



UWSP Geo News

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www.uwsp.edu/geo
www.uwsp.edu/gis

WAUSAU DIGITAL CONCIERGE

Your Personal Guide to the Wausau River District

Douglas Miskowiak, Senior GIS Education Specialist

"If highly educated and skilled young professionals can live anywhere in the world, why should they choose the Wausau region? Similarly, if visitors can choose any place to recreate, why should they choose Wausau?" Community leaders sought to address these questions by identifying the place-based characteristics that these groups desire. Commitment to active and healthy lifestyles, access to quality education, a diverse community, and substantive work are a few qualifiers that young professionals desire. Shops, quality dining, and vibrant entertainment venues are attributes that visitors search for. Yet, while area leaders have physically developed these assets in the Wausau River District, this storyline remained muted to the public. To address the problem, UW-Stevens Point GIS Center envisioned a way to chronicle Wausau's amenities from a geographic perspective.



Internet + Maps = an Accessible, Functional, & Immersive User Experience

The Wausau Digital Concierge (WDC), which marries the internet to digital maps, emerged as the result. The WDC uses online maps to show the locations of area shops, restaurants, service businesses, entertainment, and places of worship, among other amenities. Work conducted by the traditional hotel concierge inspired the idea for the WDC. A concierge

WDC continued on page 4.



You can get there from here!

Graduates - Class of Spring 2018

in scientia opportunitas - In knowledge there is opportunity

Bachelor of Science in Geography

Samuel Bortz

GIS and Spatial Analysis Minor

Zachary Halbach

GIS and Spatial Analysis Minor

Urban Planning Minor

Karli Jaeger

GIS and Spatial Analysis Minor

John Koss

GIS and Spatial Analysis Minor

Austin Lieburn

GIS and Spatial Analysis Minor

Urban Planning Minor

Jonathan Sundstedt

Brant Urner

Bachelor of Science in Geoscience

Jonathan Dawson

Kayla Faskell

GIS and Spatial Analysis Minor

Devin Fleck

Earth Science Minor

Geology Minor

GIS and Spatial Analysis Minor

Natural Science Minor

Benjamin Gardner

Geology Minor

Evan Garski

Geology Minor

GIS and Spatial Analysis Minor

Christopher Headlee

Geology Minor

GIS and Spatial Analysis Minor

Ernest Jorgensen

Earth Science Minor

Geology Minor

Samuel Kasten

Geology Minor

GIS and Spatial Analysis Minor

Kaitlyn Kivi

GIS and Spatial Analysis Minor

Cole Massie

Geology Minor

The degrees recognized on this page are those offered by the UWSP Department of Geography and Geology. Academic credentials awarded by other departments are not listed.



WDC continued from page 1.

offers community guests with filtered information and useful guidance to fashion a wonderful night out or a pleasant weekend adventure. Likewise, the WDC provides guests to the community with information about Wausau’s amenities and assets. The internet service offers guests information that is accessible, functional, and immersive.

ACCESSIBLE

WDC is accessible across computing platforms. With an internet connection or cellular data service, users can access the WDC from a home computer, tablet device, or smartphone. A web search for Wausau Digital Concierge or typing the web address will open the WDC. Windows, Apple IOS, and Android devices are all supported.

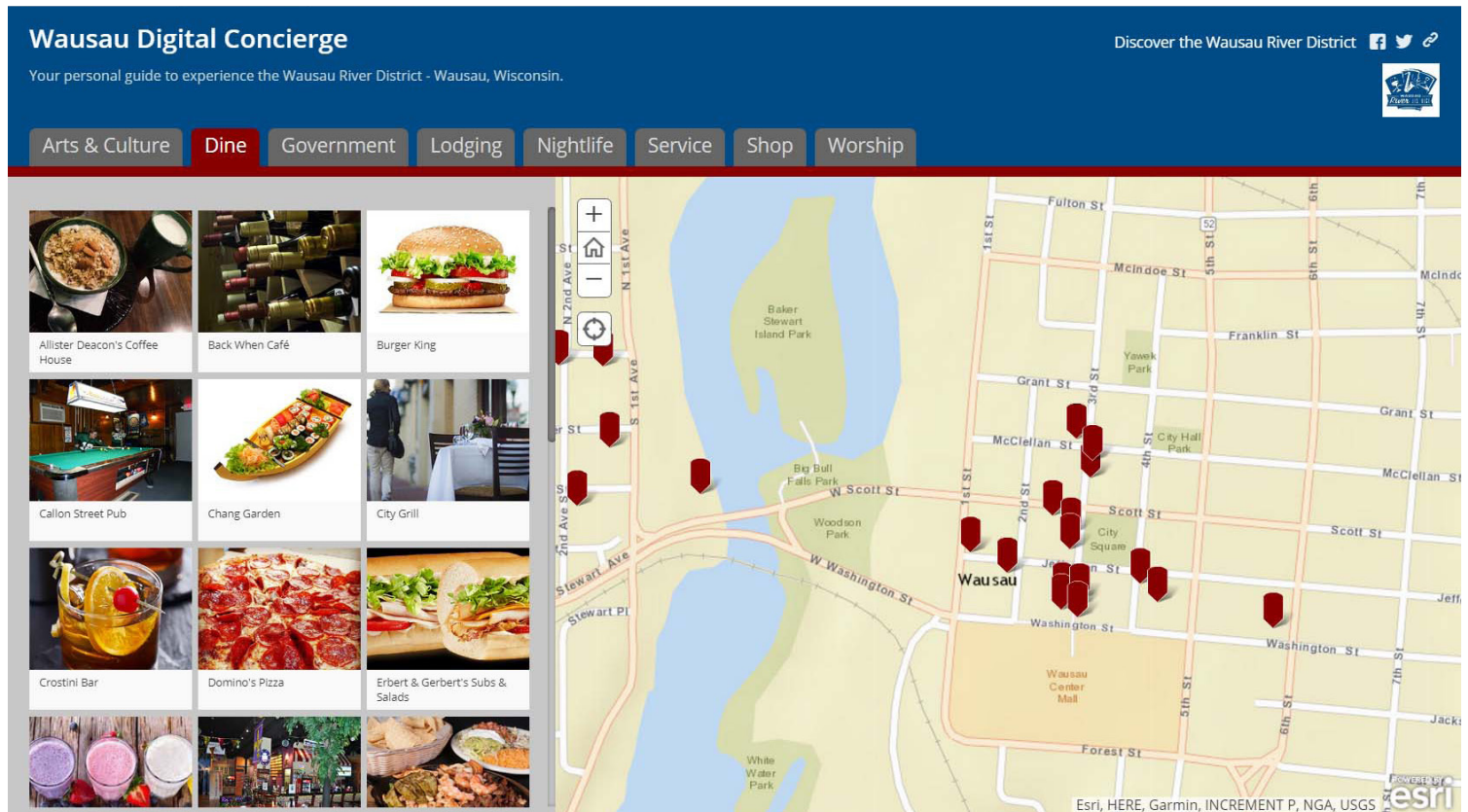
FUNCTIONAL

The WDC provides users with a functional experience. Firstly, community amenities are organized on a map that provides geographic context essential to navigation and way finding. Moreover, with location services from a smartphone, the WDC reveals the user's present location and offers driving or walking directions using Google Maps. Secondly, maps are filtered by amenity type to limit unwanted information.

IMMERSIVE

Each amenity listed on the WDC is ascribed with rich content to showcase the experience that will result from a visit. When a user clicks on an amenity map pin, a content pane appears that describes the amenity with a text description, photographs, web links to more information, and driving or walking directions.

The WDC viewed from a computer or large screen tablet. Tabs (top) filter the user experience by category, while the map pane (right) offers utility for wayfinding, and the description pane (left) offers rich content.



Crafting the WDC

Creating a polished user experience with the WDC required a methodical process. Aaron Willems, a student of the GIS Professional Certificate program, developed the WDC in three phases: Story Boarding, Data Collection & Management, and Digital Tool Development.

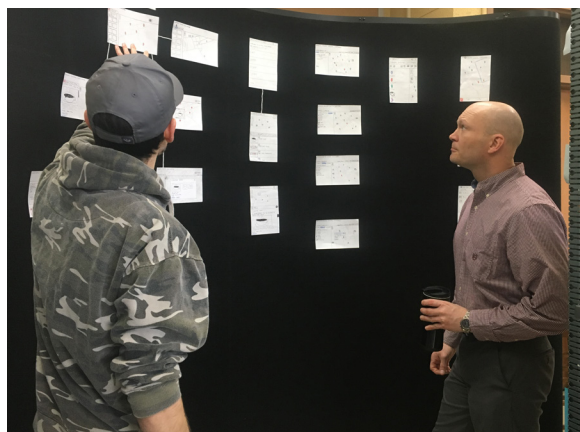
Phase 1. Storyboarding

Cartographic design controls provided the method to conduct storyboarding and guide the design of the WDC. Setting technology momentarily aside, storyboarding addresses design issues and limitations conceptually. While many students eagerly wish to jump into digital development, careful design contemplation early in the process saves the developer from unexpected design challenges later on. Storyboards, created as Microsoft Word documents, considered project purpose, audience, map scale and extent, how the map would be used, technological limitations, and the necessary data to tell the story. Moreover, even language choices were carefully scrutinized to build a common, user-friendly, and logical means to describe amenity categories. After several conceptual design iterations in consultation with an advisory board, the story was manually drawn and constructed to further conceptualize how users might traverse the story.

Phase 2. Data Collection and Management

With a storyline fully conceptualized, the data collection and management phase commenced. Each amenity, in excess of 100 for the Wausau River District, required significant data, none of which previously existed. First, the geographic location of each amenity by its street address was obtained to create geographic markers on the map. Each geographic location is attributed with an amenity category, text description, photographs, and a web address for obtaining more information. Mr. Willems sought various sources of information to develop the robust database. He then acted to author vibrant, yet accurate descriptions, collect or snap vivid photos, and garner other information necessary to describe each amenity in rich detail.

Aaron Willems and Doug Miskowiak contemplate an early storyboard.



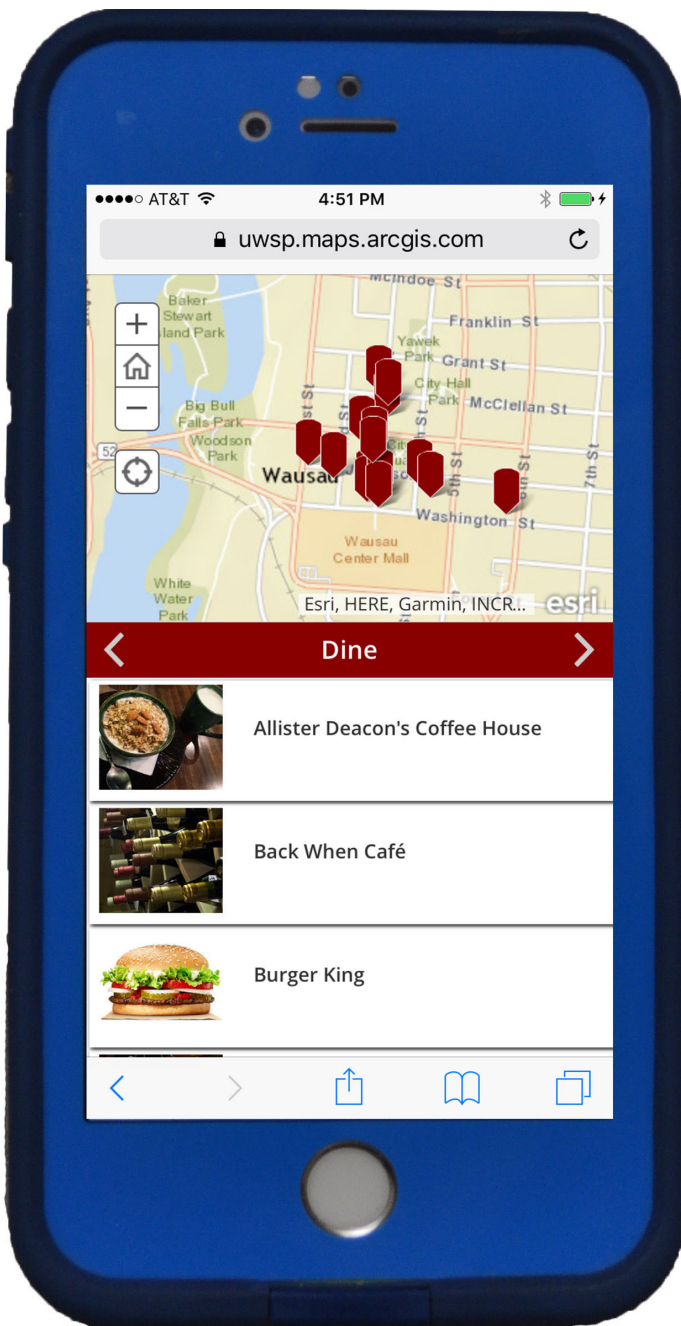
Phase 3. Digital Story Map Development

ESRI's shortlist template provided the software platform for developing the WDC. The template is uncomplicated and user-friendly while viewed from computer, tablet, or smartphone. Content is organized into selectable tabs, a map pane, and a description pane. Tabs organize amenities into categories and allow the user to select an experience to explore further, such as dining. The map pane pinpoints the geographic locations of each amenity. When a user clicks on a map pin, more information about that location is provided in the description pane. Users can also select among amenities from the description pane. Doing so also shares information about the selected amenity. Moreover, users can identify their present location on the map, find amenities that interest them, and get directions.

Aaron places the finishing touches on the WDC before launching it publicly.



WDC viewed from an Apple iPhone.



Unveiling the WDC to the Community

The WDC launched publicly in December 2017. Douglas Miskowiak, Senior GIS Education Specialist from UW-Stevens Point and Elizabeth Brodek, Executive Director of the Wausau River District, first unveiled the application to the Wausau City Council as a new way to explore the city. Since, the story has been shared by local area news outlets, including [WSAW Sunrise 7](#) and [WAOW Newsline 9](#). Links to the application are also shared from local websites including the [City of Wausau](#) and the [Wausau River District](#).

Sean Caldwell and Cassandra Sepeda (left) and Douglas Miskowiak and Elizabeth Brodek (right) share the WDC with viewers of WSAW Sunrise 7.



Conclusion

Maps have long been used to help people navigate robust thematic stories with the help of geographic contexts. Storymaps use the internet to couple the map with rich content to create a user experience that is functional, immersive, and accessible from computer, tablet, or smartphone. Wausau leaders have long cultivated a community that hosts amenities that visitors and young professional transplants are known to desire. The WDC packages the qualities of the Wausau River District and uses the map as a vehicle to share the thriving Wausau experience with these groups more broadly.



UWSP ALL-STAR STUDENT

Margaret Schwark

During this past spring semester, Margaret Schwark, a student of the UW-Stevens Point GIS Certificate Program, secured an internship with the Board of Commissioners of Public Lands. As Wisconsin's oldest state agency, they manage \$1 billion in trust fund assets and 77,000 acres of School Trust Lands originally granted to Wisconsin by the federal government to finance public education. Margaret's responsibilities included modernizing land records, particularly land easement records, using Geographic Information Systems (GIS). The remainder of this article is Margaret's account of her internship:



Frankly, before this internship, I had never heard of the Board of Commissioners of Public Lands (BCPL). Moreover, I had never seen an easement document or even heard the term *easement*. That changed this spring semester when I accepted an internship with the BCPL mapping land easements with GIS. At the start, I received a spreadsheet with easement data, several computer file folders of easement documents, metadata on property attributes, and my supervisor's advice that, *"This will not be as simple as it all sounds."* Four months later, I've created a GIS tool to collect and organize data, and improve its accessibility for managing easement rights associated with public and private property.

University Preparation

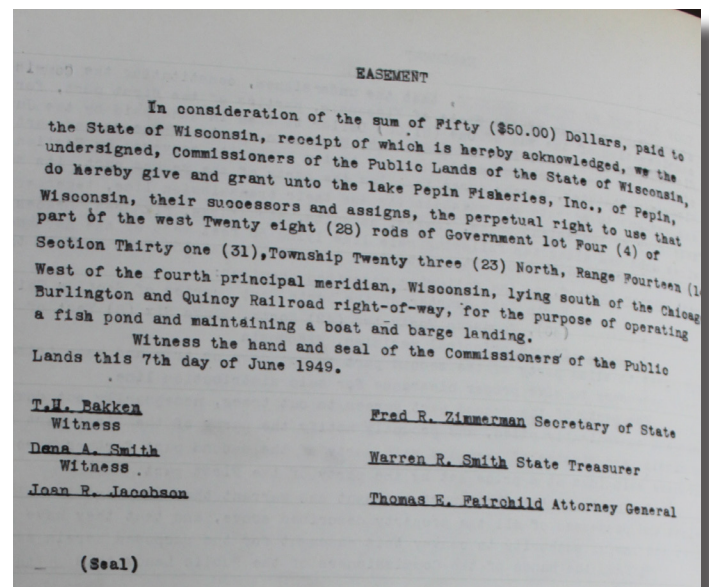
Prior to the internship I was prepared with several courses in GIS offered through the Department of Geography and Geology, so I had a firm understanding of ESRI's ArcMap software and using it to develop GIS databases, digitize features, and attribute feature classes. In addition, my forest management classes prepared me for reading legal descriptions.

Success Strategies

In addition to working on this project, I'm a full-time UW-Stevens Point student and member of the U.S. military. Naturally, I was required to practice time management and patience, and learn from my more

experienced colleagues. Organization was essential as I worked to divide this larger project into manageable sections. I found that color coding the spreadsheet helped separate easements by type, including those that were mapped as linear as opposed to polygon features. County by county, I took note of inconsistencies in the records and worked to resolve them.

Easement document granting Pepin Fisheries, Inc., rights to use land for the purpose of operating a fish pond and maintaining a boat and barge landing (circa 1949).



Original plat map including the easement granted to Pepin Fisheries, Inc.



Pepin Fisheries, Inc., easement recorded as a polygon (orange) using modern GIS.



Top Lessons

The internship provided me with a wonderful learning experience. My top three lessons:

Lesson #1: Accurate interpretation and digitizing are time consuming geospatial techniques and they often take longer than anticipated. Considering that my supervisor established no set rate for digitizing, I accomplished more than I initially set out to do.

Lesson #2: GIS work is meticulous. Reading over land records that consist of paragraphs of geographic coordinates to map the extent of a roadway easement necessitates a meticulous eye. Some easements included twenty different parcels of twisting forest roads, each requiring digitizing. In every case, patience was the recipe for accurately mapping high quality features.

Lesson #3: Trust in your experienced colleagues. Over the course of this project I had questions I could not address myself. At times roads weren't visible, or current land ownership was unknown. Other times, the public land survey layers conflicted with easement descriptions. The BCPL staff, with years of land records savvy, addressed the majority of my questions and offered other useful insights.

Enjoyable and Interesting Work

Technical tasks aside, I also enjoyed the historical aspect of Wisconsin land records. Early on in the semester, I visited the BCPL's Madison office and Randy Bixby, the Land Records Archivist. She helped me learn to search and scan easement documents and photograph documents that couldn't be scanned. Moreover, she introduced me to the original Wisconsin public land survey notebooks. I still marvel at what the original surveyors were able to accomplish. Well over one hundred years later, here I am using that data online to locate a tricky lot using ArcMap. One of the most historically interesting easements I encountered was from 1896, detailing land granted to a railroad company which went out of business one year after acquiring the easement. With no clear grantee, the BCPL still owns the land and the railroad bed is now a bike path.

Though my work on the project will eventually come to an end, the project itself will never be completely finished. As long as the BCPL possesses land and easements, the data contained in these feature classes will continue to grow and be updated. Wherever I go after I complete my portion of the work, I've thoroughly enjoyed being a part of this project, and I'm interested to see where the BCPL will take it in the future.

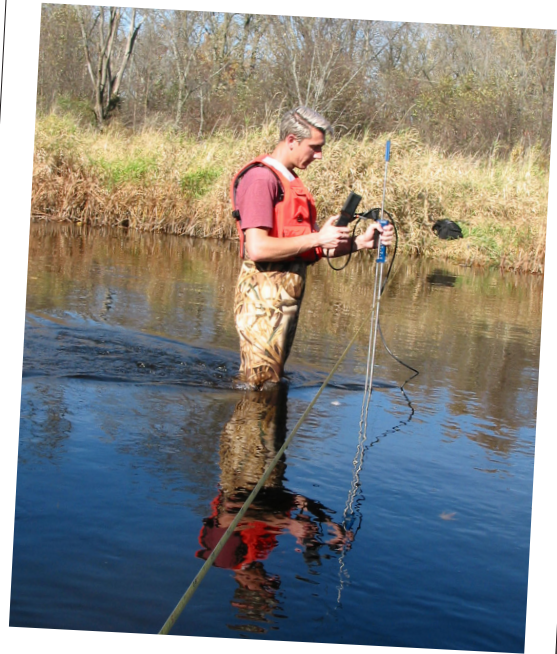




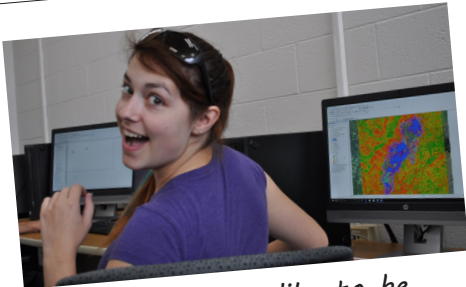
UWSP GeoClub and Student Scrapbook



GIS pros, Andy Faust and Andrea Bohn, share expertise with GeoClub on GIS Day no less



Ben may be up a creek without a paddle, but he's equipped for some serious geomorphology



Wouldn't you like to be a GISer too? Janelle, was that a rhetorical question?



Evan, Chels, and Kylie host a Geology Station at the UWSP Natural History Museum



A visit with Levi Schultz at his job with the USDA Natural Resources Conservation Service





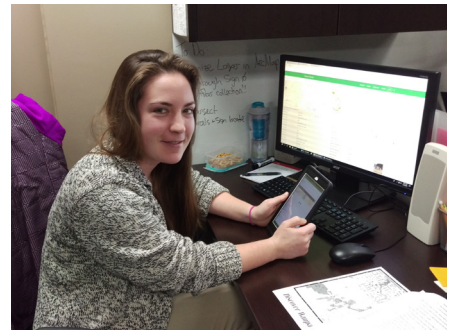
Mary Clare Sorenson, Dept ADA, visits with recent alum, Joe Martell on his wedding day



A visit to Roche-A-Cri State Park, 300-foot rock outcroppings and Native American petroglyphs



Students enjoy a sunset along the river while on the Mississippi Delta field trip



Olivia Stroinski interns for the City of Waupaca, WI



According to Anastasia, Melissa, and Suhyoon Bae, Geology Rocks!



Measuring the Baraboo Syncline fold hinge in Structural Geology





A visit to the old country store in the Mississippi Delta



In the footsteps of the King of Rock & Roll at the Legendary Sun Studio



Geography field trip to Quantum Spatial in Sheboygan, Wisconsin



A visit to William Faulkner's home



Validating remotely sensed imagery





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- ▶ Eric Larsen, Professor
- ▶ Douglas Miskowiak, Senior GIS Education Specialist
- ▶ Ismaila Odogba, Associate Professor
- ▶ Ray Reser, Director of Museum of Natural History
- ▶ Keith Rice, Professor and Director of GIS Center
- ▶ Diane Stelzer, GIS Center Associate
- ▶ Lisa Theo, Senior Lecturer

Calendar of Events

ESRI International User Conference
July 9 - July 13, 2018. San Diego, CA
www.esri.com/events/user-conference

American Institute of Professional Geologists
National Conference
September 8 - 11, 2018. Colorado Springs, CO
www.aipg.org/2018Conference

National States Geographic Information Council
Annual Conference
October 1 - 5, 2018. Duluth, MN
www.nsgic.org

GIS Day
November 14, 2018
www.gisday.com

You can get there from here!

