



**MINNESOTA GIS/LIS CONSORTIUM**

# Preliminary Program

## 11th Annual Conference & Workshops

**October 10-12, 2001  
Duluth Entertainment Convention Center  
Duluth, Minnesota**



<http://www.mngislis.org>

# About The Conference

The Minnesota GIS/LIS Consortium will hold its 11th Annual Conference and Workshops on Geographic Information Systems (GIS) and Land Information Systems (LIS) on October 10–12, 2001, at the Duluth Entertainment Convention Center (DECC). The pre-conference workshops offered on Wednesday, October 10, will cover a variety of technical topics through lectures, discussions, field trips and hands-on training, and will be followed by a Welcome Reception in the evening. The conference opens Thursday, October 11, with a Plenary Session, followed by Concurrent Sessions throughout the day and the Vendors Reception and Poster Session in the evening. Concurrent Sessions will continue on Friday, October 12, to be followed by the Closing Luncheon. The Exhibit Hall will be open both Thursday and Friday and will feature over forty vendors exhibiting the latest in GIS-related technology and services.

## Who Should Attend?

The conference program is designed to address the needs of:

- ♦ Municipal, county, state and federal government officials who implement and use GIS/LIS for a variety of applications.
- ♦ Surveyors, engineers and land management specialists who use GIS/LIS technology.
- ♦ Business, real estate, banking and insurance specialists who need to understand and access GIS/LIS data.
- ♦ University faculty and students interested in new GIS/LIS technology and research applications.
- ♦ Public and private utility representatives who use GIS/LIS technology for infrastructure management.
- ♦ Consultants who provide GIS/LIS services or hardware/software.
- ♦ Individuals interested in learning more about GIS/LIS in Minnesota.

## Conference Highlights

On Wednesday, a variety of full and half day **Workshops** will address topics ranging from general and introductory GIS/LIS concepts to more technical areas of GIS/LIS applications and research. A complete listing of workshops begins on page 7 of this brochure.

A **Welcome Reception** will be held on Wednesday from 5:00 – 8:00 pm in the Harbor Side Ballroom at the DECC. The reception will include complimentary hors d'oeuvres and a cash bar. Conference materials and name badges will be distributed along with Duluth maps and a visitor's guide.

The **Concurrent Sessions, Project Demonstrations and Poster Presentations** will address numerous subjects of interest to GIS/LIS practitioners in local government, natural resources management, transportation or business. A complete listing of sessions, project demonstrations and posters begins on page 14 of this brochure. Posters will be available for viewing in the Exhibit Hall with authors present during the Vendors Reception and Poster Session.

The **Exhibit Hall** will feature numerous vendors showcasing the latest GIS-related hardware, software, products and services, and will be open Thursday and Friday.

The **Vendors Reception and Poster Session**, held on Thursday evening, will be held in the Exhibit Hall with all vendors present. The reception will feature complimentary hors d'oeuvres and a cash bar. Door prizes will be given away between 6:00 and 7:00 pm.

## Job Fair Board

Are you an employer with a open GIS position? Are you an individual looking for a job in GIS? A Job Fair Board will be located next to the registration desk at the conference where employers can post job descriptions and individuals can post their resumes. Bring several copies and check the board throughout the conference for updates.

# Opening Plenary Session Keynote Speakers

On Thursday, October 11, the Opening Plenary Session will be given by:

- ♦ **Bob Marx**, Chief, Geography Division, US Census Bureau
- ♦ **Dorothy Stroz**, Team Leader, Legal and Administrative Areas, Geography Division, US Census Bureau
- ♦ **Wes Flack**, Geographer, Kansas City Regional Office, US Census Bureau

The topic of the keynote presentation will be the Master Address File and the Topologically Integrated Geographic Encoding and Referencing (MAF/TIGER) Modernization Program, a major effort by the Bureau to improve the coordinate accuracy of TIGER and to develop a system for the continuous updating of TIGER and MAF. A key aspect of the program will be the focus on developing partnerships with the private sector and state and local governments.

## Closing Luncheon Speaker

On Friday, October 12, the Closing Luncheon speaker will be **James Pisarowicz** from Windcave National Park in South Dakota. Honored in 1990 with the prestigious Lew Bicking Award by the National Speleological Society for a career of outstanding cave exploration, Pisarowicz will share his experiences from an exploration of Sumidero Santa Elena, a large river cave in the northern region of the Mexican state of Puebla.

## Entertainment

Listed below are just a few of the exciting events that await you in Duluth. Information on other Duluth attractions and restaurants will be distributed during on-site registration. For more information, visit the Duluth Convention and Visitors Bureau's Web site at: <http://www.visitduluth.com>

**2nd Annual Pool Tournament** -- The Minnesota GIS/LIS 2nd Annual Pool Tournament will take place Wednesday evening beginning at 7:00 pm at Grandma's Sports Garden, located across the foot bridge from the DECC in Canal Park. Interested participants must sign-up at the Welcome Reception or at Grandma's Sports Garden before 7:15 pm. Parings will be drawn that night and a prize for first and second place will be given. Snacks will be served during the tournament, and dancing will follow at 9:00 pm.

**Glensheen Historic Estate** -- The Glensheen estate features a 39-room Jacobean style mansion, beautifully manicured grounds and formal gardens. Completed in 1908, Glensheen is listed on the National Register of Historic Places. Conference participants interested in visiting Glensheen at the following times must sign up on the conference registration form. Transportation to Glensheen from the DECC will be provided. Scheduled times represent departure times from the DECC. Ticket price is \$10.00. Guests welcome.  
Schedule: Tuesday, October 9, 4:00 pm; Wednesday, October 10, 6:30 pm; Thursday, October 11, 7:00 pm

**Vista Fleet** -- The Vista Fleet offers fully narrated sightseeing cruises of the Twin Ports Harbor. During the cruise, you'll travel under the Aerial Lift Bridge into Lake Superior and tour the harbor for a close view of busy grain elevators, lake freighters and saltwater ships. Conference participants interested in the following scheduled cruise must sign up on the conference registration form. Ticket price is \$8.75. Guests welcome.  
Schedule: Friday, October 12, 4:00 pm

**Bananaz Family Entertainment Complex** -- Go Nuts! Located in Canal Park, Bananaz Family Entertainment Complex includes a climbing wall, flight simulators, virtual parachute jump, laser tag, mini golf, and much, much more! Conference participants will receive a coupon for discounted admission to the complex in their conference packet.

**Duluth OMNIMAX Theatre** -- The OMNIMAX is a specially-designed theatre that puts you at the center of the action! Images are projected with a 180 degree lens onto a vast dome screen that encompasses the audience. Conference participants will receive a coupon for discounted admission to the theatre in their conference packet.

**Great Lakes Aquarium** -- The Great Lakes Aquarium features over 70 species of fish from the Great Lakes and other freshwater lakes and rivers across the globe, as well as birds, amphibians, reptiles, river otters and more! Conference participants will receive a coupon for discounted admission to the aquarium in their conference packet.

## Exhibitors

The Exhibit Hall will be open to conference participants on Thursday and Friday. The Vendors Reception and Poster Session will take place Thursday evening beginning at 5:00 pm and will include hors d'oeuvres and a cash bar. At this time, participating vendors include:

Barr Engineering Company

Bonestroo, Rosene, Anderlik & Associates, Inc.

ERDAS, Inc.

Frontier Precision

Horizons, Inc.

Intergraph Mapping & GIS Solutions

Kunde Co., Inc.

LMIC

Minnesota Governor's Council on Geographic Information  
Pro-West & Associates, Inc.

Remote Sensing & Geospatial Analysis Lab

Rowekamp Associates, Inc.

Sokkia Measuring Systems

SRF Consulting Group, Inc.

USGS EROS Data Center

## Conference Planning Committee

Gerald Sjerven, Natural Resources Research Institute (Conference Chair)

Dave Dahl, Minnesota Department of Natural Resources

Sonia Dickerson, Minnesota Department of Agriculture

Scott Freburg, Land Management Information Center

Joella Givens, Minnesota Department of Transportation

Peter Knutson, Minnesota Department of Natural Resources

Banette Kritzky, Minnesota Department of Transportation

Tim Krohn, Fond du Lac Reservation

Alan Laumeyer, Reliant Minnegasco

Peter Morey, Minnesota Department of Transportation

Nancy Read, Metropolitan Mosquito Control District

Mike Rowekamp, Rowekamp Associates, Inc.

Craig Skone, Metropolitan Council

Ben Verbick, LOGIS

## Conference Coordinators

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## About The Minnesota GIS/LIS Consortium

The Minnesota GIS/LIS Consortium is a forum for communicating information to, and improving cooperation among, those interested in Geographic Information Systems (GIS) and Land Information Systems (LIS) in the state of Minnesota. Members include GIS users in local, state and federal government agencies; business and industry; and educational institutions. Membership is free.

The Consortium hosts annual state-wide conferences, and establishes committees that deal with specific GIS/LIS-related issues in Minnesota. Opportunities to participate in Consortium activities are available through volunteer work with committees, conferences and workshops. For more information on current Consortium activities and volunteer opportunities, visit our Web site, send us an e-mail or stop by our booth during the Conference.



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## 2001 GIS/LIS CONFERENCE AT-A-GLANCE

THURSDAY  OCTOBER  11	7:30 am	Conference Registration and Materials Pick-Up -- Refreshments in Granite Floor Lobby					
	8:30 am	<b>Opening Plenary Session</b> Lake Superior Ballroom JK Bob Marx, Chief, Geography Division, US Census Bureau Dorothy Stroz, Team Leader, Legal and Administrative Areas, Geography Division, US Census Bureau Wes Flack, Geographer, Kansas City Regional Office, US Census Bureau					
	10:00 am	Break -- Refreshments in Exhibit Hall Edmund Fitzgerald Exhibit Hall Opens and Poster Display Begins					
	10:30 am	<b>Concurrent Sessions</b>					
		Session A <u>Gooseberry Falls</u> Internet Mapping	Session B <u>French River</u> Local Government Applications	Session C <u>Lake Superior L</u> Data Sources	Session D <u>Lake Superior MN</u> Forest Management	Session E <u>Lake Superior O</u> Using Census 2000 Data	Project Demo <u>Split Rock 2</u> Wetland Management
	Noon	Lunch -- Harbor Side Ballroom					
	1:30 pm	<b>Concurrent Sessions</b>					
		Session F <u>Gooseberry Falls</u> Mining	Session G <u>French River</u> Local Government Planning	Session H <u>Lake Superior L</u> Data Sharing	Session I <u>Lake Superior MN</u> Hydrography	Session J <u>Lake Superior O</u> Land Records Modernization	Project Demo <u>Split Rock 2</u> Dakota County Census
	3:00 pm	Break -- Refreshments in Exhibit Hall					
	3:30 pm	<b>Concurrent Sessions</b>					
		Session K <u>Gooseberry Falls</u> Image Processing	Session L <u>French River</u> Public Data Use	Session M <u>Lake Superior L</u> Data Distribution	Session N <u>Lake Superior MN</u> Wetland and Watershed Management	Session O <u>Lake Superior O</u> Transportation 1	
5:00 pm	<b>Vendors Reception and Poster Session</b> Edmund Fitzgerald Exhibit Hall Prize Drawings (must be present to win) Complimentary Hors d'oeuvres and Cash Bar						
FRIDAY  OCTOBER  12	7:30 am	Conference Registration and Materials Pick-Up					
	8:00 am	Edmund Fitzgerald Exhibit Hall Opens -- Refreshments in Exhibit Hall					
	8:30 am	<b>Concurrent Sessions</b>					
		Session P <u>Gooseberry Falls</u> Photogrammetry Panels	Session Q <u>French River</u> Public Health	Session R <u>Lake Superior L</u> Data Collection	Session S <u>Lake Superior MN</u> Wildlife Management	Session T <u>Lake Superior O</u> Transportation 2	Project Demo <u>Split Rock 2</u> Wetland Management
	10:00 am	Break -- Refreshments in Exhibit Hall					
	10:30 am	<b>Concurrent Sessions</b>					
		Session U <u>Gooseberry Falls</u> Remote Sensing Applications	Session V <u>French River</u> Land Use Planning	Session W <u>Lake Superior L</u> LMIC Data Smorgasbord	Session X <u>Lake Superior MN</u> Agriculture	Session Y <u>Lake Superior O</u> Transportation 3	Project Demo <u>Split Rock 2</u> Dakota County Census
	11:00 am	Edmund Fitzgerald Exhibit Hall Closes					
	Noon	<b>Closing Luncheon</b> Harbor Side Ballroom James Pisarowicz, Windcave National Park					
	1:30 pm	<b>Minnesota GIS/LIS Consortium Business Meeting</b> and Year End Review					
	2:00 pm	Prize Drawings (must be present to win) Adjournment					

# 2001 GIS/LIS Workshops

All workshops will be held on Wednesday, October 10. All lecture style workshops will be held at the DECC, while most hands-on workshops will be held off-site at various computer labs. Transportation to off-site hands-on workshops will be provided. If you register for a full day workshop or two half day workshops, your registration fee includes lunch. Lunches will be provided at the DECC and at off-site workshop locations.

**Check-in for workshop participants begins at 7:30 am at the DECC. If you register for a hands-on workshop, please arrive at the DECC no later than 8:00 am for check-in. Buses will depart for off-site hands-on workshops promptly at 8:30 am from the City Side Convention Center entrance.**

- ♦ The morning workshops begin at 9:00 am and will conclude by 12:15 pm.
- ♦ The afternoon workshops begin at 1:15 pm and will conclude by 4:30 pm.

## Full Day Workshops

### **1. Introduction to GPS and the Trimble ProXR (Hands-On)**

This workshop will provide a basic introduction to GPS, the Trimble ProXR receiver and Pathfinder Office software. This course was designed to prepare students to map point, line, and area features in the field. After a one hour introduction to GPS, the course is divided into three distinct sections: a) what's required in the office before moving to the field, b) how to collect data in the field using a data dictionary, and c) what to do in the office after collecting the data.

Students must bring: a) Trimble ProXR system with charged and/or new batteries for the receiver and data collector (at least one receiver per two students), and b) Pathfinder Office Software.

*Audience: Beginner*

*Instructor: Pete Knutson, MN Department of Natural Resources*

### **2. AutoCAD 2000 for GIS Applications (Hands-On)**

Topics Covered: AutoCAD MAP 2002 and Database Fundamentals, Applying MAP 2002 to Base Mapping  
An intermediate class for AutoCAD technicians in the use of AutoCAD MAP 5 (2002) for the management of spatial and attribute data using Dataview, the Project Workspace, and MAPs new Thematic Wizard. Learn how to extend AutoCAD drawings into GIS applications by associating AutoCAD objects to internal and external data sources. Break source maps into manageable sizes and automate the creation of reports and thematic maps using Drawing Attachments and Queries. The session will also use Coordinate Zones and Property Alteration to assemble source data from several coordinate systems into one consistent base map.

*Audience: Intermediate*

*Instructor: Van Maguire, CAD/CAM Engineering*

### **3. Building GIS from Imagery (ERDAS) (Hands-On)**

Imagery, together with the technology available today, allows the average GIS user to turn imagery into information. The first half of the workshop will cover the tools used in image processing, sources and availability of imagery, automatic feature extraction using an expert system, and land cover analysis. The second half of the workshop will cover the generation of orthoaccurate aerial photographs. This ortho-imagery can then be used to build a highly accurate GIS database or correct and update an existing GIS.

*Audience: Intermediate*

*Instructors: Ben Dorland, Minnesota DNR, Suzie Noble, ERDAS, Inc.*

### **4. Raster Analysis with Spatial Analyst (Hands-On)**

Learn how to apply raster GIS concepts and techniques using ESRI's ArcView 3.2 and Spatial Analyst. This full day workshop will cover the basics of GIS data management and analysis techniques for raster based processes. Topics include converting vector to raster, reclassification, distance modelling, density mapping, spatial coincidence and overlay analysis. You must have a working knowledge of ArcView to attend this workshop.

*Audience: Intermediate*

*Instructor: Tim Loesch, Minnesota Department of Natural Resources*

## **5. Applying Visual Basic for Applications (VBA) (Hands-On)**

Visual Basic for Applications has been licensed by many vendors and imbedded into their software applications (such as ArcInfo 8). This workshop assumes you understand basic programming concepts such as those covered in the free module 'Getting Started With Visual Basic' on the ESRI Virtual Campus. Topics covered will include error handling, debugging, string functions, manipulating COM objects and working with Map Object's sample class modules.

*Audience: Advanced*

*Instructor: Rose Erickson, Pro-West & Associates, Inc.*

## **6. Orthophotos Made Easy (Hands-On)**

This workshop is designed to teach the GIS professional how to easily create and update orthophotos. The emphasis in the workshop will be on how to use existing maps and/or orthophotos to create new orthophotos from new or historical aerial imagery. Quality control tools will be discussed to verify that the new orthophoto will overlay precisely with existing orthophotos. Tools such as coordinate transformations (of images, DEMs and Shape files), file type conversion, and mosaicing options will be extensively discussed. The general schedule for the workshop includes basics of orthophotos, creation of orthophotos, orthophoto mosaics, utilities necessary for orthophoto production, hands-on experience in creating orthophotos and hands-on experience in orthorectifying overlays.

In the afternoon, the participants will be using OrthoMapper to create their own orthophotos. Logistically, each participant should bring a laptop (or desktop) computer (two can share). Access key and computer files needed to use the OrthoMapper program will be loaded onto your machine at the beginning of the workshop. The following minimum specifications will optimize the program upload and functions:

- ♦ There must be a parallel port on the computer.
- ♦ If you are running Windows NT or 2000, you must have Administrative Privileges to install the program.
- ♦ 64 MB RAM minimum -- the more the better.
- ♦ 300 - 600 MB of disk space suggested -- digital images used to create orthophotos take a lot of memory.

*Audience: Advanced*

*Instructor: Frank Scarpace, University of Wisconsin-Madison*

## **7. The Basics of "Reading" Aerial Photographs: Overview of Fundamentals, Classification Systems, Interpretation and Other Stuff (Lecture)**

This is a beginner/novice workshop that will cover the basic principals of aerial photography. The workshop includes a quick overview in the morning including a stereo eye test and sample photo feature identification problems followed by interpretation lab work in the afternoon. The lab work includes wetland classification systems and practice interpretation, forested landscape classification system and practice interpretation, and, time permitting, personal assistance with student provided aerial photographs. Participants may also wish to bring their own stereoscopes and pocket calculators.

*Audience: Beginner*

*Instructors: John Anderson, EnviroData, Inc., Brian Huberty, USDA Natural Resource Conservation Service, Howard Post, GeoData Model Solutions*

## **8. Introduction to GIS (Lecture)**

This is a workshop designed to introduce basic terminology and concepts in GIS. It is intended for those individuals who have little or no experience with GIS. The workshop will cover a variety of broad-ranging, introductory material designed to give the beginning user an appropriate background, including maps and spatial analysis, components of GIS, data acquisition, data structures, hardware and software systems, data analysis, and GIS application examples.

*Audience: Beginner*

*Instructor: Ben Richason, St. Cloud State University*



## **9. Spatial Analysis (Lecture)**

GIS provides access to a wide variety of tools for analyzing spatial data. Deciding which data model (vector or raster) and which tools to use can be confusing. This course will consider some common geographic questions that can be resolved by spatial analysis. Following an introduction to spatial analysis and data models, each section will focus on selecting the most appropriate spatial analytical techniques for a category of questions. The final section will introduce participants to spatial modeling. Both vector and raster analysis will be covered, with particular attention paid to distinguishing the strengths and weaknesses of each. Through a combination of lecture and group exercises, participants will learn to develop a plan for addressing complex spatial problems. As examples of spatial analysis tools will be drawn from ESRI software products (ARC/INFO, ArcView, and their extensions), participants should be familiar with one or more of these software packages.

*Audience: Intermediate*

*Instructor: Elizabeth Hobbs, Minnesota Department of Transportation*

## **10. GIS/GPS Field Tour (Field Trip)**

This full day workshop departs from the DECC to examine GIS and GPS use in northeastern Minnesota's mining industry. Day begins with on-bus briefings by mining, government and landowner GIS/GPS staff. Field stop highlights include a visit to the Hibbing Taconite mining operations to see GPS use in 240 ton trucks, shovel operations, drill rig positioning and mine surveying. Other stops include DNR's Lands and Minerals office to see GIS use related to mining, mineral land leasing and mineral exploration, and a rare opportunity to stand atop the only triple continental divide in the US (on private land). Bus returns to the DECC late in the afternoon.

*Audience: Beginner*

*Trip Leader: David Dahl, Minnesota Department of Natural Resources*

## **Morning Workshops**

### **11. Introduction to ArcView GIS 8.1 (Hands-On)**

This workshop introduces you to the three applications comprising ArcView GIS 8.1: ArcCatalog, ArcMap and ArcTools. We will explore the following topics:

- ArcCatalog: managing GIS data, creating metadata, creating/modifying GIS data

- ArcMap: creating a data frame containing layers of data, querying data spatially and by attribute, creating a map layout

- ArcTools: projecting GIS data, converting GIS data format

- Comparison of ArcView GIS 3.2 to ArcView GIS 8.1: functionality differences between 3.2 and 8.1, hardware and software requirements, programming environment of 8.1 and how that affects your existing Avenue applications, strategies to consider for implementation of this new software

*Audience: Beginner*

*Instructor: Terese Rowekamp, Rowekamp Associates, Inc.*

### **12. ArcView 3.2 Report Writer Extension and Seagate's Crystal Reports 7.0 (Lecture)**

This lecture style workshop will include the basics of ArcView 3.2 Report Writer and Crystal Reports 7.0. Topics covered include using the 8 Report Experts to create reports, working with fields, sorting, grouping, formulas, visually appealing reports and creating charts. Participants will receive a manual with step by step instructions to use with their own data. No experience required.

*Audience: Beginner*

*Instructor: Annette Theroux, Pro-West & Associates, Inc.*

### **13. Everything You Wanted to Know about the 2000 Census, but Didn't Know Who to Ask (Lecture)**

How does 250 PowerPoint slides, talking in a soft monotone voice and a dark quiet room sound to you? Not at this workshop. Games, prizes, an atmosphere of high self-esteem and more data than you can shake a stick at will be the order of the day at this workshop. The 2000 Census offers a wealth of data, and with a little work, yields usable information. Census geography, definitions, and changes from 1990 will be covered. If you're new to Census data, or haven't used it since 1990, all will be revealed. Datamining, GIS and several other buzzwords will be used throughout the presentation.

*Audience: Beginner*

*Instructor: Kent Treichel, Wilder Research Center*



#### **14. GIS Services Using the Internet (Lecture)**

This session will take a basic look at how users can utilize GIS data through the Internet. The session will include discussion; topics covered include dispensing data, accessing data, privacy issues, implementing your GIS online, as well as locating data. This session will also look at how PMC has used ESRI's ArcIMS (Internet Map Server) technology to enhance GIS throughout the Midwest. This includes increased citizen access to public data as well as minimizing traffic in public offices. Featured sites include county systems that also utilize real estate data for customized reports and comparison. ESRI software will be heavily referenced.

*Audience: Beginner*

*Instructors: Geoff Wood, Jeff Corns, PMC ProMap Corporation*

#### **15. Keeping Pace on a Spinning Planet: Dealing With Stress and Change (Lecture)**

"On your mark ... get set ... change!" The rapid pace of change is constantly throwing new challenges in our path. Just as we overcome one obstacle, a new one is bearing down upon us. How can we possibly keep up? Change doesn't have to lead to that common sensation of being overwhelmed. We can learn how to navigate the turbulent waters of change. This session provides insight and skills that enhance our ability to keep pace in the face of rapid, constant change.

*Audience: Beginner*

*Instructor: Karl Mulle, Bruce Christopher Seminars*

#### **16. Making Better Maps (Lecture)**

Making Better Maps is a short course for those without cartographic training. "Maps are the tools that communicate results of Geographic Information Systems." What sets them apart from other tools is that you build them yourself. You can do it well, or poorly. This workshop will help you to make better maps for your purposes. The fundamentals of good map design will be covered, including choosing symbols; data classification; map elements, and effective layouts of the map elements. The overall goal of this workshop is to show how to optimize those map revisions and make more effective maps. If possible, everyone should bring 15 copies of some of their own maps for a round of constructive criticism. Most examples will be ArcView products, but the intent is to be generic.

*Audience: Beginner*

*Instructor: Charlie Parson, Bemidji State University*

#### **17. ArcView 3-D Analyst and Sonar (Lecture)**

This workshop will examine the techniques for field data collection using sonar for application within ArcView 3-D Analyst. Detailed descriptions of creating, editing and analyzing data within ArcView as well as an exposure of various tools that are available for data manipulation and 3-D view enhancement. The intermediate user will gain an exposure to data preparation, scene creation and the ancillary data needed to get the most out of 3-D Analyst. The examples used for this workshop are river bottom modeling for Mn/DOT river crossing analysis.

*Audience: Intermediate*

*Instructor: Thomas Martin, Minnesota Department of Transportation*

#### **18. GIS for Public Works (Lecture)**

This presentation will discuss the advantages of using GIS as an asset and maintenance management tool for public works. CityWorks, which is an extension to ArcView and/or ArcInfo will be demonstrated as one option for management. CityWorks is a very robust product which will create and manage work orders, inspections and tests, and maintain a detailed inventory of infrastructure. CityWorks provides management tools for sewer, water, storm, parking, pavement, signs and signals. We will also take a look at a very simple GIS application built using ESRI's "MapObjects". This application can be used by anyone to access information about parcel ownership, sewer, water, or storm information, view your scanned as-builts, create very simple mailings -- with a simple click of the mouse.

*Audience: Intermediate*

*Instructor: Rebecca Blue, SEH, Inc.*

#### **19. Map Objects Lite 2 -- Using Visual Basic (Lecture)**

This workshop will highlight how to get started using Map Objects Lite with Visual Basic. This will include the basics of displaying data (Arc/Info coverages, Shape Files and Images), pan, zoom, length, area, transparency issues, text and labeling maps, working with tables, displaying DOQs from USGS, and printing. Some Visual Basic experience would be helpful. While Map Objects will be the primary focus, some Visual Basic concepts will be covered, but at a very fast pace.

*Audience: Advanced*

*Instructor: Craig Perreault, Minnesota Department of Natural Resources*

## **20. Using the Geodatabase in ArcInfo 8 (Lecture)**

This workshop demonstrates how to create a geodatabase in ArcInfo 8. Discussion of the following topics will include a lecture, a demonstration, and a question/answer session: 1) Overview of the geodatabase, 2) How to manage the geodatabase with ArcCatalog, 3) How to implement subtypes and domains, 4) How to establish relationships between feature classes and tables, 5) Use of custom feature types. This workshop is designed for existing ArcInfo 8 users. Some familiarity with ArcMap and ArcCatalog will be advantageous. This workshop is intended to explain the geodatabase data model and the new functionality it incorporates.

*Audience: Advanced*

*Instructor: Mark Midas, ESRI*

## **Afternoon Workshops**

### **21. Introduction to ArcView 3.2 (Hands-On)**

This half-day workshop will provide a hands-on approach to understanding the major functionality of ESRI's ArcView GIS, version 3.2. Topics covered include: Getting around in the ArcView documents (Views, Tables, Charts, Layouts) and trying different queries and geographic analysis functions. A question and answer period provides opportunity to discuss functionality and implementation issues. The workshop is appropriate to those with no prior ArcView experience.

*Audience: Beginner*

*Instructor: Catherine Hansen, Rowekamp Associates, Inc.*

### **22. Using a Garmin Handheld GPS with ArcView (Hands-On)**

Learn how to transfer data to and from ArcView 3.X and the Garmin GPS handheld receivers. After a brief introduction to the Garmin 12/12XL handheld GPS receiver, we will collect data and convert it to a shapefile using WaypointPlus and the DNR Garmin ArcView extension. We will also create a point shapefile and a polygon shapefile in ArcView and load them into the Garmin GPS receiver. We will conclude with tips and tricks for using the GPS with ArcView in work, hobby and recreational settings. Some experience with creating and editing shapefiles using ArcView is helpful but not required.

*Audience: Beginner*

*Instructor: Paul Olson, Minnesota Department of Natural Resources*

### **23. Datums, Projections and Coordinate Systems: An Understanding for GPS Applications and Mapping (Lecture)**

This workshop is designed for those just beginning in the mapping fields such as GPS Surveying, Photogrammetry, GIS, and map making. You will learn about the origins of datums, projections and coordinate systems, and why they are necessary for GPS and mapping applications. It will give you an understanding of their use and relationship and how they are applied to GPS and mapping. You will learn how to create a datum, projection and coordinate system; the difference between different datums, the difference between Geoid Separation, Ellipsoid Height, Orthometric Height and Mean Sea Level; and how to convert from one to another and back using transformations and other algorithms. Participants will receive a disk with the tools necessary to accomplish these tasks as well as bibliography for future research.

*Audience: Beginner*

*Instructor: Ken Whitehorn, Leica Geosystems, Inc.*

### **24. Exploring ArcView 8.1 (Lecture)**

This workshop will explore the latest version of ESRI's desktop GIS offering, ArcView 8.1. Its place within the ArcGIS suite of products, including a comparison of applications versus functional product levels, will be discussed. The technical portion of the workshop will focus on the basics of using ArcView for data display, query and simple analysis in ArcMap, and on using ArcCatalog and ArcToolbox for data management and processing. Migration issues from ArcView 3.x will also be covered.

*Audience: Beginner*

*Instructor: Ron Bruder, Applied Data Consultants, Inc.*

## **25. MBTI Personalities in the Workplace (Lecture)**

An introduction to the Myers-Briggs Type Indicator through the lens of work relationships. Ever wonder why co-workers do the things they do? Curious about how your natural approach to a project or challenge is so different or similar to that of your colleagues? Personality doesn't explain everything, but some insight into its role can help you to appreciate the complimentary gifts of others and learn to better develop your own. This session is designed for people unfamiliar with the Myers-Briggs Type Indicator and explains the origin of the MBTI personality theory, basics of the testing instrument, ethical use and purpose of the MBTI, activities to illustrate type in action and a take-home "inventory" for those interested in learning about one's own type.

*Audience: Beginner*

*Instructor: Jenaya Van Horn, Minnesota Department of Employee Relations*

## **26. Redistricting: Law and Technology (Lecture)**

In 2002, election districts will be redrawn throughout the nation to account for population changes reflected in the 2000 census. The art of redistricting is a balance between legal requirements, technical capabilities and politics. This session will provide a glimpse into the milieu in which technical staff will be working when assisting with redistricting.

*Audience: Beginner*

*Instructor: Randall Cutting, Minnesota Department of State*

## **27. Principles of Graphic Design, Advanced Cartography and Visualization (Lecture)**

This workshop is designed for practitioners who want a better understanding of the potential for GIS-based maps. Topics will include basic principles of cartographic symbolization, classification, and generalization. There will be an emphasis on principles of design and the graphic hierarchy. Also covered will be multivariate symbolization and advanced techniques of data visualization.

*Audience: Intermediate*

*Instructor: Robert McMaster, University of Minnesota*

## **28. Introduction to Customizing the ArcIMS HTML Viewer (Lecture)**

This workshop is intended for GIS professionals who are familiar with ArcIMS but have been struggling with customizing the HTML Viewer interface and functionality. Topics to be covered will include: A basic primer on HTML, JavaScript and XML; How the Server Request/Response cycle works in ArcIMS; How the HTML Viewer is coded and constructed, so the user better understands how to customize it; How to customize the HTML Viewer design; How to add custom functionality to the HTML Viewer. Sample scripts and documentation will be provided. Attendees should have a basic understanding of and preferably some experience with ArcIMS.

*Audience: Intermediate*

*Instructor: Suzanne Fliege, Plansight, LLC*

## **29. Advanced ArcView 3.2 Tips and Tools (Lecture)**

This workshop will demonstrate the tips and tools that make you a proficient ArcView user. Instruction will be in the use of various downloadable tools, easy to use query builder commands, error control, importing parts of a project into a separate project, converting your DOQs to JPEG format and portable projects. Participants will receive a manual with step by step instructions to use with their own data. ArcView experience is required.

*Audience: Advanced*

*Instructor: Annette Theroux, Pro-West & Associates, Inc.*

## **30. Avenue to Visual Basic for ArcGIS 8.1 (Lecture)**

This workshop demonstrates how to leverage your existing Avenue skills using VBA in the ArcGIS Environment. The workshop will include a lecture, a demonstration, and a question/answer session. This workshop is designed for existing ArcView/Avenue programmers. Familiarity with Visual Basic, ArcMap and ArcCatalog will be advantageous. This workshop is intended to assist the Avenue Programmer in transitioning from the Avenue programming environment to using VBA in ArcGIS.

*Audience: Advanced*

*Instructor: Mark Midas, ESRI*

# 2001 Conference Program

## Thursday, October 11

- 7:30 am Conference Registration and Materials Pick-Up
- 8:30 am **Opening Plenary Session**  
Bob Marx, Chief, Geography Division, US Census Bureau  
Dorothy Stroz, Team Leader, Legal and Administrative Areas, Geography Division, US Census Bureau  
Wes Flack, Geographer, Kansas City Regional Office, US Census Bureau
- 10:00 am Break  
Edmund Fitzgerald Exhibit Hall Opens and Poster Display Begins
- 10:30 am **Concurrent Sessions**
- Session A -- Internet Mapping**
- ♦ *Internet Mapping on a Budget*, Blaine Hackett, PlanSight LLC
  - ♦ *Using Internet Based Online Maps to Solve a Wide Variety of User Needs*, Mark Sloan, Clay County
  - ♦ *What's New with Landview: Bringing Geographic Information to People Who Don't Have It*, Craig Perreault, MN DNR
- Session B -- Local Government Applications**
- ♦ *GASB 34: Penalty or Panacea*, Bradford Henry, URS/BRW
  - ♦ *Right of Way Mapping and the Parcel Cadastre*, Jay Krafthefer, Todd Basney, MN/DOT
  - ♦ *Dakota County Website Property Resources*, Randy Knippel, Kent Tupper, Dakota County
- Session C -- Data Sources**
- ♦ *Status of The National Map*, Kari J. Craun, USGS
  - ♦ *Extending Satellite Remote Sensing to Local Scales: Minnesota Experience with IKONOS Data*, Marvin Bauer, Kali Sawaya, Geoff Holden, University of Minnesota
  - ♦ *A New Public Land Survey GIS Layer for the State Is Complete ... So, What Is It Good For?*, Jill Bornes, Minnesota DNR
- Session D -- Forest Management**
- ♦ *Predicting Tree Species Range Limits*, Karen V. Walker, Margaret B. Davis, Shinya Sugita, University of Minnesota
  - ♦ *Regional-Scale Forest Growth Modeling Using GIS and Remote Sensing Technologies*, Ryan W. Kirk, Thomas E. Burk, University of Minnesota
  - ♦ *New Technologies in Operational Forest Mapping*, D. Samuel Rajasekhar, James William Rack, MN DNR
- Session E -- Using Census 2000 Data**
- ♦ *Census 2000 Highlights*, Craig Best, US Census Bureau
  - ♦ *Tiger/Line 2000*, Craig Best, US Census Bureau
  - ♦ *Desktop GIS Mapping of SF-1 Data*, Wes Flack, US Census Bureau
- Project Demonstration -- Wetland Management**
- ♦ *An Automated Mapping Application For Wetland Management*, Steve Hofstad, Clay County, Rose Erickson, ProWest & Associates, Inc.
- Noon Lunch

1:30 pm **Concurrent Sessions**

**Session F -- Mining**

- ♦ *Using Multi-Spectral Digital Imagery for Mine Reclamation, Erosion and Damage Control*, Jennifer Hintz, Airborne Data Systems, Inc.
- ♦ *Volcanogenic Massive Sulfide Deposit Mineral Potential Mapping in Northern Minnesota: GIS Spatial Analysis Methodology*, Dean M. Peterson, Natural Resources Research Institute
- ♦ *Lode Gold Deposit Mineral Potential Mapping in Northern Minnesota: GIS Spatial Analysis of Analog Canadian Mining Camps and Integration into Minnesota*, Dean M. Peterson, Natural Resources Research Institute

**Session G -- Local Government Planning**

- ♦ *Enterprise GIS Deployment: The Minneapolis Model*, Gary Criter, City of Minneapolis
- ♦ *Geospatial Engineering in Minneapolis*, Sherry Coatney, Intergraph, Don Elwood, City of Minneapolis Public Works Department
- ♦ *The Fargo-Moorhead Advanced Metropolitan GIS Plan*, Brian St. George, PlanSight, LLC, Chad Coziahr, Fargo-Moorhead Metropolitan Council of Governments

**Session H -- Data Sharing**

- ♦ *The Minnesota DNR Extended Data Dictionary: Integrating Data Documentation and Distribution*, Robert Maki, MN DNR, Sandra Paddock, EMA, Inc.
- ♦ *Minnesota's Top Ten List: Status of the Most Needed GIS Data Sets*, Don Yaeger, LMIC
- ♦ *Delivering Data and Tools Through Cooperative GIS*, Jim Ramstrom, LMIC

**Session I -- Hydrography**

- ♦ *National Hydrography Dataset*, Ron Wencil, USGS
- ♦ *National Hydrography Dataset (NHD) Development Activity in Minnesota*, Mark Olsen, MPCA, Susanne Maeder, LMIC
- ♦ *Georeferencing Water Quality Information to the National Hydrography Dataset*, Mark Olsen, Carrie Bartz, MPCA

**Session J -- Land Records Modernization**

- ♦ *Proposed Land Record's Modernization Program for Minnesota*, Jay Wittstock, URS Corporation, Luci Radde Botzek, Capitol Connections

**Project Demonstration -- Dakota County Census**

- ♦ *Dakota County Census CD Project Demonstration*, Todd Lusk, Scott Laursen, Dakota County

3:00 pm Break

3:30 pm **Concurrent Sessions**

**Session K -- Image Processing**

- ♦ *Addition of Elevation in Automatic Geo-Referencing Software*, David Fuhr, Airborne Data System
- ♦ *Scanning Historic Air Photos -- A Tale of Many Pictures*, Timothy N. Loesch, MN DNR
- ♦ *Regional Vegetation Condition Analysis Based on AVHRR NDVI Temporal Profiles*, Liang Guo, Marvin Bauer, University of Minnesota

**Session L -- Public Data Use**

- ♦ *Fire/EMS Incident Management with GIS*, Rick Larkin, City of Burnsville Fire Department, Catherine Hansen, Rowekamp Associates, Inc.
- ♦ *Using GIS for Comstat: The Reality of CBS' The District*, Nicole DeMotto, Kansas City Police Department
- ♦ *Dakota County Census CD Project*, Todd Lusk, Scott Laursen, Dakota County

#### Session M -- Data Distribution

- ♦ *GeoGateway Enhancements: The Quick Route to Geographic Information*, Chris Cialek, Jim Dickerson, LMIC
- ♦ *Web Map Services and More -- New Developments in Sharing Data on MetroGIS DataFinder*, Alison Slaats, Mark Kotz, Metropolitan Council
- ♦ *Internet Delivery of Satellite Imagery With TerraSIP's MODIS Download Facility*, Jamie L. Smedsmo, Thomas E. Burk, Pericles S. Nacionales, Ranga R. Vatsavai, University of Minnesota

#### Session N -- Wetland and Watershed Management

- ♦ *Using a GIS in Hydrogeomorphic Wetland Classification*, Leslie A. Jagger, Stacey L. Stark, Computer Sciences Corporation, Naomi E. Detenbeck, EPA Mid-Continent Ecology Division
- ♦ *Using the MLCCS for Watershed Management and Natural Resource Based Planning*, David Holmen, Jay Riggs, Dakota County
- ♦ *Clay SWCD: A Wetland Functional Analysis Model*, Steve Hofstad, Clay County, Rose Erickson, ProWest & Associates, Inc.

#### Session O -- Transportation 1

- ♦ *GIS at MN/DOT*, Mike Barnes, MN/DOT
- ♦ *Spatial Analysis of Hydraulic Infrastructure Data*, Thomas Martin, MN/DOT
- ♦ *MN/Model Implementation*, Beth Hobbs, Crystal Philips, MN/DOT

#### 5:00 pm Vendors Reception and Poster Session

Prize Drawings (must be present to win); Complimentary Hors d'oeuvres and Cash Bar

### Friday, October 12

7:30 am Conference Registration and Materials Pick-Up

8:00 am Edmund Fitzgerald Exhibit Hall Opens

#### 8:30 am Concurrent Sessions

##### Session P -- Photogrammetry Panels

- ♦ *Minnesota Aerial Photography / Imagery Status and Requirements*, Ron Wencl, USGS
- ♦ *Ask the Experts: Everything You Wanted to Know About Photogrammetry and Remote Sensing but Were Afraid to Ask!*, Brian Huberty, USDA NRCS

##### Session Q -- Public Health

- ♦ *Assessing the Probability of Impact of Petroleum Release Sites on Community Wells: Rochester, Minnesota*, Steve Bruggeman, Maier Engineering, Sandeep Burman, MPCA, David McConville, Resource Analysis Program #16
- ♦ *Using GIS to Facilitate Targeted Blood Lead Screening*, Mary Hagerman, Steve Scott, Dakota County
- ♦ *Using GIS as a Tool to Manage Northern Minnesota's On-site Wastewater Treatment Systems*, Richard J. Otis, Timothy Barnett, Ayres Associates

##### Session R -- Data Collection

- ♦ *Digitization tools for GIS Editor*, Ramesh Kumar, Shailendra Singh, Indian Institute of Technology
- ♦ *DNR Tools for Integrating Garmin GPS with ArcView*, Christopher Pouliot, MN DNR
- ♦ *Combining GIS and GPS Capability with Satellite Imagery for In-Field Forestry Applications*, Rick Kerns, Thomas E. Burk, Marvin Bauer, University of Minnesota

##### Session S -- Wildlife Management

- ♦ *Wolves in the Superior Mixed Forest*, Jan Slaats, The Nature Conservancy
- ♦ *Data Defining Species Management Opportunities for the Muscatatuck National Wildlife Refuge*, Jennifer Sieracki, Thomas E. Burk, University of Minnesota
- ♦ *GIS for Wildlife Conservation in Cambodia*, Pericles S. Nacionales, J.L. David Smith, Sun Hean, University of Minnesota



### Session T -- Transportation 2

- ♦ *Metropolitan Council 2001 Transit Database Update*, Mike Dolbow, Metropolitan Council
- ♦ *Advanced Snowplow Routing Analysis*, Linda Tomaselli, GISRDC
- ♦ *3-D Modeling*, Josh Stevenson, MN/DOT

### Project Demonstration -- Wetland Management

- ♦ *An Automated Mapping Application For Wetland Management*, Steve Hofstad, Clay County, Rose Erickson, ProWest & Associates, Inc.

10:00 am Break

### 10:30 am Concurrent Sessions

#### Session U -- Remote Sensing Applications

- ♦ *Impervious Surface Area Classification and Mapping Using Satellite Remote Sensing*, Jean Doyle, Marvin Bauer, University of Minnesota
- ♦ *Statistical, Spectral and Spatial Knowledge Based Classification System for Multi-Spectral Remote Sensing Imagery*, Ranga Raju Vatsavai, Thomas E. Burk, University of Minnesota
- ♦ *Extending Water Quality Monitoring: A Statewide Classification of Lake Water Clarity Using Landsat Imagery*, Leif Olmanson, Marvin Bauer, Patrick Brezonik, University of Minnesota

#### Session V -- Land Use Planning

- ♦ *Comprehensive Planning Using GIS*, Tim Penfield, MSA Professional Services
- ♦ *Twin Cities Regional Planned Land Use Database - 2020: A Technical Overview*, Paul E. Hanson, Metropolitan Council
- ♦ *Geographic Information Systems Tools -- Useful for Inventorying and Displaying Aggregate Resource Information*, Renee L. Johnson, Jonathan B. Ellingson, MN DNR

#### Session W -- LMIC Data Smorgasbord

- ♦ *GIS Utilization of Historic Timberland Survey Records -- The Conclusion*, John Hoshal, LMIC
- ♦ *Geo-Coding the Minnesota Office of Tourism's Business Partners*, Norman Anderson, LMIC
- ♦ *Geo-Coding MnSCU Students: A Multi-Faceted Approach*, Sandi Kuitunen, Sally Wakefield, LMIC

#### Session X -- Agriculture

- ♦ *Carver County Odor From Feedlots Setback Estimation Tool*, Greg Aamodt, Peter Henschel, Carver County
- ♦ *Using GIS to Locate, Analyze and Map Feedlots in Minnesota*, Scott Freburg, Kristina Tierney, LMIC
- ♦ *Measuring Conflict: Changes in Animal Agricultural Industry*, Carol Ann Sersland, URS/BRW, Jean Coleman, Biko Associates, Inc., David G. Pitt, University of Minnesota

#### Session Y -- Transportation 3

- ♦ *MN/DOT's Location Data Manager and Available Data*, Dan Ross, Matt Koukol, MN/DOT
- ♦ *MN/DOT Railroad Right of Way Map Preservation*, George Thibault, MN/DOT
- ♦ *Developing GIS Support: MN/DOT's Experience*, Joella Givens, MN/DOT
- ♦ *Living Snow Fence Project*, Dan Gullickson, Steve Kortuem, MN/DOT
- ♦ *Intelligent Vehicle Initiatives*, Max Donath, University of Minnesota

### Project Demonstration -- Dakota County Census

- ♦ *Dakota County Census CD Project Demonstration*, Todd Lusk, Scott Laursen, Dakota County

11:00 am Edmund Fitzgerald Exhibit Hall Closes

### Noon Closing Luncheon

James Pisarowicz, Windcave National Park

1:30 pm **Minnesota GIS/LIS Consortium Business Meeting and Year End Review**

2:00 pm Prize Drawings (must be present to win)  
Adjournment

## Poster Presentations

The following poster presentations will be on display in the Exhibit Hall throughout the conference. Poster presenters will be on-hand to answer questions regarding their posters during the Vendors Reception and Poster Session on Thursday, October 11, from 5:00 – 6:00 pm.

- ♦ *A Comparison of Trade Area Models for a Small Business*, Christina M. Brandel, College of St. Catherine, Robert Werner, University of St. Thomas
- ♦ *A New State Standard for Coding Cities and Townships in Minnesota*, Mark Kotz, Metropolitan Council, Chris Cialek, LMIC
- ♦ *Action Research Examples: GIS for Community Groups*, Carol Gersmehl, Andras Bartal, Macalester College
- ♦ *Comparing and Contrasting Remote Sensing Technologies for Resource Assessment Along a Riparian Corridor*, Keith LeClaire, Mike Walker, Byron Williams, Teri Alberico, US Army Corps of Engineers
- ♦ *Comparing Past and Present Landscapes*, Tim Wallace, Carol Gersmehl, Macalester College
- ♦ *Don't Duck Metadata! Resources to Help You Document your GIS Data*, Nancy Rader, Chris Cialek, LMIC
- ♦ *GIS as a Tool for Watershed Education Within a Collaborative Framework*, Todd Lusk, Dakota County, Kevin Biehn, The Kestrel Design Group
- ♦ *GIS Utilization of Historic Timberland Survey Records -- The Conclusion*, John Hoshal, LMIC
- ♦ *GIS/GPS Use on the Fond du Lac Reservation*, Tim Krohn, Fond du Lac Reservation
- ♦ *Historical Forest Record Keeping with GIS*, Karen V. Walker, Thomas E. Burk, Ronald W. Severs, University of Minnesota
- ♦ *Integrating GPS-Enabled Equipment into Operations*, Chris Stevens, Nancy Read, Metropolitan Mosquito Control District
- ♦ *Lakeshed Assessment and Management Project*, Sue McGuire, Greg Berg, Dennis Fuchs, Rob Sip, Stearns County, Dan Lais, MN DNR
- ♦ *Minnesota Lake Water Clarity*, Leif Olmanson, Marvin Bauer, Patrick Brezonik, University of Minnesota
- ♦ *MN/DOT Public Land Survey Corner Database*, Michael Cannon, MN/DOT
- ♦ *Potential Conservation Corridors and Habitat Patches in the Blue Earth River Watershed*, Pete Knutson, Cathi Fouchi, MN DNR
- ♦ *Present and Predicted Landscape Change in the Twin Cities Metropolitan Area*, Fei Yuan, Kali Sawaya, Marvin Bauer, University of Minnesota, Bryan Pijanowski, Brad Shellito, Michigan State University
- ♦ *Spatial Analysis of Hydraulic Infrastructure Data*, Thomas Martin, MN/DOT
- ♦ *Stream Mapping Using a Remote Control Model Helicopter*, John Bonde, Natural Resources Research Institute
- ♦ *Twin Cities Regional Planned Land Use Database - 2020: Policy Implications*, Paul E. Hanson, Metropolitan Council
- ♦ *Use of IKONOS Imagery for Assessment of Lake Water Clarity in Eagan, Minnesota*, Leif Olmanson, Marvin Bauer, Patrick Brezonik, University of Minnesota
- ♦ *Using GIS in Landscape Planning*, Chad Skally, Minnesota Forest Resources Council
- ♦ *Using GIS to Facilitate Targeted Blood Lead Screening*, Mary Hagerman, Steve Scott, Dakota County
- ♦ *Using GIS to Locate, Analyze and Map Feedlots in Minnesota*, Scott Freburg, Kristina Tierney, LMIC
- ♦ *Where Is It, and Does It Matter? Predicting In-Stream Conditions from Land Use at Varying Distances from the Channel*, Tom Hollenhorst, Lucinda B. Johnson, Jeff Schuldt, Carl Richards, George Host, Natural Resources Research Institute
- ♦ *Wolves in the Superior Mixed Forest*, Jan Slaats, The Nature Conservancy

# Lodging Accommodations

A block of rooms has been reserved for conference participants at the following hotels. The rates given below are subject to the 13% Duluth hotel tax, and are available October 9-13, 2001. Room blocks will be released on September 10. Reservations made after the room blocks have been released are still eligible for the discounted conference rates listed below if MN GIS/LIS is mentioned when making the reservation. **The city of Duluth receives many visitors during the fall color season, so please make your reservation early.**

## **Holiday Inn Hotel & Suites Downtown Waterfront**

200 West 1st Street, Duluth, MN 55802

Located in downtown Duluth on the corner of West 1st Street and 2nd Avenue West. Parking area accessed from West 1st Street. The Holiday Inn is connected to the DECC via the skywalk system.

Call: 1-800-477-7089 or 218-722-1202

Rates: \$67.00 Tuesday-Thursday; \$119.95 Friday-Saturday (1-2 persons); Each additional adult is \$10.00 per room, per night.

## **The Inn on Lake Superior**

350 Canal Park Drive, Duluth, MN 55802

Located directly on the shore of Lake Superior in Canal Park. The Inn on Lake Superior is located four blocks from the DECC across the slip bridge. Room includes complimentary breakfast.

Call: 1-888-668-4352 or 218-726-1111

Rate: \$69.00 (1-2 persons)

## **Radisson Hotel Duluth Harborview**

505 West Superior Street, Duluth, MN 55802

Located in downtown Duluth on the corner of Superior Street and 5th Avenue West. Parking area accessed from 5th Avenue West. The Radisson is connected to the DECC via the skywalk system.

Call: 1-800-333-3333 or 218-727-8981

Rate: \$70.00 (1-4 persons)

# General Information

**Location:** The conference will be held at the Duluth Entertainment Convention Center (DECC), 350 Harbor Drive, Duluth, Minnesota. The DECC is located on the bay of Lake Superior next to Bayfront Park and Canal Park, a waterfront district with numerous shops and restaurants. See map on the inside front cover.

**Meals:** The standard registration fee includes all refreshment breaks and lunch on Thursday and Friday. The discounted student rate includes all refreshment breaks and one lunch ticket for use on Thursday or Friday. Lunch on Wednesday will be provided for workshop participants attending one full day or two half day workshops.

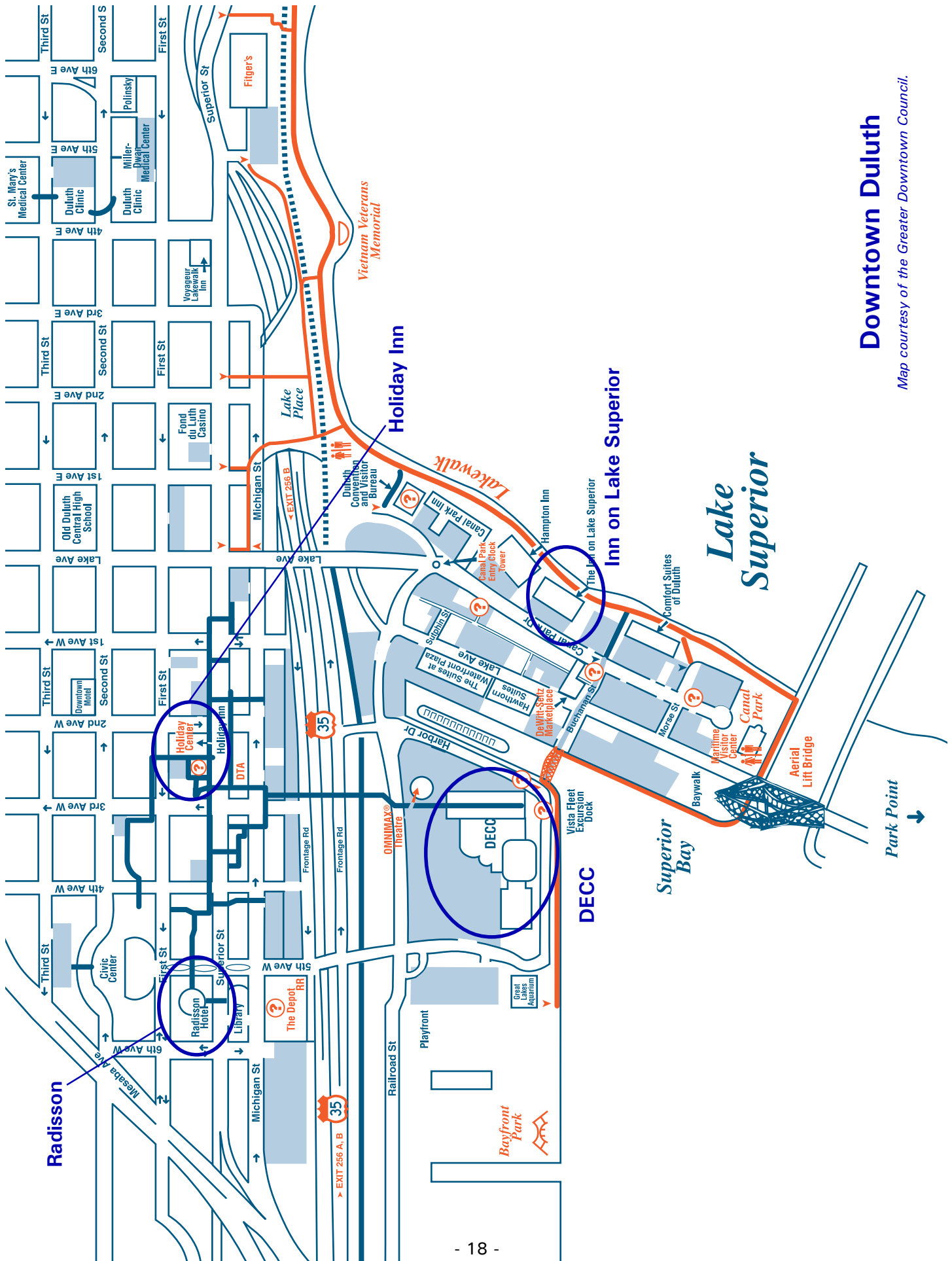
**Materials:** Conference attendees will receive a copy of the conference proceedings which will include abstracts for all presentations. Workshop attendees will receive workshop booklets for each workshop attended.

**Continuing Education:** Forms for Professional Development Hours for surveyors and engineers will be available at the registration desk.

**Fees:** All registration fees are to be made payable to the University of Minnesota Duluth (UMD). Payment can be made by check, credit card, or purchase order. Remember to register before September 28 to receive the lowest registration rate for the conference.

**Registration:** Please complete the enclosed Registration Form and return it to: MN GIS/LIS Conference, c/o UMD Continuing Education, 251 Darland, 10 University Drive, Duluth, MN 55812. Registrations received after October 5 will be processed at the conference as "on-site" registrations. To avoid delays while registering, please submit your registration by October 5. To register via the Web, visit: <http://www.mngislis.org/conf2001/register.htm>

**Refunds:** Cancellations received by September 24 will receive a 90% refund; cancellations received after September 24 but before September 28 will receive a 50% refund. No refunds will be issued after September 28. Substitutions are permitted.

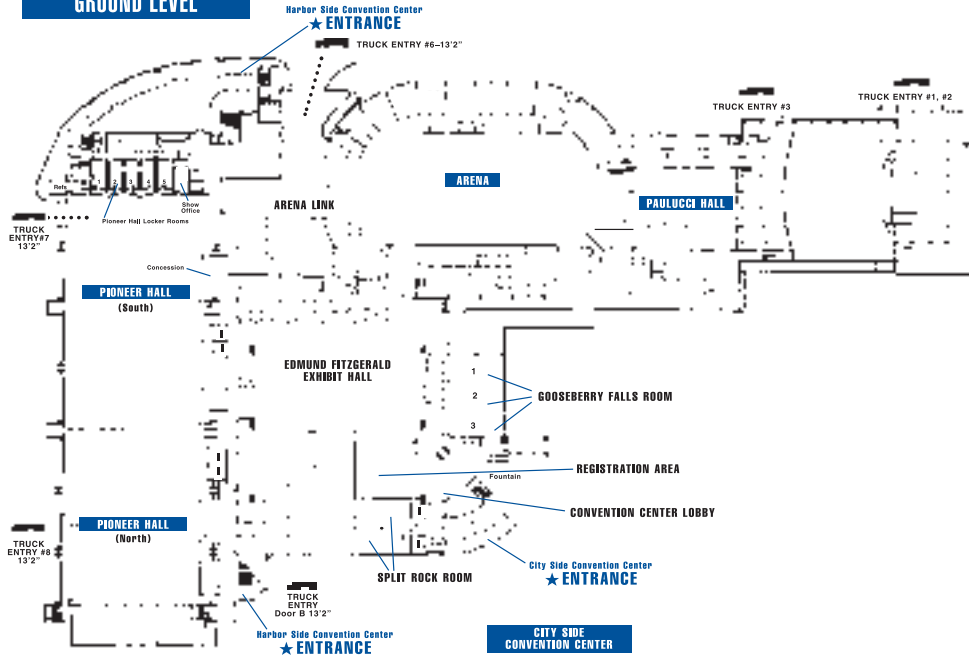


# Downtown Duluth

Map courtesy of the Greater Downtown Council.

# Duluth Entertainment Convention Center (DECC)

## GROUND LEVEL

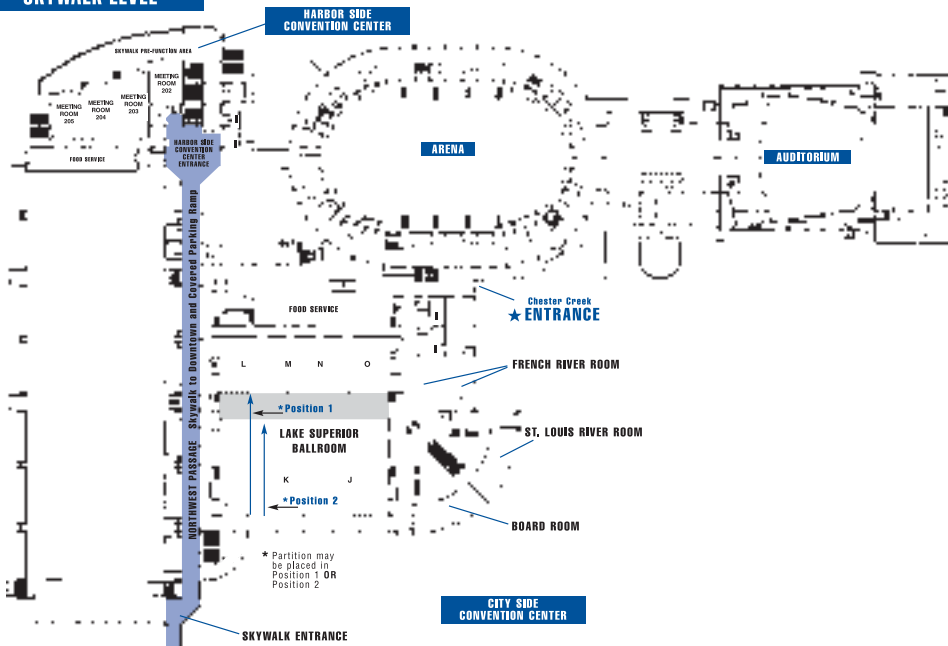


## THIRD LEVEL



HARBOR SIDE  
CONVENTION CENTER

## SKYWALK LEVEL





## **MINNESOTA GIS/LIS CONSORTIUM**

### *11th Annual Conference & Workshops*

**October 10-12, 2001**

**Duluth Entertainment Convention Center, Duluth, Minnesota**

**Be sure to register before September 28, 2001, to receive the discounted registration rate. Checks, VISA, MasterCard, Discover/Novus and purchase orders accepted.**

For additional information about the conference, visit:  
<http://www.mngislis.org/conf2001/conf2001.htm>

To request an exhibitor's package for the conference, contact Marge Erickson at:  
Phone: 218-726-6819  
E-mail: [merickso@d.umn.edu](mailto:merickso@d.umn.edu)



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