



Summary

Highway and Road Networks Priority Common Information Need Peer Review Forum

**October 24, 2002
1:00 p.m. to 4:30 p.m.**

**John Rose Skating Facility
Roseville, MN**

*Prepared by: Mike Dolbow (Metropolitan Council-GIS Unit), Randall Johnson (MetroGIS),
and David Vessel (Metropolitan Council-Transportation Planning)*

In Brief: On October 24, 2002, MetroGIS hosted a Peer Review Forum to launch work to address the MetroGIS community's Highway and Road Networks Common Information Need. The goals of the forum were to share the results of the 1996 MetroGIS Business Information Needs Project pertaining to Highway and Road Networks and refine and confirm that preliminary work. In attendance were more than 30 individuals representing a variety of professional organizational perspectives, including local communities, counties, regional and state agencies, and utilities.¹ Participants evaluated the value of the forum in terms of providing new and informative information and ideas and, on a scale of 1 to 4 (4 being the highest), gave it an average rating of 3.12. On the same scale, participants rated their understanding of MetroGIS's objectives at 2.35 prior to the forum, and at 2.91 after the forum.² (Note: Each speaker's presentation slides are available upon request.)

Welcome

Victoria Reinhardt, chair of the MetroGIS Policy Board, welcomed participants to the forum and gave an overview of the afternoon. She thanked the participants for taking time out of their busy schedules, and stated that the MetroGIS leadership highly values their contributions to this important project. She introduced the speakers for the forum: Jane Harper, Principal Planner with Washington County and vice-chair of the MetroGIS Coordinating Committee; Mike Dolbow, GIS Specialist with the Metropolitan Council and lead staff for the Highway and Road Network Forum Support Team³; and David Vessel, Metropolitan Council Transportation Staff and member of the Forum Support Team

MetroGIS: Vision and Core Functions

Jane Harper gave a brief overview of how MetroGIS was formed, its vision⁴ and core functions.⁵ This information was included to provide the participants context on how their work at this forum fits into the broader objectives of MetroGIS. Ms. Harper briefly explained the extensive process used by MetroGIS to survey the region's geodata users, and agree upon the MetroGIS community's common information needs – including Highway and Road Networks. She identified the other priority information needs and identified the regional datasets that have been implemented thus far.

Ms. Harper closed by encouraging the participants to focus on the information needs of their particular organization, and not on the data needed to address those needs. She noted that the Next Steps in the process will involve identifying data sources that address common information needs.

¹ See Attachment A for a list of the forum participants and their organizational affiliations.

² See Attachment B for a summary of the forum evaluation.

³ See Attachment C for a listing of the members of the Forum Support Team and their affiliations.

⁴ "Provide an ongoing, stakeholder governed, metro-wide mechanism through which participants easily and equitably share geographically referenced data that are accurate, current, secure, of common benefit and readily usable."

⁵ Support a forum to foster coordination among stakeholders to address common geodata needs, oversee regional solutions to common information needs, and support an Internet data search and retrieval capability - MetroGIS DataFinder (www.datafinder.org). See <http://www.metrogis.org/about/index.shtml> for more information.

Expectations from Today's Forum

Mike Dolbow summarized the expectations for what the Forum Support Team hoped to accomplish at this forum, including refining the business need and defining any issues for a technical workgroup to resolve. He defined the roles of the diverse participants, the anticipated next steps, and how the forum results fit in to the larger MetroGIS decision-making process. He reiterated Ms. Harper's suggestion that the participants think in terms of information needs, not data.

Recap of Prior MetroGIS Activity Related to Highway and Road Networks.

David Vessel commented that MetroGIS had completed a complex, highly participatory Business Object Framing Model project during the fall of 1996 to both identify and begin to define the characteristics of the priority common information needs of the MetroGIS community. That effort resulted in the identification of 13 priority common information needs of the community, as well as a Business Object Framing Model. This model contains a Highway and Road Networks Fragment⁶, which provides a high-level, first-cut definition of the characteristics of the data needed to address this information need. Mr. Vessel then explained that the primary purpose of this forum is to refine the preliminary information gathered in the 1996 project.

It was noted that the Forum Support Team spent a good deal of time identifying candidate forum participants to ensure the group included a diversified cross-section of professionals, or subject matter experts, who also represented diverse organizational perspectives. He encouraged everyone to actively participate in the discussion in order to take advantage of the diversity at the table.

Mr. Vessel then identified several pitfalls, which he asked each participant to try to avoid while engaged in the forum discussion. These included identifying a need but not describing it enough to be useful, forgetting to identify needs that are currently met, and omitting important needs because of the cost or time involved in collecting the data.

Refine and Confirm Highway and Road Networks Information Need

A. Refine Preliminary Definition: At 1:30 p.m. Joella Givens (MnDOT GIS Coordinator and member of the Forum Support Team), Chad Martini (MnDOT), and Mike Dolbow began facilitating a group discussion that lasted until 2:30 p.m. The purpose of this activity was to expand upon and clarify preliminary characteristics of Highway and Road Network Information Need identified in the 1996 Framing Model project. The discussion was informally divided into five major components: general characteristics, uses, construction and maintenance, traffic, and non-automotive modes. The facilitators captured the comments from the participants on flip charts.

⁶ The model illustrates relationships between several hundred entities (parcels, roads, streets, lakes, etc) and provides a "first pass" effort to define attributes of the entities. 87 distinct common information needs were identified in the initial phase of the project and are represented as "model fragments". The fragments are made up of entities, relationships among the entities, and attributes of both the entities and their relationships. The model can be downloaded from http://www.metrogis.org/data/about/bom_erd.pdf. (A D-sized plotter is required to print the model.) More information about the Business Object Framing Model project is available at <http://www.metrogis.org/data/about/index.shtml>.

B. Group Prioritization Exercise: At 2:30 p.m. each participant was given adhesive dots and asked to “vote” for information needs listed on the flip charts. By using blue dots for met needs and red dots for unmet needs, the participants identified their organization’s most important information needs. The purpose of this exercise was to focus Next Steps on those Highway and Road Networks information needs of common interest to the broad community. The exercise helped prioritize the needs and organize them by accessibility. The participants were given 30 minutes to vote in combination with a break.

See Attachment D titled “Forum Exercise Results” for a detailed listing of the Highway and Road related information needs, and how they were voted on according to type of organization and access to the need.

Upon brief inspection of the voting, it appears there are some general trends to note. For example, among the needs that received seven or more overall votes, at least one agency identified the need as “met”. Also among these top needs, there were only two needs (Actual speeds and traffic controls) where the majority of voters identified the need as “unmet”. Of all the needs receiving more than one vote, there were only nine that were identified as “unmet” by all voters:

- Number of lanes
- Private roads and driveways (categorized)
- Restrictions (Width/Height/Weight/Vehicle/Parking)
- Road type
- Unseen uses – i.e. Underground Utilities
- Traffic Volumes (Peak)
- Planned construction/maintenance locations (vs. unplanned or weather-related)
- Historic locations of construction/maintenance (changes over time, GASB 34)
- Traffic controls by intersection

C. Follow-up on Identified Priorities: The participants reconvened at 3:05 to share their initial observations of the results of the voting exercise. The following comments and suggestions will be addressed by the “Next Steps” workgroup as they formulate a recommendation for MetroGIS endorsement:

- One participant stated their surprise that the construction/maintenance component did not receive more votes, given that the data exist but there is no effective mechanism in place to share it.

This statement led to a question about how MetroGIS will deal with information needs that no organization has a need to provide. Randall Johnson, MetroGIS Staff Coordinator, stated that a guiding principal of MetroGIS is not to ask any organization to do anything for the broader community if they do not have a business need to perform that task.

- The group concurred with a suggestion to use a matrix to record the matches and disconnects between common information needs, and to keep the matrix up-to-date for long-term collaboration.

- All agreed that a huge benefit would come from this effort if consistent definition of terms can be agreed upon, and that MetroGIS should align with existing standards where they meet the need.

This led to a statement by the MetroGIS Staff Coordinator that MetroGIS's philosophy embeds the NSDI vision, that MetroGIS always looks to recognized standards as a starting point, going its own way only if nothing else exists. Mr. Johnson also asked if anyone knew how to obtain a copy of the supposedly newly released national content standard for roads and highways, which the Forum Support Team could review. (Following the meeting, Jonette Kreideweis helped staff locate a copy of this standard.)

- Dan Ross of MnDOT commented that a MnDOT pilot is in progress in the Rochester Area for the purpose of fostering partnerships to acquire and maintain commonly needed road data.
- Gordon Chinander of Carver County questioned why GPS coordinates are not used for locational data along roads, given the technology is readily available and proven. He stated that Carver County would be interested in joining the MnDOT pilot with the Rochester Area.
- The need for an active and effective data sharing relationship between road authorities and utilities was called for.
- It was agreed that involvement from the public safety community is needed.
- The following written evaluation comments were also received (Attachment B):
 - The categorization of information needs seemed a little odd: mix of objects and processes. So much of the detail varies by intended use - geocoding, routing, planning, maintenance.
 - You need to develop common definitions of terms such as centerline, access, jurisdictional control.

Next Steps and Closing

Mike Dolbow stated that the next step will be to form a workgroup that will evaluate the results of the forum and recommend strategies to address priority common needs. He encouraged the forum participants to state their interest on the evaluation form, to be sure to turn in their evaluation forms and thanked everyone for their participation.

The workgroup will develop a recommendation for MetroGIS consideration that identifies the desired characteristics of a regional dataset(s) to address the priority common information needs identified at the forum. This workgroup will also identify desired custodial roles and responsibilities, and identify candidate organizations with the resources and business need to assume these responsibilities on behalf of the broader community. The workgroup's recommendations will be shared with the forum participants for comment, and possibly further discussion. Lastly, the recommendations will be forwarded to the MetroGIS Coordinating Committee and Policy Board for consideration.

Attachment A – Forum Attendance List

Primary Participants		
Attended?	Individual	Organization
x	Allen, Ron	MnDOT
x	Bloom, Deb	City of Roseville
x	Chinander, Gordon	Carver County
	Corliss, Chuck	White Bear Lake SD
x	Crowson, Ginny	MnDOT
x	Hack, Steve	SEH
x	Engstrom, Erik	MnDOT
x	Gustafson, Joe	Scott County
x	Harrington, Adam	MetroTransit
x	Haukom, Terry	MnDOT
x	Henry, Brad	URS/BRW
x	Holden, Chuck	Anoka-Hennepin SD
x	Hoshal, John	LMIC
x	Jackson, Mary	MnDOT
x	Kreideweis, Jonette	MnDOT
x	Laumeyer, Al	Reliant Energy
x	Maxwell, Jim	The Lawrence Group
x	Mertens, John	Dakota County
x	Person, Rick	City of St. Paul Public Works
x	Radke, Allan	NSP/Xcel
x	Read, Nancy	Mosquito Control District
x	Seavey, Warren	MnDOT
x	Treichel, Kent	MN Department of Revenue
	Urquhart, Ken	DPS/State Patrol
x	Vessel, David	Metropolitan Council
x	Weiss, Lenny	Dakota County
Guests / Observers / Resources		
	Carlstrom, Dick	TIES
x	Gelbmann, Rick	Met Council
x	Givens, Joella	MnDOT
x	Glancy, Tom	MnDOT
x	Harper, Jane	Washington County
x	Johnson, Randall	MetroGIS
	Kjonaas, Rick	MnDOT
x	Martin, Thomas	MnDOT
x	Martini, Chad	MnDOT
x	Morey, Rick	MnDOT
x	Reinhardt, Victoria	Ramsey County
x	Ross, Dan	MnDOT
x	Tupper, Kent	Dakota County
	Turnquist, Harold	St. Paul Schools
x	Wencl, Ron	USGS
	Submitting Written Comments:	
	Chesik, Jan	ROCOG
	Fiskness, Jon	ARDC
	Larsen, Jeff	AT&T
	Skipton, Lisa	Goodhue County
	Pollock, Nancy	Emergency 911

Attachment B
Evaluation Results: Peer Review Forum
MetroGIS Highways & Roads Information Need

Poor	(1)
Average	(2)
Good	(3)
Outstanding	(4)

Your Understanding Following the Presentations/Activities

1. Connection between this Forum and MetroGIS's Core Functions..... 3.08
2. Earlier MetroGIS activity related to this topic..... 2.71
3. Goals for a Regional Highways & Roads data solution..... 2.88

Was this Forum.....

1. A valuable use of your time / relevant to your job responsibilities?..... 2.92
2. Useful in providing new and valuable information and ideas?..... 3.12

Your Understanding of MetroGIS's Objectives

1. Prior to the forum..... 2.35
2. After to the forum..... 2.91

Additional Comments:

- Would like to stay informed, but don't have time to participate now due to budget reductions. Thank you for the opportunity!
- Good topic for discussion on data of a core dataset.
- Thank you for including me in the discussion.
- The categorization of information needs seemed a little odd: mix of objects and processes. So much of the detail varies by intended use - geocoding, routing, planning, maintenance.
- You need to develop common definitions of terms such as centerline, access, jurisdictional control.
- My time, like everyone's, is limited but I would like to participate.
- Thanks! This is so important! (And I like the meeting location!)

Attachment C
Forum Support Team

Member	Organization
Denny Brott	MnDOT
Mike Dolbow	Metropolitan Council
Joella Givens	MnDOT
Tom Glancy	MnDOT
Randall Johnson	MetroGIS
Matt Koukol	MnDOT
Jan Vanderwall	Roseville School District
David Vessel	Metropolitan Council

Attachment D Forum Exercise Results

The following chart details the results of the forum prioritization exercise. Original information needs on the left-hand side are in normal type; new information needs introduced at the forum are *in italics*. The organizational types represented in the voting are grouped into four categories, as listed across the top of the chart. Votes signifying unmet needs are listed in the gray columns, met needs are listed in the white columns. Notes on the right hand side indicate uncertainties and issues that need clarification, either by the participants or by the workgroup.

	Local/County	Regional/State	Private/Utility	MnDOT	Totals	Notes
Generalized Information Need						
Road/Highway network:						
accurate centerline location: x, y, z (elev at grade) including on/off ramps Complete for 7 county metro Access provided						Most stickers placed by "Centerline" attribute - assumed to be the preference for location. One sticker uncertainly placed near Grade Elevation
		2	2	1	5	
	1				1	
		2	1		3	
Characteristics:						
name				1	1	
alias		1	1	1	3	
one-way/two-way desig.						
address ranges	1	4	2		7	
cross streets		1	1		2	
functional classification		1			1	
Number of lanes		1	2		3	
<i>lane width/geometry</i>	1			1	3	
shoulder characteristics (<i>width, paved/unpaved</i>)				1	1	
<i>striping characteristics</i>	1				1	
Bridge locations & characteristics						
Intersection locations & characteristics						
Private Roads & Driveways (<i>categorized</i>)	2	2			4	
Restrictions:						
Width/Height/ <i>Weight/Vehicle/Parking</i>		2		2	4	
Street and Curb geometry / <i>curb presence</i>			1	1	1	3
Jurisdiction -Political (state, county, city, etc)	1	1	1	4	2	9 Refers to location - where is the road?

Generalized Information Need

	Local/County	Regional/State	Private/Utility	MnDOT				
Traffic control devices								
Traffic lights & type: <i>intelligent, turn signal, etc</i>								
Mile Markers				1	1	2		
Speed limit sign locations								
Posted speed limits (by street segment)	1					1		
Stop signs		1				1		
Traffic controls	3	2	1	1	2	9		
<i>Traffic sensors and loop detectors</i>					1	1		
<i>School zones</i>		1				1		
Traffic management equipment								
<i>Traffic controls by intersection age/condition of controls</i>	2					2		
<i>cameras</i>								
<i>crosswalks</i>								
<i>informational vs. legislative</i>								
<i>rumble strips</i>								
recreational network								
locations								
<i>School walkways/pathways</i>		1				1		
width								
access								
authority								
<i>bikeways/bike network/Bike-only paths</i>		2		1	2	5		
<i>bikes as recreation vs for commuting</i>								
<i>is a separate bike path a "roadway"?</i>								
<i>intersections/coincidence with roads</i>								
<i>emergency response vehicles on bike paths</i>								
other modes of transportation								
intersections with roads								
intersections with roads/ <i>Connectivity between different modes</i>			1			1		
<i>Other-mode safety issues (ie chemical spill on RR)</i>	1					1		
<i>waterways</i>								
<i>Bridges</i>								
Totals	22	24	18	16	16	19	25	16

Totals Notes