What is Available and When: Real-time Flood Inundation Mapping Products

**PHASE 1A**

- **Earth Science Data and Information System (EEDIS) Distributed Active Archive Centers (DAACs)**
  - [https://earthdata.nasa.gov/daac](https://earthdata.nasa.gov/daac)
  - EEDIS DAACs process, archive, and distribute data from NASA’s past and current Earth-observing satellites and field measurement programs.

- **Coastal Storm Modeling System (CSTORM-M5)**
  - [https://www.nws.noaa.gov/mdl/cstорм/cstorm-m5](https://www.nws.noaa.gov/mdl/cstormal/cstorm-m5)
  - CSTORM-M5 is a comprehensive system of highly skilled and highly motivated models used to simulate coastal storms and accurately assess risk to coastal communities.

- **Corps Water Management System (CWMS)**
  - The CWMS is a Corps-wide implementation system to evaluate and model water levels.

- **National Inventory of Dams (NIAD)**
  - [https://www.usgs.gov/centers/nlsc/home/pages/floods](https://www.usgs.gov/centers/nlsc/home/pages/floods)
  - NIAD contains information on dams relevant to flood risk and management.

- **National Levee Database**
  - [https://www.usgs.gov/centers/west/home/pages/floods](https://www.usgs.gov/centers/west/home/pages/floods)
  - The National Levee Database includes data on nearly 65,000 levee structures.

**PHASE 1B**

- **National Agricultural Statistics Service (NASS) Flood Data**
  - [https://nassgeodata.gmu.edu/Flood/](https://nassgeodata.gmu.edu/Flood/)
  - NASS manages and disseminates agricultural data in near-realtime and provides comprehensive database reports, metadata, and time series data.

- **CropScape-CropLand Data Layer (CDL)**
  - [https://nassgeodata.gmu.edu/CropScape/](https://nassgeodata.gmu.edu/CropScape/)
  - CDL provides acreage estimates for major US crops and produces digital, cross-sensor, cross-data type, categorized georeferenced output products.

- **Dynamic Surface Water Extent Model (DSWEM)**
  - [https://www.usgs.gov/land-resources/nli/dynamic_surface_water_extent](https://www.usgs.gov/land-resources/nli/dynamic_surface_water_extent)
  - DSWEM provides a near-realtime inundation prediction map at the city block level.

- **Flood Inundation Mapper (FIM)**
  - [https://floodobservatory.colorado.edu/](https://floodobservatory.colorado.edu/)
  - FIM provides a web-based, public accessible inundation mapping tool.

**PHASE 2A**

- **Cyclone Global Navigation Satellite System (CYGNSS) Satellite Inundation Estimates**
  - [https://cygnss.umd.edu/cygnss](https://cygnss.umd.edu/cygnss)
  - CYGNSS Satellite Inundation Estimates provides near-realtime flood mapping on a global basis.

- **Dartmouth Flood Observatory (DFO)**
  - [http://dfo.noaa.gov/](http://dfo.noaa.gov/)
  - DFO provides operational flood mapping, reporting, and modeling of coastal water (Note: In general, the DFO website may have more accurate products as experts have been involved in building the flood extent maps using available data and are thus able to edit out errors. The NASA website will have more timely products, as they are generated and posted automatically within several hours of satellite overpasses, but they have not been manually examined or edited for errors.)

- **Flood Maps from NASA Operations Weather Surveillance Radar (SARS)**
  - [https://sars.gsfc.nasa.gov/](https://sars.gsfc.nasa.gov/)
  - SARS generates operational-level flood mapping, reporting, and modeling of coastal water.

**PHASE 2B**

- **USGS Flood Information**
  - [https://www.usgs.gov/centers/west/home/pages/floods](https://www.usgs.gov/centers/west/home/pages/floods)
  - USGS provides experimental flood products based on real-time imagery from sensor flood extent and that can be used for civil applications.

- **NASA Flood Documentation**
  - [https://maps.disasters.nasa.gov/arcgis/apps/sites/#/](https://maps.disasters.nasa.gov/arcgis/apps/sites/#/)
  - NASA website will have more timely products, as they are generated and posted automatically within several hours of satellite overpasses, but they have not been manually examined or edited for errors.

**DOCUMENTATION**

- **Near Real-Time Global Flood Mapping**
  - [https://floodmap.nos.ngs.noaa.gov](https://floodmap.nos.ngs.noaa.gov)
  - NASA’s Near Real-time Global Flood Mapping provides routine global mapping of likely flood water using available satellite reconnaissance. In general, the DFO website may have more accurate products as experts have been involved in building the flood extent maps using available data and are thus able to edit out errors. The NASA website will have more timely products, as they are generated and posted automatically within several hours of satellite overpasses, but they have not been manually examined or edited for errors.

**COMING SOON**

- **Post-Event Depth Grids**
  - Post-Eviction evaluations will offer the full set of inundation maps that shows where flooding would occur given a selected storm condition.

- **NIST Flood Data**
  - [https://www.nist.gov/aps](https://www.nist.gov/aps)
  - NIST is in the process of developing post-disaster survey techniques that will allow for more comprehensive data collection in which state of the art engineering and social science survey techniques are employed that will generate data and subsequently findings that can be combined to develop more robust and geospatially detailed models, which to which can lead to future algorithm development. The project leads for the hurricane Matthew flood event evaluation noted difficulties in finding a reliable flood inundation model for the depth and extent of the flooding to generate accurate flood extent products (a significant need that has increased in parcel level flood inundation).