Non-profit, state supported

Established 1846

Broad Collections Focus

350 fulltime staff
22 federal grants

Historic Sites

State Education
(textbooks and Publications)

“Using the Power of History to Transform Lives”

Preserving - Sharing - Connecting
Audiences

- Students, ages 5-18
- Genealogists
- Scholarly Researchers
STORYTELLING
Multi-sensory exhibits make the feel of the past accessible...

- Museums know a lot about experience design
- Users, audiences have different needs
- Rooted in Theater – set design, lighting, story
We publish Textbooks, Research, and Publications
ARCHIVING:
We archive maps, art, photographs, manuscripts, govt documents.
Collecting, Storing, and Preserving
Digitization
ACCESS:
Access to collections in multiple formats

- Read a typed transcript
- Listen to a reading
- Zoom into the original
- View and Search on a Map

**Description:**
Mary Clark writes from Fort Snelling to her brother, Temple Clark, in Green Lake, Wisconsin. She offers news of the fort, family, friends, and local events. She mentions Henry Wilson’s expedition to capture a group of Dakota implicated in the alleged murder of a white man. She reports that the lieutenant guarding the five Dakota at the time of their escape is scheduled to appear before a court martial. Also included is a description of a fire in the fort’s commissary storehouse, after which Clark writes, “The occurrence of the most thrilling thing at Fort Snelling soon becomes an object of universal description and importance.”

**Quantity:** 1 item

**Format:** Content Category: text
Edition:

**Place:** Subject: Fort Snelling, Commissary-Storehouse, Hennepin County, Minnesota, United States

**Creation:** Author: Clark, Mary E.

**Subjects:** Recipient: Clark, Temple
Collected by: Rsvold, Floyd E.
Dakota Indians
Fort Snelling, Hennepin County, Minnesota, United States

**Dates:** Creation: Not earlier than 10/13/1844 - Not later than 10/15/1844
Data Visualization

http://www.historicfortsnelling.org/a-place-in-time/store
Web ‘Exhibits’

http://www.mnhs.org/exhibits/lakestreets
Challenges:

- Communicate Across Departments
- Stay Positive, even with Budget Cuts
- Maintain Authority, but be Open

Maps and Geospatial History Projects at MHS


• True North Online GIS for Students (2006-2007) www.mnhs.org/truenorth

• ’Minnesota on the Map’ Website (2009-present) www.collections.mnhs.org/maps

• Georeferenced Historic Photos and Georectified Maps (2010-2013) www.collections.mnhs.org/mapexplorer

• 3D Modeling (2008-2011) http://screencast.com/t/Er0VMNHC

• Data Visualization of Primary Sources (2012-2013) http://www.historicfortsnelling.org/a-place-in-time/home
Original Land Survey Maps/Field Notes

About:
http://www.mngeo.state.mn.us/chouse/GLO/fieldnotes/
http://www.mngeo.state.mn.us/glo/Index.htm

Legend:
The lines signify that the bluff is sloping inward and to the north.

Bluff

Field

Lake

Quarry

Stream

Rood

Swamp

Marsh

Windfall
Trees killed by straight-line winds.
TRUE NORTH: Free, Consolidated, Online access to GIS layers and Archives

http://www.mngeo.state.mn.us/ghol/
Selected, re-projected, organized GIS layers from across the State of Minnesota

**LAND USE MAPS**
Dept. of Natural Resources

**PEOPLE MAPS**
MSP Public Library, MHS

**HISTORY MAPS**
MN Historical Society

**ROAD MAPS**: Minn.Dept of Transportation

**ETHNICITY MAPS**
www.census.gov

**BACKGROUND MAPS**
Land Management Information Center
## Some Example Layers (of over 200)

<table>
<thead>
<tr>
<th>Aerial Photographs</th>
<th>Solar Power Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Use, 1969, 2002</td>
<td>Wild Rice Beds</td>
</tr>
<tr>
<td>State Parks</td>
<td>Mineral Resources</td>
</tr>
<tr>
<td>Ecological Provinces</td>
<td>Railroad, pre-1930</td>
</tr>
<tr>
<td>Shaded Relief</td>
<td>Streetcar Routes</td>
</tr>
<tr>
<td>Bedrock Geology</td>
<td>Bike Paths, 1899</td>
</tr>
<tr>
<td>Moraines</td>
<td>Territorial Roads</td>
</tr>
<tr>
<td>Soil Fertility</td>
<td>Swedish Ancestry</td>
</tr>
<tr>
<td>Epidemics</td>
<td>Hispanic/Latino Population</td>
</tr>
<tr>
<td>Watersheds</td>
<td>Percent Below Poverty</td>
</tr>
<tr>
<td>Well Depth</td>
<td>Ojibwe Migration</td>
</tr>
<tr>
<td>Fur Trade Posts</td>
<td>Grasshopper Plagues</td>
</tr>
<tr>
<td>Wheat, 1879 and 2006</td>
<td>Average Commuting Time</td>
</tr>
<tr>
<td>POW Camps</td>
<td>Annual Rainfall by Decade</td>
</tr>
</tbody>
</table>
Each Map is linked to relevant archives (even GIS layers are more than data; they represent history and memory and people)

Chicago & North Western Railway tracks during "big snow" of 1880. Photograph Collection 1880. Location no. HE6.43 r25. Negative no. 76.
Goals: To ‘open’ GIS data. To simplify mapping tools. To make GIS analysis easy. To allow connections and surprise.
Example: The History of the US Land Survey (and my daily walk)
(my house)
Example: Public Land Survey History

See the humans connected to the maps and the land... their hats, their tools, their handwriting...
Audience-Driven Cartographic Elements (for kids, in this case)

Simplified, playful tools and icons. Some successes for 2006. Not a big 'wow' compared to today.
Georectified Maps and Photos

http://collections.mnhs.org/mapexplorer/
Search by Address or Placename: zooms you into that location and automatically displays content geotagged within the 4 corners of the map/screen.
Limit the type of content you want to see.
Circles with Numbers in them refer to the location of digital items. Images open in a pop-up on the screen, and link back to full metadata and enlarged images.
Maps can be viewed in the same way, or automatically overlaid across the landscape.
Searches may be done by Keyword. In this case, all content with the word 'horse' in its metadata appears.
3D Digital Modeling
Prototype: Modeling the Washburn A Mill in 1880
Using Autodesk 3DS Max and ESRI City Engine
Placing the City Archives in Space
Modeling the details of the Mill itself
Developing a 1 minute video and many still images for use in museum exhibits, classroom lessons, and for historic interpretation.
Modeling Trauma and Difficult Heritage
Fort Snelling as an example
Historic Fort Snelling

Complex History. One space. Many things to many people over time.

- Site of the Dakota creation story
- Crossroads of two major river highways of the fur trade
- Foothold of American westward expansion
- Site of 1862 Dakota Internment Camp
- 19th and 20th century active military base
The purpose of ‘new’ modeling

(It’s not that much easier)
1. Visualizing a lost landscape

Every stone, window, doorknob, and blade of grass has to get modeled.
2. Reconstructing a space for future analysis

The answer is not to go to the text “armed with a hypothesis” but “with a machine that is ready to reorganize the text in a thousand different ways instantly.”

Matthew Wilkens

- Please add a pine tree to the model at the location of the green X (above).
The basic processes of 3D digital modeling

3D Studio max
City Engine
AutoCad

- door missing
- window missing
- should this be a door, not a window?
1. Please edit the paths and widths of the rivers so that they match those in the photo at right (to work with the full-size version of the photo outside of this Word doc, access the file October1953-WN-5M-71.tif, posted on Base Camp).

2. After correcting the river shapes, please add in islands A and B, circled at left. For a complete view of island B and its location in the river, see May1951-BF-9-44.tif, also on Base Camp.

3. Replace water body C with land, as suggested by the green scribbles. Use October1953-WN-5M-71.tif as a guide for creating the correct path for the Minnesota River where it flows south around Snelling Lake.

4. Enlarge lake D so that it extends under the Mendota bridge, approximately as shown by the dotted red line. Use the photo Metro1945-A-2-47.tif (on Base Camp) as a guide, as well as October1953-WN-5M-71.tif, if needed. Allow Metro1945-A-2-47.tif to take precedent, since it was taken in 1945.
1862 Dakota War
A Single overview Photo Remains. But WHERE was the camp, precisely?
Critically Examine the Single Photograph
Triangulate Possible Location
Confirm (Best Guess) Location
Acurate Spatial Modeling
Detailed Object Modeling

...
Capturing the Accurate Season
Understanding the Meaning of Space

(Where museums and geography and digital collide)
WWII Japanese Internment Camp
Haiti, earthquake survivors camp, 2010
Revisiting Fort Snelling Concentration Camp
So, if the details are correct, everything is in the right place, what does it take to convey the Feel of a Space? *(Especially when that space carries a long legacy of pain? )* 

Can a model convey a feeling? 

Can a model be from a ’point of view’?
Video #1
http://screencast.com/t/Er0VMNHC

Video #2
http://screencast.com/t/rjQqHPWtpc
Capturing the ‘reality’,
Searching for the feel...
in “The Uncanny Valley”