

Session 11

Doug Burtoft

FL. Dept. of Transportation SMO

County General Highway Maps: Where We've Been, Where We Are, Where We're Going

Topic Description

An overview of the history of the General Highway County Map series, a discussion on the present state of the the series regarding the color reformat process, and the immediate and longer -range goals for the series regarding spatial accuracy and GIS applications.

Speaker Biography

Doug Burtoft has worked with the FDOT Surveying and Mapping Office for twenty years. He began as a Remote Sensing Technician before moving to the County General Highway Map series. He has helped develop the color reformatting process of the map series, and is involved in designing a process to improve the accuracy of the maps. He is a graduate of Florida State University with a Bachelor of Science degree in Meteorology.

Session 11

Travis Richards

FL. Dept. of Transportation SMO

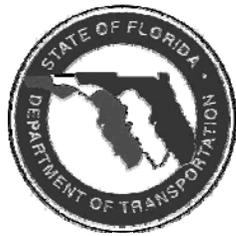
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Speaker Biography

Travis Richards has worked with the FDOT Surveying and Mapping Office for four years, contributing to the updating of the County General Highway Map series. He is a graduate of Florida State University with a Bachelor of Science degree in Geography. His specialized fields of interest include Geographic Information Systems (GIS) and the eventual conversion of the County General Highway Maps into an intelligent base map for GIS applications.



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Doug Burtoft

Travis Richards

Geographic Mapping

COUNTY GENERAL HIGHWAY MAPS

Out with the Old-

In with the New



The 1930's

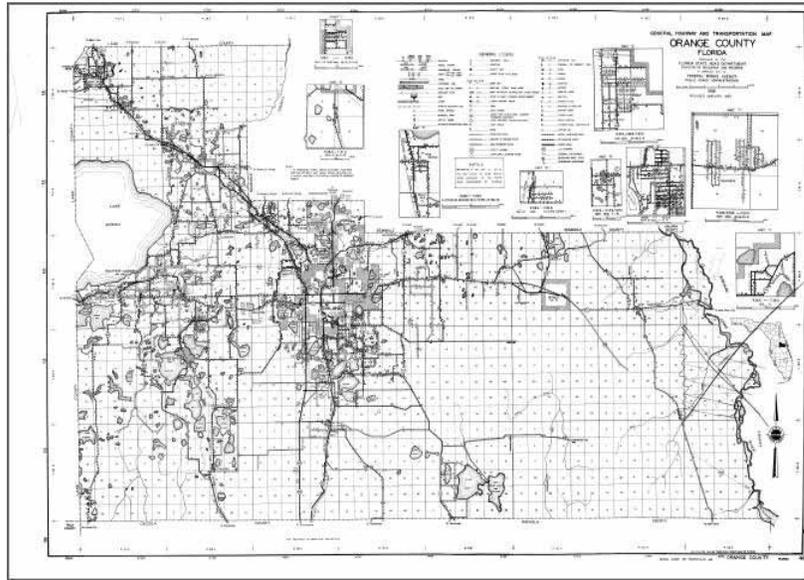


History of the Map Series

- Series started in mid 1930's.
- Maps were hand drawn and lettered.
- Very time consuming.
- No margin for error – no “undo.”



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ORANGE COUNTY, FL 1936

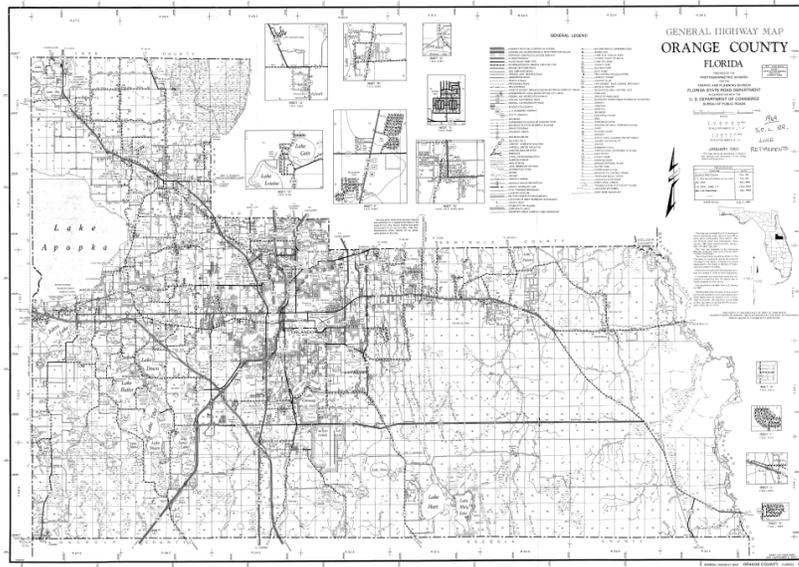


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The 1950's



- Still a lot of hand-drafting
- Use of “stick-up” - the original cut and paste
- Much more detail to map – addition of wetland features



ORANGE COUNTY, FL 1961



The 1970's

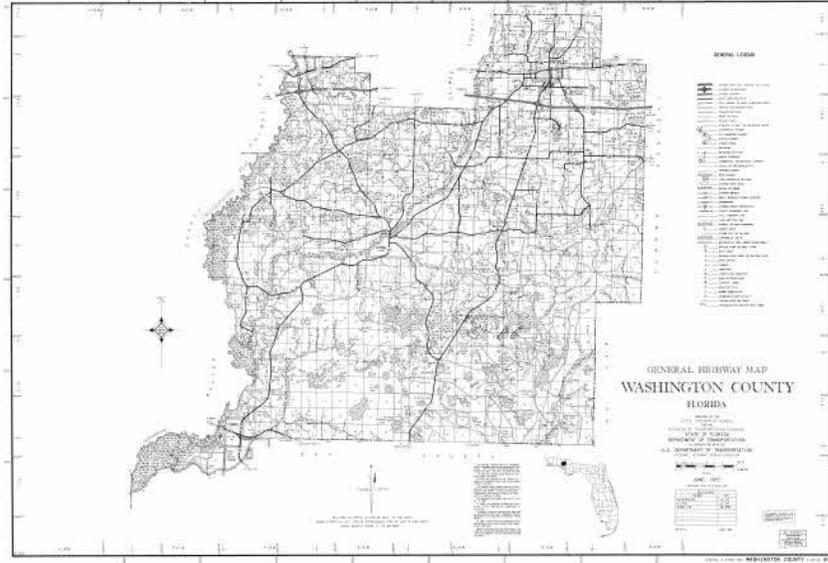


Into the Digital Age

- Late 1970's- began production in digital format.
- Designed to emulate “stick-up” maps.
- Much easier to modify and update maps.
- Easier to correct mistakes.



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WASHINGTON COUNTY, FL 1977



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Updating the Maps



The Old Way - Manuscript

- A “Map Manuscript” was produced by the Surveying and Mapping Office.
- Aerial photography as a back drop.
- New road alignments digitized into the digital file.



The Old Way - Manuscript

- File clipped apart along USGS 7.5 minute quadrangle map borders.
- Quads plotted, trimmed and bound.
- Manuscript sent to district.

The Old Way - Road Inventory

- Field Inventory using highly accurate (0.01 mi.) odometer, compass.
- Color coded manuscript.
- Returned to Surveying and Mapping Office.



Old Style Field Inventory



The Old Way - Final Map

- Patterns applied according to color code.
- Other updates added as needed (boundaries, insets, etc.)
- Updated file plotted in black and white.



The New Way

- No Manuscript Preparation
- Microstation design file sent to consultant.



The New Way-Road Inventory

- GPS alignments collected during field inventory.
- Alignments color coded in a blank DGN file according to road type.
- New file returned to Surveying and Mapping Office.
- Inventory data compared to 2m +/- raster backdrop imagery prepared by Photogrammetry Section.



The New Way-Final Map

- New DGN file from consultant is referenced to existing map.
- New alignments merged into master file and appropriate attributes and symbology applied.



Summary of Advantages

- Fewer man-hours required to produce map
- Fewer resources (paper, ink etc.) required
- Greater accuracy in road alignments and physical features
- More frequent updates of maps



The 1990's



Lots of things going for the map series:

- Popular / well established
- Lots of information
- Combine transportation,
natural geography and
culture



Why Change?

Interest in GIS

- Digital Files Found Wanting
 - Very large file size
 - Incomplete/ disconnected line work
 - Displaced map features
 - Inability to query map info in present format

Keeping Up With the Joneses

- Visual Maps Found Wanting
 - Checked ours against other states
 - Some very impressive color maps
 - Getting behind the curve



Increased Marketability

- Desire to have a highly accurate base map upon which numerous applications could be based.
- Increased information stored in the map.
 - scale ranges
 - attribute tables



Goals for New Map

- No loss of information
- More flexible, easier to customize
- Make our data more GIS compatible
- Aesthetically pleasing



Goals vs. Final Product



No Information Lost

- Added roads not shown on b/w maps
- Some cultural features eliminated, others added.

Added Flexibility

- Separated text from physical features
- Use more than 150 levels compared to 23-24 used in b/w format

GIS Compatibility

- Topology cleaned up
- Common features linked together rather than being segmented
- Cells vs. Symbols
- Side benefit: File size reduction
 - 12.6 Mb to 5.7 Mb

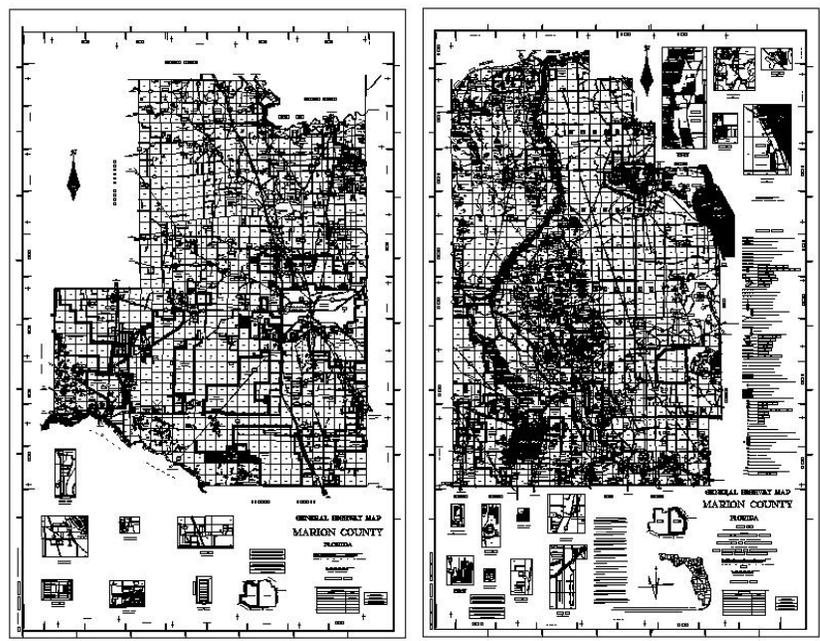


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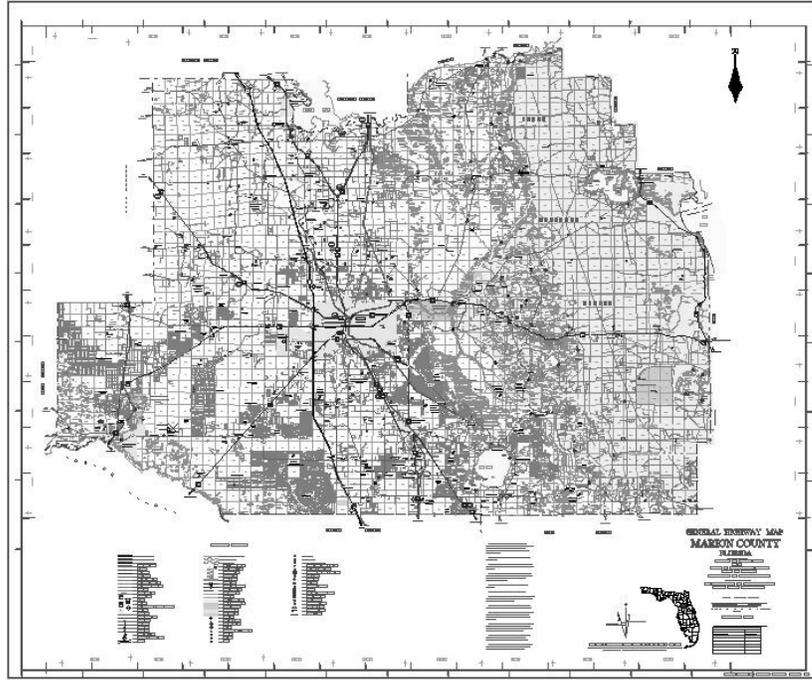
Aesthetically Pleasing?



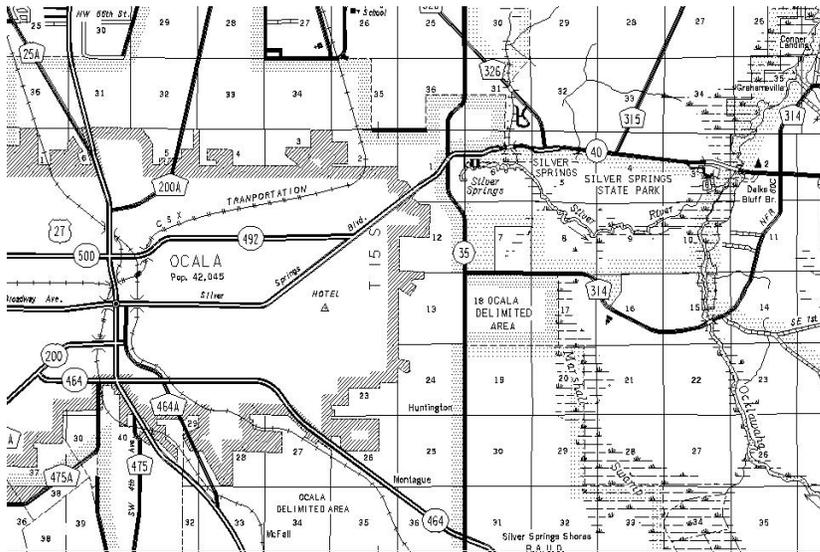
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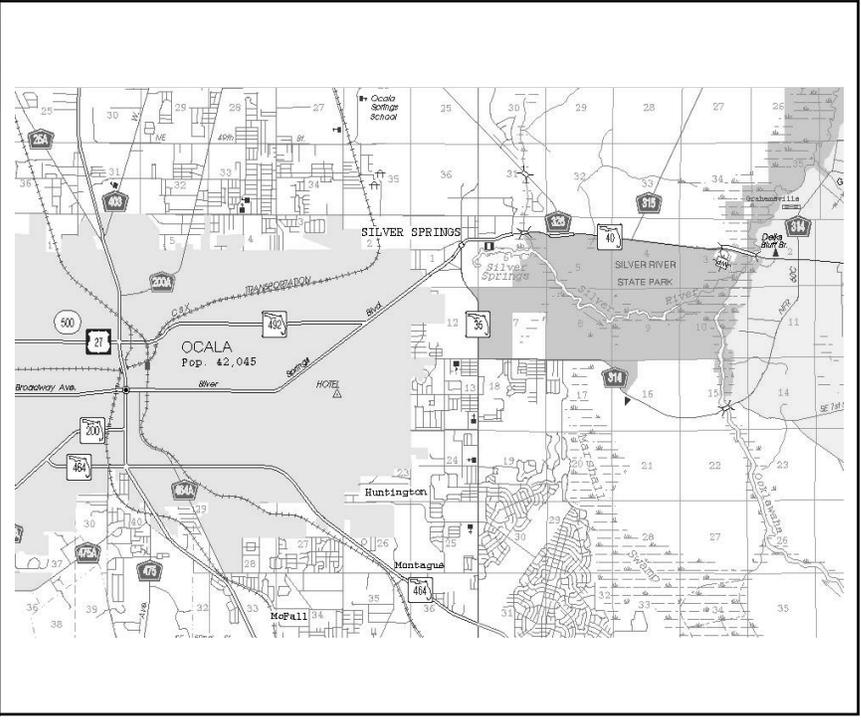


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What's Next?



Short-Term

- All maps reformatted to color maps by end of 2006
- B/W maps no longer being produced



Long-Term

- Create a GIS database from the data collected and displayed in the County Maps
- Fully functional GIS map
 - Balance functionality and appearance



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