



**MetroGIS – Mn/DOT Collaboration
on Roads and Highways Information**
*MetroGIS Technical Workgroup on Roads and
Highways Business Information Need*



Meeting Summary

Date: September 29, 2004, 2:00 pm

Location: State Transportation Building

Attendees: Mike Dolbow, *Metropolitan Council*; Don Elwood, *City of Minneapolis*; John Harrison, *Mn/DOT*; Jim Maxwell, *The Lawrence Group*; Peter Morey, *Mn/DOT*; Dan Ross, *Mn/DOT*; Kent Tupper, *Dakota County*; Ben Verbick, *LOGIS*, Bob Wolbeck, *Mn/DOT*

I. Welcome

- A.** Mike Dolbow welcomed everyone to the meeting, and reviewed:
 - History of MetroGIS work on the Roads and Highways Business Information Need
 - Mn/DOT's development of the Location Data Manager (LDM) and its potential to serve as a statewide referencing system
 - Purpose of the meeting: to explore issues involved in integrating different datasets with the LDM.
- B.** Agenda review and approval
 - Brief discussion, agenda items reconfirmed
- C.** Brief review of LDM, how it might fit the data sharing role, and current timelines
 - Dan Ross explained the goals for the LDM and working with external partners:
 - To have a statewide solution for roads and highways, utilizing a standardized system of Anchor Segments and Anchor Points
 - To combine Mn/DOT's legacy systems for Traffic, Pavement, and Crash data
 - To place tools in the hands of local governments to enable them to influence the state solution in terms of quality and completeness
 - Preliminary work with ROCOG has produced many questions. Answering these questions requires MetroGIS involvement in order to find "best practice" solutions for the Metro and statewide. Mn/DOT wants to build on MetroGIS's experience in defining local expectations and fostering cooperation and data sharing.
 - Dan also explained that the LDM Java software and User Interface are not complete, and are behind schedule
- D.** Discuss process/strategy for resolving issues:
 - Are all appropriate stakeholders present?
 - Mike mentioned that for the first time we have data producers outside of Mn/DOT and TLG at the table for a Technical Workgroup meeting: Dakota County and the City of Minneapolis. Along with data users, these viewpoints are critical to keep involved.
 - Identify potential obstacles to data sharing: licensing, ownership domains, etc
 - At this time, these obstacles are being acknowledged as issues that must be addressed at some point. However, both Dan and Jim Maxwell expressed that they were interested in pursuing the resolution of technical obstacles at this time. Mike said that if any policy issues arise during technical discussions, the workgroup could

relay those to the appropriate decision-makers within the participating organizations.

II. LDM Demonstration

- A. Dan and John Harrison presented an informal, interactive demonstration on the LDM software
- John used the Java User Interface to show some sample Anchor Segments and:
 - Associated attributes
 - Drill-down integrity information embedded in certain attributes, such as length
 - Routing and path capabilities to deal with dynamic features like addresses, street names, and pavement types
 - Distance measures have been derived from the best available source; i.e. design plans for trunk highways. Often the 1:24,000 graphic rep is the best source available.
 - Crash data is in the system but there needs to be more discussion before the data can be made available.
 - Draft documentation is available, but Mn/DOT is working with Bentley to improve it
- B. Dan explained that a number of issues need to be addressed before sharing this system with local governments: expectations, access format (likely remote through Citrix server), etc.
- When adding new features to the LDM, a set of 29 business rules need to be followed
 - These ensure integrity of the data
 - Each new feature must be assigned a feature class
 - A feature's class will determine if all business rules apply, or only a subset
 - For interstates, trunk highways and other state-aid roads, Mn/DOT will be the “auditing organization” - with the final word on LDM elements. For local roads, Mn/DOT is looking to pursue partnerships to aid in the data collection process, giving counties and municipalities some auditing influence over county and municipal roads. For all public roads, Mn/DOT will be the clearinghouse for assigning Anchor Segment and Anchor Point ID's.
 - A wizard for local organizations to automatically load attributes into the system has been repeatedly added and cut from the budget. Mn/DOT believes they can develop this functionality in-house, but it is currently out of scope for the project. They do intend to develop this in the future.
 - Mn/DOT does not expect everyone to become experts on this software; most likely a core set of contact persons will perform the work for local governments
 - A system for handling geometry updates to existing Anchor Segments needs to be established
- C. Peter Morey and Bob Wolbeck provided clarification on a number of issues, such as minimum mapping units (5.28 ‘) and minimum change distances for Anchor Segments.(52.8’)

III. Discussion: Data Synchronization Issues

Two issues were addressed with a consensus being reached:

- A. Attribute Changes within Anchor Segments (changes at non-intersections)
- When attributes such as addresses (not present in the system today) and road names change at non-intersections, they have to be carried as paths in the LDM in order to allow for a linear reference conversion in the system.
 - For circular roads and self-intersecting segments, the segment must be split at the far end of the entrance in order for the system to recognize it. This will be one of the only cases where an Anchor Point will be established at a non-intersection point.

B. Divided Highways

- Currently at Mn/DOT, the absence or presence of a physical barrier determines whether a divided highway appears as one or two centerlines within the LDM. The barrier could be merely a strip of grass to count – as long as it's a physical break in the pavement evidenced by something other than painted lines on pavement.
- Jim mentioned that TLG is following the same definition, but they are not systematically updating their data to reflect this; they are only making necessary changes when they fall within the area of current review. He also mentioned that routing requirements, such as for emergency vehicles, are the primary driver of this definition for TLG.
- Kent Tupper mentioned that because of some legacy design requirements, their data does not have any divided highways: all routes are represented with a single centerline. Mike responded to this by saying that a relational database schema must be created in order to share attributes on roadways that are divided by one agency but consolidated by another.

C. Private Roads & Parking Lots

- Dan said that the issue of private roads and parking lots is a complicated one. Mn/DOT has encountered this issue with ROCOG, which has many, many private roads that Mn/DOT would normally designate as public. The rule-of-thumb that 2 or more houses along a centerline means the road is public does not always apply. They do not want to provide layer maintenance on private roads in the long-term. However, for private roads that they already have in their system, it may be a simple solution of reclassification to meet immediate needs.
- Mike and Jim suggested that if Mn/DOT could provide Anchor Points at locations where private roads intersect public roads, enabling other data providers to maintain data on private roads that could still be seamlessly integrated with the LDM. Dan responded that he would need to see some solid examples and drawings before assessing the impact this would have on the system.
- The group decided to adjourn and table the discussion on private roads, as well as the remaining synchronization issues (see “Unresolved Issues” below).

IV. Next Steps

A. Unresolved Issues

- Small Connecting Segments
- Addressing
 - Frontage roads
 - Conflicting ranges on either side of a road
- Ambiguous Road Names
- Intersection Location

B. Pilot Project

- No discussion on the Pilot Project was engaged at this meeting. Synchronization issues must be worked out before discussing a Pilot.

V. Questions/Concerns

- Ben Verbick mentioned that the Public Safety sector is still missing from these conversations, and that addressing efforts at the Metro 911 Board are linked with roads data. Gordon Chinander, the new GIS Director at the Metro 911 Board, is a perfect candidate to join the discussion. Mike promised to invite Gordon into the group with the hopes that he can lend his expertise and represent the needs of the Public Safety sector.