The DEM team at NCEI is currently developing DEMs to support individual coastal States as part of the NTHMP's efforts to improve community preparedness and hazard mitigation. Migration to a tiled schema occurring through DEM work under COASTAL Act funding.

Priorities are based on:

- **NOAA forecast modeling requirements**
- **State modeling needs**
- **Data availability**
DEM Development - Status

**NTHMP CY18**
- Rhode Island and Narragansett Bay to Nantucket - *completed tiles*
- Western Washington coast - *completed tiles*
- Port Alexander, AK - *completed*
- Wrangell, AK - *completed*
- Old Harbor, AK* - *in process*
- Akhiok, AK* - *in process*
- Karlok, AK* - *in process*

*funded separately

**NTHMP CY17**
- Atka, AK & Adak, AK (completed, additional NTHMP funded)
- Bristol Bay, AK (completed)
- Bellingham Bay, WA (completed - tiled)
- SW Florida (completed - tiled)
- Puerto Rico (completed - tiled)

**NOAA NWS/PMEL FY18**
- no funding
DEM Development

The DEM team at NCEI uses custom scripts that make use of free open-source software such as GDAL, MB-System, GMT, LASTools*, VDatum, etc.

examples:

- **Data Processing:**
  - Custom scripts making use of LAStools which is highly efficient with large datasets (lidar), VDatum for tidal, orthometric, and ellipsoidal transformations, GDAL for format conversions and custom processing.

- **DEM Building:**
  - GMT and MB-System are used to generate final DEM products.
  - Eastern inland boundaries for tiles defined by Cat 4/5 maximum of maximum (MOM) storm surge. Western inland boundaries options?
Tiled DEM updating

Rapid updating of tiled DEMs

Benefit of tiling schema is quicker updating.

- Tiled DEMs allow for rapid updates when new data becomes available.
- Updates only to tiles that contain new data.
- No need to rebuild entire DEMs when new data becomes available.
- More consistent DEM products over time.
DEM Status - Tiled

Tiled DEM development funded in part by COASTAL Act.
DEM Access

**NCEI**

*DEM* *tiled and non-tiled* in *netCDF* format.

NCEI Thredds Catalog -
https://www.ngdc.noaa.gov/thredds/dem Catalog.html

**NOAA’s Office for Coastal Management (OCM)**

*Tiled DEMs with delivery options* for custom extract, datums, and formats.

Map Viewer and Custom Extract -
https://coast.noaa.gov/dataviewer/#/

or bulk download and ftp access -
https://coast.noaa.gov/htdata/raster2/elevation/
NCEI_third_Topobathy_2014_8580/

https://coast.noaa.gov/htdata/raster2/elevation/
NCEI_ninth_Topobathy_2014_8483/
New tiled DEM Access

Tiled Data Access Update - NCEI tiled DEMs are available from NOAA/OCM’s Data Access Viewer. This enables download options for data format and ROI specific selection.
International Efforts

- **USAID DEM development** - NCEI to develop inundation DEMs for selected sites in Jamaica and Belize supporting the Tsunami Program.

- **Ocean Networks Canada (ONC) DEM workshop** - A second follow up workshop possible in 2019.

Questions?