

Public Comments for May 8, 2017 City Council
Appeal Hearing (AP-17-01) received on
May 8, 2017 prior to the hearing.

rec'd by May 8

FROM THE HOME OF

KEITH HAMILTON

May 7, 2017

Keith Hamilton
18250 Upper Midhill Dr.
West Linn, OR 97068

To Whom It May Concern:

I am a citizen of Robinwood.

I would not be such if suburban development were not permitted or encouraged.

I therefore am in support of development.

What I am not in support of, however, is intimidation, misinformation, and the rule of the junta when and where the safety of my family is concerned. In the case of the currently proposed development at the end of Upper Midhill Dr., in West Linn, I do believe that obfuscation is being used to paint a picture of relative safety and quietude where none would exist were the planned subdivision proceed as planned.

To describe the sort of traffic we should expect, as neighbors, as "typical" is comical at best, and flat-out false at worst. We don't *typically* endure hours on-end of heavy-load vehicles running up and down our streets. To assume that children, who currently frequent our neighborhood would safely be able to navigate the unmitigated influx of trucks is absurd, and to assume that, simply because they live and play a block off-site, they are not the concern of the bringer of heavy equipment is callous, and wrong.

We aren't ready, as a neighborhood, for 300 additional trips up and down Upper Midhill, Arbor, and Marylhurst Drives, neither from the standpoint of the modality of how current neighborhood residents treat our intersections (generally without regard for law or safety), nor from the legitimately realistic future that will occur should we begin construction of a 34-lot subdivision at the end of our street without the proper infrastructure to support it while providing safety for the men, women, and children of our neighborhood, who simply want to visit the park.

An independent study must be conducted (and is, as of the writing of this letter) to validate the claims of KIA in their generous assessment that our neighborhood will be just fine during construction—a time period that has no upper bound.

It is the duty of the city, as well as the planning commission, to consider an open, third-party investigation into the traffic and safety impacts of the proposed development, to such a degree that the citizens and city council of West Linn can make an open assessment of the situation that does not prey on ignorance, but information.

Any study that is performed without releasing its derived data is suspect. I simply want to be able to address my council and receive their word that the decision levied was made under the auspices of knowledge, not ignorance.

I am for development—it is the bedrock of our growing community. I stand firmly in opposition of development that is done without the transparent awareness of, security of, and consent of those whom it directly affects.

Regards,

A handwritten signature in black ink, appearing to read 'KH', with a stylized flourish at the end.

Keith Hamilton

May 8, 2017

VIA EMAIL

Mayor Russell Axelrod
West Linn City Council
West Linn City Hall
22500 Salamo Road
West Linn, OR 97068

#1

Seth J. King
sking@perkinscoie.com
D. +1.503.727.2024
F. +1.503.346.2024

**Re: Upper Midhill Estates Subdivision
City File Nos. SUB-15-03/WAP-16-03/AP-16-02/AP-17-01
Applicant's Request to Exclude New Evidence**

Dear Mayor Axelrod and Members of the City Council:

This office represents Upper Midhill Estates, LLC ("Applicant"), the applicant requesting approval of a 34-lot subdivision and water resources permit for property located at 18000 Upper Midhill Drive, City File Nos. SUB-15-03, WAP-16-03, AP-16-02, and AP-17-01 ("Applications"), which the Planning Commission approved on reconsideration, subject to conditions. With this letter, Applicant objects to, and requests that the City Council exclude from the record, testimony submitted by Ann Beltman on May 4, 2017, which includes an email at 2:24pm and an attachment entitled "Robinwood Neighborhood Plan and Proposed Robinwood Overlay Zone," on the grounds that this testimony is both improper new evidence and outside the scope of the appeal.

First, Ms. Beltman's testimony constitutes improper new evidence. Because this matter is a quasi-judicial appeal from the Planning Commission, the City Council is only permitted to accept new evidence under two limited circumstances, and neither of these circumstances apply to the RN Overlay Zone testimony. The two circumstances when the City Council may accept new evidence on appeal are the following: (1) a procedural error was committed that prejudiced the party's substantial rights, and reopening the record is the only means of correcting the error; or (2) a factual error occurred before the Planning Commission that is both relevant to an approval criterion and material to the decision. West Linn Community Development Code ("CDC") 99.280.C.

Mayor Axelrod and West Linn City Council

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Ms. Beltman's email and attachment constitute new evidence because they include and discuss a proposed overlay zone that would have applied to the subject property if the City had adopted it. Ms. Beltman does not contend that the Planning Commission committed a procedural or factual error below, and it did not. Ms. Beltman and others in the community had several weeks when the record was open before the Planning Commission, and they could have submitted this evidence during that open record period. However, they failed to do so. Therefore, there is no basis for the City Council to accept or consider the evidence pertaining to the RN Overlay Zone at this point in the proceedings.

Second, Ms. Beltman's testimony is outside the scope of the appeal because it does not fall within the scope of the reconsideration, which is limited to compliance with CDC 85.200.A; it is not identified as an issue on the appellants' appeal statement, as required by CDC 99.280.D; and the issue raised in her testimony was not preserved below, also as required by CDC 99.280.D.

The public notice for this appeal hearing states that testimony outside the scope of the appeal hearing will not be accepted by the City. Therefore, the City Council should not consider Ms. Beltman's evidence and should formally exclude it from the record. Thank you for your attention to this request.

Very truly yours,



Seth J. King

cc: Peter Spir (via email)
Tim Ramis (via email)
Megan Thornton (via email)
Ryan Zygar (via email)
Andrew Tull (via email)
Matt Bell (via email)
Michael Robinson (via email)

May 8, 2017

VIA EMAIL

#2

Mayor Russell Axelrod
West Linn City Council
West Linn City Hall
22500 Salamo Road
West Linn, OR 97068

Seth J. King
sking@perkinscoie.com
D. +1.503.727.2024
F. +1.503.346.2024

**Re: Upper Midhill Estates Subdivision
City File Nos. SUB-15-03/WAP-16-03/AP-16-02/AP-17-01
Applicant's Letter in Support of the Applications**

Dear Mayor Axelrod and Members of the City Council:

This office represents Upper Midhill Estates, LLC ("Applicant"), the applicant requesting approval of a 34-lot subdivision and water resources permit for property located at 18000 Upper Midhill Drive ("Property"), City File Nos. SUB-15-03, WAP-16-03, AP-16-02, and AP-17-01 ("Applications"), which the Planning Commission approved on reconsideration, subject to conditions. Applicant requests that the City Council deny the appeal and affirm the Planning Commission's decision for the reasons stated below.

1. Procedural Arguments.

- **The City Council should limit the appeal to appellants' Issue 3 (Willamette Drive bicycle lanes) because it is the single issue that is properly within the scope of the appeal.** The City Council has already determined that this appeal is not an opportunity to raise any and all issues about the proposed development. Instead, the scope of the appeal is limited in three important ways:
 - The testimony and argument must fall within the scope of the reconsideration, which the City Council previously limited to the topic of "adequate public facilities, including traffic impact and influences and pedestrian improvements and safety that are related to CDC 85.200.A."
 - The appeal issue must be identified in the appeal statement, as required by West Linn Community Development Code ("CDC") 99.280.D; and

- The appeal issue must have been raised below with sufficient specificity to allow the Planning Commission and the parties to respond. *Id.*
- The issue of the adequacy of bicycle lanes on Willamette Drive falls within the scope of the reconsideration, residents raised the issue with sufficient specificity to allow the Planning Commission and the parties to respond, and the appellants identified the issue in their appeal statement. Therefore, this issue is properly before the City Council at the appeal hearing.
- **The City Council should reject other issues raised in the appeal statement or at the appeal hearing without reaching their merits because they are outside the scope of the appeal** and, as explained above, not allowed pursuant to CDC 99.280.D or the public notice provided by the City in advance of this hearing (“Testimony determined to be outside the scope of this appeal hearing will not be accepted.”).
- **The City Council should limit the appeal hearing to evidence already in the record because the Planning Commission did not commit any procedural or factual errors that would allow the City Council to consider new evidence.** See CDC 99.280.C (limiting new evidence in a City Council appeal hearing to instances when the Planning Commission committed an error). As examples, but without limitation, the City Council should expressly reject measurements of Willamette Drive that were completed after the Planning Commission hearing and the copy of the draft RN Overlay Zone that the City once considered but never adopted.

2. Policy Arguments.

- Applicant is proposing to develop the Property with a permitted use (single-family residential), which is the same use developed throughout the surrounding neighborhood.
- Applicant is not requesting an upzoning and, in fact, the Applications propose to develop the Property at the lowest density possible under existing zoning and thus will have the fewest operational and safety impacts to area streets.

- The proposed development is not unusual in the scope or extent of its impacts, and those impacts will be mitigated.
- Applicant is not required to address existing deficiencies in the area street network.

3. Substantive Arguments.

- Applicant concurs with the Planning Commission decision and the City staff report recommendation to approve the Applications, subject to conditions.
- **Applicant is proposing more mitigation measures than with the original Applications, including:**
 - Restriping Willamette Drive with a northbound left-turn pocket on the south leg of the Willamette Drive/Arbor Drive intersection and a left-turn refuge storage area on the north leg of the intersection;
 - Payment of a fee in the amount of \$11,600 as Applicant's proportionate share contribution toward the long-term Highway 43 Multimodal Transportation Project; and
 - Hillside Drive road widening and tapering and approximately 90 feet of sidewalk on the north side of the street in front of 17849 Hillside Drive and 150 feet of sidewalk on the west side of the street commencing at the south edge of the proposed subdivision boundary to fill in gaps in the pedestrian facilities.
- **The Oregon Department of Transportation ("ODOT"), KAI, DKS Engineering, and City Engineering provided expert testimony, which was not rebutted or undermined by any other traffic consultant or testimony, that there will be adequate public transportation facilities to serve the development:**
 - KAI analyzed the safety and performance of the area street system and concluded that, subject to Applicant's completion of the mitigation

measures identified above, the development would be served by adequate and safe transportation facilities. See KAI Memorandum dated March 1, 2017 (“KAI Memorandum”). KAI reached its conclusions based upon an analysis of the background and projected traffic conditions (including trips generated by the development) at affected intersections in the vicinity of the development. See Appendices to KAI Memorandum. KAI concluded that, subject to implementation of these mitigation measures, all affected intersections would operate consistent with applicable performance standards (Level of Service or Volume-to-Capacity). KAI Memorandum at 1. In fact, Applicant’s proposed interim improvements will actually improve performance during the PM peak hour at the Willamette Drive/Arbor Drive intersection. *Id.* Based upon its analysis, KAI concluded that “the proposed development plan can be constructed while maintaining safe and adequate public facilities for motorists, pedestrians, and cyclists.” KAI Memorandum at 4.

- Notably, on reconsideration, Applicant has committed to completing more transportation mitigation measures than Applicant proposed, or City staff recommended, in the original proceedings. See KAI’s original Transportation Impact Analysis for the Development dated January 2016 (“TIA”), which had recommended only the payment of a fee in lieu toward completion of off-site traffic mitigation measures on Willamette Drive between Arbor Drive and Shady Hollow Way. The additional mitigation measures proposed by Applicant on reconsideration reflect Applicant’s good faith commitment to addressing the transportation impacts of the Development.
- However, the additional mitigation measures are not even necessary to ensure the adequacy of area facilities. The transportation engineers at both DKS Associates (the City’s transportation engineer) and ODOT reviewed KAI’s original TIA and concurred with its recommendation that requiring payment of a fee in lieu was “appropriate.” See Staff Report for April 20, 2016 Planning Commission meeting at 14. To the extent the fee in lieu alone ensured that there were adequate public transportation facilities to serve the development—as these professional engineers

found—Applicant’s provision of the additional mitigation measures identified above before occupancy of the development certainly ensures this standard is met.

- Further, ODOT has reviewed KAI’s separate Transportation Impact Analysis for a more intensive, 42-unit residential development proposal for the Property and has concluded that Applicant could mitigate the impacts of this more intensive development by completing the Arbor Drive/Willamette Drive interim improvements and paying a fee in lieu toward the long-term improvements at this intersection. See ODOT memorandum dated February 3, 2017. To the extent these measures were sufficient to mitigate the impacts of that more intensive development, Applicant’s provision of the same mitigation measures (plus the Hillside Drive improvements) before occupancy of the 34-lot development certainly ensures this standard is met.
- **Applicant has adequately addressed appellant’s concerns regarding the adequacy of bicycle lanes on Willamette Drive.** The Planning Commission approved the Applications, subject to Condition 3, which requires Applicant to complete off-site traffic mitigation, including interim improvements to Willamette Drive and a fair-share contribution to long-term improvements for this facility:

“To mitigate the traffic impacts from the proposed subdivision until the Highway 43 Multimodal Transportation Project is constructed, and prior to the issuance of a grading permit for the development site, the applicant shall construct their proposed interim solution as depicted in Figure 9 of Kittelson Associates’ March 1, 2017, memorandum (‘KAI Memorandum’) (Exhibit PC-5B) that includes restriping the highway with a northbound left turn pocket on the south leg of the intersection and a left turn refuge/storage area on the north leg of the intersection. The applicant shall also pay a proportionate fee in the amount of \$11,600 as Applicant’s proportionate share contribution toward the long-term Highway 43 Multimodal Transportation Project.”

Applicant's transportation engineer has stated that it is feasible to incorporate bicycle lanes into the design of the interim improvements. See KAI Memorandum, page 3.

Alternatively, ODOT has jurisdiction over this segment of Willamette Drive and has stated that, as needed, it will consider deviations from design standards for Applicant's interim improvements that are consistent with design deviations granted for the Highway 43 Multimodal Transportation Project as a whole. See ODOT memorandum dated February 3, 2017, page 2. To the extent ODOT approves a design exception that affects bicycle lanes for the interim improvements, it will be the final decision of the agency with jurisdiction over this highway segment on the need for/sufficiency of bicycle lanes associated with the interim improvements. Accordingly, based upon the testimony from Applicant's transportation engineer and ODOT, the City Council can condition approval of the Applications upon providing bicycle lanes or, as needed, obtaining a design exception from ODOT from any bicycle lane requirement.

Further, the interim improvements will be temporary in nature. Applicant's transportation engineer testified to the Planning Commission that the long-term improvements for Willamette Drive are anticipated in 2020. ODOT testified that these long-term improvements will incorporate bicycle lanes. See ODOT memorandum dated February 3, 2017, page 1. Planning Commission Condition 3 requires Applicant to make its fair-share contribution to these long-term improvements, which will necessarily constitute Applicant's fair-share contribution to bicycle lanes associated with these long-term improvements.

- In its narrative for the reconsideration (dated March 1, 2017), Applicant has responded to each of the City Council's original grounds for denial:
 - Applicant may rely upon facilities that are programmed but not built to demonstrate that there are "adequate public facilities," provided Applicant pays a proportionate share fee in lieu for the programmed facility. In this case, Applicant does not actually rely upon facilities that

are programmed but not built because the interim improvements alone will satisfy the “adequate public facilities” standard.

- The City should rely upon the traffic analysis completed by KAI because the assumptions and methodology underlying this analysis are credible.
- Applicant’s proposed mitigation measures will improve safety and decrease delay at the intersection of Arbor Drive and Willamette Drive before occupancy.
- The local streets and sidewalks connecting the proposed development and Willamette Drive are adequate to accommodate existing and projected traffic.
- **Applicant is not required to address construction-related traffic in order to satisfy CDC 85.200.A.** Nevertheless, Applicant has voluntarily agreed to submit for approval by the Public Works Director a Construction Management Plan for the development that includes a traffic management plan prohibiting truck traffic on Upper Midhill Drive between Marylhurst Drive and Arbor Drive. See Planning Commission Condition 11.
- **The Applications propose detached single-family dwellings, which are “needed housing” under both state and local law.** See ORS 197.303(1)(a) and City Comprehensive Plan at H-1, H-2, and Figure 10-1. As a result, the City may only apply “clear and objective standards, conditions, and procedures” to the Applications. ORS 197.307(4). To the extent CDC 85.200.A requires the City to exercise discretion, it is not a “clear and objective standard.”

4. Conclusion.

For the reasons explained above, and based upon evidence in the record, the City Council should deny the appeal and affirm the Planning Commission’s approval of the Applications, subject to conditions.

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Applicant has requested that City staff include a copy of this letter in the official record for this matter and place a copy before you prior to the appeal hearing in this matter. Applicant and its representatives will attend the City Council appeal hearing and are happy to answer any questions at that time.

Thank you for your careful consideration of this testimony and the Applications.

Very truly yours,



Seth J. King

cc: Peter Spir (via email)
Tim Ramis (via email)
Megan Thornton (via email)
Ryan Zygar (via email)
Andrew Tull (via email)
Matt Bell (via email)
Michael Robinson (via email)

Spir, Peter

From: Jason Harra <jharra@gmail.com>
Sent: Monday, May 08, 2017 3:58 PM
To: Axelrod, Russell; Perry, Brenda; Cummings, Teri; Martin, Bob; Sakelik, Richard
Cc: Spir, Peter
Subject: Written Testimony
Attachments: Jason Harra - Written Testimony.docx

Mayor and Council Members,

Please see my attached written testimony regarding the 34-lot subdivision application. I look forward to explaining my position at tonight's meeting.

Regards,

Jason Harra

From Jason Harra, received
4am/ May 8, 2017

I am asking the City Council to once again deny the application for Upper Midhill, LLC (the Applicant) to develop a 34-lot subdivision because there are not adequate public facilities. Specifically, the Applicant does not provide sufficient mitigation to meet all existing demands nor will it satisfy projected demands from projects with existing land use approvals, plus the additional demand created by the application. Further, off-site facilities will remain incompliant with some applicable standards.

Background: Inadequate Public Facilities and Applicant's Proposed Mitigation

The Applicant has proposed to build a 34-lot subdivision and off-site vehicle only traffic mitigation at the intersection of Hwy 43 and Arbor Dr. But the result of this development is increased automobile, bicycle and pedestrian traffic without the adequate public facilities to meet its demand. To approve the application, the Applicant is required, by CDC 85.200, to provide a burden of proof that adequate public facilities exist.¹

Upper Midhill, LLC, in its application, has proposed that it will mitigate the primary issue arising from the development by restriping Highway 43 to provide a two-way left-hand turn lane.

However, the Applicant's proposed mitigations are insufficient for several reasons. First, the Applicant's traffic analysis on which the proposed mitigation is based is critically flawed and biased in favor of the Applicant. The result is that the Applicant is not providing an accurate picture of the demand on these critical public facilities. Second, even if the Applicant was providing an accurate picture of the increased traffic, its proposed mitigation of restriping Highway 43 to provide a two-way left-turn lane is insufficient to address existing and projected demands. Third, the Applicant's proposed mitigation of restriping Highway 43 will further reduce already narrow pedestrian travel lanes the result of which is pedestrian facilities that are inconsistent with ADA and other applicable standards. Finally, the Applicant's proposed mitigation of reducing traffic at Highway 43 and Arbor by utilizing side street connectivity creates dangerous conditions for pedestrians and cyclists on those side streets.

(1) Flawed Methodology used in Developer Traffic Analysis

Under CDC 85.200, Midhill has an obligation to "(2) satisfy the projected demands from projects with existing land use approvals, plus the additional demand created by the application." In order to do this, the Applicant has done a traffic analysis which claims to be accounting for the estimated trips generated from projects with existing land use approvals at Mary's Woods and

¹ CDC 85.200 provides: "**Adequate public facilities.** Public facilities that must be adequate for an application for new construction, remodeling, or replacement of an existing structure to be approved are transportation, water, sewer, and storm sewer facilities. To be adequate, on-site and adjacent facilities must meet City standards, and off-site facilities must have sufficient capacity to (1) meet all existing demands, (2) satisfy the projected demands from projects with existing land use approvals, plus the additional demand created by the application, and (3) remain compliant with all applicable standards.

For purposes of evaluating discretionary permits in situations where the level-of-service or volume-to-capacity performance standard for an affected City or State roadway is currently failing or projected to fail to meet the standard, and an improvement project is not programmed, the approval criteria shall be that the development avoids further degradation of the affected transportation facility. Mitigation must be provided to bring the facility performance standard to existing conditions at the time of occupancy."

the new duplexes on Willamette Dr.² but may not have provided sufficient proof of doing so. If the Applicant has not provided, for public review, the estimated trips generated from other projects in the region and their impact on the TIA this is unacceptable. The Applicant should deliver the trips generated in their original format so that its claims can be validated.

In addition, the Applicant has suggested that it has done the appropriate supplemental traffic counts³ but has not provided the supplemental traffic counts for City Council or public review, so it is again asking the City Council and the public to trust that they are properly applied to the analysis. This is unacceptable, the supplemental traffic counts should be provided in the same format as the original traffic counts done by Quality Counts in June 2015 "Appendix A Traffic Counts, Pages 84-95". Further, the public should have all mathematical formulas used to balance and seasonally adjust. Without this data, there is no way to verify that this analysis was done in accordance with approved methodologies without just "taking the word" of the Applicant.

"KAI testified that this adjustment was sufficient to account for trips in-process developments such as the new duplexes on Willamette Drive and the expansion of Mary's Woods. Id. Stated another way, if KAI had separately added in trips from in-process developments and assumed a two percent growth in area traffic, it would have resulted in double-counting of these background trips." (RECONSIDERATION, page 18)

Without access to the data used to account for trips in-process developments we should consider the KAI testimony invalid as the City Council cannot verify that they are accurate or unbiased in favor of the Applicant. Given current regional traffic growth in West Linn and other areas served by Highway 43, we can assume a one percent per year growth to be insufficient. With our safety at stake, the public deserves to know how different growth assumptions would impact the analysis. Without the raw data used in these assumptions, we cannot verify them as accurate.

Not only is the information provided by the Applicant incomplete, but it appears to be based on faulty assumptions as well. For example, the Applicant seems to suggest that it can account for only typical heavy weekday traffic and ignore new and atypical construction traffic generated by the development.⁴

² "This increase accounts for the new duplexes on Willamette Drive, which were under construction when the traffic counts were conducted, and the expansion of Mary's Woods, which is not expected to occur until after full build out of the proposed development." (RECONSIDERATION, page 18)

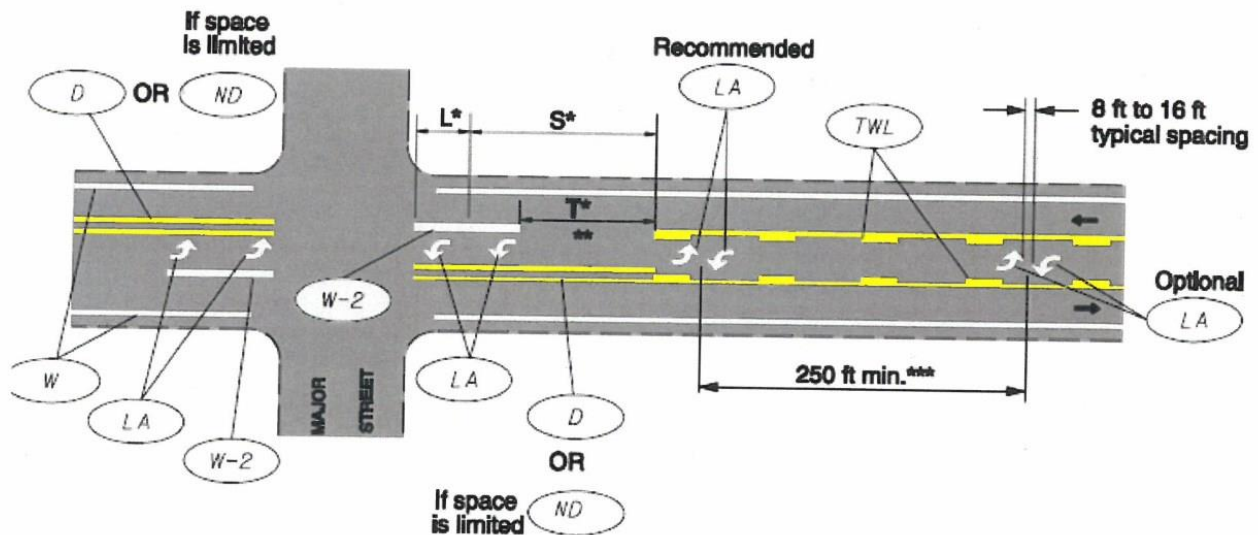
³ "Supplemental traffic counts were conducted at the study intersections in October 2016, while school was in session. The traffic counts were balanced and seasonally adjusted in accordance with the methodologies identified in the ODOT Analysis Procedures Manual (APM) to reflect peak traffic conditions within the study area." (RECONSIDERATION, page 18)

⁴ "The traffic analysis was prepared in accordance with City and ODOT standards and focused on total build-out conditions (i.e. residential homes fully built and occupied). As such, the traffic analysis included typical weekday heavy vehicle traffic captured in the traffic counts. While temporary construction traffic should be considered in the overall development process, it is typically handled as part of a construction management plan that can involve stakeholders." (RECONSIDERATION, page 18)

KIA's assertion that it can account for typical weekday heavy vehicle traffic and ignore the impact of new and atypical construction traffic generated by the development is unconvincing and further illustrates the biased nature of the analysis. The reality is that logging trucks leaving the development site will need to navigate a failing intersection. When was the last time there was this many logging trucks and other heavy machinery coming down Arbor Drive? I contend that a reasonable and neutral person would describe a situation where logging trucks, dump trucks, and other heavy machinery navigating the intersection of Highway 43/Arbor as 'Atypical', 'Irregular', or 'Unusual' traffic. Further, I assert that construction traffic should be considered because, in the real world, this added traffic impacts off-site facilities with each generated trip, in fact, much more than regular traffic.

(2) Restriping Highway 43 to provide a two-way left-turn lane (TWLTL) is insufficient to address increased traffic at an already failing intersection.

The Applicant proposes that, to mitigate the impacts of heavily increased traffic, it will restripe Highway 43 to provide for a two-way left-turn lane. Example below.



- * Refer to Figure 21 for L, S, and T dimensions.
- ** A reversing curve shall be used for crest vertical curves, horizontal curves, and multiple left turn lanes.
- *** Double arrows to be placed at even intervals, proportioned within block. Approx. distance (ft) between each set = 10 x posted speed in mph.

Figure 22b Typical Two-Way Left Turn Lane Layout at Major Intersections

A TWLTL does not come without limitations, especially when applied to a narrow an uncommonly narrow and very busy intersection like Hwy43/Arbor.

“There are some limitations to TWLTLs the designer must keep in mind. **Extra street width may be required, resulting in an increased need for right of way.** In addition, **TWLTLs add another lane pedestrians and bicyclists to cross and do not provide a refuge area for them.** Another limitation is that **TWLTLs may not alleviate safety problems at closely spaced entrances and intersections, where queuing traffic can block left turning movements.**” (Iowa Department of Transportation, page 2)

The proposed mitigation plan does not meet the Oregon Highway Design Manual standards because it does not provide a continuous two-way left-turn lane and “will likely require Design Exceptions” (ODOT 1, page 4; ODOT 2, page 69). The methodology used to design the mitigation assumes that **100%** of motorists will instinctively know how to do a two-stage turn when there is an “acceptable gap” in traffic. “It cannot be overstated that gap acceptance behavior is highly dependent on the driver characteristics and preferences. Therefore, homogeneous behavior from all drivers at all times is not realistic.” (Nabae, Moore, Hurwitz, page 1). Further, there is insufficient data to show that there will be enough “acceptable gaps” for the proposed mitigation to succeed in its purpose during the peak hours of operation. A simple drive through the intersection during peak hours will illustrate that gaps are extremely limited.

“In fact, drivers on minor approaches have shown a tendency to accept a gap when “the benefit from entry is greater than the associated risk” (Pollatschek et al. 2002). **When the waiting time exceeds the drivers’ expectation and tolerance limit, they will accept higher levels of risk associated with smaller gaps.** It is somewhat unclear in the literature if drivers accurately perceive the increased risks associated with the acceptance of these smaller gaps. After a certain wait time threshold, drivers might even accept gaps shorter than gaps that had previously been rejected.” (Xiaoming et al. 2007)

How does the proposed mitigation work when there are vehicles waiting in the turn lane and vehicles waiting to enter Highway 43 from Arbor? What happens when there are vehicles waiting on both sides of Arbor and both Highway turning lanes? These types of situations will happen relatively frequently during peak hours and, while they should result in fewer rear-end collisions, they may result in more turning type accidents due to the unusually high volume of traffic at this intersection. The answer from the accepted methodology is that, due to forecasted optimal use of the two-stage turn, these situations won’t impact the level of service and capacity.

“When a driver arrives at the stop line on the minor approach to a TWSC intersection, they need to decide when to execute a maneuver based on right of way hierarchy as well as the availability and distributions of the major road gaps (HCM 2000). **Due to the important role that personal driver behavior plays in confronting the conflicting traffic, the capacity and level of service analysis for TWSC intersections are more complex than that of intersections with higher levels of control.**” (Kittleson and Vandehey, 1991)

What happens to the level of service (LOS) and capacity (v/c) of this intersection if fewer than 100% of motorists instinctively know how to use the TWLTL? What happens during peak traffic hours when traffic is backed up for hundreds of feet north of the intersection and there are no acceptable gaps for long periods of time? I assert that a significant number of motorists will prefer to wait for an adequate gap on both sides of travel instead of attempting a two-stage turn.

I assert that a significant number motorists do not want to make other drivers think “is this person turning in front of me, or will they actually wait?” when attempting a two-stage turn.

In addition, the proposed mitigation plans are also unclear as to which ODOT Traffic Line Manual striping standards (ODOT Traffic Line Manual, pages 36-38) will be used. It is logical to assume that different striping plans will impact utilization of the TWLTL. The methodology applied does not allow you to vary the utilization of the TWLTL and is logically flawed or open to different interpretations.

The problem with accepting the proposed mitigation and its underlying assumptions regarding use of two-stage turns is that we cannot test them as variable inputs and check the results. Instead, we must hope that all motorists perform robotic like homogeneous two-stage turns to get real world results to match their model. What is more troubling is that even when you apply these unrealistic assumptions, the intersection barely meets standards and will easily fail if any of the following occur: (1) two-stage turns are not optimally done, (2) KIA incorrectly gathered or incorrectly applied resampled traffic counts (like their first attempt), or (3) regional traffic growth adds more volume than capacity. The latter has already been projected to happen in the West Linn Conceptual Design Plan, which includes even better and safer mitigation but it still failed.

As previously mentioned, the City Council, working in conjunction with Kittleson & Associates (KAI), has provided projections which illustrate the forecasted impact of both the currently proposed traffic mitigation and the future reconfiguration in the West Linn Conceptual Design Plan (WL, pages 45-47). Refer to Table 2 below.

Table 2: 2040 Future Base Weekday Peak Hour Intersection Level of Service with Proposed Conceptual Design Plan

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Average Delay (Sec)	Volume/Capacity (v/c)	Los	Average Delay (Sec)	Volume/Capacity (v/c)
<i>Signalized Intersections</i>						
Hwy 43/Marylhurst Dr. – Lazy River Way	D	41.9	>1	D	44.7	>1
Hwy 43/Hidden Springs Rd.	D	39	0.96	D	38.6	0.94
Hwy 43/Pimlico Dr.	C	23.8	0.88	C	31.5	0.99
Hwy 43/West A St.	C	23.8	0.88	C	25.4	0.95
Hwy 43/Hood St.-McKilligan St.	D	36	0.93	D	51	0.99
<i>Unsignalized Intersections</i>						
Hwy 43/Arbor Dr.	A/F	> 50	0.00/0.98	B/F	> 50	0.05/>1
Hwy 43/Cedar Oak Dr.	D/F	> 50	0.03/0.25	B/C	16	0.01/0.04
Hwy 43/Holmes St. 2	B/F	> 50	n/a/>1	B/F	> 50	n/a/>1
Hwy 43/Lewis St. 2	B/F	> 50	0.07/0.27	B/F	> 50	0.07/0.45

Notes: LOS = Level of Service

Delay = For signalized intersections, average vehicle delay in the peak hour for entire intersection in seconds. For unsignalized intersections, average vehicle delay for the critical movement.

Unsignalized Intersections Operations:

A/A = Major street turn LOS/Minor street turn LOS

#/# = Major street turn v/c /Minor street turn v/c

“The recommended 2016 Plan would improve the corridor over existing conditions but still does not meet some of the ODOT operating standards during the AM and PM

peak hours. In addition, all locations without traffic signals will continue to have significant delays for side street approaching traffic during peak hours. This is consistent with the current findings under existing volumes. Improved side street connectivity to existing signalized intersections would help mitigate this condition.” (WL, page 47)

A reasonable person would agree that we should not make our current and future problems even worse by adding more Eastbound traffic down Arbor Drive onto Northbound Hwy 43, which leaves the future motorists only once choice, a local street called Upper Midhill Drive.

Proposed Mitigation Impact on Side Streets Facilities

“Improved side street connectivity to existing signalized intersections would help mitigate this condition” (WL, page 47)

Upper Midhill Dr. is the only side street which provides connectivity to the existing signalized intersection at Highway 43/Marylhurst Dr and public park facilities (Upper Midhill Park) and **is classified as a local street**. The section of Upper Midhill between Arbor Dr. and Marylhurst Dr. measures 16 feet wide in many sections, subjecting users to inadequate **8 feet travel lanes** and **no sidewalks**. The proposed development is projected to generate additional traffic on Upper Midhill Dr. How can a reasonable person construe these existing public facilities as adequate? How can you justify sending more (future demand) trips down this street? Well KIA would have you believe that it is easily justified by ignoring the width of travel lanes and lack of sidewalks and instead focusing on the vehicle trips per day associated with a “local street”.

“The streets that connect the proposed development to OR 43 are sufficient to accommodate existing vehicle traffic and traffic generated by the proposed development, particularly the segment of Upper Midhill Drive located north of Arbor Drive and the segment of Arbor Drive located east of Upper Midhill Drive. **As local streets, these streets are designed to accommodate up to 1,500 vehicles per day. With the proposed development, these streets are projected to accommodate less than 900 vehicles per day. Therefore, there is sufficient capacity along the existing street network to accommodate a significant increase in traffic beyond the proposed development.** The segment of Upper Midhill Drive located south of Arbor Drive is narrow; however, as described in a previous response letter, it is sufficient to accommodate existing vehicle traffic and traffic generated by the proposed development, which is expected to be less than 10 vehicles per day, including one vehicle during the morning and one vehicle during the evening peak hour. With the proposed development, this segment of Upper Midhill Drive is projected to accommodate less than 300 vehicles per day.” (RECONSIDERATION, page 18)

West Linn Community Development Code 85.200 Approval Criteria defines roadway standards as follows:

“3. Street widths. Street widths shall depend upon which classification of street is proposed. The classifications and required cross sections are established in the adopted TSP.

The following table identifies appropriate street width (curb to curb) in feet for various street classifications. The desirable width shall be required unless the applicant or his or

her engineer can demonstrate that site conditions, topography, or site design require the reduced minimum width. For local streets, a 12-foot travel lane may only be used as a shared local street when the available right-of-way is too narrow to accommodate bike lanes and sidewalks."

City of West Linn Roadway Cross-Section Standards

Street Element	Characteristic	Width/Options
Vehicle Lane Widths (Typical widths)	Minor Arterial	11 - 12 feet
	Collector	10 - 12 feet
	Neighborhood Route	10 - 12 feet
	Local	10 - 12 feet

In addition, there are no sidewalks on Upper Midhill Dr. to provide residents with safe travel to and from the existing park facilities. As a matter of fact, children must walk in the street if they wish to walk from the proposed new development to Upper Midhill Park. Is this adequate?

Sidewalk standards are defined below:

Sidewalks (Typical widths)	Minor Arterial	6 feet, 10 - 12 feet in commercial zones
	Collector	6 feet, 8 feet in commercial zones
	Along Cycle Track	6 feet, 10 - 12 feet in commercial zones
	Neighborhood Route / Local	6 feet (4 - 5 feet in Willamette Historical District), 8 feet in commercial zones

West Linn Community Development Code 85.200 Approval Criteria is very clear in stating that if the purposed development will require access to the signalized location at Highway 43/Marylhurst Dr then adequate public facilities must be available, which is not the case as Upper Midhill Dr. is not "compliant with all applicable standards".

“No tentative subdivision or partition plan shall be approved **unless adequate public facilities will be available to provide service to the partition** or subdivision area prior to final plat approval and the Planning Commission or Planning Director, as applicable, finds that the following standards have been satisfied, or can be satisfied by condition of approval.”

It is obvious that public facilities are inadequate to provide for existing or future transportation demand on Upper Midhill Dr. Future trips generated by the proposed development will compound this problem further, maybe not in terms of total volume as opined by KIA and classified by City Code but certainly in terms of pedestrians, cyclists and motorists being forced into sharing a dangerously narrow pathway. Because public facilities are not “compliant with all applicable standards available” and neither the city nor the Applicant have plans to satisfactorily address West Linn Community Code 85.200, the application should be denied.

Proposed Mitigation Impact for Cyclists and Pedestrians

The proposed mitigation will result in further narrowing already narrow bike and pedestrian lanes on Highway. 43 to 5 ½' (Application Reconsideration, page 32). The northern leg of the intersection is not wide enough to accept even these widths and will likely need to be narrowed **below 5 feet**, which will require even more **exceptions to safety standards**.

The proposed mitigation is not consistent with the Oregon Highway Design Manual, the West Linn Comprehensive Plan, or the latest national standards including the NACTO Urban Bikeway Design Guide regarding best practices to ensure bike and pedestrian safety. The proposed mitigation may increase the risk of serious injury to a pedestrian or cyclist until the long-term facility improvements are in place, and it does not align its purpose with that of the Multimodal Transportation Project as stated below.

“The purpose of this project **is to improve bike and pedestrian facilities** as well as the overall safety of the roadway. When fully completed, this corridor could provide a safe and critical link between users in Oregon City, the historic Willamette Falls/Locks area, Lake Oswego, Portland, and beyond.” (MTP, page 1)

The City of West Linn has further publicly supported the need for bicycle safety with the following statements.

“The 2016 OR 43 Conceptual Design Plan (2016 Plan) is needed to provide clarity on the ultimate cross section envisioned for OR 43 in West Linn, **incorporate bicycle facilities that will serve and attract users of all ages and abilities**, ensure consistent access for emergency vehicles and maintenance functions, and secure agreement between the Oregon Department of Transportation (ODOT) and the City of West Linn with regards to the geometric and traffic control design elements throughout the corridor.” (WLCP 1, page 4)

“Create a corridor that will **encourage the use of alternative transportation modes and reduce reliance on the automobile**.” (WLCP, page 4)

“Improve vehicular access to properties abutting OR 43 **while promoting bicycle and pedestrian safety**.” (WLCP, page 4)

“Ensure consistency with adopted plans, policies and standards, including the Oregon Highway Plan, the Oregon Highway Design Manual, the Regional Transportation Plan, the West Linn System Transportation Plan, the West Linn Comprehensive Plan, and the latest national standards including the NACTO Urban Bikeway Design Guide.” (WLCP, page 4)

I fully support the efforts taken on behalf of the City of West Linn working in conjunction with ODOT for their 2016 Conceptual Design Plan to drastically improve the public facilities available to cyclists and pedestrians. However, the Applicant plan does not provide for adequate transportation facilities to accommodate existing and future cyclist and pedestrian demand.

Summary

There has been a pattern of mistakes that err on the side of the Applicant and I personally question the neutrality of the professionals working on behalf of the Applicant. The Applicant is claiming that we can rely on his expert testimony, but there is reasonable doubt about the neutrality of his experts, if not a clear conflict of interest for certain parties involved and how they interpret “adequate public facilities.” If we cannot trust the data used to generate the TIA, we cannot trust the proposed mitigation. When considering the mitigation, we must consider its impact on ALL modes of transportation. The City’s own forecast shows this intersection will continue to fail into the future and if we truly want to solve the problem we need to also focus on other methods of transportation, which this proposed mitigation does not do. Doing so will require widening the road to “include extension of existing storm drainage pipes/culverts and installation of retaining walls/ handrails would likely be needed.” (WLCP, page 17). The city should not accept a short-sighted solution from the Applicant if it means compromising on safer facilities for cyclists and pedestrians. There is certainly more room to argue each side, but I believe it is the duty of the council to err on the side of public safety rather than a developer’s personal financial gain. I feel confident with more focus, more resources, and further evidence being presented, the threat of a higher density and overall more dangerous plan can be mitigated. We may be in for a long battle that could reach as high as the Oregon Supreme Court. That is ok. I would forever regret not addressing these issues if somebody is tragically injured. I purpose the City deny the application and work with the community and the Applicant on a safer plan that meets both existing and future public facility demand. Here are a few options.

- The Applicant waits for the Multimodal Transportation Project which includes adequate bike and pedestrian facility to be completed.
- Due to the rather high cost for all parties to bring existing facilities up to adequate capacity, it may be in the best interest of all parties to discuss a transfer of ownership of the property from Midhill to the city. I am sure this is not budgeted, but neither is bringing our existing facilities on Upper Midhill Dr. and Arbor Dr. compliant with all applicable standards.
- The city and Midhill enter into conversations to reduce the number of trips generated by the proposed development while bringing facilities up to safety standards.

Thank you,

Jason Harra

17701 Hillside Dr.
West Linn, OR

REFERENCES

RECONSIDERATION (3/1/17)

https://westlinnoregon.gov/sites/default/files/fileattachments/planning/project/10331/2017.03.01_applicants_reconsideration_submittal.pdf

Sahar Nabaee, Derek Moore, & David Hurwitz Oregon State University

“REVISITING DRIVER BEHAVIOR AT UNSIGNALIZED INTERSECTIONS: TIME OF DAY IMPLICATIONS FOR TWO-WAY LEFT TURN LANES (TWLTL)”

http://drivingassessment.uiowa.edu/sites/default/files/DA2011/Papers/063_NabaeeMoore.pdf

Kittleson, W.K., & Vandehey, M.A., (1991).

Delay Effects on Driver Gap Acceptance Characteristics at Two-Way Stop-Controlled Intersections. Transportation Research Record, 1320, 154–159.

Pollatschek, M.A., Polus, A., & Livneh, M. (2002).

A decision model for gap acceptance and capacity at intersections. Transportation Research Part B, 36(7), 649-663.

Transportation Research Board of The National Academies. (2000).

Highway Capacity Manual. Washington, D.C.: Transportation Research Board of the National Academies.

Zhong Xiaoming, Zhu Xinzheng, Zhang Yong, & LIU Xiaoming. (2007).

Left-turn Gap Acceptance Behavior of Tee Type of Unsignalized Intersection. Paper presented at the International Conference on Transportation Engineering (ICTE) 2007 Chengdu, China.

IDOT – Continuous Two-Way Left Turn Lanes (TWLTLs)

<https://www.iowadot.gov/design/dmanual/06c-06.pdf>

ODOT 1

ODOT Response 4/6/16

https://westlinnoregon.gov/sites/default/files/fileattachments/planning/project/10331/letter_from_odot_and_additional_testimony.pdf

“The mitigation concept as proposed **does not meet ODOT’s Highway Design Manual**; the three lane section will have to extend from the proposed northbound Arbor Drive to the existing southbound left-turn lane at Shady Hollow Way, creating a

continues two-way left turn-lane that includes bike and sidewalk along this section of the highway.”

ODOT 2

ODOT Response 2/3/17

https://westlinnoregon.gov/sites/default/files/fileattachments/planning/project/10331/2017.03.01_applicants_reconsideration_submittal.pdf

“ODOT supports the proposed mitigation concept to improve mobility standards and address safety issues at this intersection. **However, in order to construct this turn lane to ODOT standards**, Midhill would need to extend the three lane section from Arbor Drive to Shady Hollow Way, creating a continuous two-way left turn-lane that includes bike lanes along this section of the highway.”

ODOT Traffic Line Manual 6/11

http://www.oregon.gov/ODOT/HIGHWAY/TRAFFIC-ROADWAY/docs/pdf/tlm_web.pdf

MTP 1

<http://www.odotr1stip.org/explore-by-program/enhance/highway-43-multimodal-transportation-project/>

WLCP – West Linn OR 43 2016 Conceptual Design Plan. City of West Linn, Oregon.

http://westlinnoregon.gov/sites/default/files/fileattachments/planning/page/5828/west_linn_Highway_43_concept_plan_-_adopted_2016.pdf

CDC – West Linn Community Development Code, Chapter 85.200

<http://www.codepublishing.com/OR/WestLinn/CDC/WestLinnCDC85.html#85.200>

Public Comments for May 8, 2017 City Council
Appeal Hearing (AP-17-01) received on
May 8, 2017 after the hearing.

Spir, Peter

From: Jason Harra <jharra@gmail.com>
Sent: Monday, May 08, 2017 5:25 PM
To: Axelrod, Russell; Perry, Brenda; Cummings, Teri; Martin, Bob; Sakelik, Richard
Cc: Spir, Peter
Subject: Re: Written Testimony
Attachments: Chene Blanc Estates Greenlight 5-8-17.pdf

May 8, 2017
West Linn City Council
22500 Salamo Road West Linn, OR 97068

Attached you will find written testimony from Greenlight Engineering RE: City of West Linn FILE NO. SUB-15-03, WAP-16-03
If it's not too late please print a copy for each council member.

Thank you,
Jason Harra

On Mon, May 8, 2017 at 3:58 PM, Jason Harra <jharra@gmail.com> wrote:

Mayor and Council Members,

Please see my attached written testimony regarding the 34-lot subdivision application. I look forward to explaining my position at tonight's meeting.

Regards,

Jason Harra



GREENLIGHT ENGINEERING

TRAFFIC ENGINEERING/TRANSPORTATION PLANNING

May 8, 2017

West Linn City Council
22500 Salamo Road
West Linn, OR 97068

RE: City of West Linn FILE NO. SUB-15-03, WAP-16-03

Greenlight Engineering has been asked by our client, Jason Harra, to evaluate the transportation related impacts of the proposed 34 lot subdivision proposed at 18000 Upper Midhill Drive in West Linn, Oregon. We have completed a review of the application materials and have visited the site. We offer the following comments.

Executive Summary

The application fails to provide the necessary evidence to support approval of the project for the following reasons:

- Highway 43/Arbor Drive interim mitigation is not an improvement for bicyclists, pedestrians, and transit and disabled users
- The traffic impact analysis (TIA) fails to account for the cumulative impacts of approved development in the area
- The TIA's assumed growth rate of 1% per year is not based on evidence
- The TIA fails to provide the raw traffic count data of October 2016 traffic counts

Highway 43/Arbor Drive Interim Mitigation is Not an Improvement for Bicyclists, Pedestrians, and Transit and Disabled Users

The proposed interim improvements at the Highway 43/Arbor Drive intersection are detailed on Figure 9 of Kittelson and Associate's March 1, 2017 letter. The improvements consist of restriping the existing pavement at and around the intersection to allow for the construction of a northbound and southbound two way left turn lane to better accommodate automobile mobility and safety.

Unfortunately, the improvements provide benefits only to automobile mobility and safety, but are a detriment to pedestrian, bicycle, transit and disabled user safety. There has been no discussion or analysis of impacts to these users by the applicant.

There are currently bike lanes on Highway 43 near Arbor Drive with no separate pedestrian facilities. These bicycle facilities are shared by pedestrians, cyclists and transit users. There are bus stops located on the northwest and southeast corners of the intersection. The interim improvement proposal suggests the restriping of bicycle

facilities to 5 ½ feet wide in some locations, significantly narrowing the existing width in several locations to a width below ODOT standard. According to the ODOT Highway Design Manual, the minimum bike lane width along Highway 43 is six feet wide.

On the southeast corner of the intersection, at the location of a Tri-Met bus stop, pedestrians, bikes and transit users will all share a space just 5 ½ feet if the proposed improvement is constructed.

The Department of Transportation ADA Standards for Transportation Facilities (2006) requires an eight foot by five foot area in location of bus boarding or alighting as shown below in Figure 810.2.2 from ADA¹. These dimensions currently exist at the location of the two bus stops, but would not exist near the location of the southeast corner bus stop if the interim improvements are constructed. ADA 810.2.2 states “Bus stop boarding and alighting areas shall provide a clear length of 96 inches (2440 mm) minimum, measured perpendicular to the curb or vehicle roadway edge, and a clear width of 60 inches (1525 mm) minimum, measured parallel to the vehicle roadway.”

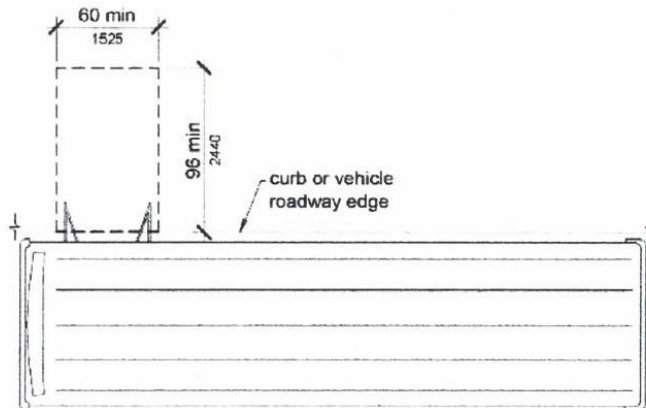


Figure 810.2.2 Dimensions of Bus Boarding and Alighting Areas

In addition to the lack of area to continue to meet ADA requirements, pedestrians, cyclists, transit users will all need to share a much more narrow space than currently exists and which does not meet standard in order to accommodate the impacts of this proposed development. As there is no identified funding for the ultimate Highway 43 improvement, this situation could exist for many years if the interim improvements are approved for construction.

In their March 1, 2017 letter, Kittelson argues that “[p]edestrians and bicyclists wanting to access OR 43 will be able to continue to use the College Hill Place-Marylcreek Drive connection to the OR 43/Marylbrook Drive intersection, which is served by local transit service”. While that connection does exist, it is wholly inconvenient for most of the existing neighborhood that utilizes the Highway 43/Arbor intersection for pedestrian,

¹ <https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/ada-standards/chapter-8-special-rooms,-spaces,-and-elements#810%20Transportation%20Facilities>

bicycle and transit access. This connection is unlikely to be utilized by those destined to the south on Highway 43 or by those that would need to travel out of direction to use this connection nor does it provide any benefit to bicyclists traveling south on Highway 43 as they would still need to travel via the narrowed bike lane on Highway 43.

Section 85.170(B)(2)(e)(1)(C) of the West Linn Community Development Code requires that “[w]hen a Traffic Impact Analysis is required, approval of the development proposal requires satisfaction of the following criteria:

The proposed site design and traffic and circulation design and facilities, for all transportation modes, including any mitigation measures, are designed to:

- (1) Have the least negative impact on all applicable transportation facilities; and
- (2) Accommodate and encourage non-motor vehicular modes of transportation to the extent practicable; and
- (3) Make the most efficient use of land and public facilities as practicable; and
- (4) Provide the most direct, safe and convenient routes practicable between on-site destinations, and between on-site and off-site destinations; and
- (5) Otherwise comply with applicable requirements of the City of West Linn Community Development Code”

The application fails to provide any evaluation of items 1-4 with regard to the impacts of the proposed mitigation at Highway 43/Arbor Drive.

The TIA Fails to Account for Background Traffic

The TIA fails to account for the impacts of several developments in the nearby area that have been approved but are not yet constructed. CDC 02.030 requires “[t]o be adequate, on-site and adjacent facilities must meet City standards, and off-site facilities must have sufficient capacity to (1) meet all existing demands, (2) **satisfy the projected demands from projects with existing land use approvals**, plus the additional demand created by the application, and (3) remain compliant with all applicable standards” (emphasis added).

Nearby projects that would have an impact on the study intersections include:

- Mary's Woods expansion located at Marylhurst roughly 1/3 a mile to the north of the Highway 43/Arbor intersection
- Shady Hollow Village located roughly 1/4 of a mile to the south of the Highway 43/Arbor intersection

According to the November 30, 2016 traffic report prepared by Kittelson and Associates for the Mary's Woods project, the ongoing Mary's Woods expansion consists of the

following and equates to approximately 165 weekday PM peak hour trips (see Appendix A):

- 48 units of assisted living or roughly 11 PM weekday peak hour trips
- 199 units of independent living or 50 PM peak hour trips
- 9,485 square foot medical office or roughly 25 PM peak hour trips
- 3,955 square foot pub, 9,485 square foot wellness center, 8,825 square foot office, 7,210 square foot retail, and 1,615 square foot deli or 79 weekday PM peak hour trips

According to the May 2008 traffic impact analysis prepared by Charbonneau Engineering for the Shady Hollow Village project, Shady Hollow Village could generate 27 weekday PM peak hour trips (see Appendix A).

The approved development in the area will vastly exceed 31 vehicles just from these two nearby developments, not to mention other developments (i.e. Wizer block in Lake Oswego) that have been approved or regional growth that has occurred since the October 2016 traffic counts or will occur along Highway 43.

Additionally, as the TIA assumes a 1% growth/year is applied equally over each of the study intersection movements, the TIA is unreliable as it does not specifically load the study intersections for approved developments appropriately. For instance, while the Highway 43/Marylhurst intersection will experience an increase in 165 weekday PM peak hour due to the Mary's Woods expansion, they are mostly turning movements into and out of the subject driveway. However, the TIA for this subdivision project generally analyzes these extra trips as through movements through the intersection rather than the turning movements that will actually occur.

The TIA's Assumed Growth Rate of 1% Per Year is Not Based on Evidence

On page 3 of their March 1, 2017 letter, Kittelson opines that the assumed 1% growth/year added to the existing counts at the study intersections accounts for all regional and local growth. The assumed 1% growth per year equates to “31 additional vehicles during the weekday PM peak hour.” The Kittelson reports fail to provide any information regarding where the assumed 1% growth is derived from.

Greenlight Engineering commissioned Key Data Network to conduct a traffic count on Highway 43 north of Arbor Drive (see Appendix B) to collect daily traffic volumes on Highway 43. Additionally, we researched ODOT historical traffic data available in their annual Transportation Volume Tables on Highway 43 north of Arbor Drive (see Appendix C).

Table 1 below illustrates the average annual daily traffic volumes on Highway 43 north of Arbor Drive over various years and associated year over year growth rates.

Table 1. Highway 43 North of Arbor Drive

Year of Count	AADT	Growth (%) / Yr	Notes
2013*	16900		
2014*	17100	1.2	
2015*	15900	-7.0	
2017**	20653	14.9	29.9% growth over two years

*Source: ODOT, Transportation Volume Tables

**Source: Key Data Network, May 2017 count

To adjust our May 2017 counts, the ODOT Analysis Procedures Manual was utilized (see Appendix D). The seasonal trend table method was utilized. When comparing the ODOT Transportation Volume Tables with our seasonally adjusted 2017 traffic count, it is clear that traffic volumes have greatly increased from 2015, the most recent data that ODOT has published. When comparing 2015 to 2017, the traffic volumes represent a percent growth of 14.9% per year. Even when comparing 2013 to 2017 data, the traffic volumes represent a yearly percent growth of over five percent per year, far more than Kittelson assumed.

Additionally, the applicant provides no evidence that their assumed build-out year of 2018 is able to be met.

The TIA Fails to Provide October 2016 Traffic Counts

The March 1, 2017 Kittelson letter references traffic counts that were collected in October 2016. However, the letter fails to include evidence of the raw traffic counts nor the calculations that were utilized in seasonally adjusting the raw traffic counts as reported.

Conclusion

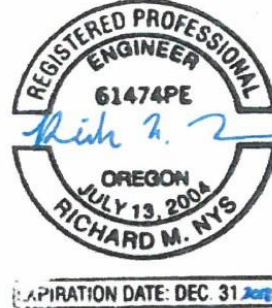
The land use application fails to provide substantial evidence, or in some cases any evidence at all, to support the conclusion that the applicant demonstrated compliance with the transportation related requirements necessary to approve this land use application.

Should you have any questions, feel free to contact me at 503-317-4559.

Sincerely,

Rick Nys

Rick Nys, P.E.
Principal Traffic Engineer



Experience and Experience

I am a Professional Engineer (P.E.) registered in the State of Oregon. I hold a Bachelor of Science degree in Civil Engineering. I have over seventeen years of experience in traffic engineering and transportation planning.

Appendix A

***Mary's Woods & Shady Hollow Village
Trip Generation***

Table 2 shows the trip generation for the uses approved to date (Phases 1 and 2) and the total trip generation for the uses approved in the ODPS based on the October 26, 2015 Phase 2 trip generation comparison.

Table 2. Trip Generation for Previously Approved Uses—Weekday P.M. Peak Hour

Development Component (ITE Classification) ¹	Development Size			ODPS Build-out	Trip Generation ¹	
	Existing (Phase 1)	Ongoing (Phase 2)	Total ⁴ (Phases 1 & 2)		Phases 1 & 2	ODPS Build-out
Residential Uses						
Independent Living (252)	266 units	199 units	465 units	497 units	116	120
Health Care ² (217 & 254)	104 beds	--	104 beds	133 beds	20	35
Villas (210)	50 units	--	50 units	--	50	--
Cottages (NA)	--	--	--	50 units	--	10
				<i>Subtotal</i>	186	165
				<i>Internal Trips</i>	-18	0
				Net Residential Trips	168	165
Institutional Uses						
Day Care Center (565)	--	--	--	75 children & 6,500 s.f. adult	--	130
				<i>Subtotal</i>	0	130
				<i>Internal Trips</i>	0	-50
				<i>Pass-by Trips</i>	0	-10
				Net Institutional Trips	0	70
Office Uses						
Medical Office (720)	--	9,485 s.f.	9,485 s.f.	38,000 s.f.	34	150
Multi-Tenant Office (710)	--	--	--	41,000 s.f.	--	95
Heritage Center(NA)	7 persons	--	7 persons	--	7	--
				<i>Subtotal</i>	41	245
				<i>Internal Trips</i>	-9	-15
				Net Office Trips	32	230
Retail Uses						
Financial Services (911)	--	--	--	7,000 s.f.	--	120
Dining/Drinking (925)	--	3,955 s.f.	3,955 s.f.	7,000 s.f.	45	90
Wellness Center (492)	--	9,485 s.f.	9,485 s.f.	--	33	--
Other Retail ³ (826)	--	17,650 s.f.	17,650 s.f.	14,000 s.f.	64	70
				<i>Subtotal</i>	142	280
				<i>Internal Trips</i>	-49	-55
				<i>Pass-by Trips</i>	-14	-40
				Net Retail Trips	79	185
NET NEW TRIPS					279	650

- Notes: (1) Phase 1 & 2 trip generation from *Trip Generation Manual*, 9th Edition. ODPS trip generation from *Trip Generation*, 5th Edition and a trip generation study conducted at Willamette View Manor & Convalescent Center. NA indicates uses where unique ODPS rates were used for the Phase 1 & 2 trip generation estimates since an applicable ITE use is not available.
(2) Includes assisted living, skilled nursing, and memory care.
(3) May include office space.
(4) Units based on Phase 2 evaluation submitted in October 26, 2015.

As shown in Table 2, the ODPS anticipated approximately 650 net new weekday p.m. peak hour trips would be generated by buildout of the development. Additionally, Phases 1 and 2 of the development are estimated to generate approximately 279 net new weekday p.m. peak hour trips approved as part of the ODPS. Table 3 shows the estimated trip comparison with the proposed assisted living building.

Table 3. Trip Generation Comparison with Proposed Assisted Living —Weekday P.M. Peak Hour

Development Component (ITE Classification) ¹	Development Size			ODPS Build-out	Trip Generation ¹	
	Approved (Phase 1&2)	Current Proposed	Total ⁴ (To Date)		Total (To Date)	ODPS Build-out
Residential Uses						
Independent Living (252)	465 units	--	465 units	497 units	116	120
Health Care ² (217 & 254)	104 beds	48 beds	152 beds	133 beds	31	35
Villas (210)	50 units	--	50 units	--	50	--
Cottages (NA)	--	--	--	50 units	--	10
<i>Subtotal</i>					197	165
<i>Internal Trips</i>					-18	0
<i>Net Residential Trips</i>					179	165
Institutional Uses						
Day Care Center (565)	--	--	--	75 children & 6,500 s.f. adult	--	130
<i>Subtotal</i>					0	130
<i>Internal Trips</i>					0	-50
<i>Pass-by Trips</i>					0	-10
<i>Net Institutional Trips</i>					0	70
Office Uses						
Medical Office (720)	9,485 s.f.	--	9,485 s.f.	38,000 s.f.	34	150
Multi-Tenant Office (710)	--	--	--	41,000 s.f.	--	95
Heritage Center(NA)	7 persons	--	7 persons	--	7	--
<i>Subtotal</i>					41	245
<i>Internal Trips</i>					-9	-15
<i>Net Office Trips</i>					32	230
Retail Uses						
Financial Services (911)	--	--	--	7,000 s.f.	--	120
Dining/Drinking (925)	3,955 s.f.	--	3,955 s.f.	7,000 s.f.	45	90
Wellness Center (492)	9,485 s.f.	--	9,485 s.f.	--	33	--
Other Retail ³ (826)	17,650 s.f.	--	17,650 s.f.	14,000 s.f.	64	70
<i>Subtotal</i>					142	280
<i>Internal Trips</i>					-49	-55
<i>Pass-by Trips</i>					-14	-40
<i>Net Retail Trips</i>					79	185
NET NEW TRIPS					290	650

- Notes: (1) Phase 1 & 2 trip generation from *Trip Generation Manual*, 9th Edition. ODPS trip generation from *Trip Generation*, 5th Edition and a trip generation study conducted at Willamette View Manor & Convalescent Center. NA indicates uses where unique ODPS rates were used for the Phase 1 & 2 trip generation estimates since an applicable ITE use is not available.
 (2) Includes assisted living, skilled nursing, and memory care.
 (3) May include office space.
 (4) Units based on Phase 2 evaluation submitted in September 18, 2015 and October 26, 2015.

Appendix B

***Highway 43 North of Arbor Drive
Traffic Count, May 4, 2017***

KEY DATA NETWORK

K-D-N.com
 Tualatin, OR 97062
 503-804-3294

Hwy 43 north of Arbor Dr

Date Start: 5/3/2017

Latitude: 45' 23.7488 North
 Longitude: 122' 39.0669 West

Start Time	5/4/2017 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		15	153			6	124				
12:15		4	151			6	125				
12:30		4	150			4	164				
12:45		2	164			7	125				
01:00		10	147	25	618	2	130	23	538	48	1156
01:15		6	156			2	130				
01:30		7	160			4	120				
01:45		3	170			2	122				
02:00		3	185	26	633	1	124	10	502	36	1135
02:15		4	156			2	120				
02:30		3	174			2	142				
02:45		2	182			1	135				
03:00		1	292	12	697	2	147	6	521	18	1218
03:15		6	274			0	221				
03:30		2	261			4	282				
03:45		0	251	9	1078	5	211	11	861	20	1939
04:00		2	273			6	134				
04:15		1	262			8	122				
04:30		7	293			18	205				
04:45		12	273	22	1101	22	186	54	647	76	1748
05:00		8	265			37	136				
05:15		8	282			47	238				
05:30		20	246			78	216				
05:45		12	254	48	1047	93	184	255	774	303	1821
06:00		34	265			111	122				
06:15		33	218			170	123				
06:30		55	166			258	112				
06:45		59	139	181	788	273	102	812	459	993	1247
07:00		95	128			272	86				
07:15		107	130			284	64				
07:30		94	94			258	50				
07:45		110	83	406	435	246	66	1060	266	1466	701
08:00		124	94			219	66				
08:15		107	112			214	59				
08:30		132	97			242	58				
08:45		102	104	465	407	246	56	921	239	1386	646
09:00		114	62			183	56				
09:15		109	70			198	52				
09:30		116	74			157	38				
09:45		144	66	483	272	168	26	706	172	1189	444
10:00		109	64			133	18				
10:15		116	26			141	24				
10:30		124	23			156	18				
10:45		138	20	487	133	136	14	566	74	1053	207
11:00		120	25			114	10				
11:15		143	17			125	12				
11:30		134	18			158	8				
11:45		148	13	545	73	148	11	545	41	1090	114
Total		2709	7282			4969	5094			7678	12376
Percent		27.1%	72.9%			49.4%	50.6%			38.3%	61.7%

KEY DATA NETWORK

K-D-N.com
Tualatin, OR 97062
503-804-3294

Hwy 43 north of Arbor Dr

Date Start: 5/3/2017

Latitude: 45' 23.7488 North
Longitude: 122' 39.0669 West

Start Time	5/3/2017 Wed	NB		SB		Combined		5/4/2017 Thu	NB		SB		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00	*	*	*	*	*	*	*	15	153	6	124	21	277	
12:15	*	*	*	*	*	*	*	4	151	6	125	10	276	
12:30	*	*	*	*	*	*	*	4	150	4	164	8	314	
12:45	*	*	*	*	*	*	*	2	164	7	125	9	289	
01:00	*	*	*	*	*	*	*	10	147	2	130	12	277	
01:15	*	*	*	*	*	*	*	6	156	2	130	8	286	
01:30	*	*	*	*	*	*	*	7	160	4	120	11	280	
01:45	*	*	*	*	*	*	*	3	170	2	122	5	292	
02:00	*	*	*	*	*	*	*	3	185	1	124	4	309	
02:15	*	*	*	*	*	*	*	4	156	2	120	6	276	
02:30	*	*	*	*	*	*	*	3	174	2	142	5	316	
02:45	*	*	*	*	*	*	*	2	182	1	135	3	317	
03:00	*	*	*	*	*	*	*	1	292	2	147	3	439	
03:15	*	*	*	*	*	*	*	6	274	0	221	6	495	
03:30	*	*	*	*	*	*	*	2	261	4	282	6	543	
03:45	*	*	*	*	*	*	*	0	251	5	211	5	462	
04:00	*	*	*	*	*	*	*	2	273	6	134	8	407	
04:15	*	*	*	*	*	*	*	1	262	8	122	9	384	
04:30	*	*	*	*	*	*	*	7	293	18	205	25	498	
04:45	*	*	*	*	*	*	*	12	273	22	186	34	459	
05:00	*	*	*	*	*	*	*	8	265	37	136	45	401	
05:15	*	*	*	*	*	*	*	8	282	47	238	55	520	
05:30	*	*	*	*	*	*	*	20	246	78	216	98	462	
05:45	*	*	*	*	*	*	*	12	254	93	184	105	438	
06:00	*	252	*	118	*	370	*	34	265	111	122	145	387	
06:15	*	251	*	120	*	371	*	33	218	170	123	203	341	
06:30	*	239	*	112	*	351	*	55	166	258	112	313	278	
06:45	*	190	*	88	*	278	*	59	139	273	102	332	241	
07:00	*	132	*	81	*	213	*	95	128	272	86	367	214	
07:15	*	100	*	96	*	196	*	107	130	284	64	391	194	
07:30	*	96	*	98	*	194	*	94	94	258	50	352	144	
07:45	*	104	*	80	*	184	*	110	83	246	66	356	149	
08:00	*	134	*	46	*	180	*	124	94	219	66	343	160	
08:15	*	100	*	62	*	162	*	107	112	214	59	321	171	
08:30	*	96	*	58	*	154	*	132	97	242	58	374	155	
08:45	*	92	*	54	*	146	*	102	104	246	56	348	160	
09:00	*	99	*	46	*	145	*	114	62	183	56	297	118	
09:15	*	88	*	43	*	131	*	109	70	198	52	307	122	
09:30	*	82	*	45	*	127	*	116	74	157	38	273	112	
09:45	*	52	*	31	*	83	*	144	66	168	26	312	92	
10:00	*	48	*	26	*	74	*	109	64	133	18	242	82	
10:15	*	30	*	26	*	56	*	116	26	141	24	257	50	
10:30	*	28	*	14	*	42	*	124	23	156	18	280	41	
10:45	*	22	*	9	*	31	*	138	20	136	14	274	34	
11:00	*	19	*	6	*	25	*	120	25	114	10	234	35	
11:15	*	11	*	10	*	21	*	143	17	125	12	268	29	
11:30	*	14	*	6	*	20	*	134	18	158	8	292	26	
11:45	*	18	*	7	*	25	*	148	13	148	11	296	24	
Total	0	2297	0	1282	0	3579	2709	7282	4969	5094	7678	12376		
Day Total		2297		1282		3579		9991		10063		20054		
% Total	0.0%	64.2%	0.0%	35.8%			13.5%	36.3%	24.8%	25.4%				
Peak	-	- 06:00	-	06:00	-	06:00	-	11:00	04:30	06:30	03:00	07:00	03:00	
Vol.	-	932	-	438	-	1370	-	545	1113	1087	861	1466	1939	
P.H.F.		0.925		0.913		0.923		0.921	0.950	0.957	0.763	0.937	0.893	

Appendix C

**Highway 43
ODOT Transportation Volume Tables
2013, 2014, 2015**

2013 TRAFFIC VOLUMES ON STATE HIGHWAYS

Milepoint	2013 AADT All Vehicles	ATR AVC	Location Description
OSWEGO HIGHWAY NO. 3 (Continued)			
RESUME TWO-WAY TRAFFIC			
1.00	26200		0.02 mile north of S.W. Julia Street
2.15	26200		0.05 mile north of S.W. Taylors Ferry Road
2.54	34800		0.05 mile north of Sellwood Ferry Road
3.64	20200		South city limits of Portland
4.02	19700		0.02 mile north of S.W. Riverwood Road
5.69	19200		0.02 mile north of Terwilliger Boulevard
5.80	24400		0.06 mile south of Terwilliger Boulevard
6.11	22100		0.02 mile north of S. "A" Avenue
6.17	32200		0.04 mile south of S. "A" Avenue
6.40	30600		0.02 mile south of North Shore Road
6.65	29600		0.05 mile north of S. McVey Avenue
6.77	18700		On Oswego Creek Bridge
7.54	18200		0.04 mile south of S. Glenmorrie Road
8.04	16900		South city limits of Lake Oswego, north city limits of West Linn, 0.03 mile north of S. Arbor Drive
9.52	18000		0.02 mile north of Jolie Pointe Road
10.27	18700		0.02 mile south of W. "A" Street
11.07	21500		0.10 mile north of East Portland Freeway (I-205)
Willamette River Bridge closed for entire 2011 year			
11.34	10900		0.01 mile north of S. Willamette Falls Drive
11.43	10100		On Willamette River Bridge, south city limits of West Linn and north city limits of Oregon City
THE DALLES-CALIFORNIA HIGHWAY NO. 4			
Milepoint indicates distance from Washington-Oregon State Line			
0.00	6200		Washington-Oregon State Line, The Dalles Bridge
0.79	5300		0.15 mile south of Columbia River Highway Interchange (I-84)
1.01	5400		0.10 mile south of Mosier-The Dalles Highway (US30)
1.24	3000		0.02 mile south of N.E. Fremont Street
10.30	2400	*	Dufur Automatic Traffic Recorder, Sta. 33-005, 0.84 mile south of Boyd Market Road (North Jct)
13.27	1300		0.05 mile south of Boyd Loop Road
16.08	1300		On Mays Canyon Creek Bridge
Equation: MP 23.00 BK = MP 27.88 AH			
22.87	1400		0.02 mile south of Dufur Gap Road
33.84	1400		0.05 mile north of Sherars Bridge Highway (OR216)
33.94	970		0.05 mile south of Sherars Bridge Highway (OR216)
Equation: MP 37.77 BK = MP 39.33 AH			
42.36	990		0.07 mile north of Wapinitia Highway (OR216)
42.48	980		0.05 mile south of Wapinitia Highway (OR216)
43.96	1100		West city limits of Maupin, 0.30 mile south of Deschutes Avenue
45.84	1100		On Deschutes River Bridge
45.98	740		0.02 mile south of Bakeoven Road
46.40	470		South city limits of Maupin, 0.32 mile south of Deschutes River Road
67.00	390		0.17 mile north of Sherman Highway (US97)
67.22	2000		0.05 mile south of Sherman Highway (US97)
81.00	3400		0.02 mile south of Old Highway 97
87.78	3700		0.50 mile south of N.E. Elm Lane

2014 TRAFFIC VOLUMES ON STATE HIGHWAYS

Milepoint	2014 AADT All Vehicles	ATR AVC	Location Description
			OSWEGO HIGHWAY NO. 3 (Continued)
6.77	18900		On Oswego Creek Bridge
7.54	18400		0.04 mile south of S. Glenmorrie Road
8.04	17100		South city limits of Lake Oswego, north city limits of West Linn, 0.03 mile north of S. Arbor Drive
9.52	18200		0.02 mile north of Jolie Pointe Road
10.27	18900		0.02 mile south of W. "A" Street
11.07	21800		0.10 mile north of East Portland Freeway (I-205)
11.34	11000		0.01 mile north of S. Willamette Falls Drive
11.43	12400		On Willamette River Bridge, south city limits of West Linn and north city limits of Oregon City
			THE DALLES-CALIFORNIA HIGHWAY NO. 4
			Milepoint indicates distance from Washington-Oregon State Line
0.00	6600		Washington-Oregon State Line, The Dalles Bridge
0.79	6000		0.15 mile south of Columbia River Highway Interchange (I-84)
1.01	3200		0.10 mile south of Mosier-The Dalles Highway (US30)
1.24	3700		0.02 mile south of N.E. Fremont Street
10.30	2400	*	Dufur Automatic Traffic Recorder, Sta. 33-005, 0.84 mile south of Boyd Market Road (North Jct)
13.27	1000		0.05 mile south of Boyd Loop Road
16.08	1100		On Mays Canyon Creek Bridge
22.87	1200		0.02 mile south of Dufur Gap Road
			Equation: MP 23.00 BK = MP 27.88 AH
33.84	1200		0.05 mile north of Sherars Bridge Highway (OR216)
33.94	1000		0.05 mile south of Sherars Bridge Highway (OR216)
			Equation: MP 37.77 BK = MP 39.33 AH
42.36	1000		0.07 mile north of Wapinitia Highway (OR216)
42.48	1000		0.05 mile south of Wapinitia Highway (OR216)
43.96	1000		West city limits of Maupin, 0.30 mile south of Deschutes Avenue
45.84	1100		On Deschutes River Bridge
45.98	670		0.02 mile south of Bakeoven Road
46.40	440		South city limits of Maupin, 0.32 mile south of Deschutes River Road
67.00	370		0.17 mile north of Sherman Highway (US97)
67.22	2100		0.05 mile south of Sherman Highway (US97)
81.00	3400		0.02 mile south of Old Highway 97
87.78	3400		0.50 mile south of N.E. Elm Lane
89.60	3800		0.05 mile north of N.E. Cherry Lane
91.17	4700		0.05 mile north of N.E. Meadowlark Lane
91.43	5500		0.03 mile south of N.E. Loucks Road
91.98	8100		0.10 mile north of Warm Springs Highway (US26)
			SOUTHBOUND - ONE-WAY TRAFFIC
			<i>On 4th Street</i>
92.13	9000		0.02 mile north of Pine Street
92.44	10200		0.02 mile north of Culver Highway
92.76	9600		0.02 mile north of "G" Street
93.06	8700		0.02 mile south of "J" Street

2015 TRAFFIC VOLUMES ON STATE HIGHWAYS

Milepoint	2015 AADT All Vehicles	ATR AVG	Location Description
			OSWEGO HIGHWAY NO. 3 (Continued)
			RESUME TWO-WAY TRAFFIC
1.00	22300		0.02 mile north of S.W. Julia Street
2.15	22400		0.05 mile north of S.W. Taylors Ferry Road
2.54	30000		0.05 mile north of Sellwood Ferry Road
3.64	17300		South city limits of Portland
4.02	17000		0.02 mile north of S.W. Riverwood Road
5.69	16500		0.02 mile north of Terwilliger Boulevard
5.80	21400		0.06 mile south of Terwilliger Boulevard
6.11	20200		0.02 mile north of S. "A" Avenue
6.17	34100		0.04 mile south of S. "A" Avenue
6.40	28500		0.02 mile south of North Shore Road
6.65	27600		0.05 mile north of S. McVey Avenue
6.77	17900		On Oswego Creek Bridge
7.54	16800		0.04 mile south of S. Glenmorrie Road
8.04	15900		South city limits of Lake Oswego, north city limits of West Linn, 0.03 mile north of S. Arbor Drive
9.52	17800		0.02 mile north of Jolie Pointe Road
10.27	18500		0.02 mile south of W. "A" Street
11.07	20900		0.10 mile north of East Portland Freeway (I-205)
11.34	13600		0.01 mile north of S. Willamette Falls Drive
11.43	13100		On Willamette River Bridge, south city limits of West Linn and north city limits of Oregon City
			THE DALLES-CALIFORNIA HIGHWAY NO. 4
			<i>Milepoint indicates distance from Washington-Oregon State Line</i>
0.00	7100		Washington-Oregon State Line, The Dalles Bridge
0.79	6300		0.15 mile south of Columbia River Highway Interchange (I-84)
1.01	3300		0.10 mile south of Mosier-The Dalles Highway (US30)
1.24	3900		0.02 mile south of N.E. Fremont Street
10.30	2600	*	Dufur Automatic Traffic Recorder, Sta. 33-005, 0.84 mile south of Boyd Market Road (North Jct)
13.27	1100		0.05 mile south of Boyd Loop Road
16.08	1100		On Mays Canyon Creek Bridge
			Equation: MP 23.00 BK = MP 27.88 AH
22.87	1300		0.02 mile south of Dufur Gap Road
33.84	1300		0.05 mile north of Sherars Bridge Highway (OR216)
33.94	1100		0.05 mile south of Sherars Bridge Highway (OR216)
			Equation: MP 37.77 BK = MP 39.33 AH
42.36	1000		0.07 mile north of Wapinitia Highway (OR216)
42.48	1100		0.05 mile south of Wapinitia Highway (OR216)
43.96	1100		West city limits of Maupin, 0.30 mile south of Deschutes Avenue
45.84	1100		On Deschutes River Bridge
45.98	710		0.02 mile south of Bakeoven Road
46.40	460		South city limits of Maupin, 0.32 mile south of Deschutes River Road
67.00	390		0.17 mile north of Sherman Highway (US97)
67.22	2200		0.05 mile south of Sherman Highway (US97)
81.00	3400		0.02 mile south of Old Highway 97
87.78	3600		0.50 mile south of N.E. Elm Lane
89.60	4000		0.05 mile north of N.E. Cherry Lane

Appendix D

**May 4, 2017
Traffic Count
Seasonal Adjustment**

TREND	SEASONAL TREND TABLE (Updated: 9/20/16)												Seasonal Trend Peak Period Factor												
	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun		1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec
INTERSTATE URBANIZED	1.0328	1.0423	1.0157	0.9891	0.9780	0.9670	0.9562	0.9483	0.9530	0.9567	0.9365	0.9202	0.9228	0.9275	0.9229	0.9182	0.9363	0.9544	0.9568	0.9592	0.9776	0.9959	1.0131	1.0303	0.9162
INTERSTATE NONURBANIZED	1.0476	1.0593	1.0243	1.0003	0.9842	0.9685	0.9594	0.9503	1.0243	0.9984	0.9494	0.9005	0.8748	0.8449	0.8450	0.8452	0.8928	0.9405	0.9815	1.0232	1.0745	1.0965	1.1193	1.1721	0.8449
COMMUTER	1.0345	1.0453	1.0272	0.9991	0.9913	0.9836	0.9655	0.9474	0.9442	0.9411	0.9497	0.9583	0.9410	0.9243	0.9206	0.9168	0.9288	0.9409	0.9431	0.9452	0.9724	1.0017	1.0249	1.0481	0.9168
COASTAL DESTINATION	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294
COASTAL DESTINATION ROUTE	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294
AGRICULTURE	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294
RECREATIONAL SUMMER	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294
RECREATIONAL SUMMER WINTER	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294
RECREATIONAL WINTER	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294
SUMMER < 2500	1.0311	1.0426	1.0169	0.9903	0.9829	0.9752	0.9571	0.9390	1.0450	1.0227	0.9632	0.9438	0.8923	0.8293	0.8289	0.8284	0.8792	0.9300	0.9656	1.0132	1.0622	1.0977	1.1321	1.2053	0.9294

*Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.
 *Grey shading indicates months were seasonal factor is greater than 30%.

20054 Count collected on May 3, 2017
 1.029886562 Seasonal Factor based on Commuter route
 20653 AADT

Highway 43 North of Arbor Drive

