



History of the U.S. National Grid at the U.S. Geological Survey

Presented at:
**National Academies of Science
Mapping Sciences Committee**

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May 3, 2007

U.S. Department of the Interior
U.S. Geological Survey

Brief Summary

- **FGDC Process**
- **The USGS National Mapping Program implementation**
- **Examples**

FGDC Approval Process History

Milestones	Date	Action By
Initial Briefing to FGDC	1998-08	Public X-Y Mapping Project
Initial Proposal	1999-05-24	Public X-Y Mapping Project
Final Proposal	2000-05-03	FGDC Standards Sub-Working Group for USNG
Public review draft	2000-11	FGDC Standards Working Group
Comment adjudication complete	2001-09-12	FGDC Standards Sub-Working Group for USNG
Final draft	2001-09	FGDC Standards Working Group
FGDC-endorsed standard	2001-12	FGDC Steering Committee

Two Big Questions for the FGDC

Do we need a preferred national grid?

If so, which one?



The Hidden Parts of Question 1

For what purpose?

Is it a Federal role?

**What needs to be
standardized?**

Who will be affected?

Answers

For what purpose?

Protect life and property by
improving effectiveness of
emergency response

Answers

Is it a Federal role?

“provide for the common defense and promote the general welfare” clause of the constitution

Answers

What needs to be standardized?

“successful response starts with a map”

a common language of
location among maps used
in emergency response

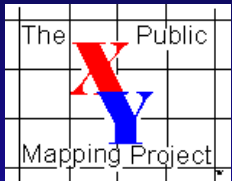
Answers

Who will be affected?

USGS National Mapping
Program and its partners



2001 FGDC Fact Sheet (excerpt)



The U.S. National Grid

An FGDC Standards Proposal



What are the objectives of the standard?

1. Make maps, GIS, and GPS more effective tools for emergency response, disaster recovery and disaster preparedness.
2. Increase the usefulness of GPS for commerce (e.g., Location-based Services).

By increasing the interoperability of:

Maps and GPS

Maps and GIS

Maps and Maps

This is a different type of standard for the FGDC because it is **NOT** about the data; it is about the *human interface* with the data.

Criteria for Answering Question 2

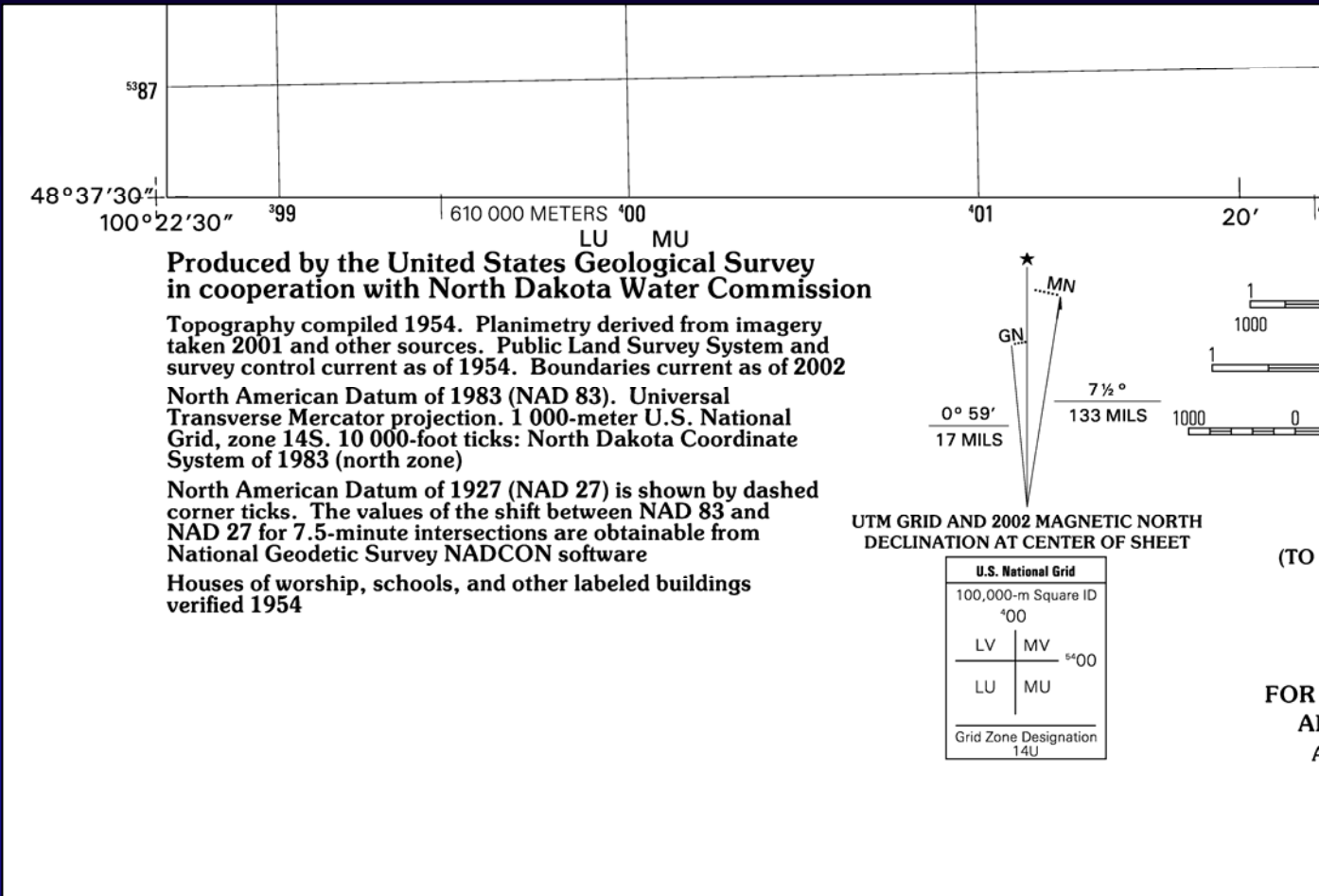
- **Must be human friendly**
- **Must unambiguously communicate location**
- **Must be able to implement on USGS maps**
- **Must be able to implement in GIS**
- **Must be able to implement in GPS receivers**
- **Must be easy to use in the field**
 - With no additional support
 - With no power
 - Under stressful condition

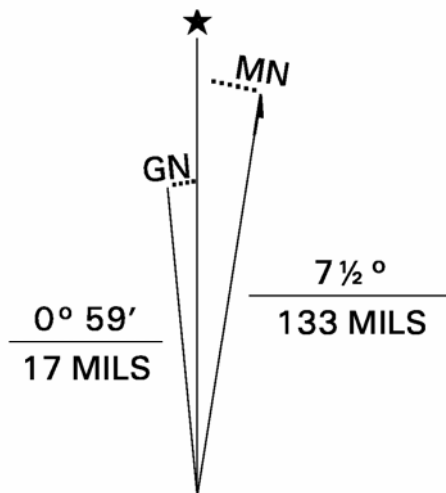
Answer to Question 2

**The Military Grid
Reference System
simplified for civilian
use**

The Grid on USGS Maps

- 1974** USGS adopts full-line UTM grid for 1:24,000 scale topographic maps
- 2002** USGS adopts US National Grid labeling for the full-line UTM grid on the 1:24,000 scale topographic maps
- 2003** USGS adds US National Grid to *The National Map*



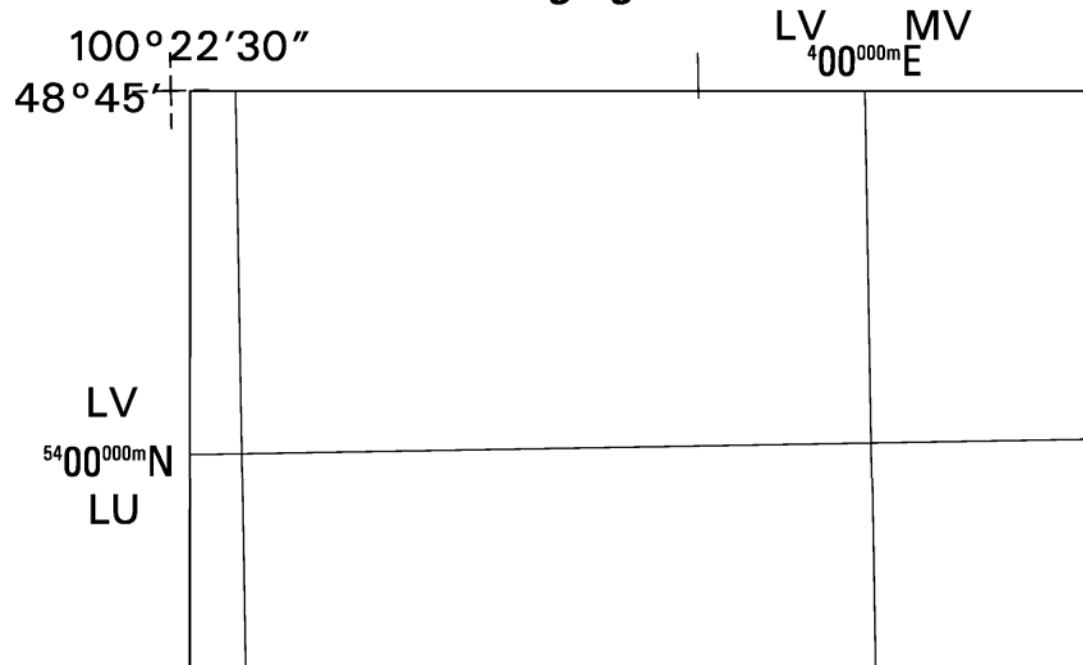


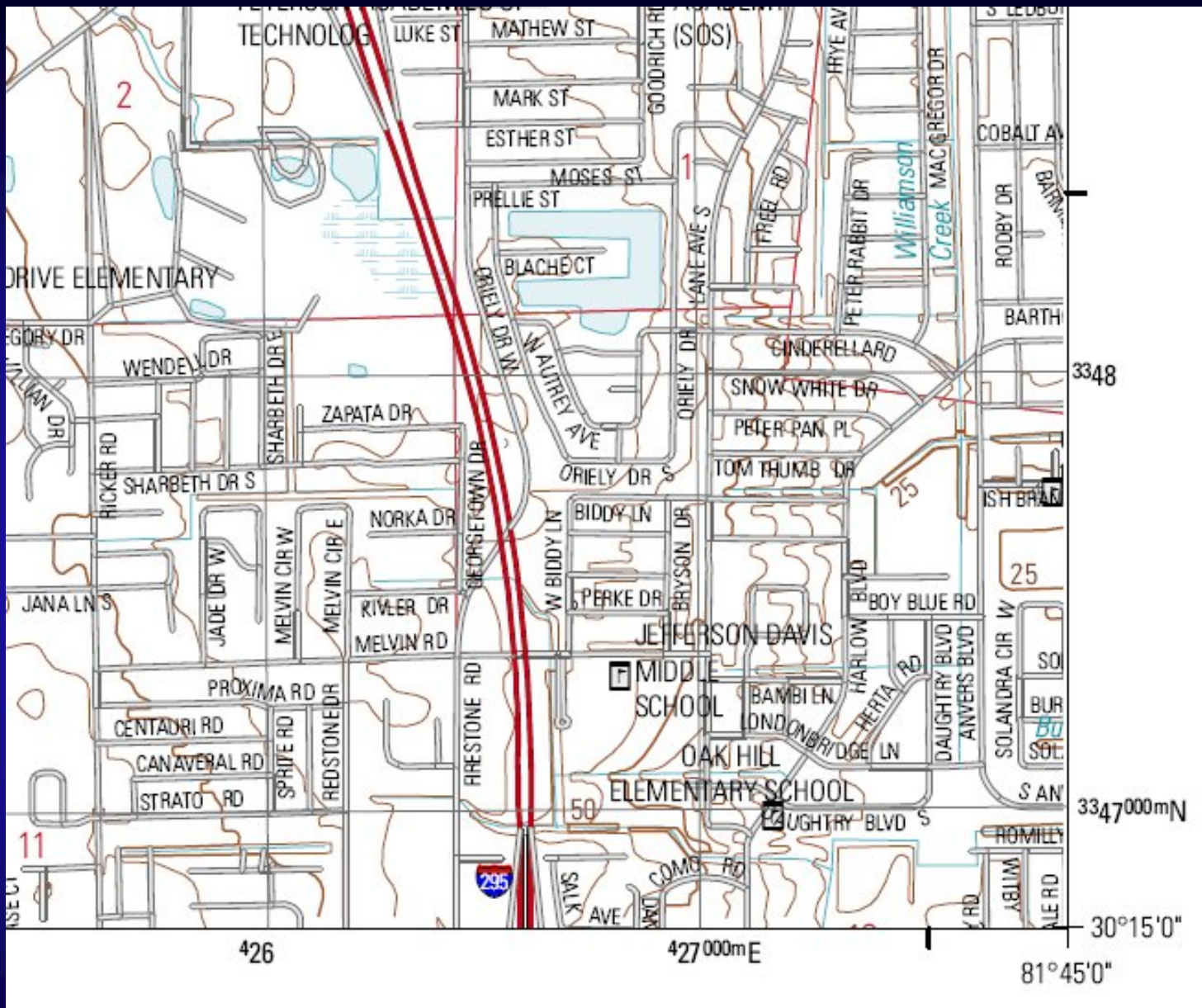
UTM GRID AND 2002 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

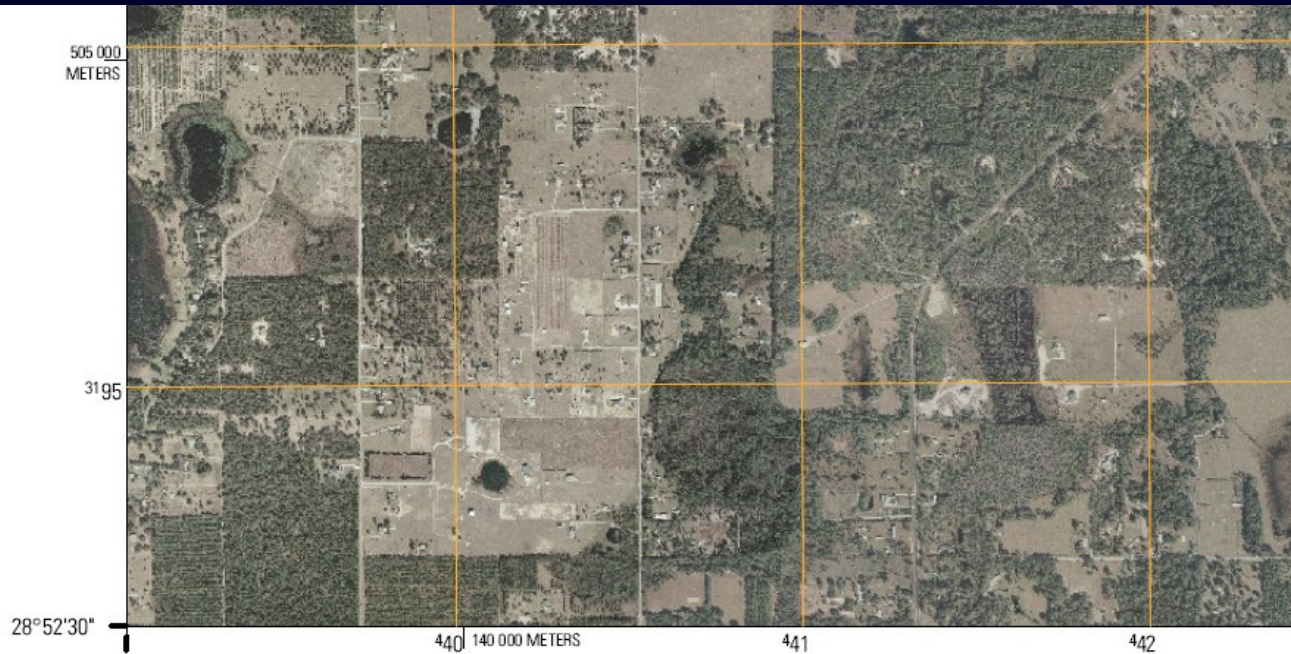
U.S. National Grid	
100,000-m Square ID	
400	
LV	MV
5400	
LU	MU
Grid Zone Designation	
14U	



U.S. DEPT.
OF THE
INTERIOR







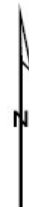
81°37'30"

Produced by the United States Geological Survey

World Geodetic System of 1984 (WGS84)
 Equiarectangular projection with standard parallel at center of sheet
 1 000-meter Universal Transverse Mercator grid, zone 17
 2 500-meter grid ticks: Florida Coordinate System of 1983, east zone

UTM grid declination, 0° 15' west
 2007 Magnetic declination, 5°29' west

Imagery.....Digital Orthophoto Quadrangle.....USGS, 2006
 Transportation.....CENSUS, 2004
 Names.....Geographic Names Information System, 1999



U.S. National Grid	
100,000-m Square ID	
MN	32 ⁴⁰
MM	
Grid Zone Designator	
17R	




Zoom to a Point: U.S. National Grid (USNG) Coordinates

Go to the [Guided Entry Form](#)

Enter USNG coordinates. Coordinates outside of the Viewer maximum extent will not be displayed.

USNG Coordinates

Zoom Level

Example coordinates for the Washington Monument: 18S UJ 23483 06480

Information: [FGDC Standards Working Group - United States National Grid](#) (1MB PDF)

Zoom To Point

Return to Menu

Close Window

And Beyond

- **Federal Program Adoption**
 - Office of Science and Technology Policy
 - National Geodetic Survey
 - U.S. Geological Survey
 - FEMA
 - National Fire Administration
- **State Adoption**
 - Florida
 - Division of Emergency Management

And Beyond

- **Adoption as an American National Standard**
 - INCITS L1 Project 1846-D
<http://l1.incits.org/l1sd4.htm>