



FEMA

# Flood Risk Review

## Twin Cities HUC8 Watershed

### Rice Creek Watershed Study

**Flood Risk Review Meeting**  
**March 11, 2021 | 9:00 AM CST**

**RiskMAP**  
Increasing Resilience Together



# Agenda

- 1. Introductions**
- 2. Meeting Goals**
- 3. Milestones in recent FEMA Floodplain Map actions and investments**
- 4. Engineering details – work maps**
- 5. Next Steps & Grant Opportunities**
- 6. Training Options**
- 7. Questions**

# Introductions

- **FEMA Project Team**
  - Pam Broviak – FEMA Regional Engineer
  - Frank Shockey – FEMA NFIP Specialist
  - Cadence Peterson – FEMA Planner
- **Minnesota Department of Natural Resources (MN DNR)**
  - Stacy Harwell – Hydrologist, Project Manager
  - Ceil Strauss – State Floodplain Manager
  - Suzanne Jiwani – Floodplain Mapping Engineer
  - Lucas Youngsma – Metro Area Hydrologist
- **Minnesota Department of Public Safety**
  - Jen Davis – State Hazard Mitigation Officer (SHMO)
- **United States Army Corps of Engineers**
  - Terry Zien – Program Manager/Engineer Floodplain Management, Silverjackets
- **Nick Tomczik (Rice Creek) & Chris Otterness (Houston Engineering)**

# Meeting Goals

*You are getting a first look at DRAFT results of the completed analyses for your review and comment. These results will eventually be used to revise local Flood Insurance Rate Maps (FIRM), and you will have new opportunity to provide comment and/or appeal with release of a future Preliminary FIRM.*

## Goals for today's meeting

- Overview hydrologic and hydraulic analyses and data
- Review and discuss draft results
- Collect your concerns/feedback/technical data
- View the draft work maps at <https://bit.ly/3bNwvMY>

# RCWD Modeling Milestones



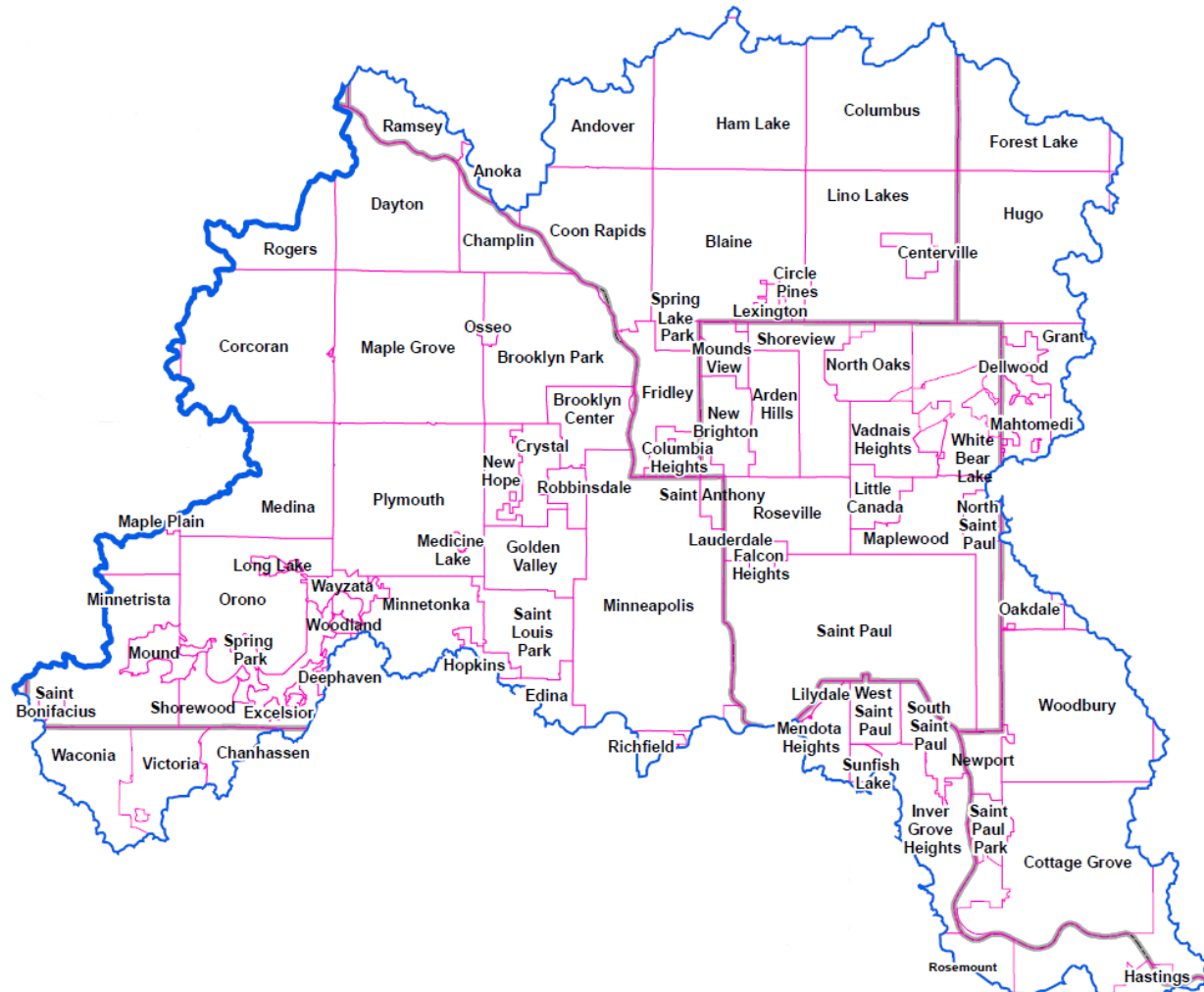
## DWMP Updates

- Modifications of *regional* stormwater mgmt. features
- Modifications of subwatershed boundaries
- New survey data
- New lake level monitoring data
- Corrections of known errors
- Detailed modeling created by RCWD partners
- Updated model format

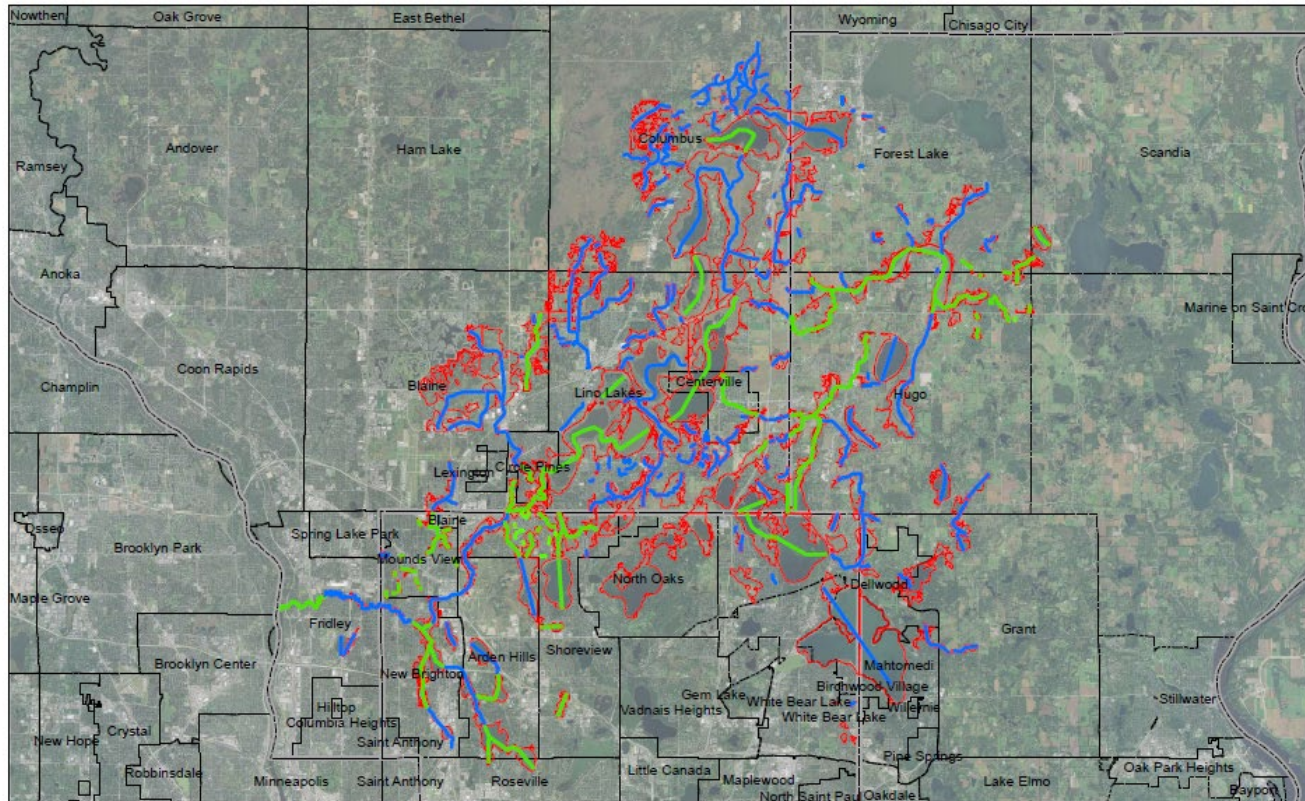


- Flood maps are exported to RCWD GIS viewer when models are updated
- Check for availability of model updates prior to using RCWD models and flood elevations

# Twin Cities HUC8 Watershed



# FEMA Study Areas in Rice Creek Watershed



FEMA Study Areas in the Rice Creek Hydrologic Boundary  
Twin Cities HUC 8 Flood Risk Project

## Legend

- Zone A - approximate study area
- Zone AE - detailed study area
- Effective Special Flood Hazard Area
- City Boundaries



# Twin Cities HUC8 Mapping Timeline

## *When will the data be digitally available online?*

- The data will be available digitally when we hold the Flood Risk Review meetings now.  
<https://bit.ly/3bNwvMY>

## *When can the new data be used?*

- **A Zone** data can be used immediately after the Flood Risk Review meetings for zoning decisions, to apply for FEMA map appeals and flood insurance rating. It's considered "best available data."
- **Zone AE** updated data can only be used once it is on a new official map.
  - New FEMA maps
  - Letter of Map Revision (LOMR)
  - Ordinance amendment will be required



# National Flood Insurance Program

## NFIP Participating Jurisdictions

### Community Rating System

#### *Voluntary Program - Why join?*

- Document good community efforts to reduce flood risk for citizens – Bragging rights!
- Landowners with flood insurance policies in higher risk zones get discounts (5% - 25% in MN)
- City of St. Paul would be a good candidate
- Other communities are already using higher standards and would be good candidates, however there aren't many Zone A flood insurance policies.

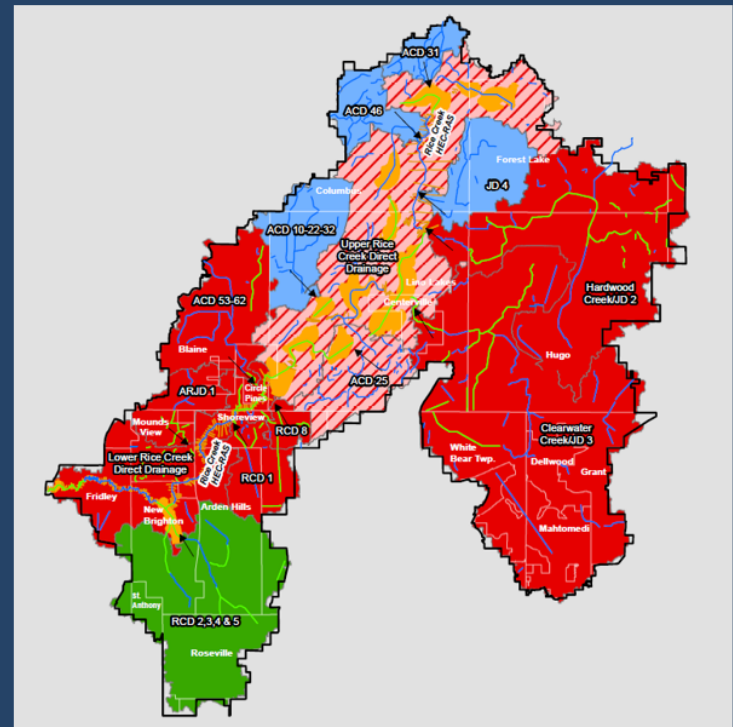
# Rice Creek Watershed Model



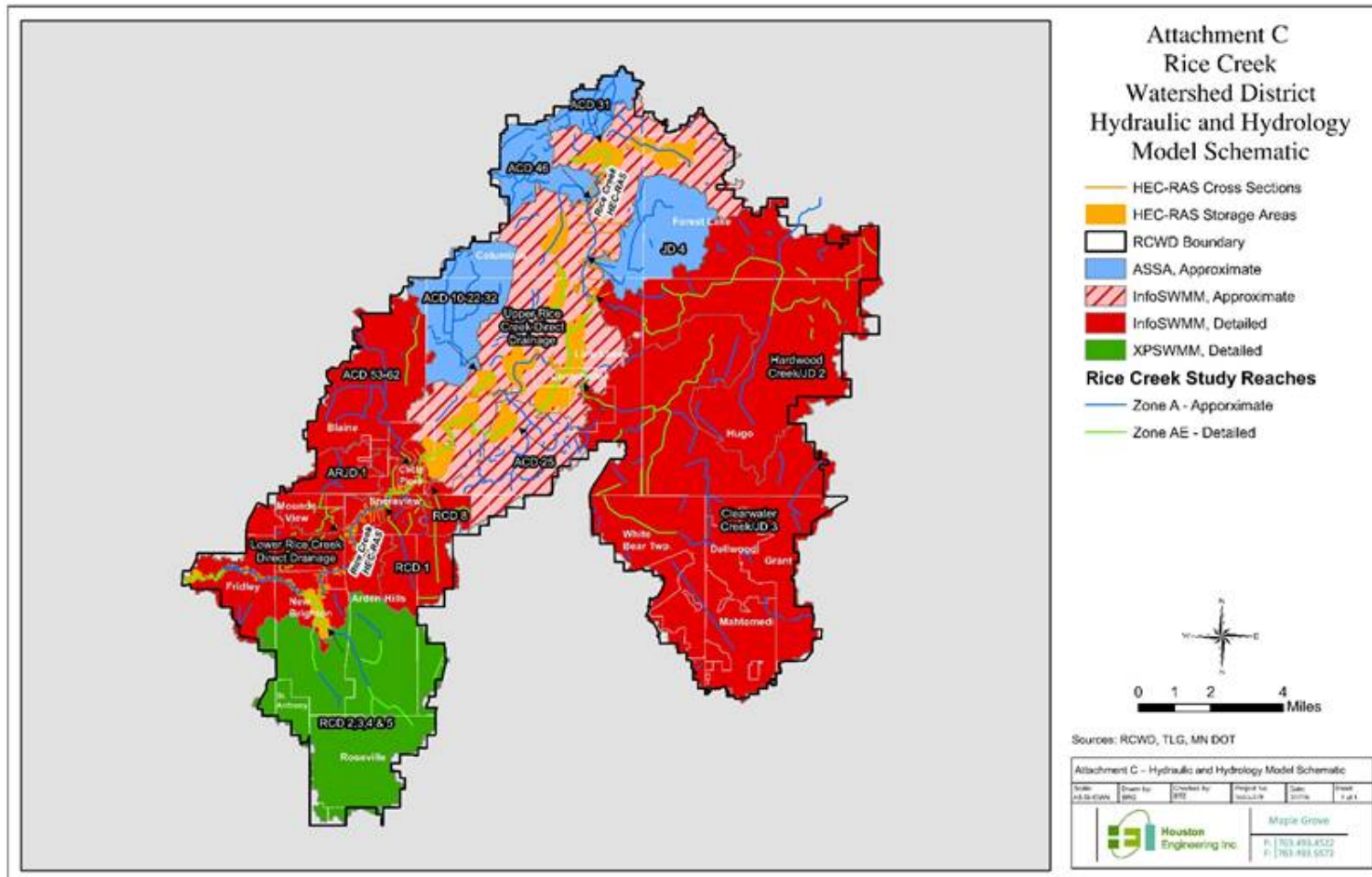
## "District-Wide" Model *More than just a model*

### Components

- Existing Conditions SWMM Models (hydrology & hydraulics)
  - Majority of District in XP-SWMM
  - Some remaining ASSA and InfoSWMM models
  - Regional scale: public drainage systems and trunk conveyance systems



# Models/Model Connections

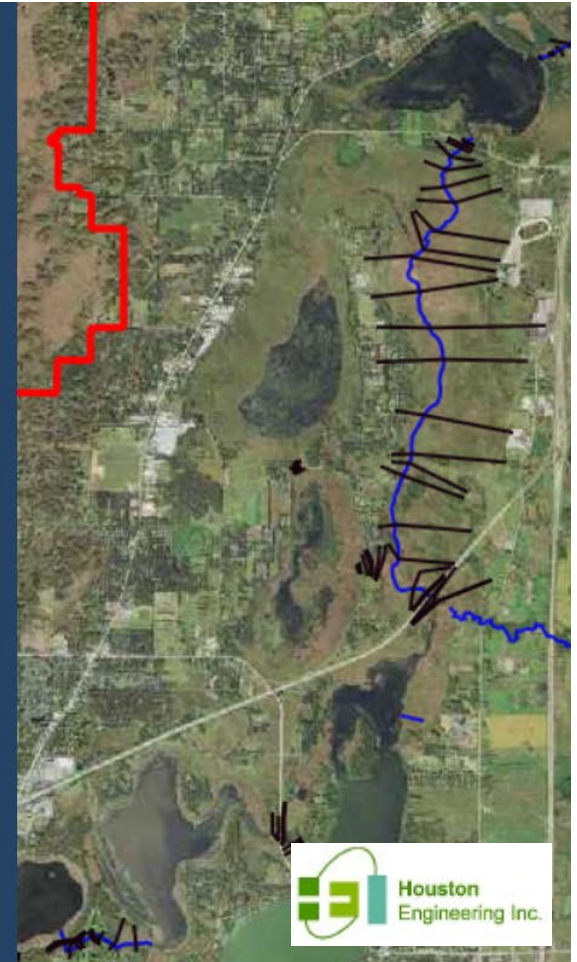
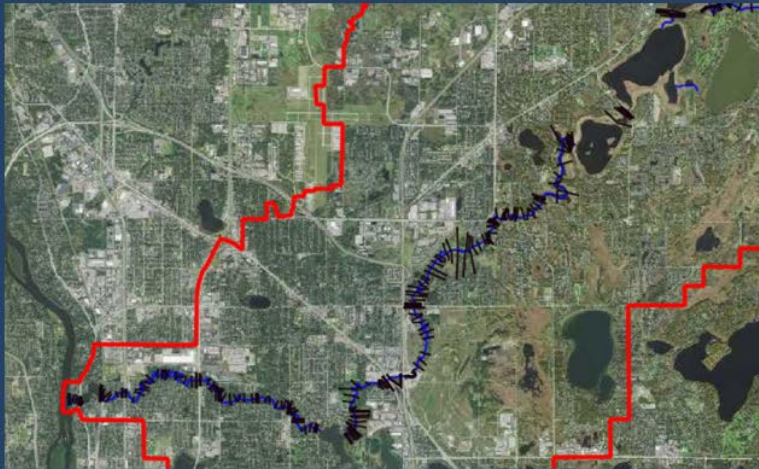


# Rice Creek Watershed Model

## "District-Wide Model"

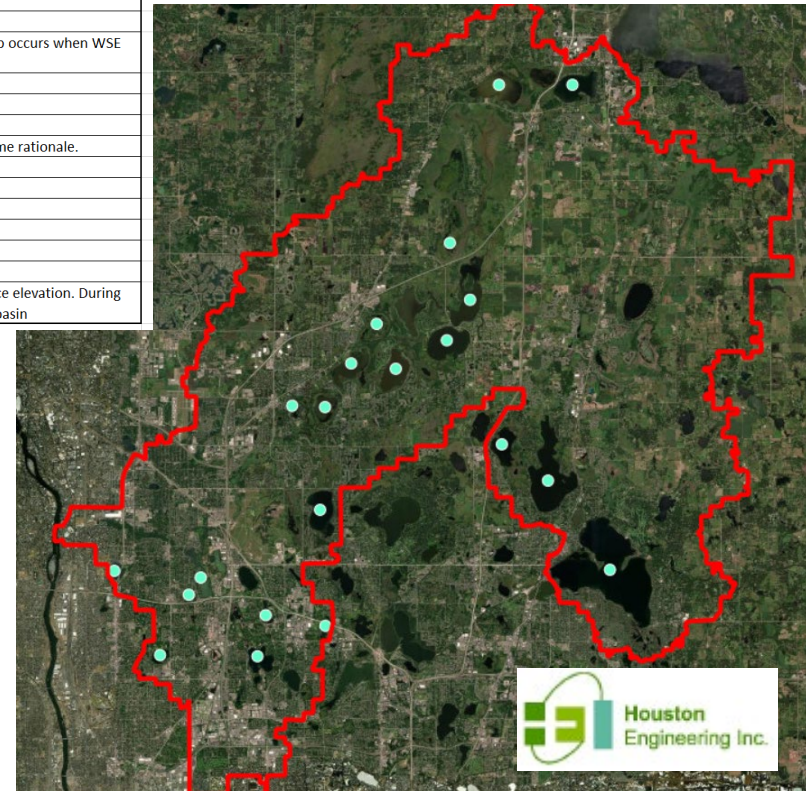
### Components

- Rice Creek HEC-RAS Model (river hydraulics)



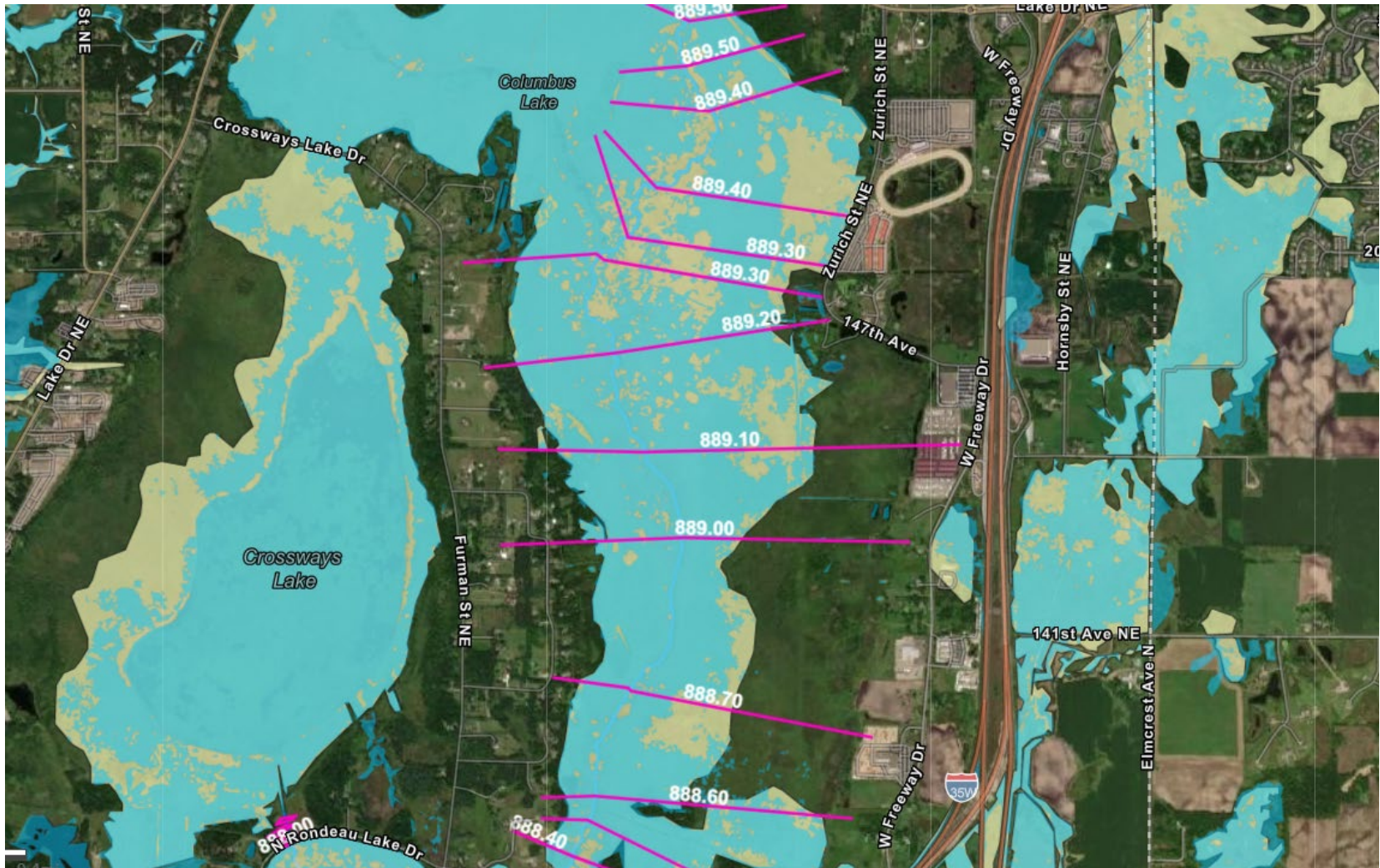
# Model Verification

| Lake             | Lake Level Frequency Analysis (NAVD 88) | MWSE From Models    |                 |               | Difference | Source Model | Node             | Rationale   |
|------------------|---|---------------------|-----------------|---------------|------------|--------------|------------------|---|
|                  |   | 100-yr 24-hour Rain | 10-day Snowmelt | Critical MWSE |            |              |                  |   |
| Bald Eagle Lake  | 912.50                                  | 911.63              | 912.05          | 912.05        | -0.46      | JD3          | K_BELAKE         |   |
| Baldwin Lake     | 887.00                                  | 885.60              | 886.88          | 886.88        | -0.12      | HEC-RAS      | Baldwin Lake     |   |
| Centerville Lake | 887.90                                  | 886.86              | 887.30          | 887.30        | -0.60      | HEC-RAS      | Centerville Lake |   |
| Clear Lake       | 891.90                                  | 891.61              | 891.70          | 891.70        | -0.20      | HEC-RAS      | Clear Lake       |   |
| Golden Lake      | 889.60                                  | 890.14              | 890.08          | 890.14        | 0.54       | LRC          | S_FMT006         |   |
| Howard Lake      | 889.60                                  | 889.47              | 889.77          | 889.77        | 0.17       | HEC-RAS      | Howard Lake      |   |
| Johanna Lake     | 881.10                                  | 880.91              | 881.12          | 881.12        | 0.02       | RCD 2345     | K_JOHAN          |   |
| Long Lake        | 868.40                                  | 870.25              | 872.01          | 872.01        | 3.61       | HEC-RAS      | Long Lake        | Hydraulic jump occurs due to outlet. Jump occurs when WSE hits the crown of the pipe                        |
| Marshan Lake     | 887.00                                  | 885.66              | 886.98          | 886.98        | -0.02      | HEC-RAS      | Marshan Lake     |   |
| Otter Lake       | 912.60                                  | 911.63              | 912.05          | 912.05        | -0.55      | JD3          | K_OTTERL         |   |
| Peltier Lake     | 887.70                                  | 887.20              | 887.54          | 887.54        | -0.16      | HEC-RAS      | Peltier Lake     |   |
| Pike Lake        | 869.70                                  | 871.07              | 871.89          | 871.89        | 2.19       | RCD 2345     | S_NMT004         | Hydraulically connected to Long Lake. Same rationale.   |
| Reshanau Lake    | 887.00                                  | 885.65              | 886.97          | 886.97        | -0.03      | HEC-RAS      | Reshanau Lake    |   |
| Rice Lake        | 887.00                                  | 885.65              | 886.97          | 886.97        | -0.03      | HEC-RAS      | Rice Lake        |   |
| Rondeau Lake     | 887.60                                  | 887.47              | 887.86          | 887.86        | 0.26       | HEC-RAS      | Rondeau Lake     |   |
| Silver Lake      | 934.70                                  | 935.59              | 935.04          | 935.59        | 0.89       | RCD 2345     | K_SILVE          |   |
| Moore Lake       |   |                     |                 |               |            |              |                  |   |
| Turtle Lake      | 892.70                                  | 892.45              | 892.61          | 892.61        | -0.10      | LRC          | S_LMT521         |   |
| White Bear Lake  | 927.30                                  | 923.17              | 923.77          | 923.77        | -3.53      | JD3          | K_WBLAKE         | Highly dependent on starting water surface elevation. During the modeled events, the lake is a closed basin |



## Lake level frequency analysis

# Effective Map Example



# What's Next?

- **Review maps/models**
  - Comment period through until April 7, 2021
- **Draft data, reports, models and work maps available on:**
  - <https://bit.ly/2NqvFNI>
  - Modeling data is available upon request
  - RWMWD Website ([rwmwd.org](http://rwmwd.org))
- **Work together to coordinate on:**
  - Project scope and scheduling:
    - Pam Broviak [pamela.broviak@fema.dhs.gov](mailto:pamela.broviak@fema.dhs.gov)
    - Suzanne Jiwani [suzanne.jiwani@state.mn.us](mailto:suzanne.jiwani@state.mn.us)
  - NFIP questions:
    - Ceil Strauss [ceil.strauss@state.mn.us](mailto:ceil.strauss@state.mn.us)
    - Frank Shockey [frank.shockey@fema.dhs.gov](mailto:frank.shockey@fema.dhs.gov)
  - Work map comments:
    - Stacy Harwell [stacy.Harwell@state.mn.us](mailto:stacy.Harwell@state.mn.us)

# FRR Meeting Process

What to review on Work maps:

- **Basemap**
  - Political boundary changes
  - Significant transportation features
  - Hydro names (streams, lakes, rivers; should align with GNIS)
- **Floodplain Delineations**
  - Stream channel reconfigurations
  - Significant fill in the floodplain
  - **Floodway**
    - Hydraulic structures (bridges, major culverts) not reflected
    - New approximate study areas that you wish to add
    - LOMRs not captured
    - Flood Zone Label errors



# FEMA Hazard Mitigation Grants

- **Building Resilient Infrastructure and Communities (BRIC)**

- FY20 \$500 million

Priorities:

- Incentivize public infrastructure projects
- Incentivize projects that mitigate risk to one or more lifelines
- Incorporate nature-based solutions
- \$ for adoption and enforcement of building codes

Now eligible:

- **Project scoping**
- **Pre-award costs**

- **Flood Mitigation Assistance (FMA)**

- FY20 \$160 million+

Reduce or eliminate the risk of repetitive flood damage to buildings and structures insured under the National Flood Insurance Program (NFIP).

**New:**

- **Project scoping**
- **Community Flood Mitigation Projects**

- **Interested in FY2021?**

- Email

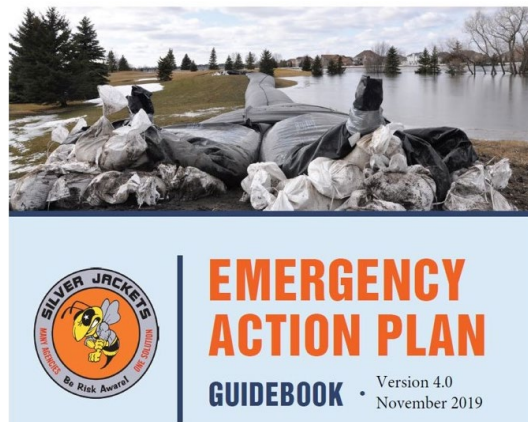
[hazard.mitigation@state.mn.us](mailto:hazard.mitigation@state.mn.us)

# Training Opportunities

- Upcoming Trainings
  - March 8 through May 5
  - Mondays 1:00-2 pm & Wednesdays 9:30-10:30 am
  - Will be virtual WebEx meetings
  - Zoning administrators provided feedback on days/time and topics
  
- *Stay tuned for more information!*
  - [Floodplain Training and Education | Minnesota DNR \(state.mn.us\)](https://state.mn.us/floodplain-training-education)

# Emergency Action Plan Guidebook

- **Developed by MN Silver Jackets Team, in association with other State and Federal Agencies**
  - Guide used for small to medium sized communities and tribes
  - Purpose is to develop and document information for safe and effective flood emergency response.
- **A useful counterpart to county and state all-hazard plans**
  - Used to compile any missing critical information for location-specific conditions.



# Emergency Action Plan Guidebook

**The St. Paul District USACE conducts these local and regional workshops**

- Purpose is to develop these community level flood emergency action plans

## **For More Information Contact:**

Terry R. Zien P.E., CFM

U.S. Army Corps of Engineers, St. Paul District

Phone: (651) 290-5714 or e-mail: [Terry.R.Zien@usace.army.mil](mailto:Terry.R.Zien@usace.army.mil)

**All documents and fillable forms for the guidebook can be found here:**

<https://www.lrh.usace.army.mil/Portals/38/docs/civil%20works/Emergency%20Action%20Plan%20Guidebook.pdf>

# Questions?



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