

CGSIC - Surveying, Mapping, and Geosciences Session

- **Status of CORS Products and Services** - *Giovanni Sella, NOAA-NGS*
- **Status and Future of the NDGPS Program** – *Timothy Klein, Dept. of Transp.*
- **TDOT Survey Initiatives** - *Jim Waters, Tennessee Depart. of Transp.*
- **Use of High-Rate CORS for Airborne Positioning** - *Theresa Damiani, NOAA-National Geodetic Survey*
- **10:20-10:40 Break**
- **Repositioning the Oregon Real-Time GPS Network** - *Ken Bays, Oregon Dept. of Transp.*
- **IGS Real-Time Products and Services** - *Ken MacLeod, Natural Resources Canada*
- **Open Discussion**
- **12:30 p.m. Session End**

CORS Program Updates FY2012- 2013

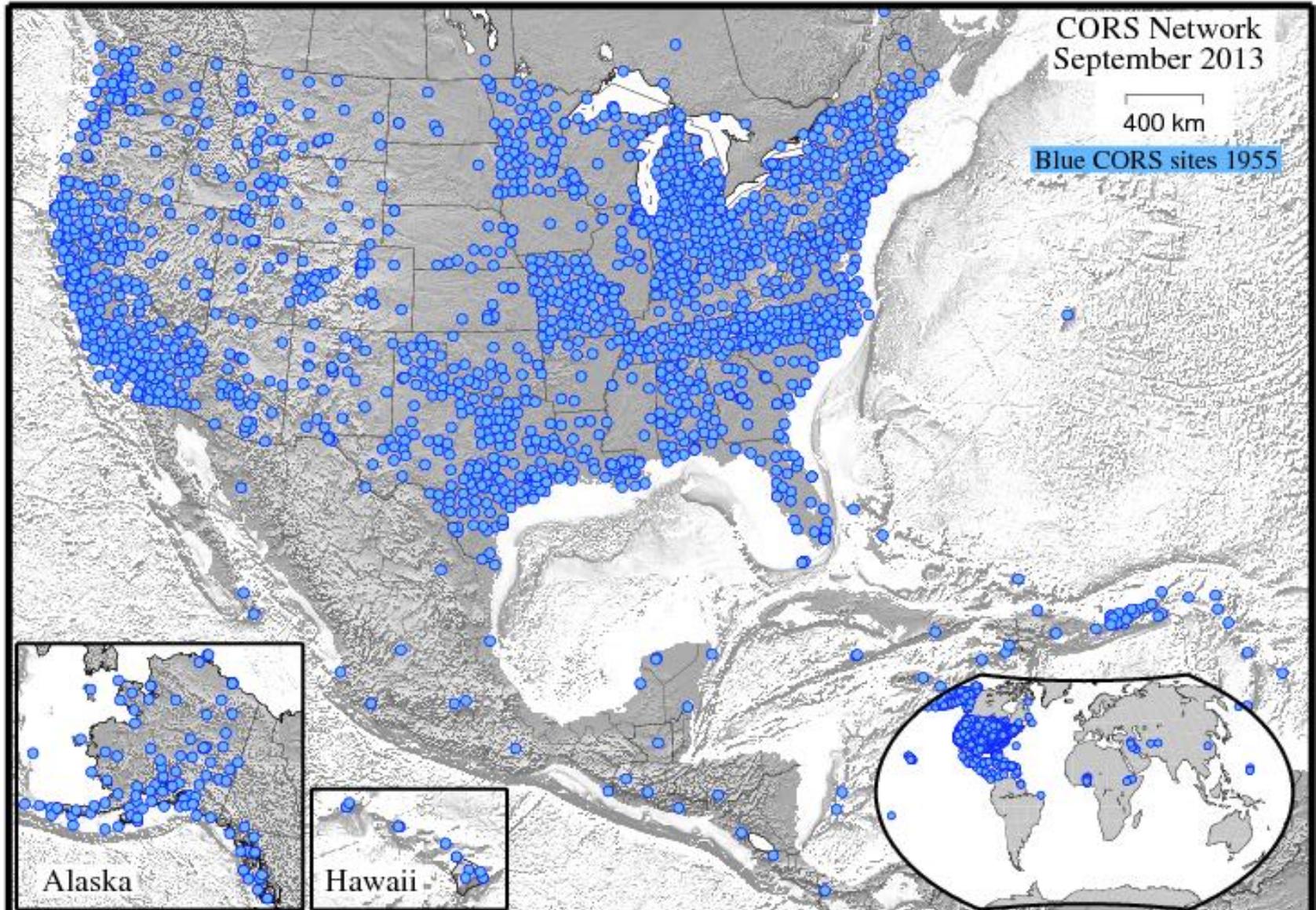
Giovanni Sella
CORS Program Manager
NOAA-National Geodetic Survey

CGSIC – Nashville, TN
16 September, 2013

CORS News for FY12-3

- Continue to see transition to full implementation of new CORS coordinates - IGS08/NAD83(2011/MA11/PA11)
- Growth continues to be strong, but has been reduced!
- Updated CORS guidelines released
- Transition from GPS only to GNSS (GPS + GLONASS)
- OPUS-Projects – almost almost released
- NGS continues to be an active participant in the IGS
 - Contributes ultra-rapid, rapid and final orbits
 - Acts as the Analysis Center Coordinator

CORS Network Status



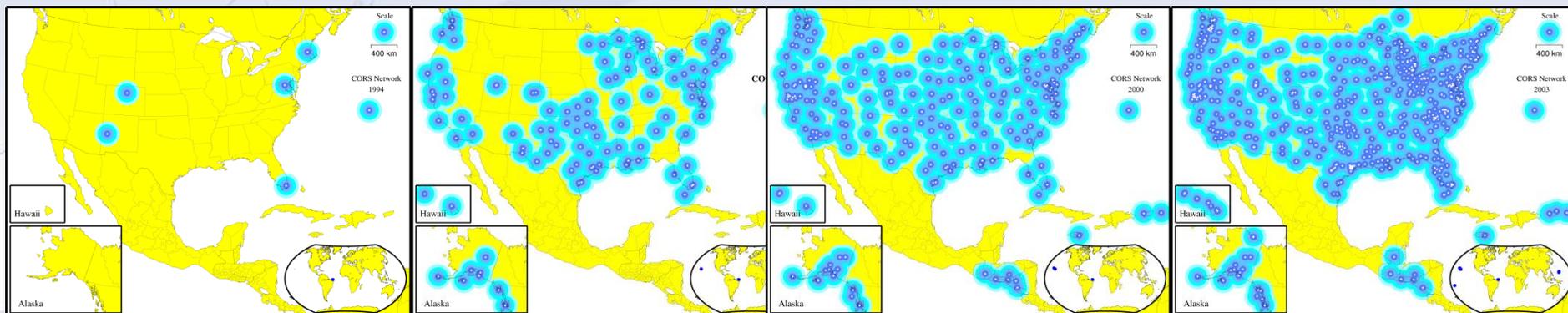
Growth of CORS Network

1994

1997

2000

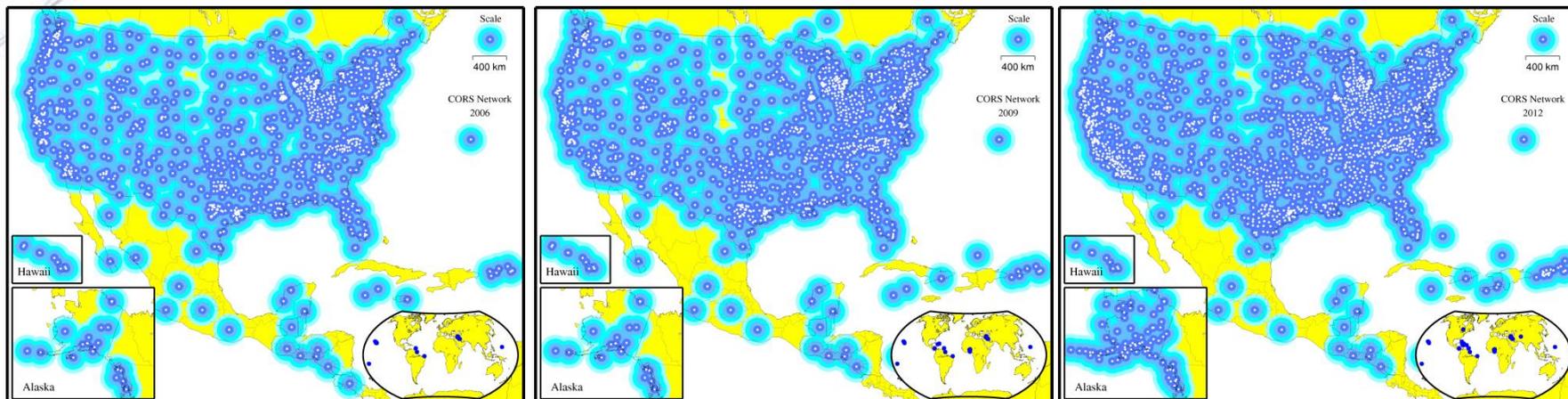
2003



2006

2009

2012



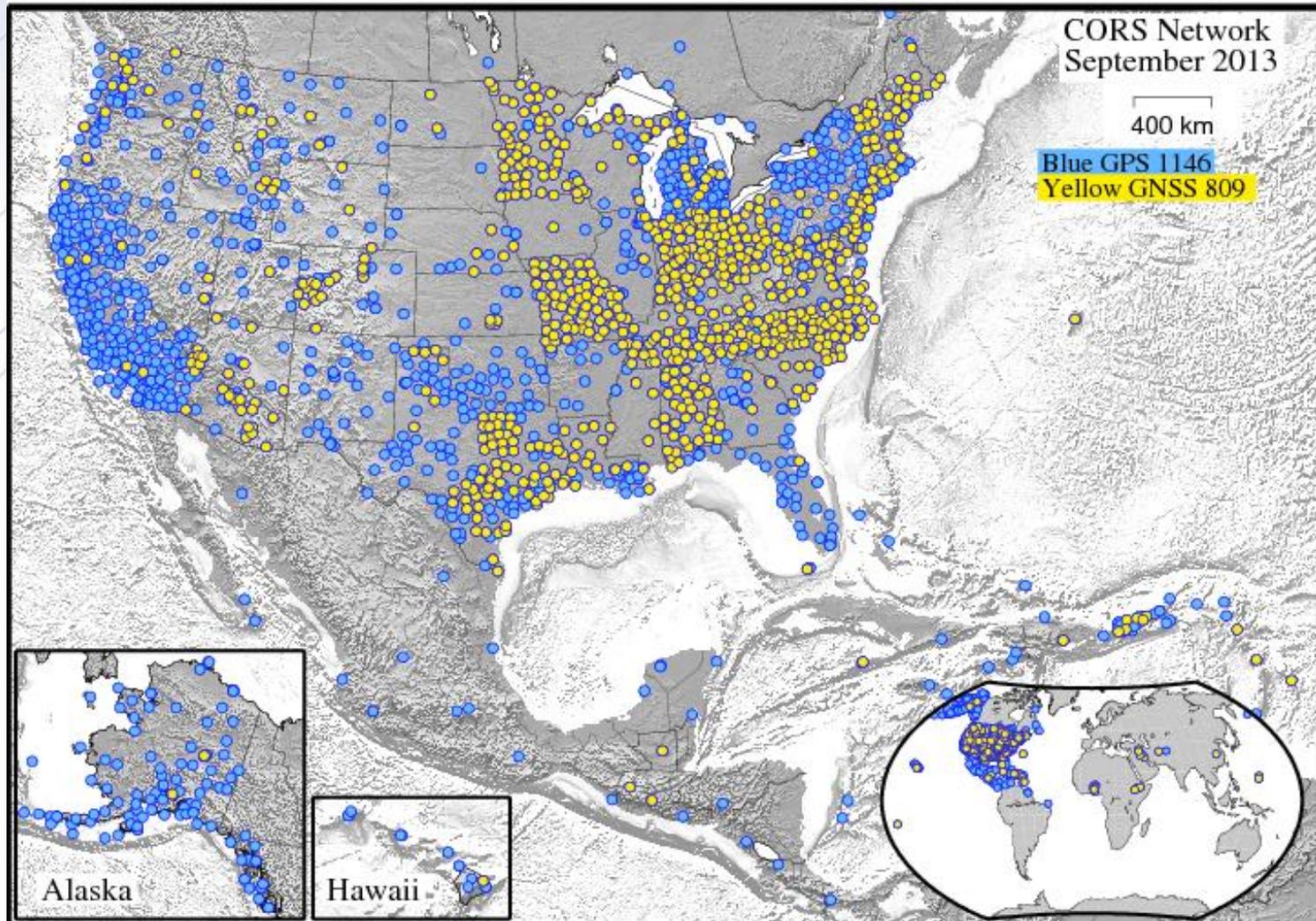
FY12-13 added 86 new CORS

With Growth Comes Change

- Growth is often thought of as good
- Too much “good” can be bad
- We are nearing 2000 stations
- Updated Guidelines released 6 Jan 2013
- Major change is minimum distance of 70 km between stations
 - Exceptions made for NOAA/Federal mission
 - Data quality of nearby CORS is poor
 - Concerns/suggestions should be made via:
ngs.proposed.cors@noaa.gov

Inclusion of GNSS in CORS Network

- Oct 1 2013 Start of transition to GNSS (GPS + GLONASS)



CORS Map

Pull down menu

http://geodesy.noaa.gov/CORS_Map



CORS Map (agencies)

Pull down menu

Choose up to 7 agencies

http://geodesy.noaa.gov/CORS_Map

CORS Map
National Geodetic Survey

NGS Home | NGS | Data & Imagery | Tools | Surveys | Science & Education

CORS Agency Map

Agency Abbreviations

- UNAVPB (406)
- USCG (171)
- TXDOT (139)
- MIDT (93)
- NCGS (77)
- MODT (65)
- MNDT (58)
- SMRTNT (55)
- OHDT (49)
- NYSDOT (42)
- FAA (39)
- TNDOT (39)
- ALDOT (38)
- NGS (38)
- INDOT (36)
- LASU (27)
- FLDT (26)
- UNAVCO (25)
- ASLDSC (23)
- OKDOT (18)
- PADT (18)

Map data ©2013 Google, INEGI, MapLink - Terms of Use

Access to GNSS data

- Anonymous ftp

ftp://geodesy.noaa.gov/cors/tst_gnssrnx/{yyyy}/{ddd}/{ssss}

yyyy – 4-digit year, ddd – 3 digit day-of-year, ssss – 4-alphanumeric site id

- UFCORS (User Friendly CORS) 4.0 New interface backward compatible

<http://beta.ngs.noaa.gov/UFCORS>

No RINEX format change (2.11), but users will now find in GPS only files L2C and L5 obs if available

UFCORS 3.6.3 (current)

Terminated on 1 October 2013

The screenshot shows a web browser window titled "User Friendly CORS Version 3.6.3 - (Private Browsing)". The address bar shows the URL "www.ngs.noaa.gov/UFCORS/". The page content includes a title "User Friendly CORS Version 3.6.3" and a notice dated "2013-Aug-21" regarding a new beta version 4.0. Below the notice, there are three buttons: "UFCORS Page Info", "Trimble Products Configuration", and "UFCORS Problem/Comment Form". The main form area contains several input fields and links: "Starting Day:" with a dropdown menu showing "Sep 15, 2013 - 258" and a "Get Older Data" link; "Start Time of the field observation:" with a dropdown menu showing "00:00" and a "Day and Time Info" link; "Time Zone relative to observation location:" with a dropdown menu showing "UTC (GMT)" and a "Time Zone Info" link; and "Number of hours of data you wish to receive:" with a dropdown menu showing "1" and a note "Please LIMIT requests for 1-second sampling rate data to 2 hours." Below the form are "CONTINUE" and "CLEAR" buttons. At the bottom of the page, there are links for "NOS Home", "Contact Info", "Privacy Policy", "Disclaimer", and "Document Viewers", and a footer stating "Web site owner: National Geodetic Survey (NGS), National Oceanic & Atmospheric Administration (NOAA)".

User Friendly CORS
Version 3.6.3

2013-Aug-21: UFCORS (User Friendly CORS) has a new beta version 4.0 that supports GNSS (GPS+GLONASS only) at selected sites.
<http://beta.ngs.noaa.gov/UFCORS>
This beta version will remain available until 1 October 2013, at which point UFCORS3x will be terminated and replaced by UFCORS4.0. For Pathfinder users this transition should be seamless. The biggest change is that UFCORS3x provided GPS data that excluded L2C and L5 data, and now will include GPS L2C, L5 and GLONASS if available. Users will be able to exclude GLONASS data but not specific GPS signals.

This utility allows you to obtain a specific block of Global Positioning System (GPS) data for a continuously operating reference station (CORS) contained in the network of GPS sites managed by the National Geodetic Survey.

The GPS data will be in "receiver independent exchange" (RINEX) format, version 2.10.

UFCORS Page Info Trimble Products Configuration UFCORS Problem/Comment Form

Starting Day: Sep 15, 2013 - 258 [Get Older Data](#)

Start Time of the field observation: 00:00 [Day and Time Info](#)

Time Zone relative to observation location: UTC (GMT) [Time Zone Info](#)

Number of hours of data you wish to receive: 1 Please LIMIT requests for 1-second sampling rate data to 2 hours.

CONTINUE CLEAR

[NOS Home](#) | [Contact Info](#) | [Privacy Policy](#) | [Disclaimer](#) | [Document Viewers](#)

Web site owner: [National Geodetic Survey \(NGS\)](#), [National Oceanic & Atmospheric Administration \(NOAA\)](#)

UFCORS 4.0 (as of 1 October 2013)

http://beta.ngs.noaa.gov/UFCORS
 Has been available since mid August 2013

Download Custom CORS data files
 This utility allows you to obtain a specific block of Global Navigation Satellite System (GNSS) data, in Receiver INdependent EXchange (RINEX) format 2.11, for any site in the Continuously Operating Reference Station (CORS) Network.

Fields marked with an asterisk (*) are required.

Selection Criteria

*Start Date:
 (First available data: Jan 01, 1994)

Year Day of Year

Start Time:

Time Zone:

*Duration in Hour(s):

*Site ID: [CORS Map](#)

Sampling Rate:

Available Satellite Systems:

Optional Files

Coordinate File :

NGS data sheet :

IGS Orbits in SP3(c) format :

UFCORS 4.0 (as of 1 October 2013)

Selection of GLONASS is site dependent

BETA User Friendly CORS (UFCORS) National Geodetic Survey

Download Custom CORS data files

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Fields marked with an asterisk (*) are required.

Selection Criteria

*Start Date: 09/02/2013
(First available data: Jan 01, 1994)

2013 245
Year Day of Year

Start Time: 00:00

Time Zone: UTC (GMT)

*Duration in Hour(s): 1

*Site ID: AB15 [CORS Map](#)

Sampling Rate: As Is

Available Satellite Systems: GPS GLONASS

Optional Files

Coordinate File:

NGS data sheet:

IGS Orbits in SP3(c) format:

Website Owner: National Geodetic Survey / Last modified by NGS.UFCORS Jun 25 2013

Timetable of roll out of GNSS data

- 1 October switch data ingestion to start distributing GNSS RINEX files in distribution directories /cors/rinex
- Migrate all older GNSS data in /cors/tst_gnssrnrx to /cors/rinex in reverse order all the way back to 2007
- As soon as 15 September to 1 October data migrated then UFCORS 3.6.3 replaced with UFCORS 4.0
- Transition should be finished by November hopefully sooner
- Command line query of UFCORS backward compatible and Pathfinder software works with new UFCORS
- OPUS remains GPS only
- GNSS is only GPS + GLONASS at this time

Summary

- Start distributing GNSS (GPS+GLONASS) for CORS
 - Updated site guidelines with 70 km minimum spacing
 - OPUS projects is almost almost released
 - All NGS Products and Services are in consistent frames since 2012:
 - IGS08 epoch 2005.00
 - NAD 83(2011,MA11,PA11) epoch 2010.00
- Require usage of absolute antenna calibrations

Questions/Comments

- We recognize that NGS and the public want CORS to be the primary access to the NSRS, but **accuracy and constancy are not always possible.**
- NGS is keen to hear your comments/concerns
- Check: geodesy.noaa.gov/CORS/news.shtml
geodesy.noaa.gov/CORS

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