funded

- SE Atlantic
- Antilles (regional) / PR-USVI

#### COASTAL Act FY20 scheduled

- Florida Panhandle and AL/MS
- Chesapeake
- Louisiana
- Texas Update



The map shows the United States with several coastal regions highlighted in green. These regions correspond to the areas listed in the text: Alaska (Port Graham, Klawock), Oregon (Tillamook County), Washington (Western WA coastal), Florida Panhandle, Alabama, Mississippi, Louisiana, Texas, and the Caribbean (Antilles, Puerto Rico, USVI).

## POWELL CENTER

**Goal:** The goal of the Tsunami Sources Powell Center Working Group is to regionally define and implement a transparent and scientifically based methodology for characterizing hypothetical but realistic sources of tsunamis that pose a potential hazard to U.S. populations, commerce, and infrastructure in order to provide federal, state, and local authorities with probabilities of scenario occurrence for improved mitigation and planning efforts.

**Status:** Ongoing

- Planning meeting/workshop held
- Two regional meetings/workshops held: Alaska; Caribbean, Gulf and East Coasts
- Upcoming regional meeting/workshop: Pacific excluding Cascadia. Date TBD

## HAZUS

**Goal:** To utilize the Federal Emergency Management Agency (FEMA) software HAZUS tool for estimating potential losses from tsunami waves with hazard mapping and local structure data input to the HAZUS Tsunami Module.

**Status:** Ongoing

