

# 2018 USACE GOES DCS User Report

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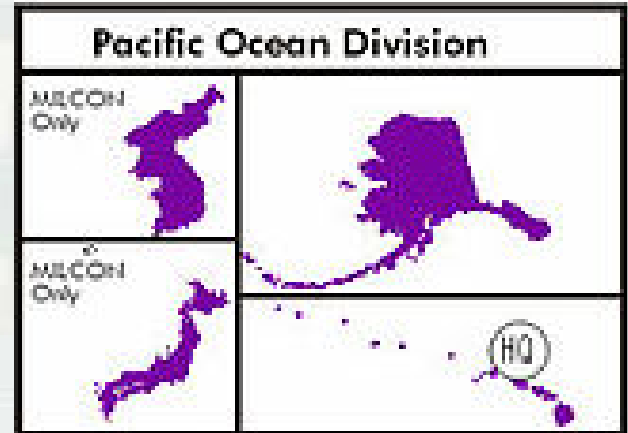
22 Mar 2018

Annual TWG Meeting



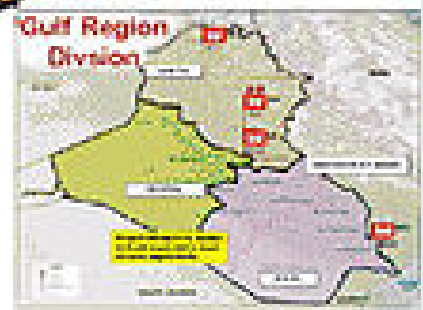
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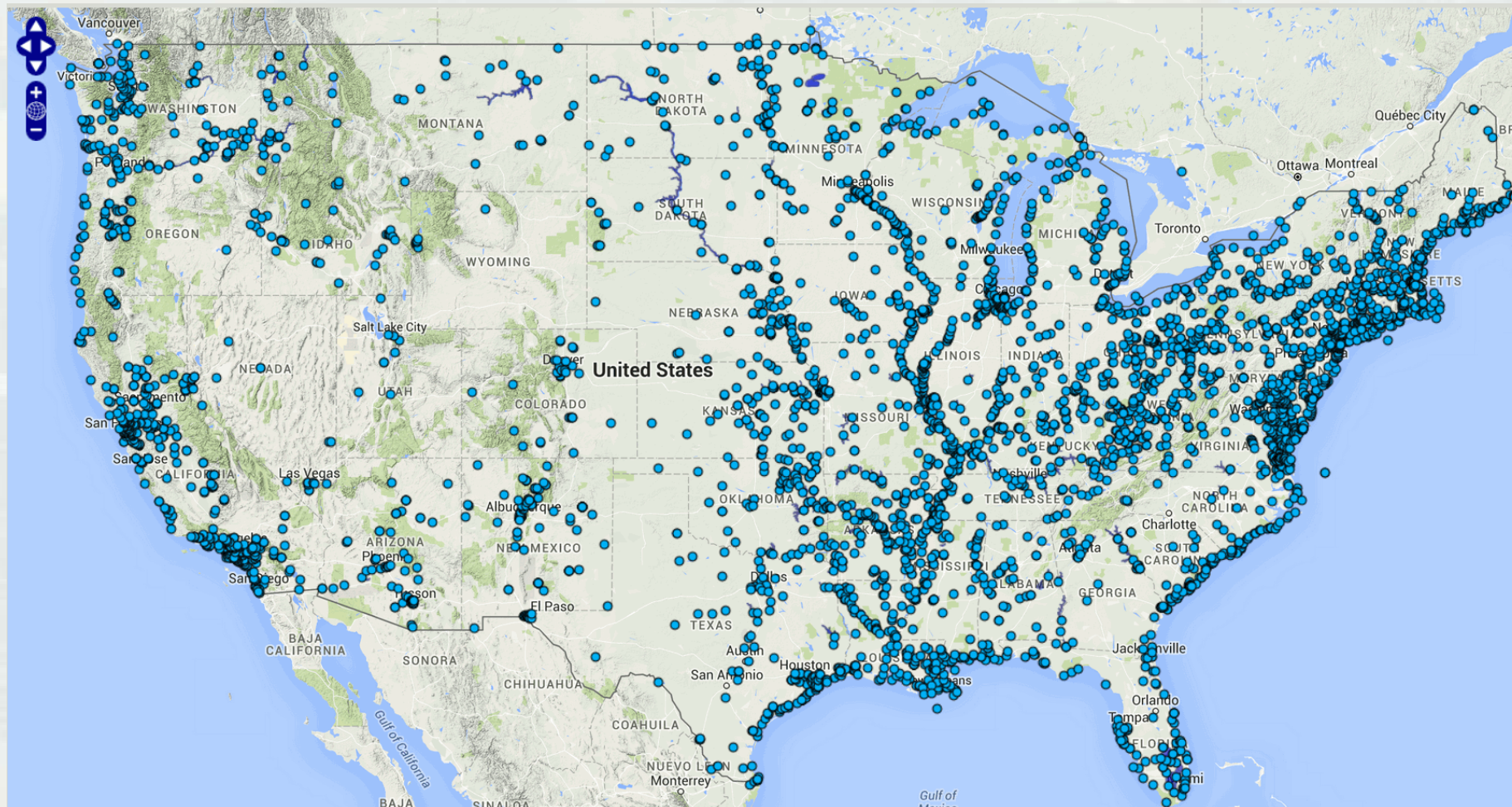


**Other Commands**

- Engineer Research and Development Center
- Huntsville Engineer Support Center
- Transatlantic Programs Center
- 249th Engineer Battalion



# Deployed CONUS GOES DCP's



# 2018 USACE Summary

- ~2936 owned GOES Id's
- ~2527 active GOES platforms (all 300 baud)
- Channels: 17, 25, 31, 49, 58, 73, 88, 161, 162, 177
  - ▶ Channel 41 vacated by Mobile District last year
- Western districts converting Line of Site platforms to GOES (SPL completely converted)
- Of 38 districts, over ~90% have at least one local L/HRIT receive system
- Still a desire for more frequent transmissions at critical locations
  - ▶ Some also transmit on random channel while exceeding observation threshold
- Supplementing GOES DCP's with r/t DAMS-NT over LAN at some locks and dams, etc.
- "300 series" channels?
- 2-Way DCP's?
- Adding sensors sending add'l observations as necessary for MMC Modeling efforts
- Continue updating Group Id's in DADDS



# USACE GOES Usage by Division

- North Atlantic Division
  - ▶ New England, New York, Philadelphia, Baltimore and Norfolk Districts
- ~127 GOES Platforms (300 Baud)
  - ▶ 104 active
- Channels 161
- 1-hour intervals
- 5, 10 and 15 second windows



# USACE GOES Usage by Division

- North Atlantic Division (cont'd.)
  - ▶ New England District
  - ▶ 98 Active GOES DCP's (300 Baud on Channel 161)
    - 35 reservoirs, 3 hurricane barriers, 2 tidal stations and remaining are stream gages
    - Primarily 5-sec time windows with a few 10-sec
    - Most transmit 15-minute data hourly
    - 3 hurricane barriers transmit every 15 minutes



# USACE GOES Usage by Division

- North Atlantic Division (cont'd.)
  - ▶ Baltimore District - NAB
    - Transmits 15 minute data hourly
    - 17 of 83 are reservoir and remaining are stream gages
    - 20 collect precip, 12 collect air temp and 10 collect water quality data
    - No new gages in the foreseeable future



# USACE GOES Usage by Division

- South Atlantic Division
  - ▶ Charleston, Jacksonville, Mobile, Savannah, and Wilmington Districts
- ~230 GOES Platforms (300 Baud)
  - ▶ 131 active
- Channels 31 and 161
  - ▶ SAM completed vacating channel 41
- 1-hour intervals
- 5, 10 and 15 second windows





# USACE GOES Usage by Division

- South Atlantic Division (cont'd.)
  - ▶ Wilmington District – SAW
    - 39 active GOES DCP's ( 300 Baud)
    - Channel 161
    - 10-minute samples
    - Hourly transmissions
    - Decodes 74 USGS GOES DCP's throughout North Carolina and Virginia



# USACE GOES Usage by Division

- South Atlantic Division (cont'd.)
- SAJ has 46 active DCP's (89 total)
  - ▶ Recently received a new block of NESDIS Id's
  - ▶ Plans to deploy 25-30 new platforms (some currently under construction)
    - Culverts along Herbert Hoover Dike surrounding Lake Okeechobee
  - ▶ Sensors: Shaft encoders, wind sensors, barometers, pressure transducers, gate position indicators, temperature sensors, battery voltage and flow meters
  - ▶ Typical sites: locks and dams, spillways, culverts, stilling wells, etc.



# USACE GOES Usage by Division

- Lakes and Rivers Division
  - ▶ Huntington, Detroit, Nashville, Pittsburgh, Cincinnati, Buffalo and Louisville Districts
- ~739 GOES Platforms (300 Baud)
  - ▶ 675 active
- Channels 17, 25, 88, 177
- 1-hour intervals
- 10 second windows



# USACE GOES Usage by Division

- Lakes and Rivers Division (cont'd.)
  - ▶ Pittsburg District
    - 313 Platforms (260 USGS)
  - ▶ Huntington District
    - 262 Platforms (176 USGS)
  - ▶ Cincinnati District
    - 24 Platforms (24 USGS)
  - ▶ Buffalo District
    - 20 Platforms (24 USGS)
  - ▶ Louisville District
    - 124 Platforms (124 USGS)
  - ▶ Nashville District
    - 90 Platforms (47 USGS)
    - Precip, stage, air/water temp, pool, tail, pH, dissolved oxygen, pool/tail elevation, gate opening, etc.
  - ▶ Detroit District
    - 74 Platforms



# USACE GOES Usage by Division

- Mississippi Valley Division
  - ▶ St. Paul, Rock Island, St. Louis, Memphis, New Orleans and Vicksburg Districts
- 798 GOES Platforms (300 Baud)
  - ▶ 710 active
- Channels 31, 49, 58, 73, 177
- 30-minute and 1-hour transmit intervals
- 5 and 10 second windows



# USACE GOES Usage by Division

- Mississippi Valley Division (cont'd.)
  - ▶ St. Louis District
    - 122 PDT's (118 active)
      - ▷ 64 distributed throughout central and eastern Missouri
      - ▷ 54 sites in central and southern Illinois
      - ▷ Elevation, stage, precip, air/water temp, wind speed/direction, water quality, etc.
    - 10 major water resource projects (5 reservoirs, 5 locks and dams)
    - 100+ levee systems
    - 10 CS2 transmitters deployed, 30 on the shelf
    - Use DRGS and LRIT to receive data
    - Continuing to upgrade to CS2 (25-50 DCP's/year)
    - Will need 4-5 new DCP assignments per year for the next 5 years



# USACE GOES Usage by Division

- Mississippi Valley Division (cont'd.)
  - ▶ Rock Island District
    - 155 active DCP's (161 total)
      - ▷ 22 CS2 Platforms
      - ▷ Contract with USGS to maintain 103 active MVR stations
      - ▷ Receive and decode 165 additional USGS gages
      - ▷ Fund 85 USGS gages
    - 23 Projects (20 Navigation Locks and Dams and 3 Multi-purpose Reservoirs)
      - ▷ MET Stations: Air/water temp, wind speed/direction, gate opening, pool/tail stage, precip, pool/tail elevation
      - ▷ Half-hourly transmissions
      - ▷ Send minute interval data using network DCP's
      - ▷ Display real-time data on homegrown web GUI served from Sutron DCP
      - ▷ Acquire data locally: monitoring includes all Corps GOES DCS channels
        - East and West DRGS cages with LRIT as secondary GOES downlink
        - Distribute data Corps-wide as Data Acquisition Center
        - Host Cove DCP-Monitor: decode and collect districts' GOES data and display performance stats



# USACE GOES Usage by Division

- Mississippi Valley Division (cont'd.)
  - ▶ New Orleans District
    - Maintains 95 Data Collection Platforms
    - Allows District's Water Management Team to daily maintain 30/70 split between Atchafalaya River and the Mississippi River at the Old River Control Complex using near real-time water level data
    - Allows the district to provide the public with real-time water levels throughout SE Louisiana





# USACE GOES Usage by Division

- Northwestern Division
  - ▶ Kansas City, Omaha, Walla Walla, Seattle and Portland Districts
- ~391 GOES Platforms (300 Baud)
  - ▶ 341 active
- Channels 58, 88
- 1-hour intervals
- 5, 10 and 20 second windows



# USACE GOES Usage by Division

- Northwestern Division (cont'd.)
  - ▶ NWW has 18 platforms
    - Mostly elevation, weather, water temp and stage
  - ▶ 15 platforms are maintained by the USGS but owned and monitored by NWW
  - ▶ Plan to add 7 platforms in the next year for temp monitoring and elevation
  - ▶ Plan to add another 7 in the next 2-3 for project data, weather and water temp
  - ▶ Plan to add 6 platforms for fish passage purposes



# USACE GOES Usage by Division

- Northwestern Division (cont'd.)
  - ▶ NWK decodes and collects 180 (91 funded whole or in part)
    - Transmitting 15 minute data every hour
    - A few platforms log 5 minute data and transmit hourly
    - Typical configuration consists of a Sutron DCP with orifice lines and/or radar gages
    - Added new sensors for (MMC) modeling effort



# USACE GOES Usage by Division

- Southwestern Division
  - ▶ Tulsa, Fort Worth and Galveston Districts
    - Galveston transferred all DCP's to USGS
      - ▷ Funds equipment, operation and maintenance
- ~388 GOES Platforms (300 Baud)
  - ▶ 345 active
- Channels 31, 49, 88 and 162
- 1-hour intervals
- 5 and 10 second windows



# USACE GOES Usage by Division

- South Pacific Division
  - ▶ Sacramento, San Francisco, Los Angeles and Albuquerque Districts
- ~263 GOES Platforms (300 Baud)
  - ▶ 221 active
- Channels 17, 31
- 1-hour intervals
- 5 and 10 second windows



# USACE GOES Usage by Division

- South Pacific Division (cont'd.)
  - ▶ Los Angeles District
    - 30 GOES Platforms
    - Converted all LOS sites to GOES
    - 2 L/HRIT systems (LA and El Monte, CA)



End.



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