Fact Sheet- Sauk Creek Corridor Plan

1/17/25

This fact sheet was developed to address input and questions that the City has received throughout the corridor planning process.

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Stormwater

Will the Sauk Creek Greenway look like other greenways?

No. The Sauk Creek Greenway will retain much of the natural habitat whereas other greenways have been full reconstructions with larger impacts. Examples of recent projects include the Mendota Grassman Greenway, the Tree Lane section of the Sauk Creek Greenway, and Pheasant Branch Greenway Enhancement. The main focus of those projects was flood mitigation and maximizing flows. The Sauk Creek Corridor Plan is focused on stabilizing banks and improved management of a much wider corridor.

The City does not have an example greenway to point to for what the Community can expect in the Sauk Creek Greenway Corridor, as the historical approach has been to complete a full reconstruction. As a result of the Community's input, the Sauk Creek Corridor Plan proposes a new approach.

Mendota Grassman Greenway (off University Ave near Baker Ave)

The short version is that the Mendota Grassman Greenway Flood Mitigation and Restoration project was driven by flood mitigation and we needed to increase conveyance capacity to mitigate flooding to adjacent residents. Therefore, the main channel needed to be lowered and widened. This is very different from Sauk Creek.

There are a few important things to note. The first is that homes adjacent to Mendota Grassman have flooded many times and are at high risk for continued flooding. The homes are low-lying, and a few are only 1-2' above the centerline of the existing channel. The Strickers/Mendota watershed study showed that there weren't effective options to reduce flooding besides deepening and lowering the channel. This figure illustrates the flood impacts:

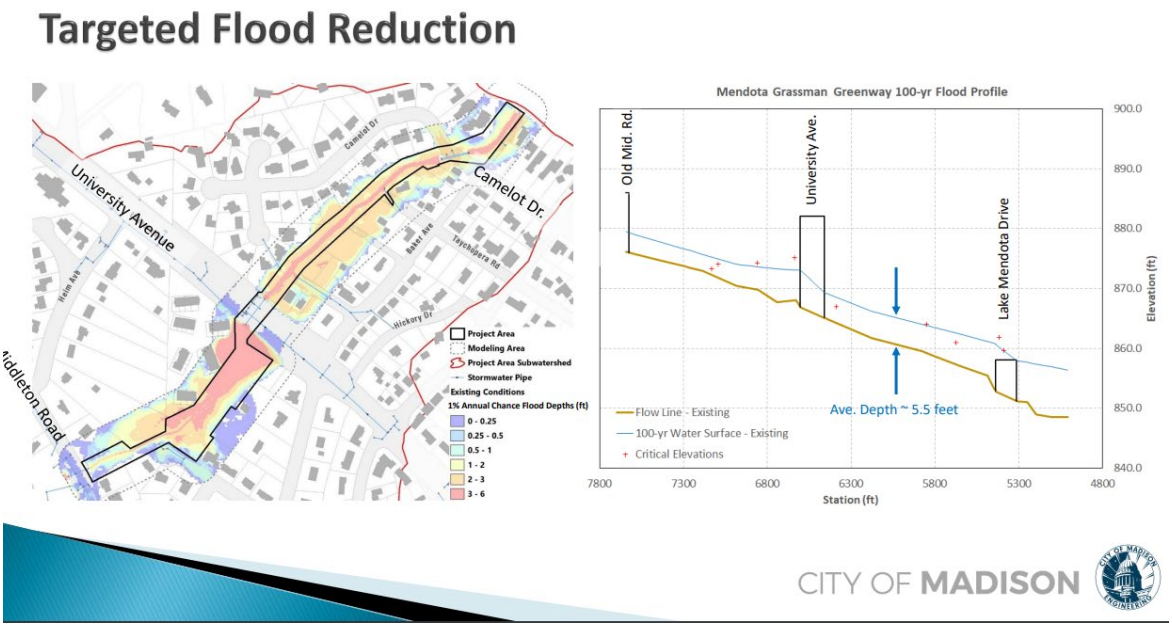

Figure 1

In contrast Sauk Creek project is being driven by the need to stabilize the channel and develop maintenance access. Homes adjacent to the channel are generally much higher than the centerline of the channel. So the project isn't driven by improving conveyance and stabilizing the channel will have a smaller impact.

The second key difference is that creating the conveyance needed to mitigate flooding took up much of the Mendota Grassman greenway. Therefore, many of the trees had to be removed to prevent adjacent homes from flooding. The Mendota Grassman greenway is ~85' wide through many areas (whereas the Sauk Creek greenway is ~200' through its narrower points). Since many of the trees were being removed for flood mitigation (both due to the scale of the solution needed, and the width of the greenway), the City proposed removing some additional trees outside of the construction limits that make restoration challenging and investing heavily in the restoration. The public was generally supportive of this strategy, so that is what ended up in the final plan. The Public Meeting #2 has a good overview of the project goals, impacts, and restoration plan. You can see the slides here: https://www.cityofmadison.com/engineering/documents/projects/10-3%20Mendota_Grassman_PIM2_FINAL.pdf

Since the Sauk Creek greenway is much wider, and footprint of the work likely to be much smaller, the City requested public input on the level of restoration outside of the area immediately impacted by the project.

Sauk Creek Greenway between W Beltline and High Point Rd

There were two completed greenway projects in this area that were very different from the proposed project between Tree Lane and Old Sauk Road. The previous greenways on Tree Lane had been cleared of most trees when they were surrounded by farms prior to development which you can see in Figure 2.

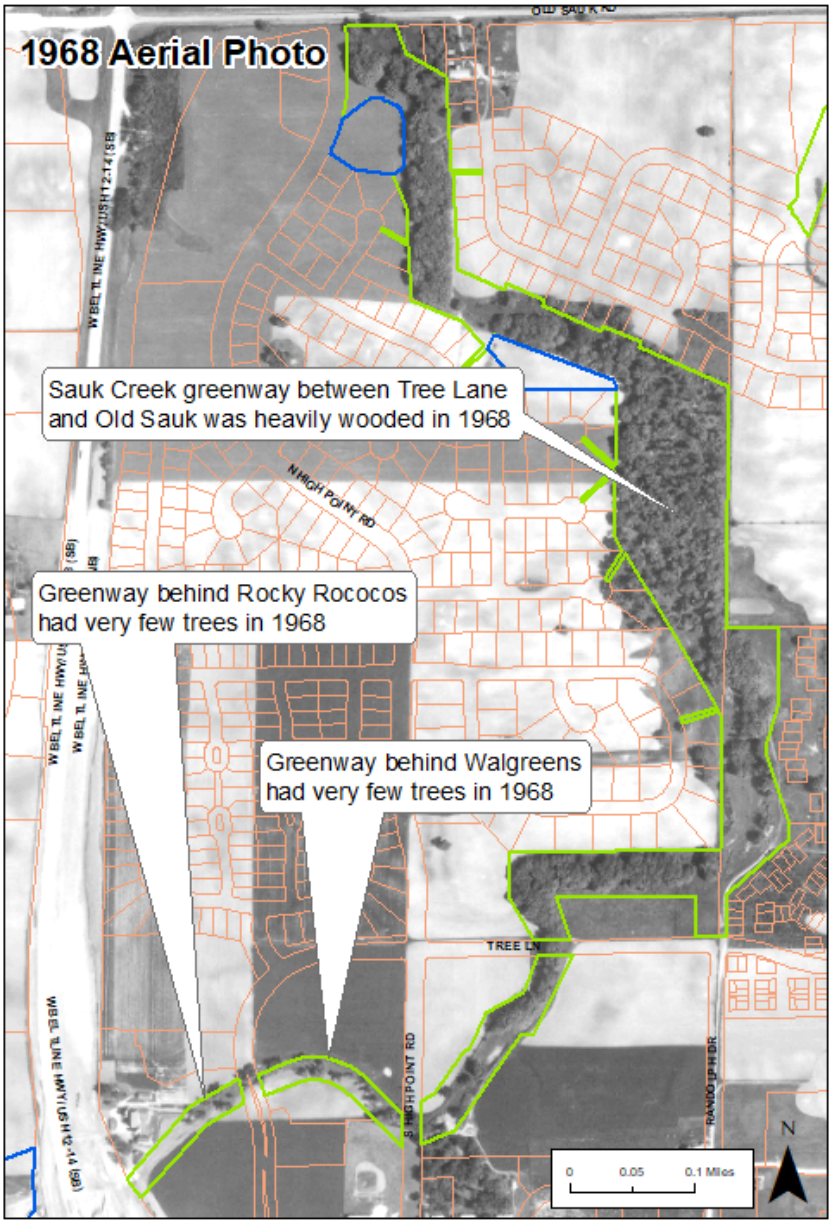

Figure 2

Initial tree clearing during development (agricultural and commercial/residential) followed by a lack of replanting or restoration efforts led to the growth of a near complete canopy of invasive, aggressive tree and shrub species. In addition to creating conditions that are not conducive to stormwater management, the lack of biodiversity had negative implications for wildlife and ecosystem functionality. The proposed greenway area between Tree Lane and Old Sauk Rd was not clear-cut prior to development, so the canopy in the proposed greenway project consists of a higher percentage of mature native species such as oaks. The City will be working to reduce the footprint of the channel and maintenance access path in order to save as many high quality, native trees as possible.

Additionally, the two upstream sections of greenways function more like ponds than channels—a deep, wide channel fills up and drains with a small ditch. The Sauk Creek greenway between Tree Lane and Old Sauk Road has a more defined channel with an elevated floodplain, especially in the southern section. These slightly elevated, better draining areas created

the conditions that allowed for the dominant oak canopy to establish. Oaks, even those with a higher tolerance to standing water such as swamp white and bur, are susceptible to root rot when subjected to flood conditions for long periods, hence why the lower-laying portions of upstream greenways do not have as good of conditions for oak trees.

The City shared the engineering plans, including anticipated tree removals, during the design phase for both upstream greenways with the public prior to completing the projects.

Pheasant Branch Enhancement

The Pheasant Branch Greenway Enhancement project and the Sauk Creek Greenway are two very different projects for a variety of reasons including the project approach, flood risk and adjacent flooding impacts, stormwater flows and their locations within the watershed, historical uses, and topographical constraints. The project results will be drastically different. You can learn more here:

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How is City addressing upstream commercial development?

City is addressing flood resiliency in a variety of ways, including revising the Municipal Government Ordinance (MGO) 37 in 2020. The revisions created the following additional regulations:

For all new development:

- Added 0.5% chance detention requirement
- Increased sizing standards for greenway crossings
- Set low building openings for critical areas

For Re-Development:

- Reduce 10% chance peak flow by 15%
- Reduce 10% chance runoff volume by 5%
- Green Infrastructure required
- Set low building openings for critical areas

It is also a requirement to utilize models created for watershed studies.

Impacts of Commercial Area Upstream of Sauk Creek

We heard public interest in having Menards hold more stormwater on their property to reduce amount of stormwater moving through Sauk Creek Greenway.

The City completed an analysis that shows that this does not have an impact. This is due to how water is routed into the large Target ponds, then flows through the greenways east of the beltline that slow down the water and function as dry ponds during large flows.

You can see the comparison of flows leaving the Menards property to the flows moving through the Sauk Creek Greenway near N. High Point Pond in the graph below:

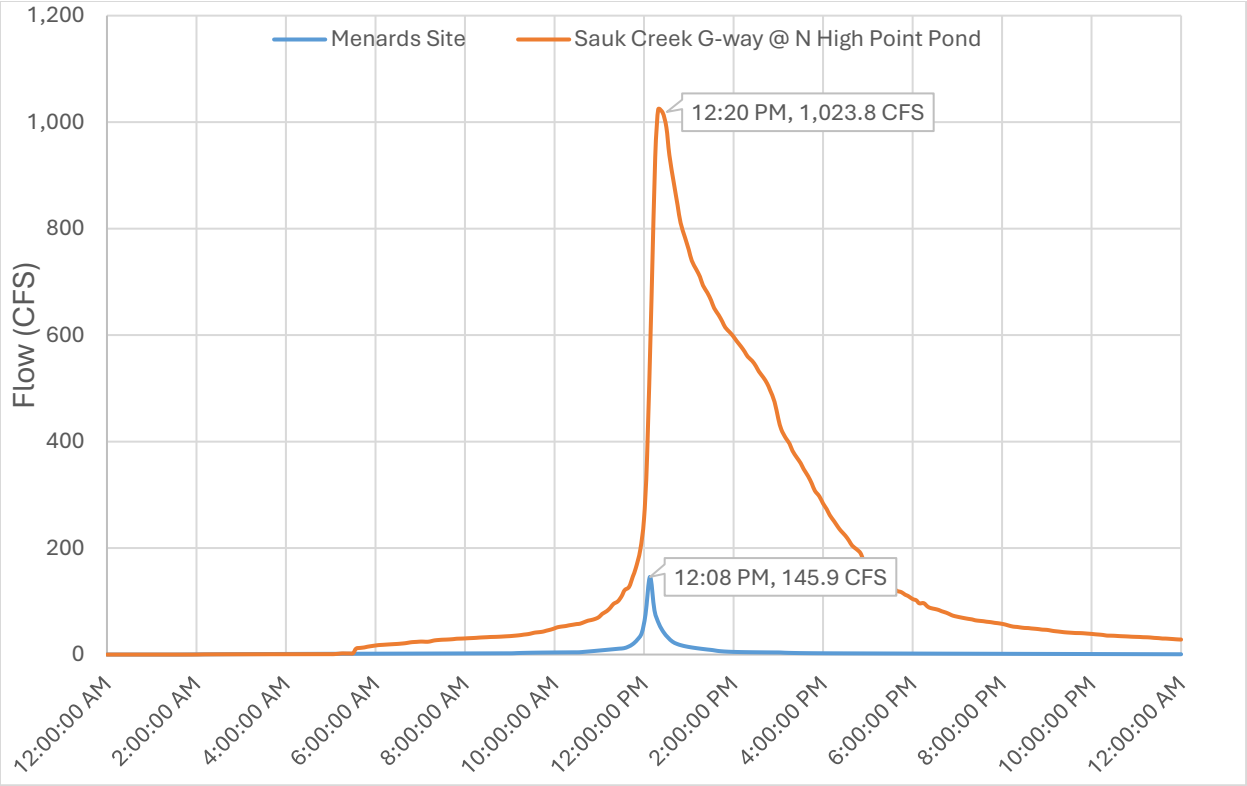


Figure 3 Graph shows total runoff from Menards is a small fraction of the flow entering in Sauk Creek greenway in 1% annual chance storm

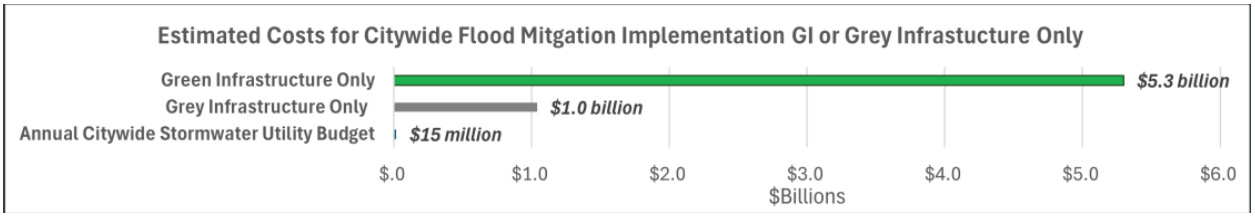
Figure 4 Hypothetical modeling removed all runoff on Menards from model. The result is small reductions in flood depths around Mineral Point Road and Target pond in 1% chance storm. By the time the water reaches the Sauk Creek greenway, there are no changes in flood depth.

The graph (Figure 3) shows there is 145.9 cfs total coming from the Menards property, and it peaks before the peak at the downstream end of the Sauk Creek greenway, which is 1,023 cfs. The small relative quantity of runoff does not have a notable impact to the greenway flows. This is also seen in the flood depth map above (Figure 4). The map shows a small reduction in flood depths in the 1% annual chance storm around Target, and just downstream of the beltline. However, by the time the flows pass Tree Lane, there is not a change in flood depth. This shows that

Menards is not having a notable impact on the flows, or the flood depths in the Sauk Creek Greenway. The City will continue to look for opportunities as upstream development occurs to decrease peak flows downstream in line with the new ordinance.

Can Green Infrastructure (GI) be used to reach flood targets?

Green Infrastructure (GI) is smaller infrastructure that filters and absorbs stormwater where it falls. GI uses plant or soil systems, permeable pavement or other permeable surfaces or substrates, stormwater harvest and reuse, or landscaping to store, infiltrate, or evapotranspirate stormwater and reduce flows to sewer systems or to surface waters. A GI analysis was completed with the Pheasant Branch Watershed study to evaluate Green Infrastructure as a means to reach our flood mitigation targets. The study found that significant GI is needed to meet flood reduction targets. This is because GI is meant to improve water quality, and is designed for smaller frequent storms (which carry most of the pollutants), not large flood storms. When GI fills up at the start of a large storm, the water flows out like a cup that is full during the most intense part of a storm that causes the most flooding. An analysis shows that Citywide implementation of GI as the primary flood control measure would exceed $5 billion, several times the cost of necessary grey infrastructure (stormwater pipes).



In the Sauk Creek greenway, flows would need to be reduced significantly to create non-erosive forces within the greenway. Even in small-to-medium sized storms stormwater forces are high enough to erode unstable banks, especially when there is a large blockage within the channel that the water needs to find a route around.

However, the City is supportive of installing GI wherever possible for the other benefits that it has, including in improving downstream water quality, and recharging groundwater. It is just one of many tools we can use to reach our flood mitigation targets.

For more information, including the GI analysis report, and summary fact sheet, please visit:

https://www.cityofmadison.com/flooding/city-initiatives/watershed-studies/watershed-study-learning-hub/green-infrastructure-water

Ponds

What is the purpose of the existing stormwater ponds?

The St Lawrence Ponds will be improved to enhance infiltration of stormwater that enters the pond. The N High Point Pond is currently used for a preliminary sediment reduction, but it is challenging to remove the aggregated sediment. Once the upstream banks are stabilized, the City will analyze the best use of the pond to capture sediment in a way that the City can remove it in a less disruptive manner, and see what other improvements can be made. For more information on the ponds, please see the Draft Corridor Plan Report.

If you improve the ponds, can the channel stay the same?

Both ponds are downstream of the areas where banks are eroding. Therefore, making improvements to the ponds first will not have an impact on the erosive forces of the stormwater upstream of the ponds, and banks will still need to be stabilized. Additionally, the ponds are very small in proportion to the volume of water moving through

the greenway, so their impacts will be minimal even downstream of the ponds from a flood mitigation perspective. An analysis found that even if the City would maximize the flood storage of the ponds (which would have impacts to adjacent neighbors by grading up to their property lines, and creating a steep, deep pond for stormwater storage), the ponds would fill up with stormwater before the peak of the flood level storms, meaning the peaks would pass through and flood downstream to the same extent as before. As noted in the report, the amount of volume flowing the greenway during a 1% annual chance storm is 290 acre-feet of water. Currently within the corridor, stormwater is only intentionally detained in the 2 stormwater ponds, that are about 3.1 acres total. If you tried to hold all the stormwater from a 1% annual chance storm in these ponds it would be stacked nearly 94 feet high (~equivalent height of a 9-story building). This visual is intended to help people understand the volumes of water that need to be managed, and why the ponds are not big enough to have an impact.

Additionally, if the High Point Pond was reconstructed prior to stabilizing the banks, it would quickly re-fill with sediment from the banks. This is why the City intends to stabilize the banks as the first priority.

How can you increase infiltration in the greenway?

The infiltration that occurs in the greenway currently, independent of the pond areas, will not have a notable change based on the proposed riprap and maintenance access. The water leaves the main channel in a >1" rainstorm, and the water spreads throughout the non-FEMA regulated floodplain. This floodplain currently infiltrates some stormwater as the water flows over it, and it will continue to infiltrate similar amounts of water. The St Lawrence Pond will be retrofitted to increase infiltration, so overall infiltration will be increased throughout the corridor.

There have been a variety of concerns from residents about recharging aquifers, and promoting infiltration with the project. If the concern is the Mt Simon aquifer where Madison gets its water supply there is very strong evidence that we should be infiltrating chloride free roof water instead of street run and parking lot melt water that has high chloride loading. Additionally, focused infiltration produces more groundwater recharge when rain falls on pervious surfaces. So, if the impact of greenway improvements on groundwater recharge is the concern, infiltration the roof run off via rain gardens will provide the best return on effort.

The peak flows described in the Corridor Plan Report, Chapter 2 – Infiltration Capacity section and in Figure 11 highlight that the neighborhoods that drain directly into the Sauk Creek Greenway have a disproportional impact on peak flows moving through the greenway. This presents a unique opportunity for those in the neighborhood that are concerned about downstream flooding, peak flows within the greenway, and improving infiltration within their area to recharge the groundwater (and in the long-term the aquifer), to install raingardens on their property that can infiltrate stormwater from their roofs. If enough people are able to infiltrate all of their roof water, that could begin to have an impact on downstream flooding, but also would increase the regional infiltration. The added benefit to infiltrating roof water is that it is considered clean water, as opposed to stormwater that has collected salt and other heavy metals from streets, parking lots etc. Additionally, raingardens, planted with native vegetation tends to improve infiltration rates with their deep roots, and likely would improve wildlife habitat throughout the Community. The Stormwater Utility highly values residents who build raingardens on their property and have developed a credit on their stormwater bill that residents who build rain gardens on their property can apply for.

How will the project impact stormwater conveyance?

This project will not impact the rate of flow of water towards Middleton and Lake Mendota in larger storms. Depending on the improvements to the ponds, it is possible there would be small reductions in flows just downstream of the greenway in very small events. The project has always been intended to improve water quality by stabilizing the banks and improving the ponds.

Will the project impact the greenway adjacent to Greenbrair apartments?

The project will also not impact the upstream greenway adjacent to the Greenbriar apartments because the changes will not impact the flows through the Sauk Creek Greenway.

Can you use tree revetements to stabilize the banks?

There are a variety of options for channel stabilization that have different advantages and disadvantages. A resident requested that the City consider tree revetments to stabilize the banks. Tree revetments were initially ruled out of the primary options due to the fact that they are most durable in channels that have baseflow. That is because the revetments (essentially tree trunks and branches) in channels with baseflow are underwater most of the time, and that helps to preserve them. If they continually cycle between wet and dry, as they would within the Sauk Creek Greenway, they breakdown faster, and often need to be repaired or replaced, and such would require access. Additionally, the fish wildlife benefits of tree revetments are not seen in channels without baseflow like Sauk Creek, because there is not fish habitat within the channel. In order to be efficient and economical in stormwater designs, the City considers lifecycles, and additionally, the Sauk Creek Greenway's community sensitivity to large equipment and projects within the greenway. If residents are interested in trying out this technique within the greenway, the City could consider using this in specific, appropriate banks during the design phase.

Water Quality

City's plan to reduce sediment?

Bank erosion is a significant source of sediment. 1 cubic foot of soil weighs 135 lb. A 200 foot long, 4 foot high bank that erodes 6" a year would wash 54,000 lb (200 * 4* 0.5 *135) of sediment downstream each year. This is the equivalent sediment load of 226 residential acres per our WinSLAMM water quality model. As a reference, 226 acres is approximately 1,130 average sized (0.2 acres) lots.

The City plans to reduce the sediment that is sent downstream by stabilizing the banks, getting access to the channel to remove large blockages before they cause significant erosion, and improve the effectiveness of the stormwater treatment ponds. A resident questioned what the City will do to reduce the sediment that comes from street sand, grass, leaves and twigs—reducing street sand is a policy compromise that the residents would need to make to have reduced salting of roads. The City currently removes ~1,200 tons of sand from catch basins with the vactor trucks, and ~7,340 tons of debris are swept with street sweepers (based on 2022 reported totals). Catch basins are underground stormwater chambers in our storm sewer system designed to catch sediment before it enters our waterways.

Why can't the City dredge the High Point pond and/or Wexford pond annually instead of stabilizing the banks of the greenway?

Ponds are not 100% effective at removing Total Suspended Solids (TSS), which is a specific stormwater modeling term that describes sediment. The High Point Pond removes 7% TSS, and the Wexford pond removes 40%. That means 93% of the TSS that enters the High Point Pond passes downstream, and 60% of the TSS from Wexford Pond passes downstream. Best management practices are to utilize ponds to capture sediment that cannot be avoided (leaves from trees, sand from roads etc), and the WinSLAMM water quality models we use to assess the effectiveness of our stormwater treatment assumes that the upstream channel banks are stable, as that is part of our Municipal Stormwater Permit (MS4).

Dredging a pond includes permitting, soil sampling, potential removal of herptiles (if present), large equipment access, dewatering the dredged sediment, and disposal of the sediment. Depending on the size of a project even

smaller scale ponds tend to be large disruptive projects that impacts adjacent residents. It also requires staff time to develop plans, complete engagement, manage and inspect the project. For reference, the Wexford Pond project cost $1.0M for the dredging component alone, not to mention staff time, easement needs etc.

Maintenance

Why does the Vactor truck needs access to the sanitary sewer within the greenway

Using smaller equipment takes additional resources (3 crews, 2-3 pieces of equipment). Due to the additional crews and equipment, cannot quickly and efficiently respond to an emergency. Response times are >4x more during non-business hours. This leads to increased risk of damage to adjacent homes and natural resources during emergency.

Can you use the channel as access for construction and maintenance?

The neighbors requested the City use the channel as access as it could have a smaller footprint and result in fewer impacts to trees. However, there are a variety of challenges for the City in implementing this:

- Regular habitat disturbance of macroinvertebrates, salamanders, small mammals, turtles, and birds in natural pools
- Equipment could destabilize existing stable banks or impact trees along banks
- Slower maintenance response
    - Branches, down trees, boulders, and wet pools make construction and maintenance access challenging.
    - Much of spring/summer is too wet to bring in equipment
    - Increased level of maintenance would be needed to reach critical blockages, such as removing all down trees between the access point and the area in need of maintenance.
- Small equipment would be needed to navigate the narrow channel bottom and sharp turns
- ~Doubles the cost of the construction (contractor estimates)
- Increase staff time to complete maintenance
- Tracked bobcat with a grapple is Operation's largest piece of equipment that could navigate the channel
    - Safety concerns arise in log jams because limbs often have a "loaded" force on them. When crews have to manually cut or pull apart log jams there is a hazard of loaded limbs unloading the stored force, breaking equipment, and endangering the cutting crew. It is important to keep in mind that tree trunks weigh 1,000's of pounds.
    - The safest and most efficient piece of equipment to remove log jams is an excavator with a grapple bucket, allowing the operator to grab and lift logs, increasing the distance from equipment and ground crews having to cut the jam apart.
    - Our tracked excavator cannot access the majority of the channel.

A few people have pointed to seeing equipment in the channel when the Mendota Grassman project was reconstructed. This project is very different from Sauk Creek in that existing stormwater channel was more like a small ditch that needed to be widened and lowered. Therefore, the entire channel area was graded and reconstructed with the project, so they could drive equipment over the channel, damaging the existing channel, because it was going to be regraded and re-built. Additionally, the Mendota Grassman Greenway has a channel maintenance access path running parallel to it for future channel maintenance. Please see the section above on "Will the Sauk Creek Greenway look like other Greenways / Mendota Grassman Greenway" above, for more information on project differences.

Do you plan to remove all trees within the channel?

No, the City only intends to remove major blockages that are at risk of causing severe erosion. Small down trees will remain within the channel to help slow down water and create in-channel habitat.

Ecological Restoration

Is oak savanna a desired outcome of restoration?

There is no plan to turn Sauk Creek greenway into an oak savanna. The goals of the proposed ecological restoration are to improve biodiversity and ecosystem functionality in affected project areas. Many areas of the greenway will not be affected by the project and will retain existing canopy trees, native and invasive plants (except where efforts by local volunteer groups may address invasives outside project boundaries). Within project boundaries as regrading affects the existing vegetation, efforts will be made to replace invasive plants with native tree, shrub and herbaceous plantings appropriate and adapted for woodlands. While the exact composition of the species may shift over time as light levels go from more open immediately following construction, to more shaded in subsequent years, the revegetation efforts will focus on shade and partially shade tolerant, tree, shrub and herbaceous species. This will provide a source of native plant regeneration to areas outside the project boundaries and contribute to habitat offerings.

Woods hasn't had maintenance in 40 years, why is it important now?

The goals and resources within the Stormwater Utility have changed since it was established 2000. Prior to its implementation, funding for stormwater projects was not as available as it is now. Where in the past, best stormwater practices were to utilize concrete channels bordered by turf, over time, the benefits of native plants to stormwater management, as well as to local ecology have taken on greater importance. As best practices have trended towards solutions utilizing "green infrastructure," resources to use more ecologically friendly approaches have increased. City Engineering has been increasingly using the principles of ecological restoration to guide the creation and maintenance of stormwater land and in the last five years, created two permanent positions and two seasonal internships devoted entirely to ecological restoration. The work of these staff members focuses primarily on how to maximize biodiversity and ecosystem services on stormwater land. See the City Engineering Stormwater Utility Vegetation Management Plan for more information. Notably, however, major restoration efforts are typically limited to planned stormwater projects where capital funding create the opportunity to perform resource-intensive ecological restoration. This is another reason larger-scale invasive species control or ecological restoration efforts have not been pursued by the City at Sauk Creek in the past.

The City is proposing to make small incremental improvements to the wooded area of the greenway with the 10-20' buffer adjacent to stormwater improvements and the sanitary access path to limit the spread of invasives, and create opportunities to replant oak and hickory trees to ensure these species persist in the future canopy. The community shared it was important to protect the health of the woods and create a future generation of oak and other hardwood trees, which is why this was proposed, and likely why the community agreed to the proposal during the in-meeting polling. Please see the Sauk Creek Corridor Plan report and Appendix 2 – Engagement Summary for more information.

How will wildlife be impacted by the project?

Ponds and greenways provide habitat to urban-adapted wildlife such as turkeys, deer, coyotes, foxes and many other mammals, birds and insects. While reconstructions of wooded greenways may displace these animals temporarily, such impacts are usually mitigated by several factors.

First, ponds and greenways complement shorelines, parks, golf courses, other stormwater land and private land as a system of wildlife habitat corridors able to serve as refuges for displaced urban wildlife. Degraded woodlands similar to a typical wooded greenway are a common habitat type within this corridor system.

Second, species that thrive in these densely wooded novel ecosystems tend to be those that are more generalist in their habitat needs. These generalist species are well-suited to finding alternative resources when faced with a disturbance such as reconstruction. For example, The Urban Canid Project has tracked foxes denning under porches as readily as in greenways and parks. Finally, reconstruction and subsequent restoration can provide habitat for a wider variety and a greater density of wildlife species, some of whom even have specialized habitat requirements.

Current sub-canopy conditions on this greenway have greatly minimized plant diversity. Where a healthy oak woodland has a diverse and well-vegetated groundlayer, the Sauk Creek Greenway is so densely shaded by invasive sub-canopy shrubs such as buckthorn, honeysuckle, and quick-growing tree species, that much of the groundlayer is bare, exposed soil. Without a healthy groundlayer, erosion is accelerated. Southern Wisconsin oak woodlands classically have a thinner canopy that allows more light to reach the groundlayer. Removing the invasive sub-canopy and thinning aggressive species, will allow more light to penetrate to the groundlayer. With the assistance of follow-up restoration efforts, a diverse groundlayer of native herbaceous species could be established, and young oak trees could be planted to help spur regeneration.

City Engineering understands the benefits of using native plants on stormwater land and has been incorporating native plants in stormwater design for decades. Many native herbaceous and woody plants have deep and extensive root systems that make them resilient in Wisconsin's variable climate. Deep roots not only prevent erosion but also create many small channels within the soil structure that measurably assist in infiltration.

The Sauk Creek Greenway restoration project will also preserve many mature trees, and only part of the corridor will be under construction at a time, so mobile wildlife such as mammals and birds can shift to undisturbed areas of the corridor, or if they find refuge in neighboring greenspaces, they will be able to return to the greenway soon after construction ends.

Similar reconstruction and restoration efforts are underway on other greenways across the City. Some greenways host a similar suite of wildlife and care has been taken to mitigate effects on wildlife. For example, on the Mendota-Grassman Greenway, the City consulted with Dr. Drake's Urban Canid Project out of UW-Madison. The City and UW-Madison assessed the greenway for fox or coyote populations within the greenway, and did not find any at the time of construction but the City did receive recommendations on precautions that could be taken if denning populations had been found on site during construction periods.

Ecological restoration efforts following construction will add native shrubs, trees and herbaceous plants back to the greenway system. With the restoration of plant species that may not have thrived here in decades, we can expect to see new wildlife species using the greenway. The addition of a diverse, native groundlayer of herbaceous plants will particularly benefit small herptiles such as salamanders and turtles, that rely on groundcover to complete their life stages, as well as pollinators, that rely on a suite of plants, including herbaceous species, to supply nectar, pollen and shelter. Increasing insect diversity in the greenway in turn benefits birds, small mammals and other species throughout the food web.

Ponds and greenways rich in native species are an increasingly important refuge for pollinators and can support surprising diversity. For example, urban areas may have higher rates of pollination than rural areas in the same region due to a greater density of flower-rich areas in cities (Halle-Jena-Leipzig, 2020). Increasing the biodiversity of the Sauk Creek greenway as a whole will support not only pollinator health, but the wildlife, plants and people that depend on the pollinators.

Funding

Funding the improvements in the plan

These improvements are **not** funded from property taxes. All stormwater improvements are funded through a charge on your monthly municipal services bill called "stormwater". The average single family house pays $12.50/month (as of 2025) which is used to fund ALL the operations of the entire stormwater sewer system as well as funding capital projects.

Timing

Phasing of future design/construction project

The Corridor Plan is tentatively broken up into 3 discrete phases to fit into the Stormwater Utility's budget.

Timeline for design and construction for each phase

Each project will begin with approximately a year of design, public engagement, and permitting. That will be followed by less than 1 year of construction for each phase. Therefore, based on the current estimated phasing timeframe, there will be less than 2 years of construction over the next 6 years, and another ~year once the pond work is budgeted and designed. Due to the long nature of the greenway, individual homes will likely not experience more than 1-2 years of nearby construction from the corridor plan work. Project timelines and phasing are dependent on the City's annual budgeting process.

Construction

Does the City sell the trees it removes?

No. The City does not sell any trees that are removed with the project. The Contractor is responsible for protecting the trees that need to be saved, and they are charged if they remove or damage any trees that are to remain. The Contractor is also responsible for removing trees from site that are marked for removal, unless they are called to be left in place for wildlife, or other uses. The City pays for all trees that are removed, and there is no financial incentive to remove any trees. Contractors often chose to chip the felled trees onsite, and remove them as chips, as an economical way to transport felled trees. Contactors are not incentivized to remove any additional trees, nor is the City. In fact, Contractors are penalized for removal or damage to trees that are meant to remain.

Will selective clearing of invasives damage non-invasive trees?

Selectively clearing DNR NR 40 invasives trees (primarily buckthorn) in a buffer outside of the project area is done in a way that does not damage the adjacent, non-invasive trees. This is specified in the contract documents, and fencing, construction oversite, and arborist consultation are all used to protect all trees that are not called for removal.

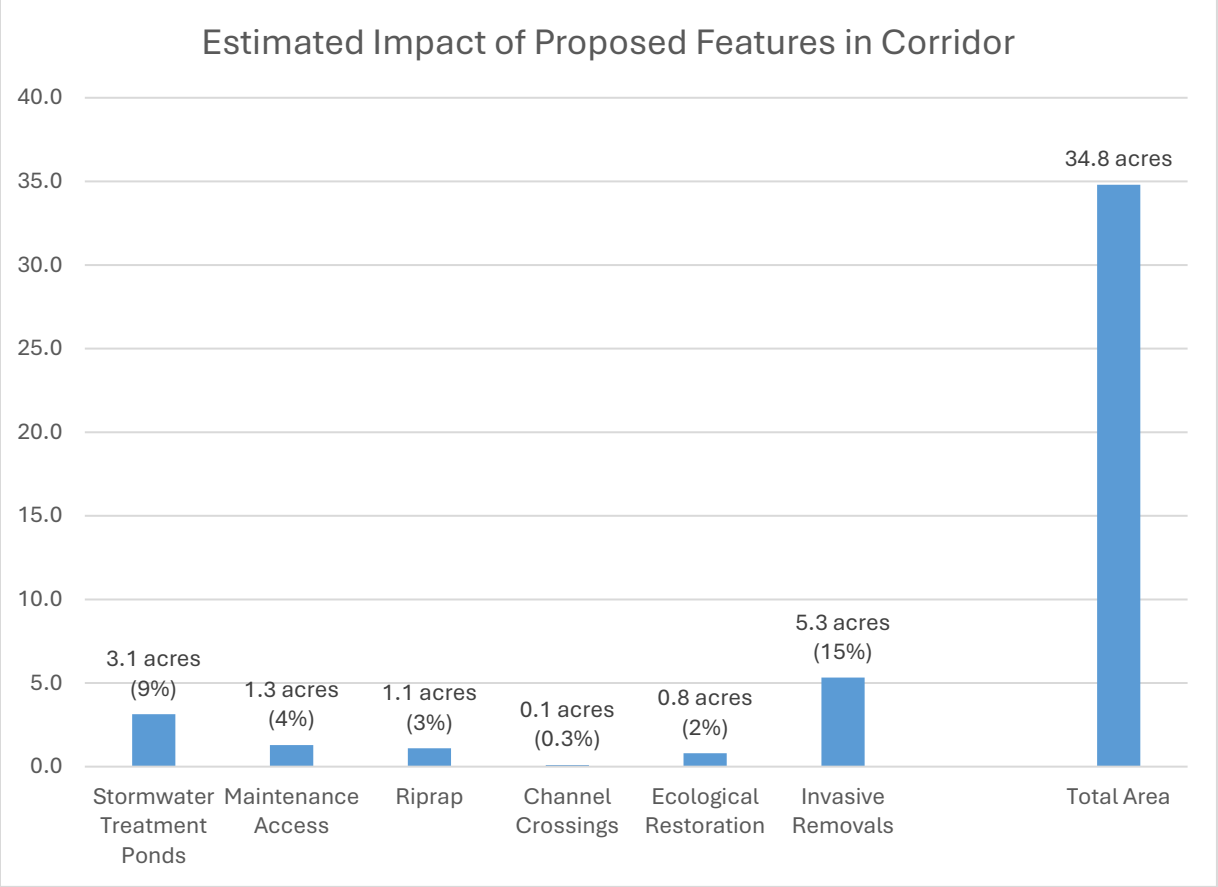
Clearing other Debris within the corridor

There are currently piles of rock, old trash, and remnant barbed wire in the corridor. Within the project area, if trash or barbed wire are found, they would be removed. The piles of rock would be investigated as to if they should stay or remain if they were within the project area.

Total Impacts of Corridor Plan

Individual Proposed Features

The chart below shows the estimated size of the proposed conceptual features in the Corridor Plan in relation to the entire corridor. You can learn more about the proposed features in the Draft Corridor Plan Report.



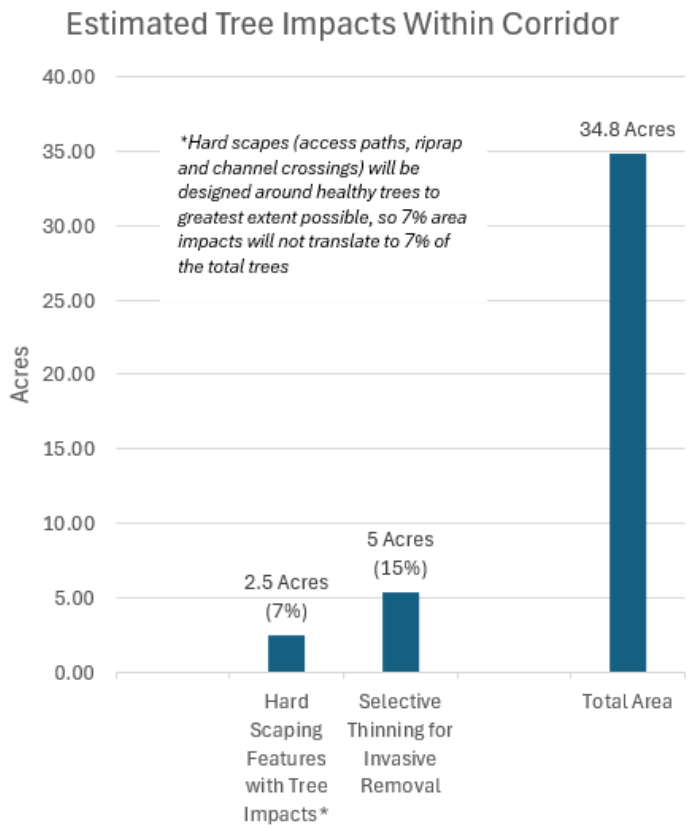
Can you quantify exact tree impacts?

Without a final engineered design, it is not possible to quantity tree impacts. This is because much of the design effort will consist of trying to avoid impacts to healthy, native trees that are included in the ecological communities identified in the ecological assessment, so the paths will weave through the corridor. This detailed design work cannot be completed far in advance of construction because the City needs an updated tree inventory to complete the detailed design. This is because tree health is dynamic, and it doesn't make sense to design around a specific tree that was healthy based on the 2017 inventory, only to find that it has died since. The City places a high importance on trees. Design elements such as boulder retaining walls are some methods that have been used in the past to successfully protect individual trees, so it is important to understand the trees current health conditions before including these expensive design elements. Additionally, during the design process, certified

arborists with woodlot experience would help determine what design options may assist in minimizing tree impacts for specific trees.

Estimated Tree Impacts

The chart below shows the estimated impacts of proposed hard scape design elements on the corridor. Hardscapes proposed include access paths, riprap and channel crossings. These elements will be designed around healthy trees to the greatest extent possible, so the 7% of area impacts below will not translate to 7% of total trees impacted.



How will the corridor plan impact tree canopy?

The draft corridor plan is not intended to have a significant impact on the long-term canopy in the corridor. The hard scaping features are a very small percentage of the corridor, and it is expected that adjacent trees will continue to have canopy overhanging much of the area, or newly planted trees will eventually grow to do so.

Based on a study done in Madison, "Scale-dependent interactions between tree canopy cover and impervious surfaces reduce daytime urban heat during summer" by Ziter et al. (2019), we see canopy cooling impacts on a smaller scale. You can see the Capitol Area Regional Planning Commission's Growing Shade tool that was developed to help prioritize areas for improving tree canopy.

There is community concern related to the current 16% canopy cover in District 9. The Sauk Creek Greenway corridor is only 1% of the total area in District 9. Additionally, the Private Trees portion of the Urban Forestry Task Force Report states, "Arguably, the largest single constituency affecting the future of the urban forest canopy is the public itself. The majority of the urban forest exists on private residential and commercial properties, and accordingly decisions affecting those trees are made by thousands of individual property owners. … While most single-family homes have one or more trees planted by current or pervious owners, these properties may be

easiest and most cost effective way to add tree canopy to Madison's neighborhoods." The Stormwater Utility needs to stabilize the channel, and paired with that work will be restoration efforts to replant trees and shrubs. Encouraging the Community to leverage their ability to plant more trees on private property to aid canopy coverage throughout the area and City overall will help meet the canopy goals.

Can you share the east-west tree inventory data?

Yes, you can view this data here: East-West Section - SC Gwy Tree Inventory_2021.xlsx

Current project costs

How much staff and consultant time has been spent on the project planning?

There have been nearly 3,000 hours of City staff time spent on the Sauk Creek Corridor Plan project to date. There have been $162,800 spent on consultants, and $156,000 of staff payroll.