Johnson, Johanna

From: amykell0450@gmail.com
Sent: Saturday, February 22, 2025 1:05 PM
To: Board of Public Works
Subject: Please vote NO on the Sauk Creek Greenway Plan

Alders:

For the past six years, we have been advocating for a restoration plan that is minimally invasive, environmentally focused, and cost-effective. Unfortunately, previous watershed projects in this area have been poorly designed and have failed to address the real issues.

The current proposal before you has been reviewed by a number of local scientific experts from various fields, all of whom have expressed serious concerns.

The root causes of bank erosion are still not being adequately addressed in this plan. Without addressing these core issues, the project will likely fail, as previous efforts have.

This plan, as it stands, goes against sound scientific principles and represents an irresponsible use of taxpayer money.

Therefore, I urge you to delay the vote on this project until city engineers provide a detailed, point-by-point response to the concerns and recommendations raised by local experts. We deserve a solution that works, one that prioritizes long-term environmental health and financial responsibility."

From Faith Fitzpatrick, PhD, National Stormwater reconstruction engineer
These comments follow from a series of emails to the City starting in 2022 regarding the approach to stormwater improvements in the Sauk Creek Greenway between Tree Lane and the North High Point Pond. I have professional expertise in the areas of channel erosion, erosion hazards, and hydrologic restoration. These comments are based on field indicators and topographic analyses of geomorphic processes.

This reach of Sauk Creek has a high potential to meet stormwater goals if the causes for erosion and sedimentation problems along the creek were addressed. However, “fixing” 6,000 linear feet of streambanks along 5,900 ft of channel with boulder riprap is expensive and won’t fix the problem. The proposed costly boulder stabilization has a large possibility of failing because the root causes for bank erosion have not been addressed. If the boulder riprap falls into the channel, it becomes an obstruction, causing more bank erosion, lateral migration, and possibly threatening more trees and infrastructure. This happened recently downstream on the South Branch of Pheasant Branch and the creek was threatening to cause structural damage on a nearby building—it doesn’t matter how big the boulders are if the channel drops out from beneath or decides to go elsewhere. I’m not sure why the consultant’s channel assessment didn’t include this. The longitudinal profiles help here to see these things. I’ve included a more technical description of some of the problem hotspots below.

Two hotspots include reaches of the creek affected by engineering works associated with North High Point Pond and St. Lawrence Pond. During the construction of North High Point Pond, the channel bed was raised and the floodplain constricted. Besides problems with the pond not functioning as planned, this caused upstream sedimentation, standing water, raised water table, and ultimately more upstream channel lateral migration,

channel instability, and tree loss. Over the last decade or so, the effects of this continued and channel migration and bank instability continue to progress upstream. Failed engineered in-creek structures associated with redirecting and raising the channel grade near the St. Lawrence Pond are also causing continued channel erosion, lateral migration, and channel instability. Furthermore, the concrete fords/paths proposed in the vicinity of both of these ponds are at critical points where the creek is still adjusting. This means that they have a high potential for failure by being cut around during the next flood, causing more tree loss and erosion, and need for repair. Solution — restore the creek channel to the correct elevation, remove levees, reduce erosive power of the flows, and design an inline wetland that catches sediment in place of the failed pond.

Another channel adjustment hotspot looks to be a progressive knickpoint in the vicinity of the stormwater outfall at Geneva Circle. This is a point to be very careful with bank stabilization especially concerning the rubble and debris left from previous construction activity. The worst thing would be to allow the knickpoint to keep moving upstream, further dropping the bed of the channel. It also appears that bed erosion has locked the channel in its current location along a steep bank near Walnut Grove. It looks like the channel used to be in the center of the greenway before incision worked its way upstream. Solution: remove failing riprap causing channel instability, design natural grade control, replace failed pond with inline floodplain wetland.

Channel conditions change upstream of Gray Fox Trail because the geomorphic setting is more ravine-like with steeper slopes and there is a greater chance for the creek bed to erode through upstream knickpoint progression. Bank stabilization may fail here due to a likely drop in bed elevation after each major flood. The planned culvert crossing for the sanitary path has a high potential to wash out again if bed erosion continues. If the culvert is set at the wrong elevation, it has the potential to cause upstream progression of lateral migration. Solution: carefully placed grade control, energy dissipating bedforms.

Maintenance paths -- the new proposed paths in the north, middle, and south further affect 4,300 ft or over 70% of the length of the creek. This unnecessary addition will result in more damage to the floodplain canopy forest, soils, and floodplain connectivity. I can't understand why the plan is adding more disturbance and possibility for more erosion, flood damage, and maintenance/repair costs. Instead of building more constrictions and disturbing soils and vegetation, the focus should be on improving the conditions of the forest canopy and floor and its filtering ability, and promoting channel/floodplain connectivity.

There seems to be confusion in the final plan about bank erosion, sources of sediment, and the role of large wood (tree fall) in slowing and filtering flood flows, reducing erosion and suspended sediment loads, and improving habitat. As stated in previous emails, this is contrary to sound science backing nature-based solutions and flood management under a changing climate in urban systems. Solution: no more disturbance of the forest floor or canopy, no more constrictions in the floodway, no more constricted crossings.

Please take this design back to the consultants that did the channel assessment. Please include my comments. Make sure that you have someone giving you sound advice that understands geomorphic feedbacks, channel/floodplain interactions, and hydrologic restoration.

Amy Kell