

TO: PLANNING COMMISSION

FROM: LISA ANDERSON-OGILVIE, AICP, DEPUTY COMMUNITY DEVELOPMENT DIRECTOR AND PLANNING ADMINISTRATOR

DATE: FEBRUARY 15, 2022

SUBJECT: SUPPLEMENTAL STAFF REPORT FOR COMPREHENSIVE PLAN CHANGE / ZONE CHANGE NO. 21-06; 2100 BLOCK OF DOAKS FERRY RD NW (AMANDA APPLICATION NOS. 21-114252-ZO; 21-114255-ZO)

BACKGROUND

On January 25, 2022, the Planning Commission held a public hearing and received testimony for consolidated Comprehensive Plan Map Amendment, Neighborhood Plan Change, and Zone Change Case No. 21-06. The staff report made available on January 18, 2022 recommended approval of the application.

At the January 25, 2022 hearing, the West Salem Neighborhood Association and members of the public requested the Planning Commission hold the record open to address concerns by the public, particularly regarding traffic and the Transportation Planning Rule Analysis (TPR). The Planning Commission closed the hearing and left the record open for the following periods: February 1, 2022 for new testimony, February 8, 2022 for rebuttal testimony and to February 15, 2022 for the applicant's final written rebuttal.

Since the hearing was closed and the record was held open, staff received **8** comments in opposition from surrounding tenants and/or property owners and **1** new testimony from the applicant during the first open record period, which were sent to the Planning Commission on February 2, 2022.

SUPPLEMENTAL FINDINGS

Public Comments

During the first open record period ending February 1, 2022, comments were received from West Salem Neighborhood Association (WSNA) and seven residents within 250-feet of the subject property. These comments are summarized below and followed by staff responses.

1. Transportation Planning Rule Analysis (TPR)

WSNA and many neighbors sent comments challenging items within the TPR analysis.

Staff Response: On January 25, 2022, the applicant's Traffic Engineer (Transight Consulting) submitted a response to many of the concerns raised prior to the initial hearing (**Attachment A**). Within this document, the applicant explains that the TPR Analysis "only provides a theoretical assessment of 'worst-case' analysis scenarios for purposes of

rezoning, and does not include an assessment of the suitability of the transportation system with the proposed apartments (which will be separately required as part of the site plan application) as a specific site plan is not available at this time.” In addition, Transight Consulting included a FAQ sheet from Department of Land Conservation and Development (DLCD) which contains helpful information as to how a TPR analysis is evaluated, determination of “significant effect,” and what types of limitations are acceptable.

After the hearing held on January 25, 2022, comments from Oregon Department of Transportation (ODOT) were sent to the applicant (**Attachment B**), which identified items within the analysis to be addressed. Overall, ODOT found that while their comments would have an effect on the operational analysis results, it is unlikely that they would be significant enough to have an impact on the conclusions of the study.

On January 31, 2022, Transight Consulting provided a response to ODOT’s comments, and ODOT responded again on February 3, 2022, which are entered into the record as **Attachment C** and **Attachment D**. In short, ODOT has determined that “the traffic impact study has been prepared in accordance with ODOT analysis procedures and methodologies.” Both ODOT and the City’s Traffic Engineer agree that the TPR analysis presented provides a reasonable assessment of the forecast conditions.

- *Evaluation of “significant effect”*

According to DLCD, a proposed plan amendment or zone change has a “significant effect” if: (1) it generates more traffic than allowed by existing plan and zoning, AND; (2) planned transportation improvements do not provide adequate capacity to support the allowed land uses. The evaluation of whether there is a significant effect must consider the range of uses allowed by the proposed plan and zoning changes, not just the particular use proposed by the applicant. This is because the resulting plan amendment or zone change, once approved, would allow any of the uses listed in the zoning district without further review for compliance with the TPR. An applicant or local government can modify or limit the proposed plan or zone change to reduce its traffic generating impacts to help avoid triggering a significant effect. Where the application or approval is limited to specific uses or a particular level of traffic generation, it is possible to limit the scope of the analysis. This is typically adequate to avoid triggering a significant effect.

The requested comprehensive plan change, neighborhood plan change, and zone change will not have a significant effect on the existing transportation system beyond what the current land use designations would allow. The applicant’s analysis shows that the existing zoning could generate about 1,770+ trips, and the proposed zoning about 1,100+ more. Their analysis also shows that if they add only those extra trips, they will have no significant effect on the transportation system. The applicant also recognizes that there are “viable mitigation options as the project moves into the entitlements phase where actual impacts (not the comparative impacts) are the relevant performance criteria.” However, for purposes of TPR compliance, the “worst-case” scenario under the proposed zoning compares far more density than what the applicant is proposing. Accordingly, a trip cap provides the simplest mechanism to mitigate the finding of a significant impact. Therefore, limiting the site to 500 multi-family units will mitigate the finding of a significant effect.

The City Traffic Engineer and ODOT have concurred with the applicant's TPR analysis of no significant effect. Future development of the site would also be subject to a Traffic Impact Analysis (TIA).

2. Trip Cap Amendment

WSNA submitted comments indicating concerns for an increase in traffic to the surrounding roads, and a suggested trip cap of 1,000 vehicle trips in lieu of the recommended 2,270 vehicle trips under Condition 1.

Staff Response: The determination of significant impact on a transportation facility is based upon a comparison of potential trip generation from uses allowed under the current designations and uses allowed under the proposed designations; it is not based upon a comparison of trips generated from the current use – undeveloped land – to trips generated from potential uses under the proposed designations. The applicant is not required to identify proposed land uses or provide a development plan for this type of application for land use designations, and the City is not required to impose conditions that will mitigate any potential effect development may have on transportation facilities. The finding in the original staff report discusses the requirement and staff analysis:

“The applicant submitted a Transportation Planning Rule (TPR) Analysis in consideration of the requirements of the Transportation Planning Rule (OAR 660-012-0060). The TPR analysis is required to demonstrate that the proposed Comprehensive Plan Change and Zone Change will not have a significant effect on the transportation system as defined by OAR 660-012-0060. The Assistant City Traffic Engineer has reviewed the proposed Comprehensive Plan Change and Zone Change and concurs with the applicant's conclusion that it complies with OAR 660-012-0060 and does not cause a “significant effect” to the City's transportation system. The submitted TPR analysis proposes a trip cap equal to 500 multi-family units on the site. The Assistant City Traffic Engineer concurs with the TPR analysis findings and recommends a condition to limit the development on the 24.84-acre site to 2,270 average daily vehicle trips.”

The City Traffic Engineer has provided a response to the proposed trip cap amendment, included as **Attachment E**. The analysis provided by Transight Consulting shows the 500-unit and 2,270 average daily traffic (ADT) trip cap is not a significant effect pursuant to the Transportation Planning Rule and the Oregon Highway Plan Action 1F.5, and that there is no basis to place a 1,000 vehicles per day trip on this site as the existing zoning could generate 1,775 daily trips currently. It should also be noted that the flow chart included in the WSNA comments dated February 1, 2022, refers to 1,000 trips on a state facility, not a City facility. In this case, the only state facility is Wallace Road, and the TPR analysis does not show 1,000 extra trips on Wallace Road. As further explained by the City Traffic Engineer, the TPR analysis provided “shows that in the horizon year of 2035 in the Salem Transportation System Plan, the intersections within the City's jurisdiction (Doaks Ferry Road NW - Orchard Heights Road NW, and Doaks Ferry Road NW and Glen Creek Road NW) operate below the City's standard for both the existing use and the proposed used with the 500 unit (2,270 ADT) limitation. The suggested 1,000 average daily traffic increase is based upon the Oregon Highway Plan (OHP) Action 1F.5 that indicates if the increase is

less than 1,000 ADT then ODOT considers the increase to be ‘small’ and does not further degrade the system.”

As previously stated, the applicant’s analysis shows that the existing zoning could generate about 1,770+ trips, and the proposed zoning about 1,100+ more. A trip cap of 1,000 does not seem reasonable considering that would be 770 less trips than they would be expected to generate today under the existing zoning, and there has been no traffic analysis submitted to corroborate that assertion. However, the trip cap of 2,270 trips makes this an enforceable, ongoing requirement for the future development.

3. Alternative Zoning

Several comments were submitted in favor of the existing single-family designation, or alternately the RM-I zone, as a lower density multiple family residential.

Staff Response: The State of Oregon Legislature passed House Bill (HB) 2001 that is aimed at increasing the housing supply in Oregon. The City of Salem is implementing the provisions of HB 2001 that would increase the availability of land for multiple family development in the City’s single-family zones permitted within the “Single Family Residential” Comprehensive Plan designation. The code impacts the current RA zoning designation, as well as the RM-I zone, to allow higher density multifamily housing within single-family zoning to address housing needs. Thus, duplexes, triplexes, quadplexes and cottage clusters, known as middle housing, are now allowed in single family zones. As addressed in the Transight Consulting report dated January 31, 2022, the 1,770 trips assumed under the current single-family zoning does not account for any middle housing allowed under the HB 2001 mandate. The applicant presents a scenario in which the subject property would be developed as single family with 183 lots of approximately 5,000 square feet each. As triplexes are allowed on lots at least 5,000 square feet in size, the development has the potential to create 549 (183 x 3) units under its single-family designation, which is a higher density than the 500-unit density cap proposed. Therefore, the current single family (RA) designation, as well as the RM-I designation presented in comments from the surrounding tenants and/or property owners, has the potential to allow higher density developments than the proposed RM-II zoning designation, particularly with the trip cap condition in place.

The Planning Commission is tasked with determining if the Comprehensive Plan designation and zoning requested by the applicant meets the applicable criteria. The Commission is limited to approving, approving with conditions, or denying the proposal. It is not within the Commission’s purview to approve or apply a different designation or zone.

4. Site Acreage

Comments were submitted regarding discrepancies between the size of the property referenced in the decision, the applicant’s written statement, and the County Assessor’s Records.

Staff Response: Polk County Assessor’s Records indicate the subject property (Tax lot 400) is 36.72 acres in size. However, a survey was conducted for the property which indicates the size of the property to be 36.86 acres. In addition, the survey showed that the

adjacent square property to the south along Orchard Heights Rd NW (Tax lot 900) is actually .987 acres as opposed to the .872 referenced in the Polk County Assessor's Records. It is important to note the size of tax lot 900 as a prior Comprehensive Plan Change and Zone Change case (Case No. CPC-NPC-ZC11-12) references the rezone of the southern portion of the subject property as 15 acres in size, which included this approximately 1-acre tax lot in the decision. Therefore, the southern portion of the subject property, without inclusion of tax lot 900, is approximately 14 acres, leaving approximately 22.86 acres for the northern portion. The proposal includes rezoning 1.987 acres of NCMU to the RM-II designation, for a total of 24.84 acres (22.86 + 1.987).

Originally, the applicant's proposal and written statements referenced the Polk County Assessor's data, and a 1.05-acre portion of the NCMU to be rezoned. However, the data received from the survey provided more accurate acreage totals used in the decision, but not revised in the applicant's written statements attached. This accounts for the discrepancies mentioned in the submitted comments, and the decision documents reflect the most accurate data provided. The recommendation has also been revised to better reflect the approximate acreages described above.

- 5. Quasi-judicial Zone Change Criterion SRC 265.005(e)(1)(E): If the zone change requires a comprehensive plan change from an industrial use designation to a non-industrial use designation, or from a commercial or employment designation to any other use designation, a demonstration that the proposed rezone is consistent with its most recent economic opportunities analysis and the parts of the Comprehensive Plan which address the provision of land for economic development and employment growth; or be accompanied by an amendment to the Comprehensive Plan to address the proposed rezone; or include both the demonstration and an amendment to the Comprehensive Plan.**

Comments were submitted indicating that the above criterion was not met for the approximately 2-acre portion of NCMU (Neighbor Center Mixed Use) designated land.

Staff Response: In 2014, the City conducted the Housing Needs Analysis (HNA) along with the Salem Economic Opportunities Analysis (EOA). The purpose of the HNA was to develop strategies to provide enough land to meet Salem's housing needs through 2035 and to inform policy decisions related to residential land, while the purpose of the EOA was to ensure there is enough land in the Salem area to accommodate expected employment growth. Both the HNA and EOA counted the various land designations in Salem for purposes of the respective studies. For the subject property, these studies counted the NCMU portion for 10 acres out of the 14 total as residential land, as opposed to industrial, commercial, or employment use land. As more than 70 percent of the subject portion of the property was considered residential, this criterion is met.

6. Housing Needs Analysis Update

The applicant's team submitted the most recent Housing Needs Analysis in response to comments raised about the current deficit of multiple family residential designation.

Staff Response: The City of Salem Planning Division has been working to implement the Salem Housing Needs Analysis (HNA) Work Plan and provides updates as the City works

towards achieving the projected goals. The most recent update on multifamily development is included as **Attachment F**. As of April 20, 2021, the City has added 40 net acres of Multiple Family designated land on the Comprehensive Plan Map, reducing the projected deficit to 167 acres. Additionally, the City has added 102 acres of Mixed-Use designated land which allows multi-family development as an outright permitted use, thereby further increasing the land available for multi-family development. As outlined in the memorandum, there continues to be a documented need for multi-family land.

RECOMMENDATION:

Based upon the Facts and Findings contained in this staff report, staff recommends that the Planning Commission take the following actions concerning the consolidated application for 24.84 acres in the northern portion of a 36.86-acre parcel of property located at the 2100 Block of Doaks Ferry Rd NW (Polk County Assessor Map and Tax lot 073W17B / 00400):

- A. APPROVE Minor Comprehensive Plan Map Amendment from “Developing Residential” (22.84-acres) and “Mixed Use” (approximately 2 acres) to “Multiple Family Residential”;
- B. APPROVE Neighborhood Plan Map Amendment to “Multiple Family Residential”; and
- C. APPROVE Zone Change from RA (Residential Agriculture) (22.84-acres) and NCMU (Neighborhood Center Mixed Use) (approximately 2 acres) to RM-II (Multiple Family Residential), subject to the following condition of approval:

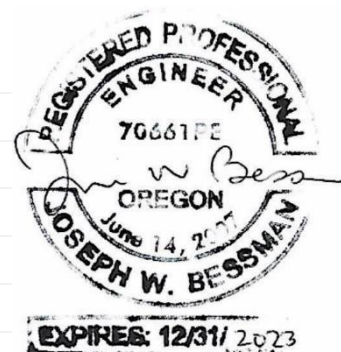
Condition 1: The transportation impacts from the 24.84-acre site shall be limited to a maximum 500 multi-family units and a cumulative total of 2,270 average daily vehicle trips.

- Attachments:
- A. Response from Transight Consulting dated January 25, 2022
 - B. Letter from ODOT received January 26, 2022
 - C. Response from Transight Consulting dated January 31, 2022
 - D. ODOT’s response to Transight Consulting dated
 - E. Rebuttal from City’s Traffic Engineer, Tony Martin
 - F. Salem HNA Update

Prepared by Jamie Donaldson, Planner II



Date:	January 25, 2022
To:	Tony Martin, PE, City of Salem
From:	Joe Bessman, PE
Project Reference No.:	1603
Project Name:	Titan Hill Rezone



Thank you for the opportunity to provide a response to comments received to date on the Titan Hill rezone project in West Salem. I have reviewed all the comments submitted by members of the public and agencies, and I appreciate the concern and input that has been shared related to transportation. This memorandum provides a formal response to those comments to help clarify the project team's position and relevance to the subject application.

GENERAL COMMENTS

This section addresses general comments raised by members of the public within various correspondence.

Comment 1: Various comments relate to current transportation issues that are not addressed within the Transportation Planning Rule analysis presented.

As described within the submittal materials, the proposed rezone of approximately 22.85 acres of a 36.72 parcel from Residential Agricultural and Neighborhood Center Mixed-Use to Multiple Family Residential complies with the Transportation Planning Rule with the proposed density restrictions in place. The study only provides a theoretical assessment of "worst-case" analysis scenarios for purposes of rezoning, and does not include an assessment of the suitability of the transportation system with the proposed apartments (which will be separately required as part of the site plan application) as a specific site plan is not available at this time.

The submitted analysis shows that the rezone has the potential to create a significant impact at the Wallace Road/Glen Creek Road intersection. The intersection is already forecast to operate beyond its adopted mobility standard without the rezone, and with the additional trips that are possible from the multifamily zoning the project would exacerbate this condition. Consistent with OAR 660-12-0060(2), which describes addressing significant impacts for plan amendments and zone changes, a density limitation was identified that would limit the 22.85-acre rezone area to develop with up to 500 apartment units. This condition would be considered a "density cap," and would limit what could be constructed on the rezone portion of the site. With this cap, the impact at the affected intersection results in a minor change in the v/c ratio of 0.02 that is considered "de minimus".

Our project team recognizes that developing the site will require additional mitigation measures and strategies. Our understanding is that any project would be responsible for improvements along the Doaks Ferry Road frontage, to provide safe walking routes and crossings to the adjacent schools, and to support the identified plans to develop Landaggard as a *Collector* that is suitable within its residential context. Depending on the ultimate density that is developed there may also be off-site improvements that are also required. While we understand and fully anticipate these needs, only the non-specific rezone is

proposed at this time. This land use action does not in itself allow any site development, and therefore creates no physical impacts to the transportation system.

We do appreciate the comments raised by area neighbors and will incorporate this feedback and input into future transportation materials.

Comment 2: Several comments relate to Landeggard Drive NW and its intended extension through the subject property as shown in the City's adopted Transportation System Plan. The comments indicate that neighbors do not support this alignment or overall connection.

The purpose of the Transportation Planning Rule is to ensure consistency with the adopted Transportation System Plan. We recognize that the Landeggard Drive NW corridor is not built to a *Collector* standard today and that it supports direct residential driveway access and lacks sidewalks and bicycle facilities.

Table 3-1 of the City's adopted Transportation System Plan outlines the basic design guidelines for various classifications of streets. This shows that the purpose of Collectors is to *"Primarily distributes traffic between neighborhoods, activity centers, and the arterial street system. Secondarily provides property access."* The table also shows that there are design options to provide on-street bicycle lanes or a route per the City's Bicycle Plan Map, and that a two lane section is suitable with turn lanes where appropriate. The intended volume range for this classification is between 1,600 and 10,000 vehicles per day, which the street will easily maintain given the zoning and limited land area served.

Today Landeggard Drive NW serves about 20 homes (approx. 189 daily trips), so the additional trips shown in the report will remain well within the daily travel range for this functional classification. Therefore, the rezone will not change the adopted functional classification of the facility. Within the site plan phase of the project our team can explore design treatments with traffic calming strategies to ensure that the level and types of travel remain appropriate given the current rural residential context.

In addition, while not part of the subject application, within the future site plan application our team will review potential street connections that can support access to the property and that can help reduce construction access through these streets. We recognize the current development patterns along Grice Hill Road, Colorado Way, and Landeggard Drive and can explore connections to the subject property to reduce impacts to what are currently built as rural residential streets.

WEST SALEM NEIGHBORHOOD ASSOCIATION COMMENTS

This section responds to the more specific comments presented by the West Salem Neighborhood Association.

Comment 3: The report references the Oregon Highway Plan rather than City standards despite this being an action within the City of Salem.

A Plan and Land Use Regulation Amendment is required to show compliance with the adopted Transportation System Plan. While a zone change focuses on section -0060 of the Transportation Planning Rule, the preceding sections of the rule outline the requirements for agencies to develop long-term multi-modal plans, coordinate that planning with impacted service providers, and develop funding mechanisms to implement the plan. A rezone must then show that it does not negate this required planning work by creating impacts that were not anticipated when the plans were prepared.

Accordingly, the adopted City standards apply to facilities within the City of Salem, and ODOT's standards apply to their facilities. While ODOT's planning is fairly general and high level (with overlap in City and County planning), their specific standards are contained within the Oregon Highway Plan. This document serves the "streets" modal plan element of the Oregon Transportation Plan that governs the adopted performance standards and management objectives for the facility.

Comment 4: The horizon year assesses year 2035 conditions which is a 13-year projection which doesn't seem much of a horizon.

The purpose of a rezone analysis is to assess a horizon year that is consistent with City plans so that the impact to those affected City plans can be evaluated. If the horizon period was extended beyond what the City had planned it would be changing policies and goals already established by the public and elected representatives, and extend beyond what improvements and funding sources have contemplated. In the case of ODOT facilities the planning horizon within the Oregon Highway Plan is a "rolling" 15-year horizon. The assessment reviews year 2036 conditions throughout the analysis to provide consistency with both plans without separate planning horizons. Additional context and detail on planning horizons can be found within ODOT's supplemental TPR materials included as an attachment.

Comment 5: The report uses volume projections from the Salem River Crossing Technical Report of 2016 (which is now six years old) and does not take into account development since that time period.

The City's adopted Transportation System Plan was prepared in 2013 (and updated in 2020 primarily with pedestrian and bicycle sections with no change to the horizon year for the motor vehicle system) and assesses a 2035 horizon. Again, to assess consistency with the adopted plan similar growth forecasts were applied.

The comments imply that growth rates somehow avoid recent growth that has occurred in West Salem; that is not the case, as the traffic counts are current and show conditions that are occurring on the system with growth and development that is present as of September 2021 (about four months from the date of this response). Growth rates are then applied to these volumes to account for the build-out of surrounding urban lands through the horizon year. While these estimates may be somewhat coarse in terms of how they project growth in rural areas (such as, for example, on Landeggard Drive), all the transportation facilities operate well within their performance standard with the exception of Wallace Road (OR 221). The highway carries high volumes today and is best projected using "coarse" projections given its regional role that extends beyond the boundary of West Salem.

The discussion within the report highlights the basis for the growth estimates and shows that the more rural area along Doaks Ferry Road included a higher growth rate than the Wallace Road corridor consistent with these area expectations, higher even than what other prior projections identified given the higher degree of uncertainty in the modeling.

We understand that growth projections (and many other aspects of a hypothetical rezone application) can be subjective, which is why assumptions related to land use scenarios were provided to agencies within scoping materials to ensure that we have reliable assumptions that are both appropriate and consistent with area planning.

Comment 6: Page 29 and 30 notes that there are limited ‘minor’ approaches that could be considered, such as signal coordination or other similar strategies.

We agree with this statement, there likely are “minor transportation improvements” that could be considered per OAR 660-12-0060(2)(d). These could include items such as signal timing/phasing changes, improvements to alternate travel modes/facilities, etc. These will remain viable mitigation options as the project moves into the entitlements phase where the actual impacts (not the comparative impacts) are the relevant performance criteria. However, for purposes of TPR compliance our team recognizes that a reasonable “worst-case” scenario under the proposed zoning compares far more apartments than what would be contemplated for this site. Accordingly, a trip cap provides the simplest mechanism to mitigate the finding of a significant impact. The following information published by ODOT to help agencies and the public understand the TPR as it applies to zone changes is cited below¹:

Is the evaluation of significant effect based on the applicants proposed use or other uses allowed by the proposed plan or zone change?

Generally speaking the evaluation of whether there is a significant effect must consider the range of uses allowed by the proposed plan and zoning changes, not just the particular use proposed by the applicant. This is because the resulting plan amendment or zone change, once approved, would allow any of the uses listed in the zoning district without further review for compliance with the TPR. Typically, plan amendments and zone changes do not prevent an applicant (or subsequent property owners) from pursuing more intense development than is contemplated in the original application.

As explained below, an applicant or local government can modify or limit the proposed plan or zone change to reduce its traffic generating impacts and possibly avoid triggering a significant effect. Where the application or approval is limited to specific uses or a particular level of traffic generation, it is possible to limit the scope of the analysis. In many situations this is adequate to avoid triggering a significant effect.

Comment 7: The report discusses “de minimus” changes in the v/c ratio but overlooks the substantial changes in queue lengths.

The report responds to the adopted performance standards of the affected transportation facility which remains the overall v/c ratio for ODOT facilities. Similar to current conditions, the future queues at intersections operating at or over their carrying capacity will be long with or without the rezone. As a comparative analysis only our assessment is premised on the change in v/c ratio with and without the rezone. The specific length of a given 95th percentile queue within a horizon year analysis is less precise

¹ TPR Section 0060 FAQs, December 15, 2008, <http://Oregon.gov/LCD>

and critical than the overall intersection capacity, as traffic signals have the ability to reallocate green time based on demands.

Comment 8: The narrative within the TIA states that the NCMU zoning will be Outside Core but a master plan has not been proposed or approved.

Again, the report provided is not a Transportation Impact Analysis but is a Transportation Planning Rule analysis that is intended to provide comparative review of hypothetical development scenarios within the existing and proposed zoning. The NCMU zoning impacts 1.05 acres of the 22.85 acres proposed for rezoning and as noted has not been master planned or approved for any specific uses, nor are there any specific plans included with the subject application.

The analysis presented reviews various uses that could be allowed within the NCMU zoning, but ultimately assesses more reasonable uses that would typically be included within a large-scale system plan (see Table 4). Within the 1-acre NCMU zone our analysis focuses on the impact of five homes with 7,000 square-foot lots versus about 22 apartment units. We agree that this provides a more reasonable comparison than other uses that could be allowed within this zoning.

Comment 9: The Transight Consulting TIA describes the comparison of 2020 and 2021 traffic counts that were collected throughout the area and the selection of the higher of the two counts for use in the analysis. However, it appears that the full set of both 2020 and 2021 traffic counts were not included in the attachments.

Table 6 of the report presents the summary comparison of both the morning and evening traffic counts. This shows that in the morning hours all of the 2020 traffic counts were higher, but in the evening hours Doaks Ferry Road experienced higher levels of travel in 2021.

Further review showed that much of these changes were attributable to modifications to the Salem-Keizer School District's modifications to the school bell schedule. This shifted the high school hours back, and the elementary school hours forward, changing how these schools impact the area commute peaks. In addition to the potential educational benefits, this also shows generally favorable improvements in area traffic conditions, particularly during the morning hours. The 2020 traffic counts on Doaks Ferry Road showed higher volumes and pronounced peaks from the stacking of commute and school impacts. Within the 2021 counts these profiles were flattened as shown in the traffic report. Accordingly, based on review of this information we applied the higher year 2020 traffic counts to the Wallace Road corridor but retained the 2021 traffic counts on Doaks Ferry Road, as the changes appeared more school-related rather than COVID.

It does appear that in my summary of the traffic counts (Table 6) I highlighted that the 2020 data was applied on Doaks Ferry Road; this is incorrect and should be revised as follows:

Table 6. Summary of Traffic Counts (Total Entering Volume shown)

Intersection	Weekday AM Peak Hour		% Change	Weekday PM Peak Hour		% Change
	January 2020	September 2021		January 2020	September 2021	
1: Doaks Ferry Rd/ Orchard Heights Rd	1,595	1,340	84%	875	1,208	138%
2: Doaks Ferry Rd/ Glen Creek Rd	1,425	1,337	94%	1,013	1,268	125%
3: Wallace Rd/ Orchard Heights Rd	2,567	2,470	96%	2,904	2,854	98%
4: Wallace Rd/ Glen Creek Rd	3,474	3,298	95%	4,094	4,049	99%

As was stated in the original report, the following description remains valid:

“To provide a reasonable and conservative analysis, the intersections on Doaks Ferry Road were analyzed with the more recent September 2021 counts. These intersections are greatly impacted by school traffic and reflect the current travel patterns from the changes in school hours. These intersections also have much higher traffic volumes during the September 2021 weekday p.m. peak hour traffic counts. The intersections on Wallace Road were analyzed with the older, January 2020 traffic counts, reflecting the higher and more conservative traffic volumes. These traffic volumes are minimally impacted by the changes in school hours.”

Comment 10: The Transight report provides conclusions without citing the source of the data. For example, Table 9 on page 27 compares 2012 traffic counts with projected 2040 volumes without a source for the comparison.

The paragraph preceding the introduction of the table describes that the volume projections are based on the Salem River Crossing Project Traffic and Transportation Technical Report Addendum (River Crossing, October 2016). These materials are available on the City’s website and can be provided upon request. Please let me know if any other citations are needed.

Comment 11: The Transight report provides inconsistencies in intersection graphics, such as the omission of the Total Entering Volume that is shown on the existing conditions graphics but omitted from the horizon analyses.

The total entering volume is simply the summation of the turning movements shown, this information is supplemental and does not relate to performance measures or requirements. The information was provided within the figure showing the 2020 versus 2021 traffic count comparison to simplify the overall selection of volumes for review purposes. If WSNA finds this information helpful for comparisons we can easily include this information on all future submittals.

Comment 12: The trip difference between the existing and proposed zoning scenario do not match the values in the report.

The overall comment is unclear, but I have reviewed the datasets and verified that the appropriate numbers have been assessed throughout the analysis scenarios. It appears that the graphics referenced

by WSNA are mixing the volumes with and without the trip cap. To simplify this specific comparison of traffic volumes at the Doaks Ferry/Orchard Heights intersection as highlighted by WSNA, I have provided a more detailed layout of the traffic volumes at the cited intersection in Figure 1 to show how the proper addition and comparison of these traffic volumes should flow.

Additional explanatory materials can be provided as part of future land use applications to further simplify this process both for the public and agency reviewers; the appendices were prepared to a level of detail more common to agencies that are accustomed to reviewing these technical files.

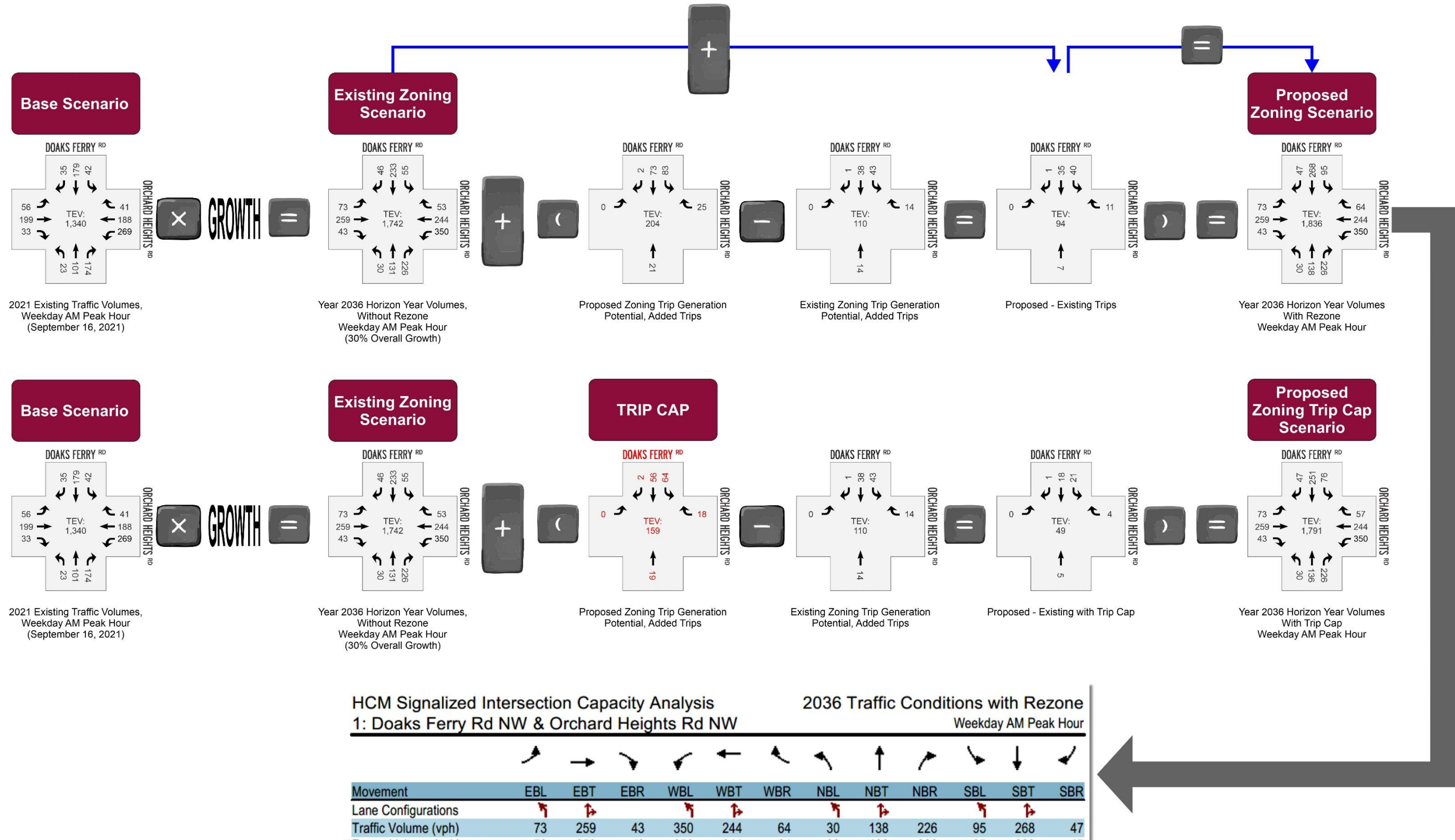


Figure 1. Example break-out of traffic volumes between the existing traffic counts and analysis volumes applied within the analysis modeling.

Comment 13: The total entering vehicles is reproduced on page 49. According to the Synchro report the volume change at the intersection provides a difference of +17 [at Wallace Road/Glen Creek] and +40 [at Wallace Road/Orchard Heights]. Please explain.

If I understand the comment correctly it appears that WSNA’s comment relates to the difference in added trips between the with and without rezone scenarios at the two Wallace Road intersections with Glen Creek Road and Orchard Heights Road. The analysis that was prepared assigns about half the trips to Wallace Road along Orchard Heights Road and about half traveling farther south on Doaks Ferry Road and then east on Glen Creek Road. The trip assignment is a function of trip time, to include point delays at intersections and congestion on the Wallace Road corridor. If all the trips took a single route to Wallace Road the difference in total trips would be more similar at both intersections. However, review of the existing traffic counts show that this rerouting is already occurring to balance travel delays.

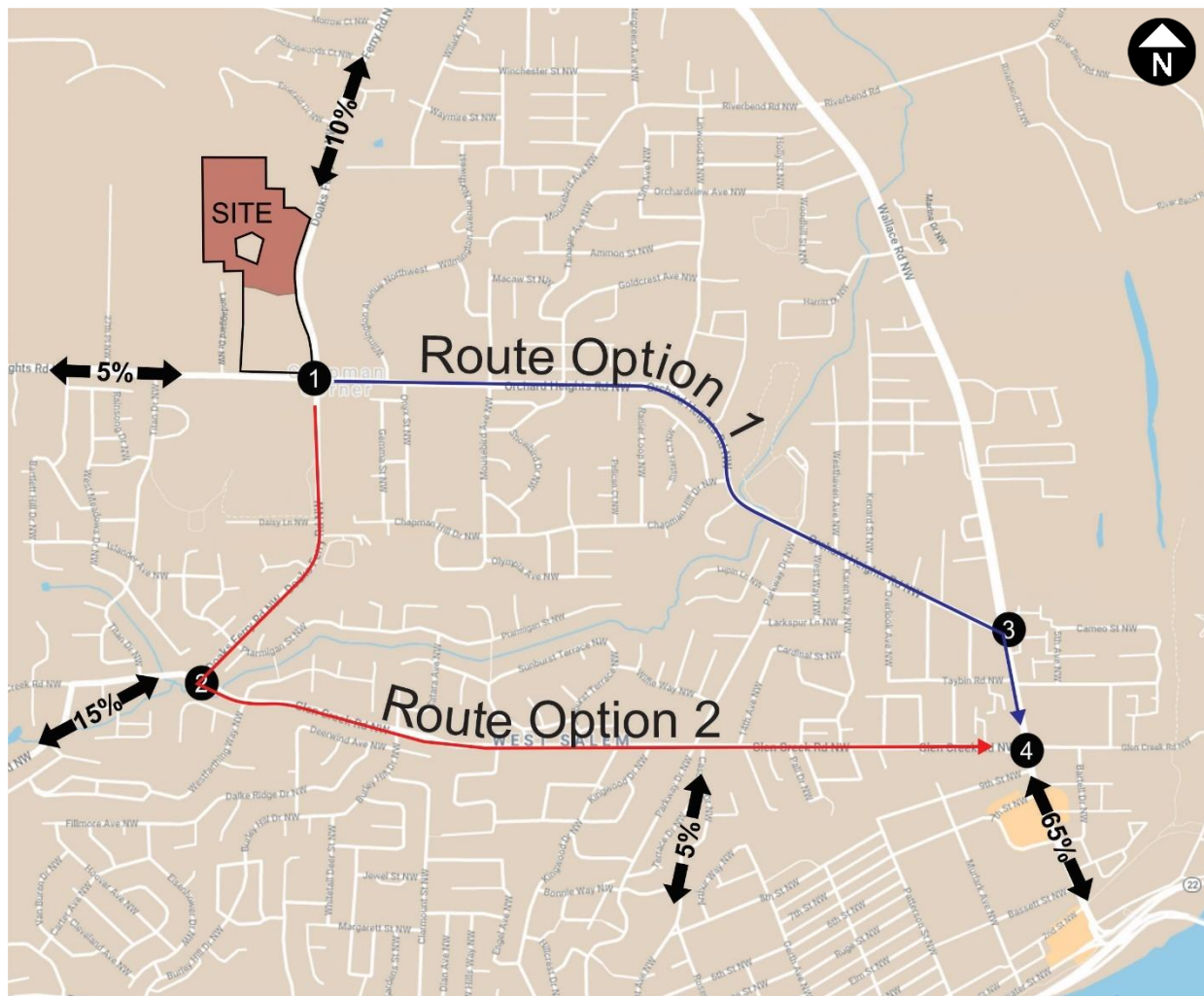


Figure 2. Routing Options toward Wallace Road.

Comment 14: The operational analysis summarized in Table 12 shows that with the trip cap the change in volume-to-capacity ratio is 0.02. This does not account for queues and the Level of Service “F”?

ODOT’s adopted mobility standard is based solely on the volume-to-capacity ratio and does not account for queuing and delays. ODOT’s performance standards are based on the design hour, which is typically correlated with the evening peak hour. During this time period the rezone adds a total of 15 trips, or

0.003%² of the forecast volume. This is less than the daily volume fluctuation, and far less than regional growth that occurs in a single year from outlying areas.

E.M EASTERLY COMMENTS

Additional technical comments were provided from E.M. Easterly as outlined below.

Comment 15: The conclusions skip over current failing “F” Level of Service deficiencies on Wallace Road by presenting an overall general LOS for the intersections.

Signal timing is complex and generally attempts to minimize overall intersection delays. If throughput on Wallace Road is the primary movement then having more green time allocated to this movement can provide better overall performance, but at the expense of lower volume (or lower priority) movements. The use of an overall intersection metric as adopted by ODOT and the City of Salem provides a better comparison, particularly to horizon year conditions when the specific signal timing plans (let alone motor vehicle and detection technology) are unknown.

Comment 16: Two intersections currently fail performance standards.

To clarify, both intersections meet the adopted mobility target/standard today. The Wallace Road/Orchard Heights intersection operates acceptably with and without the rezone in the horizon year (but at the boundary and near its carrying capacity). The Wallace Road/Glen Creek Road intersection exceeds adopted mobility standards with or without the rezone.

With only a single intersection shown to experience a “significant impact” the analysis of the proposed mitigation measure (the density limit) focuses only on the Wallace Road/Glen Creek Road intersection.

Comment 17: The analyst selected the higher traffic count for the analysis.

See clarification within Comment #9.

Comment 18: The graphic data does not match the total entering volume cited within the traffic count section.

Since the counts were collected in 2020 an additional year of growth was applied throughout the analysis to avoid undercounting growth through the 15-year horizon, despite the lower traffic volumes observed in 2021.

² The forecast volume in the 2036 design hour is 5,643 vehicles.

Comment 19: Comparison of traffic counts between the proposed zone change is outlined below and in the analysis output sheets.

Please see the volume development process outlined in Figure 1 and also within Comment 13 to help clarify how traffic volumes were developed and assigned throughout this analysis.

Comment 20: Various data is provided with an implied argument that the growth or volumes vary from those within the study at the Glen Creek and Wallace Road intersection based on the COG 2035 projections.

The analysis presented within the E.M. Easterly letter compares what appears to be the COG’s raw link-based year 2035 travel demand model outputs at the Glen Creek and Wallace Road intersection to the year 2036 turning movement projections presented in the traffic study. Comparison of the two forecasts shows a minor 8% difference in volume forecasts, with those in the submitted traffic study slightly higher. For clarity, I have provided a summary within Table 2 to compare these values side by side.

Table 2. Comparison between 2035 COG forecasts and 2036 projected turning movements

Movement	Inbound		Outbound		Combined	
	COG	TPR Analysis	COG	TPR Analysis	COG	TPR Analysis
Southbound	1,775	1,679	2,730	2,478	4,505	4,157
Westbound	110	242	175	228	285	470
Northbound	1,120	1,432	850	1,267	1,970	2,699
Eastbound	875	846	120	227	995	1,073
Total	3,880	4,199	3,875	4,200	7,755	8,399

This comparison shows a very close match between the raw COG link travel demands and those prepared in the TPR analysis and I think helps to validate the reasonableness of the data presented. The more detailed turning counts provided in the traffic study include the benefit of “recalibrating” the projection eight years after the original estimates, they reflect an additional year of growth, and they include the additional detail of the turning movements rather than simply a segment-based forecast. Overall, it appears that the data within the model and forecasts align well between these two sources taken at different points in time.

I would caution comparing model-based link volumes directly with turning movement volumes. A more detailed process is typically applied as outlined within NCHRP Report 255, which essentially notes the need to calibrate the travel demand model forecasts with turning movement counts and the methods that can be employed. The specific process and accuracy depends on the quality of the travel demand model within a defined area.

NEXT STEPS

Thank you for the opportunity to provide these transportation materials. As outlined in the report, limiting the site to 500 apartment units will mitigate the finding of a significant impact. The analysis presented provides a reasonable assessment of forecast conditions, and our team is aware of the specific site context and connectivity needs that will be require more detailed assessment within the future site plan application. I look forward to addressing any remaining questions that may arise at the project hearing. If you have any questions I can be reached at (503) 997-4473 or via email at joe@transightconsulting.com.

Attachments:

- TPR Section 0060 FAQs, December 15, 2008, <http://Oregon.gov/LCD>
- Year 2020 Traffic Count Dataset
- Year 2021 Traffic Count Dataset

FREQUENTLY ASKED QUESTIONS ABOUT SECTION 0060 OF THE TRANSPORTATION PLANNING RULE

What is Section 0060 of the Transportation Planning Rule?

Section 0060 of the Transportation Planning Rule (TPR) is a statewide planning requirement that directs cities and counties to assess whether proposed plan amendments and zone changes will have a significant effect on the transportation system. In essence, this means that before approving plan or zone changes, cities and counties must determine whether existing transportation facilities and planned improvements will provide adequate capacity to support the new development that would be allowed by the proposed land use changes.

If there is not adequate planned capacity, a “significant effect” occurs. When a city or county finds there is a significant effect, it must take steps to put land use and transportation in balance. Ways to do this include: adding planned transportation facilities or improvements, limiting land use or modifying performance standards to tolerate additional congestion. Section 0060 outlines the process and standards for deciding whether a plan amendment or zone change has a significant effect, and appropriate remedies.

What is the purpose of Section 0060?

Section 0060 is intended to assure that when new land uses are allowed by plan or zone changes that there is adequate planned transportation capacity, usually roadway capacity, to serve the planned land uses. The potential for traffic and congestion from new development is a major concern in communities around the state. Section 0060 is a tool to help communities understand the traffic impacts of plan and zone changes and assure that growth is adequately planned for and does not result in excessive traffic congestion. Amendments to Section 0060 adopted in 2005 also help communities address whether funding plans and strategies for needed improvements are in place before plans or zoning are changed to allow more development.

What is the legal basis for Section 0060?

State law (ORS 197.646) requires that local governments comply with statewide planning goals and rules adopted to implement them when they consider plan amendments. The TPR implements Statewide Planning Goal 12 (Transportation) which requires local governments to plan for a safe, convenient, and adequate transportation system.

What decisions does TPR Section 0060 apply to?

This portion of the TPR applies to local plan and land use regulation amendments. These include plan and zoning map changes as well as changes to the list of allowed land uses in a zone or other provisions of a zoning district.

Does Section 0060 apply to building permits, subdivisions or conditional use permits or similar authorizations?

No. As described above, Section 0060 only applies where a plan amendment or zone change of some sort is involved. Approvals that are made under the terms of existing city and county plans and zoning ordinances are not subject to Section 0060. However, in some situations local governments may have adopted local standards that are equivalent to the TPR Section 0060 that do apply during site plan review.

Does Section 0060 affect all plan amendments and zone changes?

In practice, the TPR affects relatively few plan amendments and zone changes. Most plan amendments don't affect expected traffic one way or another; and those that do are often adequately served by existing or planned roadway improvements.

Do changes to land use regulation amendments other than zone changes need to be reviewed for compliance with Section 0060?

Yes. While most changes to zoning or development codes do not affect the transportation system, some relatively minor changes may allow new or expanded uses that would have a significant effect. For example, adding "sales of building materials" as an allowed use in an industrial zoning district could have the effect of allowing a large format retail use into an industrial zoning district that would generate much more traffic than allowed industrial development. Local governments need to evaluate each land use regulation amendment and assess whether or not it would allow uses that would generate more traffic than that generated by uses currently allowed in the zone.

Section 0060 is *part* of the Transportation Planning Rule. What are the other parts of the TPR?

The Transportation Planning Rule or TPR is an administrative rule adopted by the Land Conservation and Development Commission. The rule implements Statewide Planning Goal 12 (Transportation) and other statewide planning goals that provide guidance to local governments about how they conduct transportation planning. The major requirement in the TPR is that cities and counties adopt transportation system plans (TSPs) that include plan for future streets and roadway improvements and other transportation facilities and services needed to support future land use plans. The TPR was adopted in 1991. Since that time most of the cities and counties in the state have adopted TSPs to carry out the rule. Further information about the TPR including the full text of the rule is available on the DLCDC website. Information about TSPs is available from the respective city and county planning departments.

My city and county have adopted transportation plans (TSPs). Is additional review of plan amendments and zone changes for compliance with 0060 still required?

Yes. Generally, TSPs include planned facilities that are adequate to serve uses anticipated based on existing planning and zoning. Changes to comprehensive plans and zoning can create the need for additional street or roadway improvements. Section 0060 requires cities and counties to assess whether a plan amendment or zone change would create more traffic than the plan anticipates or that facilities called for in the plan are designed to handle. In many cases, local governments find that improvements called for in TSPs will be

adequate to support the planned land use change. Where this is the case, the requirements of 0060 are met. However, where expected new traffic would exceed the capacity of planned facilities, additional planning must be done to figure out how the traffic will be handled, usually by amending the TSP to account for the additional traffic.

How is Section 0060 applied?

Local governments considering plan or land use regulation amendments evaluate whether the proposed plan amendment or zoning change would "significantly effect" the planned transportation system. Most local governments ask applicants to address this in their application. The evaluation involves reviewing applicable city, county or state transportation plans and assessing whether the proposed plan or zone change will have a significant effect on the transportation system.

What is the standard for deciding whether a plan amendment or zone change has a "significant effect"?

The standards for determining whether or not a plan or land use regulation amendment has a significant effect are set out in OAR 660-012-0060(1).¹ In most situations, an 0060 "significant effect" occurs because the plan amendment or zone change would allow uses that would result in a level traffic that exceeds the adopted performance standards for a local street or state highway. (This is the standard in 0060(1) (B): where a plan amendment or zone change reduces "...the performance of an existing or planned transportation facility below the minimum acceptable performance standard identified in the TSP or comprehensive plan.")

Local governments determine whether there is a significant effect by:

- Assessing how much new traffic would be generated by the proposed plan or zone change
- Adding the potential new traffic to traffic that is otherwise expected to occur
- Assessing whether this additional traffic will cause roadways in the vicinity of the plan amendment to exceed adopted performance standards

How do local governments determine whether or not a plan amendment or zone results in a "significant effect"?

Typically some sort of traffic analysis or traffic impact study is prepared. In either case, the analysis compares traffic allowed under the existing and proposed plan or zoning designations. A proposed plan amendment or zone change has a "significant effect" if: (1) it generates more traffic than allowed by existing plan and zoning AND

¹ There are three other circumstances where a plan amendment could trigger a "significant effect":

- Changes to the functional classification of an existing or planned transportation facility – an example would be where a local plan designation for a planned street is changed from a "minor arterial" to a "major collector".
- Changes to standards implementing a functional classification system. Examples of this type of change would include amendments to driveway or street spacing requirements.
- Allowing types or levels of uses which would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or

(2) planned transportation improvements do not provide adequate capacity to support the allowed land uses.

Are there some simple guidelines for assessing whether a plan amendment is likely to trigger a significant effect?

Yes. In most cases the key question is whether the proposed plan designation or zoning will result in more traffic than is allowed by current zoning.

If the proposed plan amendment or zone change would generate the same or less traffic than is allowed by the current plan and zone designations, it generally is considered *not* to have a "significant effect" on the transportation system. In essence, the rule requires further review of transportation impacts only where a plan amendment or zone change would yield more traffic than is allowed by current zoning.

If a plan amendment would result in more traffic being allowed is it automatically considered to have a "significant effect" under the TPR?

No. The local government would first need to evaluate whether planned transportation facilities will be adequate to handle the additional traffic. If they are adequate, then there would not be a significant effect.

Is the evaluation of significant effect based on the applicants proposed use or other uses allowed by the proposed plan or zone change?

Generally speaking the evaluation of whether there is a significant effect must consider the range of uses allowed by the proposed plan and zoning changes, not just the particular use proposed by the applicant. This is because the resulting plan amendment or zone change, once approved, would allow any of the uses listed in the zoning district without further review for compliance with the TPR. Typically, plan amendments and zone changes do not prevent an applicant (or subsequent property owners) from pursuing more intense development than is contemplated in the original application.

As explained below, an applicant or local government can modify or limit the proposed plan or zone change to reduce its traffic generating impacts and possibly avoid triggering a significant effect. Where the application or approval is limited to specific uses or a particular level of traffic generation, it is possible to limit the scope of the analysis. In many situations this is adequate to avoid triggering a significant effect.

What happens when a local government concludes there is a "significant effect"? Can the plan amendment or zone change still be approved?

A finding of "significant effect" does not prevent approval of a plan amendment or zone change. It does trigger the requirement for local governments to take steps to put land use and transportation "in balance"; by assuring that planned land uses are consistent with the planned transportation system. Local governments have four options for putting land use and transportation "in balance" including one or a combination of the following:

- Adding planned transportation facilities or improvements
- Limiting allowed land uses to fit available facilities

- Changing the transportation performance standards to accept lower performance
- Adopting measures that reduce auto travel

Can local governments avoid triggering a significant effect by limiting the uses allowed by a proposed plan amendment or zone change?

Yes. In practice, applicants or local governments have done this by calculating either the capacity of the planned transportation system or the intensity of use allowed by existing plans and zoning, and then including zoning restrictions that cap allowed development to avoid a "significant effect". This can be done by adopting trip caps or limits on the allowed uses. Currently, thoughtful applicants, with assistance from their traffic consultants, will carefully calculate the capacity of the planned transportation system and adjust their plan amendment proposal to fit within the available the capacity. This may include proposing roadway improvements or other measures to make the proposal fit the available capacity.

How do local governments assess whether there is adequate planned transportation capacity to support proposed uses?

Evaluation is based on applicable adopted transportation plans. These include adopted city and county transportation system plans (TSPs), and the 1999 Oregon Highway Plan adopted by the Oregon Department of Transportation (ODOT).² Basically, local governments compare expected traffic under existing plans with additional traffic that would be allowed under the proposed plan amendment. They then assess whether improvements included in adopted plans will adequately serve the additional traffic. If the increased volume of traffic would cause a performance standard not to be met, there is a significant effect on the transportation system. This assessment is usually based on a traffic impact analysis prepared by a traffic engineer for the applicant.

Does the TPR require traffic impact studies?

While the TPR does not specifically require a traffic impact study, one may be needed to determine whether or not a plan amendment or zone change results in a significant effect. The need for a traffic impact study is usually decided by local government as it reviews a proposed plan amendment. Where a proposed amendment affects a state highway, the local government needs to consult with ODOT to determine whether a traffic impact study or some other analysis is needed.

Does the TPR require a "worst case" analysis - for example, where someone is proposing a zone change to allow a specific use, such as an auto dealership, but the proposed zoning allows other more intense uses, such as fast food restaurants?

No. However, the analysis must be based on the uses that would be allowed by the proposed zoning. An applicant or local government can limit the scope of analysis by limiting the request or approval to specific uses or to a particular level of traffic generation. One approach that is often used is to calculate the amount of traffic expected to be generated by the proposed use and to adopt land use regulations that limit uses in the zone to not exceed this amount.

² The Oregon Highway Plan also includes any specific implementing plans adopted by the Oregon Transportation Commission, such as Highway Corridor Plans or Interchange Area Management Plans. These specific "facility plans" often set different or additional standards for highway performance than are in the OHP document.

Is it possible to defer compliance with the TPR to a subsequent approval, such as a site plan or conditional use approval?

Technically no. However, local governments can achieve this result by limiting development and adopting a local ordinance that essentially mirrors the requirements of Section 0060. Several LUBA rulings³ have upheld local government decisions that, in effect, defer application of the TPR where the following conditions are met:

- (1) The plan amendment and zone change themselves do not allow additional development
- (2) the plan or zoning amendment include the substance of 0060 as a standard for approving any development - typically through a site plan approval process; and
- (3) the local implementation process provides for public review and a hearing including notice to ODOT and other affected transportation providers.

In addition, the Department of Justice has provided ODOT with informal guidance about requirements for local governments to accomplish deferral.

Does DLCD recommend "deferring" transportation analysis required by the TPR?

No. The department recommends against using this approach for several reasons:

- **It undermines the predictability that zoning is intended to provide.** Zoning or rezoning land implies that the land is suitable and appropriate for uses allowed in the zone. If lands are zoned "commercial", for example, property owners rightfully assume that the public has determined that the land is suitable for many commercial uses and can be developed for commercial uses without difficult or complicated reviews. Deferring evaluation of transportation impacts and mitigation to site review works against this objective, especially where expensive improvements are needed to mitigate traffic impacts.
- **It undermines public participation in zoning decisions.** Rezoning is a key opportunity for the public, including neighboring property owners, citizens and agencies, to comment on a proposed zone change. Traffic impacts are often a major concern which the public should understand *before* a zone change is approved. Deferring transportation analysis reduces the opportunity for meaningful public participation.
- **It creates tracking and enforcement problems for local governments.** Where transportation analysis is deferred, future land use decisions and approvals have to be adjusted to include the required transportation analysis. It several years pass between the time the original zone change is approved there is likely to be uncertainty or confusion about what is required – especially if local staff turnover or if property is sold.

³ The LUBA decisions on this issue are:

- Citizens for the Protection of Neighborhoods, LLC v. City of Salem and Sustainable Fairview Associates LLC, 47 OrLUBA 111 (2004): <http://www.oregon.gov/LUBA/docs/Opinions/2004/06-04/03201.pdf>
- *Concerned citizens of Malheur County v. Malheur County and Treasure Valley Renewable Resources, LLP*, 47 OrLUBA 208 (2004).... <http://www.oregon.gov/LUBA/docs/Orders/2004/04-04/04008.pdf>

Overall, local governments, property owners and the public are better served by conducting the traffic analysis as the zone change is considered and making a clear decision about whether the planned transportation system is adequate to serve the allowed uses as part of approving the zone change.

What qualifies as a "planned transportation facility" that local governments may rely upon in determining whether there are adequate facilities to support the planned land use?

Section 0060(4) lists the types of facilities, improvements and services that can be counted as "planned" for purposes of 0060 compliance. Typically, a facility or improvement must be included in the relevant TSP and have some level of funding commitment in place to be considered to be "planned" under section 0060. The rule also allows transportation providers to issue letters to confirm that certain improvements are "reasonably likely" to be provided by the end of the planning period. Where such letters are issued, the improvements may be considered as planned. The rule also allows for improvements that are provided by the applicant, typically as a condition of approval, to be counted as planned improvements.

A detailed list of list of facilities, improvements and services that are considered planned is outlined in Section 0060(4) and includes:

- ❑ Transportation facilities, improvements or services that are funded for construction or implementation in:
 - ❑ the Statewide Transportation Improvement Program
 - ❑ a locally or regionally adopted transportation improvement program or capital improvement plan, or,
 - ❑ program of a transportation service provider. (See OAR 660-012-0060(4)(b)(A).)

- ❑ Transportation facilities, improvements or services that are authorized in a local transportation system plan and for which a funding plan or mechanism is in place or approved. These include, but are not limited to, transportation facilities, improvements or services for which:
 - ❑ transportation systems development charge revenues are being collected;
 - ❑ a local improvement district or reimbursement district has been established or will be established prior to development;
 - ❑ a development agreement has been adopted; or
 - ❑ conditions of approval to fund the improvement have been adopted. (See OAR 660-012-0060(4)(b)(B)).

- ❑ Transportation facilities, improvements or services in a metropolitan planning organization (MPO) area that are part of the area's federally-approved, financially constrained regional transportation system plan. OAR 660-012-0060(4)(b)(C).

Who decides whether a planned facility or improvement is "reasonably likely" to be provided by the end of the planning period?

The decision is made by the relevant transportation facility provider. For example, for state highways, the decision about whether an improvement is reasonably likely is made by

ODOT. For county roads, the decision is made by the county. For city streets, the determination is made by the city. In each case, the entity making the determination may establish its own procedures to determine who is authorized to make reasonably likely determinations and how such determinations will be issued. ODOT's guidelines address this issue for state highways.

Are “reasonably likely” determinations “land use decisions”?

The Commission's intent is that reasonably likely determinations not be land use decisions. The determination is essentially evidence or a finding submitted by a third-party. The rule does not ask or direct that local governments decide as part of the land use proceeding whether an improvement is “reasonably likely” to be funded; that determination is made separately and only the result, not the substance of determination, is at issue in the land use proceeding.

Why does the rule require “reasonably likely” determinations for projects that are included in TSPs? Why aren't all of the projects included in TSPs considered “planned projects” for purposes of 0060?

The amendments to Section 0060 were adopted following a broad evaluation of the TPR and of transportation planning done by Oregon communities over the last 10-15 years conducted jointly by the Oregon Transportation Commission and LCDC. A major finding of the evaluation was that there is a substantial gap between likely funding and the improvements that are called for in TSPs. In short, the transportation improvements included in plans greatly exceeds revenue likely to be generated over the next 20 years, even if there are new or expanded sources of revenue.

The consequence of this funding gap is that many of the projects that TSPs call for in the next 20 years will not be built, and for many communities traffic congestion will worsen. To a large extent, this is a result of past land use decisions – that put in place development patterns that create a need for additional roadway improvements. While LCDC recognizes that more needs to be done to address this gap, the conclusion was that it was not prudent to ignore or worsen the imbalance between land use and transportation by allowing additional land use changes that depend upon improvements that are not likely to be built in the next 20 years.

The TPR says that transportation performance is measured at the “end of the planning period”. How is the applicable “planning period” determined?

The TPR defines planning period as “... the 20-year period beginning with the date of adoption of a TSP to meet the requirements ... of the rule.” (OAR 660-012-0005(18)). This date based on the date of adoption of the applicable city or county TSP. For state highways, the Oregon Highway Plan indicates that the planning period is the one specified in the relevant local TSP applies but not less than 15 years from the date of application.

Are there additional requirements for review of plan and zone changes around freeway interchanges?

Yes. Section 0060 includes additional requirements for review of plan amendments within ½ mile of interchanges on interstate freeways. This includes interchanges on I-5 and I-84, as well as interchanges on I-205, I-405 (in the Portland Metropolitan area) and I-105 in the

Eugene-Springfield area. Additional review was required because of the special significance of the interstate system to the state transportation system.

Within freeway interchange areas the list of "planned improvements" is limited to improvements that have some form of funding commitment and does not include projects that are "reasonably likely" to be funded. However, other improvements can be counted as planned if ODOT agrees that the proposed plan amendment will not adversely affect the interstate highway system. (This part of the rule and ODOTs process for assessing whether amendments will affect the interstate system are outlined in ODOTs Guidelines for implementing Section 0060. See below.)

Who sets the performance standards for deciding whether there is "adequate" transportation capacity and what are they?

Standards for capacity and transportation system performance are set by local governments and ODOT through their adopted transportation system plans (TSPs). For state highways, mobility standards are expressed as acceptable "volume-to-capacity" ratios for traffic. Most local governments use a comparable system that uses letter grades to define acceptable "level of service" or LOS. The system rates service from "A", light traffic and free flow conditions to "F" heavily congested, with significant delays at traffic lights or to make turn movements. Most set "D" or "E" as the acceptable performance standard.

Does 0060 effectively set a "concurrency requirement", i.e. that adequate facilities have to be built or funded before development can be allowed?

No. The rule does not create the kind of "concurrency" requirement that has been adopted in other states, where transportation facilities must be built before new development is approved. . The TPR requires local governments to assess whether planned facilities – that are expected to be constructed over the planning period – will – at the end of the planning period – be adequate to meet needs. This allows for development to occur in advance of needed transportation improvements being constructed.

Will Section 0060 delay the development of "shovel-ready" industrial sites?

No. Industrial sites are not certified as "shovel-ready" until and unless they have the necessary plan and zoning designations for the appropriate industrial uses and are served by adequate public facilities, including transportation facilities. Section 0060 does not apply to sites already designated as "shovel-ready" and, therefore, will not cause a delay in their development.

Can local governments adopt concurrency requirements or other standards that are stricter than those in 0060 standards?

Yes. The TPR is basically a minimum state standard for review of plan amendments and zone changes. Individual cities can adopt ordinances regulating new development to meet particular local needs or circumstances that are stricter than the TPR. Several local governments have adopted concurrency type standards, requiring that needed improvements be constructed or funded or in place at the same time new development occurs.

Can a local government change performance standards to accept greater levels of congestion?

Yes. Where a planned development will result in an exceedance of the applicable performance standard, the TPR authorizes local governments to amend their TSPs to modify the performance standards to accept greater motor vehicle congestion OAR 660-012-0060(2)(d). Where state highways are affected, local governments need to get ODOT to agree to change its performance standards as well. Metro in the Portland metropolitan area, in coordination with the Oregon Transportation Commission and ODOT, has adopted performance standards that accomplish this objective and support the implementation of the region's Metro 2040 plan.

Where can I get more information about Section 0060?

The full text of the Transportation Planning Rule, including Section 0060, is available on DLCD's website at www.lcd.state.or.us

ODOT has produced guidelines for use by its staff in applying Section 0060. The guidelines are available on the ODOT website at:

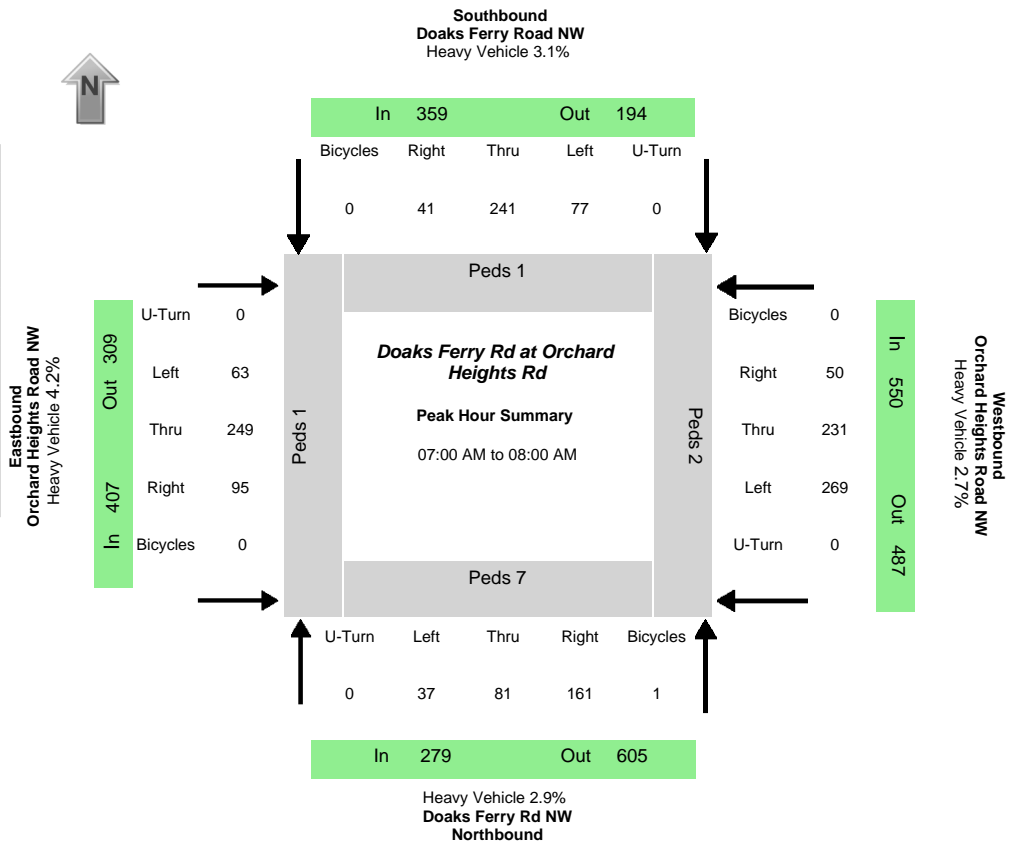
<http://www.oregon.gov/ODOT/TD/TP/docs/TPR/tprGuidelines.pdf>

While the guidelines are intended principally for use by ODOT staff, they can also provide useful guidance to help local governments and applicants understand and apply Section 0060. Key to the amended rule are decisions by ODOT (and local governments) about whether or not needed improvements are funded or "reasonably likely" to be funded during the planning period. The ODOT guidance provides direction about how ODOT staff are to make reasonably likely determinations.

Numerous LUBA decisions provide useful guidance in understanding details of applying the Section 0060. The text of LUBA opinions and headnotes summarizing LUBA decisions related to Goal 12 and the Transportation Planning Rule are available on LUBA's website at www.orluba.state.or.us

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW		
E/W street	Orchard Heights Road NW		
City, State	Salem OR		
Site Notes			
Location	44.960438 - -123.079714		
Start Date	Wednesday, January 22, 2020		
Start Time	06:00:00 AM		
Weather			
Study ID #			
Peak Hour Start	07:00:00 AM		
Peak 15 Min Start	07:20:00 AM		
PHF (15-Min Int)	0.77		



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
37	81	161	0	77	241	41	0	63	249	95	0	269	231	50	0	279	359	407	550	605	194	309	487
Percent Heavy Vehicles																							
2.7%	1.2%	3.7%	0.0%	3.9%	1.2%	12.2%	0.0%	6.3%	3.6%	4.2%	0.0%	2.2%	3.5%	2.0%	0.0%	2.9%	3.1%	4.2%	2.7%	2.1%	3.1%	4.5%	3.7%

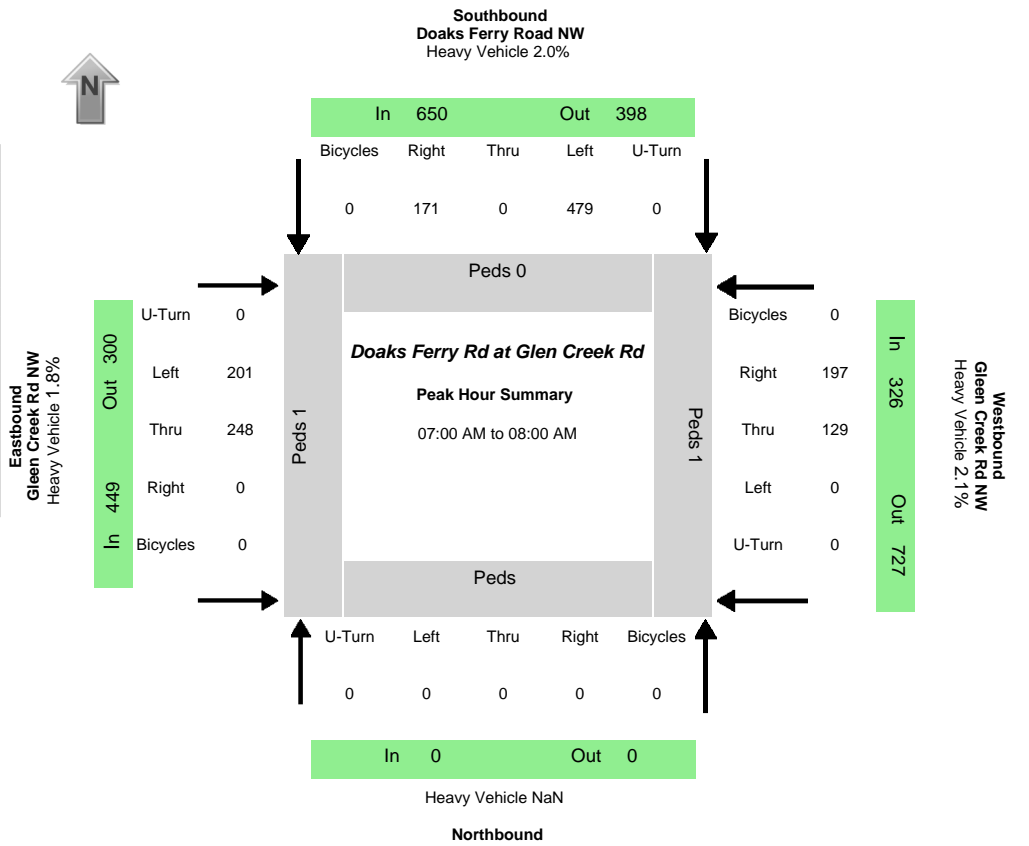
PHV- Bicycles														PHV- Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	1	2	11

Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Road NW				Eastbound Orchard Heights Road NW				Westbound Orchard Heights Road NW				15 Min Sum	1 HR Sum	
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn			
06:00:00 AM	0	2	0	0	0	3	1	0	0	0	2	0	0	2	3	0	0		
06:05:00 AM	0	2	1	0	0	1	0	0	0	0	3	0	0	7	1	0	0		
06:10:00 AM	0	2	2	0	0	3	0	0	0	0	7	1	0	4	1	0	0	48	
06:15:00 AM	0	0	1	0	0	4	0	0	0	0	4	0	0	2	0	0	0	46	
06:20:00 AM	0	2	4	0	0	0	0	0	0	0	3	0	0	1	2	1	0	44	
06:25:00 AM	0	2	4	0	0	1	1	0	0	1	6	0	0	2	2	0	0	43	
06:30:00 AM	0	4	5	0	2	3	0	0	0	1	6	1	0	6	3	0	0	63	
06:35:00 AM	0	5	2	0	0	1	0	0	0	3	10	0	0	6	1	2	0	80	
06:40:00 AM	0	5	4	0	2	6	3	0	0	1	7	2	0	2	6	2	0	101	
06:45:00 AM	0	4	1	0	0	8	2	0	0	3	14	1	0	8	2	1	0	114	
06:50:00 AM	2	3	4	0	1	6	3	0	0	2	8	4	0	8	6	1	0	132	
06:55:00 AM	1	4	5	0	0	8	5	0	0	4	15	1	0	6	10	3	0	154	346
07:00:00 AM	3	5	4	0	2	13	4	0	0	7	19	3	0	15	15	2	0	202	425
07:05:00 AM	2	11	5	0	3	19	5	0	0	2	25	12	0	22	18	0	0	278	534
07:10:00 AM	3	3	8	0	5	19	7	0	0	4	25	16	0	24	47	1	0	378	676
07:15:00 AM	3	4	9	0	1	29	5	0	0	7	19	13	0	33	35	2	0	446	825
07:20:00 AM	16	11	14	0	5	20	9	0	0	10	25	12	0	24	22	1	0	491	981
07:25:00 AM	8	8	19	0	8	24	3	0	0	8	39	10	0	25	29	4	0	514	1147
07:30:00 AM	1	8	18	0	10	21	5	0	0	7	41	12	0	20	14	4	0	515	1277
07:35:00 AM	0	6	22	0	12	19	1	0	0	8	23	6	0	28	13	12	0	496	1397
07:40:00 AM	0	5	24	0	14	22	1	0	0	2	14	5	0	24	17	6	0	445	1491
07:45:00 AM	0	10	14	0	7	25	0	0	0	1	9	1	0	24	6	13	0	394	1557
07:50:00 AM	0	3	11	0	7	13	1	0	0	6	8	4	0	18	9	4	0	328	1593
07:55:00 AM	1	7	13	0	3	17	0	0	0	1	2	1	0	12	6	1	0	258	1595

08:00:00 AM	1	7	4	0	1	17	2	0	2	7	1	0	5	4	0	0	199	1554
08:05:00 AM	0	9	3	0	2	12	0	0	0	7	2	0	7	5	1	0	163	1478
08:10:00 AM	0	3	1	0	1	12	1	0	0	8	3	0	4	5	2	0	139	1356
08:15:00 AM	1	4	1	0	3	10	1	0	2	6	2	0	2	5	1	0	126	1234
08:20:00 AM	0	6	4	0	4	4	1	0	0	10	1	0	0	3	0	0	111	1098
08:25:00 AM	0	3	6	0	1	7	1	0	1	4	2	0	2	6	1	0	105	947
08:30:00 AM	1	3	7	0	2	9	1	0	0	10	3	0	2	6	2	0	113	832
08:35:00 AM	0	4	6	0	2	9	0	0	0	11	2	0	5	4	1	0	124	726
08:40:00 AM	1	5	8	0	4	8	0	0	2	8	1	0	7	7	3	0	144	646
08:45:00 AM	0	2	6	0	0	4	1	0	3	10	3	0	9	5	5	0	146	584
08:50:00 AM	0	3	10	0	2	15	1	0	2	7	0	0	10	7	2	0	161	559
08:55:00 AM	0	10	15	0	0	3	4	0	2	11	2	0	11	4	1	0	170	558

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Road NW
E/W street	Gleen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.952083 - -123.084318
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:00:00 AM
Peak 15 Min Start	07:15:00 AM
PHF (15-Min Int)	0.80



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	479	0	171	0	201	248	0	0	0	129	197	0	0	650	449	326	0	398	300	727
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	2.3%	0.0%	2.0%	1.6%	0.0%	0.0%	0.0%	3.9%	1.0%	0.0%	NaN	2.0%	1.8%	2.1%	NaN	1.5%	3.0%	1.8%

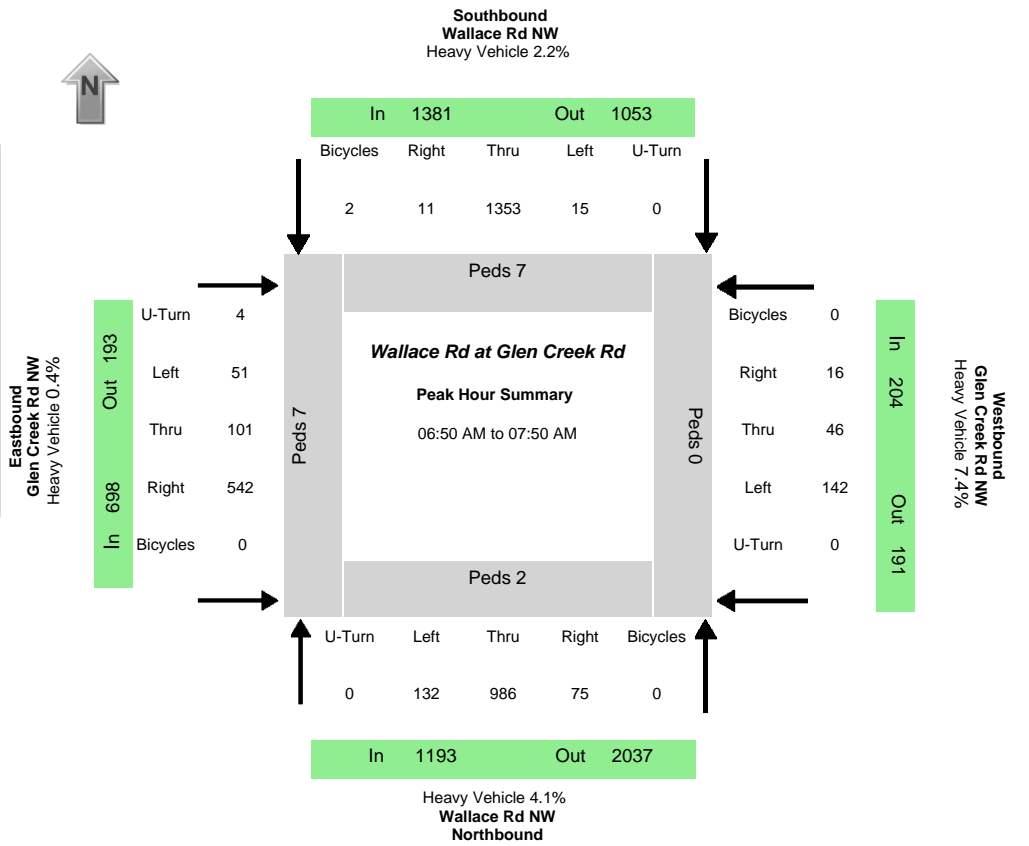
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2

Time	Northbound				Southbound				Eastbound				Westbound				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM					2		4	0	4	7		0		2	1	0		
06:05:00 AM					2		8	0	2	3		0		9	2	0		
06:10:00 AM					2		7	0	2	5		0		3	3	0	68	
06:15:00 AM					3		6	0	2	11		0		4	1	0	75	
06:20:00 AM					5		2	0	3	9		0		1	1	0	70	
06:25:00 AM					3		3	0	5	12		0		3	3	0	77	
06:30:00 AM					7		4	0	5	18		0		1	7	0	92	
06:35:00 AM					11		3	0	9	20		0		11	2	0	127	
06:40:00 AM					9		7	0	4	19		0		2	3	0	142	
06:45:00 AM					9		7	0	4	12		0		5	7	0	144	
06:50:00 AM					13		9	0	8	29		0		5	14	0	166	
06:55:00 AM					13		6	0	16	14		0		13	8	0	192	479
07:00:00 AM					26		11	0	18	12		0		11	23	0	249	560
07:05:00 AM					30		13	0	16	11		0		20	29	0	290	653
07:10:00 AM					48		14	0	16	13		0		21	20	0	352	763
07:15:00 AM					50		20	0	19	14		0		18	35	0	407	892
07:20:00 AM					46		10	0	25	24		0		13	26	0	432	1015
07:25:00 AM					49		18	0	15	34		0		12	18	0	446	1132
07:30:00 AM					61		15	0	17	35		0		5	8	0	431	1231
07:35:00 AM					45		18	0	16	25		0		5	14	0	410	1298
07:40:00 AM					47		12	0	22	21		0		2	3	0	371	1361
07:45:00 AM					37		18	0	22	16		0		5	7	0	325	1412
07:50:00 AM					16		13	0	15	22		0		13	8	0	289	1421
07:55:00 AM					24		9	0	10	21		0		4	6	0	256	1425

08:00:00 AM		12	10	0	5	13	0	10	3	0	214	1377
08:05:00 AM		11	10	0	6	22	0	5	5	0	186	1317
08:10:00 AM		15	9	0	4	15	0	6	9	0	170	1243
08:15:00 AM		8	10	0	7	18	0	6	7	0	173	1143
08:20:00 AM		5	5	0	8	15	0	6	7	0	160	1045
08:25:00 AM		8	7	0	15	11	0	5	7	0	155	952
08:30:00 AM		19	9	0	24	18	0	5	16	0	190	902
08:35:00 AM		18	13	0	17	12	0	8	13	0	225	860
08:40:00 AM		31	12	0	11	16	0	5	8	0	255	836
08:45:00 AM		20	15	0	10	18	0	4	4	0	235	812
08:50:00 AM		12	12	0	23	20	0	5	11	0	237	808
08:55:00 AM		12	9	0	10	9	0	15	8	0	217	797

Data Provided by K-D-N.com 503-594-4224

N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.950175 - -123.051659
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	06:50:00 AM
Peak 15 Min Start	07:05:00 AM
PHF (15-Min Int)	0.93



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
132	986	75	0	15	1353	11	0	51	101	542	4	142	46	16	0	1193	1379	698	204	2037	1053	193	191
Percent Heavy Vehicles																							
2.3%	4.6%	1.3%	0.0%	6.7%	1.9%	27.3%	0.0%	0.0%	0.0%	0.6%	0.0%	7.0%	6.5%	12.5%	0.0%	4.1%	2.2%	0.4%	7.4%	1.9%	4.5%	4.7%	1.0%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2	7	7	0	16

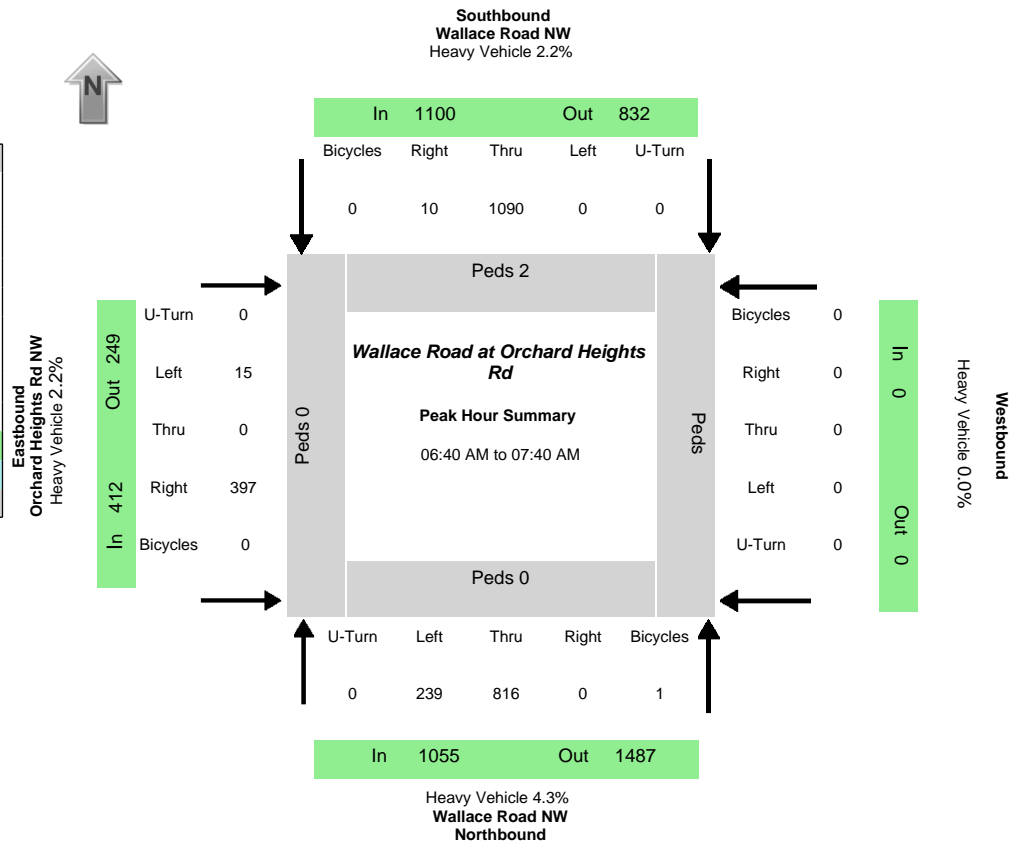
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	3	35	2	0	1	43	0	0	4	4	13	0	4	5	3	0		
06:05:00 AM	4	22	2	0	2	45	0	0	4	3	12	0	5	4	3	0		
06:10:00 AM	7	39	2	0	0	66	0	0	2	2	12	0	17	7	5	0	382	
06:15:00 AM	1	48	2	0	1	75	0	0	1	0	23	0	8	2	3	0	429	
06:20:00 AM	2	46	3	0	1	73	1	0	3	2	26	0	7	0	1	0	488	
06:25:00 AM	2	58	6	0	1	94	0	0	0	3	27	0	7	2	2	0	531	
06:30:00 AM	1	56	2	0	1	74	0	0	3	7	29	1	9	4	0	0	554	
06:35:00 AM	5	66	1	0	1	111	1	0	3	3	26	0	6	4	1	0	617	
06:40:00 AM	7	78	5	0	0	119	0	0	5	4	47	0	8	0	0	0	688	
06:45:00 AM	8	69	5	0	0	107	1	0	2	4	29	0	15	9	3	0	753	
06:50:00 AM	9	93	2	0	1	128	4	0	3	4	28	0	15	4	4	0	820	
06:55:00 AM	7	71	3	0	1	124	3	0	2	7	40	0	8	4	2	0	819	2420
07:00:00 AM	22	105	4	0	0	88	2	0	6	8	43	0	10	5	1	0	861	2597
07:05:00 AM	15	111	2	0	4	147	1	0	3	4	36	1	7	3	4	0	904	2829
07:10:00 AM	10	73	3	0	0	126	1	0	2	5	47	0	11	1	1	0	912	2950
07:15:00 AM	13	86	3	0	1	104	0	0	2	7	75	3	15	4	0	0	931	3099
07:20:00 AM	12	87	9	0	2	101	0	0	3	6	55	0	15	5	1	0	889	3230
07:25:00 AM	8	74	6	0	0	119	0	0	2	6	45	0	7	0	0	0	876	3295
07:30:00 AM	17	72	7	0	1	101	0	0	9	9	45	0	13	7	0	0	844	3389
07:35:00 AM	3	90	15	0	3	93	0	0	7	15	41	0	18	4	2	0	839	3452
07:40:00 AM	5	64	9	0	0	124	0	0	9	11	36	0	15	4	1	0	850	3457
07:45:00 AM	11	60	12	0	2	98	0	0	3	19	51	0	8	5	0	0	838	3474
07:50:00 AM	7	79	13	0	0	72	0	0	6	15	30	0	14	5	1	0	789	3421
07:55:00 AM	7	53	8	0	2	92	0	0	7	10	31	0	14	6	4	0	745	3383

08:00:00 AM	7	43	9	1	1	140	1	0	6	11	35	0	10	3	1	0	744	3357
08:05:00 AM	6	71	7	0	3	83	1	0	6	13	42	0	12	8	3	0	757	3274
08:10:00 AM	8	47	12	0	3	119	0	0	1	11	18	0	10	8	1	0	761	3232
08:15:00 AM	7	50	9	0	3	118	1	0	3	6	31	0	11	3	2	0	737	3163
08:20:00 AM	20	68	10	0	2	76	0	0	8	12	40	0	7	4	0	0	729	3114
08:25:00 AM	10	64	4	0	2	89	1	0	2	9	23	0	10	8	7	1	721	3077
08:30:00 AM	15	58	12	0	1	72	1	0	3	4	33	0	12	6	1	0	695	3014
08:35:00 AM	5	48	9	0	1	105	0	0	4	7	31	0	8	0	6	0	672	2947
08:40:00 AM	5	77	10	0	6	107	6	0	5	9	29	0	13	5	2	0	716	2943
08:45:00 AM	11	62	11	0	5	79	1	0	8	10	48	0	19	7	3	0	762	2938
08:50:00 AM	15	55	15	0	6	95	0	0	4	10	30	1	12	4	0	0	785	2943
08:55:00 AM	18	76	13	0	2	113	4	0	4	12	21	0	17	11	4	0	806	3004



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Wallace Road NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.953357 - -123.05262
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	06:40:00 AM
Peak 15 Min Start	06:55:00 AM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
239	816	0	0	0	1090	10	0	15	0	397	0	0	0	0	0	1055	1100	412	0	1487	831	249	0
Percent Heavy Vehicles																							
2.9%	4.7%	0.0%	0.0%	0.0%	1.8%	40.0%	0.0%	13.3%	0.0%	1.8%	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	2.2%	2.2%	0.0%	1.8%	4.8%	4.4%	0.0%

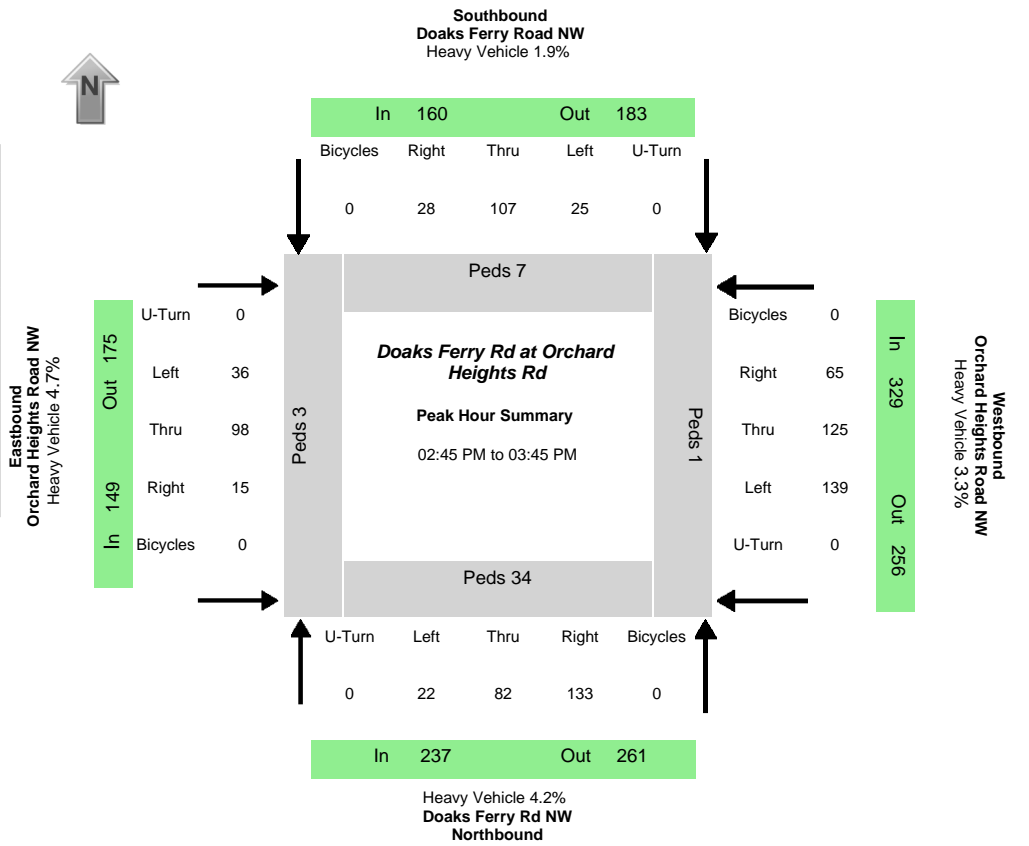
PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	2

Time	Northbound Wallace Road NW				Southbound Wallace Road NW				Eastbound Orchard Heights Rd NW				Westbound				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	6	36	0	0	36	0	0	0	0	0	12	0	0	0	0	0	6	36
06:05:00 AM	5	26	0	0	39	0	0	0	0	0	8	0	0	0	0	0	5	26
06:10:00 AM	1	44	0	0	52	0	0	0	0	0	22	0	0	0	0	0	1	44
06:15:00 AM	8	45	0	0	57	0	0	0	1	0	15	0	0	0	0	0	8	45
06:20:00 AM	5	46	0	0	61	0	0	0	1	0	27	0	0	0	0	0	5	46
06:25:00 AM	6	55	0	0	80	0	0	0	1	0	23	0	0	0	0	0	6	55
06:30:00 AM	7	49	0	0	67	0	0	0	1	0	15	0	0	0	0	0	7	49
06:35:00 AM	10	56	0	0	89	0	0	0	0	0	28	0	0	0	0	0	10	56
06:40:00 AM	8	91	0	0	104	0	0	0	0	0	30	0	0	0	0	0	8	91
06:45:00 AM	9	66	0	0	80	0	0	0	2	0	41	0	0	0	0	0	9	66
06:50:00 AM	11	77	0	0	101	0	0	0	0	0	33	0	0	0	0	0	11	77
06:55:00 AM	17	80	0	0	112	1	0	0	2	0	32	0	0	0	0	0	17	80
07:00:00 AM	33	64	0	0	69	0	0	0	0	0	38	0	0	0	0	0	33	64
07:05:00 AM	28	69	0	0	110	1	0	0	0	0	38	0	0	0	0	0	28	69
07:10:00 AM	30	58	0	0	120	2	0	0	0	0	19	0	0	0	0	0	30	58
07:15:00 AM	25	63	0	0	84	1	0	0	1	0	37	0	0	0	0	0	25	63
07:20:00 AM	20	66	0	0	76	0	0	0	3	0	37	0	0	0	0	0	20	66
07:25:00 AM	25	65	0	0	81	3	0	0	1	0	25	0	0	0	0	0	25	65
07:30:00 AM	17	56	0	0	76	2	0	0	4	0	31	0	0	0	0	0	17	56
07:35:00 AM	16	61	0	0	77	0	0	0	2	0	36	0	0	0	0	0	16	61
07:40:00 AM	8	54	0	0	69	2	0	0	1	0	33	0	0	0	0	0	8	54
07:45:00 AM	12	63	0	0	53	1	0	0	1	0	32	0	0	0	0	0	12	63
07:50:00 AM	22	51	0	0	60	1	0	0	1	0	24	0	0	0	0	0	22	51
07:55:00 AM	16	44	0	0	50	3	0	0	1	0	36	0	0	0	0	0	16	44

08:00:00 AM	13	48	0	99	3	0	0	22	0	494	2289
08:05:00 AM	10	44	0	107	3	0	1	25	0	525	2233
08:10:00 AM	19	35	0	92	0	0	2	27	0	550	2179
08:15:00 AM	9	48	0	65	0	0	1	26	0	514	2117
08:20:00 AM	17	52	0	72	0	0	0	26	0	491	2082
08:25:00 AM	19	53	0	70	1	0	0	23	0	482	2048
08:30:00 AM	21	48	0	69	0	0	1	27	0	499	2028
08:35:00 AM	9	40	0	70	0	0	2	35	0	488	1992
08:40:00 AM	23	42	0	80	1	0	0	31	0	499	2002
08:45:00 AM	18	58	0	66	1	0	2	45	0	523	2030
08:50:00 AM	15	45	0	91	1	0	1	31	0	551	2055
08:55:00 AM	34	40	0	72	4	0	1	28	0	553	2084

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Orchard Heights Road NW
City, State	Salem OR
Site Notes	
Location	44.960438 - -123.079714
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	02:45:00 PM
Peak 15 Min Start	02:45:00 PM
PHF (15-Min Int)	0.85



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
22	82	133	0	25	107	28	0	36	98	15	0	139	125	65	0	237	160	149	329	261	183	175	256
Percent Heavy Vehicles																							
4.5%	4.9%	3.8%	0.0%	4.0%	0.9%	3.6%	0.0%	2.8%	5.1%	6.7%	0.0%	2.9%	4.0%	3.1%	0.0%	4.2%	1.9%	4.7%	3.3%	2.3%	3.8%	4.0%	4.3%

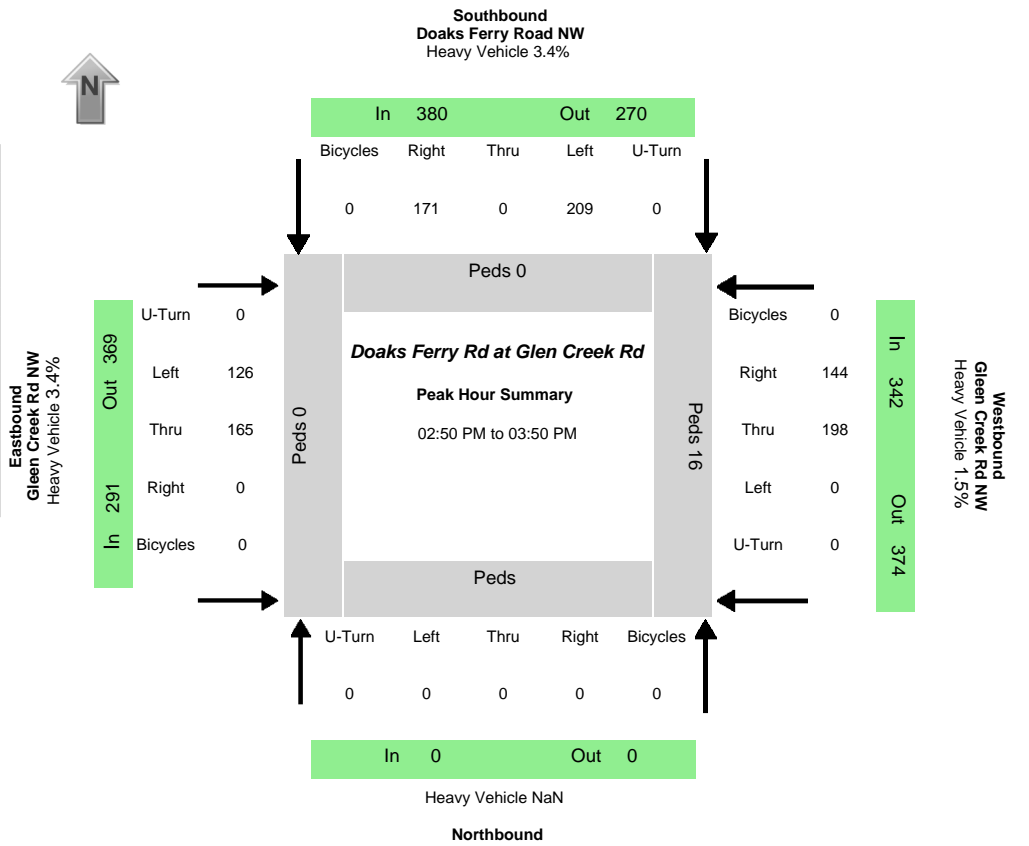
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	7	3	1	45

Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Road NW				Eastbound Orchard Heights Road NW				Westbound Orchard Heights Road NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	2	3	2	0	0	9	0	0	2	11	2	0	3	8	2	0		
02:05:00 PM	0	9	8	0	0	3	2	0	0	10	0	0	4	4	2	0		
02:10:00 PM	1	6	4	0	2	2	0	0	0	8	0	0	2	11	1	0	123	
02:15:00 PM	1	4	4	0	4	5	0	0	2	3	2	0	3	7	0	0	114	
02:20:00 PM	1	4	6	0	2	6	3	0	0	5	1	0	5	4	0	0	109	
02:25:00 PM	2	4	4	0	0	4	3	0	2	11	1	0	2	13	0	0	118	
02:30:00 PM	0	5	14	0	9	6	0	0	3	11	1	0	2	4	2	0	140	
02:35:00 PM	1	7	11	0	7	2	2	0	3	4	1	0	2	6	2	0	151	
02:40:00 PM	0	3	9	0	7	7	2	0	0	8	0	0	10	9	7	0	167	
02:45:00 PM	1	11	11	0	3	13	2	0	4	7	1	0	22	11	13	0	209	
02:50:00 PM	2	10	11	0	1	8	1	0	2	10	2	0	23	12	14	0	257	
02:55:00 PM	1	6	8	0	2	8	3	0	2	11	0	0	7	9	6	0	258	666
03:00:00 PM	1	6	9	0	3	5	1	0	2	1	1	0	4	4	7	0	203	666
03:05:00 PM	3	9	16	0	3	7	0	0	5	8	0	0	4	7	3	0	172	689
03:10:00 PM	2	7	11	0	3	9	6	0	4	8	1	0	3	12	2	0	177	720
03:15:00 PM	3	3	10	0	2	8	0	0	3	11	2	0	16	10	6	0	207	759
03:20:00 PM	3	7	19	0	1	16	11	0	3	10	3	0	6	5	2	0	228	808
03:25:00 PM	1	8	14	0	2	10	0	0	1	7	1	0	4	14	2	0	224	826
03:30:00 PM	1	6	9	0	1	4	2	0	5	9	2	0	8	8	3	0	208	827
03:35:00 PM	2	2	10	0	2	7	1	0	5	10	1	0	13	12	4	0	191	848
03:40:00 PM	2	7	5	0	2	12	1	0	0	6	1	0	29	21	3	0	216	875
03:45:00 PM	0	5	7	0	7	8	1	0	1	4	1	0	28	13	5	0	238	856
03:50:00 PM	1	6	8	0	1	12	5	0	0	9	1	0	7	8	8	0	235	826
03:55:00 PM	3	5	4	0	2	11	2	0	3	6	1	0	7	7	2	0	199	816

04:00:00 PM	1	10	3	0	3	10	0	0	0	4	0	0	5	7	4	0	166	819
04:05:00 PM	1	9	4	0	3	14	3	0	3	3	0	0	13	6	4	0	163	817
04:10:00 PM	0	4	4	0	5	13	3	0	2	4	2	0	14	11	3	0	175	814
04:15:00 PM	3	6	6	0	0	9	1	0	1	8	1	0	4	11	4	0	182	794
04:20:00 PM	2	7	10	0	1	12	2	0	2	3	0	0	5	4	5	0	172	761
04:25:00 PM	1	11	10	0	6	13	4	0	5	8	0	0	5	14	3	0	187	777
04:30:00 PM	3	8	5	0	0	4	1	0	1	9	1	0	10	13	4	0	192	778
04:35:00 PM	2	9	15	0	1	15	2	0	4	11	0	0	10	4	3	0	215	785
04:40:00 PM	2	10	7	0	3	11	6	0	1	12	1	0	10	11	5	0	214	775
04:45:00 PM	2	11	8	0	3	10	3	0	1	5	1	0	5	6	0	0	210	750
04:50:00 PM	2	11	9	0	7	17	1	0	4	5	0	0	8	6	5	0	209	759
04:55:00 PM	0	7	10	0	2	15	0	0	0	8	1	0	8	5	2	0	188	764
05:00:00 PM	1	7	6	0	4	19	1	0	3	3	0	0	9	16	5	0	207	791
05:05:00 PM	0	11	8	0	2	4	1	0	3	9	1	0	9	7	6	0	193	789
05:10:00 PM	2	11	7	0	1	10	1	0	2	7	1	0	7	8	2	0	194	783
05:15:00 PM	2	6	6	0	1	13	2	0	3	6	2	0	3	11	2	0	177	786
05:20:00 PM	0	6	7	0	2	13	1	0	2	10	0	0	8	6	5	0	176	793
05:25:00 PM	1	11	14	0	2	7	1	0	1	5	3	0	8	8	0	0	178	774
05:30:00 PM	1	16	8	0	2	6	2	0	2	6	3	0	8	13	5	0	193	787
05:35:00 PM	1	8	6	0	1	9	0	0	1	5	2	0	4	12	1	0	183	761
05:40:00 PM	1	11	6	0	5	5	0	0	0	8	0	0	4	9	0	0	171	731
05:45:00 PM	0	7	10	0	2	9	2	0	3	1	0	0	1	8	2	0	144	721
05:50:00 PM	2	9	5	0	2	6	3	0	3	7	1	0	8	13	3	0	156	708
05:55:00 PM	1	12	1	0	2	10	5	0	0	7	1	0	5	9	0	0	160	703

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Road NW
E/W street	Gleen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.952083 - -123.084318
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	02:50:00 PM
Peak 15 Min Start	03:35:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	209	0	171	0	126	165	0	0	0	198	144	0	0	380	291	342	0	270	369	374
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	4.7%	0.0%	4.0%	3.0%	0.0%	0.0%	0.0%	0.5%	2.8%	0.0%	NaN	3.4%	3.4%	1.5%	NaN	3.3%	2.4%	2.7%

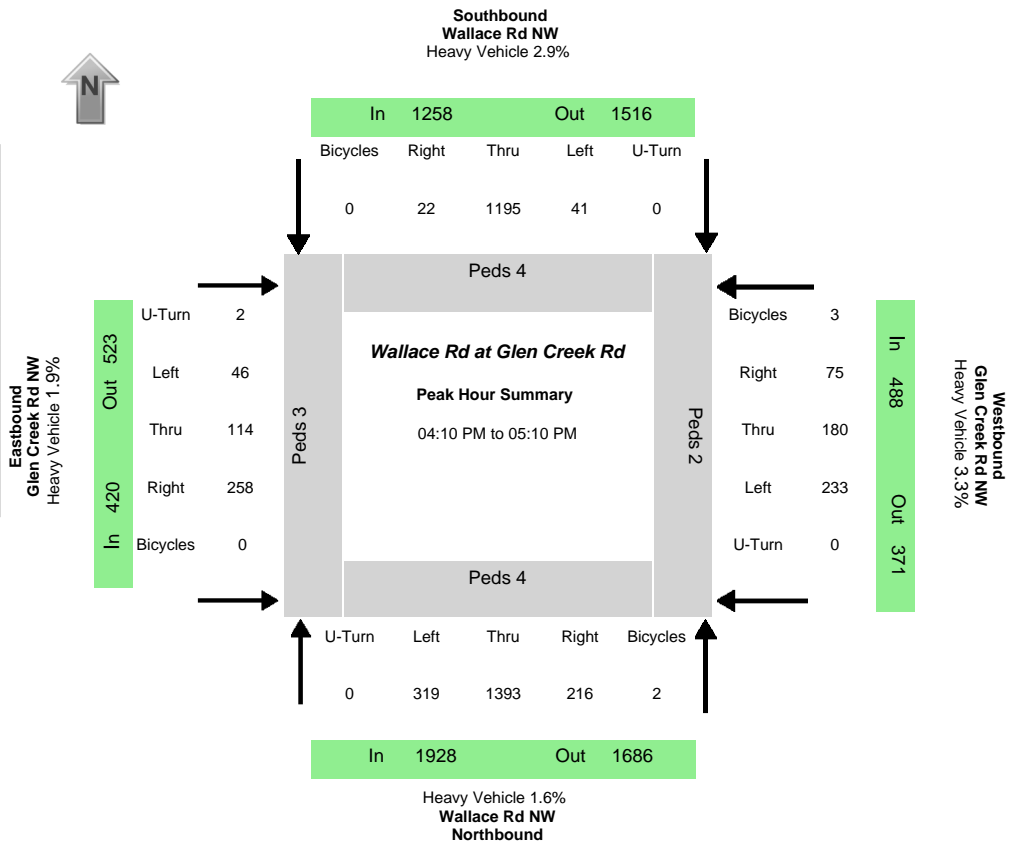
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16

Time	Northbound				Southbound				Eastbound				Westbound				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM					12		6	0	6	19		0	15	8		0		
02:05:00 PM					4		4	0	11	18		0	11	5		0		
02:10:00 PM					6		3	0	6	13		0	15	3		0	165	
02:15:00 PM					6		7	0	3	12		0	11	4		0	142	
02:20:00 PM					11		5	0	9	9		0	17	9		0	149	
02:25:00 PM					5		5	0	9	10		0	16	8		0	156	
02:30:00 PM					7		2	0	13	19		0	7	6		0	167	
02:35:00 PM					6		4	0	8	13		0	9	8		0	155	
02:40:00 PM					11		9	0	14	11		0	10	16		0	173	
02:45:00 PM					21		11	0	14	18		0	10	5		0	198	
02:50:00 PM					16		18	0	15	11		0	17	26		0	253	
02:55:00 PM					14		5	0	10	17		0	21	11		0	260	754
03:00:00 PM					13		8	0	14	19		0	22	17		0	274	781
03:05:00 PM					7		11	0	12	10		0	15	13		0	239	796
03:10:00 PM					17		13	0	9	13		0	13	9		0	235	824
03:15:00 PM					27		20	0	12	20		0	9	12		0	242	881
03:20:00 PM					17		13	0	17	11		0	16	3		0	251	898
03:25:00 PM					12		10	0	6	10		0	13	13		0	241	909
03:30:00 PM					13		10	0	8	17		0	20	12		0	221	935
03:35:00 PM					24		13	0	10	7		0	12	10		0	220	963
03:40:00 PM					24		25	0	7	13		0	23	8		0	256	992
03:45:00 PM					25		25	0	6	17		0	17	10		0	276	1013
03:50:00 PM					10		11	0	6	18		0	16	12		0	273	983
03:55:00 PM					9		10	0	8	16		0	16	9		0	241	973

04:00:00 PM	7	13	0	4	7	0	23	11	0	206	945
04:05:00 PM	22	14	0	9	18	0	9	5	0	210	954
04:10:00 PM	21	13	0	14	12	0	20	7	0	229	967
04:15:00 PM	11	9	0	8	12	0	18	11	0	233	936
04:20:00 PM	11	11	0	10	15	0	19	22	0	244	947
04:25:00 PM	16	6	0	10	12	0	29	14	0	244	970
04:30:00 PM	14	10	0	13	14	0	19	13	0	258	973
04:35:00 PM	19	9	0	14	9	0	16	14	0	251	978
04:40:00 PM	14	15	0	5	22	0	14	15	0	249	963
04:45:00 PM	9	11	0	22	16	0	21	12	0	257	954
04:50:00 PM	23	12	0	12	10	0	13	9	0	255	960
04:55:00 PM	18	11	0	14	19	0	15	8	0	255	977
05:00:00 PM	16	17	0	12	13	0	25	9	0	256	1004
05:05:00 PM	11	9	0	15	13	0	22	12	0	259	1009
05:10:00 PM	10	7	0	17	21	0	15	8	0	252	1000
05:15:00 PM	13	12	0	9	11	0	14	14	0	233	1004
05:20:00 PM	12	8	0	13	16	0	20	12	0	232	997
05:25:00 PM	14	9	0	18	11	0	15	10	0	231	987
05:30:00 PM	10	4	0	10	10	0	12	9	0	213	959
05:35:00 PM	14	8	0	12	16	0	13	14	0	209	955
05:40:00 PM	9	6	0	15	13	0	12	10	0	197	935
05:45:00 PM	6	9	0	13	12	0	20	17	0	219	921
05:50:00 PM	12	11	0	10	13	0	17	13	0	218	918
05:55:00 PM	13	7	0	13	15	0	18	7	0	226	906

Data Provided by K-D-N.com 503-594-4224

N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.950175 - -123.051659
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
319	1393	216	0	41	1195	22	0	46	114	258	2	233	180	75	0	1928	1258	420	488	1686	1514	523	371
Percent Heavy Vehicles																							
1.6%	1.8%	0.5%	0.0%	4.9%	2.8%	0.0%	0.0%	2.2%	0.0%	2.7%	0.0%	5.6%	1.1%	1.3%	0.0%	1.6%	2.9%	1.9%	3.3%	3.2%	1.8%	1.3%	0.8%

PHV- Bicycles														PHV- Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	5	4	4	3	2	13

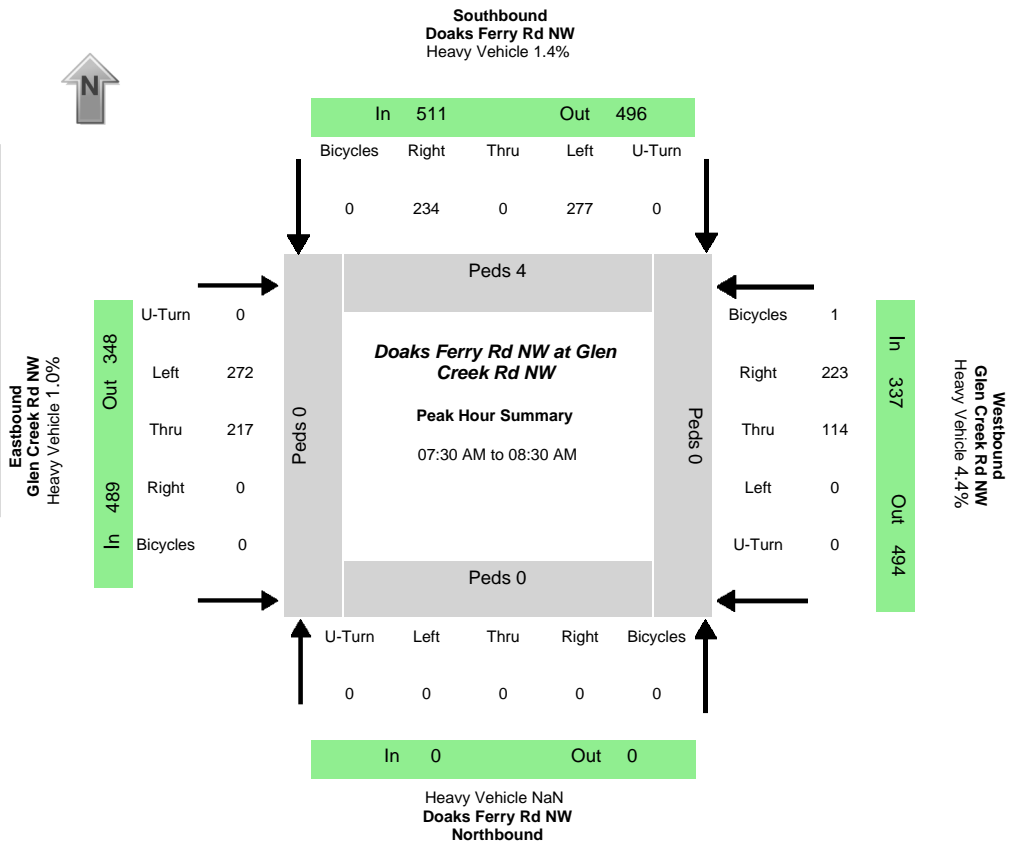
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	16	79	20	0	4	63	1	0	3	11	19	0	39	10	2	0		
02:05:00 PM	15	72	9	0	9	80	1	0	2	8	25	0	19	9	4	0		
02:10:00 PM	24	90	12	1	2	62	1	0	4	7	29	1	18	7	5	0	783	
02:15:00 PM	27	120	21	0	2	52	2	0	3	14	23	0	19	9	6	0	814	
02:20:00 PM	21	80	9	0	7	72	2	0	3	5	22	0	26	12	8	0	828	
02:25:00 PM	16	79	19	0	0	70	2	0	10	6	17	0	25	11	3	0	823	
02:30:00 PM	25	92	10	1	6	52	3	0	4	10	17	0	16	12	4	0	777	
02:35:00 PM	15	96	14	0	10	94	1	0	0	9	25	0	19	12	5	0	810	
02:40:00 PM	10	80	14	0	3	81	2	0	2	7	15	0	21	9	7	0	803	
02:45:00 PM	29	116	16	0	1	70	0	0	3	7	25	0	25	8	4	0	855	
02:50:00 PM	20	129	12	0	4	57	0	0	6	7	20	2	28	16	7	0	863	
02:55:00 PM	18	106	16	0	8	86	6	0	0	8	22	0	13	7	4	0	906	3315
03:00:00 PM	34	102	18	0	2	78	4	0	4	5	28	0	16	10	3	0	906	3352
03:05:00 PM	18	106	18	0	2	60	1	0	6	11	22	0	25	17	5	0	889	3390
03:10:00 PM	22	106	14	0	9	96	4	0	1	9	16	0	18	8	9	0	907	3439
03:15:00 PM	22	91	18	0	6	87	1	0	3	7	22	0	7	8	1	0	876	3414
03:20:00 PM	29	118	10	0	7	73	3	0	9	9	32	0	20	13	2	0	910	3472
03:25:00 PM	18	110	16	0	7	70	2	0	1	2	28	0	10	21	7	0	890	3506
03:30:00 PM	17	81	13	0	0	86	7	0	3	5	20	0	18	16	5	0	888	3525
03:35:00 PM	35	115	13	0	2	79	2	0	7	12	36	0	24	14	6	0	908	3570
03:40:00 PM	27	105	13	0	12	89	1	0	2	8	29	1	21	23	8	0	955	3658
03:45:00 PM	18	94	18	0	3	118	3	0	3	11	16	0	16	8	4	0	996	3666
03:50:00 PM	24	93	14	0	6	82	1	0	8	13	37	0	11	17	5	0	962	3669
03:55:00 PM	26	143	18	0	2	63	1	0	2	7	20	0	17	16	10	0	948	3700

04:00:00 PM	25	104	13	0	6	88	3	0	7	8	15	0	23	7	6	0	941	3701
04:05:00 PM	33	87	23	0	2	91	3	0	3	9	21	0	22	11	7	0	942	3722
04:10:00 PM	15	128	15	0	3	77	4	0	2	18	21	0	24	22	8	0	954	3747
04:15:00 PM	29	113	24	0	6	105	1	0	5	6	20	0	25	19	3	0	1005	3830
04:20:00 PM	38	92	22	0	1	88	1	0	7	3	21	0	17	10	7	0	1000	3812
04:25:00 PM	28	135	18	0	0	98	2	0	5	12	24	0	18	13	7	0	1023	3880
04:30:00 PM	25	122	18	0	1	114	3	0	4	8	20	1	16	24	6	0	1029	3971
04:35:00 PM	18	101	18	0	2	114	2	0	1	8	15	0	21	17	6	0	1045	3949
04:40:00 PM	31	121	21	0	4	97	0	0	7	12	39	0	16	12	3	0	1048	3973
04:45:00 PM	18	119	18	0	4	108	1	0	3	10	11	0	19	15	12	0	1024	3999
04:50:00 PM	22	122	11	0	6	133	1	0	3	5	21	1	19	10	2	0	1057	4044
04:55:00 PM	44	99	19	0	7	89	1	0	3	10	24	0	15	10	5	0	1020	4045
05:00:00 PM	23	120	15	0	5	77	3	0	4	10	22	0	30	19	11	0	1021	4079
05:05:00 PM	28	121	17	0	2	95	3	0	2	12	20	0	13	9	5	0	992	4094
05:10:00 PM	28	103	23	0	1	76	3	0	3	7	26	0	21	15	7	0	979	4070
05:15:00 PM	15	134	21	0	4	59	2	0	3	15	16	1	15	13	6	0	944	4018
05:20:00 PM	15	132	24	0	3	64	2	0	5	8	13	0	25	16	1	0	925	4019
05:25:00 PM	34	100	15	0	1	78	4	0	4	11	23	1	9	10	9	0	911	3958
05:30:00 PM	31	126	13	0	5	62	4	0	6	7	16	0	16	15	11	0	919	3908
05:35:00 PM	15	137	15	0	9	99	3	0	6	6	24	0	14	12	5	0	956	3930
05:40:00 PM	22	103	15	0	6	107	1	0	4	9	20	0	8	9	3	0	964	3874
05:45:00 PM	35	121	12	0	6	83	2	0	4	7	32	0	18	11	9	0	992	3876
05:50:00 PM	23	129	17	1	5	75	1	0	6	8	17	0	15	10	3	0	957	3830
05:55:00 PM	24	93	14	0	2	83	6	0	1	6	17	0	7	11	1	0	915	3769

04:00:00 PM	19	87	0	59	1	0	1	20	0	656	2593
04:05:00 PM	26	94	0	80	1	0	2	23	0	652	2624
04:10:00 PM	23	115	0	77	1	0	1	24	0	654	2634
04:15:00 PM	17	87	0	78	1	0	1	20	0	671	2631
04:20:00 PM	32	87	0	92	0	0	0	17	0	673	2649
04:25:00 PM	40	110	0	87	0	0	1	38	0	708	2721
04:30:00 PM	18	94	0	114	0	0	3	13	0	746	2776
04:35:00 PM	33	96	0	73	1	0	1	21	0	743	2740
04:40:00 PM	29	111	0	112	4	0	0	20	0	743	2789
04:45:00 PM	26	96	0	100	2	0	2	36	0	763	2836
04:50:00 PM	22	122	0	81	1	0	1	23	0	788	2856
04:55:00 PM	33	107	0	89	2	0	1	25	0	769	2874
05:00:00 PM	30	98	0	68	1	0	2	18	0	724	2904
05:05:00 PM	37	71	0	63	2	0	2	21	0	670	2874
05:10:00 PM	36	99	0	73	0	0	0	22	0	643	2863
05:15:00 PM	29	106	0	59	2	0	2	11	0	635	2868
05:20:00 PM	34	98	0	56	0	0	1	12	0	640	2841
05:25:00 PM	38	115	0	56	3	0	1	27	0	650	2805
05:30:00 PM	41	109	0	62	1	0	2	20	0	676	2798
05:35:00 PM	27	120	0	99	1	0	1	26	0	749	2847
05:40:00 PM	31	93	0	79	0	0	0	24	0	736	2798
05:45:00 PM	32	107	0	81	5	0	0	24	0	750	2785
05:50:00 PM	31	99	0	70	2	0	2	19	0	699	2758
05:55:00 PM	26	80	0	57	0	0	1	19	0	655	2684

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95208 - -123.08433
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:30:00 AM
Peak 15 Min Start	08:00:00 AM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	277	0	234	0	272	217	0	0	0	114	223	0	0	511	489	337	0	495	348	494
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.3%	0.0%	0.7%	1.4%	0.0%	0.0%	0.0%	7.9%	2.7%	0.0%	NaN	1.4%	1.0%	4.5%	NaN	1.6%	3.4%	1.4%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	0	4

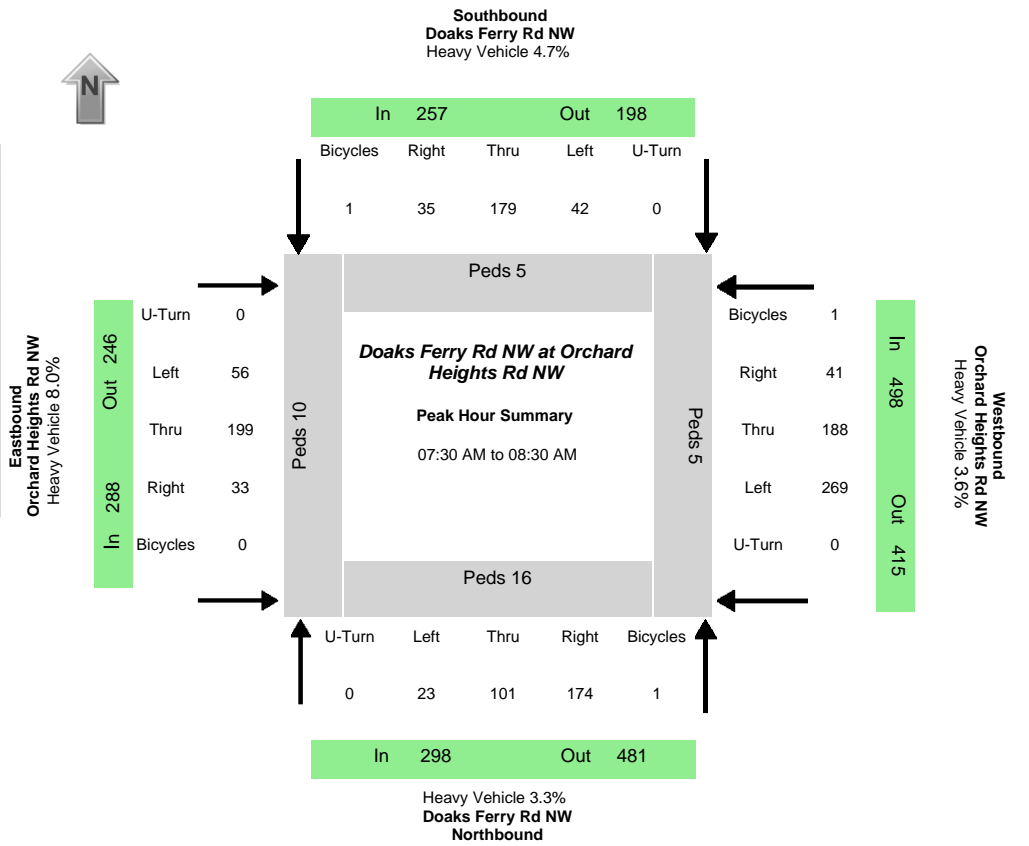
Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	0	0	0	0	2	0	2	0	0	10	0	0	0	3	0	0		
06:05:00 AM	0	0	0	0	1	0	4	0	1	9	0	0	0	3	1	0		
06:10:00 AM	0	0	0	0	3	0	5	0	2	4	0	0	0	3	1	0	54	
06:15:00 AM	0	0	0	0	1	0	4	0	2	12	0	0	0	0	3	0	59	
06:20:00 AM	0	0	0	0	4	0	3	0	3	5	0	0	0	1	3	0	59	
06:25:00 AM	0	0	0	0	1	0	4	0	5	10	0	0	0	0	3	0	64	
06:30:00 AM	0	0	0	0	5	0	5	0	4	12	0	0	0	5	2	0	75	
06:35:00 AM	0	0	0	0	4	0	4	0	3	16	0	0	0	7	1	0	91	
06:40:00 AM	0	0	0	0	5	0	3	0	2	10	0	0	0	6	3	0	97	
06:45:00 AM	0	0	0	0	4	0	7	0	6	11	0	0	0	5	2	0	99	
06:50:00 AM	0	0	0	0	7	0	8	0	6	13	0	0	0	9	1	0	108	
06:55:00 AM	0	0	0	0	3	0	3	0	9	23	0	0	0	8	6	0	131	346
07:00:00 AM	0	0	0	0	2	0	11	0	14	16	0	0	0	8	3	0	150	383
07:05:00 AM	0	0	0	0	13	0	14	0	11	11	0	0	0	6	8	0	169	427
07:10:00 AM	0	0	0	0	11	0	13	0	9	17	0	0	0	5	11	0	183	475
07:15:00 AM	0	0	0	0	9	0	14	0	12	18	0	0	0	9	8	0	199	523
07:20:00 AM	0	0	0	0	11	0	10	0	22	15	0	0	0	9	4	0	207	575
07:25:00 AM	0	0	0	0	8	0	8	0	28	11	0	0	0	6	9	0	211	622
07:30:00 AM	0	0	0	0	10	0	14	0	41	19	0	0	0	6	18	0	249	697
07:35:00 AM	0	0	0	0	13	0	14	0	33	21	0	0	0	7	21	0	287	771
07:40:00 AM	0	0	0	0	20	0	20	0	44	15	0	0	0	6	22	0	344	869
07:45:00 AM	0	0	0	0	25	0	37	0	14	18	0	0	0	5	9	0	344	942
07:50:00 AM	0	0	0	0	15	0	32	0	20	17	0	0	0	15	16	0	350	1013
07:55:00 AM	0	0	0	0	22	0	21	0	18	14	0	0	0	16	17	0	331	1069

08:00:00 AM	0	0	0	0	22	0	20	0	22	16	0	0	0	13	20	0	336	1128
08:05:00 AM	0	0	0	0	35	0	11	0	30	17	0	0	0	7	24	0	345	1189
08:10:00 AM	0	0	0	0	27	0	20	0	23	13	0	0	0	16	29	0	365	1251
08:15:00 AM	0	0	0	0	32	0	16	0	10	20	0	0	0	8	26	0	364	1293
08:20:00 AM	0	0	0	0	22	0	14	0	9	22	0	0	0	14	13	0	334	1316
08:25:00 AM	0	0	0	0	34	0	15	0	8	25	0	0	0	1	8	0	297	1337
08:30:00 AM	0	0	0	0	27	0	11	0	6	22	0	0	0	11	5	0	267	1311
08:35:00 AM	0	0	0	0	14	0	7	0	11	16	0	0	0	10	7	0	238	1267
08:40:00 AM	0	0	0	0	9	0	5	0	10	15	0	0	0	12	13	0	211	1204
08:45:00 AM	0	0	0	0	11	0	7	0	10	20	0	0	0	15	12	0	204	1171
08:50:00 AM	0	0	0	0	14	0	8	0	9	15	0	0	0	11	5	0	201	1118
08:55:00 AM	0	0	0	0	14	0	6	0	5	16	0	0	0	8	7	0	193	1066



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Doaks Ferry Rd NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.96044 - -123.07966
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:30:00 AM
Peak 15 Min Start	08:05:00 AM
PHF (15-Min Int)	0.87



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
23	101	174	0	42	179	35	0	56	199	33	0	269	188	41	0	298	256	288	498	481	198	246	415
Percent Heavy Vehicles																							
8.7%	5.9%	1.1%	0.0%	11.9%	0.6%	17.1%	0.0%	10.7%	6.0%	15.2%	0.0%	3.0%	5.3%	0.0%	0.0%	3.4%	4.7%	8.0%	3.6%	2.9%	6.1%	7.3%	4.6%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk				Sum	
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	3	16	5	10	5	36

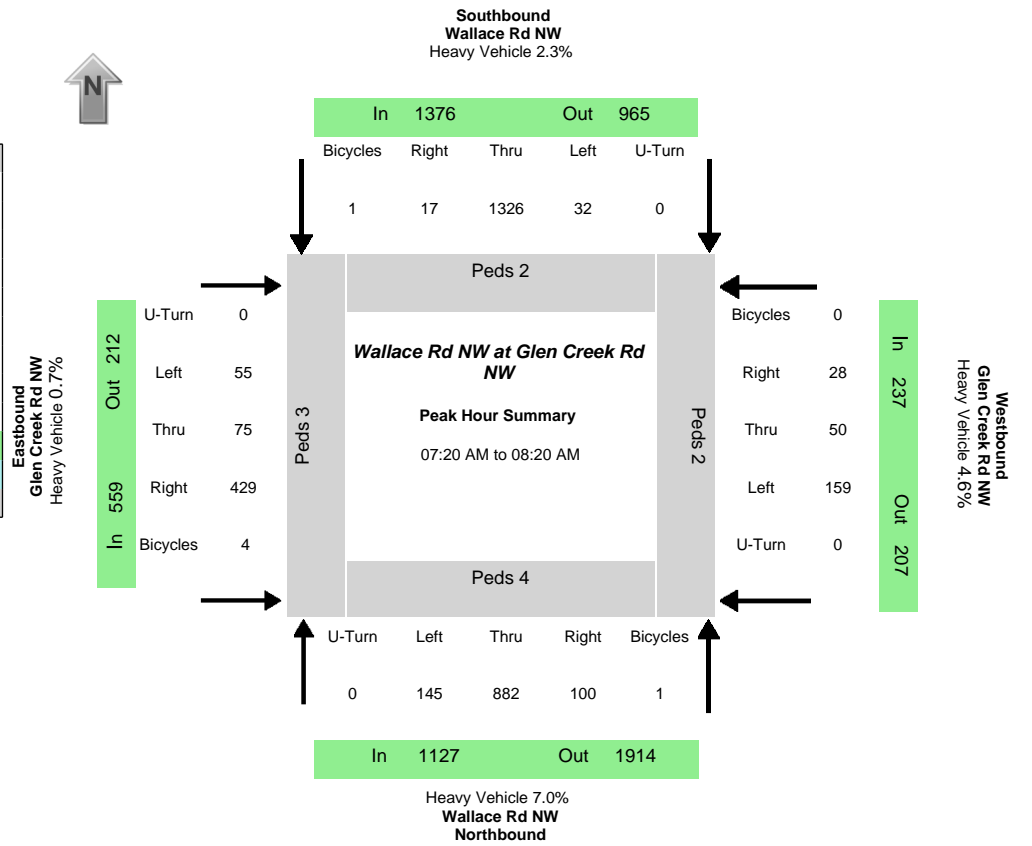
Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	0	1	0	0	1	1	0	0	1	1	0	0	2	0	0	0		
06:05:00 AM	0	2	0	0	0	0	0	0	1	3	1	0	4	1	1	0		
06:10:00 AM	0	5	0	0	0	4	0	0	0	3	1	0	1	3	0	0	37	
06:15:00 AM	0	2	1	0	2	5	0	0	0	2	0	0	1	2	0	0	45	
06:20:00 AM	0	9	0	0	0	3	0	0	2	1	0	0	2	3	3	0	55	
06:25:00 AM	0	1	1	0	1	2	0	0	0	3	0	0	1	0	1	0	48	
06:30:00 AM	0	4	2	0	1	2	1	0	0	1	2	0	2	2	1	0	51	
06:35:00 AM	0	2	2	0	2	4	1	0	0	3	0	0	1	4	0	0	47	
06:40:00 AM	0	2	1	0	3	4	0	0	0	6	0	0	2	0	0	0	55	
06:45:00 AM	0	4	2	0	1	3	1	0	1	10	1	0	5	4	2	0	71	
06:50:00 AM	0	8	1	0	1	3	0	0	1	4	1	0	7	6	3	0	87	
06:55:00 AM	0	5	3	0	2	3	3	0	1	7	2	0	2	5	1	0	103	243
07:00:00 AM	0	3	9	0	3	9	0	0	2	13	0	0	5	5	4	0	122	289
07:05:00 AM	1	6	9	0	1	7	2	0	2	6	1	0	7	3	3	0	135	324
07:10:00 AM	0	4	13	0	6	8	0	0	2	7	1	0	14	3	3	0	162	368
07:15:00 AM	0	11	9	0	3	9	0	0	1	15	0	0	11	3	3	0	174	418
07:20:00 AM	0	4	7	0	3	5	0	0	2	6	3	0	12	8	4	0	180	449
07:25:00 AM	0	7	16	0	4	6	0	0	0	7	3	0	11	5	4	0	182	502
07:30:00 AM	0	10	24	0	2	11	0	0	3	20	0	0	11	6	4	0	208	575
07:35:00 AM	1	17	25	0	3	11	2	0	7	13	4	0	20	18	4	0	279	681
07:40:00 AM	3	11	27	0	4	6	2	0	2	24	2	0	28	12	6	0	343	790
07:45:00 AM	1	10	28	0	5	7	2	0	7	12	1	0	35	21	4	0	385	889
07:50:00 AM	0	9	11	0	3	12	0	0	2	10	0	0	30	18	5	0	360	954
07:55:00 AM	1	4	11	0	4	11	4	0	2	7	2	0	23	17	2	0	321	1008

08:00:00 AM	0	9	17	0	10	8	1	0	3	14	2	0	10	9	4	0	275	1042
08:05:00 AM	1	4	6	0	4	19	4	0	4	17	4	0	23	27	4	0	292	1111
08:10:00 AM	2	10	9	0	4	22	7	0	5	18	5	0	33	15	1	0	335	1181
08:15:00 AM	6	5	8	0	1	29	3	0	10	27	6	0	21	20	3	0	387	1255
08:20:00 AM	5	5	6	0	2	32	5	0	4	13	4	0	21	14	1	0	382	1313
08:25:00 AM	3	7	2	0	0	11	5	0	7	24	3	0	14	11	3	0	341	1340
08:30:00 AM	2	8	7	0	1	6	1	0	1	11	2	0	5	4	1	0	251	1298
08:35:00 AM	3	6	5	0	1	4	1	0	3	7	2	0	2	1	3	0	177	1211
08:40:00 AM	2	10	3	0	4	3	0	0	3	11	1	0	7	8	3	0	142	1139
08:45:00 AM	0	16	2	0	4	8	1	0	5	9	1	0	4	2	4	0	149	1062
08:50:00 AM	0	3	5	0	7	5	1	0	3	7	2	0	8	7	5	0	164	1015
08:55:00 AM	0	6	10	0	4	14	0	0	1	9	3	0	4	5	9	0	174	992



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95009 - -123.05165
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:20:00 AM
Peak 15 Min Start	07:40:00 AM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
145	882	100	0	32	1326	17	0	55	75	429	0	159	50	28	0	1127	1375	559	237	1914	965	212	207
Percent Heavy Vehicles																							
7.6%	6.9%	7.0%	0.0%	3.1%	2.3%	0.0%	0.0%	0.0%	1.3%	0.7%	0.0%	4.4%	6.0%	3.6%	0.0%	7.0%	2.3%	0.7%	4.6%	2.1%	6.4%	6.6%	4.3%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	3	1	0	0	0	0	0	6	4	2	3	2	11

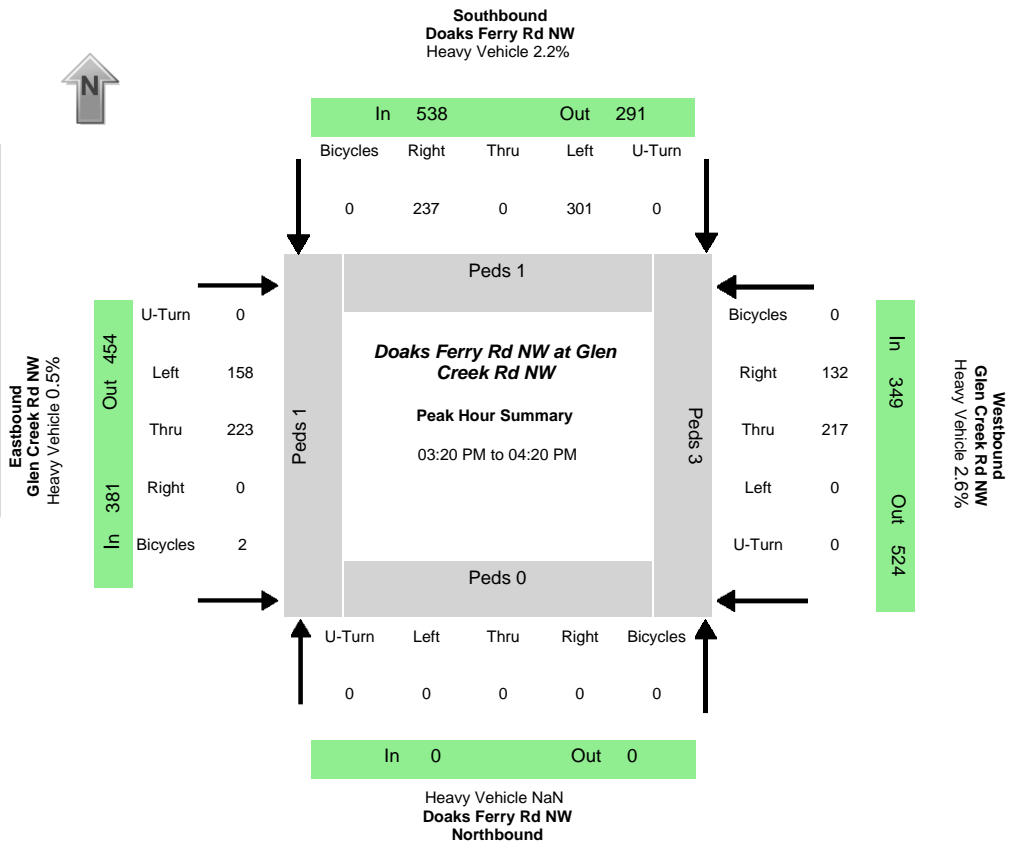
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	2	54	3	0	3	41	0	0	2	1	19	0	4	1	0	0		
06:05:00 AM	0	51	2	0	1	38	1	0	4	1	17	1	2	1	2	0		
06:10:00 AM	3	48	1	0	0	51	0	0	2	1	18	0	5	2	3	0	385	
06:15:00 AM	2	50	0	0	0	56	0	0	2	2	23	0	6	2	5	0	403	
06:20:00 AM	4	52	3	0	2	58	0	0	1	6	20	0	7	1	1	0	437	
06:25:00 AM	2	50	0	0	0	68	1	0	1	8	17	0	7	5	1	0	463	
06:30:00 AM	4	47	2	0	0	67	0	0	2	3	23	0	5	6	1	0	475	
06:35:00 AM	4	52	3	0	0	101	0	0	3	3	18	0	11	3	2	0	520	
06:40:00 AM	3	50	2	0	2	83	0	0	3	1	34	0	10	3	1	0	552	
06:45:00 AM	6	51	3	0	1	78	1	0	7	5	38	0	9	2	4	0	597	
06:50:00 AM	4	79	9	0	0	97	1	0	2	2	17	0	16	6	1	0	631	
06:55:00 AM	5	47	4	0	1	83	1	0	2	8	27	0	6	5	1	0	629	2029
07:00:00 AM	5	55	4	0	1	103	0	0	5	4	37	0	8	2	1	0	649	2124
07:05:00 AM	9	44	3	0	0	115	1	0	4	2	25	0	13	4	0	0	635	2223
07:10:00 AM	4	54	9	0	0	105	2	0	0	3	27	0	3	7	5	0	664	2308
07:15:00 AM	11	64	7	0	1	108	2	0	1	4	45	0	18	2	2	0	704	2425
07:20:00 AM	8	63	10	0	1	99	0	0	2	5	34	0	10	4	1	0	721	2507
07:25:00 AM	7	90	9	0	1	106	3	0	6	2	32	0	9	5	2	0	774	2619
07:30:00 AM	10	73	9	0	2	116	1	0	3	6	34	0	10	5	2	0	780	2730
07:35:00 AM	7	66	5	0	2	116	2	0	5	5	38	0	17	9	3	0	818	2805
07:40:00 AM	9	89	8	0	2	118	0	0	8	9	26	0	18	0	3	0	836	2903
07:45:00 AM	14	65	8	0	3	137	1	0	3	7	41	0	12	5	3	0	864	2997
07:50:00 AM	22	63	3	0	2	107	0	0	7	10	47	0	16	4	3	0	873	3047
07:55:00 AM	11	68	12	0	5	100	3	0	6	4	34	0	14	2	1	0	843	3117

08:00:00 AM	15	91	9	0	5	125	3	0	1	4	31	0	15	5	2	0	850	3198
08:05:00 AM	18	60	6	0	4	95	3	0	2	4	32	0	13	5	2	0	810	3222
08:10:00 AM	14	67	14	0	4	96	1	0	9	12	48	0	10	2	2	0	829	3282
08:15:00 AM	10	87	7	0	1	111	0	0	3	7	32	0	15	4	4	0	804	3298
08:20:00 AM	14	64	5	0	1	68	2	0	4	3	48	0	11	4	2	0	786	3287
08:25:00 AM	13	74	6	0	5	77	0	0	4	7	34	0	14	7	4	0	752	3260
08:30:00 AM	5	78	8	0	5	82	1	0	6	12	38	0	9	5	4	0	724	3242
08:35:00 AM	11	71	10	0	2	92	1	0	1	9	42	0	25	8	3	0	773	3242
08:40:00 AM	18	58	13	0	3	79	1	0	2	10	43	0	19	6	1	0	781	3205
08:45:00 AM	17	74	7	0	3	84	0	0	5	9	38	0	22	6	7	0	800	3178
08:50:00 AM	14	78	13	0	5	85	0	0	6	16	31	0	16	2	2	0	793	3162
08:55:00 AM	11	72	7	0	3	111	1	0	4	3	26	0	20	8	3	0	809	3171

08:00:00 AM	35	52	0	0	0	86	2	0	2	0	45	0	0	0	0	0	623	2449
08:05:00 AM	21	41	0	0	0	68	0	0	3	0	19	0	0	0	0	0	574	2416
08:10:00 AM	30	58	0	0	0	77	0	0	1	0	40	0	0	0	0	0	580	2457
08:15:00 AM	31	52	0	0	0	62	2	0	2	0	39	0	0	0	0	0	546	2470
08:20:00 AM	20	39	0	0	0	60	3	0	2	0	31	0	0	0	0	0	549	2436
08:25:00 AM	15	78	0	0	0	66	0	0	1	0	35	0	0	0	0	0	538	2442
08:30:00 AM	18	64	0	0	0	52	1	0	5	0	30	0	0	0	0	0	520	2382
08:35:00 AM	13	54	0	0	0	47	1	0	3	0	34	0	0	0	0	0	517	2297
08:40:00 AM	12	59	0	0	0	86	0	0	0	0	31	0	0	0	0	0	510	2251
08:45:00 AM	22	52	0	0	0	78	4	0	1	0	32	0	0	0	0	0	529	2218
08:50:00 AM	22	56	0	0	0	95	2	0	1	0	32	0	0	0	0	0	585	2225
08:55:00 AM	27	62	0	0	0	64	1	0	2	0	25	0	0	0	0	0	578	2206

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95208 - -123.08433
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	03:20:00 PM
Peak 15 Min Start	03:30:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	301	0	237	0	158	223	0	0	0	217	132	0	0	538	381	349	0	290	454	524
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	2.1%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	2.8%	2.3%	0.0%	NaN	2.2%	0.5%	2.6%	NaN	1.0%	2.4%	1.7%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	1	1	3	5

Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	0	0	0	0	6	0	8	0	9	14	0	0	0	10	13	0		
02:05:00 PM	0	0	0	0	5	0	4	0	20	15	0	0	0	15	15	0		
02:10:00 PM	0	0	0	0	9	0	3	0	17	16	0	0	0	16	9	0	204	
02:15:00 PM	0	0	0	0	11	0	6	0	13	9	0	0	0	14	9	0	206	
02:20:00 PM	0	0	0	0	7	0	11	0	14	11	0	0	0	11	6	0	192	
02:25:00 PM	0	0	0	0	19	0	23	0	4	11	0	0	0	9	10	0	198	
02:30:00 PM	0	0	0	0	21	0	30	0	10	12	0	0	0	12	13	0	234	
02:35:00 PM	0	0	0	0	15	0	15	0	5	13	0	0	0	16	10	0	248	
02:40:00 PM	0	0	0	0	11	0	12	0	8	18	0	0	0	11	6	0	238	
02:45:00 PM	0	0	0	0	16	0	8	0	13	10	0	0	0	14	7	0	208	
02:50:00 PM	0	0	0	0	7	0	8	0	16	12	0	0	0	14	15	0	206	
02:55:00 PM	0	0	0	0	4	0	10	0	10	9	0	0	0	9	16	0	198	838
03:00:00 PM	0	0	0	0	7	0	5	0	9	14	0	0	0	12	13	0	190	838
03:05:00 PM	0	0	0	0	6	0	13	0	15	13	0	0	0	23	18	0	206	852
03:10:00 PM	0	0	0	0	10	0	10	0	15	5	0	0	0	18	21	0	227	861
03:15:00 PM	0	0	0	0	13	0	6	0	14	19	0	0	0	13	13	0	245	877
03:20:00 PM	0	0	0	0	26	0	10	0	10	22	0	0	0	15	7	0	247	907
03:25:00 PM	0	0	0	0	24	0	26	0	12	14	0	0	0	22	10	0	276	939
03:30:00 PM	0	0	0	0	39	0	17	0	17	19	0	0	0	18	8	0	316	959
03:35:00 PM	0	0	0	0	32	0	16	0	15	19	0	0	0	18	10	0	336	995
03:40:00 PM	0	0	0	0	33	0	34	0	16	15	0	0	0	16	8	0	350	1051
03:45:00 PM	0	0	0	0	29	0	20	0	10	25	0	0	0	18	13	0	347	1098
03:50:00 PM	0	0	0	0	12	0	18	0	16	18	0	0	0	19	21	0	341	1130
03:55:00 PM	0	0	0	0	15	0	11	0	12	17	0	0	0	11	15	0	300	1153

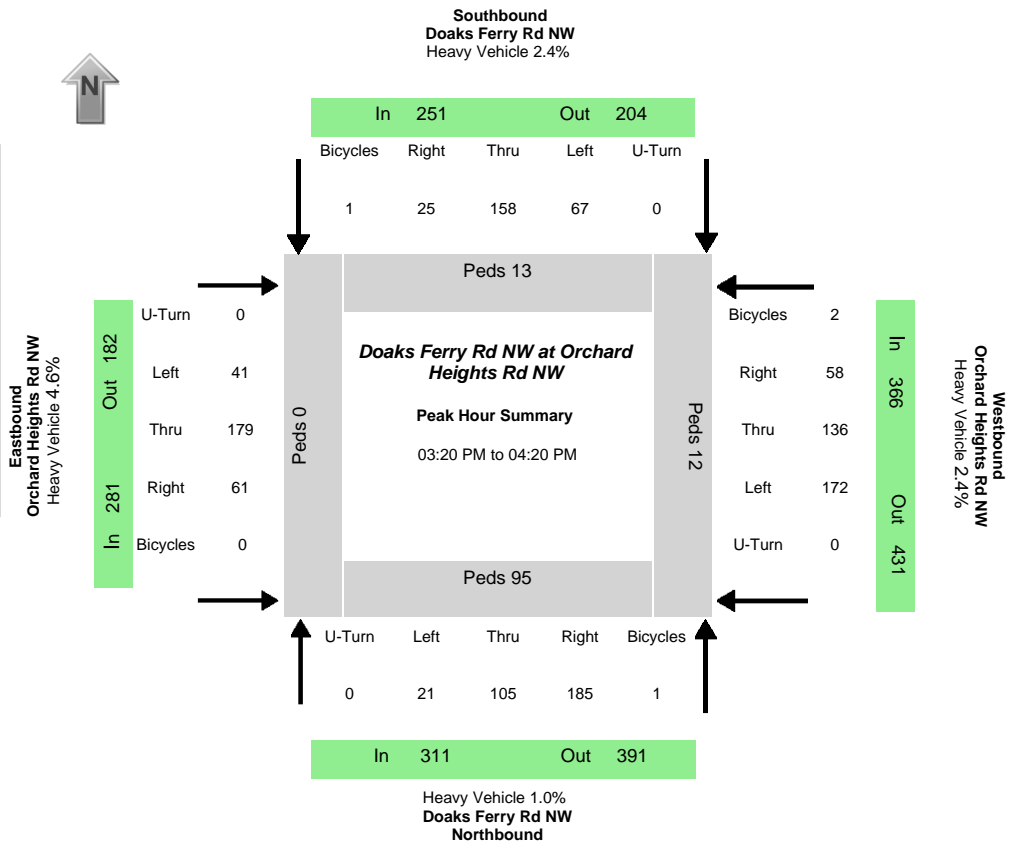
04:00:00 PM	0	0	0	0	16	0	11	0	11	23	0	0	0	16	17	0	279	1187
04:05:00 PM	0	0	0	0	23	0	32	0	12	11	0	0	0	28	4	0	285	1209
04:10:00 PM	0	0	0	0	28	0	25	0	11	22	0	0	0	17	8	0	315	1241
04:15:00 PM	0	0	0	0	24	0	17	0	16	18	0	0	0	19	11	0	326	1268
04:20:00 PM	0	0	0	0	16	0	13	0	10	19	0	0	0	21	10	0	305	1267
04:25:00 PM	0	0	0	0	15	0	11	0	11	9	0	0	0	17	14	0	271	1236
04:30:00 PM	0	0	0	0	13	0	5	0	8	20	0	0	0	15	13	0	240	1192
04:35:00 PM	0	0	0	0	16	0	11	0	8	19	0	0	0	20	13	0	238	1169
04:40:00 PM	0	0	0	0	16	0	11	0	10	14	0	0	0	16	13	0	241	1127
04:45:00 PM	0	0	0	0	21	0	17	0	13	21	0	0	0	22	7	0	268	1113
04:50:00 PM	0	0	0	0	11	0	8	0	14	15	0	0	0	19	9	0	257	1085
04:55:00 PM	0	0	0	0	12	0	6	0	15	17	0	0	0	12	6	0	245	1072
05:00:00 PM	0	0	0	0	7	0	11	0	14	18	0	0	0	25	8	0	227	1061
05:05:00 PM	0	0	0	0	14	0	12	0	9	18	0	0	0	17	10	0	231	1031
05:10:00 PM	0	0	0	0	12	0	10	0	11	9	0	0	0	24	9	0	238	995
05:15:00 PM	0	0	0	0	20	0	7	0	14	9	0	0	0	14	8	0	227	962
05:20:00 PM	0	0	0	0	12	0	8	0	19	11	0	0	0	17	22	0	236	962
05:25:00 PM	0	0	0	0	11	0	8	0	16	18	0	0	0	15	13	0	242	966
05:30:00 PM	0	0	0	0	12	0	8	0	14	12	0	0	0	14	18	0	248	970
05:35:00 PM	0	0	0	0	20	0	6	0	10	10	0	0	0	16	21	0	242	966
05:40:00 PM	0	0	0	0	9	0	9	0	19	13	0	0	0	9	23	0	243	968
05:45:00 PM	0	0	0	0	17	0	11	0	20	8	0	0	0	22	13	0	256	958
05:50:00 PM	0	0	0	0	14	0	7	0	25	10	0	0	0	10	11	0	250	959
05:55:00 PM	0	0	0	0	8	0	12	0	15	20	0	0	0	30	21	0	274	997



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.96044 - -123.07966
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	03:20:00 PM
Peak 15 Min Start	03:30:00 PM
PHF (15-Min Int)	0.88



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
21	105	185	0	67	158	25	0	41	179	61	0	172	136	58	0	311	250	281	366	391	204	182	431
Percent Heavy Vehicles																							
0.0%	1.0%	1.1%	0.0%	6.0%	0.6%	4.0%	0.0%	7.3%	3.4%	6.6%	0.0%	1.7%	4.4%	0.0%	0.0%	1.0%	2.4%	4.6%	2.5%	2.0%	2.0%	3.8%	2.8%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	4	95	13	0	12	120

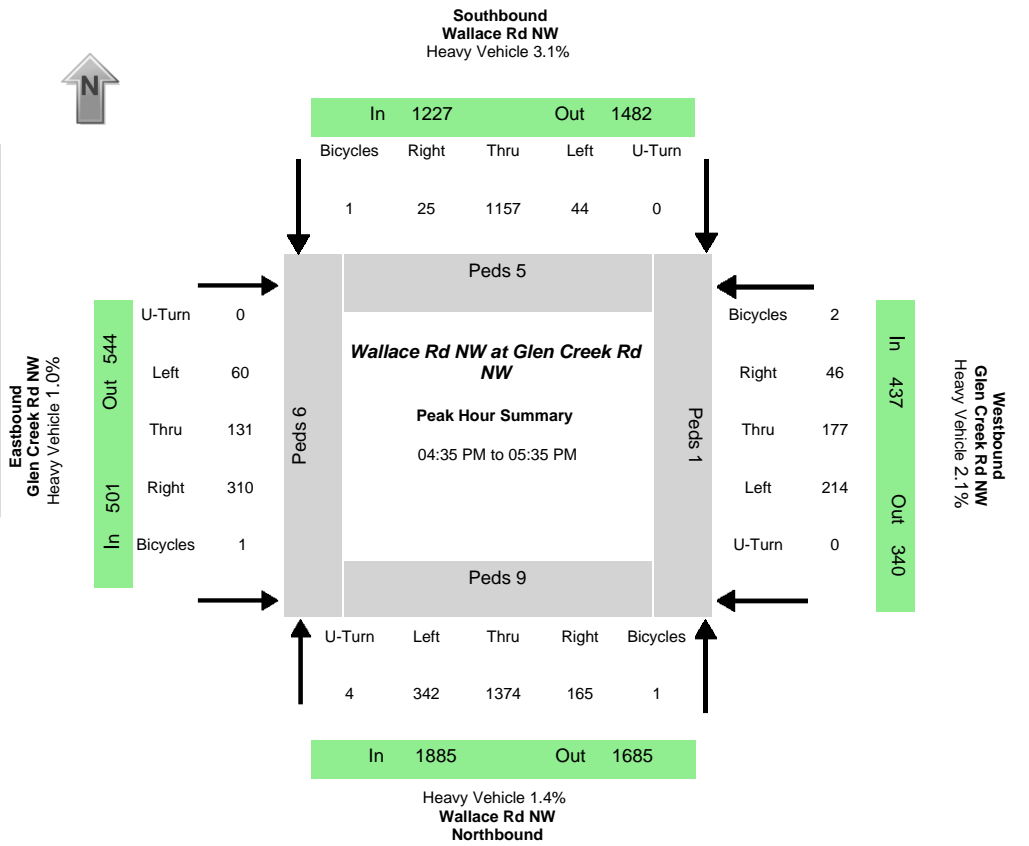
Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	1	6	10	0	1	5	0	0	0	9	2	0	4	4	1	0		
02:05:00 PM	0	6	12	0	1	5	0	0	1	10	1	0	4	5	1	0		
02:10:00 PM	1	5	9	0	2	6	1	0	2	12	0	0	3	10	5	0	145	
02:15:00 PM	1	10	17	0	3	3	2	0	2	11	6	0	3	3	0	0	163	
02:20:00 PM	0	6	6	0	4	8	0	0	3	7	1	0	4	4	4	0	164	
02:25:00 PM	1	7	9	0	1	3	0	0	1	5	1	0	26	13	5	0	180	
02:30:00 PM	0	11	8	0	3	4	1	0	3	3	1	0	32	17	1	0	203	
02:35:00 PM	2	6	6	0	3	4	0	0	0	9	0	0	23	7	6	0	222	
02:40:00 PM	1	8	5	0	4	8	2	0	2	5	3	0	13	7	3	0	211	
02:45:00 PM	1	6	2	0	1	8	1	0	3	10	1	0	12	3	2	0	177	
02:50:00 PM	1	6	13	0	3	7	2	0	1	8	1	0	5	9	4	0	171	
02:55:00 PM	1	8	6	0	2	3	1	0	1	7	2	0	10	10	1	0	162	698
03:00:00 PM	2	11	3	0	3	5	3	0	2	6	0	0	3	17	3	0	170	713
03:05:00 PM	4	8	4	0	1	8	0	0	1	10	3	0	15	7	2	0	173	730
03:10:00 PM	1	10	11	0	0	8	4	0	2	10	2	0	11	22	3	0	205	758
03:15:00 PM	5	10	6	0	5	19	3	0	1	2	0	0	13	14	0	0	225	775
03:20:00 PM	3	6	10	0	4	15	1	0	4	12	3	0	8	21	2	0	251	817
03:25:00 PM	0	5	6	0	3	26	4	0	6	25	11	0	11	12	3	0	279	857
03:30:00 PM	0	6	12	0	5	14	3	0	8	25	11	0	6	8	3	0	302	874
03:35:00 PM	6	16	18	0	4	10	1	0	8	19	9	0	9	12	7	0	332	927
03:40:00 PM	1	17	30	0	4	15	3	0	5	19	10	0	12	6	2	0	344	990
03:45:00 PM	1	5	23	0	5	10	1	0	1	19	3	0	19	8	1	0	339	1036
03:50:00 PM	2	9	16	0	10	7	2	0	0	8	4	0	12	6	2	0	298	1054
03:55:00 PM	3	7	22	0	13	9	5	0	1	14	2	0	9	9	3	0	271	1099

04:00:00 PM	2	14	10	0	7	10	1	0	4	10	0	0	12	4	5	0	254	1120
04:05:00 PM	2	3	13	0	6	19	1	0	2	13	4	0	22	17	9	0	287	1168
04:10:00 PM	0	9	9	0	2	15	3	0	1	12	1	0	29	23	15	0	309	1203
04:15:00 PM	1	8	16	0	4	8	0	0	1	3	3	0	23	10	6	0	313	1208
04:20:00 PM	2	12	8	0	4	8	3	0	0	5	2	0	13	7	6	0	272	1189
04:25:00 PM	0	13	4	0	5	14	1	0	1	4	0	0	6	7	2	0	210	1134
04:30:00 PM	1	8	3	0	5	7	2	0	5	8	1	0	4	6	3	0	180	1086
04:35:00 PM	4	8	8	0	2	15	2	0	2	4	1	0	8	9	3	0	176	1033
04:40:00 PM	0	8	5	0	3	11	1	0	2	8	2	0	4	9	4	0	176	966
04:45:00 PM	1	9	4	0	6	21	1	0	2	4	0	0	5	9	1	0	186	933
04:50:00 PM	2	10	4	0	1	9	1	0	8	4	3	0	7	9	4	0	182	917
04:55:00 PM	2	13	6	0	4	5	3	0	1	7	3	0	5	10	1	0	185	880
05:00:00 PM	0	8	2	0	3	10	4	0	2	6	0	0	5	13	1	0	176	855
05:05:00 PM	1	12	5	0	1	16	2	0	1	6	2	0	4	5	0	0	169	799
05:10:00 PM	0	8	6	0	0	10	3	0	1	18	0	0	9	9	3	0	176	747
05:15:00 PM	3	9	3	0	3	17	1	0	1	5	1	0	6	10	5	0	186	728
05:20:00 PM	1	17	9	0	6	9	1	0	4	4	2	0	6	14	5	0	209	736
05:25:00 PM	0	14	12	0	2	7	3	0	1	2	2	0	8	10	2	0	205	742
05:30:00 PM	1	13	6	0	4	10	2	0	2	4	0	0	4	10	1	0	198	746
05:35:00 PM	1	12	4	0	3	18	4	0	2	7	1	0	3	13	8	0	196	756
05:40:00 PM	2	9	4	0	5	12	0	0	1	10	1	0	10	12	1	0	200	766
05:45:00 PM	1	8	8	0	5	18	3	0	2	8	1	0	6	15	2	0	220	780
05:50:00 PM	2	17	12	0	5	11	9	0	0	6	2	0	7	22	4	0	241	815
05:55:00 PM	1	9	7	0	3	10	3	0	4	4	2	0	4	15	4	0	240	821



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95009 - -123.05165
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	04:35:00 PM
PHF (15-Min Int)	0.98



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
342	1374	165	4	44	1157	25	0	60	131	310	0	214	177	46	0	1885	1226	501	437	1685	1480	544	340
Percent Heavy Vehicles																							
1.2%	1.5%	1.2%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	2.8%	1.1%	2.2%	0.0%	1.4%	3.1%	1.0%	2.1%	2.9%	1.4%	1.1%	0.6%

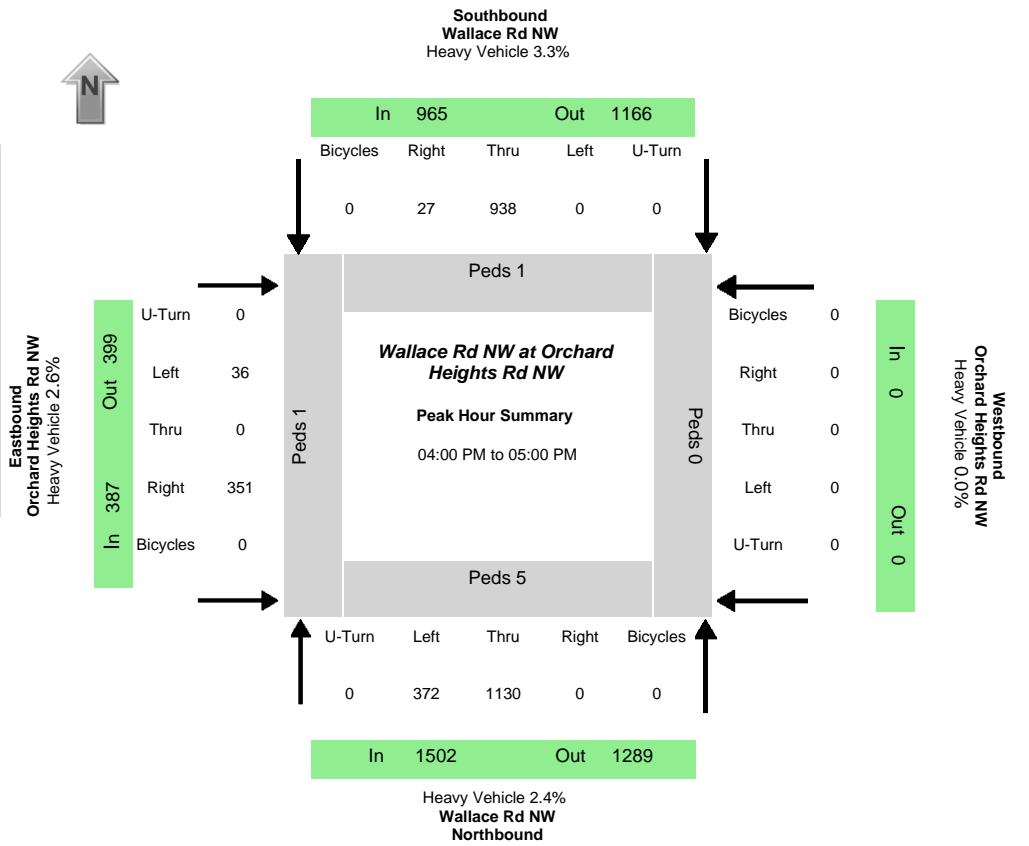
PHV- Bicycles														PHV- Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	5	9	5	6	1	21

Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	21	70	17	0	3	59	2	0	3	16	31	1	32	11	5	0		
02:05:00 PM	15	96	15	0	5	103	3	0	2	12	24	1	26	17	9	0		
02:10:00 PM	24	109	11	0	3	78	1	0	5	7	15	0	23	13	2	0	890	
02:15:00 PM	20	100	15	0	3	69	3	0	3	6	24	0	18	15	7	0	902	
02:20:00 PM	24	84	17	0	7	69	1	0	6	5	17	1	27	8	1	0	841	
02:25:00 PM	14	111	16	0	5	109	1	0	4	15	12	0	11	8	4	0	860	
02:30:00 PM	28	90	15	0	6	87	3	0	4	8	38	1	14	8	4	0	883	
02:35:00 PM	26	78	13	0	1	93	4	0	9	17	24	1	24	18	10	0	934	
02:40:00 PM	19	100	8	0	3	112	1	0	4	5	21	0	20	10	1	0	928	
02:45:00 PM	25	79	12	0	2	94	1	0	5	8	45	1	18	8	1	0	921	
02:50:00 PM	33	84	18	0	3	70	5	0	6	10	25	1	22	16	6	0	902	
02:55:00 PM	18	108	19	0	5	105	3	0	4	6	20	0	22	5	8	0	921	3599
03:00:00 PM	24	87	17	0	3	77	1	0	4	3	21	0	19	12	2	0	892	3598
03:05:00 PM	34	98	13	0	2	67	0	0	5	14	17	0	15	11	5	0	874	3551
03:10:00 PM	30	98	14	0	10	88	1	0	5	4	19	0	23	14	7	0	864	3573
03:15:00 PM	23	141	11	0	4	113	2	0	3	4	21	0	12	10	2	0	940	3636
03:20:00 PM	35	115	15	0	2	74	2	0	2	8	30	0	14	10	3	0	969	3679
03:25:00 PM	24	86	19	1	2	93	5	0	6	4	33	0	15	13	11	0	968	3681
03:30:00 PM	16	106	11	0	2	115	5	0	8	10	26	0	17	9	3	0	950	3703
03:35:00 PM	39	110	12	0	7	75	2	0	4	8	30	0	24	15	0	0	966	3711
03:40:00 PM	24	101	13	0	3	78	1	0	10	5	30	0	23	16	11	0	969	3722
03:45:00 PM	27	105	16	0	6	111	0	0	8	10	29	0	14	18	2	0	987	3769
03:50:00 PM	35	141	15	0	4	101	1	0	7	9	25	0	15	9	8	0	1031	3840
03:55:00 PM	23	99	11	0	2	85	2	0	7	21	16	0	21	19	3	0	1025	3826

04:00:00 PM	24	103	21	0	4	99	2	0	2	7	28	0	22	14	4	0	1009	3886
04:05:00 PM	31	112	12	0	4	105	1	0	7	11	32	0	10	20	7	0	991	3957
04:10:00 PM	22	103	20	0	4	83	3	0	5	15	34	0	21	11	3	0	1006	3968
04:15:00 PM	28	95	15	0	7	67	1	0	7	8	25	0	26	21	7	0	983	3929
04:20:00 PM	22	124	15	0	1	111	5	0	5	8	27	0	18	10	4	0	981	3969
04:25:00 PM	26	111	16	0	2	79	1	0	4	13	39	0	15	15	5	0	983	3983
04:30:00 PM	20	94	14	0	9	96	5	0	4	8	23	0	21	10	4	0	984	3963
04:35:00 PM	22	124	18	0	6	113	4	0	5	6	25	0	14	16	5	0	992	3995
04:40:00 PM	30	126	18	1	1	88	2	0	7	12	33	0	19	20	4	0	1027	4041
04:45:00 PM	26	91	14	1	2	83	1	0	6	19	20	0	22	21	3	0	1028	4004
04:50:00 PM	14	126	11	0	4	108	4	0	5	12	26	0	15	5	8	0	1008	3972
04:55:00 PM	44	135	12	1	2	95	2	0	5	11	31	0	13	10	2	0	1010	4026
05:00:00 PM	27	99	13	0	5	87	3	0	4	17	23	0	21	23	4	0	1027	4022
05:05:00 PM	28	100	17	0	4	103	0	0	7	9	21	0	23	15	2	0	1018	3999
05:10:00 PM	40	126	13	0	1	93	3	0	1	5	30	0	21	14	3	0	1005	4025
05:15:00 PM	28	113	18	0	2	81	2	0	6	12	32	0	15	14	2	0	1004	4043
05:20:00 PM	17	98	7	1	6	93	1	0	2	9	25	0	29	19	7	0	989	4007
05:25:00 PM	29	121	11	0	6	115	0	0	3	8	16	0	9	9	3	0	969	4011
05:30:00 PM	37	115	13	0	5	98	3	0	9	11	28	0	13	11	3	0	990	4049
05:35:00 PM	25	95	17	0	6	96	1	0	6	14	25	0	27	18	3	0	1009	4024
05:40:00 PM	29	111	11	0	3	85	1	0	6	7	16	0	16	15	3	0	982	3966
05:45:00 PM	34	119	19	0	2	89	3	0	5	11	21	1	18	6	4	0	968	3989
05:50:00 PM	26	112	18	0	5	82	1	0	5	10	33	1	9	22	1	0	960	3976
05:55:00 PM	23	110	18	0	2	92	5	0	2	16	13	0	13	16	1	0	968	3924

Data Provided by K-D-N.com 503-594-4224

N/S street	Wallace Rd NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.95334 - -123.05251
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
372	1130	0	0	0	938	27	0	36	0	351	0	0	0	0	0	1502	965	387	0	1289	1166	399	0
Percent Heavy Vehicles																							
1.6%	2.7%	0.0%	0.0%	0.0%	3.3%	3.7%	0.0%	2.8%	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	3.3%	2.6%	0.0%	3.1%	2.7%	1.8%	0.0%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	7

Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	23	50	0	0	0	65	4	0	2	0	21	0	0	0	0	0	566	
02:05:00 PM	47	77	0	0	0	55	2	0	1	0	28	0	0	0	0	0	595	
02:10:00 PM	35	65	0	0	0	65	0	0	2	0	24	0	0	0	0	0	572	
02:15:00 PM	33	71	0	0	0	61	1	0	3	0	25	0	0	0	0	0	595	
02:20:00 PM	21	74	0	0	0	60	3	0	0	0	29	0	0	0	0	0	625	
02:25:00 PM	25	79	0	0	0	86	1	0	0	0	23	0	0	0	0	0	666	
02:30:00 PM	24	73	0	0	0	86	0	0	2	0	39	0	0	0	0	0	678	
02:35:00 PM	28	84	0	0	0	80	0	0	0	0	36	0	0	0	0	0	647	
02:40:00 PM	21	86	0	0	0	74	2	0	0	0	43	0	0	0	0	0	617	
02:45:00 PM	21	70	0	0	0	74	1	0	1	0	26	0	0	0	0	0	617	
02:50:00 PM	29	68	0	0	0	60	2	0	4	0	35	0	0	0	0	0	579	2418
02:55:00 PM	30	88	0	0	0	43	1	1	1	0	24	0	0	0	0	0	586	2453
03:00:00 PM	27	74	0	0	0	69	1	0	1	0	28	0	0	0	0	0	590	2445
03:05:00 PM	23	69	0	0	0	82	2	0	0	0	26	0	0	0	0	0	640	2492
03:10:00 PM	40	96	0	0	0	74	3	0	1	0	24	0	0	0	0	0	655	2513
03:15:00 PM	36	86	0	0	0	65	1	0	2	0	25	0	0	0	0	0	693	2566
03:20:00 PM	28	90	0	0	0	110	1	0	0	0	11	0	0	0	0	0	677	2574
03:25:00 PM	22	82	0	0	0	83	1	0	3	0	31	0	0	0	0	0	689	2577
03:30:00 PM	44	77	0	0	0	67	5	0	3	0	31	0	0	0	0	0	675	2575
03:35:00 PM	26	82	0	0	0	75	1	0	3	0	39	0	0	0	0	0	707	2603
03:40:00 PM	27	105	0	0	0	87	2	0	3	0	30	0	0	0	0	0	717	2647
03:45:00 PM	41	86	0	0	0	61	3	0	3	0	43	0	0	0	0	0	715	2673
03:50:00 PM	28	93	0	0	0	73	0	0	3	0	27	0	0	0	0	0	692	2716
03:55:00 PM	24	82	0	0	0	103	3	0	0	0	19	0	0	0	0	0		

04:00:00 PM	35	90	0	0	0	75	9	0	0	0	30	0	0	0	0	0	694	2755
04:05:00 PM	31	82	0	0	0	86	2	0	5	0	30	0	0	0	0	0	706	2789
04:10:00 PM	33	83	0	0	0	74	1	0	4	0	31	0	0	0	0	0	701	2777
04:15:00 PM	26	99	0	0	0	58	1	0	9	0	39	0	0	0	0	0	694	2794
04:20:00 PM	32	100	0	0	0	59	2	0	3	0	36	0	0	0	0	0	690	2786
04:25:00 PM	34	76	0	0	0	92	2	0	0	0	22	0	0	0	0	0	690	2790
04:30:00 PM	28	91	0	0	0	94	6	0	0	0	17	0	0	0	0	0	694	2799
04:35:00 PM	30	108	0	0	0	78	1	0	1	0	29	0	0	0	0	0	709	2820
04:40:00 PM	26	95	0	0	0	76	0	0	6	0	43	0	0	0	0	0	729	2812
04:45:00 PM	29	83	0	0	0	72	1	0	5	0	25	0	0	0	0	0	708	2790
04:50:00 PM	45	118	0	0	0	75	0	0	0	0	31	0	0	0	0	0	730	2835
04:55:00 PM	23	105	0	0	0	99	2	0	3	0	18	0	0	0	0	0	734	2854
05:00:00 PM	43	79	0	0	0	88	2	0	0	0	20	0	0	0	0	0	751	2847
05:05:00 PM	26	95	0	0	0	77	2	0	2	0	24	0	0	0	0	0	708	2837
05:10:00 PM	31	91	0	0	0	69	1	0	2	0	35	0	0	0	0	0	687	2840
05:15:00 PM	37	83	0	0	0	70	0	0	0	0	22	0	0	0	0	0	667	2820
05:20:00 PM	23	104	0	0	0	91	2	0	2	0	25	0	0	0	0	0	688	2835
05:25:00 PM	27	87	0	0	0	89	1	0	0	0	16	0	0	0	0	0	679	2829
05:30:00 PM	33	90	0	0	0	96	5	0	2	0	15	0	0	0	0	0	708	2834
05:35:00 PM	41	93	0	0	0	86	2	0	2	0	23	0	0	0	0	0	708	2834
05:40:00 PM	41	84	0	0	0	72	2	0	0	0	32	0	0	0	0	0	719	2819
05:45:00 PM	29	77	0	0	0	67	2	0	3	0	38	0	0	0	0	0	694	2820
05:50:00 PM	44	89	0	0	0	73	1	0	1	0	24	0	0	0	0	0	679	2783
05:55:00 PM	38	90	0	0	0	74	2	0	5	0	24	0	0	0	0	0	681	2766

Jamie Donaldson

From: Joe Bessman <Joe@transightconsulting.com>
Sent: Wednesday, February 2, 2022 12:50 PM
To: Jamie Donaldson
Cc: mlowen@livebsl.com
Subject: FW: Doaks Ferry Rezone
Attachments: Doaks Ferry Rezone_Region 2 TIA Review.pdf

Please see enclosed.

From: FRICKE Daniel L <Daniel.L.FRICKE@odot.oregon.gov>
Sent: Wednesday, January 26, 2022 10:06 AM
To: Joe Bessman <Joe@transightconsulting.com>; Tony Martin <TMartin@cityofsalem.net>
Subject: FW: Doaks Ferry Rezone

Gentlemen –
Attached are comments on the TIA for the subject rezone project.
Dan

Dan Fricke, Senior Transportation Planner
ODOT Region 2 Tech Center
455 Airport Road SE, Building A
Salem, OR 97301-5397
Ph: 503-507-0391
E-mail: daniel.l.fricke@odot.oregon.gov

From: FERBER Arielle <Arielle.FERBER@odot.oregon.gov>
Sent: Tuesday, January 18, 2022 2:02 PM
To: FRICKE Daniel L <Daniel.L.FRICKE@odot.oregon.gov>
Cc: KNECHT Casey <Casey.KNECHT@odot.oregon.gov>
Subject: RE: Doaks Ferry Rezone

Dan,
Attached are Region Traffic's comments on the submitted TPR analysis for the Doaks Ferry Rezone in Salem, OR. Upon your review, please forward these comments to the City along with any additional comments you feel are necessary or prudent.

Please let me know if you have any questions or I can help with anything else. In addition, please copy me when you provide comments to the local jurisdiction.

Thanks!

Arielle Ferber, P.E.
Traffic Analysis Engineer
ODOT Region 2
455 Airport Rd. SE, Bldg. A, Salem, OR 97031
(503) 986-2857



Oregon

Kate Brown, Governor

Department of Transportation

Region 2 Tech Center

455 Airport Road SE, Building A

Salem, Oregon 97301-5397

Telephone (503) 986-2990

Fax (503) 986-2839

DATE: January 18, 2022

TO: Dan Fricke
Senior Transportation Planner

FROM: Arielle Ferber, PE
Traffic Analysis Engineer

SUBJECT: Doaks Ferry Rezone (Salem, OR) – Transportation Planning Rule (TPR)
TIA Review Comments

ODOT Region 2 Traffic has completed our review of the submitted TPR analysis (dated January 3, 2022) to address traffic impacts due to development northeast of the Doaks Ferry Road at Orchard Heights Road intersection in the city of Salem, with respect to consistency and compliance with ODOT's Analysis Procedures Manual, Version 2 (APM). The APM was most recently updated in October 2020. The current version is published online at: <http://www.oregon.gov/ODOT/TD/TP/Pages/APM.aspx>. As a result, we submit the following comments for the City's consideration:

Analysis items to note:

- This study utilized the outdated Highway Capacity Manual (HCM) 2000 and did not utilize methodology from the current HCM 6th Edition for signalized intersections. Our review showed that use of HCM 6, as opposed to HCM 2000, did not have an effect on the conclusions of this analysis. However, the consultant shall be advised HCM 2000 analyses for signalized intersections will not be accepted for use on future studies under ODOT's authority.
- Region Traffic assumes all land uses and densities offered under both the current and proposed zones are consistent with the City's code as cited in the report.
- This study does not contain a simulation-based queuing analysis. Such analysis would have been scoped if this study had been required under ODOT's authority.

Analysis items to be addressed:

1. Our review identified multiple trip generation errors. The combination of these errors has underestimated reasonable worst-case trip generation under the current zone and proposed zoning. Trip generation should be modified to reflect the appropriate method of trip generation.
 - Method of Trip Generation – Multiple land uses utilized the weighted average rate method where the fitted curve equation method is instead recommended, per the *Institute of Transportation*

Engineers (ITE). Region Traffic has identified the land uses that, per Section 4.4 of the current *ITE Trip Generation Handbook*, should instead utilize the fitted curve equation method:

- Land Use 210 (Single-Family Detached Housing) – The fitted curve equation method should instead be utilized for the daily, AM, and PM trip generation. This change will increase current zone trips.
 - Land Use 221 (Mid-Rise Multifamily Housing) – The fitted curve equation method should instead be utilized for the daily and AM trip generation. This change will increase proposed zone trips.
2. The 2036 forecast traffic volumes for the existing zoning scenario were developed by applying a linear growth rate to the 2021 existing traffic volumes. It should be noted that the linear growth does not provide enough growth to be consistent with the projected trip potential of the existing zoning at the Doaks Ferry Road at Orchard Heights Road intersection for the SBL, WBR, and NBT movements (i.e. the SBL movement increases by 13 vehicles between 2021 and 2036 while the existing zoning (Figure 3) shows an increase of 43 vehicles in the AM peak period). While this may have an effect on the operational results of the analysis, it is not expected to have an impact on the conclusions of the study.
 3. When reporting the 95th percentile queues, study shall ensure all estimated queue lengths are consistently rounded up to the next 25 feet.
 4. Figure 4 appears to be missing the SBT trips related to the proposed zoning at the Doakes Ferry Road at Orchard Heights Road intersection, however, as the net trips correctly account for these trips this does not have an impact on the analysis.
 5. As January 2020 counts were utilized for the Wallace Road at Orchard Heights Road and Wallace Road at Glen Creek Road intersections, they should also be included in the Appendix

Proposed mitigation comments:

6. ODOT maintains jurisdiction of the Salem-Dayton Highway No. 150 (OR 221) and ODOT approval shall be required for all proposed mitigation measures to this facility.
7. No mitigation measures to a state highway have been proposed. This conclusion appears reasonable for this proposed development given the submitted analysis. While the above comments will have an effect on the operational analysis results, it is unlikely they will be significant enough to have an impact on the conclusions of the study.

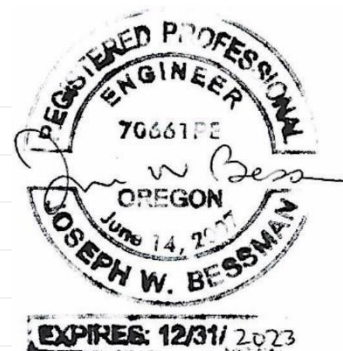
Thank you for the opportunity to review this traffic impact analysis. As the analysis software files were not provided, Region 2 Traffic has only reviewed the submitted report.

While the above comments will have an effect on the operational analysis results, it is unlikely they will be significant enough to have an impact on the conclusions of the study. However, if the City determines any of the above comments will merit the need for reanalysis, we would be willing and able to assist with a second round of review.

If there are any questions regarding these comments, please contact me at (503) 986-2857 or Arielle.Ferber@ODOT.state.or.us



Date:	January 31, 2022
To:	Arielle Ferber, PE
From:	Joe Bessman, PE
Project Reference No.:	1603
Project Name:	Titan Hill Rezone



Thank you for the continued opportunity to coordinate with ODOT through the rezone process for the Titan Hill site located west of Doaks Ferry Road. This memorandum provides responses to the ODOT letter dated January 18, 2022 (received on January 26, 2022, following the Planning Commission hearing). The ODOT letter provides three primary comments related to technical aspects of the analysis and concludes by stating these issues would not change the overall findings. However, I have prepared the enclosed responses that will be provided to ODOT seeking concurrence and agreement. Based on informal discussions with ODOT staff, I believe their concurrence, while not necessary, will be provided to the City.

Comment 1: This study utilized the outdated Highway Capacity Manual (HCM) 2000 and did not utilize methodology from the HCM 6th Edition for signalized intersections. Our review showed that use of HCM6, as opposed to HCM 2000, did not affect the conclusions of this analysis.

I respectfully disagree with this statement and the characterization of the analysis submitted. The analysis was prepared using the HCM 6th Edition (the most current) analysis methodology, and all queuing and delays are provided from these reports. However, the HCM 6th Edition methodology no longer provides a volume-to-capacity ratio for the intersection as a whole, only for individual lane groups.

ODOT's adopted mobility standards within the Oregon Highway Plan are premised on the overall intersection v/c ratio, and so to get around this methodology limitation, ODOT's Transportation Planning and Analysis Unit (TPAU) devised a methodology to "approximate" the overall v/c ratio using a combination of the HCM 6th Edition outputs, the HCM2000 outputs, and the 1985 version of the Highway Capacity Manual methods for a Critical Movement Analysis. Simply stated, the 1985 Critical Movement Analysis combines conflicting movements and sums these combinations against the total capacity of the intersection.

The problem with this approach is that it does not respond well to more complicated signal timing and phasing strategies or high volumes of right-turns on red from dedicated turn lanes, such as those present along the Wallace Road corridor, and experiences other challenges with nuances of the software outputs. While the HCM 2000 is an older version of the Highway Capacity Manual, the results of the overall v/c metric are more realistic than this blended critical movement approach at complex intersections, and the calculations in the HCM6th Edition and HCM2000 remain very similar in how they account for pedestrians,

cyclists, trucks, cars, and various geometric factors.¹ For the comparative assessment between rezone scenarios this provides reasonable results appropriate for long-range planning analyses (and is what was presented in the adopted Transportation System Plan).

To address the suggestion that our analysis software or methods may have altered the results (a suggestion I reject and ODOT has already rejected), I have worked with ODOT staff to complete this analysis for the Wallace Road intersections as best as is possible per the ODOT Analysis Procedures Manual and limitations of this methodology (all other metrics such as queuing and delays were already reported from the HCM 6th Edition and need not be updated). These revised results are provided in Table 1 to avoid any speculation this could change the outcome of the analysis.

Table 1. Summary of ODOT v/c Ratios (CMA Technique)

Intersection	Year 2036 Existing Zoning	Year 2036 Proposed Zoning	Year 2036 Proposed Zoning with Density Cap	Meets OHP 1F.5?
Weekday AM Peak Hour				
Wallace Road/ Orchard Heights	v/c = 1.071	v/c = 1.114 (+0.043)	v/c = 1.092 (+0.021)	Yes with Density Cap
Wallace Road/ Glen Creek Road	v/c = 1.122	v/c = 1.156 (+0.034)	v/c = 1.136 (+0.014)	Yes with Density Cap
Weekday PM Peak Hour (ODOT Design Hour)				
Wallace Road/ Orchard Heights	v/c = 1.212	v/c = 1.241 (+0.029)	v/c = 1.221 (+0.009)	Yes
Wallace Road/ Glen Creek Road	v/c = 1.139	v/c = 1.156 (+0.017)	v/c = 1.152 (+0.013)	Yes

Please note that the applicable standard to assess a significant impact is cited within Action 1F.5 of the Oregon Highway Plan; this states the following:

In applying OHP mobility targets to analyze mitigation, ODOT recognizes that there are many variables and levels of uncertainty in calculating volume-to-capacity ratios, particularly over a specified planning horizon. After negotiating reasonable levels of mitigation for actions required under OAR 660-012-0060, ODOT considers calculated values for v/c ratios that are within 0.03 of the adopted target in the OHP to be considered in compliance with the target. The adopted mobility target still applies for determining significant affect under OAR 660-012-0060.

Accordingly, during the ODOT Design Hour (which is built around the weekday p.m. peak hour consistent with long-range planning efforts) the change in the v/c ratio is less than 0.03 at both intersections. With

¹ Refer to ODOT TPAU's July 21, 2021 presentation describing the basis and limitations of this methodology as included within the attachments.

the density cap in place this difference is further reduced. Accordingly, the rezone complies with the TPR section on Plan and Land Use Regulation Amendments.

Comment 2: This study does not contain a simulation-based queuing analysis. Such analysis would have been scoped if this study had been required under ODOT’s authority.

As part of general practice for traffic impact analysis reports (TIAs), ODOT requires microsimulation for closely spaced and coordinated signalized corridors. This is neither practical nor appropriate on Wallace Road or for a TPR analysis:

- Microsimulation of a congested system would need to study the “pinch point” – in this case that would be the limited bridge capacity at the merge which is well outside of the study area.
- Microsimulation is a detailed analysis tool applicable to corridor projects and signal timing plan development and is not relevant to a TPR analysis. Our requirement is to show consistency with the adopted Transportation System Plan, which was not prepared using microscopic assessment tools, nor would it have been appropriate given the sweeping assumptions inherent within a long-term analysis that outweigh the higher levels of precision.
- Microsimulation does not provide ODOT with an overall v/c ratio that would respond to their standards. Its purpose is to understand queue lengths and queue blockage impacts. This is helpful information, but it does not respond to ODOT standards. The limitation is exacerbated without a broader assessment that extends to the bridge and a more detailed assessment that accounts for private driveways between intersections.
- Microsimulation of a signalized corridor relies on specific signal timing parameters for its outputs. The future timing plans, vehicle technologies, and even the signal detection and controller technologies that will be in place in 2036 remain highly speculative.

Within a Transportation Planning Rule analysis, a queuing analysis is useful supporting information that shows what the public, staff, and the consultant team already know – there is congestion on Wallace Road associated with the available bridge capacity. However, our analysis provides a comparative assessment of whether the impact of the rezone is significant under the Transportation Planning Rule – nothing else. This assessment is measured by the adopted v/c ratios and guidance within Action 1F.5 of the Oregon Highway Plan.

Comment 3: Our review identified multiple trip generation errors. The combination of these errors has underestimated reasonable worst-case trip generation under the current zone and proposed zone. Multiple land uses utilized the weighted average trip rate instead of the fitted equation.

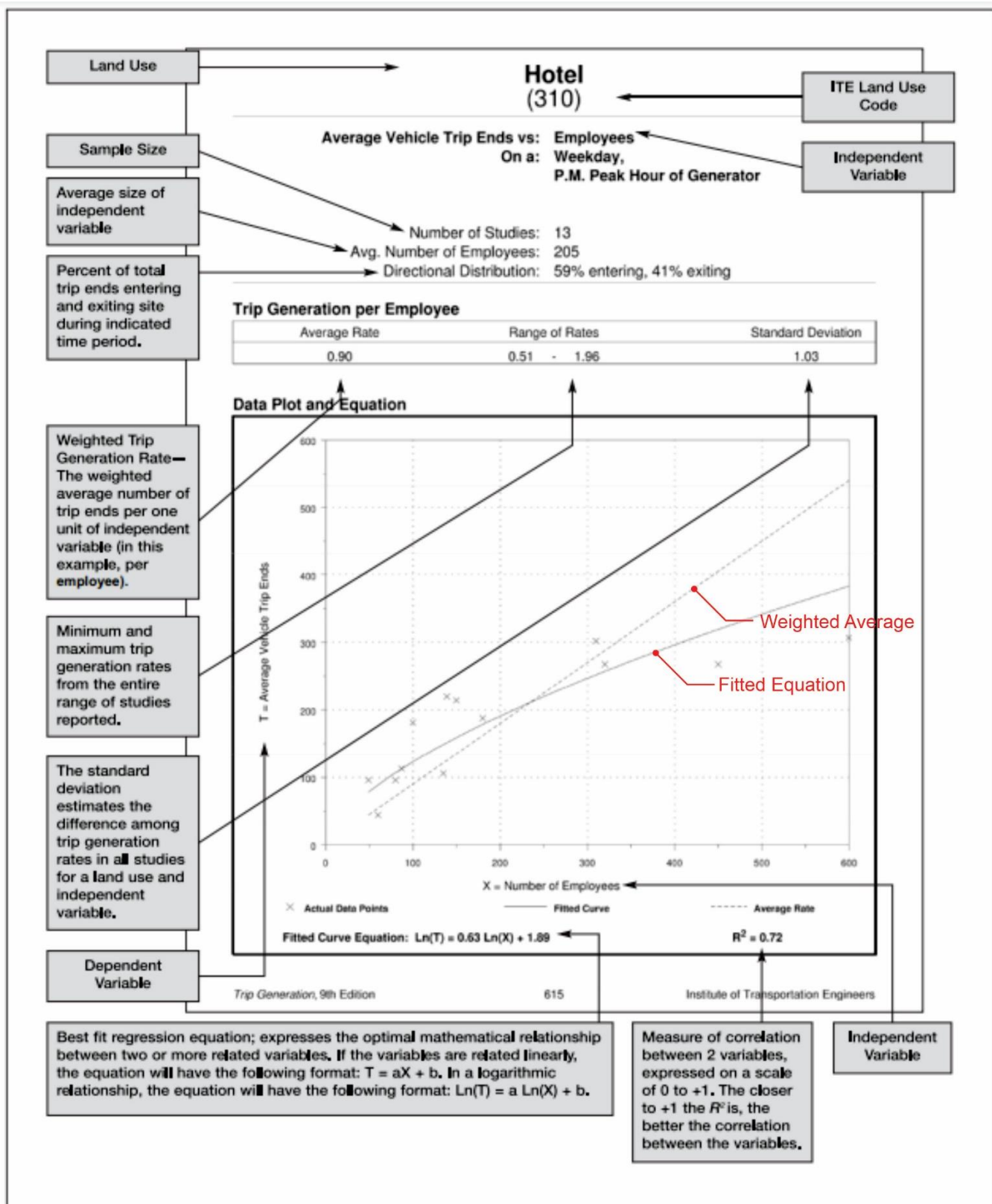
The City of Salem requires application of the weighted average trip rate for all of its trip generation calculations, and the report consistently applies this approach. This “straight-line” approach has the benefits of avoiding adjusting the results between mixing of the two equations, providing simple tracking mechanisms to monitor development, and consistency across all submitted studies. I recognize this analysis requires greater context, and so I have explained the ITE-recommended practice to highlight how this City policy is appropriate and conservative within this application.

The premise of the comment is that certain uses (e.g., a shopping center) exhibit an increasingly lower trip rate as they increase in size. If a retail center is 10,000 square-feet an expansion to 100,000 square-feet will not directly increase the trip rate ten-fold. The ITE manual has the same premise for residential uses, showing that surveys of larger suburban neighborhoods exhibit a lower trip rate per home than smaller suburban areas neighborhoods. From a practical perspective, this result does not look at other

factors (house size, number of persons, income, age, etc.), and this finding reflects other demographic characteristics and the very limited datapoints at the upper end of the range. The suggestion that building more houses of an identical type within an area will generate fewer trips per house is unreasonable. Salem is not the only jurisdiction to require the use of the average trip rate, which usually provides a more conservative analysis, and avoids anomalies when the size of the use is near the x-intercept on the graph.

To further help understand the context and implications of this technical comment, an example sheet with labels from the *ITE Trip Generation Handbook* is presented in Figure 1. This shows several data points, each of which represent a cordon-area survey that counts every inbound and outbound vehicle that passes through the cordon line during the specified period. These are plotted as a function of the size of development (“units” for most residential applications) on the x-axis and the number of trips on the y-axis.

These surveys are aggregated to develop a weighted-average trip rate, which essentially provides an averaged trip rate across the entire range of development sizes. This average rate is plotted as a straight dashed line intersecting at the graph origin. In addition, a fitted equation is developed using a regression analysis to better match this line to the data points; this line does not necessarily extend from the chart origin. Where there is a good fit to the data (meaning that the survey points are closer to this curved line), a higher R^2 (coefficient of determination) value results. Figure 2 provides recommended guidance on when it is recommended to select the weighted average or fitted curve. There is substantial guidance within the manual related to use of engineering judgement in making these determinations, and this is not intended to be universally applied as a “flow-chart” process.



Source: *Trip Generation Manual*, 9th Edition, Institute of Transportation Engineers, Washington, DC, 2012.

Figure 1. Sample Data Page in Trip Generation Manual. Source: *ITE Trip Generation Handbook*, 3rd Edition

Use Fitted Curve Equation when:

- A fitted curve equation is provided and the data plot has at least 20 data points

OR

- A fitted curve equation is provided, the curve has an R^2 of at least 0.75, the fitted curve falls within data cluster, and the weighted standard deviation is more than 55 percent of the weighted average rate.

Use Weighted Average Rate when:

- The data plot has at least three data points (and preferably, six or more);
- The R^2 value for the fitted curve is less than 0.75 or no fitted curve equation is provided;
- The weighted standard deviation for the average rate is less than 55 percent of the weighted average rate; and
- The weighted average rate is within data cluster in plot.

Collect Local Data when:

- Study site is not compatible with ITE Land Use Code definition;
- Data plot has only one or two data points (and preferably, when five or fewer);
- The weighted standard deviation for the average rate is greater than 55 percent of the weighted average rate;
- Independent variable value is not within range of data; or
- Neither weighted average rate line nor fitted curve is within data cluster at size of study site.

Figure 2. ITE Trip Generation Handbook Guidance on Selection of the Weighted Average vs. Fitted Curve Equation.
Source: *ITE Trip Generation Handbook, 3rd Edition, pp28*

Within the submitted Transportation Planning Rule analysis the critical land use classifications include use of ITE 210: *Single-Family Detached Housing* and ITE 221: *Multifamily Housing (Mid-Rise)*. Based on review of the ITE data I found:

- For the single-family housing classification, the ITE provides a robust dataset, the number of units considered falls within the range of the data, and the R^2 is higher than 0.75. The ITE recommends use of the fitted curve equation.
- For the multifamily housing the ITE again provides a robust dataset, but the number of units contemplated (640 uncapped or 500 capped) fall outside the data cluster in the plot. For this use the weighted average rate is recommended.

The net result is that the analysis would be premised on 33 fewer weekday daily trips, 1 less trip during the morning, and 3 fewer trips during the evening peak hour. With a reduction across all time periods this would show better results than those reported within the submitted TPR analysis and would not affect the findings of “no significant impact” with the proposed trip cap.

Comment 4: Similar to public comments responded to within the prior materials, ODOT requested receipt of the full set of traffic counts (2020 and 2021).

These were inadvertently omitted from the original report, I have enclosed the full sets of counts as an attachment.

IMPACT OF HOUSE BILL 2001

Subsequent to the preparation of this analysis, the City of Salem incorporated House Bill 2001 into its Development Code. The impact of this legislation is to allow higher density multifamily housing products within single-family zoning to address *needed housing*. As this rezone is premised on the comparison of a single-family zoning and the change in moving to allow multifamily housing, with this change to what is now allowed in the existing zoning the relative impact will be significantly less.

The Code adopted by the City of Salem impacts the RS, RA (which is the designation of the subject property), RD, and RM-I zones. This will allow duplex units on all lots that are larger than 4,000 square-feet. Triplex units will be allowed on lots that are at least 5,000 square-feet, and quadplex units will be allowed on lots that are 7,000 square-feet, and cottage clusters (the number of units appears to be undefined) are allowed on lots larger than 7,000 square-feet.

Instead of showing the equivalent of 183 single-family lots in our base-case rezone analysis, each that are approximately 5,000 square-feet, this would now allow this same number of triplex units. This 183-triplex scenario, or even a combination of triplex and duplex units could reach as high as 549 total residential units (183 lots * up to 3 units per lot = up to 549 units), which is a higher density than the proposed 500-unit density cap being proposed.

NEXT STEPS

I appreciate the coordination and support of ODOT staff throughout the review of this application and trust these additional materials address any remaining concerns about the analysis. I hope these materials can be expeditiously reviewed by ODOT, and a written response can be provided into the record, supporting or refuting these responses so that the public can appropriately trust that the information provided to the Planning Commission is complete and accurate. If you have questions you can reach me at (503) 997-4473 or via email at joe@transightconsulting.com.

Attachments:

- July 21, 2021 ODOT TPAU APM guidance (Excerpt)
- Supplemental Level of Service Worksheets (Capped Scenario)
- Critical Movement Analysis Worksheets
- Year 2020 Traffic Count Dataset
- Year 2021 Traffic Count Dataset
- Middle Housing: HB2001 Frequently Asked Questions



Image – Google Maps Streetview



Critical Volume to Capacity Ratios

Calculating intersection v/c's

- Numerous recent issues relating to critical intersection v/c's
- Synchro HCM2000 report and lead-lag left turn phasing
- Limitations with HCM6 reports for permitted-protected phasing
- HCM is the best reference (1985 forward)
- Flow ratio calculation depends on summing flow ratios for each phase



- Issues are mainly related to picking critical movements ; shows over-reliance on report critical movements ; shows need to have extra guidance on fundamentals
- Synchro HCM2000 report may show extra critical movements that are not used in the calculations especially if lead-lag phasing is used ; need to make sure have good grasp of fundamentals of picking critical movements
- Still can be useful for showing the range that calculation should be
- Limitations in HCM6 – doesn't show permitted and protected sat flows (will have to use HCM2000 based sat flows here)
- Can use any edition of HCM – 1985 , 2000, 2010, 6th etc
- Flow ratios – v/s (volume/sat flow)

Queues
3: Wallace Road NW & Orchard Heights Rd NW

2036 Traffic Conditions with Rezone
Weekday AM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	20	536	313	1054	1421
v/c Ratio	0.29	1.00	0.51	0.36	0.82
Control Delay	69.8	77.9	28.7	3.4	31.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	69.8	77.9	28.7	3.4	31.6
Queue Length 50th (ft)	17	~507	223	53	474
Queue Length 95th (ft)	44	#545	m335	244	#780
Internal Link Dist (ft)	1063			1080	560
Turn Bay Length (ft)	125		115		
Base Capacity (vph)	317	536	608	2912	1741
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	1.00	0.51	0.36	0.82

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 3: Wallace Road NW & Orchard Heights Rd NW

2036 Traffic Conditions with Rezone
 Weekday AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	18	493	288	970	1295	12
Future Volume (vph)	18	493	288	970	1295	12
Ideal Flow (vphp)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1471	1456	1614	3167	3244	
Flt Permitted	0.95	1.00	0.08	1.00	1.00	
Satd. Flow (perm)	1471	1456	131	3167	3244	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	20	536	313	1054	1408	13
RTOR Reduction (vph)	0	10	0	0	0	0
Lane Group Flow (vph)	20	526	313	1054	1421	0
Confl. Peds. (#/hr)		2				
Heavy Vehicles (%)	13%	2%	3%	5%	2%	40%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	8	1	1	6	2	
Permitted Phases		8	6			
Actuated Green, G (s)	4.2	47.1	115.3	115.3	67.9	
Effective Green, g (s)	4.2	47.1	115.3	115.3	67.9	
Actuated g/C Ratio	0.03	0.36	0.89	0.89	0.52	
Clearance Time (s)	4.5	4.5	4.5	6.0	6.0	
Vehicle Extension (s)	1.5	1.0	1.0	0.5	0.5	
Lane Grp Cap (vph)	47	577	605	2808	1694	
v/s Ratio Prot	0.01	c0.30	0.17	0.33	c0.44	
v/s Ratio Perm		0.06	0.29			
v/c Ratio	0.43	0.91	0.52	0.38	0.84	
Uniform Delay, d1	61.7	39.5	25.3	1.2	26.4	
Progression Factor	1.00	1.00	1.34	2.52	1.00	
Incremental Delay, d2	2.2	18.5	0.2	0.3	5.2	
Delay (s)	64.0	58.0	34.0	3.4	31.5	
Level of Service	E	E	C	A	C	
Approach Delay (s)	58.2			10.4	31.5	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 3: Wallace Road NW & Orchard Heights Rd NW

2036 Traffic Conditions with Rezone
 Weekday AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	493	288	970	1295	12
Future Volume (veh/h)	18	493	288	970	1295	12
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1573	1723	1709	1682	1723	1204
Adj Flow Rate, veh/h	20	536	313	1054	1408	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	2	3	5	2	40
Cap, veh/h	324	496	329	2247	1810	17
Arrive On Green	0.22	0.22	0.25	1.00	0.54	0.54
Sat Flow, veh/h	1498	1460	1628	3279	3409	31
Grp Volume(v), veh/h	20	536	313	1054	693	728
Grp Sat Flow(s),veh/h/ln	1498	1460	1628	1598	1637	1717
Q Serve(g_s), s	1.4	28.1	14.0	0.0	43.5	43.6
Cycle Q Clear(g_c), s	1.4	28.1	14.0	0.0	43.5	43.6
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	324	496	329	2247	891	935
V/C Ratio(X)	0.06	1.08	0.95	0.47	0.78	0.78
Avail Cap(c_a), veh/h	324	496	487	2247	891	935
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.57	0.57	1.00	1.00
Uniform Delay (d), s/veh	40.5	42.9	25.3	0.0	23.4	23.4
Incr Delay (d2), s/veh	0.0	63.5	12.9	0.4	6.6	6.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	24.5	9.5	0.1	18.0	18.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.5	106.4	38.3	0.4	30.0	29.8
LnGrp LOS	D	F	D	A	C	C
Approach Vol, veh/h	556			1367	1421	
Approach Delay, s/veh	104.1			9.1	29.9	
Approach LOS	F			A	C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.6	76.8			97.4	32.6
Change Period (Y+Rc), s	4.5	6.0			6.0	4.5
Max Green Setting (Gmax), s	28.7	58.2			91.4	28.1
Max Q Clear Time (g_c+I1), s	16.0	45.6			2.0	30.1
Green Ext Time (p_c), s	0.1	2.2			2.3	0.0
Intersection Summary						
HCM 6th Ctrl Delay			33.7			
HCM 6th LOS			C			

Queues
3: Wallace Road NW & Orchard Heights Rd NW

2036 Traffic Conditions with Rezone
Weekday PM Peak Hour



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	23	430	508	1858	1626
v/c Ratio	0.32	0.70	0.76	0.62	1.02
Control Delay	70.8	36.7	36.5	7.4	61.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	70.8	36.7	36.5	7.4	61.8
Queue Length 50th (ft)	19	287	401	315	~771
Queue Length 95th (ft)	49	370	m363	m286	#1004
Internal Link Dist (ft)	1063			1080	560
Turn Bay Length (ft)	125		115		
Base Capacity (vph)	317	612	667	3021	1588
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.07	0.70	0.76	0.62	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis
 3: Wallace Road NW & Orchard Heights Rd NW

2036 Traffic Conditions with Rezone
 Weekday PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	21	396	467	1709	1476	20
Future Volume (vph)	21	396	467	1709	1476	20
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1471	1430	1646	3292	3220	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1471	1430	104	3292	3220	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	430	508	1858	1604	22
RTOR Reduction (vph)	0	4	0	0	1	0
Lane Group Flow (vph)	23	426	508	1858	1625	0
Confl. Peds. (#/hr)	3					
Heavy Vehicles (%)	13%	4%	1%	1%	3%	7%
Turn Type	Prot	pm+ov	pm+pt	NA	NA	
Protected Phases	8	1	1	6	2	
Permitted Phases		8	6			
Actuated Green, G (s)	4.4	52.7	115.1	115.1	62.3	
Effective Green, g (s)	4.4	52.7	115.1	115.1	62.3	
Actuated g/C Ratio	0.03	0.41	0.89	0.89	0.48	
Clearance Time (s)	4.5	4.5	4.5	6.0	6.0	
Vehicle Extension (s)	1.5	1.0	1.0	0.5	0.5	
Lane Grp Cap (vph)	49	629	664	2914	1543	
v/s Ratio Prot	0.02	c0.25	c0.28	0.56	c0.50	
v/s Ratio Perm		0.05	0.39			
v/c Ratio	0.47	0.68	0.77	0.64	1.05	
Uniform Delay, d1	61.7	31.7	31.7	2.0	33.9	
Progression Factor	1.00	1.00	1.21	3.55	1.00	
Incremental Delay, d2	2.6	2.3	0.4	0.1	38.4	
Delay (s)	64.2	34.0	38.6	7.1	72.3	
Level of Service	E	C	D	A	E	
Approach Delay (s)	35.5			13.8	72.3	
Approach LOS	D			B	E	

Intersection Summary

HCM 2000 Control Delay	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Signalized Intersection Summary
 3: Wallace Road NW & Orchard Heights Rd NW

2036 Traffic Conditions with Rezone
 Weekday PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	21	396	467	1709	1476	20
Future Volume (veh/h)	21	396	467	1709	1476	20
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1573	1695	1736	1736	1709	1654
Adj Flow Rate, veh/h	23	430	508	1858	1604	22
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	13	4	1	1	3	7
Cap, veh/h	324	659	456	2319	1398	19
Arrive On Green	0.22	0.22	0.48	1.00	0.43	0.43
Sat Flow, veh/h	1498	1437	1654	3386	3365	45
Grp Volume(v), veh/h	23	430	508	1858	793	833
Grp Sat Flow(s),veh/h/ln	1498	1437	1654	1650	1624	1701
Q Serve(g_s), s	1.6	28.1	31.5	0.0	55.4	55.4
Cycle Q Clear(g_c), s	1.6	28.1	31.5	0.0	55.4	55.4
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	324	659	456	2319	692	725
V/C Ratio(X)	0.07	0.65	1.11	0.80	1.15	1.15
Avail Cap(c_a), veh/h	324	659	456	2319	692	725
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	0.09	0.09	1.00	1.00
Uniform Delay (d), s/veh	40.6	27.2	26.6	0.0	37.3	37.3
Incr Delay (d2), s/veh	0.0	1.8	54.5	0.3	82.2	82.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	10.6	15.3	0.1	37.3	39.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.6	29.0	81.1	0.3	119.5	119.8
LnGrp LOS	D	C	F	A	F	F
Approach Vol, veh/h	453			2366	1626	
Approach Delay, s/veh	29.6			17.6	119.7	
Approach LOS	C			B	F	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	36.0	61.4			97.4	32.6
Change Period (Y+Rc), s	4.5	6.0			6.0	4.5
Max Green Setting (Gmax), s	31.5	55.4			91.4	28.1
Max Q Clear Time (g_c+I1), s	33.5	57.4			2.0	30.1
Green Ext Time (p_c), s	0.0	0.0			5.2	0.0
Intersection Summary						
HCM 6th Ctrl Delay			56.2			
HCM 6th LOS			E			

Project Name: Doaks Ferry (Titan Hill) Rezone
 Project Number: 1603
 Analysis Period: Future Horizon Year 2036
 Scenario: Without Rezone Scenario

Intersection	Wallace at Glen (AM)												Notes
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate			129	619	182			169				1729	HCM2000 Used for RTOR on EBR
Saturated Flow Rate			1750	2544	3057			3183				3327	HCM6th
		0	0.073714	0.243318	0.059535	0	0	0.053095	0	0	0	0.519687	
Cycle Length	130												
Lost Time	20												v/c Ratio= 1.121958
Intersection	Wallace at Glen (PM)												Critical Movements
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate			148	304	304			462				1678	HCM2000 Used for RTOR on EBR
Saturated Flow Rate			1750	2516	3082			3183				3261	HCM6th
		0	0.084571	0.120827	0.098637	0	0	0.145146	0	0	0	0.514566	0 I see higher crit combination with EBTR and WBL than with EBL and WBTR
Cycle Length	130												
Lost Time	20												v/c Ratio= 1.138974
Intersection	Wallace at Orchard Hts (AM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	20			503				309				1408	Only shows 10 EB RTOR, seems very low for a dedicated lane; likely closer to 100 (3 per cycle)
Saturated Flow Rate	1498			1460				1628				3409	HCM2000 implies one RTOR for every three cycles
	excluded			0.344521	0	0	0	0.189803	0	0	0	0.413024	
Cycle Length	130												
Lost Time	15												v/c Ratio= 1.070916
Intersection	Wallace at Orchard Hts (PM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	23			420				502				1604	Only shows 4 EB RTOR, this is unrealistic for a dedicated lane.
Saturated Flow Rate	1498			1437				1654				3365	
	excluded			0.292276	0	0	0	0.303507	0	0	0	0.476672	
Cycle Length	130												
Lost Time	15												v/c Ratio= 1.212339

Project Name: Doaks Ferry (Titan Hill) Rezone
 Project Number: 1603
 Analysis Period: Future Horizon Year 2036
 Scenario: With Rezone Scenario

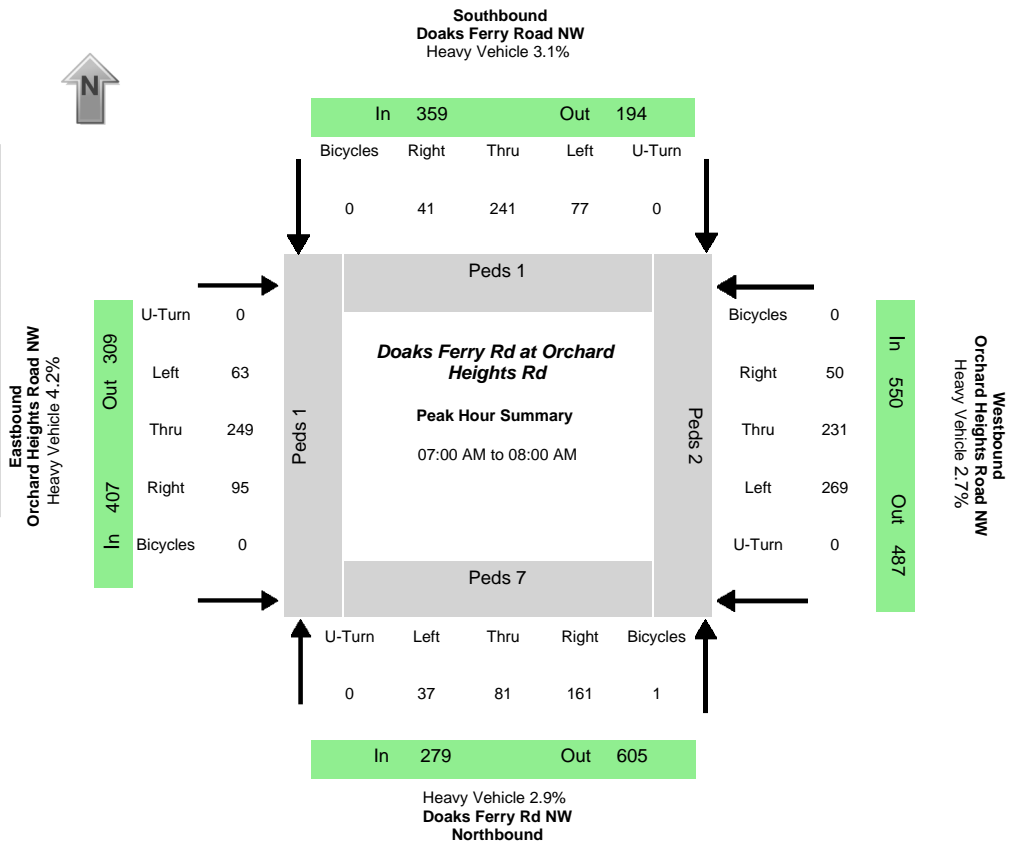
Intersection	Wallace at Glen (AM)												Notes
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate			129	639	182			172				1772	HCM2000 Used for RTOR on EBR
Saturated Flow Rate			1750	2544	3057			3183				3328	HCM6th
		0	0.073714	0.251179	0.059535	0	0	0.054037	0	0	0	0.532452	
Cycle Length	130												
Lost Time	20												v/c Ratio= 1.147449
Intersection	Wallace at Glen (PM)												Critical Movements
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate			148	310	304			471				1709	HCM2000 Used for RTOR on EBR
Saturated Flow Rate			1750	2516	3082			3183				3262	HCM6th
		0	0.084571	0.123211	0.098637	0	0	0.147974	0	0	0	0.523912	0 I see higher crit combination with EBTR and WBL than with EBL and WBTR
Cycle Length	130												
Lost Time	20												v/c Ratio= 1.156179
Intersection	Wallace at Orchard Hts (AM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	20			548				321				1408	Only shows 10 EB RTOR, seems very low for a dedicated lane; likely closer to 100 (3 per cycle)
Saturated Flow Rate	1498			1460				1628				3409	HCM2000 implies one RTOR for every three cycles
	excluded			0.375342	0	0	0	0.197174	0	0	0	0.413024	
Cycle Length	130												
Lost Time	15												v/c Ratio= 1.11409
Intersection	Wallace at Orchard Hts (PM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	23			437				524				1604	Only shows 4 EB RTOR, this is unrealistic for a dedicated lane.
Saturated Flow Rate	1498			1437				1654				3365	
	excluded			0.304106	0	0	0	0.316808	0	0	0	0.476672	
Cycle Length	130												
Lost Time	15												v/c Ratio= 1.240748

Project Name: Doaks Ferry (Titan Hill) Rezone
 Project Number: 1603
 Analysis Period: Future Horizon Year 2036
 Scenario: With Rezone and Trip Cap

Intersection	Wallace at Glen (AM)												Notes
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate			129	630	182			171				1752	HCM2000 Used for RTOR on EBR
Saturated Flow Rate			1750	2544	3057			3183				3327	HCM6th
		0	0.073714	0.247642	0.059535	0	0	0.053723	0	0	0	0.526601	
Cycle Length		130											
Lost Time		20											v/c Ratio= 1.135981
Intersection	Wallace at Glen (PM)												Critical Movements
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate			148	306	304			464				1709	HCM2000 Used for RTOR on EBR
Saturated Flow Rate			1750	2516	3082			3183				3262	HCM6th
		0	0.084571	0.121622	0.098637	0	0	0.145774	0	0	0	0.523912	0 I see higher crit combination with EBTR and WBL than with EBL and WBTR
Cycle Length		130											
Lost Time		20											v/c Ratio= 1.151701
Intersection	Wallace at Orchard Hts (AM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	20			526				313				1408	Only shows 10 EB RTOR, seems very low for a dedicated lane; likely closer to 100 (3 per cycle)
Saturated Flow Rate	1498			1460				1628				3409	HCM2000 implies one RTOR for every three cycles
	excluded			0.360274	0	0	0	0.19226	0	0	0	0.413024	
Cycle Length		130											
Lost Time		15											v/c Ratio= 1.091501
Intersection	Wallace at Orchard Hts (PM)												
	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Adjust Flow Rate	23			426				508				1604	Only shows 4 EB RTOR, this is unrealistic for a dedicated lane.
Saturated Flow Rate	1498			1437				1654				3365	
	excluded			0.296451	0	0	0	0.307134	0	0	0	0.476672	
Cycle Length		130											
Lost Time		15											v/c Ratio= 1.22116

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW		
E/W street	Orchard Heights Road NW		
City, State	Salem OR		
Site Notes			
Location	44.960438 - -123.079714		
Start Date	Wednesday, January 22, 2020		
Start Time	06:00:00 AM		
Weather			
Study ID #			
Peak Hour Start	07:00:00 AM		
Peak 15 Min Start	07:20:00 AM		
PHF (15-Min Int)	0.77		



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
37	81	161	0	77	241	41	0	63	249	95	0	269	231	50	0	279	359	407	550	605	194	309	487
Percent Heavy Vehicles																							
2.7%	1.2%	3.7%	0.0%	3.9%	1.2%	12.2%	0.0%	6.3%	3.6%	4.2%	0.0%	2.2%	3.5%	2.0%	0.0%	2.9%	3.1%	4.2%	2.7%	2.1%	3.1%	4.5%	3.7%

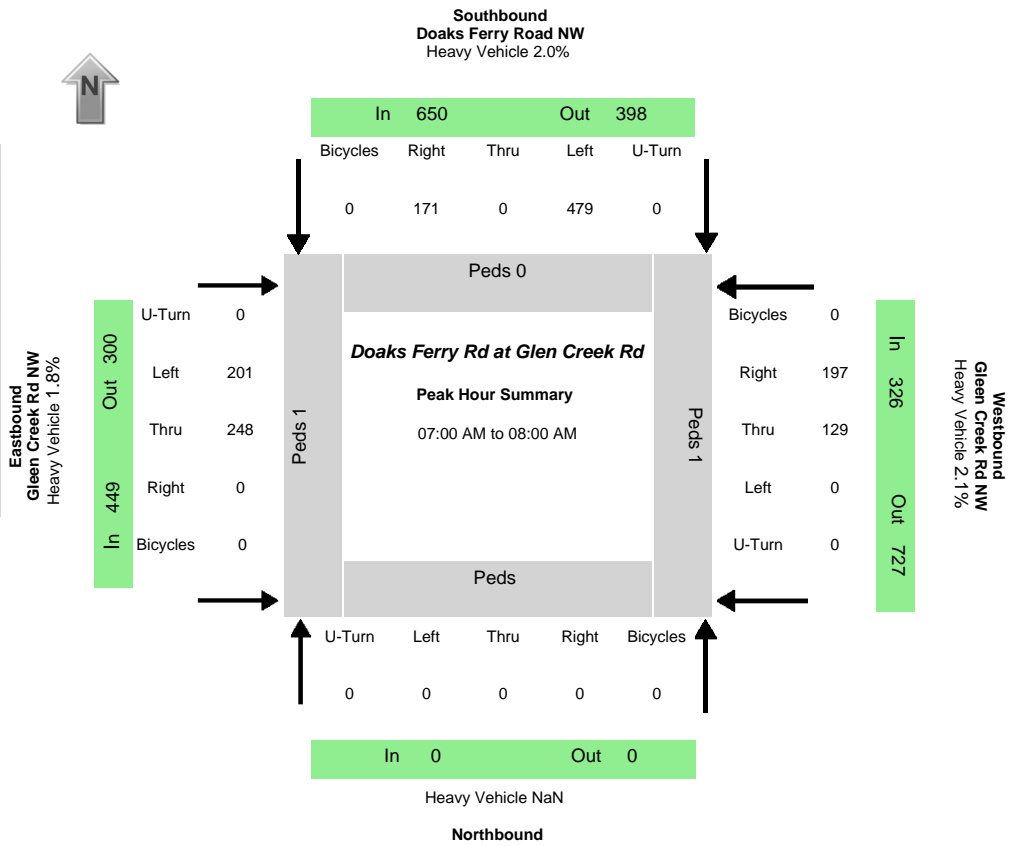
PHV- Bicycles														PHV- Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	1	1	2	11

Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Road NW				Eastbound Orchard Heights Road NW				Westbound Orchard Heights Road NW				15 Min Sum	1 HR Sum	
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn			
06:00:00 AM	0	2	0	0	0	3	1	0	0	0	2	0	0	2	3	0	0		
06:05:00 AM	0	2	1	0	0	1	0	0	0	0	3	0	0	7	1	0	0		
06:10:00 AM	0	2	2	0	0	3	0	0	0	0	7	1	0	4	1	0	0	48	
06:15:00 AM	0	0	1	0	0	4	0	0	0	0	4	0	0	2	0	0	0	46	
06:20:00 AM	0	2	4	0	0	0	0	0	0	0	3	0	0	1	2	1	0	44	
06:25:00 AM	0	2	4	0	0	1	1	0	0	1	6	0	0	2	2	0	0	43	
06:30:00 AM	0	4	5	0	2	3	0	0	0	1	6	1	0	6	3	0	0	63	
06:35:00 AM	0	5	2	0	0	1	0	0	0	3	10	0	0	6	1	2	0	80	
06:40:00 AM	0	5	4	0	2	6	3	0	0	1	7	2	0	2	6	2	0	101	
06:45:00 AM	0	4	1	0	0	8	2	0	0	3	14	1	0	8	2	1	0	114	
06:50:00 AM	2	3	4	0	1	6	3	0	0	2	8	4	0	8	6	1	0	132	
06:55:00 AM	1	4	5	0	0	8	5	0	0	4	15	1	0	6	10	3	0	154	346
07:00:00 AM	3	5	4	0	2	13	4	0	0	7	19	3	0	15	15	2	0	202	425
07:05:00 AM	2	11	5	0	3	19	5	0	0	2	25	12	0	22	18	0	0	278	534
07:10:00 AM	3	3	8	0	5	19	7	0	0	4	25	16	0	24	47	1	0	378	676
07:15:00 AM	3	4	9	0	1	29	5	0	0	7	19	13	0	33	35	2	0	446	825
07:20:00 AM	16	11	14	0	5	20	9	0	0	10	25	12	0	24	22	1	0	491	981
07:25:00 AM	8	8	19	0	8	24	3	0	0	8	39	10	0	25	29	4	0	514	1147
07:30:00 AM	1	8	18	0	10	21	5	0	0	7	41	12	0	20	14	4	0	515	1277
07:35:00 AM	0	6	22	0	12	19	1	0	0	8	23	6	0	28	13	12	0	496	1397
07:40:00 AM	0	5	24	0	14	22	1	0	0	2	14	5	0	24	17	6	0	445	1491
07:45:00 AM	0	10	14	0	7	25	0	0	0	1	9	1	0	24	6	13	0	394	1557
07:50:00 AM	0	3	11	0	7	13	1	0	0	6	8	4	0	18	9	4	0	328	1593
07:55:00 AM	1	7	13	0	3	17	0	0	0	1	2	1	0	12	6	1	0	258	1595

08:00:00 AM	1	7	4	0	1	17	2	0	2	7	1	0	5	4	0	0	199	1554
08:05:00 AM	0	9	3	0	2	12	0	0	0	7	2	0	7	5	1	0	163	1478
08:10:00 AM	0	3	1	0	1	12	1	0	0	8	3	0	4	5	2	0	139	1356
08:15:00 AM	1	4	1	0	3	10	1	0	2	6	2	0	2	5	1	0	126	1234
08:20:00 AM	0	6	4	0	4	4	1	0	0	10	1	0	0	3	0	0	111	1098
08:25:00 AM	0	3	6	0	1	7	1	0	1	4	2	0	2	6	1	0	105	947
08:30:00 AM	1	3	7	0	2	9	1	0	0	10	3	0	2	6	2	0	113	832
08:35:00 AM	0	4	6	0	2	9	0	0	0	11	2	0	5	4	1	0	124	726
08:40:00 AM	1	5	8	0	4	8	0	0	2	8	1	0	7	7	3	0	144	646
08:45:00 AM	0	2	6	0	0	4	1	0	3	10	3	0	9	5	5	0	146	584
08:50:00 AM	0	3	10	0	2	15	1	0	2	7	0	0	10	7	2	0	161	559
08:55:00 AM	0	10	15	0	0	3	4	0	2	11	2	0	11	4	1	0	170	558

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Road NW
E/W street	Gleen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.952083 - -123.084318
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:00:00 AM
Peak 15 Min Start	07:15:00 AM
PHF (15-Min Int)	0.80



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	479	0	171	0	201	248	0	0	0	129	197	0	0	650	449	326	0	398	300	727
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	2.3%	0.0%	2.0%	1.6%	0.0%	0.0%	0.0%	3.9%	1.0%	0.0%	NaN	2.0%	1.8%	2.1%	NaN	1.5%	3.0%	1.8%

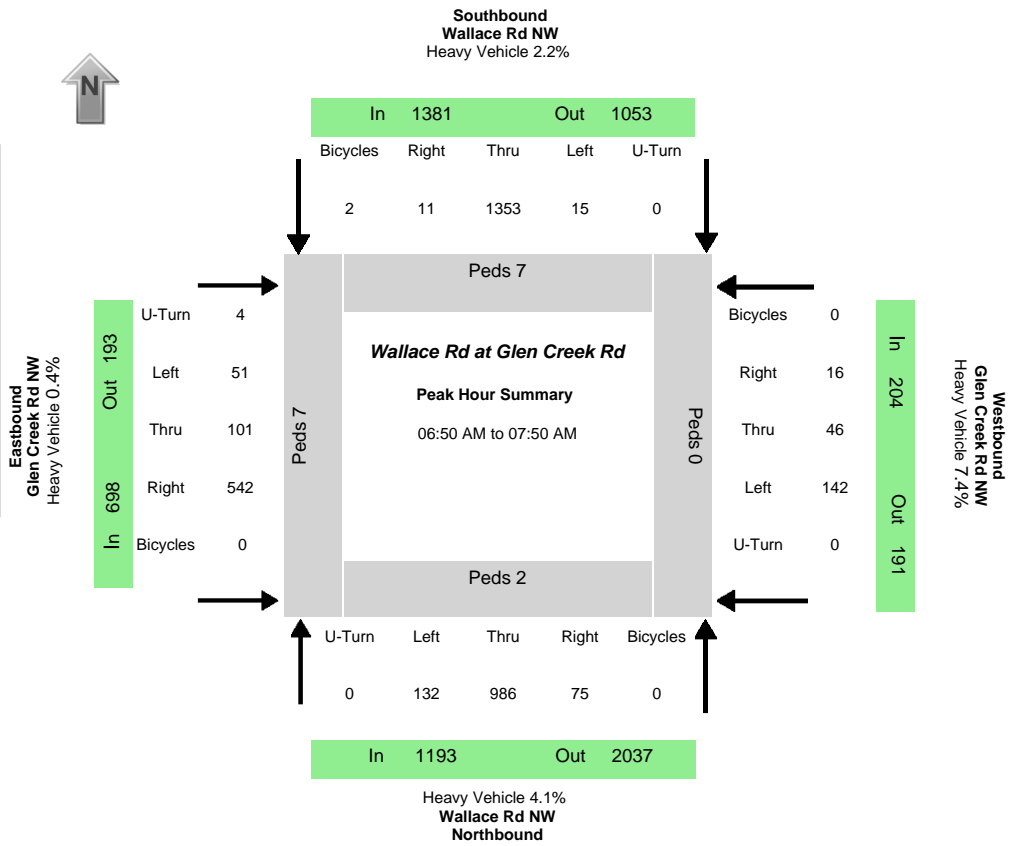
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	2

Time	Northbound				Southbound				Eastbound				Westbound				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM					2		4	0	4	7		0		2	1	0		
06:05:00 AM					2		8	0	2	3		0		9	2	0		
06:10:00 AM					2		7	0	2	5		0		3	3	0	68	
06:15:00 AM					3		6	0	2	11		0		4	1	0	75	
06:20:00 AM					5		2	0	3	9		0		1	1	0	70	
06:25:00 AM					3		3	0	5	12		0		3	3	0	77	
06:30:00 AM					7		4	0	5	18		0		1	7	0	92	
06:35:00 AM					11		3	0	9	20		0		11	2	0	127	
06:40:00 AM					9		7	0	4	19		0		2	3	0	142	
06:45:00 AM					9		7	0	4	12		0		5	7	0	144	
06:50:00 AM					13		9	0	8	29		0		5	14	0	166	
06:55:00 AM					13		6	0	16	14		0		13	8	0	192	479
07:00:00 AM					26		11	0	18	12		0		11	23	0	249	560
07:05:00 AM					30		13	0	16	11		0		20	29	0	290	653
07:10:00 AM					48		14	0	16	13		0		21	20	0	352	763
07:15:00 AM					50		20	0	19	14		0		18	35	0	407	892
07:20:00 AM					46		10	0	25	24		0		13	26	0	432	1015
07:25:00 AM					49		18	0	15	34		0		12	18	0	446	1132
07:30:00 AM					61		15	0	17	35		0		5	8	0	431	1231
07:35:00 AM					45		18	0	16	25		0		5	14	0	410	1298
07:40:00 AM					47		12	0	22	21		0		2	3	0	371	1361
07:45:00 AM					37		18	0	22	16		0		5	7	0	325	1412
07:50:00 AM					16		13	0	15	22		0		13	8	0	289	1421
07:55:00 AM					24		9	0	10	21		0		4	6	0	256	1425

08:00:00 AM		12	10	0	5	13	0	10	3	0	214	1377
08:05:00 AM		11	10	0	6	22	0	5	5	0	186	1317
08:10:00 AM		15	9	0	4	15	0	6	9	0	170	1243
08:15:00 AM		8	10	0	7	18	0	6	7	0	173	1143
08:20:00 AM		5	5	0	8	15	0	6	7	0	160	1045
08:25:00 AM		8	7	0	15	11	0	5	7	0	155	952
08:30:00 AM		19	9	0	24	18	0	5	16	0	190	902
08:35:00 AM		18	13	0	17	12	0	8	13	0	225	860
08:40:00 AM		31	12	0	11	16	0	5	8	0	255	836
08:45:00 AM		20	15	0	10	18	0	4	4	0	235	812
08:50:00 AM		12	12	0	23	20	0	5	11	0	237	808
08:55:00 AM		12	9	0	10	9	0	15	8	0	217	797

Data Provided by K-D-N.com 503-594-4224

N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.950175 - -123.051659
Start Date	Wednesday, January 22, 2020
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	06:50:00 AM
Peak 15 Min Start	07:05:00 AM
PHF (15-Min Int)	0.93



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
132	986	75	0	15	1353	11	0	51	101	542	4	142	46	16	0	1193	1379	698	204	2037	1053	193	191
Percent Heavy Vehicles																							
2.3%	4.6%	1.3%	0.0%	6.7%	1.9%	27.3%	0.0%	0.0%	0.0%	0.6%	0.0%	7.0%	6.5%	12.5%	0.0%	4.1%	2.2%	0.4%	7.4%	1.9%	4.5%	4.7%	1.0%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	2	7	7	0	16

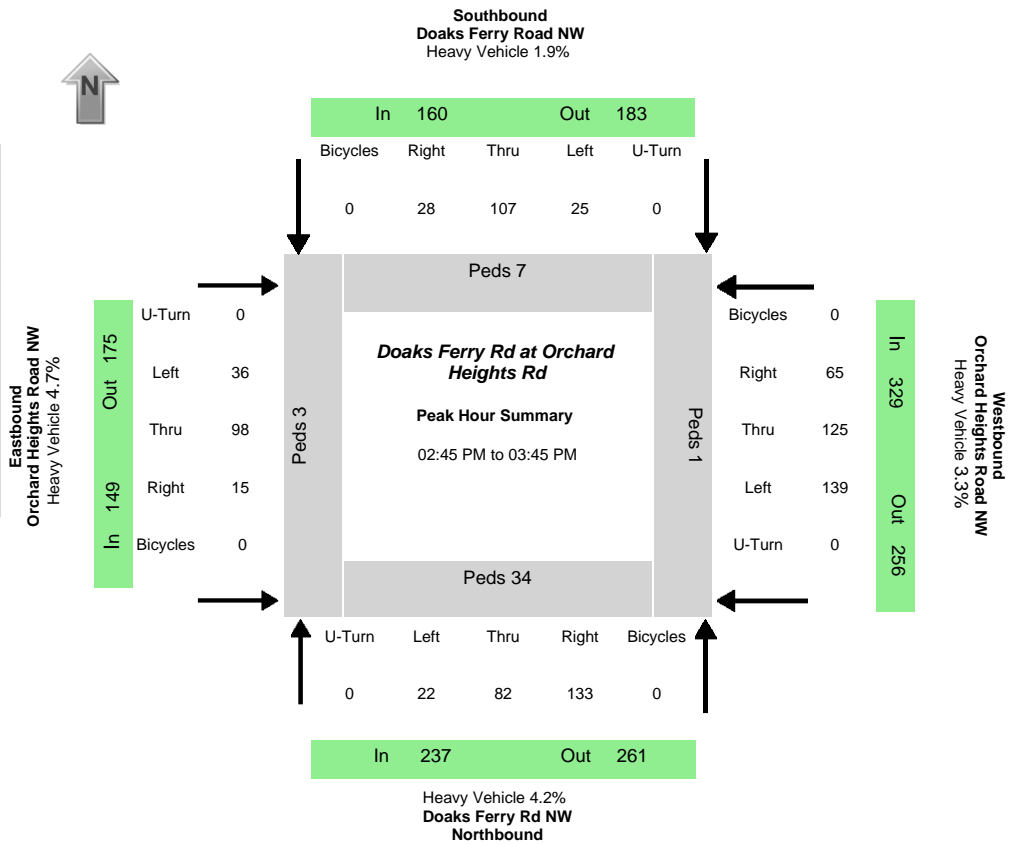
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	3	35	2	0	1	43	0	0	4	4	13	0	4	5	3	0		
06:05:00 AM	4	22	2	0	2	45	0	0	4	3	12	0	5	4	3	0		
06:10:00 AM	7	39	2	0	0	66	0	0	2	2	12	0	17	7	5	0	382	
06:15:00 AM	1	48	2	0	1	75	0	0	1	0	23	0	8	2	3	0	429	
06:20:00 AM	2	46	3	0	1	73	1	0	3	2	26	0	7	0	1	0	488	
06:25:00 AM	2	58	6	0	1	94	0	0	0	3	27	0	7	2	2	0	531	
06:30:00 AM	1	56	2	0	1	74	0	0	3	7	29	1	9	4	0	0	554	
06:35:00 AM	5	66	1	0	1	111	1	0	3	3	26	0	6	4	1	0	617	
06:40:00 AM	7	78	5	0	0	119	0	0	5	4	47	0	8	0	0	0	688	
06:45:00 AM	8	69	5	0	0	107	1	0	2	4	29	0	15	9	3	0	753	
06:50:00 AM	9	93	2	0	1	128	4	0	3	4	28	0	15	4	4	0	820	
06:55:00 AM	7	71	3	0	1	124	3	0	2	7	40	0	8	4	2	0	819	2420
07:00:00 AM	22	105	4	0	0	88	2	0	6	8	43	0	10	5	1	0	861	2597
07:05:00 AM	15	111	2	0	4	147	1	0	3	4	36	1	7	3	4	0	904	2829
07:10:00 AM	10	73	3	0	0	126	1	0	2	5	47	0	11	1	1	0	912	2950
07:15:00 AM	13	86	3	0	1	104	0	0	2	7	75	3	15	4	0	0	931	3099
07:20:00 AM	12	87	9	0	2	101	0	0	3	6	55	0	15	5	1	0	889	3230
07:25:00 AM	8	74	6	0	0	119	0	0	2	6	45	0	7	0	0	0	876	3295
07:30:00 AM	17	72	7	0	1	101	0	0	9	9	45	0	13	7	0	0	844	3389
07:35:00 AM	3	90	15	0	3	93	0	0	7	15	41	0	18	4	2	0	839	3452
07:40:00 AM	5	64	9	0	0	124	0	0	9	11	36	0	15	4	1	0	850	3457
07:45:00 AM	11	60	12	0	2	98	0	0	3	19	51	0	8	5	0	0	838	3474
07:50:00 AM	7	79	13	0	0	72	0	0	6	15	30	0	14	5	1	0	789	3421
07:55:00 AM	7	53	8	0	2	92	0	0	7	10	31	0	14	6	4	0	745	3383

08:00:00 AM	7	43	9	1	1	140	1	0	6	11	35	0	10	3	1	0	744	3357
08:05:00 AM	6	71	7	0	3	83	1	0	6	13	42	0	12	8	3	0	757	3274
08:10:00 AM	8	47	12	0	3	119	0	0	1	11	18	0	10	8	1	0	761	3232
08:15:00 AM	7	50	9	0	3	118	1	0	3	6	31	0	11	3	2	0	737	3163
08:20:00 AM	20	68	10	0	2	76	0	0	8	12	40	0	7	4	0	0	729	3114
08:25:00 AM	10	64	4	0	2	89	1	0	2	9	23	0	10	8	7	1	721	3077
08:30:00 AM	15	58	12	0	1	72	1	0	3	4	33	0	12	6	1	0	695	3014
08:35:00 AM	5	48	9	0	1	105	0	0	4	7	31	0	8	0	6	0	672	2947
08:40:00 AM	5	77	10	0	6	107	6	0	5	9	29	0	13	5	2	0	716	2943
08:45:00 AM	11	62	11	0	5	79	1	0	8	10	48	0	19	7	3	0	762	2938
08:50:00 AM	15	55	15	0	6	95	0	0	4	10	30	1	12	4	0	0	785	2943
08:55:00 AM	18	76	13	0	2	113	4	0	4	12	21	0	17	11	4	0	806	3004

08:00:00 AM	13	48	0	99	3	0	0	22	0	494	2289
08:05:00 AM	10	44	0	107	3	0	1	25	0	525	2233
08:10:00 AM	19	35	0	92	0	0	2	27	0	550	2179
08:15:00 AM	9	48	0	65	0	0	1	26	0	514	2117
08:20:00 AM	17	52	0	72	0	0	0	26	0	491	2082
08:25:00 AM	19	53	0	70	1	0	0	23	0	482	2048
08:30:00 AM	21	48	0	69	0	0	1	27	0	499	2028
08:35:00 AM	9	40	0	70	0	0	2	35	0	488	1992
08:40:00 AM	23	42	0	80	1	0	0	31	0	499	2002
08:45:00 AM	18	58	0	66	1	0	2	45	0	523	2030
08:50:00 AM	15	45	0	91	1	0	1	31	0	551	2055
08:55:00 AM	34	40	0	72	4	0	1	28	0	553	2084

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW		
E/W street	Orchard Heights Road NW		
City, State	Salem OR		
Site Notes			
Location	44.960438 - -123.079714		
Start Date	Wednesday, January 22, 2020		
Start Time	02:00:00 PM		
Weather			
Study ID #			
Peak Hour Start	02:45:00 PM		
Peak 15 Min Start	02:45:00 PM		
PHF (15-Min Int)	0.85		



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
22	82	133	0	25	107	28	0	36	98	15	0	139	125	65	0	237	160	149	329	261	183	175	256
Percent Heavy Vehicles																							
4.5%	4.9%	3.8%	0.0%	4.0%	0.9%	3.6%	0.0%	2.8%	5.1%	6.7%	0.0%	2.9%	4.0%	3.1%	0.0%	4.2%	1.9%	4.7%	3.3%	2.3%	3.8%	4.0%	4.3%

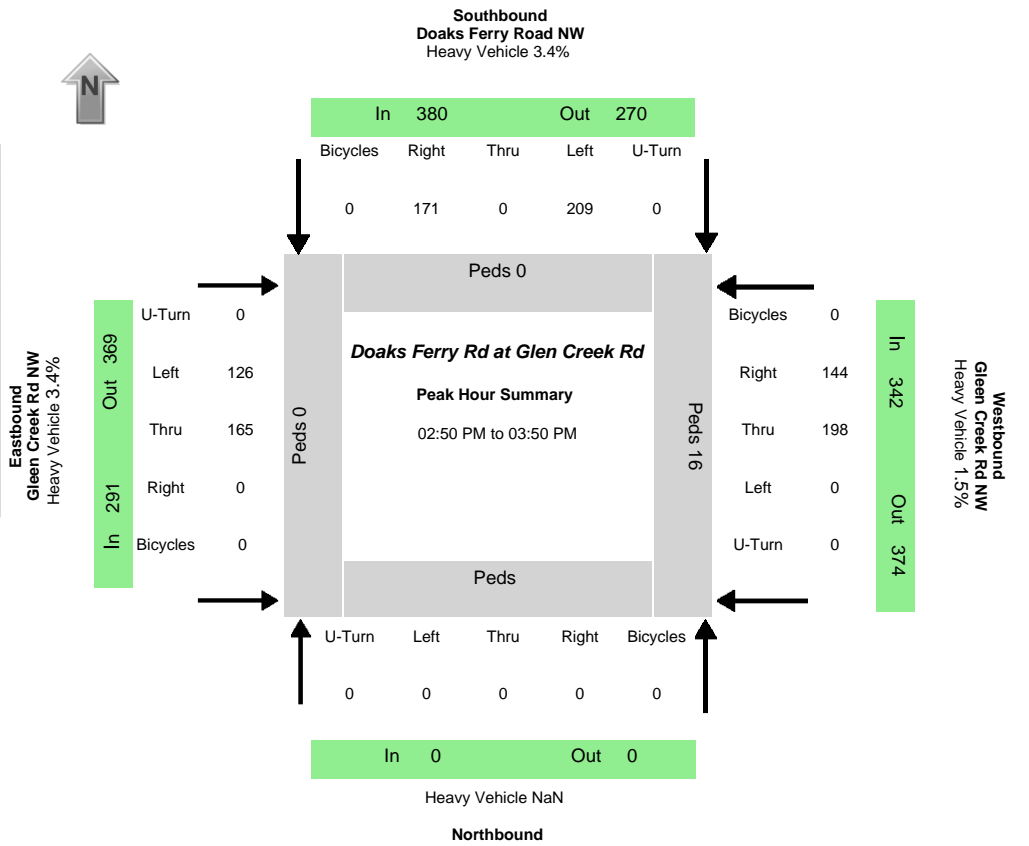
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	7	3	1	45

Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Road NW				Eastbound Orchard Heights Road NW				Westbound Orchard Heights Road NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	2	3	2	0	0	9	0	0	2	11	2	0	3	8	2	0		
02:05:00 PM	0	9	8	0	0	3	2	0	0	10	0	0	4	4	2	0		
02:10:00 PM	1	6	4	0	2	2	0	0	0	8	0	0	2	11	1	0	123	
02:15:00 PM	1	4	4	0	4	5	0	0	2	3	2	0	3	7	0	0	114	
02:20:00 PM	1	4	6	0	2	6	3	0	0	5	1	0	5	4	0	0	109	
02:25:00 PM	2	4	4	0	0	4	3	0	2	11	1	0	2	13	0	0	118	
02:30:00 PM	0	5	14	0	9	6	0	0	3	11	1	0	2	4	2	0	140	
02:35:00 PM	1	7	11	0	7	2	2	0	3	4	1	0	2	6	2	0	151	
02:40:00 PM	0	3	9	0	7	7	2	0	0	8	0	0	10	9	7	0	167	
02:45:00 PM	1	11	11	0	3	13	2	0	4	7	1	0	22	11	13	0	209	
02:50:00 PM	2	10	11	0	1	8	1	0	2	10	2	0	23	12	14	0	257	
02:55:00 PM	1	6	8	0	2	8	3	0	2	11	0	0	7	9	6	0	258	666
03:00:00 PM	1	6	9	0	3	5	1	0	2	1	1	0	4	4	7	0	203	666
03:05:00 PM	3	9	16	0	3	7	0	0	5	8	0	0	4	7	3	0	172	689
03:10:00 PM	2	7	11	0	3	9	6	0	4	8	1	0	3	12	2	0	177	720
03:15:00 PM	3	3	10	0	2	8	0	0	3	11	2	0	16	10	6	0	207	759
03:20:00 PM	3	7	19	0	1	16	11	0	3	10	3	0	6	5	2	0	228	808
03:25:00 PM	1	8	14	0	2	10	0	0	1	7	1	0	4	14	2	0	224	826
03:30:00 PM	1	6	9	0	1	4	2	0	5	9	2	0	8	8	3	0	208	827
03:35:00 PM	2	2	10	0	2	7	1	0	5	10	1	0	13	12	4	0	191	848
03:40:00 PM	2	7	5	0	2	12	1	0	0	6	1	0	29	21	3	0	216	875
03:45:00 PM	0	5	7	0	7	8	1	0	1	4	1	0	28	13	5	0	238	856
03:50:00 PM	1	6	8	0	1	12	5	0	0	9	1	0	7	8	8	0	235	826
03:55:00 PM	3	5	4	0	2	11	2	0	3	6	1	0	7	7	2	0	199	816

04:00:00 PM	1	10	3	0	3	10	0	0	0	4	0	0	5	7	4	0	166	819
04:05:00 PM	1	9	4	0	3	14	3	0	3	3	0	0	13	6	4	0	163	817
04:10:00 PM	0	4	4	0	5	13	3	0	2	4	2	0	14	11	3	0	175	814
04:15:00 PM	3	6	6	0	0	9	1	0	1	8	1	0	4	11	4	0	182	794
04:20:00 PM	2	7	10	0	1	12	2	0	2	3	0	0	5	4	5	0	172	761
04:25:00 PM	1	11	10	0	6	13	4	0	5	8	0	0	5	14	3	0	187	777
04:30:00 PM	3	8	5	0	0	4	1	0	1	9	1	0	10	13	4	0	192	778
04:35:00 PM	2	9	15	0	1	15	2	0	4	11	0	0	10	4	3	0	215	785
04:40:00 PM	2	10	7	0	3	11	6	0	1	12	1	0	10	11	5	0	214	775
04:45:00 PM	2	11	8	0	3	10	3	0	1	5	1	0	5	6	0	0	210	750
04:50:00 PM	2	11	9	0	7	17	1	0	4	5	0	0	8	6	5	0	209	759
04:55:00 PM	0	7	10	0	2	15	0	0	0	8	1	0	8	5	2	0	188	764
05:00:00 PM	1	7	6	0	4	19	1	0	3	3	0	0	9	16	5	0	207	791
05:05:00 PM	0	11	8	0	2	4	1	0	3	9	1	0	9	7	6	0	193	789
05:10:00 PM	2	11	7	0	1	10	1	0	2	7	1	0	7	8	2	0	194	783
05:15:00 PM	2	6	6	0	1	13	2	0	3	6	2	0	3	11	2	0	177	786
05:20:00 PM	0	6	7	0	2	13	1	0	2	10	0	0	8	6	5	0	176	793
05:25:00 PM	1	11	14	0	2	7	1	0	1	5	3	0	8	8	0	0	178	774
05:30:00 PM	1	16	8	0	2	6	2	0	2	6	3	0	8	13	5	0	193	787
05:35:00 PM	1	8	6	0	1	9	0	0	1	5	2	0	4	12	1	0	183	761
05:40:00 PM	1	11	6	0	5	5	0	0	0	8	0	0	4	9	0	0	171	731
05:45:00 PM	0	7	10	0	2	9	2	0	3	1	0	0	1	8	2	0	144	721
05:50:00 PM	2	9	5	0	2	6	3	0	3	7	1	0	8	13	3	0	156	708
05:55:00 PM	1	12	1	0	2	10	5	0	0	7	1	0	5	9	0	0	160	703

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Road NW
E/W street	Gleen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.952083 - -123.084318
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	02:50:00 PM
Peak 15 Min Start	03:35:00 PM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	209	0	171	0	126	165	0	0	0	198	144	0	0	380	291	342	0	270	369	374
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	2.4%	0.0%	4.7%	0.0%	4.0%	3.0%	0.0%	0.0%	0.0%	0.5%	2.8%	0.0%	NaN	3.4%	3.4%	1.5%	NaN	3.3%	2.4%	2.7%

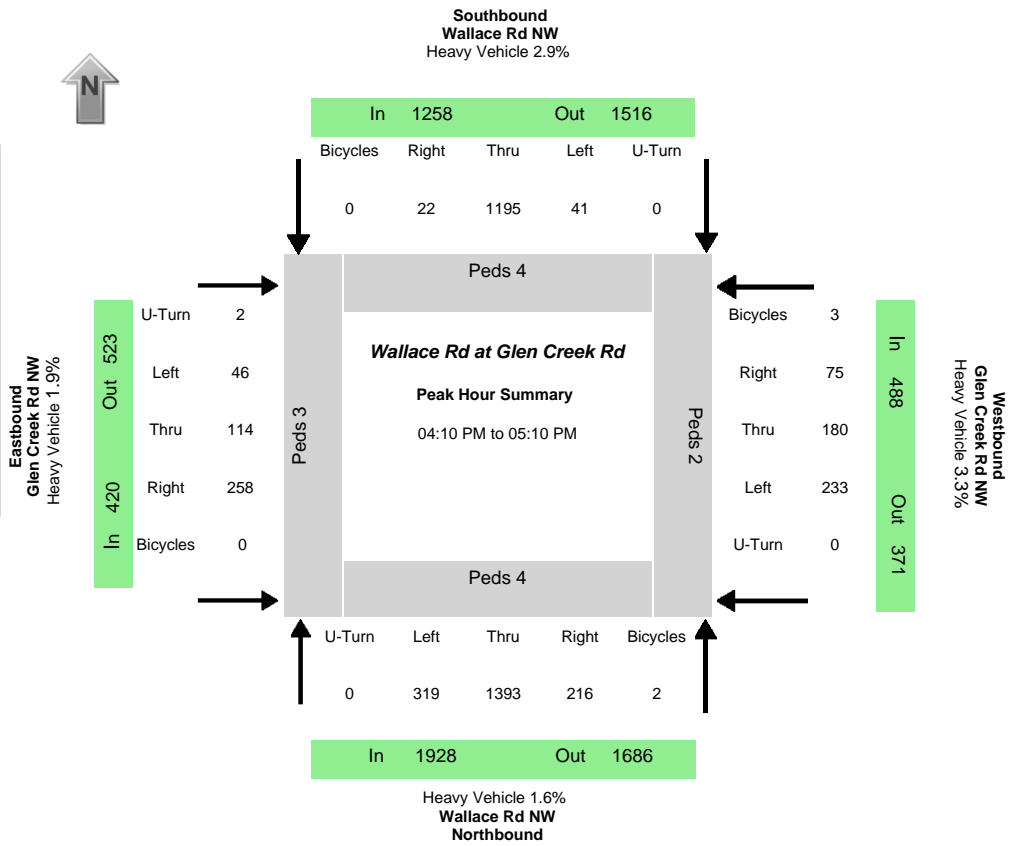
PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	16

Time	Northbound				Southbound				Eastbound				Westbound				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM					12		6	0	6	19		0	15	8		0		
02:05:00 PM					4		4	0	11	18		0	11	5		0		
02:10:00 PM					6		3	0	6	13		0	15	3		0	165	
02:15:00 PM					6		7	0	3	12		0	11	4		0	142	
02:20:00 PM					11		5	0	9	9		0	17	9		0	149	
02:25:00 PM					5		5	0	9	10		0	16	8		0	156	
02:30:00 PM					7		2	0	13	19		0	7	6		0	167	
02:35:00 PM					6		4	0	8	13		0	9	8		0	155	
02:40:00 PM					11		9	0	14	11		0	10	16		0	173	
02:45:00 PM					21		11	0	14	18		0	10	5		0	198	
02:50:00 PM					16		18	0	15	11		0	17	26		0	253	
02:55:00 PM					14		5	0	10	17		0	21	11		0	260	754
03:00:00 PM					13		8	0	14	19		0	22	17		0	274	781
03:05:00 PM					7		11	0	12	10		0	15	13		0	239	796
03:10:00 PM					17		13	0	9	13		0	13	9		0	235	824
03:15:00 PM					27		20	0	12	20		0	9	12		0	242	881
03:20:00 PM					17		13	0	17	11		0	16	3		0	251	898
03:25:00 PM					12		10	0	6	10		0	13	13		0	241	909
03:30:00 PM					13		10	0	8	17		0	20	12		0	221	935
03:35:00 PM					24		13	0	10	7		0	12	10		0	220	963
03:40:00 PM					24		25	0	7	13		0	23	8		0	256	992
03:45:00 PM					25		25	0	6	17		0	17	10		0	276	1013
03:50:00 PM					10		11	0	6	18		0	16	12		0	273	983
03:55:00 PM					9		10	0	8	16		0	16	9		0	241	973

04:00:00 PM	7	13	0	4	7	0	23	11	0	206	945
04:05:00 PM	22	14	0	9	18	0	9	5	0	210	954
04:10:00 PM	21	13	0	14	12	0	20	7	0	229	967
04:15:00 PM	11	9	0	8	12	0	18	11	0	233	936
04:20:00 PM	11	11	0	10	15	0	19	22	0	244	947
04:25:00 PM	16	6	0	10	12	0	29	14	0	244	970
04:30:00 PM	14	10	0	13	14	0	19	13	0	258	973
04:35:00 PM	19	9	0	14	9	0	16	14	0	251	978
04:40:00 PM	14	15	0	5	22	0	14	15	0	249	963
04:45:00 PM	9	11	0	22	16	0	21	12	0	257	954
04:50:00 PM	23	12	0	12	10	0	13	9	0	255	960
04:55:00 PM	18	11	0	14	19	0	15	8	0	255	977
05:00:00 PM	16	17	0	12	13	0	25	9	0	256	1004
05:05:00 PM	11	9	0	15	13	0	22	12	0	259	1009
05:10:00 PM	10	7	0	17	21	0	15	8	0	252	1000
05:15:00 PM	13	12	0	9	11	0	14	14	0	233	1004
05:20:00 PM	12	8	0	13	16	0	20	12	0	232	997
05:25:00 PM	14	9	0	18	11	0	15	10	0	231	987
05:30:00 PM	10	4	0	10	10	0	12	9	0	213	959
05:35:00 PM	14	8	0	12	16	0	13	14	0	209	955
05:40:00 PM	9	6	0	15	13	0	12	10	0	197	935
05:45:00 PM	6	9	0	13	12	0	20	17	0	219	921
05:50:00 PM	12	11	0	10	13	0	17	13	0	218	918
05:55:00 PM	13	7	0	13	15	0	18	7	0	226	906

Data Provided by K-D-N.com 503-594-4224

N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.950175 - -123.051659
Start Date	Wednesday, January 22, 2020
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:10:00 PM
Peak 15 Min Start	04:40:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
319	1393	216	0	41	1195	22	0	46	114	258	2	233	180	75	0	1928	1258	420	488	1686	1514	523	371
Percent Heavy Vehicles																							
1.6%	1.8%	0.5%	0.0%	4.9%	2.8%	0.0%	0.0%	2.2%	0.0%	2.7%	0.0%	5.6%	1.1%	1.3%	0.0%	1.6%	2.9%	1.9%	3.3%	3.2%	1.8%	1.3%	0.8%

PHV- Bicycles														PHV- Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	2	0	0	0	0	0	0	0	0	0	0	0	3	0	0	5	4	4	3	2	13

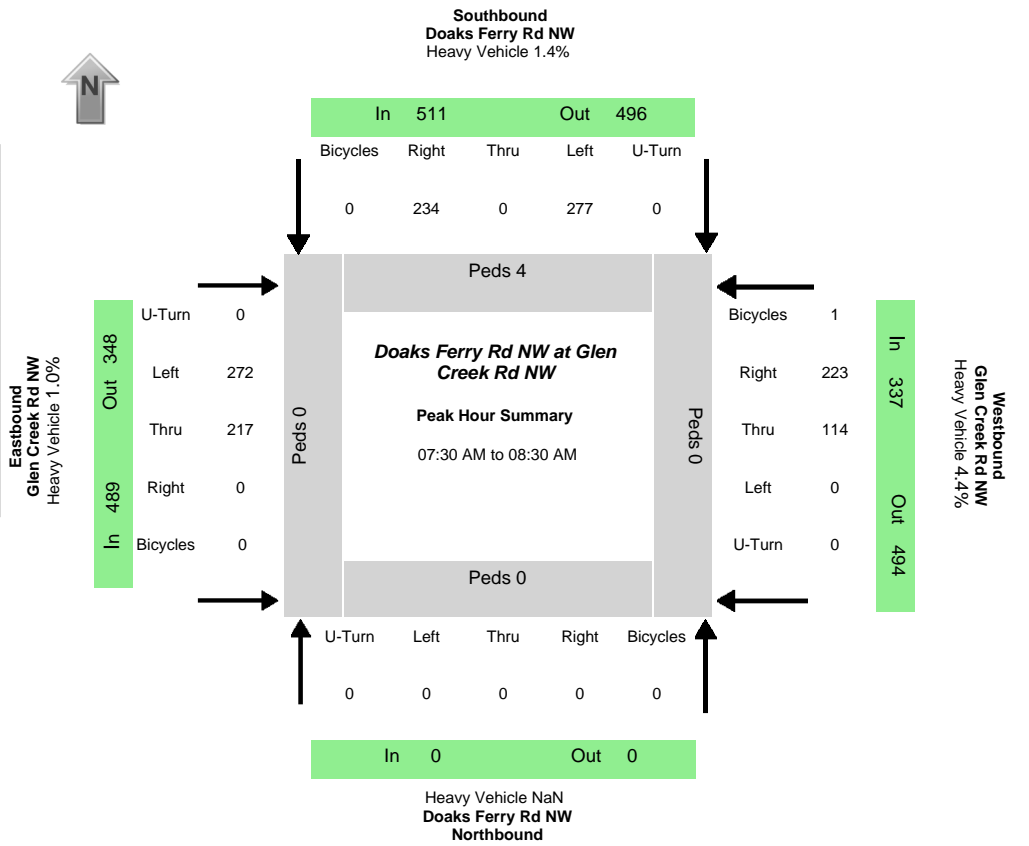
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	16	79	20	0	4	63	1	0	3	11	19	0	39	10	2	0		
02:05:00 PM	15	72	9	0	9	80	1	0	2	8	25	0	19	9	4	0		
02:10:00 PM	24	90	12	1	2	62	1	0	4	7	29	1	18	7	5	0	783	
02:15:00 PM	27	120	21	0	2	52	2	0	3	14	23	0	19	9	6	0	814	
02:20:00 PM	21	80	9	0	7	72	2	0	3	5	22	0	26	12	8	0	828	
02:25:00 PM	16	79	19	0	0	70	2	0	10	6	17	0	25	11	3	0	823	
02:30:00 PM	25	92	10	1	6	52	3	0	4	10	17	0	16	12	4	0	777	
02:35:00 PM	15	96	14	0	10	94	1	0	0	9	25	0	19	12	5	0	810	
02:40:00 PM	10	80	14	0	3	81	2	0	2	7	15	0	21	9	7	0	803	
02:45:00 PM	29	116	16	0	1	70	0	0	3	7	25	0	25	8	4	0	855	
02:50:00 PM	20	129	12	0	4	57	0	0	6	7	20	2	28	16	7	0	863	
02:55:00 PM	18	106	16	0	8	86	6	0	0	8	22	0	13	7	4	0	906	3315
03:00:00 PM	34	102	18	0	2	78	4	0	4	5	28	0	16	10	3	0	906	3352
03:05:00 PM	18	106	18	0	2	60	1	0	6	11	22	0	25	17	5	0	889	3390
03:10:00 PM	22	106	14	0	9	96	4	0	1	9	16	0	18	8	9	0	907	3439
03:15:00 PM	22	91	18	0	6	87	1	0	3	7	22	0	7	8	1	0	876	3414
03:20:00 PM	29	118	10	0	7	73	3	0	9	9	32	0	20	13	2	0	910	3472
03:25:00 PM	18	110	16	0	7	70	2	0	1	2	28	0	10	21	7	0	890	3506
03:30:00 PM	17	81	13	0	0	86	7	0	3	5	20	0	18	16	5	0	888	3525
03:35:00 PM	35	115	13	0	2	79	2	0	7	12	36	0	24	14	6	0	908	3570
03:40:00 PM	27	105	13	0	12	89	1	0	2	8	29	1	21	23	8	0	955	3658
03:45:00 PM	18	94	18	0	3	118	3	0	3	11	16	0	16	8	4	0	996	3666
03:50:00 PM	24	93	14	0	6	82	1	0	8	13	37	0	11	17	5	0	962	3669
03:55:00 PM	26	143	18	0	2	63	1	0	2	7	20	0	17	16	10	0	948	3700

04:00:00 PM	25	104	13	0	6	88	3	0	7	8	15	0	23	7	6	0	941	3701
04:05:00 PM	33	87	23	0	2	91	3	0	3	9	21	0	22	11	7	0	942	3722
04:10:00 PM	15	128	15	0	3	77	4	0	2	18	21	0	24	22	8	0	954	3747
04:15:00 PM	29	113	24	0	6	105	1	0	5	6	20	0	25	19	3	0	1005	3830
04:20:00 PM	38	92	22	0	1	88	1	0	7	3	21	0	17	10	7	0	1000	3812
04:25:00 PM	28	135	18	0	0	98	2	0	5	12	24	0	18	13	7	0	1023	3880
04:30:00 PM	25	122	18	0	1	114	3	0	4	8	20	1	16	24	6	0	1029	3971
04:35:00 PM	18	101	18	0	2	114	2	0	1	8	15	0	21	17	6	0	1045	3949
04:40:00 PM	31	121	21	0	4	97	0	0	7	12	39	0	16	12	3	0	1048	3973
04:45:00 PM	18	119	18	0	4	108	1	0	3	10	11	0	19	15	12	0	1024	3999
04:50:00 PM	22	122	11	0	6	133	1	0	3	5	21	1	19	10	2	0	1057	4044
04:55:00 PM	44	99	19	0	7	89	1	0	3	10	24	0	15	10	5	0	1020	4045
05:00:00 PM	23	120	15	0	5	77	3	0	4	10	22	0	30	19	11	0	1021	4079
05:05:00 PM	28	121	17	0	2	95	3	0	2	12	20	0	13	9	5	0	992	4094
05:10:00 PM	28	103	23	0	1	76	3	0	3	7	26	0	21	15	7	0	979	4070
05:15:00 PM	15	134	21	0	4	59	2	0	3	15	16	1	15	13	6	0	944	4018
05:20:00 PM	15	132	24	0	3	64	2	0	5	8	13	0	25	16	1	0	925	4019
05:25:00 PM	34	100	15	0	1	78	4	0	4	11	23	1	9	10	9	0	911	3958
05:30:00 PM	31	126	13	0	5	62	4	0	6	7	16	0	16	15	11	0	919	3908
05:35:00 PM	15	137	15	0	9	99	3	0	6	6	24	0	14	12	5	0	956	3930
05:40:00 PM	22	103	15	0	6	107	1	0	4	9	20	0	8	9	3	0	964	3874
05:45:00 PM	35	121	12	0	6	83	2	0	4	7	32	0	18	11	9	0	992	3876
05:50:00 PM	23	129	17	1	5	75	1	0	6	8	17	0	15	10	3	0	957	3830
05:55:00 PM	24	93	14	0	2	83	6	0	1	6	17	0	7	11	1	0	915	3769

04:00:00 PM	19	87	0	59	1	0	1	20	0	656	2593
04:05:00 PM	26	94	0	80	1	0	2	23	0	652	2624
04:10:00 PM	23	115	0	77	1	0	1	24	0	654	2634
04:15:00 PM	17	87	0	78	1	0	1	20	0	671	2631
04:20:00 PM	32	87	0	92	0	0	0	17	0	673	2649
04:25:00 PM	40	110	0	87	0	0	1	38	0	708	2721
04:30:00 PM	18	94	0	114	0	0	3	13	0	746	2776
04:35:00 PM	33	96	0	73	1	0	1	21	0	743	2740
04:40:00 PM	29	111	0	112	4	0	0	20	0	743	2789
04:45:00 PM	26	96	0	100	2	0	2	36	0	763	2836
04:50:00 PM	22	122	0	81	1	0	1	23	0	788	2856
04:55:00 PM	33	107	0	89	2	0	1	25	0	769	2874
05:00:00 PM	30	98	0	68	1	0	2	18	0	724	2904
05:05:00 PM	37	71	0	63	2	0	2	21	0	670	2874
05:10:00 PM	36	99	0	73	0	0	0	22	0	643	2863
05:15:00 PM	29	106	0	59	2	0	2	11	0	635	2868
05:20:00 PM	34	98	0	56	0	0	1	12	0	640	2841
05:25:00 PM	38	115	0	56	3	0	1	27	0	650	2805
05:30:00 PM	41	109	0	62	1	0	2	20	0	676	2798
05:35:00 PM	27	120	0	99	1	0	1	26	0	749	2847
05:40:00 PM	31	93	0	79	0	0	0	24	0	736	2798
05:45:00 PM	32	107	0	81	5	0	0	24	0	750	2785
05:50:00 PM	31	99	0	70	2	0	2	19	0	699	2758
05:55:00 PM	26	80	0	57	0	0	1	19	0	655	2684

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95208 - -123.08433
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:30:00 AM
Peak 15 Min Start	08:00:00 AM
PHF (15-Min Int)	0.92



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	277	0	234	0	272	217	0	0	0	114	223	0	0	511	489	337	0	495	348	494
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	1.4%	0.0%	1.3%	0.0%	0.7%	1.4%	0.0%	0.0%	0.0%	7.9%	2.7%	0.0%	NaN	1.4%	1.0%	4.5%	NaN	1.6%	3.4%	1.4%

PHV - Bicycles														PHV - Pedestrians								
Northbound				Southbound				Eastbound				Westbound				in Crosswalk						
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	0	0	4

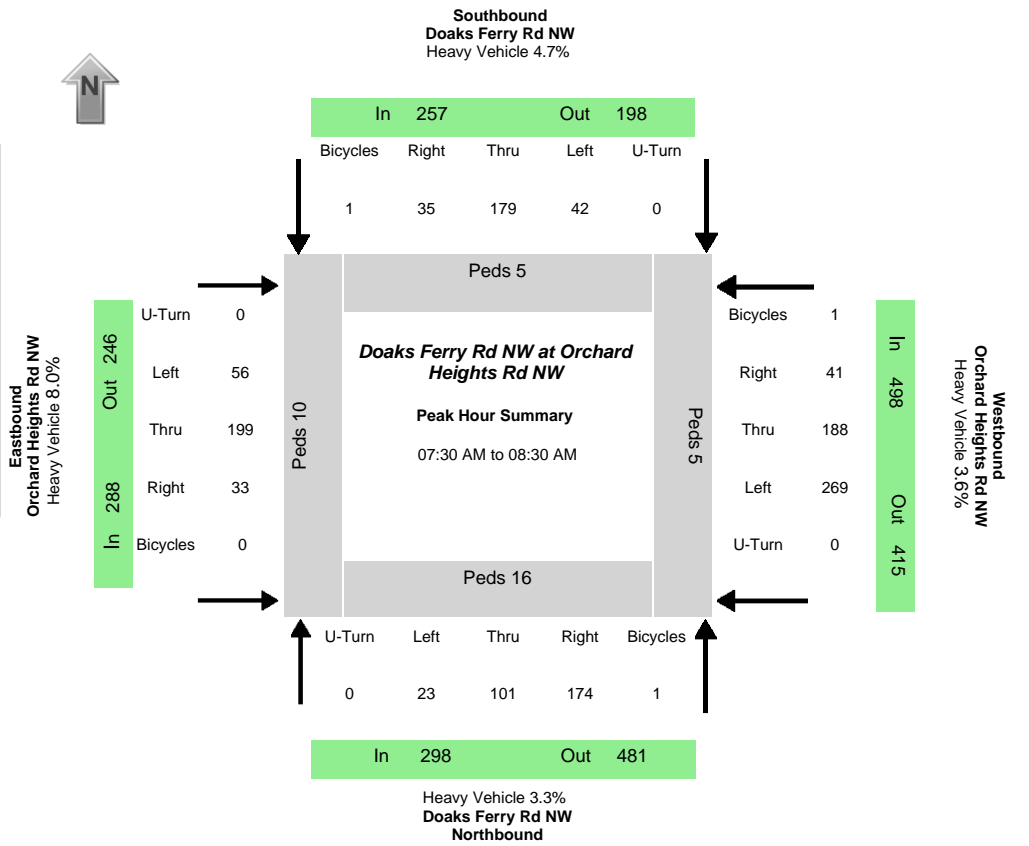
All Vehicle Volumes																		
Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	0	0	0	0	2	0	2	0	0	10	0	0	0	3	0	0		
06:05:00 AM	0	0	0	0	1	0	4	0	1	9	0	0	0	3	1	0		
06:10:00 AM	0	0	0	0	3	0	5	0	2	4	0	0	0	3	1	0	54	
06:15:00 AM	0	0	0	0	1	0	4	0	2	12	0	0	0	0	3	0	59	
06:20:00 AM	0	0	0	0	4	0	3	0	3	5	0	0	0	1	3	0	59	
06:25:00 AM	0	0	0	0	1	0	4	0	5	10	0	0	0	0	3	0	64	
06:30:00 AM	0	0	0	0	5	0	5	0	4	12	0	0	0	5	2	0	75	
06:35:00 AM	0	0	0	0	4	0	4	0	3	16	0	0	0	7	1	0	91	
06:40:00 AM	0	0	0	0	5	0	3	0	2	10	0	0	0	6	3	0	97	
06:45:00 AM	0	0	0	0	4	0	7	0	6	11	0	0	0	5	2	0	99	
06:50:00 AM	0	0	0	0	7	0	8	0	6	13	0	0	0	9	1	0	108	
06:55:00 AM	0	0	0	0	3	0	3	0	9	23	0	0	0	8	6	0	131	346
07:00:00 AM	0	0	0	0	2	0	11	0	14	16	0	0	0	8	3	0	150	383
07:05:00 AM	0	0	0	0	13	0	14	0	11	11	0	0	0	6	8	0	169	427
07:10:00 AM	0	0	0	0	11	0	13	0	9	17	0	0	0	5	11	0	183	475
07:15:00 AM	0	0	0	0	9	0	14	0	12	18	0	0	0	9	8	0	199	523
07:20:00 AM	0	0	0	0	11	0	10	0	22	15	0	0	0	9	4	0	207	575
07:25:00 AM	0	0	0	0	8	0	8	0	28	11	0	0	0	6	9	0	211	622
07:30:00 AM	0	0	0	0	10	0	14	0	41	19	0	0	0	6	18	0	249	697
07:35:00 AM	0	0	0	0	13	0	14	0	33	21	0	0	0	7	21	0	287	771
07:40:00 AM	0	0	0	0	20	0	20	0	44	15	0	0	0	6	22	0	344	869
07:45:00 AM	0	0	0	0	25	0	37	0	14	18	0	0	0	5	9	0	344	942
07:50:00 AM	0	0	0	0	15	0	32	0	20	17	0	0	0	15	16	0	350	1013
07:55:00 AM	0	0	0	0	22	0	21	0	18	14	0	0	0	16	17	0	331	1069

08:00:00 AM	0	0	0	0	22	0	20	0	22	16	0	0	0	13	20	0	336	1128
08:05:00 AM	0	0	0	0	35	0	11	0	30	17	0	0	0	7	24	0	345	1189
08:10:00 AM	0	0	0	0	27	0	20	0	23	13	0	0	0	16	29	0	365	1251
08:15:00 AM	0	0	0	0	32	0	16	0	10	20	0	0	0	8	26	0	364	1293
08:20:00 AM	0	0	0	0	22	0	14	0	9	22	0	0	0	14	13	0	334	1316
08:25:00 AM	0	0	0	0	34	0	15	0	8	25	0	0	0	1	8	0	297	1337
08:30:00 AM	0	0	0	0	27	0	11	0	6	22	0	0	0	11	5	0	267	1311
08:35:00 AM	0	0	0	0	14	0	7	0	11	16	0	0	0	10	7	0	238	1267
08:40:00 AM	0	0	0	0	9	0	5	0	10	15	0	0	0	12	13	0	211	1204
08:45:00 AM	0	0	0	0	11	0	7	0	10	20	0	0	0	15	12	0	204	1171
08:50:00 AM	0	0	0	0	14	0	8	0	9	15	0	0	0	11	5	0	201	1118
08:55:00 AM	0	0	0	0	14	0	6	0	5	16	0	0	0	8	7	0	193	1066



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Doaks Ferry Rd NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.96044 - -123.07966
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:30:00 AM
Peak 15 Min Start	08:05:00 AM
PHF (15-Min Int)	0.87



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
23	101	174	0	42	179	35	0	56	199	33	0	269	188	41	0	298	256	288	498	481	198	246	415
Percent Heavy Vehicles																							
8.7%	5.9%	1.1%	0.0%	11.9%	0.6%	17.1%	0.0%	10.7%	6.0%	15.2%	0.0%	3.0%	5.3%	0.0%	0.0%	3.4%	4.7%	8.0%	3.6%	2.9%	6.1%	7.3%	4.6%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk				Sum	
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	3	16	5	10	5	36

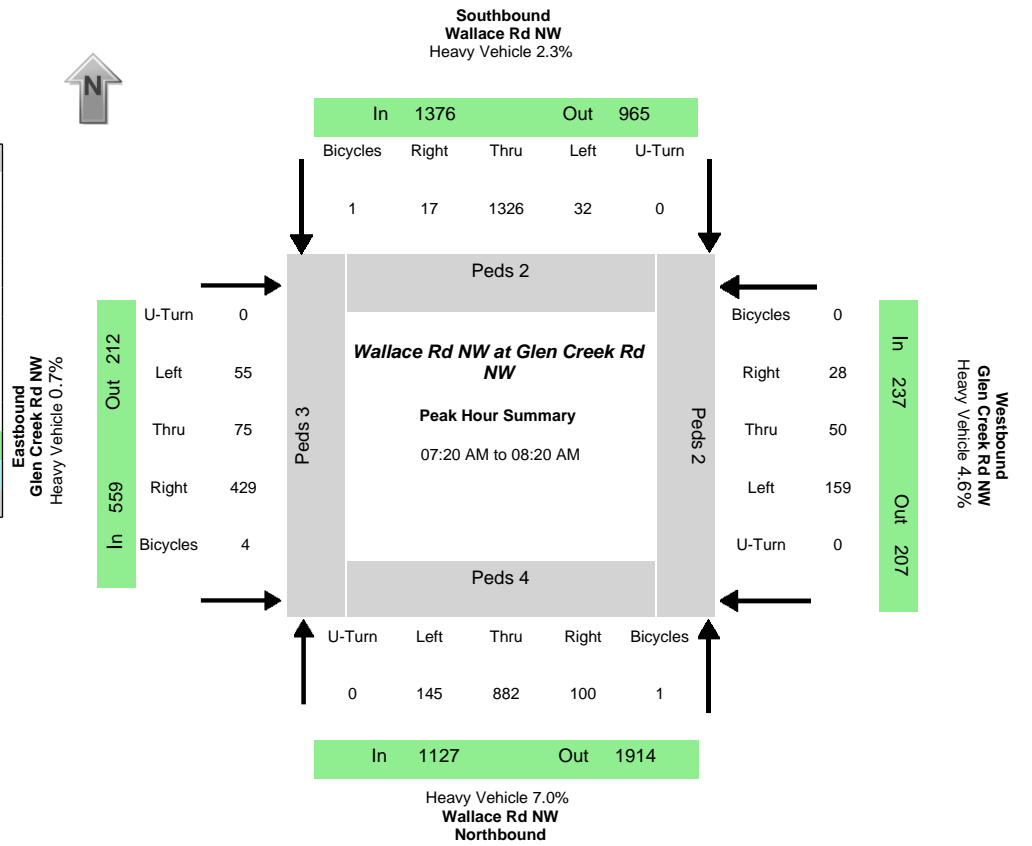
Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	0	1	0	0	1	1	0	0	1	1	0	0	2	0	0	0		
06:05:00 AM	0	2	0	0	0	0	0	0	1	3	1	0	4	1	1	0		
06:10:00 AM	0	5	0	0	0	4	0	0	0	3	1	0	1	3	0	0	37	
06:15:00 AM	0	2	1	0	2	5	0	0	0	2	0	0	1	2	0	0	45	
06:20:00 AM	0	9	0	0	0	3	0	0	2	1	0	0	2	3	3	0	55	
06:25:00 AM	0	1	1	0	1	2	0	0	0	3	0	0	1	0	1	0	48	
06:30:00 AM	0	4	2	0	1	2	1	0	0	1	2	0	2	2	1	0	51	
06:35:00 AM	0	2	2	0	2	4	1	0	0	3	0	0	1	4	0	0	47	
06:40:00 AM	0	2	1	0	3	4	0	0	0	6	0	0	2	0	0	0	55	
06:45:00 AM	0	4	2	0	1	3	1	0	1	10	1	0	5	4	2	0	71	
06:50:00 AM	0	8	1	0	1	3	0	0	1	4	1	0	7	6	3	0	87	
06:55:00 AM	0	5	3	0	2	3	3	0	1	7	2	0	2	5	1	0	103	243
07:00:00 AM	0	3	9	0	3	9	0	0	2	13	0	0	5	5	4	0	122	289
07:05:00 AM	1	6	9	0	1	7	2	0	2	6	1	0	7	3	3	0	135	324
07:10:00 AM	0	4	13	0	6	8	0	0	2	7	1	0	14	3	3	0	162	368
07:15:00 AM	0	11	9	0	3	9	0	0	1	15	0	0	11	3	3	0	174	418
07:20:00 AM	0	4	7	0	3	5	0	0	2	6	3	0	12	8	4	0	180	449
07:25:00 AM	0	7	16	0	4	6	0	0	0	7	3	0	11	5	4	0	182	502
07:30:00 AM	0	10	24	0	2	11	0	0	3	20	0	0	11	6	4	0	208	575
07:35:00 AM	1	17	25	0	3	11	2	0	7	13	4	0	20	18	4	0	279	681
07:40:00 AM	3	11	27	0	4	6	2	0	2	24	2	0	28	12	6	0	343	790
07:45:00 AM	1	10	28	0	5	7	2	0	7	12	1	0	35	21	4	0	385	889
07:50:00 AM	0	9	11	0	3	12	0	0	2	10	0	0	30	18	5	0	360	954
07:55:00 AM	1	4	11	0	4	11	4	0	2	7	2	0	23	17	2	0	321	1008

08:00:00 AM	0	9	17	0	10	8	1	0	3	14	2	0	10	9	4	0	275	1042
08:05:00 AM	1	4	6	0	4	19	4	0	4	17	4	0	23	27	4	0	292	1111
08:10:00 AM	2	10	9	0	4	22	7	0	5	18	5	0	33	15	1	0	335	1181
08:15:00 AM	6	5	8	0	1	29	3	0	10	27	6	0	21	20	3	0	387	1255
08:20:00 AM	5	5	6	0	2	32	5	0	4	13	4	0	21	14	1	0	382	1313
08:25:00 AM	3	7	2	0	0	11	5	0	7	24	3	0	14	11	3	0	341	1340
08:30:00 AM	2	8	7	0	1	6	1	0	1	11	2	0	5	4	1	0	251	1298
08:35:00 AM	3	6	5	0	1	4	1	0	3	7	2	0	2	1	3	0	177	1211
08:40:00 AM	2	10	3	0	4	3	0	0	3	11	1	0	7	8	3	0	142	1139
08:45:00 AM	0	16	2	0	4	8	1	0	5	9	1	0	4	2	4	0	149	1062
08:50:00 AM	0	3	5	0	7	5	1	0	3	7	2	0	8	7	5	0	164	1015
08:55:00 AM	0	6	10	0	4	14	0	0	1	9	3	0	4	5	9	0	174	992



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95009 - -123.05165
Start Date	Thursday, September 16, 2021
Start Time	06:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:20:00 AM
Peak 15 Min Start	07:40:00 AM
PHF (15-Min Int)	0.94



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
145	882	100	0	32	1326	17	0	55	75	429	0	159	50	28	0	1127	1375	559	237	1914	965	212	207
Percent Heavy Vehicles																							
7.6%	6.9%	7.0%	0.0%	3.1%	2.3%	0.0%	0.0%	0.0%	1.3%	0.7%	0.0%	4.4%	6.0%	3.6%	0.0%	7.0%	2.3%	0.7%	4.6%	2.1%	6.4%	6.6%	4.3%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	3	1	0	0	0	0	0	6	4	2	3	2	11

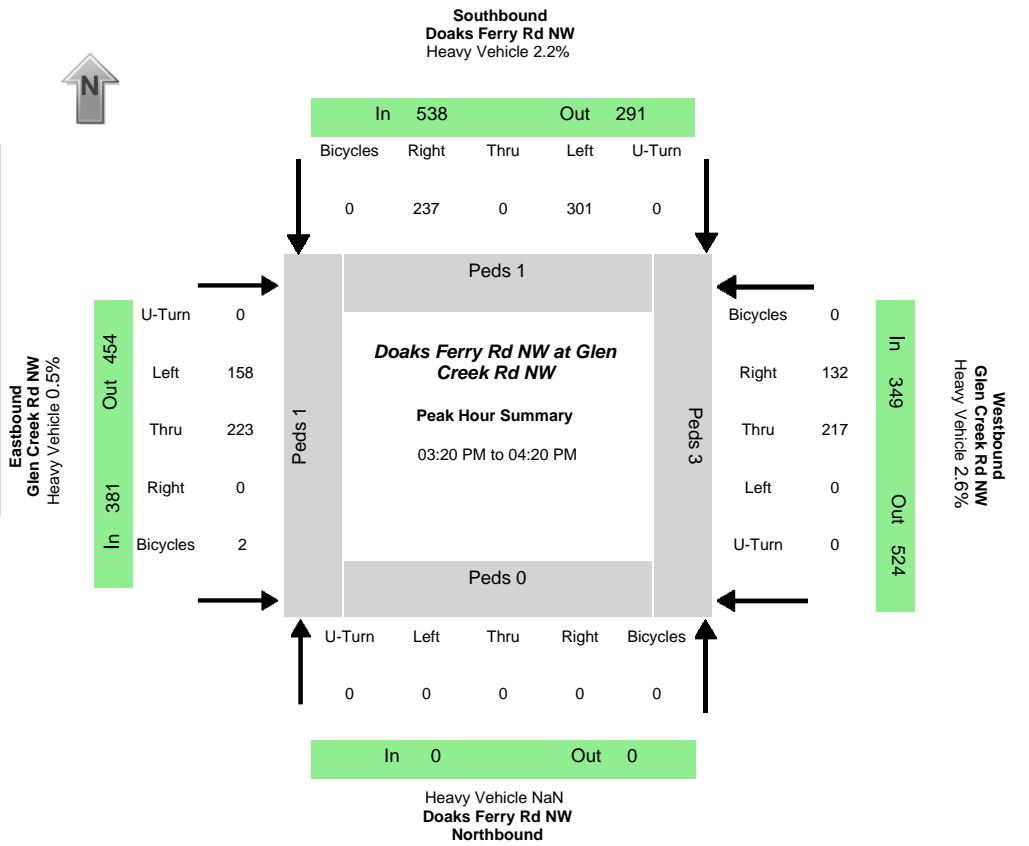
All Vehicle Volumes																		
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
06:00:00 AM	2	54	3	0	3	41	0	0	2	1	19	0	4	1	0	0		
06:05:00 AM	0	51	2	0	1	38	1	0	4	1	17	1	2	1	2	0		
06:10:00 AM	3	48	1	0	0	51	0	0	2	1	18	0	5	2	3	0	385	
06:15:00 AM	2	50	0	0	0	56	0	0	2	2	23	0	6	2	5	0	403	
06:20:00 AM	4	52	3	0	2	58	0	0	1	6	20	0	7	1	1	0	437	
06:25:00 AM	2	50	0	0	0	68	1	0	1	8	17	0	7	5	1	0	463	
06:30:00 AM	4	47	2	0	0	67	0	0	2	3	23	0	5	6	1	0	475	
06:35:00 AM	4	52	3	0	0	101	0	0	3	3	18	0	11	3	2	0	520	
06:40:00 AM	3	50	2	0	2	83	0	0	3	1	34	0	10	3	1	0	552	
06:45:00 AM	6	51	3	0	1	78	1	0	7	5	38	0	9	2	4	0	597	
06:50:00 AM	4	79	9	0	0	97	1	0	2	2	17	0	16	6	1	0	631	
06:55:00 AM	5	47	4	0	1	83	1	0	2	8	27	0	6	5	1	0	629	2029
07:00:00 AM	5	55	4	0	1	103	0	0	5	4	37	0	8	2	1	0	649	2124
07:05:00 AM	9	44	3	0	0	115	1	0	4	2	25	0	13	4	0	0	635	2223
07:10:00 AM	4	54	9	0	0	105	2	0	0	3	27	0	3	7	5	0	664	2308
07:15:00 AM	11	64	7	0	1	108	2	0	1	4	45	0	18	2	2	0	704	2425
07:20:00 AM	8	63	10	0	1	99	0	0	2	5	34	0	10	4	1	0	721	2507
07:25:00 AM	7	90	9	0	1	106	3	0	6	2	32	0	9	5	2	0	774	2619
07:30:00 AM	10	73	9	0	2	116	1	0	3	6	34	0	10	5	2	0	780	2730
07:35:00 AM	7	66	5	0	2	116	2	0	5	5	38	0	17	9	3	0	818	2805
07:40:00 AM	9	89	8	0	2	118	0	0	8	9	26	0	18	0	3	0	836	2903
07:45:00 AM	14	65	8	0	3	137	1	0	3	7	41	0	12	5	3	0	864	2997
07:50:00 AM	22	63	3	0	2	107	0	0	7	10	47	0	16	4	3	0	873	3047
07:55:00 AM	11	68	12	0	5	100	3	0	6	4	34	0	14	2	1	0	843	3117

08:00:00 AM	15	91	9	0	5	125	3	0	1	4	31	0	15	5	2	0	850	3198
08:05:00 AM	18	60	6	0	4	95	3	0	2	4	32	0	13	5	2	0	810	3222
08:10:00 AM	14	67	14	0	4	96	1	0	9	12	48	0	10	2	2	0	829	3282
08:15:00 AM	10	87	7	0	1	111	0	0	3	7	32	0	15	4	4	0	804	3298
08:20:00 AM	14	64	5	0	1	68	2	0	4	3	48	0	11	4	2	0	786	3287
08:25:00 AM	13	74	6	0	5	77	0	0	4	7	34	0	14	7	4	0	752	3260
08:30:00 AM	5	78	8	0	5	82	1	0	6	12	38	0	9	5	4	0	724	3242
08:35:00 AM	11	71	10	0	2	92	1	0	1	9	42	0	25	8	3	0	773	3242
08:40:00 AM	18	58	13	0	3	79	1	0	2	10	43	0	19	6	1	0	781	3205
08:45:00 AM	17	74	7	0	3	84	0	0	5	9	38	0	22	6	7	0	800	3178
08:50:00 AM	14	78	13	0	5	85	0	0	6	16	31	0	16	2	2	0	793	3162
08:55:00 AM	11	72	7	0	3	111	1	0	4	3	26	0	20	8	3	0	809	3171

08:00:00 AM	35	52	0	0	0	86	2	0	2	0	45	0	0	0	0	0	623	2449
08:05:00 AM	21	41	0	0	0	68	0	0	3	0	19	0	0	0	0	0	574	2416
08:10:00 AM	30	58	0	0	0	77	0	0	1	0	40	0	0	0	0	0	580	2457
08:15:00 AM	31	52	0	0	0	62	2	0	2	0	39	0	0	0	0	0	546	2470
08:20:00 AM	20	39	0	0	0	60	3	0	2	0	31	0	0	0	0	0	549	2436
08:25:00 AM	15	78	0	0	0	66	0	0	1	0	35	0	0	0	0	0	538	2442
08:30:00 AM	18	64	0	0	0	52	1	0	5	0	30	0	0	0	0	0	520	2382
08:35:00 AM	13	54	0	0	0	47	1	0	3	0	34	0	0	0	0	0	517	2297
08:40:00 AM	12	59	0	0	0	86	0	0	0	0	31	0	0	0	0	0	510	2251
08:45:00 AM	22	52	0	0	0	78	4	0	1	0	32	0	0	0	0	0	529	2218
08:50:00 AM	22	56	0	0	0	95	2	0	1	0	32	0	0	0	0	0	585	2225
08:55:00 AM	27	62	0	0	0	64	1	0	2	0	25	0	0	0	0	0	578	2206

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95208 - -123.08433
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	03:20:00 PM
Peak 15 Min Start	03:30:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
0	0	0	0	301	0	237	0	158	223	0	0	0	217	132	0	0	538	381	349	0	290	454	524
Percent Heavy Vehicles																							
0.0%	0.0%	0.0%	0.0%	2.3%	0.0%	2.1%	0.0%	0.0%	0.9%	0.0%	0.0%	0.0%	2.8%	2.3%	0.0%	NaN	2.2%	0.5%	2.6%	NaN	1.0%	2.4%	1.7%

PHV - Bicycles												PHV - Pedestrians									
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	1	1	3	5

Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	0	0	0	0	6	0	8	0	9	14	0	0	0	10	13	0		
02:05:00 PM	0	0	0	0	5	0	4	0	20	15	0	0	0	15	15	0		
02:10:00 PM	0	0	0	0	9	0	3	0	17	16	0	0	0	16	9	0	204	
02:15:00 PM	0	0	0	0	11	0	6	0	13	9	0	0	0	14	9	0	206	
02:20:00 PM	0	0	0	0	7	0	11	0	14	11	0	0	0	11	6	0	192	
02:25:00 PM	0	0	0	0	19	0	23	0	4	11	0	0	0	9	10	0	198	
02:30:00 PM	0	0	0	0	21	0	30	0	10	12	0	0	0	12	13	0	234	
02:35:00 PM	0	0	0	0	15	0	15	0	5	13	0	0	0	16	10	0	248	
02:40:00 PM	0	0	0	0	11	0	12	0	8	18	0	0	0	11	6	0	238	
02:45:00 PM	0	0	0	0	16	0	8	0	13	10	0	0	0	14	7	0	208	
02:50:00 PM	0	0	0	0	7	0	8	0	16	12	0	0	0	14	15	0	206	
02:55:00 PM	0	0	0	0	4	0	10	0	10	9	0	0	0	9	16	0	198	838
03:00:00 PM	0	0	0	0	7	0	5	0	9	14	0	0	0	12	13	0	190	838
03:05:00 PM	0	0	0	0	6	0	13	0	15	13	0	0	0	23	18	0	206	852
03:10:00 PM	0	0	0	0	10	0	10	0	15	5	0	0	0	18	21	0	227	861
03:15:00 PM	0	0	0	0	13	0	6	0	14	19	0	0	0	13	13	0	245	877
03:20:00 PM	0	0	0	0	26	0	10	0	10	22	0	0	0	15	7	0	247	907
03:25:00 PM	0	0	0	0	24	0	26	0	12	14	0	0	0	22	10	0	276	939
03:30:00 PM	0	0	0	0	39	0	17	0	17	19	0	0	0	18	8	0	316	959
03:35:00 PM	0	0	0	0	32	0	16	0	15	19	0	0	0	18	10	0	336	995
03:40:00 PM	0	0	0	0	33	0	34	0	16	15	0	0	0	16	8	0	350	1051
03:45:00 PM	0	0	0	0	29	0	20	0	10	25	0	0	0	18	13	0	347	1098
03:50:00 PM	0	0	0	0	12	0	18	0	16	18	0	0	0	19	21	0	341	1130
03:55:00 PM	0	0	0	0	15	0	11	0	12	17	0	0	0	11	15	0	300	1153

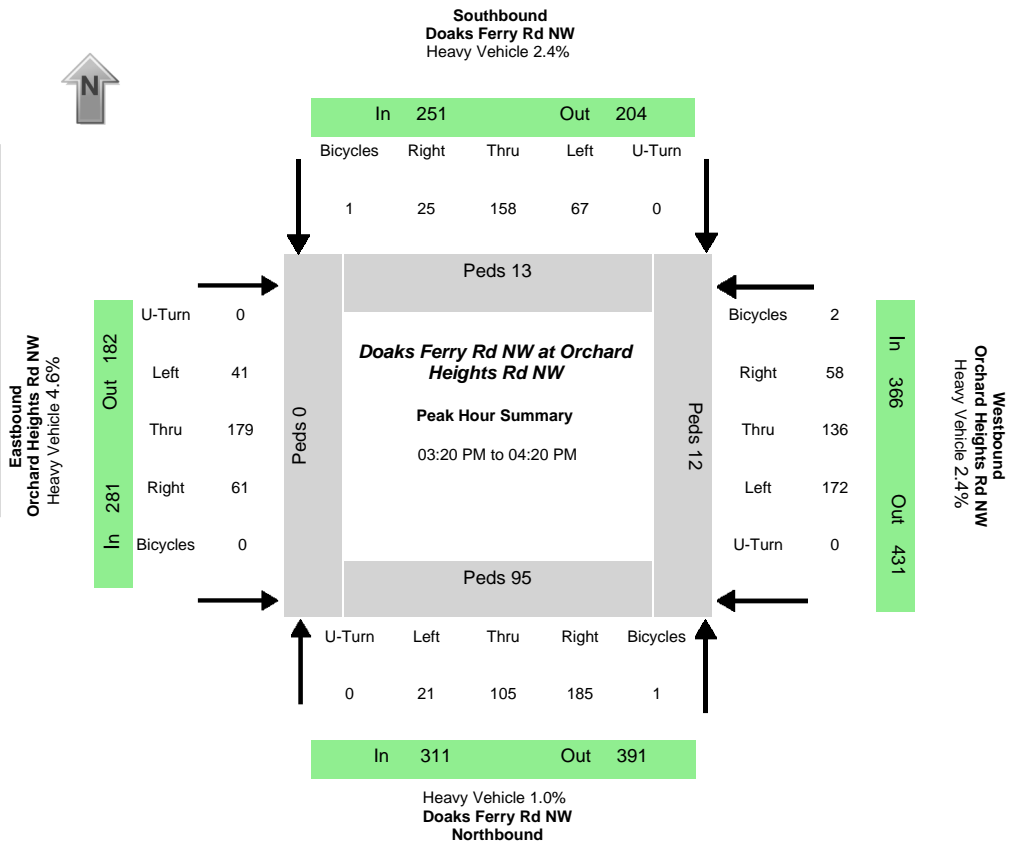
04:00:00 PM	0	0	0	0	16	0	11	0	11	23	0	0	0	16	17	0	279	1187
04:05:00 PM	0	0	0	0	23	0	32	0	12	11	0	0	0	28	4	0	285	1209
04:10:00 PM	0	0	0	0	28	0	25	0	11	22	0	0	0	17	8	0	315	1241
04:15:00 PM	0	0	0	0	24	0	17	0	16	18	0	0	0	19	11	0	326	1268
04:20:00 PM	0	0	0	0	16	0	13	0	10	19	0	0	0	21	10	0	305	1267
04:25:00 PM	0	0	0	0	15	0	11	0	11	9	0	0	0	17	14	0	271	1236
04:30:00 PM	0	0	0	0	13	0	5	0	8	20	0	0	0	15	13	0	240	1192
04:35:00 PM	0	0	0	0	16	0	11	0	8	19	0	0	0	20	13	0	238	1169
04:40:00 PM	0	0	0	0	16	0	11	0	10	14	0	0	0	16	13	0	241	1127
04:45:00 PM	0	0	0	0	21	0	17	0	13	21	0	0	0	22	7	0	268	1113
04:50:00 PM	0	0	0	0	11	0	8	0	14	15	0	0	0	19	9	0	257	1085
04:55:00 PM	0	0	0	0	12	0	6	0	15	17	0	0	0	12	6	0	245	1072
05:00:00 PM	0	0	0	0	7	0	11	0	14	18	0	0	0	25	8	0	227	1061
05:05:00 PM	0	0	0	0	14	0	12	0	9	18	0	0	0	17	10	0	231	1031
05:10:00 PM	0	0	0	0	12	0	10	0	11	9	0	0	0	24	9	0	238	995
05:15:00 PM	0	0	0	0	20	0	7	0	14	9	0	0	0	14	8	0	227	962
05:20:00 PM	0	0	0	0	12	0	8	0	19	11	0	0	0	17	22	0	236	962
05:25:00 PM	0	0	0	0	11	0	8	0	16	18	0	0	0	15	13	0	242	966
05:30:00 PM	0	0	0	0	12	0	8	0	14	12	0	0	0	14	18	0	248	970
05:35:00 PM	0	0	0	0	20	0	6	0	10	10	0	0	0	16	21	0	242	966
05:40:00 PM	0	0	0	0	9	0	9	0	19	13	0	0	0	9	23	0	243	968
05:45:00 PM	0	0	0	0	17	0	11	0	20	8	0	0	0	22	13	0	256	958
05:50:00 PM	0	0	0	0	14	0	7	0	25	10	0	0	0	10	11	0	250	959
05:55:00 PM	0	0	0	0	8	0	12	0	15	20	0	0	0	30	21	0	274	997



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224

N/S street	Doaks Ferry Rd NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.96044 - -123.07966
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	03:20:00 PM
Peak 15 Min Start	03:30:00 PM
PHF (15-Min Int)	0.88



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
21	105	185	0	67	158	25	0	41	179	61	0	172	136	58	0	311	250	281	366	391	204	182	431
Percent Heavy Vehicles																							
0.0%	1.0%	1.1%	0.0%	6.0%	0.6%	4.0%	0.0%	7.3%	3.4%	6.6%	0.0%	1.7%	4.4%	0.0%	0.0%	1.0%	2.4%	4.6%	2.5%	2.0%	2.0%	3.8%	2.8%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	4	95	13	0	12	120

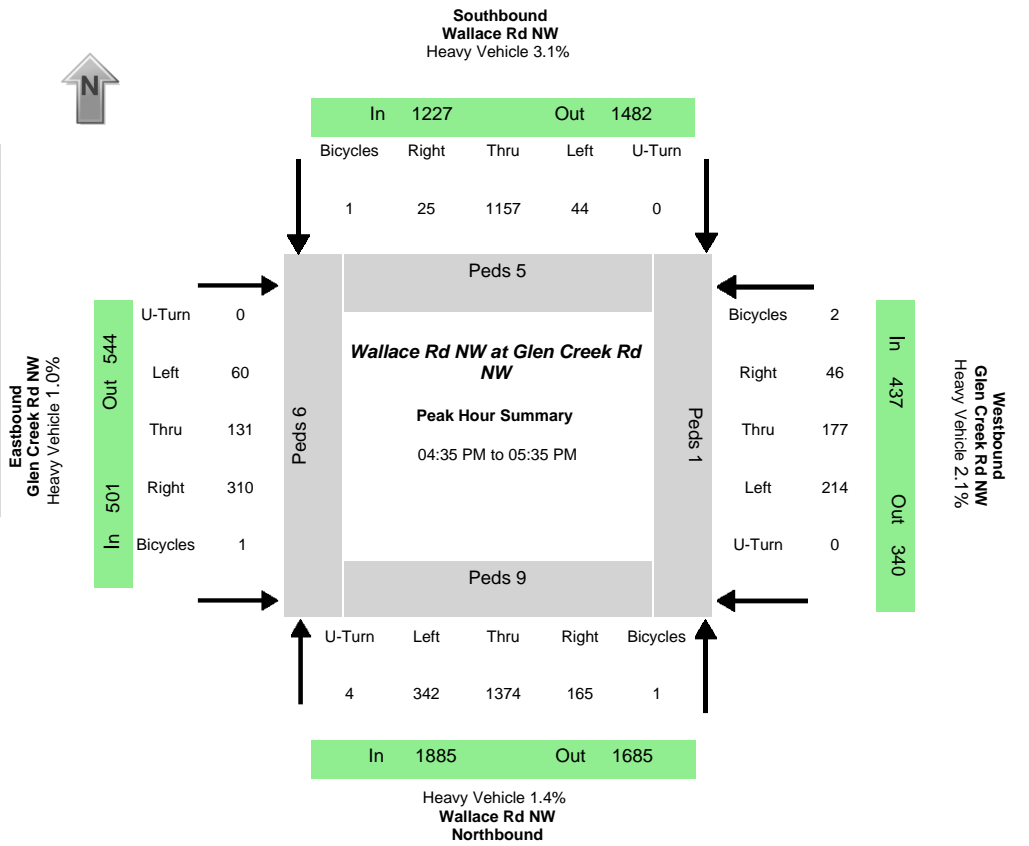
Time	Northbound Doaks Ferry Rd NW				Southbound Doaks Ferry Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	1	6	10	0	1	5	0	0	0	9	2	0	4	4	1	0		
02:05:00 PM	0	6	12	0	1	5	0	0	1	10	1	0	4	5	1	0		
02:10:00 PM	1	5	9	0	2	6	1	0	2	12	0	0	3	10	5	0	145	
02:15:00 PM	1	10	17	0	3	3	2	0	2	11	6	0	3	3	0	0	163	
02:20:00 PM	0	6	6	0	4	8	0	0	3	7	1	0	4	4	4	0	164	
02:25:00 PM	1	7	9	0	1	3	0	0	1	5	1	0	26	13	5	0	180	
02:30:00 PM	0	11	8	0	3	4	1	0	3	3	1	0	32	17	1	0	203	
02:35:00 PM	2	6	6	0	3	4	0	0	0	9	0	0	23	7	6	0	222	
02:40:00 PM	1	8	5	0	4	8	2	0	2	5	3	0	13	7	3	0	211	
02:45:00 PM	1	6	2	0	1	8	1	0	3	10	1	0	12	3	2	0	177	
02:50:00 PM	1	6	13	0	3	7	2	0	1	8	1	0	5	9	4	0	171	
02:55:00 PM	1	8	6	0	2	3	1	0	1	7	2	0	10	10	1	0	162	698
03:00:00 PM	2	11	3	0	3	5	3	0	2	6	0	0	3	17	3	0	170	713
03:05:00 PM	4	8	4	0	1	8	0	0	1	10	3	0	15	7	2	0	173	730
03:10:00 PM	1	10	11	0	0	8	4	0	2	10	2	0	11	22	3	0	205	758
03:15:00 PM	5	10	6	0	5	19	3	0	1	2	0	0	13	14	0	0	225	775
03:20:00 PM	3	6	10	0	4	15	1	0	4	12	3	0	8	21	2	0	251	817
03:25:00 PM	0	5	6	0	3	26	4	0	6	25	11	0	11	12	3	0	279	857
03:30:00 PM	0	6	12	0	5	14	3	0	8	25	11	0	6	8	3	0	302	874
03:35:00 PM	6	16	18	0	4	10	1	0	8	19	9	0	9	12	7	0	332	927
03:40:00 PM	1	17	30	0	4	15	3	0	5	19	10	0	12	6	2	0	344	990
03:45:00 PM	1	5	23	0	5	10	1	0	1	19	3	0	19	8	1	0	339	1036
03:50:00 PM	2	9	16	0	10	7	2	0	0	8	4	0	12	6	2	0	298	1054
03:55:00 PM	3	7	22	0	13	9	5	0	1	14	2	0	9	9	3	0	271	1099

04:00:00 PM	2	14	10	0	7	10	1	0	4	10	0	0	12	4	5	0	254	1120
04:05:00 PM	2	3	13	0	6	19	1	0	2	13	4	0	22	17	9	0	287	1168
04:10:00 PM	0	9	9	0	2	15	3	0	1	12	1	0	29	23	15	0	309	1203
04:15:00 PM	1	8	16	0	4	8	0	0	1	3	3	0	23	10	6	0	313	1208
04:20:00 PM	2	12	8	0	4	8	3	0	0	5	2	0	13	7	6	0	272	1189
04:25:00 PM	0	13	4	0	5	14	1	0	1	4	0	0	6	7	2	0	210	1134
04:30:00 PM	1	8	3	0	5	7	2	0	5	8	1	0	4	6	3	0	180	1086
04:35:00 PM	4	8	8	0	2	15	2	0	2	4	1	0	8	9	3	0	176	1033
04:40:00 PM	0	8	5	0	3	11	1	0	2	8	2	0	4	9	4	0	176	966
04:45:00 PM	1	9	4	0	6	21	1	0	2	4	0	0	5	9	1	0	186	933
04:50:00 PM	2	10	4	0	1	9	1	0	8	4	3	0	7	9	4	0	182	917
04:55:00 PM	2	13	6	0	4	5	3	0	1	7	3	0	5	10	1	0	185	880
05:00:00 PM	0	8	2	0	3	10	4	0	2	6	0	0	5	13	1	0	176	855
05:05:00 PM	1	12	5	0	1	16	2	0	1	6	2	0	4	5	0	0	169	799
05:10:00 PM	0	8	6	0	0	10	3	0	1	18	0	0	9	9	3	0	176	747
05:15:00 PM	3	9	3	0	3	17	1	0	1	5	1	0	6	10	5	0	186	728
05:20:00 PM	1	17	9	0	6	9	1	0	4	4	2	0	6	14	5	0	209	736
05:25:00 PM	0	14	12	0	2	7	3	0	1	2	2	0	8	10	2	0	205	742
05:30:00 PM	1	13	6	0	4	10	2	0	2	4	0	0	4	10	1	0	198	746
05:35:00 PM	1	12	4	0	3	18	4	0	2	7	1	0	3	13	8	0	196	756
05:40:00 PM	2	9	4	0	5	12	0	0	1	10	1	0	10	12	1	0	200	766
05:45:00 PM	1	8	8	0	5	18	3	0	2	8	1	0	6	15	2	0	220	780
05:50:00 PM	2	17	12	0	5	11	9	0	0	6	2	0	7	22	4	0	241	815
05:55:00 PM	1	9	7	0	3	10	3	0	4	4	2	0	4	15	4	0	240	821



KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	Wallace Rd NW
E/W street	Glen Creek Rd NW
City, State	Salem OR
Site Notes	
Location	44.95009 - -123.05165
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	04:35:00 PM
PHF (15-Min Int)	0.98



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
342	1374	165	4	44	1157	25	0	60	131	310	0	214	177	46	0	1885	1226	501	437	1685	1480	544	340
Percent Heavy Vehicles																							
1.2%	1.5%	1.2%	0.0%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	2.8%	1.1%	2.2%	0.0%	1.4%	3.1%	1.0%	2.1%	2.9%	1.4%	1.1%	0.6%

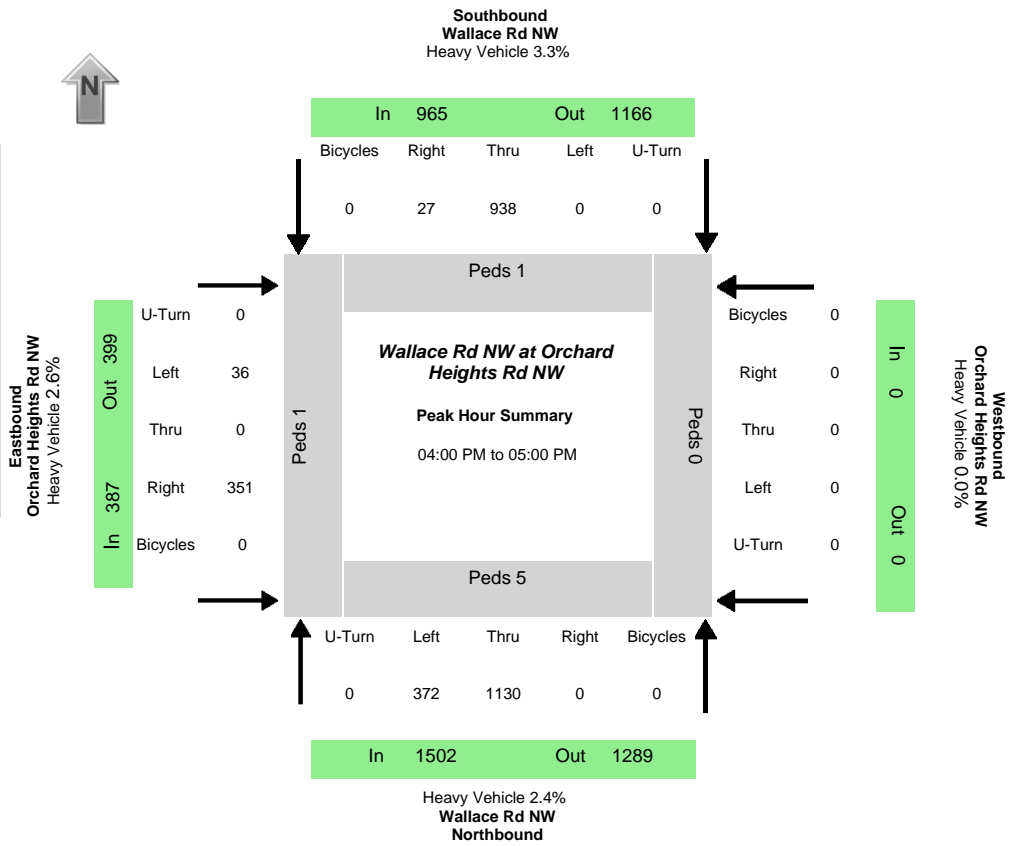
PHV- Bicycles																PHV- Pedestrians					
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	NB	SB	EB	WB	Sum
0	1	0	0	0	1	0	0	0	1	0	0	0	1	1	0	5	9	5	6	1	21

All Vehicle Volumes																		
Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Glen Creek Rd NW				Westbound Glen Creek Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	21	70	17	0	3	59	2	0	3	16	31	1	32	11	5	0		
02:05:00 PM	15	96	15	0	5	103	3	0	2	12	24	1	26	17	9	0		
02:10:00 PM	24	109	11	0	3	78	1	0	5	7	15	0	23	13	2	0	890	
02:15:00 PM	20	100	15	0	3	69	3	0	3	6	24	0	18	15	7	0	902	
02:20:00 PM	24	84	17	0	7	69	1	0	6	5	17	1	27	8	1	0	841	
02:25:00 PM	14	111	16	0	5	109	1	0	4	15	12	0	11	8	4	0	860	
02:30:00 PM	28	90	15	0	6	87	3	0	4	8	38	1	14	8	4	0	883	
02:35:00 PM	26	78	13	0	1	93	4	0	9	17	24	1	24	18	10	0	934	
02:40:00 PM	19	100	8	0	3	112	1	0	4	5	21	0	20	10	1	0	928	
02:45:00 PM	25	79	12	0	2	94	1	0	5	8	45	1	18	8	1	0	921	
02:50:00 PM	33	84	18	0	3	70	5	0	6	10	25	1	22	16	6	0	902	
02:55:00 PM	18	108	19	0	5	105	3	0	4	6	20	0	22	5	8	0	921	3599
03:00:00 PM	24	87	17	0	3	77	1	0	4	3	21	0	19	12	2	0	892	3598
03:05:00 PM	34	98	13	0	2	67	0	0	5	14	17	0	15	11	5	0	874	3551
03:10:00 PM	30	98	14	0	10	88	1	0	5	4	19	0	23	14	7	0	864	3573
03:15:00 PM	23	141	11	0	4	113	2	0	3	4	21	0	12	10	2	0	940	3636
03:20:00 PM	35	115	15	0	2	74	2	0	2	8	30	0	14	10	3	0	969	3679
03:25:00 PM	24	86	19	1	2	93	5	0	6	4	33	0	15	13	11	0	968	3681
03:30:00 PM	16	106	11	0	2	115	5	0	8	10	26	0	17	9	3	0	950	3703
03:35:00 PM	39	110	12	0	7	75	2	0	4	8	30	0	24	15	0	0	966	3711
03:40:00 PM	24	101	13	0	3	78	1	0	10	5	30	0	23	16	11	0	969	3722
03:45:00 PM	27	105	16	0	6	111	0	0	8	10	29	0	14	18	2	0	987	3769
03:50:00 PM	35	141	15	0	4	101	1	0	7	9	25	0	15	9	8	0	1031	3840
03:55:00 PM	23	99	11	0	2	85	2	0	7	21	16	0	21	19	3	0	1025	3826

04:00:00 PM	24	103	21	0	4	99	2	0	2	7	28	0	22	14	4	0	1009	3886
04:05:00 PM	31	112	12	0	4	105	1	0	7	11	32	0	10	20	7	0	991	3957
04:10:00 PM	22	103	20	0	4	83	3	0	5	15	34	0	21	11	3	0	1006	3968
04:15:00 PM	28	95	15	0	7	67	1	0	7	8	25	0	26	21	7	0	983	3929
04:20:00 PM	22	124	15	0	1	111	5	0	5	8	27	0	18	10	4	0	981	3969
04:25:00 PM	26	111	16	0	2	79	1	0	4	13	39	0	15	15	5	0	983	3983
04:30:00 PM	20	94	14	0	9	96	5	0	4	8	23	0	21	10	4	0	984	3963
04:35:00 PM	22	124	18	0	6	113	4	0	5	6	25	0	14	16	5	0	992	3995
04:40:00 PM	30	126	18	1	1	88	2	0	7	12	33	0	19	20	4	0	1027	4041
04:45:00 PM	26	91	14	1	2	83	1	0	6	19	20	0	22	21	3	0	1028	4004
04:50:00 PM	14	126	11	0	4	108	4	0	5	12	26	0	15	5	8	0	1008	3972
04:55:00 PM	44	135	12	1	2	95	2	0	5	11	31	0	13	10	2	0	1010	4026
05:00:00 PM	27	99	13	0	5	87	3	0	4	17	23	0	21	23	4	0	1027	4022
05:05:00 PM	28	100	17	0	4	103	0	0	7	9	21	0	23	15	2	0	1018	3999
05:10:00 PM	40	126	13	0	1	93	3	0	1	5	30	0	21	14	3	0	1005	4025
05:15:00 PM	28	113	18	0	2	81	2	0	6	12	32	0	15	14	2	0	1004	4043
05:20:00 PM	17	98	7	1	6	93	1	0	2	9	25	0	29	19	7	0	989	4007
05:25:00 PM	29	121	11	0	6	115	0	0	3	8	16	0	9	9	3	0	969	4011
05:30:00 PM	37	115	13	0	5	98	3	0	9	11	28	0	13	11	3	0	990	4049
05:35:00 PM	25	95	17	0	6	96	1	0	6	14	25	0	27	18	3	0	1009	4024
05:40:00 PM	29	111	11	0	3	85	1	0	6	7	16	0	16	15	3	0	982	3966
05:45:00 PM	34	119	19	0	2	89	3	0	5	11	21	1	18	6	4	0	968	3989
05:50:00 PM	26	112	18	0	5	82	1	0	5	10	33	1	9	22	1	0	960	3976
05:55:00 PM	23	110	18	0	2	92	5	0	2	16	13	0	13	16	1	0	968	3924

Data Provided by K-D-N.com 503-594-4224

N/S street	Wallace Rd NW
E/W street	Orchard Heights Rd NW
City, State	Salem OR
Site Notes	
Location	44.95334 - -123.05251
Start Date	Thursday, September 16, 2021
Start Time	02:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:00:00 PM
Peak 15 Min Start	04:45:00 PM
PHF (15-Min Int)	0.97



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
372	1130	0	0	0	938	27	0	36	0	351	0	0	0	0	0	1502	965	387	0	1289	1166	399	0
Percent Heavy Vehicles																							
1.6%	2.7%	0.0%	0.0%	0.0%	3.3%	3.7%	0.0%	2.8%	0.0%	2.6%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	3.3%	2.6%	0.0%	3.1%	2.7%	1.8%	0.0%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				Sum
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	1	0	7

Time	Northbound Wallace Rd NW				Southbound Wallace Rd NW				Eastbound Orchard Heights Rd NW				Westbound Orchard Heights Rd NW				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
02:00:00 PM	23	50	0	0	0	65	4	0	2	0	21	0	0	0	0	0	566	
02:05:00 PM	47	77	0	0	0	55	2	0	1	0	28	0	0	0	0	0	595	
02:10:00 PM	35	65	0	0	0	65	0	0	2	0	24	0	0	0	0	0	572	
02:15:00 PM	33	71	0	0	0	61	1	0	3	0	25	0	0	0	0	0	595	
02:20:00 PM	21	74	0	0	0	60	3	0	0	0	29	0	0	0	0	0	625	
02:25:00 PM	25	79	0	0	0	86	1	0	0	0	23	0	0	0	0	0	666	
02:30:00 PM	24	73	0	0	0	86	0	0	2	0	39	0	0	0	0	0	678	
02:35:00 PM	28	84	0	0	0	80	0	0	0	0	36	0	0	0	0	0	647	
02:40:00 PM	21	86	0	0	0	74	2	0	0	0	43	0	0	0	0	0	617	
02:45:00 PM	21	70	0	0	0	74	1	0	1	0	26	0	0	0	0	0	617	
02:50:00 PM	29	68	0	0	0	60	2	0	4	0	35	0	0	0	0	0	579	2418
02:55:00 PM	30	88	0	0	0	43	1	1	1	0	24	0	0	0	0	0	586	2453
03:00:00 PM	27	74	0	0	0	69	1	0	1	0	28	0	0	0	0	0	590	2445
03:05:00 PM	23	69	0	0	0	82	2	0	0	0	26	0	0	0	0	0	640	2492
03:10:00 PM	40	96	0	0	0	74	3	0	1	0	24	0	0	0	0	0	655	2513
03:15:00 PM	36	86	0	0	0	65	1	0	2	0	25	0	0	0	0	0	693	2566
03:20:00 PM	28	90	0	0	0	110	1	0	0	0	11	0	0	0	0	0	677	2574
03:25:00 PM	22	82	0	0	0	83	1	0	3	0	31	0	0	0	0	0	689	2577
03:30:00 PM	44	77	0	0	0	67	5	0	3	0	31	0	0	0	0	0	675	2575
03:35:00 PM	26	82	0	0	0	75	1	0	3	0	39	0	0	0	0	0	707	2603
03:40:00 PM	27	105	0	0	0	87	2	0	3	0	30	0	0	0	0	0	717	2647
03:45:00 PM	41	86	0	0	0	61	3	0	3	0	43	0	0	0	0	0	715	2673
03:50:00 PM	28	93	0	0	0	73	0	0	3	0	27	0	0	0	0	0	692	2716
03:55:00 PM	24	82	0	0	0	103	3	0	0	0	19	0	0	0	0	0		

04:00:00 PM	35	90	0	0	0	75	9	0	0	0	30	0	0	0	0	0	694	2755
04:05:00 PM	31	82	0	0	0	86	2	0	5	0	30	0	0	0	0	0	706	2789
04:10:00 PM	33	83	0	0	0	74	1	0	4	0	31	0	0	0	0	0	701	2777
04:15:00 PM	26	99	0	0	0	58	1	0	9	0	39	0	0	0	0	0	694	2794
04:20:00 PM	32	100	0	0	0	59	2	0	3	0	36	0	0	0	0	0	690	2786
04:25:00 PM	34	76	0	0	0	92	2	0	0	0	22	0	0	0	0	0	690	2790
04:30:00 PM	28	91	0	0	0	94	6	0	0	0	17	0	0	0	0	0	694	2799
04:35:00 PM	30	108	0	0	0	78	1	0	1	0	29	0	0	0	0	0	709	2820
04:40:00 PM	26	95	0	0	0	76	0	0	6	0	43	0	0	0	0	0	729	2812
04:45:00 PM	29	83	0	0	0	72	1	0	5	0	25	0	0	0	0	0	708	2790
04:50:00 PM	45	118	0	0	0	75	0	0	0	0	31	0	0	0	0	0	730	2835
04:55:00 PM	23	105	0	0	0	99	2	0	3	0	18	0	0	0	0	0	734	2854
05:00:00 PM	43	79	0	0	0	88	2	0	0	0	20	0	0	0	0	0	751	2847
05:05:00 PM	26	95	0	0	0	77	2	0	2	0	24	0	0	0	0	0	708	2837
05:10:00 PM	31	91	0	0	0	69	1	0	2	0	35	0	0	0	0	0	687	2840
05:15:00 PM	37	83	0	0	0	70	0	0	0	0	22	0	0	0	0	0	667	2820
05:20:00 PM	23	104	0	0	0	91	2	0	2	0	25	0	0	0	0	0	688	2835
05:25:00 PM	27	87	0	0	0	89	1	0	0	0	16	0	0	0	0	0	679	2829
05:30:00 PM	33	90	0	0	0	96	5	0	2	0	15	0	0	0	0	0	708	2834
05:35:00 PM	41	93	0	0	0	86	2	0	2	0	23	0	0	0	0	0	708	2834
05:40:00 PM	41	84	0	0	0	72	2	0	0	0	32	0	0	0	0	0	719	2819
05:45:00 PM	29	77	0	0	0	67	2	0	3	0	38	0	0	0	0	0	694	2820
05:50:00 PM	44	89	0	0	0	73	1	0	1	0	24	0	0	0	0	0	679	2783
05:55:00 PM	38	90	0	0	0	74	2	0	5	0	24	0	0	0	0	0	681	2766

Middle Housing: HB 2001 Frequently Asked Questions

The State Legislature passed [House Bill 2001](#)

(<https://olis.leg.state.or.us/liz/2019R1/Downloads/MeasureDocument/HB2001/Enrolled>) in 2019 to help increase housing choices and housing supply in Oregon. Below are answers to some frequently asked questions about the new law and its impact on Salem. You can also learn more by visiting the [State's webpage](#) (<https://www.oregon.gov/lcd/UP/Pages/Housing-Choices.aspx>) on HB 2001.

The Planning Commission will hold a work session on proposed code changes to implement HB 2001 on Tuesday, June 1.

1. How does HB 2001 affect the types of housing allowed in Salem?

HB 2001 requires large cities like Salem to allow a duplex on each lot that is zoned for residential use that allows development of a detached single-family dwelling. Salem must also allow other types of middle housing – triplexes, quadplexes, townhouses, and cottage clusters – in *areas* zoned for residential use that allow detached single-family dwellings.

2. What areas of Salem will be impacted?

HB 2001 will impact all areas in Salem that are zoned residential *and* allow detached single-family dwellings. That includes the Single-Family Residential (RS) zone, Residential Agriculture (RA) zone, Duplex Residential (RD) zone, and Multiple Family Residential I (RM-I) zone. You can [find the zoning of your property online](#) (</Pages/find-your-property-zone.aspx>).

3. Will all middle housing types be allowed on lots in those residential zones

No. Duplexes will be allowed on all lots in the RS, RA, RD, and RM-I zone that allow detached single-family dwellings. That means duplexes, like a single-family dwellings, will be allowed on lots that are at least 4,000 square feet in size. However, the State has recently adopted new administrative rules that include a provision that requires triplexes, quadplexes, and cottage clusters to be allowed in residential areas based on lot size. In Salem, the requirement is:

- A triplex is allowed on a lot that is at least 5,000 square feet in size

- A quadplex is allowed on a lot that is at least 7,000 square feet in size
- A cottage cluster is allowed on a lot that is at least 7,000 square feet in size

4. What is a cottage cluster?

The State has generally defined a cottage cluster as a grouping of at least four detached dwelling units per acre that are clustered around a common courtyard. Each building must have a footprint of less than 900 square feet.

5. Will single-family homes be banned?

No. Detached single-family dwellings will still be allowed. HB 2001 allows a broader mix of housing types but does not prohibit detached single-family homes.

6. Will accessory dwelling units still be allowed?

Yes. Accessory dwelling units (ADUs) will continue to be allowed with a single-family detached dwelling. They will continue to be limited in size to 900 square feet or 75 percent of the main building gross area, whichever is less. HB 2001 prohibits cities from requiring owner occupancy or parking for ADUs; Salem's zoning code already complies with these parts of the law.

7. How much parking will be required?

Under the State's rules, the City can generally require up to two parking spaces for a duplex, three spaces for a triplex, four spaces for a quadplex, one space for each townhouse, and one space for each dwelling unit in a cottage cluster. If a detached single-family dwelling is converted to a triplex or quadplex, the City cannot require any additional parking spaces.

8. When must Salem comply with HB 2001?

The City must comply with the new law and its associated administrative rules by June 30, 2022.

9. When does Salem expect to implement HB 2001?

The City is reviewing the State's recently-adopted rules and will propose changes to Salem's zoning code to comply. This work was initially going to be incorporated into the [Our Salem project \(/our-salem\)](#), but might be done in advance of that larger project this spring or summer, given the State-mandated deadline for adoption.

10. How do I stay informed?

You can [sign up to receive updates \(https://cityofsalem.us1.list-manage.com/subscribe?u=9c537ef0aeb7914e4fe4f6d5c&id=21d07b5555\)](https://cityofsalem.us1.list-manage.com/subscribe?u=9c537ef0aeb7914e4fe4f6d5c&id=21d07b5555) on this and other Planning projects. If you have more questions, you can also contact Eunice Kim, Long Range Planning Manager.



Oregon

Kate Brown, Governor

Department of Transportation

Region 2 Tech Center

455 Airport Road SE, Building A


Salem, Oregon 97301-5397

Telephone (503) 986-2990

Fax (503) 986-2839

DATE: February 3, 2022

TO: Dan Fricke
Senior Transportation Planner

FROM: 
Arielle Ferber, PE
Traffic Analysis Engineer

SUBJECT: Doaks Ferry (Titan Hill) Rezone (Salem, OR) – Transportation Planning Rule (TPR)
TIA Review Comments

ODOT Region 2 Traffic has completed our review of the submitted memorandum (dated January 31, 2022) and TPR analysis (dated January 3, 2022) to address traffic impacts due to development northeast of the Doaks Ferry Road at Orchard Heights Road intersection in the city of Salem, with respect to consistency and compliance with ODOT's Analysis Procedures Manual, Version 2 (APM). The APM was most recently updated in October 2020. The current version is published online at: <http://www.oregon.gov/ODOT/TD/TP/Pages/APM.aspx>. As a result, we submit the following comments for the City's consideration:

Analysis items to note:

- Region Traffic assumes all land uses and densities offered under both the current and proposed zones are consistent with the City's code as cited in the report.
- The 2036 forecast traffic volumes for the existing zoning scenario were developed by applying a linear growth rate to the 2021 existing traffic volumes. It should be noted that the linear growth does not provide enough growth to be consistent with the projected trip potential of the existing zoning at the Doaks Ferry Road at Orchard Heights Road intersection for the SBL, WBR, and NBT movements (i.e. the SBL movement increases by 13 vehicles between 2021 and 2036 while the existing zoning (Figure 3) shows an increase of 43 vehicles in the AM peak period). While this may have an effect on the operational results of the analysis, it is not expected to have an impact on the conclusions of the study as the study is reviewing for the difference between existing and proposed zoning.

Proposed mitigation comments:

1. ODOT maintains jurisdiction of the Salem-Dayton Highway No. 150 (OR 221) and ODOT approval shall be required for all proposed mitigation measures to this facility.

2. No mitigation measures to a state highway have been proposed. This conclusion appears reasonable for this proposed development given the submitted analysis.

Thank you for the opportunity to review this traffic impact analysis. As the analysis software files were not provided, Region 2 Traffic has only reviewed the submitted report.

This traffic impact study has been prepared in accordance with ODOT analysis procedures and methodologies. No further analysis work should be required.

If there are any questions regarding these comments, please contact me at (971) 208-1290 or Arielle.Ferber@ODOT.state.or.us

Jamie Donaldson

From: Tony Martin
Sent: Monday, February 7, 2022 8:53 AM
To: Jamie Donaldson
Subject: Case CPC-ZC 21-06 - Rebuttal

REBUTTAL to WSNA Land Use Chair 1 February 2022 comments.

The assertion that this proposal “does significantly impact traffic” is incorrect. The analysis provided by Transight Consulting shows that in the horizon year of 2035 in the Salem Transportation System Plan, the intersections within the City’s jurisdiction (Doaks Ferry Road NW - Orchard Heights Road NW, and Doaks Ferry Road NW and Glen Creek Road NW) operate below the City’s standard for both the existing use and the proposed used with the 500 unit (2,270 ADT) limitation. Imposing a “trip cap” or 1,000 ADT will likely also comply with the Transportation Planning Rule (TPR), OAR 660-012-0060, but no traffic analysis has been submitted to corroborate that assertion. The suggested 1,000 average daily traffic increase is based upon the Oregon Highway Plan (OHP) Action 1F.5 that indicates if the increase is less than 1,000 ADT then ODOT considers the increase to be “small” and does not further degrade the system.

There are no citations of any Land Use Board of Appeals decisions that indicate that implementing the Oregon Highway Plan (OHP) standards In Action 1F.5 are inappropriate for the State facility. If a TPR analysis shows the facility is operating above the operating standards in the TSP horizon year (assuming full build-out of the existing allowed uses), then that v/c ratio becomes the NEW operating standard per OHP Action 1F.5. Then the facilities are analyzed with the net difference in traffic from the proposed development. On the State facility, If the increase in v/c is 0.03 or less, is it NOT considered significant. It may be a degradation of the State facility, but it IS allowed under OHP Action 1F.5 if the increase of v/c ration is 0.03 or less.

The Draft Environmental Impact Statement for the Salem River Crossing is immaterial for this application. The Draft EIS was not adopted by City Council and has no bearing in this discussion. The City’s Congestion Relief Taskforce analysis is also not relevant to this application. The analysis stands on it’s own and shows there is no significant affect to the transportation system with the proposed trip cap.

The proposed “trip cap” of 550 units and 2,270 ADT was analyzed and evaluated in the January 3, 2022 Transight Engineering analysis. Table 11 shows the intersection of Orchard Height Road NW and Wallace Road operate BELOW the ODOT performance standard of a v/c < 0.95. Table 12 show the relative change in the v/c ratio of 0.01 at the intersection of Glen Creek Road NW and Wallace Road NW with the “trip cap” in place. The Oregon Highway Action 1F6 states:

In applying “avoid further degradation” for state highway facilities already operating above the mobility targets in Table 6 or Table 7 or those otherwise approved by the Oregon Transportation Commission, or facilities projected to be above the mobility targets at the planning horizon, a small increase in traffic does not cause “further degradation” of the facility.

The threshold for a small increase in traffic between the existing plan and the proposed amendment is defined in terms of the increase in total average daily trip volumes as follows:

- Any proposed amendment that does not increase the average daily trips by more than 400.
- Any proposed amendment that increases the average daily trips by more than 400 but less than 1001 for state facilities where:
 - The annual average daily traffic is less than 5,000 for a two-lane highway
 - The annual average daily traffic is less than 15,000 for a three-lane highway
 - The annual average daily traffic is less than 10,000 for a four-lane highway
 - The annual average daily traffic is less than 25,000 for a five-lane highway
- If the increase in traffic between the existing plan and the proposed amendment is more than 1000 average daily trips, then it is not considered a small increase in traffic and the amendment causes further degradation of the facility and would be subject to existing processes for resolution.

In applying OHP mobility targets to analyze mitigation, ODOT recognizes that there are many variables and levels of uncertainty in calculating volume-to-capacity ratios, particularly over a specified planning horizon. After negotiating reasonable levels of mitigation for actions required under OAR 660-012-0060, ODOT considers calculated values for v/c ratios that are within 0.03 of the adopted target in the OHP to be considered in compliance with the target. The adopted mobility target still applies for determining significant affect under OAR 660-012-0060.

The analysis provided indicates the “state highway facilities . . . [are] projected to be above the mobility targets at the planning horizon, a small increase in traffic does not cause “further degradation” of the facility.” Since the facility is projected to be “above the mobility targets at the planning horizon”, the NEW mobility targets become the future calculated v/c ratios, pursuant to OAR 660-012-0060(3)(a). OHP Action 1F.5 states, “ODOT considers calculated values for v/c ratios that are within 0.03 of the adopted target in the OHP to be considered in compliance with the target.” The analysis provided shows the intersection of Orchard Heights Road NW still be operating below the mobility standard of 0.95 and the relative change in the v/c at the intersection of Glen Creek Road NW will only increase the v/c 0.01 which is BELOW the 0.03 limit to be considered “in compliance with the target.”

There is no basis to place a 1,000 vehicles per day trip cap on this site. The analysis provided shows the 500-unit and 2,270 ADT trip cap is NOT a significant affect pursuant to the Transportation Planning Rule and the Oregon Highway Plan Action 1F.5. Under the existing zoning, the site could generate 1,775 daily trips as shown on Table 3 of the Transight TPR analysis.



MEMORANDUM

COMMUNITY DEVELOPMENT DEPARTMENT

DATE: APRIL 20, 2021

TO: PLANNING COMMISSION

FROM: EUNICE KIM, LONG RANGE PLANNING MANAGER

SUBJECT: UPDATE ON MULTIFAMILY DEVELOPMENT

The City of Salem Planning Division has been working to implement the Salem Housing Needs Analysis (HNA) [Work Plan](#) since directed to do so by City Council in 2016. The work plan advances recommendations in the [HNA](#) to address the projected 207-acre deficit of multifamily land (2,897 dwelling units) in Salem's portion of the urban growth boundary (UGB). This memorandum outlines what has been accomplished, what is in the works, and what progress has been made toward the projected deficit.

HNA Work Plan Projects

The HNA Work Plan includes three phases of work as shown below.

Phase	Project
Phase 1 – Expand Housing Choices	
	1. Allow accessory dwelling units ✓
	2. Allow more multifamily housing types in single-family zones In progress
Phase 2 – Encourage Multifamily Development	
	3. Revise design review process ✓
	4. Revise Planned Unit Development regulations ✓
	5. Identify tools to increase redevelopment ✓
Phase 3 – Redesignate Land	
	6. Redesignate land for multifamily housing In progress

Land for Multifamily Housing

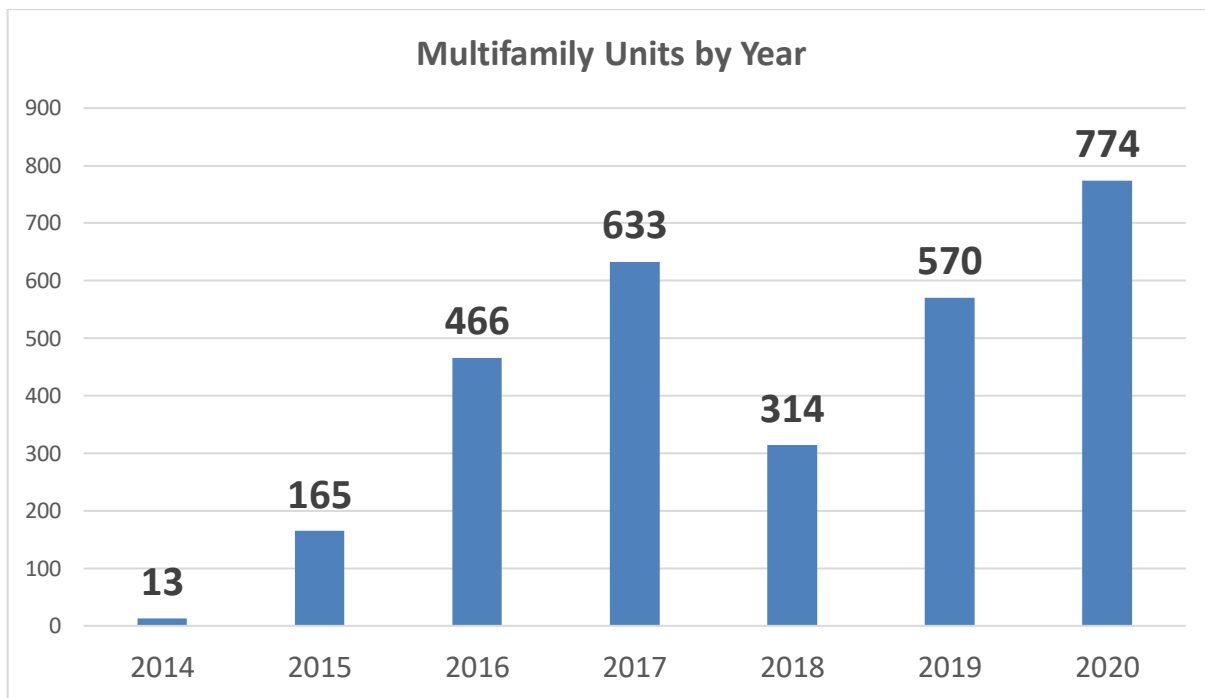
Between January 2014 and March 2020, there has been a net increase of roughly 40 acres of land designated as Multi-Family Residential on the Comprehensive Plan Map. The amount of additional multifamily land does not account for zone changes from Multiple Family-I (RM-I) to Multiple Family-II (RM-II). The HNA – and the projected deficit of multifamily land – is based on Comprehensive Plan designations as opposed to zoning, and land that is zoned RM-I and RM-II generally have a Comprehensive Plan designation of Multi-Family Residential.

In addition to the new Multifamily land, there has been a net increase of roughly 102 acres of land designated as Mixed Use on the Comprehensive Plan Map. Much of this land was redesignated to accommodate mixed-use developments that include multifamily housing.

Multifamily Development

Multifamily housing has continued to be developed in Salem since the HNA was completed. The HNA relied on building permit data through February of 2014. Between that time and the end of 2020, building permits have been issued for 2,935 new multifamily units.

Attachment 1 shows that multifamily development has been occurring across Salem. The map shows building permits for multifamily units by year, as does the chart below. The number of building permits for multifamily units hit a high of 774 units last year.



House Bill 2001

In 2019, the State Legislature passed House Bill 2001 to help increase housing choices and housing supply in Oregon. It requires large cities like Salem to allow a duplex on each lot that is zoned for residential use that allows development of a detached single-family dwelling. That means, for example, that a duplex must be allowed on all lots that are at least 4,000 square feet in the Single-Family Residential (RS) zone.

Salem must also allow other types of middle housing – triplexes, quadplexes, townhouses, and cottage clusters – in areas zoned for residential use that allow detached single-family dwellings. Specifically, new administrative rules recently adopted by the State include a provision that requires triplexes, quadplexes, and cottage clusters to be allowed in residential areas based on lot size. In Salem, the requirement is:

- A triplex is allowed on a lot that is at least 5,000 square feet in size
- A quadplex is allowed on a lot that is at least 7,000 square feet in size
- A cottage cluster is allowed on a lot that is at least 7,000 square feet in size

The City must comply with HB 2001 and its associated rules by June 30, 2022. Staff is reviewing the rules and plans to propose changes to Salem's zoning code to comply this spring or early summer. In the meantime, staff has created a [webpage](#) to answer frequently asked questions about HB 2001.

Our Salem

Staff continues to work on the [Our Salem project](#), which is a multi-year project to update the Salem Area Comprehensive Plan. After a year and a half of community engagement, the City – working with a consultant team – has developed the [Our Salem Vision](#) for future growth and development. This vision includes proposed changes to the Comprehensive Plan Map that significantly increase the amount of land designated Multi-Family Residential and Mixed Use. Specifically, the proposed changes redesignate roughly 290 acres to Multi-Family and 1,700 acres to Mixed Use. Both designations allow multifamily housing. The proposed changes will accommodate Salem's projected housing needs as identified in the HNA.

Staff plans to develop and propose Comprehensive Plan policies, zoning map changes, and zoning code changes in line with the Vision later this year. By the end of this year, staff plans to bring all of those proposed changes – including the proposed Comprehensive Plan Map – through the adoption process.

Design Review

The City has updated Salem's design regulations on multifamily housing as a result of the Multifamily Housing Design project. The updated regulations help meet our community's housing needs by removing barriers to the development of multifamily housing and ensuring that new development is compatible with our neighborhoods. The City Council approved the changes in February 2020.

Effective in March 2020, the changes:

- Provide greater flexibility in how multifamily design standards can be met
- Reduce the number of design standards for small multifamily housing projects
- Simplify the regulations for three and four-unit projects
- Reduce parking requirements for multifamily projects of all sizes

Details can be found on the [Multifamily Housing Design Standards webpage](#).

Tools to Increase Redevelopment

The City has implemented several tools to increase redevelopment (and infill development) for housing in recent years. As mentioned above, the City waived SDCs for ADUs for five years.

As part of the Multifamily Housing Design code amendment, the City simplified the approval process for multifamily housing development. Specifically, if multifamily housing projects cannot meet all of the City's design standards, those projects can now apply for an adjustment, which is an administrative approval. Prior to the code amendment, such projects had to go through a public hearing process at the Planning Commission.

The City also decreased parking requirements for housing to spur redevelopment and infill housing development.

- Off-street parking is no longer required for multifamily projects that are either located in the [Central Salem Development Program area](#) downtown or within a quarter-mile of Cherriots' [Core Network](#). The Core Network consists of corridors throughout Salem where Cherriots has committed to providing frequent transit service.
- The parking requirement for housing projects with three to 12 units has been reduced to 1 space per unit.
- The parking requirement for affordable housing units (e.g., 80 percent of family median income) has been reduced by 25 percent.
- The City has provided other options for reducing parking requirements for multifamily housing projects. For example, such projects can provide additional covered bicycle parking or on-site shared vans to reduce their parking requirement.

In addition, the City has initiated and adopted Comprehensive Plan Map changes to land along State Street and in West Salem from Commercial to Mixed Use in recent years. These redesignations of land have simplified the approval process for multifamily housing to spur housing redevelopment and infill development. In particular, multifamily housing is now a permitted use in the Mixed Use areas, where previously a conditional use permit was required (e.g., public hearing process).

Last year, the City created a new tax increment financing (TIF) district to incent additional affordable housing in a residential development on the former North Campus of the State Hospital site. This is a new tool that the City has implemented to help increase the supply of affordable housing in Salem.

Accessory Dwelling Units

In 2017, City Council approved a code amendment to allow accessory dwelling units (ADUs), and it became effective on August 9, 2017. As of the end of 2020, 77 building permits have been approved for ADUs in Salem.

Since July 1, 2019, the system development charges (SDCs) for ADUs have been waived for five years. This amounts to more than \$4,000 in cost savings per new ADU. The waiver will continue until June 30, 2024. It is the result of a City Council vote on February 25, 2019 to update the methodologies used to determine SDCs for parks, transportation, water, wastewater, and stormwater infrastructure.

Background

The City of Salem completed the HNA in December 2014. The purpose was to develop strategies to provide enough land to meet Salem's housing needs over the next 20 years and to inform policy decisions related to residential land. The HNA, in conjunction with the Salem Economic Opportunities Analysis, validated that the existing UGB does not need to be expanded to meet Salem's land needs.

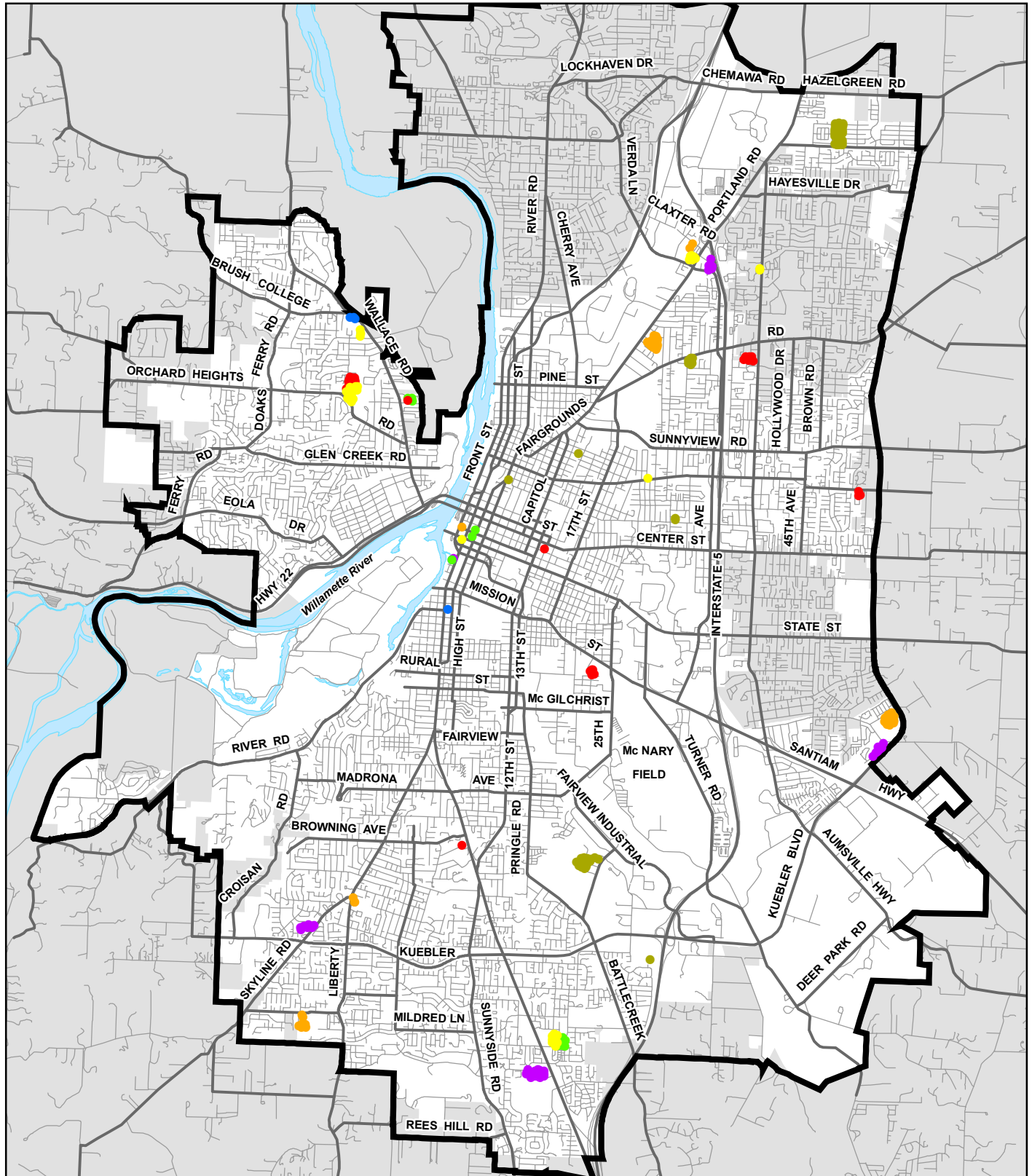
The HNA found that Salem's portion of the UGB has a projected 1,975-acre surplus of land for single-family housing (9,131 units) and a projected 207-acre deficit of land designated for multifamily housing (2,897 units). Under state law, the City cannot adopt the HNA without also addressing this deficit. Staff is working to do this through the HNA Work Plan described earlier as well as the Our Salem project.

Attachment:

1. Map of Multifamily Housing Building Permits

Attachment 1: Map of Multifamily Housing Building Permits

1st Quarter 2014 through 4th Quarter 2020 MultiFamily Permits



Legend

1Q2014-4Q2020 MultiFamily Permits

- 2014
- 2015
- 2016
- 2017
- 2018

- 2019
- 2020

- ▭ Urban Growth Boundary
- ▭ Outside Salem City Limits
- Major Streets
- Other Streets



0 1,500 3,000 6,000 Feet



This product is provided as is, without warranty. In no event is the City of Salem liable for damages from the use of this product. This product is subject to license and copyright limitations and further distribution or resale is prohibited.