ARD ENGINEERING
21370 SW Langer Farms Pkwy
Suite 142, Sherwood, OR 97140

Technical Memorandum

To: Todd Boyce - Westwood Homes, LLC

From: Michael Ard, PE

Date: August 31, 2020

Re: Coburn Grand View Zone Change - Salem, OR

This memorandum is written to provide information related to two proposed zone change applications related to the planned Coburn Grand View Estates residential development located on the east side of Battle Creek Road north of Kuebler Boulevard in Salem, Oregon. The proposed zone changes consist of a conversion of 2.589 acres of property from PH (Public and Private Health Services) to RM-2 (Multiple Family Residential) and a conversion of 10.321 acres of property from RA (Residential Agriculture) to RM-2 (Multiple Family Residential).

The following analysis addresses the potential transportation impacts that can be anticipated following each of the two proposed zone changes, as well as the cumulative impacts of both zone changes. The analysis also includes a detailed examination of the requirements of Oregon's Transportation Planning Rule.

TRIP GENERATION

In order to quantify the potential change in site traffic volumes associated with each of the two proposed zone changes, estimates of trip generation for the "reasonable worst-case development scenarios" were developed for the existing and proposed zoning. The comparison between the existing and proposed zoning traffic levels thereby shows the maximum potential change in traffic that could result from each proposed zone change.

PH to RM-2 Zone Change (2.589 acres)

Under existing conditions, the City of Salem's PH zoning allows for development of the 2.589-acre (112,796 sf) property with a medical/dental office building. Assuming that the maximum reasonable gross floor area of the building will be 25 percent of the gross area of the property, the maximum reasonable building size for the medical/dental office would be 28,200 square feet.

Following approval of the proposed change to RM-2 zoning, the 2.589-acre property could be developed with multi-family residential uses, with up to 28 dwelling units per net acre. Assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 54 mid-rise apartments could be constructed on the subject property.

Trip generation estimates for the existing and proposed zoning were prepared using data from the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers. Trip generation was calculated for the existing PH zoning using the published trip rates for ITE land use code 720, *Medical-Dental Office Building*. The calculations are based on the gross floor area of the building. For the proposed RM-2 zoning, the trip estimate was calculated using data for land use code 221, *Multi-Family Housing (Mid-Rise)*. The calculations are based on the number of dwelling units.

Based on the analysis, the first proposed zone change would be projected to result in a net decrease in site trips as compared to the development potential under the existing zoning. A summary of the trip generation calculations is provided in the table below. Detailed trip estimate worksheets for the existing and proposed zoning scenarios are provided in the attached technical appendix.

Coburn Grand View Zone Change #1 - Trip Generation Summary

	Morning Peak Hour			Evening Peak Hour			Daily
	In	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
Proposed RM-2 Zoning (54 Units)	5	14	19	15	9	24	294
-Ex PH Zoning (28,200 sf medical office)	-61	-17	-78	-27	-71	-98	-982
Net Change in Site Trips	**-56**	**-3**	**-59**	**-12**	**-62**	**-74**	**-688**

RA to RM-2 Zone Change (10.321 Acres)

Under existing conditions, the City of Salem's RA zoning allows for development of the 10.321-acre (449,580 sf) property with single-family homes with a minimum lot area of 4,000 square feet. Again, assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 84 single-family homes could be constructed on the subject property.

Following approval of the proposed change to RM-2 zoning, the 10.321-acre property could be developed with multi-family residential uses, with up to 28 dwelling units per acre. Assuming that 25 percent of the gross land area is used for roads and necessary infrastructure to support residential development, a maximum of 217 mid-rise apartment units could be constructed on the subject property.

Again, trip generation estimates for the existing and proposed zoning were prepared using data from the *Trip Generation Manual, 10th Edition,* published by the Institute of Transportation Engineers. Trip generation was calculated for the existing RA zoning using the published trip rates for ITE land use code 210, *Single-Family Detached Housing*. The calculations are based on the number of dwelling units. For the

proposed RM-2 zoning, the trip estimate was calculated using data for land use code 221, *Multi-Family Housing (Mid-Rise)*. The calculations are based on the number of dwelling units.

Based on the analysis, the second proposed zone change could result would be projected to result in a net increase of 16 trips during the morning peak hour, 12 trips during the evening peak hour, and 388 daily trips under the reasonable worst-case development scenarios. A summary of the trip generation calculations is provided in the table below. Detailed trip estimate worksheets for the existing and proposed zoning scenarios are provided in the attached technical appendix.

Coburn Grand View Zone Change #2 - Trip Generation Summary

	Morning Peak Hour			Evening Peak Hour			Daily
	In	Out	Total	In	Out	Total	Total
Proposed RM-2 Zoning (217 Units)	20	58	78	58	37	95	1180
-Ex RA Zoning (84 Homes)	-16	-46	-62	-52	-31	-83	-792
Net Change in Site Trips	**4**	**12**	**16**	**6**	**6**	**12**	**388**

The trip generation analysis demonstrates that neither of the proposed zone changes will result in any significant increase in peak hour traffic. Although a slight increase in traffic is projected in association with the second zone change (RA to RM-2), 16 or fewer additional trips are projected during each of the peak hours. Additionally, the two zone changes cumulatively are projected to result in a net decrease of 43 trips during the morning peak hour, 62 fewer trips during the evening peak hour, and 300 fewer daily site trips.

Based on the analysis, neither of the proposed zone changes are projected to result in traffic added traffic volumes significant enough to require detailed operational analysis of impacts at the 20-year planning horizon, and when the two proposed zone changes are considered together, site traffic for the Coburn Grand View Estates site is decreased under the reasonable worst-case development scenario.

TRANSPORTATION PLANNING RULE ANALYSIS

In order to allow the proposed zone change, the City of Salem must find that the requirements of Oregon's Transportation Planning Rule (OAR 660-012-0060) are met. This rule provides guidance regarding whether and how the potential transportation impacts of a plan amendment must be mitigated. The relevant portions of the Transportation Planning Rule are quoted, along with responses specific to the proposed zone change.

660-012-0060
Plan and Land Use Regulation Amendments

(1) If an amendment to a functional plan, an acknowledged comprehensive plan, or a land use regulation (including a zoning map) would significantly affect an existing or planned transportation facility, then the local government must put in place measures as provided in section (2) of this rule, unless the amendment is allowed under section (3), (9) or (10) of this rule. A plan or land use regulation amendment significantly affects a transportation facility if it would:

(a) Change the functional classification of an existing or planned transportation facility (exclusive of correction of map errors in an adopted plan);

No changes are proposed to the functional classification of existing or planned transportation facilities.

(b) Change standards implementing a functional classification system; or

No changes are proposed to the standards implementing the functional classification system.

(c) Result in any of the effects listed in paragraphs (A) through (C) of this subsection based on projected conditions measured at the end of the planning period identified in the adopted TSP. As part of evaluating projected conditions, the amount of traffic projected to be generated within the area of the amendment may be reduced if the amendment includes an enforceable, ongoing requirement that would demonstrably limit traffic generation, including, but not limited to, transportation demand management. This reduction may diminish or completely eliminate the significant effect of the amendment.

(A) Types or levels of travel or access that are inconsistent with the functional classification of an existing or planned transportation facility;

(B) Degrade the performance of an existing or planned transportation facility such that it would not meet the performance standards identified in the TSP or comprehensive plan; or

(C) Degrade the performance of an existing or planned transportation facility that is otherwise projected to not meet the performance standards identified in the TSP or comprehensive plan.

The proposed residential zonings would generate traffic types and volumes consistent with the functional classifications of all existing and planned transportation facilities. The first zone change will result in a net decrease in traffic as measured at the planning horizon and the second zone change will result in a minimal increase in traffic. Neither zone change would be projected to degrade the performance of any existing or planned transportation facilities, and cumulatively approval of the two zone changes is projected to result in a reduction in traffic.

CONCLUSIONS

Based on the analysis, the proposed zone changes from City of Salem "PH" zoning to "RM-2" zoning and from "RA zoning to "RM-2" zoning will not result in a significant effect as defined under Oregon's Transportation Planning Rule, and will not result in increases in traffic which would reasonably require detailed operational analysis of impacts at the long-range planning horizon. Accordingly, no mitigation is necessary or recommended in conjunction with either zone change individually or with the two zone changes cumulatively.

If you have any questions regarding this analysis, please feel free to contact me via email at mike.ard@gmail.com or via phone at 503-537-8511.

Appendix

Trip Generation Calculation Worksheet

Land Use Description: Medical-Dental Office Building
ITE Land Use Code: 720
Independent Variable: Gross Floor Area
Quantity: 28.2 Thousand Square Feet

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 2.78 trips per ksf
Directional Distribution: 78% Entering 22% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 3.46 trips per ksf
Directional Distribution: 28% Entering 72% Exiting

Total Weekday Traffic
Trip Rate: 34.80 trips per ksf
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

28.2 ksf Medical-Dental Office Building

	Entering	Exiting	Total
AM Peak Hour	61	17	78
PM Peak Hour	27	71	98
Weekday	491	491	982

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Multi-Family Housing (Mid-Rise)
ITE Land Use Code: 221
Independent Variable: Dwelling Units
Quantity: 54 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.36 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.44 trips per dwelling unit
Directional Distribution: 61% Entering 39% Exiting

Total Weekday Traffic
Trip Rate: 5.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

54 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	5	14	19
PM Peak Hour	15	9	24
Weekday	147	147	294

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Single-Family Detached Housing
ITE Land Use Code: 210
Independent Variable: Dwelling Units
Quantity: 84 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.74 trips per dwelling unit
Directional Distribution: 25% Entering 75% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.99 trips per dwelling unit
Directional Distribution: 63% Entering 37% Exiting

Total Weekday Traffic
Trip Rate: 9.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

84 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	16	46	62
PM Peak Hour	52	31	83
Weekday	396	396	792

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017

Trip Generation Calculation Worksheet

Land Use Description: Multi-Family Housing (Mid-Rise)
ITE Land Use Code: 221
Independent Variable: Dwelling Units
Quantity: 217 Dwelling Units

Summary of ITE Trip Generation Data

AM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.36 trips per dwelling unit
Directional Distribution: 26% Entering 74% Exiting

PM Peak Hour of Adjacent Street Traffic
Trip Rate: 0.44 trips per dwelling unit
Directional Distribution: 61% Entering 39% Exiting

Total Weekday Traffic
Trip Rate: 5.44 trips per dwelling unit
Directional Distribution: 50% Entering 50% Exiting

Site Trip Generation Calculations

217 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	20	58	78
PM Peak Hour	58	37	95
Weekday	590	590	1180

Data Source: *Trip Generation Manual, 10th Edition* , Institute of Transportation Engineers, 2017