



Department of Public Works

Engineering Division

James M. Wolfe, P.E., City Engineer

City-County Building, Room 115
210 Martin Luther King, Jr. Boulevard
Madison, Wisconsin 53703
Phone: (608) 266-4751
Fax: (608) 264-9275
engineering@cityofmadison.com
www.cityofmadison.com/engineering

Assistant City Engineer

Bryan Cooper, AIA
Gregory T. Fries, P.E.
Chris Petykowski, P.E.

Deputy Division Manager

Kathleen M. Cryan

Principal Engineer 2

John S. Fahmeyer, P.E.
Janet Schmidt, P.E.

Principal Engineer 1

Mark D. Moder, P.E.
Andrew J. Zwieg, P.E.

Financial Manager

Steven B. Danner-Rivers

TO: Tim Parks – Plan Commission
FROM: Gregory T. Fries, P.E. – Deputy City Engineer
DATE: 5/31/24
SUBJECT: Stormwater Comments for Old Sauk Road Apartments

Background:

The proposed site fronts on Old Sauk Road and from a stormwater perspective this site currently acts as an overflow route for the public stormwater system serving Old Sauk Road in large run off events and provides for unintended stormwater detention on the site.

Stormwater Requirements:

This site is considered new development and has the following general requirements:

- 1) Detention 1 through 200-year storm events
- 2) Sediment Control 80% Total Suspended Solids Control of post development discharge
- 3) Infiltration 90% matching of existing infiltration amounts
- 4) Unintended detention – this site provides existing detention for public stormwater that volume of storage must be provided in addition to volume required to meet the above standards.
- 5) Oil and grease treatment for parking areas.
- 6) Matching Predevelopment volumetric discharges post to pre for the 1, 2, 5, 10-year storm events.
- 7) Record a maintenance agreement for all private stormwater treatment systems created.
- 8) Safely pass the 500-year event – in this case that would be interpreted to mean cause no additional harm over existing conditions.

Site Conditions:

This site currently discharges in three directions, toward Old Sauk Road (which then discharges to storm sewer pipes going to Spyglass Ct); a small area discharging directly to the North; and the majority of the site which drains between two private homes to E. Spyglass Ct. The original plat of Woodland Hills had originally dedicated OL 1 between the private homes, which is now combined into the property at 25 E. Spyglass Ct. It is noted that drainage, per the plat, was intended to flow through that previously dedicated OL.

General Comments:

It is somewhat rare at the Plan Commission level, to have a full stormwater management report completed, and even more rare to have a revision submitted addressing preliminary comments both by Engineering staff but also two (2) rounds of comments by a 3rd party Engineer, hired privately to review the submittal.

The Stormwater Management is still considered DRAFT and is about 90% level there remain additional details to address which are not limited to but include those noted below. Additionally, as part of a final review Engineering would require the actual model files be provided such that we can verify the results presented in the report. This is standard procedure.

- 1) Detention 1 through 200-year storm peak flow matching post development to pre-development.

At the site level, it is my opinion that these standards have been met. As noted, this site drains in three directions predevelopment and post development, and they have met the standards for each direction of drainage (though the areas draining each direction have changes pre to post development) and they have met the standards for the site as a whole.

- 2) Sediment control – the requirement is to get 80% control for the entire site post development and provide 80% treatment of paved surfaces prior to infiltration.

At the site level, it is my opinion that these standards have been met.

It should be noted that to meet water quality, infiltration, and volume requirements the report notes they plan to “excavate and turn” the soils at the bottom of the infiltration systems. This is proposed to be done to allow the site to reach the design infiltration rates used. I am not aware of standards for turning soils. Additional details/information will be required on how this will be completed and how it will be verified in the field that these infiltration rates have been met.

Madison General Ordinance 37 provides for a requirement to certify that the stormwater management plan has been constructed in accord with the design. This provision is not often required but it would be mandated in this case.

- 3) Infiltration – as a new development the site it required to match 90% of existing infiltration. This site is also required to meet volumetric matching for the 1–10-year storm events. As a result of the infiltration requirement, meeting the volume requirement can be relatively easy to meet.

Again, it is noted that there will be additional information required by the development team on how they plan to verify that design infiltration rates proposed have been met in practice.

- 4) Unintended detention – this site provides overflow and detention for public water that overtops from Old Sauk Road in large runoff events. The site is required to continue to provide that amount of storage volume separate from the additional detention required to meet the post development standards.

The site has utilized the same digital terrain model that the City's watershed model used to determine the storage provided on the site and has provided slightly in excess of that amount. We would consider that requirement met.

- 5) Oil and grease control – parking areas are required to meet a relatively basic level of treatment. The applicant proposes to use a proprietary device called an upflow filter to treat parking areas for oil and grease as well as for total suspended solids prior to infiltration. The oil and grease standard is not a numeric standard as we do not have a reliable model to document either the amount running off nor the amount captured by a treatment system – rather the area is “treated or it is not”. In this case, the treatment standard has been met.
- 6) Matching Predevelopment volumetric discharges post to pre for the 1, 2, 5, 10-year storm events. As noted previously, as a result of not having an easement or public pipe to discharge to and discharging to adjacent private property MGO 37 provides a requirement to match existing volumetric amounts discharging from the site in events up to and including the 10-year event.

The applicant has proposed infiltration systems to meet this requirement. This system as designed will meet that requirement. However, again it is noted that there will be additional information required on how they plan to verify that design infiltration rates proposed are met in the field and a post construction certification will be required as allowed by MGO 37.

- 7) Record a maintenance agreement – the applicant is required to record a maintenance agreement as part of the approval process. They have included a draft agreement with the report. Provided this development moves forward engineering will work with the applicant to refine and record that agreement against the parcel at the Dane County Register of Deeds. The maintenance required by this agreement is enforceable by City Engineering under MGO 37.
- 8) Safely pass the 500-year event – in this case that would be interpreted to mean cause no additional harm over existing conditions. The current report does not document the discharge during the 500-year event. Additional information will be required.
- 9) Capacity analysis of the existing system – this site does not now (other than a limited area along Old Sauk Road) and does not propose to discharge to the public system directly. This portion of the MGO does not apply – the standards to be met are those that refer to discharge to adjacent private lands.

Additional comments:

- 1) It has been brought to the attention of City Engineering that there are concerns regarding where groundwater will go if this amount of water is infiltrated. There are no state, county or city standards or regulations regarding the control of water that is infiltrated to the groundwater system. Determination of where infiltrated water goes at this location, or any other development site is not possible without significant study that is not required by any code.

- 2) There is some concern with regard to the level spreader being made of rock – often these are difficult to construct and maintain. If the proposed design is maintained, construction documentation would be a requirement of the stormwater management permit.
- 3) Additional information will be required to be provided on how the soil will be improved/amended to allow it to meet the infiltration rates used as part of the design. Construction documentation and certification will be required. Yearly inspections and reporting of the stormwater system to ensure it functions properly is a requirement of the maintenance agreement.
- 4) There have been comments that this site should meet the standards for an enclosed depression. The requirement in MGO 37 is for discharge directly to an enclosed basin on private lands. While it is true that this entire watershed does drain to Stricker's Pond and subsequently Tiedeman's Pond in Middleton and that pond is "lifted/pumped" to drain to Lake Mendota the requirement does not and has never been applied to a watershed wide system, rather it required where the discharge is directly to adjacent private property that does not have an outlet which is not the case here. Text from the MGO is appended below note that it is under the requirements for "discharge off-site to other private lands":

"Discharge Off-Site to Other Private Lands. When a site being reviewed by the Administrative Authority proposes to continue existing drainage patterns and discharge stormwater runoff onto property neither under the applicant's control (via ownership, easement or agreement) nor onto property under the control of the City of Madison, the Administrative Authority shall require the applicant to provide documentation that they have made significant efforts to obtain the right to discharge stormwater onto this property.

If no such right can be obtained, the applicant shall be required to mitigate the increased volume of discharge on their property prior to making this discharge. Mitigation shall consist of implementation of a stormwater practice that shall match the existing volumetric discharges from the applicant's property to other lands not under their control in storm events including the 1-, 2-, 5- and 10-year storm events. If the proposed discharge is to an area that is an enclosed depression, this requirement shall be increased to include the 25 and 100-year storm events."

Conclusion:

As noted previously, the DRAFT stormwater management report is not completed and not approved. During the final project development and design it is expected that the details will be finalized. Generally, the report follows the ordinance requirements, but additional information will be necessary.