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Date: 5/16/2023
To: City of Newberg – Doug Rux, AICP, Community Development Director
From: Trevor Synkelma, PE, LSI
Project Name: Collina at Springbrook Subdivision
AKS Job No.: 4487-01
Project Site: Collina at Springbrook
Subject: Roundabout at Mountainview Drive and Villa Road Intersection
Supplemental Information

This memorandum provides a response to the following proposed condition for the Collina at Springbrook Subdivision:

To comply with Ordinance No. 2007-2678 the Applicant shall: Consider a roundabout at Villa Road/Mountainview Drive intersection. Provide information on the merits of such a design versus a traffic signal.

A roundabout at the intersection of Mountainview Drive and Villa Road was considered, but not ultimately included in the project due to concerns expanded upon below regarding topography and right-of-way availability.

Topography Concerns

The existing topography surrounding the Mountainview Drive and Villa Road intersection is not an ideal siting condition for a roundabout. Section 6.8.7.5 of The National Cooperative Highway Research Program (NCHRP) Report 672, Roundabouts: An Informational Guide states that it is not desirable to place roundabout where grades through an intersection are greater than 4% and that entry grade profiles should not exceed 3%. The southern approach of the intersection consists of grades around 5% and the eastern approach of the intersection consists of grades around 6.75%. Grading in a roundabout at this location would increase and exacerbate the approach grades and create unsafe approach conditions. Modifying the approaches to meet the preferable approach grades would require significant modifications and reconstruction of the existing roadways, the Hess Creek dip, and adjacent properties.

Right-of-Way Availability Concerns

The existing segments of Mountainview Drive and Villa Road are bounded by existing homes to the southeast of the intersection and the Northwest Christian Church to the southwest of the intersection. Constructing a roundabout at the intersection would require significant right-of-way acquisition and impacts to these properties, resulting in the loss of homes and critical parking and circulation area for the Church. An alternative design limiting impacts to the existing homes and Church would place the entirety of the roundabout on the Collina Subdivision. This offset roundabout would result in undesirable approach angles for the east and west approaches of the intersection, or significant impacts to the Collina Subdivision and the Hess Creek Corridor to ensure proper approach angles.