



## Floodplain Updates (for MACPZA conference)

10/14/2021

# Topics

- Upcoming training options
- FEMA map updates in progress
- Enhanced Lake Flood Elevations Online (LFEO)
- Disaster Roles for Local Officials videos – live soon!
- Other DNR Floodplain & Shoreland site updates
- FEMA's Risk Rating 2.0

# Trainings

- Did 19 virtual one hour trainings: late March to early May
- Planning series of one hour virtual trainings Winter 2021/2022
  - Survey soon on best weeks and preferred topics
  - Some to be recorded
- One day workshops will resume once workable, but mixed with virtual
- NEW: virtual shoreland training for a community's elected and appointed officials; community requests where officials have interest
  - 45 minutes on shoreland basics, variances and higher standards (can be customized); 15 minutes Q & A



Greetings and Welcome to the Minnesota DNR's 2021 virtual *Spring Series* focusing on

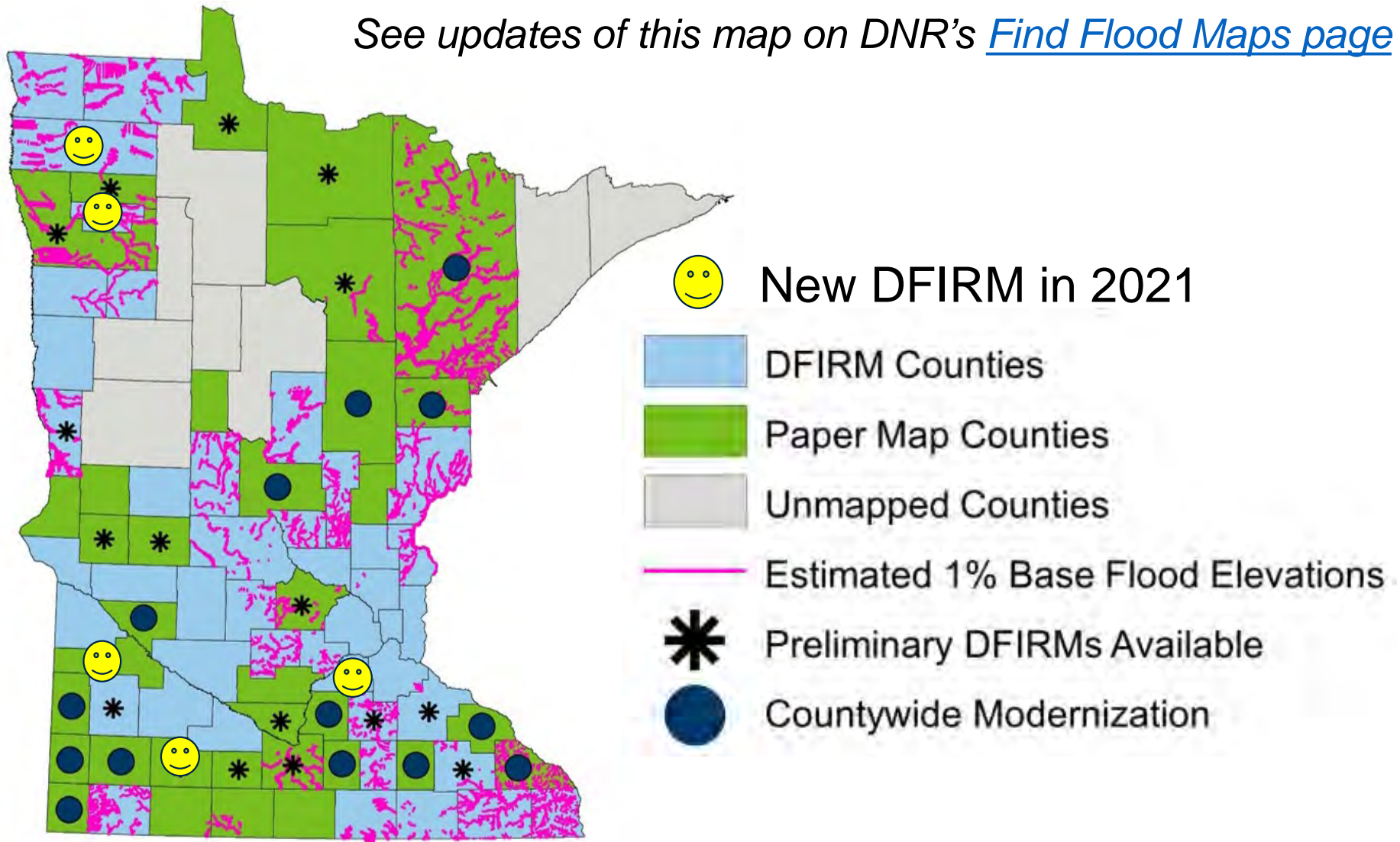


a wide variety of topics including floodplain basics to understanding options for your shoreline. Join us for a "series" of one-hour learning sessions and ask those burning questions that need answers! You are sure to hit a home run as you take valuable tools back to your team! Bases are loaded, so don't forget to register-tickets are free....see you there!

# Mapping Updates

## Flood Insurance Rate Maps (FIRMs)

See updates of this map on DNR's [Find Flood Maps page](#)



# Mapping Status – 2021/2022

- New Effective:
  - Scott – 2/12/2021
  - Red Lake – 3/9/2021
  - Marshall – 3/23/2021
  - Cottonwood – 9/24/2021
  - Yellow Medicine – 10/7/2021
- Letter of Final Determination (LFD) – 6 months before effective:
  - Rice (Zumbro panels) – 10/6/2021 (effective 4/6/2022)
  - Lyon (panels), Nicollet – Feb 2022
  - Lake of the Woods – March 2022
  - Blue Earth, Koochiching – May 2022

# Mapping Status – 2021/2022

## Preliminary New Maps:

- 5/28/21: Carlton
- 7/30/21: Itasca (revised panel)
- 9/30/21: Lincoln, Stevens (revised), Waseca
- Oct 2021: Watonwan (rev panels)
- Nov 2021: Pipestone, Rock
- Dec 2021: Dodge, Wabasha; Pennington (rev panel)
- Jan to March 2022: Morrison, Nicollet; St Louis, Wilkin (panels)
- April to June 2022: Blue Earth
- Sometime in 2022: Chippewa, LeSueur; Winona, Polk (rev); Wright (rev)

# Mapping Status – 2021/2022

- Flood Risk Review meetings
  - 2/22/21 St Louis
  - Twin Cities Mississippi HUC8 – starting 2/24/21 & in progress
- Kick offs (initial meeting with communities, then work on modeling)
  - 2/23/21 Murray
- Discovery (watershed level) – late 2021/2022
  - Rum River HUC8 (mainly Anoka, Isanti, Mille Lacs)
  - Ottertail River HUC8 (mainly Becker, Otter Tail, Wilkin)



# Lake & Flood Elevations Online (LFEO) Application



## Lake & Flood Elevations Online

The Lake & Flood Elevations Online (LFEO) viewer is a web-based interactive map tool for users to view flood elevations for lakes and other basins in Minnesota.

Not all lakes and basins have flood elevations determined. Information available to the public is only shown if it is based on current effective FEMA flood studies or other sources determined by Minnesota DNR (MNDNR) to be best available data that meets minimum quality standards.

\*Local ordinances use higher flood elevations than shown in this application. State minimum elevation requirements for new/expanded structures add at least one foot to the 100-year flood elevation. Local ordinances may be more restrictive than state minimums. Consult your local zoning authority – your city, if within city limits, or your county or township if outside city limits – to ensure you comply with local requirements.

We strive to have this resource as complete and accurate as possible. If you have questions, see errors, or are aware of data that should be available in this online viewer, please contact [Minnesota DNR Floodplain Program staff](#).

**Disclaimer:** The State of Minnesota, Department of Natural Resources, Ecological and Water Resources Division assumes no responsibility for and disclaims all liability for any typographical or other errors on this site. The DNR may make changes to the lake floodplain elevations at any time and without notice.

Continue

\*Local ordinances use higher flood elevations than shown in this application. State minimum elevation requirements for new/expanded structures add at least one foot to the 100-year flood elevation. Local ordinances may be more restrictive than state minimums. Consult your local zoning authority – your city, if within city limits, or your county or township if outside city limits – to ensure you comply with local requirements



# LFE0 – Enhanced Version

## **Added data layers:**

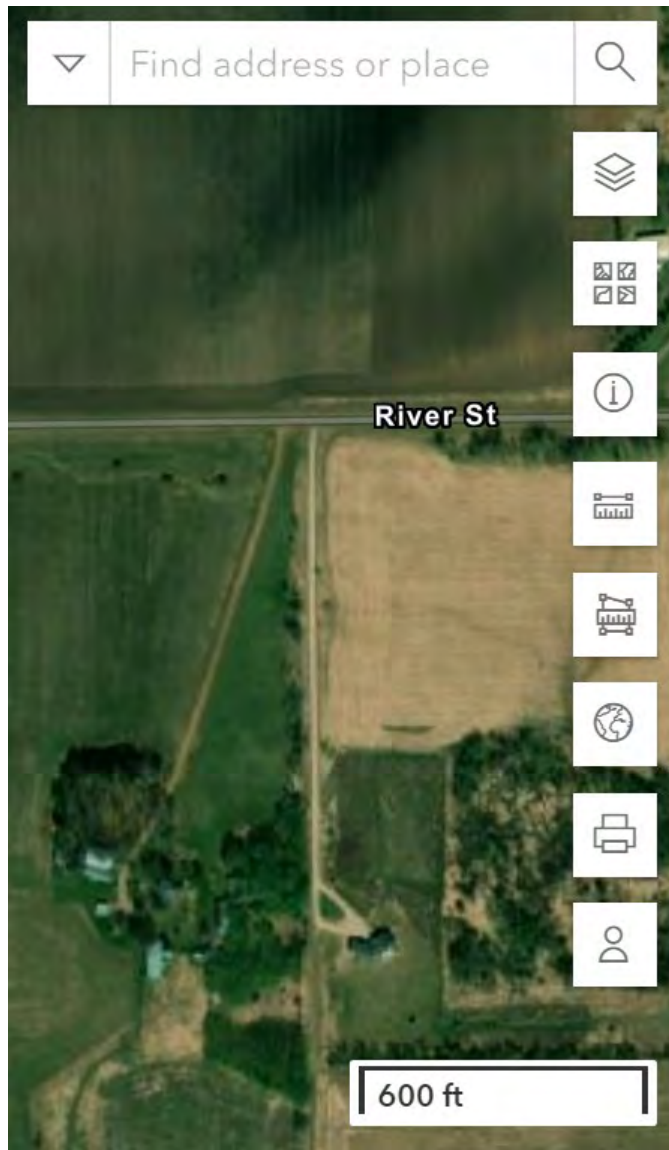
- Showing all basins (has flood data; DNR has some; none)
- National Flood Hazard Layers (flood zones, XSs, BFE lines.)
- “unmodernized” flood zones (for many paper map counties)
- Public water basins & watercourses
- “pink lines” (A zone model cross-sections with 1% annual chance)
- 2-foot contours
- Parcel boundaries & PID

## **Report options:**

- Current view – add a location drop; option to add comments
- Basin report:
  - Table with OHW; highest recorded water level & date; datum
  - Table with flood elevations; source & source date; datum

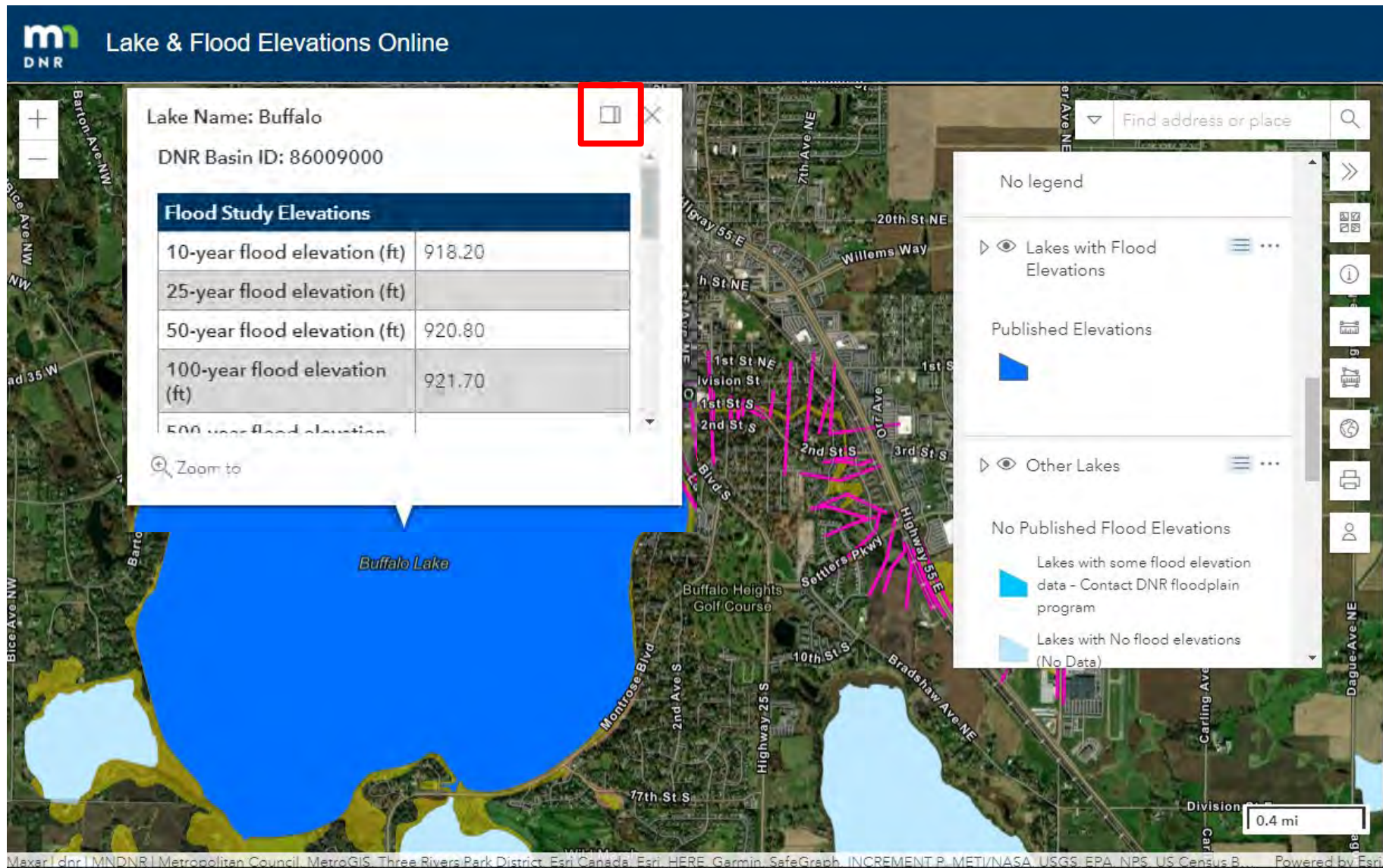
# Sample View on Enhanced LFEO Viewer

## Key Options



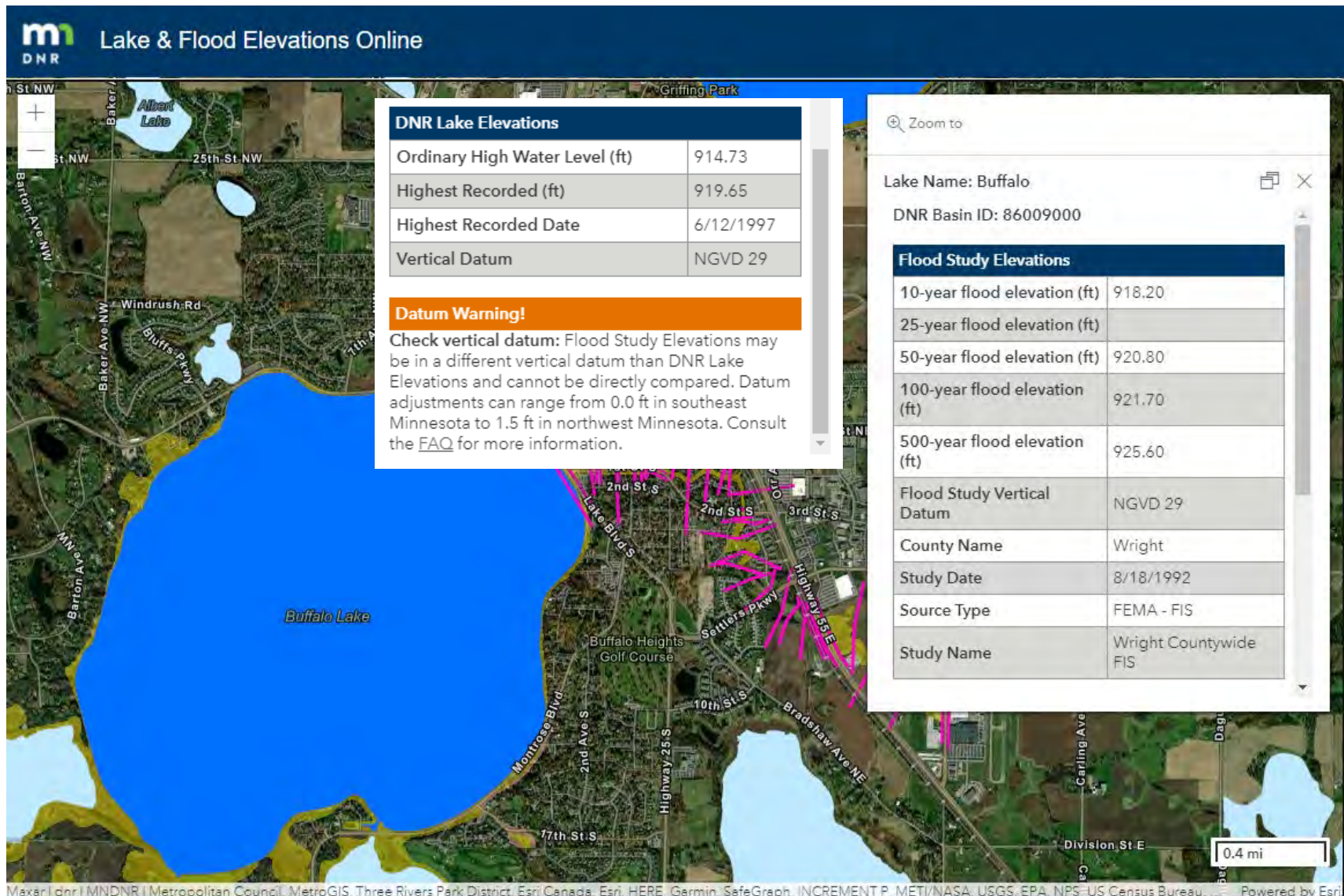
- Layers
- Backgrounds
- Information
- Measure line
- Measure area
- See Latitude/Longitude
- Print report options
- (for DNR use)

# Lake Flood Elevations Online (LFEO) Application



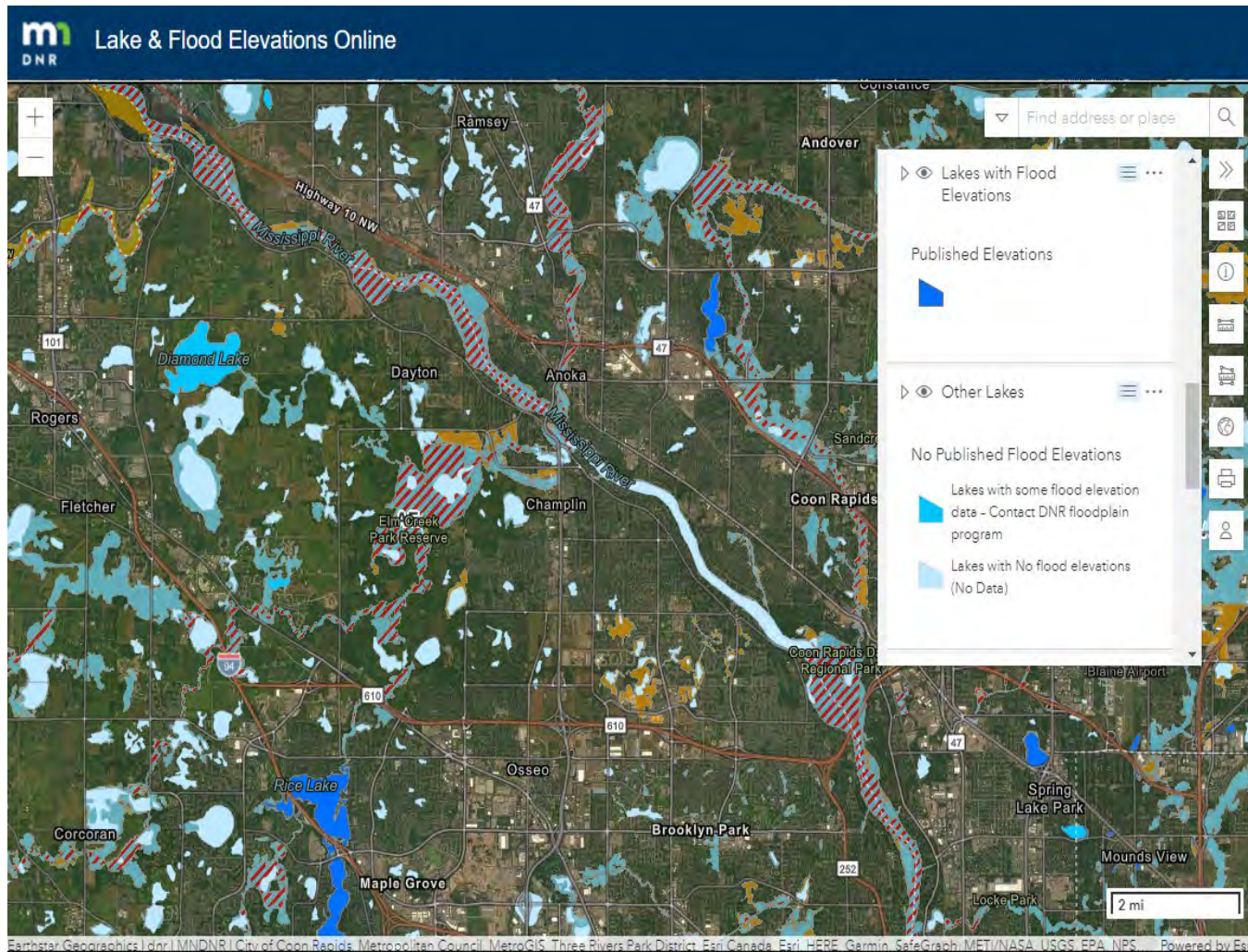


# Lake Flood Elevations Online (LFEO) Application





# LFEO - More Basin Data Shared in Future

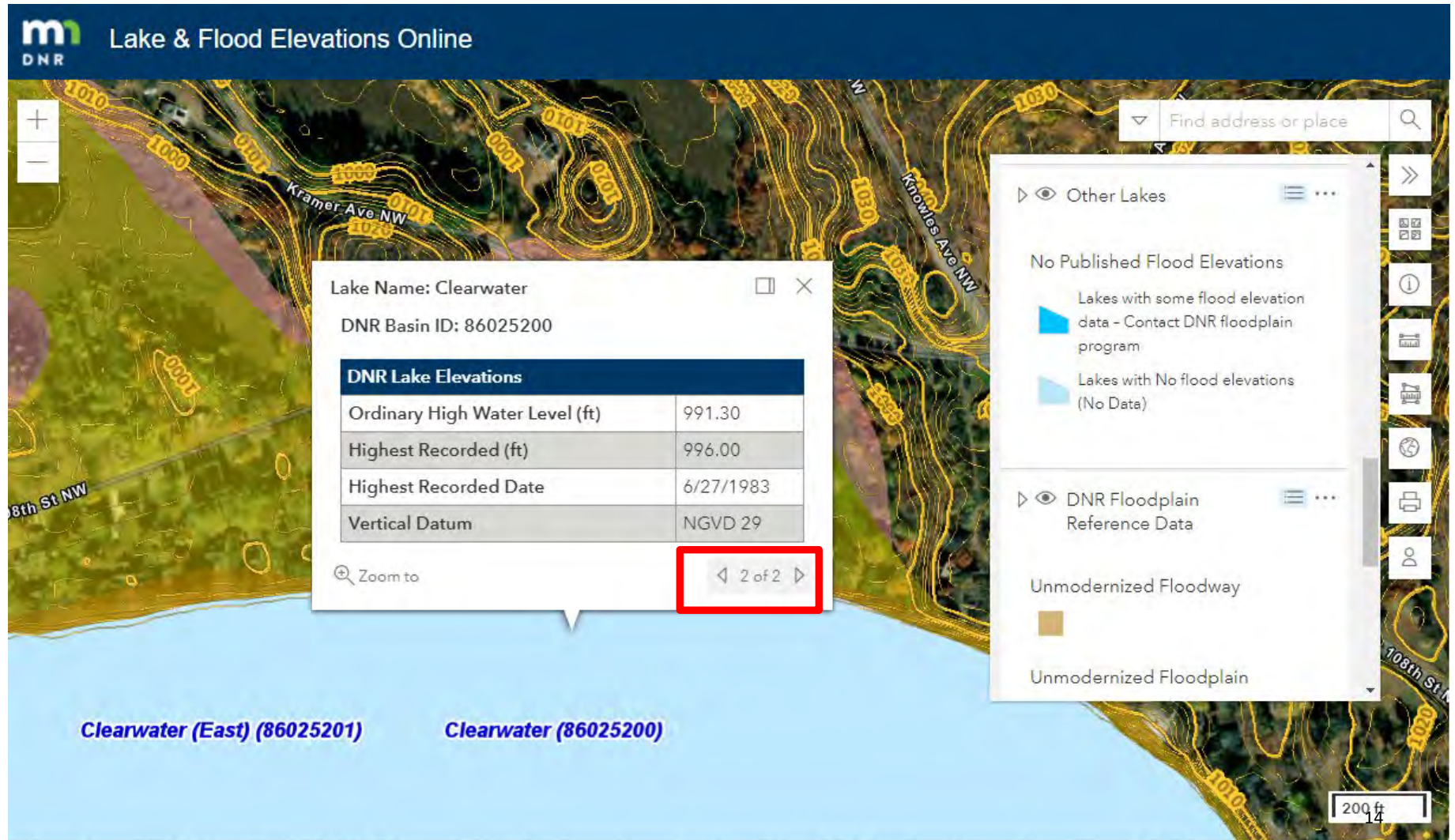


- DNR has additional A Zone study data, watershed & city data, DNR & USACOE studies, etc.
- As staff time allows, will review & make public if minimum quality standards met



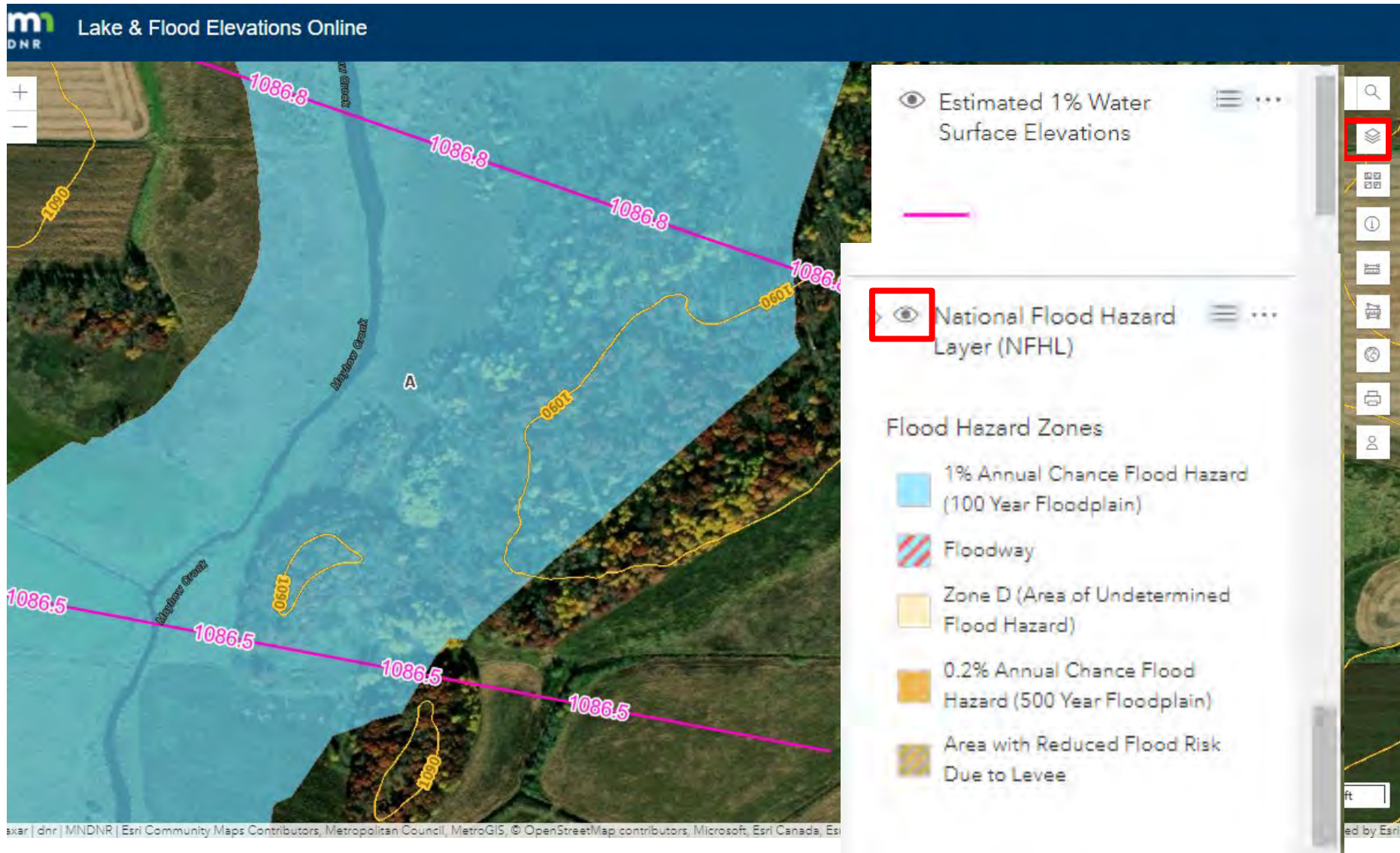
# Sample View on Enhanced LFEO Viewer

## Unmodernized & DNR Basics Elevations (no public FP)





# Sample Report on Enhanced LFEO Viewer

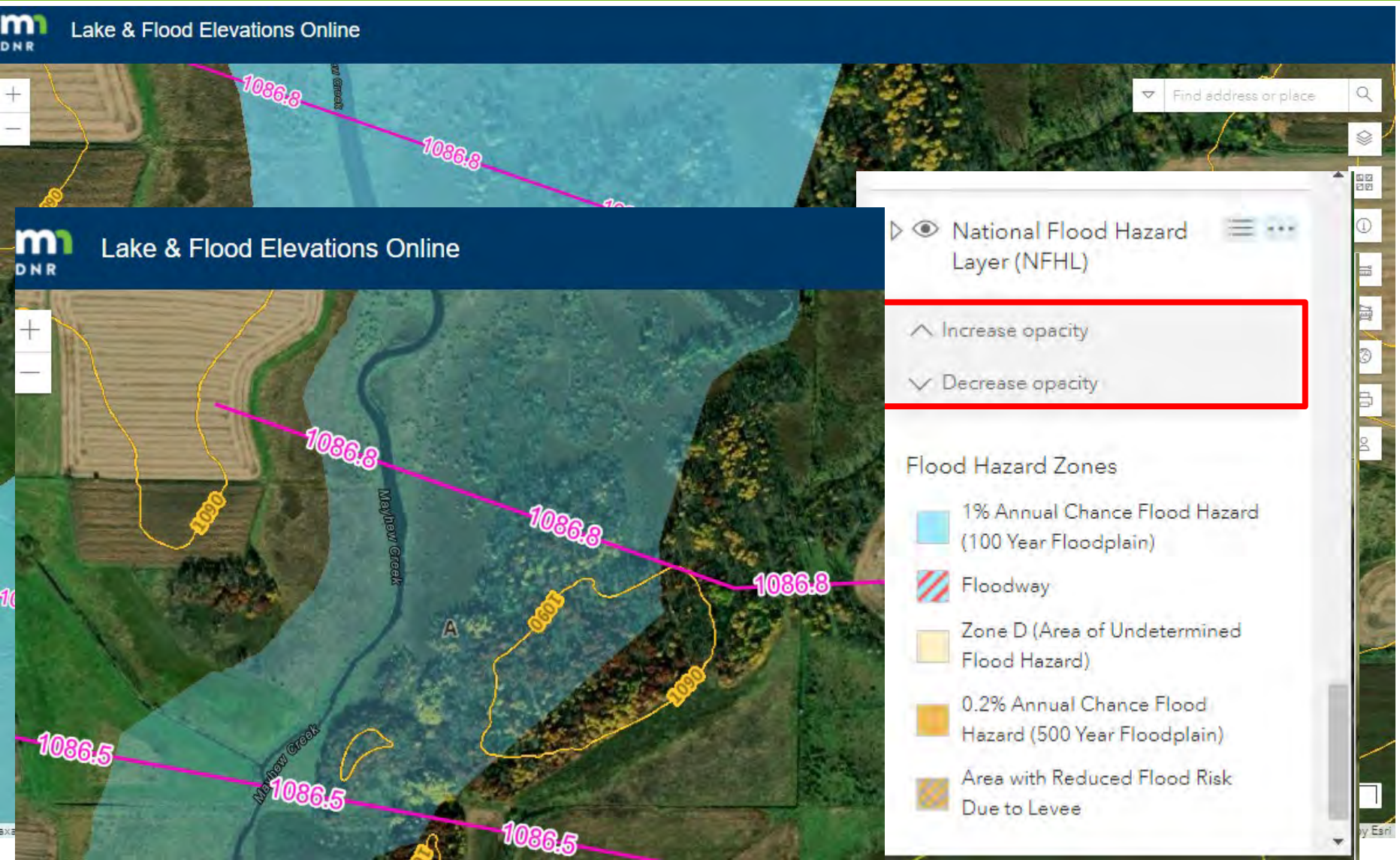


# Sample Report on Enhanced LFEO Viewer



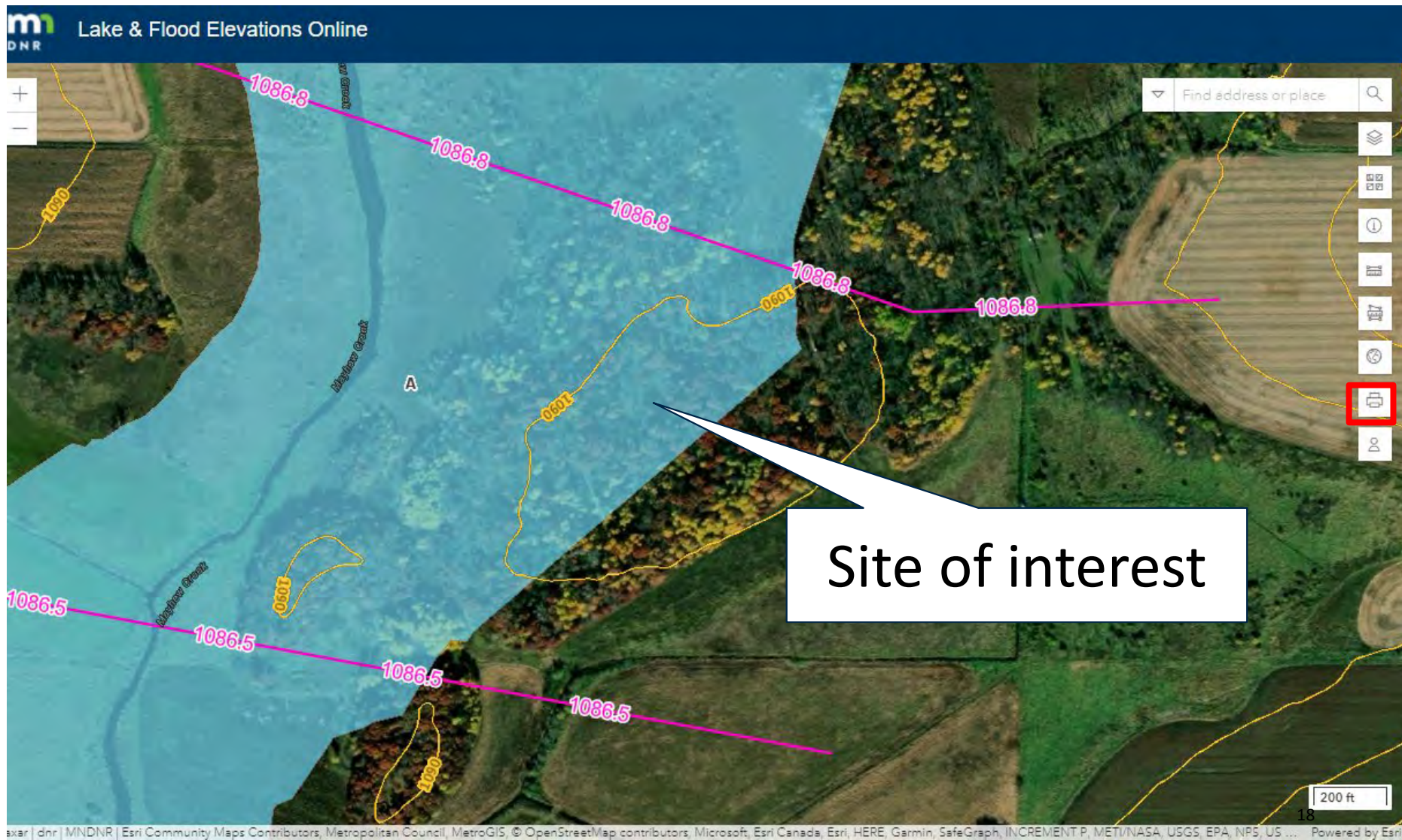


# Sample Report on Enhanced LFEO Viewer





# Sample Report on Enhanced LFEO Viewer



# Sample Report on Enhanced LFEO Viewer

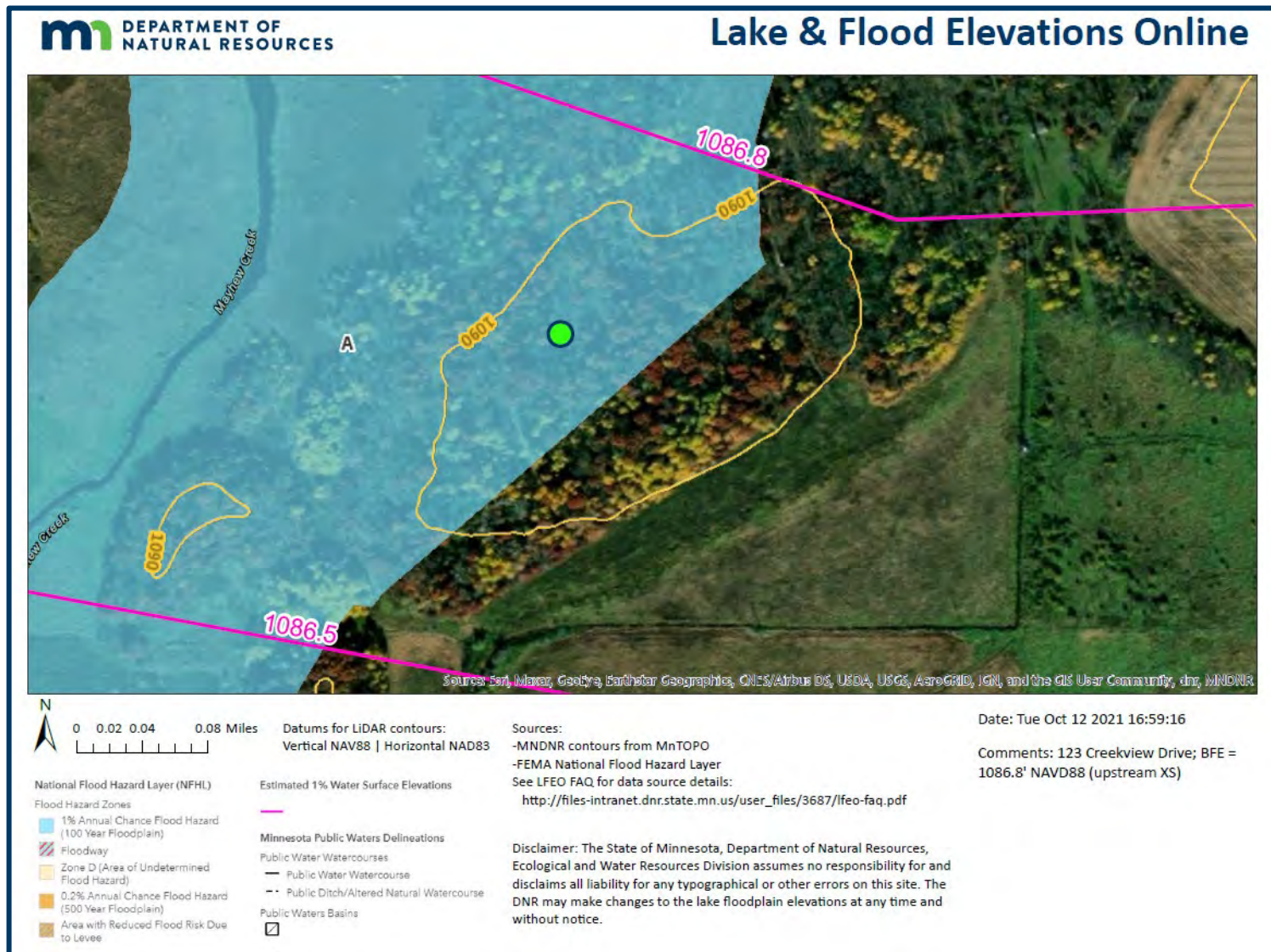
The screenshot displays the 'Lake & Flood Elevations Online' (LFEO) Viewer interface. The main map area shows a satellite view of a landscape with a body of water on the left. A green dot is placed on the land, and a red arrow points to it from the 'Map Report' sidebar. The map features pink elevation contour lines labeled '1086.8' and '1086.5', and yellow contour lines labeled '1080'. A search bar at the top right of the map area contains the text 'Find address or place'. The 'Map Report' sidebar on the right contains the following elements:

- Map Report** (Section Header)
- Step 1:** Select the point of interest on the map.
- Step 2:** Enter an optional comment about the map such as an address or parcel ID number.
- Map Comments (Optional):**  
123 Creekview Drive; BFE = 1086.8' NAVD88 (upstream XS cancel)
- Print Map Report** (Button)
- Cancel** (Button)

The footer of the page includes the following text: 'Vaxar | dnr | MNDNR | Esri Community Maps Contributors, Metropolitan Council, MetroGIS, © OpenStreetMap contributors, Micr... Powered by Esri'.

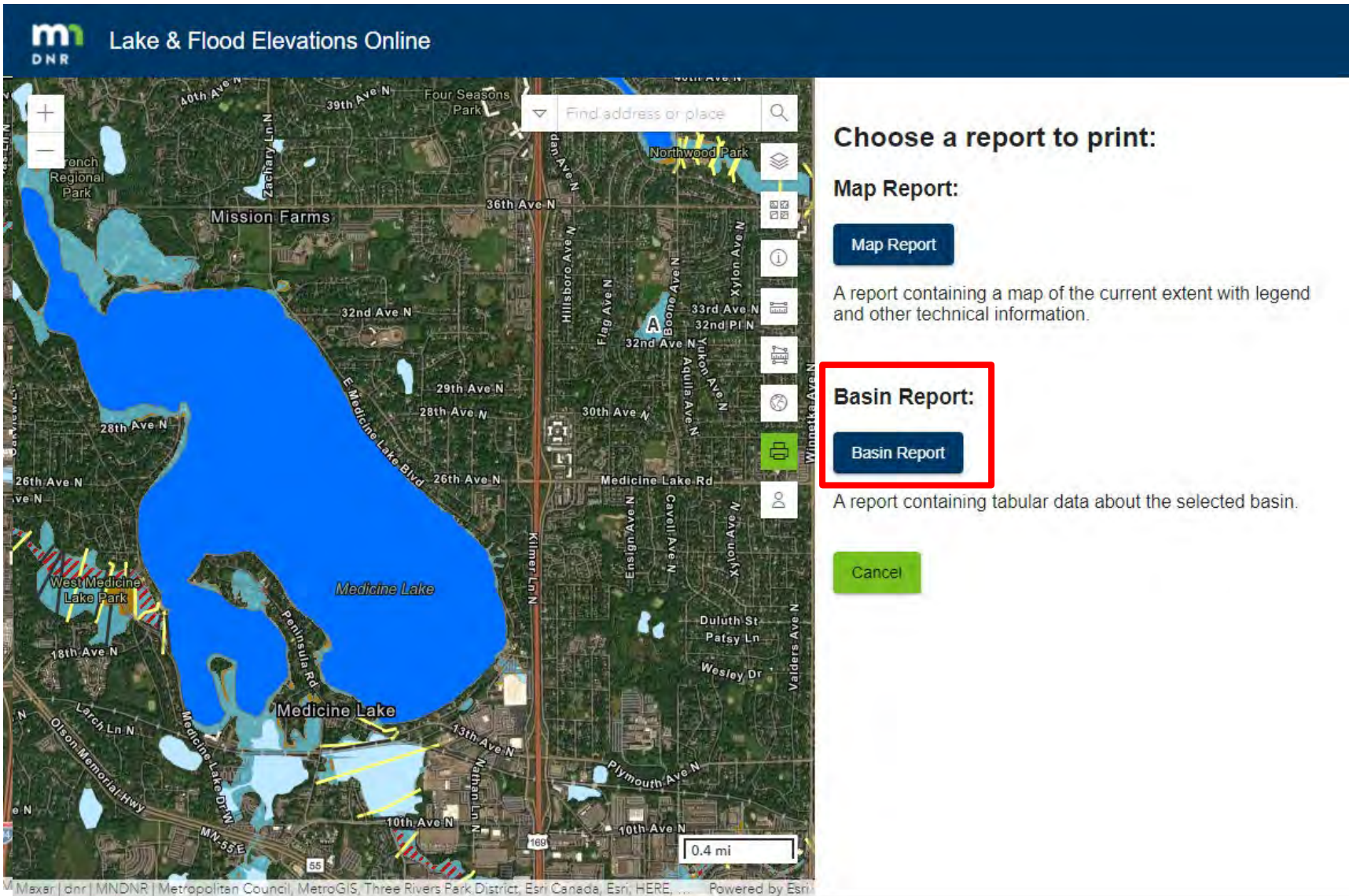


# Sample Report on Enhanced LFEO Viewer





# Sample Basin Report



The screenshot displays the 'Lake & Flood Elevations Online' web application. The main map area shows a satellite view of Medicine Lake, with various streets and landmarks labeled. A search bar at the top right of the map area contains the text 'Find address or place'. On the right side of the map, there is a vertical toolbar with icons for map navigation and data viewing. A red rectangle highlights the 'Basin Report' option in the sidebar. Below the sidebar, there is a 'Cancel' button.

**Choose a report to print:**

**Map Report:**

[Map Report](#)

A report containing a map of the current extent with legend and other technical information.

**Basin Report:**

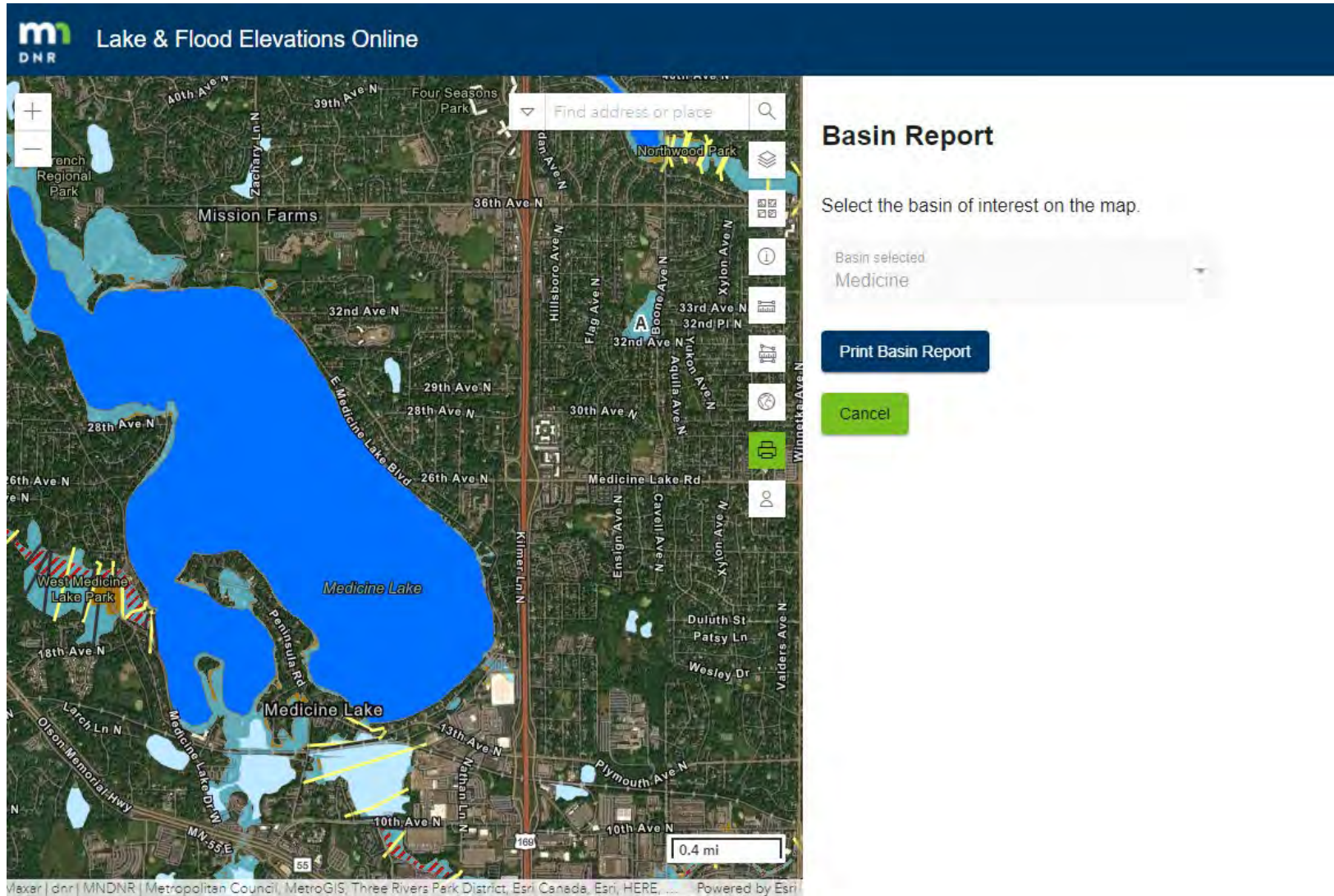
[Basin Report](#)

A report containing tabular data about the selected basin.

[Cancel](#)

Maxar | dnr | MNDNR | Metropolitan Council, MetroGIS, Three Rivers Park District, Esri Canada, Esri, HERE, ... Powered by Esri

# Sample Basin Report



The screenshot displays the 'Lake & Flood Elevations Online' web application. The main map area shows a satellite view of a region including Medicine Lake, Mission Farms, and Northwood Park. A search bar at the top center contains the text 'Find address or place'. A sidebar on the right, titled 'Basin Report', contains a dropdown menu labeled 'Basin selected' with 'Medicine' selected. Below the dropdown are two buttons: 'Print Basin Report' and 'Cancel'. The map interface includes standard navigation controls like a zoom in (+) and zoom out (-) button, a scale bar indicating 0.4 miles, and a compass. The footer of the map area lists various data sources: 'vmax | dnr | MNDNR | Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, Canada, Esri, HERE, ... Powered by Esri'.

## Basin Report

Select the basin of interest on the map.

Basin selected  
Medicine

Print Basin Report

Cancel

vmax | dnr | MNDNR | Metropolitan Council, MetroGIS, Three Rivers Park District, Esri, Canada, Esri, HERE, ... Powered by Esri



# Sample Basin Report

Date: Tue Oct 12 2021 17:59:41

## Medicine Elevation Report

DNR Basin ID: 27010400

Flood Study Elevations	
10-year flood elevation (ft)	889
25-year flood elevation (ft)	Not Available
50-year flood elevation (ft)	889.5
100-year flood elevation (ft)	889.8
500-year flood elevation (ft)	890.2
Flood Study Vertical Datum	NGVD 29
County Name	Hennepin
Study Date	11/4/2016
Source Type	FEMA - FIS
Study Name	Hennepin Countywide FIS

DNR Lake Elevations	
Ordinary High Water Level (ft)	889.1
Highest Recorded (ft)	890.68
Highest Recorded Date	7/15/1951
Vertical Datum	NGVD 29



### Check vertical datum:

Flood Study Elevations may be in a different vertical datum than DNR Lake Elevations and cannot be directly compared. Datum adjustments can range from 0.0 ft in southeast Minnesota to 1.5 ft in northwest Minnesota. Consult the FAQ for more information.



### Reference Information:

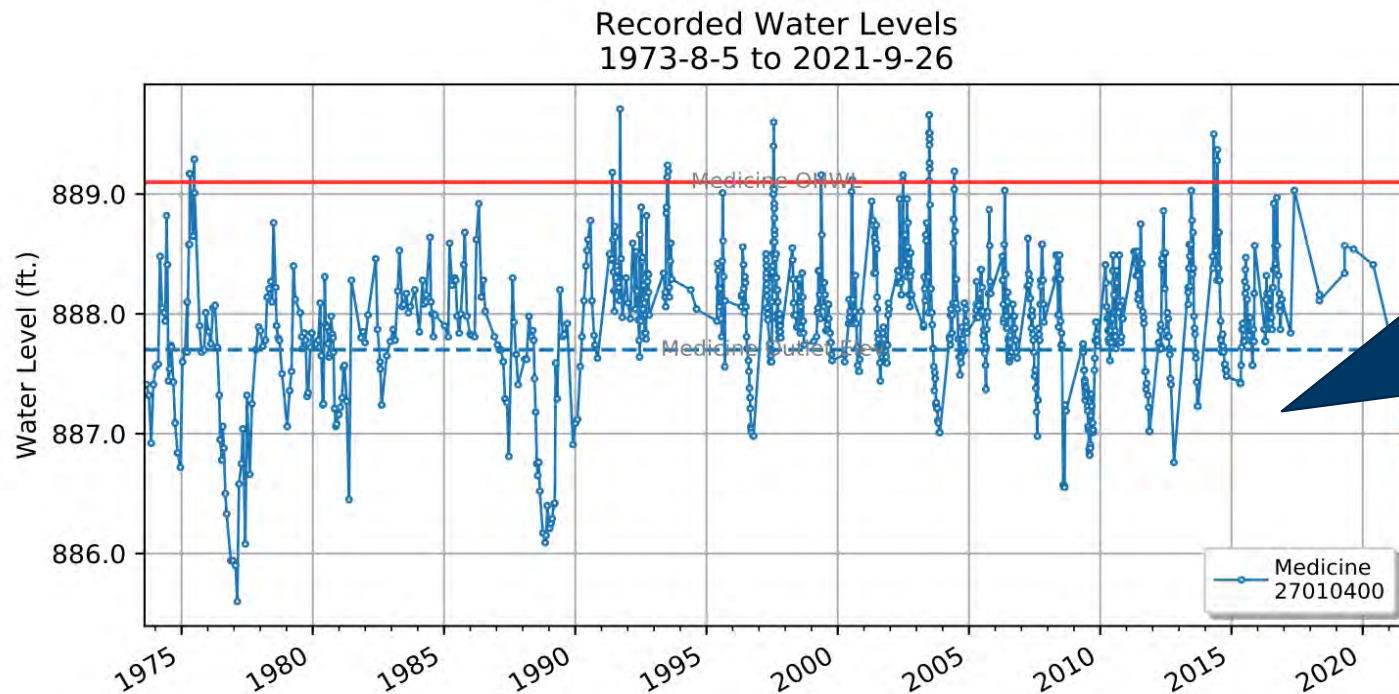
- MNDNR Floodplain Management Program: [https://www.mndnr.gov/waters/watermgmt\\_section/floodplain/index.html](https://www.mndnr.gov/waters/watermgmt_section/floodplain/index.html)
- DNR lake and elevation information at MNDNR LakeFinder: [www.mndnr.gov/lakefind](http://www.mndnr.gov/lakefind)
- Ordinary High Water Level (OHWL) information: [www.mndnr.gov/waters/surfacewater\\_section/hydrographics/ohw.html](http://www.mndnr.gov/waters/surfacewater_section/hydrographics/ohw.html)

Questions? Contact DNR Floodplain Staff: [floodplain.dnr@state.mn.us](mailto:floodplain.dnr@state.mn.us)

Disclaimer: The State of Minnesota, Department of Natural Resources, Ecological and Water Resources Division assumes no responsibility for and disclaims all liability for any typographical or other errors on this site. The DNR may make changes to the lake floodplain elevations at any time and without notice.

# LFE0 – Next Steps

- Getting more basin data added
- Pricing out possible additions:
  - ✓ Point elevations & profiles (like in MNTPOPO)
  - ✓ Interactive water level graphs



Detailed  
record

# Disaster Roles of Local Officials Videos



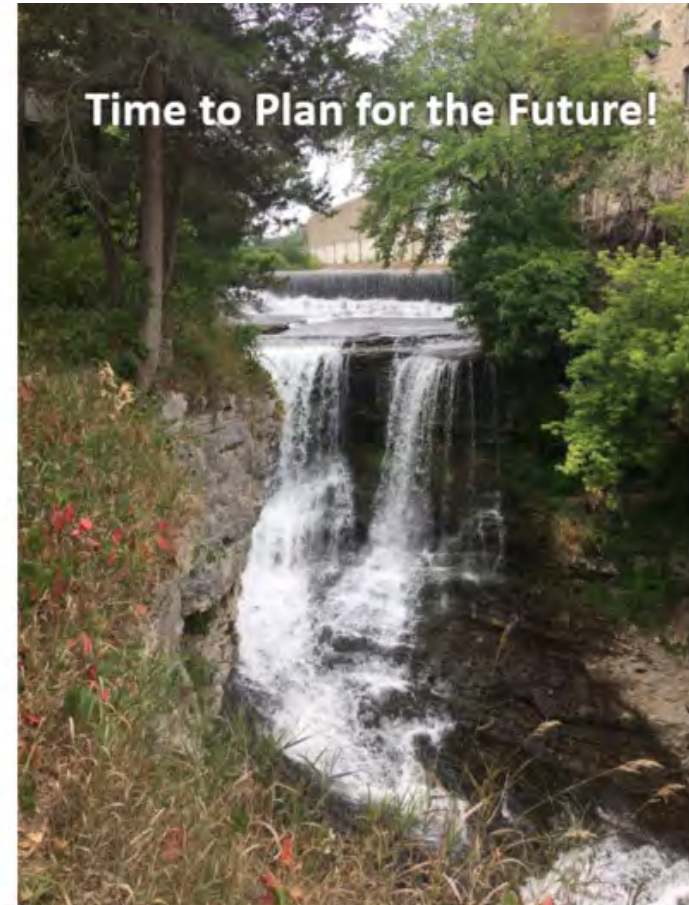
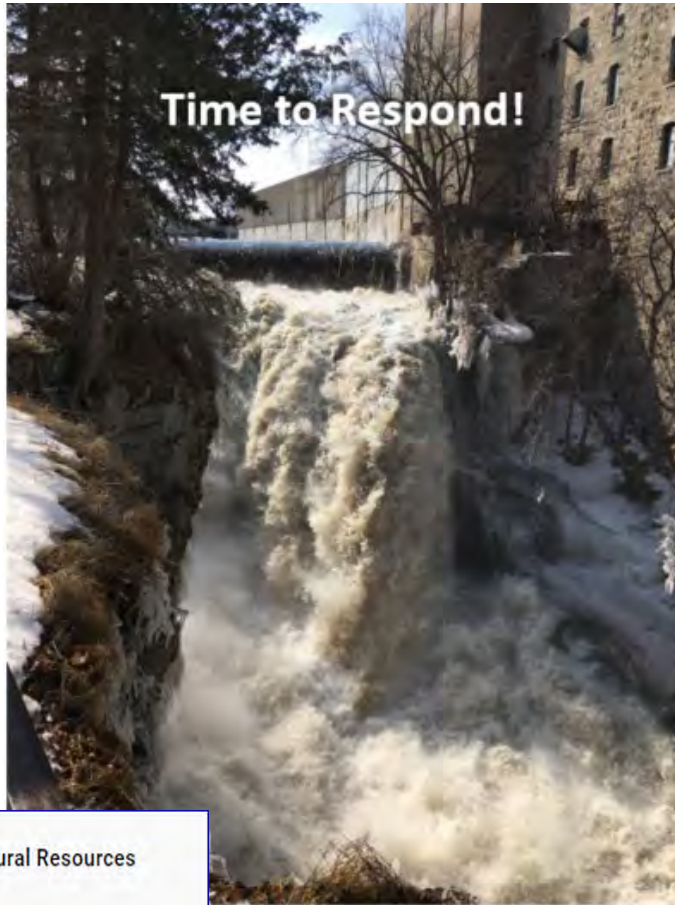
- **Disaster Roles of Local Officials: Part 1 - Preparation:** (~17 minutes)
- **Disaster Roles of Local Officials: Part 2 - Response and Recovery:** (~15 minutes)



# Disaster Roles of Local Officials Videos

## Viewer Hint:

Select the "Show More" below the video to see links to more information and time stamps in the videos.



Minnesota Department of Natural Resources  
13.9K subscribers

<https://www.dnr.state.mn.us/waters/wa...>

SHOW MORE



# MN Post-Flood Substantial Damage Playbook for Local Officials Available Fall 2021

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## Minnesota Post-Flood Substantial Damage Playbook for Local Officials

Fall 2021

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This packet provides a quick reference to guide local authorities in their post-disaster permitting responsibilities as required by the National Flood Insurance Program (NFIP).

### Includes Information On:

- Steps in Processing a Building Permit for Damaged Buildings
- Substantial Damage and Substantial Improvement Determinations
- Sample Handouts, Letters, and Press Releases
- Community Responsibilities
- Information on Mitigation Programs & Strategies

# Big Update to State Floodplain Model in Progress

Working on big update:

- ✓ close check against state & federal rules
- ✓ adding some graphics
- ✓ Making more plain language
- ✓ Showing higher standards & optional in blue font

Will have group of local officials helping review later in 2021



# DNR Floodplain Web Site

## Floodplain Management

Main page

Floodplain Regulations

Maps and Technical  
Resources

Flood Insurance

Preparation, Response and  
Recovery

Training and Education

Flood Hazard Mitigation

Floodplain Management  
History

## Floodplain Management



### Regulating Floodplain Development

Find information on model ordinances, permit requirements, minimum standards and elevation requirements.

[Information on regulations »](#)



### Floodplain Maps and Technical Resources

Resources are available for accessing flood maps, map updates and appeals, determining base flood elevations, hydraulic models and technical resources. [Learn more »](#)



### Flood Insurance

Information is available on getting a policy, mandatory purchase, coverage, policy rates, claims and other considerations.

[Learn more »](#)



### Floodplain Management in Minnesota: Past, Present, and Future

[Learn about Minnesota's efforts to promote responsible floodplain development »](#)

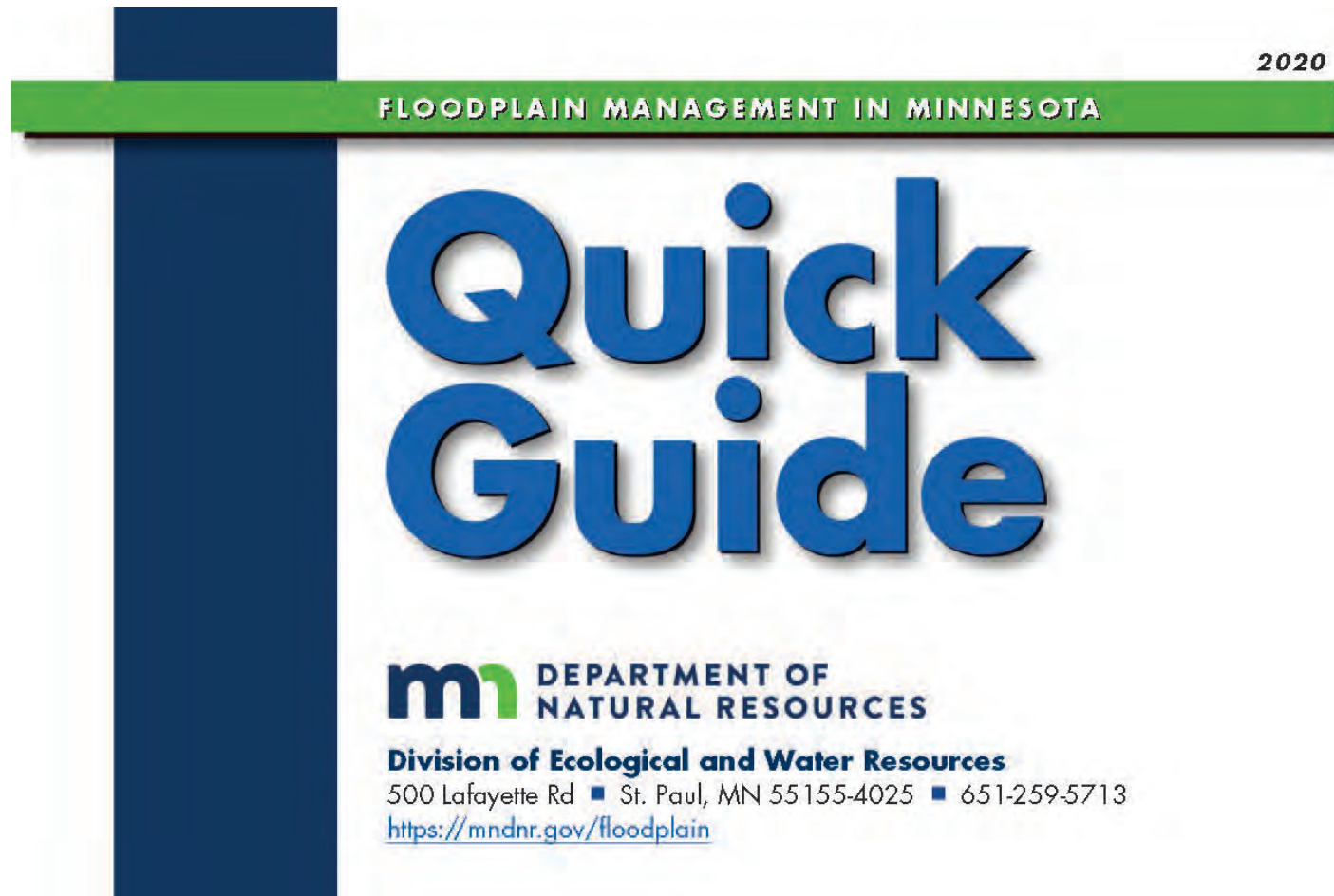
- Use [mndnr.gov/floodplain](https://mndnr.gov/floodplain) or Search “MN Floodplain Management” for main page
- See upcoming trainings and past *Water Talk* newsletters on “Floodplain Training and Education” page (can also subscribe to *Water Talk*)

## Water Talk Newsletter

The Water Talk Newsletter is published quarterly and features updates on program news, funding, projects, events, and learning resources for local governments and others involved in floodplain and shoreland management.

- [July 2021](#) [↗](#)
- [Spring 2021](#) [↗](#)
- [March 2021](#) [↗](#)
- [January 2021](#) [↗](#)
- [November 2020](#) [↗](#)
- [September 2020](#) [↗](#)

# MN 2020 Floodplain Management Quick Guide Available (Phase 2) –On website now



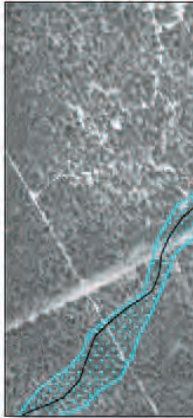
[2020 MN Floodplain Management Quick Guide on DNR site](https://mndnr.gov/floodplain)



# MN 2020 Floodplain Management Quick Guide

## Example New Pages

### Approximate Zone A



Check with local officials for the best data determined in local permits or contact MNDNR floodplain assistance.

### Sources for BFEs in Approximate Zone A Without BFEs

When FIRMs show Zone A without BFEs (called Approximate Zone A), local officials and others must look for floodplain information from other sources to determine BFEs. Potential sources include:

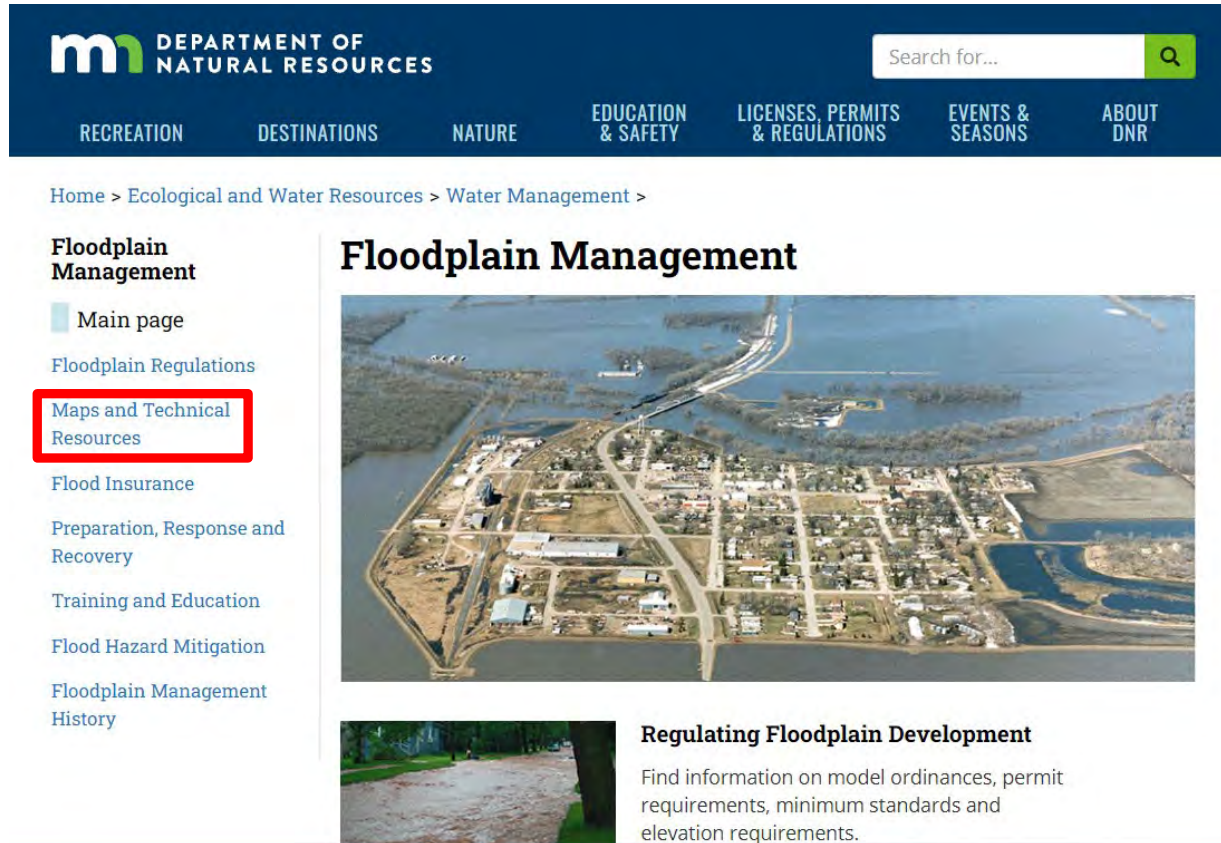
- FEMA detailed studies for preliminary or pending maps
- Lake Flood Elevations Online (LFEON) viewer, for basins and lakes ([see page 21](#))
- For streams, Level B, C, or D quality data, also known as "pink lines" ([see page 19](#))
- Studies prepared by communities and watershed districts



Sample showing "pink lines," which are estimated 1% Water Surface Elevations that can be used as best available data BFEs.

Find BFEs and other flood elevations at [https://www.dnr.state.mn.us/waters/watermgmt\\_section/floodplain/bfe.html](https://www.dnr.state.mn.us/waters/watermgmt_section/floodplain/bfe.html). Community officials, surveyors, and others can check with MNDNR Area Hydrologists or floodplain staff ([floodplain.dnr@state.mn.us](mailto:floodplain.dnr@state.mn.us)) for other sources.

# DNR Floodplain Web Site



- Use [mndnr.gov/floodplain](http://mndnr.gov/floodplain) or Search "MN Floodplain Management" for main page
- Choose "Maps and Technical Services"
- Choose "Find Flood Maps"



# DNR Floodplain Web Site

Home > Ecological and Water Resources > Water Management > Floodplain >

## Floodplain Management

[Main page](#)

[Floodplain Regulations](#)

[Maps and Technical  
Resources](#)

[Flood Insurance](#)

[Preparation, Response and  
Recovery](#)

[Training and Education](#)

[Flood Hazard Mitigation](#)

## Find Flood Maps

### "Is My House in the Floodplain?" Video

Are you looking for the official FEMA floodplain map in your area? Has a lender told you flood insurance is mandatory? View the ["Is My House in the Floodplain"](#) video. Learn how to:

- Check what type of FEMA floodplain map is available in your county (in Minnesota).
- Find and print the FEMA Flood Insurance Rate Map (FIRM) for your area.

### What Flood Maps are Available in Each County?

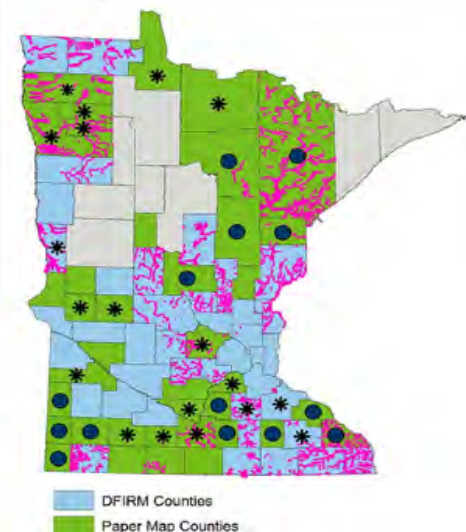
Find what flood maps and elevation information is available for your community using the map below.

**DFIRM and Paper Map Counties: See more details below.**

#### Other Map Legend notes:

- **Estimated 1% Base Flood Elevations:** Modeling with estimated Base Flood Elevation is available. See [Finding BFEs and other Flood Elevations](#)
- **Preliminary DFIRMs Available:** See options to view preliminary DFIRMs in DFIRM or Paper counties resources below.
- **Countywide Modernization:** DNR and FEMA are currently working on getting better data and mapping. See latest on [FEMA map updates](#).

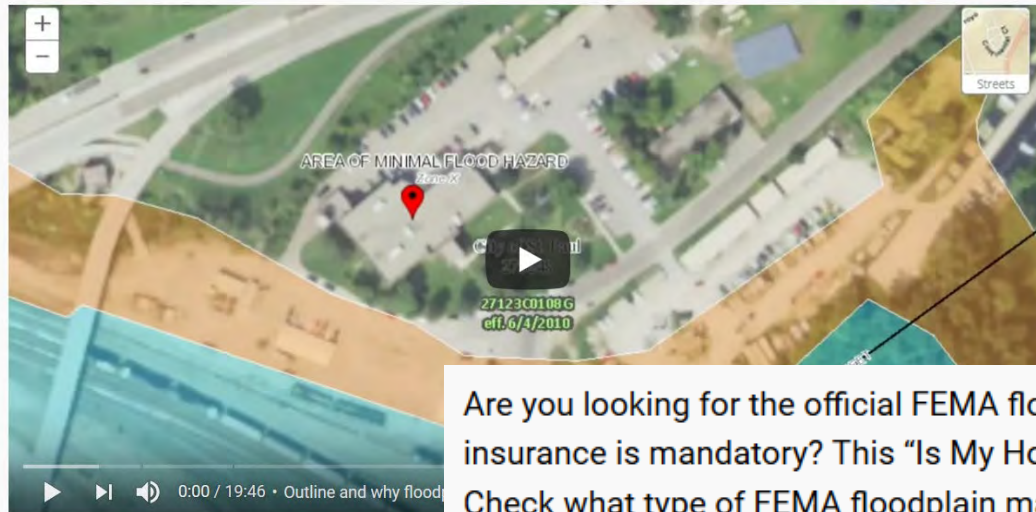
Click to enlarge



# Is My House in the Floodplain? Video

YouTube

Search



Is My House in the Floodplain?

2,317 views • Jul 6, 2020



Minnesota Department of Natural Resources  
11.1K subscribers

<https://www.dnr.state.mn.us/waters/wa...>

Are you looking for the official FEMA floodplain r

SHOW MORE

SHOW

Are you looking for the official FEMA floodplain map in your area? Has a lender told you flood insurance is mandatory? This "Is My House in the Floodplain?" video shows how to:

Check what type of FEMA floodplain map is available in your county (in Minnesota)

Find and print the FEMA Flood Insurance Rate Map (FIRM) for your area

For more details, see the following time stamps:

**00:00** Outline and why floodplain maps are important

**02:19** Find what type of FEMA floodplain map is available in your county (in Minnesota)

**04:06** Find and print FEMA Digital Flood Insurance Rate Map (DFIRM)

**09:05** Find and print FEMA paper Flood Insurance Rate Map (FIRM)


**14:04** How to verify and document if no FEMA map


**17:28** Introduction to "MNTOP" (Minnesota interactive map with 2-foot elevation contours)

**19:31** Thanks and link to county contacts in Minnesota



# Resources: DNR's Innovative Shoreland Standards Showcase

 **DEPARTMENT OF  
NATURAL RESOURCES**

Search for... 


RECREATIONDESTINATIONSNATUREEDUCATION & SAFETYLICENSES, PERMITS & REGULATIONSEVENTS & SEASONSABOUT DNR

Home > Ecological and Water Resources > Water Management > Shoreland >

**Shoreland Management**

- [Main page](#)
- [History and purpose](#)
- [Property owner information](#)
- [Shoreland regulations](#)
- [Lake, river and stream classifications](#)
- [Lake improvement districts](#)

## Innovative Shoreland Standards Showcase



Communities around Minnesota are taking their shoreland ordinances beyond the statewide minimums standards to tackle tough issues affecting lakes and rivers.

The current shoreland rules were updated in 1989. They do not address emerging problems with declining water quality and habitat loss due to contemporary shoreland development, or the effects of climate change. Communities can do more!

### Examples of Innovative Standards

[Innovative Shoreland Standards page link](#)

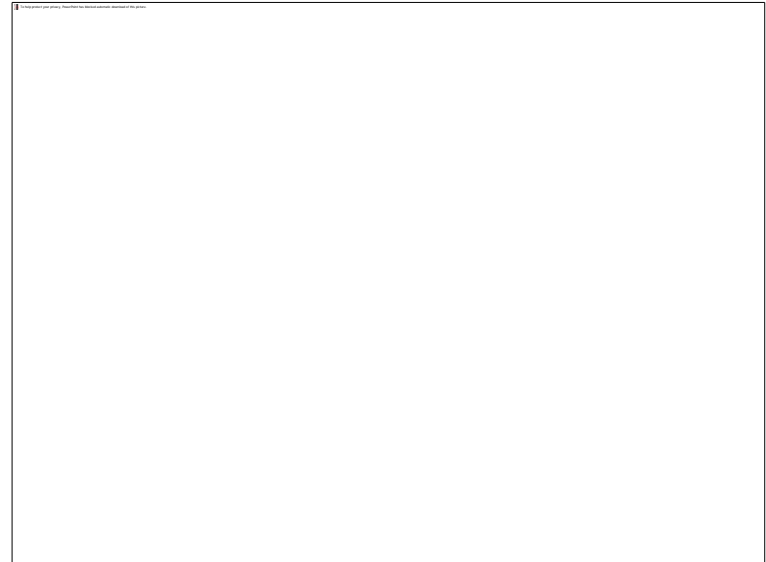
# Risk Rating 2.0 Timing

- October 1, 2021:
  - ✓ New policies use new Risk Rating 2.0 rates
  - ✓ Existing policies eligible for renewal will be eligible to take advantage of immediate decreases
- April 1, 2022:
  - ✓ All policies subject to new ratings upon renewal



# High Level: What is Not Changing?

- Using Flood Insurance Rates Maps (FIRMs) for Mandatory Purchase and Floodplain Management



- Limiting annual premium increases (e.g., 18%/year on individual rates; set by 2014 Homeowners Flood Insurance Affordability Act, or HFIAA)
- Premium discounts for Pre-FIRM, newly mapped and continuous coverage grandfathering (but glide path to RR 2.0)

# High Level: What is Not Changing?

- Still discounts for those in Community Rating System Communities (***and will apply to ALL policies in community!***)
- Increased Cost of Compliance (ICC)
- Still Letters of Map Amendments (LOMAs) & LOMRs
- Can transfer better rates by assigning flood insurance policy when property changes ownership

# High Level: What is Not Changing?

The following fees and surcharges continue to apply to all policies:

- Reserve Fund Assessment (18% in most cases)
- Homeowners Flood Insurance Affordability Act (HFIAA) surcharge
  - ✓ \$25 - Primary residential
  - ✓ \$250 – Non-primary residential & non-residential
- Federal Policy Fee (Currently: \$50; \$25 for Preferred Risk Policies)
- Probation surcharge (if applicable) - \$50 surcharge if community is on probation (not currently applicable for any MN communities)



# Elevation above Flooding Source

- Key Rating Factor in Legacy System:

- Only in mapped Zone As
- Lowest floor minus Base Flood

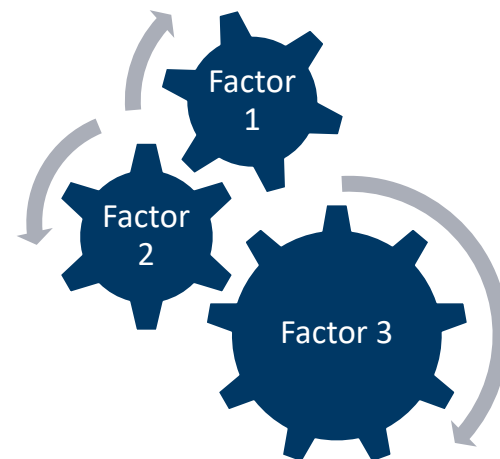
## Risk Rating 2.0:

- For ALL zones
- “First Floor Elevation” minus Lowest Adjacent Grade

# Methods to Measure First Floor Height

## Method 1: System Generated

- Part of the new “rating engine”
- FEMA will determine a first floor height value using “informed assumptions, application information, and various datasets.”



## Method 2: Elevation Certificate

- No longer required, but can be used
- Still required for Floodplain Management (or other elevation documentation)

**ELEVATION CERTIFICATE** (OMB No. 1605-0008, 8-2010; Date: November 10, 2010)

REPORTANTS: In these spaces, copy the corresponding information from Section A.  
Building Street Address (including apt., unit, suite, and/or Bldg. No.) or P.O. Place and Box No. \_\_\_\_\_ FOR INSURANCE COMPANY USE  
Policy Number \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP Code \_\_\_\_\_ Company NAIC Number \_\_\_\_\_

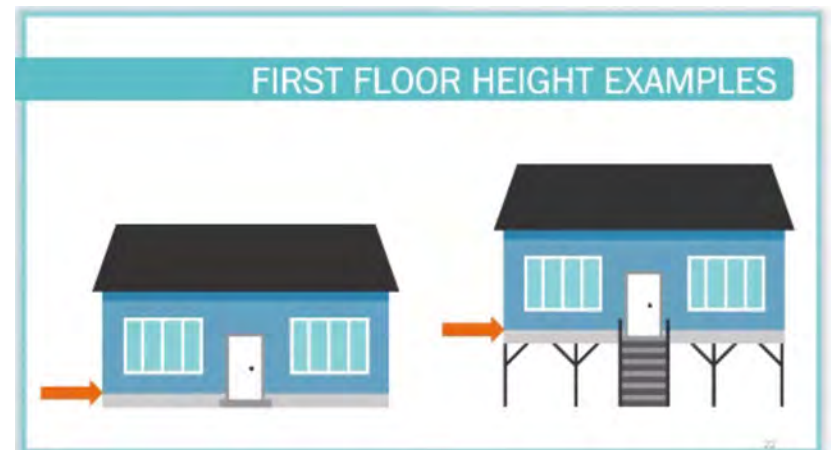
**SECTION C - BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)**

C-1. Building elevations are based on: ☐ Construction Drawings ☐ Building Under Construction ☐ Finished Construction  
In case Elevation Certificate will be required when construction of the building is complete.

C-2. Elevation - Zones A1, A2, A3, A4, A5, A6, A7, A8, A9, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, A25, A26, A27, A28, A29, A30, A31, A32, A33, A34, A35, A36, A37, A38, A39, A40, A41, A42, A43, A44, A45, A46, A47, A48, A49, A50, A51, A52, A53, A54, A55, A56, A57, A58, A59, A60, A61, A62, A63, A64, A65, A66, A67, A68, A69, A70, A71, A72, A73, A74, A75, A76, A77, A78, A79, A80, A81, A82, A83, A84, A85, A86, A87, A88, A89, A90, A91, A92, A93, A94, A95, A96, A97, A98, A99, A100, A101, A102, A103, A104, A105, A106, A107, A108, A109, A110, A111, A112, A113, A114, A115, A116, A117, A118, A119, A120, A121, A122, A123, A124, A125, A126, A127, A128, A129, A130, A131, A132, A133, A134, A135, A136, A137, A138, A139, A140, A141, A142, A143, A144, A145, A146, A147, A148, A149, A150, A151, A152, A153, A154, A155, A156, A157, A158, A159, A160, A161, A162, A163, A164, A165, A166, A167, A168, A169, A170, A171, A172, A173, A174, A175, A176, A177, A178, A179, A180, A181, 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# First Floor Height

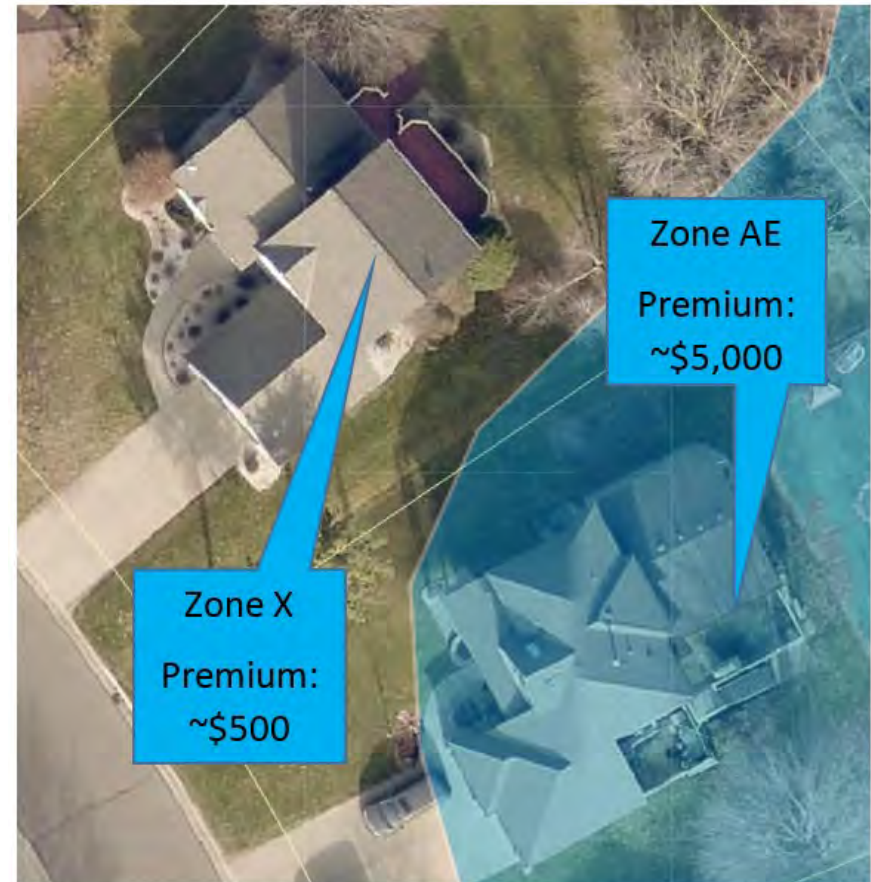
- Elevations will be used in determining rates for ALL policies
- The elevation of the first floor of the structure will replace the elevation difference between the Lowest Floor Elevation (LFE) and Base Flood Elevation (BFE) in “legacy methodology”
- Will look at First Floor versus Lowest Adjacent Grade
- Two ways to measure first floor height.





# Distance to Flooding Source & Type of Flooding

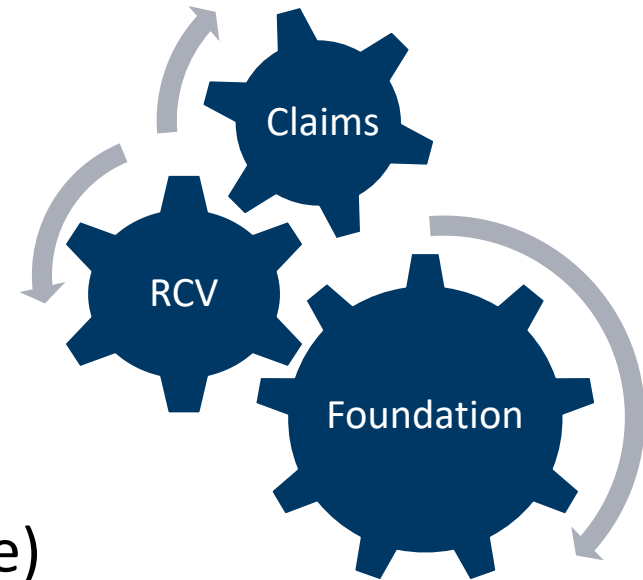
- Individualized building risk approach - Getting away from “cliff” effect
- Distance to flooding source:
  - ✓ Automatic using GIS
  - ✓ Based on property location entered by agent
- Types of Flooding: Inland, Storm Surge, Tsunami, Coastal Erosion, & Great Lakes



Neighboring houses can have very different flood insurance premiums due to “cliff effect” for rates in Zone X versus Zone AE. (NOTE: For illustrative purposes only. Rates vary depending on amount of coverage, and Zone AE rates vary depending on lowest floor elevation, whether basement, etc.)

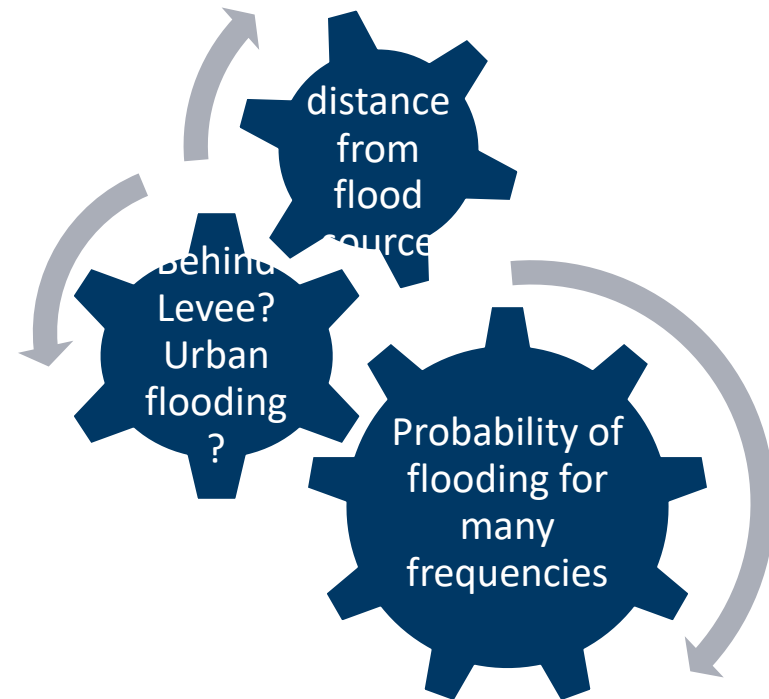
# Other Main Factors

- Replacement Cost Value (more expensive homes pay more)
- Foundation type (frame vs masonry)
- Past claims over 20 years (1 forgiven)
- Discounts:
  - CRS – in ALL Zones (once at Full Risk Rate)
  - Elevated Machinery & Equipment – 5%
  - Flood Vents (in ALL zones) – 3-27%
  - Pre-FIRM & Newly mapped (but glide path to Full Risk Rates)



# Rating Engine

- Probability of getting to elevations for different flooding types – up to 10,000-year flood
- Using many sources to determine these flood elevations at the range of probabilities
- Riverine versus behind levee
- Considering urban flooding





# Elevation Certificates (ECs)

- “Legacy system” required FEMA Elevation Certificate for rating post-FIRM in Special Flood Hazard Areas
- Elevation Certificates MAY be used to possibly help get better rates with Risk Rating 2.0
- Section E can be used in all Zones for insurance rating
- Elevation Certificates will still be used for Floodplain Management and Letters of Map Amendments (LOMAs) and Letters of Map Revisions base on Fill (LOMR-Fs)
  - ✓ ECs still required for Floodplain Management documentation for communities in the Community Rating System (CRS)
  - ✓ Other survey documentation continues to be acceptable in addition to ECs

<b>WEATHER CERTIFICATE</b>				OMB No. 1050-0008 Expiration Date: 12/31/2011 <b>FOR INSURANCE COMPANY USE</b> Policy Number _____	
<b>IMPORTANT:</b> In these spaces, specify the corresponding information from Section A.					
Building Street Address (including Apt., Unit, Suite, and/or Bldg.) No P.O. Boxes and Box No.					
City _____		State _____ Zip Code _____		Company NAEC Number _____	
<b>SECTION C – BUILDING ELEVATION INFORMATION (SURVEY REQUIRED)</b>					
C1. Building elevations are based on: <input type="checkbox"/> Construction Drawings? <input type="checkbox"/> Building under Construction?				<input type="checkbox"/> Finished Condition?	
Is a new Elevation Certificate will be required after construction of building is complete.					
C2. Elevations – Zones A1-A30, AE, AH, A (each BFE), VE, V1-V30, V (each BFE), AR, ARRA, ARUE, ARUAA1-A30, ARUA, ARUAG, Complete Items C2-a to below according to the building diagram specified in item A7. In Puerto Rico only, enter meters. Benchmark: Unknown <input type="checkbox"/> Vertical Datum _____					
Indicate elevation datum used for the elevations in Item A through H below: <input type="checkbox"/> NGVD 1929 <input type="checkbox"/> NAVD 1983 <input type="checkbox"/> Other/Generic _____					
Datum used for building elevations must be the same as that used for the BFE.					
A1. Top of foundation floor (including basement, crawlspace, or enclosure floor) _____				Check the measurement used: <input type="checkbox"/> feet <input type="checkbox"/> meters	
B1. Top of the next higher floor _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
C1. Bottom of the lowest horizontal structural member (V Zones only) _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
D1. Attached garage (top of slab) _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
E1. Lowest elevation of machinery or equipment serving the building (detector type of equipment and location in Comments) _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
F1. Lowest adjacent finished grade next to building (LAD) _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
G1. Highest adjacent finished grade next to building (HAG) _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
H1. Lowest adjacent grade at lowest elevation of deck or stairs, including structural support _____				<input type="checkbox"/> feet <input type="checkbox"/> meters	
<b>SECTION D – SURVEYOR, ENGINEER, OR ARCHITECT CERTIFICATION</b>					
This certification is to be signed and posted by a duly licensed surveyor, engineer, or architect authorized by title to certify elevation information. I certify that the information on this Certificate represents my own efforts to measure the data submitted and I understand that any false statement may be punishable by fine or imprisonment under 18 U.S.C. Section 1001.					
Were statute and language in Section A provided by a licensed land surveyor? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Check here if statements.					
Certificate's Name _____		License Number _____		Place Seal Here	
Title _____					
Company Name _____					
Address _____					
City _____	State _____	Zip Code _____			
Signature _____	Date _____	Telephone _____	Ext. _____		
Copy 4 copies of this Elevation Certificate and all attachments for 1) community office, 2) insurance agent/company, and 3) building owner.					
Comments (including type of equipment and location, per C2(a), applicable):  					

# What Does Risk Rating 2.0 Mean for Minnesota?

## Minnesota — Risk Rating 2.0

With the implementation of Risk Rating 2.0, FEMA delivers rates that more accurately reflect flood risk and ensure the National Flood Insurance Program will be here for this generation and generations to come.

### National Flood Insurance Program in Minnesota

NFIP Policies in Force by County in Minnesota



A significant part of FEMA's NFIP Transformation is Risk Rating 2.0, which will fundamentally change the way FEMA prices insurance and determines an individual property's flood risk.

Risk Rating 2.0 is equity in action. With Risk Rating 2.0, individuals will no longer pay more than their share in flood insurance premiums based on the value of their homes. Roughly two-thirds of policyholders with older pre-FIRM homes will see a premium decrease.

FEMA will reduce disaster-related suffering and disaster-related costs in Minnesota through insurance and the

- Limited to 18% per year increase for individual policies
- Normally an increase - varies
- [See state profiles & excel with breakdowns](#)

## Risk Rating 2.0 in Minnesota



# Thank You!

**Ceil Strauss**

*Ceil.Strauss@state.mn.us*

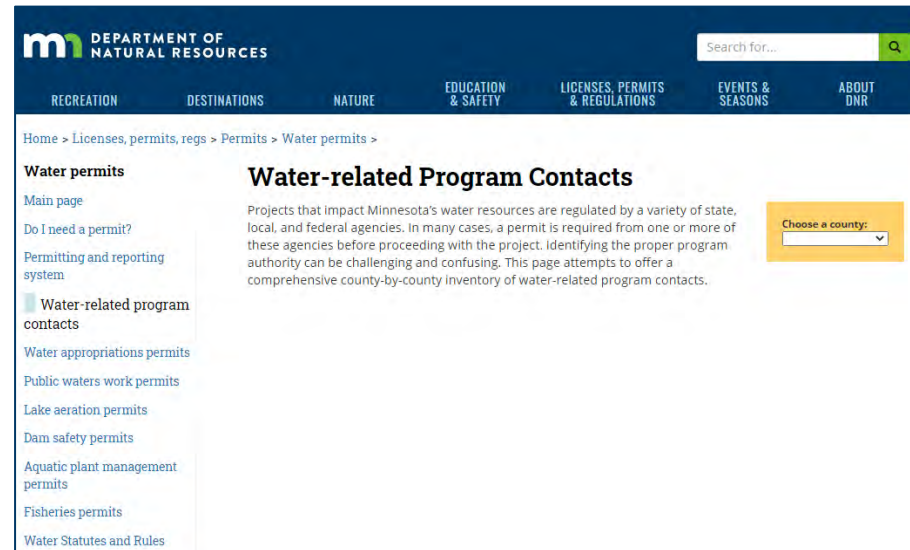
651-259-5713



# Contacts for local governments

- [DNR's county-by-county water-related permit contacts webpage](https://www.dnr.state.mn.us/permits/water/water_permit_contacts.html) provides local, state, and federal contacts by county
- [MPCA's Metro Watershed Management Organizations webpage](#) provides links to Metro watershed organization websites and a link to the [Twin Cities Metro Area Watersheds interactive map](#)
  - Type in an address to figure out which watershed an address is located in

[https://www.dnr.state.mn.us/permits/water/water\\_permit\\_contacts.html](https://www.dnr.state.mn.us/permits/water/water_permit_contacts.html)



# DNR Climate Change Site



[Home](#) > [Nature](#) > [Climate](#) >

## Climate Change and Minnesota

[Main page](#)

[Climate trends](#)

[Impacts of climate change](#)

[What's the DNR doing?](#)

[Climate change resources](#)

### Climate

[Main page](#)

[Frequently asked questions](#)

[Current conditions](#)

[Climate Change](#)

[Drought](#)

[Floods](#)

[Climate data](#)

## Climate change and Minnesota



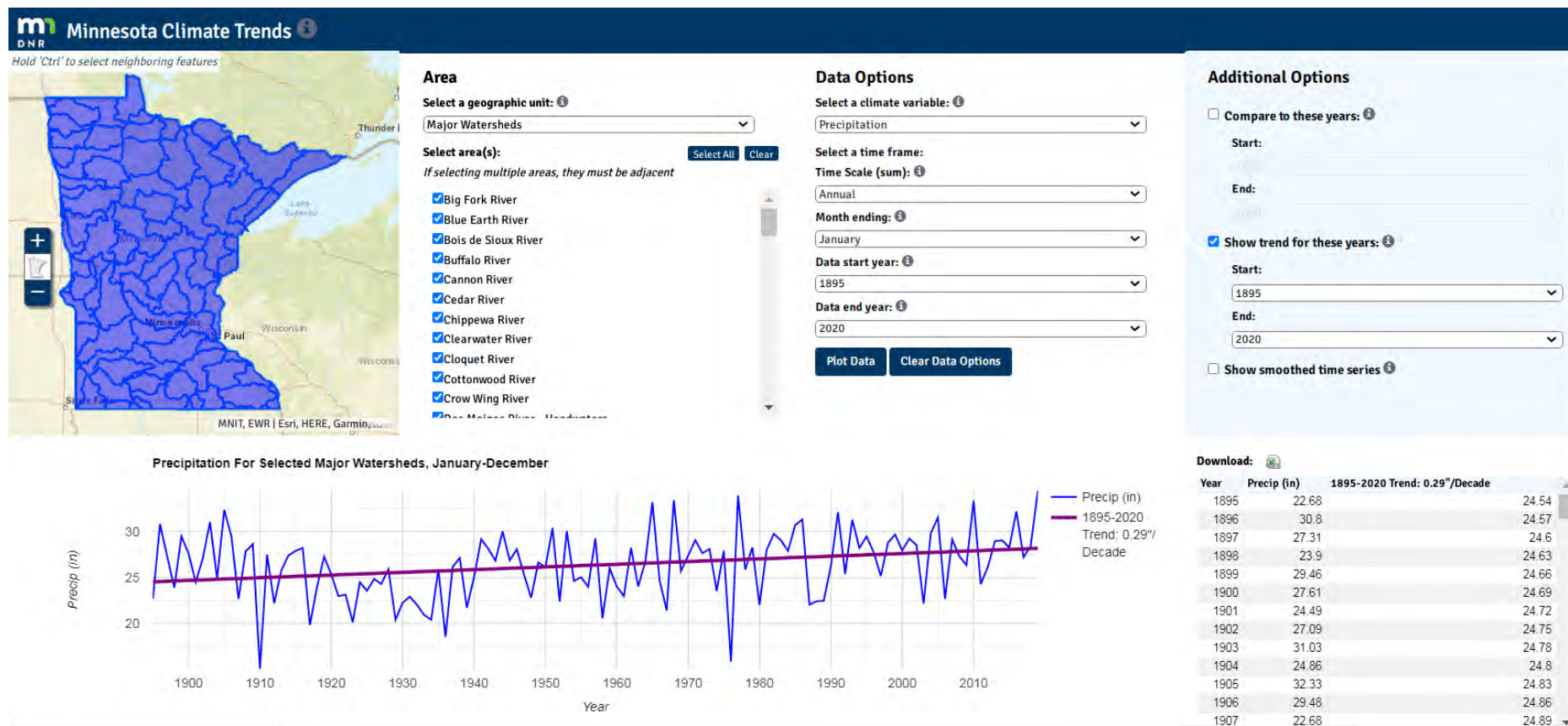
### Climate trends

Temperatures are increasing and larger, more frequent extreme precipitation events are occurring.

[Explore examples of changes in Minnesota »](#)

[Explore precipitation and temperature](#)

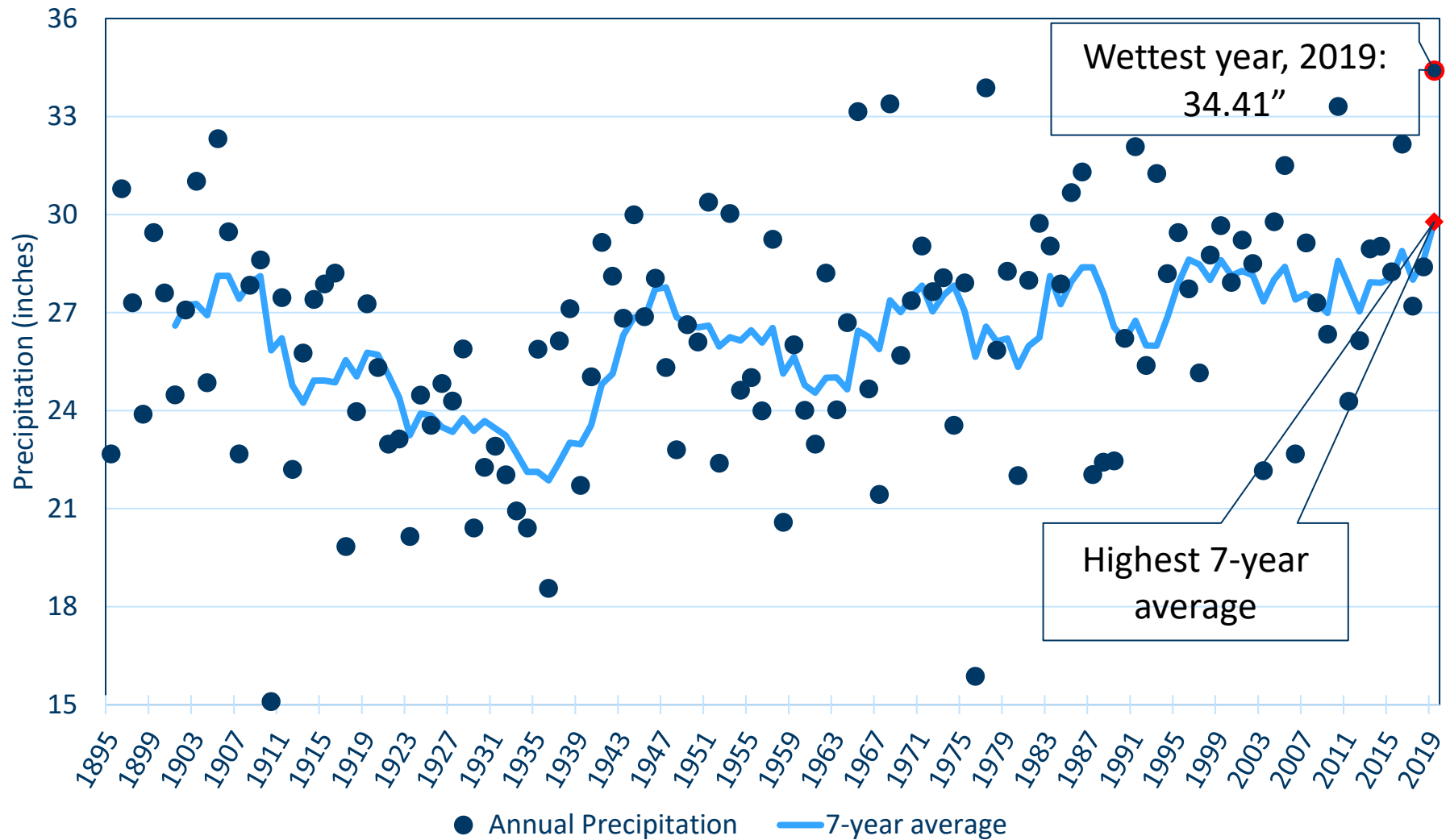
# Minnesota Climate Trends site



- Check out state or watershed(s)
- Lots of options to look at temperature and precipitation trends



# Minnesota Annual Precipitation, 1895-2019



# MnTOPO


- <http://www.dnr.state.mn.us/maps/mntopo/index.html> or search MNTOPPO and proceed to viewer
- Use to view or download state LiDAR data
- Use to view FEMA floodplain data (not as up-to-date as MnGEO)
- Must be zoomed in or out to see certain layers

# Search MNTOPPO



[Home](#) > [Maps](#) >

## MnTOPO

MnTOPO is a web application for viewing, printing and downloading high-resolution elevation data for the State of Minnesota that uses [LiDAR technology](#).  It runs on a variety of devices including desktop PCs, tablets, and mobile phones.

The data you see and download in MnTOPO was made possible by the [Minnesota elevation mapping project](#).

### Use the MnTOPO viewer application

[Proceed to the MnTOPO viewer](#)



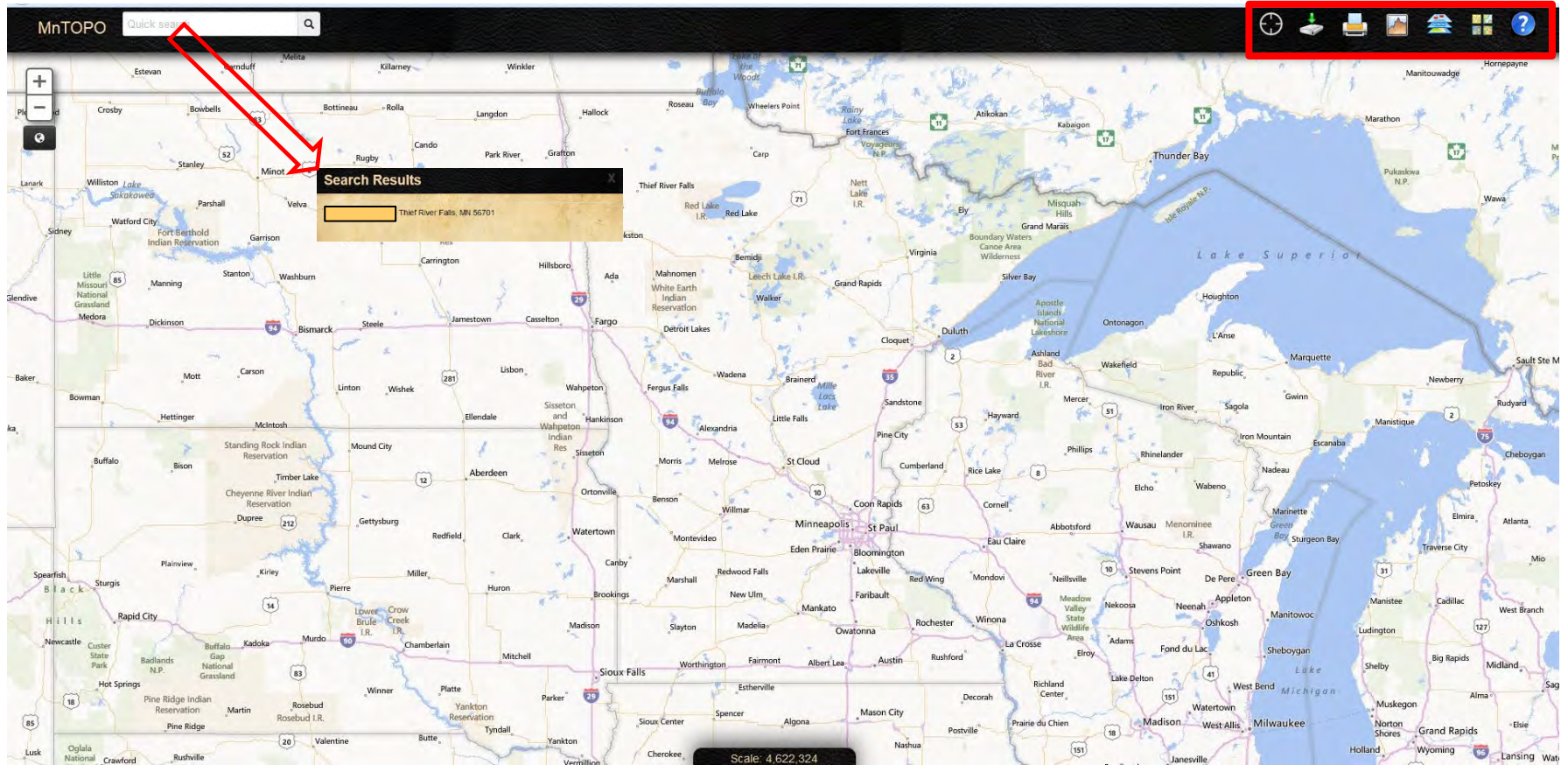
## MnTOPO Audience Applications

MnTOPO has been developed with three primary audience applications in mind: casual terrain exploration, terrain-data analysis and analysis.

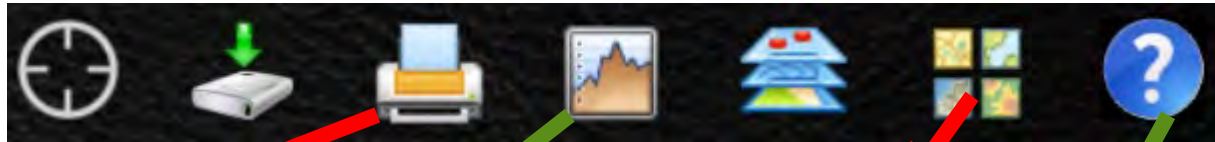


# MnTOPO Site

<http://arcgis.dnr.state.mn.us/gis/mntopo/>



# MNTOPPO Options



Print  
a map

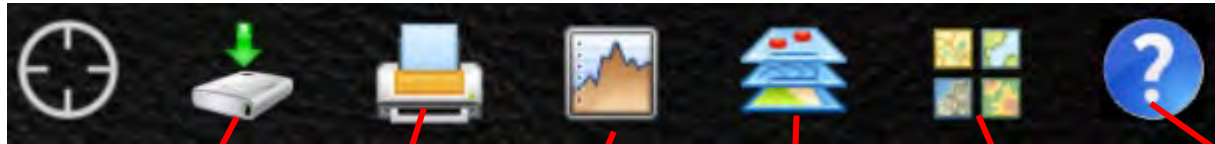
Get a point  
elevation  
or elevation  
along a line

Change Basemap:

- Road
- Imagery
- Color Terrain
- B&W Terrain

Help PDF  
document

# MNTPO Options



Download  
LiDAR  
products

Print  
a map

Get a point  
elevation  
or elevation  
along a line

Show map layers:

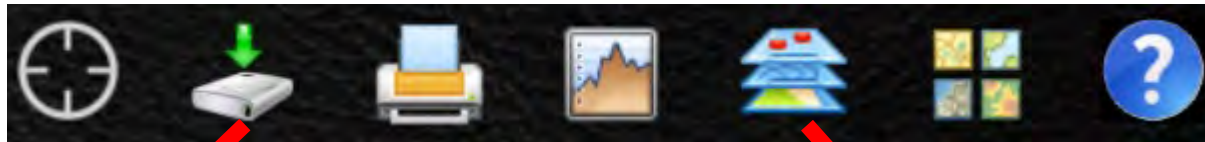
- 50-, 10-, 2-foot contours
- LiDAR flight lines
- FEMA Flood Data

Help PDF  
document

Change Basemap:

- Road
- Imagery
- Color Terrain
- B&W Terrain

# MnTOPO



**Step 1: Select Area of Interest**

Draw polygon to select lidar products for area of interest.

**Step 2: Select Products**

- ☐ 1 Meter DEM
- ☐ 1 Meter Hillshade
- ☐ 3 Meter DEM
- ☐ 3 Meter Hillshade
- ☐ Raw LAS Files
- ☐ Bare Earth Points
- ☐ Contours
- ☐ Building Footprints
- ☐ Hydro Breaklines

**Step 3: Select Product Type**

**Step 4: Enter Email**

Download  
LiDAR  
products

**Contours**

- ☒ 50 Foot Contours
- ☒ 10 Foot Contours
- ☒ 2 Foot Contours

**LiDAR Collect Information**

- ☐ LiDAR Flight Lines

**FEMA Flood Data**

- ☒ FEMA Flood Data

Unmodernized Floodplain  
Unmodernized  
Modernized Floodplain

- Show map layers:
- 50-, 10-, 2-foot contours
  - LiDAR flight lines
  - FEMA Flood Data



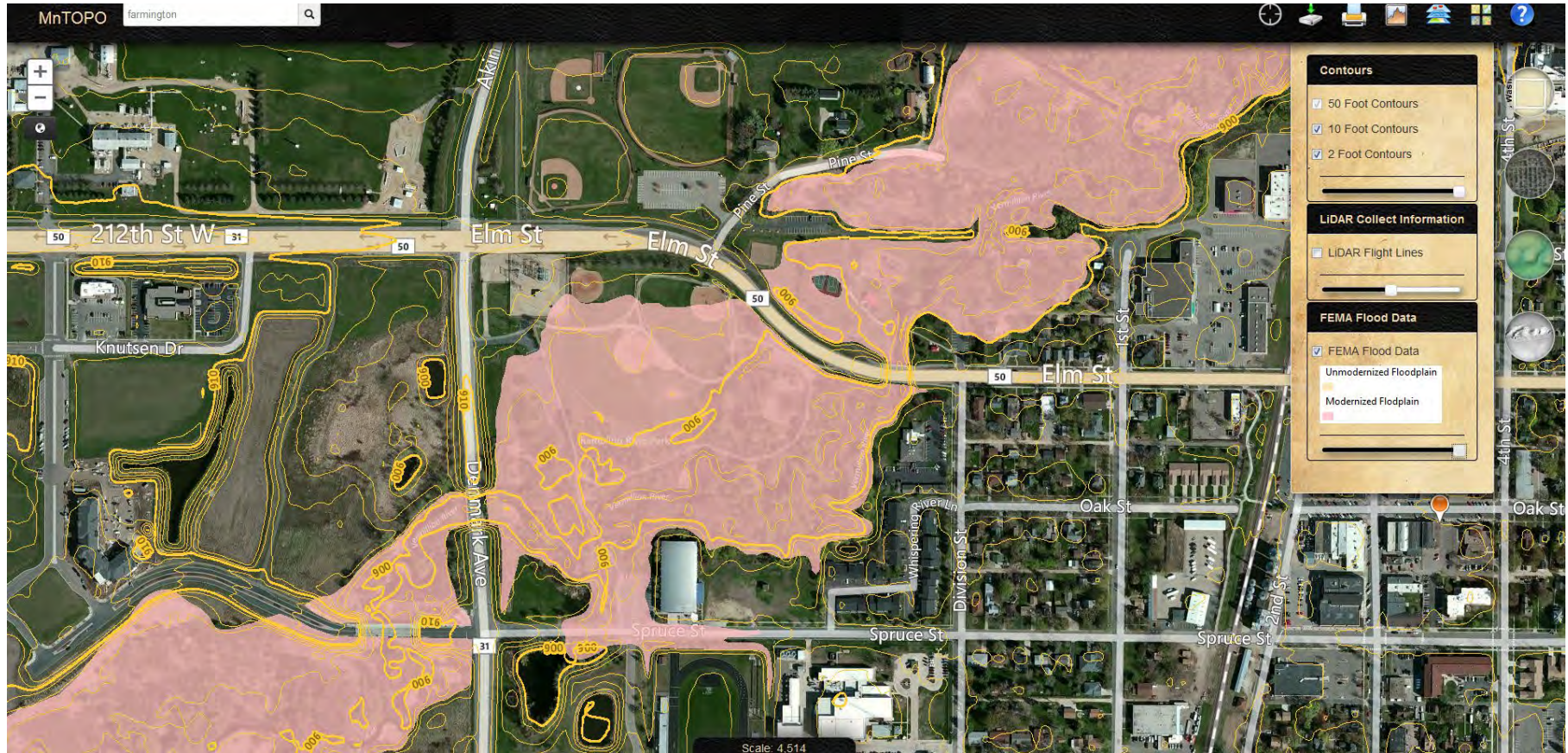
# Unmodernized Example

- “Unmodernized” – NOT official; Q3 layer (quick digitization)
- “Modernized” – Final Digital Flood Insurance Rate Map (DFIRM) layer





# Modernized Example



# Lines and Point Elevations in MnTOPO

## Elevation Data

### Elevation:

280.78 meters

921.18 feet

### WGS 84 Coordinates

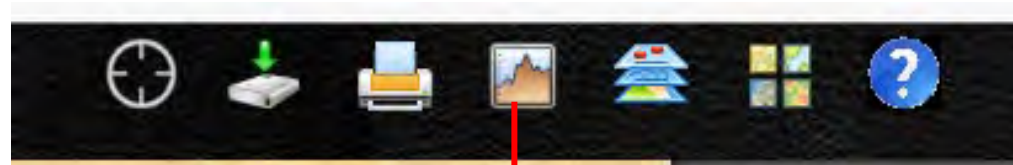
Latitude: 45.53127

Longitude: -93.05481

### NAD83 UTM 15

Easting: 495720.99

Northing: 5041971.62



Point Elevation

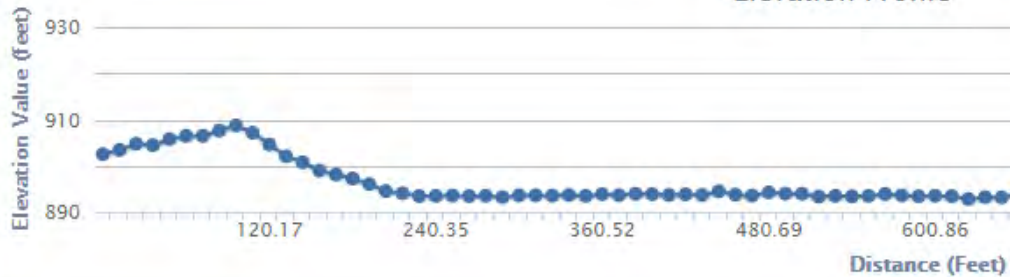
Line

Freehand Line

### Line Elevation Active:

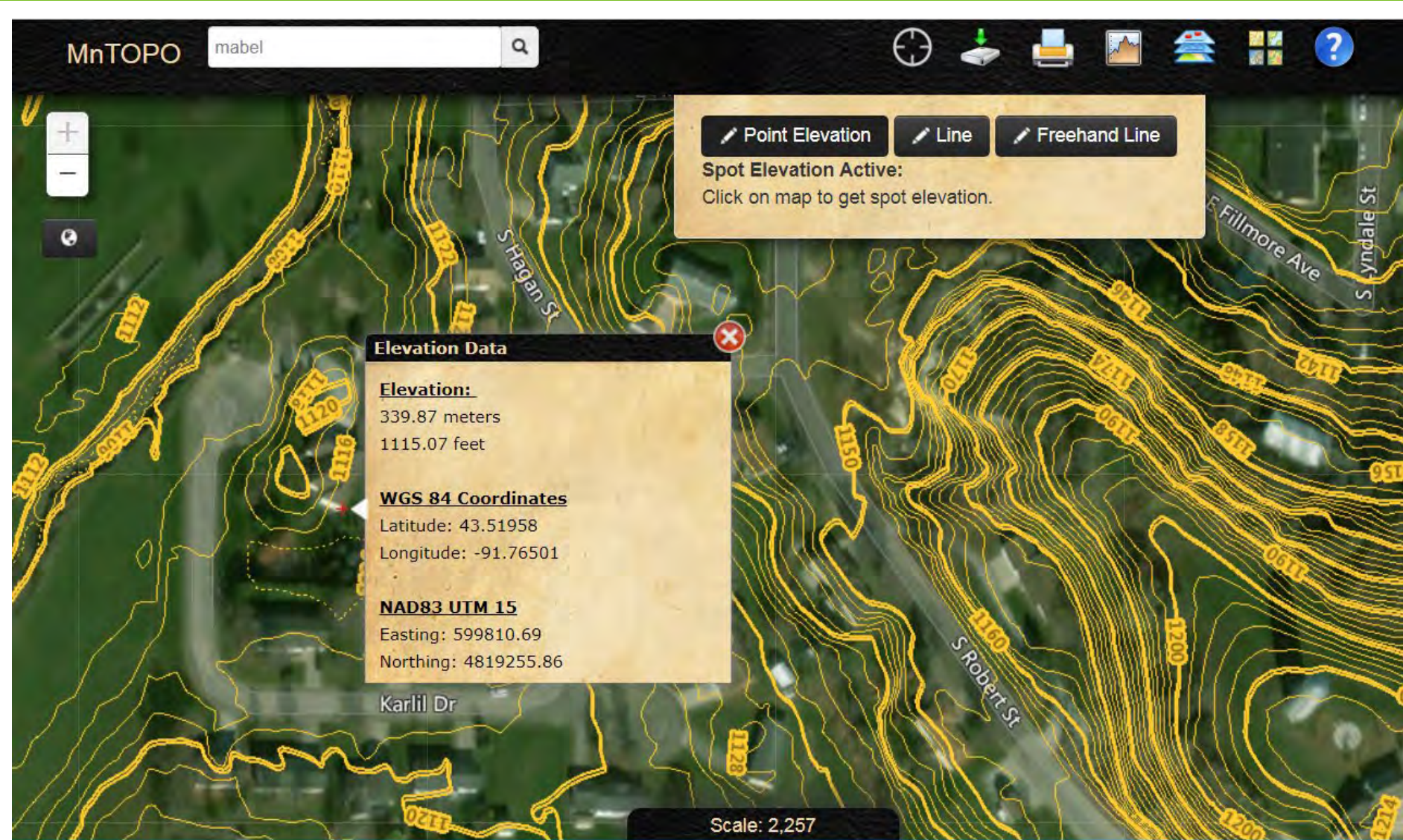
Click to add line vertices.

Double click to end.



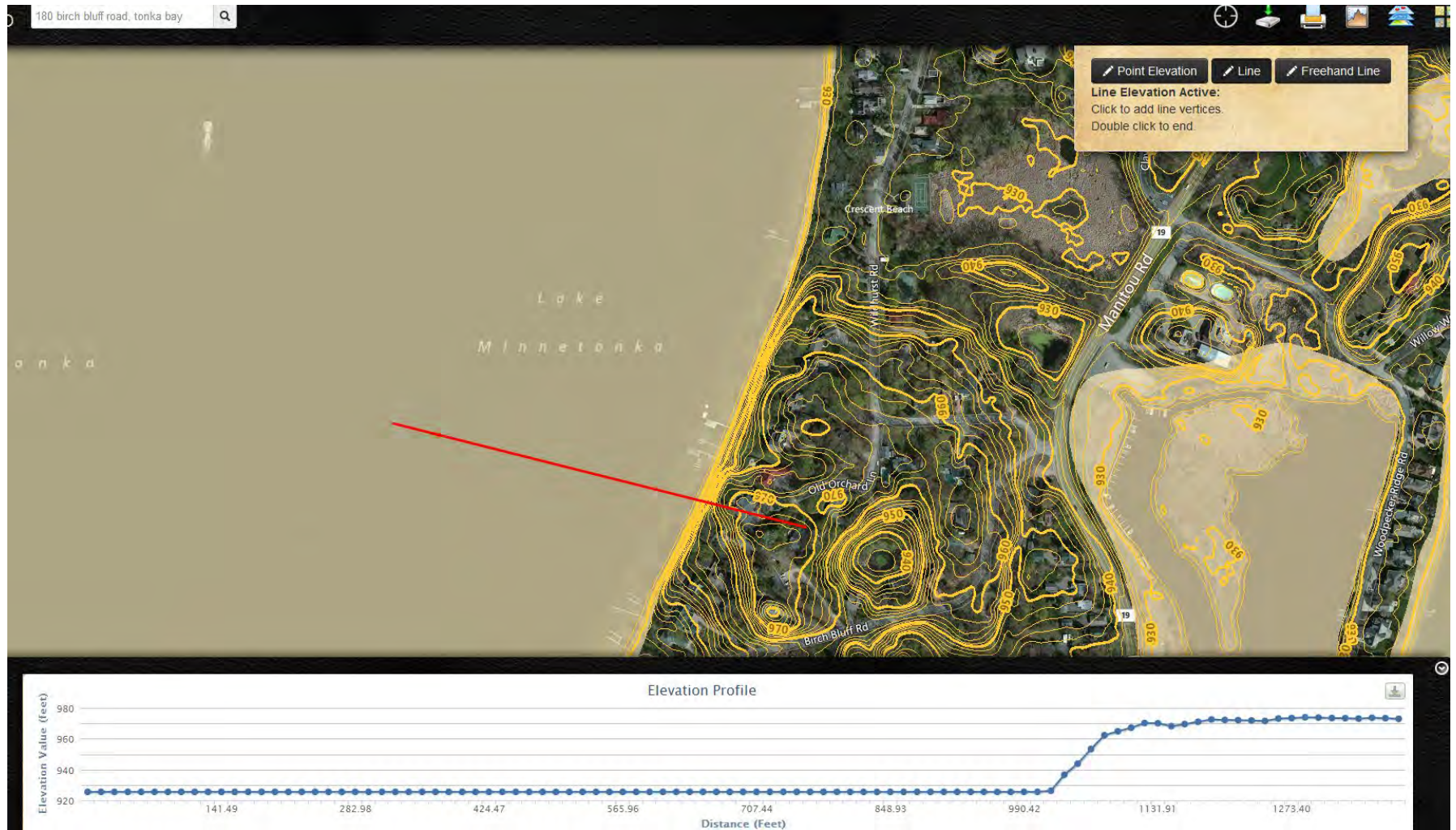


# MnTOPO – Sample of “Point”





# MnTOPO – Sample of “Line”

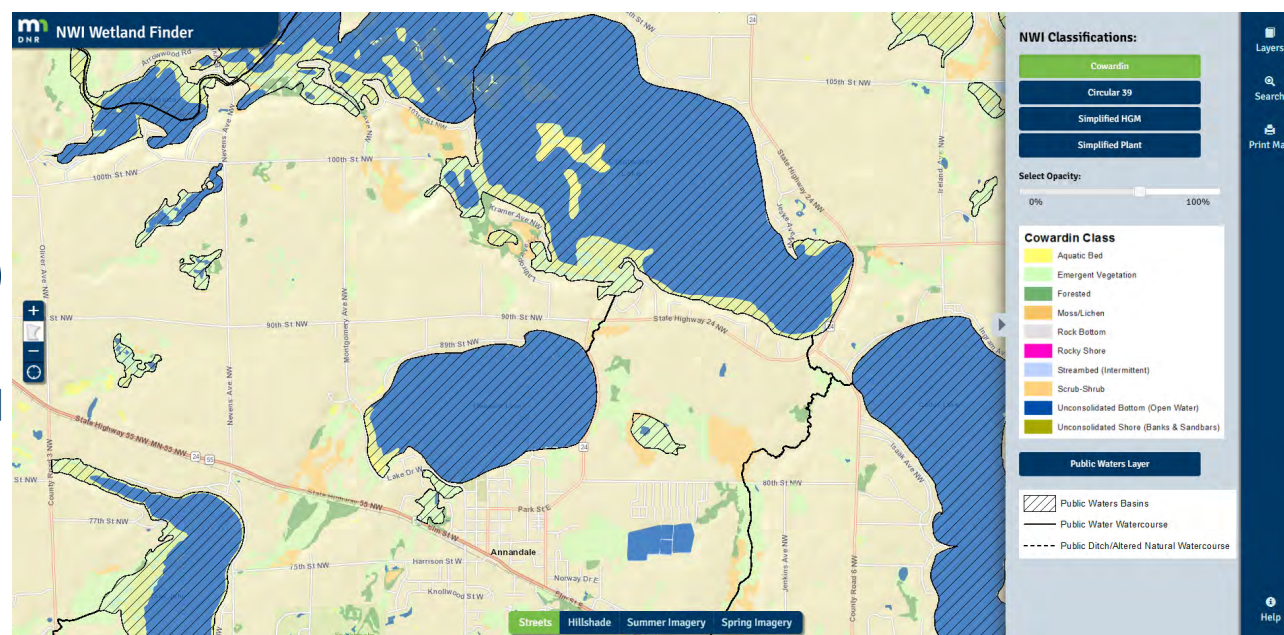


# DNR's NWI Wetland Finder

- [DNR's NWI Wetland Finder](#) Online map displays locations of wetlands and public waters
  - Map shows Wetland Conservation Act (WCA) regulated wetlands
    - Regulated at local level
- Map shows boundaries of public waters
  - Regulated by DNR
- Click on features to see agency contact
- Click on public water feature to see PWI#

## NWI Wetland Finder Online Map

<https://arcgis.dnr.state.mn.us/ewr/wetlandfinder/>



NWI = National Wetlands Inventory



# DNR's NWI Wetland Finder

**NWI Wetland Finder**

**NWI Wetland Finder Online Map**  
<https://arcgis.dnr.state.mn.us/ewr/wetlandfinder/>

**NWI Classifications:**  
Cowardin  
Circular 39

Simplified HGM  
Simplified Plant

Select Opacity: 0% 100%

**Cowardin Class**

- Aquatic Bed
- Emergent Vegetation
- Forested
- Moss/Lichen
- Rock Bottom
- Rocky Shore
- Streambed (Intermittent)
- Scrub-Shrub
- Unconsolidated Bottom (Open Water)
- Unconsolidated Shore (Banks & Sandbars)

**Public Waters Layer**

- Public Waters Basins
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse

Layers  
Search  
Print Map  
Help

mer Imagery Spring Imagery