

Nationwide DGPS

Project Status

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Homeland
Security

U.S. Department of
Homeland Security
**United States
Coast Guard**



Maritime / Nationwide DGPS

Currently 86 operational sites:

- USCG NAVCEN is the Operational Control for all sites.
- Newly commissioned Maritime Information Operations Center (MIOC)



Nationwide DGPS Partnership:

- USCG Maritime → 39 sites
- Dept of Transportation → 38 sites
- U. S. Army Corps of Engineers → 9 sites





NAVIGATION CENTER

The Navigation Center of Excellence

U.S. Department of Homeland Security
UNITED STATES COAST GUARD



Consolidated Nav Info | DGPS Advisories | GPS Advisories / NANUs | GPS Testing Notices | LNM's | Almanacs | Nav Rules | AIS | Contact Us | Search | Home

Primary Mission Areas:

- Global Positioning System
- Differential GPS
- Nationwide DGPS
- LORAN C
- Inland River Vessel Movement Center
- Civil GPS Service Interface Committee
- Automatic Identification System
- Electronic Navigation & Charting
- Maritime Telecommunications

Services & Reporting:

- Receive Free LNM Updates
- Receive Free GPS Status Messages
- Receive NANU Updates
- Join CGSIC (free)
- Report an ATON Discrepancy or Outage
- Report a GPS Problem
- Report a DGPS Problem
- Report an AIS Problem
- Report a LORAN Problem
- Contact Us

May 6, 2008

NAVIGATION CENTER POINTS OF INTEREST



Current Operational / Safety Information

- Consolidated Nav Info
- DGPS Site Status
- GPS Ops Advisories & NANUs
- GPS Almanacs
- GPS Interference Notices
- Local Notice to Mariners
- Light List and Corrections
- Navigation Rules
- Navigation Regulations
- Navigation Safety Alerts



Maritime Information

- USCG "Homeport" Website
- Vessel Traffic Services
- Global Maritime Distress and Safety System
- CG Nat'l Distress System
- Digital Selective Calling
- Vessel Traffic Services
- VHF Channels & Freqs
- MF & HF Channels
- Nav Pubs and Documents
- Radio Watch Requirements
- Marine Safety Information Broadcasts
- Ports and Waterways Safety System



More About NAVCEN

- Mission Statement
- Contact Us
- Directions to NAVCEN
- Search Our Site
- Site Map
- Website Privacy Policy

News and Notices:

- The U.S. DOT approved a decision to continue the inland component of the NDGPS, which provides an accurate, highly-reliable, real-time GPS correction signal. The decision is based on the results of the NDGPS user assessment conducted by the Research and Innovative Technology Administration (RITA). [Read the DOT press release...](#)
- Reported GPS/AIS User Equipment Problems Involving PRN32:** [Read our notice...](#)
- PRN 32 Announcement:** Per [NANU 2008023](#), PRN 32 will be set healthy at 1800Z 26 Feb 2008.
- DoD Announcement:** Success In Intercepting Non-Functioning Satellite in final orbits. [Read more...](#)
- Adoption of a National Backup System to GPS** - On Feb 7th, 2008, DHS issued a statement regarding the adoption of eLoran (enhanced LORAN) as the back to GPS...[read the statement in its entirety \(18K, PDF\).](#)
- The [2007 Light Lists](#) have been published and are available for download in PDF.
- You may view [previous news items here.](#)

Nationwide DGPS - USCG Navigation Center - Windows Internet Explorer

http://www.navcen.uscg.gov/ndgps/default.htm

File Edit View Favorites Tools Help

RoboForm Search Logins (passcards) Jacob John Ramos Save Generate

Nationwide DGPS - USCG Navigation Center



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Nationwide DGPS

- NDGPS Site Configuration
- Current Expansion Projects
- NDGPS Planned Sites
- Network Enhancements Paper
- NDGPS Executive Steering Council
- NDGPS Federal Register Notice, Aug 2007

Primary Mission Areas:

- Global Positioning System
- Differential GPS
- Nationwide DGPS
- LORAN C
- Inland River Vessel Movement Center
- Civil GPS Service Interface Committee
- Automatic Identification System
- Electronic Navigation & Charting

Maritime Information:

- USCG "Homeport" Website
- Vessel Traffic Services
- Global Maritime Distress and Safety System
- CG Nat'l Distress System
- Digital Selective Calling

NATIONWIDE DGPS

Nationwide DGPS Status Report (AUG 2008)

On April 18, 2008, the U.S. Department of Transportation approved a decision to continue the inland component of the Nationwide Differential Global Positioning System (NDGPS), which provides an accurate, highly-reliable, real-time GPS correction signal. The decision is based on the results of the NDGPS user assessment conducted by the Research and Innovative Technology Administration (RITA). RITA followed the plan announced in the Federal Register notice on NDGPS (72 FR 42219), assessing the current user needs and systems requirements for the inland component of NDGPS. The notice listed 10 factors for consideration. Information was gathered on these 10 factors through public responses to the notice (including responses from state and local governments, the private sector, and the non-profit sector), and through quantification of the mission requirements of other federal agencies using inland NDGPS. Discussions are ongoing regarding the future funding mechanism for inland NDGPS, and will be addressed in future budget submissions. This decision was endorsed by the National Space-Based Positioning, Navigation and Timing Executive Committee at their meeting of March 20, and publicly announced at the PNT Advisory Committee meeting on March 27. You may read the [full NDGPS Assessment report](#).

To date, the US Coast Guard monitors and controls 38 operational NDGPS sites that belong to the DOT. The Coast Guard is a key member of the seven-agency partnership for the Department of Transportation's NDGPS expansion initiative. The Coast Guard brings its expertise in building, operating and maintaining DGPS sites to the partnership. The other members of the project are the U.S. Air Force, the U.S. Army Corps of Engineers, the Federal Highway Administration, the National Oceanic and Atmospheric Administration, the Office of the Secretary of the Department of Transportation, and most recently appointed sponsor for the project is the Research and Innovative Technology Administration (RITA).

Major NDGPS projects for 2008 & 2009 include:

- Continuing the evaluation and expansion of the high accuracy (HA) NDGPS concept.

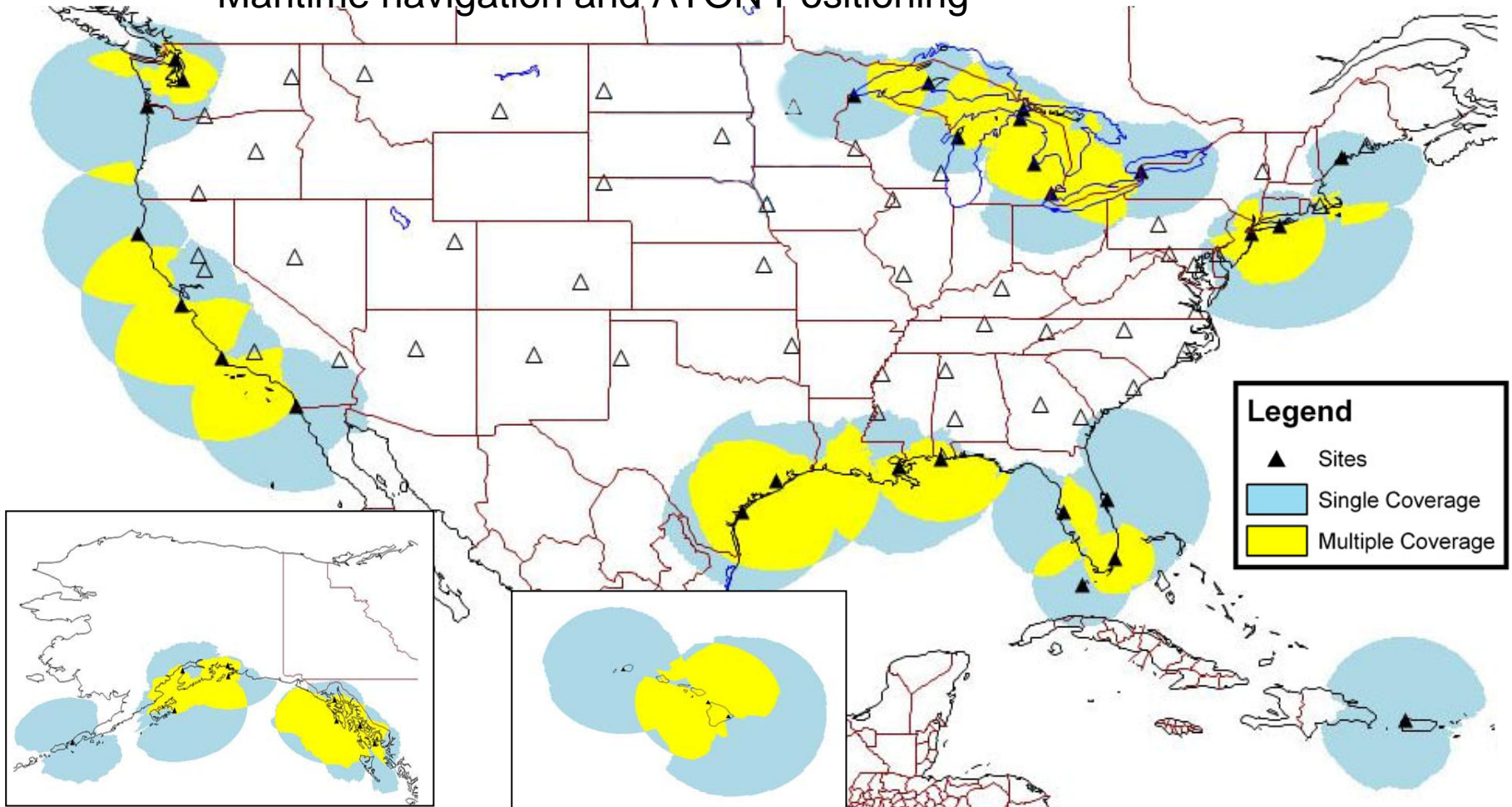
Currently, Hawk Run, PA; Hagerstown, MD; and the Topeka, KS NDGPS sites are equipped to broadcast code and carrier phase observables under a test scenario. Testing is expected to continue for the immediate future to support ongoing system development. Pueblo, CO is expected to become the next HA NDGPS broadcast site in FY 09. Further information on the high accuracy initiative can be obtained on the U.S. Coast Guard's Navigation Center homepage, and at the [Turner Fairbanks](#)

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USCG Maritime Signal Coverage

- USCG funds & maintains 39 sites.
 - Maritime navigation and ATON Positioning



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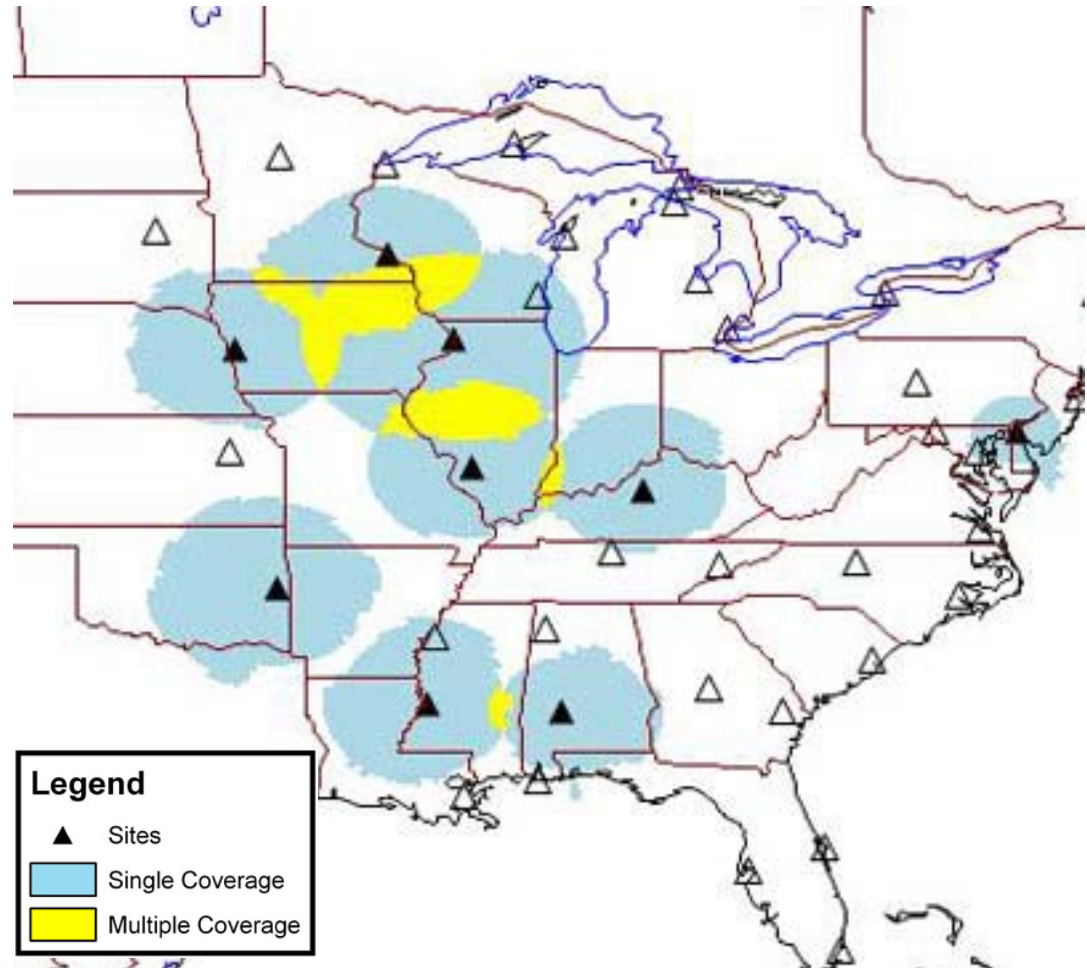




US Army Corps
of Engineers®

US Army Corps of Engineers Signal Coverage

- US Army Corps of Engineers funds & maintains coverage for Inland Waterways
 - Surveying and Dredging
 - Setting Navigational Aids
 - Electronic Navigation



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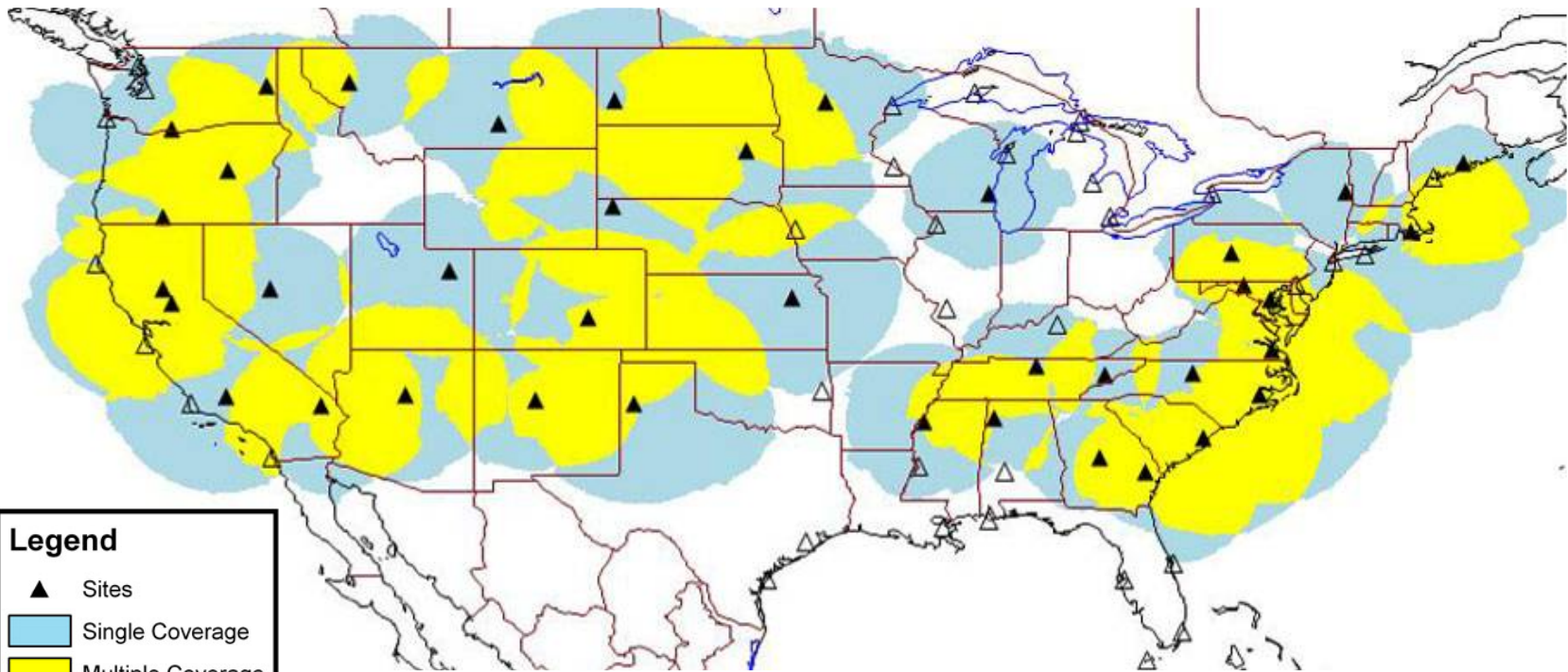
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US Department of Transportation's Nationwide DGPS Coverage

- US Dept of Transportation funds 38 sites which are operated & maintained by the USCG and contract support.
- Precision Agriculture, Intelligent Transportation Systems, Positive Train Control.



Legend

- ▲ Sites
- Single Coverage
- Multiple Coverage



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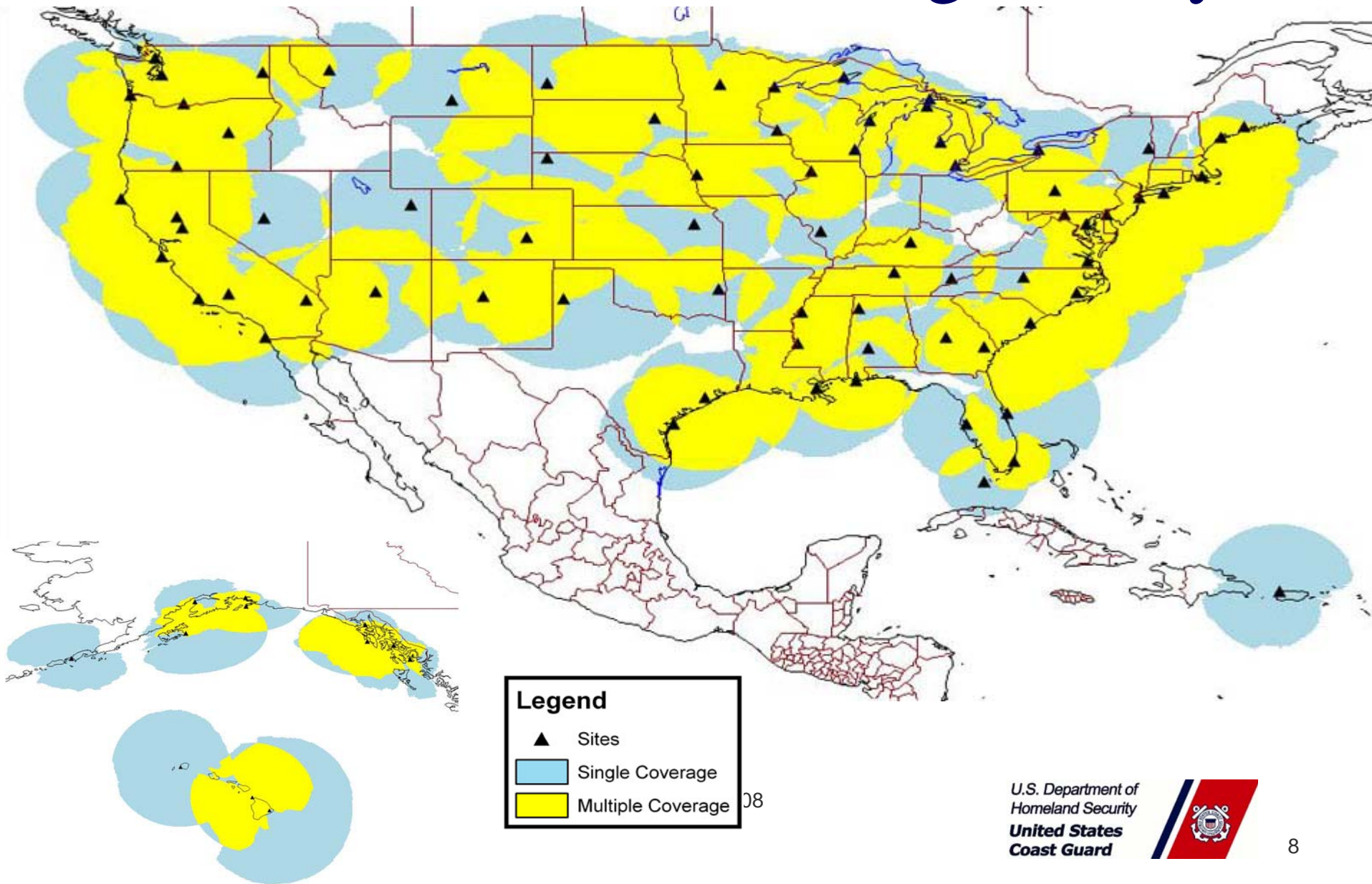
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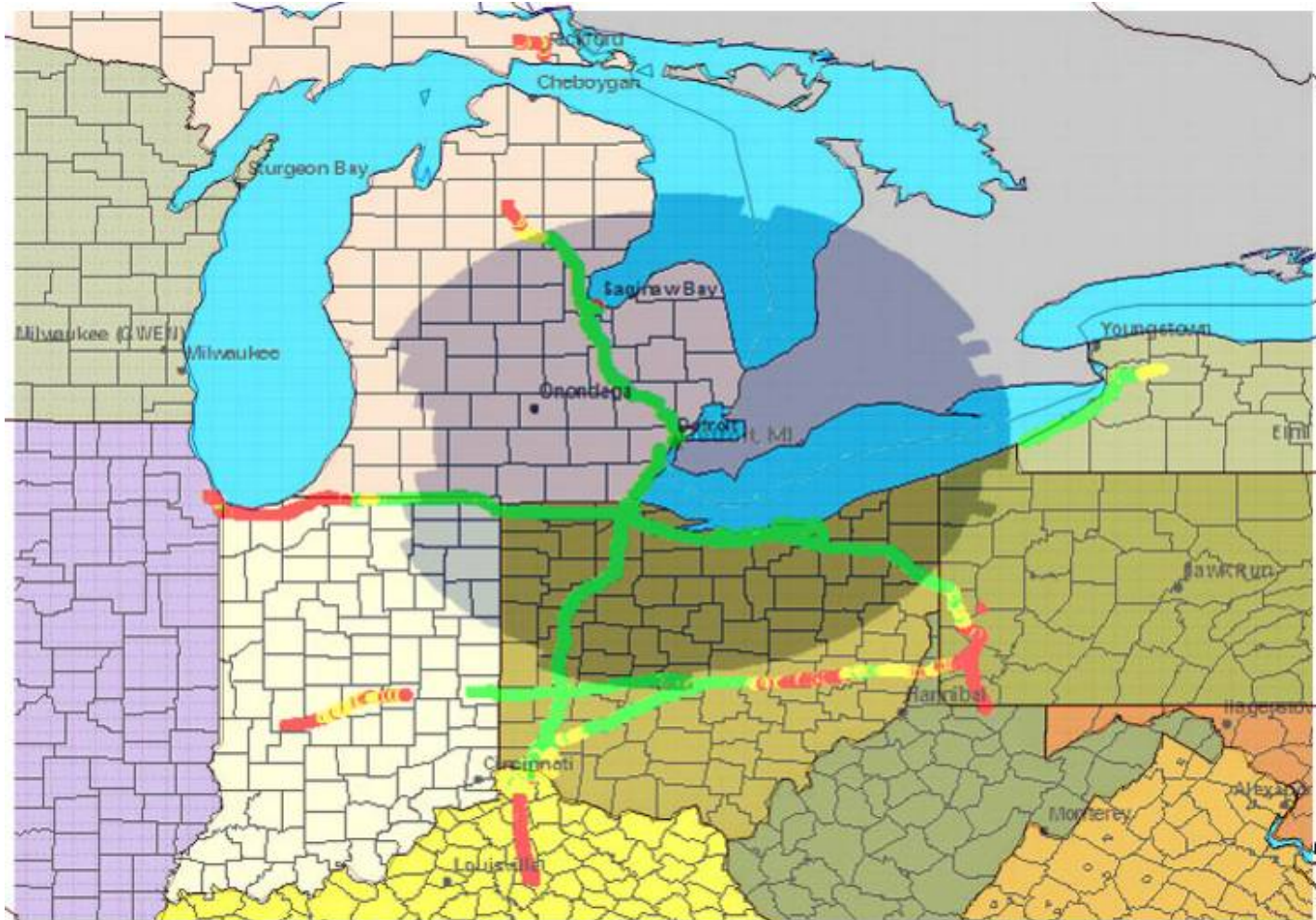


Combined DGPS Coverage Today



Nationwide DGPS

Coverage Planning & Verification



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FY06 NDGPS Policy Implementation Team Sets the Goal to Achieve IOC (99% CONUS)

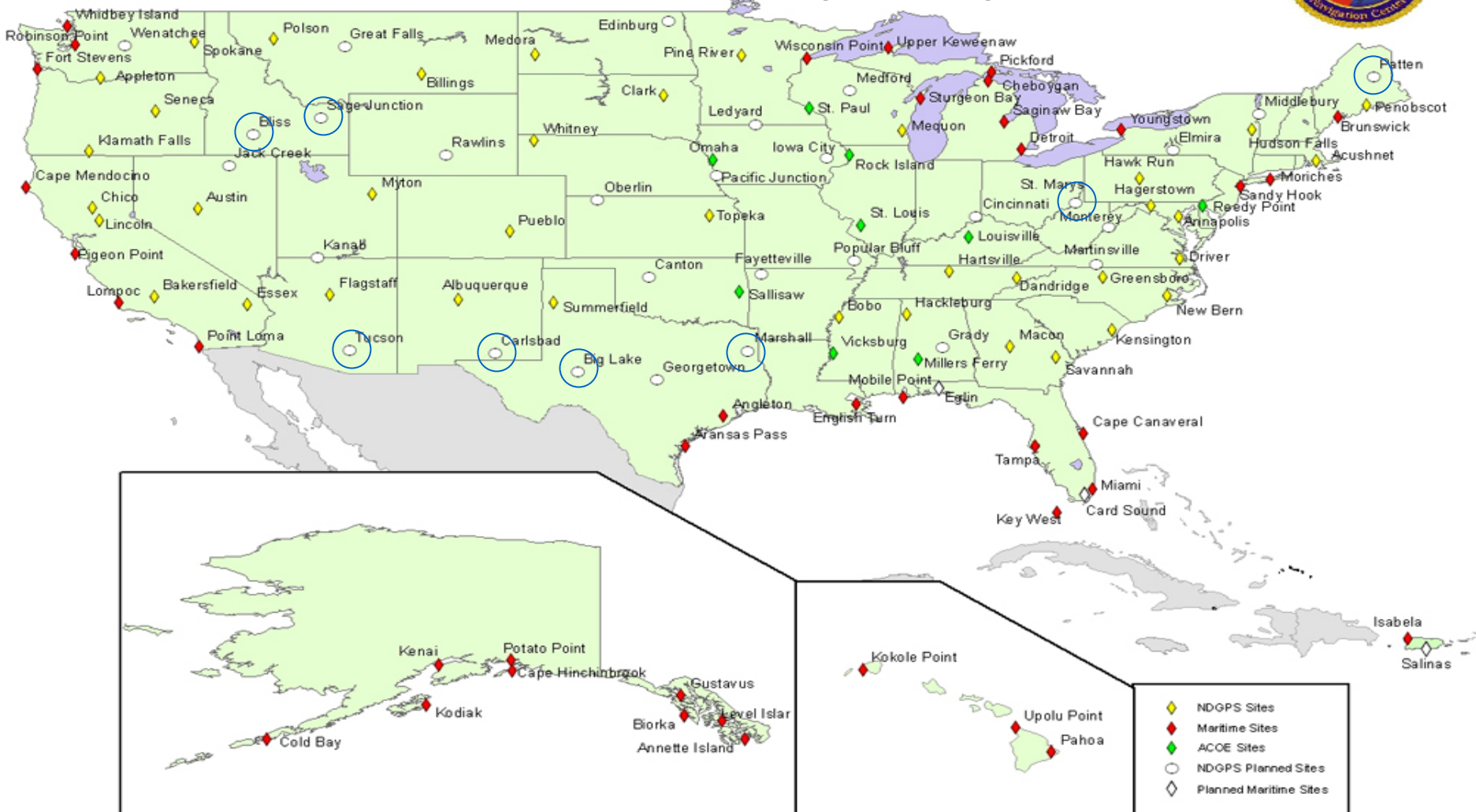
Sites Required for the 99% Single Coverage Goal

- St. Mary's, WV (New Build)
- Bliss, ID (New Build)
- Tucson, AZ (New Build)
- Carlsbad, NM (New Build)
- Sage Junction, ID (New Build)
- Marshall, TX (New Build)
- Big Lake, TX (New Build)
- Patten, ME (New Build)



Nationwide DGPS

Sites Required for the 99% Single Coverage Goal



October 2007



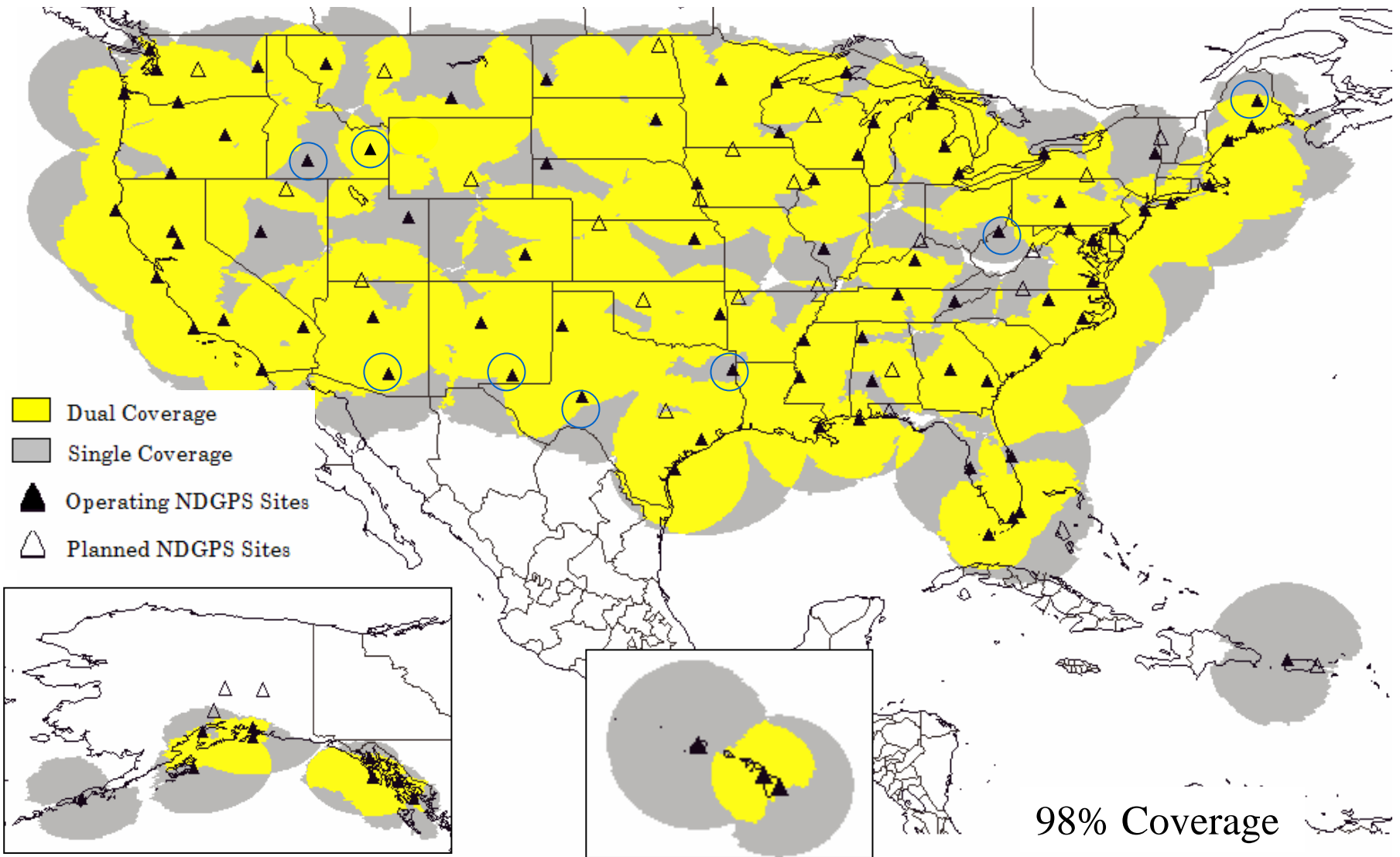
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NDGPS Coverage



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Site Preparation Procedures

May Take 2-3 years

- Find a Candidate Property
- Conduct a Site Assessment
- Complete an Environmental Investigation under the guidelines of the Programmatic EA (FONSI)
- Complete a Real Property Survey
 - Includes Soil Boring Samples
- Complete the Installation Design Plan
- Complete the Property Use Agreement (Lease/Purchase/ISSA)





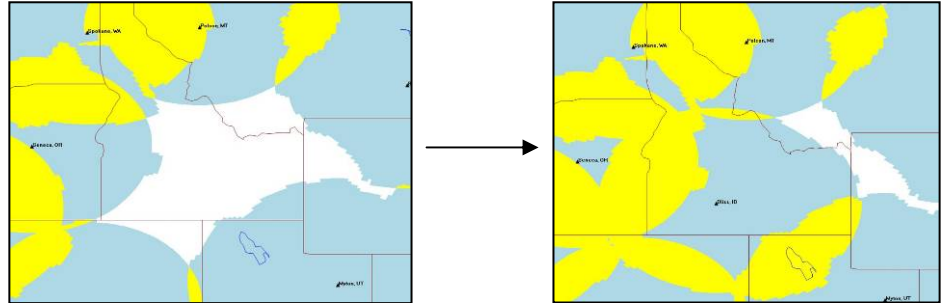




NDGPS FY08 Progress

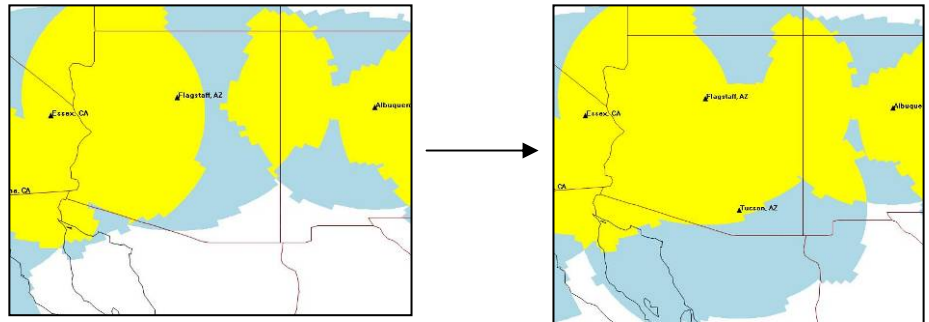
Bliss, ID (AKA Gooding New Build)

- Site Assessment Completed
- Property Survey Completed
- SF299 RP Document In Progress (BLM Property)
- EA Underway Through FHWA
- IDP Pending (ETC: August 2008)



Tucson, AZ (New Build)

- Site Assessment Completed
- Property Survey Completed
- SF299 RP Document In Progress (BLM Property)
- EA Underway Through FHWA (ETC: Nov 2008)
- IDP Pending (90% Complete, Awaiting EA)



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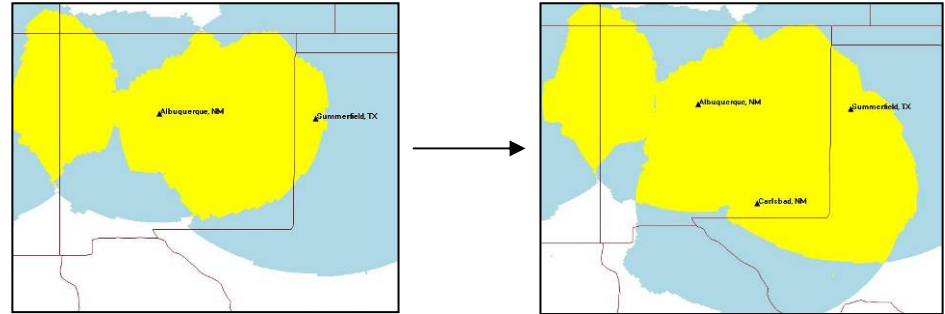
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NDGPS FY08 Progress

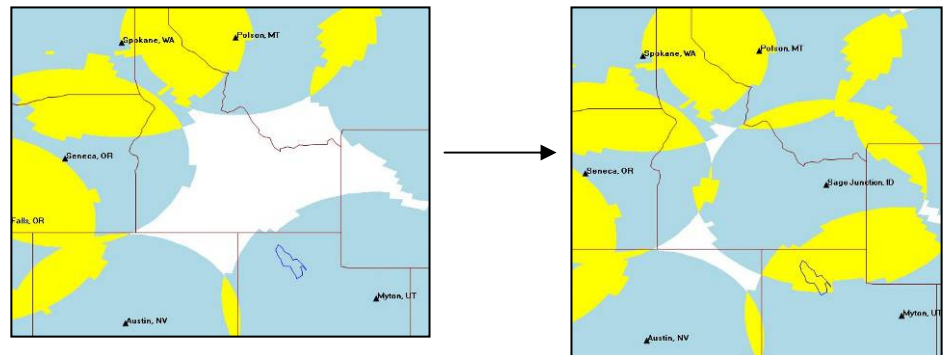
Carlsbad, NM (New Build)

- Site Assessment Completed
- Property Survey Completed
- SF299 RP Document In Progress (BLM Property)
- EA Underway Through FHWA (ETC: Nov 2008)
- IDP Package Completed
- Additional Items:
 - Archaeological Survey sent to Native American tribes 25 Jan 08.
 - Public Workshop Completed



Sage Junction, ID (AKA Idaho Falls New Build)

- Site Assessment Completed
- Property Survey Completed
- Lease Negotiations Pending
- EA Underway Through FHWA (ETC: Jun 2009)
- IDP Pending Results Of The EA



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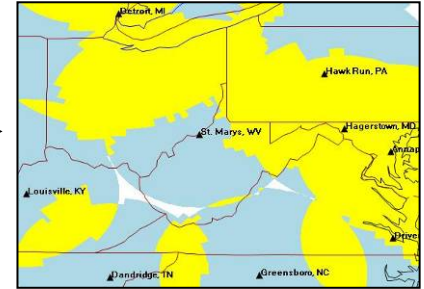
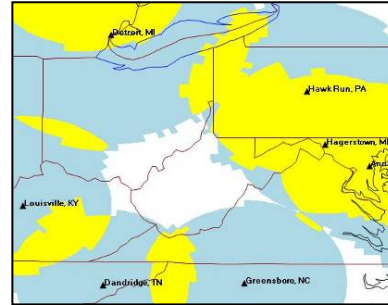
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NDGPS FY08 Progress

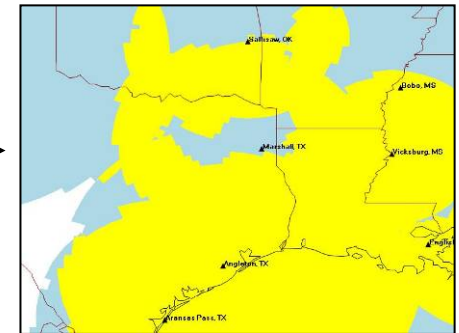
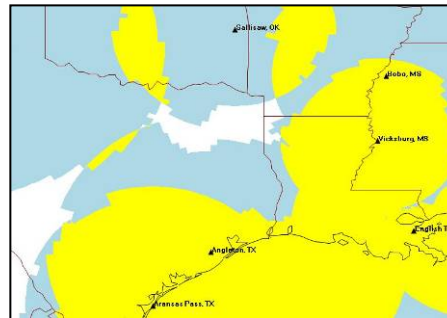
St Marys, WV (New Build)

- All Preparations Completed
- Site Ready For Construction (**AUG 11th- SEP 26th**)
- SOVT (**SEP 29th – OCT 3rd**)



Marshall, TX (New Build)

- Site Assessment Completed
- Property Survey Completed
- EA Completed
- IDP Completed
- Lease Negotiations Pending



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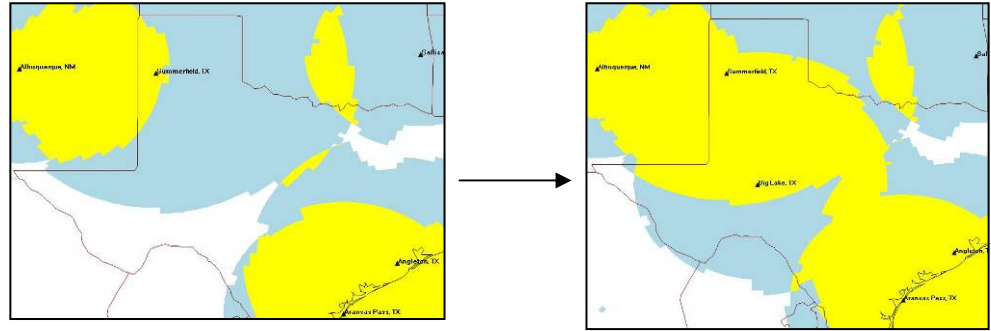
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NDGPS FY08 Progress

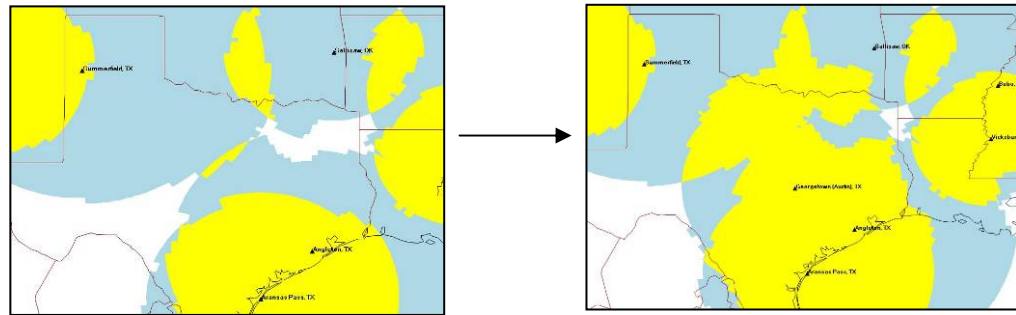
Big Lake, TX (New Build)

- Site Assessment Completed
- Property Survey Completed
- EA is Underway Through the FHWA
- IDP Completed
- Lease Negotiations Pending Results of the EA



Georgetown, TX (New Build)

- Site Assessment Completed
- Property Survey Completed
- EA Completed
- IDP Completed
- Lease Negotiations Pending



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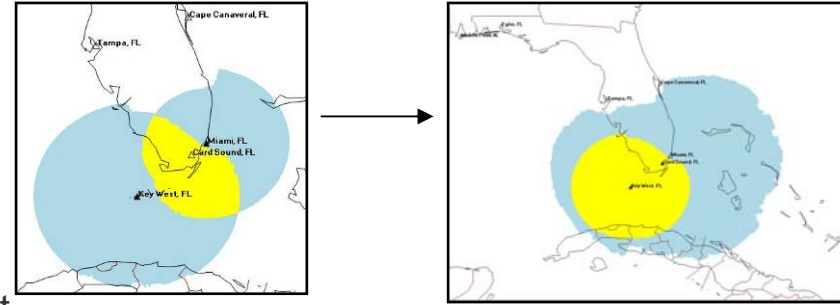
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Maritime DGPS Progress FY08

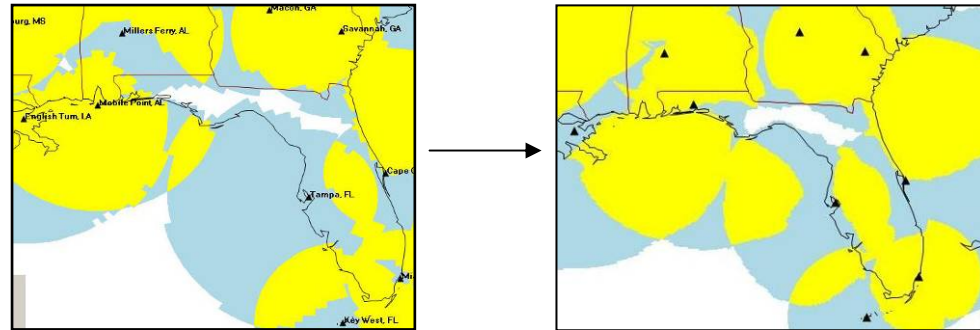
Card Sound, FL (Miami Replacement & New Build)

- All Preparations Completed
- Awaiting Frame Relay (FR) Circuit Delivery
- NAVCEN Requesting Onsite Survey Through Provider
- SFWMD Permit Received
 - Zoning Letter for Class 4 Miami Dade County Permit



Eglin AFB, FL (Mobile Point Replacement & New Build)

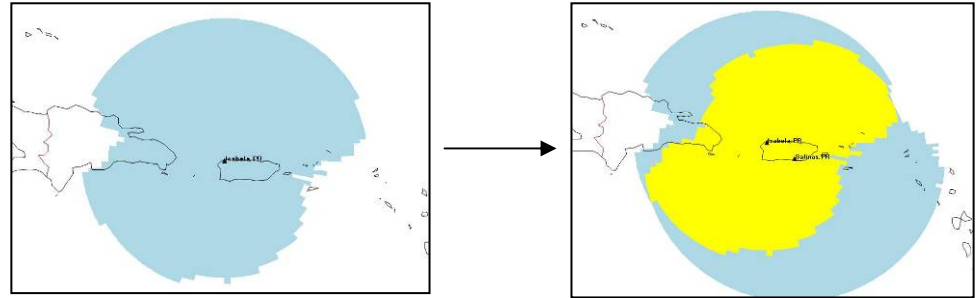
- Site Assessment Completed
- Property Survey Completed
- Interference Study (IS) Requested by USAF
- EA Pending Commencement (IS)
- IDP Pending EA
- Lease Pending/Construction Pending Clearance of County Permits



Maritime DGPS Progress FY08

Salinas, PR (New Build)

- Site Assessment Completed
- Property Survey Completed
- Interference Study (IS) Requested by USAF
- EA Pending Commencement (IS)
- IDP Pending EA
- Lease Pending



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Maritime DGPS Recap



- **Upgraded Receivers & Antennas: L1/L2 (L2C) Geodetic Grade**
- **Accuracy is typically 1-3 meters (*10 meters published*)**
 - Much better accuracy has been observed from prototype recap sites.
 - Testing is in progress to determine typical accuracy measurements.
- **New system architecture is easier and less expensive to upgrade as new technologies become available.**



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