Comments on and Discussion of the COGO Spatial Data Infrastructure Report Card

ASCE – Southern NM Branch Meeting
St Clair Winery – 1720 Avenida De Mesilla
Las Cruces, New Mexico

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Discussion of COGO Spatial Data Report Card - Burkholder

Presenter: Earl F. Burkholder, PS, PE, F.ASCE

- Long-time Member of ASCE.
- Retired from NMSU Surveying faculty in July 2010.
- Wrote book, The 3-D Global Spatial Data Model (GSDM).
- Is currently Past Chair – ASCE Geomatics Division EXCOM.
- Promotes use of 3-D COGO and error propagation software.
- Currently preparing Second Edition of 3-D book.

- Glad for opportunity to share information on COGO.
  (Note – Global COGO, Inc. is entirely different.)

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ASCE material includes:

- The Vision for Civil Engineering in 2025
- Achieving the Vision for Civil Engineering in 2025
- Raise-the-Bar for Engineering
- Strengthening the educational foundation for tomorrow's Engineers – Raise the bar initiative – 2012 & 2013
- 2013 Report Card for America's Infrastructure
- Failure to act – the impact of current infrastructure investment on America's economic future.

ASCE report card does NOT include information on the spatial data infrastructure. All CE's use/are responsible for spatial data!

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COGO Report Card on National Spatial Data Infrastructure (NSDI):

- Published/posted February 6, 2015.
- Can be downloaded from ASPRS web site.
- Patterned after ASCE Infrastructure Report card on:
  - Transportation, Energy, Water & 13 other categories.
  - Assessment of status every 4 years.
  - Assigns a grade A to F with pluses and minuses.
  - Used to justify infrastructure investments.
  - Notes grade changes from previous assessment.
  - Scorecard to keep track of progress (or lack thereof).

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- **The ASCE Geomatics Division (GMD) discussed what it would take to develop a spatial data report card. Big task!**

- **A "Report Card on the National Spatial Data Infrastructure" was developed by the Coalition of Geospatial Organizations (COGO)**

- **"Report Card" can be downloaded from:**
  http://www.asprs.org/Press-Releases/Coalition-of-Geospatial-Organizers-COGO-Announces-the-Release-of-the-Report-Card-on-the-U-S-National-Spatial-Data-Infrastructure.html

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Coalition of Geospatial Organizations (COGO) includes:

- American Society of Civil Engineers.
- American Society of Photogrammetry & Remote Sensing.
- Association of American Cartographers.
- Cartography and Geographic Information Society.
- Geographic and Land Information Society.
- Geographic Information Systems Certification Institute.
- International Association of Assessing Officers.
- Management Assoc. for Private Photogrammetric Surveyors.
- National Society for Professional Surveyors.
- National States Geographic Information Council.
- U.S. Geospatial Intelligence Foundation.
- University Consortium for Geographic Information Science.
- Urban and Regional Information Systems Association.

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Report Card on National Spatial Data Infrastructure (NSDI)

- **Grades only the NSDI Framework – best use of resources.**
- **Framework includes 7 data themes:**
  - **Cadastral Data. D+**
  - **Elevation Data. C+**
  - **Geodetic Control Data. B+**
  - **Governmental Units Data. C**
  - **Hydrography Data. C**
  - **Orthoimagery Data. C+**
  - **Transportation Data. D**

Overall grade = C

Report Card on National Spatial Data Infrastructure (NSDI)

- **Also includes evaluation of 7 management issues:**
  - **Capacity** **C**
  - **Condition** **D**
  - **Funding** **D**
  - **Future need** **D**
  - **Operation & Maintenance** **C**
  - **Public Use** **C**
  - **Resilience** **C**

Comprehensive grade = C-

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Executive Summary (paraphrased):

- **NSDI created by Executive Order 12906, April 11, 1994.**
- **Create plan for implementation of a national digital geospatial data framework. . & ongoing data maintenance."**
- **Federal government is no longer dominant data producer.**
- **Stakeholders embrace technology and processes that outpaces what the federal government can provide.**
- **There is an urgent need to reexamine relationships between data providers and users.**
- **Needed – a fair and equitable geospatial data marketplace that serves a full range of applications.**

Executive Summary (continued):

- **"The cornerstone of the program is a common digital base map that would aggregate the best representations of fundamental data from all levels of government. These Framework data layers are intended to serve as the unified foundation upon which all other geographic information could be created and shared. By maintaining a standardized, high-quality series of Framework data the NSDI would provide access to reliable, current from all of the above partners, not just Federal agencies. This would minimize duplication of effort and promote use of the most complete and reliable information."**

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Executive Summary (the clincher):

- **"While Framework data have been collected and made available for use over the past two decades, a digital geospatial Framework that is national in scope is not yet in place and may never exist."**
- **My question is, "Why not adopt the GSDM?"**

- **Example – in March 2014, the NOAA issued a request for information (RFI) asking for advice for making its data easier to use. They want private industry to tell them how to extract commercial value from the vast holdings of agency geospatial data – and then to do it without costing the federal gov.**
- **The RFI and Global COGO, Inc. response are posted.**

So, what does all this mean?

- **For me – I am preparing material for a Second Edition to the book I wrote, "The 3-D Global Spatial Data Model: Foundation of the Spatial Data Infrastructure."**

  - Manuscript is due April 1, 2016.

  - New material will include least squares, network/local accuracies, analogies, and computational examples.

  - The subtitle of the Second Edition will be, "Principles and Applications." The publisher insisted that a revised subtitle would enhance its marketability.

  - I've been gathering feedback from various persons/agencies.

- **Serious writing is underway!**

So, what does all this mean for ASCE?

- **Both as an organization and for individual members?**
- **ASCE Geomatics Division (GMD) is alive and "healthy."**
- **GMD will become part of Utility Engineering & Surveying Institute (UESI)**
- **GMD is currently working on a update to "Surveying Engineering Manual" previously published in 1985.**
- **GMD has much to contribute on issues of spatial data accuracy and standards for use of (geo) spatial data.**
- **ASPRS has promulgated Positional Accuracy Standards for Digital Geospatial Data – (traditional mode)**

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- **Thank you for opportunity to participate!**

- **A pdf file of this presentation can be accessed at:**

  www.globalcogo.com/ASCE-COGO-Rpt.pdf

- **The power point presentation file is posted at:**

  www.globalcogo.com/ASCE-COGO-Rpt.pptx

- **2nd Edition status – www.globalcogo.com/SecEd.html**