The CITY of EDINA

PUBLIC PARTICIPATION SUMMARY
MORNINGSIDE FLOOD INFRASTRUCTURE PROJECT

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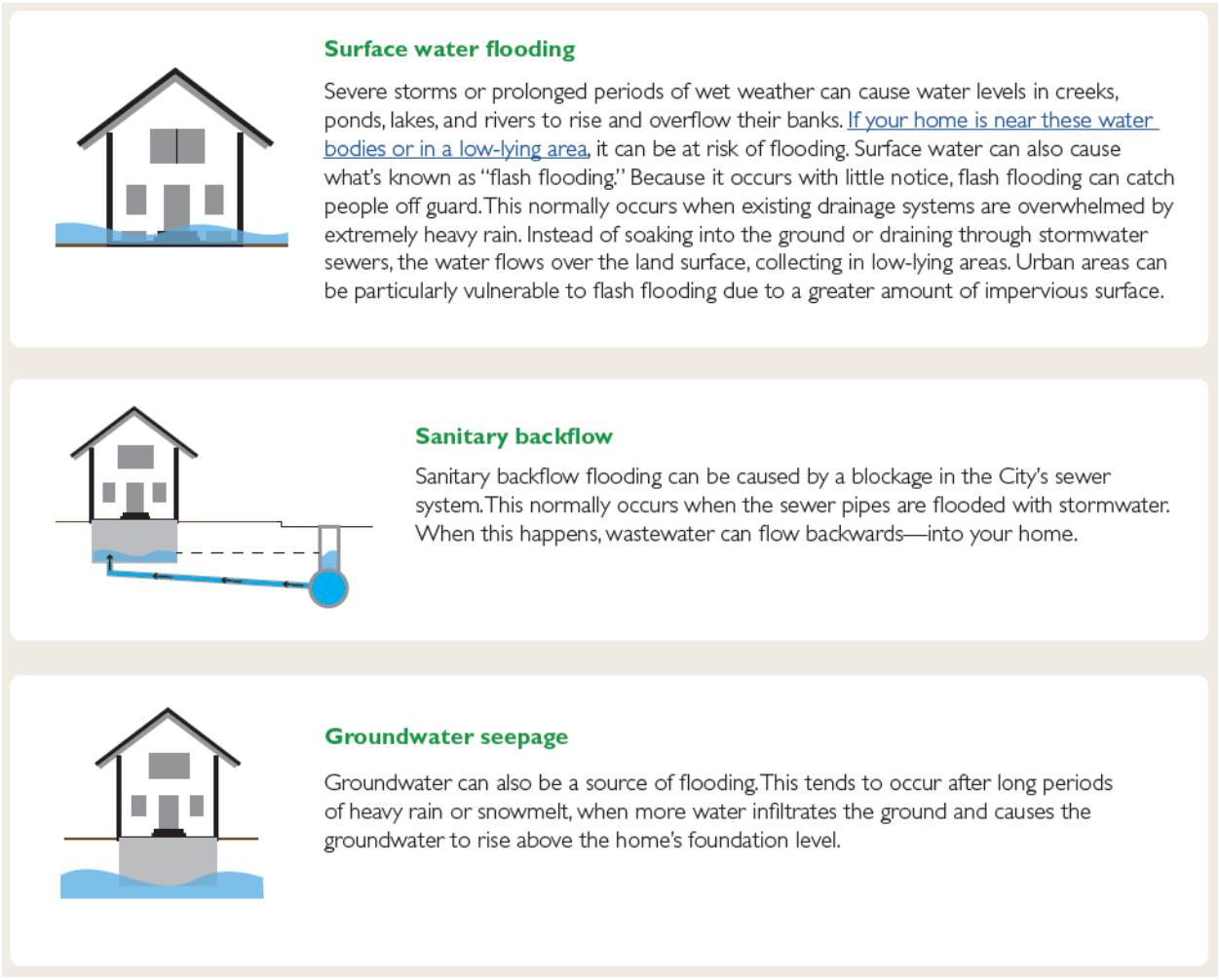
PUBLIC PARTICIPATION SUMMARY

PROJECT: MORNINGSIDE FLOOD INFRASTRUCTURE PROJECT

BACKGROUND

The Morningside neighborhood has several low or landlocked areas that are prone to flooding, and many homeowners experience varying levels of flooding when there is a significant rainstorm. Flooding can occur due to water flowing over the land surface, through groundwater seepage, and as a result of sanitary backflow (Figure 1).

Figure 1 – Causes of Flooding



Source: Barr Engineering, Morningside Flood Infrastructure Technical Memo, September 2020

The Edina City Council recently adopted a Flood Risk Reduction Strategy identifying four areas of work:

- Infrastructure
- Regulation
- Outreach and Engagement
- Emergency Services

Anticipated roadway reconstruction in the Morningside neighborhood in 2022 and 2023 presents an opportunity to explore infrastructure-based solutions to managing flood risk in the Morningside neighborhood. This is the first project to engage a neighborhood and plan flood infrastructure under the new strategy. The result of this work will be a recommendation to the City Council on infrastructure scenarios to address some of the flooding issues in the Morningside neighborhood in conjunction with the future roadway reconstruction projects.

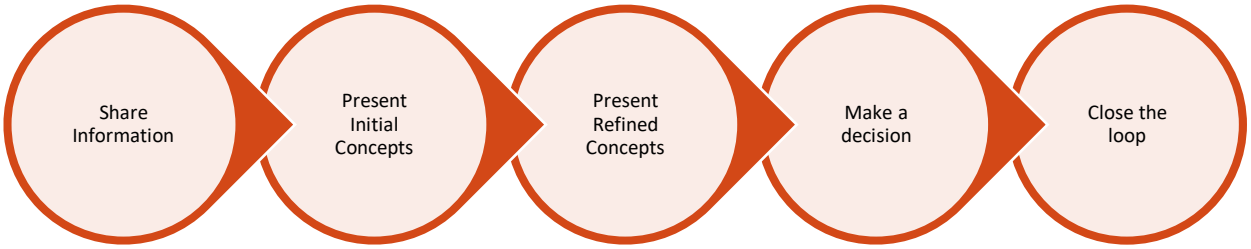
The City of Edina contracted with Barr Engineering to conduct technical studies, model water flow, and develop and evaluate multiple options for reducing flooding risk through infrastructure in the Morningside neighborhood. The technical report can be reviewed at www.BetterTogetherEdina.org/morningside.

PUBLIC PARTICIPATION PLAN

The City of Edina developed a public participation plan (Figure 2) for both informing Morningside residents and property owners about flood risk and engaging them in the development and evaluation of infrastructure options for reducing flood risk. The plan acknowledged that any decisions would be made by the Edina City Council and identified the following key stakeholders:

- Morningside Neighborhood residents
- Morningside Neighborhood Association
- Park and Recreation Commission
- Energy and Environment Commission
- Planning Commission
- Avail Academy (formerly Calvin Christian School)
- Minnehaha Creek Watershed District
- City of St. Louis Park
- City of Minneapolis

Figure 2 - Public Participation Approach



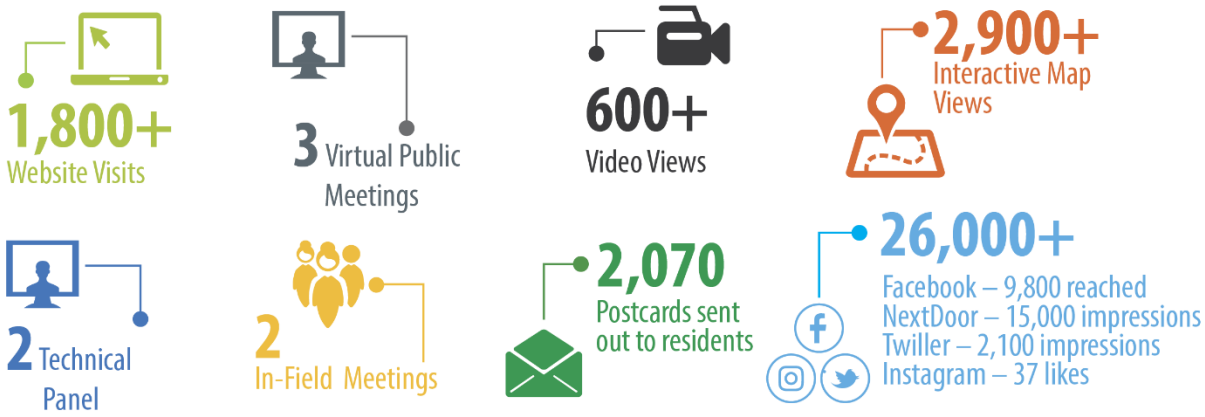
Objective	**The City will share flood risk information and the City's Flood Risk Reduction Strategy. Staff will inform people of actions they can take to reduce their own flood risk. Staff will inform people of the project and process.**	**The City will present initial concepts and receive feedback. The City will gauge community values and the tradeoffs people are willing to consider.**	**The City will refine concepts based on feedback and present them for more feedback. Staff will describe how feedback was used.**	**Staff will make a recommendation to Council. Council decides.**	**Staff will communicate the decision to the public. Staff will archive the project and process online.**
Anticipated Outcomes	People are risk aware. People have access to information about how to reduce their exposure and vulnerability to flooding. People know how and when to provide feedback.	People have access to information. People have the ability to provide their feedback.	People have access to information. People know how initial feedback was used. People have the ability to provide their feedback.	The recommended concept-level design is influenced by community values.	People know what decision was made. People can view the information, process, and decision on the BetterTogetherEdina webpage.
Timeline	Summer 2020	Fall 2020	Winter 2020	Spring 2021	Spring 2021

Source: City of Edina, Public Participation Plan, Morningside Flood Infrastructure Project, approved April 21,2020

The public participation plan included five key steps that are concurrent with steps in the technical analysis and design phases of the project. These steps and the public participation objectives of each phase are shown in Figure 2. The purpose of this report is to document the public participation activities and the resulting input for Phases 1-3.

Due to the Covid-19 pandemic, the strategies used to engage people in the Morningside Flood Infrastructure Project during 2020 were modified to use primarily online tools (www.BetterTogetherEdina.org/morningside) and virtual meetings. In-field activities that were designed for social distancing were also used along with email, social media, and direct mail correspondence. Public Participation in Phase 1-3 activities is summarized in Figure 3.

Figure 3 - Public Participation in Phases 1-3



Note: Data is from project start through January 18, 2021

PHASE 1: SHARE INFORMATION

The purpose of Phase 1 public participation was to build an understanding of the complexities and history of flooding and flood risk in the Morningside neighborhood, as well as to gain an understanding of people's concerns and to answer questions about flooding, flood risk and the process being used for the Morningside Flood Infrastructure Project. A web page – www.BetterTogetherEdina.org/morningside - was established to provide ongoing information about the project, provide access to project documentation, and provide an ongoing means for people to share their opinions through an ideas board, an interactive map, and a survey. In addition, a virtual meeting was held on June 3, 5-6:30 p.m., and a socially distanced "walk the line" event was held in Weber Park.

SURVEY

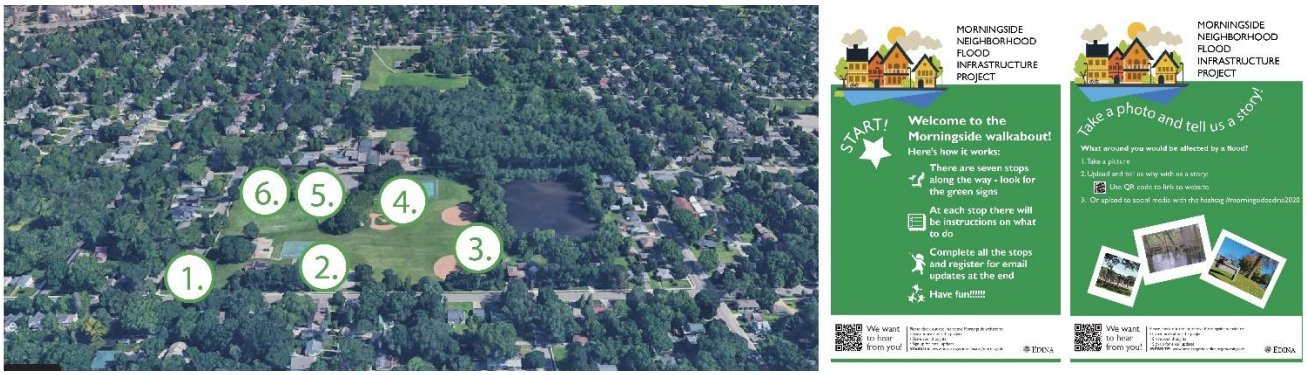
An online survey was conducted on www.BetterTogetherEdina.org/morningside to gain a better understanding of people's experiences with flooding and things they had done to reduce flooding on their properties. While only eight people responded to the survey, almost all of those people had experienced flooding in the Morningside neighborhood.

- Yard flooding was the most common type of flooding, followed by street and basement flooding.
- A quarter of respondents experience flooding more than once a year and a quarter experience flooding every year or every few years.
- Almost half of the respondents said they have a plan for flooding, but they would not feel prepared.
- The most common strategies that people installed on their properties to help with flooding were gutters and downspouts, landscaping, regrading, and sump pumps.

"WALK THE LINE" ACTIVITY IN WEBER PARK

An outdoor activity that people could do independently was set up in Weber Park for approximately three weeks in late June 2020. The purpose of this activity was to provide information about the causes of flooding, the types of flooding, the Morningside Flood Infrastructure Project, and what people can do on their own properties to reduce flooding. QR codes were provided so that people could provide real time comments or take the survey by linking directly to www.BetterTogetherEdina.org/morningside. The displays were spaced apart so that people could be socially distanced while viewing the displays and participating in the activities (Figure 4). This event was announced through social media and the project website. The field experience was also replicated in an online interactive story map. Details of the exercise are provided in Appendix B.

Figure 4 - "Walk the Line" Field Activity



VIRTUAL PUBLIC MEETING

A live virtual public meeting was held on June 3, 2020, 5-6:30 p.m. via WebEx/YouTube. The purpose of this meeting was to provide information to people about flooding in the Morningside neighborhood (causes, types, history, frequency, etc.) and to provide an opportunity for people to ask questions and provide comments about the Morningside Flood Infrastructure Project. Notices about the meeting were sent to almost 700 addresses in the Morningside neighborhood (see Appendix A), and the meeting was also publicized through social media and the Better Together Edina website. Key stakeholders were notified of the meeting and asked to share information about the meeting with their constituents. During the meeting, people were also directed to the project webpage if they wished to provide additional comments and were given the opportunity to meet individually with staff about concerns that they had about a particular property. Questions and comments received during the virtual public meeting are summarized here. The presentation can be viewed on the project webpage.

- Concerns were expressed about the amount of recent redevelopment in the neighborhood and an associated increase in impervious surfaces and runoff. *Staff commented that impervious cover is more of a historical driver of flood risk in the neighborhood and climate change and aging infrastructure are the biggest current drivers. Properly managing drainage with impervious cover is most valuable for smaller, more frequent storms. For larger storms, increases in impervious cover were less important. During heavy rain events, pervious areas such as lawns become saturated with water and then experience runoff that is similar to impervious areas.*
- There were questions about flooding experiences on specific properties. *Staff talked one-on-one with these individuals following the meeting.*
- Information was provided about planned street construction projects in the neighborhood.
- A question was asked about whether properties or yards would be acquired to provide the necessary flooding infrastructure. *Staff responded that the city does not expect to acquire property or easements for flood infrastructure. The work will focus on existing streets, rights-of-way, easements, and parks.*
- One person commented that temporary flooding of streets and parks would be acceptable if it did not increase flooding risk for permanent structures.
- Several clarifying questions were asked and responded to regarding climate change, frequency of flooding, terminology, and flood protection actions that homeowners can take.

COMMUNICATION WITH KEY STAKEHOLDERS

In addition to the activities described above, city staff met with individuals upon request. City staff met with both Susan Lindgren School and Avail Academy to review the flood risks for each property and gauge the willingness of each to be included in the planning for flood

risk reduction scenarios. Both schools are amenable to planning and interested in the project benefits of each scenario. City staff maintains frequent contact with the Morningside Neighborhood Association, in particular about upcoming events. The Association has been helpful in getting the word out about these events and places to get information about flooding and the project. The City also provided flood data that could be downloaded and viewed using Google Earth prior to the second live virtual public meeting.

https://www.bettertogetheredina.org/morningside/news_feed/view-flood-data-on-google-earth

During Phase 1, Barr Engineering and the City met with a panel of experts for an Estimate-Talk-Estimate (ETE) or mini "Delphi" meeting to vet developed scenarios and to propose new or refined concepts for the community to consider. This group included representatives from the cities of Minneapolis and St. Louis Park and from four local engineering consulting companies. The first meeting of this group was held on July 29, 2020. The discussions at this meeting resulted in technical refinements of flood reduction scenarios that were subsequently presented to a City Council workshop held on September 1, 2020, and at the virtual public meeting held on September 3, 2020.

PHASE 2: PRESENT INITIAL CONCEPTS

During Phase 2, efforts continued to build understanding of flooding in the Morningside neighborhood. In addition, several scenarios for managing flood risk were evaluated. Flood infrastructure elements were presented at a virtual public meeting on September 3, 2020, 5-6:30 p.m.

VIDEOS

Two videos were produced, published on YouTube, and linked on the project website. These videos included:

- A video that explains how and why flooding occurs including the types of flooding, flooding frequency, terminology and contributing factors.
- A series of videos from the stormwater model showing neighborhood flooding for varying design storms.

VIRTUAL PUBLIC MEETING

A live virtual public meeting was held on September 3, 2020, 5-6:30 p.m. via WebEx/YouTube. The purpose of this meeting was to provide information to people about the various flood infrastructure elements that were being considered to reduce flood risk in the Morningside neighborhood and to provide an opportunity for people to ask questions and provide comments. Notices about the meeting were sent to almost 700 addresses in the Morningside neighborhood (see Appendix A), and the meeting was also publicized

through social media and the project website. Key stakeholders were notified of the meeting and asked to share information about the meeting with their constituents. People were directed to the project webpage to provide additional comments/questions and were given the opportunity to meet individually with staff about concerns they had about a particular property. Questions and comments received during the virtual public meeting are summarized below. The presentation can be viewed at www.BetterTogetherEdina.com/morningside.

- There were questions about flooding experiences on specific properties. *Staff talked one-on-one with these individuals following the meeting.*
- Where does the Weber pond outflow to and can the capacity of that area be increased? *Weber Pond has one outlet pipe that runs north, then east through Minneapolis to Bde Maka Ska. Although a bigger pipe is technically feasible, the cost as well as the transfer of risk to the City of Minneapolis, which has its own flooding problems, makes it unworkable.*
- 41st Street right-of-way does not continue between Kipling and Grimes – that was turned into private property some time ago. *That is correct.*
- Does the City of Edina own the Susan Lindgren land area west of Monterey? *This property is owned by the St. Louis Park School District.*
- Should the City prohibit new construction on lots that are high risk (red on map)? *This is a regulatory issue that is not part of the infrastructure project. When properties redevelop, there is an opportunity to reduce vulnerability to flooding.*
- Will residents be able to discharge sump lines into the sewer system in all options? *Sump pump drains should be connected to the stormwater system – it is illegal to connect them to the sanitary sewer system. There is a factsheet available about this topic at www.EdinaMN.gov/flooding.*
- Some of the options look very expensive. Will these expenses be borne by residents through assessments for street reconstruction or is this a budget item for the city? *The sanitary sewer, municipal water, and stormwater utilities all have designated funds from quarterly utility bills. The special assessment is for the roadway reconstruction. Because the flood infrastructure will be paid from the stormwater utility fund, the City does not foresee the project impacting special assessments.*
- Are there ways to add fill to a property to reduce flooding without negatively impacting the flood areas? *This depends on the property. Every grading permit (over 10 cubic yards) is reviewed for stormwater flow paths and flooding potential.*
- How does the city interact with builders to be more water removal conscious by providing down spouts directed to rain gardens or deep into the groundwater? *The City interacts with builders through the plan review and permitting process.*
- How does the current economic situation affect the road reconstruction timeline? *The street reconstruction project is continuing as planned.*

COMMUNICATION WITH KEY STAKEHOLDERS

During Phase 2, city staff continued to meet with individuals upon request. City staff continued to have discussions with both Susan Lindgren School and Avail Academy as well as adjoining cities to review the flood risk infrastructure scenarios. City staff kept the Morningside Neighborhood Association informed about upcoming events. The Association has been helpful in getting the word out about the project.

During Phase 2, Barr Engineering and the City met again with the ETE panel of experts for an Estimate-Talk-Estimate (ETE) – only the representatives from the cities of Minneapolis and St. Louis Park were able to attend – on November 9, 2020. The purpose of this second meeting was to update the group on refinements to scenarios and seek comments on the refined concepts and concept-level cost estimates. This review led to additional refinements in the flood reduction scenarios, which were shared with the public during a live virtual public meeting held on December 9, 2020.

PHASE 3: PRESENT REFINED CONCEPTS

Following the completion of Phase 2, attention was turned to refining the various concepts into several flood risk management scenarios. These scenarios were documented in several one-pagers (see Appendix C) that were posted on the project website. A Halloween-themed field activity (with social distancing) was held in Weber Park on October 31st, and a live virtual public meeting was held on December 9, 2020, 5-6:30 p.m.

"HALLOWEEN-THEMED" ACTIVITY IN WEBER PARK

An outdoor activity that people could do physically distanced was set up in Weber Park on October 31, 2020. This included several display boards of the one-pager materials (see Appendix C) as well as tables with individual bags of candy, copies of the one-pagers, and contact information. Staff was available (with masks and social distancing) from 1-3 p.m. to explain the scenarios and answer questions. The purpose of this activity was to provide information about the scenarios that were tested and collect feedback. QR codes were provided so that people could make real time comments or leave comments online by linking directly to the project webpage. The displays were spaced apart so that people could be socially distanced while viewing the displays and participating in the activities (Figure 5). The displays remained available for public viewing in the park for approximately three weeks. This event was announced through social media and the www.BetterTogetherEdina.org/morningside website.

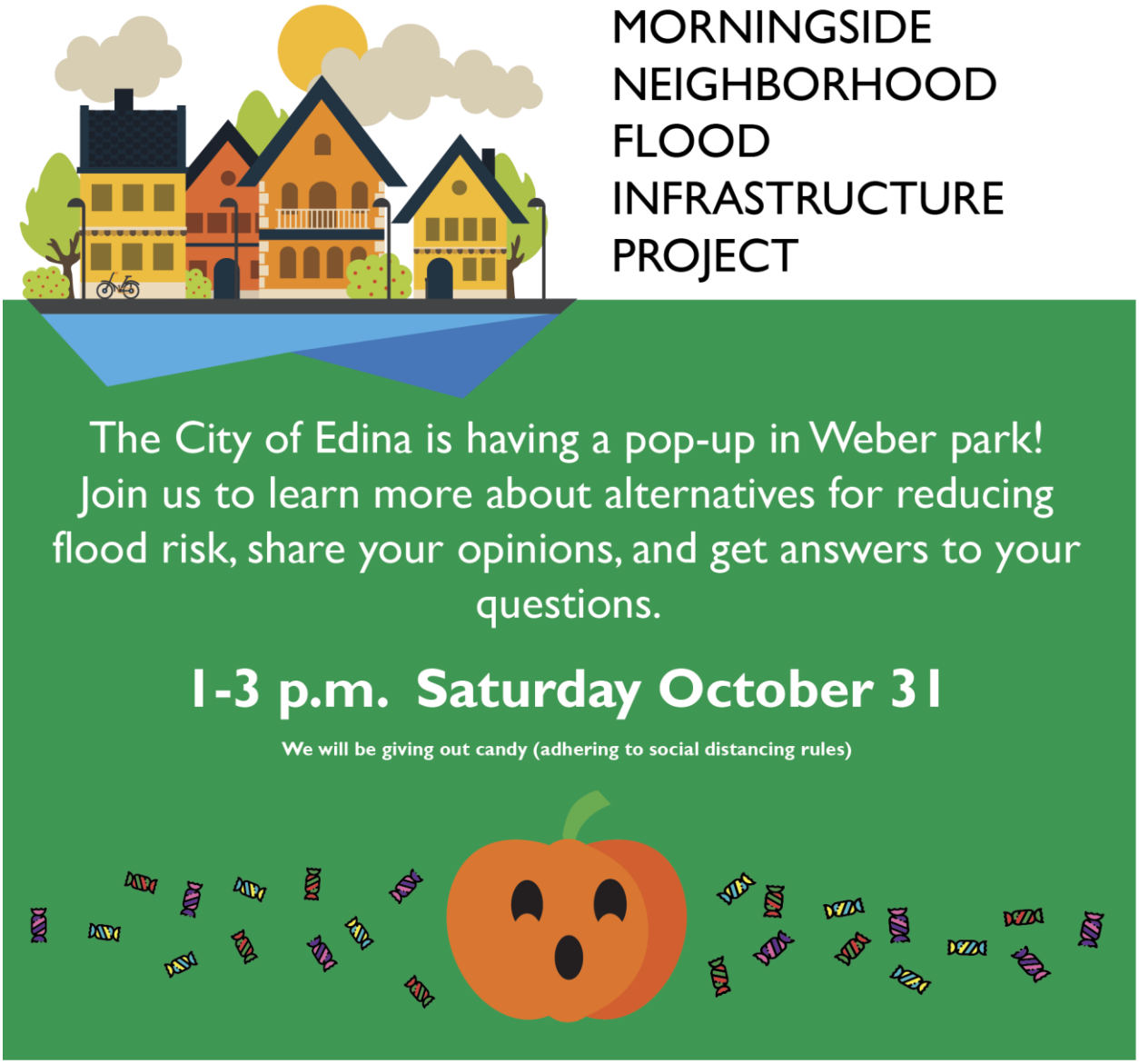


Figure 5 - Halloween-Themed Field Activity

VIRTUAL PUBLIC MEETING

A third live virtual public meeting was held on December 9, 2020, 5-6:30 p.m. via WebEx/YouTube. Following the live virtual meeting in September, scenarios were tested and modified based on public feedback. The purpose of the meeting was to share the refined concept, describe how feedback was used, and provide an opportunity for people to ask questions and provide comments. Notices about the meeting were sent to almost 700 addresses in the Morningside neighborhood (see Appendix A), and the meeting was also publicized through social media and the project website. Key stakeholders were notified of the meeting and asked to share information about the meeting with their constituents. People were directed to project website to provide additional comments and were given the opportunity to meet individually with staff about concerns that they had about a particular property. Questions and comments received during the virtual public meeting are summarized here. The presentation can be viewed at www.BetterTogetherEdina.org/morningside.

- Some participants indicated they like the idea of expanding Weber Pond and improving Weber Park and the trails.
- Some people expressed a desire to protect wildlife and trees and had questions about the potential impacts of the proposed scenario.
- Concerns were expressed that reducing flood risk on some properties would not increase flood risk on other properties. *Staff responded that a key design goal of scenario development was to make sure that no homes would have increased risk. They were able to meet that design goal for each of the three levels of effort.*
- It was suggested that adding street inlets would better utilize existing pipe flow capacity and reduce water and ice build-up from sump pumps. *Staff responded that additional outlets to optimize use of pipe capacity were included in the recommended scenario.*
- A question was raised about whether excavation would occur on private property. *Staff responded that all excavation would occur on public lands.*
- There were some questions about why Crocker was selected as the preferred alignment. *Staff responded that Crocker is preferred because 1) there is an existing pipe on Crocker that would need to repaired and there are some cost savings if an existing pipe can be upsized, 2) there would be better opportunity to provide more flood benefit in the future if more space were created downstream, and 3) because of the grade of the streets less earth would have to be dug through if Crocker were used.*
- A question was asked about landscape and property restoration. *Staff responded that landscape and property restoration costs would be included in the project.*
- Concerns were raised about the cost of the scenario and how infrastructure improvements would be funded. *Staff responded that cost/funding is related to the desired level of service. This project has helped the city to understand what is achievable, what the cost would be, and what the community would support. The level*

of effort in this neighborhood and citywide has not yet been determined. Community feedback during this process and the Council's decision in 2021 will guide the service level and associated funding.

- There were several questions about specific properties. *Staff offered to have individual conversations about specific properties.*

COMMUNICATION WITH KEY STAKEHOLDERS

During Phase 3, city staff continued to meet with individuals upon request, and continued to have discussions as needed with key stakeholders. Many of these conversations were captured on the project website. City staff continued to update the Morningside Neighborhood Association about upcoming events. The Association has been helpful in getting the word out about these events and about where to get information about the project.

The following meetings have been or will be held prior to presentation of the Morningside Flood Infrastructure Project to City Council:

- Morningside Neighborhood Association Steering Committee Check-In – January 4
- Energy and Environment Commission - January 14
- Planning Commission – January 27
- Park and Recreation Commission – February 9 (tentative)
- Minnehaha Creek Watershed District – February 16 (tentative)

MAJOR THEMES

The following are major themes heard from residents during Phases 1-3:

- People seem to highly value open spaces and the wildlife they support. They seemed supportive of protecting and enhancing natural areas. Some people expressed support for expanding/deepening Weber Pond, improving/modifying Weber Park, and expanding the trail system.

- People are concerned about the amount of recent redevelopment in the neighborhood and the permitting process and requirements for building in areas with flood risk.

- People are interested in understanding the causes, frequency and other aspects of flooding and flood risks and are open to doing what they can as property owners to reduce their own flood risk.

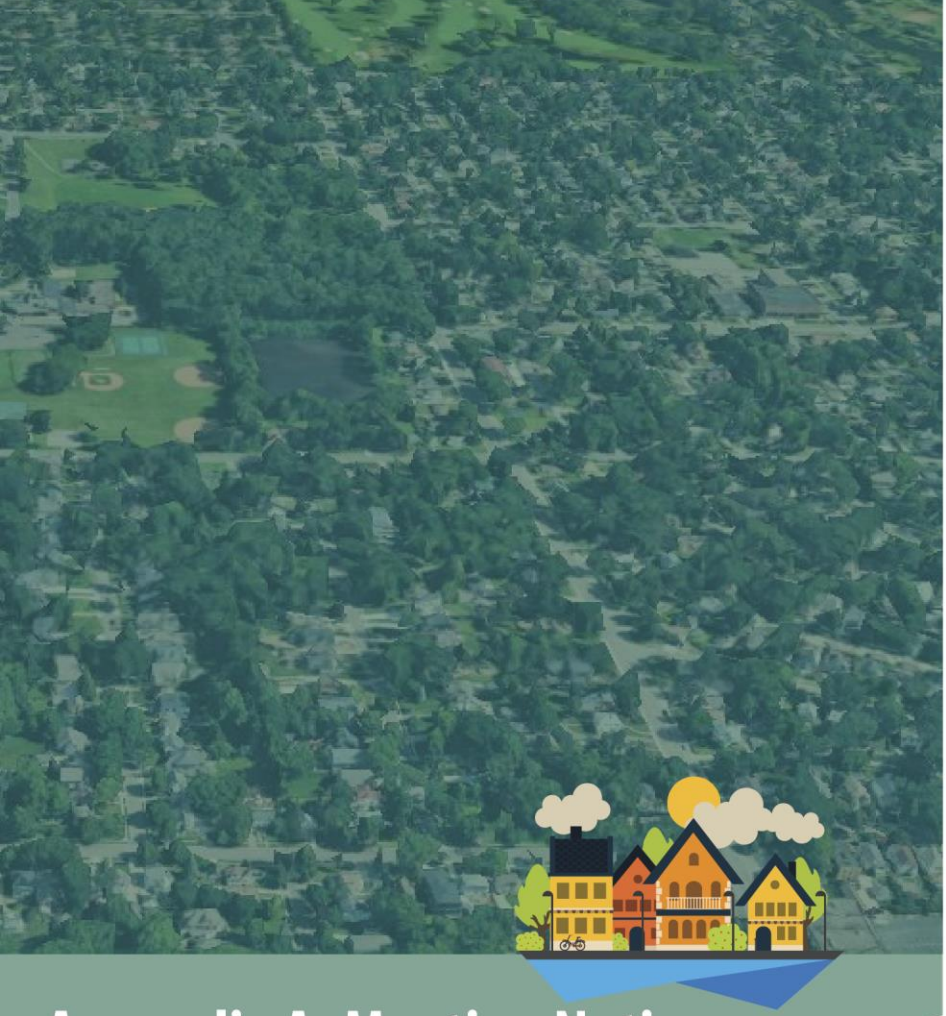
- People seem to understand the potential impacts of climate change and expressed an appreciation that this was considered in developing the flood infrastructure scenarios.

- People expressed concerns about the acquisition of properties or yards and excavation on private property. There was also interest in property restoration being included as part of project cost.

- People do not support infrastructure options that increase risk for downstream properties.

- People are concerned about the cost of flood infrastructure and the funding for infrastructure construction.

- People seemed supportive of moving an infrastructure project forward.



Appendix A- Meeting Notices

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

The City of Edina is considering some infrastructure improvements to help reduce flooding impacts in the Morningside Neighborhood. The City will host a virtual public meeting with residents 5-6:30 p.m. June 3. Join the conversation to learn more about flood risk and infrastructure options and to share your experiences and concerns about local flooding. There will be a presentation, question-and-answer session and real-time survey.

Better Together

EDINA

We want to hear from you!

The City of Edina invites you to attend a virtual public meeting.

Learn about:

- Your flood risk
- Edina's Flood Risk Reduction Strategy
- Project information and timeline
- How to reduce your flood risk
- How to stay involved

Participate in a real-time survey and question-and-answer session.

5-6:30 p.m. Wednesday, June 3, Join the meeting here:

www.bettertogetheredina.org/morningside

City of Edina
Engineering Department
7450 Metro Blvd.
Edina, MN 55439

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

EDINA

Virtual Meeting #2

The City will host a second virtual public meeting with residents from 5-6:30 p.m. on September 3rd.

We used your input from the first meeting to help develop initial concepts for reducing flood risk in Morningside. Thank you for your input! The initial concepts and their pros and cons will be presented at the meeting on September 3rd. Join us to hear about the concepts, ask questions, and share your opinions.

We want to hear from you!

The City of Edina invites you to **Virtual Public Meeting #2** to learn about initial concepts for reducing flood risk in the Morningside neighborhood.

5-6:30 p.m. Thursday, Sept. 3,
Join the meeting here:
www.bettertogetheredina.org/morningside

City of Edina
Engineering Department
7450 Metro Blvd.
Edina, MN 55439

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

What we've been up to!

- We've looked at what storm infrastructure can reduce flood risk
- We'xe weighed tradeoffs to roads, parks and related City services
- We've looked at opportunities for improving the park while making room for flood waters

Join us!

The City of Edina is considering some infrastructure improvements to help reduce flooding impacts in the Morningside neighborhood. The City will host a third virtual public meeting with residents **5-6:30 p.m. Dec. 9th.** We've come up with a new revised concept that maximizes the flood risk reduction benefit. Join us to learn more and tell us what you think.

EDINA

We want to hear from you!

The City of Edina invites you to attend a virtual public meeting #3.

Learn about:
- The ideas we've tested
- How community feedback has been used
- Project information and timeline
- How to stay involved

There will be a presentation with question-and-answer session.

5-6:30 p.m. Wednesday, Dec 9th
Join the meeting here:
www.bettertogetheredina.org/morningside

City of Edina
Engineering Department
7450 Metro Blvd.
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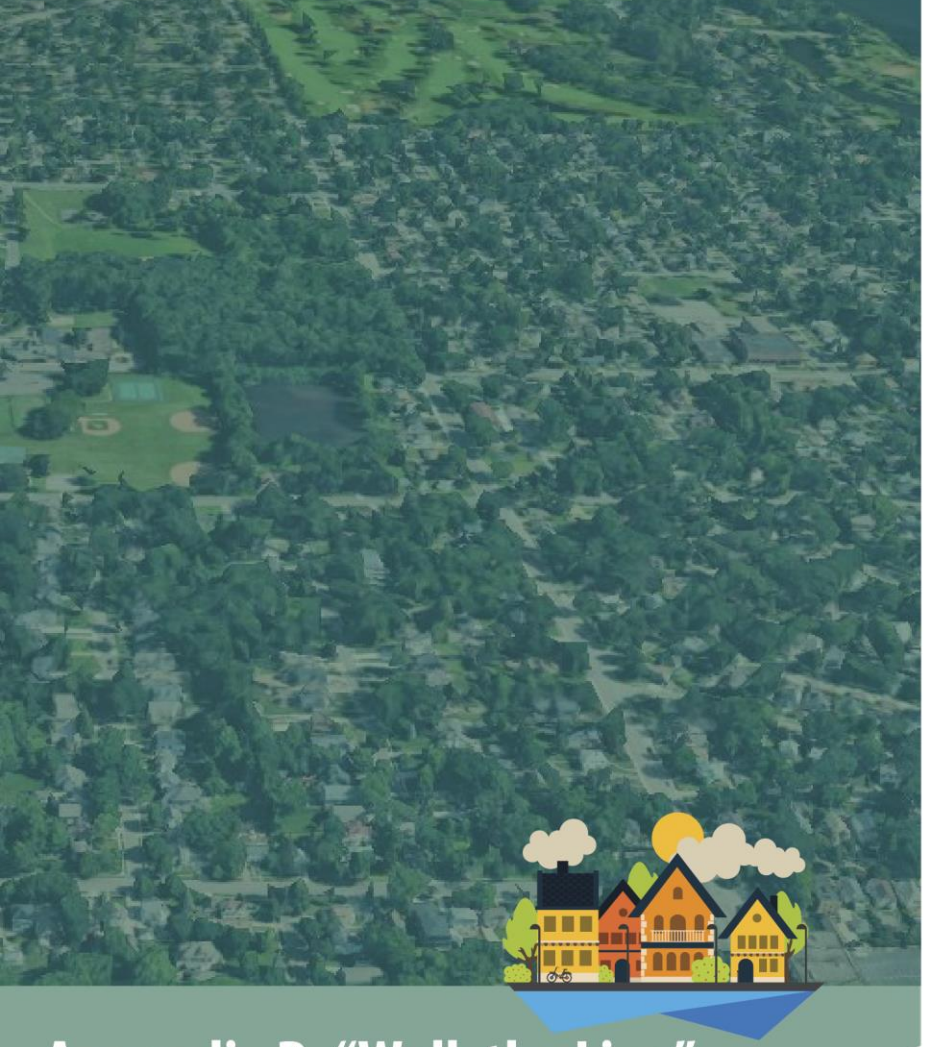


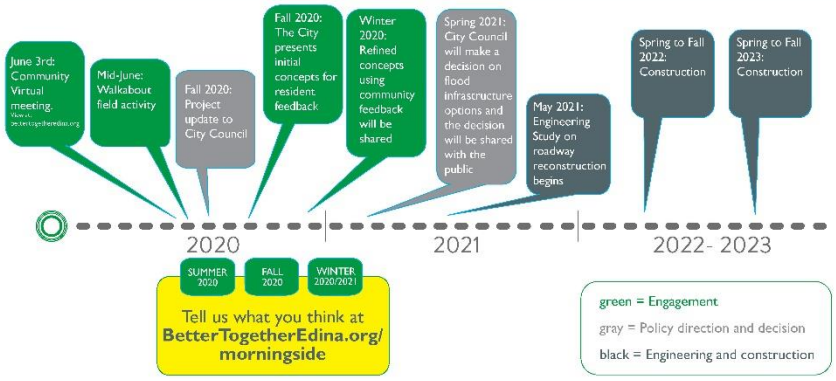
Appendix B- "Walk the Line" Activity Displays

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

WHAT'S GOING ON?

The Morningside neighborhood has several low or landlocked areas that are prone to flooding. The City Council recently adopted a Flood Risk Reduction Strategy identifying four areas of work; infrastructure, regulation, outreach and engagement, and emergency services. This is the first project to engage a neighborhood and plan flood infrastructure under the new strategy. The result of this work will be a recommendation to the City Council on infrastructure options to address some of the flooding issues in the Morningside neighborhood in conjunction with the future roadway reconstruction projects.

PROJECT TIMELINE



MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

START!

Welcome to the Morningside walkabout!

Here's how it works:

- **There are seven stops along the way - look for the green signs**
- **At each stop there will be instructions on what to do**
- **Complete all the stops and register for email updates at the end**
- **Have fun!!!!!!**

We want to hear from you!

Please check out the interactive Morningside website to:
- Learn more about the project
- Share your thoughts
- Sign up for email updates

WEBSITE: www.bettertogetheredina.org/morningside

EDINA

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

Take a look at the graphics that show different potential flood events and their flood lines.

Mapping Exercise:
Can you find yourself on the map? What flood zone are you standing in?

Answer on the back of this board

10% chance of flooding every year
=
At least a 95% chance of flooding during a 30-year mortgage

1% chance of flooding every year
=
At least a 25% chance of flooding during a 30-year mortgage

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

Take a photo and tell us a story!

What around you would be affected by a flood?

1. Take a picture
2. Upload it and tell us why with a story:

Use QR code to link to website or email it to jwilson@edinamn.gov

We want to hear from you!

Please check out the interactive Morningside website to:
- Learn more about the project
- Share your thoughts
- Sign up for email updates

WEBSITE: www.bettertogetheredina.org/morningside

EDINA

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

What can you do to reduce exposure and vulnerability to flooding around your property?

Would you like to learn more?
www.EdinaMN.gov/flooding

We want to hear from you!

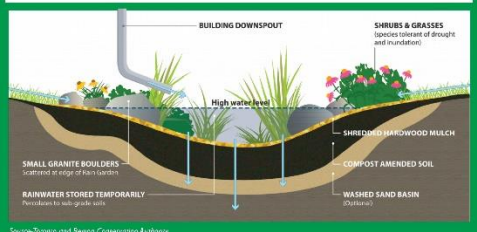
Please check out the interactive Morningside website to:
- Learn more about the project
- Share your thoughts
- Sign up for email updates

WEBSITE: www.bettertogetheredina.org/morningside

EDINA

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

Do you know what a rain garden looks like underground?
Check this out!
Do you have any of these plants in your yard?



Source-Toronto and Region Conservation Authority

GRASSES

big bluestem – sun, partial sun

tufted hairgrass – sun, partial sun

little bluestem – sun

FLOWERING HERBACEOUS PLANTS

wild columbine – sun, partial sun

butterfly weed – sun

white turtlehead – sun, partial sun,

oxeye sunflower – sun

wild bergamot – sun, partial sun

New England aster – sun, partial sun

SHRUBS

red-osier dogwood – sun, partial sun

eastern ninebark – sun, partial sun

nannyberry – sun

We want to hear from you!

Please check out the interactive Morningside website to:
- Learn more about the project
- Share your thoughts
- Sign up for email updates

WEBSITE: www.bettertogetheredina.org/morningside

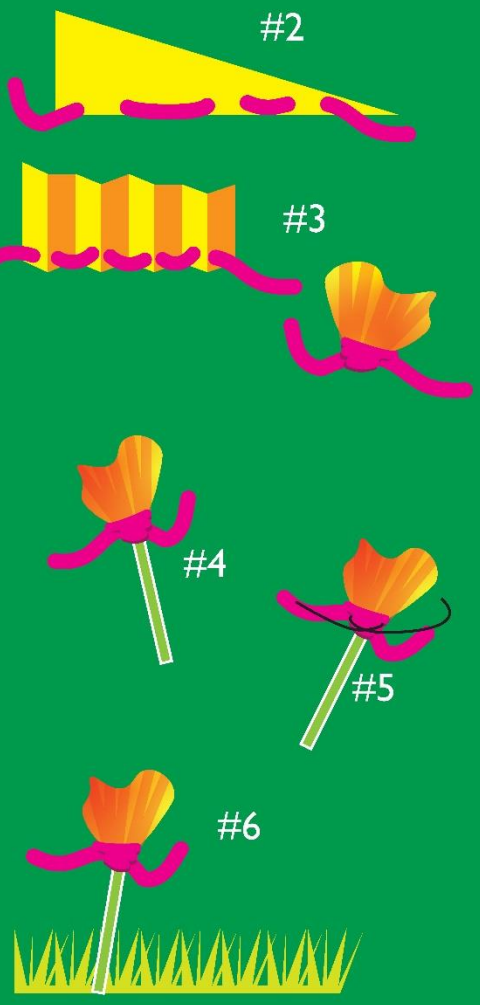
EDINA

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

Now that we have learned about rain gardens, let's make one!

To make a flower:
#1 Take a green dowel, a pipe cleaner, a piece of wire and one foam piece.
#2 Gently poke the pipe cleaner through the bottom of the foam (like you are sewing).
#3 Sinch it up.
#4 Push the dowel into the base of the flower.
#5 Wrap with a piece of wire.
#6 Now place it in the ground.

Congrats, you made a flower for the community garden!



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EDINA

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

Can you guess how many Edina water towers it would take to hold the runoff from a 1% annual chance flood event?

(Lift flap after you have a guess)

It would take **103** water towers to hold the runoff water from a **1%** annual chance flood in the Morningside Neighborhood

The Southdale water tower has 500,000 gallons capacity. It would take 103 Southdale water towers to store the 1% annual chance flood, which is 51,810,300 gallons.

Thank you for participating!

We want to hear from you!

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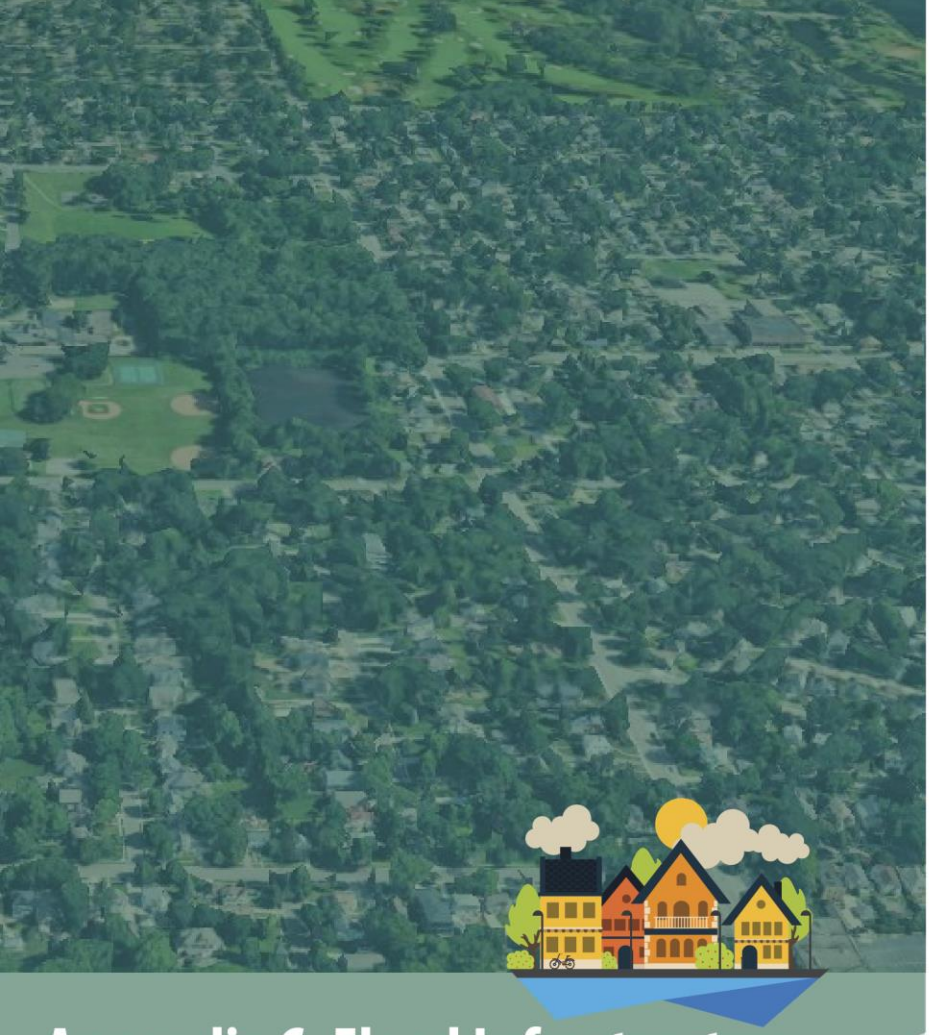
EDINA



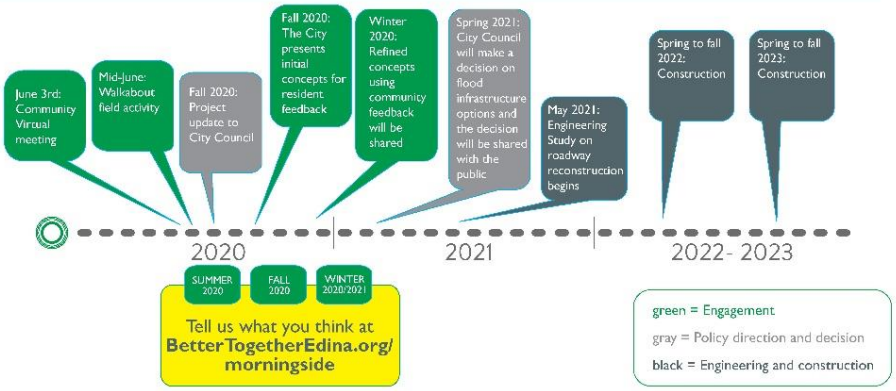
Appendix C- Flood Infrastructure Scenarios

MORNINGSIDE NEIGHBORHOOD FLOOD INFRASTRUCTURE PROJECT

WHAT'S GOING ON?

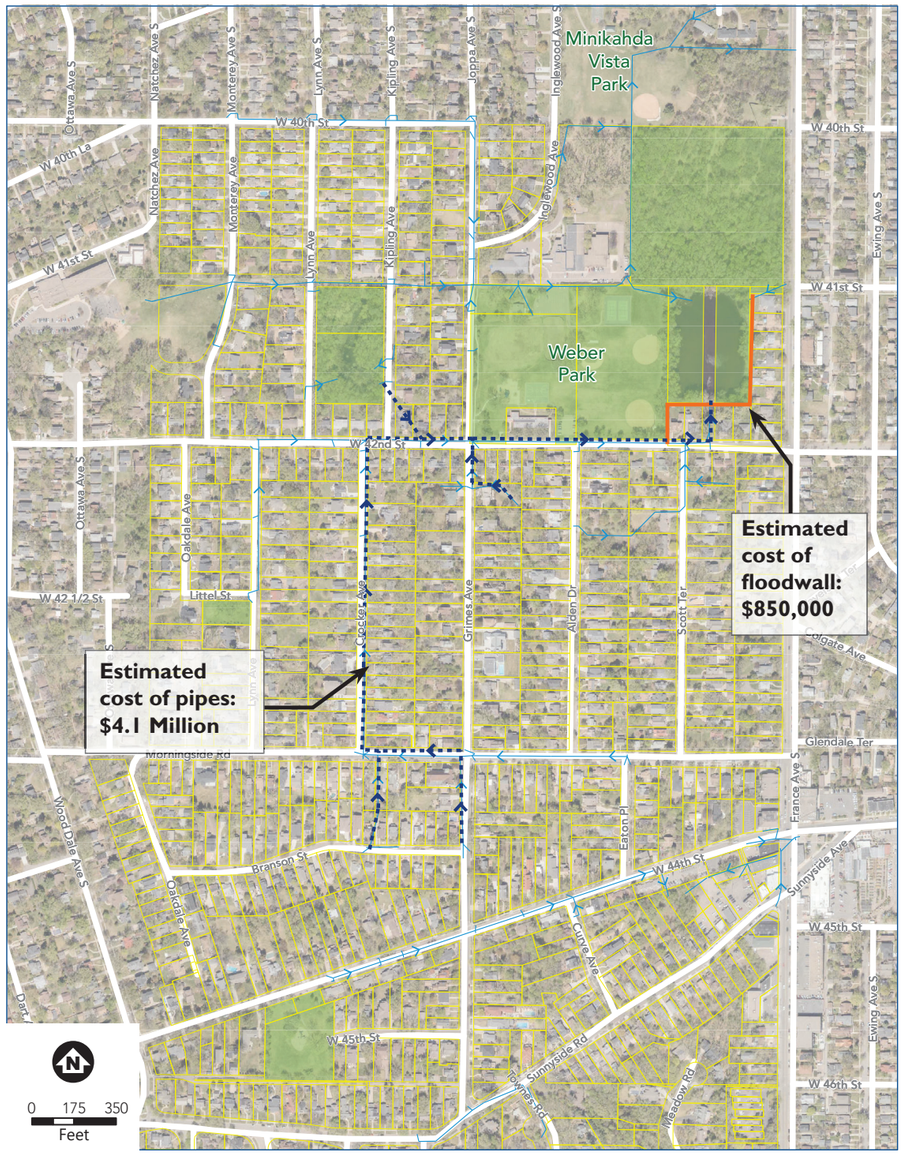
- We're looking at what storm infrastructure can reduce flood risk
- We're weighing tradeoffs to roads, parks and related City services
- We're looking at opportunities for improving the park while making room for flood waters

PROJECT TIMELINE



Morningside Flood Infrastructure Project
Scenario: Pipe Sizes and Floodwalls

Provide your feedback for these scenarios at: ***www.bettertogetheredina.org/morningside***



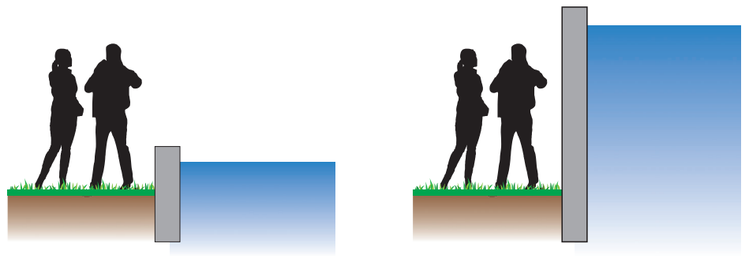
LEGEND

- Existing Park
- Parcels
- Existing Storm Sewer Pipe
- Increased Pipe Size and/or New Storm Sewer
- Floodwall

WHAT IT IS:

With this scenario, the size of the main trunk sewer along West 42nd Street and Crocker Avenue would be increased up to 60 inches. The sizes of some of the lateral storm sewer (e.g., along Grimes Avenue) would also be increased (24 to 48 inches). More stormwater inlets (e.g., catch basins) would be added at intersections and a floodwall would be constructed on the east and south sides of Weber Pond to protect adjacent residential properties. The height of the floodwall would range from 1.5 feet to 7 feet, based on existing ground elevation.

THE DISTANCE FROM THE GROUND TO THE TOP OF THE FLOODWALL WOULD VARY BASED ON LOCATION



The height of the floodwall at any given location is determined by the ground elevation. Under normal water level conditions, water will not reach the floodwall. Water levels shown are for illustration purposes only and reflect temporary conditions – the depth and duration of high water will depend on the size of the storm.

WHAT IT DOES:

CHANGE IN HOMES EFFECTED
(Each symbol equals 10 homes):

(16 homes removed from risk)

(Reduced risk in 118 homes)

(Increased risk in 16 homes)

Change in risk of damage to homes is based on predictive modeling parameters; however, no home is ever removed from all flood risk.

ESTIMATED COST REDUCTION FOR DAMAGES NEIGHBORHOOD-WIDE **32%**

The method for quantifying flood risk considers (1) the probability and magnitude of flood events, (2) the probability of damage, (3) the amount of damage expected if no changes are made, and (4) the damage expected with each scenario. Included in this assessment are damages to homes from surface flooding, indirect flooding (from groundwater), and sanitary sewer backups.

WHAT WE LEARNED:

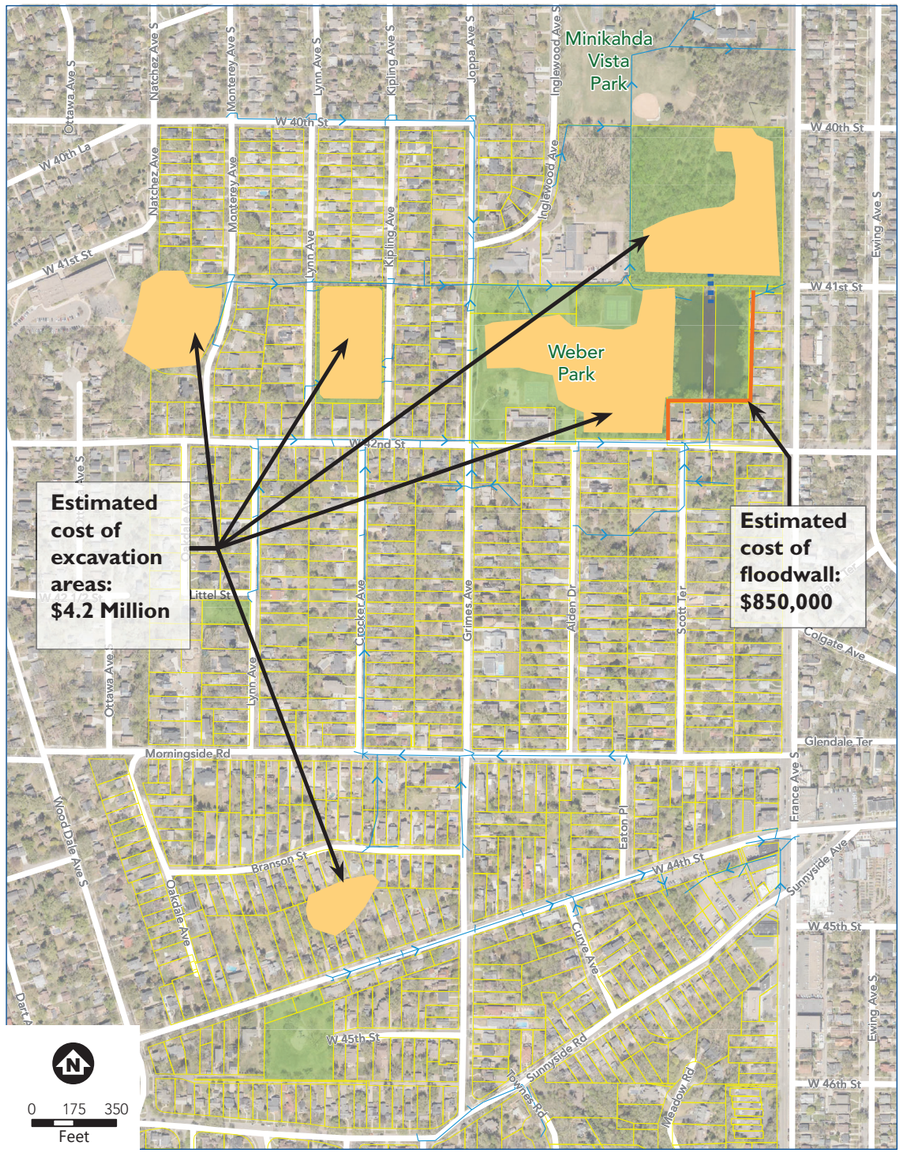
The advantage of this scenario is that pipe sizes could be increased during planned street reconstruction in 2022 and 2023 (see www.edinamn.gov/360/Design-and-Construction-Projects for more details) which covers this proposed project area with the exception of West 42nd Street east of Grimes Avenue, previously reconstructed in 2014. Increasing the pipe sizes upstream would help reduce flood risk for some upper portions of the drainage area, but increase risk for some areas farther downstream (transfer of risk). Thus, mitigation (e.g., floodwalls) would be required to help offset some of the flood risk. Floodwalls are expensive, per property protected, and may not be able to defend homes from the groundwater risk that could be associated with high water.

Do you know your home's flood risk? If not, check it out on the City's interactive map: www.edinamn.gov/flooding

We want to hear from you!

Morningside Flood Infrastructure Project
Scenario: Flood Storage

Provide your feedback for these scenarios at: ***www.bettertogetheredina.org/morningside***



LEGEND

- Existing Park
- Existing Storm Sewer Pipe
- Parcels
- Floodwall
- Excavation
- Culvert

WHAT IT IS:

This scenario would create additional flood storage by excavating (i.e., lowering) areas on several public properties and some private backyards (as allowed by homeowners). It would also include installation of a storm sewer pipe to connect Weber Pond to newly created stormwater storage and construction of a floodwall on the east and south sides of Weber Pond to protect adjacent residential properties.

CONCEPTUAL BRIDGE TRAIL FOR THE PROPOSED EXCAVATED OPEN WATER IN WEBER WOODS

This rendering is an estimated representation of the study scenario, not a final design concept.

WHAT IT DOES:

CHANGE IN HOMES EFFECTED
(Each symbol equals 10 homes):

(8 homes removed from risk)

(Reduced risk in 105 homes)

1

(Increased risk in 5 homes)

Change in risk of damage to homes is based on predictive modeling parameters; however, no home is ever removed from all flood risk.

ESTIMATED COST REDUCTION FOR DAMAGES NEIGHBORHOOD-WIDE

33%

The method for quantifying flood risk considers (1) the probability and magnitude of flood events, (2) the probability of damage, (3) the amount of damage expected if no changes are made, and (4) the damage expected with each scenario. Included in this assessment are damages to homes from surface flooding, indirect flooding (from groundwater), and sanitary sewer backups.

WHAT WE LEARNED:

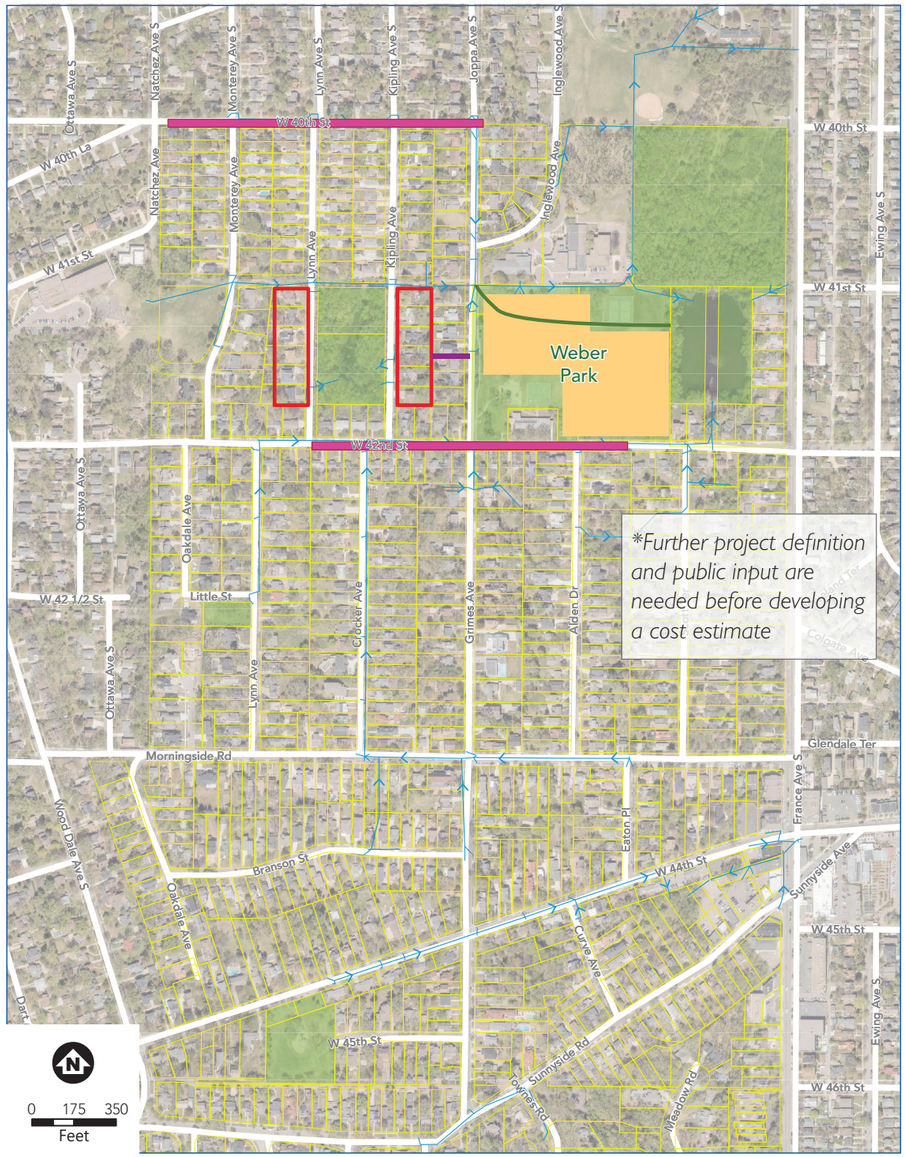
This scenario would be most advantageous for small storms. The excavation shown does not provide enough storage volume to completely solve the flood problem, but would benefit homes closest to the excavation areas. The floodwall shown would reduce vulnerability of the homes adjacent to Weber Pond during larger storms. This scenario affects the use and appearance of the park, and further evaluation is needed to understand how often the park would flood and what tradeoffs would be acceptable for the active use areas.

Do you know your home's flood risk? If not, check it out on the City's interactive map: www.edinamn.gov/flooding

We want to hear from you!

Morningside Flood Infrastructure Project
Scenario: Graded Overflows

Provide your feedback for these scenarios at: ***www.bettertogetheredina.org/morningside***



**Further project definition and public input are needed before developing a cost estimate*

LEGEND

- Existing Park
- Existing Storm Sewer Pipe
- Parcels
- Raise Homes
- Lower Streets
- Emergency Overflow
- Excavation
- Swale

WHAT IT IS:

With this scenario, both West 42nd Street and West 40th Street would be lowered up to approximately 2 feet and regraded to route stormwater more directly to Weber Park and Weber Pond. This would limit flow south along Monterey, Lynn, and Kipling Avenues. The ball fields in Weber Park would also be lowered to create additional stormwater storage; these fields would not be playable during a 5-year (or greater) storm. A 5-year storm is defined as 3.6 inches of precipitation over a 24-hour period and has a 20% chance of occurring in any given year. Unlike the pipes scenario, this one would not use the floodwalls to mitigate the risk transfer, so its overall benefit was reduced. This scenario assumes that homes along the west side of Lynn and east side of Kipling would rebuilt at higher elevation through the normal turnover and/or rebuild process, the timeline of which is determined by property owners.

CONCEPTUAL SWALE AND TRAIL NEAR BALLFIELDS

This rendering is an estimated representation of the study scenario, not a final design concept.

WHAT IT DOES:

CHANGE IN HOMES EFFECTED
(Each symbol equals 10 homes):

(9 homes removed from risk)
**This scenario assumes that homes along Lynn and Kipling would be redeveloped at a higher elevation.*

(Reduced risk in 54 homes)

(Increased risk in 41 homes)

Change in risk of damage to homes is based on predictive modeling parameters; however, no home is ever removed from all flood risk.

ESTIMATED COST REDUCTION FOR DAMAGES NEIGHBORHOOD-WIDE **10%**

The method for quantifying flood risk considers (1) the probability and magnitude of flood events, (2) the probability of damage, (3) the amount of damage expected if no changes are made, and (4) the damage expected with each scenario. Included in this assessment are damages to homes from surface flooding, indirect flooding (from groundwater), and sanitary sewer backups.

WHAT WE LEARNED:

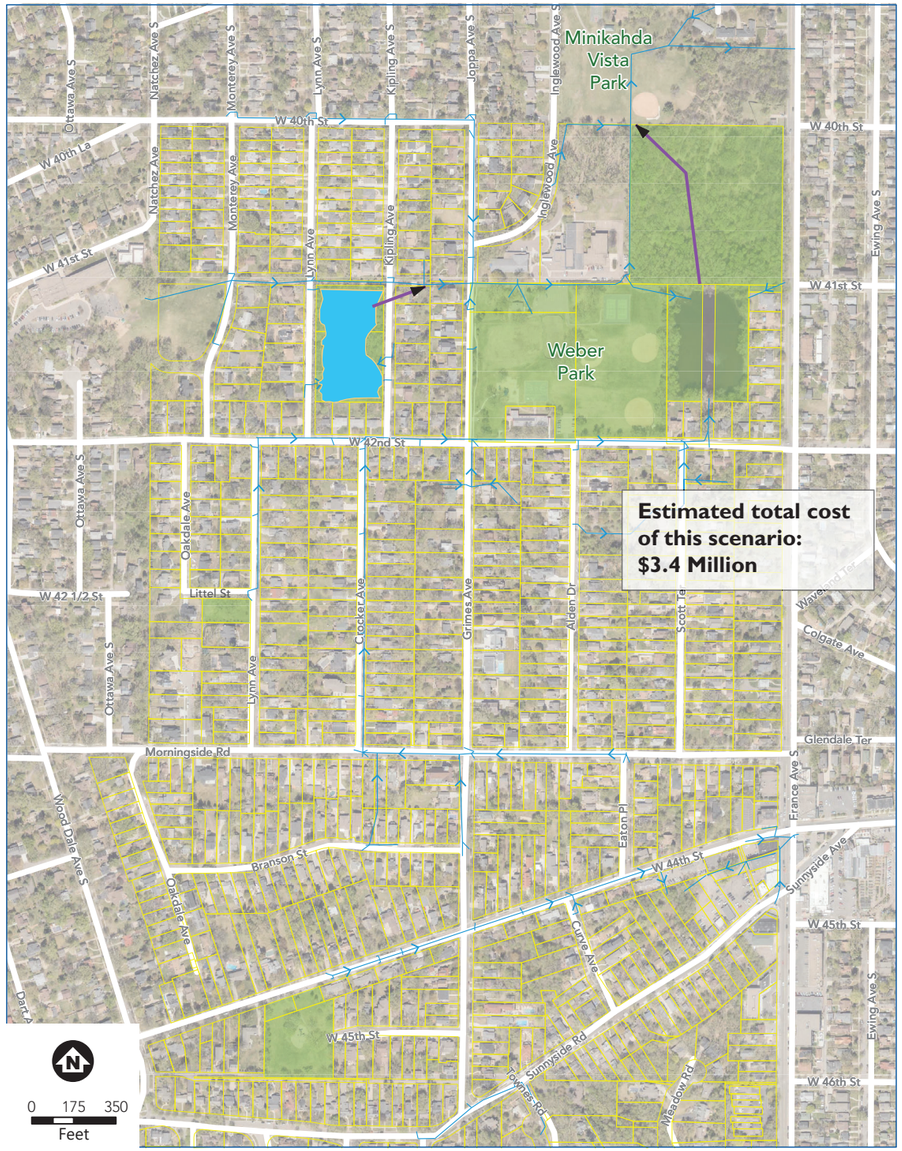
The large number of connections and other utility conflicts add significant cost and complexity. By itself, this scenario conveys water downstream—which benefits upstream properties but transfers risk to homes downstream. In addition, the location of the graded overflow along West 42nd Street includes a portion of the street (east of Grimes Avenue) was reconstructed in 2014 and is not part of the street reconstruction planned for 2022/2023; therefore, the City would like to avoid additional reconstruction for that portion of 42nd Street. While the lowering and grading of streets does not appear to be a practical option, the overflow swale in the park does present a feasible opportunity for providing a flood-risk-reduction benefit, especially when combined with other flood-risk-reduction components shown in the other factsheets.

Do you know your home's flood risk? If not, check it out on the City's interactive map: www.edinamn.gov/flooding

We want to hear from you!

Morningside Flood Infrastructure Project
Scenario: Ponds and Predictive Pumping

Provide your feedback for these scenarios at: ***www.bettertogetheredina.org/morningside***



LEGEND

- Existing Park
- Existing Storm Sewer Pipe
- Parcels
- Predictive Pumping
- Pond Excavation

WHAT IT IS:

Additional stormwater storage would be provided through excavation and regrading of the open park space area between Lynn Avenue and Kipling Avenue (north of West 42nd Street). Predictive pumping systems would be installed from that open park space area and Weber Pond to Minikahda Vista Park. Predictive pumping involves anticipating storms (through weather forecasting) and preemptively pumping water out of stormwater storage areas to create stormwater storage before the storm occurs. The accuracy of predicting localized storms is very uncertain.

CONCEPTUAL VIEW OF STORMWATER STORAGE AREA BETWEEN LYNN AND KIPPLING AVENUES

(Looking south on Lynn Avenue)

This rendering is an estimated representation of the study scenario, not a final design concept.

WHAT IT DOES:

CHANGE IN HOMES EFFECTED

(Each symbol equals 10 homes):

(0 homes removed from risk)

(Reduced risk in 93 homes)

(Increased risk in 6 homes)

Change in risk of damage to homes is based on predictive modeling parameters; however, no home is ever removed from all flood risk.

ESTIMATED COST REDUCTION FOR DAMAGES NEIGHBORHOOD-WIDE **16%**

The method for quantifying flood risk considers (1) the probability and magnitude of flood events, (2) the probability of damage, (3) the amount of damage expected if no changes are made, and (4) the damage expected with each scenario. Included in this assessment are damages to homes from surface flooding, indirect flooding (from groundwater), and sanitary sewer backups.

WHAT WE LEARNED:

One challenge with this scenario is that predicting localized storms to facilitate pumping is very difficult and may not be effective. Without additional excavation, benefits are small and primarily limited to the downstream portion of the drainage area.

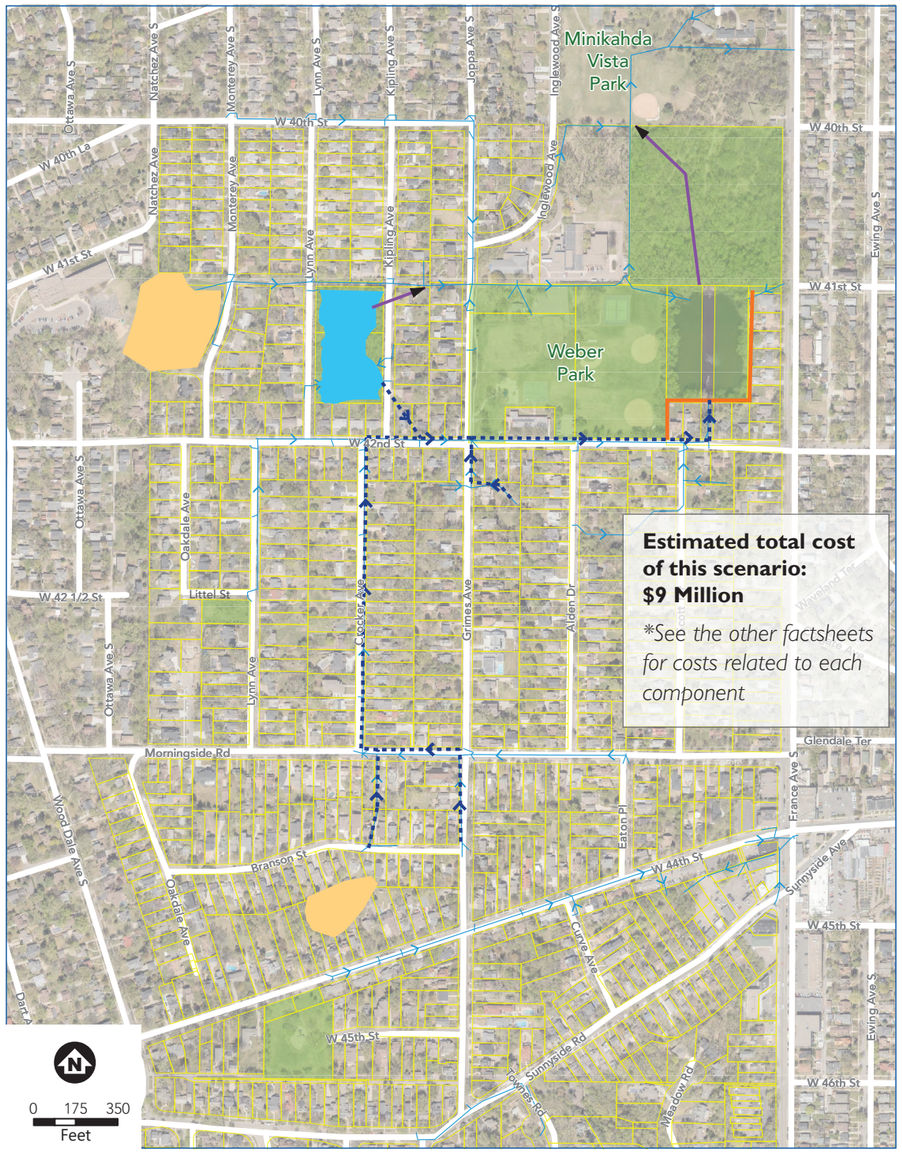
Do you know your home's flood risk? If not, check it out on the City's interactive map: www.edinamn.gov/flooding

We want to hear from you!

Morningside Flood Infrastructure Project

Scenario: Combination

Provide your feedback for these scenarios at: ***www.bettertogetheredina.org/morningside***



Estimated total cost of this scenario: $9 Million

**See the other factsheets for costs related to each component*

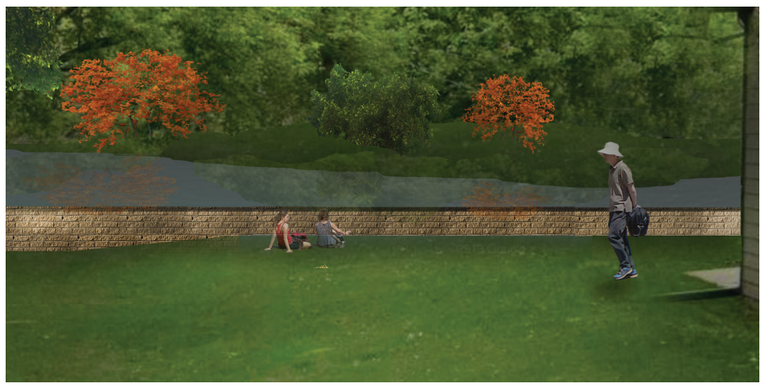
LEGEND

- Existing Park
- Existing Storm Sewer Pipe
- Parcels
- Predictive Pumping
- Pond Excavation
- Increased Pipe Size and/or New Storm Sewer
- Floodwall
- Excavation

WHAT IT IS:

This scenario combines four approaches: (1) increasing the pipe sizes of storm sewer pipes along West 42nd Street/Crocker Avenue and Grimes Avenue, (2) constructing a floodwall on the east and south sides of Weber Pond to protect adjacent residential properties, (3) installing predictive pumping systems, and (4) excavation to provide additional stormwater storage. Excavation would be in the open park space area between Lynne Avenue and Kipling Avenue and the open area between Susan Lindgren Elementary School and Monterey Avenue.

CONCEPTUAL VIEW FROM RESIDENCE AFTER WEBER POND EXCAVATION AND FLOODWALL INSTALLATION



This rendering is an estimated representation of the study scenario, not a final design concept.

WHAT IT DOES:

CHANGE IN HOMES EFFECTED

(Each symbol equals 10 homes):

(29 homes removed from risk)

(Reduced risk in 125 homes)

(Increased risk in 9 homes)

Change in risk of damage to homes is based on predictive modeling parameters; however, no home is ever removed from all flood risk.

ESTIMATED COST REDUCTION FOR DAMAGES NEIGHBORHOOD-WIDE **56%**

The method for quantifying flood risk considers (1) the probability and magnitude of flood events, (2) the probability of damage, (3) the amount of damage expected if no changes are made, and (4) the damage expected with each scenario. Included in this assessment are damages to homes from surface flooding, indirect flooding (from groundwater), and sanitary sewer backups.

WHAT WE LEARNED:

Carefully choosing the best aspects of each of the previous scenarios maximizes benefits for all portions of the neighborhood, however, the total cost is high.

Do you know your home's flood risk? If not, check it out on the City's interactive map: www.edinamn.gov/flooding

We want to hear from you!