

2007 Winter OSACA Conference Cartographer Breakout Sessions

Jan. 23-24, 2007

DOR Training Matrix

- Brett asked if there was anything missing from the training matrix?
see Appendix A: DOR Training Matrix
- It was mentioned that GeoMedia training should be added to the list for those counties. DOR will not be supporting GeoMedia anymore and will be moving strictly to ArcGIS (ESRI) products.
 - ✓ Oregon GeoMedia Users Group could work together to support and define GeoMedia training.

Cartographer Certification

- DOR has been looking into the work that the State of Idaho has been doing and incorporating some of their documents into the Oregon effort. DOR has been in contact with the State of Idaho about their certification effort.
 - ✓ Advanced certifications would include GeoMedia and ESRI classes.
 - ✓ It was asked if the certification timetable was still valid. Brett explained that with the cartographer staff turnover that the CIS Unit has been experiencing over the past year; this timetable has been delayed. The goal is to have a plan of action by this time next year.
 - ✓ It was asked if the certification would improve the pay rates for cartographers. DAS has been evaluating the cartographer and GIS positions and may be adding a new position of “Cartographer/GIS” as the skill sets are becoming more similar. However, there is no guarantee that certification would result in higher pay.

Cartography Discussion

There was a question about use of meters in ODOT descriptions and highway right-of-way maps. There was discussion about using the macro in Microstation used to “switch working units.”

- ✓ It was suggested to build it as if it were in feet then to “scale it” to the units desired.
- ✓ It was suggested that to get to the most up-to-date ODOT data to check with the regional offices.
- ✓ It was asked if there is a list of the local contacts for the ODOT regional offices.
- ✓ Many of the ODOT strip maps have been scanned and are available digitally on the ODOT FTP site.

- ✓ Parts of the BLM site are back up.

Map Manual: DOR is currently making updates to the Map Manual and has requested that if anyone has any suggestions that they would like to map to the manual to pass them along. Important updates that should be made are those concerning case law. If anyone has any updates concerning case law please pass those along. There is not regular schedule to update the manual, but might be something to look into in the future.

ORMAP Update

“Goal 4” is now no longer the final product produced for ORMAP. There are now the ORMAP Technical Specifications for data produced for ORMAP, these new specs can be downloaded from the ORMAP site. We will be discussing a process to test if your data meets these new tech specs in Wednesday January 24, 2007 “break-out session.”

Spending Limitation: Many of you may know about ORMAP’s spending limitation, this limitation was set at \$3.4 million for the 2005-07 biennium and we are quickly reaching that limitation. One of the reasons is because of the large number of grants that were extended from 2003-05 into the current biennium. ORMAP and DOR will be managing this limitation by keeping a track of the contracts that will be paid out over the next 5 months, and may need to pay out some grants after July 1, 2007. We will also be limiting the number of contracts extended into the 2007-09 biennium because the limitation for 07-09 was reduced to \$2.8 million.

Spring 2007 Grants: The amount of grants that counties have on their ORMAP business plans is projected to be less than the balance of the ORMAP fund, so we hope to fund all of the grants to be requested. Phil urged that everyone please update their business plans so we can continue to plan for future ORMAP grants.

ORMAP Goal 2 Deliverable: ORMAP will stop accepting Goal 2 data on Friday February 2, 2007. This is so we can start putting all of the counties’ data together into the statewide shapefile. Currently we are only using the statewide shapefile to aid in the search of taxmaps on the ORMAP site.

One reason that it is important to get the updated 2006 data is so that any new taxmaps or changes to taxmaps can be found on the ORMAP site. Currently if the shapefile and the map list do not match, the newer taxmaps will not be displayed in a search of the map list. This can cause some confusion as taxpayers search ORMAP for their taxmaps in a newer subdivision.

Another question was; how does DOR handle edge-matching discrepancies (i.e. gaps and overlaps)? Last year Rod at DOR spent a lot of time attempting to clean up the county boundaries in the statewide shapefile. DOR would like some suggestions as to the best way to handle these problems. As mentioned before the only current use of this data is on the ORMAP site.

- ✓ It was suggested and agreed upon by the attending members to “stretch or shrink” the taxlots along the county boundary to make it fit. As long as none of the polygons are removed or lost during the process, the group felt that as long as all the taxlot polygons remain represented the size and shape would not matter for this use.

Updated ORMAP Goals: The ORMAP Advisory Committee suggested that if the counties cannot meet the October 2008 Goal 4 date; what would be more realistic completion dates? How much of the state (taxmaps) can we expect to be completed? With that, Phil went through all of the counties online ORMAP business plans to come up with two new goals and a percentage of the state that would be completed to the ORMAP Technical Specifications by those dates. He came up with the following goals*:

- Goal 3: 2006 50% of the taxmaps to ORMAP Specs
- Goal 4: 2008 70% of the taxmaps to ORMAP Specs
- Goal 5: 2010 90% of the taxmaps to ORMAP Specs
- Goal 6: 2012 100% of the taxmaps to ORMAP Specs

**For a complete list of the goals and their definitions, see the ORMAP site.*

Projects that can be funded: ORMAP will only fund projects that support the A&T function of property taxes. Once counties have completed their taxlot base to the tech specs, other projects that the county would like to start may be funded. These other projects would be put in a lower priority to those completing counties to the tech specs. There have been a few suggestions as to what those projects could be, a couple are soil maps and building footprints.

Once we get closer to a majority of the counties completing their base maps we will look into these types of projects.

ESRI Parcel Model Discussion & Edit Session Demonstration

David Cutting, Lane County's Lead Cartographer, performed an edit session of assessor map data using ArcGIS edit tools and data that was in the ESRI Parcel Model.

ORMAP Technical Specification Map Evaluation Training

Dean Anderson, Polk County IT Director led a discussion of the tests involved in determining if county assessor maps meet the ORMAP Technical Specifications. Out of this discussion automated testing tools will be developed to speed up and document the evaluation process.

Notes on the ORMAP Technical Specifications Tests

From Dean Anderson, Polk County:

The following are notes that discuss the various tests that could be part of the map specification document. Please refer to the map specification document for detailed descriptions. Tests for meeting the map specification should follow these rules:

- Must be understandable
- Must be relatively easy and cost effective to implement.
- Must create measurable results.
- Must be reproducible.

The following seven tests could be given to test for complete compliance with map specification standards and are illustrated in the following sections.

Mapping Control

1. Control Exists
2. Control Mapping

Geometry

3. Geometry Accuracy
4. Location Accuracy
5. Feature Area
6. Internal slivers/gaps/laps
7. County boundary slivers/gaps/lap

Mapping Control

1. Control Test A: Is control present and do attributes/fields that describe accuracy and type of control points exist?

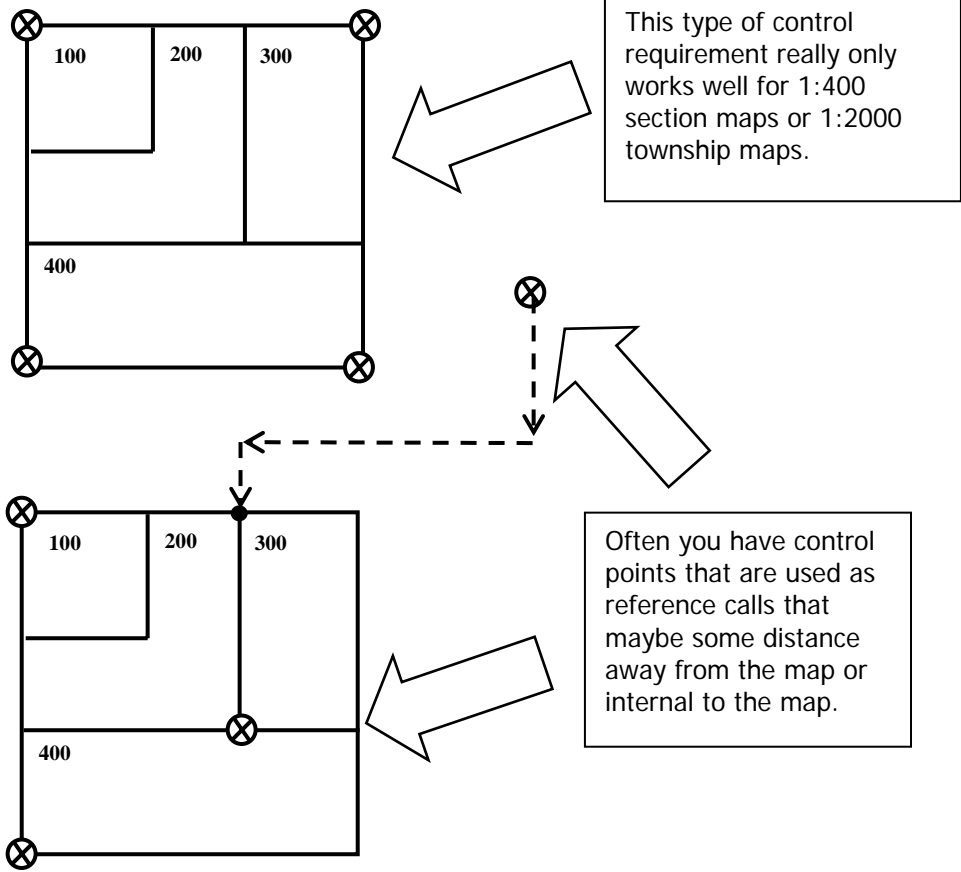
Answer: Yes, control points exist with fields that describe accuracy and control type.
No, control points do not exist or accuracy of points is not known.

Discussion: Field/Attributes for control should include some type of accuracy rating and a designation as to the type of control.

2. Control Mapping Test B: Is enough good control present to be used for control mapping?

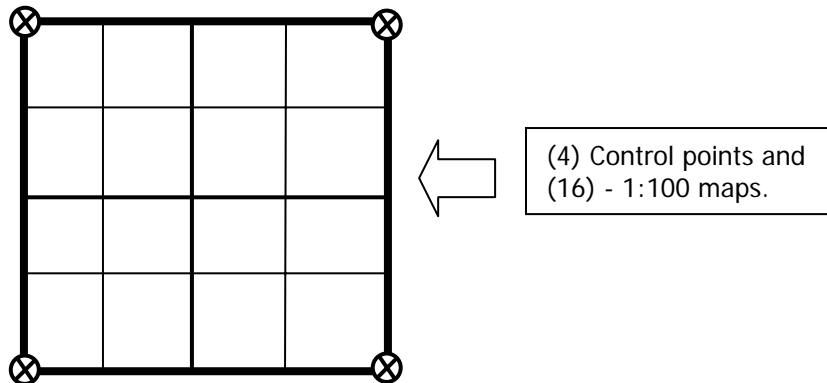
Answer: Yes, approximately four control points of required accuracy exist for each map.
No, not enough control points of known accuracy exist. (This could mean some maps do not meet the specification and others do.)

Discussion: Distribution of control points and deciding if they are used may be difficult. Simply stating that each map must have four (4) control points of specific accuracy often does not accurately reflect mapping techniques. Instead the statement might be: "Four (4) control points of a specific accuracy were used to build each map." If not it may be an "Exception Area".



However, the distance a control point is from a map is important. For example, using four section corners to control all 1:100 maps in a city probably does not meet map specifications.

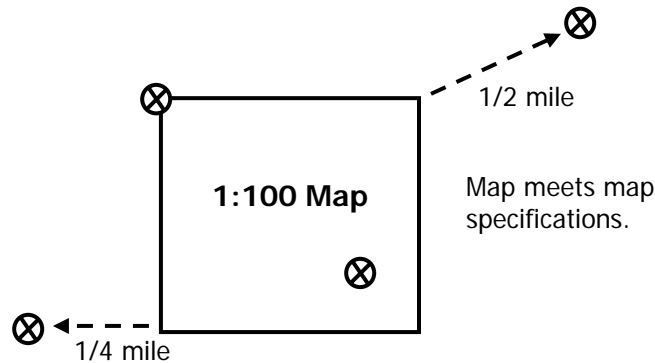
THIS CONTROL DOES NOT MEET SPECIFICATION!



To meet map specifications a map must have four control points within a specific distance such as described in the following table.

Map Scale	Distance within 4 Points that meet accuracy specification.
1:100	½ mile (+/-1ft)
1:200	1 mile (+/-1ft)
1:400	4 miles(+/-10ft)
1:2000	Within map

For example the following map would meet map specifications:



This test could be easily automated by counting the number of control points with a specified distance of maps based on scale. For example you could:

- create four data sets of control based on accuracy type,
- create four additional data sets based on map scale and type,
- use a “near function” to count the number of points within a specified distance from each map
- based on the map type count the number of needed for each map.

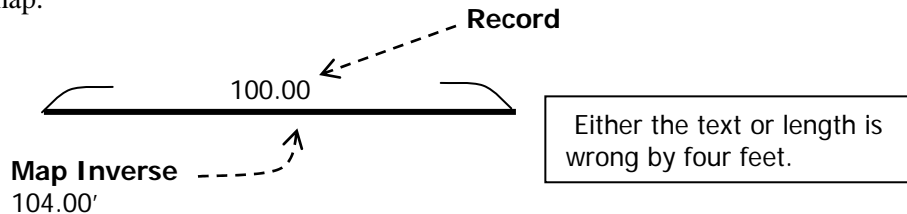
Geometry Tests

- Geometry Test: Does the line work that describes taxlots accurately reflect legal record descriptions?

Answer: Yes, the line work that depicts taxlot lines generally matches the text (annotation) that is next to it (within limits identified in the map specification).

No, the line work that depicts taxlot lines generally does not match the text (annotation) that is next to it (within limits identified in the map specification).

Discussion: A simple way to complete this test is to compare the length of a line on the map and compare it to the length of the line as depicted by its length for a limited number of lines on the map.



This test could be passed if 80% of the lines tested were within +/- 2% or +/- 2' on a 100' line on a 1:100 scale map. If 10-15 lines per map were tested this could easily be completed. This test could also be automated and statistics generated for a map.

Map Scale	Relative Geometry Accuracy
1:100	+/- 2ft
1:200	+/- 4ft
1:400	+/- 20ft
1:2000	+/- 40ft

4. **Location Test:** How well do the features on a map match the ground? This is the most difficult test. (*Future web links will be provided to help explain this test.*)

Answer: Yes, location accuracy of the map is known and published.
No, the location accuracy is not known.

Discussion: Based on discussions with many groups including surveyors it appears that the only way this test can be completed is by comparing positions calculated from the taxlot map with positions surveyed in the field by a surveyor as recommended in the national map accuracy standard. Some reasons why the national map accuracy test is a good idea are:

- The test is nationally documented and accepted.
- The test could be applied for any collection of maps and only needs 30 points collected.
- Publishing test results will tell map users how good the map is using an acceptable criterion.
- The test is easy to run.
- It will build on the relationships created with the surveyors.

To meet map specifications the results of the test are as follows:

Map Scale	Location Accuracy
1:100	+/- 2ft
1:200	+/- 4ft
1:400	+/- 20ft
1:2000	+/- 40ft

PLEASE NOTE: This test will cost money to complete. It will take time for the cartographer to identify the points and it will cost from \$50-250 for the surveyor to locate these points. In addition, rural points may be problematic as these points are harder to find.

The steps needed to complete this test are.

- a. Create a collection of 30 candidate point positions for your map collection as calculated from the assessor maps. These points could be identifiable property corners, street intersections, or any control point that was not used to construct the map.

- b. Store the coordinates and short description for these points as the following illustrates:

Type	X-Easting	Y-Northing
Main & First Intersection	7538604.4	544156.0
7.5.23AB.00100 (SW Corner)	7535324.3	542312.2
NW Corner Lot1 – Joe’s Addition	7513242.6	547454.5

- c. Provide these points and a map to a surveyor.
 d. Survey identifies positions for 15 of the points.
 e. Use national accuracy equations to calculate standard as provided by DOR.

It may be that ORMAP could select a pilot county to explore how to best complete this test.

Area Test

5. Area Test: Do taxlot areas on the map match the calculated area from legal descriptions within the tolerances identified in the map specification?

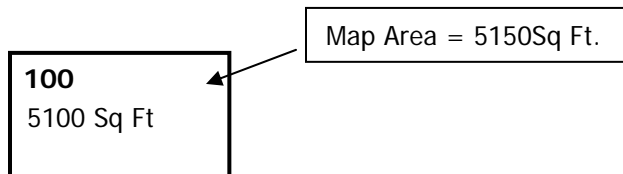
Answer: Yes, the map areas for taxlots as depicted on the map match the legal areas as stored in A&T.

No, the areas for taxlots are not within tolerances as described in the map specification.

Discussion: This is a very simple test. For selected maps use the map/taxlot number to relate the taxmap shape file to a table of assessor data and compare the map area for each taxlot to the legal area. You should be within tolerances as identified by the technical specification as follows.

Map Scale	Area Accuracy
1:100	+/- 4 %
1:200	+/- 4 %
1:400	+/- 4 %
1:2000	+/- 8 %

For example on a 1:100 urban map where the %error for taxlot 100 is .98% well within the 4% limit.



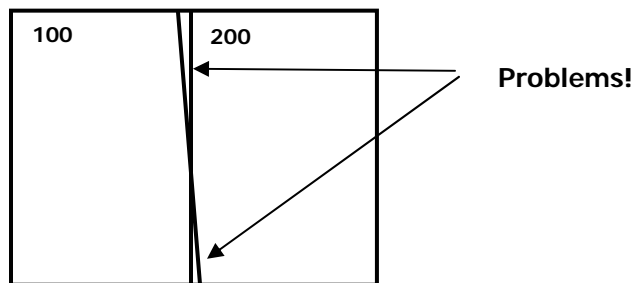
$\begin{aligned} \%Error &= (Map\ Area - Record\ Area) / Record\ Area * 100 \\ .98\% &= (5150 - 5100) / 5100 * 100 \end{aligned}$

Slivers/Gaps/Laps Test

6. Internal Sliver/Gap/Lap Test: Does the taxlot map contain any areas that are not accounted for (slivers, gaps, laps)?

Answer: No, the taxlots are continuous for the entire area. No gaps or overlaps exist between map boundaries, taxlots or districts. A no answer meets map specifications.
Yes, gaps, laps, slivers exist.

Discussion: This is a very simple test. Open the attribute table for the shape file and select any polygons that do not have a taxlot value. Any that exist are either slivers, gaps, or laps between taxlots, map boundaries or some other problem as illustrated in the following example.



7. Boundary Sliver/Gap/Lap Test: Does your taxlots match the surrounding county boundary?

Answer: Yes, the boundaries generated by my county match the boundary generated by neighboring counties.
No, the boundaries do not match.

Discussion: This test will require the cartographer to cooperate with county neighbors. The county must obtain and/or provide county district boundary to a neighboring county and append them together and look for gaps and laps just as was done with the internal /sliver/gap/lap test.

GIS Panel Discussion

The cartographers joined the assessors for a GIS Panel Discussion.

The moderator was:

Brett Juul – Cadastral information Systems Unit Manager, Dept. of Revenue

Panel members were:

Dave Messenger – Assessor, Gilliam Co.

Dean Anderson – IT Services Director, Polk Co.

Janice Patterson – Program Supervisor for Cartography and Divisions, Multnomah Co.

David Cutting – Lead Cartographer, Lane Co.

There were ten questions asked and discussed:

1. How is GIS being used in your county to support the A&T function? What are some of the examples?
2. What are the different responsibilities or types of work performed by the Cartographer and the GIS coordinator in your county? How do they work together to develop better A&T mapping?
3. What departments are your county's GIS services located in? What are some of the advantages and disadvantages of this arrangement?
4. Can you think of GIS projects that could be worked on at the state level and support several county's A&T functions? If so, what kind of projects would they be?
5. What do you see as some of the barriers that are preventing counties from migrating toward geographic information services? What are some of the ways to break down those barriers?
6. How does your county plan to use cadastral data for non-A&T work?
7. Do the various departments in your county collaborate on the development of GIS data or the use of the data to address county priorities? If so, how?
8. What are some of the competing priorities in your county in the area of GIS?
9. Are the primary uses of Assessor data understood by the GIS community or is Assessor data being used in ways that it probably should not be? How can we best educate others on the intricacies of assessment data?
10. GIS data is most useful if it is up to date. Is your county able to maintain a current taxlot theme? If so, have you had to change your business processes?

There was time left for the assessor's to ask follow up questions

Items Discussed During Cartography Roundtable

ORS Updates or keeping an eye out for legislation that may affect the cartography/GIS function.

Places in the Map Manual that need updates, revisions and changes. How should they be rewritten?

Also, we could highlight one ORMAP grant project. A county specific project done in Microstation or the ESRI tools development project would be interesting to me.

Is there a way to access Department of State Lands deeds and record systems?

Ideas For Future Agenda Items

Have someone from Department of State Lands discuss navigable waterways
Have somebody give a lecture on the history of cartography in general.

Appendix A: DOR Training Matrix

Training Matrix

Name: _____

Date: _____

Revised 12.1.06

Please put an x in the box if you have had the class. If you remember the date enter that in the box.

Classes offered at the State Library

Access XP/2003		Effective Meetings	Excel XP/2003			Keys to Success	MDS Developmental	Maximizing Project Success thru People
Intro	Advanced		Intro	Adv A	Adv B			

Power Point	Train the Trainer	Visual Basic	Stress for Success	Word XP/2003			Writing Fundamentals
				Intro	Adv A	Adv B	

Classes offered through DOR Continuing Ed

Intro to Cadastral Mapping & Legal Descriptions	Real Est. Law	Deeds & Titles	Legal Descript.

Of secondary need

DOR Basic Land Valuation	Principles of Oregon A & T

ArcGIS Training

Intro to ArcGIS		Creating & Editing Parcels with ArcGIS	Intro Geoprocessing Scripts using Python	Intro to Programming ArcObjects w/VBA	Adv Analysis w/ ArcGIS	ArcSDE Administration for SQL Server	Extending ArcGIS Desktop Applications
I	II						

