



City of Puyallup
OFFICE OF THE CITY ENGINEER
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Staff Report

To: City Council

From: Mark Palmer, P.E., LEED® AP, City Engineer

Subject: Stewart Crossing Final Plat, Phases 3 & 4

Date: April 14, 2017

Request: Approval of Final Plat having met all conditions for final plat acceptance.

Background: Stewart Crossing Phase 3 & 4 Final Plat has been before Council more than once for final approval. Previously, action has been deferred due to drainage concerns of citizens and staff consisting of the following:

1. Toomey property drainage (Parcel 0420207003)
2. Elmwood Homeowners Cooperative drainage (Parcel 0420203006)
3. Capps property drainage (Parcel 0420203112)
4. Weese property drainage (Parcel 0420203108)
5. Struble property drainage (Parcel 0420203031)
6. Function of the regional stormwater pond.

Staff is unaware of other drainage issues related to Stewart Crossing.

Findings: City Engineer finds to following facts in reference to the identified issues:

1. The developer, Stewart Crossing LLC, has agreed to install a drainage system on the Toomey property per the attached plan (Toomey Drainage Plan) to address the stormwater drainage issues on this property. A financial guarantee has been provided to the City for these improvements. Construction of the system will occur later this year when conditions are appropriate for that activity.

2. The developer has agreed to install a drainage system on the Elmwood property per the attached plan (Elmwood Interceptor Drain) to address the stormwater drainage issues on this property. This system installation is contingent upon the successful conversion of the Elmwood property to sanitary sewer service by others since the current septic drain fields are in the location of the proposed drainage system. A financial guarantee has been provided by the developer to assure this drainage system is constructed.

3. The Capps property was affected by Phases 1 & 2 of Stewart Crossing and is not relevant to the current consideration. Staff finds that the Capps property is a natural depression and that drainage issues on that property were pre-existing the Stewart Crossing project. The developer attempted, in good faith, to coordinate a drainage solution for the existing condition for the property owner, but the property owner declined to participate.

4. The Weese property is adjacent to fill placed for Phases 5-7 of Stewart Crossing. The developer currently has plans for these phases in for review, and has indicated that he will be developing a plan to address drainage issues for this parcel. In addition, the plat is conditioned, as stated in the Mitigated Determination of Non-Significance (MDNS) for the project, "such that any new fill must be mitigated to address potential impacts to adjacent properties on the perimeter of the project." Staff is confident that the drainage issues for this property will be addressed during Phases 5-7.

5. The Struble property is adjacent to the Weese property and will be addressed in a similar fashion as described in #4.

6. Stewart Crossing's stormwater requirements for water quality and flow control are addressed by a regional stormwater facility in the project's northwest corner. Staff's observations of the operation of the pond led staff to believe that the pond was not functioning as designed. Based on these observations and a review of the design of the stormwater system, KPG, a local engineering firm, was selected to further investigate the stormwater system's operation. They have provided draft reports on the system, which will be referenced here. We expect the reports will be finalized within the next couple of weeks. Notwithstanding the draft status, the evidence is sufficient to make some findings.

- a. The 2005 Department of Ecology Stormwater Management Manual for Western Washington (SMMWW) requires that the live storage for a combined wetpond/detention pond be above seasonal high groundwater elevations.

- b. The Stewart Crossing State Environmental Protection Act (SEPA) MDNS, dated July 10, 2013, states that “No groundwater diversions or withdrawals are anticipated as a part of this project.”
- c. The regional stormwater facility is a combined wetpond/detention facility.
- d. The maximum dead storage elevation, and consequently the start of live storage, in the pond is designed to be 20 feet elevation.
- e. The groundwater elevation in the immediate vicinity of the pond is greater than 20 feet elevation.
- f. The pond is effectively dewatering and lowering groundwater elevations in the immediate vicinity of the pond and possibly up to 2,000 feet away.
- g. The pond is not meeting the strict requirements of either the SMMWW or the SEPA MDNS as currently operating.
- h. The pond can operate as designed at an assumed groundwater elevation of 22 feet with a modified control structure. This is also the maximum elevation to start live storage and still be able to meet detention volume requirements for Stewart Crossing Phases 1-4.
- i. Determining natural groundwater elevations in the vicinity of the pond will require up to a year to allow for complete monitoring of groundwater elevations.
- j. If groundwater elevations are determined to be higher than 22 feet, solutions will be limited. Two possible scenarios include lining the pond, likely with a rigid material that can be anchored to resist buoyancy, or finding a route to discharge directly to the Puyallup River in order to utilize the flow control exemption.

Conclusions:

1. The drainage issues of surrounding property owners have been or will be addressed by the developers proposed improvements.
2. The regional wetpond/detention pond is not meeting the requirements of the SMMWW, and consequently the City’s National Pollutant Discharge Elimination System (NPDES) permit, nor the SEPA MDNS which indicates groundwater diversions would not occur with the plat development.

3. A temporary fix for the stormwater pond for Phases 3 & 4 can include increasing the live storage to the maximum elevation of 22 feet. This will minimize the groundwater discharge from the pond while still being able to address the flow control storage requirements of the pond.
4. The developer has agreed to correcting the flow control structure and associated elements as described in 3 above, and has provided a financial guarantee for those improvements.
5. The City will need to continue to monitor groundwater elevations through most of the next wet season to determine seasonal high groundwater in the vicinity of the pond for natural conditions (e.g. without the dewatering effect of the pond).
6. Once the natural groundwater elevation in the vicinity of the pond has been determined, the applicant will be required to address any deficiencies with pond operation as a part of Phase 5-7 design.

Recommendation: Approve Stewart Crossing Phases 3 & 4 as conditioned above.

Attachments: Toomey Drainage Plan (Stewart Crossing Plat Map)
Elmwood Interceptor Drain