



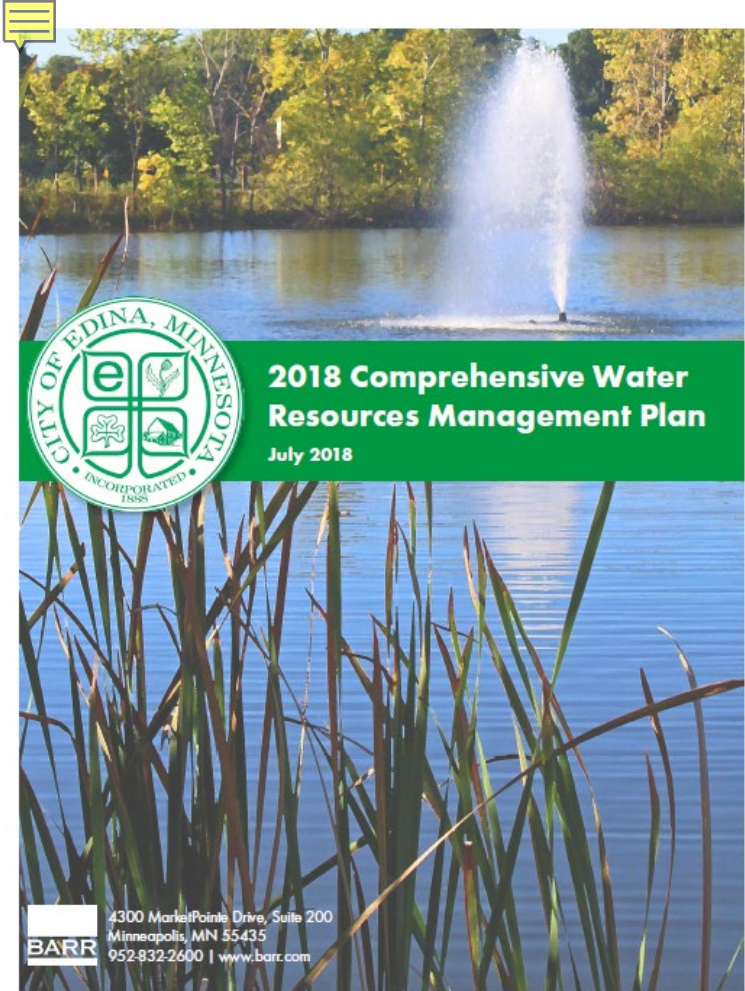
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# Flood Risk Reduction Strategy Development

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March 5, 2019 – City Council Worksession



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## How this project started:

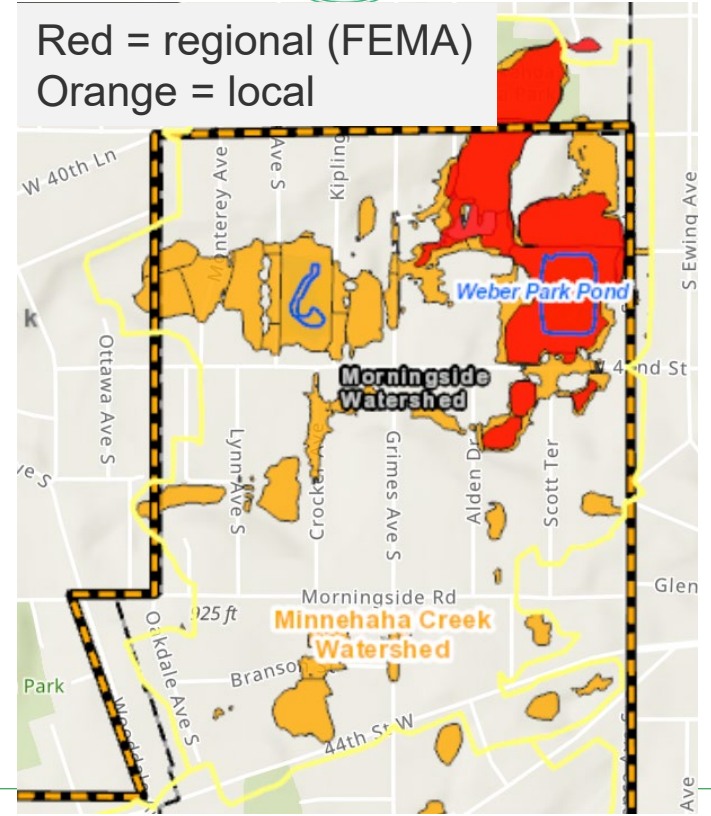
- The City’s guide for delivery of flood protection, runoff management, and clean water services. New information.
- Plan takes incremental improvement or no new risk approach.
- Council; “Show us what it takes to solve it. Don’t worry about the budget. Show us a range of options. We want to give people what they want.”



# Flood Risk Reduction Strategy

- \$250k for FRRS - \$50K for combined model effort = \$200K remaining
- Focus on Morningside geography
- Opportunity in Weber Woods
- Opportunity in 2022-23 reconstruction areas
- We are just starting to plan this effort and want to know what opportunities are you willing to consider? Not?

Red = regional (FEMA)  
Orange = local





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# Outline

Review - These are the drivers that lead to this problem.

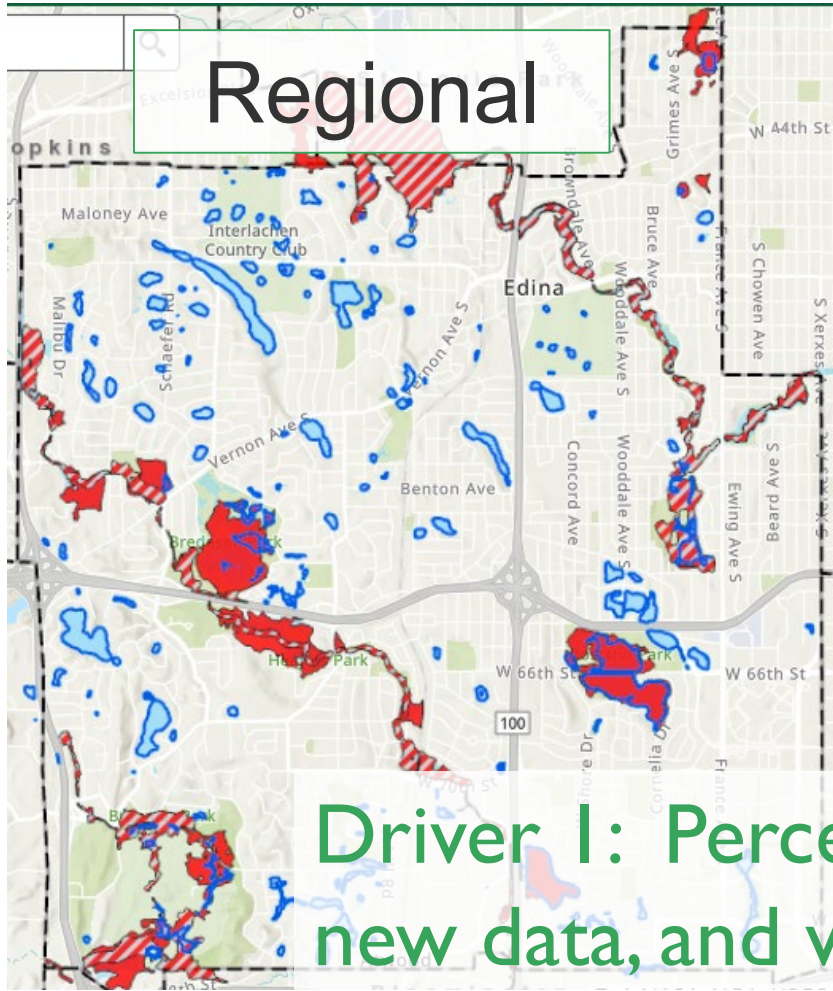
## A Paradigm Shift?

- Is flooding a technical problem or something more?

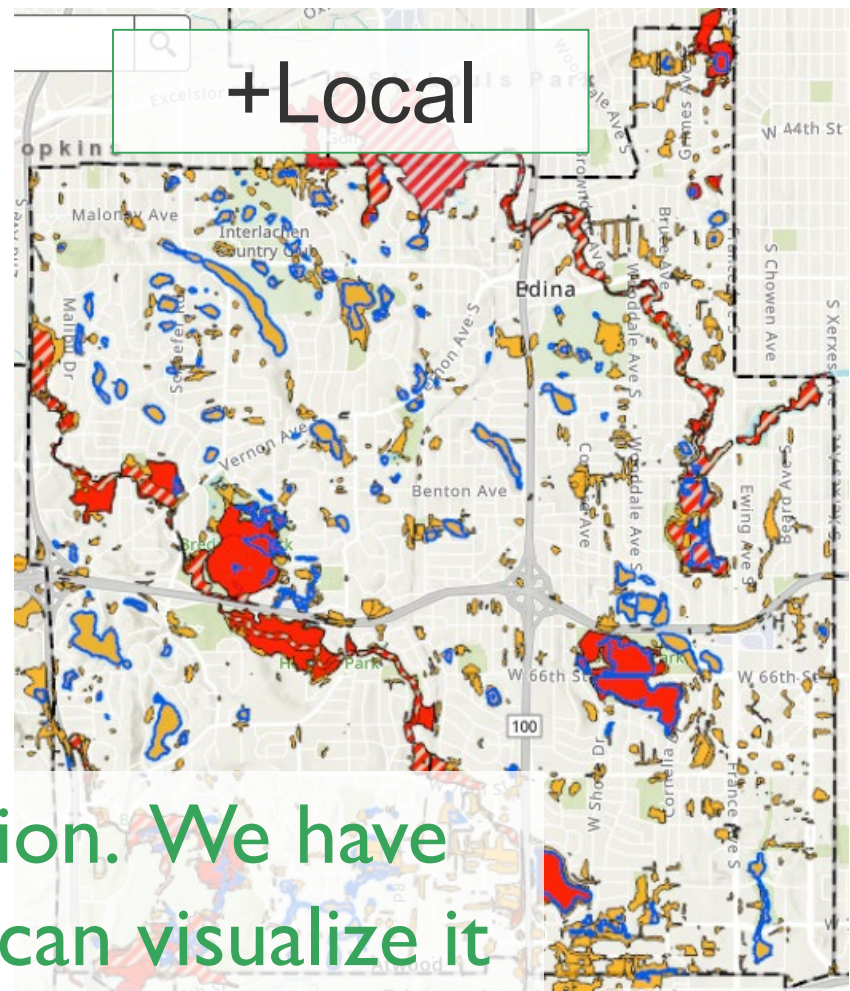
Questions that help guide what solutions we are willing to consider

- What does success look like?
- Which sector do you see opportunities: Land use, awareness, stormwater utility, park redevelopment, road projects, community capacity
- How and when to engage the public?

Regional



+Local



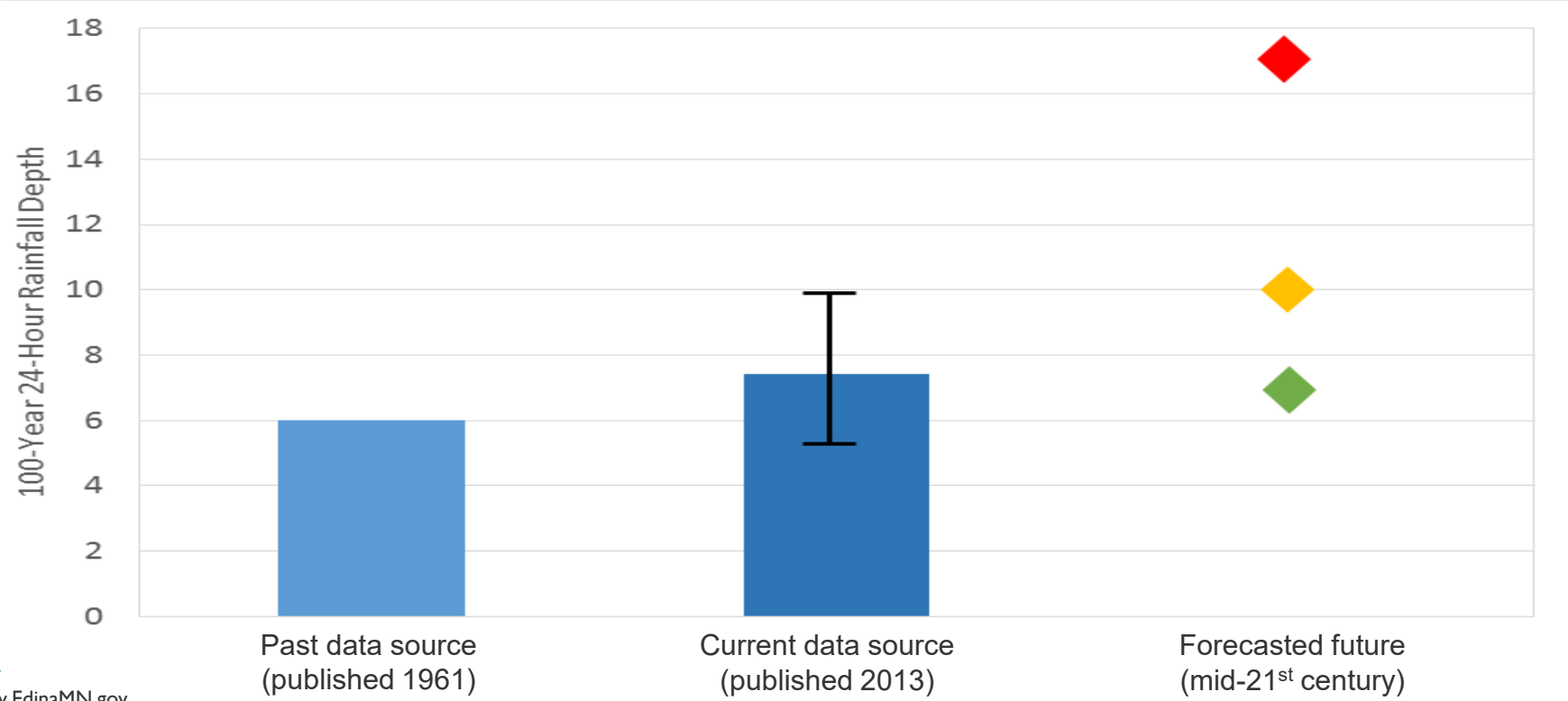
Driver 1: Perception. We have new data, and we can visualize it



# Driver 2: More rain (Climate Change)

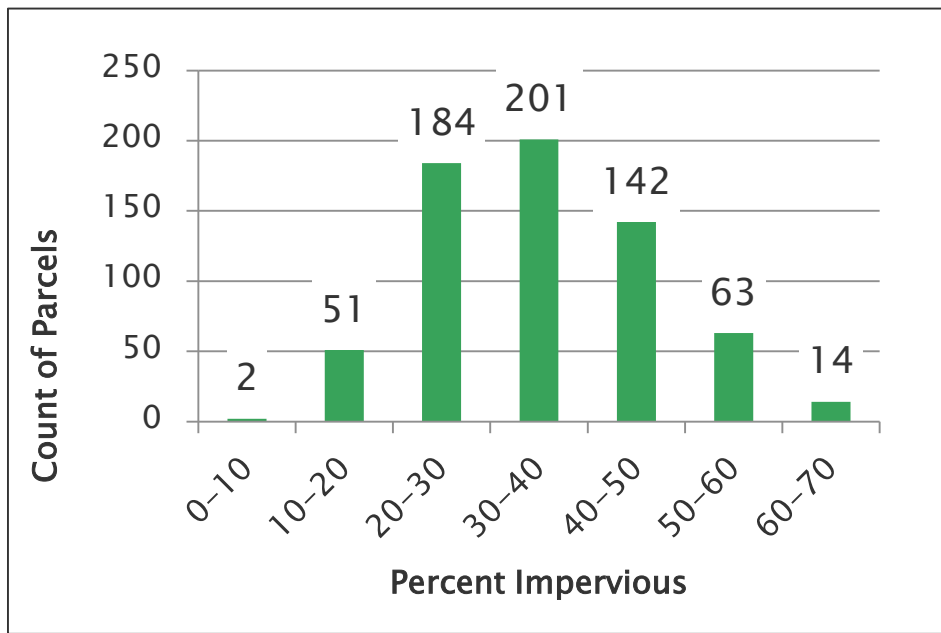
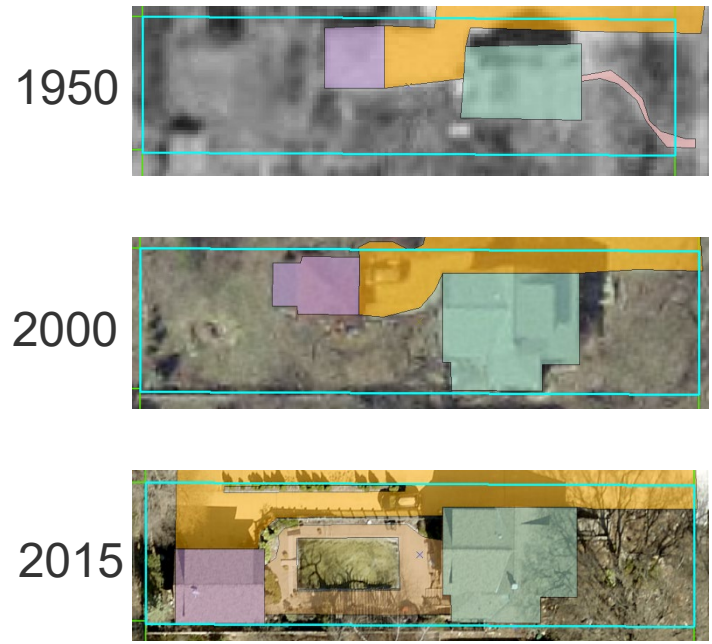


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# Driver 3: More runoff

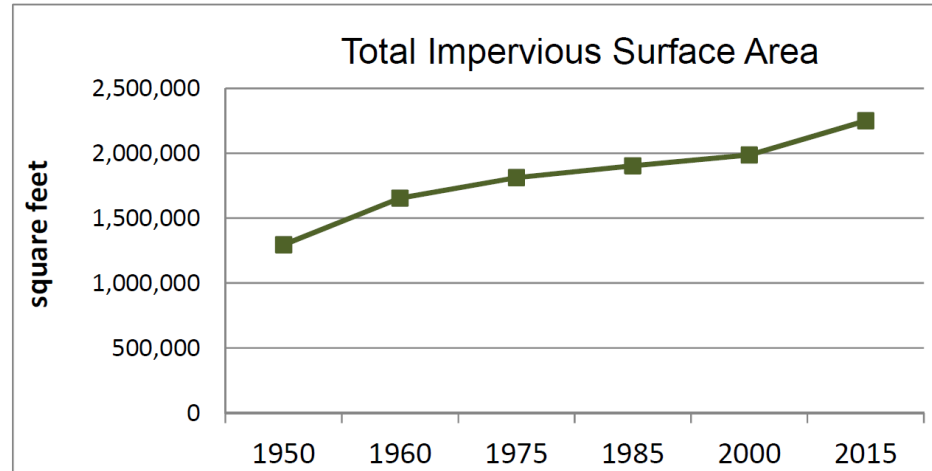


Count of parcels in various percent impervious ranges in the Morningside neighborhood (2019, City of Edina Staff).



# Driver 3: More runoff

- Nearly one million square feet of impervious surfaces added since 1950 (about 14% of the total area of occupied parcels)
- What will 2030 look like?



Total impervious area for developed residential parcels in the Morningside neighborhood (2019, City of Edina Staff).





## Driver 4: Service level expectations

- Land use: “We want homes, driveways, patios, walkways, pools, trees, parks, roads and more”
- Drainage: “Drain the land, make it usable to build homes and grow grass” “I want a useable basement”
- Stormwater management: “Make the water flow away quickly” “store water in planned areas” “Don’t erode or back water on my property”
- Flood management: “Protect lives and property”



## Other drivers

- Scale and pace of change. “it took 70-100 years to get into this, how long to get out?” “we built over wetlands”
- Problem solving vs. risk management “One property's solution is another's problem”
- Regulatory approach vs. utility approach: “do the minimum required for this project” vs. “Design a system to provide a service”
- Utility approach vs. social approach: “>2/3 of land is privately owned, and must be part of the solution”
- Water + gravity: “Inconsistently consistent.”
- Contradiction of dual mandate: “Flood protection and clean water”



# Is there consensus on values around flooding?

City Position; All land uses generate runoff but properties and facilities near low areas bear most of the risk.

- Viewpoint 1; “The city should fix this.” “The amount I have to pay to design this is unreasonable” “if the pipes were bigger, I wouldn’t have this problem”
- Viewpoint 2; “Some rain events are so large they overwhelm storage and pipe capacity.” “This will take a sustained and coordinated effort to solve” “We are willing to make tradeoffs as we build our home, driveway, road, patio, sport court, and landscaping to protect our property and others from flooding.”



# Is there consensus on knowledge around flooding?



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City Position; People learn about this topic when they have had an issue, after a flood or at the point of decision when they are asked to consider it.

- Viewpoint 1; “This is caused by my neighbors runoff” “Why are you trying to limit flow?”
- Viewpoint 2; “I am responsible for my own site drainage” “The runoff from my site affects me and anyone downstream” “Climate change is making this issue worse” “I need resources to reduce my risk”



# What kind of problem is flooding?



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## Values

Knowledge

	Consensus	Disagreement
Consensus	Technical	Political
Disagreement	Scientific	Social

Timothy M. Gieseke  
Shared Governance for  
Sustainable Working Landscapes



# Where the City is involved now



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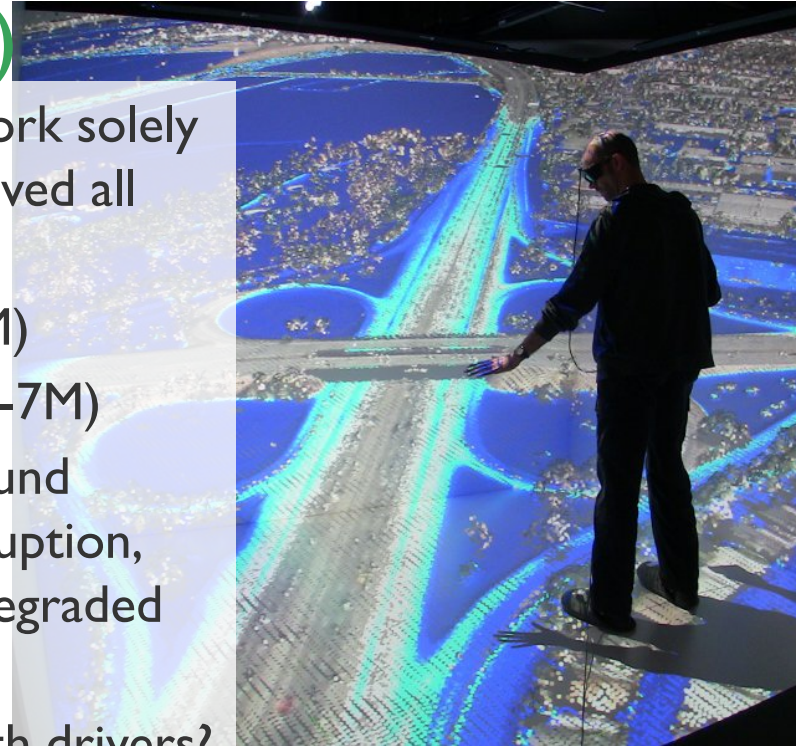
(sectors)

1. Stormwater utility (public infrastructure)
2. Land use permitting (land use, private infrastructure)
3. Issue investigation (community capacity, private infrastructure)
4. Parks (land use, public infrastructure)
5. Roads (land use, public infrastructure)
6. Emergency response
7. Risk communication
8. New grant program (community capacity)

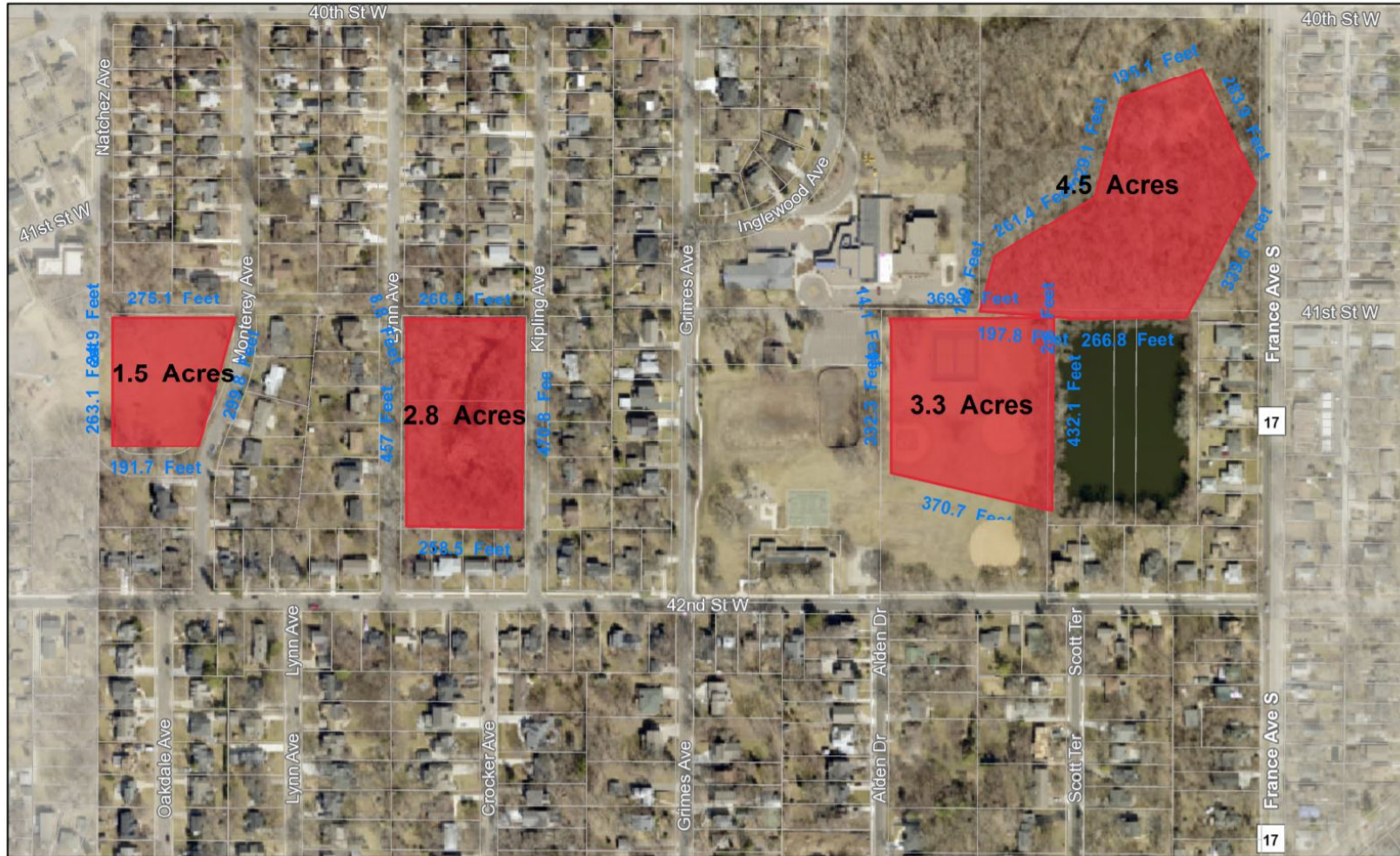


# What we've looked into so far (technical, public infrastructure)

- Several mitigation options explored that work solely in public right of way and parks, none removed all risk for all properties.
- Go Big: reduce 20-30% of flood risk (\$3-4M)
- Go Bigger: reduce 30-40% of flood risk (\$6-7M)
- Significant tradeoffs: Bigger pipes, underground chambers, pump stations, construction disruption, acres of tree removal, public open spaces regraded and lowered
- Will a 'technical only' approach keep up with drivers?



# Example Scale







# Key Questions for Council

1. What are the priority outcomes?
2. What does success look like?
3. What questions do you need answered?
4. How should we bring the public in to the conversation?
5. Who should we be talking to?
6. Who should we be learning from?

(next page – possible next steps)



# Where do we go next?



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## Possible efforts:

1. Preliminary technical scope of what the City could build to reduce flood risk?
2. Public engagement around infrastructure tradeoffs
3. Individualized risk reduction advice to homeowners
4. Policy review around land use/water policy
5. Public engagement around land use/water policy
6. Other ideas?

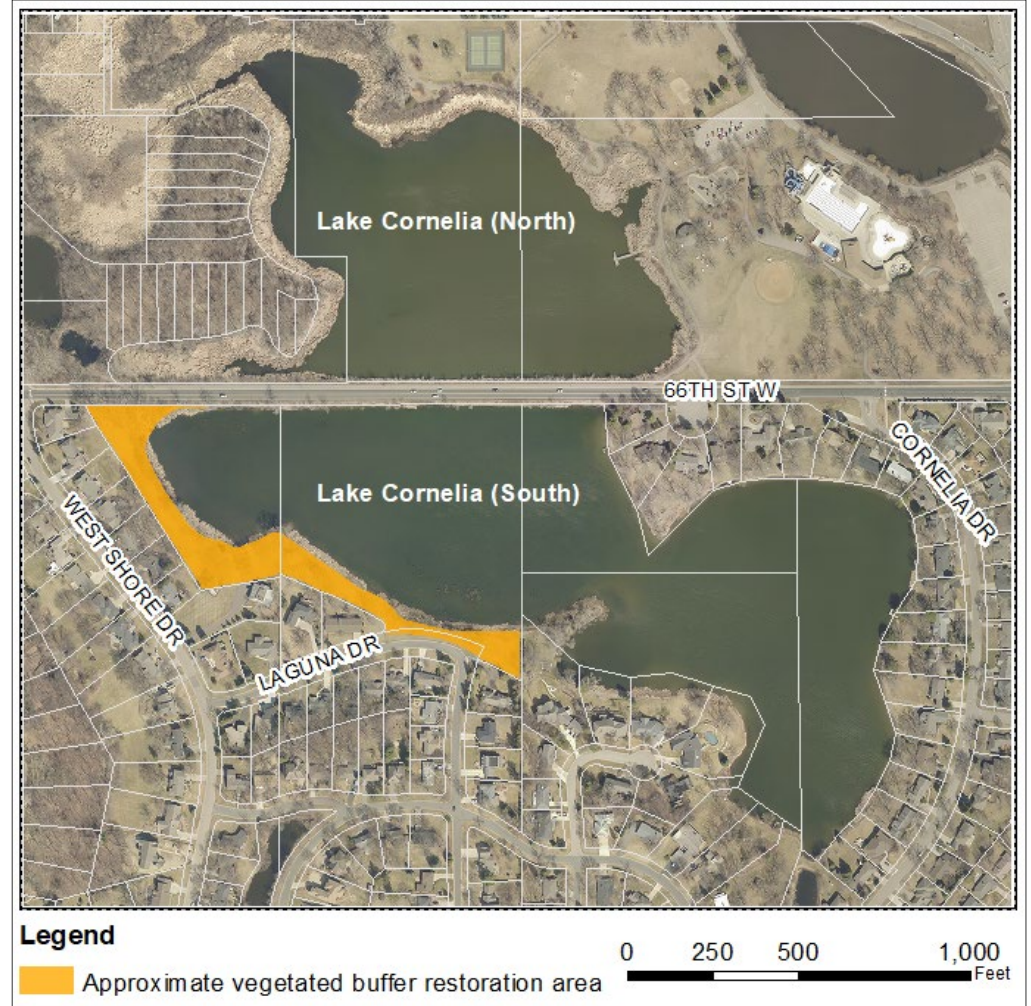


# Clean Water Strategy

- Lake Cornelia focal geography
- 2020 Clean Water Strategy Development
  - Leveraging current efforts of the Minnesota Pollution Control Agency and the Nine Mile Creek Watershed District
- Vegetated buffer project
  - Clean Water.** Lake Cornelia is polluted with excess nutrients, mainly phosphorus. Excess phosphorus fuels algae, including harmful blue-green algae blooms. Vegetated buffers promote clean water by filtering nutrients from water before it enters the lake.
  - Habitat.** Native plants support wildlife, including pollinators. The project includes management of invasive buckthorn.
  - Sustainability.** Native landscapes require less mowing which means savings in labor and equipment costs, fewer carbon emissions, and a more resilient landscape in a changing climate.

# Lake Cornelia vegetated buffer

- Removal of turf and invasive buckthorn on City property
- Restoration with native plants
- Ongoing maintenance
- Conservation easement





# Chloride Pollution Prevention

- City of Edina continues to be a leader
- 2018 City Council Resolution of Support for state law to limit liability for Smart Salting Certified private commercial salt applicators
- Model contract for snow and ice management
  - Embraces best practices to minimize environmental impacts while maintaining safety and addressing liability risk allocation.
  - Initiated and championed largely by a group of Edina residents.
- 2019 bills re-introduced

