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MASTER DEVELOPMENT DRAINAGE PLAN

FOR

THE RETREAT AT TIMBERRIDGE

FOR COMMENT

CCES Response 6/16/17

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PUD-17-00 3

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As mentioned previously, the majority of the off-site flows are already within the Sand Creek channel prior to entering the property. However the few off-site basins that must travel through the proposed site development areas prior to entering Sand Creek have been accounted for.

Basins OS-4 (Q_2 = 0.6 cfs Q_5 = 3.4 cfs, Q_{100} = 20.7 cfs) and E (Q_2 = 1.4 cfs Q_5 = 7.7 cfs, Q_{100} = 46.6 cfs) are both tributary to the proposed Pond A. Developed flows will be routed towards this facility via side road ditches, storm sewer and sheet flow. This facility will provide detention/SWQ prior to flows being released into Sand Creek. Basins A (Q_2 = 16.8 cfs Q_5 = 33.3 cfs, Q_{100} = 98.2 cfs) and B (Q_2 = 15.3 cfs Q_5 = 27.6 cfs, Q_{100} = 75.8 cfs) are both tributary to the proposed Pond B. Developed flows will be routed towards this facility via curb and gutter, storm sewer and sheet flow. This facility will provide detention/SWQ prior to flows being released into Sand Creek.

Basins OS-1 (Q_2 = 0.6 cfs Q_5 = 4.7 cfs, Q_{100} = 35.7 cfs), OS-2 (Q_2 = 0.3 cfs Q_5 = 2.8 cfs, Q_{100} = 21.2 cfs), C (Q_2 = 13.4 cfs Q_5 = 26.1 cfs, Q_{100} = 75.6 cfs) and D (Q_2 = 26.7 cfs Q_5 = 47.8 cfs, Q_{100} = 127.1 cfs) are all tributary to the proposed Pond C. Developed flows will be routed towards this facility via curb and gutter, storm sewer and sheet flow. This facility will provide detention/SWQ prior to flows being released into Sand Creek. The off-site predevelopment flows from Basin OS-1 contains both sheets flows that will be accounted for with the on-site lot grading (swales between lots) and concentrated flows that naturally route towards the proposed Mount Jackson Dr. road alignment and will be accounted for and collected in the on-site storm system. Likewise, the off-site predevelopment flows from Basin OS-2 contains both sheets flows that will be accounted for with the on-site lot grading (swales between lots) as well as collection of the concentrated flows into the on-site storm system (easement between lots).

Basins OS-5 (Q_2 = 1.2 cfs Q_5 = 1.4 cfs, Q_{100} = 10.8 cfs) and I (Q_2 = 0.3 cfs Q_5 = 2.1 cfs, Q_{100} = 16.7 cfs) are both tributary to the existing 48" CMP culvert under Vollmer Road at the intersection with Arroya. This facility appears to be very silted in and may require cleaning or replacement. No immediate development within Basin I is proposed at this time. Upon development of that parcel further drainage analysis will be required. These pre-development flows will continue to cross Vollmer and are then proposed to be routed via extension of the 48" storm sewer within Arroya

There has been an EA meeting.
Coordinate with owner.

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Lane to the east towards Sand Creek. This design will eliminate this historic flow into Basin A and the proposed lots. Basin OS-3 (Q_2 = 1.3 cfs Q_5 = 2.0 cfs, Q_{100} = 4.2 cfs) represents the proposed Arroya Lane and upon formal development will be collected via proposed storm sewer and routed towards Pond B.

Basins F (Q_2 = 0.5 cfs Q_5 = 3.7 cfs, Q_{100} = 29.3 cfs), G (Q_2 = 2.1 cfs Q_5 = 6.3 cfs, Q_{100} = 27.4 cfs) and H (Q_2 = 1.5 cfs Q_5 = 5.1 cfs, Q_{100} = 24.5 cfs) are all directly tributary to Sand Creek. Basin F represents flows from the proposed open space tract north of Arroya Lane currently containing Sand Creek. No development is proposed within this tract other than trail construction. Both Basins G and H represent portions of the proposed rear yards of lots adjacent to Sand Creek and the Creek area itself. The minimal developed portion of these basins will be required to route all impervious areas across a landscape area, meeting ECM/DCM design requirements for a buffer BMP, prior to sheet flow release into Sand Creek. These buffer BMP areas will end up being the rear yards of all homes backing up to the creek. While the HOA may dictate landscape methods meeting the ECM/DCM requirements, these rear yard buffer areas will be owned and maintained by each individual lot owner. If these landscape buffer areas are unable to be provided, a deviation request from ECM Section I.7.1.B will be required with the Preliminary Drainage Report.

No immediate development within Basin K is proposed at this time. Upon development of that parcel further drainage analysis will be required. These pre-development flows will continue to sheet flow in a southerly direction off-site. Basin J is proposed for two large lots averaging 3.5 ac. each. Per the ECM Section I.7.1.B, WQCV is not required for these lots given their size (2.5 Ac. +). However, sediment control will be provided on each individual lot. After this sediment control, the minimal developed flow from these lots will be allowed to continue to sheet flow directly into the side road ditch along Vollmer Road.

DETENTION FACILITIES / STORMWATER QUALITY

Final design of these recommended facilities that include planning for water quality management of storm water runoff features will be designed during final design and construction of the proposed improvements. Storm water quality measures will be utilized in order to reduce the amount of

Another solution meeting ECM requirements will be provided. (We can't assume a deviation will be approved unless you submit it now and receive approval).

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