

Community Development Department

P.O. Box 970 ▪ 414 E First Street ▪ Newberg, Oregon 97132
503-537-1240 ▪ Fax 503-537-1272 ▪ www.newbergoregon.gov

PLANNING COMMISSION STAFF REPORT CRESTVIEW CROSSING PLANNED UNIT DEVELOPMENT AND CONDITIONAL USE PERMIT

HEARING DATE: October 11, 2018

FILE NO: PUD18-0001/CUP18-0004

REQUEST: The application proposes a mixture of commercial use, single-family homes, cottage style homes, affordable housing and multi-family homes. The proposed development on 33.13 acres of land includes 18 single-family homes, 230 cottage homes and 51 multi-family homes with modifications to the base zone's dimensional requirements as permitted through the PUD process. The conditional use permit request is for allowing residential use on C-2 Community Commercial zoned property.

LOCATION: 4505 E Portland Road and abutting property without a street address

TAX LOTS: Yamhill County tax lots 3216-01100 and 3216AC-13800

PROPERTY SIZE: 33.13 acres

APPLICANT: Andrew Tull of 3J Consulting, Inc.

OWNER: GC Commercial, LLC and VPCF Crestview, LLC

ZONE: C-2 Community Commercial, R-1 Low Density Residential and R-2 Medium Density Residential districts. Yamhill County VLDR-1 and VLDR-2.5.

PLAN DISTRICT: COM (Commercial), LDR (Low Density Residential), MDR (Medium Density Residential)

OVERLAYS: Airport Conical Surface, Newberg Bypass Interchange

Attachments:

Order 2018-10 with

Exhibit "A": Findings

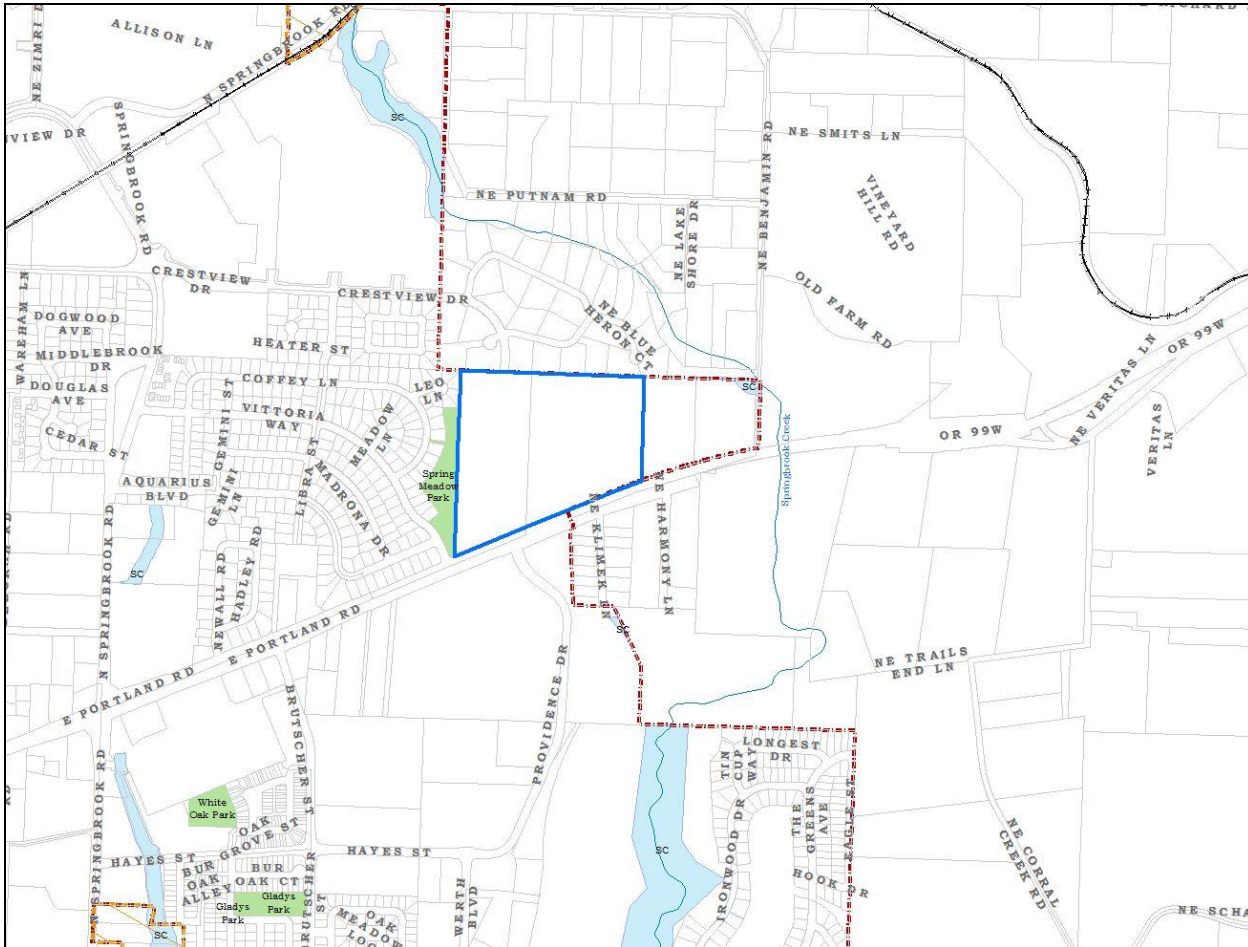
Exhibit "B": Conditions

Attachments

1. Application Material
2. Agency Comments
3. Public Comments
4. 5-Party Agreement
5. Kittelson and Associates Memorandum with Attachment received August 29, 2018
6. Related Resolutions, Orders and Ordinances
7. Joint Permit Application
8. Supplemental Narrative received August 23, 2018
9. Applicant/Oxberg Lakes Estates Jointly Proposed Conditions of Approval, 2008 Development

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Agreement and Email Communication Pertaining to the Sound Wall
10. Kittelson and Associates Memorandums on Traffic Calming Proposals and Associated Emails



Location Map

A. DESCRIPTION OF APPLICATION:

The applicant is proposing a mixture of commercial development, single-family homes, cottage style single-family homes, affordable housing and multi-family homes. Residential use will include 18 single-family homes on large lots, 230 cottage homes, and 51 multi-family homes with modifications to the dimensional requirements of the base zones dimensional requirements. One 4.4-acre lot will be created to allow for future commercial development (Attachment 1).

The applicant is proposing both active and passive opens space areas. There will be a network of open spaces, wetlands and a network of linked pedestrian paths. The paths will provide connections for the residents to open spaces, a neighborhood park and wetlands.

Both public and private streets will be utilized through the PUD process. Several off-street parking areas are proposed and on-street parking will also be provided on the public streets.

The applicant has reviewed the City of Newberg Affordable Housing Action Plan and is proposing an affordable housing component that would provide twelve single family detached

homes at reduced prices and deed restrictions designed to create perpetual affordability. The twelve homes will be marketed at rates affordable to those home buyers earning less than the median family income as described within the City's Housing Action Plan's definition of affordable housing. The City's Affordable Housing Action Plan defines affordable housing as when a family spends no more than 30% of their income for housing. The applicant has stated that "at closing, buyers will be required to sign covenants agreeing to limit the price of any future sale to a rate of appreciation which is tied to either the Area Median Family Income rate or another acceptable index of income." Further, the applicant has stated that they "plan on working with the Housing Authority of Yamhill County and the City's Affordable Housing Ad Hoc Committee to refine the covenants which will be recorded with the sale of these units and to eventually find parties which may qualify for the purchase of affordable houses. The proposed affordable homes will require owner occupation and will be constructed at various locations throughout the development." It should be noted that the applicant has not stated which lots will be designated as affordable housing units or in what phase of development these units will be built.

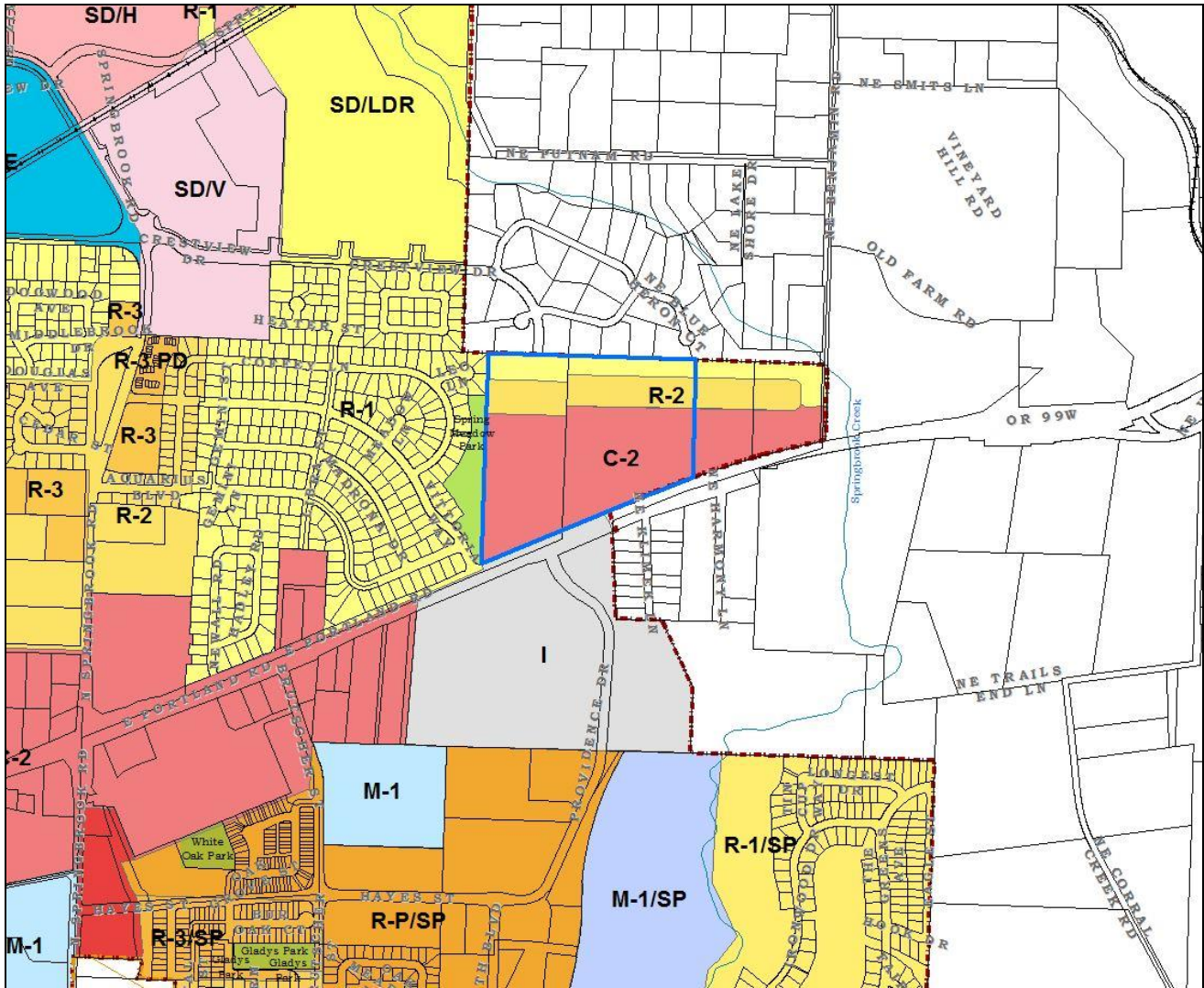
The applicant is proposing two plats. The first plat proposes attached, duplex styled housing on some of the lots. The alternative plat illustrates exclusively detached housing units. The applicant is asking for flexibility in preparing the final plats for the various phases within the development to meet market demand by platting either detached or attached homes. The applicant has stated that there will be no additions or deletions of lots, the 250 lots will remain the same regardless of housing unit type.

B. SITE INFORMATION:

1. Location: 4505 E Portland Road and abutting tax lot 3216AC-13800
2. Size: 33.13 Acres
3. Topography: Sloping topography, generally slopes downward from the northwest to the southeast.
4. Current Land Uses: vacant, single family house, a barn and several small structures (animal coops/pens or storage sheds) buildings and unmaintained orchards
5. Natural Features: wetlands
6. Adjacent Land Uses:
 - a. North: Unincorporated Yamhill County, Oxberg Lake Estates with lots 1 acre and larger
 - b. East: Single family house, vacant
 - c. South: E Portland Road, Klimek Homes subdivision, Providence Newberg Medical Center
 - d. West: Spring Meadow Park, Spring Meadow Subdivision

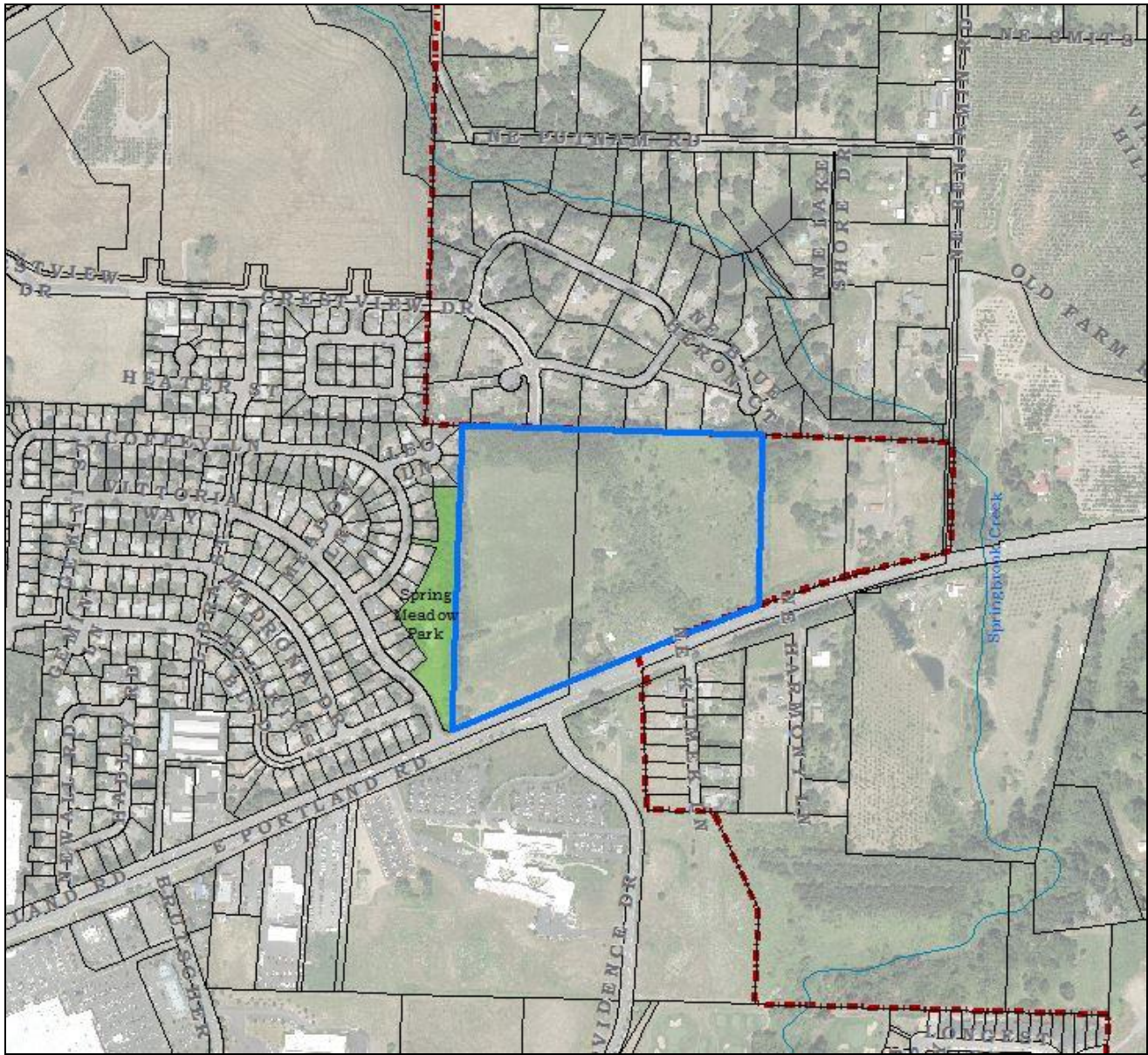
7. Access and Transportation: Access will be provided from the south by E Portland Road and E Crestview Drive from the north.
8. Utilities:
 - a. Wastewater: The City's GIS shows there is a 24-inch public sewer line which is available for extension to the north to serve the Crestview Crossing PUD. The line is located approximately 700-feet south of E Portland Road at the south end of NE Klimek Lane.
 - b. Water: The City's GIS shows there is a 10-inch public water line in E Portland Road which is available for extension to the north, and an 8-inch public water line in E Crestview Drive which is available for extension to the south.

The City's GIS also shows an 8-inch non-potable water line along E Portland Road that terminates just east of the property near NE Harmony Lane.
 - c. Storm: The City's GIS shows there is a 15-inch public stormwater line available for connection to the northern terminus of E Crestview Drive, and a 24-inch public stormwater line culvert under E Portland Road.
 - d. Overhead lines: There are no existing overhead lines. All new service lines are required to be undergrounded.
 - e. Wetlands: There are existing wetlands within the boundary of the Crestview Crossing PUD. The applicant will be required to follow state/federal processes to delineate wetlands and apply for a joint permit application (JPA).



Zoning Map

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Aerial Photo

C. PROCESS: The planned unit development request is a Type III application and follows the procedures in Newberg Development Code 15.100.050. The Planning Commission will hold a quasi-judicial hearing on the application. The Commission is to make a decision on the application based on the criteria listed in the attached findings. The Planning Commission’s decision is final unless appealed. Important dates related to this application are as follows:

1. 07/05/18: The Community Development Director deemed the application complete.
2. 07/12/18: The applicant mailed notice to the property owners within 500 feet of the site.
3. 07/12/18: The applicant posted notice on the site.

4. 07/18/18: The *Oregonian* newspaper published notice of the Planning Commission hearing for the August 9, 2018 meeting.
5. 07/16/18 City staff posted notice of the Planning Commission hearing in 4 public places.
6. 08/09/18: After proper notice the Planning Commission opened the public hearing, kept the record open and continued the hearing until 9/13/18. a quasi-judicial hearing to consider the application.
7. 08/09/18 The applicant requested a thirty six (36) day extension to the required 120 day time limit for processing their application.
8. 08/17/18 The applicant resubmitted their application material
9. 08/29/18 City staff posted notice of the Planning Commission hearing in 4 public places.
10. 08/29/18 The *Newberg Graphic* published notice of the Planning Commission hearing for the September 13, 2018 meeting.
11. 09/13/18 The Planning Commission continued the hearing from 08/09/18, took public comments, kept the record open and continued the hearing until October 11, 2018.
12. 10/11/18 The Planning Commission continued the hearing from 09/13/18 took public comments and deliberated.

D. AGENCY COMMENTS: The application was routed to several public agencies for review and comment. Comments and recommendations from city departments have been incorporated into the findings and conditions. As of the writing of this report, the city received the following external agency comments (Attachment 2):

1. PGE
2. ODOT Rail and Public Transit – no conflict
3. ODOT – Comments regarding trees along E Portland Road

E. PUBLIC COMMENTS: As of the writing of this report, the city has received eleven public comments. One comment was received in support of the proposed Crestview Crossing development if the rules established in 2006-2008 are followed. The supporting comment states the development is appropriate with effective water management to protect the aquifer from which the Oxberg community gets their water, use of proper traffic calming maintaining the collector-route properties and use of a sound wall to separate the existing developments from the proposed. Two of the comments expressed concern for the number of trees proposed for removal. The other eight generally expressed concern regarding degradation of livability due to noise, not wanting a Lake Oswego based Developer building the development, trespassing, traffic, movement of the planned roundabout further south, violation of the 5 party agreement with Oxberg Lake Estates, need for a barrier between Oxberg Lake Estates and the large lots proposed by the Crestview Crossing PUD, wanting to utilize all the wetlands as a

park, filling of wetlands and maintaining the water quality of the Oxberg Lake Estates aquifer which the Oxberg Lake Estates draws potable water from for their homes. All public comments received in time are included in Attachment 3.

F. ANALYSIS:

Applicants' and Oxberg Lakes Estates HOA Jointly Proposed Conditions of Approval Received at 2:14 pm on September 25, 2018

We received jointly proposed conditions of approval from the applicant and Oxberg Lake Estates HOA at 2:14 pm on September 25, 2018. City Staff were originally told by the two parties at the September 13, 2018 Planning Commission public hearing that the jointly proposed conditions would be delivered on September 20, 2018. There are eleven revised conditions of approval and thirteen newly proposed conditions of approval for the sound wall pertaining to traffic calming, sound wall, landscape buffer and setback and storm water drainage system. The applicants' and Oxberg Lakes Estates jointly proposed conditions of approval resemble the conditions listed in a 2008 Development Agreement (DA) between GC Commercial, LLC., and the properties owners who owned tax lots 1803, 1804 and 1808 in 2008. It should be noted that neither the applicant nor attorney representing the Oxberg Lake Estates subdivision can locate a signed and/or Yamhill County recorded DA. There are ties between the 2008 DA and Newberg Urban Area Management Commission (NUAMC) Resolution 2008-0013. The text of the applicants' and Oxberg Lakes Estates is primarily taken from the 2008 DA, which the City was not a party to. The jointly proposed conditions of approval did not address a sound wall on tax lot 1100. However, Order 2008-0013 specifically states "upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner property". The Gueldner property is tax lot 13800 where the applicant and Oxberg Lakes Estates HOA have jointly proposed a sound wall along the northern property line. Therefore, per Order 2008-0013 that a sound wall is constructed along the entire northern property line along tax lots 13800 and 1100.

The applicant and Oxberg Lakes Estates HOA have also submitted two memorandums concerning traffic calming. The first memo was received on September 28, 2018 and a second memo on October 3, 2018. These memos are addressed in the conditions of approval section of this staff report.

System Development Charges (SDCs) proposed during the Planning Commission meeting on 09/13/18

The City of Newberg adopted a System Development Charge Procedures Guide dated March 21, 2018. This guide was developed to promote the consistent implementation of the resolutions, ordinances, and statues that govern the City's system development charges (SDCs). The guide covers calculation methodology for Transportation SDCs (TSDCs), Water SDCs, Stormwater SDCs, and Wastewater SDCs. The guide also outlines procedures for indexing, deductions and credits, and annual accounting.

On Tuesday September 25, 2018 the City of Newberg received a conditions memo from the applicant's attorney. The applicant has proposed modifications to several conditions relating to SDC credits, those conditions in question are listed below:

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- Condition B.7
- Condition B.11
- Condition B.16
- Condition B.17
- Condition B.29
- Condition B.31

Section 7 of the System Development Charge Procedures Guide outlines the procedure that needs to be followed concerning deductions and credits. The guide notes,

“Credits for a qualified public improvement shall be calculated according to Procedure 7.B at the design review or public improvement permit stage of the development process and shall be recorded upon acceptance of the qualified public improvement by the City.”

The applicant will be required to follow Procedure 7B: Qualified Public Improvement. Because the applicant has not submitted documents for their design review or public improvement permit, the City cannot make a determination SDC credit eligibility. At such time that the applicant provides detailed documentation that satisfies the steps outlined in Procedure 7B, the City will review the documentation and make a determination on SDC credit eligibility. As such, the City has modified the listed conditions provided by the applicant to reflect the City’s System Development Charge Procedures Guide.

The last sentence in Condition B.7, B.11, B.16, B.17, B.29, and B.21 will read as follows:

Because the applicant has not submitted design review documents or received a public improvement permit and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the applicant at design review or the public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City’s System Development Charge Procedures Guide.

Five Party Agreement

In 2006, the Five Party Agreement, also referred to as the Six Party Agreement, was signed by the City of Newberg, Yamhill County, Oxberg Lake Homeowners Association, Ken and Joan Austin, JT Smith Companies and Meadow Wood Development (Attachment 4). The agreement focused on transportation issues in the area of the proposed Crestview Crossing development and surrounding properties. In general, the purpose of the agreement was to establish the northern arterial roadway that would connect E Crestview Drive to E Portland Road. Jeffrey Kleinman, attorney representing the Oxberg Lake Homeowners Association, raised concerns that the proposed Crestview Crossing development was not meeting the intent

of the signed agreement (Attachment 3). Exhibit "A" of the agreement illustrates the proposed location of a traffic roundabout. The current Crestview Crossing proposal illustrates a roundabout south from where it was illustrated in Exhibit "A" of the agreement. The applicant has provided a memorandum from traffic consultants Kittelson and Associates, dated August 15, 2018, as part of their August 17, 2018 application resubmittal (Attachment 5). This memorandum concluded that "the proposed Crestview Drive alignment, intersection treatments, and cross-sectional elements are consistent with the guiding principles established in the Agreement, and as such, provides functionally equivalent transportation infrastructure as that identified in the Agreement.

Of concern is whether the alignment, intersection treatments, and cross-sectional elements being proposed in the Crestview Crossing PUD are consistent with the Five Party Agreement. The conceptual alignment from the original Five Party Agreement shows a roundabout approximately 380 feet north of E Portland Road with a traffic circle approximately 850-feet north of the roundabout, just south of Robin Ct.

After the Five Party agreement was executed, traffic circles were installed at Birdhaven Loop and Robin Court.

The proposed alignment shows a roundabout approximately 590-feet north of E Portland Road with the existing traffic circle at Robin Court located approximately 910-feet north of the roundabout.

The difference between the roundabout and traffic circle spacing between the Five Party Agreement conceptual alignment, and the proposed PUD alignment is approximately 60-feet (850-feet vs. 910-feet) and will not impact travel speeds between the two traffic control devices.

Additionally it should be noted that a two-way side-street stop controlled intersection is being proposed between the roundabout and the existing traffic circle on Crestview Drive.

The City has determined that the information provided in the memo dated August 15, 2018, shows the proposed street alignments in the Crestview Crossing PUD is in compliance with the Five Party Agreement.

Oxberg Lake Estates Potable Water

Jeffrey Kleinman, attorney representing the Oxberg Lake Homeowners Association, has submitted information bringing into question the potential impact to the Oxberg Lake potable groundwater well that serves the residents of the subdivision. In response to these concerns, the applicant has submitted a "Revised Geologic and Hydrogeologic Technical Memorandum" from professional Geologist Jonathon S. Travis who works for GeoEngineers. This memorandum stated the following conclusions:

"Based on the hydrogeologic information reviewed for the Site and adjacent property where the Oxberg well is located, we conclude that there is little to no potential for the Crestview development to:

1. Impair groundwater recharge to the nearby Oxberg wells.
2. Effect groundwater quality in the Oxberg wells.

Both of these conclusions are based on the following observations:

- The Oxberg wells are in a confined aquifer that has limited to no hydraulic connection to the Site.
- In the unlikely event that there was a hydraulic connection between the confined aquifer the Oxberg wells pump water from, measured surface infiltration (recharge) rates are extremely low to non-existent, indicating little or no local recharge to the underlying confined aquifer.”

During the September 13, 2018, Planning Commission meeting the applicant and attorney for the Oxberg Lakes Estates HOA stated they would produce an agreement pertaining to groundwater monitoring to assure that the Oxberg Lakes Estates groundwater well would not be impacted. To date we have not seen any information pertaining to a groundwater monitoring program agreement between the two parties. Additionally, the NDC does not have any requirements listed for groundwater monitoring, therefore this is a civil matter between the applicant and the Oxberg Lakes Estates HOA.

Newberg Urban Area Management Commission (NUAMC) Resolutions 2006-15 and 2006-18 (Attachment 6)

NUAMC Resolutions 2006-15 and 2006-18 pertain to tax lots 13800 and 1100 respectively. These resolutions dealt with amending the urban growth boundary and accompanying comprehensive plan amendment. Resolution 2006-18 lists the following pertinent conditions:

1. “Require that, upon future development of the property, the development contribute its share, based on traffic volume, of the future cost of capacity improvements to the Springbrook/99W intersections.
2. Require the tree buffer along the north property line as described in the application.
3. Require a wetland determination prior to any development on the site.”

Resolution 2006-18 lists the following pertinent conditions:

1. “Require that, upon future development of the property, the development contribute its share, based on traffic volume, of the future cost of capacity improvements to the Springbrook/99W intersections.
2. A wetland determination and delineation report, following state and federal standards, shall be prepared prior to development on the site. Development shall comply with applicable state and federal wetland standards.
3. Require a 30 foot setback from the northern property line of these parcels for all future buildings on the site.
4. Require a 20 foot wide dense buffer along the Benjamin Road commercial frontage on the site to block light, noise and sight. The buffer could include vegetative elements, a wall, and a berm (*Not applicable to lots 13800 and 1100*).
5. Require that development follow best management practices for storm drainage as outlined in the letter from James Bennett to Yamhill County Board of Commissioners dated 1/30/06.
6. Upon development, verify the capacity of the Fernwood Road sanitary sewer pump

station and upsize if necessary. All public sewer lines must be gravity flow. Coordinate with DSL and the US Army Corps of Engineers regarding changes to the existing on-site stormwater drainage ways. Complete street frontage improvements along Hwy 99W. The Crestview Drive extension from Oxberg Lakes to 99W must be in place at the time of the development.”

Order 2007-0002 and Ordinance 2007-2664, Order 2008-013 and Ordinance 2008-2700 (Attachment 6)

There are several orders and ordinances with conditions of approval that pertain to the subject properties. A discussion of each order and pertinent conditions of approval are listed below:

Order 2007-0002/Ordinance 2007-2664 and Order2008-013/Ordinance 2008-2700: These Orders and Ordinances pertain to the annexation and zoning change for tax lots 13800 and 1100. The following conditions of approval apply to the current application and tax lot 1100:

1. “A refined traffic study out to year 2025 will be required showing the actual development proposed at that time. No direct access to Highway 99W will be allowed. The traffic study should refine the existing study based on the actual development proposal and determine the number of treps that this development would add to the Springbrook/Hwy99W intersection.
2. Upon future development of this property the development shall contribute its share, based on traffic volume, of the future cost of capacity improvements to the Springbrook Rd/Hwy99W intersection.
3. A 30 ft building setback along the north property line will be required upon development of the site.
4. A wetland determination is required prior to any development on the site.
5. Future development of the property shall follow best management practices for storm drainage as outline in the letter from James Bennett to the Yamhill County Board of Commissioners dated 1/30/06.”
6. Upon development, verify the capacity of the Fernwood Road sanitary sewer pump station and upsize if necessary. All public sewer lines must be gravity flow. Coordinate with DSL and the US Army Corps of Engineers regarding changes to the existing on-site stormwater drainage ways. Complete street frontage improvements along Hwy 99W. The Crestview Drive extension from Oxberg Lakes to 99W, and the eastward extension of Gueldner Drive, must be in place at the time of development
7. Existing homes to connect to sewer and water or be removed within two years of annexation.
8. Upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner Property west.

The following conditions of approval apply to the current application and tax lot 13800:

1. Annexation of this property is contingent upon final official adoption of the urban growth boundary amendment. The effective date of the UGB amendment is contingent upon the final approval and adoption of amendments to the acknowledged Newberg

- Transportation System Plan as initiated by Resolution 2006-2661 and as shown in the agreement by the parties but subject to any amendment to the agreement as the parties may approve.
2. Upon future development of this property, the development shall contribute its share, based on traffic volume, of the future cost of capacity improvements to the Springbrook Rd/Hwy 99W intersection.
 3. A 30 ft building setback along the north property line will be required upon development of the site.
 4. A wetland determination is required prior to any development on the site.
 5. Future development of the property shall follow best management practices for Storm drainage as outlined in the letter from James Bennett to the Yamhill County Board of Commissioners dated 1/30/06.

Wetlands: There are five wetlands located within the confines of the subject property. Subject property means both Yamhill County tax lot 01100 and 13800. The applicant did not provide detailed information pertaining to the wetlands. This information was obtained from the Oregon Department of State Lands (DSL) website. In an email dated July 26, 2018, Ms. Jevra Brown, Aquatic Resource Planner for Oregon Department of State Lands (Attachment 2) notified City staff that two wetland delineation applications had expired and one application, Joint Permit Application (JPA) No. WD2013-0148, administratively closed application 57027-RF, 58464-RF application on extension through August 31, 2018. The aforementioned application was for a different layout that had a larger commercial component proposed as part of the development. On July 30, 2018, an email was received from Mr. Dan Cary, Aquatic Resource Coordinator Columbia and Clatsop Counties for the Oregon Department of State Lands which stated “I am told by the applicant that there is a new revised application coming but I have not seen it. I am not reviewing any application at this time. They are in an extension of my permit decision deadline until August 31, 2018. They will likely need to request another extension to maintain this file number since I still haven’t received a new application. From the informal plans I have seen the project has changed significantly and it will go back out for public review and restart the clock for the whole process when I get a complete application. That is all I have.”

Since the text that was written above, the applicant has submitted a JPA to the Oregon Department of States Lands on August 7, 2018. The application is still being reviewed by DSL. The application can be viewed at:

<https://docs.dsl.state.or.us/PublicReview/docview.aspx?id=3397640&dbid=0>

The following is a description of the existing wetlands taken directly from the Joint Permit Application NO. WD2013-0148 (Attachment 7).

- Wetland A (A1, A2) (288,785sf) was primarily a PEM/slope wetland with areas of PSS and PFO. A 1, 4471f perennial drainage was located within and directly adjacent to the wetland with an area of 6, 589sf. combined wetland/ water area was 6. 7 acres (295,374sf).
- Wetland B, at 189sf (0. 004 acre) was a PFO/depressional wetland located in the northwest corner of the site.
- The other two wetlands are isolated and located in the eastern portion of the

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property which is planted to small trees for a tree farm. These wetlands were delineated in 2007 and although no hydrology was indicated in 2013 their presence was based on vegetation and soils criteria. Wetland C is 13, 147sf (0.3 acres) and classified as palustrine emergent slope wetland. The dominant vegetation in the emergent portion is meadow foxtail (*Alopecurus pratensis*) and bentgrass (*Agrostis stolonifera*). Wetland D is another isolated wetland (469sf) immediately below the first.

Public Utility Easements (PUEs): - PGE has agreed to allow 8 feet wide PUEs along private road frontages as long as there are no sidewalks located within these PUEs. All PUEs along the public street frontages must be 10 feet wide.

G. PRELIMINARY STAFF RECOMMENDATION: At this time staff recommends the following motion:

Move to adopt Planning Commission Order 2018-10, which approves the requested Planned Unit Development, tentative plat and phasing plan with the attached conditions.



PLANNING COMMISSION ORDER 2018-10

AN ORDER APPROVING PUD18-0001/CUP18-0004 FOR THE CRESTVIEW CROSSING PUD AND CONDITIONAL USE PERMIT TO ALLOW RESIDENTIAL USE IN THE C-2 COMMERCIAL ZONING DISTRICT AND CREATE 250 LOTS FOR SINGLE FAMILY, MULTI-FAMILY AND COMMERCIAL USE AT 4505 E PORTLAND ROAD (YAMHILL COUNTY TAX LOT 3216-01100) AND ON YAMHILL COUNTY TAX LOT 3216AC-13800.

RECITALS

1. CG Commercial LLC and VPCF Crestview LLC submitted an application for preliminary plan approval of a planned unit development for 250 lots and conditional use permit to allow residential use on C-2 commercially zoned property at 4505 E Portland Road (Yamhill County Tax Lot 3216-01100) and Yamhill County Tax Lot 3216AC-13800.
2. After proper notice, the Newberg Planning Commission held a hearing on August 9, 2018 to consider the application. The Commission considered public testimony, kept the hearing open and continued the hearing to September 13, 2018 based on a lack of information needed to assess the proposed PUD and conditional use permit.
3. On August 29, 2018, The Newberg Graphic published a public hearing notice and city staff placed notices in 4 public places advertising the September 13, 2018 Planning Commission public hearing.
4. On September 13, 2018, the Newberg Planning Commission continued the August 9, 2018, public hearing, took public testimony, left the record open and continued the hearing to October 11, 2018.
5. On October 11, 2018, the Newberg Planning Commission continued the September 13, 2018 public hearing, took public comments, and deliberated.
6. The Newberg Planning Commission finds that the application meets the applicable criteria as shown in the findings shown in Exhibit "A".

The Newberg Planning Commission orders as follows:

1. Conditional Use Permit Application CUP18-0004 is hereby approved, subject to the conditions contained in Exhibit "B". Exhibit "B" is hereby adopted and by this reference incorporated.
2. The planned unit development preliminary plan application PUD18-0001 is hereby approved, subject to the conditions contained in Exhibit "B". Exhibit "B" is hereby adopted and by this reference incorporated.
3. The findings shown in Exhibit "A" are hereby adopted. Exhibit "A" is hereby adopted and by

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this reference incorporated.

4. This order shall be effective October 26, 2018 unless appealed prior to that date.
5. This order shall expire one year after the effective date above if the applicant does not apply for final plan approval by that time, unless an extension is granted per Newberg Development Code 15.240.020.
6. The conditional use permit shall expire one year after the effective date above if the applicant does not gain final plan (Step 2 of the PUD process) approval for Phase 1A of the phasing plan by that time, unless an extension is granted per Newberg Development Code 15.225.100.
7. The phasing plan shall expire ten years after the effective date above with the possibility of five one year extensions as granted per 15.240.020(C).
8. When commercial use on lot 250 is developed the application shall be reviewed through a Type II Design Review process.

Adopted by the Newberg Planning Commission this 11th day of October, 2018.

ATTEST:

Planning Commission Chair

Planning Commission Secretary

List of Exhibits:

Exhibit "A": Findings

Exhibit "B": Conditions

other sections of this report, the applicant has not maxed out their density allowance so even though the proposed density is greater than surrounding older subdivisions additional units could be proposed and could cause even more of an impact. However, the current application does not max out the density allowance. The applicant has requested an increase in maximum lot and parking coverage from 60% in the R-2 zone to 70% coverage. The proposed coverage is greater than the surrounding development, however, no adverse impacts to the surrounding properties is anticipated. This is mitigated by larger lots north abutting Oxberg Lake Estates and to the west by Spring Meadow Park. Although not illustrated on the development plan sheets, on page 8 of the narrative the applicant has stated “they intend to provide landscape plantings along the boundary of lots 245 to 248 to provide a vegetative buffer between the lower density Spring Meadow Subdivision and the higher density lots proposed along the project’s boundary”. The vegetative buffer would be established between 1812 Leo Lane and proposed lots 245 through 248. Prior to proposed lots 245 through 248 receiving a certificate of occupancy from the Building Department, a vegetative buffer must be established along the rear property line of said lots because of the smaller lots and higher density in the proposed Crestview Crossing development than is found in Spring Meadow subdivision and the applicant has expressed a willingness to provide additional buffering to lessen the impact to 1812 Leo Lane. It should be pointed out that the surrounding subdivisions were developed before the adoption of the current development code, when larger lots and lower density was common.

The proposed development would remove 923 of 1,045 total trees within the site. In NUAMC Resolution 2006-15 the Newberg Urban Area Management Commission lists a condition of approval that states a tree buffer along the north property line would be required (Attachment 6). The applicants’ submittal does not show any trees along the north property line being preserved or any new trees planned to be planted. In compliance with Resolution 2006-15, the applicant shall retain as many mature trees as possible along the northern border of Yamhill County Tax lots 13800 and 1100 and supplement the tree buffer with new trees where necessary to provide a contiguous vegetative buffer. The conditions of approval listed in the NUAMC Resolution 2006-15 are still enforceable, therefore a tree buffer is appropriate for the northern border of tax lots 13800 and 1100. In order to verify that an adequate buffer will be established, the applicant must provide an updated tree removal, tree preservation and tree planting plan that clearly illustrates the type, number and location of new trees, numbers of trees being preserved and the number of trees being removed. Said plan sheet will be required to be submitted before step two (Final Plans) Section 15.240.020(B)(2) commences. Adequate public facilities and utilities are available to serve the development. The applicant has provided a Transportation Impact Analysis (TIA) dated June 2018 and a memorandum dated August 15, 2018, which addresses the 5-Party Agreement (referred to as the 6-Party Agreement in memorandum). The TIA makes several recommendations pertaining to N Providence Drive/E Crestview Drive/E Portland Road intersection and site circulation/site access operations that have been incorporated into the findings in Exhibit “A” and conditions of approval in Exhibit “B”.

City staff engineers have reviewed the proposed development for the availability of sanitary sewer, water and stormwater facilities and services. Sanitary sewer, water and stormwater services are

available to serve the development. Conditions of approval have been drafted by City staff, which ensure that if any upgrades or additional services are needed then the applicant will construct them per City requirements. Sanitary sewer, water and stormwater requirements are discussed in other sections of this report to further support the availability of facilities, services and any needed upgrades as stated in the conditions of approval.

In 2006, the City of Newberg, Yamhill County, Oxberg Lake Homeowners Association, JT Smith Companies, Ken and Joan Austin and Meadowood Development, LLC., entered into an agreement commonly known as the “Five Party Agreement” (Attachment 4). This agreement pertains to transportation issues within and surrounding area of the Crestview Crossing project area and needed improvements agreed upon by those signatories of the agreement. Kittelson and Associates memorandum, dated August 15, 2018, states that the “proposed Crestview Drive alignment, intersection treatments, and cross-sectional elements area consistent with the guiding principles established in the Agreement, and as such, provides functionally equivalent transportation infrastructure as that identified in the Agreement” (Attachment 1). City staff engineers have reviewed the memorandum dated August 15, 2018 and have found the findings listed to be accurate and adequately addresses concerns raised by residents and attorney Jeffrey Kleinman.

In a memorandum from Jeffrey Kleinman, attorney representing the Oxberg Lake Homeowners Association, he raised questions of a potential impact to the Oxberg Lake potable groundwater well that serves the residents of the subdivision. In response to these concerns, the applicant has submitted a “Revised Geologic and Hydrogeologic Technical Memorandum” from professional Geologist Jonathon S. Travis who works for GeoEngineers. This memorandum was discussed in more detail in a previous section of this report. The applicants’ consultant stated that there was little chance that the aquifer, which is utilized for the Oxberg Lake subdivisions drinking water, would be negatively impacted by the proposed Crestview Crossing development.

This criterion will be met with the adherence to the aforementioned conditions of approval.

B. The location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping or civic environment, and will be as attractive as the nature of the use and its location and setting warrants.

Finding: The proposed development will be accessed via E Portland Road from the south and E Crestview Drive from the northwest. With direct access to E Portland Road, the proposed development will have easy access to the Portland Metro area, Downtown Newberg, grocery stores, recreational uses, medical facilities, offices and industrial uses. When the proposed commercial lot is developed there will be direct access for residents within the development and for those within the surrounding area. The possible additional population will potentially spend additional dollars within the community and have the opportunity to work and live within the City of Newberg. The property owner is utilizing planners, engineers, architects and landscape architects to design the project. These professionals have produced designs and site planning for the subject property. Lot 250 is proposed for commercial use to be developed at a later date. Per sheet C220 of the development plan sheets, lot 250 would have two vehicle access points, one providing a right turn in and right turn out

from E Crestview Drive and another vehicle access point from proposed public street “B”. Pedestrian access is also provided from sidewalks. Because of the access from the proposed development to potential employers, shopping, downtown and other community amenities and the property owner using professionals to design and provide site planning for the subject property, this criterion is met.

C. The proposed development will be consistent with this code. [Ord. 2451, 12-2-96. Code 2001 § 151.210.]

Finding: The applicant has provided responses to Newberg Development Code sections, a set of land use plans, various technical reports and public notification of the public hearing. City staff have reviewed the applicants’ submitted materials and have determined with adherence to the conditions of approval, the proposed development meets required conditional use criteria and this section of the NDC.

Recommendation: Because the proposed development meets NDC 15.225.060 A, B, C and with the recommended conditions of approval, City staff recommends approval of the Conditional Use Permit to allow residential use on C-2 zoned property.

II. Chapter 15.240 PD PLANNED UNIT DEVELOPMENT REGULATIONS

15.240.020 General provisions.

A. Ownership. Except as provided herein, the area included in a proposed planned unit development must be in single ownership or under the development control of a joint application of owners or option holders of the property involved.

Finding: The applicants’ narrative states that the subject property is under single ownership. In fact, the subject properties are owned by two separate LLCs. Yamhill County tax lot 13800 is owned by GC Commercial, LLC. and tax lot 01100 is owned by VPCF Crestview, LLC. The person signing the City’s Application for the two LLCs is Jeff Smith. This criterion is met.

B. Processing Steps – Type III. Prior to issuance of a building permit, planned unit development applications must be approved through a Type III procedure and using the following steps:

1. Step One – Preliminary Plans. Consideration of applications in terms of on-site and off-site factors to assure the flexibility afforded by planned unit development regulations is used to preserve natural amenities; create an attractive, safe, efficient, and stable environment; and assure reasonable compatibility with the surrounding area. Preliminary review necessarily involves consideration of the off-site impact of the proposed design, including building height and location.

Finding: On July 5, 2018, the applicants’ submittal was deemed complete by City staff. The applicant re-submitted updated materials on August 17, 2018 in an effort to address deficiencies in

their first submittal. The applicant has provided technical reports evaluating the on-site and off-site impacts of the proposed development. The proposed development would remove 923 of 1,045 total trees within the site. In NUAMC Resolution 2006-15 the Newberg Urban Area Management Commission lists a condition of approval that states a tree buffer along the north property line would be required (Attachment 6). The applicants' submittal does not show any trees along the north property line being preserved or any new trees planned to be planted. In compliance with Resolution 2006-15, the applicant shall retain as many mature trees as possible along the northern border of Yamhill County Tax lots 13800 and 1100 and supplement the tree buffer with new trees where necessary to provide a contiguous vegetative buffer. The conditions of approval listed in the NUAMC Resolution 2006-15 are still enforceable, therefore a tree buffer is appropriate for the northern border of tax lots 13800 and 1100. In order to verify that an adequate buffer will be established, the applicant must provide an updated tree removal, tree preservation and tree planting plan that clearly illustrates the type, number and location of new trees, numbers of trees being preserved and the number of trees being removed. Said plan sheet will be required to be submitted before step two (Final Plans) Section 15.240.020(B)(2) commences.

The applicant has provided the following suggested conditions of approval for the sound wall. "The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of tax lots 1803, 1804 and 1808 where they abut the north boundary of tax lot 13800 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners."

City staff do not concur with the exact wording of the proposed condition of approval because said condition does not address the sound wall along tax lot 1100. The sound wall was a condition of approval in annexation Order 2008-0013, which is applicable to tax lot 1100 and not tax lot 13800. The applicant and Oxberg Lakes Estates HOA have jointly agreed to a sound wall along only tax lot 13800. The text of the applicants' and Oxberg Lakes Estates is primarily taken from the 2008 DA, which the City was not a party to. The jointly proposed conditions of approval did not address a sound wall on tax lot 1100. However, Order 2008-0013 specifically states "upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner property". The Gueldner property is tax lot 13800 where the applicant and Oxberg Lakes Estates HOA have jointly proposed a sound wall along the northern property line. Therefore, per Order 2008-0013 a sound wall is to be constructed along the entire northern property line along tax lots 13800 and 1100. City staff propose that the wall be extended along the entire northern boundary of both tax lots 13800 and 1100. The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815 where they

about the north boundary of tax lots 13800 and 1100 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners.

“The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804 and 1808.”

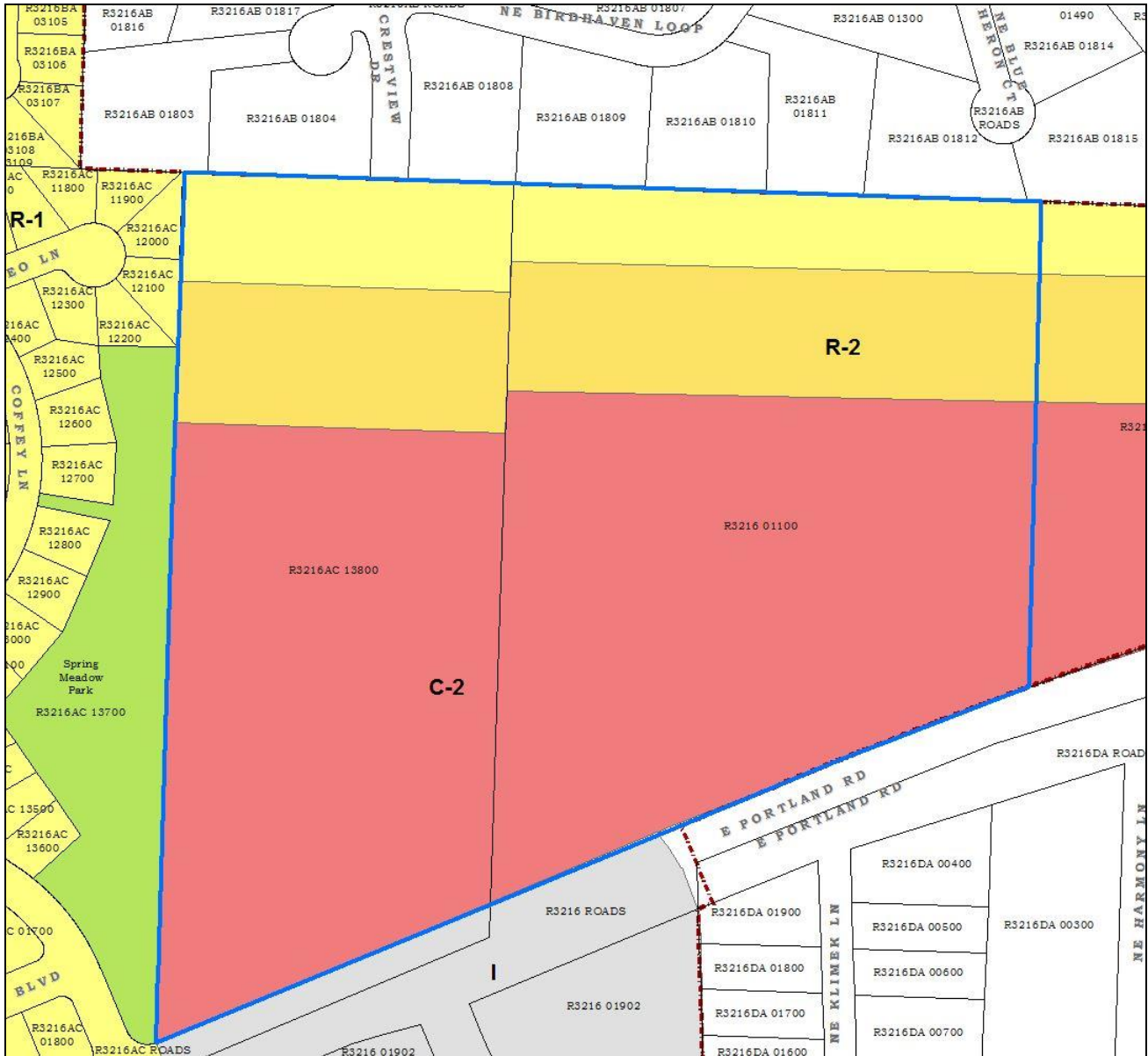
City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815.

“The Applicant shall provide the owners of tax lots 1803, 1804 and 1808 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall on or before the date of final lift of asphalt concrete within the Applicant's development. The owners shall grant the Applicant a temporary construction easement for the sound wall.”

City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. By the applicant stating that the Sound Wall doesn't have to be completed on or before the date of the final lift of asphalt concrete could result in neighboring residents putting up with noise, that may have been negated by the Sound Wall, for up to 15 years. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. The Applicant shall provide the owners of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall at the same time as Phase 1 is constructed and completed within the Applicant's development. The owners shall grant the Applicant a temporary construction easement for the sound wall.

“The owners of tax lots 1803, 1804 and 1808 and the Crestview Crossing Homeowners Association shall share in all costs and expenses related to the maintenance and general upkeep of the Sound Wall after completion. This maintenance obligation shall bind the owners and their respective successors in interest and shall be made a part of the easements and the Crestview Crossing CCRs. The owners shall grant the Applicant a temporary construction easement for the Sound Wall, which shall be as limited in scope as reasonably possible.” Because the City was not a party to the 2008 Development Agreement between the applicant and the Oxberg Lakes HOA, it is inappropriate to propose modification of the aforementioned condition of approval that places financial burden for maintenance and general upkeep of the sound wall on property owners within Oxberg Lakes Estates subdivision. In a memo from the applicants attorney dated August 17, 2018, it was stated that a “Draft Maintenance Agreements for the Private Street and Stormwater Tracts. These items have been provided in lieu of CC&R’s”. The applicant shall submit CC&Rs during an intermediate review step prior to Step 2 of the PUD review process for the City to review and require changes if needed because their proposed condition of approval refers to CC&Rs that, to date, the City has not received for review.

“Applicant shall begin construction of the Sound Wall after it has received all site design approvals, land use permits, entitlements and other permits required for the development, and has begun construction. If Applicant does not receive the aforementioned permits and entitlements it shall not be obligated to build the sound wall.”



Tax Lot Numbers

The City of Newberg does not have an urban forestry program and the development code only provides for tree preservation within Stream Corridor overlay areas. There are no noted Stream Corridor areas within the confines of the subject property.

The applicant has provided elevation drawings illustrating the proposed façades of buildings, which appear to be aesthetically pleasing.

The applicant submitted a TIA to assess impacts and proposed recommendations to mitigate the additional number of automobile trips projected to be generated by the development of the subject property.

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A landscaping plan has been submitted that meets the requirements of the NDC.

The applicant has made an effort to locate larger lots on the northern border of the subject property where they will abut larger lots of the Oxberg Lake Estates subdivision that is located in unincorporated Yamhill County. Most of the smaller lot higher density area along the western boundary of the subject property will abut Spring Meadow Park. There is one lot, 1812 Leo Lane, in Spring Meadow subdivision that will abut proposed smaller lots 245-248. A condition of approval has been added in a previous section of these findings and is listed in Exhibit "B" to address buffering between the larger lot in Spring Meadow subdivision and the smaller lots. The multifamily buildings will be located north of E Portland Road and approximately 263 feet from the closest house to the east. A network of paths and sidewalks provide pedestrians safe access throughout the development and the proposed park and preserved wetland area.

With the adherence to the conditions of approval, this criterion will be met.

2. Step Two – Final Plans. Consideration of detailed plans to assure substantial conformance with preliminary plans as approved or conditionally approved. Final plans need not include detailed construction drawings as subsequently required for a building permit.

Finding: Not applicable for the first step in the PUD review process.

C. Phasing. If approved at the time of preliminary plan consideration, final plan applications may be submitted in phases. If preliminary plans encompassing only a portion of a site under single ownership are submitted, they must be accompanied by a statement and be sufficiently detailed to prove that the entire area can be developed and used in accordance with city standards, policies, plans and ordinances.

Finding: On August 17, 2018, the applicant submitted a phasing plan with the re-submitted application materials.

The applicant is proposing the following phasing:

- Phase 1: This phase will include improvements to the site's frontage along E Portland Road and the installation of underground utility connections necessary to provide service to the site.
- Phase 1a: This phase will include the extension of E Crestview Drive through the site and the construction of roadways and lots located east of the E Crestview Drive extension to public road D. This phase will also include the stormwater facility located south of public road B.
- Phase 2: This phase will include the installation of the roadways, infrastructure and lots which are to be located west of the E Crestview extension. Crestview Crossing – Alternate Plat and Phasing July 24, 2018

- Phase 3: This phase will include the lots located east of public road D to the property's eastern property boundary.
- Phases B and C will be constructed after the construction of Phases 1 and 1A and may be constructed independently of the subdivision lots and by other entities or assigns.

Due to the size of the plan and the complexity of the various components within the development, the Applicant has requested that the City grant the developer a ten (10) year window for the construction of the infrastructure shown within the plan's phases with opportunities for up to five (5) one (1) year extensions following the approval of the preliminary plat. While the Applicant does not intend to wait for ten (10) years to allow for the construction of the proposed improvements, the flexibility afforded by the ten (10) year schedule with the requested extensions will allow for the project's various components to be sensitive to changing market conditions."

There has been no schedule submitted in terms of years in which a given phase will be completed. Section 15.240.020(C) requires a statement and be sufficiently detailed to prove that the entire area can be developed and used in accordance with city standards, policies, plans and ordinances. Section 15.240.020(D) states "if the applicant fails to submit material required for consideration at the next step in accordance with the schedule approved at the previous step or, in the absence of a specified schedule, within one year of such approval, the application as approved at the previous step". Although the applicant has submitted a phasing plan it does not provide sufficient detail in terms of how long each phase will take to complete. The applicants' phasing letter located in Attachment 1 states "In addition to covering the entitlements afforded to the developer through Section D of the Planned Unit Development's general conditions, this phasing schedule is also intended to supersede the one (1) year limitation imposed upon Conditional Use Permits which is described in section 15.225.100 and the Final Plat criteria described in section 15.235.070. This time limitation can be made to be flexible by section 15.225.080.L of the City's code." Because the applicant is requesting a phasing plan to be approved but has not provided sufficient detail in terms of timing of completion of the various phases, the applicant must provide estimates for the timing of completion for each phase of development during an interim review step between step 1 and step 2 of the PUD review process.

Because the applicant has provided a phasing plan as permitted under NDC 15.240.020.C., final plan applications may be submitted in phases. If the Planning Commission approves the proposed PUD then the applicant may submit final plans in phases. This criterion is met.

F. Density. Except as provided in NMC 15.302.040 relating to subdistricts, dwelling unit density provisions for residential planned unit developments shall be as follows:

1. Maximum Density.

a. Except as provided in adopted refinement plans, the maximum allowable density for any project shall be as follows:

<i>District</i>	<i>Density Points</i>
<i>R-1</i>	<i>175 density points per gross acre, as calculated in subsection (F)(1)(b) of this section</i>
<i>R-2</i>	<i>310 density points per gross acre, as calculated in subsection (F)(1)(b) of this section</i>
<i>R-3</i>	<i>640 density points per gross acre, as calculated in subsection (F)(1)(b) of this section</i>
<i>RP</i>	<i>310 density points per gross acre, as calculated in subsection (F)(1)(b) of this section</i>
<i>C-1</i>	<i>As per required findings</i>
<i>C-2</i>	<i>As per required findings</i>
<i>C-3</i>	<i>As per required findings</i>

b. Density point calculations in the following table are correlated to dwellings based on the number of bedrooms, which for these purposes is defined as an enclosed room which is commonly used or capable of conversion to use as sleeping quarters. Accordingly, family rooms, dens, libraries, studies, studios, and other similar rooms shall be considered bedrooms if they meet the above definitions, are separated by walls or doors from other areas of the dwelling and are accessible to a bathroom without passing through another bedroom. Density points may be reduced at the applicant's discretion by 25 percent for deed-restricted affordable dwelling units as follows:

<i>Density Point Table</i>

<i>Dwelling Type</i>	<i>Density Points: Standard Dwelling</i>	<i>Density Points: Income Restricted Affordable Dwelling Unit</i>
<i>Studio and efficiency</i>	<i>12</i>	<i>9</i>
<i>One-bedroom</i>	<i>14</i>	<i>11</i>
<i>Two-bedroom</i>	<i>21</i>	<i>16</i>
<i>Three-bedroom</i>	<i>28</i>	<i>21</i>
<i>Four or more bedrooms</i>	<i>35</i>	<i>26</i>

The density points in the right-hand column are applicable to income-restricted affordable dwelling units, provided the dwelling units meet the affordability criteria under NMC 15.242.030 regarding affordable housing requirements for developments using the flexible development standards.

- 2. Approved Density. The number of dwelling units allowable shall be determined by the hearing authority in accordance with the standards set forth in these regulations. The hearing authority may change density subsequent to preliminary plan approval only if the reduction is necessary to comply with required findings for preliminary plan approval or if conditions of preliminary plan approval cannot otherwise be satisfied.*
- 3. Easement Calculations. Density calculations may include areas in easements if the applicant clearly demonstrates that such areas will benefit residents of the proposed planned unit development.*
- 4. Dedications. Density calculations may include areas dedicated to the public for recreation or open space.*
- 5. Cumulative Density. When approved in phases, cumulative density shall not exceed the overall density per acre established at the time of preliminary plan approval.*

Finding: The applicant has provided density calculations based on zoning and land area within a zone district to calculate the maximum allowable density. The R-1 total acreage of 4.31 acres yields 754.25 density points at 175 points per acres. The R-2 total acreage of 6.58 acres yields 4,211.2 density points at 640 points per acres. The C-2 total acreage of 22.24 acres yields 6,894.4 density points at 310 points per acres. The total maximum density points earned based on zoning and land area is 11,859.85 points.

There will be 27 one bedroom units, multiplied by 14 density points, which yields 378 points. There will be 24 two bedroom units, multiplied by 21 density points, which yields 504 points. There will be 80 three bedroom units, multiplied by 28 density points, which yields 2,240 points. There will be 168 four or more bedroom units (single family units), multiplied by 35 density points, which yields 5,880 points. Adding the total number of points produced by the number of bedrooms yields 9,314 points.

The applicants' narrative or other submitted material did not provide data for assessing the applicability of NMC 15.242.030 so the flexible development standards are not part of these findings. These standards are optional and the applicant has made no request to utilize the aforementioned section of the development code.

The applicant has not made any request that the affordable units be utilized as part of the density calculation as provided above under subsection 15.240.020.F.1.b.

Because the maximum allowable density, based on land area, yielded 11,859 density points and the applicants proposed density, based on number of bedrooms, yields 9,314 this section of the NDC is met.

G. Buildings and Uses Permitted. Buildings and uses in planned unit developments are permitted as follows:

1. R-1, R-2, R-3 and RP Zones.

- a. Buildings and uses permitted outright or conditionally in the use district in which the proposed planned unit development is located.***
- b. Accessory buildings and uses.***
- c. Duplexes.***
- d. Dwellings, single, manufactured, and multifamily.***
- e. Convenience commercial services which the applicant proves will be patronized mainly by the residents of the proposed planned unit development.***

Finding: The applicant is proposing single family detached residential uses within the R-1 and R-2 portions of the subject property. This criterion is met because single-family and multifamily uses are permitted within the R-1 and R-2 zone districts.

2. C-1, C-2 and C-3 Zones.

- a. When proposed as a combination residential-commercial planned unit development, uses and buildings as listed in subsection (G)(1) of this section and those listed as permitted outright or conditionally in the use district wherein the development will be located.***

Finding: The applicant is proposing a combination residential-commercial planned unit development. All uses within the C-2 zoned property are permitted either conditionally for residential or as a permitted use for future commercial use. This criterion is met because all proposed uses are permitted either conditionally or by right as a permitted uses.

H. Professional Coordinator and Design Team. Professional coordinators and design teams shall comply with the following:

1. Services. A professional coordinator, licensed in the State of Oregon to practice architecture, landscape architecture or engineering, shall ensure that the required plans are prepared. Plans and services provided for the city and between the applicant and the coordinator shall include:

- a. Preliminary design;**
- b. Design development;**
- c. Construction documents, except for single-family detached dwellings and duplexes in subdivisions; and**
- d. Administration of the construction contract, including, but not limited to, inspection and verification of compliance with approved plans.**

2. Address and Attendance. The coordinator or the coordinator's professional representative shall maintain an Oregon address, unless this requirement is waived by the director. The coordinator or other member of the design team shall attend all public meetings at which the proposed planned unit development is discussed.

3. Design Team Designation. Except as provided herein, a design team, which includes an architect, a landscape architect, engineer, and land surveyor, shall be designated by the professional coordinator to prepare appropriate plans. Each team member must be licensed to practice the team member's profession in the State of Oregon.

4. Design Team Participation and Waiver. Unless waived by the director upon proof by the coordinator that the scope of the proposal does not require the services of all members at one or more steps, the full design team shall participate in the preparation of plans at all three steps.

5. Design Team Change. Written notice of any change in design team personnel must be submitted to the director within three working days of the change.

6. Plan Certification. Certification of the services of the professionals responsible for particular drawings shall appear on drawings submitted for consideration and shall be signed and stamped with the registration seal issued by the State of Oregon for each professional so involved. To assure comprehensive review by the design team of all plans for compliance with these regulations, the dated cover sheet shall contain a statement of review endorsed with the signatures of all designated members of the design team.

Finding: The applicant narrative states that a professional engineer licensed by the State of Oregon has produced all required plans. Additionally, the land use plan sheets list a landscape architecture firm. A completeness check was conducted to verify that all required documents and plans were submitted. These criteria have been met.

I. Modification of Certain Regulations. Except as otherwise stated in these regulations, fence and wall provisions, general provisions pertaining to height, yards, area, lot width, frontage, depth and coverage, number of off-street parking spaces required, and regulations pertaining to setbacks specified in this code may be modified by the hearing authority, provided the proposed

development will be in accordance with the purposes of this code and those regulations. Departures from the hearing authority upon a finding by the engineering director that the departures will not create hazardous conditions for vehicular or pedestrian traffic. Nothing contained in this subsection shall be interpreted as providing flexibility to regulations other than those specifically encompassed in this code.

Finding: The applicants’ narrative requests modification for lot sizes, minimum lot dimensions, minimum lot frontages, maximum lot and parking area coverage and minimum setback standards for the R-1, R-2 and C-2 zoning districts. Lot coverage is discussed below under “J”. The following table details the requirements listed in the NDC and the dimensional modifications that the applicant is requesting.

	Min. front yard setback per NDC to house not garage	Proposed front yard setback by applicant	Minimum interior setback per NDC	Proposed minimum interior setback proposed by applicant	Minimum lot size per NDC	Proposed minimum lot size	Minimum lot width per the NDC	Proposed minimum lot width
R-1	15 feet	10 feet	5 feet	5 feet	5,000 sq.ft.	5,000 sq.ft.	35 feet	35 feet
R-2	15 feet	10 feet	5 feet	2.5 feet	3,000 sq.ft.	1,440 sq.ft.	25 feet	21.5 feet
C-2	10 feet	10 feet	10 feet	2.5 feet	5,000 sq.ft.	1,440 sq.ft.	n/a	21.5 feet

In Order numbers 2007-0002 and 2008-0013, which pertained to the annexation of tax lot 13800 and 1100, a condition of approval required 30 foot building setback along the north property line. A 30 foot setback along the north property line is illustrated on sheet C-150 of the applicants’ plan set. In Order 2008-0013, Attachment 6, a condition of approval stated “upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner property to the west”. The applicant did not illustrate or provide a detail of a wall within their development plan set. Additionally, their narrative did not address the wall. Because Order 2008-0013, applies to tax lot 1100 stated upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner property to the west. Conditions of approval addressing the sound wall along the northern boundary of the applicants’ properties have addressed in other sections of this staff report.

The current NDC states that “each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at

least 25 feet wide.” For the R-1 zone the minimum frontage required by the NDC is 25 feet. The larger lots developed within the R-1 zoned area have lot frontage of between 58 to 79 feet, which exceeds the requirement listed in the NDC. A number of higher density or smaller lots do not meet the 25 foot minimum frontage requirement. If approved, the planning commission would be granting a relaxation of 3.5 feet from the required 25 foot minimum frontage requirements.

Each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at least 25 feet wide. No new private streets, as defined in NMC 15.05.030, shall be created to provide frontage or access except as allowed by NMC 15.240.020(L)(2).

The applicant has requested a modification to the maximum lot and parking coverage, which is discussed in the next section “J” of this report.

City of Newberg Staff Engineers have reviewed the development proposal and have not found hazardous conditions created for vehicular or pedestrian traffic if all conditions of approval are adhered to. This criterion is met because the proposed modifications to the Newberg Development Code do not create hazardous conditions for vehicular or pedestrian traffic.

J. Lot Coverage. Maximum permitted lot and parking area coverage as provided in this code shall not be exceeded unless specifically permitted by the hearing authority in accordance with these regulations.

Finding: The applicant has requested the following modifications to lot and parking coverage.

	Maximum Lot Coverage listed in the NDC	Maximum parking coverage	Maximum combined parking and lot coverage	Proposed maximum lot coverage listed on sheet C150	Proposed maximum lot coverage stated in narrative
R-1	40% or 50% if all structures on the lot are one story.	30%	60%	None requested	None listed
R-2	50%	30%	60%	60%	70%
C-2	n/a	n/a	n/a	n/a	n/a

The lot coverage listed above is from the NDC and was current at the time the applicant made their submittal. The applicants’ narrative and sheet C150 listed different requested maximum lot coverages. The PUD process allows for adjustments to the strict adherence to requirements listed in

the development code. The applicant has stated in their narrative that “the anticipated coverage for these lots [R-1] will be less than the stated maximum” lot coverage listed in the table above. The applicant states that smaller lots sizes of 1,474 to 2,010 square feet would have a maximum combined lot and parking coverage of 56.6% in the R-2 zone. Additionally, the applicants’ narrative states for lots within the R-2 that are 2,010 square feet the combined lot coverage would be 63.7%. Finally, for lots within the R-2 with an area 1,742 square feet the narrative states the lot coverage would be approximately 65.9%. The applicant is requesting a combined lot and parking coverage of 70% within the R-2 zone. No adverse impacts have been identified with a greater lot and parking coverage and having more units or higher density within a subdivision can be considered a more efficient use of land.

The current NDC does not have a maximum lot coverage for C-2 zoned property. The applicant is proposing a number of residential lots within the C-2, which allows for residential land use with a conditional use permit.

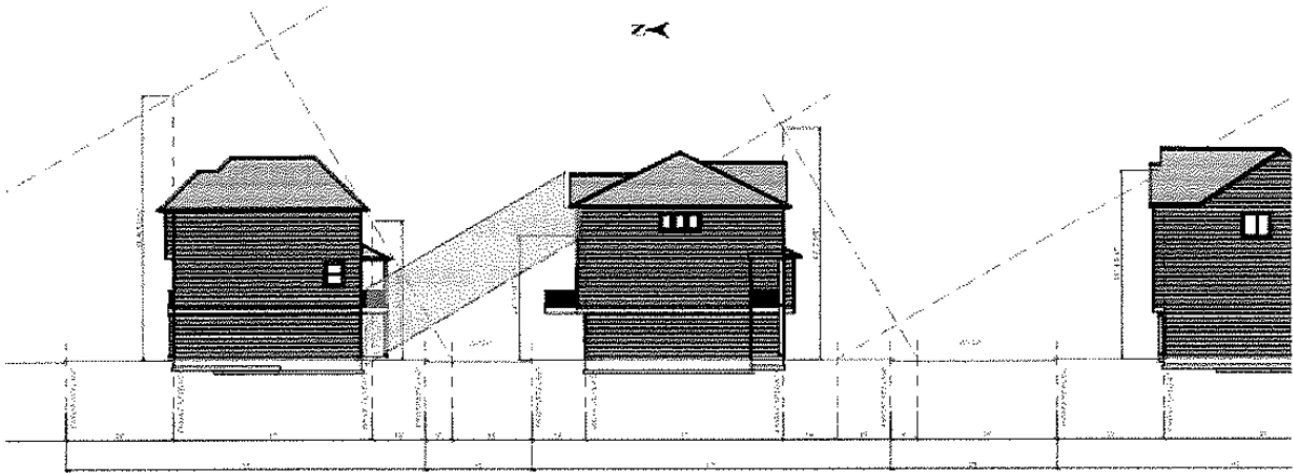
In summary, the applicant is requesting a 10% increase in combined lot and parking coverage over the current maximum of 60% combined lot coverage allowed for in the R-2 zone.

Because there are no adverse impacts anticipated to units within the proposed development and to existing surrounding properties, it is appropriate to allow an increase of a combined lot and parking coverage of 70% within the R-2 zone. This criterion along with section 15.240.020.I. have been met.

K. Height. Unless determined by the hearing authority that intrusion of structures into the sun exposure plane will not adversely affect the occupants or potential occupants of adjacent properties, all buildings and structures shall be constructed within the area contained between lines illustrating the sun exposure plane (see Appendix A, Figure 8 and the definition of “sun exposure plane” in NMC 15.05.030). The hearing authority may further modify heights to:

- 1. Protect lines of sight and scenic vistas from greater encroachment than would occur as a result of conventional development.***
- 2. Protect lines of sight and scenic vistas.***
- 3. Enable the project to satisfy required findings for approval.***

Finding: The applicant has provided a sun exposure diagram and analysis with the updated submittal. The applicant is proposing some 3-story units that may impact sun exposure. The narrative states that “some of the north/south oriented lots may have slight impacts on the first floor of the proposed homes”. The first floor of lots that would be impacted are 36-66, 81 and 82. The east/west oriented lots do not appear to be impacted by the smaller lots and higher density of units. The following diagram is provided in the applicants’ narrative.



The applicants’ narrative has made several arguments in support of what they call a “limited impact” and that housing configured in this manner provides numerous benefits to the future residents and provides opportunities for the creation of a highly efficient and well-designed developments. It is true that the urban growth boundary limits the amount of land developed at urban densities. The residents will have access to the network of pathways, sidewalks and parks so they will still have access to the sun. The applicants’ narrative did not discuss impacts to Oxberg Lake or Spring Meadow subdivisions. It is up to the hearing authority, in this case the planning commission, to determine if lack of sun exposure will or will not adversely affect the occupants or potential occupants of adjacent properties. Even houses in existing subdivisions that have not been granted relaxations of dimensional requirements, such as lot width and setback, block the sun to some extent of neighboring houses. Because existing neighboring houses in previously developed subdivisions block sun exposure to some extent and a limited number of proposed units, 32, would have impacts to sun exposure on only the first floor of their homes and not the entire house these criteria are met.

L. Dedication, Improvement and Maintenance of Public Thoroughfares. Public thoroughfares shall be dedicated, improved and maintained as follows:

- 1. Streets and Walkways. Including, but not limited to, those necessary for proper development of adjacent properties. Construction standards that minimize maintenance and protect the public health and safety, and setbacks as specified in NMC 15.410.050, pertaining to special setback requirements to planned rights-of-way, shall be required.***
- 2. Notwithstanding subsection (L)(1) of this section, a private street may be approved if the following standards are satisfied.***
 - a. An application for approval of a PUD with at least 50 dwelling units may include a private street and the request for a private street shall be supported by the evidence required by this section. The planning commission may approve a private street if it finds the applicant has demonstrated that the purpose statements in NMC 15.240.010(A) through (D) are satisfied by the evidence in subsections (L)(2)(a)(i) through (v) of this section.***

- i. A plan for managing on-street parking, maintenance and financing of maintenance of the private street, including a draft reserve study showing that the future homeowners association can financially maintain the private street;*
- ii. A plan demonstrating that on- and off-street parking shall be sufficient for the expected parking needs and applicable codes;*
- iii. Proposed conditions, covenants and restrictions that include a requirement that the homeowners association shall be established in perpetuity and shall continually employ a community management association whose duties shall include assisting the homeowners association with the private street parking management and maintenance, including the enforcement of parking restrictions;*
- iv. Evidence that the private street is of sufficient width and construction to satisfy requirements of the fire marshal and city engineer; and*
- v. The PUD shall be a Class I planned community as defined in ORS Chapter 94.*

Finding: The applicant is proposing a mixture of private and public streets. The NDC states that “at least 50 dwelling units may include a private street and the request for a private street shall be supported by the evidence required by this section”. The applicant has stated they have met the requirements listed in NDC Section 15.240.020(L)(2)(a)(i, ii, iii, iv and v) as well as Section 15.240.010(A, B, C and D). The applicant has provided documentation that the development proposal meets the requirements listed in Section 15.240.020(L)(a)(i, ii, iii, iv and v) including:

- “a PUD proposes at least 50 dwelling units,
- has provided a plan for on-street parking, maintenance and financing of maintenance of the private street,
- demonstrates sufficient parking,
- includes CC&Rs addressing the private street (alternative submittal discussed below),
- is constructed to proper standards, and
- the PUD is a Class I planned community as defined in ORS Ch. 94.”

1. The applicant has proposed 299 dwelling units, which exceeds the required minimum units for a PUD of 50 dwelling units. The applicant has provided a Declaration of Private Street Maintenance Covenant and Agreement, Stormwater Facility Easement and Maintenance Agreement and a Reserve Study and Maintenance Plan for financing of maintenance of the private streets and stormwater facilities. The letter submitted by the applicants’ legal representative states that the stormwater and private street maintenance covenant and agreements have been submitted in lieu of CC&Rs. The applicant shall submit CC&Rs during an intermediate review step prior to Step 2 of the PUD review process for the City to review and require changes if needed because their narrative refers to CC&Rs and CC&Rs are required by the NDC that, to date, the City has not received for review. The applicant is providing 1,087 parking spots while the NDC requires 570 parking spots, so this proposal demonstrates there is sufficient parking. With the adherence to all conditions of approval the proposed Crestview

Crossing development will be constructed to meet proper City standards. In order for a PUD to meet ORS Chapter 94 of a Class I planned community the following must be true: “Class I planned community” means a planned community as defined in ORS 94.550 that: (a) Contains at least 13 lots or in which the declarant has reserved the right to increase the total number of lots beyond 12; and (b) Has an estimated annual assessment, including an amount required for reserves under ORS 94.595, exceeding \$10,000 for all lots or \$100 per lot, whichever is greater, based on: (A) For a planned community created on or after January 1, 2002, the initial estimated annual assessment, including a constructive assessment based on a subsidy of the association through a contribution of funds, goods or services by the declarant;” The applicants proposed PUD meets the requirements of ORS 94 as it pertains to planned communities.

The applicant further states their application meets the following purpose statements in NDC 15.240.010(A) through (D), which include:

- “encourage comprehensive planning in areas of sufficient size...
- provide flexibility in architectural design, placement and clustering of buildings, use of open space and outdoor living areas, and provision of circulation facilities, parking, storage and related site and design considerations
- promote an attractive, safe, efficient and stable environment...and
- provide for economy of shared services and facilities.”

The subject property is 33.13 acres in area, which is large enough for comprehensive planning. As proposed by the applicant, the development has provided a network of paths and a park centered around a wetland, parking for visitors is spread throughout the development and has utilized a team of professionals including planners, engineers and landscape architects in their planning process. The applicant has provided a few typical single family and multifamily home elevation drawings utilizing peaked roofs and other architectural features. Clustering of lots has been somewhat utilized as evident from the preservation of some of the wetlands. The applicant has indicated in their narrative that they have provided enough open and outdoor living space for each unit, which has been conditioned for verification during the building permit review process. The applicant has provided a plan showing site circulation for pedestrians and vehicles. One intersection of private street “G” and public street “C” has been determined to not meet the required distance from Crestview Drive (Major Collector), which is discussed and conditioned later in this report. The applicant has provided plans for shared waste water disposal, stormwater and public water facilities and services.

The City Engineer is requiring sidewalks along private streets to be a minimum of five feet wide. The applicant is proposing a PUD which includes both public and private streets. The applicant is proposing private streets A-L with the following cross-section:

- 5-foot sidewalk*

- 0.5-foot rolled curb
- 24-26-foot travel lanes
- 0.5-foot rolled curb
- 5-foot sidewalk*

* Per private road cross-section shown on sheet C300.

The applicant has indicated in parts of the narrative that private walkways are to be 4-feet wide, but the cross-section of C300 show sidewalks along private streets as 5-feet wide. Information regarding travel lane widths for private streets was updated by the applicant per an email sent on Friday July 27, 2018 by Andrew Tull. The email indicates that all private streets will have at least 26-feet of access. In some cases, access drives will be 24-feet in width with mountable curbs and sidewalks built to withstand wheel-loads. Private streets without walkways will have 26-feet of pavement.

~~Because the applicant has been unclear on the intended width of walkways along private streets, the applicant shall follow City Engineer requirements for sidewalks along private streets to be 5 feet wide matching the applicant's cross-section detail on sheet C300. The design of weep holes in the proposed rolled curb will be reviewed as part of the Public Improvement Permit, direct connection to the stormwater system may be required.~~

The applicant has proposed the following condition of approval:

“The applicant shall follow the city engineer requirement for sidewalks along private streets to be 5-foot wide, with 12 inch wide, six inch high mountable curb. The private street width shall be measured from the back of the 12 in curb.”

Staff does not concur with the applicants proposed condition of approval. Staff believes the updated condition reduces the clarity of the original condition which referenced a cross-section detail on sheet C300. Under the proposed condition, clarity is lost in regards to the actual sidewalk width. It's possible to interpret the applicant's proposed condition to mean that the 5-foot sidewalk is inclusive of the 12-inch mountable curb which would reduce the ADA accessible width of the sidewalk to 4-feet, which is not acceptable to the City Engineer. However, staff does recognized that the detail on sheet C300 does not include the dimensioning for the mountable curb which would make the effective roadway width 26-feet.

Staff recommends the following condition to address both staff and the applicant's concerns:

The applicant shall follow City Engineer requirements for sidewalks along both sides of private streets to be a 5-foot wide ADA accessible surface matching the applicant's cross-sectional detail on sheet C300. The private street width shall be measured from the back of the 12-inch mountable curb. The sidewalk shall be measure from the back of walk to the back of the 12-inch mountable curb. The design of weep holes in the proposed rolled curb will be reviewed as part of the Public Improvement Permit, direct connection to the stormwater system may be required.

Because the applicant has been unclear about their intended parking locations on private streets, the applicant shall follow requirements outlined in a letter TVF&R provided on June 5, 2018 which indicated the following:

- 20-26 feet road width – no parking on either side of roadway

Through their submitted materials, the applicant has demonstrated compliance with Section 15.240.010 (A) through (D) of the NDC.

Private streets are acceptable with the adherence to the conditions of approval because the applicant plans, narrative and other supporting documents meet the requirements of this section of the NDC or conditions of approval address and correct any deficiencies. These criteria have been met. Additional requirements for public improvements are addressed later in this report.

b. If the PUD is established, the homeowners association shall provide an annual written report on the anniversary date of the final approval of the PUD approval to the community development director that includes the following:

i. The most recent reserve study.

ii. The name and contact information for the retained community management association.

iii. A report on the condition of the private street and any plans for maintenance of the private street.

Finding: The applicant has provided a copy of the Crestview Crossing Homeowners Association Reserve Study and Maintenance Plan 2020 as required by this section of the NDC. The reserve study utilizes a mix of information provided by the developer, various construction estimating and scheduling manuals/programs, and will incorporate information from the eventually established Crestview Crossing Homeowners Association (HOA) in order to determine the useful life and replacement cost of each common item such as the proposed private streets. This documents states that it will be updated annually. Blue Mountain Community Management will be utilized by the Crestview Crossing HOA to conduct the reserve study, which will be implemented for the budget year beginning on January 1, 2020 with the budget year ending on December 31, 2020. As described in this study, a reserve study is best described as an assessment of current assets, their approximate value and their future value at the time of replacement. Page 10 of the Maintenance Plan 2020 projects that all lots would be required to pay a monthly fee of \$5.52 providing an annual total program contribution of \$16,425.00. The aforementioned total assumes contributions by all 250 lots. It is unknown when all 250 lots will be constructed and the developer has proposed phasing of the development over ten years with the possibility of an additional five one year extensions. Because the NDC requires an annual written report on the anniversary date of the final approval of the PUD and the project is proposed to be phased, which final approval could take 10 years with additional five one year extensions, the Crestview HOA must provide and annual report that meets the

requirements of NDC 15.240.020.L.2.b. to the Newberg Community Development Direction each year on the anniversary date of the final approval for each phase of the PUD approval. These criteria will be met with the adherence to the aforementioned condition of approval.

3. Easements. As are necessary for the orderly extension of public utilities and bicycle and pedestrian access.

Finding: Easements are needed for the extension of public utilities and bicycle and pedestrian access. The applicant is showing 8-foot public utility easements along private street frontages. The applicant provided email correspondence with Portland General Electric (PGE) dated August 8, 2018 which indicated that PGE would like 10-foot public utility easements along all public road frontages, and 8-foot public utility easements along private street frontages with the goal to have 8-foot clear space (no sidewalks). Because the applicant's narrative and plans do not clearly show the different necessary easements, the applicant is required to provide 10-foot public utility easements on public street frontages per PGEs review dated August 24, 2018. Public utility easements shall not be collocated/overlapped (running parallel) with public infrastructure easements on private streets i.e. storm, sewer, water, or non-potable water lines.

M. Underground Utilities. Unless waived by the hearing authority, the developer shall locate all on-site utilities serving the proposed planned unit development underground in accordance with the policies, practices and rules of the serving utilities and the Public Utilities Commission.

Finding: On page 20 of the narrative the applicant has stated that all utilities will be placed underground. This criterion is met.

N. Usable Outdoor Living Area. All dwelling units shall be served by outdoor living areas as defined in this code. Unless waived by the hearing authority, the outdoor living area must equal at least 10 percent of the gross floor area of each unit. So long as outdoor living area is available to each dwelling unit, other outdoor living space may be offered for dedication to the city, in fee or easement, to be incorporated in a city-approved recreational facility. A portion or all of a dedicated area may be included in calculating density if permitted under these regulations.

Finding: Page 21 of the applicants' supplemental narrative provided on August 8, 2018, states all dwelling units are served by outdoor living areas equal to at least 10 percent of the gross floor area of each unit (Attachment 8). The single-family units will have outdoor living on individual lots. The multifamily units will utilize a combination of balconies and porches as well as common outdoor living areas located throughout the overall planned unit development. All proposed dwelling units will be able to provide at least 10% of the gross floor area in outdoor living space. Outdoor living spaces for each unit can be verified at the time of the building permit." Because the applicants' narrative states they will verify that all units have at least 10% outdoor living area, the applicant shall clearly list all outdoor living area calculations on all single-family and multifamily building plans. If a single family or multifamily building plan does not meet said requirement then no

building permit shall be granted until plans are revised to meet this section 15.240.020(N) of NDC. This criterion will be verified to have been met during the building permit review process.

O. Site Modification. Unless otherwise provided in preliminary plan approval, vegetation, topography and other natural features of parcels proposed for development shall remain substantially unaltered pending final plan approval.

Finding: The applicant has submitted grading plans that have been reviewed by City staff. The applicant is proposing to remove 923 of 1,042 trees, which is allowed under the current Newberg Development Code due to there not being an Urban Forestry Program in the City. However, Resolution 2006-15 the Newberg Urban Area Management Commission lists a condition of approval that states a tree buffer along the north property line would be required (Attachment 6). The applicants' submittal does not show any trees along the north property line or any new trees planned to be planted. The applicant has provided no information pertaining to a tree buffer and is proposing to remove all existing mature trees along the northern border abutting the Oxberg Lake Estates subdivision. A condition of approval has been added to a separate section of this report to address the absence of a tree buffer along the northern property line. In order to meet the requirements of this section of the NDC, prior to modification of any site features or beginning "Step Two" of the review process (NDC Section 15.240.020.B.2.) the applicant shall provide a list of site features to be modified and supporting drawings illustrating before and after conditions for review by City Staff. "Step two" shall not commence until the applicant and city staff can agree what site modifications are permissible under this section of the NDC. As discussed in length in other sections of this staff report, existing trees will be preserved within 10 feet of the northern property line to act as a buffer between Oxberg Lakes Estates subdivision and the proposed Crestview Crossing development. The following condition of approval is appropriate to meet the requirements of this section of the NDC. The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815.

On August 7, 2018, the applicant has submitted a Joint Permit Application to the Oregon Department of State Lands for their review. The following text is not applicable due to a new application being submitted to DSL. The applicant has stated that the permitting for wetland filling and mitigation is being conducted separately from this PUD application and have provided little information regarding their progress with the Joint Permit Application (JPA) process. On August 20, 2018, a review referral form was sent to Mr. Dan Cary of Aquatic Resource Management Program, Oregon Department of State Lands, who sent an email dated July 30, 2018, providing comments pertaining to currently proposed Crestview Crossing development. The applicant is proposing significant modifications to wetlands including preservation, removal and mitigation. In an email dated July 26, 2018 (Attachment 2) and received after 6:30 pm, Ms. Jevra Brown, Aquatic Resource Planner for Department of State Lands stated the following:

"Expired delineation WD2000-0260 for tax lot 1100

Expired delineation WD2006-0698 associated with administratively closed permits 40337-RF and 48735-RF for Crestview Crossing – Part I.

Crestview Crossing – Part 2 WD2013-0148, administratively closed application 57027-RF, 58464-RF application on extension.”

The applicant was informed of the expired wetlands permit issue on July 27, 2018.

With adherence to the aforementioned condition of approval this criterion is met.

P. Completion of Required Landscaping. If required landscaping cannot be completed prior to occupancy, or as otherwise required by a condition of approval, the director may require the applicant to post a performance bond of a sufficient amount and time to assure timely completion.

Finding: On page 21 of the applicants’ narrative it states that “the applicant acknowledges the possibility of a performance bond being required to assure timely completion of any delayed landscaping.” Because the applicant has acknowledged this section of the NDC this criterion is met.

Q. Design Standards. The proposed development shall meet the design requirements for multifamily residential projects identified in NMC 15.220.060. A minimum of 40 percent of the required points shall be obtained in each of the design categories. [Ord. 2822 § 1 (Exh. A), 2-5-18; Ord. 2763 § 1 (Exh. A §§ 9, 10), 9-16-13; Ord. 2730 § 1 (Exh. A § 9), 10-18-10; Ord. 2720 § 1(4), 11-2-09; Ord. 2505, 2-1-99; Ord. 2451, 12-2-96. Code 2001 § 151.226.]

Finding: This section of the NDC is discussed later in this staff report under Section 15.220.060.

15.240.030 Preliminary plan consideration – Step one.

B. Application. An application, with the required fee, for preliminary plan approval shall be made by the owner of the affected property, or the owner’s authorized agent, on a form prescribed by and submitted to the director. Applications, accompanied by such additional copies as requested by the director for purposes of referral, shall contain or have attached sufficient information as prescribed by the director to allow processing and review in accordance with these regulations. As part of the application, the property owner requesting the planned development shall file a waiver stating that the owner will not file any demand against the city under Ballot Measure 49, approved November 6, 2007, that amended ORS Chapters 195 and 197 based on the city’s decision on the planned development.

Finding: All required fees for the preliminary plan approval have been paid. Additionally, the applicant has provided a Measure 49 waiver. This criterion is met because required fees have been paid and a Measure 49 waiver has been submitted.

C. Type III Review and Decision Criteria. Preliminary plan consideration shall be reviewed through the Type III procedure. Decisions shall include review and recognition of the potential impact of the entire development, and preliminary approval shall include written affirmative findings that:

1. The proposed development is consistent with standards, plans, policies and ordinances adopted by the city; and

Finding: This application is being reviewed under a Type III process and the findings review and recognize potential impacts of the entire development. The proposed development has gone through a full review of City standards, plans, policies, order and ordinances to determine compliance. Conditions of approval (Exhibit “B”) are provided later in this report and require the developer to address any issues that the preliminary PUD has that cause a shortfall in meeting City requirements. This criterion will be met with the adherence to all conditions of approval.

2. The proposed development’s general design and character, including but not limited to anticipated building locations, bulk and height, location and distribution of recreation space, parking, roads, access and other uses, will be reasonably compatible with appropriate development of abutting properties and the surrounding neighborhood; and

Finding: The applicant is proposing larger lot single-family detached homes along the northern property line, providing a buffer from the smaller lots proposed as part of the development from the larger lots located in the Oxberg Lake Estates subdivision. To the west is Spring Meadow Subdivision and Spring Meadow Park, where smaller lot higher density single family development is proposed. The higher density single family area near the west property line is buffered from Spring Meadow subdivision by Spring Meadow Park. The multifamily and smaller lots bordering the eastern property line of the subject property are approximately 263 feet from the single family home on the abutting lot to the east. Along the southern property line smaller single family lots and multifamily buildings abut E Portland Road. The proposed development provides a network of pathways and a centrally located park. Parking is provided on the single family lots, a parking lot for the multifamily buildings, on street parking on the public streets and visitor parking lots are located throughout the higher density single family areas. Both public and private streets are being proposed as part of the development.

The height of the proposed buildings meets the requirements of the NDC and should relate well to human scale. The bulk of the proposed development is greater than surrounding development within the city due to the reduced size of the proposed lots and reduced setbacks. However, as discussed in other sections of this report, the applicant has not maxed out their density allowance so even though the proposed density is greater than surrounding older subdivisions additional units could be proposed and could cause even more of an impact. However, the current application does not max out the density allowance. The landscaping and screening is adequate for most of the surrounding lots with the exception of 1812 Leo Lane, tax lot 12100, located in Spring Meadow subdivision. The property in Spring Meadow subdivision will abut proposed lots 245 through 248. As conditioned elsewhere in this report, a vegetative buffer will be required along the entire property line of 1812 Leo Lane because lots 245 through 248 are a smaller or more dense and out of character with the lots within the Spring Meadow subdivision. As conditioned elsewhere in this report, a tree buffer will be required to lessen the impact to the Oxberg Lake Estate subdivision. It should be pointed out that the

surrounding subdivisions were developed before the adoption of the current development code, when larger lots and lower density was common. In NUAMC Resolution 2006-15 the Newberg Urban Area Management Commission lists a condition of approval that states a tree buffer along the north property line would be required (Attachment 6). The applicants' submittal does not show any trees along the north property line being preserved or any new trees planned to be planted. As conditioned earlier in the report and in compliance with Resolution 2006-15, the applicant shall retain as many mature trees as possible along the northern border of Yamhill County Tax lots 13800 and 1100 and supplement the tree buffer with new trees where necessary to provide a contiguous vegetative buffer. The applicant has provided site development plans that illustrate the location and distribution of recreation space, parking, roads, access and other uses such as a centrally located park as part of a preserved wetland. The proposed plans provide adequate recreation space, the required 10% outdoor living space per Section 15.240.020 (N) will also be checked during the building permit review process. As discussed in other sections of this report, the applicant has provided a sufficient number of parking spaces. Staff engineers have reviewed all private and public roads and access and have found all to meet City requirements and standards except where conditioned. Conditions of approval have been provided to assure compliance with the NDC.

The applicant has provided the following suggested conditions of approval for the sound wall. "The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of tax lots 1803, 1804 and 1808 where they abut the north boundary of tax lot 13800 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners."

City staff do not concur with the exact wording of the proposed condition of approval because said condition does not address the sound wall along tax lot 1100. The sound wall was a condition of approval in annexation Order 2008-0013, which is applicable to tax lot 1100 and not tax lot 13800. The applicant and Oxberg Lakes Estates HOA have jointly agreed to a sound wall along only tax lot 13800. The text of the applicants' and Oxberg Lakes Estates is primarily taken from the 2008 DA, which the City was not a party to. The jointly proposed conditions of approval did not address a sound wall on tax lot 1100. However, Order 2008-0013 specifically states "upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner property". The Gueldner property is tax lot 13800 where the applicant and Oxberg Lakes Estates HOA have jointly proposed a sound wall along the northern property line. Therefore, per Order 2008-0013 a sound wall is to be constructed along the entire northern property line along tax lots 13800 and 1100. City staff propose that the wall be extended along the entire northern boundary of both tax lots 13800 and 1100. The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of

tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815 where they abut the north boundary of tax lots 13800 and 1100 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners.

“The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804 and 1808.”

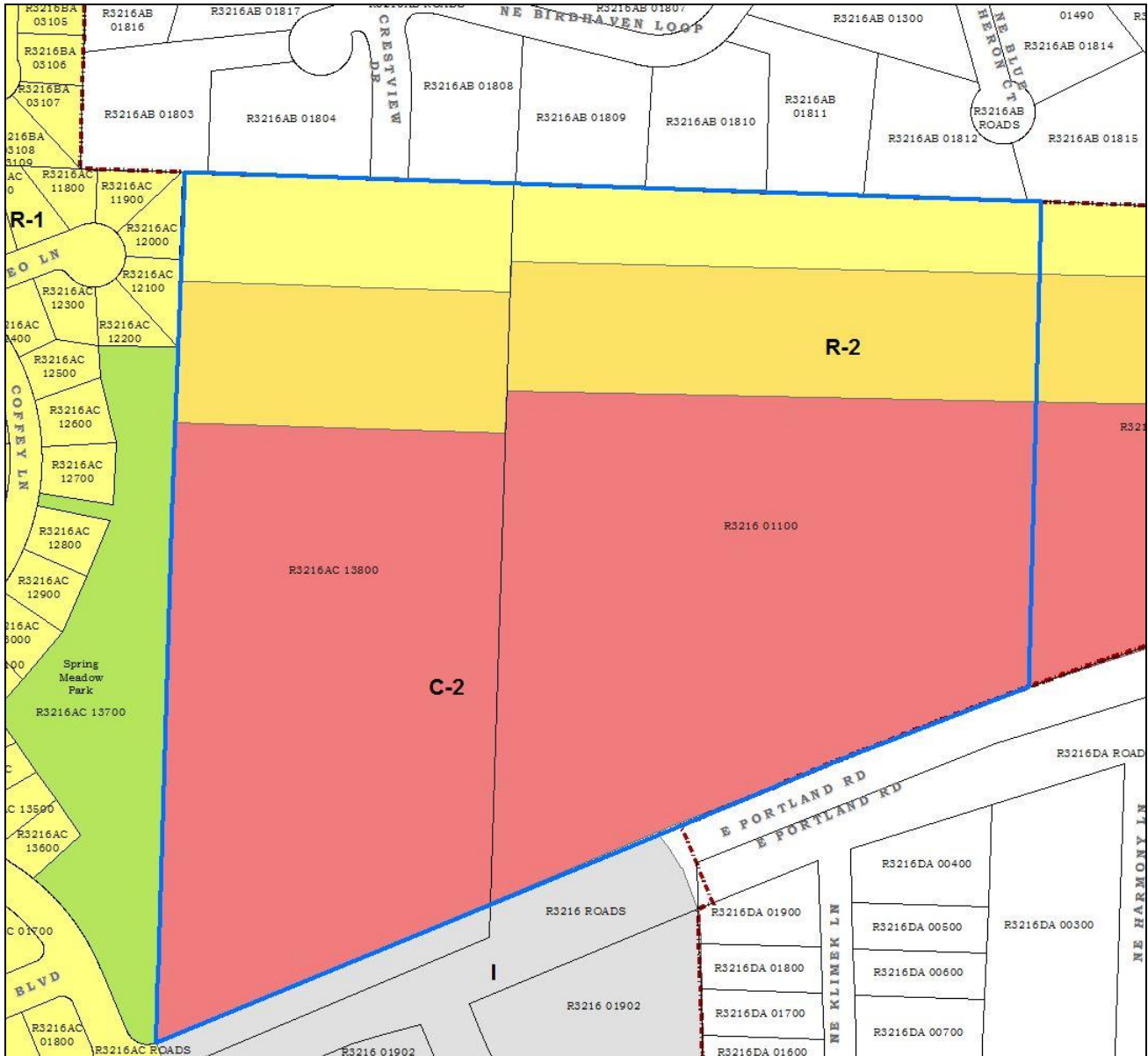
City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815.

“The Applicant shall provide the owners of tax lots 1803, 1804 and 1808 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall on or before the date of final lift of asphalt concrete within the Applicant's development. The owners shall grant the Applicant a temporary construction easement for the sound wall.”

City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. By the applicant stating that the Sound Wall doesn't have to be completed on or before the date of the final lift of asphalt concrete could result in neighboring residents putting up with noise, that may have been negated by the Sound Wall, for up to 15 years. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. The Applicant shall provide the owners of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall at the same time as Phase 1 is constructed and completed within the Applicant's development. The owners shall grant the Applicant a temporary construction easement for the sound wall.

“The owners of tax lots 1803, 1804 and 1808 and the Crestview Crossing Homeowners Association shall share in all costs and expenses related to the maintenance and general upkeep of the Sound Wall after completion. This maintenance obligation shall bind the owners and their respective successors in interest and shall be made a part of the easements and the Crestview Crossing CC&Rs. The owners shall grant the Applicant a temporary construction easement for the Sound Wall, which shall be as limited in scope as reasonably possible.” Because the City was not a party to the 2008 Development Agreement between the applicant and the Oxberg Lakes HOA, it is inappropriate to propose modification of the aforementioned condition of approval that places financial burden for maintenance and general upkeep of the sound wall on property owners within Oxberg Lakes Estates subdivision. In a memo from the applicants attorney dated August 17, 2018, it was stated that a “Draft Maintenance Agreements for the Private Street and Stormwater Tracts. These items have been provided in lieu of CC&R's”. The applicant shall submit CC&Rs during an intermediate review step prior to Step 2 of the PUD review process for the City to review and require changes if needed because their proposed condition of approval refers to CC&Rs that, to date, the City has not received for review.

“Applicant shall begin construction of the Sound Wall after it has received all site design approvals, land use permits, entitlements and other permits required for the development, and has begun construction. If Applicant does not receive the aforementioned permits and entitlements it shall not be obligated to build the sound wall.” By the applicant stating that the Sound Wall doesn't have to be completed on or before the date of the final lift of asphalt concrete within the Applicants' development could result in neighboring residents putting up with noise, that may have been negated by the Sound Wall, for up to 15 years. This is a condition of approval that the Planning Commission should review and consider modification to address noise that could occur over what is potentially a 15 year construction project.



Tax Lot Numbers

This criterion will be met with the adherence to the conditions of approval.

3. Public services and facilities are available to serve the proposed development. If such public services and facilities are not at present available, an affirmative finding may be made under this criterion if the evidence indicates that the public services and facilities will be available prior to need by reason of:

- a. Public facility planning by the appropriate agencies; or***
- b. A commitment by the applicant to provide private services and facilities adequate to accommodate the projected demands of the project; or***

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c. Commitment by the applicant to provide for offsetting all added public costs or early commitment of public funds made necessary by the development; and

4. The provisions and conditions of this code have been met; and

Finding: City staff engineers have evaluated public services and facilities available to the subject property, have found that adequate public services and facilities exists or upgrades can be made in order to meet this section of the NDC. The conditions of approval identified in Exhibit “B” cover needed upgrades to public services and facilities. Adequate services, police, fire (TVF&R) and access to the library are available and the proposed developments property tax dollars will help fund these services. With implementation of the conditions of approval found throughout this report, these criteria will be met.

5. Proposed buildings, roads, and other uses are designed and sited to ensure preservation of features, and other unique or worthwhile natural features and to prevent soil erosion or flood hazard; and

Finding: The design and location of the buildings, roads and other uses has been done in a way to preserve a portion of wetlands located on the property. The applicant has provided a grading plan showing soil erosion mitigation measures that will be taken. According to the City’s GIS, there are no flood hazards within the confines of the subject property. In compliance with Resolution 2006-15, discussed earlier in this report, a condition of approval has been added requiring trees along the northern boundary to be preserved where possible to maintain a buffer between the proposed development and the Oxberg Lake subdivision. ~~It is unclear if the Oregon Department of State Lands and Army Corps of Engineers have received or reviewed a new Joint Permit Application (JPA) for the current version of Crestview Crossing.~~ The applicant has submitted a revised Joint Permit Application (JPA) to the Oregon Department of State Lands (DSL) that matches the development that is currently being proposed to the City. The JPA is intended for filling and mitigating impacts to the wetlands. A referral for review of the current proposal was sent to the DSL but as of the date this report was drafted there has been no response. The City has no documentation of any State Planning Goal 5 resources located within the confines of the subject property including wildlife habitats, historic places, and aggregate (gravel) within the confines of the subject property.

This criterion is met.

6. There will be adequate on-site provisions for utility services, emergency vehicular access, and, where appropriate, public transportation facilities; and

Finding: City Staff Engineers have evaluated the application for adequate utility services and have found existing services to be adequate. The applicant has indicated they’ve worked with Tualatin Valley Fire & Rescue (TVF&R) and a letter was submitted as part of their application. TVF&R stated that no on-street parking is permitted on the private streets, it doesn’t appear that the applicant is proposing parallel parking on the private streets but they are illustrating several parking lots

showing 90 degree parking. Sheet C230 of the plan set illustrates a fire access plan. No transportation facilities are located onsite or planned per the page 24 of the narrative submitted on August 23, 2018. The applicant stated that “if the opportunity arises in the future, public transportation facilities” could be provided. This criterion will be met with the adherence to the aforementioned condition of approval.

7. Sufficient usable recreation facilities, outdoor living area, open space, and parking areas will be conveniently and safely accessible for use by residents of the proposed development; and

Finding: The applicant is proposing both active and passive open space recreational areas for use by the residents. The applicant has stated in their findings that “the proposed design includes a civic use park which has been envisioned to provide space for community events as well as a space for featured local vendors. A smaller neighborhood park is connected to the proposed development through a network of multi-use pathways, which provide pedestrian circulation and recreation throughout the site. The proposal includes multiple open spaces, most of which include a trail system. The multi-family housing has common outdoor living areas, as well as balconies and patios for some individual units. The single-family housing has outdoor living areas adjacent to the homes.” The single family homes will have onsite parking, the multifamily buildings have direct access to a parking lot, on-street parking is provided on the public streets and visitor parking lots off of the private streets are provided in several areas throughout the development. City staff concur with the applicants narrative and plans, which have shown that the proposed parking spaces, discussed in detail in a separate section of this report meets the city requirements. The applicants’ plan set illustrates a centrally located open space/park that will provide access via pathways. The required outdoor living area per unit of 10% will be reviewed for conformance with the NDC at the time of building permit review. A condition of approval has been added in a separate section, which requires units to be modified if they do not provide the minimum of 10% outdoor living area. This criterion will be met with the adherence to the conditions of approval.

8. Proposed buildings, structures, and uses will be arranged, designed, and constructed so as to take into consideration the surrounding area in terms of access, building scale, bulk, design, setbacks, heights, coverage, landscaping and screening, and to assure reasonable privacy for residents of the development and surrounding properties.

Finding: The applicant has stated that the “...site has been designed to reflect the surrounding area and to provide a reasonable level of privacy for residents of the development and surrounding properties. Large lot single-family detached dwellings are proposed along the northern property line, separating this development from another large lot residential development, easing the transition from lower density to higher. The site is buffered from the residential developments to the west by the park that is adjacent to the site. The site as a whole is designed to provide safe and convenient access.” The proposed building elevation drawings illustrate peaked roofs and architectural feature not unlike the surrounding homes in abutting subdivisions. There are no structures proposed at this time. Engineers, planners, architects and landscape architects have worked as a development team to

arrange units, provide landscaping and arrange streets in a pattern that considers the surrounding area. There will be sufficient buffering, with conditions of approval, for the surrounding neighborhoods either through like sized lots, additional vegetative buffers or separation by distance from the smaller lots and multifamily lot. The access to the site will be from E Crestview Drive from the north and E Portland Road from the south. Building scale refers to building elements and details as they proportionally relate to each other and to humans. The height of the proposed buildings meets the requirements of the NDC and should relate well to human scale. The bulk of the proposed development is greater than surrounding developments within the city due to the reduced size of the proposed lots and reduced setbacks. However, as discussed in other sections of this report, the applicant has not maxed out their density allowance so even though the proposed density is greater than surrounding older subdivisions additional units could have been proposed causing an even greater impact to surrounding properties. The landscaping and screening is adequate for most of the surrounding lots with the exception of 1812 Leo Lane, tax lot 12100, located in Spring Meadow subdivision. The property in Spring Meadow subdivision will abut proposed lots 245 through 248. As conditioned elsewhere in this report, a vegetative buffer will be required along the entire property line of 1812 Leo Lane because lots 245 through 248 are a great deal smaller or more dense and out of character with the lots within the Spring Meadow subdivision. It should be pointed out that the surrounding subdivisions were developed before the adoption of the current development code, when larger lots and lower density was common. In NUAMC Resolution 2006-15 the Newberg Urban Area Management Commission lists a condition of approval that states a tree buffer along the north property line would be required (Attachment 6). The applicants' submittal does not show any trees along the north property line being preserved or any new trees planned to be planted. As conditioned earlier in the report and in compliance with Resolution 2006-15, the applicant shall retain as many mature trees as possible along the northern border of Yamhill County Tax lots 13800 and 1100 and supplement the tree buffer with new trees where necessary to provide a contiguous vegetative buffer. The applicant has provided site development plans that illustrate the location and distribution of recreation space, parking, roads, access and other uses such as a centrally located park as part of a preserved wetland. The proposed plans provide adequate recreation space, the required 10% outdoor living space per Section 15.240.020 (N) will also be checked during the building permit review process. As discussed in other sections of this report, the applicant has provided a sufficient number of parking spaces. Staff engineers have reviewed all private and public roads and access. City engineers have found the roads and access meets City requirements and standards except where conditioned. Conditions of approval have been provided to assure compliance with the NDC. Through the PUD process the applicant is asking for an increase in combined lot and parking coverage of 70% in the R-2 zone district. The current NDC does not have a maximum lot coverage for C-2 zoned property. The applicant is proposing a number of residential lot within the C-2 zone, which allows for residential land use with a conditional use permit. The applicant has applied for a conditional use permit for constructing residential uses within the C-2 zone. Lot and parking coverage is checked during the building permit review process. The applicant has stated that they are confident that the 70% coverage allowance will be adequate for meeting the requirements of the NDC.

The applicant has provided the following suggested conditions of approval for the sound wall. “The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of tax lots 1803, 1804 and 1808 where they abut the north boundary of tax lot 13800 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners.”

City staff do not concur with the exact wording of the proposed condition of approval because said condition does not address the sound wall along tax lot 1100. The sound wall was a condition of approval in annexation Order 2008-0013, which is applicable to tax lot 1100 and not tax lot 13800. The applicant and Oxberg Lakes Estates HOA have jointly agreed to a sound wall along only tax lot 13800. The text of the applicants' and Oxberg Lakes Estates is primarily taken from the 2008 DA, which the City was not a party to. The jointly proposed conditions of approval did not address a sound wall on tax lot 1100. However, Order 2008-0013 specifically states “upon development of the property, construct a sound wall along the northern property line to be of similar design and coordinated with the sound wall on the adjacent Gueldner property”. The Gueldner property is tax lot 13800 where the applicant and Oxberg Lakes Estates HOA have jointly proposed a sound wall along the northern property line. Therefore, per Order 2008-0013 a sound wall is to be constructed along the entire northern property line along tax lots 13800 and 1100. City staff propose that the wall be extended along the entire northern boundary of both tax lots 13800 and 1100. The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815 where they abut the north boundary of tax lots 13800 and 1100 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners.

“The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804 and 1808.”

City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those

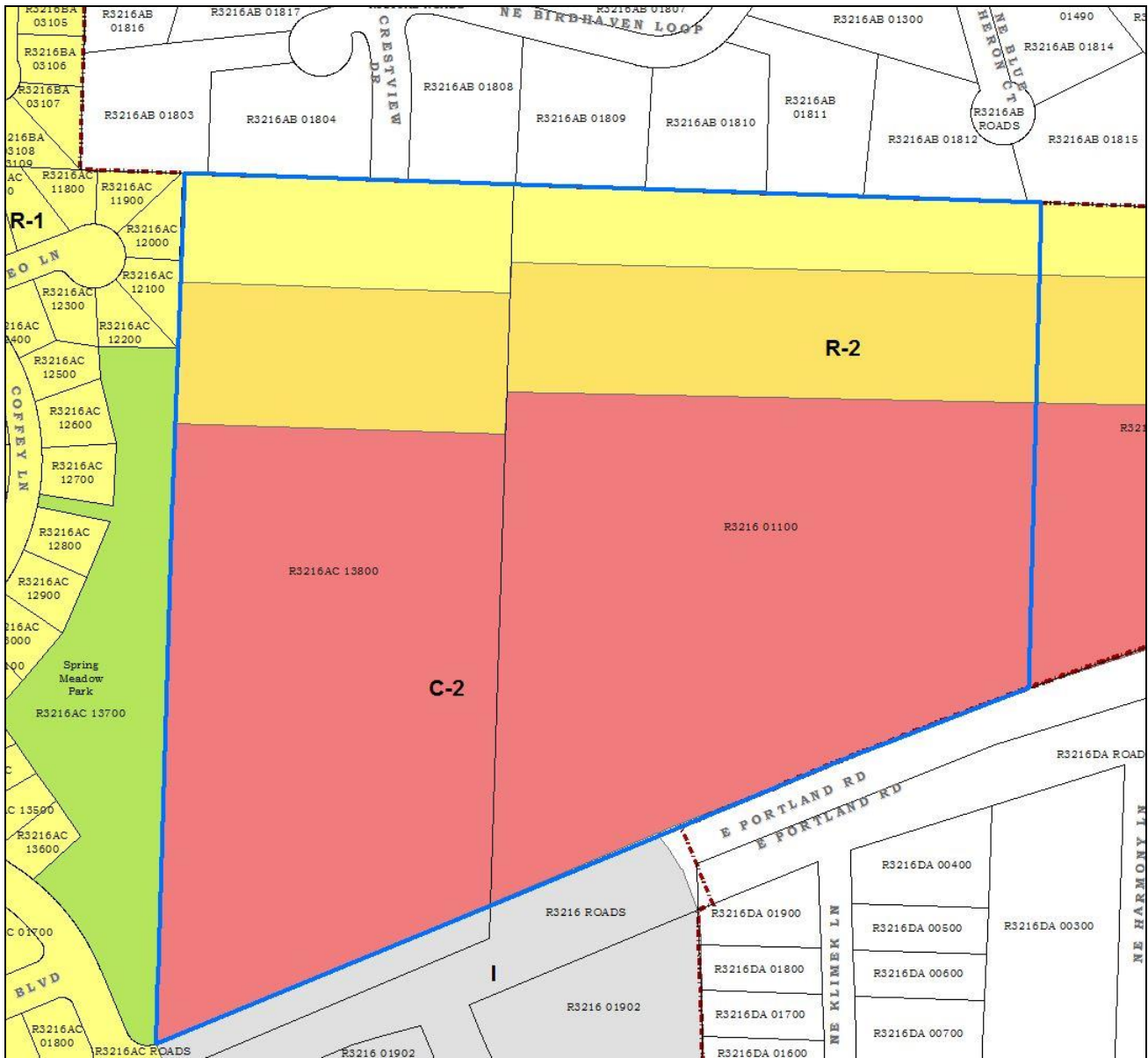
trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815.

“The Applicant shall provide the owners of tax lots 1803, 1804 and 1808 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall on or before the date of final lift of asphalt concrete within the Applicant’s development. The owners shall grant the Applicant a temporary construction easement for the sound wall.”

City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. By the applicant stating that the Sound Wall doesn’t have to be completed on or before the date of the final lift of asphalt concrete could result in neighboring residents putting up with noise, that may have been negated by the Sound Wall, for up to 15 years. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. The Applicant shall provide the owners of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall at the same time as Phase 1 is constructed and completed within the Applicant’s development. The owners shall grant the Applicant a temporary construction easement for the sound wall.

“The owners of tax lots 1803, 1804 and 1808 and the Crestview Crossing Homeowners Association shall share in all costs and expenses related to the maintenance and general upkeep of the Sound Wall after completion. This maintenance obligation shall bind the owners and their respective successors in interest and shall be made a part of the easements and the Crestview Crossing CC&Rs. The owners shall grant the Applicant a temporary construction easement for the Sound Wall, which shall be as limited in scope as reasonably possible.” Because the City was not a party to the 2008 Development Agreement between the applicant and the Oxberg Lakes HOA, it is inappropriate to propose modification of the aforementioned condition of approval that places financial burden for maintenance and general upkeep of the sound wall on property owners within Oxberg Lakes Estates subdivision. In a memo from the applicants attorney dated August 17, 2018, it was stated that a “Draft Maintenance Agreements for the Private Street and Stormwater Tracts. These items have been provided in lieu of CC&R's”. The applicant shall submit CC&Rs during an intermediate review step prior to Step 2 of the PUD review process for the City to review and require changes if needed because their proposed condition of approval refers to CC&Rs that, to date, the City has not received for review.

“Applicant shall begin construction of the Sound Wall after it has received all site design approvals, land use permits, entitlements and other permits required for the development, and has begun construction. If Applicant does not receive the aforementioned permits and entitlements it shall not be obligated to build the sound wall.” By the applicant stating that the Sound Wall doesn’t have to be completed on or before the date of the final lift of asphalt concrete within the Applicants’ development could result in neighboring residents putting up with noise, that may have been negated by the Sound Wall, for up to 15 years. This is a condition of approval that the Planning Commission should review and consider modification to address noise that could occur over what is potentially a 15 year construction project.



Tax Lot Numbers

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The applicant has proposed the following condition of approval:

“In compliance with Resolution 2006-15, the Applicant shall retain as many mature trees as possible within ten feet (10’) of the north property boundary. Tree removal as necessary to construct the boundary wall and stormwater improvements is allowed. The Applicant shall supplement the tree buffer with new trees where necessary to provide a continuous vegetative buffer” (Attachment 9).

The applicant and the attorney representing the Oxberg Lakes Estates HOA have also offered the following condition of approval. “Applicant shall include a ten-foot (10') wide landscape buffer zone on the north edge of tax lot 13800 along the boundary shared with tax lots 1803, 1804 and 1808 (the "Landscape Buffer Zone"), and a 30-foot (30') setback (the "Setback Zone") between the Sound Wall and any buildings in any subdivision plats maps for tax lot 13800 submitted for approval to any governmental entity with jurisdiction over the Applicant’s development. The Landscape Buffer Zone and Setback Zone shall be recorded in the form of easements burdening and encumbering tax lot 13800 and future lots platted therefrom, and benefiting tax lots 1803, 1804 and 1808. The specific language of the easements shall be as reasonably agreed by the affected parties.”

City staff do not concur with the proposed condition of approval as jointly drafted by the applicant and Oxberg Lakes Estates HOA. City staff proposed the following modified condition of approval to address the entire northern property line of tax lots 13800 and 1100. Applicant shall include a ten-foot (10') wide landscape buffer zone on the north edge of tax lots 13800 and 1100 along the boundary shared with tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815 (the "Landscape Buffer Zone"), and a 30-foot (30') setback (the "Setback Zone") between the Sound Wall and any buildings in any subdivision plats maps for tax lots 13800 and 1100 submitted for approval to any governmental entity with jurisdiction over the Applicant’s development. The Landscape Buffer Zone and Setback Zone shall be recorded in the form of easements burdening and encumbering tax lots 13800 and 1100 and future lots platted therefrom, and benefiting tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815. The specific language of the easements shall be as reasonably agreed by the affected parties.

There are five additional homeowners who live further to the east of tax lots 1803, 1804 and 1808 who will be backing up to Crestview Crossing. Additionally, Ordinance 2008-2700 and Order 2008-0013 refer to a sound wall on tax lot 1100 and not 13800. These property owners are not being offered any additional buffering but the preservation of 12-inch BDH or greater trees along the north property line of the proposed Crestview Crossing development. City Staff suggest removal of the reference to just tax lots 1803, 1804 and 1808 and referring to just the “northern property line” so that the buffer would be extended along the entire proposed Crestview Crossing development.

The applicant and Oxberg Lakes Estates HOA have also proposed a jointly agreed to condition of approval pertaining to a landscape buffer and setback which states “Applicant shall include a ten-foot (10') wide landscape buffer zone on the north edge of tax lot 13800 along the boundary shared with tax lots 1803, 1804 and 1808 (the "Landscape Buffer Zone"), and a 30-foot (30') setback (the "Setback Zone") between the Sound Wall and any buildings in any subdivision plats maps for tax lot

13800 submitted for approval to any governmental entity with jurisdiction over the Applicant's development. The Landscape Buffer Zone and Setback Zone shall be recorded in the form of easements burdening and encumbering tax lot 13800 and future lots platted therefrom, and benefiting tax lots 1803, 1804 and 1808. The specific language of the easements shall be as reasonably agreed by the affected parties." The issue with this condition is that, according to Order 2008-0013 and Ordinance 2008-2700 the sound wall is supposed to be located on tax lot 1100 and not tax lot 13800. This criterion will be met with the adherence to the conditions of approval in Exhibit "B".

D. Conditions. Applications may be approved subject to conditions necessary to fulfill the purpose and provisions of these regulations. [Ord. 2822 § 1 (Exh. A), 2-5-18; Ord. 2693 § 1 (Exh. A(6)), 3-3-08; Ord. 2612, 12-6-04; Ord. 2451, 12-2-96. Code 2001 § 151.227.]

Finding: Exhibit "B" lists conditions of approval that are necessary in order fulfill the purpose and provisions of these regulations within the NDC. If the applicant adheres to all conditions of approval this criterion will be met.

III. 15.220.060 Additional requirements for multifamily residential projects.

The purpose of this section is to ensure that residential projects containing three or more units meet minimum standards for good design, provide a healthy and attractive environment for those who live there, and are compatible with surrounding development. As part of the site design review process, an applicant for a new multifamily residential project must demonstrate that some of the following site and building design elements, each of which has a point value, have been incorporated into the design of the project. At least 14 points are required for attached single-family projects of any size and smaller multifamily projects with six or fewer units and at least 20 points are required for multifamily projects with seven or more units. For more information and illustrations of each element, refer to the Newberg Residential Development Design Guidelines (July 1997).

A. Site Design Elements.

- 1. Consolidate green space to increase visual impact and functional utility. This applies to larger projects which collectively have a significant amount of open space areas which can be consolidated into children's play areas, gardens, and/or dog-walking areas (three points).***
- 2. Preserve existing natural features, including topography, water features, and/or native vegetation (three points).***
- 3. Use the front setback to build a street edge by orienting building(s) toward the street with a relatively shallow front yard (12 to 15 feet for two-story buildings) to create a more "pedestrian-friendly" environment (three points).***
- 4. Place parking lots to the sides and/or back of projects so that front yard areas can be used for landscaping and other "pedestrian-friendly" amenities (three points).***

5. *Create “outdoor” rooms in larger projects by grouping buildings to create well-defined outdoor spaces (two points).*
6. *Provide good-quality landscaping. Provide coordinated site landscaping sufficient to give the site its own distinctive character, including the preservation of existing landscaping and use of native species (two points).*
7. *Landscape at the edges of parking lots to minimize visual impacts upon the street and surrounding properties (two points).*
8. *Use street trees and vegetative screens at the front property line to soften visual impacts from the street and provide shade (one point).*
9. *Use site furnishings to enhance open space. Provide communal amenities such as benches, playground equipment, and fountains to enhance the outdoor environment (one point).*
10. *Keep fences neighborly by keeping them low, placing them back from the sidewalk, and using compatible building materials (one point).*
11. *Use entry accents such as distinctive building or paving materials to mark major entries to multifamily buildings or to individual units (one point).*
12. *Use appropriate outdoor lighting which enhances the nighttime safety and security of pedestrians without causing glare in nearby buildings (one point).*

B. Building Design Elements.

1. *Orient buildings toward the street. For attached single-family and smaller multifamily projects, this means orienting individual entries and porches to the street. In larger projects with internal circulation and grounds, this means that at least 10 percent of the units should have main entries which face the street rather than be oriented toward the interior (three points).*
2. *Respect the scale and patterns of nearby buildings by reflecting the architectural styles, building details, materials, and scale of existing buildings (three points).*
3. *Break up large buildings into bays by varying planes at least every 50 feet (three points).*
4. *Provide variation in repeated units in both single-family attached and large multifamily projects so that these projects have recognizable identities. Elements such as color; porches, balconies, and windows; railings; and building materials and form, either alone or in combination, can be used to create this variety (three points).*
5. *Building Materials. Use some or all of the following materials in new buildings: wood or wood-like siding applied horizontally or vertically as board and batten; shingles, as roofing, or on upper portions of exterior walls and gable ends; brick at the base of walls and chimneys; wood or wood-like sash windows; and wood or wood-like trim (one point for each material described above).*
6. *Incorporate architectural elements of one of the city’s historical styles (Queen Anne, Dutch colonial revival, colonial revival, or bungalow style) into the design to reinforce the city’s cultural identity. Typical design elements which should be considered include, but are not limited to, “crippled hip” roofs, Palladian-style windows, roof eave brackets, dormer windows, and decorative trim boards (two points).*

7. Keep car shelters secondary to the building by placing them to the side or back of units and/or using architectural designs, materials, and landscaping to buffer visual impacts from the street (two points).

8. Provide a front porch at every main entry as this is both compatible with the city's historic building pattern and helps to create an attractive, "pedestrian-friendly" streetscape (two points).

9. Use sloped roofs at a pitch of 3:12 or steeper. Gable and hip roof forms are preferable (two points). [Ord. 2763 § 1 (Exh. A § 8), 9-16-13; Ord. 2505, 2-1-99. Code 2001 § 151.195.]

Finding: The table below illustrates the possible points and points earned for site design and building design elements. This section of the NDC states that at least 14 points are required for attached single-family projects of any size and smaller multifamily projects with six or fewer units and at least 20 points are required for multifamily projects with seven or more units. This multifamily design criteria listed in the NDC is met because the applicant has demonstrated they have obtained at least 33 combined points for site design and building design.

Design Review	Possible Points	Points Earned
<i>Site Design Elements</i>		
Consolidate green space	3	3
Preserve existing natural features	3	0
Use front setback to build a street edge	3	0
Place parking lots on sides or back of projects	3	3
Create "outdoor rooms"	2	02
Provide good quality landscaping	2	2
Landscape at edges of parking lots	2	2
Use street trees and vegetative screens	1	1
Use site furnishings to enhance open space	1	0
Keep fences "neighborly"	1	0
Use entry accents	1	1
Use appropriate outdoor lighting	1	1
<i>Building Design Elements</i>		
Orient buildings toward the street	3	3
Respect the scale and patterns of nearby buildings	3	3
Break up large building planes into bays	3	3
Provide variation in repeated units	3	3
Building materials: a) wood or wood-like siding b) shingles on roof or upper portions c) brick at base of walls or chimneys d) wood or wood-like sash windows e) wood or wood-like trim	1 each	4 (a, b, d and e)
Incorporate historical architectural elements	2	0
Keep car shelters accessory to building	2	0
Provide a front porch at every main entry	2	2
Use slope roofs at a pitch of 3:12 or steeper	2	0
Total Earned		33

15.220.030 Site design review requirements.

14. Traffic Study. A traffic study shall be submitted for any project that generates in excess of 40 trips per p.m. peak hour. This requirement may be waived by the director when a determination is made that a previous traffic study adequately addresses the proposal and/or when off-site and frontage improvements have already been completed which adequately mitigate any traffic impacts and/or the proposed use is not in a location which is adjacent to an intersection which is functioning at a poor level of service. A traffic study may be required by the director for projects below 40 trips per p.m. peak hour where the use is located immediately adjacent to an intersection functioning at a poor level of service. The traffic study shall be conducted according to the City of Newberg design standards. [Ord. 2619, 5-16-05; Ord. 2451, 12-2-96. Code 2001 § 151.192.]

Finding: A traffic study was submitted with the land use application for the Crestview Crossing PUD dated August 2018. Based on the analysis, the 260 single-family homes and 48 apartment units

within the Crestview Crossing PUD were evaluated and it was estimated to create 2,826 additional trips each day; 213 will occur in the AM peak hour (7am-9am) and 285 trips will occur in the PM peak hour (4pm-6pm). It should be noted that the applicant's narrative uses a different number of homes, as it states 18 single-family homes, 230 cottage homes, and 51 multi-family homes. This means that the traffic analysis over stated the number of single family homes (260 homes in TIA vs. 248 homes in the applicant's narrative) and understated the number of apartments (48 apartments in the TIA vs. 51 apartments in the applicant's narrative). Eight study intersections were evaluated to determine the impact on the adjacent transportation system.

The study identified the following recommendations to mitigate traffic impacts at the Providence Drive/E Crestview Drive/E Portland Road intersection from the development. No other traffic impacts were identified.

- The new north leg of the Providence Drive/E Crestview Drive/E Portland Road intersection should be configured as a four-lane section with one northbound lane and three southbound lanes (left turn lane, through movement, and right turn lane). At least 250-feet of southbound left-turn lane storage and 150-feet of southbound right-turn lane storage should be provided to accommodate the 95th percentile queue lengths.
- The existing south leg of the Providence Drive/E Crestview Drive/E Portland Road intersection should be restriped to a four-lane section with one southbound lane, and three northbound lanes (left turn lane, through movement, and right turn lane).
 - Based on the 95th percentile queuing analysis:
 - A westbound right turn lane should be constructed with at least 300-feet of storage
 - A eastbound left turn lane should be striped to provide at least 150-feet of storage
 - The signal phasing of the Providence Drive/E Crestview Drive/E Portland Road intersection should be operated with permissive left turn movements on the north and south approaches with fully protected left turn movements on the east and west approaches.

The applicant submitted a supplemental traffic memo which is titled the "Five Party Agreement Transportation Considerations," dated August 15, 2018. This document outlines the transportation elements of the original Five Party Agreement from 2006, and addresses concerns raised by residents about the agreement.

Of concern is whether the alignment, intersection treatments, and cross-sectional elements being proposed in the Crestview Crossing PUD are consistent with the Five Party Agreement. The conceptual alignment from the original Five Party Agreement shows a roundabout approximately 380 feet north of E Portland Road with a traffic circle approximately 850-feet north of the roundabout, just south of Robin Ct.

After the Five Party agreement was executed, traffic circles were installed at Birdhaven Loop and Robin Court.

The proposed alignment shows a roundabout approximately 590-feet north of E Portland Road with the existing traffic circle at Robin Court located approximately 910-feet north of the roundabout.

The difference between the roundabout and traffic circle spacing between the Five Party Agreement conceptual alignment, and the proposed PUD alignment is approximately 60-feet (850-feet vs. 910-feet) and will not impact travel speeds between the two traffic control devices.

Additionally it should be noted that a two-way side-street stop controlled intersection is being proposed between the roundabout and the existing traffic circle on Crestview Drive.

The City has determined that the information provided in the memo dated August 15, 2018, shows the proposed street alignments in the Crestview Crossing PUD is in compliance with the Five Party Agreement.

Because the applicant has submitted a TIA that meets City requirements and City Staff have found the supplemental memorandum adequately addressing the Five Party Agreement this criterion is met.

15.305.020 Zoning use table – Use districts.

Finding: The applicant is proposing single family and multifamily residential development within the R-1, R-2 and C-2 zone districts. The single family units are proposed for the R-1 and R-2 zoned areas, these uses are permitted within said zoning districts. The multifamily units will be developed within the C-2 area, which are permitted as a conditional use. The applicant has requested a conditional use for development of multifamily units within the C-2 zone district. Additionally, proposed lot 250 will be developed with commercial uses, which are permitted within the C-2 zone district. City staff has recommended approval of the conditional use permit for development of multifamily units within the C-2 District. Because the proposed uses are permitted either by right or allowed with a conditional use permit, Section 15.305.020 has been met.

15.356 Bypass Interchange (BI) Overlay

15.356.030 Permitted uses.

All uses of land and water that are permitted in the underlying zoning district(s) are also permitted in the bypass interchange overlay, with the exception of the special limitations on commercial uses in the industrial districts as outlined in NMC 15.356.050. [Ord. 2734 § 1 (Exh. B), 3-7-11; Ord. 2708 § 2, 12-1-08; Ord. 2602, 9-20-04. Code 2001 § 151.531.2.]

15.356.040 Conditional uses.

A. Uses of land and water that are listed as conditional uses in the underlying zoning district(s) may also be allowed in the bypass interchange overlay, with the exception of uses included in the list of prohibited uses in NMC 15.356.050.

B. Proposed conditional uses in the bypass interchange overlay are subject to the standard conditional use criteria and procedures of this code.

Finding: The subject properties are within the Bypass Interchange Overlay. However, the proposed path of the Bypass has since been revised and is proposed to be located adjacent to the frontage of the subject property. The applicant is proposing a mixture of single family, multifamily and commercial development on residentially and commercially zoned property. The applicant has applied for Conditional Use approval for the residential development in the C-2 zone that was evaluated earlier per the Conditional Use criteria in this report and is recommended to be approved. Because the uses proposed by the applicant are permitted either by right or as a conditional use, these criteria are met.

15.440.010 Required off-street parking.

A. Off-street parking shall be provided on the development site for all R-1, C-1, M-1, M-2 and M-3 zones. In all other zones, the required parking shall be on the development site or within 400 feet of the development site which the parking is required to serve. All required parking must be under the same ownership as the development site served except through special covenant agreements as approved by the city attorney, which bind the parking to the development site.

Finding: The applicant is proposing adequate parking for the R-1 zone district (lots 1-18) that will be located within the confines of lots along the northern property line of the subject property. This criterion is met.

D. All commercial, office, or industrial developments that have more than 20 off-street parking spaces and that have designated employee parking must provide at least one preferential carpool/vanpool parking space. The preferential carpool/vanpool parking space(s) must be located close to a building entrance. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16; Ord. 2763 § 1 (Exh. A § 15), 9-16-13; Ord. 2564, 4-15-02; Ord. 2561, 4-1-02; Ord. 2451, 12-2-96. Code 2001 § 151.610.] Penalty: See NMC 15.05.120.

Finding: The current PUD application will subdivide lots, lot 250 is proposed for commercial use. It is anticipated that uses on this lot will require more than 20 off-street parking spaces and have designated employee parking. When development plans are submitted for commercial lot 250 a staff review will verify that at least one preferential carpool/vanpool parking space(s) will be provided and located close to the building entrance. Lot 250 will still have to be reviewed through the Design Review process to verify that the proposed parking meets the requirements of the NDC. This criterion will be verified to have been met through the Design Review process after the applicant submits an application for review.

15.440.020 Parking area and service drive design.

A. All public or private parking areas, parking spaces, or garages shall be designed, laid out and constructed in accordance with the minimum standards as set forth in NMC 15.440.070.

Finding: It has been determined that all proposed public and private parking areas and parking space have been laid out and constructed in compliance with the illustrations and footnotes listed Section 15.440.070 of the NDC.

B. Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwellings on a single lot, shall be served by a service drive so that no backward movement or other maneuvering of a vehicle within a street, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety in traffic access and egress and maximum safety of pedestrian and vehicular traffic on the site, but in no case shall two-way and one-way service drives be less than 20 feet and 12 feet, respectively. Service drives shall be improved in accordance with the minimum standards as set forth in NMC 15.440.060.

C. Gates. A private drive or private street serving as primary access to more than one dwelling unit shall not be gated to limit access, except as approved by variance.

Findings: The applicant has proposed groups of three or more parking spaces within the subject property. The applicant has indicated that both front loading and back loading spaces are proposed for the development. There are several parking areas that may require backward movement onto the private streets. Private streets are not public streets. The applicant is not proposing any gates as part of the project. Sheet C215 illustrates services drives of 24 to 26 feet in width for multifamily 249.

This criterion is met because the applicant has demonstrated compliance with Section 15.440.020(B and C).

15.440.030 Parking spaces required.

A. Use	B. Minimum Parking Spaces Required
Residential Types	
Dwelling, multifamily and multiple single-family dwellings on a single lot Studio or one-bedroom unit Two-bedroom unit Three- and four-bedroom unit Five- or more bedroom unit • Unassigned spaces	1 per dwelling unit 1.5 per dwelling unit 2 per dwelling unit 0.75 spaces per bedroom If a development is required to have more than 10 spaces on a lot, then it must provide some unassigned spaces. At least 15 percent of the total required parking spaces must be unassigned and be located for convenient use by all occupants of the development. The location shall

A. Use	B. Minimum Parking Spaces Required
<ul style="list-style-type: none"> • Visitor spaces • On-street parking credit • Available transit service 	<p>be approved by the director.</p> <p>If a development is required to have more than 10 spaces on a lot, then it must provide at least 0.2 visitor spaces per dwelling unit.</p> <p>On-street parking spaces may be counted toward the minimum number of required spaces for developments required to have more than 10 spaces on a lot. The on-street spaces must be directly adjoining and on the same side of the street as the subject property, must be legal spaces that meet all city standards, and cannot be counted if they could be removed by planned future street widening or a bike lane on the street.</p> <p>At the review body’s discretion, affordable housing projects may reduce the required off-street parking by 10 percent if there is an adequate continuous pedestrian route no more than 1,500 feet in length from the development to transit service with an average of less than one hour regular service intervals during commuting periods or where the development provides its own transit. A developer may qualify for this parking reduction if improvements on a proposed pedestrian route are made by the developer, thereby rendering it an adequate continuous route.</p>
Commercial neighborhood district (C-1)	1 for each dwelling
Dwelling, single-family or two-family	2 for each dwelling unit on a single lot
Fraternities, sororities, cooperatives and dormitories	1 for each three occupants for which sleeping facilities are provided
Hotels, motels, motor hotels, etc.	1 for each guest room
Rooming or boarding houses	1 for each guest room
Special needs housing	1 space per 3 beds or actual parking needs as demonstrated through a parking analysis.

A. Use	B. Minimum Parking Spaces Required
Institutional Types	
Churches, clubs, lodges	1 for every 4 fixed seats or every 8 feet of bench length or every 28 sq. ft. where no permanent seats or benches are maintained – in main auditorium (sanctuary or place of worship)
Continuing care retirement community not including nursing care	1 space per living unit
Day care facility	5 spaces per each 1,000 gross sq. ft.
Hospitals (including accessory retail wholly contained within a hospital building)	2 spaces for each 1,000 gross sq. ft.
Libraries, museums, art galleries	1 for each 250 sq. ft. of gross floor area
Medical/dental offices and laboratories	3.5 spaces for each 1,000 gross sq. ft.
Nursing homes, homes for the aged, group care homes, asylums, etc.	1 for each 3 beds
Schools	Colleges – “commuter” type, 1 for every full-time equivalent student (plus 1/2 of the requirements for accessory buildings, i.e., 1.-E* and 3.-G(1))**
Schools	Colleges – “resident” type, 1 for every 3 full-time equivalent students (plus 1/2 of the requirements for accessory buildings, i.e., 1.-E* and 3.-G(1))**
Schools	Elementary or junior high, 1-1/2 for each teaching station plus 4 for every classroom, or 1 for every 42 sq. ft. of seating area where there are no fixed seats in an auditorium or assembly area
Schools	High schools, 1-1/2 for each teaching station, plus 8 for every classroom, or 1 for every 28 sq. ft. of seating area where there are no fixed seats in an auditorium or assembly area
Schools	Colleges – commercial or business, 1 for every 3

A. Use	B. Minimum Parking Spaces Required
	classroom seats (plus 1/2 of the requirements for accessory buildings, i.e., 1.-E* and 3.-G(1))**
Welfare or correctional institutions	1 for each 5 beds
Commercial Types	
Barber and beauty shops	1 for each 75 sq. ft. of gross floor area
Bowling alleys	6 for each bowling lane
Establishments or enterprises of a recreational or an entertainment nature:	
Establishments for the sale and consumption on the premises of food and beverages with a drive-up window	1 for each 75 sq. ft. of gross floor area
Establishments for the sale and consumption on the premises of food and beverages without a drive-up window	1 for each 100 sq. ft. of gross floor area
Participating type, e.g., skating rinks, dance halls	1 for each 75 sq. ft. of gross floor area
Spectator type, e.g., auditoriums, assembly halls, theaters, stadiums, places of public assembly	1 parking space for each 4 seats
Office buildings, business and professional offices	1 for every 400 sq. ft. of gross floor area
Pharmacies	1 for each 150 sq. ft. of gross floor area
Retail establishments, except as otherwise specified herein	1 for each 300 sq. ft. of gross floor area
Retail stores handling bulky merchandise, household furniture, or appliance repair	1 for each 600 sq. ft. of gross floor area
Industrial Types	
Except as specifically mentioned herein, industrial uses listed as permitted in the M districts: M-1, M-2, M-3, and M-4	1 for each 500 sq. ft. of gross floor area

A. Use	B. Minimum Parking Spaces Required
Aircraft storage hangars up to 3,600 sq. ft. each enclosed hangar area	None (parking occurs in hangar)
Aircraft storage hangars over 3,600 sq. ft. each enclosed hangar area	1 for every 700 sq. ft. of hangar area over 3,600 sq. ft.
Aircraft hangars intended for repair and maintenance operations	1 for each 5,000 sq. ft. of hangar, plus 1 for each 500 sq. ft. of shop area, plus 1 for each 400 sq. ft. of office area
Laboratories and research facilities	1 for each 300 sq. ft. of gross floor area
Machinery or equipment	1 for each 400 sq. ft. of gross sales floor area
Wholesale and storage operations	1 for each 700 sq. ft. of gross floor area

Notes:

* **“1-E”** refers to fraternities, sororities, cooperatives and dormitories that require one parking space for each three occupants for whom sleeping facilities are provided.

** **“3.-G(1)”** refers to establishments or enterprises of a recreational or an entertainment nature (spectator type, e.g., auditoriums, assembly halls, theaters, stadiums, places of public assembly) that require one parking space for each four seats.

1. [Ord. 2763 § 1 (Exh. A § 16), 9-16-13; Ord. 2730¹ § 1 (Exh. A (13)), 10-18-10; Ord. 2720 § 1(19), 11-2-09; Ord. 2710 § 1, 3-2-09; Ord. 2647, 6-5-06; Ord. 2550, 5-21-01; Ord. 2451, 12-2-96. Code 2001 § 151.612.]

Penalty: See NMC 15.05.120.

Findings: The applicant has stated “all single family development will have parking on the individual lots with at least 2 parking spaces provided on each lot, one within the garage and one within the driveway provided for each single family lot. The 248 single family lots will require a total of 496 spaces based on 2 spaces required per single family unit. ” For the 51 multifamily units the applicant is proposing 27 one bedroom and 24 two bedroom units. The required parking for the one bedroom units is 27 spaces, two bedroom 36 spaces and 11 visitor spaces for a total of 74 parking spaces. The applicant is proposing the following parking spaces:

- Multifamily – 87 spaces, 4 ADA
- Public Street – 73 parallel on street spaces
- Private Street lots – 85 spaces
- R-1 onsite parking – 72 spaces
- 17’ Front load parking – 46 spaces
- 17’ rear load parking - 219 spaces

21' front load spaces – 111 spaces
21' rear load spaces – 268 spaces
25' front load spaces – 52 spaces
25' rear load spaces – 68 spaces

The parking space requirements for commercial lot 250 will be evaluated when a development application submitted.

Because the applicant is proposing 1,085 parking spaces and the NDC requires 570 parking spaces, the parking space requirements are met.

15.440.060 Parking area and service drive improvements.

All public or private parking areas, outdoor vehicle sales areas, and service drives shall be improved according to the following:

A. All parking areas and service drives shall have surfacing of asphaltic concrete or Portland cement concrete or other hard surfacing such as brick or concrete pavers. Other durable and dust-free surfacing materials may be approved by the director for infrequently used parking areas. All parking areas and service drives shall be graded so as not to drain stormwater over the public sidewalk or onto any abutting public or private property.

B. All parking areas shall be designed not to encroach on public streets, alleys, and other rights-of-way. Parking areas shall not be placed in the area between the curb and sidewalk or, if there is no sidewalk, in the public right-of-way between the curb and the property line. The director may issue a permit for exceptions for unusual circumstances where the design maintains safety and aesthetics.

C. All parking areas, except those required in conjunction with a single-family or two-family dwelling, shall provide a substantial bumper which will prevent cars from encroachment on abutting private and public property.

D. All parking areas, including service drives, except those required in conjunction with single-family or two-family dwellings, shall be screened in accordance with NMC 15.420.010(B).

E. Any lights provided to illuminate any public or private parking area or vehicle sales area shall be so arranged as to reflect the light away from any abutting or adjacent residential district.

F. All service drives and parking spaces shall be substantially marked and comply with NMC 15.440.070.

G. Parking areas for residential uses shall not be located in a required front yard, except as follows:

Cycling is a healthy activity for travel and recreation. In addition, by maximizing bicycle travel, the community can reduce negative effects of automobile travel, such as congestion and pollution. To maximize bicycle travel, developments must provide effective support facilities. At a minimum, developments need to provide a secure place for employees, customers, and residents to park their bicycles. [Ord. 2564, 4-15-02; Ord. 2518, 9-21-99. Code 2001 § 151.625.1.]

15.440.100 Facility requirements.

Bicycle parking facilities shall be provided for the uses shown in the following table. Fractional space requirements shall be rounded up to the next whole number.

<i>Use</i>	<i>Minimum Number of Bicycle Parking Spaces Required</i>
<i>New multiple dwellings, including additions creating additional dwelling units</i>	<i>One bicycle parking space for every four dwelling units</i>
<i>New commercial, industrial, office, and institutional developments, including additions that total 4,000 square feet or more</i>	<i>One bicycle parking space for every 10,000 square feet of gross floor area. In C-4 districts, two bicycle parking spaces, or one per 5,000 square feet of building area, must be provided, whichever is greater</i>
<i>Transit transfer stations and park and ride lots</i>	<i>One bicycle parking space for every 20 vehicle parking spaces</i>
<i>Parks</i>	<i>Two bicycle parking spaces within 50 feet of each developed play-ground, ball field, or shelter</i>

Finding: The applicant is proposing 51 multifamily units as part of the project, which requires 13 bicycle parking spaces. Site development sheet C215 illustrates 14 bicycle parking spots and bicycle parking loops will accommodate two bikes. Lot 249 has been planned for multifamily units. Lot 249 must go through the Design Review process as required by the NDC.

This section of the NDC is met because the applicant is proposing 14 bicycle parking spaces.

15.440.110 Design.

A. Bicycle parking facilities shall consist of one or more of the following:

- A. **1. A firmly secured loop, bar, rack, or similar facility that accommodates locking the bicycle frame and both wheels using a cable or U-shaped lock.**
- 2. An enclosed locker.**

3. A designated area within the ground floor of a building, garage, or storage area. Such area shall be clearly designated for bicycle parking.

4. Other facility designs approved by the director.

B. All bicycle parking spaces shall be at least six feet long and two and one-half feet wide. Spaces shall not obstruct pedestrian travel.

C. All spaces shall be located within 50 feet of a building entrance of the development.

D. Required bicycle parking facilities may be located in the public right-of-way adjacent to a development subject to approval of the authority responsible for maintenance of that right-of-way. [Ord. 2518, 9-21-99. Code 2001 § 151.625.3.]

Finding: The applicant is proposing to provide secured loop like bicycle parking spots. Sheet C215 of the plan set illustrates loops that are approximately 3 feet in lengths. However, subsection “B” requires spaces to be 6 feet long and two and one-half feet wide. It was unclear from the drawings if the aforementioned dimensional requirements were met. The bicycle parking spots are located in front of the apartment buildings within the required 50 feet of a building entrance. The bicycle parking spaces will be located on private property within lot 249. The applicant shall install bicycle parking loops and spaces that are at least six feet long and two and one-half feet wide.

With the adherence to the aforementioned condition of approval these criteria will be met.

15.440.140 Private walkway design.

A. All required private walkways shall meet the applicable building code and Americans with Disabilities Act requirements.

B. Required private walkways shall be a minimum of four feet wide.

C. Required private walkways shall be constructed of portland cement concrete or brick.

D. Crosswalks crossing service drives shall, at a minimum, be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

E. At a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other.

F. The review body may require on-site walks to connect to development on adjoining sites.

G. The review body may modify these requirements where, in its opinion, the development provides adequate on-site pedestrian circulation, or where lot dimensions, existing building layout, or topography preclude compliance with these standards. [Ord. 2619, 5-16-05; Ord. 2513, 8-2-99. Code 2001 § 151.620.3.]

Finding: The applicant is proposing private walkways throughout the PUD, which connect multi-family residential units to E Portland Road, are located throughout the wetland/natural areas, and

connect to Spring Meadow Park to the west. In the narrative the applicant has indicated that “walkways will be a minimum of 4-feet in width and will be constructed of Portland cement concrete. Crosswalks will be provided on the site to delineate the shift from public streets to private streets. Crosswalks will be painted/clearly striped in conformance with these requirements.” The applicant did not indicate in the narrative that private walkways will meet the applicable building code and Americans with Disabilities Act requirements, or that private walkways are connecting each main pedestrian building entrance to each abutting public street and to each other. Because the applicant is not addressing all private walkway design requirements, the applicant will be required to meet the applicable building code and Americans with Disabilities Act requirements for private walkways, and develop a plan where private walkways are connecting each main pedestrian building entrance to each abutting public street and to each other.

These criteria will be met if the aforementioned conditions of approval are met.

IV. Chapter 15.505 PUBLIC IMPROVEMENTS STANDARDS

5.505.010 Purpose.

This chapter provides standards for public infrastructure and utilities installed with new development, consistent with the policies of the City of Newberg comprehensive plan and adopted city master plans. The standards are intended to minimize disturbance to natural features, promote energy conservation and efficiency, minimize and maintain development impacts on surrounding properties and neighborhoods, and ensure timely completion of adequate public facilities to serve new development. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16.]

15.505.020 Applicability.

The provision and utilization of public facilities and services within the City of Newberg shall apply to all land developments in accordance with this chapter. No development shall be approved unless the following improvements are provided for prior to occupancy or operation, unless future provision is assured in accordance with NMC 15.505.030(E).

A. Public Works Design and Construction Standards. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall comply with the requirements of the most recently adopted Newberg public works design and construction standards.

Finding: The preliminary plans show an extension of E Crestview Drive (Major Collector) to the south connecting to E Portland Road (Major Arterial). Frontage improvements along E Portland Road are also shown. Internal to the PUD, Public Street B is designated as a minor collector, and Public Street C and Public Street D are designated as local streets. Additionally, Private Streets A-L provide circulation and property access throughout the PUD. Other public improvements not limited to water, non-potable water, wastewater and stormwater infrastructure are also included in the

applicant's plans. These improvements requiring city approval shall comply with the City's Public Works Design and Construction Standards. A number of these improvements also require approval from other agencies. Because permitting was not discussed in detail in the applicants' narrative, public utility infrastructure improvements not limited to street improvements, public walkways, water, non-potable water, wastewater, and stormwater will require completed permits from partner agencies to authorize different work tasks. Issuance of required permits for wetland delineation/mitigation, construction, etc. not limited to the agencies of Yamhill County, the State of Oregon, and the Federal Government will be required prior to the City of Newberg issuing a Public Improvement Permit.

This criterion will be met if the conditions of approval are adhered to.

B. Street Improvements. All projects subject to a Type II design review, partition, or subdivision approval must construct street improvements necessary to serve the development.

Finding: The preliminary plans show an extension of E Crestview Drive to the south connecting to E Portland Road. Frontage improvements along E Portland Road are also shown. Internal to the PUD, Public Street B is designated as a minor collector, and Public Street C and Public Street D are designated as local streets. Additionally, Private Streets A-L provide circulation and property access throughout the PUD.

This criteria will be met if all street improvements necessary to serve the development are constructed.

C. Water. All developments, lots, and parcels within the City of Newberg shall be served by the municipal water system as specified in Chapter 13.15 NMC.

Finding: There is an existing 10-inch public water line on E Portland Road which is available for extension to the north to serve the development. There is an existing 8-inch public water line on E Crestview Drive which is available for extension to the south to serve the development.

There is an existing 8-inch non-potable water line on E Portland Road east of the development near NE Harmony Lane that is available for extension to the north to serve the development.

Preliminary plans show both public and private streets having water lines, and public streets having non-potable water lines. This criterion is met.

D. Wastewater. All developments, lots, and parcels within the City of Newberg shall be served by the municipal wastewater system as specified in Chapter 13.10 NMC.

Finding: There is an existing 24-inch public wastewater line approximately 700-feet south of E Portland Road which is available for extension to the north to serve the Crestview Crossing PUD. Preliminary plans show both public and private streets having wastewater lines. This criterion is met.

E. Stormwater. All developments, lots, and parcels within the City of Newberg shall manage stormwater runoff as specified in Chapters 13.20 and 13.25 NMC.

Finding: Preliminary plans show stormwater drainage for the development connecting to proposed Tract B, Tract C, and Tract E stormwater facilities. Additionally, plans show connection to the existing 15-inch stormwater pipe to the north and the 24-inch public stormwater line that connections under E Portland Road. This criterion is met.
This criterion is met.

F. Utility Easements. Utility easements shall be provided as necessary and required by the review body to provide needed facilities for present or future development of the area.

Finding: The applicant has submitted preliminary plans that indicate some utility easements. All public utilities shall be located within a public utility easement or right-of-way. The applicant has not submitted construction plans, but it's anticipated that they should be able to meet City requirements in regards to utility easements.

This criterion is met.

G. City Approval of Public Improvements Required. No building permit may be issued until all required public facility improvements are in place and approved by the director, or are otherwise bonded for in a manner approved by the review authority, in conformance with the provisions of this code and the Newberg Public Works Design and Construction Standards. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16.]

15.505.030 Street standards.

A. Purpose. The purpose of this section is to:

- 1. Provide for safe, efficient, and convenient multi-modal transportation within the City of Newberg.***
- 2. Provide adequate access to all proposed and anticipated developments in the City of Newberg. For purposes of this section, "adequate access" means direct routes of travel between destinations; such destinations may include residential neighborhoods, parks, schools, shopping areas, and employment centers.***
- 3. Provide adequate area in all public rights-of-way for sidewalks, wastewater and water lines, stormwater facilities, natural gas lines, power lines, and other utilities commonly and appropriately placed in such rights-of-way. For purposes of this section, "adequate area" means space sufficient to provide all required public services to standards defined in this code and in the Newberg public works design and construction standards.***

B. Applicability. The provisions of this section apply to:

- 1. The creation, dedication, and/or construction of all public streets, bike facilities, or pedestrian facilities in all subdivisions, partitions, or other developments in the City of Newberg.*
- 2. The extension or widening of existing public street rights-of-way, easements, or street improvements including those which may be proposed by an individual or the city, or which may be required by the city in association with other development approvals.*
- 3. The construction or modification of any utilities, pedestrian facilities, or bike facilities in public rights-of-way or easements.*
- 4. The designation of planter strips. Street trees are required subject to Chapter 15.420 NMC.*
- 5. Developments outside the city that tie into or take access from city streets.*

C. Layout of Streets, Alleys, Bikeways, and Walkways. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to previously approved subdivisions, partitions, and other developments for adjoining properties, unless it is found in the public interest to modify these patterns. Transportation improvements shall conform to the standards within the Newberg Municipal Code, the Newberg public works design and construction standards, the Newberg transportation system plan, and other adopted city plans.

D. Construction of New Streets. Where new streets are necessary to serve a new development, subdivision, or partition, right-of-way dedication and full street improvements shall be required. Three-quarter streets may be approved in lieu of full street improvements when the city finds it to be practical to require the completion of the other one-quarter street improvement when the adjoining property is developed; in such cases, three-quarter street improvements may be allowed by the city only where all of the following criteria are met:

- 1. The land abutting the opposite side of the new street is undeveloped and not part of the new development; and*
- 2. The adjoining land abutting the opposite side of the street is within the city limits and the urban growth boundary.*

Finding: The applicant is proposing to extend E Crestview Drive, a major collector, from its northwestern terminus to E Portland Road. The applicant has proposed a cross-section on sheet C200 that varies and does not match the City's cross-section for a major collector roadway which requires a minimum of 60-feet of right of way:

- 1-foot from back of walk to right-of-way
- 5-foot sidewalk
- 5.5-foot planter*
- 0.5-foot curb
- 6-foot bike lane
- 12-foot travel lane

- 12-foot travel lane
- 6-foot bike lane
- 0.5-foot curb
- 5.5-foot planter
- 5-foot sidewalk
- 1-foot from back of walk to right-of-way

* A 5.0-foot planter will be constructed between the E Crestview Drive/Public Street B intersection and the E Crestview Drive/E Portland Road intersection to allow for a proposed retaining wall on the west side of E Crestview Drive to be located outside of the public right-of-way.

Because the applicant has not shown E Crestview Drive matching a major collector standard, the E Crestview Drive roadway is to consist of the following: 1-foot from back of walk to right-of-way, 5-foot sidewalk, 5.5-foot planter*, 0.5-foot curb, 6-foot bike lane, 12-foot travel lane, 12-foot travel lane, 6-foot bike lane, 0.5-foot curb, 5.5-foot planter, 5-foot sidewalk, 1-foot from back of walk to right-of-way. The applicant is required to dedicate sufficient right-of-way (minimum of 60-feet) to construct E Crestview Drive, to construct a roundabout meeting FHWA Standards at the E Crestview Drive/Public Street B intersection, and to construct improvements related to modifying the traffic signal at the E Crestview Drive/Providence Drive/E Portland Road intersection meeting City of Newberg, Yamhill County, and Oregon Department of Transportation requirements.

*A 5.0-foot planter will be constructed between the E Crestview Drive/Public Street B intersection and the E Crestview Drive/E Portland Road intersection to allow for a proposed retaining wall on the west side of E Crestview Drive to be located outside of the public right-of-way.

The applicant has proposed to add the following sentence to the condition of approval:

“Improvements related to the upsizing of Crestview Dr to collector standards shall be eligible for SDC credits” (Attachment 9).

Staff does not concur with the applicants proposed sentence being added to the condition of approval. See the explanation of the City’s System Development Charge Procedures Guide in the Analysis section of this report.

Because the applicant has not submitted construction documents for the public improvement permit plan review and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge

Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City's System Development Charge Procedures Guide.

The applicant is showing Public Street B designated as a minor collector running east-west through the PUD. The applicant has proposed a cross-section on sheet C200 that does not clearly articulate the dedication of roadway space. The following cross-section meets the City's standard for a minor collector and requires 64-feet of right of way:

- 1-foot from back of walk to right-of-way
- 5-foot sidewalk
- 5.5-foot planter
- 0.5-foot curb
- 8-foot parking lane
- 12-foot travel lane with sharrow
- 12-foot travel lane with sharrow
- 8-foot parking lane
- 0.5-foot curb
- 5.5-foot planter
- 5-foot sidewalk
- 1-foot from back of walk to right-of-way

Because the applicant has not clearly indicated that allocation of space in the public right-of-way for Public Street B, the Public Street B is to consist of the following: 1-foot from back of walk to right-of-way, 5-foot sidewalk, 5.5-foot planter, 0.5-foot curb, 8-foot parking lane, 12-foot travel lane with sharrow, 12-foot travel lane with sharrow, 8-foot parking lane, 0.5-foot curb, 5.5-foot planter, 5-foot sidewalk, 1-foot from back of walk to right-of-way. The applicant is required to dedicate sufficient right-of-way (minimum of 64-feet) to construct Public Street B.

The applicant is showing Public Street C and Public Street D designated as local residential streets. The applicant has proposed a cross-section on sheet C200 that does not match the City's Transportation System Plan based on a local road functional classification. The following cross-section meets the City's standard for a local residential street and requires 56-feet of right of way:

- 1-foot from back of walk to right-of-way
- 5-foot sidewalk
- 5.5-foot planter
- 0.5-foot curb
- 7-foot parking lane
- 9-foot travel lane
- 9-foot travel lane

- 7-foot parking lane
- 0.5-foot curb
- 5.5-foot planter
- 5-foot sidewalk
- 1-foot from back of walk to right-of-way

Because that applicant has proposed a roadway cross-section that does not match the City’s Transportation System Plan for a local road, the applicant shall revise plans to show Public Street C and Public Street D consisting of the following: 1-foot from back of walk to right-of-way, 5-foot sidewalk, 5.5-foot planter, 0.5-foot curb, 7-foot parking lane, 9-foot travel lane, 9-foot travel lane, 7-foot parking lane, 0.5-foot curb, 5.5-foot planter, 5-foot sidewalk, 1-foot from back of walk to right-of-way. The applicant is required to dedicate sufficient right-of-way (minimum of 56-feet) to construct the listed streets.

The criterion will be met if the aforementioned conditions of approval are adhered to.

E. Improvements to Existing Streets.

1. All projects subject to partition, subdivision, or Type II design review approval shall dedicate right-of-way sufficient to improve the street to the width specified in subsection (G) of this section.

Finding: E Portland Road is designated as a major arterial and is an ODOT owned facility that borders the southern edge of the property. The applicant is proposing to construct frontage improvements along their property frontage and is showing a dedication 4.5-feet of right-of-way just east of the E Crestview Drive/E Portland Road intersection in order to construct a right-turn lane. The following cross-section meets the City’s standard for a major arterial street and requires 98-feet of right of way:

- 1-foot from back of walk to right-of-way
- 5-foot sidewalk
- 5.5-foot planter
- 0.5-foot curb
- 6-foot bike lane
- 12-foot travel lane
- 12-foot travel lane
- 14-foot TWLTL travel lane
- 12-foot travel lane
- 12-foot travel lane
- 6-foot bike lane
- 0.5-foot curb
- 5.5-foot planter
- 5-foot sidewalk

- 1-foot from back of walk to right-of-way

As noted in the applicants traffic study a westbound right-turn lane is needed at the E Crestview Drive/E Portland Road intersection. Based on the submitted plans, it is unclear if 4.5-feet is all of the right-of-way that will be required by the Oregon Department of Transportation for the right turn lane construction. Because right-of-way dedication will need to be verified through the detailed design process which is unknown at this time, the applicant will be required to dedicated additional right-of-way on E Portland Road necessary to meet requirements set forth by the Oregon Department of Transportation to meet Highway Design Manual standards to construct the westbound right-turn lane.

The applicant has proposed to add the following sentence to the condition of approval:

“The widening improvement for the turn lane shall be eligible for partial SDC credits to the extent that lane capacity exceeds project trip distribution” (Attachment 9).

Staff does not concur with the applicants proposed sentence being added to the condition of approval. See the explanation of the City’s System Development Charge Procedures Guide in the Analysis section of this report.

Because the applicant has not submitted construction documents for the public improvement permit plan review and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City’s System Development Charge Procedures Guide.

This criterion will be met with the adherence to the aforementioned condition of approval.

2. All projects subject to partition, subdivision, or Type II design review approval must construct a minimum of a three-quarter street improvement to all existing streets adjacent to, within, or necessary to serve the development. The director may waive or modify this requirement where the applicant demonstrates that the condition of existing streets to serve the development meets city standards and is in satisfactory condition to handle the projected traffic loads from the development. Where a development has frontage on both sides of an existing street, full street improvements are required.

3. In lieu of the street improvement requirements outlined in NMC 15.505.040(B), the review authority may elect to accept from the applicant monies to be placed in a fund dedicated to the future reconstruction of the subject street(s). The amount of money deposited with the city shall be 100 percent of the estimated cost of the required street improvements (including any associated utility improvements), and 10 percent of the estimated cost for

inflation. Cost estimates used for this purpose shall be based on preliminary design of the constructed street provided by the applicant's engineer and shall be approved by the director.

F. Improvements Relating to Impacts. Improvements required as a condition of development approval shall be roughly proportional to the impact of the development on public facilities and services. The review body must make findings in the development approval that indicate how the required improvements are roughly proportional to the impact. Development may not occur until required transportation facilities are in place or guaranteed, in conformance with the provisions of this code. If required transportation facilities cannot be put in place or be guaranteed, then the review body shall deny the requested land use application.

Finding: A traffic study was submitted with the land use application for the Crestview Crossing PUD dated June 2018. Based on the analysis, the 260 single-family homes and 48 apartment units within the Crestview Crossing PUD were evaluated and it was estimated to create 2,826 additional trips each day; 213 will occur in the AM peak hour (7am-9am) and 285 trips will occur in the PM peak hour (4pm-6pm). This means that the traffic analysis over stated the number of single family homes (260 homes in TIA vs. 248 homes in the applicant's narrative) and understated the number of apartments (48 apartments in the TIA vs. 51 apartments in the applicant's narrative). Eight study intersections were evaluated to determine the impact on the adjacent transportation system.

The traffic study identified the following recommendations to mitigate traffic impacts of the proposed development at the Providence Drive/E Crestview Drive/E Portland Road intersection, and the applicant shall construct and be fiscally responsible for these roadway improvements:

- The new north leg of the intersection should be configured as a four-lane section with one northbound lane and three southbound lanes (left turn lane, through movement, and right turn lane). At least 250-feet of southbound left-turn lane storage and 150-feet of southbound right-turn lane storage should be provided to accommodate the 95th percentile queue lengths.
- The existing south leg of the intersection should be restriped to a four-lane section with one southbound lane, and three northbound lanes (left turn lane, through movement, and right turn lane).
- Based on the 95th percentile queuing analysis:
 - A westbound right turn lane should be constructed with at least 300-feet of storage
 - A eastbound left turn lane should be striped to provide at least 150-feet of storage
- The signal phasing of the intersection should be operated with permissive left turn movements on the north and south approaches with fully protected left turn movements on the east and west approaches.

Oregon Department of Transportation

The Oregon Department of Transportation (ODOT) has reviewed the traffic study and provided comments. Because it has not been determined if the applicant has addressed all of ODOT's traffic

study requirements, the comments on the traffic study identified by ODOT shall be adequately addressed and approved by ODOT as noted in the memo dated July 19, 2018 signed by Dan Fricke, Region 2 Senior Planner.

ODOT has identified the following Roadway Improvements and Signal Modifications at the Providence Drive/Crestview Drive/OR 99W intersection:

Roadway Improvements:

The following roadway improvements have been identified

- Installation of a westbound right-turn deceleration lane on OR 99W approaching Crestview Drive
- At the northeast corner of the OR 99W/Crestview Drive intersection, the sidewalk will need to connect to the highway shoulder with an “End of Walk” ADA compliant connection (ODOT Standard Drawing RD 754).
- The crosswalk on the east leg of the intersection (across OR 99W) must be reinstalled along with appropriate modifications to the traffic signal (signal modifications are addressed in more detail below)
- The required roadway and signal improvements will trigger the need to assess all curb ramps and push buttons at OR 99W/Crestview Drive. Any non-compliant curb ramps shall be remediated to meet State ADA standards.

Prior to the issuance of the first grading or building permit, the applicant shall submit plans and specifications for all improvements/construction within ODOT right-of-way for review and approval by ODOT District 3 and issuance of a permit to construct within ODOT right-of-way. ODOT shall certify that all construction activities have been completed pursuant to the approved plans and specifications prior to the issuance of the first certificate of use and occupancy, or the city’s equivalent.

Signal Modifications:

It is likely that the entire signal installation will need to be replaced to accommodate the Crestview Drive leg being added to the existing intersection. The following is a list of the minimum modifications that are anticipated to be necessary:

- The existing signal poles on the north side of the intersection will need to be replaced to accommodate the new Crestview Drive
- A new mast arm will be needed in the southwest quadrant of the intersection to signalize the new Crestview Drive leg.
- New pedestrian signal and push-button pedestal for the pedestrian crossing on the east leg of the intersection.
- New detection will be needed depending on how new ADA ramps affect crosswalk locations (note that Region 2 is using radar detection)

Prior to issuance of the first grading or building permit, the applicant shall submit signal modification plans for the review of the ODOT Region 2 Traffic Engineer and the review and approval of the State Traffic Engineer. ODOT shall certify that all required signal modifications have been completed and the signal operational prior to the issuance of the first certificate of use and occupancy, or the city's equivalent.

Annexation Orders & Conditions of Approvals

Order No. 2007-0002 Tax Lot 3216AC-13800 (west – “Gueldner Property”) and Order No. 2008-0013 Tax Lot 3216-1100 (east – “Gish Property”) were both annexed into the City of Newberg and represent properties that are now being developed as part of the Crestview Crossing PUD. As part of the annexation process for the two properties, conditions of approval were established. Each property had the following condition of approval issued in regards to transportation improvements:

- *Upon future development of the property, the development shall contribute its share, based on traffic volume, of the future cost of capacity improvements to the Springbrook Rd/Hwy 99W intersection.*

The findings leading up to the condition state that *“The City of Newberg has already identified this intersection [Springbrook Rd/Hwy 99W] as one that needs improvement, however, and has charged recent developments in the area with impact fees based on the number of trips they added to the intersection. The fees could be used for street improvements that would improve the performance of the intersection, whether those improvements were directly at the intersection or were for a nearby street (such as the future completion of Hayes Street) that would reduce the number of trips at the Springbrook 99W intersection.”*

It should be noted that the intersection of Springbrook Road/Hwy 99W was improved as part of the recent Newberg-Dundee Bypass Phase 1 Project. Since the Bypass preceded the development of Tax Lot 3216AC-13800 and Tax Lot 3216-1100, no monies/impact fees were paid into the improvement of the Springbrook Rd/Hwy 99W intersection.

However, the City's Transportation System Plan does identify the need to signalize the intersection of N Springbrook Road/Haworth Avenue and to add left turn lanes on Haworth. This project is directly adjacent to the intersection of Springbrook Road/Hwy 99W, and would help to improve the performance of both the N Springbrook Road/Haworth Avenue intersection and the Springbrook Road/Hwy 99W intersection.

The City has developed a Traffic Impact Fee to be consistent with the Conditions of Approval for the annexation of Tax Lot 3216AC-13800 and Tax Lot 3216-1100. Project I09 in the City's Transportation System Plan identifies the need to install a traffic signal at the N Springbrook Road/Haworth Avenue intersection at the cost of \$400,000. The applicant was required to do a traffic study for their development which was dated August 2018, and indicates that trips added to the project intersection as a direct result of the development are as follows: 21 AM peak hour trips

and 12 PM peak hour trips (Figure 9). The total trips through the intersection during the peak hours are as follows: 774 AM peak hour trips and 1253 PM peak hour trips (Figure 10).

The greatest volume impact at the N Springbrook Road/Haworth Avenue intersection occurs during the AM peak period. Because the applicant has not satisfied the conditions of approval for the annexation of Tax Lot 3216AC-13800 and Tax Lot 3216-1100, the applicant is required to pay the following Traffic Impact Fee to the City of Newberg to meet Order No. 2007-0002 and Order No. 2008-0013 conditions of approval:

(21 AM Peak Hour Trips resulting from the development)/(774 AM Peak Hour Total Trips through the intersection) = 0.0271 proportional trips through the intersection

(0.0271 proportional trips through the intersection)*(\$400,000 intersection project cost estimate) = \$10,840 Traffic Impact Fee – AM Peak Hour

This criterion will be met if the conditions of approval are adhered to.

G. Street Width and Design Standards.

1. Design Standards. All streets shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.

Table 15.505.030(G) Street Design Standards

<i>Type of Street</i>	<i>Right-of-Way Width</i>	<i>Curb-to-Curb Pavement Width</i>	<i>Motor Vehicle Travel Lanes</i>	<i>Median Type</i>	<i>Striped Bike Lane (Both Sides)</i>	<i>On-Street Parking</i>
Arterial Streets						
<i>Expressway**</i>	<i>ODOT</i>	<i>ODOT</i>	<i>ODOT</i>	<i>ODOT</i>	<i>ODOT</i>	<i>ODOT</i>
<i>Major arterial</i>	<i>95 – 100 feet</i>	<i>74 feet</i>	<i>4 lanes</i>	<i>TWLTL or median*</i>	<i>Yes</i>	<i>No*</i>
<i>Minor arterial</i>	<i>69 – 80 feet</i>	<i>48 feet</i>	<i>2 lanes</i>	<i>TWLTL or median*</i>	<i>Yes</i>	<i>No*</i>
Collectors						
<i>Major</i>	<i>57 – 80 feet</i>	<i>36 feet</i>	<i>2 lanes</i>	<i>None*</i>	<i>Yes</i>	<i>No*</i>
<i>Minor</i>	<i>61 – 65 feet</i>	<i>40 feet</i>	<i>2 lanes</i>	<i>None*</i>	<i>Yes*</i>	<i>Yes*</i>

Table 15.505.030(G) Street Design Standards

<i>Type of Street</i>	<i>Right-of-Way Width</i>	<i>Curb-to-Curb Pavement Width</i>	<i>Motor Vehicle Travel Lanes</i>	<i>Median Type</i>	<i>Striped Bike Lane (Both Sides)</i>	<i>On-Street Parking</i>
<i>Local Streets</i>						
<i>Local residential</i>	<i>54 – 60 feet</i>	<i>32 feet</i>	<i>2 lanes</i>	<i>None</i>	<i>No</i>	<i>Yes</i>
<i>Limited residential, parking both sides</i>	<i>44 – 50 feet</i>	<i>28 feet</i>	<i>2 lanes</i>	<i>None</i>	<i>No</i>	<i>Yes</i>
<i>Limited residential, parking one side</i>	<i>40 – 46 feet</i>	<i>26 feet</i>	<i>2 lanes</i>	<i>None</i>	<i>No</i>	<i>One side</i>
<i>Local commercial/ industrial</i>	<i>55 – 65 feet</i>	<i>34 feet</i>	<i>2 lanes</i>	<i>None*</i>	<i>No*</i>	<i>Yes*</i>

* *May be modified with approval of the director. Modification will change overall curb-to-curb and right-of-way width. Where a center turn lane is not required, a landscaped median shall be provided instead, with turning pockets as necessary to preserve roadway functions.*

** *All standards shall be per ODOT expressway standards.*

2. Motor Vehicle Travel Lanes. Collector and arterial streets shall have a minimum width of 12 feet.

Finding: The submitted plans show 12-foot travel lanes on E Portland Road (major arterial), E Crestview Drive (major collector), and Public Street B (minor collector). This criterion is met.

3. Bike Lanes. Striped bike lanes shall be a minimum of six feet wide. Bike lanes shall be provided where shown in the Newberg transportation system plan.

Finding: The submitted plans show space available for a 6-foot bike lane on E Crestview Drive, and Public Street B. The applicant is showing the westbound bike lane on E Portland Road as 5-feet wide, this does not meet the City’s standard. Because the applicant’s proposal does not meet the City’s standard, the applicant is required to install a 6-foot bike lane along E Portland Road to match the City’s Transportation System Plan cross-section.

The applicant has proposed to add the following sentence to the condition of approval:

“The bike lane improvement shall be eligible for SDC credits.” (Attachment 9).

Staff does not concur with the applicants sentence being added to the proposed condition of approval. See the explanation of the City’s System Development Charge Procedures Guide found in the Analysis section of this report.

Because the applicant has not submitted construction documents for the public improvement permit plan review and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City’s System Development Charge Procedures Guide.

This criterion will be met with the adherence to the aforementioned condition of approval.

4. Parking Lanes. Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide.

Finding: The submitted plans show space for an 8-foot on-street parking lane on Public Street B, which is classified as a minor collector. The applicant is not proposing on-street parking along E Crestview Drive. This criterion is met.

5. Center Turn Lanes. Where a center turn lane is provided, it shall be a minimum of 12 feet wide.

Finding: The applicant’s preliminary plans show a southbound and northbound left turn lane at the E Crestview Drive/E Portland Road intersection. Because the applicant’s submitted plans do not indicate the width of center turn lanes, the City will require the southbound and northbound center turn lanes at the E Crestview Drive/E Portland Road intersection to be a minimum of 12-feet wide.

The applicant has proposed to add the following sentence to the condition of approval:

“The turn lanes for this intersection of a collector with an arterial shall be eligible for SDC credits to the extent that lane capacity exceeds project trip distribution.” (Attachment 9).

Staff does not concur with the applicants proposed sentence being added to the condition of approval. See the explanation of the City’s System Development Charge Procedures Guide located in the Analysis section of this report.

Because the applicant has not submitted construction documents for the public improvement permit plan review and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the

applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City's System Development Charge Procedures Guide.

This criterion will be met if the conditions of approval are adhered to.

7. Sidewalks. Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.

Finding: The submitted plans show 5-foot sidewalks along both sides of E Crestview Drive, Public Street B, Public Street C, and Public Street D. The City requires 5-foot sidewalks along all public streets where a planter strip is utilized, and 6-foot sidewalks in areas utilizing a curb-tight sidewalk. ODOT has different sidewalk width requirements and the applicant is showing a 6-foot sidewalk along E Portland Road. Because the applicant's plans do not clearly show directional ADA curb ramps which are integral to the sidewalk, the applicant will be required to install directional ADA curb ramps at the corners of all public street/public street intersection locations, and at public street/private street intersection locations. The final design of all roads within the PUD will be reviewed and approved as part of the Public Improvement Permit.

This criterion will be met with the adherence to the aforementioned condition of approval.

8. Planter Strips. Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided:

- a. Additional reinforcement is done to the sidewalk section at corners.***
- b. Sidewalk width is six feet.***

Finding: The submitted plans show planter strips on E Portland Road, E Crestview Drive, Public Street B, Public Street C, and Public Street D. Planter strips are not provided on private streets. The planter strips on public streets are required to be 5.5-feet wide except where noted on the west side of E Crestview Drive between the E Crestview Drive/Public Street B intersection and the E Crestview Drive/E Portland Road intersection. Where a planter strip is not provided, the public sidewalk is required to be 6-feet wide.

These criteria will be met if the conditions of approval are adhered to.

10. Intersections and Street Design. The street design standards in the Newberg public works design and construction standards shall apply to all public streets, alleys, bike facilities, and sidewalks in the city.

Finding: Preliminary plans indicate that the applicant will be able to meet requirements of the Public Works Design and Construction Standards. Because final plans have not been developed to review if all the City's Public Works Design and Construction Standards have been met, the final design of E Portland Road, E Crestview Drive, Public Street B, Public Street C, and Public Street D will need to comply with City's Public Works Design and Construction Standards and applicable ODOT standards. The applicant will be required to obtain a Public Improvement Permit and meet the City's Transportation System Plan and Public Works Design and Construction Standards for the proposed roadway improvements.

This condition of approval will be verified to have been met with the adherence to the aforementioned condition of approval.

H. Modification of Street Right-of-Way and Improvement Width. The director, pursuant to the Type II review procedures of Chapter 15.220 NMC, may allow modification to the public street standards of subsection (G) of this section, when the criteria in both subsections (H)(1) and (2) of this section are satisfied:

1. The modification is necessary to provide design flexibility in instances where:

a. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or

b. Lot shape or configuration precludes accessing a proposed development with a street which meets the full standards of this section; or

c. A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or

d. A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.

2. Modification of the standards of this section shall only be approved if the director finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.

Finding: The applicant submitted a Traffic Calming memo dated October 3, 2018. The intent of the memo is to address 15.505.030(H)(1)(d) and justify the reduction in travel lane widths using pavement markings as a traffic calming measure. The Traffic Calming memo is addressed under NMC 15.505.030(Q) in this document and provides justification for the proposed cross-section which maintains the curb-to-curb width for a major collector roadway (36-feet), but reduces the travel lane width from 12-feet to 10-feet, and provides a 2-foot buffer for the 6-foot bike lane. The traffic calming measure proposed is to reduce travel speeds and meet the intent of the 5-Party Agreement. This requirement is met.

K. Future Extension of Streets. All new streets required for a subdivision, partition, or a project requiring site design review shall be constructed to be “to and through”: through the development and to the edges of the project site to serve adjacent properties for future development.

Finding: Preliminary plans show Public Street B and Public Street C with east-west alignments with the potential to extend further to the east. This criterion is met.

M. Street Names and Street Signs. Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for new streets not in alignment with existing streets are subject to approval by the director and the fire chief and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city. It shall be the responsibility of the land divider to provide street signs.

Finding: The applicant’s plans do not show details for street name signs. Because the applicant has not shown street names and street name signs in the plans or indicated that they will be installed, the applicant is required to install street name signs at all intersections within the development including those intersections with private streets.

This criterion will be met with the adherence to the aforementioned condition of approval.

N. Platting Standards for Alleys.

- 1. An alley may be required to be dedicated and constructed to provide adequate access for a development, as deemed necessary by the director.***
- 2. The right-of-way width and paving design for alleys shall be not less than 20 feet wide. Slope easements shall be dedicated in accordance with specifications adopted by the city council under NMC 15.505.010 et seq.***
- 3. Where two alleys intersect, 10-foot corner cut-offs shall be provided.***
- 4. Unless otherwise approved by the city engineer where topographical conditions will not reasonably permit, grades shall not exceed 12 percent on alleys, and centerline radii on curves shall be not less than 100 feet.***
- 5. All provisions and requirements with respect to streets identified in this code shall apply to alleys the same in all respects as if the word “street” or “streets” therein appeared as the word “alley” or “alleys” respectively.***

O. Platting Standards for Blocks.

- 1. Purpose.*** Streets and walkways can provide convenient travel within a neighborhood and can serve to connect people and land uses. Large, uninterrupted blocks can serve as a barrier to travel, especially walking and biking. Large blocks also can divide rather than unite neighborhoods. To promote connected neighborhoods and to shorten travel distances, the following minimum standards for block lengths are established.
- 2. Maximum Block Length and Perimeter.*** The maximum length and perimeters of blocks in the zones listed below shall be according to the following table. The review body for a

subdivision, partition, conditional use permit, or a Type II design review may require installation of streets or walkways as necessary to meet the standards below.

<i>Zone(s)</i>	<i>Maximum Block Length</i>	<i>Maximum Block Perimeter</i>
<i>R-1</i>	<i>800 feet</i>	<i>2,000 feet</i>
<i>R-2, R-3, RP, I</i>	<i>1,200 feet</i>	<i>3,000 feet</i>

3. Exceptions.

a. If a public walkway is installed mid-block, the maximum block length and perimeter may be increased by 25 percent.

b. Where a proposed street divides a block, one of the resulting blocks may exceed the maximum block length and perimeter standards provided the average block length and perimeter of the two resulting blocks do not exceed these standards.

c. Blocks in excess of the above standards are allowed where access controlled streets, street access spacing standards, railroads, steep slopes, wetlands, water bodies, preexisting development, ownership patterns or similar circumstances restrict street and walkway location and design. In these cases, block length and perimeter shall be as small as practical. Where a street cannot be provided because of these circumstances but a public walkway is still feasible, a public walkway shall be provided.

d. Institutional campuses located in an R-1 zone may apply the standards for the institutional zone.

e. Where a block is in more than one zone, the standards of the majority of land in the proposed block shall apply.

f. Where a local street plan, concept master site development plan, or specific plan has been approved for an area, the block standards shall follow those approved in the plan. In approving such a plan, the review body shall follow the block standards listed above to the extent appropriate for the plan area.

Finding: The applicants’ plans illustrate block lengths and perimeters that conform to this section of the NDC.

These criteria have been met.

P. Private Streets. *New private streets, as defined in NMC 15.05.030, shall not be created, except as allowed by NMC 15.240.020(L)(2).*

Finding: Preliminary plans show public and private streets as part of a Planned Unit Development. See finding under NMC 15.240 (L)(2) for additional findings and conditions. Preliminary plans show concrete aprons/driveways providing a visual separation of private streets from public streets. This requirement is met.

Q. Traffic Calming.

1. The following roadway design features may be required in new street construction where traffic calming needs are anticipated:

a. Serpentine alignment.

b. Curb extensions.

c. Traffic diverters/circles.

d. Raised medians and landscaping.

e. Other methods shown effective through engineering studies.

2. Traffic-calming measures such as speed humps should be applied to mitigate traffic operations and/or safety problems on existing streets. They should not be applied with new street constructions.

The Traffic Calming section of the Development Code was not previously included in the staff report and has been added to address the applicant's two newly proposed conditions. These conditions if agreed with and recommended by staff will be added to the end of the existing conditions so that the existing numbering used for conditions remains. Staff believes this will provide the most clarity given the complexity of multiple submitted documents.

Traffic Calming – Cross-Sectional Modifications

The applicant in agreement with the Oxberg Lake Homeowners Association proposed the following condition of approval dated September 24, 2018:

“Crestview Dr. from the north end of the roundabout taper to the north site boundary shall be designed with 10 foot wide lanes, and a ladder crosswalk at the stop-controlled intersection.”

A Traffic Calming Memo memo dated September 27, 2018 supporting this condition was then received by the City from the applicant. It should be noted that the agreed upon condition between the applicant and the Oxberg Lake Homeowners Association did not include representation by Newberg Staff or Tualatin Valley Fire & Rescue. Upon receiving the memo, staff contacted both the applicant and Oxberg Lake Homeowners Association to inform them that the agreed upon condition was not acceptable to the City. Reducing the curb-to-curb lane width by 4-feet did not meet the City's Development Code for a major collector street and staff expressed concerns that Tualatin Valley Fire & Rescue would need to also be involved in the discussion and would ultimately need to agree to any reduction in travel lane width.

An updated Traffic Calming Memo and revised condition was received from the applicant dated October 3, 2018, and with a final modification from the Oxberg Lake development received on October 4, 2018. Both City Staff and Tualatin Valley Fire & Rescue were involved in the discussions leading up to the revised memo.

The applicant proposed the following revised condition of approval listed below with modifications from the Oxberg Lake development to include raised pavement markings on northbound and southbound inside lane lines and along the center lane lines:

“Crestview Dr. from the north end of the roundabout taper to the north site boundary shall be designed with 10 foot wide travel lanes, a two foot bike buffer, and a six foot bike lane, and a ladder crosswalk at the stop controlled intersection with raised reflectors placed with standard spacing upon the inward-facing line of the buffer strips and on the centerline of Crestview between the Crestview Crossing roundabout and the northern property line.”

The revised Traffic Calming Memo dated October 3, 2018 addressed existing and proposed traffic calming design treatments for Crestview Drive and is also intended to address NMC 15.505.030(H) which allows for the modification of travel lane widths via pavement markings. The memo is in response to the 5-Party Agreement which includes the following language as part of the agreement,

“4. The proposed design of Crestview Drive Major Collector will be posted as “no through trucks” and be designed to encourage a 25mph speed limit.”

The applicant has provided documentation of the existing traffic calming on Crestview Drive which consists of the mini roundabouts (traffic calming circles) located at and Robin Court and Birdhaven Loop. A travel speed analysis shows how the western mini roundabout at Birdhaven Loop reduces travel speeds from 30 miles per hour to 22 miles per hour for eastbound travel. It is expected that when Crestview Drive is extended to the south, the mini roundabout at Robin Court should have the same effect for northbound travel.

The applicant is also proposing additional traffic calming measures that are consistent with the City’s Transportation System Plan, *Table 4: Traffic Calming Measures by Street Functional Classification*. Because Crestview Drive is a major collector roadway, only some of the traffic calming measures listed in the table are appropriate given the roadway functional classification and design configuration. In order to encourage slower travel speeds along the corridor, the applicant is proposing street trees in the landscaping strip, residential lot lines to be placed against the edge of the Collector right-of-way and crosswalk pavement markings at key intersections along the roadway. Additionally the applicant is proposing narrowing travel lanes through pavement marking striping.

The narrower travel lanes consist of the following 36-foot roadway curb-to-curb cross-section: 6-foot bike lane, 2-foot buffer, 10-foot travel lane, 10-foot travel lane, 2-foot buffer, 6-foot bike lane as shown in Exhibit 6 of the applicant’s Traffic Calming memo. Staff believes this cross-section is in

alignment with the City's Transportation System Plan and Development Code. It maintains the overall 36-foot curb-to-curb travel lane width required for a major collector by Table 15.505.030(G), and after discussion with Tualatin Valley Fire & Rescue it meets their lane width expectations for a major collector roadway and should not compromise emergency response activities. This narrowed travel lane width will only occur on Crestview Drive from the north end of the roundabout taper at the Crestview Drive/Public Street B intersection to the northern site boundary between the Crestview Crossing Development and the Oxberg Lake development. The taper needed to transition from the proposed cross-section to the existing cross-section at the northern property line will need to occur on the Crestview Crossing Development property.

Because of the existing 5-Party Agreement which indicates Crestview Drive should be designed to encourage a 25 miles per hour speed limit staff has reviewed the applicant's Traffic Calming memo, proposed traffic calming measures, and proposed conditions. Staff is in agreement with the proposed condition from October 4, 2018 to meet the intent of the 5-Party Agreement, but believes more clarity is needed in the applicant's proposed condition to clearly define the beginning and end of the narrow travel lane section and location of raised pavement markings, and to require a taper of proposed striping to existing striping at the northern property line. Because the applicant has provided a condition that is not completely clear in regards to defining the beginning and end of the narrow travel lane section and the location of raised pavement markers, and requiring a taper of proposed striping to existing striping at the northern property line, the applicant shall install narrowed travel lane widths consisting of a curb-to-curb cross-section of 36-feet: 6-foot bike lane, 2-foot buffer, 10-foot travel lane, 10-foot travel lane, 2-foot buffer, 6-foot bike lane with raised pavement markings on the northbound and southbound inside travel lane lines and the center lane lines on Crestview Drive from the north end of the roundabout taper at the Crestview Drive/Public Street B intersection to the northern site boundary between the Crestview Crossing Development and the Oxberg Lake development, include a taper at the northern property line on the Crestview Crossing development to transition the proposed pavement markings into the existing pavement markings, and install a ladder crosswalk on the north and south legs of the Crestview Drive/Public Street C intersection, a side-street stop controlled intersection.

Traffic Calming – “No Through Trucks”

The applicant in agreement with the Oxberg Lake development has proposed the following condition of approval:

“Applicant shall install “No Through Trucks” signs on northbound Crestview Drive to the specifications of the City Engineer, including but not limited to one at the common property line.”

Staff does not concur with the applicant's proposed condition of approval. Staff has several concerns regarding the enforceability of the “No Through Trucks” sign. The Manual on Uniform Traffic Control Devices (MUTCD) has a “NO TRUCKS” sign R5-2 (image of a truck, with a red circle and cross-through), which allows for an optional sign with the words “NO TRUCKS.” The support for

Table 15.505.R. Access Spacing Standards

<i>Roadway Functional Classification</i>	<i>Area¹</i>	<i>Minimum Public Street Intersection Spacing (Feet)²</i>	<i>Driveway Setback from Intersecting Street³</i>
<i>Minor collector</i>	<i>All</i>	<i>300</i>	<i>100</i>

¹ “Urban” refers to intersections inside the city urban growth boundary outside the central business district (C-3 zone).

“CBD” refers to intersections within the central business district (C-3 zone).

“All” refers to all intersections within the Newberg urban growth boundary.

² Measured centerline to centerline.

³ The setback is based on the higher classification of the intersecting streets. Measured from the curb line of the intersecting street to the beginning of the driveway, excluding flares. If the driveway setback listed above would preclude a lot from having at least one driveway, including shared driveways or driveways on adjoining streets, one driveway is allowed as far from the intersection as possible.

Finding: The applicant’s plans show a driveway for Private Street G east of E Crestview Drive (major collector). The plans provided show that Private Street G does not meet spacing requirements from a Public Street intersection. Because the applicant is not meeting street spacing standards, the Private Street G driveway setback is to be a minimum of 150-feet from E Crestview Drive per Table 15.505.R Access Spacing Standards. Setbacks are measured from the curb line of the intersecting street to the beginning of the driveway, excluding flares. If the applicant can provide supplemental materials that meet the exception requirements in 15.505(R)(10) and 15.505(R)(11), the City could determine that a proposed alternative design is acceptable.

3. Properties with Multiple Frontages. Where a property has frontage on more than one street, access shall be limited to the street with the lesser classification.

Finding: Several lots within the applicant’s Planned Unit Development have frontages along more than one public/private street, driveway locations are not being shown. Because it’s unclear where property access is being taken from, access shall be taken from the street with the lesser functional classification, and private streets are designated as having the lowest functional classification.

This criterion will be met with the adherence to the aforementioned condition of approval.

4. Driveways. More than one driveway is permitted on a lot accessed from either a minor collector or local street as long as there is at least 40 feet of lot frontage separating each driveway approach. More than one driveway is permitted on a lot accessed from a major

collector as long as there is at least 100 feet of lot frontage separating each driveway approach.

Finding: The applicant's plans show that Lot 249 has just over 400-feet of frontage along Public Street B (minor collector). Lot 249 has two driveways shown and the distance between the driveways is at least 100-feet.

This criterion is met.

5. Alley Access. *Where a property has frontage on an alley and the only other frontages are on collector or arterial streets, access shall be taken from the alley only. The review body may allow creation of an alley for access to lots that do not otherwise have frontage on a public street provided all of the following are met:*

- a. The review body finds that creating a public street frontage is not feasible.*
- b. The alley access is for no more than six dwellings and no more than six lots.*
- c. The alley has through access to streets on both ends.*
- d. One additional parking space over those otherwise required is provided for each dwelling. Where feasible, this shall be provided as a public use parking space adjacent to the alley.*

Finding: The applicant is proposing private streets and has not identified private access locations. Because access locations have not been identified, if a property has frontage on a private street and other frontages are on collector or arterial streets, access shall be taken from the private street only.

This criterion will be met with the adherence to the aforementioned condition of approval.

6. Closure of Existing Accesses. *Existing accesses that are not used as part of development or redevelopment of a property shall be closed and replaced with curbing, sidewalks, and landscaping, as appropriate.*

7. Shared Driveways.

- a. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided as appropriate. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).*

- b. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.*
- c. No more than four lots may access one shared driveway.*
- d. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.*
- e. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.*

Finding: The applicant is not proposing shared driveways as part of this development. This requirement is not applicable.

9. ODOT or Yamhill County Right-of-Way. Where a property abuts an ODOT or Yamhill County right-of-way, the applicant for any development project shall obtain an access permit from ODOT or Yamhill County.

10. Exceptions. The director may allow exceptions to the access standards above in any of the following circumstances:

- a. Where existing and planned future development patterns or physical constraints, such as topography, parcel configuration, and similar conditions, prevent access in accordance with the above standards.*
- b. Where the proposal is to relocate an existing access for existing development, where the relocated access is closer to conformance with the standards above and does not increase the type or volume of access.*
- c. Where the proposed access results in safer access, less congestion, a better level of service, and more functional circulation, both on street and on site, than access otherwise allowed under these standards.*

Finding: The applicant's narrative briefly discusses topographic site constraints due to wetlands and the block platting pattern in regards to access spacing standards for Private Street G. Because enough information has not been presented to determine if a access spacing standard exception is met, the applicant shall provide additional information to demonstrate the need for the Private Street G access spacing standard exception addressing applicable criteria in sections 15.505(R)(10) and 15.505(R)(11).

The criterion will be verified to have met with the adherence to the condition of approval.

11. Where an exception is approved, the access shall be as safe and functional as practical in the particular circumstance. The director may require that the applicant submit a traffic study by a registered engineer to show the proposed access meets these criteria.

T. Street Trees. Street trees shall be provided for all projects subject to Type II design review, partition, or subdivision. Street trees shall be installed in accordance with the provisions of NMC 15.420.010(B)(4).

Finding: Preliminary plans show street trees along public streets within the development. E Crestview Drive is classified a major collector, Public Street B is a minor collector, and Public Street C and Public Street D are local streets. It is unclear from the applicant's submittal if they are meeting the street tree requirement. Because it's unclear that the applicant is meeting the street tree requirement, the applicant will be required to provide street trees along all public streets that are compliant with 15.420.010(B)(4)(a).

The criterion will be met with the adherence to the aforementioned condition of approval.

U. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility as approved by the city. Upon the city's acceptance of the public improvements associated with the development, the street lighting system, exclusive of utility-owned service lines, shall be and become property of the city unless otherwise designated by the city through agreement with a private utility.

Finding: Preliminary plans show street lighting on both public and private streets. Because it's unclear if the applicant is meeting street lighting standards, the applicant will be required to submit construction plans that include street lighting needed to meet the specifications and standards of the City's Public Works Design and Construction Standards.

This condition of approval will be met with the adherence to the aforementioned condition of approval.

15.505.040 Public utility standards.

C. General Standards.

1. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall conform to the Newberg public works design and construction standards and require a public improvements permit.

2. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbances of soil and site. Installation of all proposed

public and private utilities shall be coordinated by the developer and be approved by the city to ensure the orderly extension of such utilities within public right-of-way and easements.

Finding: The applicant's narrative indicates that they plan to follow the City of Newberg Design and Construction Standards and ODOT construction standards for all public improvements depending on jurisdiction and will acquire the necessary permits to build those improvements. Because the applicant has not obtained all necessary permits for construction, the issuance of required permits not limited to the agencies of Yamhill County, the State of Oregon, and the Federal Government will be required prior to the City of Newberg issuing a Public Improvement Permit. Permits not limited to a Joint Permit Application (JPA) for wetland mitigation will be required. These criteria will be met with the adherence to the aforementioned condition of approval.

D. Standards for Water Improvements. All development that has a need for water service shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary wastewater and stormwater facilities, as applicable.

- 1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping stations which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.*
- 2. Specific location, size and capacity of such facilities will be subject to the approval of the director with reference to the applicable water master plan. All water facilities shall conform with city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected. Installation costs shall remain entirely the developer's responsibility.*

Finding: The applicant will be utilizing the existing water lines in E Crestview Drive and E Portland Road to provide public water lines through the PUD. The applicant will be utilizing the existing non-potable water line in E Portland Road to provide non-potable water lines through the PUD. The applicant has not submitted fire flow calculations. Because the applicant has not submitted fire flow calculations, the applicant will be required to submit fire flow calculations to show that the existing and proposed service is adequate prior to the issuance of the Public Improvement Permit.

This criterion will be verified to have met with the adherence to the conditions of approval.

- 3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties, which, in the judgment of the city, cannot be feasibly served otherwise.*

Finding: Preliminary plans indicate that Public Street B and Public Street C will continue east beyond the proposed development in the future. The applicant’s plans do not take into account future extension beyond the development to serve adjacent properties. Because the applicant’s plans do not take into account future street extensions beyond the development, a blow off assembly on the water lines at the eastern end of Street B and Street C will be required which allows for future extension beyond the development site. This criterion will be met with the adherence to the aforementioned condition of approval.

4. Design, construction and material standards shall be as specified by the director for the construction of such public water facilities in the city.

Finding: Preliminary plans indicate that the applicant will be able to meet requirements of the Public Works Design and Construction Standards. Submitted plans show water mains in both public and private streets, but do not show a water main size, the City’s standard is an 8-inch minimum water main. The applicant is also showing non-potable water lines in public streets. Fire hydrants will need to be located to meet the Fire Code requirements.

Because construction plans have not yet been submitted and reviewed to determine if this requirement is met, the applicant will need to submit construction plans and obtain a Public Improvement Permit to install the water system and non-potable water system pursuant to the requirements of the City’s Public Works Design and Construction Standards. Utility designs and alignments will be reviewed as part of the Public Improvement Permit. Non-potable water lines are required in public streets and may be required in private streets to provide non-potable water to any landscaping area maintained by the PUD.

The applicant has proposed to add the following sentence to the condition of approval:

“Improvements related to the upsizing of the non-potable water system beyond the irrigation requirements for public right-of-way irrigation within Crestview Crossing shall be eligible for SDC credits” (Attachment 9).

Staff does not concur with the applicants sentence being added to the proposed condition of approval. See the explanation of the City’s System Development Charge Procedures Guide in the Analysis section of this report.

Because the applicant has not submitted construction documents for the public improvement permit plan review and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures design review or the public Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City’s System Development Charge Procedures

Guide.

This criterion will be met with the adherence to the aforementioned condition of approval.

E. Standards for Wastewater Improvements. All development that has a need for wastewater services shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary water services and stormwater facilities, as applicable.

1. All septic tank systems and on-site sewage systems are prohibited. Existing septic systems must be abandoned or removed in accordance with Yamhill County standards.

Finding: Preliminary plans show an existing home located on the property and the applicant did not address if a septic system exists. Because it's possible that a septic system is present on the property and the applicant has not addressed this issue, the applicant is required to abandon or remove the septic system in accordance with Yamhill County Standards. The applicant will need to provide a certification from Yamhill County of the septic system abandonment/removal. This criterion will be met with the adherence to the aforementioned condition of approval.

2. All properties shall be provided with gravity service to the city wastewater system, except for lots that have unique topographic or other natural features that make gravity wastewater extension impractical as determined by the director. Where gravity service is impractical, the developer shall provide all necessary pumps/lift stations and other improvements, as determined by the director.

3. All developments shall be required to be linked to existing wastewater collection facilities adequately sized to serve their intended area by the construction of wastewater lines which connect to existing adequately sized wastewater facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.

4. Specific location, size and capacity of wastewater facilities will be subject to the approval of the director with reference to the applicable wastewater master plan. All wastewater facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. Installation costs shall remain entirely the developer's responsibility.

Finding: Preliminary plans indicate that the applicant will be able to meet requirements of the Public Works Design and Construction Standards. Submitted plans show sewer mains in both public and private streets, but do not show a sewer main size, the City's standard is a minimum 8-inch sewer main. Service laterals for waste water service is to be provided to each lot; single residential service laterals require a 4-inch pipe with cleanout, and split residential service laterals require a 6-inch pipe with cleanout. Plans also show a connection to the existing sewer main approximately 700-

feet south of E Portland Road. The applicant has not adequately addressed capacity of the proposed wastewater line extension for the purpose of the development.

Order No. 2008-0013 Tax Lot 3216-1100 was annexed into the City of Newberg and represents a property that is now being developed as part of the Crestview Crossing PUD. As part of the annexation process, conditions of approval were established. The following condition of approval was issued in regards to sewer capacity improvements:

- *Upon development, verify the capacity of the Fernwood Road sanitary sewer pump station and upsize if necessary. All public sewer lines must be gravity flow.*

Because the applicant has not adequately addressed capacity needs of the proposed wastewater line extension, the applicant will be required to conduct a sewer sizing analysis that includes the upstream basin, verify the capacity of the Fernwood Road sanitary sewer pump and upsize if necessary, evaluate downstream impacts, submit construction plans, and obtain a Public Improvement Permit to install the wastewater system pursuant to the requirements of the City's Design and Construction Standards. Utility designs and alignments will be reviewed as part of the Public Improvement Permit.

The applicant has proposed to add the following sentence to the condition of approval:

“Any improvements related to the upsizing of infrastructure to the Fernwood Road facilities which exceed the capacity required for Crestview Crossing shall be eligible for SDC credits” (Attachment 9).

Staff does not concur with the applicants proposed sentence being added to the condition of approval. See the explanation of the City's System Development Charge Procedures Guide in the Analysis section of this report.

Because the applicant has not submitted construction documents for the public improvement permit plan review and additionally has not submitted documentation following the System Development Charge Procedures Guide – Procedure 7B, the City cannot determine if the aforementioned condition is eligible for SDC credits. In order for the City staff to determine if SDC credits can be granted, the applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City's System Development Charge Procedures Guide.

The criterion will be met with the adherence to the aforementioned condition of approval.

6. The design of the wastewater facilities shall take into account provisions for the future extension beyond the development to serve upstream properties, which, in the judgment of the city, cannot be feasibly served otherwise.

Finding: Preliminary plans indicate Public Street B and Public Street C will continue east beyond the proposed development in the future. The applicant's plans do not address future street extensions. Because the applicant's plans do not take into account future street extensions beyond the development, a manhole will be required at the eastern end of the wastewater lines in both street B and street C which will allow for future extension beyond the development site.

The applicant has proposed the following condition of approval:

"A manhole will be required at the eastern end of the wastewater lines in both street B and street C which will allow for future extension beyond the development site or as directed by the City Engineer."

Staff concurs with the proposed condition of approval allowing for flexibility in design with final approval by the City Engineer.

This criterion will be met with the adherence to the aforementioned condition of approval.

7. Design, construction and material standards shall be as specified by the director for the construction of such wastewater facilities in the city.

Finding: Preliminary plans indicate that the applicant will be able to meet requirements of the Public Works Design and Standards. Submitted plans show new sewer mains in both public and private streets throughout the PUD, minimum sewer mains are required to be 8-inches. Service laterals for waste water service is to be provided to each lot; single residential service laterals require a 4-inch pipe with cleanout, and split residential service laterals require a 6-inch pipe with cleanout. Because construction plans have not yet been submitted and reviewed to determine if this requirement is met, the applicant will be required to submit construction plans and obtain a Public Improvement Permit to install the wastewater system pursuant to the requirements of the City's Public Works Design and Construction Standards. Utility designs and alignments will be reviewed as part of the Public Improvement Permit.

This criterion will be met with the adherence to the aforementioned condition of approval.

F. Easements. Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city and designated on the final plat of all subdivisions and partitions. Minimum required easement width and locations are as provided in the Newberg public works design and construction standards. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16.]

Finding: The applicant has submitted preliminary plans that indicate some utility easements, however not all easements have been identified. Because the applicant has not indicated all utility easements, the applicant will be required to submit construction plans that include necessary utility easements meeting the specifications and standards of the City’s Public Works Design and Construction Standards, but not necessarily limited to:

- 1) 10-foot utility easements along all public street frontages, unless determined by the City Engineer as part of the Public Improvement Permit plan review to be not needed or not feasible due to site conditions.
- 2) 15-foot utility easements along all public stormwater, sewer, water, and non-potable water lines where not located within the existing roadway right-of-way.
- 3) Public access easements for any private streets that are required to be used to access public infrastructure.
- 4) Public access easements for all private walkaways within the PUD.

This criterion will be met with the adherence to all the conditions of approval.

15.505.050 Stormwater system standards.

C. General Requirement. *All stormwater runoff shall be conveyed to a public storm wastewater or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property. The developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.*

Finding: Preliminary plans show that all on-site stormwater is collected into a storm main and conveyed into stormwater facilities located in Tract B, Tract C, and Tract E. The applicant’s materials indicate that stormwater tracts/facilities will be privately maintained, but is it unclear if the facilities can be adequately accessed. Stormwater tracts located in areas of wetlands are to be mitigated, and the City will not accept wetlands in stormwater tracts. Construction plans have not yet been submitted and reviewed to determine if the requirement is met.

Because the applicant has not submitted construction plans, the applicant will be required to submit construction plans and obtain a Public Improvement Permit to install the stormwater system improvements pursuant to the requirements of the City’s Public Works Design and Construction Standards which should include the following:

- Turn templates for maintenance vehicles accessing stormwater facilities shall be provided to verify that adequate site access exists.
- ~~Permanent maintenance access via a paved road within 10 feet of stormwater facility structures within the stormwater tracts is required.~~

The applicant has proposed the following condition of approval:

”Permanent maintenance access via a paved road shall extend to within 10 feet of the center of all stormwater structures unless otherwise approved by the City Engineer.”

Staff concurs with the applicants proposed condition of approval and would propose to add one clarifying statement that specifies “private stormwater structures” since the proposed stormwater structures are private and are not going to be owned and maintained by the City of Newberg.

Staff recommends the following condition to address both staff and the applicant’s concerns:

Permanent maintenance access via a paved road shall extend to within 10 feet of the center of all private stormwater structures unless otherwise approved by the City Engineer.

- Any stormwater tract/facility treating private stormwater shall be owned and maintained by the PUD. Any stormwater tract/facility treating both public and private stormwater shall be owned and maintained by the PUD. Any stormwater tract/facility treating only public stormwater shall be owned and maintained by the City of Newberg.
- Preliminary plans show wetlands inside of stormwater tracts, because the City does not accept wetlands in stormwater tracks, the applicant will be required to remove any wetlands from stormwater tracts dedicated to the City.
- Public/private walkways when located adjacent to stormwater facilities must be located outside of the fenced stormwater facility and outside of maintenance access drives.
- A downstream analysis shall be completed, where the design Engineer visually investigates the downstream system for at least one-quarter mile downstream and report any observed deficiencies per Public Works Design and Construction Standards.
- All stormwater mains are required to cross streets at right angles perpendicular to the street.

This criterion will be met with the adherence to the aforementioned conditions of approval.

D. Plan for Stormwater and Erosion Control. No construction of any facilities in a development included in subsection (B) of this section shall be permitted until an engineer registered in the State of Oregon prepares a stormwater report and erosion control plan for the project. This plan shall contain at a minimum:

1. The methods to be used to minimize the amount of runoff, sedimentation, and pollution created from the development both during and after construction.

2. Plans for the construction of stormwater facilities and any other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the stormwater plans.

3. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included in the stormwater report and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed based upon the design criteria outlined in the public works design and construction standards for the city.

Finding: Preliminary plans and a preliminary stormwater report for the proposed development have been submitted. This site is not currently paved. New impervious surfaces will be created and stormwater quality and quantity facilities will be required and the applicant has not obtained appropriate erosion control permitting. Because this project will disturb more than one acre and permitting has not been obtain, a 1200-C permit from DEQ will be required. The applicant will be required to submit a copy of the 1200-C permit from DEQ prior to issuance of a grading or public improvement permit.

This criterion will be met with the adherence to the aforementioned condition of approval.

E. Development Standards. Development subject to this section shall be planned, designed, constructed, and maintained in compliance with the Newberg public works design and construction standards. [Ord. 2810 § 2 (Exhs. B, C), 12-19-16.]

Finding: Preliminary plans show that all on-site stormwater is collected and conveyed to on-site stormwater facilities. Construction plans for this stormwater systems have not yet been submitted. A stormwater final report will need to be submitted with the Public Improvement Permit and will be completely reviewed at that time. Because construction plans have not yet been submitted and reviewed to determine if this requirement has been met, the applicant will need to submit a stormwater report and construction plans meeting the City's Public Works Design and Construction Standards and obtain a Public Improvement Permit to install the stormwater system improvements. Utility designs and alignments will be reviewed as part of the Public Improvement Permit.

This criterion will be met with the adherence to the aforementioned condition of approval.

The applicant has proposed to add the following condition of approval:

“Storm Water Drainage System

Applicant shall construct a storm water and surface water drainage system on the southern edge of tax lots 1803, 1804, and 1808 where they abut tax lot 13800 (the “Stormwater Drainage System”).

Applicant shall provide the owners of tax lots 1803, 1804, and 1808 with copies of any proposed designs and drawings of the Storm Water Drainage System and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Storm Water Drainage System.

However, the final design and specifications of the Storm Drainage System shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction.

Applicant shall complete the construction and installation of the Storm Water Drainage System on or before the date installation of the Sound Wall begins. The owners of tax lots 1803, 1804, and 1808 shall grant Applicant temporary construction easements and encroachment easements for the Storm Water Drainage System, which shall be reasonable in scope and extent.

The owners of tax lots 1803, 1804, and 1808 and the Crestview Crossing Homeowners Association shall share in all costs and expenses related to the maintenance and general upkeep of the Storm Water Drainage System after completion. This maintenance obligation shall bind the owners and their respective successors in interest and shall be made a part of the easements and the Crestview Crossing CCRs.

Applicant shall begin construction on the Storm Water Drainage System after it has received all site design approvals, land use permits, entitlements and other permits required for the development, and has begun construction. If Applicant does not receive the aforementioned permits and entitlements it shall not be obligated to build the Storm Water Drainage System.”

Staff does not concur with the applicants proposed condition of approval. The following items are outside of the City’s jurisdictional authority to condition:

- The City of Newberg has no authority to condition that the owners of tax lots 1803, 1804, and 1808 grant temporary construction easements and encroachment easements reasonable in scope and extent. The City has no authority over property owners outside of the City limits and furthermore has no clear and objective criteria to determine the “reasonable scope and extent” of such temporary construction and encroachment easements.
- The City of Newberg has no authority to condition cost and expense sharing between third party agents or bind owners outside of the development to maintenance obligations.

Staff however, would like to acknowledge the original development agreement language and suggests that criteria/conditions beyond the language in the original development agreement be handled through a civil agreement between the applicant and the property owners affected. The original language from the Development Agreement executed on June 16, 2008 between GC Commercial, an Oregon Limited Liability Company (“GC”), and Terry Coss, Amelia Coss, Charles Alex Miller, Daniel Peek and Rebecca Peek the “Homeowners) is provided below:

3. Construction of the Storm Water Drainage System

a. GC shall construct and install, at its sole cost and expense a storm water and surface water drainage system on a portion of the Homeowners’ Parcels adjacent to the GC Development (the “Stormwater Drainage System”).

b. GC shall provide the Homeowners with copies of any proposed designs and drawings of the Storm Water Drainage System and consider, in good faith, all timely comments GC receives from the Homeowners with respect to the Storm Water Drainage System. However,

the final design and specifications of the Storm Water Drainage System shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction.

C. GC shall complete the construction and installation of the Storm Water Drainage System on or before the date installation of the Sound Wall begins.

Conclusion: Based on the above-mentioned findings, the application meets the required criteria within the Newberg Development Code, subject to completion of the attached conditions found in Exhibit "B".

**Exhibit “B” to Planning Commission Order 2018-10
Conditions –File PUD18-0001/CUP18-0004
Crestview Crossing PUD**

A. Conditional Use Conditions of Approval

1. Prior to proposed lots 245 through 248 receiving a certificate of occupancy from the Building Department, a vegetative buffer must be established along the rear property line of said lot
2. In compliance with Resolution 2006-15, the applicant shall retain as many mature trees as possible along the northern border of Yamhill County Tax lots 13800 and 1100 and supplement the tree buffer with new trees where necessary to provide a contiguous vegetative buffer.
3. The applicant must provide an updated tree removal, tree preservation and tree planting plan that clearly illustrates the type, number and location of new trees, numbers of trees being preserved and the number of trees being removed. Said plan sheet will be required to be submitted before step two (Final Plans) Section 15.240.020(B)(2) commences.

B. The applicant must provide the following information for review and approval prior to construction of any improvements:

Streets, Vehicle and Bicycle Parking, Sidewalks, Walkways and Street Trees

- ~~2. The applicant shall follow the city engineer requirement for sidewalks along private streets to be 5-foot wide matching the applicant’s cross-section detail on sheet C300. The design of weep holes in the proposed rolled curb will be reviewed as part of the Public Improvement Permit, direct connection to the stormwater system may be required.~~
3. The applicant shall follow requirements outlined in a letter TVF&R provided on June 5, 2018 which indicated the following:
 - 20-26 feet road width – no parking on either side of roadway
4. The applicant must submit drawings that clearly illustrate parking bumper locations during “Step Two” of the Planned Unit Development review process.
5. Section 15.420.010 (B) (h) requires a landscaping island for every seven (7) parking spots, the applicant shall provide landscaping islands that meet requirements of said section of the NDC.
6. The applicant shall install bicycle parking loops and spaces that are at least six feet long and two and one-half feet wide.
7. The applicant will be required to meet the applicable building code and Americans with Disabilities Act requirements for private walkways, and develop a plan where private

walkways are connecting each main pedestrian building entrance to each abutting public street and to each other.

8. The E Crestview Drive roadway is to consist of the following: 1-foot from back of walk to right-of-way, 5-foot sidewalk, 5.5-foot planter*, 0.5-foot curb, 6-foot bike lane, 12-foot travel lane, 12-foot travel lane, 6-foot bike lane, 0.5-foot curb, 5.5-foot planter, 5-foot sidewalk, 1-foot from back of walk to right-of-way. The applicant is required to dedicate sufficient right-of-way (minimum of 60-feet) to construct E Crestview Drive, to construct a roundabout meeting FHWA Standards at the E Crestview Drive/Public Street B intersection, and to construct improvements related to modifying the traffic signal at the E Crestview Drive/Providence Drive/E Portland Road intersection meeting City of Newberg, Yamhill County, and Oregon Department of Transportation requirements.
9. * A 5.0-foot planter will be constructed between the E Crestview Drive/Public Street B intersection and the E Crestview Drive/E Portland Road intersection to allow for a proposed retaining wall on the west side of E Crestview Drive to be located outside of the public right-of-way.
10. The Public Street B is to consist of the following: 1-foot from back of walk to right-of-way, 5-foot sidewalk, 5.5-foot planter, 0.5-foot curb, 8-foot parking lane, 12-foot travel lane with sharrow, 12-foot travel lane with sharrow, 8-foot parking lane, 0.5-foot curb, 5.5-foot planter, 5-foot sidewalk, 1-foot from back of walk to right-of-way. The applicant is required to dedicate sufficient right-of-way (minimum of 64-feet) to construct Public Street B.
11. The applicant shall revise plans to show Public Street C and Public Street D consisting of the following: 1-foot from back of walk to right-of-way, 5-foot sidewalk, 5.5-foot planter, 0.5-foot curb, 7-foot parking lane, 9-foot travel lane, 9-foot travel lane, 7-foot parking lane, 0.5-foot curb, 5.5-foot planter, 5-foot sidewalk, 1-foot from back of walk to right-of-way. The applicant is required to dedicate sufficient right-of-way (minimum of 56-feet) to construct the listed streets.
12. The applicant will be required to dedicated additional right-of-way on E Portland Road necessary to meet requirements set forth by the Oregon Department of Transportation to meet Highway Design Manual standards to construct the westbound right-turn lane.
13. The comments on the traffic study identified by ODOT shall be adequately addressed and approved by ODOT as noted in the memo dated July 19, 2018 signed by Dan Fricke, Region 2 Senior Planner.
14. Prior to the issuance of the first grading or building permit, the applicant shall submit plans and specifications for all improvements/construction within ODOT right-of-way for review and approval by ODOT District 3 and issuance of a permit to construct within ODOT right-of-way. ODOT shall certify that all construction activities have been completed pursuant to the approved plans and specifications prior to the issuance of the first certificate of use and occupancy, or the city's equivalent.

15. Prior to issuance of the first grading or building permit, the applicant shall submit signal modification plans for the review of the ODOT Region 2 Traffic Engineer and the review and approval of the State Traffic Engineer. ODOT shall certify that all required signal modifications have been completed and the signal operational prior to the issuance of the first certificate of use and occupancy, or the city's equivalent.
16. the applicant is required to pay the following Traffic Impact Fee to the City of Newberg to meet Order No. 2007-0002 and Order No. 2008-0013 conditions of approval:

$$\frac{(21 \text{ AM Peak Hour Trips resulting from the development})}{(774 \text{ AM Peak Hour Total Trips through the intersection})} = 0.0271 \text{ proportional trips through the intersection}$$

$$(0.0271 \text{ proportional trips through the intersection}) * (\$400,000 \text{ intersection project cost estimate}) = \$10,840 \text{ Traffic Impact Fee – AM Peak Hour}$$
17. The applicant is required to install a 6-foot bike lane along E Portland Road to match the City's Transportation System Plan cross-section.
18. The City will require the southbound and northbound center turn lanes at the E Crestview Drive/E Portland Drive intersection to be a minimum of 12-feet wide.
19. The applicant will be required to install directional ADA curb ramps at the corners of all public street/public street intersection locations, and at public street/private street intersection locations. The final design of all roads within the PUD will be reviewed and approved as part of the Public Improvement Permit.
20. The planter strips on public streets are required to be 5.5-feet wide except where noted on the west side of E Crestview Drive between the E Crestview Drive/Public Street B intersection and the E Crestview Drive/E Portland Road intersection. Where a planter strip is not provided, the public sidewalk is required to be 6-feet wide.
21. The final design of E Portland Road, E Crestview Drive, Public Street B, Public Street C, and Public Street D will need to comply with City's Public Works Design and Construction Standards and applicable ODOT standards. The applicant will be required to obtain a Public Improvement Permit and meet the City's Transportation System Plan and Public Works Design and Construction Standards for the proposed roadway improvements.
22. The applicant is required to install street name signs at all intersections within the development including those intersections with private streets.
23. The Private Street G driveway setback is to be a minimum of 150-feet from E Crestview Drive per Table 15.505.R Access Spacing Standards. Setbacks are measured from the curb line of the intersecting street to the beginning of the driveway, excluding flares. If the applicant can provide supplemental materials that meet the exception requirements in 15.505(R)(10) and 15.505(R)(11), the City could determine that a proposed alternative design is acceptable.

24. Access shall be taken from the street with the lesser functional classification, and private streets are designated as having the lowest functional classification.
25. If a property has frontage on a private street and other frontages are on collector or arterial streets, access shall be taken from the private street only.
26. The applicant shall provide additional information to demonstrate the need for the Private Street G access spacing standard exception addressing applicable criteria in sections 15.505(R)(10) and 15.505(R)(11).
27. The applicant will be required to provide street trees along all public streets that are compliant with 15.420.010(B)(4)(a).
28. The applicant will be required to submit construction plans that include street lighting needed to meet the specifications and standards of the City's Public Works Design and Construction Standards.

Water

29. A blow off assembly on the water lines at the eastern end of Street B and Street C will be required which allows for future extension beyond the development site.
30. The applicant will need to submit construction plans and obtain a Public Improvement Permit to install the water system and non-potable water system pursuant to the requirements of the City's Public Works Design and Construction Standards. Utility designs and alignments will be reviewed as part of the Public Improvement Permit. Non-potable water lines are required in public streets and may be required in private streets to provide non-potable water to any landscaping area maintained by the PUD.

Wastewater

31. The applicant is required to abandon or remove the septic system in accordance with Yamhill County Standards. The applicant will need to provide a certification from Yamhill County of the septic system abandonment/removal.
32. The applicant will be required to conduct a sewer sizing analysis that includes the upstream basin, verify the capacity of the Fernwood Road sanitary sewer pump and upsize if necessary, evaluate downstream impacts, submit construction plans, and obtain a Public Improvement Permit to install the wastewater system pursuant to the requirements of the City's Design and Construction Standards. Utility designs and alignments will be reviewed as part of the Public Improvement Permit.
33. A manhole will be required at the eastern end of the wastewater lines in both street B and street C which will allow for future extension beyond the development site or as directed by City Engineer.
34. The applicant will be required to submit construction plans and obtain a Public Improvement Permit to install the wastewater system pursuant to the requirements of the City's Public

Works Design and Construction Standards. Utility designs and alignments will be reviewed as part of the Public Improvement Permit.

Easements

35. The applicant will be required to submit construction plans that include necessary utility easements meeting the specifications and standards of the City's Public Works Design and Construction Standards, but not necessarily limited to:
 - a. 10-foot utility easements along all public street frontages, unless determined by the City Engineer as part of the Public Improvement Permit plan review to be not needed or not feasible due to site conditions.
 - b. 15-foot utility easements along all public stormwater, sewer, water, and non-potable water lines where not located within the existing roadway right-of-way.
 - c. Public access easements for any private streets that are required to be used to access public infrastructure.
 - d. Public access easements for all private walkaways within the PUD.
36. The applicant is required to provide 10-foot public utility easements on public street frontages per PGEs review dated August 24, 2018. Public utility easements shall not be collocated/overlapped (running parallel) with public infrastructure easements on private streets i.e. storm, sewer, water, or non-potable water lines.

Stormwater

37. The applicant will be required to submit construction plans and obtain a Public Improvement Permit to install the stormwater system improvements pursuant to the requirements of the City's Public Works Design and Construction Standards which should include the following:
38. Turn templates for maintenance vehicles accessing stormwater facilities shall be provided to verify that adequate site access exists.

~~Permanent maintenance access via a paved road within 10 feet of stormwater facility structures within the stormwater tracts is required.~~
39. Any stormwater tract/facility treating private stormwater shall be owned and maintained by the PUD. Any stormwater tract/facility treating both public and private stormwater shall be owned and maintained by the PUD. Any stormwater tract/facility treating only public stormwater shall be owned and maintained by the City of Newberg.
40. The applicant will be required to remove any wetlands from stormwater tracts dedicated to the City.
41. Public/private walkways when located adjacent to stormwater facilities must be located outside of the fenced stormwater facility and outside of maintenance access drives.

42. A downstream analysis shall be completed, where the design Engineer visually investigates the downstream system for at least one-quarter mile downstream and report any observed deficiencies per Public Works Design and Construction Standards.
43. All stormwater mains are required to cross streets at right angles perpendicular to the street.
44. The applicant will need to submit a stormwater report and construction plans meeting the City's Public Works Design and Construction Standards and obtain a Public Improvement Permit to install the stormwater system improvements. Utility designs and alignments will be reviewed as part of the Public Improvement Permit.

Permits Issuance and Timing

45. Public utility infrastructure improvements not limited to street improvements, public walkways, water, non-potable water, wastewater, and stormwater will require completed permits from partner agencies to authorize different work tasks. Issuance of required permits for wetland delineation/mitigation, construction, etc. not limited to the agencies of Yamhill County, the State of Oregon, and the Federal Government will be required prior to the City of Newberg issuing a Public Improvement Permit.
46. The issuance of required permits not limited to the agencies of Yamhill County, the State of Oregon, and the Federal Government will be required prior to the City of Newberg issuing a Public Improvement Permit. Permits not limited to a Joint Permit Application (JPA) for wetland mitigation will be required.
47. The applicant will be required to submit fire flow calculations to show that the existing and proposed service is adequate prior to the issuance of the Public Improvement Permit.
48. A 1200-C permit from DEQ will be required. The applicant will be required to submit a copy of the 1200-C permit from DEQ prior to issuance of a grading or public improvement permit.

Building Designs

49. The applicant shall clearly list all outdoor living area calculations on all single-family and multifamily building plans. If a single family or multifamily building plan does not meet said requirement then no building permit shall be granted until plans are revised to meet this section 15.240.020(N) of NDC.

Home Owners Association

50. The Crestview HOA must provide an annual report that meets the requirements of NDC 15.240.020.L.2.b. to the Newberg Community Development Direction each year on the anniversary date of the final approval for each phase of the PUD approval.

Additional Buffering

~~The applicant must provide a wall that meets the intent of Order 2008-0013. Plan sheets and a description must be submitted to the City for review prior to “Step Two” of the review process taking place.~~

Intermediate Step between “Step 1” and “Step 2” of the PUD Process

51. Prior to modification of any site features or beginning “Step Two” of the review process (NDC Section 15.240.020.B.2.) the applicant shall provide a list of site features to be modified and supporting drawings illustrating before and after conditions for review by City Staff. “Step two” shall not commence until the applicant and city staff can agree on what site modifications are permissible under this section of the NDC.

Construction Plans:

52. Submit engineered construction plans for review and approval of all utilities and public street improvements meeting City of Newberg requirements.
53. Grading: Obtain a city grading permit prior to grading.

C. The applicant must complete the following prior to final plat approval.

54. **Substantially Complete the Construction Improvements:** Prior to final plan approval for a given phase, the applicant must substantially complete the construction improvements and secure for them in accordance with city policy. Complete construction and call for a walk-through inspection with the Engineering Division (503-537-1273)

New Conditions of Approval for the Planning Commission meeting on 10/11/18

55. The applicant must provide estimates for the timing of completion for each phase of development during an interim step between step 1 and step 2 of the PUD review process
56. The Applicant shall construct a pre-cast concrete wall approximately six (6) feet in height along the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815 where they abut the north boundary of tax lots 13800 and 1100 (the "Sound Wall"). The exact location and length of the Sound Wall shall be determined by Applicant in compliance with applicable plans approved by the City of Newberg, or any other governmental agency having jurisdiction. The design style of the Sound Wall and its construction type shall be consistent with "Conceptual Noise Barrier Exhibit" attached hereto. [Exhibit C to the 2008 agreement] Alternatively, if that Exhibit cannot be located, the design style and construction type of the Sound Wall shall be as reasonably agreed by the Applicant and the benefitted property owner or owners.
57. The Applicant shall construct and install the Sound Wall in such a manner as to preserve, to the best of Applicant's ability, those trees with trunks greater than twelve (12) inches DBH that are located near the south boundary of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and a westerly portion of tax lot 1815.

58. The Applicant shall provide the owners of tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815 with copies of any proposed designs and drawings of the Sound Wall, and consider, in good faith, all timely comments Applicant receives from the owners with respect to the Sound Wall. However, the final design and specifications of the Sound Wall shall be in accordance with plans approved by the City of Newberg, or any other governmental agency having jurisdiction. Applicant shall complete the construction and installation of the Sound Wall at the same time as Phase 1 is constructed and completed within the Applicant's development. The owners shall grant the Applicant a temporary construction easement for the sound wall.
59. The owners of tax lots 1803, 1804 and 1808 and the Crestview Crossing Homeowners Association shall share in all costs and expenses related to the maintenance and general upkeep of the Sound Wall after completion. This maintenance obligation shall bind the owners and their respective successors in interest and shall be made a part of the easements and the Crestview Crossing CC&Rs. The owners shall grant the Applicant a temporary construction easement for the Sound Wall, which shall be as limited in scope as reasonably possible.
60. The applicant shall submit CC&Rs during an intermediate review step prior to Step 2 of the PUD review process for the City to review and require changes if needed.
61. Applicant shall begin construction of the Sound Wall after it has received all site design approvals, land use permits, entitlements and other permits required for the development, and has begun construction. If Applicant does not receive the aforementioned permits and entitlements it shall not be obligated to build the sound wall.
62. In compliance with Resolution 2006-15, the Applicant shall retain as many mature trees as possible within ten feet (10') of the north property boundary. Tree removal as necessary to construct the boundary wall and stormwater improvements is allowed. The Applicant shall supplement the tree buffer with new trees where necessary to provide a continuous vegetative buffer.
63. Applicant shall include a ten-foot (10') wide landscape buffer zone on the north edge of tax lots 13800 and 1100 along the boundary shared with tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815 (the "Landscape Buffer Zone"), and a 30-foot (30') setback (the "Setback Zone") between the Sound Wall and any buildings in any subdivision plats maps for tax lots 13800 and 1100 submitted for approval to any governmental entity with jurisdiction over the Applicant's development. The Landscape Buffer Zone and Setback Zone shall be recorded in the form of easements burdening and encumbering tax lots 13800 and 1100 and future lots platted therefrom, and benefiting tax lots 1803, 1804, 1808, 1809, 1810, 1811, 1812 and 1815. The specific language of the easements shall be as reasonably agreed by the affected parties.
64. The applicant shall follow City Engineer requirements for sidewalks along both sides of private streets to be a 5-foot wide ADA accessible surface matching the applicant's cross-sectional detail on sheet C300. The private street width shall be measured from the back of

the 12-inch mountable curb. The sidewalk shall be measure from the back of walk to the back of the 12-inch mountable curb. The design of weep holes in the proposed rolled curb will be reviewed as part of the Public Improvement Permit, direct connection to the stormwater system may be required.

65. In order for the City staff to determine if SDC credits can be granted, the applicant at the construction document review/public improvement permit stage shall follow Procedure 7B in the System Development Charge Procedures Guide and work with City staff to make a final determination on SDC credit eligibility. A System Development Charge Credit Applicant Form can be found in the City's System Development Charge Procedures Guide.
66. Permanent maintenance access via a paved road shall extend to within 10 feet of the center of all private stormwater structures unless otherwise approved by the City Engineer.
67. The applicant shall install narrowed travel lane widths consisting of a curb-to-curb cross-section of 36-feet: 6-foot bike lane, 2-foot buffer, 10-foot travel lane, 10-foot travel lane, 2-foot buffer, 6-foot bike lane with raised pavement markings on the northbound and southbound inside travel lane lines and the center lane lines on Crestview Drive from the north end of the roundabout taper at the Crestview Drive/Public Street B intersection to the northern site boundary between the Crestview Crossing Development and the Oxberg Lake development, include a taper at the northern property line on the Crestview Crossing development to transition the proposed pavement markings into the existing pavement markings, and install a ladder crosswalk on the north and south legs of the Crestview Drive/Public Street C intersection, a side-street stop controlled intersection.

D. Final Plan Consideration: In accordance with NDC 15.240.040, submit the following for City review of the final plan application. Construction improvements should be substantially complete at this point.

1. **Lapse of Approval.** If the applicant fails to submit material required for consideration at the next step in accordance with the schedule approved at the previous step or, in the absence of a specified schedule, **within one year** of such approval, the application as approved at the previous step expires. If the applicant fails to obtain a building permit for construction in accordance with the schedule as previously approved, or in the absence of a specified schedule, within three years of a preliminary plan approval, preliminary and final plan approvals expire. Prior to expiration of plan approval at any step, the hearing authority responsible for approval may, if requested, extend or modify the schedule, providing it is not detrimental to the public interest or contrary to the findings and provisions specified herein for planned unit developments. Unless the preliminary plan hearing authority provides to the contrary, expiration of final plan approval of any phase automatically renders all phases void that are not yet finally approved or upon which construction has not begun.
2. **Application Materials:**

- a. Type I application form (found either at City Hall or on the website – www.newbergoregon.gov in the Planning Forms section) with the appropriate fees.
 - b. A current title report (within 6 months old) for the property. Include copies of all existing easements and CC&Rs that pertain to the property.
 - c. A written response to these Conditions of Approval that specifies how each condition has been met.
 - d. Two blue-line copies of the final partition plats for preliminary review by the City Engineering Division. Engineering will make red-line comments on these sheets for your surveyor/engineer to correct prior to printing final Mylar copies.
 - e. Any other documents required for review.
3. **Documents Required:** Provide the following documents for review and approval:
- a. A bond for street tree planting in an amount to be approved by the Planning Division.
4. **Final Mylar Copies of the Partition Plats:** Submit final mylar copies of the corrected final partition plats (after red-line corrections have been made).
- a. Three sets (one original and two copies), 18 inches by 24 inches in size, of the final partition plans drawn in black India ink in clear and legible form. Original plats shall be in substantial conformity to the approved tentative plan and shall conform to the Yamhill County Surveyor’s specifications and requirements.
5. **Required Signatures:** According to NDC 15.235.180, approval of a final plat must be acknowledged and signed by the following:
- a. Planning and Building Director
 - b. The County Assessor
 - c. The County Surveyor
 - d. The City Recorder
6. **Recording:** Deliver the approved plat to the office of the County Clerk for recording. The County Clerk’s office is located at 414 NE Evans St, McMinnville, OR 97128.
7. **Copy returned to the City:** Return an exact mylar copy of the recorded plat to the Director to complete the plat process. The land division will not be considered final until the copy is returned to the Director. No permits will be issued for any development on the property after the plat is signed until the copy is returned.

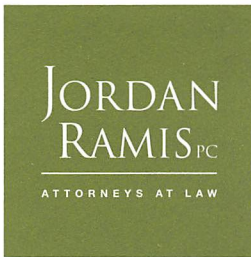
E. Development Notes:

“Working Together For A Better Community-Serious About Service”

1. **Postal Service:** The applicant shall submit plans to the Newberg Postmaster for approval of proposed mailbox delivery locations. Contact the Newberg Post Office for assistance at 503-554-8014.
2. **PGE:** PGE can provide electrical service to this project under terms of the current tariff which will involve developer expense and easements. Contact the Service & Design Supervisor, PGE, at 503-463-4348.
3. **Frontier:** The developer must coordinate trench/conduit requirements with Frontier. Contact the Engineering Division, Frontier, at 541-269-3375.
4. **Addresses:** The Planning Division will assign addresses for the new lots. Planning Division staff will send out notice of the new addresses after they receive a mylar copy of the recorded final plat.

Attachment 1: Application Material

"Working Together For A Better Community-Serious About Service"



Lake Oswego

Two Centerpointe Dr., 6th Floor
Lake Oswego, OR 97035
503-598-7070
www.jordanramis.com

Vancouver

1499 SE Tech Center Pl., #380
Vancouver, WA 98683
360-567-3900

Bend

360 SW Bond St., Suite 510
Bend, OR 97702
541-550-7900

August 17, 2018

Via E-Mail
Doug.rux@newbergoregon.gov

Doug Rux, AICP
Community Development Director
City of Newberg
414 E First Street
Newberg, OR 97123

Re: **Crestview Crossing Submittal – PUD 18-0001/CUP 18-0004**

Dear Doug:

Thanks for your assistance with scheduling the follow up submittals and the next Planning Commission hearing on September 13th. Pursuant to your request, the applicant team is providing several additional and revised submittals to address concerns raised by staff, neighbors and the Planning Commission.

Today's submittals include:

- An exhibit showing typical parking configurations;
- Draft Maintenance Agreements for the Private Street and Stormwater Tracts. These items have been provided in lieu of CC&R's;
- A draft reserve study for the Private Street Tracts;
- An updated Phasing Plan;
- Two alternative plats;
- Rendering of Highway 99 frontage and the Crestview entrance;
- A Kittelson memorandum addressing the roundabout location and the 5/6 party agreement;
- A geology report addressing the wells at Oxberg Lake Estates and Hydrogeology;
- An updated Traffic Report;
- An updated land use narrative.

Specifically we want to take this opportunity to discuss a few of the submittal items and point out how they address some of the concerns raised. First the draft maintenance agreement for the private streets will ensure that the maintenance of those streets and stormwater tracts will be privately maintained in perpetuity. Our office has drafted numerous maintenance agreements and for the sake of clarity, ease of use, and convenience to the City they are usually called out in separate agreements that are eventually incorporated into the CCRs as exhibits. Along with this we have provided you the draft reserve study which demonstrates that the private streets can easily be maintained in perpetuity.

Secondly, we would like to have you pay close attention to the Kittelson memorandum which addresses concerns raised in correspondence from interested parties related to the 5/6 party agreement. The memorandum is self-explanatory, but concludes that the design of the project is consistent with the agreement.

Doug Rux
August 17, 2018
Page 2

Third we have provided the City a geology report addressing concerns raised by interested parties in relation to the wells at Oxberg Lake Estates. The report concludes that those wells will not be impacted by Crestview Crossing.

Finally, we did hear a concern both at a staff and planning commission level about the need for an amplified narrative in certain areas. We trust that our updated narrative and supplemental information should address the concerns that staff had about not having the requisite information prior to issuing the staff report.

In conclusion, we hope that by getting these today ahead of the September 11 hearing that it will allow ample time for review by city staff, outside agencies, and the Planning Commission prior to that hearing. In the interim, let us know if there is additional information that you think might be helpful.

Very truly yours,

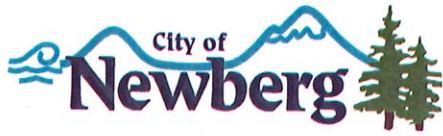
JORDAN RAMIS PC



James D. Howsley
Admitted in Oregon and Washington
james.howsleyt@jordanramis.com
WA Direct Dial (360) 567-3913

Enclosures

cc: Jesse Nemec
John Wyland
Andrew Tull



TYPE III APPLICATION - 2018
(QUASI-JUDICIAL REVIEW)

File #: CUP18-0004

TYPES - PLEASE CHECK ONE:

- Annexation
Comprehensive Plan Amendment (site specific)
Zoning Amendment (site specific)
Historic Landmark Modification/alteration
Conditional Use Permit
Type III Major Modification
Planned Unit Development
Other: (Explain)

APPLICANT INFORMATION:

APPLICANT: Andrew Tull, 3J Consulting, Inc.
ADDRESS: 5075 SW Griffith Drive, Suite 150 Beaverton, Or 97005
EMAIL ADDRESS: Andrew.tull@3j-consulting.com
PHONE: 503-545-1907 MOBILE: FAX:
OWNER (if different from above): CG Commercial LLC & VPCF Crestview LLC PHONE: 503-730-8620
ADDRESS: 5285 Meadows Drive, Suite 171 Lake Oswego, Oregon 97035
ENGINEER/SURVEYOR: Aaron Murphy, PE, 3J Consulting, Inc. PHONE: 720-220-3915
ADDRESS: 5075 SW Griffith Drive, Suite 150 Beaverton, Or 97005

GENERAL INFORMATION:

PROJECT NAME: Crestview Crossing PROJECT LOCATION: 4505 E Portland Road
PROJECT DESCRIPTION/USE: Planned Unit Development and Conditional Use Permit
MAP/TAX LOT NO. (i.e. 3200AB-400): 3s2w16-lots 13800 & 1100 ZONE: R1,R2,C2 SITE SIZE: 33.13 SQ. FT. ACRE
COMP PLAN DESIGNATION: COM, MDR, LDR TOPOGRAPHY: Gentle
CURRENT USE: Vacant
SURROUNDING USES:
NORTH: Residential County Subdivision SOUTH: Providence Hospital
EAST: Undeveloped Land WEST: Residential Subdivision

SPECIFIC PROJECT CRITERIA AND REQUIREMENTS ARE ATTACHED

General Checklist: Fees Public Notice Information Current Title Report Written Criteria Response Owner Signature

For detailed checklists, applicable criteria for the written criteria response, and number of copies per application type, turn to:

- Annexation p. 15
Comprehensive Plan / Zoning Map Amendment (site specific) p. 19
Conditional Use Permit p. 21
Historic Landmark Modification/Alteration p. 23
Planned Unit Development p. 26

The above statements and information herein contained are in all respects true, complete, and correct to the best of my knowledge and belief. Tentative plans must substantially conform to all standards, regulations, and procedures officially adopted by the City of Newberg. All owners must sign the application or submit letters of consent. Incomplete or missing information may delay the approval process.

Applicant Signature Date 4/6/18

Andrew Tull

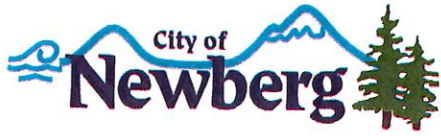
Print Name

Owner Signature Date 5/29/2018

Jeff Smith

Print Name

Attachments: General Information, Fee Schedule, Noticing Procedures, Planning Commission Schedule, Criteria, Checklists



TYPE III APPLICATION - 2018
(QUASI-JUDICIAL REVIEW)

File #: PUD18-0001

TYPES - PLEASE CHECK ONE:

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Comprehensive Plan Amendment (site specific)
Zoning Amendment (site specific)
Historic Landmark Modification/alteration
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ADDRESS: 5075 SW Griffith Drive, Suite 150 Beaverton, Or 97005

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PROJECT DESCRIPTION/USE: Planned Unit Development and Conditional Use Permit
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Applicant Signature: [Signature] Date: 4/6/18

Andrew Tull

Print Name

Owner Signature: [Signature] Date: 5/29/2018

Jeff Smith

Print Name

Attachments: General Information, Fee Schedule, Noticing Procedures, Planning Commission Schedule, Criteria, Checklists

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- Appendix A – Land Use Application
- Appendix B – Pre-Application Notes
- Appendix C – Notification Materials
- Appendix D – Technical Reports
- Appendix E – Land Use Plans

GENERAL INFORMATION

Property Owner and Applicant: CG Commercial, LLC & VPCF Crestview, LLC
5285 Meadows Road, Suite 171
Lake Oswego, OR 97035
Contact: Jesse Nemec
Phone: (503)-730-8620
Email: jnemec@jtsmithco.com

Applicant's Representative: 3J Consulting, Inc.
5075 SW Griffith Drive, Suite 150
Beaverton, OR 97005
Contact: Andrew Tull
Phone: (503)-545-1907
Email: andrew.tull@3j-consulting.com

Legal Representative: Jordan Ramis, PC
2 Centerpointe Drive, Suite 600
Lake Oswego, Oregon 97035
Contact: James Howsley
Phone: (503) 598-7070
Email: jamie.howsley@jordanramis.com

SITE INFORMATION

Parcel Number: 3216AC 13800 &1100
Address: OR 99W and Crestview Drive
Size: 33.13 acres
Zoning Designations: R-1, R-2, C-2
Existing Use: Vacant
Street Functional Classification: OR-99W is classified as a Major Arterial and is an ODOT facility. Crestview Drive is classified as a Minor Arterial and is within the City's jurisdiction.
Surrounding Zoning: The properties to the west are located within the City of Newberg and are zoned Low Density Residential (R-1). The properties to the south are zoned City Institutional (I) and County VLDR-2.5. The properties to the north are located within Yamhill county and are zoned VLDR-1. The properties to the east are located within Yamhill County and are zoned EF-20.

INTRODUCTION

APPLICANT'S REQUEST

The Applicant seeks approval of an application for a Type III Planned Unit Development (PUD) and Conditional Use Permit (CUP). This narrative has been prepared to describe the proposed development and to document compliance with the relevant sections of Newberg's Development Code.

SITE DESCRIPTION/SURROUNDING LAND USE

The subject site is 33.13 acres in size and is located north of OR-99W, south of Crestview Drive. The property is located within the City and is Zoned C-2, R-2, and R-1. The site has sloping topography which generally slopes towards the southeastern end of the property. The site currently contains numerous wetlands that will be preserved or mitigated, in compliance with Department of State Lands and Army Corps of Engineers standards.

PROPOSAL

The proposed Planned Community will create a mixture of commercial development, single-family homes, cottage style single-family homes, affordable housing and multi-family homes. The proposed development includes 18 single-family homes on large lots, 230 cottage homes, and 51 multi-family homes with modifications to the base zone's dimensions as permitted through the PUD process. The project will include a 4.4-acre parcel which has been created to allow for future commercial development.

The proposed neighborhood will feature active and passive open space areas for use by the residents. The proposed design includes a network of open spaces and wetlands, a thoughtfully linked pedestrian circulation system, and several pedestrian amenities. A neighborhood park is connected to the proposed development through a network of multi-use pathways which provide pedestrian circulation and recreation throughout the site. The development will utilize a network of public and private streets, as well as alleyways which will provide for additional on-street parking. Additional parking for residents has been provided in several off-street parking areas.

The project will include an affordable housing component. While affordable housing is not a required component of a submission for a Planned Unit Development or a Conditional Use Permit, the City does have an Affordable Housing Action Plan which identifies a significant shortage of affordably priced homes within the City and the Applicant said it would include this element. In recognition of the City's needs for affordable housing options, the Applicant proposes to create five percent of the single family detached homes with price reductions and deed restrictions designed to create perpetual affordability.

Affordable Housing is defined within the City's Affordable Housing Action Plan as when a family spends no more than 30% of its income for housing. The twelve single family homes created as part of this program will initially be marketed at rates which make them eligible for families earning less than the median family incomes as described within the Housing Action Plan's definitions of affordable housing. At closing, buyers will be required to sign covenants agreeing to limit the price of any future sale to a rate of appreciation which is tied to either the Area Median Family Income rate or another acceptable index of income. The Applicant plans to work with the Housing Authority of Yamhill County and the City's Affordable Housing Ad Hoc Committee to refine the covenants which will be recorded with the sale of these units and to eventually find parties which may qualify for the purchase of affordable houses. The proposed affordable homes will require owner occupation and will be constructed at various locations throughout the development.

As proposed, the Applicant has included two alternative plats for the property, one of which shows attached, duplex styled housing on some of the lots. The alternative plat also shows a scenario with exclusively detached products. As the project moves through construction and as sales data is received, the applicant specifically requests flexibility in preparing the final plats for the various phases within the development to allow for the platting of either detached or attached homes. The adjustments necessary to the final plat to process these changes will not require significant modifications to lots and will not result in the addition or deletion of any lots within the plan.

APPLICABLE CRITERIA

The following sections of Newberg's and Development Code have been extracted as they have been deemed to be applicable to the proposal. Following each bold applicable criteria or design standard, the Applicant has provided a series of draft findings. The intent of providing code and detailed responses and findings is to document, with absolute certainty, that the proposed development has satisfied the approval criteria for a Planned Unit Development and a Conditional Use Permit.

TITLE 15 DEVELOPMENT CODE

Division 15.200 Land Use Applications

15.225 Conditional Use Procedures

15.225.010 Description and purpose.

A. It is recognized that certain types of uses require special consideration prior to their being permitted in a particular district. The reasons for requiring such special consideration involves, among other things, the size of the area required for the full development of such uses, the nature of the traffic problems incidental to operation of the use, the effect such uses have on any adjoining land uses and on the growth and development of the community as a whole.

Applicant's Facts and Findings: The proposal includes residential development in a commercial zoning district, requiring a conditional use permit. The applicable conditional use permit standards are addressed below.

This standard is met.

B. All uses permitted conditionally are declared to be possessing such unique and special characteristics as to make impractical their being included as outright uses in any of the various districts herein defined. The authority for the location and operation of the uses shall be subject to review and the issuance of a conditional use permit. The purpose of review shall be to determine that the characteristics of any such use shall be reasonably compatible with the type of uses permitted in surrounding areas, and for the further purpose of stipulating such conditions as may be reasonable so that the basic purposes of this code shall be served. Nothing construed herein shall be deemed to require the hearing body to grant a conditional use permit.

Applicant's Facts and Findings: The development of residential housing in the C-2 (Commercial) zoning district requires a conditional use permit. The Conditional Use Permit is used in this scenario to ensure that density, lot coverage, parking, vehicular access, pedestrian and bicycle connectivity, and other residential characteristics are developed to be compatible with surrounding land uses.

This standard is met.

15.225.020 Conditional use permit prerequisite to building.

No building permit shall be issued when a conditional use permit is required by the terms of this code unless a permit has been granted by the hearing body and then only in accordance with the terms and conditions of the conditional use permit. Conditional use permits may be

temporary or permanent for any use or purpose for which such permits are required or permitted by provisions of this code.

Applicant's Facts and Findings: This land use application proposes a permanent conditional use permit for residential development in the C-2 zoning district. Building permits have not been issued for this development.

This standard is met.

15.225.030 Application.

Application for a conditional use permit shall be accompanied by such information including, but not limited to, site and building plans, drawings and elevations, and operational data, as may be required by the director to allow proper evaluation of the proposal. The plan submittal requirements identified in NMC 15.220.030 and 15.445.190 shall be used as a guide. All proposals for conditional use permit shall be accompanied by a detailed project description which includes information such as the use, information relating to utilities, the number of employees, the hours of operation, traffic information, odor impacts, and other information needed to adequately describe the project.

Applicant's Facts and Findings: The proposed Conditional Use Permit includes all information necessary for a complete and thorough review.

This standard is met.

15.225.040 Concurrent design review.

If new buildings or structures are to be included as part of the application, the planning commission shall concurrently review the application for site design review in order to streamline the review process.

Applicant's Facts and Findings: The proposed Conditional Use Permit includes a proposed Planned Unit Development on the site with both single-family detached and multi-family housing. The review of the CUP is proposed concurrent with the PUD.

This standard is met.

15.225.050 Additional information.

In order to fully evaluate the proposal, additional information may be required. This includes but is not limited to traffic studies, noise studies, visual analysis, and other site impact studies as determined by the director or planning commission.

Applicant's Facts and Findings: The proposal includes a traffic study and materials display boards. Noise studies are not necessary based on the residential proposal.

This standard is met.

15.225.060 General conditional use permit criteria – Type III.

A conditional use permit may be granted through a Type III procedure only if the proposal conforms to all the following criteria:

A. The location, size, design and operating characteristics of the proposed development are such that it can be made reasonably compatible with and have minimal impact on the livability or appropriate development of abutting properties and the surrounding neighborhood, with consideration to be given to harmony in scale, bulk, coverage and density; to the availability of public facilities and utilities; to the generation of traffic and the capacity of surrounding streets, and to any other relevant impact of the development.

B. The location, design, and site planning of the proposed development will provide a convenient and functional living, working, shopping or civic environment, and will be as attractive as the nature of the use and its location and setting warrants.

C. The proposed development will be consistent with this code.

Applicant's Facts and Findings:

The proposed residential development on this site will allow a gradual transition from the residentially-developed properties to the north and west toward the 4.4-acre retail commercial designated pad adjacent to Highway 99W. The large-lot single-family detached properties immediately adjacent to the site will be buffered by large-lot single-family detached homes. Higher-density single-family detached housing will be located central to the site and adjacent to the park on the western property boundary. The two proposed multi-family buildings are in the southeast corner of the site, adjacent to Highway 99W and near the proposed retail commercial area to be developed at a later date.

This "stair step" approach to lot size and density will serve to ensure harmony in scale, bulk, coverage and density while the multi-family near commercial will provide a convenient and functional living, working and shopping environment. All homes in the site have access via sidewalk to Spring Meadow Park and further into the City of Newberg, satisfying the requirement that the conditional use permit provide a convenient and functional civic environment.

As shown on the included design and materials boards, the proposed development includes a high level of residential design to reflect the location of the development at the eastern entry to the City of Newberg. Materials such as wood, stone, brick and northwest-style siding are all utilized to blend the site to both the natural and built surrounding areas.

Findings are made regarding all applicable sections of the Newberg Development Code throughout this narrative. As identified the findings of each individual code section, the proposed Planned Unit Development and Conditional Use Permit meet all applicable sections of the Newberg Development Code.

This standard has been met.

15.225.080 Conditions.

The hearing body shall designate conditions in connection with the conditional use permit deemed necessary to secure the purpose of this chapter and the general conditional use permit criteria and require the guarantees and evidence that such conditions will be complied with. Such conditions may include:

A. Regulation of uses.

B. Special yards, spaces

C. Fences and walls.

D. Surfacing of parking areas to city specifications.

- E. Street dedications and improvements (or bonds).**
- F. Regulation of points of vehicular ingress and egress.**
- G. Regulation of signs.**
- H. Landscaping and maintenance of landscaping.**
- I. Maintenance of the grounds.**
- J. Regulation of noise, vibration, odors or other similar nuisances.**
- K. Regulation of time for certain activities.**
- L. Time period within which the proposed use shall be developed.**
- M. Duration of use.**
- N. Such other conditions as will make possible the development of the city in an orderly and efficient manner in conformity with the Newberg comprehensive plan and the Newberg development code.**

Applicant’s Facts and Findings: The Conditional Use Permit is required for residential development within the C-2 (Commercial) zoned portion of this site. The proposed residential development includes appropriate yards and spaces, parking areas, ingress and egress, landscaping, vehicular, pedestrian and bicycle connectivity and maintenance plans to ensure compliance with this Section of the Code. Additional conditions are not warranted to secure the purpose of the Conditional Use Permit chapter.

This standard is met.

15.225.090 Development in accord with plans.

Construction, site development, and landscaping shall be carried out in substantial accord with the plans, drawings, conditions, sketches, and other documents approved as part of a final decision on a conditional use permit.

Applicant’s Facts and Findings: It is feasible for the Applicant to carry out development of the site in substantial accord with the plans, drawings, sketches and other documents approved as part of this final decision on the Conditional Use Permit.

This standard is met.

15.225.100 Conditional use permit must be exercised to be effective.

A. A conditional use permit granted under this code shall be effective only when the exercise of the right granted thereunder shall be commenced within one year from the effective date of the decision. The director under a Type I procedure may grant an extension for up to six months if the applicant files a request in writing prior to the expiration of the approval and demonstrates compliance with the following:

- 1. The land use designation of the property has not been changed since the initial use permit approval; and**
- 2. The applicable standards in this code which applied to the project have not changed.**

B. In case such right is not exercised, or extension obtained, the conditional use permit decision shall be void. Any conditional use permit granted pursuant to this code is transferable to subsequent owners or contract purchasers of the property unless otherwise provided at the time of granting such permit.

Applicant's Facts and Findings: The Applicant acknowledges that the Conditional Use Permit approval is valid for one year if an extension is not requested. The Applicant intends to begin construction of the residential development on this site within one year of the approval date. If unforeseen delay is encountered, an extension request will be filed in writing prior to the expiration date.

This standard is met.

15.225.110 Preexisting uses now listed as a conditional use.

Where a use is legally established and continuing, but that use currently would require a conditional use permit, the use shall be considered as having a conditional use permit under the terms of the prior permit approval. Any nonconforming site development shall be subject to the provisions of Chapter 15.205 NMC.

Applicant's Facts and Findings: This proposal does not include a preexisting use now listed as a conditional use and, as such, this standard is not applicable.

15.240 PD Planned Unit Development Regulations

15.240.010 Purpose.

The city's planned unit development regulations are intended to:

- A. Encourage comprehensive planning in areas of sufficient size to provide developments at least equal in the quality of their environment to traditional lot-by-lot development and that are reasonably compatible with the surrounding area; and**
- B. Provide flexibility in architectural design, placement and clustering of buildings, use of open space and outdoor living areas, and provision of circulation facilities, parking, storage and related site and design considerations; and**
- C. Promote an attractive, safe, efficient and stable environment which incorporates a compatible variety and mix of uses and dwelling types; and**
- D. Provide for economy of shared services and facilities; and**
- E. Implement the density requirements of the comprehensive plan and zoning districts through the allocation of the number of permitted dwelling units based on the number of bedrooms provided.**

Applicant's Facts and Findings: The Applicant proposes a residential Planned Unit Development (PUD) meeting the stated purposes of the PUD regulations. This site is of sufficient size as to warrant comprehensive planning rather than traditional lot-by-lot development. The Applicant proposes flexibility in placement and clustering of buildings, use of open space, circulation, parking and density to promote a safe, attractive, efficient and stable residential environment adjacent to a highway facility and a future commercial development.

This standard is met.

15.240.020 General provisions.

A. Ownership. Except as provided herein, the area included in a proposed planned unit development must be in single ownership or under the development control of a joint application of owners or option holders of the property involved.

Applicant's Facts and Findings: The area included in the planned unit development is in single ownership.

This standard is met.

B. Processing Steps – Type III. Prior to issuance of a building permit, planned unit development applications must be approved through a Type III procedure and using the following steps:

- 1. Step One – Preliminary Plans. Consideration of applications in terms of on-site and off-site factors to assure the flexibility afforded by planned unit development regulations is used to preserve natural amenities; create an attractive, safe, efficient, and stable environment; and assure reasonable compatibility with the surrounding area. Preliminary review necessarily involves consideration of the off-site impact of the proposed design, including building height and location.**
- 2. Step Two – Final Plans. Consideration of detailed plans to assure substantial conformance with preliminary plans as approved or conditionally approved. Final plans need not include detailed construction drawings as subsequently required for a building permit.**

Applicant's Facts and Findings: The Applicant acknowledges the two-step process to PUD approval and submits materials in support of Step One- Preliminary Plans.

This standard is met.

C. Phasing. If approved at the time of preliminary plan consideration, final plan applications may be submitted in phases. If preliminary plans encompassing only a portion of a site under single ownership are submitted, they must be accompanied by a statement and be sufficiently detailed to prove that the entire area can be developed and used in accordance with city standards, policies, plans and ordinances.

Applicant's Facts and Findings: The applicant is proposing the following phasing:

Phase 1: This phase will include improvements to the site's frontage along E Portland Road and the installation of underground utility connections necessary to provide service to the site.

Phase 1a: This phase will include the extension of E Crestview Drive through the site and the construction of roadways and lots located east of the E Crestview Drive extension to public road D. This phase will also include the stormwater facility located south of public road B.

Phase 2: This phase will include the installation of the roadways, infrastructure and lots which are to be located west of the E Crestview extension.

Phase 3: This phase will include the lots located east of public road D to the property's eastern property boundary.

Phases B and C will be constructed after the construction of Phases 1 and 1A and may be constructed independently of the subdivision lots and by other entities or assigns.

Due to the size of the plan and the complexity of the various components within the development, the Applicant has requested that the City grant the developer a ten (10) year window for the construction of the infrastructure shown within the plan's phases with opportunities for up to five (5) one (1) year extensions following the approval of the preliminary plat. While the Applicant does not intend to wait for ten (10) years to allow for the construction of the proposed improvements, the flexibility afforded by the ten (10) year schedule with the requested extensions will allow for the project's various components to be sensitive to changing market conditions.

This standard is met.

D. Lapse of Approval. If the applicant fails to submit material required for consideration at the next step in accordance with the schedule approved at the previous step or, in the absence of a specified schedule, within one year of such approval, the application as approved at the previous step expires. If the applicant fails to obtain a building permit for construction in accordance with the schedule as previously approved, or in the absence of a specified schedule, within three years of a preliminary plan approval, preliminary and final plan approvals expire. Prior to expiration of plan approval at any step, the hearing authority responsible for approval may, if requested, extend or modify the schedule, providing it is not detrimental to the public interest or contrary to the findings and provisions specified herein for planned unit developments. Unless the preliminary plan hearing authority provides to the contrary, expiration of final plan approval of any phase automatically renders all phases void that are not yet finally approved or upon which construction has not begun.

Applicant's Facts and Findings: The Applicant acknowledges the process for lapse of PUD approval and intends to follow through with development of the site based on the original approval timeline.

This standard is met.

E. Resubmittal Following Expiration. Upon expiration of preliminary or final plan approval, a new application and fee must be submitted prior to reconsideration. Reconsideration shall be subject to the same procedures as an original application.

Applicant's Facts and Findings: The Applicant acknowledges the process for resubmittal following expiration.

This standard is met.

F. Density. Except as provided in NMC 15.302.040 relating to subdistricts, dwelling unit density provisions for residential planned unit developments shall be as follows:

1. Maximum Density.

- a. Except as provided in adopted refinement plans, the maximum allowable density for any project shall be as follows:**

District	Density Points
R-1	175 density points per <u>gross acre</u> , as calculated in subsection (F)(1)(b) of this section
R-2	310 density points per <u>gross acre</u> , as calculated in subsection (F)(1)(b) of this section
R-3	640 density points per <u>gross acre</u> , as calculated in subsection (F)(1)(b) of this section
RP	310 density points per <u>gross acre</u> , as calculated in subsection (F)(1)(b) of this section
C-1	As per required findings
C-2	As per required findings
C-3	As per required findings

- b. Density point calculations in the following table are correlated to dwellings based on the number of bedrooms, which for these purposes is defined as an enclosed room which is commonly used or capable of conversion to use as sleeping quarters. Accordingly, family rooms, dens, libraries, studies, studios, and other similar rooms shall be considered bedrooms if they meet the above definitions, are separated by walls or doors from other areas of the dwelling and are accessible to a bathroom without passing through another bedroom. Density points may be reduced at the applicant’s discretion by 25 percent for deed-restricted affordable dwelling units as follows:

Density Point Table

Dwelling Type	Density Points: Standard Dwelling	Density Points: Income-Restricted Affordable Dwelling Units
Studio and Efficiency	12	9
One-bedroom	14	11
Two-bedroom	21	16
Three-bedroom	28	21
Four or more bedroom	35	26

The density points in the right-hand column are applicable to income-restricted affordable dwelling units, provided the dwelling units meet the affordability criteria under NMC 15.242.030 regarding affordable housing requirements for developments using the flexible development standards.

2. **Approved Density.** The number of dwelling units allowable shall be determined by the hearing authority in accordance with the standards set forth in these regulations. The hearing authority may change density subsequent to preliminary plan approval only if the reduction is necessary to comply with required findings for preliminary plan approval or if conditions of preliminary plan approval cannot otherwise be satisfied.

3. **Easement Calculations.** Density calculations may include areas in easements if the applicant clearly demonstrates that such areas will benefit residents of the proposed planned unit development.
4. **Dedications.** Density calculations may include areas dedicated to the public for recreation or open space.
5. **Cumulative Density.** When approved in phases, cumulative density shall not exceed the overall density per acre established at the time of preliminary plan approval.

Applicant's Facts and Findings: This narrative includes a Density Matrix, identifying the total number of density points available to this site vs. the total number of density points necessary to develop the site as proposed. The C-2 zoning district is proposed at the same maximum allowable density as the R-3 zoning district, or 640 points per acre. The total number of density points available to this site, as detailed on the Density Matrix, is 11,859.85. The total number and type of residential dwelling units proposed requires 9,085 density points, which is less than the number of points available to this site.

This standard is met.

G. Buildings and Uses Permitted. Buildings and uses in planned unit developments are permitted as follows:

1. **R-1, R-2, R-3 and RP Zones.**
 - a. **Buildings and uses permitted outright or conditionally in the use district in which the proposed planned unit development is located.**
 - b. **Accessory buildings and uses.**
 - c. **Duplexes.**
 - d. **Dwellings, single, manufactured, and multifamily.**
 - e. **Convenience commercial services which the applicant proves will be patronized mainly by the residents of the proposed planned unit development.**

Applicant's Facts and Findings: The proposal includes single-family detached and multi-family residential uses within the R-1 and R-2 portions of this site, both of which are permitted by subsection d. above.

This standard is met.

2. **C-1, C-2 and C-3 Zones.**
 - a. **When proposed as a combination residential-commercial planned unit development, uses and buildings as listed in subsection (G)(1) of this section and those listed as permitted outright or conditionally in the use district wherein the development will be located.**
 - b. **When proposed as a residential or commercial planned unit development, uses and buildings as permitted outright or conditionally in the use district wherein the development will be located.**

Applicant's Facts and Findings: The proposed Planned Community will create a mixture of commercial development, single-family homes, cottage style single-family homes, affordable housing and multi-family homes. All uses proposed are permitted either outright

or conditionally for the C-2 portion of this property, in compliance with subsections a. and b. above.

This standard is met.

3. **M-1, M-2 and M-3 Zones. Uses and buildings as permitted outright or conditionally in the use district wherein the development will be located.**
4. **M-4 Zone. Uses and buildings as permitted outright or conditionally in the use district wherein the development will be located. Proposed sites, structures and uses must work together to support a common theme, product or industry. Applicants for an industrial planned development in M-4 must demonstrate conformance with any adopted master plan for the subject area and provide a plan describing how the proposed structures and uses will work together to support a common theme, product or industry. Prior to subdivision, covenants must limit occupancy to the types of industrial and related uses identified in the development plan.**

Applicant's Facts and Findings: No part of this site is located within the M-1, M-2, M-3 or M-4 zoning district and, as such, this standard is not applicable.

H. Professional Coordinator and Design Team. Professional coordinators and design teams shall comply with the following:

1. **Services. A professional coordinator, licensed in the State of Oregon to practice architecture, landscape architecture or engineering, shall ensure that the required plans are prepared. Plans and services provided for the city and between the applicant and the coordinator shall include:**
 - a. **Preliminary design;**
 - b. **Design development;**
 - c. **Construction documents, except for single-family detached dwellings and duplexes in subdivisions; and**
 - d. **Administration of the construction contract, including, but not limited to, inspection and verification of compliance with approved plans.**
2. **Address and Attendance. The coordinator or the coordinator's professional representative shall maintain an Oregon address, unless this requirement is waived by the director. The coordinator or other member of the design team shall attend all public meetings at which the proposed planned unit development is discussed.**
3. **Design Team Designation. Except as provided herein, a design team, which includes an architect, a landscape architect, engineer, and land surveyor, shall be designated by the professional coordinator to prepare appropriate plans. Each team member must be licensed to practice the team member's profession in the State of Oregon.**
4. **Design Team Participation and Waiver. Unless waived by the director upon proof by the coordinator that the scope of the proposal does not require the services of all members at one or more steps, the full design team shall participate in the preparation of plans at all three steps.**
5. **Design Team Change. Written notice of any change in design team personnel must be submitted to the director within three working days of the change.**

- 6. Plan Certification.** Certification of the services of the professionals responsible for particular drawings shall appear on drawings submitted for consideration and shall be signed and stamped with the registration seal issued by the State of Oregon for each professional so involved. To assure comprehensive review by the design team of all plans for compliance with these regulations, the dated cover sheet shall contain a statement of review endorsed with the signatures of all designated members of the design team.

Applicant's Facts and Findings: This Planned Unit Development application includes all of the required plans and documents. A professional engineer in the State of Oregon has ensured that all required plans are prepared, certified as necessary and submitted. The Applicant acknowledges the process for a design team change.

This standard is met.

I. Modification of Certain Regulations. Except as otherwise stated in these regulations, fence and wall provisions, general provisions pertaining to height, yards, area, lot width, frontage, depth and coverage, number of off-street parking spaces required, and regulations pertaining to setbacks specified in this code may be modified by the hearing authority, provided the proposed development will be in accordance with the purposes of this code and those regulations. Departures from the hearing authority upon a finding by the engineering director that the departures will not create hazardous conditions for vehicular or pedestrian traffic. Nothing contained in this subsection shall be interpreted as providing flexibility to regulations other than those specifically encompassed in this code.

Applicant's Facts and Findings: This Planned Unit Development proposal seeks to modify the lot size standards of the R-1, R-2 and C-2 zoning districts. The PUD further seeks to modify the minimum lot sizes, minimum lot dimensions, minimum lot frontages, maximum lot and parking area coverage and minimum setback standards. The proposed modifications are shown on the attached preliminary site plan and plat and are intended to allow for the development of smaller residential lots, allowing a lower price-point than homes built in similar zoning districts. The creativity in site design also allows for the provision of parks and open space facilities exceeding those of a typical subdivision. And finally, varying the standards allows for the construction of a street network exceeding that of a typical residential subdivision.

The proposed modifications are in accordance with the purposes of this code as they support the efficient development of land within the City Limits, provide functional, attractive housing for the residents of the City and include safe, convenient, efficient transportation design.

This standard is met.

J. Lot Coverage. Maximum permitted lot and parking area coverage as provided in this code shall not be exceeded unless specifically permitted by the hearing authority in accordance with these regulations.

Applicant's Facts and Findings: The maximum permitted lot coverage shall be maintained within the proposed development. For the R-1 lots along the northern boundary, these lots are

approximately 8,165 sf. The driveways on these lots will be approximately 20x20 feet or 400 sf. The homes within these areas will likely be two stories with first floor footprints within the 1,200-1,700 range. The maximum permitted lot coverage within the R-1 zoning district is 30% for two story homes or 40% for single story homes. Building footprints and overall lot coverage can be verified at the time of building permit issuance. The anticipated coverage for these lots will be less than the stated maximum.

The Applicant proposes a coverage of up to 70% throughout the R-2 single family portions of the plan area. The smaller lot sizes allow for the provision of a more affordable housing stock and the increased parking ensures an adequate supply for residents and visitors. The lots within the R-2 zoned portions of the plan range in size from 1,474 to 2,010 depending upon product size and lot width. The first floors of most of the plans proposed for the lots will range between 520 sf to 881 sf, depending upon the width of the lot. For a 1,474 sf lot, a 17 foot wide home will likely be provided. These homes will have a first floor area of approximately 595 sf. The parking area for these lots will be approximately 12x20 feet, or 240 sf. The overall lot coverage for these lots, with parking and the anticipated first floor area will be approximately 835 sf or 56.6%.

For a 2,010 sf lot within the R-2 zone, a 25 foot wide house will likely be located on a 30 foot wide lot. The typical anticipated footprint for these lots will be approximately 881 sf. The parking area for these houses will consist of a 20x20 foot wide driveway, or 400 sf. The total anticipated lot coverage and parking total would be approximately 1,281 sf or 63.7%.

For a 1,742 sf lot within the R-2 zone, a 21 foot wide house will likely be located on a 26 foot wide lot. The typical anticipated footprint for these lots will be approximately 748 sf. The parking area for these houses will consist of a 20x20 foot wide driveway, or 400 sf. The total anticipated lot coverage and parking total would be approximately 1,148 sf or 65.9%.

While there may be some variation in the amount of coverage provided per lot, the Applicant's request for a blanket 70% allowance for lot coverage should be sufficient to allow for adequate area for parking and building areas. The lot coverage for each individual lot can be verified at the time of building permit submission. The Applicant requests these exceptions be specifically permitted by the Planning Commission in reviewing the Planned Unit Development and Conditional Use Permit request.

This standard is met.

K. Height. Unless determined by the hearing authority that intrusion of structures into the sun exposure plane will not adversely affect the occupants or potential occupants of adjacent properties, all buildings and structures shall be constructed within the area contained between lines illustrating the sun exposure plane (see Appendix A, Figure 8 and the definition of "sun exposure plane" in NMC 15.05.030). The hearing authority may further modify heights to:

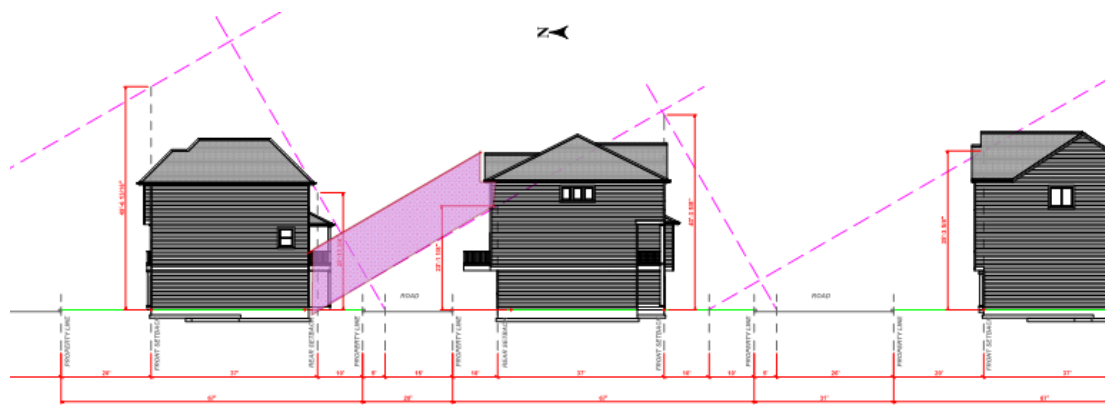
- 1. Protect lines of sight and scenic vistas from greater encroachment than would occur as a result of conventional development.**

2. **Protect lines of sight and scenic vistas.**
3. **Enable the project to satisfy required findings for approval.**

Applicant's Facts and Findings: This proposed residential Planned Unit Development includes three story single-family residential structures with reduced setbacks. This development type allows the developer to provide the housing at an approachable price point, complete the much-needed transportation system for the area and provide parks and open spaces for the residents of this and neighboring developments.

The Applicant has prepared a sun exposure diagram showing that some of the north/south oriented lots may have slight impacts on the first floors of the proposed homes. Impacts due to shade along the north/south oriented lots are anticipated to be slightly experienced on lots 36-66 and on lots 81&82. The east/west oriented lots appear to be exempt from these requirements as the sun should have full access from the south on both these lots front and rear yards.

The slight impacts to the lots identified herein are illustrated within the diagram below however the impacts to the homes is limited to first floors, in areas where garages will be located.



As described elsewhere within this narrative, the benefits of housing configured within this manner provides numerous benefits to the future residents and provides opportunities for the creation of a highly efficient and well-designed community. The Applicant's proposal for closely located buildings offers numerous benefits to the community as a whole and allows the site to meet the City's other code requirements for density, site configuration, parking, and access. Because the impacts of the shade will be limited to only the ground floors of a few properties within the plan and because the Applicant has compensated for these impacts with the provision of a significant amount of open space area, parks, and site amenities, the residents of this community will not experience any adverse effects.

L. Dedication, Improvement and Maintenance of Public Thoroughfares. Public thoroughfares shall be dedicated, improved and maintained as follows:

1. **Streets and Walkways. Including, but not limited to, those necessary for proper development of adjacent properties. Construction standards that minimize maintenance and protect the public health and safety, and setbacks as specified in NMC**

15.410.050, pertaining to special setback requirements to planned rights-of-way, shall be required.

2. Notwithstanding subsection (L)(1) of this section, a private street may be approved if the following standards are satisfied.

a. An application for approval of a PUD with at least 50 dwelling units may include a private street and the request for a private street shall be supported by the evidence required by this section. The planning commission may approve a private street if it finds the applicant has demonstrated that the purpose statements in NMC 15.240.010(A) through (D) are satisfied by the evidence in subsections (L)(2)(a)(i) through (v) of this section.

i. A plan for managing on-street parking, maintenance and financing of maintenance of the private street, including a draft reserve study showing that the future homeowners association can financially maintain the private street;

ii. A plan demonstrating that on- and off-street parking shall be sufficient for the expected parking needs and applicable codes;

iii. Proposed conditions, covenants and restrictions that include a requirement that the homeowners association shall be established in perpetuity and shall continually employ a community management association whose duties shall include assisting the homeowners association with the private street parking management and maintenance, including the enforcement of parking restrictions;

iv. Evidence that the private street is of sufficient width and construction to satisfy requirements of the fire marshal and city engineer; and

v. The PUD shall be a Class I planned community as defined in ORS Chapter 94.

b. If the PUD is established, the homeowners association shall provide an annual written report on the anniversary date of the final approval of the PUD approval to the community development director that includes the following:

i. The most recent reserve study.

ii. The name and contact information for the retained community management association.

iii. A report on the condition of the private street and any plans for maintenance of the private street.

3. Easements. As are necessary for the orderly extension of public utilities and bicycle and pedestrian access.

Applicant's Facts and Findings: This proposed PUD includes a mixture of public and private streets. As identified in subsection L.2 above, private streets may be approved if:

- a PUD proposes at least 50 dwelling units,
- has provided a plan for on-street parking, maintenance and financing of maintenance of the private street,
- demonstrates sufficient parking,
- includes CCRs addressing the private street,
- is constructed to proper standards, and
- the PUD is a Class I planned community as defined in ORS Ch. 94.

The proposal meets all of the criteria for private streets identified above. The purpose statements in NMC 15.240.010(A) through (D) include:

- encourage comprehensive planning in areas of sufficient size...

- provide flexibility in architectural design, placement and clustering of buildings, use of open space and outdoor living areas, and provision of circulation facilities, parking, storage and related site and design considerations
- promote an attractive, safe, efficient and stable environment...and
- provide for economy of shared services and facilities.

The proposed PUD is of a sufficient size to warrant comprehensive planning that is similar to traditional lot-by-lot developments in the same zoning and compatible with the surrounding environment. The inclusion of private streets makes it feasible to preserve more of the natural areas on the site. The housing design and placement, open space and outdoor living areas, circulation, parking and storage on this site are all designed to work together to form a cohesive neighborhood feel. The shared services and facilities within the development include the private streets, parking areas and open spaces. The adjacent commercial development that will be added in the future will allow for shared services as well.

All public streets are designed to City standards and proposed to be dedicated to the City.

The proposal includes all of the necessary materials to approve both the public and private streets.

This standard is met.

M. Underground Utilities. Unless waived by the hearing authority, the developer shall locate all on-site utilities serving the proposed planned unit development underground in accordance with the policies, practices and rules of the serving utilities and the Public Utilities Commission.

Applicant’s Facts and Findings: The proposal includes all on-site utilities located underground.

This standard is met.

N. Usable Outdoor Living Area. All dwelling units shall be served by outdoor living areas as defined in this code. Unless waived by the hearing authority, the outdoor living area must equal at least 10 percent of the gross floor area of each unit. So long as outdoor living area is available to each dwelling unit, other outdoor living space may be offered for dedication to the city, in fee or easement, to be incorporated in a city-approved recreational facility. A portion or all of a dedicated area may be included in calculating density if permitted under these regulations.

Applicant’s Facts and Findings: All dwelling units are served by outdoor living areas equal to at least 10 percent of the gross floor area of each unit. The single-family units will have outdoor living on individual lots. The multi-family will utilize a combination of balconies and porches as well as common outdoor living areas located throughout the overall planned unit development. All proposed dwelling units will be able to provide at least 10% of the gross floor area in outdoor living space. Outdoor living spaces for each unit can be verified at the time of building permit issuance.

This standard is met.

O. Site Modification. Unless otherwise provided in preliminary plan approval, vegetation, topography and other natural features of parcels proposed for development shall remain substantially unaltered pending final plan approval.

Applicant's Facts and Findings: This site contains several wetlands which will be a combination of preserved on site and mitigated off-site. The permitting for this is occurring separate from the land use review. This is the only substantial change to the natural features of the site.

This standard is met.

P. Completion of Required Landscaping. If required landscaping cannot be completed prior to occupancy, or as otherwise required by a condition of approval, the director may require the applicant to post a performance bond of a sufficient amount and time to assure timely completion.

Applicant's Facts and Findings: The Applicant acknowledges the possibility of a performance bond being required to assure timely completion of any delayed landscaping.

This standard is met.

Q. Design Standards. The proposed development shall meet the design requirements for multifamily residential projects identified in NMC 15.220.060. A minimum of 40 percent of the required points shall be obtained in each of the design categories.

Applicant's Facts and Findings: There are 23 possible site design points and 23 possible building design points, therefore, this project must obtain 9 each site design and building design points (40% of each).

Site Design:

Consolidated green space: 3 points
Parking lot to the back of project when viewed from 99W: 3 points
Good-quality coordinated site landscaping: 2 points
Landscaped Edges of Parking Lots: 2 points
Street trees: 1 point
Entry Accents to mark major entries to multi-family buildings: 1 point
Appropriate Outdoor Lighting: 1 point
Total Site Design Points: 13

Building Design:

Respect scale and patterns of nearby buildings by reflecting architectural styles, building details, materials and scale of existing buildings: 3 points
Break up large buildings into bays/vary planes at least every 50 feet: 3 points
Provide variation in repeated units using color, porches, balconies, windows, railings, building materials and form, alone or in combination: 3 points
Building materials: Wood or wood-like siding applied horizontally or vertically as board and batten at entry ways; shingles, as roofing; wood or wood-like sash windows; and wood or wood-like trim: 4 points
A porch at every main entry: 2 points

Total Building Design Points: 15

This standard is met as described above.

15.240.030 Preliminary plan consideration – Step one.

A. Preapplication Conference. Prior to filing an application for preliminary plan consideration, the applicant or coordinator may request through the director a preapplication conference to discuss the feasibility of the proposed planned unit development and determine the processing requirements.

Applicant's Facts and Findings: The Applicant attended a pre-application conference with the City on March 14, 2018.

This standard is met.

B. Application. An application, with the required fee, for preliminary plan approval shall be made by the owner of the affected property, or the owner's authorized agent, on a form prescribed by and submitted to the director. Applications, accompanied by such additional copies as requested by the director for purposes of referral, shall contain or have attached sufficient information as prescribed by the director to allow processing and review in accordance with these regulations. As part of the application, the property owner requesting the planned development shall file a waiver stating that the owner will not file any demand against the city under Ballot Measure 49, approved November 6, 2007, that amended ORS Chapters 195 and 197 based on the city's decision on the planned development.

Applicant's Facts and Findings: This land use application includes all required fees, forms and documentation for review of the Planned Unit Development and Conditional Use requests.

This standard is met.

C. Type III Review and Decision Criteria. Preliminary plan consideration shall be reviewed through the Type III procedure. Decisions shall include review and recognition of the potential impact of the entire development, and preliminary approval shall include written affirmative findings that:

1. The proposed development is consistent with standards, plans, policies and ordinances adopted by the city; and

Applicant's Facts and Findings: As described in this narrative, the proposed development is consistent with standards, plans, policies and ordinances adopted by the City.

This standard is met.

2. The proposed development's general design and character, including but not limited to anticipated building locations, bulk and height, location and distribution of recreation space, parking, roads, access and other uses, will be reasonably compatible with

**appropriate development of abutting properties and the surrounding neighborhood;
and**

Applicant's Facts and Findings: As discussed previously, the proposed PUD includes larger lot single-family detached homes along the northern property line, separating this development from a single-family detached development. Lot sizes will then decrease as one heads south into the site, with two multi-family residential buildings constructed in the southeast corner of the site. The homes on the site will all be designed and constructed so as to provide a cohesive design and character to the entire development. The distribution of recreation space, parking, roads, access and other uses is reasonably compatible with the appropriate development of abutting properties and the surrounding neighborhood.

This standard is met.

- 3. Public services and facilities are available to serve the proposed development. If such public services and facilities are not at present available, an affirmative finding may be made under this criterion if the evidence indicates that the public services and facilities will be available prior to need by reason of:**
- a. Public facility planning by the appropriate agencies; or**
 - b. A commitment by the applicant to provide private services and facilities adequate to accommodate the projected demands of the project; or**
 - c. Commitment by the applicant to provide for offsetting all added public costs or early commitment of public funds made necessary by the development; and**

Applicant's Facts and Findings: Public services and facilities are either available to serve the proposed development or can be reasonably conditioned to be installed and provided. The public improvement plans included with the land use submittal demonstrate full public facilities will be provided, including water, sanitary sewer, storm sewer, electricity and natural gas. Public services are currently available to serve this site, including police, fire, garbage/recycling and US Mail.

This standard is met.

- 4. The provisions and conditions of this code have been met; and**

Applicant's Facts and Findings: As discussed in detail in this narrative, the provisions and conditions of this code have been met.

This standard is met.

- 5. Proposed buildings, roads, and other uses are designed and sited to ensure preservation of features, and other unique or worthwhile natural features and to prevent soil erosion or flood hazard; and**

Applicant's Facts and Findings: The buildings, roads and other site features are located so as to preserve several wetlands and natural features and to prevent soil erosion or flood hazard.

This standard is met.

6. There will be adequate on-site provisions for utility services, emergency vehicular access, and, where appropriate, public transportation facilities; and

Applicant's Facts and Findings: The site is well provisioned for utility services, emergency vehicular access and, if the opportunity arises in the future, public transportation facilities. The public roadways are designed to public street standards and the private streets are designed to provide vehicular access. The application includes a letter from Tualatin Valley Fire & Rescue indicating that the private streets are adequate for emergency vehicle access.

This standard is met.

7. Sufficient usable recreation facilities, outdoor living area, open space, and parking areas will be conveniently and safely accessible for use by residents of the proposed development; and

Applicant's Facts and Findings: The proposed neighborhood will feature active and passive open space areas for use by the residents. The proposed design includes a civic use park which has been envisioned to provide space for community events as well as a space for featured local vendors. A smaller neighborhood park is connected to the proposed development through a network of multi-use pathways which provide pedestrian circulation and recreation throughout the site. The proposal includes multiple open spaces, most of which include a trail system within. The multi-family housing has common outdoor living areas, as well as balconies and patios for some individual units. The single-family housing has outdoor living areas adjacent to the homes.

This standard is met.

8. Proposed buildings, structures, and uses will be arranged, designed, and constructed so as to take into consideration the surrounding area in terms of access, building scale, bulk, design, setbacks, heights, coverage, landscaping and screening, and to assure reasonable privacy for residents of the development and surrounding properties.

Applicant's Facts and Findings: This site has been designed reflect the surrounding area and to provide a reasonable level of privacy for residents of the development and surrounding properties. Large lot single-family detached dwellings are proposed along the northern property line, separating this development from another large lot residential development, easing the transition from lower density to higher. The site is buffered from the residential developments to the west by the park that is adjacent to the site. The site as a whole is designed to provide safe and convenient access. The building scale, bulk, design, setbacks, heights, coverage, landscaping and screening are designed to provide harmony within the site while respecting and reflecting design patterns utilized in other nearby developments.

This standard is met.

D. Conditions. Applications may be approved subject to conditions necessary to fulfill the purpose and provisions of these regulations.

Applicant's Facts and Findings: The Applicant acknowledges the possibility of conditions imposed to fulfill the purpose and provisions of the PUD regulations. However, based on the findings identified in this narrative, the Applicant finds the proposal in full compliance with the PUD standards.

This standard is met.

15.240.040 Final plan consideration – Step two.

A. Application. An application, with the required fee, for final plan approval shall be submitted in accordance with the provisions of this code, and must be in compliance with all conditions imposed and schedules previously prescribed.

B. Referral. Referral of final plans and supportive material shall be provided to appropriate agencies and departments.

C. Decision Type I Procedure. The final plan consideration shall be reviewed through the Type I procedure. Upon receipt of the application and fee, final plans and required supportive material, the director shall approve, conditionally approve or deny the application for final plan approval. The decision of the director to approve or deny the application shall be based on written findings of compliance or noncompliance with approved preliminary plans and city standards, plans, policies and ordinances. Minor variations from approved preliminary plans may be permitted if consistent with the general character of the approved preliminary plans.

D. Conditions. Applications may be approved subject to such conditions as are necessary to fulfill the purpose and provisions of this code.

1. **Preparation and Signatures.** A duly notarized performance agreement binding the applicant, and the applicant's successors in interest, assuring construction and performance in accordance with the approved final plans shall be prepared by the city and executed by the applicant and city prior to issuance of a building permit.
2. **Return.** Unless an executed copy of the agreement is returned to the director within 60 days of its delivery to the applicant, final plan approval shall expire, necessitating the reapplication for final plan reapproval.
3. **Filing.** The director shall file a memorandum of the performance agreement with the Yamhill County recorder.
4. **Improvement Petitions and Dedications.** Improvement petitions and all documents required with respect to dedications and easements shall be submitted prior to completion of the agreement.
5. **Project Changes.** The director may permit project changes subsequent to execution of the agreement upon finding the changes substantially conform to final approved plans and comply with city standards, plans, policies and ordinances. Other modifications are subject to reapplication at the appropriate step.
6. **Compliance.** Compliance with this section is a prerequisite to the issuance of a building permit.

Applicant's Facts and Findings: The Applicant acknowledges the process for Step Two of a PUD review.

This standard is met.

Division 15.300 Zoning Districts

15.305 Zoning Use Table

Use	R-1	R-2	C-2
Residential Uses			
Dwelling, single-family detached	P(2)	P	C(4)
Dwelling, multifamily	C	P	C(4)
Parks and Open Spaces			
Open Space	P	P	P
Park	P	P	P

Notes.

(2) Limited to one per lot as a permitted use. More than one per lot allowed only through a conditional use permit or planned unit development, subject to density limits of NMC 15.405.010(B).

(4) The permitted density shall be stated on the conditional use permit.

Applicant’s Facts and Findings:

The proposed residential development requires a conditional use permit because a part of the site, including the area proposed for multi-family residential, is within the C-2 zoning district. Single-family residential development is permitted in the R-1 and R-2 zones. The Planned Unit Development proposes residential development, both single-family and multi-family, on all areas of the site (zoned R-1, R-2 and C-2).

As this application includes a conditional use permit application, this standard is met.

15.356 Bypass Interchange (BI) Overlay

Applicant’s Facts and Findings:

The frontage of this site is adjacent to the Bypass Interchange (BI) Overlay. While the provisions of the BI Overlay may apply to this site, the provisions only speak to permitted, conditional and prohibited uses. Residential development is a permitted use in the R-1 and R-2 zoning districts and a conditional use in the C-2 zoning district. Residential development is not prohibited in the BI Overlay.

This standard is met.

Division 15.400 Development Standards

15.405 Lot Requirements

15.405.010 Lot area – Lot areas per dwelling unit.

A. In the following districts, each lot or development site shall have an area as shown below except as otherwise permitted by this code:

1. In the R-1 district, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict. The average size of lots in a subdivision intended for single-family development shall not exceed 10,000 square feet.
2. In the R-2, R-3, and RP districts, each lot or development site shall have a minimum area of 3,000 square feet or as may be established by a subdistrict. In the R-2 and R-P districts, the average size of lots in a subdivision intended for single-family development shall not exceed 5,000 square feet.
3. In the AI, AR, C-1, C-2, and C-3 districts, each lot or development site shall have a minimum area of 5,000 square feet or as may be established by a subdistrict.
4. In the M-1, M-2 and M-3 districts, each lot or development site shall have a minimum area of 20,000 square feet.
5. Institutional districts shall have a minimum size of five contiguous acres in order to create a large enough campus to support institutional uses; however, additions to the district may be made in increments of any size.
6. Within the commercial zoning district(s) of the riverfront overlay subdistrict, there is no minimum lot size required, provided the other standards of this code can be met.

Applicant's Facts and Findings: This application includes a Planned Unit Development (PUD) that proposes reduced lot sizes and an increase in the allowable lot coverage standard for the R-2 zoned portions of the site. The standards for a PUD are discussed previously in this narrative.

This standard is met.

B. Lot or Development Site Area per Dwelling Unit.

1. In the R-1 district, there shall be a minimum of 5,000 square feet per dwelling unit.
2. In the R-2, AR, and R-P districts, there shall be a minimum of 3,000 square feet of lot or development site area per dwelling unit. In the R-2 and R-P districts, lots or development sites in excess of 15,000 square feet used for multiple single-family, duplex or multifamily dwellings shall be developed at a minimum of one dwelling per 5,000 square feet lot area.
3. In the R-3 district, there shall be a minimum of 1,500 square feet of lot or development site area per dwelling unit. Lots or development sites in excess of 15,000 square feet used for multiple single-family, duplex or multifamily dwellings shall be developed at a minimum of one dwelling per 2,500 square feet lot area.

C. In calculating lot area for this section, lot area does not include land within public or private streets. In calculating lot area for maximum lot area/minimum density requirements, lot area does not include land within stream corridors, land reserved for public parks or open spaces, commons buildings, land for preservation of natural, scenic, or historic resources, land on slopes exceeding 15 percent or for avoidance of identified natural hazards, land in shared access easements, public walkways, or entirely used for utilities, land held in reserve in accordance with a future development plan, or land for uses not appurtenant to the residence.

D. Lot size averaging is allowed for any subdivision. Some lots may be under the minimum lot size required in the zone where the subdivision is located, as long as the average size of all lots is at least the minimum lot size.

Applicant's Facts and Findings: This application includes a Planned Unit Development (PUD) that proposes reduced lots (development site areas) and an increase in the amount of lot coverage for the R-2 zoned portions of the plan. The standards for a PUD are discussed previously in this narrative.

This standard is met.

15.405.020 Lot area exceptions.

The following shall be exceptions to the required lot areas:

- A. Lots of record with less than the area required by this code.**
- B. Lots or development sites which, as a process of their creation, were approved in accordance with this code.**
- C. Planned unit developments, provided they conform to requirements for planned unit development approval.**

Applicant's Facts and Findings: This proposal complies with subsection C. of this criterion as a Planned Unit Development is proposed with conformity to all PUD requirements.

This standard is met.

15.405.030 Lot dimensions and frontage.

A. Width. Widths of lots shall conform to the standards of this code.

B. Depth to Width Ratio. Each lot and parcel shall have an average depth between the front and rear lines of not more than two and one-half times the average width between the side lines. Depths of lots shall conform to the standards of this code. Development of lots under 15,000 square feet are exempt from the lot depth to width ratio requirement.

C. Area. Lot sizes shall conform to standards set forth in this code. Lot area calculations shall not include area contained in public or private streets as defined by this code.

D. Frontage.

- 1. No lot or development site shall have less than the following lot frontage standards:**
 - a. Each lot or development site shall have either frontage on a public street for a distance of at least 25 feet or have access to a public street through an easement that is at least 25 feet wide. No new private streets, as defined in NMC 15.05.030, shall be created to provide frontage or access.**
 - b. Each lot in an R-2 and R-3 zone shall have a minimum width of 30 feet at the front building line.**
 - c. Each lot in an R-1, AI, or RP zone shall have a minimum width of 50 feet at the front building line.**
 - d. Each lot in an AR zone shall have a minimum width of 45 feet at the front building line.**
- 2. The above standards apply with the following exceptions:**
 - a. Legally created lots of record in existence prior to the effective date of the ordinance codified in this code.**
 - b. Lots or development sites which, as a process of their creation, were approved with sub-standard widths in accordance with provisions of this code.**
 - c. Existing private streets may not be used for new dwelling units, except private streets that were created prior to March 1, 1999, including paving to fire access**

roads standards and installation of necessary utilities, and private streets allowed in the airport residential and airport industrial districts.

Applicant's Facts and Findings: This application includes a Planned Unit Development (PUD) that proposes reduced lot dimensions, increased lot coverage, and reduced frontage requirements. Private streets are proposed to provide access to many of the lots in this development. Private streets are permitted as discussed previously in this narrative. The standards for a PUD are discussed previously in this narrative.

This standard is met.

15.405.040 Lot coverage and parking coverage requirements.

A. Purpose. The lot coverage and parking coverage requirements below are intended to:

- 1. Limit the amount of impervious surface and storm drain runoff on residential lots.**
- 2. Provide open space and recreational space on the same lot for occupants of that lot.**
- 3. Limit the bulk of residential development to that appropriate in the applicable zone.**

B. Residential uses in residential zones shall meet the following maximum lot coverage and parking coverage standards. See the definitions in NMC 15.05.030 and Appendix A, Figure 4.

- 1. Maximum Lot Coverage.**
 - a. R-1: 30 percent, or 40 percent if all structures on the lot are one-story.**
 - b. R-2 and RP: 50 percent.**
 - c. AR and R-3: 50 percent.**
- 2. Maximum Parking Coverage. R-1, R-2, R-3, and RP: 30 percent.**
- 3. Combined Maximum Lot and Parking Coverage.**
 - a. R-1, R-2 and RP: 60 percent.**
 - b. R-3: 70 percent.**

C. All other districts and uses not listed in subsection (B) of this section shall not be limited as to lot coverage and parking coverage except as otherwise required by this code.

Applicant's Facts and Findings: This application includes a Planned Unit Development (PUD) that proposes an increase to the maximum lot coverage standards to 70% within the R-2 zoned portions of the site to match the R-3 standard of 70%. This increase to the maximum is proposed to provide more housing options at an approachable price point, including some affordable housing. The standards for a PUD are discussed previously in this narrative.

This standard is met.

15.410 Yard Setback Requirements

15.410.010 General yard regulations.

A. No yard or open space provided around any building for the purpose of complying with the provisions of this code shall be considered as providing a yard or open space for any other building.

B. No yard or open space on adjoining property shall be considered as providing required yard or open space for another lot or development site under the provisions of this code.

C. No front yards provided around any building for the purpose of complying with the regulations of this code shall be used for public or private parking areas or garages, or other accessory buildings, except as specifically provided elsewhere in this code.

D. When the common property line separating two or more contiguous lots is covered by a building or a permitted group of buildings with respect to such common property line or lines does not fully conform to the required yard spaces on each side of such common property line or lines, such lots shall constitute a single development site and the yards as required by this code shall then not apply to such common property lines.

E. Dwellings Where Permitted above Nonresidential Buildings. The front and interior yard requirements for residential uses shall not be applicable; provided, that all yard requirements for the district in which such building is located are complied with.

F. In the AI airport industrial district, clear areas, safety areas, object-free areas, taxiways, parking aprons, and runways may be counted as required yards for a building, even if located upon an adjacent parcel.

G. In the AR airport residential district, clear areas, safety areas, object-free areas, taxiways, parking aprons, and runways may be counted as required yards for a building, if located upon an adjacent parcel.

15.410.020 Front yard setback.

A. Residential (see Appendix A, Figure 10).

- 1. AR, R-1 and R-2 districts shall have a front yard of not less than 15 feet. Said yard shall be landscaped and maintained.**
- 2. R-3 and RP districts shall have a front yard of not less than 12 feet. Said yard shall be landscaped and maintained.**
- 3. The entrance to a garage or carport, whether or not attached to a dwelling, shall be set back at least 20 feet from the nearest property line of the street to which access will be provided. However, the foregoing setback requirement shall not apply where the garage or carport will be provided with access to an alley only.**

B. Commercial.

- 1. All lots or development sites in the C-1 district shall have a front yard of not less than 10 feet. Said yard shall be landscaped and maintained.**
- 2. All lots or development sites in the C-2 district shall have a front yard of not less than 10 feet. No parking shall be allowed in said yard. Said yard shall be landscaped and maintained.**
- 3. All lots or development sites in the C-3 district shall have no minimum front yard requirements. The maximum allowable front yard shall be 20 feet. In the case of a through lot with two front yards, at least one front yard must meet the maximum setback requirement. In the case of three or more front yards, at least two front yards must meet the maximum setback requirements. No parking shall be allowed in said yard. Said yard shall be landscaped and maintained.**
- 4. All lots or development sites in the C-4 district will comply with the front yard requirements described in NMC 15.352.040(E).**

15.410.030 Interior yard setback.

A. Residential.

1. All lots or development sites in the AR, R- 1, R-2 and R-3 districts shall have interior yards of not less than five feet, except that where a utility easement is recorded adjacent to a side lot line, there shall be a side yard no less than the width of the easement.
2. All lots or development sites in the RP district shall have interior yards of not less than eight feet.

B. Commercial.

1. All lots or development sites in the C-1 and C-2 districts have no interior yards required where said lots or development sites abut property lines of commercially or industrially zoned property. When interior lot lines of said districts are common with property zoned residentially, interior yards of not less than 10 feet shall be required opposite the residential districts.
2. All lots or development sites in the C-3 district shall have no interior yard requirements.
3. All lots or development sites in the C-4 district will comply with the interior yard requirements described in NMC 15.352.040(E).

Applicant’s Facts and Findings: This application includes a Planned Unit Development (PUD) that proposes reduced yard setbacks of 2.5 feet within the R-2 zoned portions of the site plan. The reduced yard setbacks allow innovation in design and density of this site that promotes the purpose of the PUD to provide an approachable price point for housing, including some affordable housing. The standards for a PUD are discussed previously in this narrative.

This standard is met.

15.410.060 Vision clearance setback.

The following vision clearance standards shall apply in all zones (see Appendix A, Figure 9).

- A. At the intersection of two streets, including private streets, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 50 feet in length.
- B. At the intersection of a private drive and a street, a triangle formed by the intersection of the curb lines, each leg of the vision clearance triangle shall be a minimum of 25 feet in length.
- C. Vision clearance triangles shall be kept free of all visual obstructions from two and one-half feet to nine feet above the curb line. Where curbs are absent, the edge of the asphalt or future curb location shall be used as a guide, whichever provides the greatest amount of vision clearance.
- D. There is no vision clearance requirement within the commercial zoning district(s) located within the riverfront (RF) overlay subdistrict.

Applicant’s Facts and Findings: The proposed development maintains all required vision clearance setbacks, as demonstrated on the submitted plans.

This standard is met.

15.410.070 Yard exceptions and permitted intrusions into required yard setbacks.

The following intrusions may project into required yards to the extent and under the conditions and limitations indicated:

A. Depressed Areas. In any district, open work fences, hedges, guard railings or other landscaping or architectural devices for safety protection around depressed ramps, stairs or retaining walls may be located in required yards; provided, that such devices are not more than three and one-half feet in height.

B. Accessory Buildings. In front yards on through lots, where a through lot has a depth of not more than 140 feet, accessory buildings may be located in one of the required front yards; provided, that every portion of such accessory building is not less than 10 feet from the nearest street line.

C. Projecting Building Features. The following building features may project into the required front yard no more than five feet and into the required interior yards no more than two feet; provided, that such projections are no closer than three feet to any interior lot line:

1. Eaves, cornices, belt courses, sills, awnings, buttresses or other similar features.
2. Chimneys and fireplaces, provided they do not exceed eight feet in width.
3. Porches, platforms or landings which do not extend above the level of the first floor of the building.
4. Mechanical structures (heat pumps, air conditioners, emergency generators and pumps).

D. Fences and Walls.

1. In the residential district, a fence or wall shall be permitted to be placed at the property line or within a yard setback as follows:
 - a. Not to exceed six feet in height. Located or maintained within the required interior yards. For purposes of fencing only, lots that are corner lots or through lots may select one of the street frontages as a front yard and all other yards shall be considered as interior yards, allowing the placement of a six-foot fence on the property line. In no case may a fence extend into the clear vision zone as defined in NMC 15.410.060.
 - b. Not to exceed four feet in height. Located or maintained within all other front yards.
2. In any commercial or industrial district, a fence or wall shall be permitted to be placed at the property line or within a yard setback as follows:
 - a. Not to exceed eight feet in height. Located or maintained in any interior yard except where the requirements of vision clearance apply. For purposes of fencing only, lots that are corner lots or through lots may select one of the street frontages as a front yard and all other yards shall be considered as interior yards, allowing the placement of an eight-foot fence on the property line.
 - b. Not to exceed four feet in height. Located or maintained within all other front yards.
3. If chain link (wire-woven) fences are used, they are manufactured of corrosion-proof materials of at least 11-1/2 gauge.
4. The requirements of vision clearance shall apply to the placement of fences.

Applicant's Facts and Findings:

The Applicant acknowledges permitted intrusions into required yard setbacks. The fences surrounding the single-family residential in the R-1 and R-2 zoning areas will not exceed 6-feet in height. The fencing in the C-2 zoning areas will not exceed 8-feet in height. No fence exceeding 4-feet in height will be placed in a front yard setback.

This standard is met.

E. Parking and Service Drives (Also Refer to NMC 15.440.010 through 15.440.080).

1. In any district, service drives or accessways providing ingress and egress shall be permitted, together with any appropriate traffic control devices in any required yard.
2. In any residential district, public or private parking areas and parking spaces shall not be permitted in any required yard except as provided herein:
 - a. Required parking spaces shall be permitted on service drives in the required front yard in conjunction with any single-family or two-family dwelling on a single lot.
 - b. Recreational vehicles, boat trailers, camperettes and all other vehicles not in daily use are restricted to parking in the front yard setback for not more than 48 hours; and recreational vehicles, boat trailers, camperettes and all other vehicles not in daily use are permitted to be located in the required interior yards.
 - c. Public or private parking areas, parking spaces or any building or portion of any building intended for parking which have been identified as a use permitted in any residential district shall be permitted in any interior yard that abuts an alley, provided said parking areas, structures or spaces shall comply with NMC 15.440.070, Parking tables and diagrams (Diagrams 1 through 3).
 - d. Public or private parking areas, service drives or parking spaces which have been identified as a use permitted in any residential district shall be permitted in interior yards; provided, that said parking areas, service drives or parking spaces shall comply with other requirements of this code.
3. In any commercial or industrial district, except C-1, C-4 and M-1, public or private parking areas or parking spaces shall be permitted in any required yard (see NMC 15.410.030). Parking requirements in the C-4 district are described in NMC 15.352.040(H).
4. In the I district, public or private parking areas or parking spaces may be no closer to a front property line than 20 feet, and no closer to an interior property line than five feet.

F. Public Telephone Booths and Public Transit Shelters. Public telephone booths and public transit shelters shall be permitted; provided, that vision clearance is maintained for vehicle requirements for vision clearance.

G. Hangars within the AR airport residential district may be constructed with no yard setbacks to property lines adjacent to other properties within the airport residential or airport industrial districts

Applicant's Facts and Findings: Parking is proposed on private lots in driveways, on-street parallel, on-street in perpendicular "bays", and in designated parking lots. There are a total of 246 parking spaces proposed to serve the residential development plus either two or four parking spaces per unit within the garages of the single family homes. The location of the proposed parking areas meets the requirements of this standard.

This standard is met.

15.415 Building and Site Design Standards

15.415.010 Main buildings and uses as accessory buildings.

A. Hereinafter, any building which is the only building on a lot is a main building.

B. In any residential district except RP, there shall be only one main use per lot or development site; provided, that home occupations shall be allowed where permitted.

C. In any residential district, there shall be no more than two accessory buildings on any lot or development site.

Applicant's Facts and Findings: The proposed residential development includes only main residential-use buildings at this time. The Applicant acknowledges that no more than two accessory buildings will be permitted on any lot in the R-zoned portions of the development.

This standard is met.

15.415.020 Building height limitation.

A. Residential.

- 1. In the R-1, R-2, AR, and RP districts, no main building shall exceed 30 feet in height. Accessory buildings in the R-1, R-2, R-3, AR, and RP districts are limited to 16 feet in height, except as follows:**
 - a. Up to 800 square feet of an accessory building may have a height of up to 24 feet.**
 - b. Aircraft hangars in the AR district may be the same height as the main building.**
- 2. In the R-3 district, no main building shall exceed 45 feet in height, except, where an R-3 district abuts upon an R-1 district, the maximum permitted building height shall be limited to 30 feet for a distance of 50 feet from the abutting boundary of the aforementioned district.**
- 3. Single-family dwellings permitted in commercial or industrial districts shall not exceed 30 feet in height.**

Applicant's Facts and Findings: The proposed a combination of single-family three story attached and detached structures proposed will exceed the 30 foot height limits. The proposed buildings will be approximately 35 feet in height. The applicant has proposed a height allowance which exceeds the limitations of this section as part of an overall plan to create a planned unit development.

This standard is met.

B. Commercial and Industrial.

- 1. In the C-1 district no main building or accessory building shall exceed 30 feet in height.**
- 2. In the AI, C-2, C-3, M-1, M-2, and M-3 districts there is no building height limitation, except, where said districts abut upon a residential district, the maximum permitted building height shall not exceed the maximum building height permitted in the abutting residential district for a distance of 50 feet from the abutting boundary.**
- 3. In the C-4 district, building height limitation is described in NMC 15.352.040(J)(1).**

Applicant's Facts and Findings: The multi-family buildings proposed in the C-2 zoned portion of this site require a conditional use permit. As such, the maximum height of buildings in the C-2 zoning district will be stated in the Conditional Use Permit, as required by subsection C., below.

This standard is not applicable as a Conditional Use Permit is requested and will state the maximum height of buildings.

C. The maximum height of buildings and uses permitted conditionally shall be stated in the conditional use permits.

Applicant's Facts and Findings: The Applicant proposes a maximum building height of 48 feet for the multi-family residential structures. This maximum height shall be stated on the Conditional Use Permit.

This standard is met.

15.415.040 Public access required.

No building or structure shall be erected or altered except on a lot fronting or abutting on a public street or having access to a public street over a private street or easement of record approved in accordance with provisions contained in this code. New private streets may not be created to provide access except as allowed under NMC 15.332.020(B)(24), 15.336.020(B)(8), and in the M-4 zone. Existing private streets may not be used for access for new dwelling units, except as allowed under NMC 15.405.030. No building or structure shall be erected or altered without provisions for access roadways as required in the Oregon Fire Code, as adopted by the city.

Applicant's Facts and Findings: All proposed residential structures will have access to a public street either directly or via a connection from a private street, as permitted by the Planned Unit Development (PUD) criteria and as previously discussed in this narrative.

This standard is met.

15.420 Landscaping and Outdoor Areas

15.420.010 Required minimum standards.

A. Private and Shared Outdoor Recreation Areas in Residential Developments.

- 1. Private Areas. Each ground-level living unit in a residential development subject to a design review plan approval shall have an accessible outdoor private space of not less than 48 square feet in area. The area shall be enclosed, screened or otherwise designed to provide increased privacy for unit residents, their guests and neighbors.**
- 2. Individual and Shared Areas. Usable outdoor recreation space shall be provided for the individual and/or shared use of residents and their guests in any duplex or multifamily residential development, as follows:**
 - a. One- or two-bedroom units: 200 square feet per unit.**
 - b. Three- or more bedroom units: 300 square feet per unit.**
 - c. Storage areas are required in residential developments. Convenient areas shall be provided in residential developments for the storage of articles such as bicycles, barbecues, luggage, outdoor furniture, and the like. These shall be entirely enclosed.**
- 3. In the AR airport residential district a five percent landscaping standard is required with the goal of "softening" the buildings and making the development "green" with plants, where possible. The existence of the runway, taxiway, and approach open areas already provide generally for the 15 percent requirement.**

Applicant's Facts and Findings: Each ground-level home within the community will have a minimum of 48 square feet of private outdoor open space. The multi-family housing area provides the required shared usable outdoor recreation space. Enclosed storage areas are provided attached to the outdoor private areas in the multi-family residential and in the garages of the single-family residential.

This standard is met.

B. Required Landscaped Area. The following landscape requirements are established for all developments except single-family dwellings:

- 1. A minimum of 15 percent of the lot area shall be landscaped; provided, however, that computation of this minimum may include areas landscaped under subsection (B)(3) of this section. Development in the C-3 (central business district) zoning district and M-4 (large lot industrial) zoning district is exempt from the 15 percent landscape area requirement of this section. Additional landscaping requirements in the C-4 district are described in NMC 15.352.040(K). In the AI airport industrial district, only a five percent landscaping standard is required with the goal of "softening" the buildings and making the development "green" with plants, where possible. The existence of the runway, taxiway, and approach open areas already provide generally for the 15 percent requirement. Developments in the AI airport industrial district with a public street frontage shall have said minimum landscaping between the front property line and the front of the building.**

Applicant's Facts and Findings: A minimum of fifteen percent (15%) of the area surrounding the multi-family development will be landscaped.

This standard is met.

- 2. All areas subject to the final design review plan and not otherwise improved shall be landscaped.**

Applicant's Facts and Findings: All areas included with the final design review plan and not otherwise improved will be landscaped.

This standard is met.

- 3. The following landscape requirements shall apply to the parking and loading areas:**
 - a. A parking or loading area providing 10 or more spaces shall be improved with defined landscaped areas totaling no less than 25 square feet per parking space.**
 - b. A parking, loading area, or drive aisle which runs adjacent to a property line shall be separate from any lot line adjacent to a street by a landscaped strip at least 10 feet in interior width or the width of the required yard, whichever is greater, and any other lot line by a landscaped strip of at least five feet in interior width. See subsections (B)(3)(c) and (d) of this section for material to plant within landscape strips.**
 - c. A landscaped strip separating a parking area, loading area, or drive aisle from a street shall contain street trees spaced as appropriate to the species, not to exceed 50 feet apart on average, and a combination of shrubs and ground cover,**

or lawn. This landscaping shall provide partial screening of these areas from the street.

- d. A landscaped strip separating a parking area, loading area, or drive aisle from an interior lot line shall contain any combination of trees, shrubs, ground cover or lawn. Plant material shall be selected from at least two different plant material groups (example: trees and shrubs, or lawn and shrubs, or lawn and trees and shrubs).
- e. Landscaping in a parking or loading area shall be located in defined landscaped areas which are uniformly distributed throughout the parking or loading area.
- f. Landscaping areas in a parking lot, service drive or loading area shall have an interior width of not less than five feet.
- g. All multifamily, institutional, commercial, or industrial parking areas, service drives, or loading zones which abut a residential district shall be enclosed with a 75 percent opaque, site-obscuring fence, wall or evergreen hedge along and immediately adjacent to any interior property line which abuts the residential district. Landscape plantings must be large enough to provide the required minimum screening requirement within 12 months after initial installation. Adequate provisions shall be maintained to protect walls, fences or plant materials from being damaged by vehicles using said parking areas.
- h. An island of landscaped area shall be located to separate blocks of parking spaces. At a minimum, one deciduous shade tree per seven parking spaces shall be planted to create a partial tree canopy over and around the parking area. No more than seven parking spaces may be grouped together without an island separation unless otherwise approved by the director based on the following alternative standards:
 - i. Provision of a continuous landscaped strip, with a five-foot minimum width, which runs perpendicular to the row of parking spaces (see Appendix A, Figure 13).
 - ii. Provision of tree planting landscape islands, each of which is at least 16 square feet in size, and spaced no more than 50 feet apart on average, within areas proposed for back-to-back parking (see Appendix A, Figure 14).

Applicant's Facts and Findings:

As identified on the included site plan, the parking areas providing 10 or more spaces all meet the minimum landscaping requirements. All landscaped areas in parking areas provide a minimum of two different plant material groups, including trees, shrubs, ground cover or lawn. Fencing will be provided in compliance with this Section.

This standard is met.

- 4. **Trees, Shrubs and Ground Covers.** The species of street trees required under this section shall conform to those authorized by the city council through resolution. The director shall have the responsibility for preparing and updating the street tree species list which shall be adopted in resolution form by the city council.
 - a. Arterial and minor arterial street trees shall have spacing of approximately 50 feet on center. These trees shall have a minimum two-inch caliper tree trunk or

stalk at a measurement of two feet up from the base and shall be balled and burlapped or boxed.

- b. Collector and local street trees shall be spaced approximately 35 to 40 feet on center. These trees shall have a minimum of a one and one-half or one and three-fourths inch tree trunk or stalk and shall be balled and burlapped or boxed.
- c. Accent Trees. Accent trees are trees such as flowering cherry, flowering plum, crab-apple, Hawthorne and the like. These trees shall have a minimum one and one-half inch caliper tree trunk or stalk and shall be at least eight to 10 feet in height. These trees may be planted bare root or balled and burlapped. The spacing of these trees should be approximately 25 to 30 feet on center.
- d. All broad-leafed evergreen shrubs and deciduous shrubs shall have a minimum height of 12 to 15 inches and shall be balled and burlapped or come from a two-gallon can. Gallon-can size shrubs will not be allowed except in ground covers. Larger sizes of shrubs may be required in special areas and locations as specified by the design review board. Spacing of these shrubs shall be typical for the variety, three to eight feet, and shall be identified on the landscape planting plan.
- e. Ground Cover Plant Material. Ground cover plant material such as greening juniper, cotoneaster, minor Bowles, English ivy, hypericum and the like shall be one of the following sizes in specified spacing for that size:

Gallon cans	3 feet on center
4" containers	2 feet on center
2-1/4" containers	18" on center
Rooted cuttings	12" on center

Applicant's Facts and Findings: As identified on the submitted landscaping plan, all street trees and ground cover provided in this development will meet city standards.

This standard is met.

- 5. Automatic, underground irrigation systems shall be provided for all areas required to be planted by this section. The director shall retain the flexibility to allow a combination of irrigated and nonirrigated areas. Landscaping material used within nonirrigated areas must consist of drought-resistant varieties. Provision must be made for alternative irrigation during the first year after initial installation to provide sufficient moisture for plant establishment.
- 6. Required landscaping shall be continuously maintained.
- 7. Maximum height of tree species shall be considered when planting under overhead utility lines.
- 8. Landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) will apply to development proposals unless the institution has addressed the requirements and standards by an approved site development master

plan. With an approved site development master plan, the landscape requirements will be reviewed through an administrative Type I review process.

9. In the M-4 zone, landscaping requirements and standards for parking and loading areas (subsection (B)(3) of this section) do not apply unless within 50 feet of a residential district.

Applicant's Facts and Findings: Automatic, underground irrigation systems will be provided for all landscaped areas. Landscaping will be continuously maintained by the project's Homeowner's Association. As identified in the included landscaping plan, the trees and shrubs have been chosen for their appropriateness for the location in which they are to be planted.

This standard is met.

C. Installation of Landscaping. All landscaping required by these provisions shall be installed prior to the issuance of occupancy permits, unless security equal to 110 percent of the cost of the landscaping as determined by the director is filed with the city, insuring such installation within six months of occupancy. A security – cash, certified check, time certificates of deposit, assignment of a savings account, bond or such other assurance of completion as shall meet with the approval of the city attorney – shall satisfy the security requirements. If the installation of the landscaping is not completed within the six-month period, or within an extension of time authorized by the director, the security may be used by the city to complete the installation. Upon completion of the installation, any portion of the remaining security deposited with the city shall be returned to the applicant.

Applicant's Facts and Findings: Landscaping will be installed or assured according to City requirements prior to the issuance of occupancy permits.

This standard is met.

15.420.020 Landscaping and amenities in public rights-of-way.

The following standards are intended to create attractive streetscapes and inviting pedestrian spaces. A review body may require any of the following landscaping and amenities to be placed in abutting public rights-of-way as part of multifamily, commercial, industrial, or institutional design reviews, or for subdivisions and planned unit developments. In addition, any entity improving existing rights-of-way should consider including these elements in the project. A decision to include any amenity shall be based on comprehensive plan guidelines, pedestrian volumes in the area, and the nature of surrounding development.

A. Pedestrian Space Landscaping. Pedestrian spaces shall include all sidewalks and medians used for pedestrian refuge. Spaces near sidewalks shall provide plant material for cooling and dust control, and street furniture for comfort and safety, such as benches, waste receptacles and pedestrian-scale lighting. These spaces should be designed for short-term as well as long-term use. Elements of pedestrian spaces shall not obstruct sightlines and shall adhere to any other required city safety measures. Medians used for pedestrian refuge shall be designed for short-term use only with plant material for cooling and dust control, and pedestrian-scale lighting. The design of these spaces shall facilitate safe pedestrian crossing with lighting and

accent paving to delineate a safe crossing zone visually clear to motorists and pedestrians alike.

1. Street trees planted in pedestrian spaces shall be planted according to NMC 15.420.010(B)(4).
2. Pedestrian spaces shall have low (two and one-half feet) shrubs and ground covers for safety purposes, enhancing visibility and discouraging criminal activity.
 - a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms, and at maturity maintain growth within the planting area (refer to plant material matrix below).
 - b. Plant placement shall also adhere to clear sight line requirements as well as any other relevant city safety measures
3. Pedestrian-scale lighting shall be installed along sidewalks and in medians used for pedestrian refuge.
 - a. Pole lights as well as bollard lighting may be specified; however, the amount and type of pedestrian activity during evening hours, e.g., transit stops, nighttime service districts, shall ultimately determine the type of fixture chosen.
 - b. Luminaire styles shall match the area/district theme of existing luminaires and shall not conflict with existing building or roadway lights causing glare.
 - c. Lighting heights and styles shall be chosen to prevent glare and to designate a clear and safe path and limit opportunities for vandalism (see Appendix A, Figure 17, Typical Pedestrian Space Layouts).
 - d. Lighting shall be placed near the curb to provide maximum illumination for spaces furthest from building illumination. Spacing shall correspond to that of the street trees to prevent tree foliage from blocking light.
4. Street furniture such as benches and waste receptacles shall be provided for spaces near sidewalks only.
 - a. Furniture should be sited in areas with the heaviest pedestrian activity, such as downtown, shopping districts, and shopping centers.
 - b. Benches should be arranged to facilitate conversation between individuals with L-shaped arrangements and should face the area focal point, such as shops, fountains, plazas, and should divert attention away from nearby traffic.
5. Paving and curb cuts shall facilitate safe pedestrian crossing and meet all ADA requirements for accessibility.

Applicant's Facts and Findings:

The submitted landscaping plan identifies landscaping and amenities proposed for the public right-of-way. Due to the residential nature of the site and the amenities to be provided within the project's open spaces, the public rights-of-way have been provided with mainly plantings. Once the commercial component of this site develops, we would anticipate the need for more benches, trash receptacles and other pedestrian amenities, potentially within the rights-of-way.

This standard is met.

B. Planting Strip Landscaping. All planting strips shall be landscaped. Planting strips provide a physical and psychological buffer for pedestrians from traffic with plant material that reduces heat and dust, creating a more comfortable pedestrian environment. Planting strips

shall have different arrangements and combinations of plant materials according to the frequency of on-street parking (see Appendix A, Figures 18 and 19).

1. Planting strips which do not have adjacent parking shall have a combination of ground covers, low (two and one-half feet) shrubs and trees. Planting strips adjacent to frequently used on-street parking, as defined by city staff, shall only have trees protected by tree grates, and planting strips adjacent to infrequently used on-street parking shall be planted with ground cover as well as trees (see Appendix A, Figures 18 and 19, Typical Planting Strip Layouts). District themes or corridor themes linking individual districts should be followed utilizing a unifying plant characteristic, e.g., bloom color, habit, or fall color. When specifying thematic plant material, monocultures should be avoided, particularly those species susceptible to disease.
2. Street trees shall be provided in all planting strips as provided in NMC 15.420.010(B)(4).
 - a. Planting strips without adjacent parking or with infrequent adjacent parking shall have street trees in conjunction with ground covers and/or shrubs.
 - b. Planting strips with adjacent parking used frequently shall have only street trees protected by tree grates.
3. Shrubs and ground covers shall be provided in planting strips without adjacent parking with low (two and one-half feet) planting masses to enhance visibility, discourage criminal activity, and provide a physical as well as psychological buffer from passing traffic.
 - a. Plantings shall be 90 percent evergreen year-round, provide seasonal interest with fall color or blooms and at maturity maintain growth within the planting area.
 - b. Ground cover able to endure infrequent foot traffic shall be used in combination with street trees for planting strips with adjacent occasional parking (refer to plant material matrix below).
 - c. All plant placement shall adhere to clear sight line requirements as well as any other relevant city safety measures.

C. Maintenance. All landscapes shall be maintained for the duration of the planting to encourage health of plant material as well as public health and safety. All street trees and shrubs shall be pruned to maintain health and structure of the plant material for public safety purposes.

Applicant's Facts and Findings: As identified in the included landscaping plan, all planting strips will be landscaped with a combination of ground covers, shrubs and trees. All landscaping will be maintained for the duration of the planting and all street trees and shrubs will be pruned to maintain the health and structure of the plants.

This standard is met.

D. Exception. In the AI airport industrial district and AR airport residential district, no landscape or amenities except for grass are required for any area within 50 feet of aircraft operation areas including aircraft parking areas, taxiways, clear areas, safety areas, object-free areas, and the runway.

Applicant's Facts and Findings: This standard is not in the AI or AR zone and, as such, this standard is not applicable.

15.425 Exterior Lighting

15.425.010 Purpose.

The purpose of this chapter is to regulate the placement, orientation, distribution patterns, and fixture types of on-site outdoor lighting. The intent of this section is to provide minimum lighting standards that promote safety, utility, and security, prevent glare on public roadways, and protect the privacy of residents.

15.425.020 Applicability and exemptions.

A. Applicability. Outdoor lighting shall be required for safety and personal security in areas of assembly, parking, and traverse, as part of multifamily residential, commercial, industrial, public, recreational and institutional uses. The applicant for any Type I or Type II development permit shall submit, as part of the site plan, evidence that the proposed outdoor lighting plan will comply with this section. This information shall contain but not be limited to the following:

1. The location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture.
2. Additional information the director may determine is necessary, including but not limited to illuminance level profiles, hours of business operation, and percentage of site dedicated to parking and access.
3. If any portion of the site is used after dark for outdoor parking, assembly or traverse, an illumination plan for these areas is required. The plan must address safety and personal security.

B. Exemptions. The following uses shall be exempt from the provisions of this section:

1. Public street and airport lighting.
2. Circus, fair, carnival, or outdoor governmentally sponsored event or festival lighting.
3. Construction or emergency lighting, provided such lighting is discontinued immediately upon completion of the construction work or abatement of the emergency necessitating said lighting.
4. Temporary Lighting. In addition to the lighting otherwise permitted in this code, a lot may contain temporary lighting during events as listed below:
 - a. Grand Opening Event. A grand opening is an event of up to 30 days in duration within 30 days of issuance of a certificate of occupancy for a new or remodeled structure, or within 30 days of change of business or ownership. No lot may have more than one grand opening event per calendar year. The applicant shall notify the city in writing of the beginning and ending dates prior to the grand opening event.
 - b. Other Events. A lot may have two other events per calendar year. The events may not be more than eight consecutive days in duration, nor less than 30 days apart.
5. Lighting activated by motion sensor devices.
6. Nonconforming lighting in place as of September 5, 2000. Replacement of nonconforming lighting is subject to the requirements of NMC 15.205.010 through 15.205.100.

7. Light Trespass onto Industrial Properties. The lighting trespass standards of NMC 15.425.040 do not apply where the light trespass would be onto an industrially zoned property.

Applicant’s Facts and Findings: The land use submittal includes a lighting plan identifying the location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture. Lighting is provided in the parking areas and the multi-family residential buildings.

This standard is met.

15.425.030 Alternative materials and methods of construction, installation, or operation. The provisions of this section are not intended to prevent the use of any design, material, or methods of installation or operation not specifically prescribed by this section, provided any such alternate has been approved by the director. Alternatives must be an approximate equivalent to the applicable specific requirement of this section and must comply with all other applicable standards in this section.

Applicant’s Facts and Findings: This land use submittal does not include a request for alternative materials and methods of construction, installation or operation.

This standard is met.

15.425.040 Requirements.

A. General Requirements – All Zoning Districts.

- 1. Low-level light fixtures include exterior lights which are installed between ground level and six feet tall. Low-level light fixtures are considered nonintrusive and are unrestricted by this code.**
- 2. Medium-level light fixtures include exterior lights which are installed between six feet and 15 feet above ground level. Medium-level light fixtures must either comply with the shielding requirements of subsection (B) of this section, or the applicant shall show that light trespass from a property has been designed not to exceed one-half foot-candle at the property line.**
- 3. High-level light fixtures include exterior lights which are installed 15 feet or more above ground level. High-level light fixtures must comply with the shielding requirements of subsection (B) of this section, and light trespass from a property may not exceed one-half foot-candle at the property line.**

B. Table of Shielding Requirements.

Fixture Lamp Type	Shielded
Low/high pressure sodium, mercury vapor, metal halide and fluorescent over 50 watts	Fully
Incandescent over 160 watts	Fully
Incandescent 160 watts or less	None
Fossil fuel	None

Any light source of 50 watts or less	None
Other sources	As approved by NMC <u>15.425.030</u>

Applicant’s Facts and Findings: The land use submittal includes a lighting plan identifying the location, height, make, model, lamp type, wattage, and proposed cutoff angle of each outdoor lighting fixture. Lighting is provided in the parking areas and the multi-family residential buildings. All medium- and high-level lighting is designed to meet this section.

This standard is met.

15.430 Underground Utility Installation

15.430.010 Underground utility installation.

A. All new utility lines, including but not limited to electric, communication, natural gas, and cable television transmission lines, shall be placed underground. This does not include surface-mounted transformers, connections boxes, meter cabinets, service cabinets, temporary facilities during construction, and high-capacity electric lines operating at 50,000 volts or above.

B. Existing utility lines shall be placed underground when they are relocated, or when an addition or remodel requiring a Type II design review is proposed, or when a developed area is annexed to the city.

C. The director may make exceptions to the requirement to underground utilities based on one or more of the following criteria:

- 1. The cost of undergrounding the utility is extraordinarily expensive.**
- 2. There are physical factors that make undergrounding extraordinarily difficult.**
- 3. Existing utility facilities in the area are primarily overhead and are unlikely to be changed.**

Applicant’s Facts and Findings: All new utility lines will be located underground.

This standard is met.

15.440 Off-Street Parking, Bicycle Parking, and Private Walkways

Article I. Off-Street Parking Requirements

15.440.010 Required off-street parking.

A. Off-street parking shall be provided on the development site for all R-1, C-1, M-1, M-2 and M-3 zones. In all other zones, the required parking shall be on the development site or within 400 feet of the development site which the parking is required to serve. All required parking must be under the same ownership as the development site served except through special covenant agreements as approved by the city attorney, which bind the parking to the development site.

B. Off-street parking is not required in the C-3 district, except for:

- 1. Dwelling units meeting the requirements noted in NMC 15.305.020.**
- 2. New development which is either immediately adjacent to a residential district or separated by nothing but an alley.**

C. Within the C-4 district, the minimum number of required off-street parking spaces shall be 50 percent of the number required by NMC 15.440.030, except that no reduction is permitted for residential uses.

D. All commercial, office, or industrial developments that have more than 20 off-street parking spaces and that have designated employee parking must provide at least one preferential carpool/vanpool parking space. The preferential carpool/vanpool parking space(s) must be located close to a building entrance.

Applicant's Facts and Findings: The proposed parking for the single-family homes will be on the same lot as the use. Additional on-street parking and "guest parking" areas are proposed and will be owned and maintained according by the project's Homeowner's Association. The proposed parking for the multi-family buildings will also be on the same development site as the buildings, in a parking lot adjacent to the buildings. There are no commercial, office or industrial developments proposed at this time and, as such, no carpool/vanpool parking spaces are required.

This standard is met.

15.440.020 Parking area and service drive design.

A. All public or private parking areas, parking spaces, or garages shall be designed, laid out and constructed in accordance with the minimum standards as set forth in NMC 15.440.070.

B. Groups of three or more parking spaces, except those in conjunction with single-family or two-family dwellings on a single lot, shall be served by a service drive so that no backward movement or other maneuvering of a vehicle within a street, other than an alley, will be required. Service drives shall be designed and constructed to facilitate the flow of traffic, provide maximum safety in traffic access and egress and maximum safety of pedestrian and vehicular traffic on the site, but in no case shall two-way and one-way service drives be less than 20 feet and 12 feet, respectively. Service drives shall be improved in accordance with the minimum standards as set forth in NMC 15.440.060.

C. Gates. A private drive or private street serving as primary access to more than one dwelling unit shall not be gated to limit access, except as approved by variance.

D. In the AI airport industrial district and AR airport residential district, taxiways may be used as part of the service drive design where an overall site plan is submitted that shows how the circulation of aircraft and vehicles are safely accommodated, where security fences are located, if required, and is approved by the fire marshal, planning director, and public works director. The following submittal must be made:

- 1. A drawing of the area to be developed, including the probable location, height, and description of structures to be constructed; the location and description of a security fence or gate to secure the aircraft operations areas of off-airport property from the other nonsecured pedestrian/auto/truck areas of on-airport property; the proposed location of the proposed taxiway access in accordance with FAA specifications (refer to Federal Aviation Administration Advisory Circular No. 150/5300-13 regarding airport design, and AC/5370-10B regarding construction standards for specifications that should be used as a guideline); and the identification of the vehicular traffic pattern area clearly separated from aircraft traffic. Once specific buildings have been designed, FAA Form 7460-1, Notice of Proposed Construction or Alteration, must be**

submitted to the City of Newberg, the private airport owner, and the FAA for airspace review.

15.440.030 Parking spaces required.

Use	Minimum Parking Spaces Required
Residential Types	
<p>Dwelling, multifamily and multiple single-family dwellings on a single lot</p> <p>Studio or one-bedroom unit</p> <p>Two-bedroom unit</p> <p>Three- and four-bedroom unit</p> <p>Five- or more bedroom unit</p> <ul style="list-style-type: none"> • Unassigned spaces • Visitor spaces • On-street parking credit • Available transit service 	<p>1 per <u>dwelling unit</u></p> <p>1.5 per <u>dwelling unit</u></p> <p>2 per <u>dwelling unit</u></p> <p>0.75 spaces per bedroom</p> <p>If a development is required to have more than 10 spaces on a <u>lot</u>, then it must provide some unassigned spaces. At least 15 percent of the total required <u>parking spaces</u> must be unassigned and be located for convenient <u>use</u> by all occupants of the development. The location shall be approved by the <u>director</u>.</p> <p>If a development is required to have more than 10 spaces on a <u>lot</u>, then it must provide at least 0.2 visitor spaces per <u>dwelling unit</u>.</p> <p>On-street parking spaces may be counted toward the minimum number of required spaces for developments required to have more than 10 spaces on a lot. The on-street spaces must be directly adjoining and on the same side of the street as the subject property, must be legal spaces that meet all city standards, and cannot be counted if they could be removed by planned future street widening or a bike lane on the street.</p> <p>At the review body’s discretion, affordable housing projects may reduce the required off-street parking by 10 percent if there is an adequate continuous pedestrian route no more than 1,500 feet in length from the development to transit service with an average of less than one hour regular service intervals during commuting periods or where the development provides its own transit. A developer may qualify for this parking reduction if improvements on a proposed pedestrian route are made by the developer, thereby rendering it an adequate continuous route.</p>
<p>Dwelling, single-family or two-family</p>	<p>2 for each dwelling unit on a single lot</p>

Applicant's Facts and Findings:

All single-family development will have parking on the individual lots with at least 2 parking spaces provided on each lot, one within the garage and one within the driveway provided for each single family lot. Many of the single family homes will be provided with up to 4 parking spaces on each lot as two car garages and two car driveways will be developed on the majority of the lots within the development. The multi-family development proposes to create 51 units with 27 one bedroom homes and 24 two bedroom homes. The required parking for the one bedroom units is 27 spaces, the two bedroom units require 36 parking spaces and a total of 10 visitor parking spaces are required for a total of 74 parking spaces. As proposed, 92 spaces are provided which are on the same site as the multi-family buildings. An additional 7 on-street parking spaces are provided adjacent to the multi-family lot.

In total, the project will provide the following parking space configuration:

- Apartment Parking – 91 Spaces
- Public Street Parking – 73 Spaces
- Private Street Parking – 85 Spaces
- R-1 Lot Parking – 72 Spaces
- 17' Front Load Parking – 46 Spaces
- 17' Rear Load Parking – 219 Spaces
- 21' Front Load Spaces – 111 Spaces
- 21' Rear Load Spaces – 268 Spaces
- 25' Front Load Spaces – 52 Spaces
- 25' Rear Load Spaces – 68 Spaces

The total number of spaces may vary based upon the revisions necessary to satisfy any conditions of approval or as a result of changes to the final plat and product configuration but the current design, showing detached units, currently provides 1,085 parking spaces.

This standard is met.

15.440.060 Parking area and service drive improvements.

All public or private parking areas, outdoor vehicle sales areas, and service drives shall be improved according to the following:

A. All parking areas and service drives shall have surfacing of asphaltic concrete or Portland cement concrete or other hard surfacing such as brick or concrete pavers. Other durable and dust-free surfacing materials may be approved by the director for infrequently used parking areas. All parking areas and service drives shall be graded so as not to drain stormwater over the public sidewalk or onto any abutting public or private property.

B. All parking areas shall be designed not to encroach on public streets, alleys, and other rights-of-way. Parking areas shall not be placed in the area between the curb and sidewalk or, if there is no sidewalk, in the public right-of-way between the curb and the property line. The director may issue a permit for exceptions for unusual circumstances where the design maintains safety and aesthetics.

C. All parking areas, except those required in conjunction with a single-family or two-family dwelling, shall provide a substantial bumper which will prevent cars from encroachment on abutting private and public property.

D. All parking areas, including service drives, except those required in conjunction with single-family or two-family dwellings, shall be screened in accordance with NMC 15.420.010(B).

E. Any lights provided to illuminate any public or private parking area or vehicle sales area shall be so arranged as to reflect the light away from any abutting or adjacent residential district.

F. All service drives and parking spaces shall be substantially marked and comply with NMC 15.440.070.

G. Parking areas for residential uses shall not be located in a required front yard, except as follows:

- 1. Attached or detached single-family or two-family: parking is authorized in a front yard on a service drive which provides access to an improved parking area outside the front yard.**
- 2. Three- or four-family: parking is authorized in a front yard on a service drive which is adjacent to a door at least seven feet wide intended and used for entrance of a vehicle (see Appendix A, Figure 12).**

H. A reduction in size of the parking stall may be allowed for up to a maximum of 30 percent of the total number of spaces to allow for compact cars. For high turnover uses, such as convenience stores or fast-food restaurants, at the discretion of the director, all stalls will be required to be full-sized.

I. Affordable housing projects may use a tandem parking design, subject to approval of the community development director.

J. Portions of off-street parking areas may be developed or redeveloped for transit-related facilities and uses such as transit shelters or park-and-ride lots, subject to meeting all other applicable standards, including retaining the required minimum number of parking spaces.

Applicant's Facts and Findings: As identified on the submitted site plan and utility plans, all parking areas and service drives will be constructed to City standards. Parking areas do not encroach on public streets. Substantial parking bumpers are provided for the multi-family parking area. All parking area lighting will be designed to reduce light spill and glare away from any proposed or existing neighboring developments.

This standard is met.

Article II. Bicycle Parking

15.440.090 Purpose.

Cycling is a healthy activity for travel and recreation. In addition, by maximizing bicycle travel, the community can reduce negative effects of automobile travel, such as congestion and pollution. To maximize bicycle travel, developments must provide effective support facilities. At a minimum, developments need to provide a secure place for employees, customers, and residents to park their bicycles. [Ord. 2564, 4-15-02; Ord. 2518, 9-21-99. Code 2001 § 151.625.1.]

15.440.100 Facility requirements.

Bicycle parking facilities shall be provided for the uses shown in the following table. Fractional space requirements shall be rounded up to the next whole number.

Use	Minimum Number of Bicycle Parking Spaces Required
New multiple <u>dwelling</u> s, including additions creating additional <u>dwelling units</u>	One <u>bicycle parking space</u> for every four <u>dwelling units</u>

Applicant’s Facts and Findings: The proposed 51 multi-family dwelling units requires 13 bicycle parking spaces. This proposal includes the provision of 13 bicycle parking spaces.

This standard is met.

15.440.110 Design.

A. Bicycle parking facilities shall consist of one or more of the following:

1. A firmly secured loop, bar, rack, or similar facility that accommodates locking the bicycle frame and both wheels using a cable or U-shaped lock.
2. An enclosed locker.
3. A designated area within the ground floor of a building, garage, or storage area. Such area shall be clearly designated for bicycle parking.
4. Other facility designs approved by the director.

B. All bicycle parking spaces shall be at least six feet long and two and one-half feet wide. Spaces shall not obstruct pedestrian travel.

C. All spaces shall be located within 50 feet of a building entrance of the development.

D. Required bicycle parking facilities may be located in the public right-of-way adjacent to a development subject to approval of the authority resp

Applicant’s Facts and Findings: As shown on the included site development plans, the bicycle parking facility is designed to meet these requirements.

This standard is met.

Article III. Private Walkways

15.440.120 Purpose.

Sidewalks and private walkways are part of the city’s transportation system. Requiring their construction is part of the city’s plan to encourage multimodal travel and to reduce reliance on the automobile. Considerable funds have and will be expended to install sidewalks along the streets in the city. Yet there is little point to this expense if it is not possible for people to walk from the sidewalk to the developments along each side. The following requirements are intended to provide safe and convenient paths for employees, customers, and residents to walk from public sidewalks to development entrances, and to walk between buildings on larger sites.

15.440.130 Where required.

Private walkways shall be constructed as part of any development requiring Type II design review, including mobile home parks. In addition, they may be required as part of conditional

use permits or planned unit developments. In the airport industrial (AI) district and residential (AR) district, on-site walks are not required in aircraft operations areas, such as parking aprons, taxiways, and runways.

Applicant's Facts and Findings: As this application includes a Planned Unit Development and Conditional Use Permit, walkways and sidewalks are required.

This standard is met.

15.440.140 Private walkway design.

A. All required private walkways shall meet the applicable building code and Americans with Disabilities Act requirements.

B. Required private walkways shall be a minimum of four feet wide.

C. Required private walkways shall be constructed of portland cement concrete or brick.

D. Crosswalks crossing service drives shall, at a minimum, be painted on the asphalt or clearly marked with contrasting paving materials or humps/raised crossings. If painted striping is used, it should consist of thermoplastic striping or similar type of durable application.

E. At a minimum, required private walkways shall connect each main pedestrian building entrance to each abutting public street and to each other.

F. The review body may require on-site walks to connect to development on adjoining sites.

G. The review body may modify these requirements where, in its opinion, the development provides adequate on-site pedestrian circulation, or where lot dimensions, existing building layout, or topography preclude compliance with these standards.

Applicant's Facts and Findings: The proposal includes private walkways connecting the multi-family units to Highway 99W and connecting the western portion of the site to Spring Meadow Park. These walkways will be a minimum of 4-feet in width and will be constructed of Portland cement concrete. Crosswalks will be provided on the site to delineate the shift from public streets to private streets. Crosswalks will be painted/clearly striped in conformance with these requirements.

This standard is met.

Division 15.500 Public Improvement Standards

15.505 Public Improvements Standards

15.505.010 Purpose.

This chapter provides standards for public infrastructure and utilities installed with new development, consistent with the policies of the City of Newberg comprehensive plan and adopted city master plans. The standards are intended to minimize disturbance to natural features, promote energy conservation and efficiency, minimize and maintain development impacts on surrounding properties and neighborhoods, and ensure timely completion of adequate public facilities to serve new development.

15.505.020 Applicability.

The provision and utilization of public facilities and services within the City of Newberg shall apply to all land developments in accordance with this chapter. No development shall be

approved unless the following improvements are provided for prior to occupancy or operation, unless future provision is assured in accordance with NMC 15.505.030(E).

A. Public Works Design and Construction Standards. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall comply with the requirements of the most recently adopted Newberg public works design and construction standards.

B. Street Improvements. All projects subject to a Type II design review, partition, or subdivision approval must construct street improvements necessary to serve the development.

C. Water. All developments, lots, and parcels within the City of Newberg shall be served by the municipal water system as specified in Chapter 13.15 NMC.

D. Wastewater. All developments, lots, and parcels within the City of Newberg shall be served by the municipal wastewater system as specified in Chapter 13.10 NMC.

E. Stormwater. All developments, lots, and parcels within the City of Newberg shall manage stormwater runoff as specified in Chapters 13.20 and 13.25 NMC.

F. Utility Easements. Utility easements shall be provided as necessary and required by the review body to provide needed facilities for present or future development of the area.

G. City Approval of Public Improvements Required. No building permit may be issued until all required public facility improvements are in place and approved by the director, or are otherwise bonded for in a manner approved by the review authority, in conformance with the provisions of this code and the Newberg Public Works Design and Construction Standards.

Applicant's Facts and Findings: As identified on the included public improvement plans, the design and construction of all improvements within existing and proposed public rights-of-way and easements and all improvements to be maintained by the city are designed to comply with the requirements of the most recently adopted Newberg public works design and construction standards. All improvements for which city approval is required are proposed to the most recently adopted Newberg public works design and construction standards or, in the case of private streets, as reviewed and approved by the Newberg Engineering Department. The site development plan includes private and public streets, utility easements where necessary, connection to public water and sanitary sewer services and management of stormwater runoff.

This standard is met.

15.505.030 Street standards.

A. Purpose. The purpose of this section is to:

- 1. Provide for safe, efficient, and convenient multi-modal transportation within the City of Newberg.**
- 2. Provide adequate access to all proposed and anticipated developments in the City of Newberg. For purposes of this section, "adequate access" means direct routes of travel between destinations; such destinations may include residential neighborhoods, parks, schools, shopping areas, and employment centers.**
- 3. Provide adequate area in all public rights-of-way for sidewalks, wastewater and water lines, stormwater facilities, natural gas lines, power lines, and other utilities commonly**

and appropriately placed in such rights-of-way. For purposes of this section, "adequate area" means space sufficient to provide all required public services to standards defined in this code and in the Newberg public works design and construction standards.

B. Applicability. The provisions of this section apply to:

1. The creation, dedication, and/or construction of all public streets, bike facilities, or pedestrian facilities in all subdivisions, partitions, or other developments in the City of Newberg.
2. The extension or widening of existing public street rights-of-way, easements, or street improvements including those which may be proposed by an individual or the city, or which may be required by the city in association with other development approvals.
3. The construction or modification of any utilities, pedestrian facilities, or bike facilities in public rights-of-way or easements.
4. The designation of planter strips. Street trees are required subject to Chapter 15.420 NMC.
5. Developments outside the city that tie into or take access from city streets.

Applicant's Facts and Findings: As demonstrated in the public improvement plans, this development includes public and private streets designed to provide safe and convenient vehicular and pedestrian access. Proposed improvements include paved streets, curbs (rolled curb on private streets), sidewalks, crosswalks, planter strips with street trees and appropriate groundcover, and utility easements where necessary.

This standard is met.

C. Layout of Streets, Alleys, Bikeways, and Walkways. Streets, alleys, bikeways, and walkways shall be laid out and constructed as shown in the Newberg transportation system plan. In areas where the transportation system plan or future street plans do not show specific transportation improvements, roads and streets shall be laid out so as to conform to previously approved subdivisions, partitions, and other developments for adjoining properties, unless it is found in the public interest to modify these patterns. Transportation improvements shall conform to the standards within the Newberg Municipal Code, the Newberg public works design and construction standards, the Newberg transportation system plan, and other adopted city plans.

Applicant's Facts and Findings: While no bikeways are proposed, the streets, alleys and walkways are designed to comply with the Newberg Transportation System Plan. Streets are planned to meet with adjoining roadways and to provide for future connectivity to the east.

This standard is met.

D. Construction of New Streets. Where new streets are necessary to serve a new development, subdivision, or partition, right-of-way dedication and full street improvements shall be required. Three-quarter streets may be approved in lieu of full street improvements when the city finds it to be practical to require the completion of the other one-quarter street improvement when the adjoining property is developed; in such cases, three-quarter street improvements may be allowed by the city only where all of the following criteria are met:

1. The land abutting the opposite side of the new street is undeveloped and not part of the new development; and
2. The adjoining land abutting the opposite side of the street is within the city limits and the urban growth boundary.

Applicant's Facts and Findings: Full street improvements are proposed throughout the site.

This standard is met.

E. Improvements to Existing Streets.

1. All projects subject to partition, subdivision, or Type II design review approval shall dedicate right-of-way sufficient to improve the street to the width specified in subsection (G) of this section.
2. All projects subject to partition, subdivision, or Type II design review approval must construct a minimum of a three-quarter street improvement to all existing streets adjacent to, within, or necessary to serve the development. The director may waive or modify this requirement where the applicant demonstrates that the condition of existing streets to serve the development meets city standards and is in satisfactory condition to handle the projected traffic loads from the development. Where a development has frontage on both sides of an existing street, full street improvements are required.
3. In lieu of the street improvement requirements outlined in NMC 15.505.040(B), the review authority may elect to accept from the applicant monies to be placed in a fund dedicated to the future reconstruction of the subject street(s). The amount of money deposited with the city shall be 100 percent of the estimated cost of the required street improvements (including any associated utility improvements), and 10 percent of the estimated cost for inflation. Cost estimates used for this purpose shall be based on preliminary design of the constructed street provided by the applicant's engineer and shall be approved by the director.

Applicant's Facts and Findings: The proposal includes development of full street improvements throughout the site. The public streets will be constructed to public street standards and dedicated to the City of Newberg. The private streets will be full street improvements and will be owned and maintained by the future Homeowner's Association subject to the CC&Rs (a draft of which is submitted with this proposal).

This standard is met.

F. Improvements Relating to Impacts. Improvements required as a condition of development approval shall be roughly proportional to the impact of the development on public facilities and services. The review body must make findings in the development approval that indicate how the required improvements are roughly proportional to the impact. Development may not occur until required transportation facilities are in place or guaranteed, in conformance with the provisions of this code. If required transportation facilities cannot be put in place or be guaranteed, then the review body shall deny the requested land use application.

Applicant’s Facts and Findings: Development of the proposed street network and utilities within the development and connecting to the neighboring properties is roughly proportional to the transportation and development impacts from the development. Transportation facilities will be in place or guaranteed prior to development of the site.

This standard is met.

G. Street Width and Design Standards.

1. **Design Standards.** All streets shall conform with the standards contained in Table 15.505.030(G). Where a range of values is listed, the director shall determine the width based on a consideration of the total street section width needed, existing street widths, and existing development patterns. Preference shall be given to the higher value. Where values may be modified by the director, the overall width shall be determined using the standards under subsections (G)(2) through (10) of this section.

Table 15.505.030(G) Street Design Standards

Type of Street	Right-of-Way Width	Curb-to-Curb Pavement Width	Motor Vehicle Travel Lanes	Median Type	Striped Bike Lane (Both Sides)	On-Street Parking
Arterial Streets						
Expressway**	ODOT	ODOT	ODOT	ODOT	ODOT	ODOT
Minor arterial	69 – 80 feet	48 feet	2 lanes	TWLT or median*	Yes	No*
Collectors						
Minor	61 – 65 feet	40 feet	2 lanes	None*	Yes*	Yes*
Local Streets						
Local residential	54-60 feet	32 feet	2 lanes	None	No	Yes

2. **Motor Vehicle Travel Lanes.** Collector and arterial streets shall have a minimum width of 12 feet.
3. **Bike Lanes.** Striped bike lanes shall be a minimum of six feet wide. Bike lanes shall be provided where shown in the Newberg transportation system plan.
4. **Parking Lanes.** Where on-street parking is allowed on collector and arterial streets, the parking lane shall be a minimum of eight feet wide.
5. **Center Turn Lanes.** Where a center turn lane is provided, it shall be a minimum of 12 feet wide.
6. **Limited Residential Streets.** Limited residential streets shall be allowed only at the discretion of the review authority, and only in consideration of the following factors:
 - a. The requirements of the fire chief shall be followed.
 - b. The estimated traffic volume on the street is low, and in no case more than 600 average daily trips.
 - c. Use for through streets or looped streets is preferred over cul-de-sac streets.
 - d. Use for short blocks (under 400 feet) is preferred over longer blocks.

- e. The total number of residences or other uses accessing the street in that block is small, and in no case more than 30 residences.
 - f. On-street parking usage is limited, such as by providing ample off-street parking, or by staggering driveways so there are few areas where parking is allowable on both sides.
7. **Sidewalks.** Sidewalks shall be provided on both sides of all public streets. Minimum width is five feet.
 8. **Planter Strips.** Except where infeasible, a planter strip shall be provided between the sidewalk and the curb line, with a minimum width of five feet. This strip shall be landscaped in accordance with the standards in NMC 15.420.020. Curb-side sidewalks may be allowed on limited residential streets. Where curb-side sidewalks are allowed, the following shall be provided:
 - a. Additional reinforcement is done to the sidewalk section at corners.
 - b. Sidewalk width is six feet.
 9. **Slope Easements.** Slope easements shall be provided adjacent to the street where required to maintain the stability of the street.
 10. **Intersections and Street Design.** The street design standards in the Newberg public works design and construction standards shall apply to all public streets, alleys, bike facilities, and sidewalks in the city.
 11. **The planning commission may approve modifications to street standards for the purpose of ingress or egress to a minimum of three and a maximum of six lots through a conditional use permit.**

Applicant's Facts and Findings: Streets, sidewalks and planter strips, as identified on the proposed public improvement plans, are designed to meet the standards of the Newberg Transportation System Plan and this section.

This standard is met.

H. Modification of Street Right-of-Way and Improvement Width. The director, pursuant to the Type II review procedures of Chapter 15.220 NMC, may allow modification to the public street standards of subsection (G) of this section, when the criteria in both subsections (H)(1) and (2) of this section are satisfied:

1. **The modification is necessary to provide design flexibility in instances where:**
 - a. Unusual topographic conditions require a reduced width or grade separation of improved surfaces; or
 - b. Lot shape or configuration precludes accessing a proposed development with a street which meets the full standards of this section; or
 - c. A modification is necessary to preserve trees or other natural features determined by the city to be significant to the aesthetic character of the area; or
 - d. A planned unit development is proposed and the modification of street standards is necessary to provide greater privacy or aesthetic quality to the development.
2. **Modification of the standards of this section shall only be approved if the director finds that the specific design proposed provides adequate vehicular access based on anticipated traffic volumes.**

Applicant's Facts and Findings: Street modifications are not proposed as part of this development and, as such, this standard is not applicable.

I. Temporary Turnarounds. Where a street will be extended as part of a future phase of a development, or as part of development of an abutting property, the street may be terminated with a temporary turnaround in lieu of a standard street connection or circular cul-de-sac bulb. The director and fire chief shall approve the temporary turnaround. It shall have an all-weather surface, and may include a hammerhead-type turnaround meeting fire apparatus access road standards, a paved or graveled circular turnaround, or a paved or graveled temporary access road. For streets extending less than 150 feet and/or with no significant access, the director may approve the street without a temporary turnaround. Easements or right-of-way may be required as necessary to preserve access to the turnaround.

Applicant's Facts and Findings: The east-west minor collector dead-ends at the eastern property line for connection to future development. The easternmost north-south private street creates a hammerhead-type turnaround with the minor collector.

This standard is met.

J. Topography. The layout of streets shall give suitable recognition to surrounding topographical conditions in accordance with the purpose of this code.

Applicant's Facts and Findings: The layout of the streets takes into consideration the surrounding topography.

This standard is met.

K. Future Extension of Streets. All new streets required for a subdivision, partition, or a project requiring site design review shall be constructed to be "to and through": through the development and to the edges of the project site to serve adjacent properties for future development.

Applicant's Facts and Findings: The street network connects to the existing street to the north and future street development to the east. Connection to the west is not possible because the entire property line is adjacent to Spring Meadow Park. The connection to the south is the access from Highway 99W.

This standard is met.

L. Cul-de-Sacs.

- 1. Cul-de-sacs shall only be permitted when one or more of the circumstances listed in this section exist. When cul-de-sacs are justified, public walkway connections shall be provided wherever practical to connect with another street, walkway, school, or similar destination.**
 - a. Physical or topographic conditions make a street connection impracticable. These conditions include but are not limited to controlled access streets, railroads, steep slopes, wetlands, or water bodies where a connection could not be reasonably made.**

- b. Buildings or other existing development on adjacent lands physically preclude a connection now or in the future, considering the potential for redevelopment.
 - c. Where streets or accessways would violate provisions of leases, easements, or similar restrictions.
 - d. Where the streets or accessways abut the urban growth boundary and rural resource land in farm or forest use, except where the adjoining land is designated as an urban reserve area.
2. Cul-de-sacs shall be no more than 400 feet long (measured from the centerline of the intersection to the radius point of the bulb).
 3. Cul-de-sacs shall not serve more than 18 single-family dwellings.
Each cul-de-sac shall have a circular end with a minimum diameter of 96 feet, curb-to-curb, within a 109-foot minimum diameter right-of-way. For residential uses, a 35-foot radius may be allowed if the street has no parking, a mountable curb, curbside sidewalks, and sprinkler systems in every building along the street.

Applicant's Facts and Findings: No cul-de-sacs are proposed as part of this development and, as such, this standard is not applicable.

M. Street Names and Street Signs. Streets that are in alignment with existing named streets shall bear the names of such existing streets. Names for new streets not in alignment with existing streets are subject to approval by the director and the fire chief and shall not unnecessarily duplicate or resemble the name of any existing or platted street in the city. It shall be the responsibility of the land divider to provide street signs.

Applicant's Facts and Findings: The north-south major collector will be named Crestview Street as that is the name of the connection to the north. Other streets in the development are new and will be established with this development.

This standard is met.

N. Platting Standards for Alleys.

1. An alley may be required to be dedicated and constructed to provide adequate access for a development, as deemed necessary by the director.
2. The right-of-way width and paving design for alleys shall be not less than 20 feet wide. Slope easements shall be dedicated in accordance with specifications adopted by the city council under NMC 15.505.010 et seq.
3. Where two alleys intersect, 10-foot corner cut-offs shall be provided.
4. Unless otherwise approved by the city engineer where topographical conditions will not reasonably permit, grades shall not exceed 12 percent on alleys, and centerline radii on curves shall be not less than 100 feet.
5. All provisions and requirements with respect to streets identified in this code shall apply to alleys the same in all respects as if the word "street" or "streets" therein appeared as the word "alley" or "alleys" respectively.

Applicant's Facts and Findings: The alleys included with this proposal are all proposed as private streets owned and maintained by the Homeowner's Association.

This standard is met.

O. Platting Standards for Blocks.

- 1. Purpose.** Streets and walkways can provide convenient travel within a neighborhood and can serve to connect people and land uses. Large, uninterrupted blocks can serve as a barrier to travel, especially walking and biking. Large blocks also can divide rather than unite neighborhoods. To promote connected neighborhoods and to shorten travel distances, the following minimum standards for block lengths are established.
- 2. Maximum Block Length and Perimeter.** The maximum length and perimeters of blocks in the zones listed below shall be according to the following table. The review body for a subdivision, partition, conditional use permit, or a Type II design review may require installation of streets or walkways as necessary to meet the standards below.

Zones(s)	Maximum Block Length	Maximum Block Perimeter
R-1	800 feet	2,000 feet
R-2, R-3, RP, I	1,200 feet	3,000 feet

- 3. Exceptions.**
 - a.** If a public walkway is installed mid-block, the maximum block length and perimeter may be increased by 25 percent.
 - b.** Where a proposed street divides a block, one of the resulting blocks may exceed the maximum block length and perimeter standards provided the average block length and perimeter of the two resulting blocks do not exceed these standards.
 - c.** Blocks in excess of the above standards are allowed where access controlled streets, street access spacing standards, railroads, steep slopes, wetlands, water bodies, preexisting development, ownership patterns or similar circumstances restrict street and walkway location and design. In these cases, block length and perimeter shall be as small as practical. Where a street cannot be provided because of these circumstances but a public walkway is still feasible, a public walkway shall be provided.
 - d.** Institutional campuses located in an R-1 zone may apply the standards for the institutional zone.
 - e.** Where a block is in more than one zone, the standards of the majority of land in the proposed block shall apply.
 - f.** Where a local street plan, concept master site development plan, or specific plan has been approved for an area, the block standards shall follow those approved in the plan. In approving such a plan, the review body shall follow the block standards listed above to the extent appropriate for the plan area.

Applicant's Facts and Findings: The proposed development would create several blocks and new blocks however the patterns of natural resources present on the site and the existing development surrounding the property make a traditional subdivision with blocks meeting the standards listed above impractical. Instead of a traditional block layout, the applicant has proposed a series of blocks which are porous and interconnected with private streets, walkways, and alleys.

This standard is met.

P. Private Streets. New private streets, as defined in NMC 15.05.030, shall not be created, except as allowed by NMC 15.240.020(L)(2).

Applicant's Facts and Findings: Private streets are proposed in compliance with NMC 15.240.020(L)(2), as addressed previously in this narrative.

This standard is met.

Q. Traffic Calming.

1. The following roadway design features may be required in new street construction where traffic calming needs are anticipated:
 - a. Serpentine alignment.
 - b. Curb extensions.
 - c. Traffic diverters/circles.
 - d. Raised medians and landscaping.
 - e. Other methods shown effective through engineering studies.
2. Traffic-calming measures such as speed humps should be applied to mitigate traffic operations and/or safety problems on existing streets. They should not be applied with new street constructions.

Applicant's Facts and Findings: Traffic calming measures are not proposed as the submitted Transportation Impact Analysis demonstrates that the proposed street network is safe and effective.

This standard is met.

R. Vehicular Access Standards.

1. **Purpose.** The purpose of these standards is to manage vehicle access to maintain traffic flow, safety, roadway capacity, and efficiency. They help to maintain an adequate level of service consistent with the functional classification of the street. Major roadways, including arterials and collectors, serve as the primary system for moving people and goods within and through the city. Access is limited and managed on these roads to promote efficient through movement. Local streets and alleys provide access to individual properties. Access is managed on these roads to maintain safe maneuvering of vehicles in and out of properties and to allow safe through movements. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function.
2. **Access Spacing Standards.** Public street intersection and driveway spacing shall follow the standards in Table 15.505.R below. The Oregon Department of Transportation (ODOT) has jurisdiction of some roadways within the Newberg city limits, and ODOT access standards will apply on those roadways.

Table 15.505.R. Access Spacing Standards

Roadway Functional Classification	Area¹	Minimum Public Street Intersection Spacing (Feet)²	Driveway Setback from Intersecting Street³
Expressway	All	Refer to ODOT Access Spacing Standards	NA
Major Arterial	Urban CBD	Refer to ODOT Access Spacing Standards	
Minor Arterial	Urban CBD	500 200	150 100
Major Collector	All	400	150
Minor Collector	All	300	100

3. **Properties with Multiple Frontages.** Where a property has frontage on more than one street, access shall be limited to the street with the lesser classification.
4. **Driveways.** More than one driveway is permitted on a lot accessed from either a minor collector or local street as long as there is at least 40 feet of lot frontage separating each driveway approach. More than one driveway is permitted on a lot accessed from a major collector as long as there is at least 100 feet of lot frontage separating each driveway approach.
5. **Alley Access.** Where a property has frontage on an alley and the only other frontages are on collector or arterial streets, access shall be taken from the alley only. The review body may allow creation of an alley for access to lots that do not otherwise have frontage on a public street provided all of the following are met:
 - a. The review body finds that creating a public street frontage is not feasible.
 - b. The alley access is for no more than six dwellings and no more than six lots.
 - c. The alley has through access to streets on both ends.
 - d. One additional parking space over those otherwise required is provided for each dwelling. Where feasible, this shall be provided as a public use parking space adjacent to the alley.
6. **Closure of Existing Accesses.** Existing accesses that are not used as part of development or redevelopment of a property shall be closed and replaced with curbing, sidewalks, and landscaping, as appropriate.
7. **Shared Driveways.**
 - a. The number of driveways onto arterial streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes. Where there is an abutting developable property, a shared driveway shall be provided as appropriate. When shared driveways are required, they shall be stubbed to adjacent developable parcels to indicate future extension. "Stub" means that a driveway temporarily ends at the property line, but may be accessed or extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).
 - b. Access easements (i.e., for the benefit of affected properties) and maintenance agreements shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.

- c. No more than four lots may access one shared driveway.
 - d. Shared driveways shall be posted as no parking fire lanes where required by the fire marshal.
 - e. Where three lots or three dwellings share one driveway, one additional parking space over those otherwise required shall be provided for each dwelling. Where feasible, this shall be provided as a common use parking space adjacent to the driveway.
8. **Frontage Streets and Alleys.** The review body for a partition, subdivision, or design review may require construction of a frontage street to provide access to properties fronting an arterial or collector street.
 9. **ODOT or Yamhill County Right-of-Way.** Where a property abuts an ODOT or Yamhill County right-of-way, the applicant for any development project shall obtain an access permit from ODOT or Yamhill County.
 10. **Exceptions.** The director may allow exceptions to the access standards above in any of the following circumstances:
 - a. Where existing and planned future development patterns or physical constraints, such as topography, parcel configuration, and similar conditions, prevent access in accordance with the above standards.
 - b. Where the proposal is to relocate an existing access for existing development, where the relocated access is closer to conformance with the standards above and does not increase the type or volume of access.
 - c. Where the proposed access results in safer access, less congestion, a better level of service, and more functional circulation, both on street and on site, than access otherwise allowed under these standards.
 11. **Where an exception is approved, the access shall be as safe and functional as practical in the particular circumstance. The director may require that the applicant submit a traffic study by a registered engineer to show the proposed access meets these criteria.**

Applicant's Facts and Findings: This application proposes one access on Highway 99W. All other driveway and intersection spacing standards are met, as demonstrated on the submitted public improvement plans.

This standard is met.

S. Public Walkways.

1. **Projects subject to Type II design review, partition, or subdivision approval may be required to provide public walkways where necessary for public safety and convenience, or where necessary to meet the standards of this code. Public walkways are meant to connect cul-de-sacs to adjacent areas, to pass through oddly shaped or unusually long blocks, to provide for networks of public paths according to adopted plans, or to provide access to schools, parks or other community destinations or public areas. Where practical, public walkway easements and locations may also be used to accommodate public utilities.**
2. **Public walkways shall be located within a public access easement that is a minimum of 15 feet in width.**

3. A walk strip, not less than 10 feet in width, shall be paved in the center of all public walkway easements. Such paving shall conform to specifications in the Newberg public works design and construction standards.
4. Public walkways shall be designed to meet the Americans with Disabilities Act requirements.
5. Public walkways connecting one right-of-way to another shall be designed to provide as short and straight of a route as practical.
6. The developer of the public walkway may be required to provide a homeowners' association or similar entity to maintain the public walkway and associated improvements.
7. Lighting may be required for public walkways in excess of 250 feet in length.
8. The review body may modify these requirements where it finds that topographic, preexisting development, or similar constraints exist.

Applicant's Facts and Findings: Public walkways are proposed to connect the multi-family resident to Highway 99W, throughout the wetland/natural areas, and connecting from the development to Spring Meadow Park to the west.

This standard is met.

T. Street Trees. Street trees shall be provided for all projects subject to Type II design review, partition, or subdivision. Street trees shall be installed in accordance with the provisions of NMC 15.420.010(B)(4).

Applicant's Facts and Findings: As indicated on the submitted landscaping plans, street trees are proposed on all streets.

This standard is met.

U. Street Lights. All developments shall include underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards. The developer shall install all such facilities and make the necessary arrangements with the serving electric utility as approved by the city. Upon the city's acceptance of the public improvements associated with the development, the street lighting system, exclusive of utility-owned service lines, shall be and become property of the city unless otherwise designated by the city through agreement with a private utility.

Applicant's Facts and Findings: This proposal includes developer-installed underground electric service, light standards, wiring and lamps for street lights according to the specifications and standards of the Newberg public works design and construction standards.

This standard is met.

V. Transit Improvements. Development proposals for sites that include or are adjacent to existing or planned transit facilities, as shown in the Newberg transportation system plan or adopted local or regional transit plan, shall be required to provide any of the following, as applicable and required by the review authority:

1. Reasonably direct pedestrian connections between the transit facility and building entrances of the site. For the purpose of this section, "reasonably direct" means a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for users.
2. A transit passenger landing pad accessible to disabled persons.
3. An easement of dedication for a passenger shelter or bench if such facility is in an adopted plan.
4. Lighting at the transit facility.

Applicant's Facts and Findings: There are no transit facilities within or adjacent to this site and, as such, this standard is not applicable.

15.505.040 Public utility standards.

A. Purpose. The purpose of this section is to provide adequate services and facilities appropriate to the scale and type of development.

B. Applicability. This section applies to all development where installation, extension or improvement of water, wastewater, or private utilities is required to serve the development or use of the subject property.

C. General Standards.

1. The design and construction of all improvements within existing and proposed rights-of-way and easements, all improvements to be maintained by the city, and all improvements for which city approval is required shall conform to the Newberg public works design and construction standards and require a public improvements permit.
2. The location, design, installation and maintenance of all utility lines and facilities shall be carried out with minimum feasible disturbances of soil and site. Installation of all proposed public and private utilities shall be coordinated by the developer and be approved by the city to ensure the orderly extension of such utilities within public right-of-way and easements.

D. Standards for Water Improvements. All development that has a need for water service shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary wastewater and stormwater facilities, as applicable.

1. All developments shall be required to be linked to existing water facilities adequately sized to serve their intended area by the construction of water distribution lines, reservoirs and pumping stations which connect to such water service facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.
2. Specific location, size and capacity of such facilities will be subject to the approval of the director with reference to the applicable water master plan. All water facilities shall conform with city pressure zones and shall be looped where necessary to provide adequate pressure and fire flows during peak demand at every point within the system in the development to which the water facilities will be connected. Installation costs shall remain entirely the developer's responsibility.
3. The design of the water facilities shall take into account provisions for the future extension beyond the development to serve adjacent properties, which, in the judgment of the city, cannot be feasibly served otherwise.

4. Design, construction and material standards shall be as specified by the director for the construction of such public water facilities in the city.

E. Standards for Wastewater Improvements. All development that has a need for wastewater services shall install the facilities pursuant to the requirements of the city and all of the following standards. Installation of such facilities shall be coordinated with the extension or improvement of necessary water services and stormwater facilities, as applicable.

1. All septic tank systems and on-site sewage systems are prohibited. Existing septic systems must be abandoned or removed in accordance with Yamhill County standards.
2. All properties shall be provided with gravity service to the city wastewater system, except for lots that have unique topographic or other natural features that make gravity wastewater extension impractical as determined by the director. Where gravity service is impractical, the developer shall provide all necessary pumps/lift stations and other improvements, as determined by the director.
3. All developments shall be required to be linked to existing wastewater collection facilities adequately sized to serve their intended area by the construction of wastewater lines which connect to existing adequately sized wastewater facilities. All necessary easements required for the construction of these facilities shall be obtained by the developer and granted to the city pursuant to the requirements of the city.
4. Specific location, size and capacity of wastewater facilities will be subject to the approval of the director with reference to the applicable wastewater master plan. All wastewater facilities shall be sized to provide adequate capacity during peak flows from the entire area potentially served by such facilities. Installation costs shall remain entirely the developer's responsibility.
5. Temporary wastewater service facilities, including pumping stations, will be permitted only if the director approves the temporary facilities, and the developer provides for all facilities that are necessary for transition to permanent facilities.
6. The design of the wastewater facilities shall take into account provisions for the future extension beyond the development to serve upstream properties, which, in the judgment of the city, cannot be feasibly served otherwise.
7. Design, construction and material standards shall be as specified by the director for the construction of such wastewater facilities in the city.

F. Easements. Easements for public and private utilities shall be provided as deemed necessary by the city, special districts, and utility companies. Easements for special purpose uses shall be of a width deemed appropriate by the responsible agency. Such easements shall be recorded on easement forms approved by the city and designated on the final plat of all subdivisions and partitions. Minimum required easement width and locations are as provided in the Newberg public works design and construction standards.

Applicant's Facts and Findings: The development will connect to public utilities, including water and sanitary sewer. As demonstrated on the submitted public improvement plans, all public utilities are designed to be constructed to City standards.

This standard is met.

15.505.050 Stormwater system standards.

A. Purpose. The purpose of this section is to provide for the drainage of surface water from all development; to minimize erosion; and to reduce degradation of water quality due to sediments and pollutants in stormwater runoff.

B. Applicability. The provisions of this section apply to all developments subject to site development review or land division review and to the reconstruction or expansion of such developments that increases the flow or changes the point of discharge to the city stormwater system. Additionally, the provisions of this section shall apply to all drainage facilities that impact any public storm drain system, public right-of-way or public easement, including but not limited to off-street parking and loading areas.

C. General Requirement. All stormwater runoff shall be conveyed to a public storm wastewater or natural drainage channel having adequate capacity to carry the flow without overflowing or otherwise causing damage to public and/or private property. The developer shall pay all costs associated with designing and constructing the facilities necessary to meet this requirement.

D. Plan for Stormwater and Erosion Control. No construction of any facilities in a development included in subsection (B) of this section shall be permitted until an engineer registered in the State of Oregon prepares a stormwater report and erosion control plan for the project. This plan shall contain at a minimum:

1. The methods to be used to minimize the amount of runoff, sedimentation, and pollution created from the development both during and after construction.
2. Plans for the construction of stormwater facilities and any other facilities that depict line sizes, profiles, construction specifications, and other such information as is necessary for the city to review the adequacy of the stormwater plans.
3. Design calculations shall be submitted for all drainage facilities. These drainage calculations shall be included in the stormwater report and shall be stamped by a licensed professional engineer in the State of Oregon. Peak design discharges shall be computed based upon the design criteria outlined in the public works design and construction standards for the city.

E. Development Standards. Development subject to this section shall be planned, designed, constructed, and maintained in compliance with the Newberg public works design and construction standards.

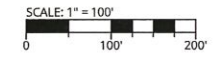
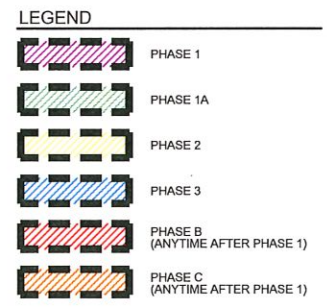
Applicant's Facts and Findings: The submitted public improvement plans include details of the proposed stormwater detention and treatment plan. The stormwater detention and treatment plan is designed to meet City standards and to preclude stormwater drainage on surrounding properties.

This standard is met.

SUMMARY AND CONCLUSION

Based upon the materials submitted herein, the Applicant respectfully requests approval from the City's Planning Commission of this application for a Planned Unit Development and a Conditional Use Permit.

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PUBLISH DATE
07.18.2018
ISSUED FOR
LAND USE DOCUMENTS

PHASING PLAN
CRESTVIEW CROSSING
PLANNED UNIT DEVELOPMENT
JT SMITH COMPANIES
NEWBERG, OR

3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
LAND USE PLANNING
5075 SW GRIFFITH DRIVE, SUITE 150, BEAVERTON, OR 97005

PROJECT INFORMATION
3J PROJECT # | 17393
TAX LOT(S) | 352W16 13800, 1100
LAND USE # | N/A
DESIGNED BY | ARS, JEJ, BMO
CHECKED BY | AJM, RGW

SHEET NUMBER
EXH

August 9, 2018

J.T. Smith Companies
5285 Meadows Road, Suite 171
Lake Oswego, Oregon 97035

Attention: Jesse Nemec

Subject: Revised Geologic and Hydrogeologic Technical Memorandum
Crestview Crossing Project
Newberg, Oregon
File No. 6748-002-03



Expires: 2/1/2019

INTRODUCTION AND PROJECT UNDERSTANDING

The purpose of this memorandum is to provide J.T. Smith Companies with GeoEngineers, Inc. hydrogeologic assessment regarding Oxberg Inc.'s concern that grading and in-filling of the wetlands on the proposed Crestview Crossing Site (the Site) may harm the adjacent property's drinking water supply capacity and increase source water contamination potential. The assessment is based on infiltrations analysis on the Site, well logs, and previous area hydrogeological studies and reports. The project area is on the north side of Highway 99W, just east of the City of Newburg (Proximity Map of Crestview Crossing Site to Oxberg Well, Figure 1).

In this memorandum we summarize:

- Groundwater and surface water interaction
- Site geology and hydrogeology
- Oxberg well log
- Near-by wells
- Site-specific infiltration rates
- Source water assessment
- Conclusions



SURFACE WATER AND GROUNDWATER INTERACTION

Surface water comes in many forms; water in wetlands, streams, rivers, lakes and oceans. Groundwater on the other hand is subsurface water and is found in pore spaces between material like soil particles, sand grains and gravels; and in fractures, cracks and broken zones in rock. If these pores and fractures are full of water subsurface groundwater conditions are described as saturated and an aquifer is present. Conversely, if the pores and fractures are not completely full, then the subsurface groundwater conditions are described as unsaturated.

Aquifers are commonly described as confined or unconfined. One of the simplest ways to understand the difference is where water occurs during well drilling. If the water level in a well after it is built is the same as it was first encountered during drilling, that aquifer would be referred to as unconfined. If water level in a well after it is built is higher than where it was first encountered during drilling, that aquifer would be referred to as confined. Unconfined aquifers also are under atmospheric pressure and they are commonly in hydraulic continuity with surface water. Conversely, confined aquifers are under higher pressure than atmospheric and have very limited to essentially no hydraulic continuity with nearby surface water.

When surface water infiltrates into the ground it moves at different rates; quickly over a period of days or weeks or slowly over months and years. The ability of a porous material (rock/silt/sand/gravel) to allow fluids to pass through it is called permeability. Gravels and sands have high permeability that allow water to move quickly horizontally while finer materials like silt and clay have a lower permeability and can create layers in the subsurface that make it difficult for water to move through. Figure 2 provides a look at how long it can take water to move through a shallow unconfined aquifer into deeper confined aquifers. Generally, in a shallow unconfined aquifer the younger the water, while in a confined aquifer the older the water is.

Figure 2 also shows a common relationship between a shallow aquifer and surface water. In cases where a shallow unconfined aquifer discharges to surface water the surface waters can be described as gaining. In the opposite case, where surface water is leaking into a shallow unconfined aquifer the surface water would be described as losing. If the underlying aquifer is confined one would generally conclude that the surface water-groundwater connection is limited to non-existent with flow paths between the two expressed in decades, centuries, or even longer.

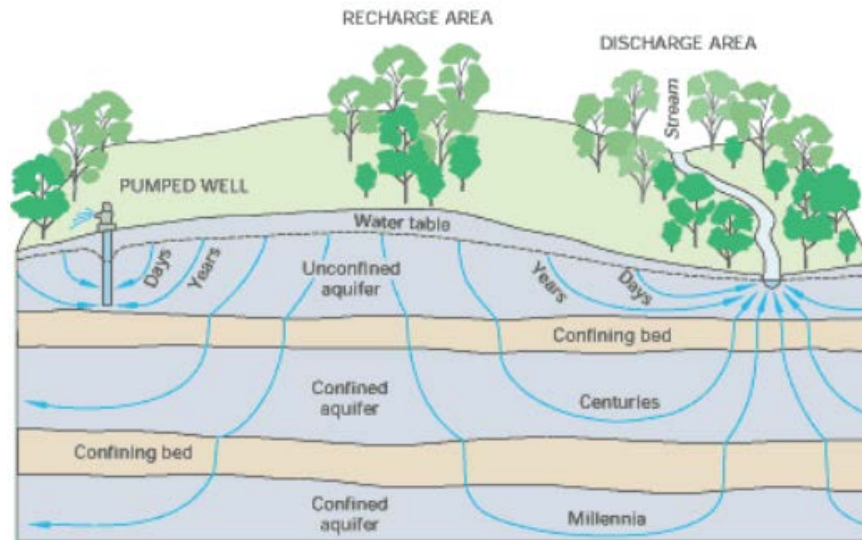


Figure 2: Groundwater Flow Paths

(Source: USGS, https://pubs.usgs.gov/circ/circ1139/htdocs/natural_processes_of_ground.htm)

SITE GEOLOGY AND HYDROGEOLOGY

The Site is located on the western edge of the Willamette Basin near the eastern edge of the Chehalem Mountains. Locally, the Site is located within the Chehalem Creek Valley, a broad alluvial drainage that forms an embayment of the Willamette Valley extending north and northwest into the Chehalem Mountains.

The *Engineering Geology of the Tualatin Valley Region, Oregon* (Schlicker and Deacon 1967) and *Groundwater in the Newberg Area, Northern Willamette Valley, Oregon* (United State Geological Survey [USGS] 1978) provide detailed descriptions of the geologic units found near the Site. For the purposes of this memorandum geologic units of interest are, from oldest to youngest, summarized as follows:

- **Columbia River Basalt Group (CRBG);** is the **dominant groundwater source** in the Newberg area (USGS 1978). The CRBG forms the bedrock of the Chehalem Mountains. The CRBG consists of a series of individual basalt lava flows which range from 40 to 100 feet thick and may locally exceed 200 feet (Oregon Water Resources Department [OWRD] 2002). The CRBG has been deformed through faulting and folding, being uplifted into the Chehalem Mountains and underlying the Willamette Valley, including the Site. Between basalt flows there are zones of breccia, ash, and broken rock called interflow zones which are the main aquifers in the CRBG. The CRBG can produce anywhere from 15 to over 1,000 gallons a minute (gpm) but in recent years declines have been observed as recharge to the deep basalt aquifer is limited (OWRD 2002).
- **Helvetia and Troutdale Formations/Basin Fill Sediments;** the Helvetia Formation consists of reddish-brown sand, silt and clay. These deposits are often difficult to distinguish from the residual soils derived from weathered CRBG. The Troutdale Formation consists mostly of silt and clay with beds of fine sand and gravel. Aquifers hosted by these strata typically have low yields so production wells are not commonly found in them (OWRD 2002).
- **Willamette Silt;** is Missoula flood silt deposits. The Willamette Silt is found in the lowlands and flanks of bordering hills up to elevations of about 250 feet above sea level. The Willamette Silt has low

permeability but high porosity and is able to sustain low yield domestic wells (OWRD 2002). The Willamette Silt can store large amounts of groundwater in the winter releasing it in the spring as seeps and shallow groundwater discharge to streams and wetlands. However, because of the low permeability it acts as a confining layer inhibiting movement of groundwater into deeper aquifers (OWRD 2002).

Based on the reports reviewed for this memorandum the primary aquifer underlying the Site is found in CRBG interflow zones and consists of one or more confined interval approximately 100 feet or more below ground surface. These confined zones are separated from the surface by low permeability dense basalt, weathered basalt, basalt altered to clay and Willamette Silt.

OXBERG WELL LOG

It is our understanding that Oxbergs concerns focus on two wells used for water supply to the adjacent property. We were able to only locate one well log in the OWRD well log database. That well log, designated YAMH 2385, is reproduced in Attachment A.

Well YAMH 2385 is reported to have been completed in December 1986. It also is reported to consist of a 12-inch-diameter borehole drilled to 30 feet below ground surface (bgs) and an 8-inch borehole drilled to 200 feet bgs. Eight-inch casing is reported to have been installed from 1 foot above the surface to 162 feet bgs and 6-inch liner with perforations is reported to have been installed from 162 to 200 feet bgs. Per the *2004 Source Water Assessment Report for Oxberg Water System Newberg, Oregon PWS #4105308* (Oregon Department of Human Services and Oregon Department of Environmental Quality [DHS and DEQ]) the cement seal from 0 to 30 feet bgs is adequate and no visible well construction deficiencies were noted.

The *2004 Source Water Assessment* indicates that well is drilled and screened in the CRBG (DHS and DEQ), producing from a 15-foot interval in the perforated liner between 162 and 200 feet bgs. Following well completion, the static depth to water was between 21 and 29 feet bgs which is many tens of feet above the water producing interval, suggesting the well is open to a confined aquifer in the CRBG, and not shallow unconfined water near the ground surface.

WELLS NEAR-BY

In addition to reviewing information about the Oxberg well we also reviewed information about other water wells near the Site. OWRD's online well database shows at least 64 water wells within $\frac{3}{4}$ quarters of a mile of the Site. Of these, 25 are less than 150 feet deep and 39 are more than 150 feet deep. Well construction, depth, water levels and pumping capacity reported for these wells is provided in Table 1 and summarized in Table 2. There are likely other wells in close proximity that are not identified during this OWRD search.



TABLE 2: SUMMARY OF NEAR-BY WELL DETAILS

	Wells <150 Feet Deep	Wells >150 Feet Deep
Number of wells	25	39
Average Constructed Depth	110.8	212.1
Average Depth of First Water (feet)	76.5	137.5
Post Drilling Static Water Level (feet)	31.7	56.9

Information source: https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx

We interpret the information shown on these well logs, and listed on Tables 1 and 2, to indicate that most of the area wells (including the Oxberg well) are in the CRBG, that these CRBG wells display evidence of confined conditions (final water levels are higher than the producing intervals), and there may be multiple groundwater producing intervals in the CRBG, one approximately 70 to 100 feet bgs and the other greater than approximately 125 feet bgs. **Based on that interpretation Oxberg well likely is completed in, and producing water from, a deeper confined CRBG aquifer underlying the Site area.**

SITE-SPECIFIC INFILTRATION RATES

GeoEngineers conducted infiltration testing to assist in evaluating the Site for stormwater infiltration design. Testing was conducted using the encased falling head and open pit infiltration testing procedures as described in the *Crestview Crossing Development Geotechnical Engineering Report* (May 12, 2018). Field measured infiltration results were 0.0 inches/hour for the encased falling head and 0.1 inches/hour for the open pit tests. Based on the fine-grained soil conditions and very low to negligible measured infiltration rates, infiltration of stormwater was not recommended to be used as the sole method of stormwater management at this site. Given these tests, we interpret that there is limited, to essentially no capacity for surface water to percolate into the ground and through the subsurface into the underlying confined CRBG aquifers.

These infiltration rates along with the ephemeral nature of the wetlands inform the surface water and groundwater connection at site; indicating that there is almost no connection and that surface water is not contributing to the deep aquifer in which the Oxberg well is pumping from.

SOURCE WATER ASSESSMENT

In addition to aquifer recharge potential we also address the potential for the proposed development to contaminate the groundwater being pumped by the Oxberg well. The Crestview Crossing project proposed drinking and fire protection water system will be supplied from Newberg's municipal water system, so there is no additional stress on the Oxberg wells. The *2004 Source Water Assessment* (DHS and DEQ) found:



1. The Oxberg well and aquifer are not considered highly sensitive to contamination based on well construction and the sensitivity analysis. This relates to directly around the well head and well house. Construction for the proposed development is located over 550 feet and downhill from the Oxberg well, and no deep subsurface work is proposed, so there is no potential for contamination at the well head during development. The second well, whose log was not available is understood to be on the northside of the lake, opposite of the proposed development.
2. Residential land use including apartments and condominiums was determined to be a low risk during the aquifer susceptibility analysis for potential contaminant sources inside the drinking water protection area.

The development of Crestview Crossing poses a low risk for potential source water contamination to the Oxberg well as no deep subsurface work is proposed and the Oxberg well is located in a confined aquifer. Drinking water will be supplied by the Newberg municipality so no new wells are planned.

CONCLUSIONS

Based on the hydrogeologic information reviewed for the Site and adjacent property where the Oxberg well is located, we conclude that there is little to no potential for the Crestview development to:

1. Impair groundwater recharge to the nearby Oxberg wells.
2. Effect groundwater quality in the Oxberg wells.

Both of these conclusions are based on the following observations:

- The Oxberg wells are in a confined aquifer that has limited to no hydraulic connection to the Site.
- In the unlikely event that there was a hydraulic connection between the confined aquifer the Oxberg wells pump water from, measured surface infiltration (recharge) rates are extremely low to non-existent, indicating little or no local recharge to the underlying confined aquifer.

If you have any questions, please do not hesitate to contact me at your convenience.

REFERENCES

DHS and DEQ. 2004. Oregon Department of Human Services Health Services Drinking Water Program and Oregon Department of Environmental Quality Water Quality Division Drinking Water Protection. *Source Water Assessment Report Summary of Analysis Oxberg Water System Newberg, Oregon Yamhill County PWS #4105308. April.*

OWRD. 2002. "Ground Water Supplies in the Willamette Basin." Oregon Water Resource Department.

Schlicker, H.G. and R.J. Deacon. 1967. "Engineering Geology of the Tualatin Valley Region, Oregon." Oregon Department of Geology and Mineral Industries, Bulletin 60, p. 103, 4 plates, 1:62,500 scale.



USGS. 1978. "Groundwater in the Newberg Area, Northern Willamette Valley, Oregon." Water Resource Department Ground Water Report No. 27. State of Oregon. Prepared in cooperation with the United State Department of the Interior Geological Survey.

Sincerely,
GeoEngineers, Inc.



Jonathon S. Travis, RG
Staff Geologist



Kevin A. Lindsey, PhD, LHg
Principal

ASC:LAH:JST:JCV:KAL:tjh

Attachments:

Table 1. Nearby Wells

Figure 1. Proximity Map of Crestview Crossing Site to Oxberg Well

Attachment A. Well Log YAMH 2385

Disclaimer: Any electronic form, facsimile or hard copy of the original document (email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.



Table 1
Nearby Wells
Crestview Crossing
Newberg, Oregon

County	Well Number	Well Tag Number	Owner Last Name	Owner First Name	Company Name	Street	City	Zip	Depth of First Water (feet)	Depth Drilled (feet)	Completed Depth (feet)	Post Static Water Level (feet)	Date Drilling Complete	Township	Range	Section	Quarter 160	Quarter 40	Tax Lot	Street of Well	Max Well Yield (gpm)
Wells Drilled Less than 150 Feet																					
YAMH	2386		DAVIS	WOODROW		PO BOX 96	NEWBERG	97132		75	75	10	9/26/1958	3S	2W	16	NE				18
YAMH	2400		ROGERS	MR WALTER		2906 HOOVER BLVD	NEWBERG	97132		80	80	5	2/14/1961	3S	2W	16	SW	SW		SPRING BROOK JUNCTION & HWY 99 W SOUTH SIDE OF ROAD	7
YAMH	2399		MEEKER	FRANK		RT 2 BOX 100	NEWBERG	97132		81	81	18	12/22/1966	3S	2W	16					7
YAMH	3866	479			PARROTT MOUNTAIN CONSTRUCTION	16260 SW BELL RD	SHERWOOD	97140	78	81	81	5	4/11/1995	3S	2W	9	SE	NE	201	29935 NE BENJAMIN RD, NEWBERG	20
YAMH	2224		FELTY	RICHARD		RT 1 BOX 312B	NEWBERG		50	88	89	8	7/28/1982	3S	2W	9	SE	SW			75
YAMH	2273		ROWLAND	JERRY			NEWBERG		50	95	95	30	2/16/1957	3S	2W	9	SW	NW		RT 2 BOX 90	19
YAMH	51		ORTIZ	MR ROBERTO	ORTIZ, MRS ROBERTO	314 S EDWARDS	NEWBERG	97132	90	97	97	72	6/5/1990	3S	2W	9	SE	NW		DAVID COURT	50
YAMH	55625	100246	WEGTER	KEN		3872 CAMISHAUM COURT	SALEM	97305	40	99	99	26	3/24/2010	3S	2W	9	SE	SW	2800	29366 PUTNAM RD, NEWBERG	1
YAMH	56262	108231	MILLS	NANCY		14615 SPRINGBROOK RD	NEWBERG	97132	62	100	98	12	5/7/2012	3S	2W	9	SW	NE	1901	14615 SPRINGBROOK RD	21
YAMH	2395		MACDONALD	MRS J C		RT 2 BOX 331	NEWBERG	97132	87	100	100	90	5/5/1973	3S	2W	16	NW	SW			11
YAMH	2256		LOOKABILL	LYLE		ROUTE 2 BOX 32	NEWBERG	97132	79	104	102	56	5/18/1979	3S	2W	9	SE	SW			20
YAMH	2397		GLEASON	ELBERT		RT 2 BOX 326	NEWBERG	97132	35	105	105	26	6/21/1972	3S	2W	16					22
YAMH	2271				YOUNG AND PAWELSKI HOMES INC				60	107	108	30	9/22/1976	3S	2W	9	SE	NW			32
YAMH	298		BURGUSS	JOE		PO BOX 506	TUALATIN	97062	65	115	115	25	5/13/1976	3S	2W	16	NE				15
YAMH	4280		BURGUSS	JOE		PO BOX 506	TUALATIN	97062	80	115	115	35	1/13/1976	3S	2W	16		NE			12
YAMH	2213		WOOD	BILL	WOOD, CATHY	1506 N COLLEGE	NEWBERG	97132	75	118	111	30	9/21/1989	3S	2W	9	SE	SE			60
YAMH	2390		BURGUSS	JOE		PO BOX 506	TUALATIN	97062	90	122	122	34	3/6/1976	3S	2W	16	NE				15
YAMH	748		BENTLEY JR	MR JAMES E	BENTLEY JR, MRS JAMES E	PO BOX 856	NEWBERG	97132	85	125	125	15	6/17/1991	3S	2W	9	SE	NW		DAVID LANE & SPRINGBACK RD (INTERSECTION)	23
YAMH	1692		COCHRAN	MR MICHAEL J	COCHRAN, MRS MICHAEL J	35101 SW LADD HILL RD	WILSONVILLE	97070		125	125	32	4/3/1992	3S	2W	9	SE	NW		14630 NE SPRINGBROOK NEWBURG (NEXT DRIVEWAY NORTH)	15
YAMH	2272		LUCIANE	JOHN B		ROUTE 2 BOX 320	NEWBERG	97132	124	126	126	22	6/11/1973	3S	2W	9	SE	NW			10
YAMH	52152	26714	ALEXANDER	DON		1282 3RD ST 56	LAFAYETTE	97127	130	137	137	19	5/4/2000	3S	2W	16	SE	NE	1100	1217 KLIMEK DR, NEWBERG	25
YAMH	113		CARTER	MR JOHN	CARTER, MRS KELLI	10035 SW GARRETT #6	TIGARD	97223	68	143	143	32	9/13/1990	3S	2W	9	SE	NW		OFF SPRINGBROOK RD (1ST DIRT RD ON R, PAST BENJAMIN RD)	26
YAMH	2393		FORTUNE, JR	JOHN J		RT 2 BOX 321 C	NEWBERG	97132	105	145	145	65	2/27/1975	3S	2W	16	NE	NE			9
YAMH	2398		WAGNER	ED		RT 3 BOX 143	NEWBERG	97132		148	148	38	9/11/1965	3S	2W	16					10
YAMH	2383		DOANE	GARY		455 SE 32ND	HILLSBORO	97123		149	149	58	9/17/1949	3S	2W	16					18
Wells Drilled Greater than 100 Feet																					
YAMH	2396				LEAVITE AND WIDING	2712 NE SANDY	PORTLAND		63	150	150	61	12/17/1970	3S	2W	16					17
YAMH	2236		HUMPRES	JIM		3965 SW 202ND	ALOHA	97007	60	151	152	47	6/12/1975	3S	2W	9	SE				50
YAMH	299		BIXBY	ETHEL			NEWBERG	97132	87	152	152	35	5/5/1973	3S	2W	16					14
YAMH	2387		DAVIS	WOODROW W		ROUTE 2 BOX 96	NEWBERG	97132		155	155	22	8/28/1958	3S	2W	16	NE				5
YAMH	278		MILLER	TOM		1478 N SHERWOOD BLVD	SHERWOOD	97140	120	155	155	60	1/12/1987	3S	2W	9	SE	SW			20
YAMH	3901	2379	GAMBLE	MR VIC	GAMBLE, MRS VIC	10260 SW NIMBUS BLDG M1	TIGARD	97223	140	160	152	28	6/2/1995	3S	2W	9	SW	SE		0.5 MI N ON BENJAMIN RD OFF HWY 99W	100
YAMH	2269		STEELE	JAMES O		RT 2 BOX 312 A2	NEWBERG	97132	126	160	160	85	5/31/1978	3S	2W	9	SE	SW	3100		15
YAMH	2268				B & H CONSTRUCTION	222 NW 139TH ST	PORTLAND		156	162	162	90	11/14/1974	3S	2W	9	SE	NW			40
YAMH	2216		WAGNER	KARL		2301 JODI COURT	NEWBERG	97132	68	163	163	17	5/11/1987	3S	2W	9	SE	SE		29705 PUTNAM RD, NEWBERG	25
YAMH	767		WAGNER	MARY JANE		29705 PUTMAN RD NE	NEWBERG	97132	118	168	168	34	6/29/1991	3S	2W	9	SE	SE	3305	29705 PUTMAN RD NE	20

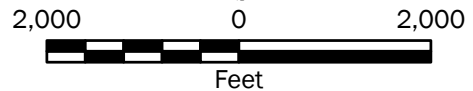
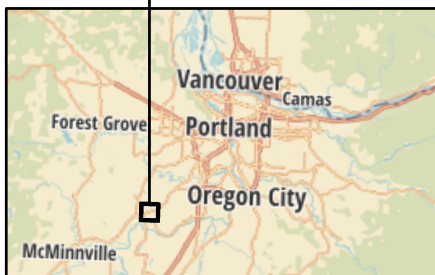
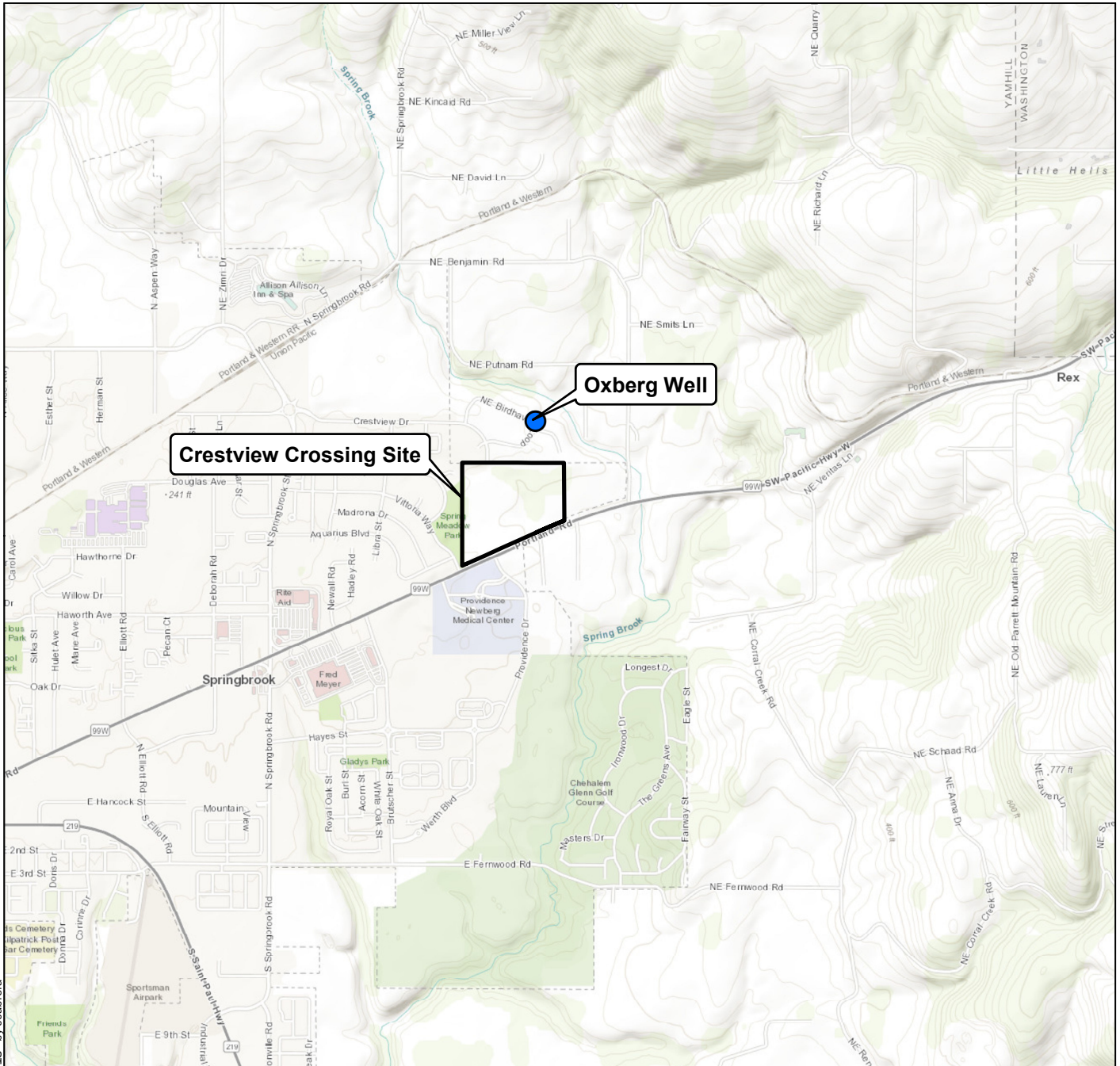
County	Well Number	Well Tag Number	Owner Last Name	Owner First Name	Company Name	Street	City	Zip	Depth of First Water (feet)	Depth Drilled (feet)	Completed Depth (feet)	Post Static Water Level (feet)	Date Drilling Complete	Township	Range	Section	Quarter 160	Quarter 40	Tax Lot	Street of Well	Max Well Yield (gpm)
YAMH	50354	8785	PECK	THOMAS		16050 PIT RD	HILLSBORO	97123	138	168		61	9/24/1996	3S	2W	9	SE	SE	4100	JUST EAST OF 29730 BENJAMIN RD, NEWBERG	120
YAMH	2389		SPANGLER	WILLIAM					92	170	170	62	1/20/1978	3S	2W	16	NW	SW			10
YAMH	2394		RETRY	ROBERT		312 N EDWARDS	NEWBERG	97132	103	170	170	50	4/8/1975	3S	2W	16					2
YAMH	3268		HOST	MR GARY A	HOST, MRS GARY A	8605 SW MANDAN DR	TUALATIN	97062	140	172	170	1	11/3/1994	3S	2W	9	SW	SE			100
YAMH	2211		BROWN	GLENN		29730 BENJAMIN RD	NEWBERG	97132	164	174	174	64	12/19/1989	3S	2W	9	SE	SE		29730 BENJAMIN RD	26
YAMH	2215		JOHNSON	EVERT	JOHNSON, ESTHER	29955 NE BENJAMIN RD	NEWBERG	97132	140	175	175	22	5/17/1989	3S	2W	9	SE	NE		29955 NE BENJAMIN RD	24
YAMH	50181	3228	DOBBINS	DAVE		29830 NE BENJAMIN	NEWBERG	97132	155	180	180	44	6/29/1996	3S	2W	9	SE	SE	3209	29830 NE BENJAMIN	100
YAMH	52308	37663	LOUIS	RON		739 CROSSBROOK DR	MORGEA	94556	115	183	183	115	8/10/2000	3S	2W	9	SW	NW	1800	3220 ZIMRI DR, NEWBERG	50
YAMH	54510	85530	NEWTON	FRED		30875 SW HEATER RD	SHERWOOD	97140	103	183	176	33	6/22/2006	3S	2W	9	SE	SE	3303	29815 SE PUTMAN, NEWBERG	90
YAMH	2219		SMITH	ROBERT D		RT 1 BOX 49	NEWBERG	97132	85	185	185	35	10/12/1982	3S	2W	9	SE		3900	RT 4 BOX 313 C; CO RD 54	50
YAMH	279		LUU	NGUAN		503 SE 47TH	PORTLAND	97215	140	195	196	66	11/3/1981	3S	2W	9	SE	SW		RT 2, NEWBERG	20
YAMH	2385				OXBERG INC.	PO BOX 467	NEWBERG	97132		200	200	29	12/11/1986	3S	2W	16				4100 E CRESTVIEW NEWBERG	45
YAMH	3169		DAMNAN	MR GARY	DAMNAN, MRS GARY	7750 SW 171ST	ALOHA	97223	145	200	200	52	8/4/1994	3S	2W	16	NE	NE			25
YAMH	2270		STEELE	JAMES O		607 N COLLEGE	NEWBERG	97132	183	203	204	51	7/12/1974	3S	2W	9	SE				30
YAMH	2391		RUBENS	CHRIS		118 W LEXINGTON	ASTORIA	97103	140	205	205	20	5/3/1977	3S	2W	16					30
YAMH	50344	8784	WISE	GEORGE	WISE, JAMIE	12287 SW LANSDOWNE LANE	TIGARD	97223	135	207	207	99	9/20/1996	3S	2W	9	SW	NE	1900	SPRINGBROOK RD	100
YAMH	3894		JACOBSEN	MRS JAN		4300 E PORTLAND RD	NEWBERG	97132	170	215	215	28	5/31/1995	3S	2W	16	SE	NW			30
YAMH	56487	106624			PROVIDENCE HEALTH SYSTEM	1001 PROVIDENCE DR	NEWBERG	97132		216	216	19	3/8/2013	3S	2W	16			1902	1001 PROVIDENCE DR; 150 YDS ON L	50
YAMH	50746	13498	ATZEN	NAN	ATZEN, TERRY	29365 NE PUTNAM RD	NEWBERG	97132	85	217	217	58	8/13/1997	3S	2W	9	SE	SW	3101	29365 NE PUTNAM RD	5
YAMH	2388		ROLOW	MR MIKE	ROLOW, MRS MIKE	RT 4 BOX 333C	NEWBERG		97	222	222	12	7/15/1985	3S	2W	16	SE	NW	100	RT 4 BOX 333C	28
YAMH	52800	51231	LYDA	JOHN		900 NE CHEHALEM DR	NEWBERG	97132	180	260	260	7	10/16/2001	3S	2W	16	SE	NE	900	1100 KLIMEK LANE	12
YAMH	2392		PETRY	ROBERT		312 N EDWARDS	NEWBERG	97132	270	290	290	50	4/14/1975	3S	2W	16					11
YAMH	138		COFFIELD	BILL		3104 ZIMIRI DRIVE	NEWBERG	97132		290	290	158	9/18/1990	3S	2W	9	SE	NW			2
YAMH	280		STIVERSON	JIM		RT 2 BOX 302C	NEWBERG	97132	274	290	290	160	11/16/1978	3S	2W	9	SE	NW			17
YAMH	55624	100245	MILLS	GLEN		15125 NE SPRINGBROOK LANE	NEWBERG	97132	138	300	300	102	3/22/2010	3S	2W	9	SE	SW	1604	NEAR 15125 NE SPRINGBROOK LANE	75
YAMH	362		BURGUSS	JOE		PO BOX 506	TUALATIN	97062	225	315	315	29	2/2/1976	3S	2W	16	NE				2
YAMH	281		MCKAY	GEORGE		RT 2 BOX 307	NEWBERG	97132	291	324	317	160	8/22/1984	3S	2W	9	SE				110
YAMH	900		PETRY	BOB		29465 NE PUTNAM RD	NEWBERG	97132	106	338	338	80	11/14/1991	3S	2W	9	SE	SE		29465 NE PUTNAM RD	7
YAMH	52306	37664	LOUIS	RON		739 CROSSBROOK DR	MORGEA	94556	62	424	424	75	8/11/2000	3S	2W	9	SW	NW	1800	3104 ZIMRI DR, NEWBERG	5

Notes:

Bold - Oxberg Well YAMH 2385

Source: Oregon Water Resource Well Log Query (https://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx)

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Proximity Map of Crestview Crossing Site to Oxberg Well

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2017
 Topo base map from ESRI.

Projection: NAD 1983 UTM Zone 10N

Crestview Crossing
 Newberg, Oregon



Figure 1

ATTACHMENT A
Well Log YAMH 2385

STATE OF OREGON
WELL REPORT
(as required by ORS 537.765)

NOV 26 1986

WELL # 2

12/24-86

OWNER: WATER RESOURCES DEPT.
NAME: OXBERG
Address: P.O. Box 467
City: NEWBERG State: OREG Zip: 97132

(2) TYPE OF WORK:
 New Well Deepen Recondition Abandon

(3) DRILL METHOD
 Rotary Air Rotary Mud Cable
 Other

(4) PROPOSED USE:
 Domestic Community Industrial Irrigation
 Thermal Injection Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval Yes No Depth of Completed Well 200 ft.
Explosives used Yes No Type _____ Amount _____

HOLE		SEAL		Amount sacks or pounds
Diameter	From To	Material	From To	
12	0	139 CEMENT	0	20
8	139	200		

How was seal placed: Method A B C D E
 Other

Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from 30 ft. to 139 ft. Size of gravel 3/4" to 1/4"

(6) CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing: 8	+1	162	250	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Liner: 6	160	200	160 LB	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(7) PERFORATIONS/SCREENS:
 Perforations Method MILLS KNIFE
 Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
50	162		475	1/4"		<input checked="" type="checkbox"/>	<input type="checkbox"/>
162	200		160	1/4"		<input type="checkbox"/>	<input checked="" type="checkbox"/>

(8) WELL TESTS: Minimum testing time is 1 hour
 Pump Bailer Air Flowing Artesian
Yield gal/min _____ Drawdown _____ Drill stem at _____ Time _____
45 50 1 hr.

Temperature of water _____ Depth Artesian Flow Found: _____
Was a water analysis done? Yes By whom _____
Did any strata contain water not suitable for intended use? Too little
 Salty Muddy Odor Colored Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County YAMHILL Latitude _____ Longitude _____
Township 3S N or S, Range 2W E or W, WM.
Section 16 1/4 _____ 1/4 _____
Tax Lot _____ Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 4100 E. CRESTVIEW, NEWBERG, OREGON

(10) STATIC WATER LEVEL:
29 ft. below land surface. Date 12/11/86
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found _____

From	To	Estimated Flow Rate	SWL
50	200	45	29

(12) WELL LOG: Ground elevation _____

Material	From	To	SWL
TOP SOIL	0	2	
BROWN CLAY	2	25	
SOFT DECOMPOSED BROWN ROCK WITH CLAY STREAKS	25	152	29
SOFT BROWN ROCK	152	172	29
BROWN CLAY	172	178	29
SOFT BROWN ROCK	178	200	29

Date started 11/26/86 Completed 12/11/86

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
Signed _____ WWC Number _____ Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
Signed CE Keller WWC Number 462 Date 12/24/86

Transportation Impact Analysis

Crestview Crossing

Newberg, Oregon

Final

August 2018

Transportation Impact Analysis

Crestview Crossing

Newberg, Oregon

Prepared For:

3J Consulting, Inc.
5075 SW Griffith Dr, Suite 150
Beaverton, OR 97005
(503) 946-9365

Prepared By:

Kittelson & Associates, Inc.
851 SW 6th Avenue, Suite 600
Portland, OR 97204
(503) 228-5230

Project Manager: Diego Arguea, PE
Project Principal: Matt Hughart, AICP
Project Analyst: Zachary Bugg, PhD

Project No. 21709

August 2018



EXPIRES: Dec. 31 2019

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Section 1
Executive Summary

EXECUTIVE SUMMARY

JT Smith Companies proposes to develop a 33.13-acre property in Newberg, Oregon into a residential development consisting of up to 260 single-family homes and 48 apartment units. The development is occurring adjacent to a 4.43-acre commercial property that is not included as part of this development application. The site is located on the north side of OR 99W (Portland Road) near the intersection with Providence Drive and will include an extension of Crestview Drive to the south through the property and connecting to OR 99W to form the north leg of the OR 99W/Providence Drive intersection.

The subject property is currently occupied by farm land and one single-family home. It is bordered by residential uses to the west, north, and east and by OR 99W to the south. No direct accesses to the residential units or civic space are proposed on OR 99W or the Crestview Drive extension—these will instead be accessed via new internal local roadways and one new east-west connector that will connect to Crestview Drive north of OR 99W. Completion and occupancy of the development as described in this report is expected to occur by 2020.

The results of this study indicate that the proposed Crestview Crossing development can be constructed while maintaining acceptable traffic operations and safety at the study intersections, assuming provision of the recommended mitigation measures.

FINDINGS

Year 2017 Existing Conditions

- All of the study intersections currently meet City of Newberg (and Oregon Department of Transportation, where applicable) mobility targets during the weekday AM and PM peak hours, with the following exceptions:
 - The Springbrook Road/OR 99W intersection currently experiences a volume-to-capacity ratio (v/c) of 0.86 during the weekday AM peak hour, which exceeds the ODOT mobility standard of 0.85. The intersection also operates at level of service (LOS) E during the weekday PM peak hour, which exceeds the City standard of LOS D under current conditions.
 - The southbound stop-controlled approach to the Vittoria Way/OR 99W intersection currently operates at LOS E during the weekday PM peak hour, which exceeds the City standard of LOS D.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.
 - One fatal crash was reported at the Springbrook Road/Crestview Drive roundabout—this crash occurred when a southbound motorcyclist struck a curb and was thrown from the vehicle. The crash report lists the cause as driver error—driving too fast for conditions.
 - Based upon a 2016 analysis, the Springbrook Road/OR 99W intersection is currently within the top five percent of the highest-scoring intersections in Region 2.

Since 2016, pavement marking improvements and an additional westbound left turn lane on OR 99W were added to this intersection, and the proposed Crestview Crossing development is expected to result in a net decrease in traffic at this intersection due to the reassignment of traffic to the Crestview Drive extension.

Year 2020 Background Conditions

- A two-percent annual growth rate was applied to the existing mainline traffic volumes on OR 99W to reflect general background growth in the area before any in-process traffic was considered.
- Traffic generated by the Oregon Clinic, to be located on the west side of Providence Drive south of Providence Newberg Medical Center, as well as the Providence Medical Office Building, to be located on the east side of Providence Drive across from the existing Providence Medical Center, were included in the background traffic volumes as in-process traffic.

Background traffic conditions with the assumed build-out of the north leg of the Providence Drive/OR 99W intersection (and no site-added traffic) were assumed as the base case against which future traffic conditions are compared.

- The proposed development will extend Crestview Drive south through the property and to the existing Providence Drive/OR 99W intersection, where it will form the north leg.
- Traffic volumes were assigned to the Crestview Drive extension based upon existing turning movement volumes at the study intersections and the Newberg Transportation System Plan.
- The background traffic condition includes rerouted traffic from the proposed Crestview Drive extension but does not include trips associated with new land uses within the proposed development.
- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2020 background traffic conditions with reassigned traffic, with the following exceptions:
 - The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.88 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 0.92 and 0.98, respectively, which both exceed the ODOT mobility standard of 0.80.

Proposed Development Plan

- The proposed development is expected to generate approximately 2,826 weekday daily trips, of which approximately 213 (53 in, 160 out) are forecast to occur during the AM peak hour and approximately 285 (180 in, 105 out) are forecast to occur during the PM peak hour.
- A select-zone analysis of the Newberg Transportation Planning Model was used to develop a trip distribution pattern for the proposed development.

Year 2020 Total Conditions

- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2020 total traffic volumes, with the following exceptions:
 - The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.88 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85 but does not exceed the v/c ratio under background conditions with reassigned traffic.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 1.01 and 1.11, respectively, which both exceed the ODOT mobility standard of 0.80.
 - The new proposed Crestview Diver/East-West Connector intersection within the Crestview Crossing development is expected to operate acceptably as a single-lane roundabout.

Year 2020 Total Mitigated Conditions

- The Crestview Drive/Providence Drive/OR 99W intersection was analyzed under total traffic conditions with the following additional lane improvements:
 - Add an exclusive left turn lane on southbound Crestview Drive,
 - Add an exclusive right turn lane on southbound Crestview Drive,
 - Add an exclusive right turn lane on westbound OR 99W,
 - Restripe eastbound OR 99W to include an exclusive left turn lane, and,
 - Restripe the northbound Providence Drive approach to include an exclusive left turn lane and an exclusive right turn lane.

With these improvements, the weekday AM and PM peak hour v/c ratios at the intersection are forecast to be 0.90 and 0.89, respectively. These exceed the ODOT mobility standard of 0.80 but do not exceed the respective v/c ratios under background conditions with reassigned traffic. As such, the impact of the development has been mitigated.

2025 Horizon Year Background Conditions

- An additional five years of growth (at a two-percent annual growth rate) was applied to the existing mainline traffic volumes on OR 99W to model horizon year background conditions.

Background traffic conditions with the assumed build-out of the north leg of the Providence Drive/OR 99W intersection (and no site-added traffic) were assumed as the base case against which future traffic conditions are compared.

- The background traffic condition includes rerouted traffic from the proposed Crestview Drive extension but does not include trips associated with new land uses within the proposed development.

- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2025 background traffic conditions with reassigned traffic, with the following exceptions:
 - The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.93 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.03, respectively, which both exceed the ODOT mobility standard of 0.80.

2025 Horizon Year Total Conditions

- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2025 total traffic volumes, with the following exceptions:
 - The weekday AM and PM peak hour v/c ratios at the Springbrook Rd/OR 99W intersection are forecast to be 0.86 and 0.92, respectively, which both exceed the ODOT mobility standard of 0.85 but are not more than 0.03 above the v/c ratios under background conditions with reassigned traffic. Per ODOT policy guidance, when an intersection exceeds mobility targets but the v/c ratio increases by less than 0.03 as a result of development, the impacts are not considered significant.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 1.08 and 1.18, respectively, which both exceed the ODOT mobility standard of 0.80.

2025 Horizon Year Total Mitigated Conditions

- With the improvements at Crestview Drive/Providence Drive/OR 99W intersection noted above, the weekday AM and PM peak hour v/c ratios at the intersection are forecast to be 0.97 and 0.96, respectively. These exceed the ODOT mobility standard of 0.80 but do not exceed the respective v/c ratios under 2025 background conditions with reassigned traffic. As such, the impact of the development has been mitigated.

95th-percentile Queuing Analysis

- All 95th-percentile queues are projected to be accommodated by the provided storage lengths under 2025 total traffic conditions, with the following exceptions:
 - The southbound right turn at Springbrook Road/OR 99W during the weekday PM peak hour.
 - The northbound left turn at Brutscher Street/OR 99W during the weekday PM peak hour.

Each of the queues noted above is expected to decrease under 2025 total traffic conditions compared with 2025 background traffic volumes due to reassigned traffic from Springbrook Road and OR 99W to the Crestview Drive extension.

2025 Horizon Year Commercial Property Sensitivity Analysis

A planning-level analysis was prepared to account for the future development potential of the 4.43-acre commercial property adjacent to the development site. While this is NOT part of this development application, the analysis was conducted to evaluate the future effectiveness of the recommended mitigations.

- A planning-level estimate for developable commercial area was used to estimate the number of potential commercial-related site trips. The gross leasable area-to-acreage ratio was assumed at 25 percent, and the entire commercial property was assumed as shopping center land use.
- The commercial development trips were added to the residential trips of this application to arrive at a total development estimate of 5,416 weekday daily trips, of which 370 (155 in, 215 out) will occur during the AM peak hour and 440 (247 in, 193 out) will occur during the PM peak hour. The development is also expected to generate approximately 96 pass-by trips during the weekday PM peak hour—these were treated as diverted trips from OR 99W.
- The Crestview Drive/Providence Drive/OR 99W intersection and Crestview Drive/East-West Connector roundabout were analyzed under 2025 conditions assuming development of the 4.43-acre commercial property.
- The Crestview Drive/East-West Connector intersection is expected to continue operating acceptably as a single-lane roundabout.
- With the mitigation improvements associated with the residential development in place, the weekday AM and PM peak hour v/c ratios at the Crestview Drive/Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.02, respectively.

Per ODOT policy guidance, when an intersection exceeds the mobility target but the v/c ratio increases by less than 0.03 as a result of development, the impacts are not considered significant. For this reason, no additional mitigation measures would be warranted as a result of additional commercial development.

RECOMMENDATIONS

Providence Drive/Crestview Drive/OR 99W Intersection

- The new north leg of the intersection, which will be an extension of Crestview Drive, should be configured as a four-lane section with one northbound lane and three southbound lanes (exclusive lanes for left-turn, through, and right-turn movements). At least 225 feet of southbound left turn storage and at least 150 feet of southbound right turn storage should be provided to accommodate the forecast 95th percentile queue lengths.
- The south leg of the intersection should be restriped to a four-lane section with one southbound lane and three northbound lanes (exclusive lanes for left-turn, through, and right-turn movements).
- Based on the forecast 95th percentile queuing analysis:
 - A westbound right turn lane should be constructed with at least 275 feet of storage.

- An eastbound left turn lane should be striped to provide at least 125 feet of storage.
- Recommended signal phasing: the intersection should be operated with permissive left turn movements on the northbound and southbound approaches and fully protected left turn movements on the eastbound and westbound approaches.

On-Site Circulation/Site Access Operations

- Driveways, landscaping, utilities, and signage within the site should be located and maintained to provide sufficient sight distance at all new internal intersections and accesses.
- Other than at the Providence Drive/Crestview Drive/OR 99W intersection, a two-lane section of Crestview Drive should be adequate to accommodate turning movements and queuing within the proposed development.

Additional details of the study methodology, findings, and recommendations are provided within this report.

Section 2 Introduction

INTRODUCTION

PROJECT DESCRIPTION

JT Smith Companies proposes to develop a 33.13-acre property in Newberg, Oregon consisting of up to 260 single-family homes and 48 apartment units. The ultimate number of residential units may vary but is not anticipated to exceed the number of units analyzed in this report. The development is located adjacent to 4.43 acres of commercial property that are not included in this application but may be developed as part of a future phase.

Figure 1 displays the site vicinity, and Figure 2 illustrates the proposed site plan. The site is located on the north side of OR 99W (Portland Road) near the intersection with Providence Drive and will include an extension of Crestview Drive to the south through the property and connecting to OR 99W to form the north leg of the OR 99W/Providence Drive intersection. No direct accesses to the residential units or adjacent commercial property are proposed on OR 99W or the Crestview Drive extension—these will instead be accessed via new internal local roadways and one new east-west connector that will connect to Crestview Drive north of OR 99W. Completion and occupancy of the development as described in this report is expected to occur by 2020.

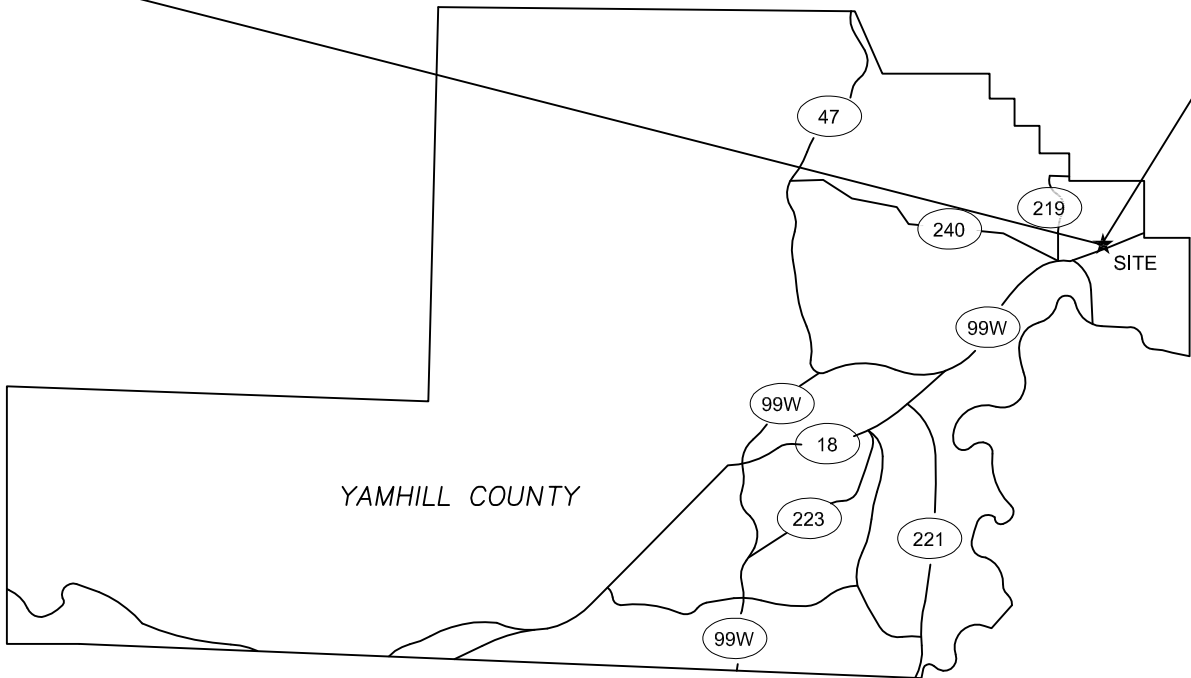
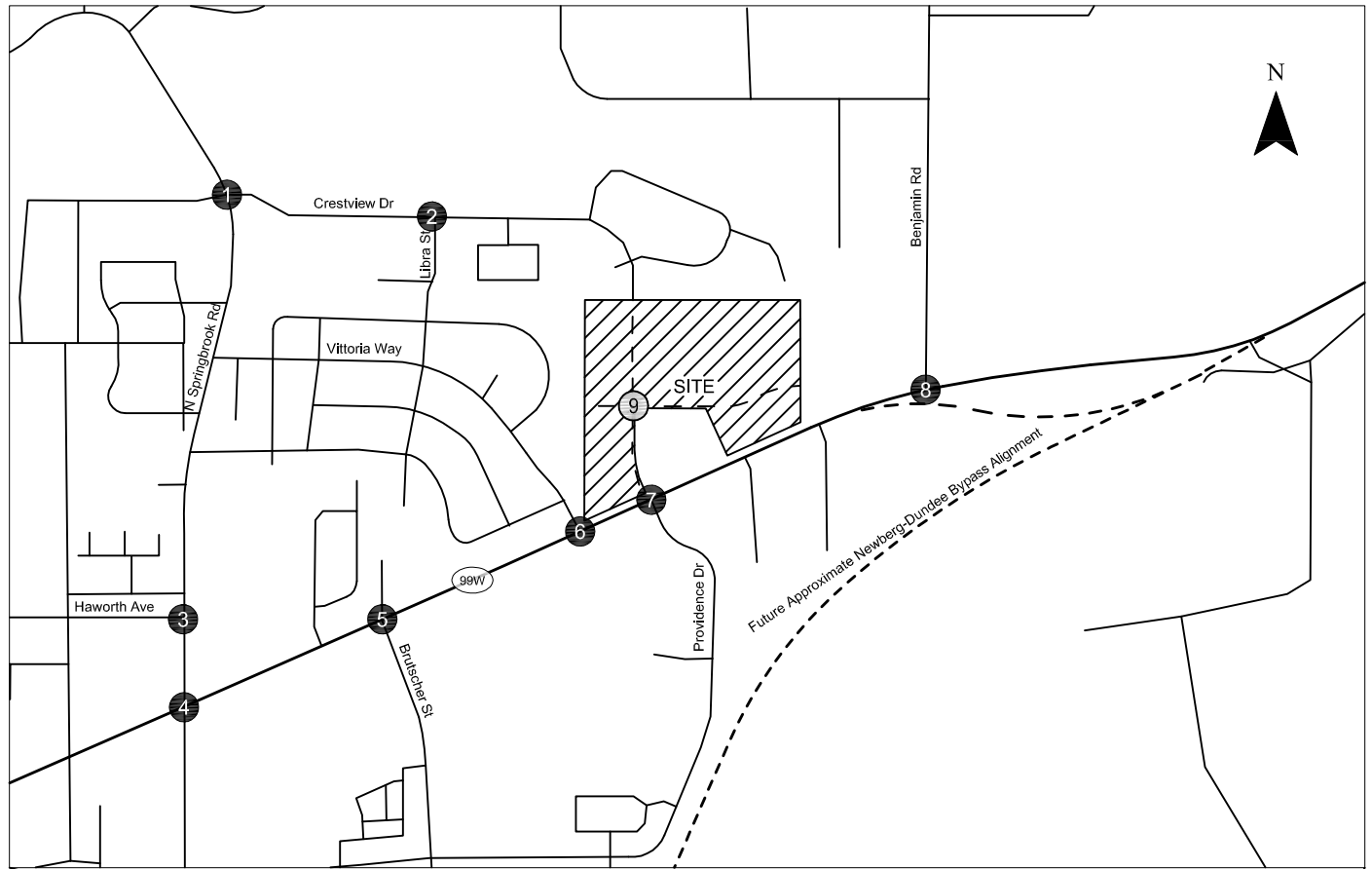
SCOPE AND ANALYSIS METHODOLOGY

This analysis determines the transportation-related impacts associated with the proposed Crestview Crossing development and was prepared in accordance with City of Newberg and Oregon Department of Transportation (ODOT) requirements for traffic impact analyses. The study intersections and scope of this project were selected based on conversations with City and ODOT staff and are documented in a scoping memorandum (dated October 19, 2017) and subsequent City and ODOT comments (*Appendix "A"*).

Study Intersections

This report includes an analysis of operations and safety at the following study intersections:

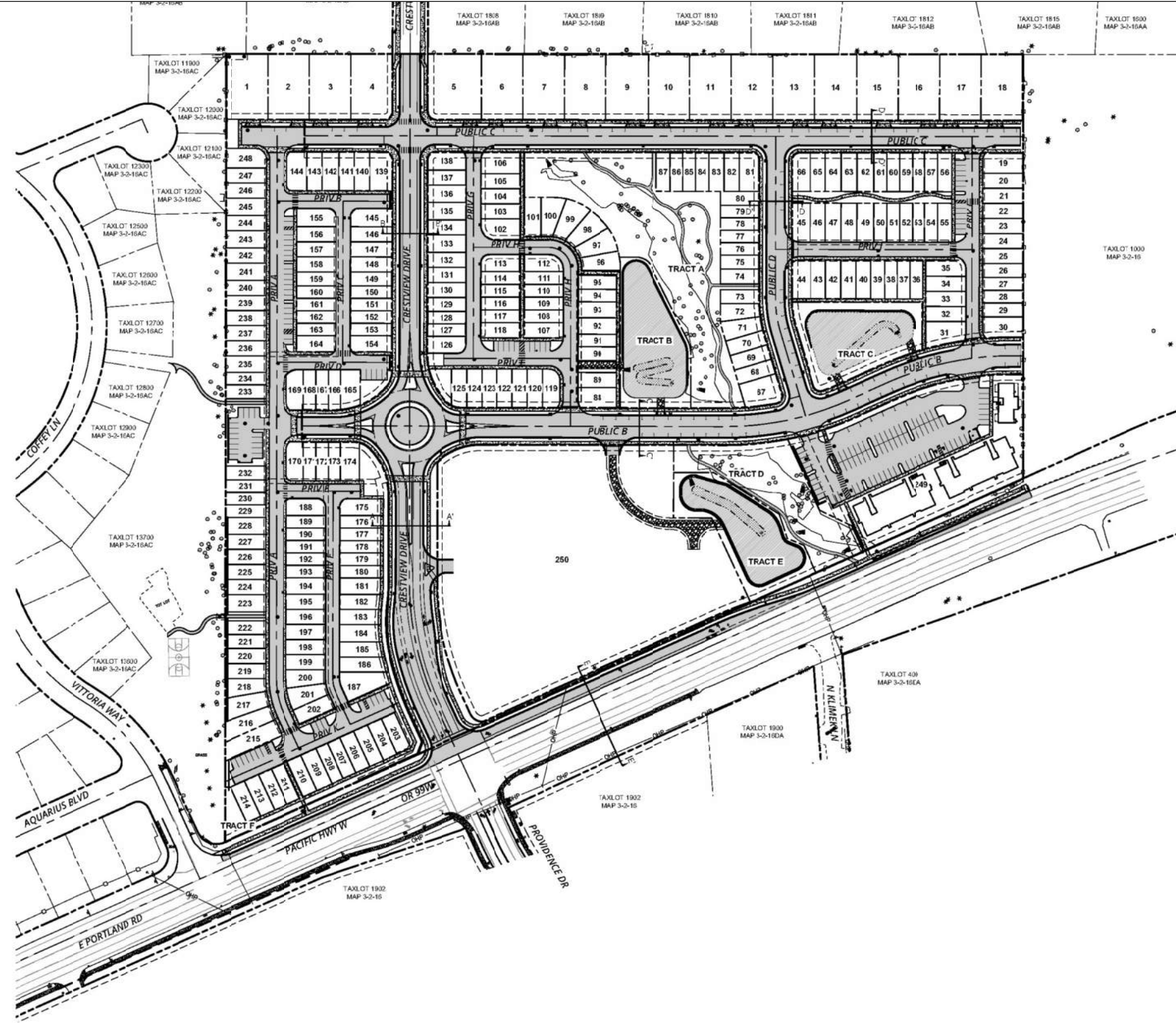
1. Springbrook Road/Crestview Drive,
2. Libra Street/Crestview Drive,
3. Springbrook Road/Haworth Avenue,
4. Springbrook Road/OR 99W,
5. Brutscher Street/OR 99W,
6. Vittoria Way/OR 99W,
7. Providence Drive/Future Crestview Drive extension/OR 99W,
8. Benjamin Road/OR 99W, and
9. Future Crestview Drive extension/Future east-west connector.



● - Study Intersection

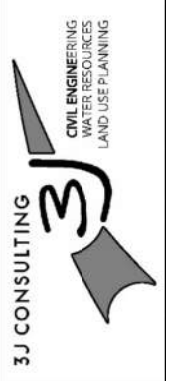
Site Vicinity
Newberg, Oregon

Figure
1

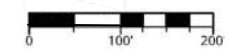


- PROPOSED LP OF GUTTER
- PROPOSED WHITE STRIPING
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED STORM FACILITY
- PROPOSED SWALE
- PROPOSED GRAVEL
- PROPOSED WOODCHIP PATH
- PROPOSED RETAINING WALL
- PROPOSED DRIVEWAY
- PROPOSED PEDESTRIAN CROSSWALK STRIPING
- PROPOSED TYPICAL STREET SECTION
SEE SHEETS C200 & C201

OVERALL SITE PLAN
CRESTVIEW CROSSING
PLANNED UNIT DEVELOPMENT
 JT SMITH COMPANIES



PROJECT INFORMATION
 3J PROJECT # | 17393
 TAX LOT(S) | 382W16 1380
 LAND USE # | N/A
 DESIGNED BY | ARS, J.E.L, BM
 CHECKED BY | A.M, RGW
 SHEET NUMBER
C210



C:\Users\zbugg\Desktop\21709 figs-.dwg Aug 15, 2018 - 12:45pm - zbugg Layout Tab: Proposed Site Plan

Site Plan Provided by 3J Consulting 6/5/2018

Proposed Site Plan
Newberg, Oregon

Figure
2

Study Scope

This report documents evaluation of the following transportation items:

- Year 2017 existing conditions analysis, including *Highway Capacity Manual 2000* (HCM 2000, Reference 1) volume-to-capacity (v/c) ratio, control delay, and 95th-percentile queuing analysis at the study intersections during the weekday AM and PM peak hours;
- A review of reported crash data from ODOT at the study intersections for the most recent five-year period available;
- Build-out Year 2020 background conditions (includes in-process traffic and regional growth but not traffic from the development), including HCM 2000 v/c ratio, control delay, and 95th-percentile queuing analysis at the study intersections during the weekday AM and PM peak hours;
- Build-out Year 2020 total conditions analysis, including HCM 2000 v/c ratio, control delay, and 95th-percentile queuing analysis at the study intersections during the weekday AM and PM peak hours;
- Horizon Year 2025 background conditions (includes in-process traffic and regional growth but not traffic from the development), including HCM 2000 v/c ratio, control delay, and 95th-percentile queuing analysis at the study intersections during the weekday AM and PM peak hours;
- Horizon Year 2020 total conditions analysis, including HCM 2000 v/c ratio, control delay, and 95th-percentile queuing analysis at the study intersections during the weekday AM and PM peak hours; and,
- On-site traffic operations and circulation.

Analysis Methodology and Applicable Standards

All Level of Service analyses described in this report were performed in accordance with the procedures stated in the HCM 2000. The operations and queuing analyses presented in this report were completed using *Synchro 9 and SimTraffic 9* software, with the exception of the roundabout analyses, which were completed using *Highway Capacity Software (HCS) 7*. Per HCM 2000 methodology, the reported traffic operations are based upon the worst 15 minutes of each peak hour—consequently, the study intersections are expected to perform better during the rest of the day, in general.

The study intersections along OR 99W are all subject to ODOT v/c ratio mobility targets, defined by the *1999 Oregon Highway Plan*, Policy 1F. The study intersections along OR 99W are within the Newberg urban growth boundary, on a Statewide Highway, on a freight route, outside a Metropolitan Planning Organization, outside a Special Transportation Area, and not on a freeway. Thus, the mobility target for each study intersection along OR 99W is a function of the posted speed limit, as shown in Table 1.

Table 1: OR 99W Mobility Targets

Intersection	Posted Speed (mph)	Mobility Target (v/c)
OR 99W/Springbrook Road	35	0.85
OR 99W/Brutcher Street	35	0.85
OR 99W/Vittoria Way	45	0.80
OR 99W/Providence Drive	45	0.80
OR 99W/Benjamin Road	55	0.75

With the exception of OR 99W/Benjamin Road, which is outside the City limits, all study intersections are additionally subject to City of Newberg mobility standards, which require LOS D or better.

Section 3
Existing Conditions

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and current operational and geometric characteristics of the roadways within the study area. These conditions will be compared with future conditions later in this report.

Kittelson & Associates, Inc. (KAI) staff visited and inventoried the proposed Crestview Crossing site in November 2017. At that time, KAI collected information regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

SITE CONDITIONS AND ADJACENT LAND USES

The subject property is located on the north side of OR 99W (Portland Road) near the intersection with Providence Drive. The site is currently occupied by farm land and one single-family home, and it is bordered by residential uses to the west, north, and east and by OR 99W to the south.

Transportation Facilities

Existing lane configurations and traffic control devices at the study intersections are displayed in Figure 3. Table 2 summarizes the existing transportation facilities and roadways in the study area.

Table 2: Existing transportation facilities and roadways in the study area

Roadway	Functional Classification ¹	Number of Lanes	Posted Speed	Sidewalks	Bicycle Lanes	On-Street Parking
OR 99W	Major Arterial	4-5	35 mph – 55 mph ²	Partial ³	Yes	No
Springbrook Road	Minor Arterial	2-3	35 mph	Both Sides	South of Haworth Avenue	No
Crestview Drive	Major Collector	2	25 mph	Both sides east of Birdhaven Loop	East of Birdhaven Loop	No
Providence Drive	Major Collector	2	25 mph	Partial ⁴	Yes	No
Brutscher Street	Major Collector	2-3	25 mph	Both Sides south of OR 99W	South of Fred Meyer entrance	No
Haworth Avenue	Major Collector	2	25 mph	Both Sides	No	Yes
Vittoria Way	Minor Collector	2	25 mph	Partial ⁵	No	Yes
Libra Street	Local Street	2	25 mph	Both Sides	No	Yes
Benjamin Road	Local Street	2	45 mph	No	No	No

¹City of Newberg Transportation System Plan (TSP, Reference 2)

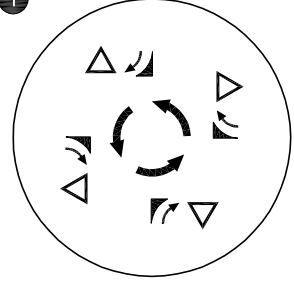
²Posted speed is 35 mph at and west of Brutscher Street, 45 mph from east of Brutscher Street to east of Providence Drive, and 55 mph at and east of Benjamin Road

³Sidewalks are provided on both sides of OR 99W throughout the study area except on the north side from 250 feet east of Brutscher Street to the east end of the study area and on the south side from 400 feet east of Providence Drive to the east end of the study area

⁴The sidewalk on the east side of Providence Drive ends approximately 270 feet south of OR 99W.

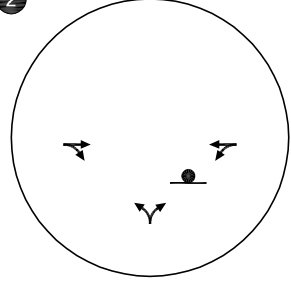
⁵No sidewalk is provided on the east side of Vittoria Way south of Aquarius Boulevard.

1 Springbrook Rd / Crestview Dr



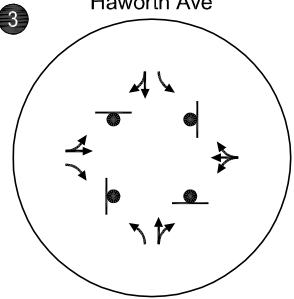
2

Libra St / Crestview Dr



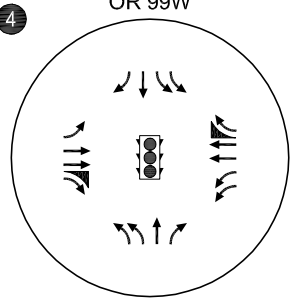
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Springbrook Rd / Haworth Ave



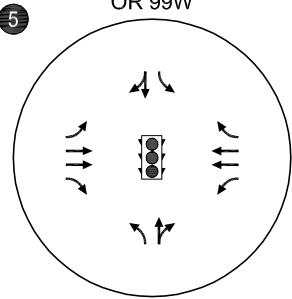
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Springbrook Rd / OR 99W



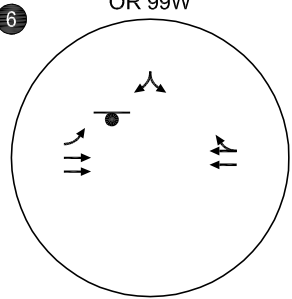
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Brutscher St / OR 99W



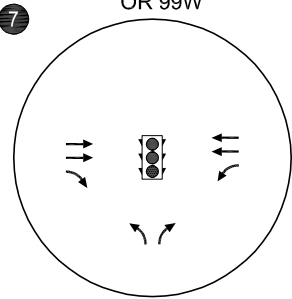
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Vittoria Way / OR 99W



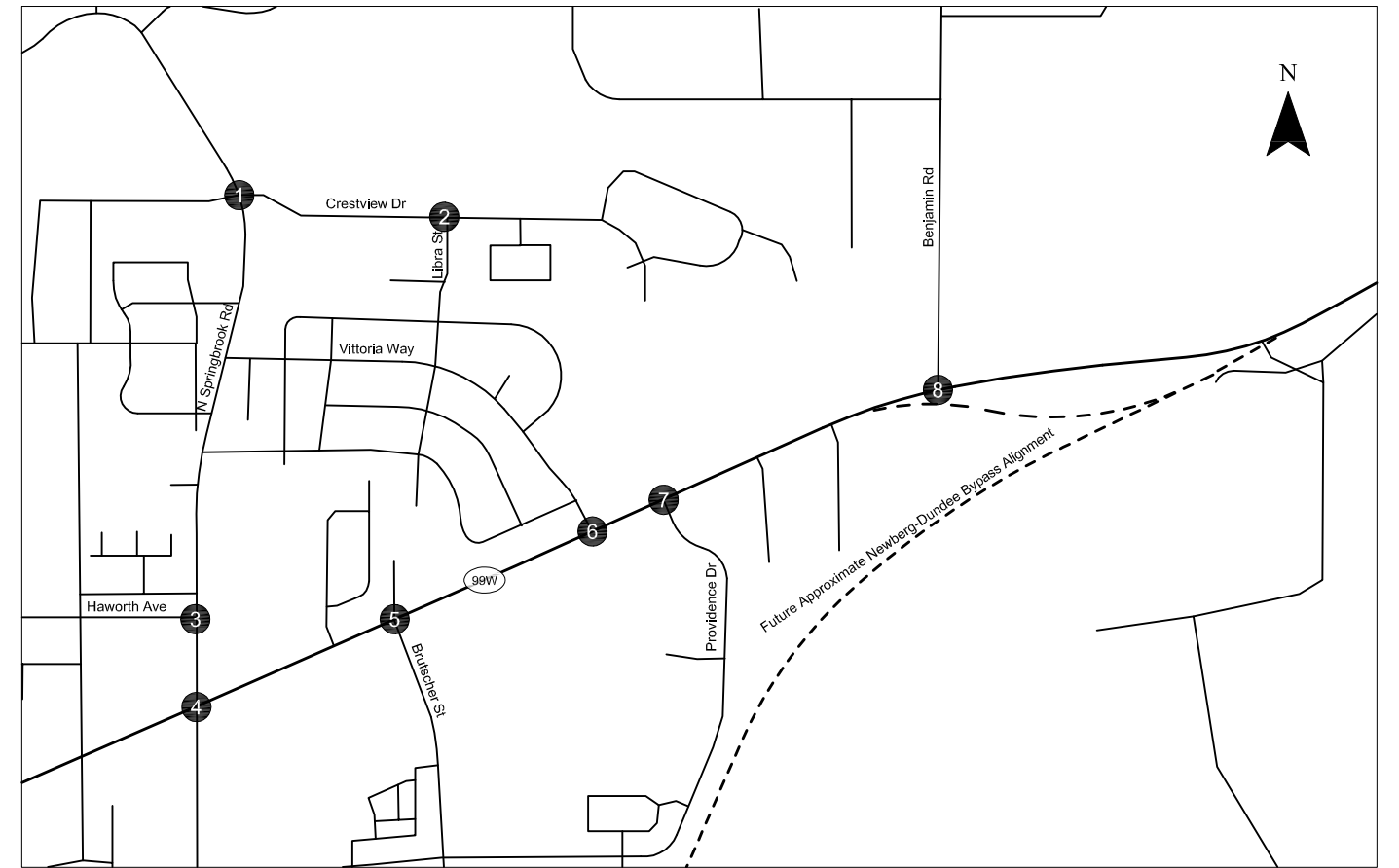
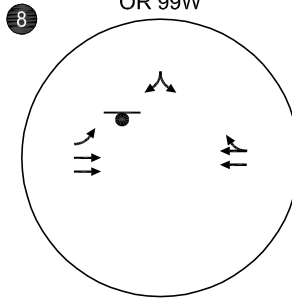
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Crestview Dr / Providence Dr / OR 99W







8

Benjamin Rd / OR 99W



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-  - STOP SIGN
-  - TRAFFIC SIGNAL
-  - ROUNDABOUT
-  - YIELD

Existing Lane Configurations and Traffic Control Devices Newberg, Oregon

Figure 3

Roadway Facilities

The proposed Crestview Crossing development site is bordered to the south by OR 99W, which is maintained by ODOT and is classified a Major Arterial in the Newberg TSP. Crestview Drive, which is classified a Major Collector, will be extended south through the proposed development site and will connect to OR 99W to form the fourth leg of the existing OR 99W/Providence Drive intersection. The Crestview Drive extension will consist of one travel lane in either direction, except where turn lanes are needed. As shown in Figure 2, several new local streets will be constructed to serve the development, and one east-west connector roadway will intersect the Crestview Drive at a roundabout approximately 500 feet north of OR 99W.

Pedestrian and Bicycle Facilities

There are currently no sidewalks provided within the proposed site frontage along OR 99W, but sidewalks and bicycle lanes are provided on both sides of Crestview Drive and Providence Drive north and south of the proposed site. While paved shoulders are provided along both sides of OR 99W within the site vicinity, OR 99W is a high-speed roadway with no separated bicycle facilities.

TRANSIT FACILITIES

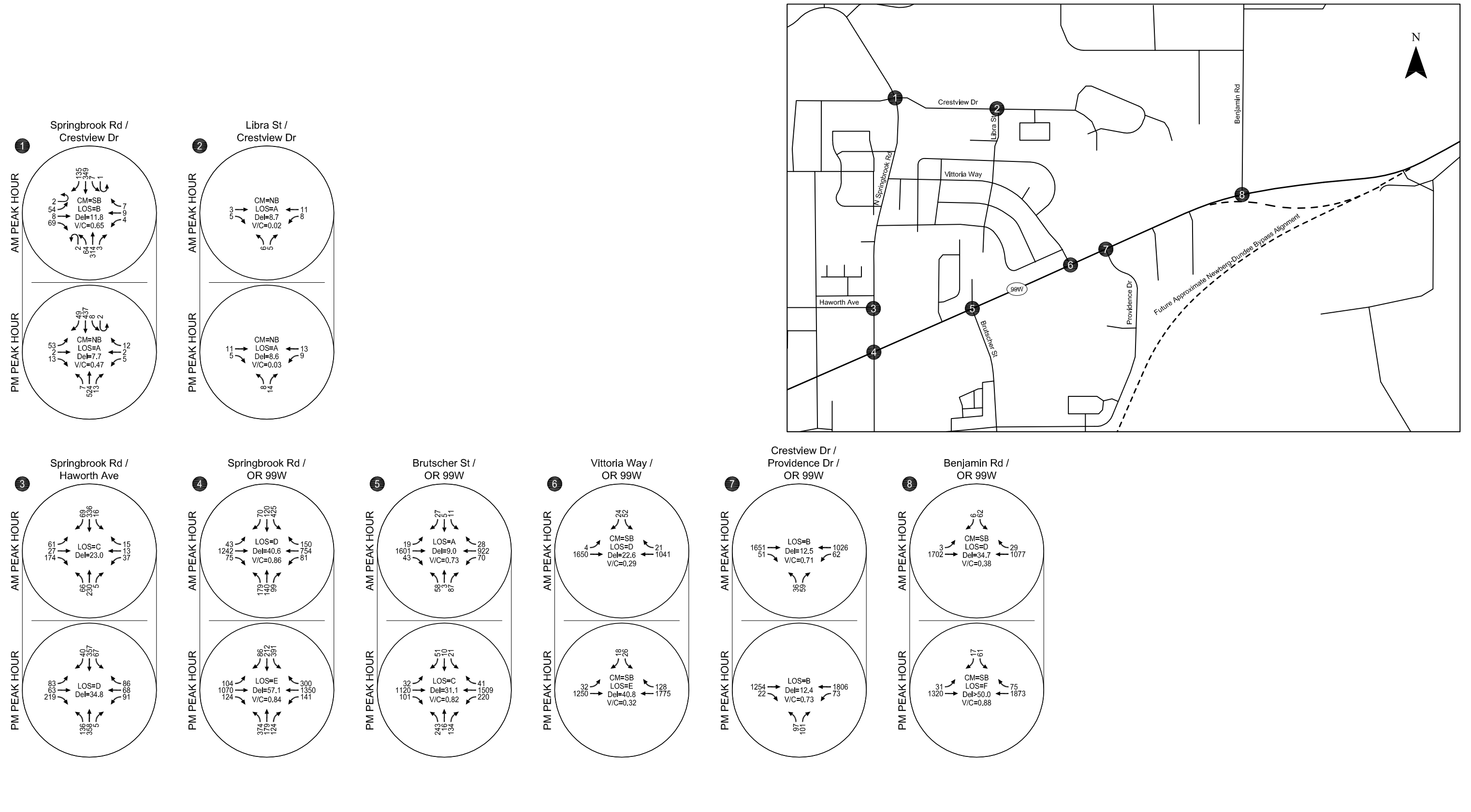
Transit service in the site vicinity is provided by Yamhill County Transit Area (YCTA, Reference 3). Route 7: Newberg Providence connects Providence Newberg Medical Center, which is approximately 0.15 mile south of the proposed development, to the Newberg Central Business District. Service is provided on weekdays at approximately one-hour intervals from approximately 7:15 AM to 6:15 PM.

TRAFFIC VOLUMES AND PEAK HOUR OPERATIONS

Turning movement counts were conducted at the Libra Street/Crestview Drive and Springbrook Road/Haworth Avenue intersections in November 2017 when school was in session. Counts were conducted at all other existing study intersections in September 2017 when school was in session—per scoping discussions with ODOT staff, the study intersections along OR 99W are heavily influenced by both seasonal traffic and school traffic, with the peak travel period occurring in September. Therefore, no seasonal count adjustment along OR 99W is required.

All counts used in this analysis were conducted on a typical midweek day during the morning (6:00 to 9:00 AM) and afternoon (3:00 to 6:00 PM) peak periods. The analysis time periods are based on a corridor-wide peak hour along OR 99W and individual intersection peak hours at the remaining study intersections. Figure 4 provides a summary of the year 2017 turning-movement counts.

Appendix “B” contains the traffic count worksheets used in this study.



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Existing Traffic Conditions
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 4

Calibration to Field Observations

Saturation Flow Rate

ODOT requires a base saturation flow rate of 1,750 vehicles per hour per lane outside the Portland metro area. Based on field observation and video data, vehicles exhibited driving behavior typical of urban areas. Thus, a saturation flow-rate study was prepared to calibrate the analysis to real-world observations. Using video data, the base saturation flow rate was calibrated to 1,800 vehicles per hour for the following two movements:

- Westbound OR 99W at Springbrook Road, and
- Westbound OR 99W at Providence Drive.

All analysis for these movements assumes the calibrated base saturation flow rates. *Appendix "C" contains the saturation flow study worksheets for these movements.*

Queuing

The *SimTraffic* queuing analysis (provided in later sections of this report) was found to overestimate the existing conditions 95th percentile queues at the Providence Drive/OR 99W intersection during the weekday AM and PM peak hours. For example, the eastbound right turn maximum queue observed during the AM peak hour was 25 feet (one vehicle length) and the *SimTraffic* results estimate a 95th-percentile queue of 100 feet. The *Synchro* analysis was found to reflect the existing field conditions more accurately, showing approximately one vehicle for the same eastbound right-turn movement during the AM peak hour.

For these reasons, the *Synchro* queuing outputs are reported for the Providence Drive/OR 99W intersection in addition to the *SimTraffic* outputs. As shown in the queuing analysis tables later in this report, the actual 95th percentile queues for the identified movements are expected to operate at a queue length in between the *Synchro* and the *SimTraffic* output.

Level of Service Analysis

Figure 4 also displays the existing levels of service at each of the study intersections during the weekday AM and PM peak hours. As shown in the figure, each of the study intersections currently meets ODOT and City mobility standards, with the following exceptions:

- The volume-to-capacity ratio of the Springbrook Road/OR 99W intersection is 0.86 during the weekday AM peak hour, which exceeds the ODOT mobility standard of 0.85. The weekday PM peak hour level of service of this intersection (LOS E) does not meet the City standard of LOS D.
- The weekday PM peak hour level of service of the Vittoria Way approach to the intersection with OR 99W (LOS E) does not meet the City standard of LOS D.

Appendix "C" contains the existing conditions Level of Service worksheets.

Traffic Safety

ODOT-reported crash data was reviewed for the most recent five-year period, from January 1, 2011 to December 31, 2015. Table 3 summarizes the reported crash data at the study intersections.

Table 3: ODOT-Reported Crash Data (January 1, 2011 to December 31, 2015)

Intersection	Crash Severity			Crash Type						Crash Rate ²
	Fatal	Injury	PDO ¹	Rear End	Turning	Sideswipe	Angle	Other	Total	
Springbrook Rd / Crestview Dr	1	0	1	1	0	0	0	1	2	0.10
Libra St / Crestview Dr	0	0	0	0	0	0	0	0	0	0.00
Springbrook Rd / Haworth Ave	0	2	5	1	2	0	3	1	7	0.24
Springbrook Rd / OR 99W	0	27	41	53	9	2	2	2	68	0.84
Brutscher St / OR 99W	0	13	7	15	4	0	0	1	20	0.31
Vittoria Way / OR 99W	0	2	2	2	2	0	0	0	4	0.07
Providence Dr / OR 99W	0	2	9	11	0	0	0	0	11	0.18
Benjamin Rd / OR 99W	0	3	1	0	4	0	0	0	4	0.06

¹Property Damage Only

²Per million entering vehicles

As shown in the table, one fatal crash was reported at the Springbrook Road/Crestview Drive roundabout—this crash occurred in 2013 when a southbound motorcyclist struck a curb and was thrown from the vehicle. The crash report lists the cause as driver error—driving too fast for conditions.

ODOT maintains a ranking of intersections with potential safety problems known as the Safety Priority Index System (SPIS). Based upon a 2016 analysis, none of the study intersections ranked within the top 5 percent of the highest-scoring intersections in Region 2.

No other crash trends or safety deficiencies were identified at the study intersections.

Appendix “D” contains the reported crash data from ODOT.

Section 4
Transportation Impact Analysis

TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study area's transportation system will operate in the year the proposed Crestview Crossing development is expected to be fully built and occupied, year 2020. The impact of traffic generated by the proposed Crestview Crossing development during the weekday AM and PM peak hours was examined as follows:

- The Oregon Clinic and the Providence Medical Office Building were identified as in-process developments by City of Newberg and included in the background traffic volumes;
- Year 2020 background traffic volumes at the study intersections were developed by applying a two-percent annual growth rate to the existing mainline volumes along OR 99W and then adding the in-process trips;
- Some traffic was reassigned based upon the new network link created by the Crestview Drive extension;
- Site trip distribution patterns were identified based upon a select zone analysis of the Newberg Model;
- Site-generated trips were estimated for build-out of the site and assigned to the study intersections based upon the assumed trip distribution pattern;
- Year 2020 total traffic volumes at the study intersections were developed by adding the site-generated trips to the 2020 background traffic volumes, accounting for reassigned traffic due to the Crestview Drive extension;
- Year 2025 background traffic volumes at the study intersections were developed by adding an additional five years of growth (at a two-percent annual growth rate) to the existing mainline volumes along OR 99W;
- Year 2025 total traffic volumes at the study intersections were developed by adding the site-generated trips to the 2025 background traffic volumes, accounting for reassigned traffic due to the Crestview Drive extension; and,
- On-site circulation issues and site-access operations were evaluated.

YEAR 2020 BACKGROUND TRAFFIC CONDITIONS

The year 2020 background traffic analysis identifies how the study area's transportation system will operate without the proposed Crestview Crossing development. This analysis includes traffic attributed to planned developments within the study area and to general growth in the region but does not include traffic from the proposed development.

Planned Developments and Transportation Improvements

The City of Newberg identified two in-process developments within the site vicinity: the Oregon Clinic, to be located on the west side of Providence Drive south of Providence Newberg Medical Center, as well as the Providence Medical Office Building, to be located on the east side of Providence Drive across from the existing Providence Medical Center.

In-process trips are summarized in a graphic in Appendix “E”.

The following two planned transportation improvements were identified, neither of which will be completed prior to development of the proposed Crestview Crossing:

- The aforementioned Crestview Drive extension, which will be incorporated into site development and is described later in this report under Proposed Development Plan; and
- The Newberg-Dundee Bypass, which will intersect OR 99W approximately 0.5 miles east of the proposed development site and is not expected to be completed until after the proposed Crestview Crossing development is fully built and occupied (2020).

Background Growth

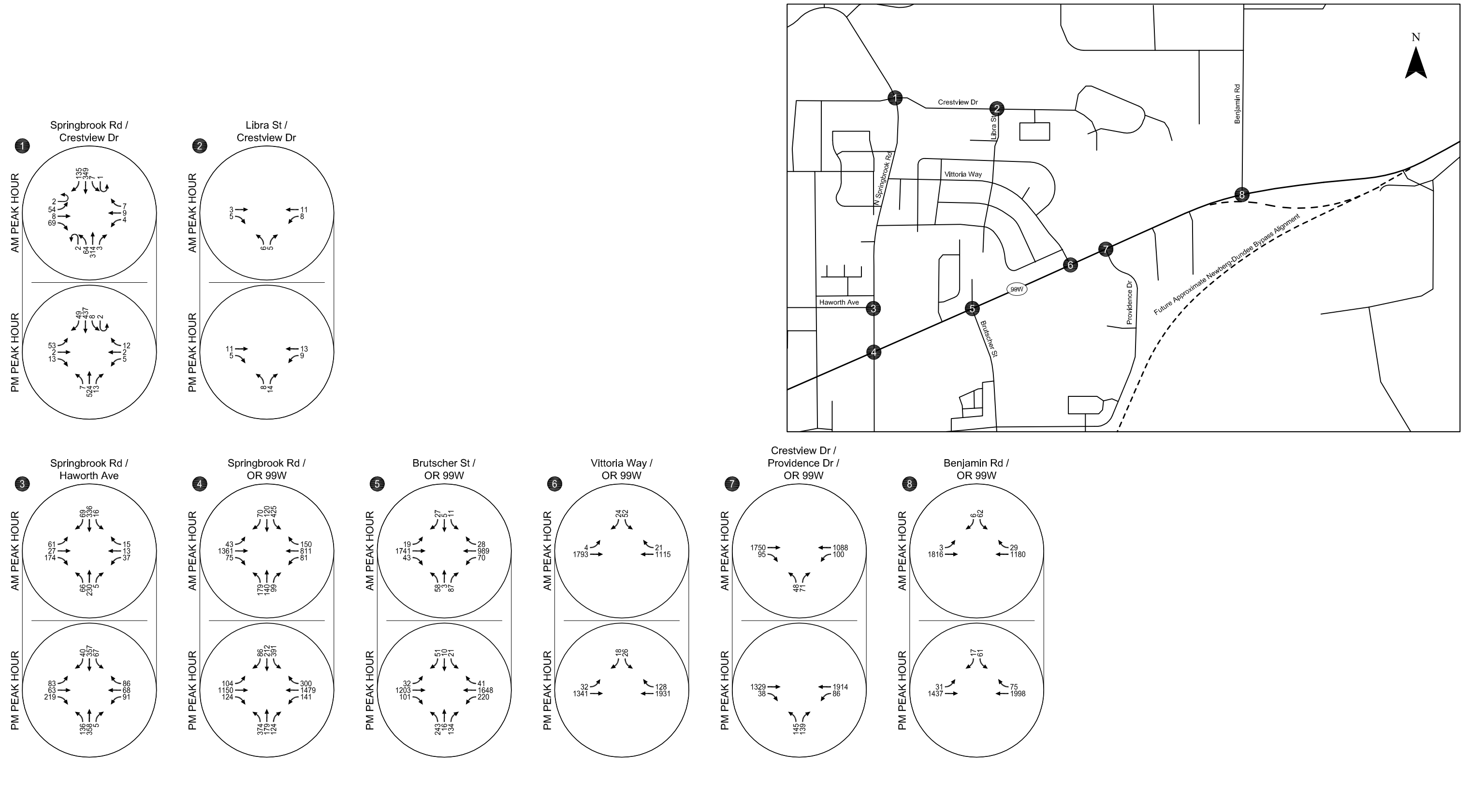
To account for general area growth, a two-percent annual growth rate was applied to the existing mainline volumes along OR 99W at the study intersections.

Figure 5 displays the 2020 background traffic volumes at the study intersections during the weekday AM and PM peak hours, which include general area growth and in-process trips identified previously.

Crestview Drive Extension

The Crestview Drive extension is contained within the City’s Transportation System Plan and can be considered a regional system improvement independent of the land uses contained within the Crestview Crossing development. The construction of the Crestview Drive extension is expected to cause some traffic to shift from Springbrook Road and OR 99W. For this analysis, traffic volumes were reassigned to the new street system based on existing turning movement demand at the intersections of Springbrook Road/Crestview Drive, Springbrook Road/Haworth Avenue, and Springbrook Road/OR 99W. The City’s Transportation System Plan was also consulted for consistency in assumptions. Figure 6 displays the estimated reassigned traffic volumes.

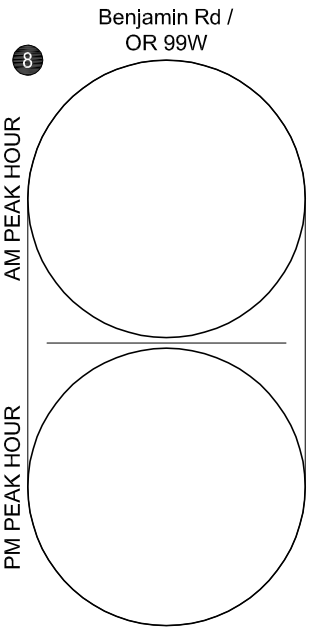
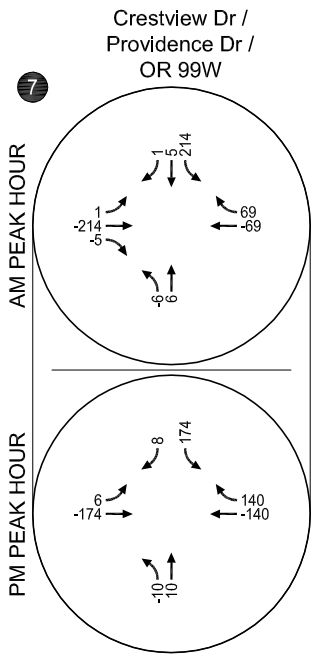
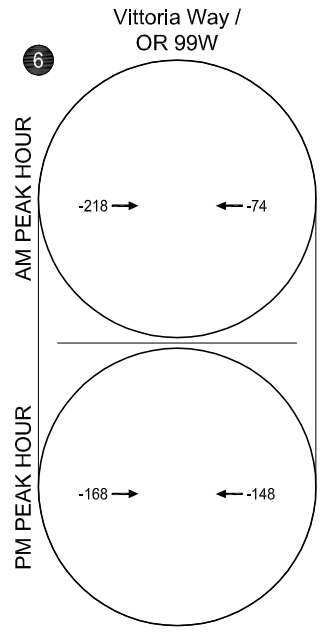
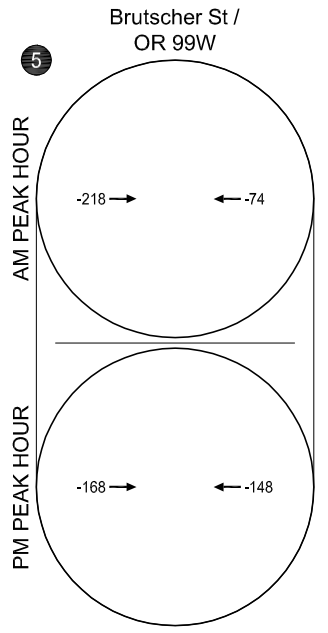
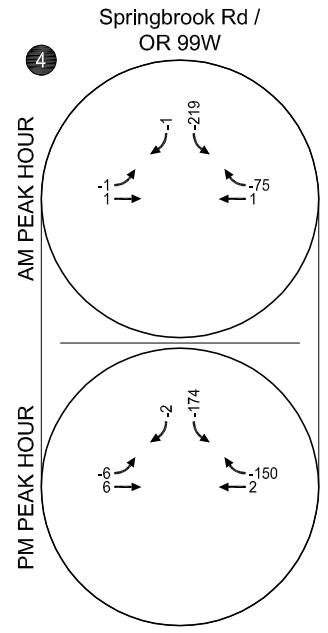
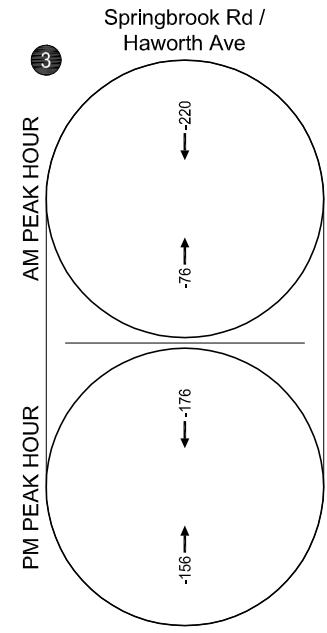
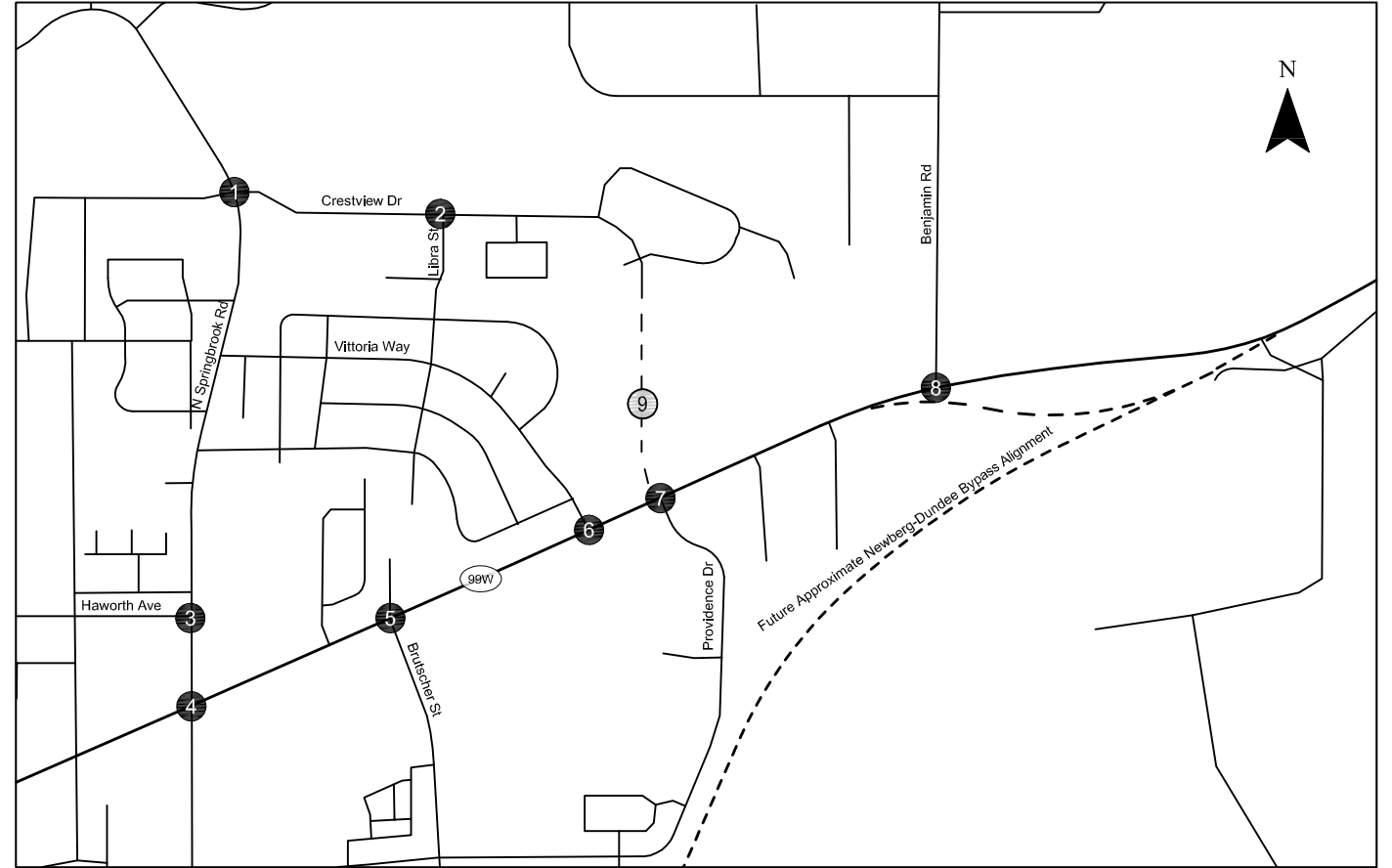
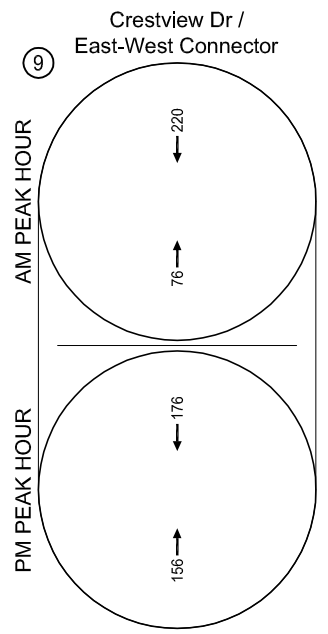
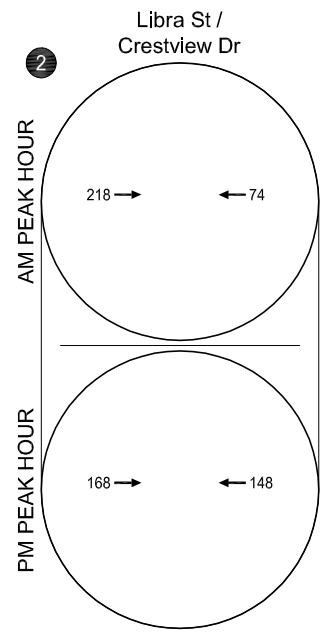
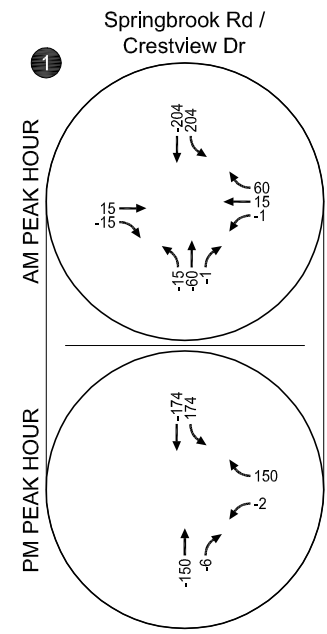
The reassigned traffic volumes shown in Figure 6 were added to the background traffic volumes in Figure 5 to arrive at the 2020 background traffic conditions, shown in Figure 7. Based on concurrence from ODOT transportation planning staff, this scenario serves as the base case against which future traffic conditions are prepared. The background condition for the Crestview Drive extension assumes a two-lane cross section, including the new north leg of the Providence Drive/OR 99W intersection. Any potential turn lane additions at the Crestview Drive/Providence Drive/OR 99W intersection will be considered mitigation measures associated with the Crestview Crossing development and are described under 2020 total traffic conditions. The assumed lane configurations for this scenario are displayed in Figure 8.



Year 2020 Background Traffic Volumes
Weekday AM and PM Peak Hours
Newberg, Oregon

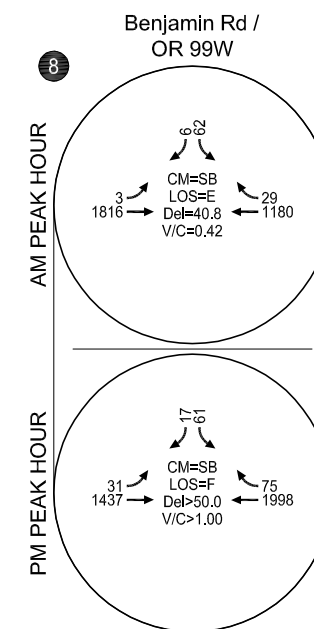
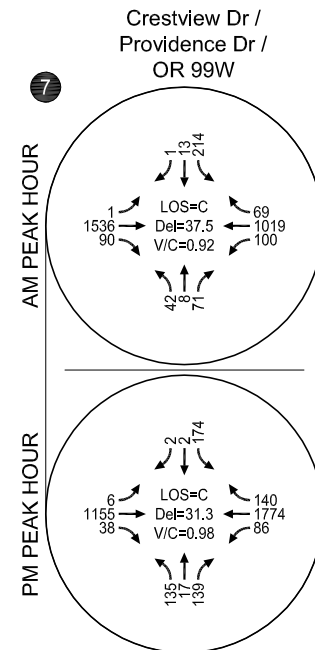
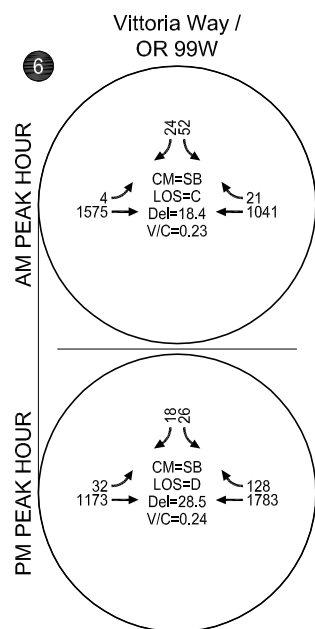
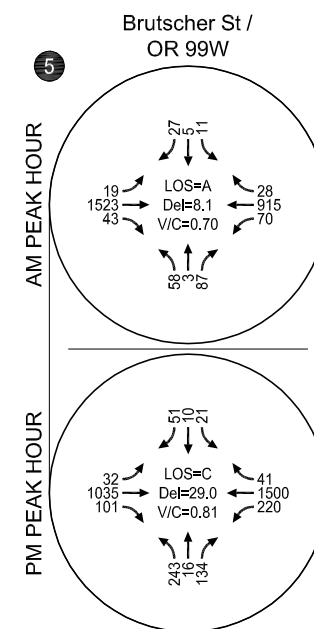
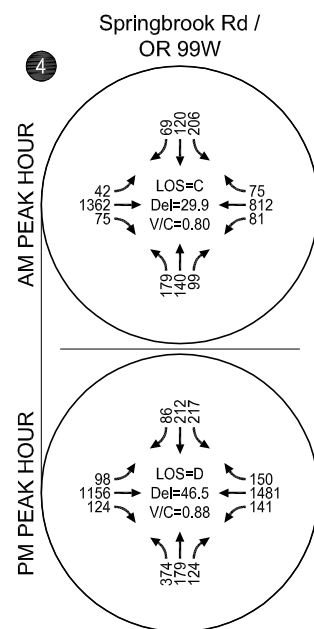
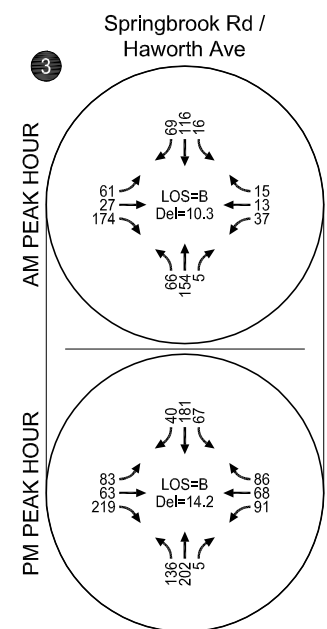
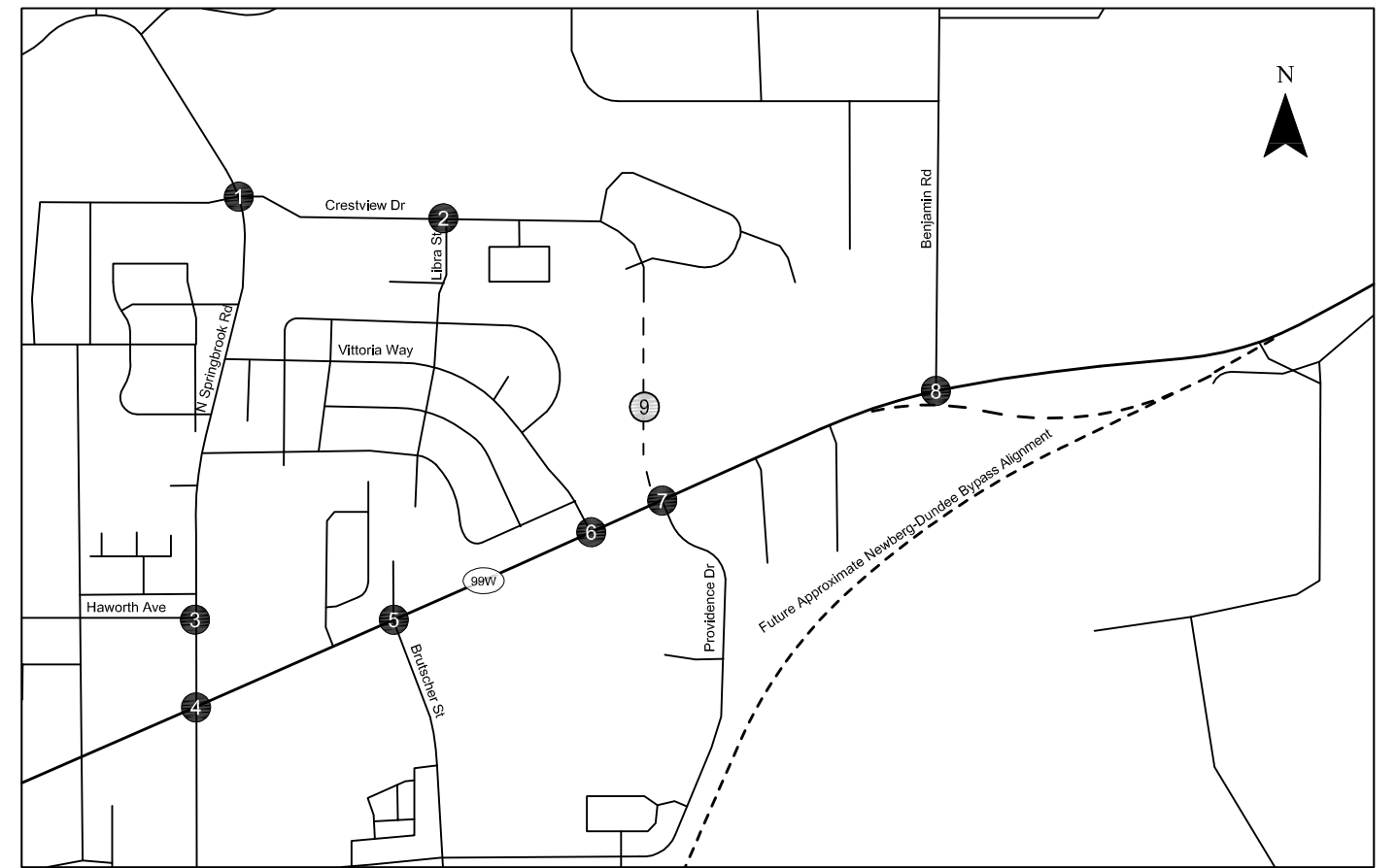
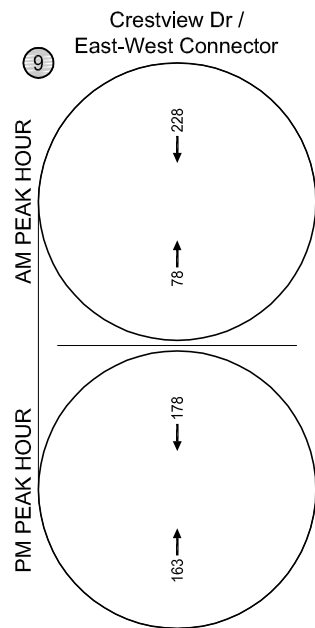
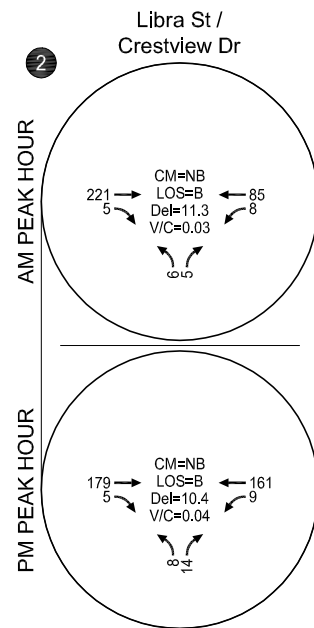
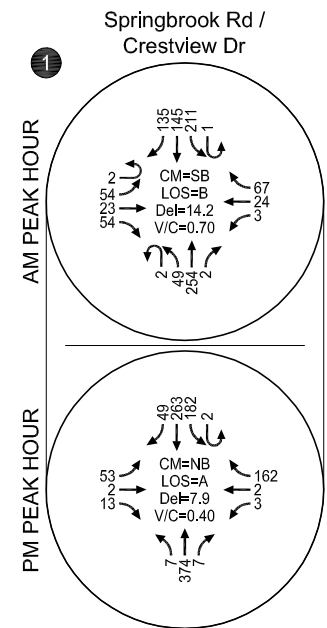
Figure
5

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Reassigned Traffic Volumes
Weekday AM and PM Peak Hours
Newberg, Oregon

Figure
6

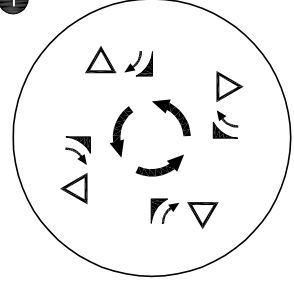


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 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2020 Background Traffic Conditions with Reassigned Traffic
 Weekday AM and PM Peak Hours
 Newberg, Oregon

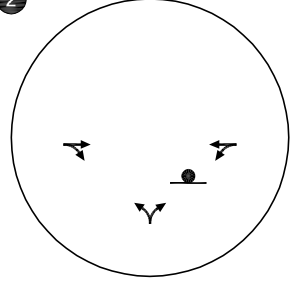
Figure
 7

1 Springbrook Rd / Crestview Dr



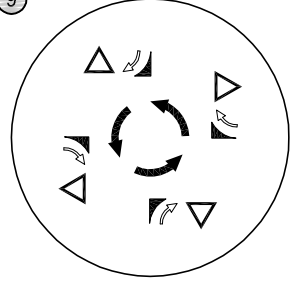
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Libra St / Crestview Dr



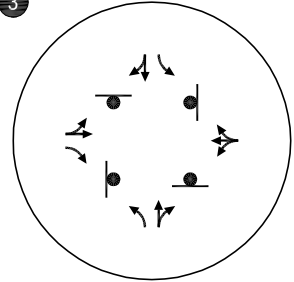
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Crestview Dr / East-West Connector



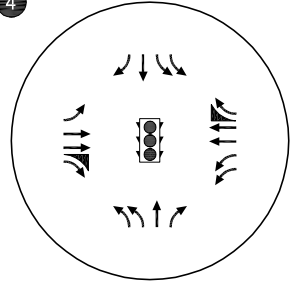
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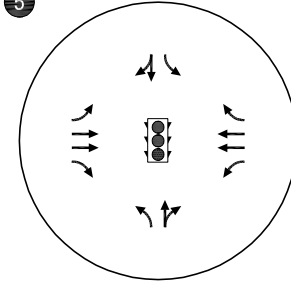
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Springbrook Rd / OR 99W



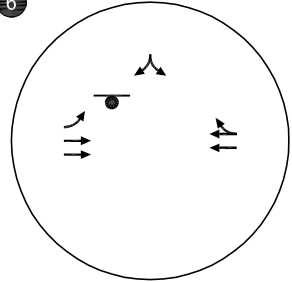
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Brutscher St / OR 99W



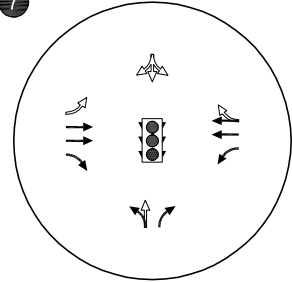
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Vittoria Way / OR 99W



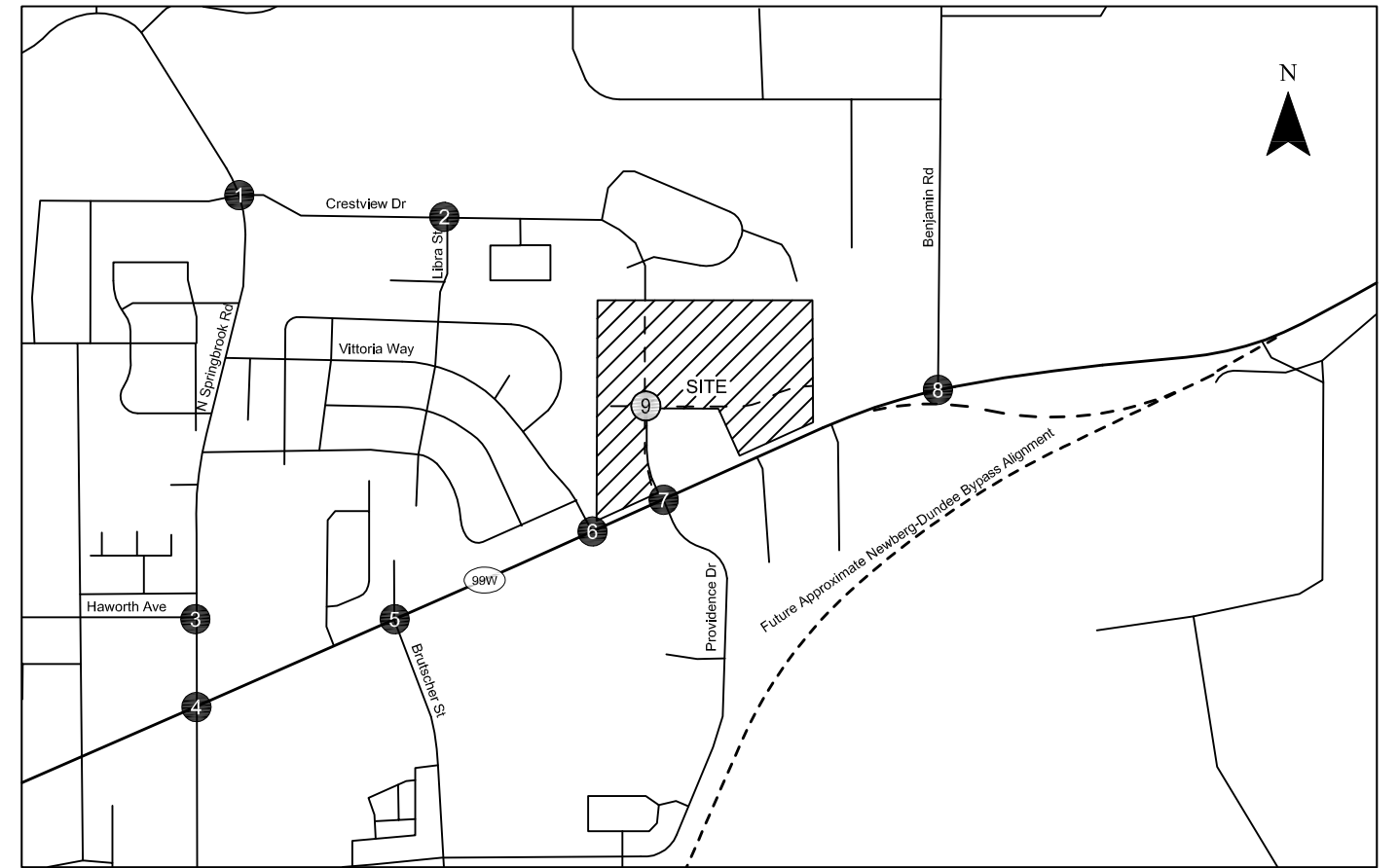
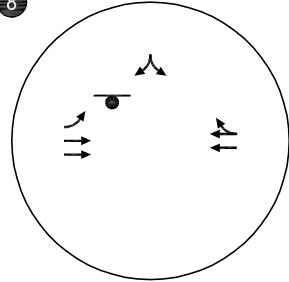
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Crestview Dr / Providence Dr / OR 99W



8

Benjamin Rd / OR 99W



-  - STOP SIGN
-  - TRAFFIC SIGNAL
-  - ROUNDABOUT
-  - YIELD
-  - EXISTING
-  - PROPOSED

Assumed Lane Configurations and Traffic Control Devices Newberg, Oregon

Figure 8

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Level of Service Analysis

Figure 7 also shows the corresponding level of service analysis—each of the study intersections is expected to continue meeting ODOT and City mobility standards, with the following exceptions:

- The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.88 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85.
- The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 0.89 and 0.92, respectively, which both exceed the ODOT mobility standard of 0.80.

Appendix “F” contains the year 2020 background with reassigned traffic Level of Service worksheets.

PROPOSED DEVELOPMENT PLAN

Per the site plan displayed in Figure 2, the Crestview Crossing development includes 248 single-family homes and 48 apartment units. However, given the potential for fluctuation in the final number of units, up to 260 single-family homes were analyzed in this report to provide a conservative analysis of the impacts. The site development will also include an extension of Crestview Drive to the south through the development and connecting to OR 99W to form the north leg of the OR 99W/Providence Drive intersection. Full-build out and occupancy of the phase of the development included in this report is expected to occur in 2020. A future development phase may include an additional 4.43 acres of commercial space adjacent to the development site but is not included in this application.

Trip Generation

The projected weekday daily, AM, and PM peak-hour vehicle trip ends for the proposed development were based on the *Trip Generation Manual*, 10th Edition (Reference 4). Table 4 summarizes the anticipated number of trips that will be generated by the proposed Crestview Crossing development.

Table 4: Proposed Trip Generation

Land Use	ITE Code	Size		Weekday Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	260	units	2,504	189	47	142	254	160	94
Apartment	220	48	units	322	24	6	18	31	20	11
Total				2,826	213	53	160	285	180	105

As shown in Table 4, the proposed development is expected to generate approximately 2,826 weekday daily trips, of which 213 (53 in, 160 out) will occur during the AM peak hour and 285 (180 in, 105 out) will occur during the PM peak hour.

Site Trip Distribution/Trip Assignment

The site-generated trips were distributed onto the study area roadway system according to a select zone analysis of TAZ 117, which includes the proposed development site, from the Newberg Transportation Planning Model, provided by ODOT. This model was reviewed and adjusted based on field-observed turning movement patterns. The traffic generated by the proposed Crestview Crossing development is expected to follow the following trip distribution pattern:

- 15 percent to the east along OR 99W;
- 10 percent to the south along Providence Drive;
- 10 percent to the south along Brutscher Street;
- 35 percent to the west along OR 99W to Springbrook Road; and
- 30 percent to the north along the Crestview Drive extension to Springbrook Road.

Trips were then distributed at the Springbrook Road/Crestview Drive and Springbrook Road/OR 99W intersections based upon existing turning movement counts. Figure 9 illustrates the estimated trip distribution pattern for the proposed development.

The estimated site-generated trips were assigned to the network by distributing the trips shown in Table 5 according to the trip distribution pattern shown in Figure 9. Figure 9 illustrates the site-generated trips that are expected to use the roadway system during the weekday AM and PM peak hours.

Appendix "G" contains the select zone analysis results received from ODOT.

YEAR 2020 TOTAL TRAFFIC CONDITIONS

The total traffic conditions analysis forecasts how the study area's transportation system will operate with the traffic generated by the proposed Crestview Crossing development. The weekday AM and PM peak hour site-generated traffic volumes (shown in Figure 9) were added to the year 2020 background traffic volumes with reassigned traffic (shown in Figure 7) to arrive at the total traffic volumes shown in Figure 10.

Level of Service Analysis

The weekday AM and PM peak hour turning-movement volumes shown in Figure 10 were used to conduct an operational analysis at each study intersection to determine the year 2020 total traffic levels of service. The assumed lane configurations at the Crestview Drive/Providence Drive/OR 99W and Crestview Drive/East-West Connector intersections are displayed in Figure 8. The results of the total traffic analysis shown in Figure 10 indicate that all of the study intersections and site access points are forecast to meet ODOT and City mobility standards under 2020 total traffic conditions during the weekday AM and PM peak hours, with the following exceptions:

- The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.86 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85 but does not exceed the v/c ratio under background conditions with reassigned traffic.
- The weekday AM and PM peak hour v/c ratios at the Crestview Drive/Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.08, respectively. These both exceed the ODOT mobility standard of 0.80.

Appendix "H" contains the year 2020 total traffic Level of Service worksheets.

Mitigation at Crestview Drive/Providence Drive/OR 99W

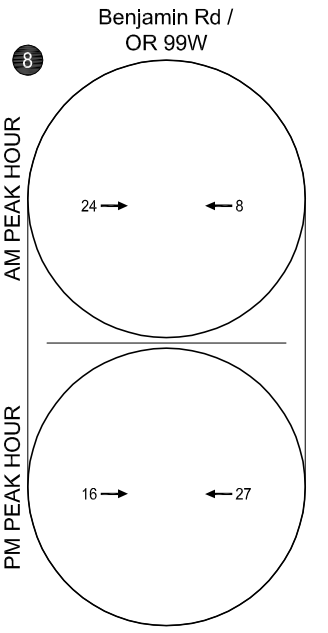
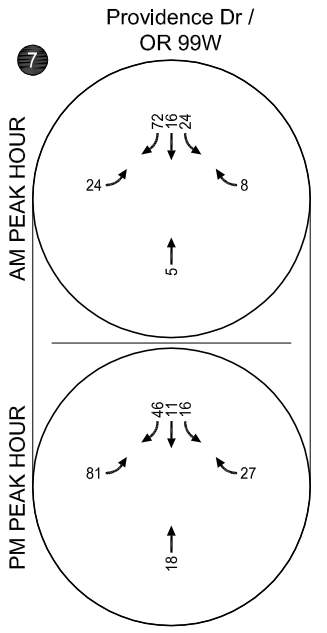
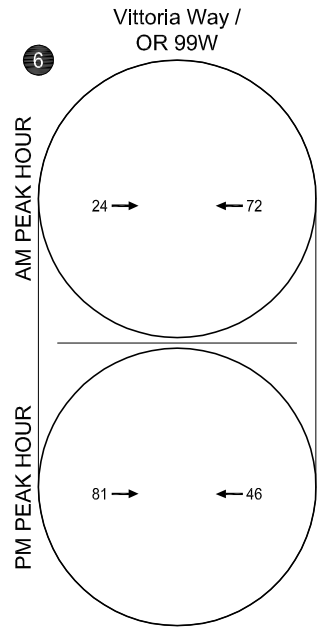
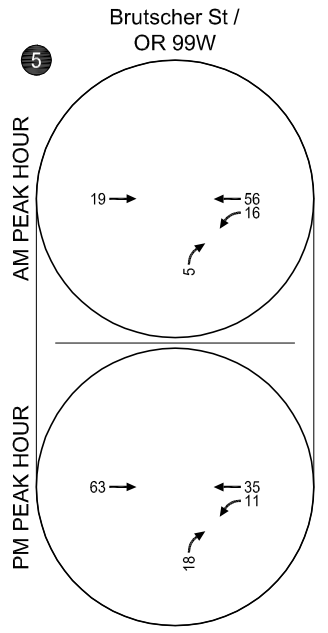
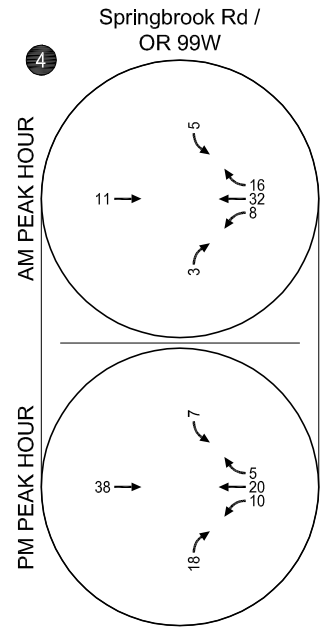
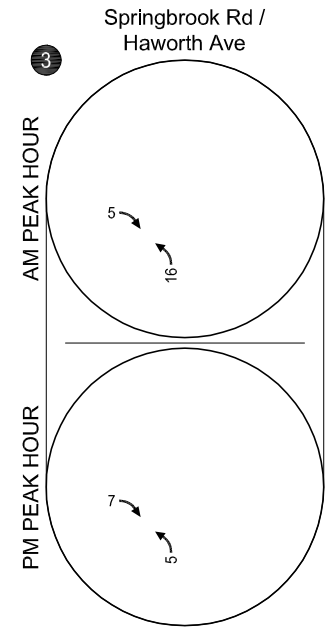
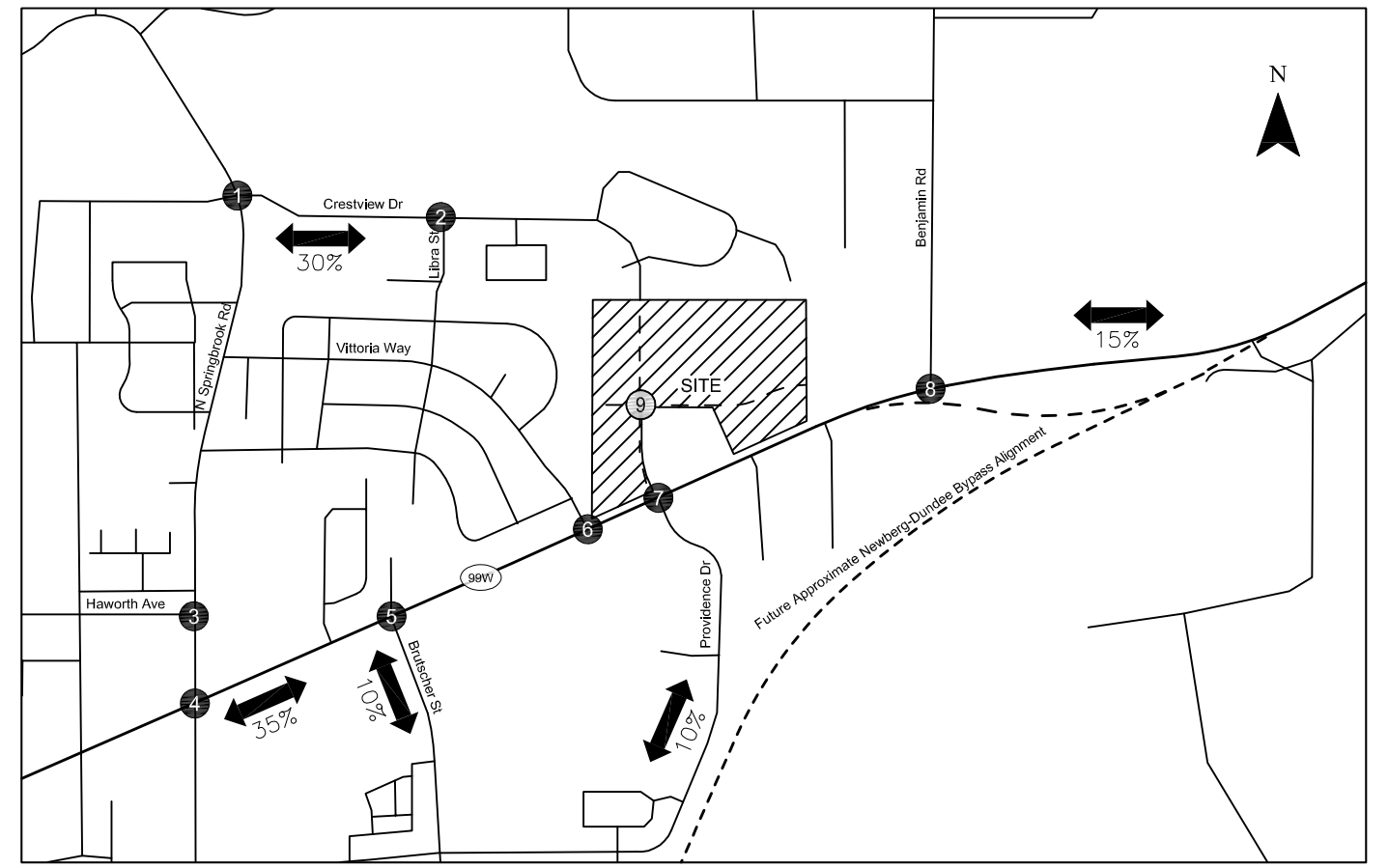
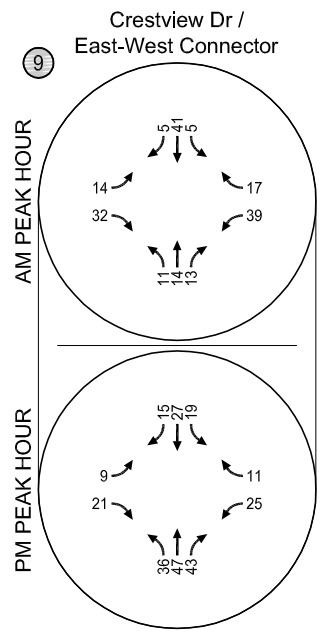
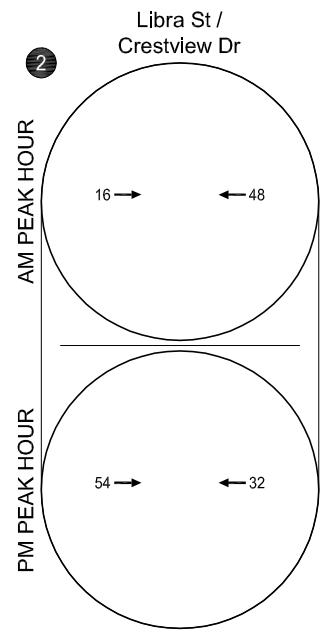
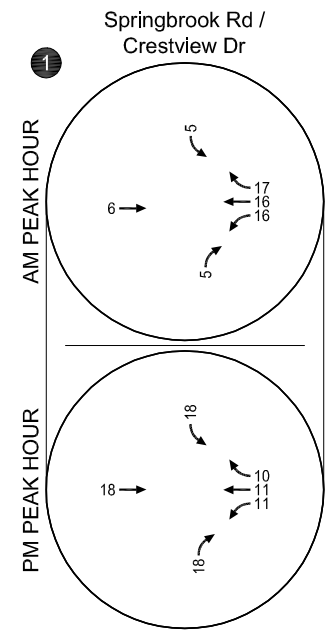
In conjunction with site development, JT Smith Companies proposes to add lanes to the Crestview Drive/Providence Drive/OR 99W intersection, shown in Figure 11 and described below:

- Add an exclusive left turn lane on southbound Crestview Drive,
- Add an exclusive right turn lane on southbound Crestview Drive,
- Add an exclusive right turn lane on westbound OR 99W, and,
- Restripe the northbound Providence Drive approach to include an exclusive left turn lane and an exclusive right turn lane.

These improvements are considered to be above and beyond the geometry needed to construct the Crestview Drive extension.

As shown in Figure 11, with these mitigation measures in place, the weekday AM and PM peak hour v/c ratios at the intersection are forecast to be 0.88 and 0.89, respectively. These both exceed the ODOT mobility standard of 0.80 but do not exceed the respective v/c ratios for background conditions with reassigned traffic.

Appendix "I" contains the year 2020 total traffic with mitigation Level of Service worksheets.

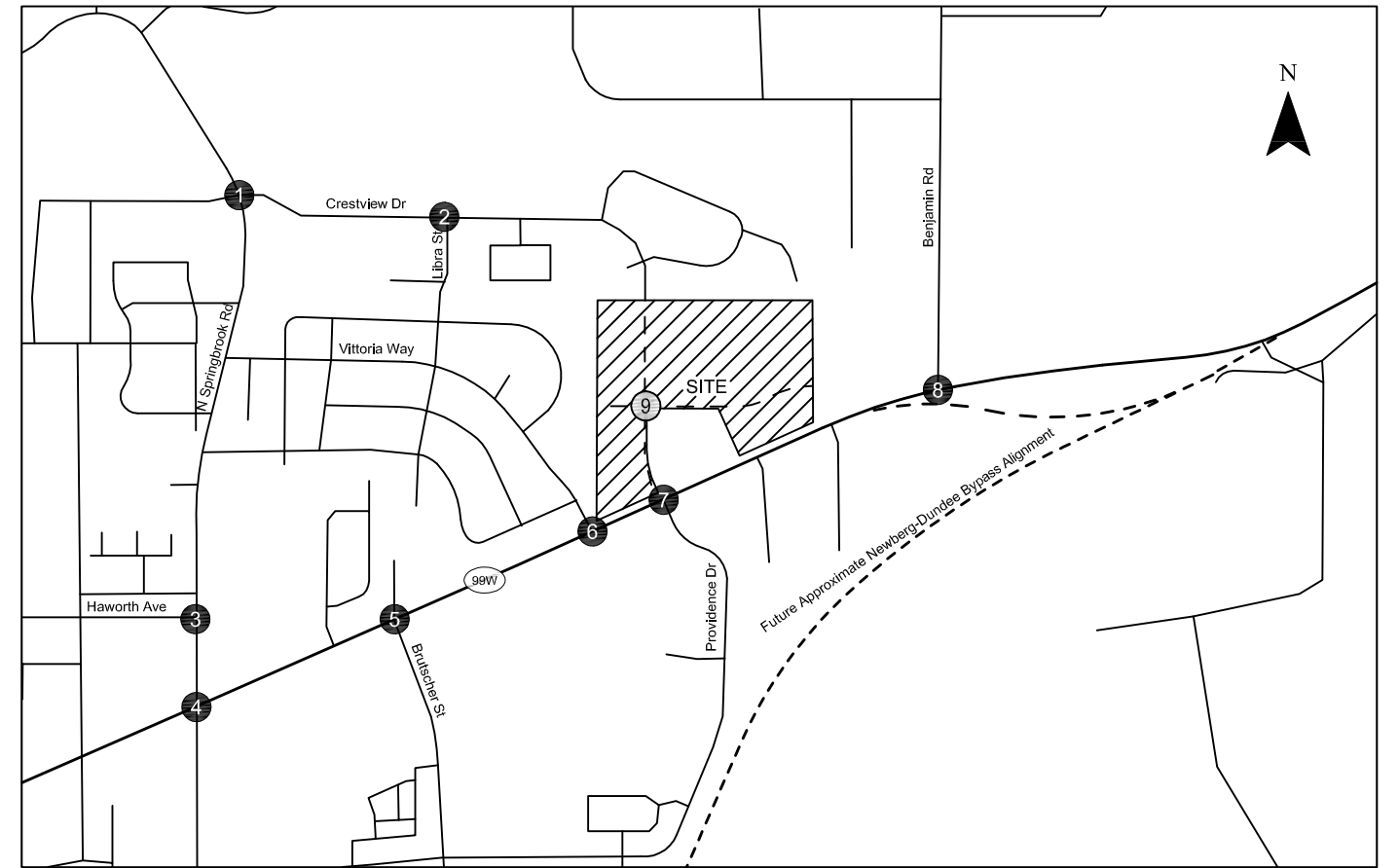
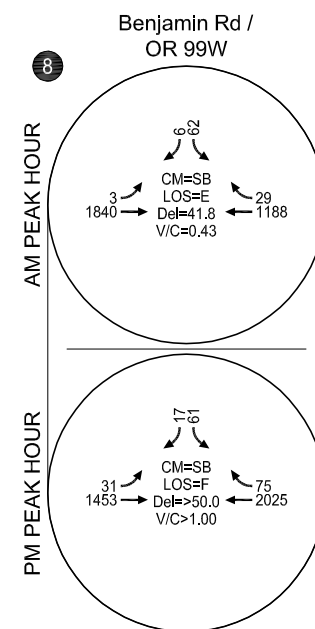
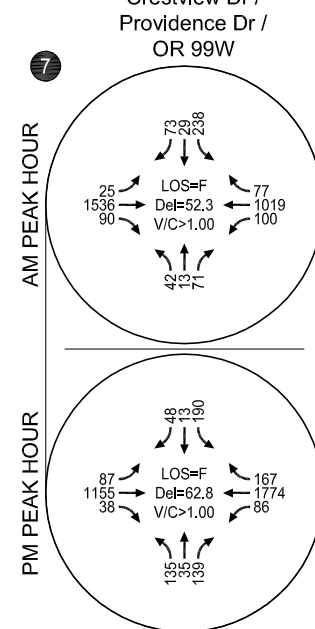
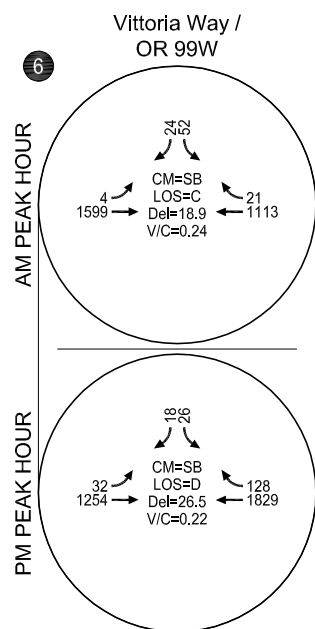
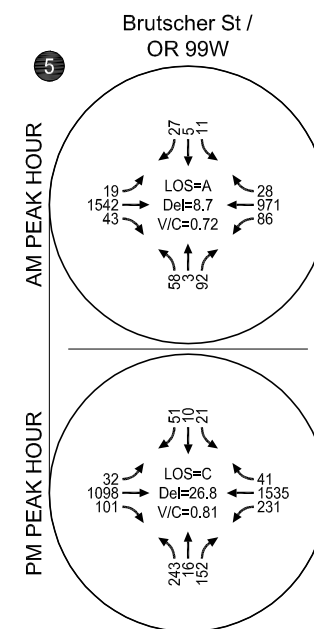
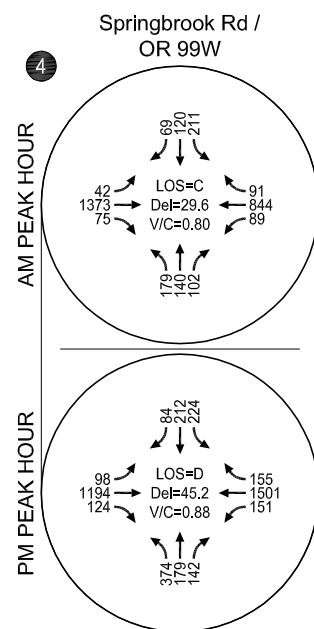
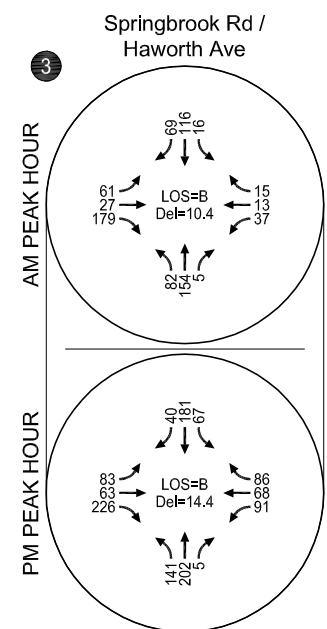
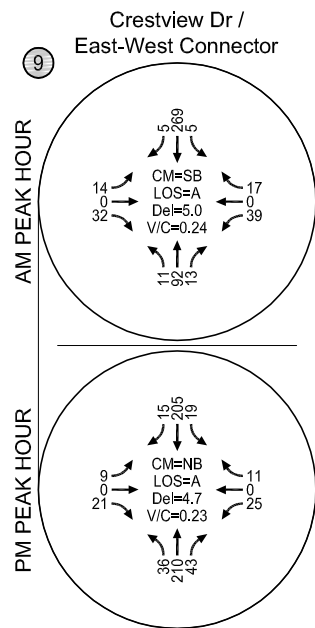
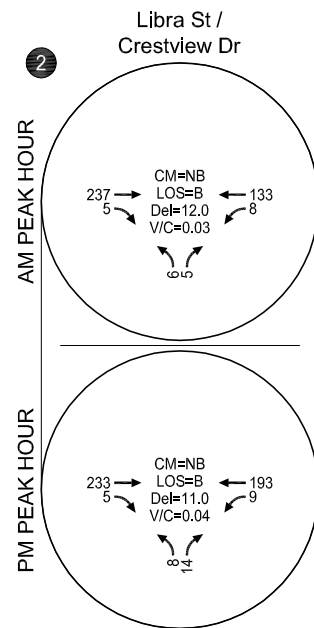
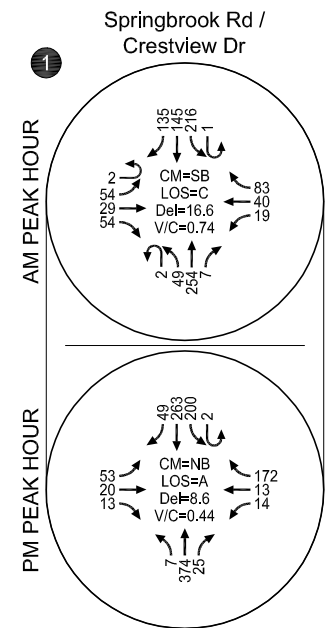


	TOTAL	IN	OUT
AM	213	53	160
PM	285	180	105

Site-Generated Trips
Weekday AM and PM Peak Hours
Newberg, Oregon

Figure
9

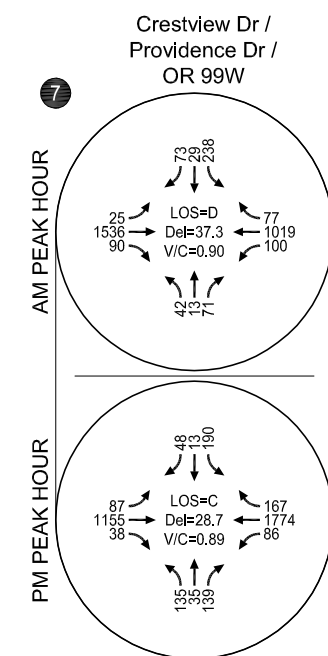
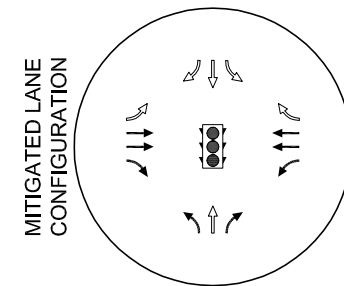
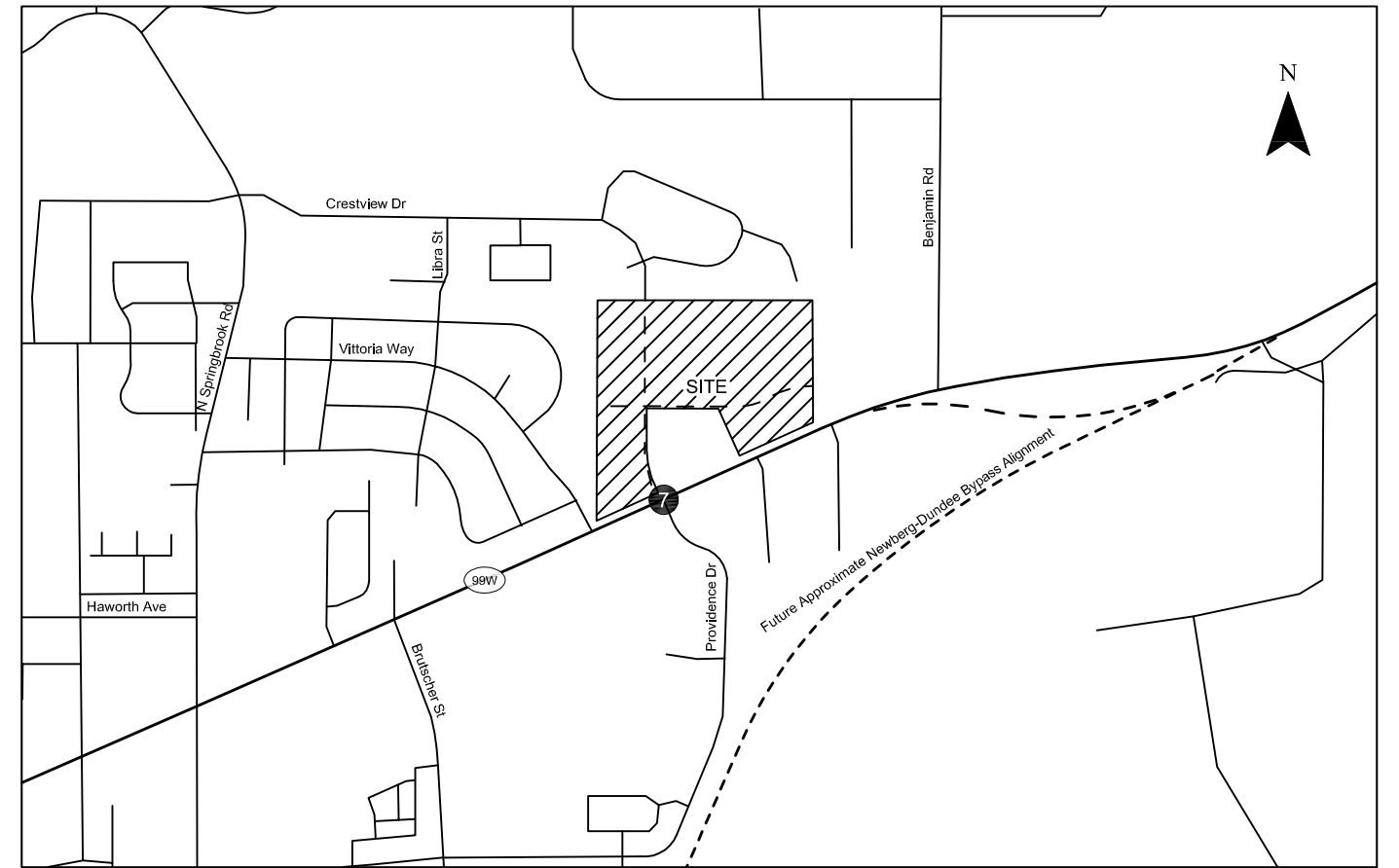
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CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2020 Total Traffic Conditions
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 10



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CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

↗ - EXISTING
 ↗ - PROPOSED

Year 2020 Total Mitigated Traffic Conditions
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
11

2025 HORIZON YEAR BACKGROUND TRAFFIC CONDITIONS

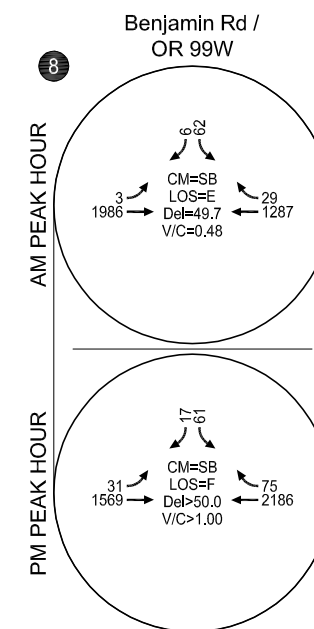
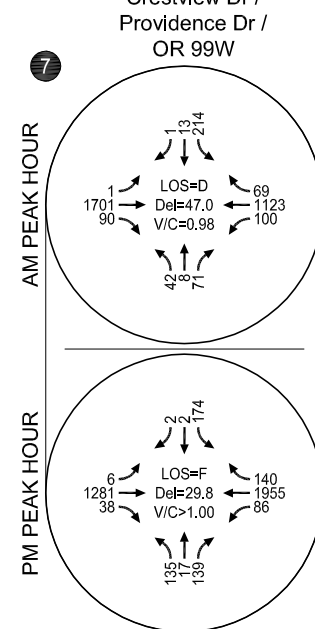
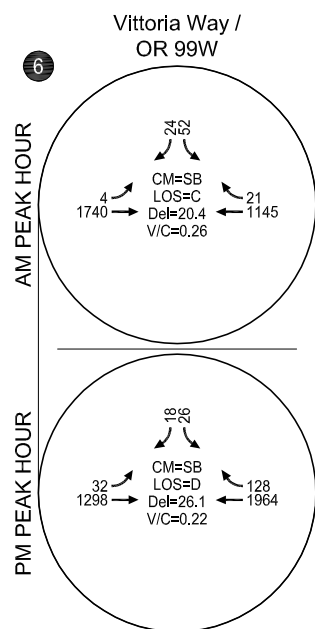
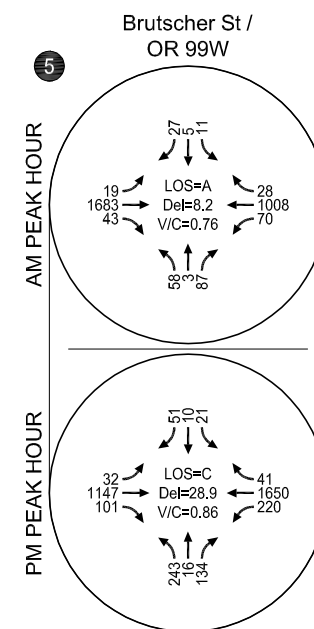
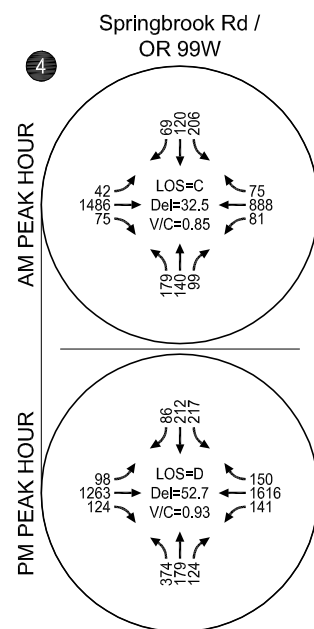
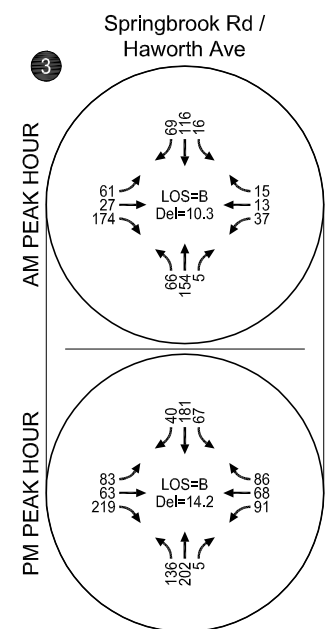
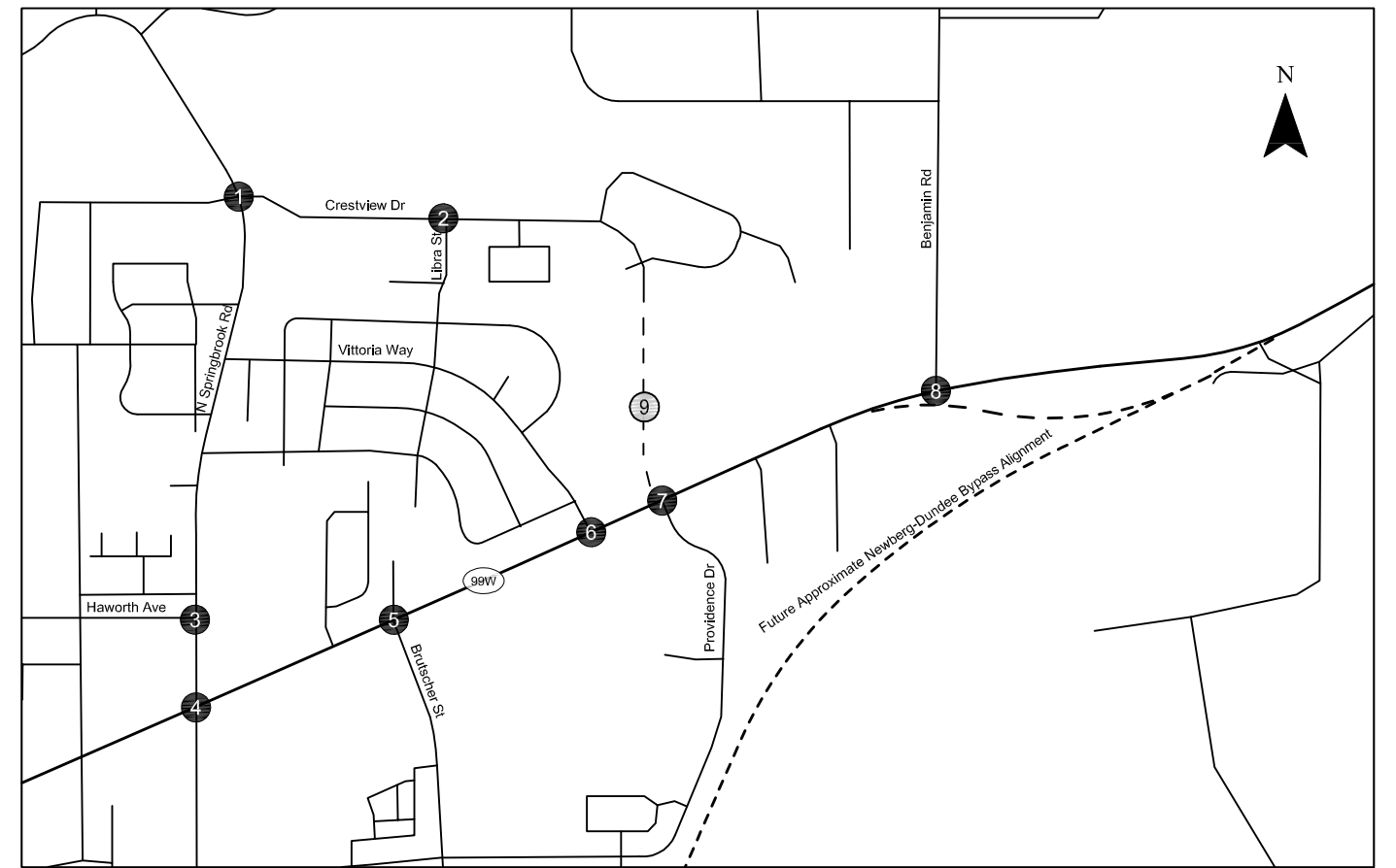
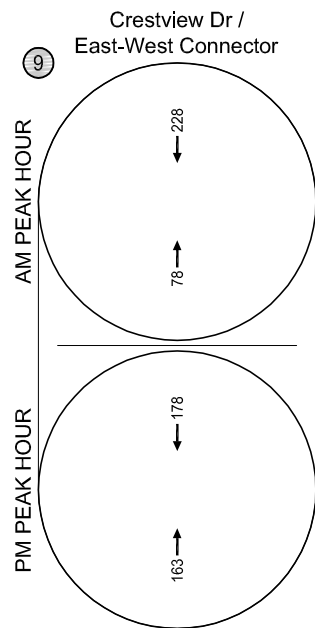
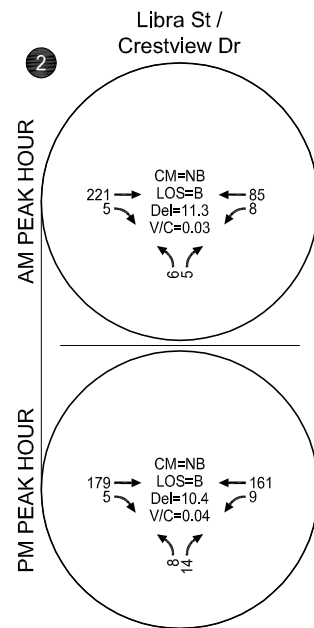
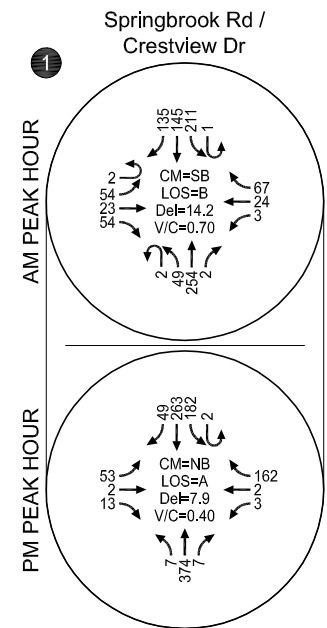
The 2025 horizon year background traffic volumes were developed from the 2020 background traffic volumes with reassigned traffic shown in Figure 8 and then adding an additional five years of growth (at two-percent annual growth) to the mainline through volumes at the study intersections on OR 99W. Figure 12 displays these volumes.

Level of Service Analysis

Figure 12 also shows the corresponding level of service analysis—each of the study intersections is expected to continue meeting ODOT and City mobility standards, with the following exceptions:

- The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.93 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85.
- The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.03, respectively, which both exceed the ODOT mobility standard of 0.80.

Appendix “J” contains the 2025 horizon year background traffic Level of Service worksheets.



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2025 Background Traffic Conditions with Reassigned Traffic
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 12

2025 HORIZON YEAR TOTAL TRAFFIC CONDITIONS

The 2025 horizon year total traffic volumes were developed by adding the site-generated trips shown in Figure 9 to the 2025 horizon year background traffic volumes shown in Figure 12. Figure 13 displays these volumes.

Level of Service Analysis

The weekday AM and PM peak hour turning-movement volumes shown in Figure 13 were used to conduct an operational analysis at each study intersection to determine the year 2025 total traffic levels of service. The assumed lane configurations at the Crestview Drive/Providence Drive/OR 99W and Crestview Drive/East-West Connector intersections are displayed in Figure 8. The results of the total traffic analysis shown in Figure 13 indicate that all of the study intersections and site access points are forecast to meet ODOT and City mobility standards under 2025 total traffic conditions during the weekday AM and PM peak hours, with the following exceptions:

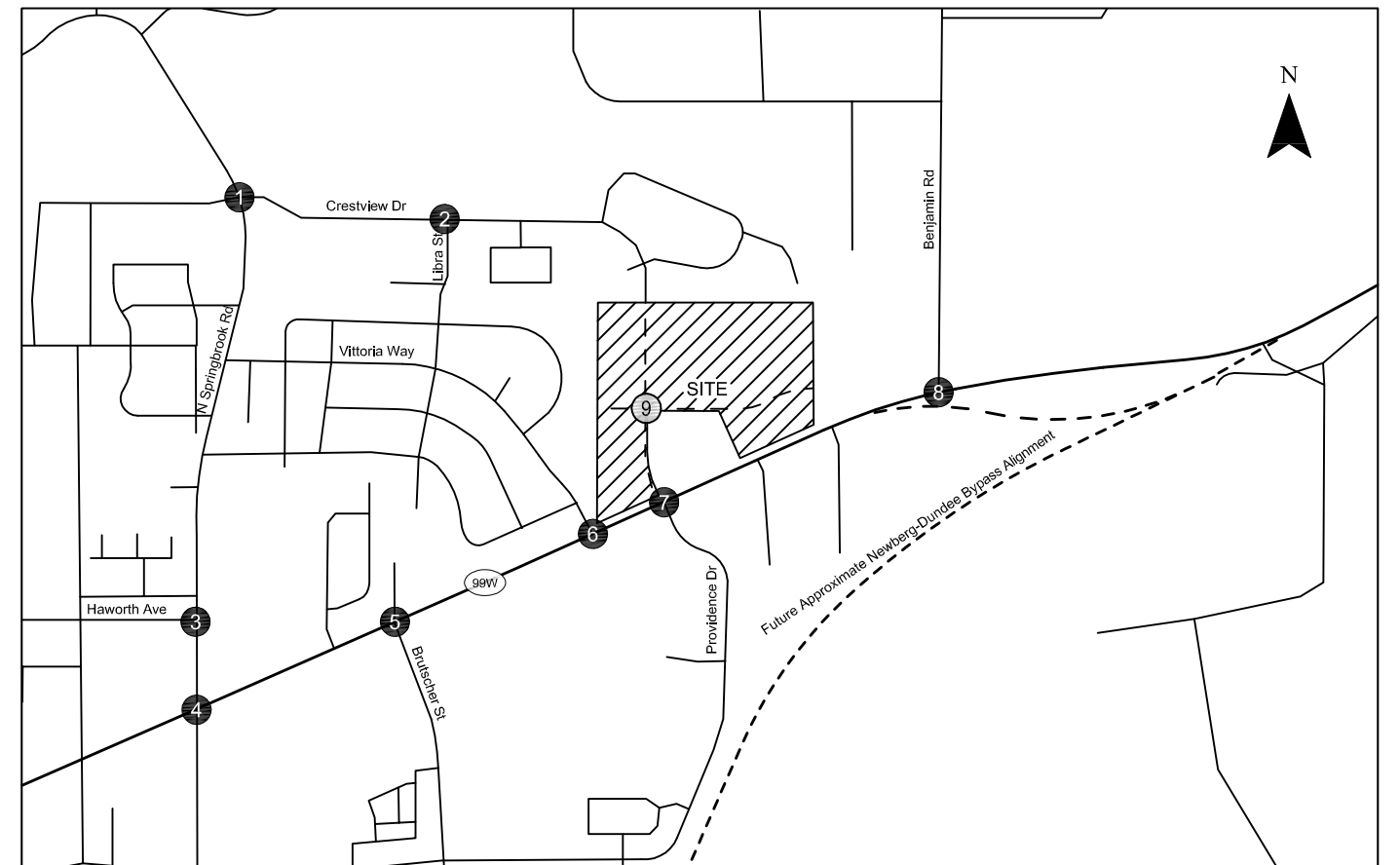
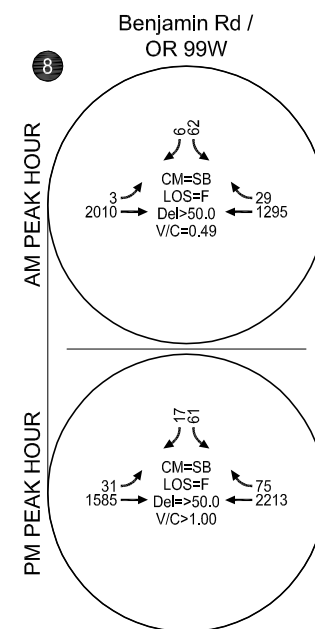
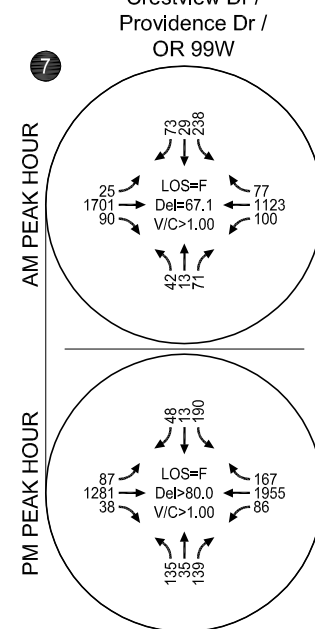
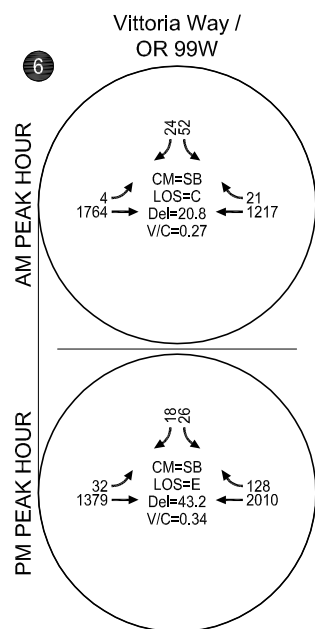
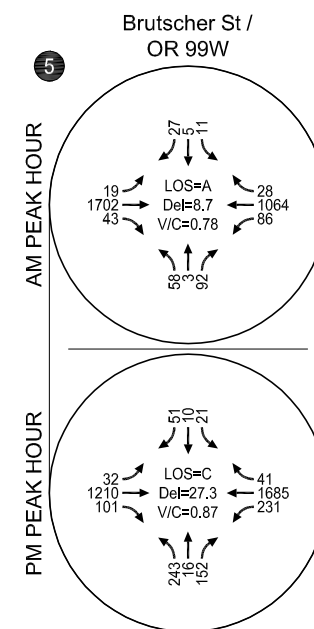
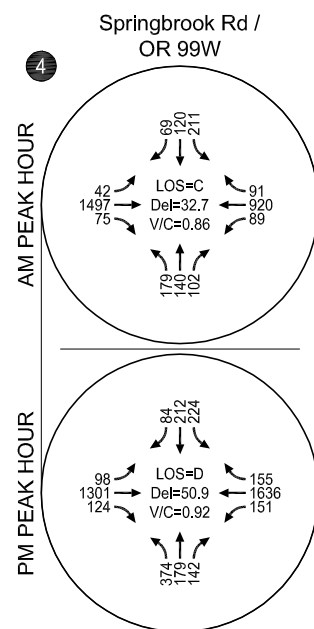
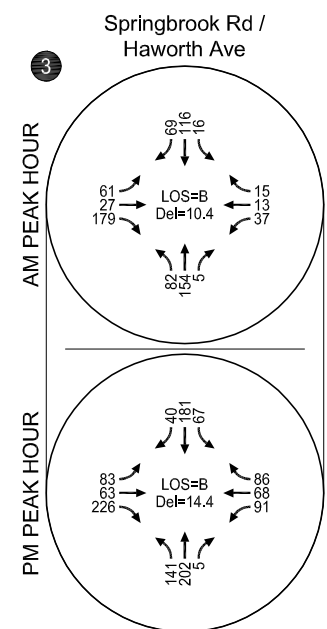
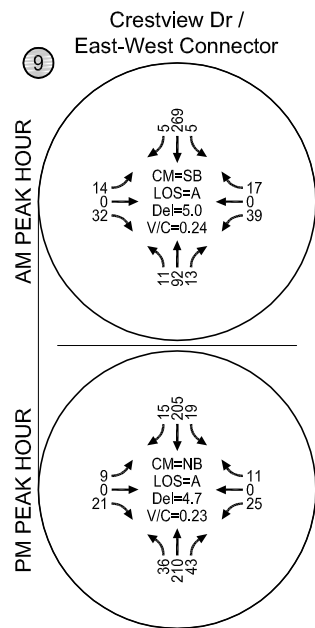
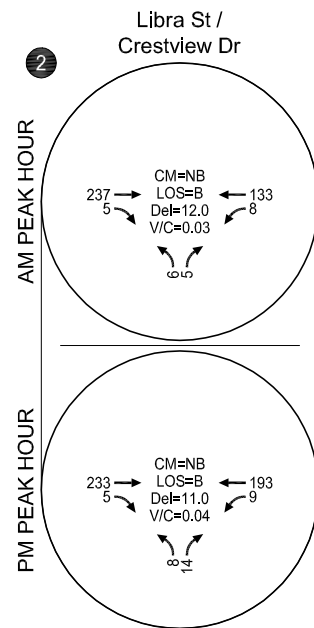
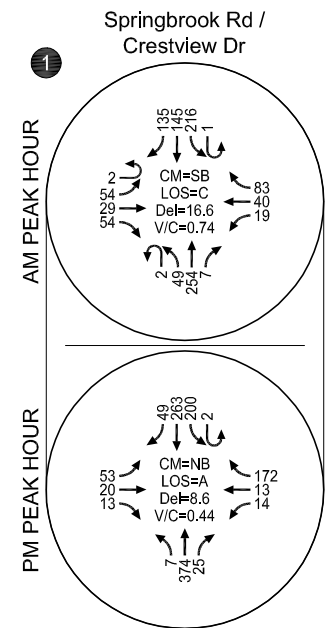
- The weekday AM and PM peak hour v/c ratios at the Springbrook Rd/OR 99W intersection are forecast to be 0.86 and 0.92, respectively. These both exceed the ODOT mobility standard of 0.85, but per ODOT policy, the v/c ratios do not reflect a significant impact because they are not more than 0.03 above the respective v/c ratios under 2025 background conditions.
- The weekday AM and PM peak hour v/c ratios at the Crestview Drive/Providence Drive/OR 99W intersection are forecast to be 1.08 and 1.18, respectively. These both exceed the ODOT mobility standard of 0.80.

Appendix "K" contains the year 2025 total traffic Level of Service worksheets.

Mitigation at Crestview Drive/Providence Drive/OR 99W

Figure 14 displays the 2025 horizon year total traffic conditions with the previously-mentioned mitigation measures at Crestview Drive/Providence Drive/OR 99W in place. As shown, the weekday AM and PM peak hour v/c ratios at the intersection are forecast to be 0.97 and 0.96, respectively. These both exceed the ODOT mobility standard of 0.80 but do not exceed the respective v/c ratios for background conditions with reassigned traffic.

Appendix "L" contains the year 2025 total traffic with mitigation Level of Service worksheets.

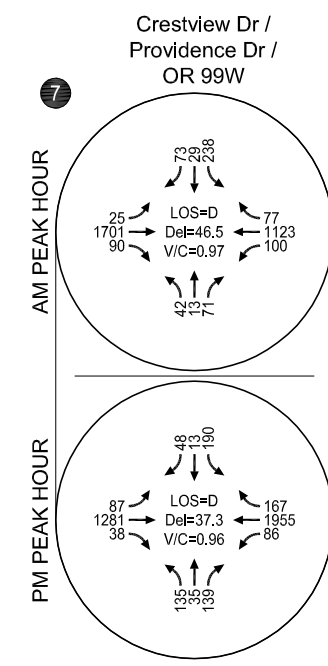
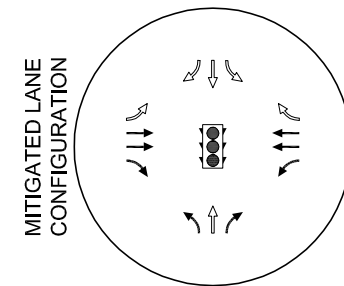
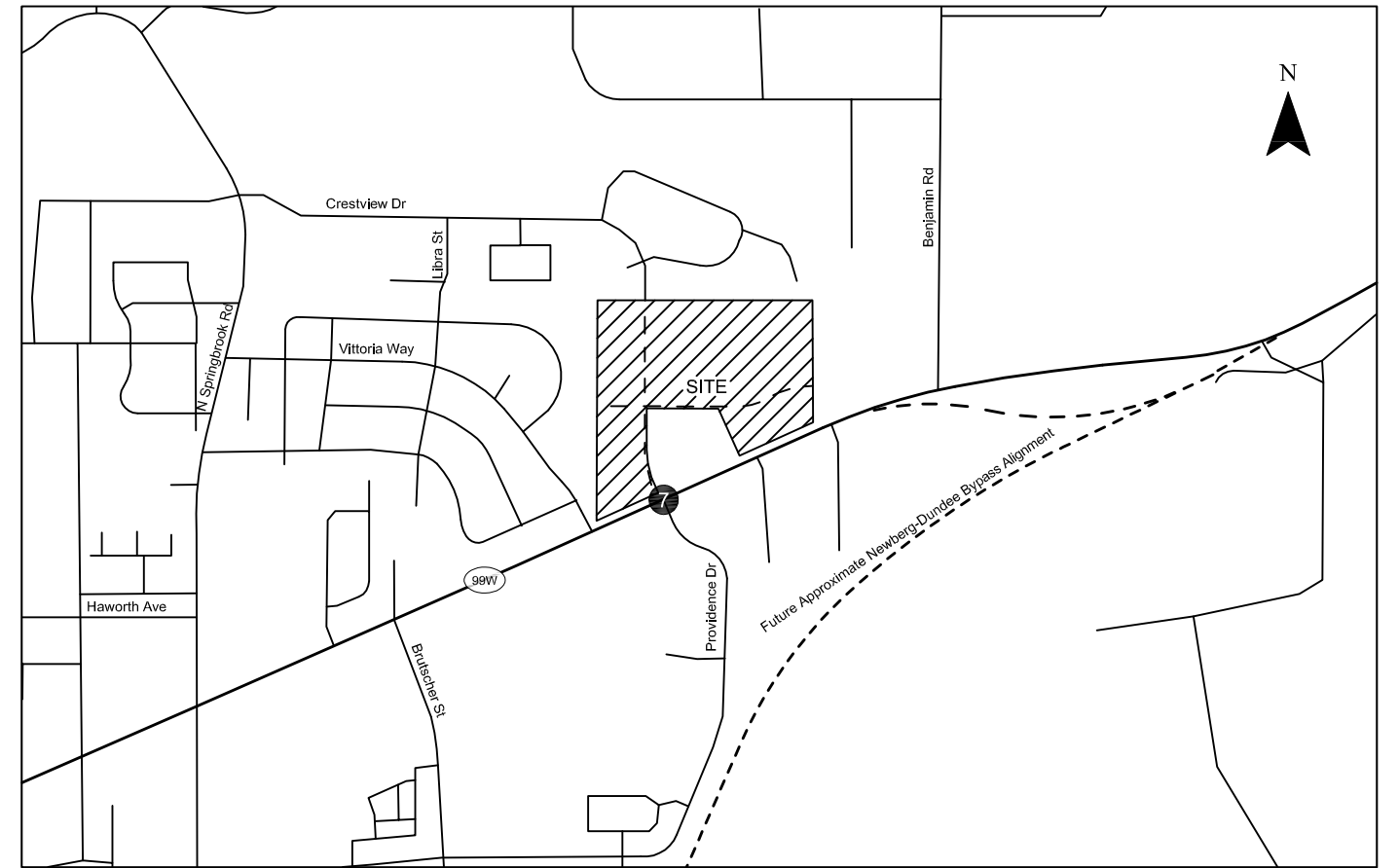


CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2025 Total Traffic Conditions
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 13

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CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

↗ - EXISTING
 ↘ - PROPOSED

Year 2025 Total Mitigated Traffic Conditions
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 14

95TH-PERCENTILE QUEUING ANALYSIS

95th-percentile queues at the study intersections were reviewed to assess whether adequate storage would be provided at turn lanes and between intersections. *SimTraffic* was used to estimate the 95th-percentile queues at the signalized intersections along OR 99W (reflecting an average of five simulation runs), HCS was used to estimate the 95th-percentile queues at the roundabouts, and Synchro was used to estimate 95th-percentile queues elsewhere. Table 5 lists the estimated 95th-percentile queue for each movement at the study intersections under existing, 2020 background, and 2020 total traffic conditions (with the recommended mitigations in place). Reported queues are rounded up to the nearest vehicle length (approximately 25 feet). Note that minor changes in reported 95th-percentile queues between scenarios may be attributed to rounding and/or variability in random seeding.

Table 5: Summary of Existing and 2020 95th-percentile Queues

Intersection	Movement	Storage (ft)	95th-percentile Queue (ft)						Adequate Storage Provided?
			Existing		2020 Background with Reassigned Traffic		2020 Total Mitigated		
			AM	PM	AM	PM	AM	PM	
1: Springbrook Rd/ Crestview Dr	EB	N/A	50	25	50	25	50	25	Yes
	WB	N/A	25	25	25	25	50	25	Yes
	NB	N/A	75	75	125	50	125	75	Yes
	SB	N/A	125	50	150	50	200	75	Yes
2: Libra St/ Crestview Dr	EB	N/A	<25	<25	<25	<25	<25	<25	Yes
	WB	N/A	25	<25	<25	<25	<25	<25	Yes
	NB	N/A	25	<25	<25	<25	<25	<25	Yes
3: Springbrook Rd/ Haworth Ave	EB L/T	N/A	25	50	25	50	25	50	Yes
	EB R	100	50	75	50	75	50	75	Yes
	WB	N/A	25	125	25	75	25	75	Yes
	NB L	90	25	50	25	50	25	50	Yes
	NB T/R	N/A	100	250	50	75	50	75	Yes
	SB L	90	25	25	25	25	25	25	Yes
	SB T/R	N/A	275	300	50	75	50	75	Yes
4: Springbrook Rd/ OR 99W	EB L	350	175	400	150	250	150	300	Yes
	EB T	N/A	475	475	475	450	500	450	Yes
	EB R	350	175	100	125	150	150	150	Yes
	WB L	430	100	275	100	375	125	475	No
	WB T	N/A	225	575	175	750	175	700	Yes
	WB R	370	<25	375	<25	500	<25	400*	No
	NB L	320	150	400	200	325	200	325	No
	NB T	N/A	200	1,925	175	275	200	225	Yes
	NB R	320	100	275	100	125	100	125	Yes
	SB L	170	225	250	175	225	175	200*	No
	SB T	N/A	375	500	250	350	225	375	Yes
SB R	130	125	175	125	175	125	150	No	

Table 5: Summary of Existing and 2020 95th-percentile Queues (continued)

Intersection	Movement	Storage (ft)	95th-percentile Queue (ft)						Adequate Storage Provided?
			Existing		2020 Background with Reassigned Traffic		2020 Total Mitigated		
			AM	PM	AM	PM	AM	PM	
5: Brutscher St/ OR 99W	EB L	260	50	125	75	125	50	125	Yes
	EB T	N/A	125	375	200	400	200	400	Yes
	EB R	200	25	225	50	225	50	200	Yes
	WB L	350	125	475	125	475	150	325	Yes
	WB T	N/A	150	1,400	125	1,325	100	375	Yes
	WB R	80	50	75	25	75	25	75	Yes
	NB L	220	125	300	125	300	125	275	No
	NB T/R	N/A	125	500	100	500	100	300	Yes
	SB L	50	50	50	50	50	50	50	Yes
	SB T/R	N/A	50	100	50	100	50	75	Yes
6: Vittoria Way/ OR 99W	EB L	100	<25	<25	<25	<25	<25	<25	Yes
	EB T	N/A	<25	<25	<25	<25	<25	<25	Yes
	WB T/R	N/A	<25	<25	<25	<25	<25	<25	Yes
	SB	N/A	25	25	25	25	25	25	Yes
7: Crestview Dr/ Providence Dr/ OR 99W	EB L	100	N/A	N/A	25	50	100	125	No
	EB T	N/A	225	250	475	225	500	175	Yes
	EB R**	100	25	25	50	<25	50	<25	Yes
	WB L**	230	100	125	225	150	225	150	Yes
	WB T	N/A	100	1,175	175	425	225	525	Yes
	WB R	230	N/A	N/A	N/A	NA	75	275	No
	NB L	160	75	200	100	225	75	200	No
	NB T	N/A	N/A	N/A	N/A	N/A	50	175	Yes
	NB R	160	100	125	75	175	100	150	Yes
	SB L	200	N/A	N/A	N/A	N/A	250	250	No
	SB T	N/A	N/A	N/A	275	250	250	200	Yes
SB R	200	N/A	N/A	N/A	N/A	75	75	Yes	
8: Benjamin Rd/ OR 99W	EB L	250	<25	<25	<25	<25	<25	<25	Yes
	EB T	N/A	<25	<25	<25	<25	<25	<25	Yes
	WB T/R	N/A	<25	<25	<25	<25	<25	<25	Yes
	SB	N/A	50	125	75	150	50	150	Yes
9: Crestview Dr/ East-West Connector	EB	N/A	N/A	N/A	N/A	N/A	25	25	Yes
	WB	N/A	N/A	N/A	N/A	N/A	25	25	Yes
	NB	N/A	N/A	N/A	N/A	N/A	25	25	Yes
	SB	N/A	N/A	N/A	N/A	N/A	25	25	Yes

*SimTraffic reported a maximum queue shorter than the 95th-percentile queue; therefore, the maximum queue is shown.

**SimTraffic reported existing 95th-percentile queues that significantly overestimate field-observed maximum queues; therefore, the Synchro-reported 95th-percentile queue is shown.

The table indicates the following 95th-percentile queues are projected to exceed the provided storage lengths under 2020 total traffic conditions with the proposed mitigation measures:

- Springbrook Road/OR 99W:
 - Westbound left turn (weekday PM peak hour). The proposed development does not add trips to this movement and results in a net decrease in trips at this intersection, so no changes are recommended.
 - Westbound right turn (weekday PM peak hour). This queue will also exceed the storage length under 2020 background conditions, so no changes are recommended.
 - Northbound left turn (weekday PM peak hour). This queue will also exceed the storage length under 2020 background conditions, so no changes are recommended.
 - Southbound left turn (weekday AM and PM peak hours). These queues will also exceed the storage length under 2020 background conditions, so no changes are recommended.
 - Southbound right turn (weekday PM peak hour). This queue will also exceed the storage length under 2020 background conditions, so no changes are recommended.
- Brutscher Street/OR 99W:
 - Northbound left turn (weekday PM peak hour). This queue will also exceed the storage length under 2020 background conditions, so no changes are recommended.
- Crestview Drive/Providence Drive/OR 99W:
 - Eastbound left turn (weekday PM peak hour). Restriping the storage length is recommended (as discussed further in this section).
 - Northbound left turn (weekday PM peak hour). This queue will also exceed the storage length under 2020 background conditions, so no changes are recommended.

Table 6 displays the 95th-percentile queues at the study intersections along OR 99W for the 2025 horizon year, under the background with reassigned traffic conditions, as well as total traffic conditions.

Table 6. Summary of 2025 Horizon Year 95th-percentile Queues

Intersection	Movement	Storage (ft)	95th-percentile Queue (ft)				Adequate Storage Provided?
			2025 Background with Reassigned Traffic		2025 Total Mitigated		
			AM	PM	AM	PM	
4. Springbrook Rd/ OR 99W	EB L	350	175	325	250	325	Yes
	EB T	N/A	600	500	625	575	Yes
	EB R	350	225	150	225	250	Yes
	WB L	430	100	550	100	475	No
	WB T	N/A	200	1425	200	825	Yes
	WB R	370	<25	575	<25	550	No
	NB L	320	200	275	175	300	Yes
	NB T	N/A	200	225	175	250	Yes
	NB R	320	125	125	100	150	Yes
	SB L	170	200	225	200	200	No
	SB T	N/A	225	400	225	350	Yes
SB R	130	125	175	125	175	No	
5. Brutscher St/ OR 99W	EB L	260	50	175	75	100	Yes
	EB T	N/A	250	375	275	400	Yes
	EB R	200	50	225	75	225	No
	WB L	350	125	450	125	275	Yes
	WB T	N/A	100	1625	100	350	Yes
	WB R	80	25	75	25	75	Yes
	NB L	220	125	300	125	275	No
	NB T/R	N/A	125	500	125	275	Yes
	SB L	50	50	75	25	50	No
SB T/R	N/A	50	125	50	100	Yes	
6. Vittoria Way/ OR 99W	EB L	100	<25	25	<25	<25	Yes
	EB T	N/A	<25	<25	<25	<25	Yes
	WB T/R	N/A	<25	<25	<25	<25	Yes
	SB	N/A	50	25	50	25	Yes
7. Crestview Dr/ Providence Dr/ OR 99W	EB L	100	25	<25	100	150	No
	EB T	N/A	500	250	500	225	Yes
	EB R	100**	50	<25	50	<25	Yes
	WB L	230**	225	150	225	150	Yes
	WB T	N/A	200	1,650	250	1,300	Yes
	WB R	230	N/A	N/A	50	350	No
	NB L	160	100	250	100	200	No
	NB T	N/A	N/A	N/A	50	150	Yes
	NB R	160	100	175	100	125	Yes
	SB L	200	N/A	N/A	250	250	No
	SB T	N/A	325	250	300	225	Yes
SB R	200	N/A	N/A	75	75	Yes	

Table 6. Summary of 2025 Horizon Year 95th-percentile Queues (Continued)

Intersection	Movement	Storage (ft)	95th-percentile Queue (ft)				Adequate Storage Provided?
			2025 Background with Reassigned Traffic		2025 Total Mitigated		
			AM	PM	AM	PM	
8. Benjamin Rd/ OR 99W	EB L	250	25	25	25	25	Yes
	EB T	N/A	<25	<25	<25	<25	Yes
	WB T/R	N/A	<25	<25	<25	<25	Yes
	SB	N/A	50	200	50	200	Yes

**SimTraffic* reported a maximum queue shorter than the 95th-percentile queue; therefore, the maximum queue is shown.

***SimTraffic* reported existing 95th-percentile queues much higher than the field-observed maximum queues; therefore, the Synchro-reported 95th-percentile queue is shown.

In addition to the 95th-percentile queues expected to exceed the provided storage lengths under 2020 total traffic conditions, the table indicates the following 95th-percentile queues are projected to exceed the provided storage lengths under 2025 total traffic conditions with the proposed mitigation measures:

- Brutscher Street/OR 99W:
 - Eastbound right turn (weekday PM peak hour). This queue will also exceed the storage length under 2025 background conditions, so no changes are recommended.
- Crestview Drive/Providence Drive/OR 99W:
 - Eastbound right turn (weekday AM peak hour). This queue will also exceed the storage length under 2025 background conditions, so no changes are recommended.
 - Westbound left turn (weekday PM peak hour). This queue will also exceed the storage length under 2025 background conditions, so no changes are recommended.

Appendix "M" contains the SimTraffic queuing worksheets.

COMMERCIAL DEVELOPMENT SENSITIVITY ANALYSIS

As noted previously, approximately 4.43 acres adjacent to the proposed site could be developed in the future as commercial property. This commercial property is not included in this land use application but could be constructed at an undetermined time as part of a separate land use application. We investigated the potential impacts of developing the 4.43 acres of commercial property for the following reasons:

- To estimate the additional mitigations, if any, needed to meet ODOT policy, and
- To consider compatibility between these additional mitigations and the proposed lane geometry and mitigations on roadways and at intersections within and around the site, including the Crestview Drive/Providence Drive/OR 99W intersection and proposed Crestview Drive/East-West Connector roundabout.

A build-out year of 2020 and a horizon year of 2025 was assumed for this analysis for simplicity and for consistency with the analysis years of the residential development. Assuming a later background year would result in marginally different background traffic volumes because traffic on OR 99W could either

increase (if more in process developments are approved) or decrease (as a result of completion of the Newberg-Dundee Bypass).

Table 7 displays the trip generation for the commercial traffic (in addition to the residential), assuming 25 percent of the 4.43 acres becomes leasable floor space and that all of the property is developed as shopping center.

Table 7: Trip Generation Including Phase II

Land Use	ITE Code	Size		Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	260	Units	2,504	189	47	142	254	160	94
<i>Less Internal Trips</i>				276	9	2	7	28	18	10
Apartment	220	48	Units	322	24	6	18	31	20	11
<i>Less Internal Trips</i>				36	1	0	1	3	2	1
Shopping Center	820	48,243*	ft ²	3,662	176	109	67	317	152	165
<i>Less Internal Trips</i>				402	9	5	4	35	17	18
<i>Less Pass-by Trips</i>				358	0	0	0	96	48	48
Total Gross Trips				6,488	389	162	227	602	332	270
<i>Less Internal Trips</i>				714	19	7	12	66	37	29
<i>Less Pass-by Trips</i>				358	0	0	0	96	48	48
Total Net New Trips				5,416	370	155	215	440	247	193

*Assumes a gross leasable area to acreage ratio of 0.25.

As shown, the commercial property, if developed, could generate a total development amount of 5,416 weekday daily trips, of which 370 (155 in, 215 out) would occur during the AM peak hour and 440 (247 in, 193 out) during the PM peak hour. The development is also expected to generate approximately 96 pass-by trips during the weekday PM peak hour—to conservatively estimate the impacts to the Crestview Drive/Providence Drive/OR 99W intersection, all of the pass-by trips were treated as diverted from OR 99W.

Figure 15 shows the trip generation and year 2020 total traffic conditions at the Crestview Drive/Providence Drive/OR 99W intersection and Crestview Drive/East-West Connector Roundabout. As shown, the Crestview Drive/East-West Connector Roundabout is expected to continue operating acceptably as a single-lane roundabout. With the mitigation improvements associated with the residential development in place, the weekday AM and PM peak hour v/c ratios at the Crestview Drive/Providence Drive/OR 99W intersection are forecast to be 0.92 and 0.95, respectively.

Figure 16 shows the trip generation and 2025 horizon year traffic conditions at the Crestview Drive/Providence Drive/OR 99W intersection and Crestview Drive/East-West Connector Roundabout. As shown, the Crestview Drive/East-West Connector Roundabout is expected to continue operating acceptably as a single-lane roundabout. With the mitigation improvements associated with the residential development in place, the weekday AM and PM peak hour v/c ratios at the Crestview Drive/Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.02, respectively.

ODOT defines no significant impact as a v/c ratio of 0.03 above the background condition—therefore, assuming the same respective background conditions, no additional mitigations would be required for either the 2020 or 2025 analysis years.

Table 8 displays the estimated resulting 95th-percentile queues at the Crestview Drive/Providence Drive/OR 99W intersection from *SimTraffic*.

Table 8: Summary of 95th-percentile Queues Including Phase II

Intersection	Movement	Storage (ft)	95 th -percentile Queue (ft)			
			2020 Phase II		2025 Phase II	
			AM	PM	AM	PM
7: Crestview Dr/ Providence Dr/ OR 99W	EB L	100	125*	125*	125	125*
	EB T	N/A	500	400	500*	425
	EB R**	100	50	<25	50	<25
	WB L**	230	225	150	225	150
	WB T	N/A	275	850	300	1,400
	WB R	230	125	275*	75	275*
	NB L	160	100	175	100	200
	NB T	N/A	75	175	50	125
	NB R	160	100	125	100	150
	SB L	200	225*	225*	225*	225*
	SB T	N/A	350	325*	325	300
	SB R	200	75	150	100	150

**SimTraffic* reported a maximum queue shorter than the 95th-percentile queue; therefore, the maximum queue is shown.

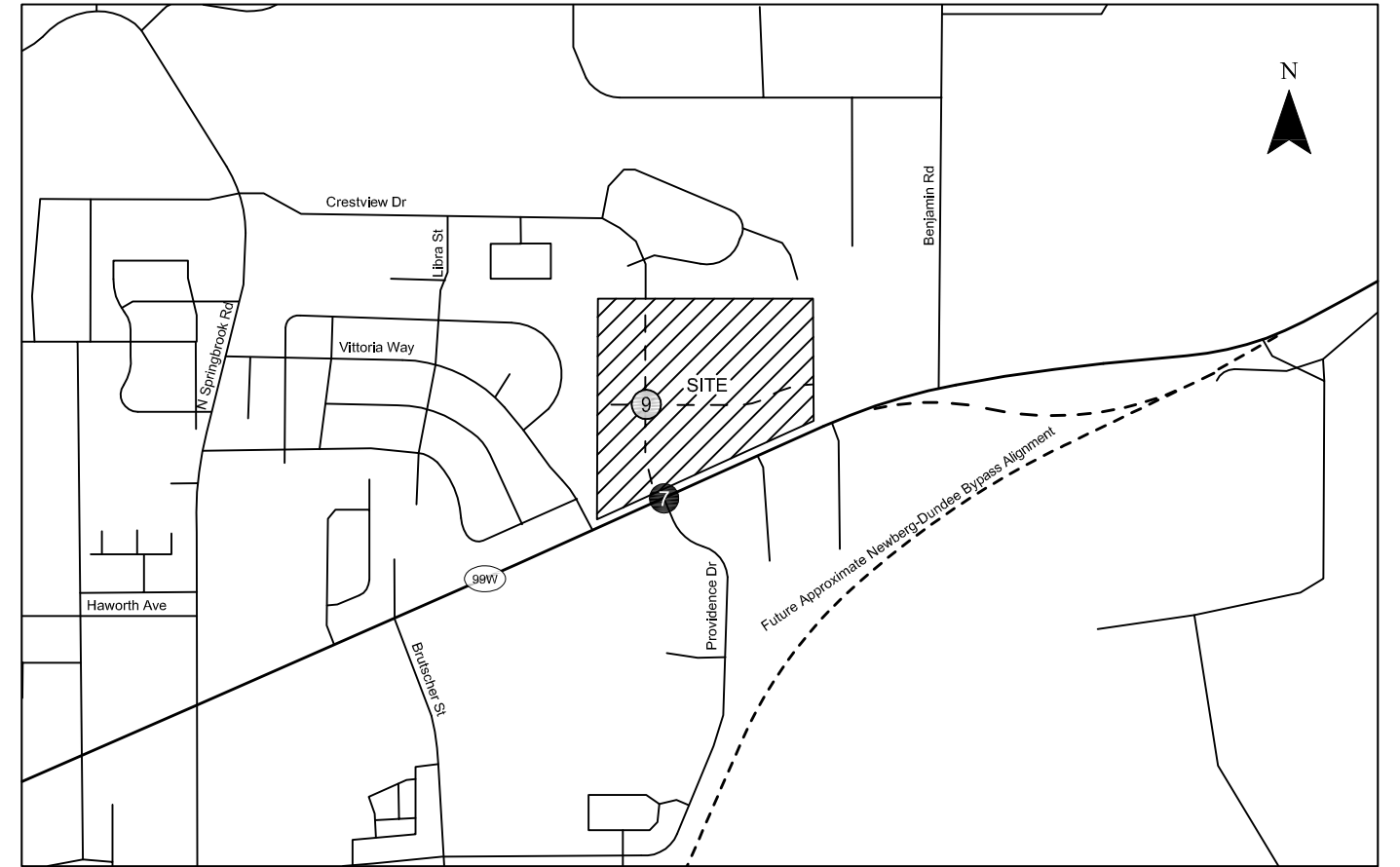
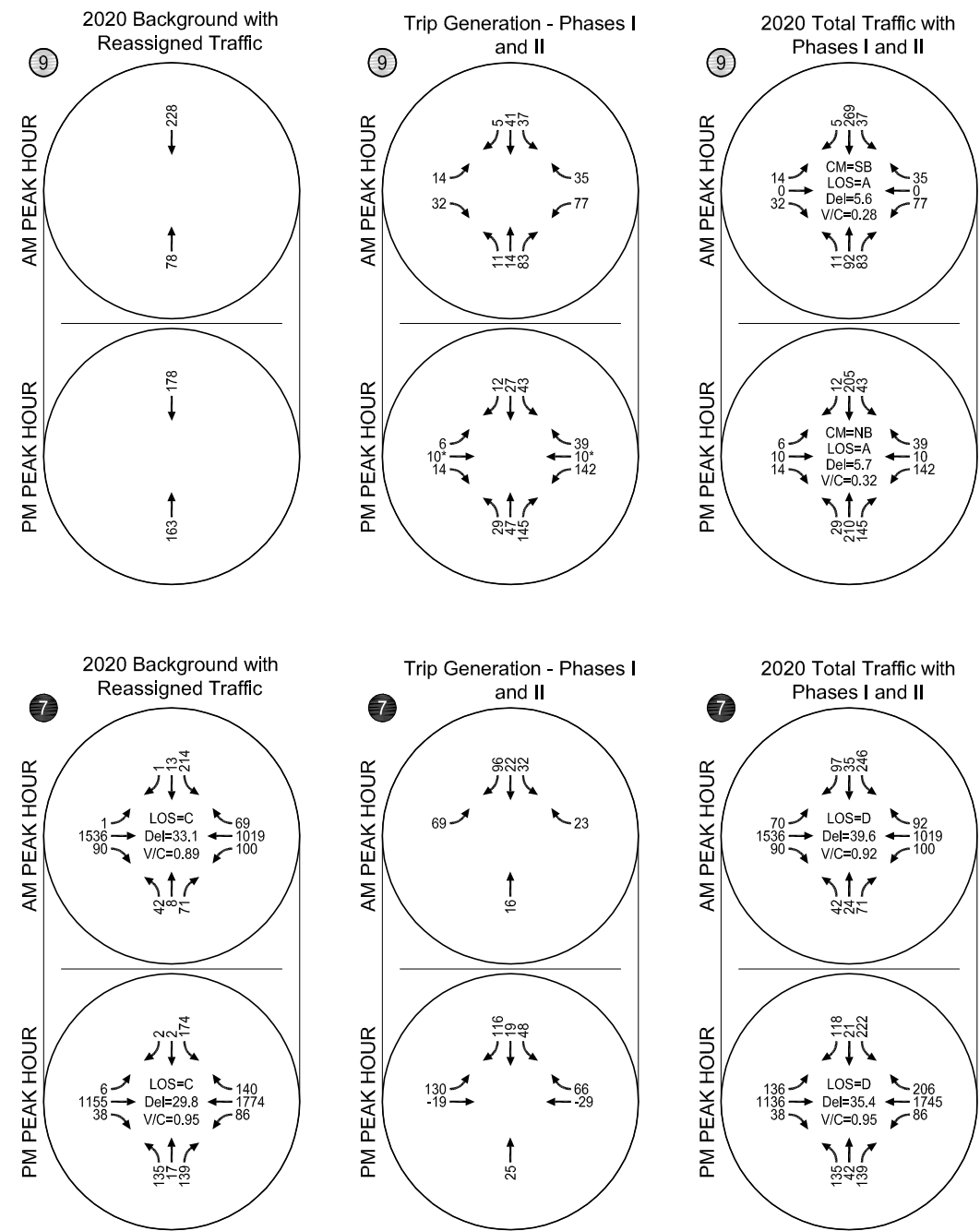
***SimTraffic* reported existing 95th-percentile queues much higher than the field-observed maximum queues; therefore, the Synchro-reported 95th-percentile queue is shown.

Based on the *SimTraffic* analysis, the following queue storage lengths are recommended:

- A westbound right turn lane should be provided and include at least 275 feet of storage.
- The eastbound left turn lane should be restriped to include at least 125 feet of storage.
- An exclusive southbound left turn lane should be provided and include at least 225 feet of storage.
- An exclusive southbound right turn lane should be provided and include at least 150 feet of storage.

Other 95th-percentile queues at the intersection are expected to be equal in length or shorter than the 95th-percentile queues under 2025 background conditions—therefore, no other changes are recommended.

Appendix “N” contains the Phase II Sensitivity Analysis Level of Service worksheets.

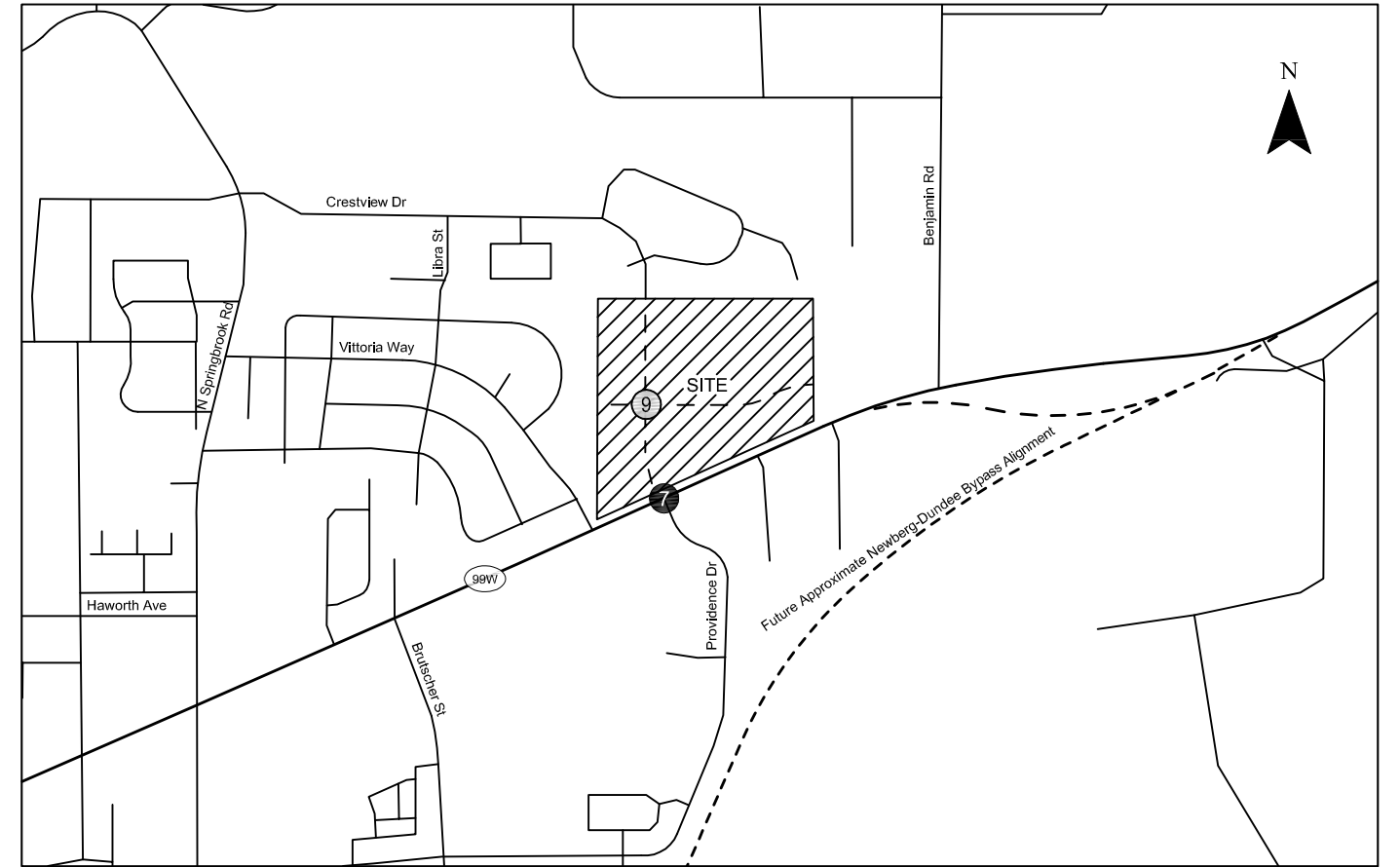
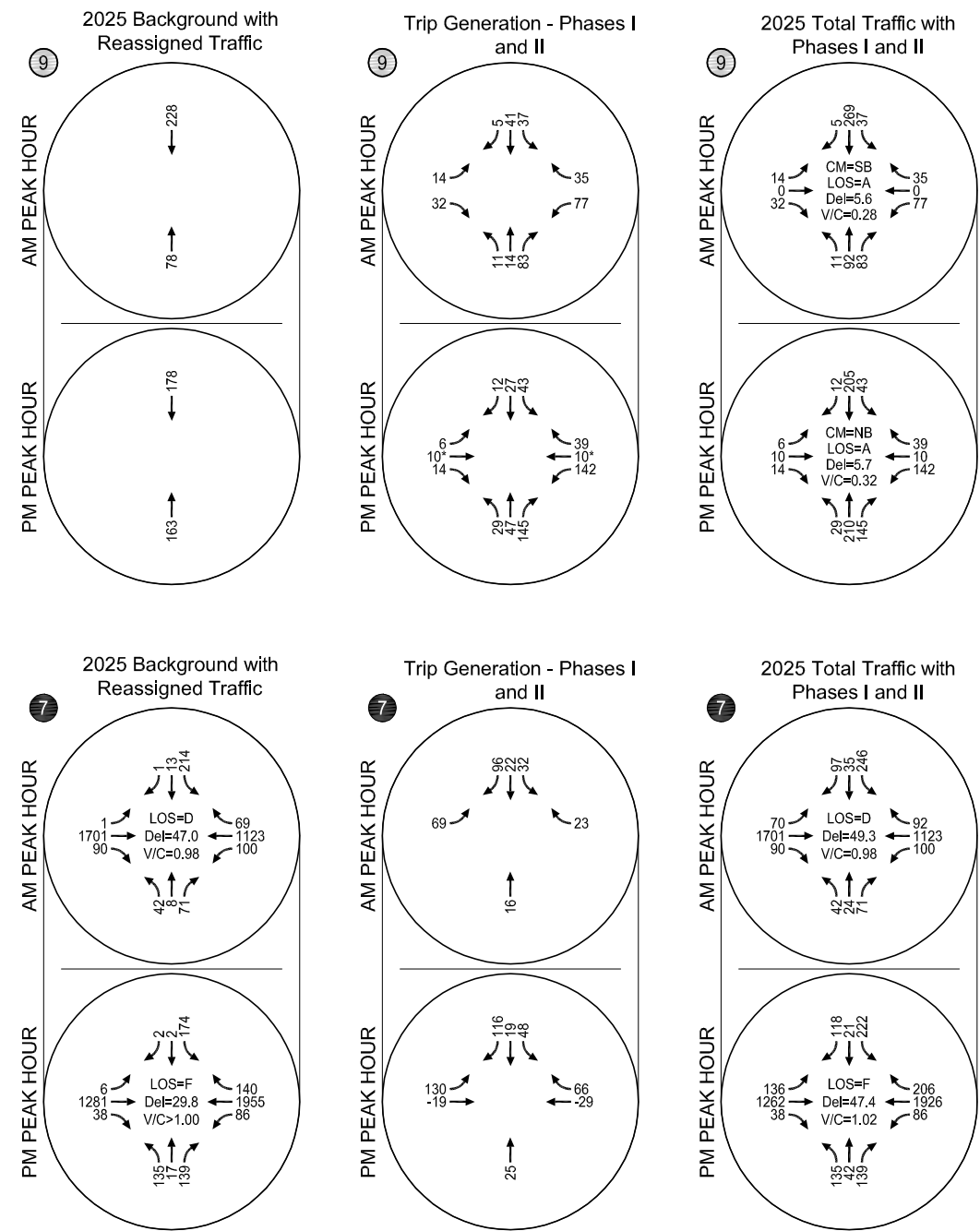


*Estimated retail-residential internal trips
 Negative values indicate retail pass-by trips.

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2020 Total Traffic Conditions - Phase II Sensitivity Analysis
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 15



*Estimated retail-residential internal trips
Negative values indicate retail pass-by trips.

CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION AVERAGE CONTROL DELAY (SIGNALIZED)/
 CRITICAL MOVEMENT CONTROL DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Year 2025 Total Traffic Conditions - Phase II Sensitivity Analysis
 Weekday AM and PM Peak Hours
 Newberg, Oregon

Figure
 16

ON-SITE CIRCULATION/SITE-ACCESS OPERATIONS

Internal circulation was evaluated to ensure that the site provides sufficient on-site circulation for pedestrian movements and internal traffic. Figure 2 illustrates the proposed development plan. The following activities are recommended to ensure adequate safety and operation at the internal intersections and roadways:

- All local streets within the development should have two travel lanes.
- Other than at the Providence Drive/Crestview Drive/OR 99W intersection, a two-lane section of Crestview Drive should be adequate to accommodate turning movements and queuing within the proposed development.
- Shrubbery and landscaping near the internal intersections and site access points should be maintained to ensure adequate sight distance.

Section 5
Conclusions and Recommendations

CONCLUSIONS AND RECOMMENDATIONS

The results of the traffic impact analysis indicate that the proposed Crestview Crossing development can be constructed while maintaining acceptable levels of service and safety on the surrounding transportation system, provided the appropriate mitigations are in place. The findings of this analysis and our recommendations are discussed below.

Year 2017 Existing Conditions

- All of the study intersections currently meet City of Newberg (and Oregon Department of Transportation, where applicable) mobility targets during the weekday AM and PM peak hours, with the following exceptions:
 - The Springbrook Road/OR 99W intersection currently experiences a volume-to-capacity ratio (v/c) of 0.86 during the weekday AM peak hour, which exceeds the ODOT mobility standard of 0.85. The intersection also operates at level of service (LOS) E during the weekday PM peak hour, which exceeds the City standard of LOS D under current conditions.
 - The southbound stop-controlled approach to the Vittoria Way/OR 99W intersection currently operates at LOS E during the weekday PM peak hour, which exceeds the City standard of LOS D.
- A review of historical crash data did not reveal any patterns or trends in the site vicinity that require mitigation associated with this project.
 - One fatal crash was reported at the Springbrook Road/Crestview Drive roundabout—this crash occurred when a southbound motorcyclist struck a curb and was thrown from the vehicle. The crash report lists the cause as driver error—driving too fast for conditions.
 - Based upon a 2016 analysis, the Springbrook Road/OR 99W intersection is currently within the top five percent of the highest-scoring intersections in Region 2.

Since 2016, pavement marking improvements and an additional westbound left turn lane on OR 99W were added to this intersection, and the proposed Crestview Crossing development is expected to result in a net decrease in traffic at this intersection due to the reassignment of traffic to the Crestview Drive extension.

Year 2020 Background Conditions

- A two-percent annual growth rate was applied to the existing mainline traffic volumes on OR 99W to reflect general background growth in the area before any in-process traffic was considered.
- Traffic generated by the Oregon Clinic, to be located on the west side of Providence Drive south of Providence Newberg Medical Center, as well as the Providence Medical Office Building, to be located on the east side of Providence Drive across from the existing Providence Medical Center, were included in the background traffic volumes as in-process traffic.

Background traffic conditions with the assumed build-out of the north leg of the Providence Drive/OR 99W intersection (and no site-added traffic) were assumed as the base case against which future traffic conditions are compared.

- The proposed development will extend Crestview Drive south through the property and to the existing Providence Drive/OR 99W intersection, where it will form the north leg.
- Traffic volumes were assigned to the Crestview Drive extension based upon existing turning movement volumes at the study intersections and the Newberg Transportation System Plan.
- The background traffic condition includes rerouted traffic from the proposed Crestview Drive extension but does not include trips associated with new land uses within the proposed development.
- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2020 background traffic conditions with reassigned traffic, with the following exceptions:
 - The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.88 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 0.92 and 0.98, respectively, which both exceed the ODOT mobility standard of 0.80.

Proposed Development Plan

- The proposed development is expected to generate approximately 2,826 weekday daily trips, of which approximately 213 (53 in, 160 out) are forecast to occur during the AM peak hour and approximately 285 (180 in, 105 out) are forecast to occur during the PM peak hour.
- A select-zone analysis of the Newberg Transportation Planning Model was used to develop a trip distribution pattern for the proposed development.

Year 2020 Total Conditions

- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2020 total traffic volumes, with the following exceptions:
 - The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.88 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85 but does not exceed the v/c ratio under background conditions with reassigned traffic.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 1.01 and 1.11, respectively, which both exceed the ODOT mobility standard of 0.80.
 - The new proposed Crestview Diver/East-West Connector intersection within the Crestview Crossing development is expected to operate acceptably as a single-lane roundabout.

Year 2020 Total Mitigated Conditions

- The Crestview Drive/Providence Drive/OR 99W intersection was analyzed under total traffic conditions with the following additional lane improvements:
 - Add an exclusive left turn lane on southbound Crestview Drive,
 - Add an exclusive right turn lane on southbound Crestview Drive,
 - Add an exclusive right turn lane on westbound OR 99W,
 - Restripe eastbound OR 99W to include an exclusive left turn lane, and,
 - Restripe the northbound Providence Drive approach to include an exclusive left turn lane and an exclusive right turn lane.

With these improvements, the weekday AM and PM peak hour v/c ratios at the intersection are forecast to be 0.90 and 0.89, respectively. These exceed the ODOT mobility standard of 0.80 but do not exceed the respective v/c ratios under background conditions with reassigned traffic. As such, the impact of the development has been mitigated.

2025 Horizon Year Background Conditions

- An additional five years of growth (at a two-percent annual growth rate) was applied to the existing mainline traffic volumes on OR 99W to model horizon year background conditions.

Background traffic conditions with the assumed build-out of the north leg of the Providence Drive/OR 99W intersection (and no site-added traffic) were assumed as the base case against which future traffic conditions are compared.

- The background traffic condition includes rerouted traffic from the proposed Crestview Drive extension but does not include trips associated with new land uses within the proposed development.
- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2025 background traffic conditions with reassigned traffic, with the following exceptions:
 - The Springbrook Rd/OR 99W intersection is forecast to operate with a v/c ratio of 0.93 during the weekday PM peak hour, which exceeds the ODOT mobility standard of 0.85.
 - The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.03, respectively, which both exceed the ODOT mobility standard of 0.80.

2025 Horizon Year Total Conditions

- All of the study intersections are expected to continue operating acceptably during the weekday AM and PM peak hours under 2025 total traffic volumes, with the following exceptions:
 - The weekday AM and PM peak hour v/c ratios at the Springbrook Rd/OR 99W intersection are forecast to be 0.86 and 0.92, respectively, which both exceed the ODOT mobility standard of 0.85 but are not more than 0.03 above the v/c ratios under

background conditions with reassigned traffic. Per ODOT policy guidance, when an intersection exceeds mobility targets but the v/c ratio increases by less than 0.03 as a result of development, the impacts are not considered significant.

- The weekday AM and PM peak hour v/c ratios at the Providence Drive/OR 99W intersection are forecast to be 1.08 and 1.18, respectively, which both exceed the ODOT mobility standard of 0.80.

2025 Horizon Year Total Mitigated Conditions

- With the improvements at Crestview Drive/Providence Drive/OR 99W intersection noted above, the weekday AM and PM peak hour v/c ratios at the intersection are forecast to be 0.97 and 0.96, respectively. These exceed the ODOT mobility standard of 0.80 but do not exceed the respective v/c ratios under 2025 background conditions with reassigned traffic. As such, the impact of the development has been mitigated.

95th-percentile Queuing Analysis

- All 95th-percentile queues are projected to be accommodated by the provided storage lengths under 2025 total traffic conditions, with the following exceptions:
 - The southbound right turn at Springbrook Road/OR 99W during the weekday PM peak hour.
 - The northbound left turn at Brutscher Street/OR 99W during the weekday PM peak hour.

Each of the queues noted above is expected to decrease under 2025 total traffic conditions compared with 2025 background traffic volumes due to reassigned traffic from Springbrook Road and OR 99W to the Crestview Drive extension.

2025 Horizon Year Commercial Property Sensitivity Analysis

A planning-level analysis was prepared to account for the future development potential of the 4.43-acre commercial property adjacent to the development site. While this is NOT part of this development application, the analysis was conducted to evaluate the future effectiveness of the recommended mitigations.

- A planning-level estimate for developable commercial area was used to estimate the number of potential commercial-related site trips. The gross leasable area-to-acreage ratio was assumed at 25 percent, and the entire commercial property was assumed as shopping center land use.
- The commercial development trips were added to the residential trips of this application to arrive at a total development estimate of 5,416 weekday daily trips, of which 370 (155 in, 215 out) will occur during the AM peak hour and 440 (247 in, 193 out) will occur during the PM peak hour. The development is also expected to generate approximately 96 pass-by trips during the weekday PM peak hour—these were treated as diverted trips from OR 99W.

- The Crestview Drive/Providence Drive/OR 99W intersection and Crestview Drive/East-West Connector roundabout were analyzed under 2025 conditions assuming development of the 4.43-acre commercial property.
- The Crestview Drive/East-West Connector intersection is expected to continue operating acceptably as a single-lane roundabout.
- With the mitigation improvements associated with the residential development in place, the weekday AM and PM peak hour v/c ratios at the Crestview Drive/Providence Drive/OR 99W intersection are forecast to be 0.98 and 1.02, respectively.

Per ODOT policy guidance, when an intersection exceeds the mobility target but the v/c ratio increases by less than 0.03 as a result of development, the impacts are not considered significant. For this reason, no additional mitigation measures would be warranted as a result of additional commercial development.

RECOMMENDATIONS

Providence Drive/Crestview Drive/OR 99W Intersection

- The new north leg of the intersection, which will be an extension of Crestview Drive, should be configured as a four-lane section with one northbound lane and three southbound lanes (exclusive lanes for left-turn, through, and right-turn movements). At least 225 feet of southbound left turn storage and at least 150 feet of southbound right turn storage should be provided to accommodate the forecast 95th percentile queue lengths.
- The south leg of the intersection should be restriped to a four-lane section with one southbound lane and three northbound lanes (exclusive lanes for left-turn, through, and right-turn movements).
- Based on the forecast 95th percentile queuing analysis:
 - A westbound right turn lane should be constructed with at least 275 feet of storage.
 - An eastbound left turn lane should be striped to provide at least 125 feet of storage.
- Recommended signal phasing: the intersection should be operated with permissive left turn movements on the northbound and southbound approaches and fully protected left turn movements on the eastbound and westbound approaches.

On-Site Circulation/Site Access Operations

- Driveways, landscaping, utilities, and signage within the site should be located and maintained to provide sufficient sight distance at all new internal intersections and accesses.
- Other than at the Providence Drive/Crestview Drive/OR 99W intersection, a two-lane section of Crestview Drive should be adequate to accommodate turning movements and queuing within the proposed development.

Section 6
References

REFERENCES

1. Transportation Research Board of the National Academies. *Highway Capacity Manual 2000*. 2000.
2. City of Newberg, Oregon. *Transportation System Plan*. 2016.
3. Yamhill County Transit Area. "Routes and Schedules." 2017. <<http://www.yctransitarea.org/index.php/routes-and-schedules/>>. Accessed 12-21-2017.
4. Institute of Transportation Engineers. *Trip Generation: 10th Edition*. 2017.

Appendix A
Scoping Memorandum



SCOPING MEMORANDUM

Date: October 19, 2017

Project #: 21709

To: Steve Olson, City of Newberg
Gerry Juster and Keith Blair, ODOT

From: Zachary Bugg, PhD; Diego Arguea, PE; and Matt Hughart, AICP

Project: Crestview Crossing

Subject: Traffic Impact Analysis Scoping Memorandum

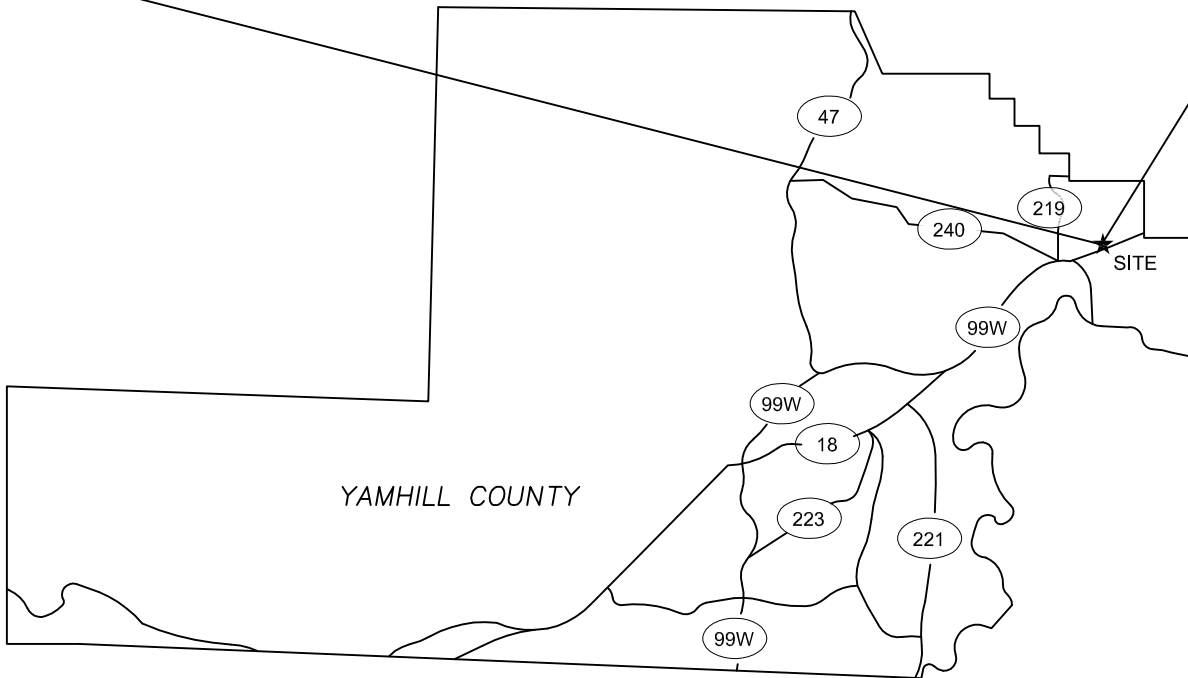
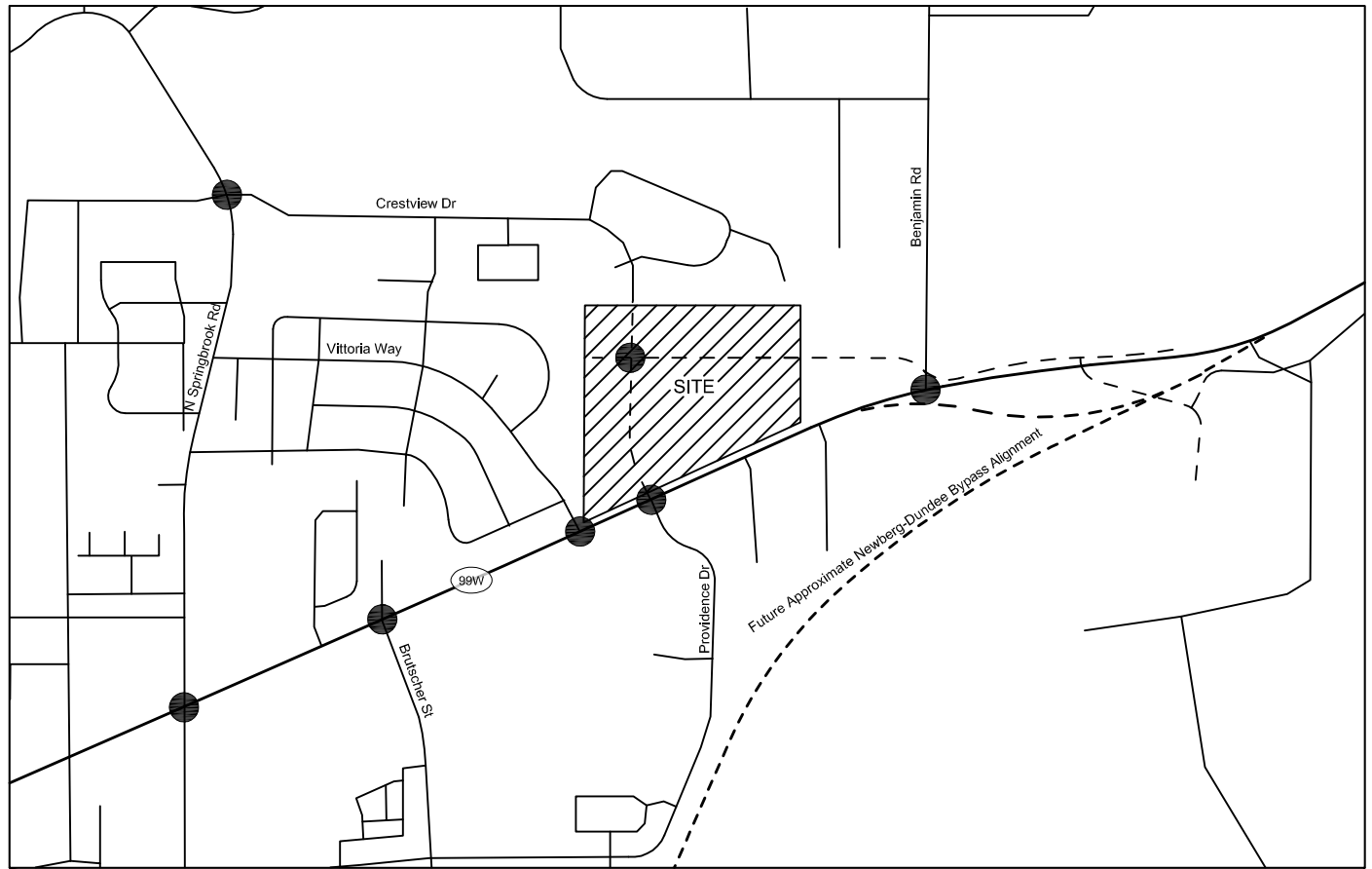
This memorandum represents a scoping needs assessment for preparing the Traffic Impact Analysis (TIA) associated with the proposed development located at the northeast corner of the OR 99W/ Providence Drive intersection in Newberg, Oregon. The assumptions for scoping the TIA are based on a review of a conceptual site plan, a preapplication meeting and discussions between City of Newberg staff and the Applicant, and our working knowledge of the transportation policies of City of Newberg and the Oregon Department of Transportation (ODOT).

Proposed Development

The Applicant, JT Smith Companies, is in the process of preparing an application to develop a 33.13-acre mixed-use development on the subject property. The site is currently occupied by farm land and one single family home. The site is bordered by OR 99W to the south and by residential uses to the west, north, and east.

Figure 1 displays a site vicinity map, and Figure 2 displays the proposed site plan. Per the current site plan, the development will include 249 single-family homes, 48 apartment units, 4.43 acres of commercial property, and 1.17 acres of civic space. As shown, the site development includes an extension of Crestview Drive to the south through the proposed development, connecting to OR 99W to form the north leg of the OR 99W/Providence Drive intersection.

Per ODOT and City of Newberg criteria, a TIA is needed as part of the design review application for the development. This memorandum presents the proposed methodology to prepare the TIA and reflects the outcome of conversations with City and ODOT staff.



● - Study Intersection

Site Vicinity
Newberg, Oregon

Figure
1

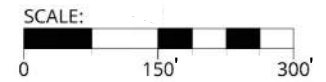
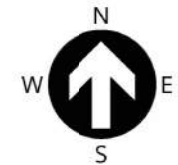
C:\Users\ybugg\Desktop\21709 figs-.dwg Oct 19, 2017 - 12:31pm - zbugg Layout Tab: Site Vicinity Map



SITE STATISTICS	
PROPERTY:	3216AC 13800 & 321601100
JURISDICTION:	CITY OF NEWBERG
GROSS SIZE:	33.13 ACRES
EXISTING ZONING:	
R-1:	4.31 ACRES
R-2:	6.58 ACRES
C-2:	22.24 ACRES
PROPOSED ZONING:	R-1 & R-3
R-1:	5.73 ACRES
R-3:	23.00 ACRES
C-2:	4.40 ACRES

SITE NOTE

SITE MAP HAS BEEN PREPARED USING DATA FROM EXISTING TAX MAPS AND METRO'S RLIS GIS DATA. THIS MAP HAS BEEN PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. ALL BOUNDARY* AND DIMENSIONAL INFORMATION SHOULD BE VERIFIED BY A PROFESSIONAL LAND SURVEYOR.



Site Plan Provided by 3J Consulting 8/14/2017

Proposed Site Plan
Newberg, Oregon

Figure
2

Trip Generation

Preliminary trip generation estimates for the proposed development were prepared based on the Institute of Transportation Engineers’ (ITE) *Trip Generation Manual*, 9th Edition (Reference 1) for weekday daily, AM peak hour, and PM peak hour time periods. The trip generation is based on the residential and commercial mix, with an assumed use of the civic space for a community center. Internal and pass-by trips were estimated based on rates identified in the *Trip Generation Handbook*, 2nd Edition (Institute of Transportation Engineers, 2004)¹. The trip generation is summarized below in Table 1.

Table 1. Preliminary Trip Generation Estimate

Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Single-Family Detached Housing	210	249 units	2,370	187	47	140	249	157	92
<i>Less Internal Trips (13% Daily, 8% AM, 12% PM)</i>			308	15	4	11	30	19	11
Apartment	220	48 units	320	24	5	19	30	20	10
<i>Less Internal Trips (13% Daily, 8% AM, 12% PM)</i>			42	2	0	2	4	2	2
Shopping Center	820	48,243 ft ² *	2,060	46	29	17	179	86	93
<i>Less Internal Trips (13% Daily, 8% AM, 12% PM)</i>			268	4	2	2	21	10	11
<i>Less Pass-by Trips (34% Daily, AM, PM)</i>			610	14	7	7	54	27	27
Recreational Community Center	495	12,741 ft ² *	292	26	17	9	35	17	18
<i>Less Internal Trips (13% Daily, 8% AM, 12% PM)</i>			38	2	1	1	4	2	2
Total Gross Trips			5,042	283	98	185	493	280	213
Less Internal Trips			656	23	7	16	59	33	26
Less Pass-by Trips			610	14	7	7	54	27	27
Total Net New Trips			3,776	246	84	162	380	220	160

*Assumes gross floor area/acreage = 0.25

As shown in Table 1, the proposed development is estimated to generate a potential of up to 246 weekday AM peak hour trips and 380 weekday PM peak hour trips.

To provide a high estimate that would result in a more conservative analysis, the trip generation in Table 1 reflects the commercial property as a general Shopping Center—no further details about the development of this property are known at this time. Also, the trip generation assumes that the civic space will function as a community area, and thus has been estimated to operate as a Recreational Community Center for trip generation estimate purposes. Should the civic space only be available as a private amenity to the residential community (such as a community pool/fitness center), then all trips associated with this land use will be internal to the development, and thus the total net new trips will

¹ The ITE Trip Generation Handbook does not include trip internalization rates for the weekday AM peak hour time period. The weekday midday peak hour trip internalization rates were applied as the best available data.

be lower than what is shown in Table 1. The final TIA will document all assumptions and reflect the revised trip generation accordingly.

The internalization calculations and assumptions are included in Attachment “A” to this memorandum.

Trip Distribution and Assignment

The study area is contained within the Newberg Transportation Planning Model. A select-zone analysis will be used to develop a trip distribution pattern for the proposed site (TAZ 117). Please provide two select zone analyses, one with the Crestview Road connection and one without the Crestview Road connection through the proposed site.

Study Area and Intersections

Based on the estimated trip generation and assignment patterns, the following intersections and accesses are proposed for analysis:

- OR 99W/Springbrook Road
- OR 99W/Brutscher Street
- OR 99W/Vittoria Way
- OR 99W/Providence Drive/Crestview Drive
- OR 99W/Benjamin Road
- Crestview Drive/Site Access
- Springbrook Road/Crestview Drive

Additionally, all accesses to the commercial property and civic property will be analyzed.

Time Periods for Analysis

Existing and estimated build-out year 2020 conditions at the identified study intersections will be analyzed using Synchro/SimTraffic Version 9 software. Turning movement counts at the study intersections will be collected during the morning (6 – 9 AM) and afternoon (3 – 6 PM) periods on a typical mid-week day when school is in session. Additionally, a 16-hour count (6 AM – 10 PM) will be performed at the OR 99W/Providence Drive intersection in support of a potential modified signal design and complete safety analysis.

Based on conversations with ODOT staff, the site is located in an area influenced by both seasonal traffic and school traffic, with the peak travel period occurring in September. Therefore, the counts will be performed between September 12, 2017 and September 21, 2017 per ODOT direction, and no seasonal volume adjustment will be required.

In-process Developments

A two percent annual growth rate will be applied to the existing mainline traffic volumes on OR 99W to generate future background traffic volumes before any trips associated with approved in-process developments are added to the background traffic volumes. We request that City of Newberg and/or ODOT confirm the two percent annual growth rate and provide any other developments to be included as in-process.

Network Traffic Reassignment

The proposed development will result in a major network connection via the southward extension of Crestview Drive to OR 99W. The methodology for reassigning existing traffic to this new connection will be based upon a combination of the Transportation System Plan and the results of the select-zone analysis applying the Newberg Transportation Planning Model.

Queuing Analysis

An analysis of average and 95th-percentile queues will be prepared based on *SimTraffic* microsimulation. The analysis will be based on five simulation runs per intersection and analysis scenario.

Crash Analysis

The most recent five years of reported crash data at the study intersections will be requested from ODOT and reviewed in detail. The ODOT Statewide Priority Index System (SPIS) will also be reviewed to identify any sites where safety issues may encourage further investigation.

Signal Timing

We will obtain the latest signal timing and phasing information for the three signalized study intersections from ODOT:

- OR 99W/Springbrook Road
- OR 99W/Brutscher Street
- OR 99W/Providence Drive

Next Steps

We trust this memorandum provides adequate documentation of the proposed land use action, methodology, and specific study intersections and analysis periods to address in the TIA. We formally request that City of Newberg and ODOT Region 2 provide written confirmation and/or questions

regarding the proposed methodology and project TIA assumptions as soon as possible so that we may proceed with our analysis. If you have any questions, please give us a call at (503) 228-5230.

REFERENCES

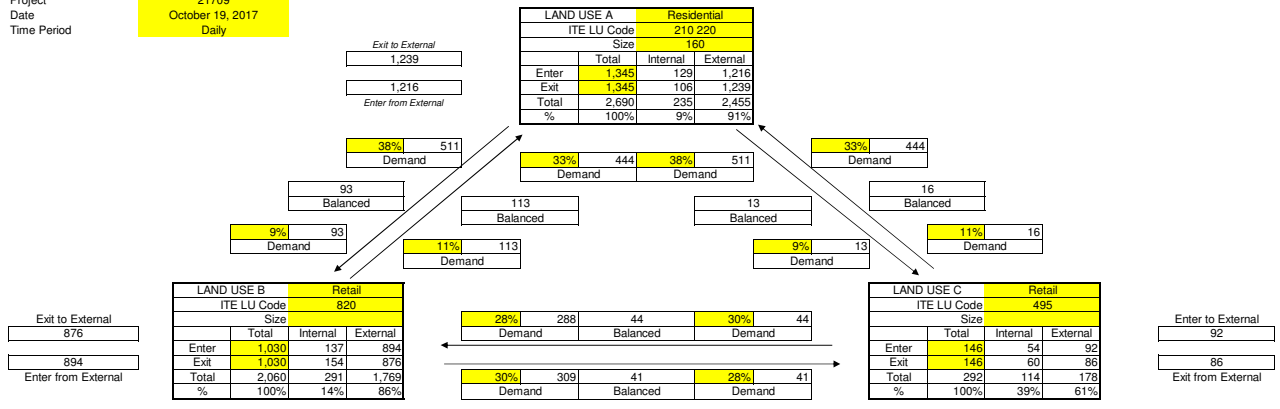
1. Institute of Transportation Engineers. *Trip Generation Manual, 9th Edition*. 2012.
2. Institute of Transportation Engineers. *Trip Generation Handbook, 2nd Edition*. 2004.

ATTACHMENT A

Trip Generation Internalization Calculations

Analyst
Project
Date
Time Period

ZHB
21709
October 19, 2017
Daily

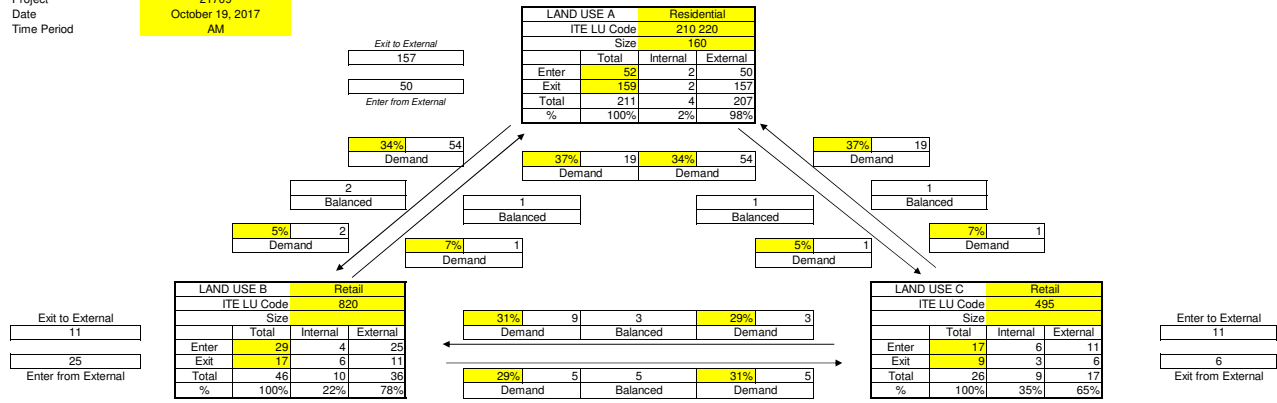


NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	1,216	894	92	2,201
Exit	1,239	876	86	2,201
Total	2,455	1,769	178	4,402
Single-Use Trip Gen Est.	2,690	2,060	292	5,042

INTERNAL CAPTURE 13%

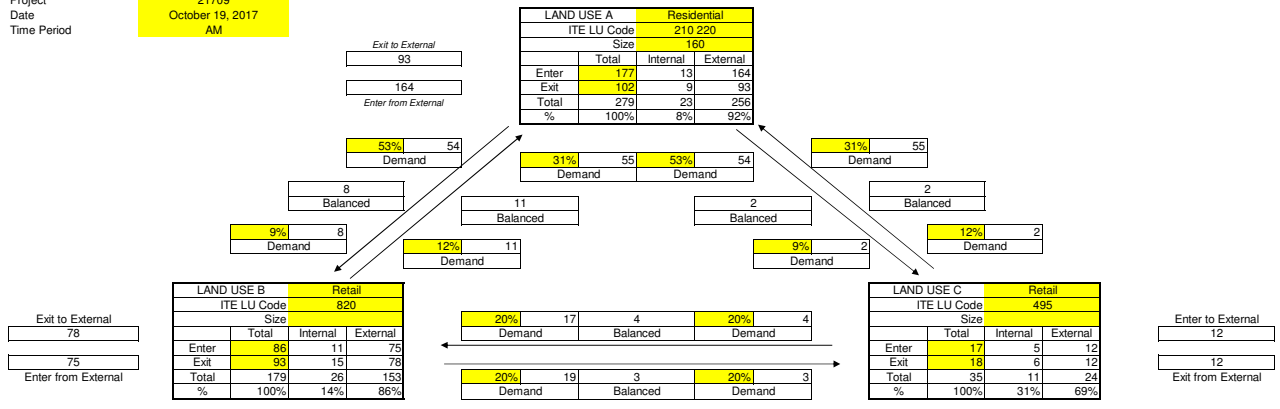
Analyst
Project
Date
Time Period

ZHB
21709
October 19, 2017
AM



Analyst
Project
Date
Time Period

ZHB
21709
October 19, 2017
AM



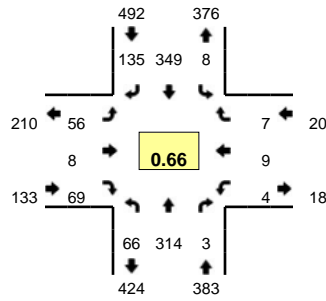
NET EXTERNAL TRIPS FOR MULTI-USE DEVELOPMENT				
	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	164	75	12	250
Exit	93	78	12	183
Total	256	153	24	434
Single-Use Trip Gen Est.	279	179	35	493

INTERNAL CAPTURE: 12%

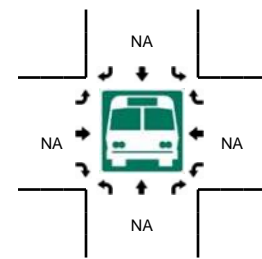
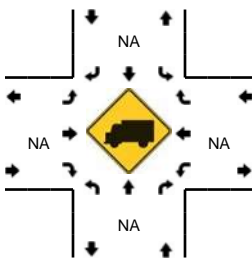
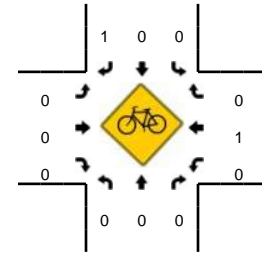
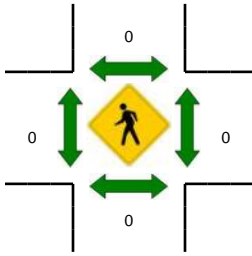
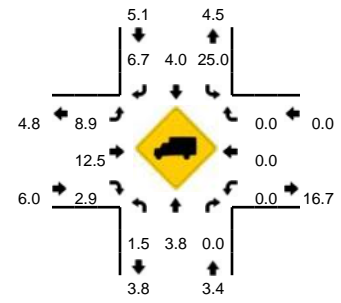
Appendix B
Turning Movement Counts

LOCATION: Springbrook Rd -- Crestview Dr
CITY/STATE: Newberg, OR

QC JOB #: 14505611
DATE: Thu, Sep 14 2017



Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

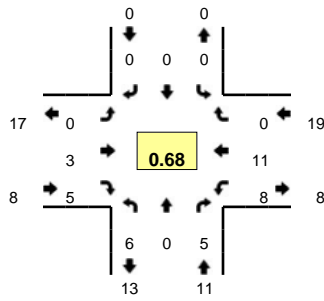


5-Min Count Period Beginning At	Springbrook Rd (Northbound)				Springbrook Rd (Southbound)				Crestview Dr (Eastbound)				Crestview Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:35 AM	0	9	0	0	0	19	2	0	0	0	1	0	0	0	0	0	31	
6:40 AM	1	10	0	0	0	22	5	0	1	0	3	0	0	0	1	0	43	
6:45 AM	0	20	0	0	0	35	5	0	0	0	1	0	0	0	0	0	61	
6:50 AM	0	10	0	0	1	30	12	0	1	0	0	0	0	2	1	0	57	
6:55 AM	0	23	0	0	1	22	9	0	1	1	0	0	0	1	1	0	59	485
7:00 AM	1	13	0	0	1	27	4	0	2	0	0	0	0	1	1	2	52	511
7:05 AM	6	21	1	1	1	23	11	1	3	0	0	0	0	1	0	0	69	558
7:10 AM	5	15	0	0	0	37	14	0	1	0	3	0	0	0	1	1	77	596
7:15 AM	14	16	0	0	1	26	23	0	9	2	6	1	0	0	0	0	98	660
7:20 AM	15	37	1	0	1	26	28	0	7	2	14	0	0	2	0	0	133	758
7:25 AM	10	30	0	0	0	29	26	0	7	3	21	0	0	5	1	0	132	851
7:30 AM	5	39	0	0	0	31	15	0	14	0	19	1	0	0	0	0	124	936
7:35 AM	1	25	1	1	1	30	8	0	8	1	2	0	0	0	1	0	79	984
7:40 AM	1	24	0	0	1	39	1	0	1	0	0	0	0	0	0	0	67	1008
7:45 AM	0	25	0	0	0	28	0	0	1	0	0	0	0	0	1	0	55	1002
7:50 AM	2	23	0	0	0	28	3	0	1	0	2	0	0	2	1	2	64	1009
7:55 AM	5	30	0	0	0	23	5	0	2	0	2	0	0	0	0	0	67	1017
8:00 AM	0	29	0	0	2	29	1	0	0	0	0	0	0	1	0	1	63	1028
8:05 AM	1	24	0	0	0	35	0	0	2	0	1	0	0	0	0	3	66	1025
8:10 AM	0	38	1	0	0	25	4	0	0	0	0	0	0	2	1	4	75	1023
8:15 AM	1	18	0	2	0	28	2	0	0	0	2	0	0	0	0	1	54	979
8:20 AM	2	17	0	0	0	39	1	0	1	0	0	0	0	2	0	1	63	909
8:25 AM	0	8	1	0	0	28	3	0	3	0	1	0	0	0	0	0	44	821
8:30 AM	0	25	0	0	0	22	0	0	2	0	0	0	0	0	0	0	49	746
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	120	424	4	0	4	344	276	0	112	20	216	4	0	28	4	0	1556	
Heavy Trucks	0	12	0	0	0	16	16	0	4	4	8	0	0	0	0	0	60	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

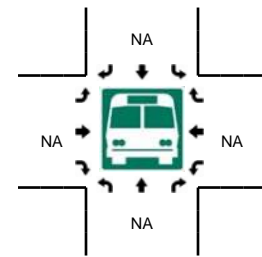
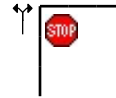
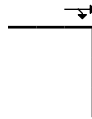
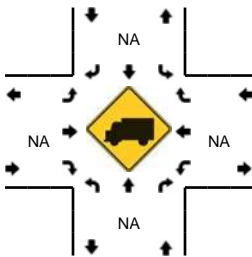
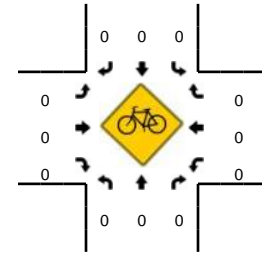
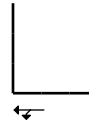
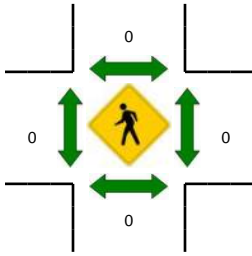
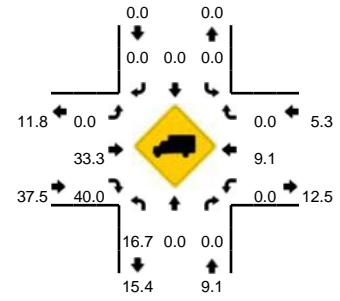
Comments:

LOCATION: N Libra St -- Crestview Dr
CITY/STATE: Newberg, OR

QC JOB #: 14566406
DATE: Wed, Nov 15 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:10 AM -- 8:25 AM

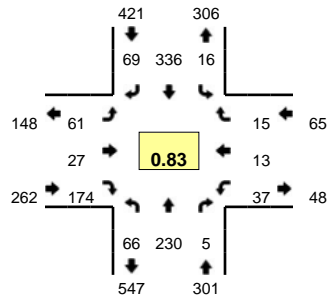


5-Min Count Period Beginning At	N Libra St (Northbound)				N Libra St (Southbound)				Crestview Dr (Eastbound)				Crestview Dr (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	2	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0	0	6	
7:05 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	
7:10 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
7:15 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	
7:20 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	
7:35 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
7:40 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	4	
7:50 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:55 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	33
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	28
8:05 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3	28
8:10 AM	4	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	7	33
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3	33
8:20 AM	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	4	36
8:25 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	34
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3	34
8:35 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	0	0	3	35
8:40 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	33
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	31
8:50 AM	0	0	2	0	0	0	0	0	0	0	0	1	0	1	1	0	0	5	35
8:55 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	4	38
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
All Vehicles	20	0	4	0	0	0	0	0	0	4	4	0	4	20	0	0	56		
Heavy Trucks	4	0	0		0	0	0		0	0	4		0	0	0	8			
Pedestrians	0				0				0				0			0			
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0	0			
Railroad																			
Stopped Buses																			

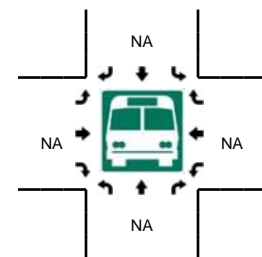
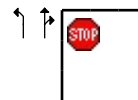
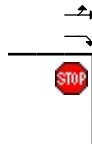
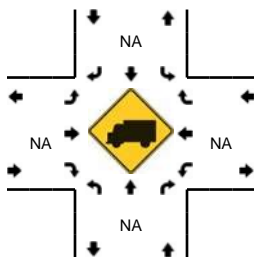
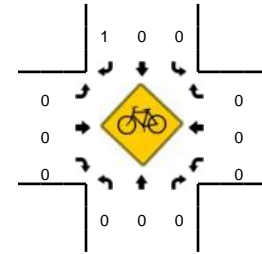
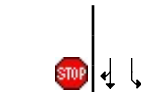
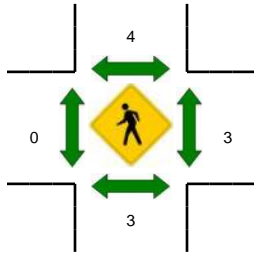
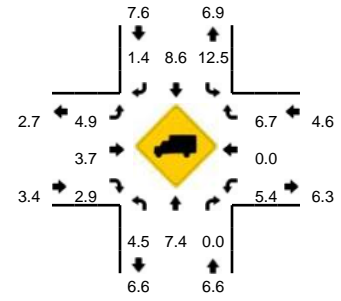
Comments:

LOCATION: N Springbrook Rd -- Haworth Ave
CITY/STATE: Newberg, OR

QC JOB #: 14566404
DATE: Wed, Nov 15 2017



Peak-Hour: 8:00 AM -- 9:00 AM
Peak 15-Min: 8:20 AM -- 8:35 AM

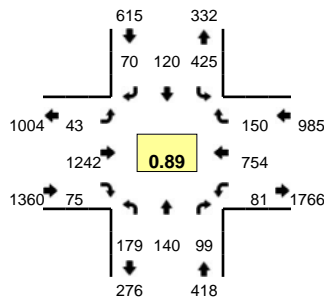


5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				Haworth Ave (Eastbound)				Haworth Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	28	0	0	1	17	7	0	15	1	21	0	2	1	0	0	96	
7:05 AM	5	21	0	0	0	24	7	0	10	1	15	0	1	0	0	0	84	
7:10 AM	5	17	0	0	1	26	5	0	4	1	19	0	2	1	2	0	83	
7:15 AM	3	18	0	0	0	30	5	0	11	0	23	0	0	0	0	0	90	
7:20 AM	6	20	1	0	0	24	4	0	8	1	17	0	2	2	1	0	86	
7:25 AM	6	13	0	0	1	26	4	0	7	3	16	0	1	0	0	0	77	
7:30 AM	3	17	0	0	1	22	6	0	10	1	13	0	4	1	2	0	80	
7:35 AM	6	24	0	0	0	31	5	0	5	0	13	0	0	0	1	0	85	
7:40 AM	1	19	2	0	3	24	9	0	6	0	10	0	4	1	1	0	80	
7:45 AM	2	12	0	0	0	19	4	0	5	0	6	0	2	1	2	0	53	
7:50 AM	8	23	0	0	3	16	10	0	9	1	14	0	2	0	0	0	86	
7:55 AM	3	10	1	0	0	28	5	0	0	4	8	0	1	0	0	0	60	960
8:00 AM	5	17	0	0	1	19	5	0	5	0	11	0	3	0	3	0	69	933
8:05 AM	4	24	1	0	1	19	7	0	4	1	11	0	3	0	3	0	78	927
8:10 AM	2	24	0	0	1	23	7	0	5	3	15	0	4	1	1	0	86	930
8:15 AM	6	28	0	0	2	26	3	0	9	4	11	0	0	1	0	0	90	930
8:20 AM	5	28	0	0	1	42	5	0	3	3	11	0	5	2	0	0	105	949
8:25 AM	6	17	0	0	2	36	10	0	9	2	18	0	0	0	0	0	100	972
8:30 AM	9	13	0	0	3	35	11	0	7	3	21	0	4	3	1	0	110	1002
8:35 AM	6	17	0	0	0	40	5	0	2	2	22	0	3	1	1	0	99	1016
8:40 AM	5	14	1	0	1	30	5	0	1	3	19	0	5	1	2	0	87	1023
8:45 AM	7	17	1	0	2	16	6	0	9	2	13	0	4	0	1	0	78	1048
8:50 AM	6	16	0	0	1	18	2	0	1	1	8	0	4	1	1	0	59	1021
8:55 AM	5	15	2	0	1	32	3	0	6	3	14	0	2	3	2	0	88	1049
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	80	232	0	0	24	452	104	0	76	32	200	0	36	20	4	0	1260	
Heavy Trucks	4	8	0	0	4	36	4	0	0	4	8	0	0	0	0	0	68	
Pedestrians		8				4								4			16	
Bicycles	0	0	0		0	0	1		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

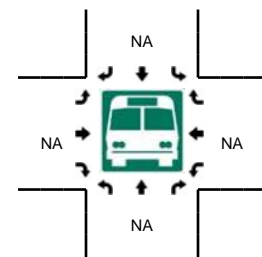
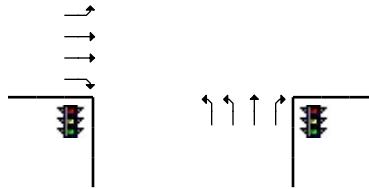
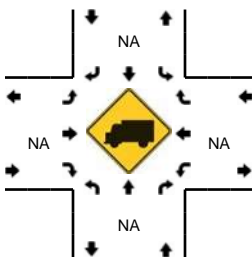
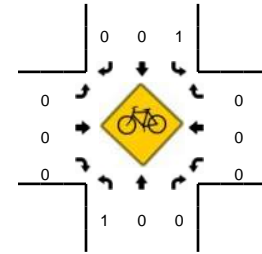
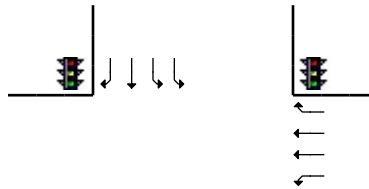
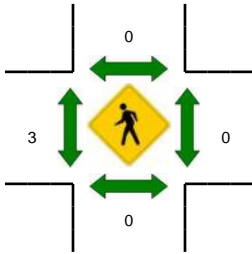
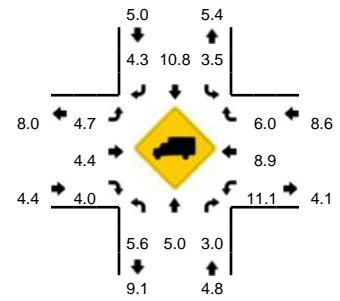
Comments:

LOCATION: N Springbrook Rd -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505601
DATE: Thu, Sep 14 2017



Peak-Hour: 6:55 AM -- 7:55 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

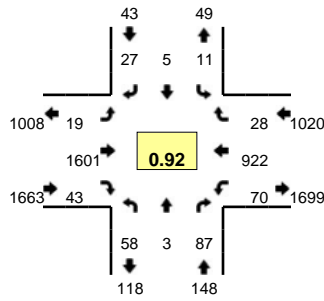


5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:25 AM	5	2	7	0	27	11	3	0	0	104	3	0	2	32	4	0	200	
6:30 AM	9	4	6	0	27	7	3	0	1	141	6	0	3	39	5	0	251	
6:35 AM	12	4	11	0	43	8	1	0	0	109	3	0	5	50	4	1	251	
6:40 AM	7	5	10	0	26	6	1	0	2	136	2	0	3	42	4	0	244	
6:45 AM	5	7	9	0	23	7	4	0	3	119	0	0	0	63	9	0	249	
6:50 AM	7	9	9	0	44	4	6	0	1	111	1	0	5	52	6	0	255	
6:55 AM	5	9	7	0	36	2	4	0	4	101	5	0	6	49	14	0	242	2665
7:00 AM	6	10	6	0	33	7	9	0	4	112	2	0	4	49	19	0	261	2739
7:05 AM	8	12	7	0	17	10	6	0	3	85	3	0	8	60	12	0	231	2795
7:10 AM	13	16	7	0	42	8	5	0	3	114	5	1	7	51	6	0	278	2858
7:15 AM	14	18	9	0	33	8	9	0	1	103	2	0	7	44	13	0	261	2952
7:20 AM	18	12	7	0	41	13	7	0	3	114	3	0	6	54	11	0	289	3012
7:25 AM	18	17	15	0	31	15	5	0	1	104	15	0	5	87	21	0	334	3146
7:30 AM	20	8	11	0	48	13	7	0	5	108	6	0	5	80	15	0	326	3221
7:35 AM	20	12	11	0	33	17	6	0	6	84	9	0	8	68	10	0	284	3254
7:40 AM	19	9	8	0	48	6	2	0	2	116	12	0	8	65	9	0	304	3314
7:45 AM	18	11	6	0	25	12	5	0	10	90	6	0	9	78	11	0	281	3346
7:50 AM	20	6	5	0	38	9	5	0	0	111	7	0	8	69	9	0	287	3378
7:55 AM	10	16	11	0	17	7	6	0	3	92	11	0	16	74	14	0	277	3413
8:00 AM	13	9	9	0	35	11	9	0	0	65	10	2	10	79	14	0	266	3418
8:05 AM	17	11	9	0	28	5	11	0	3	105	8	0	4	68	11	0	280	3467
8:10 AM	23	27	14	0	22	14	8	0	3	67	8	0	9	82	17	0	294	3483
8:15 AM	25	15	11	0	29	10	5	0	2	97	1	0	4	57	7	0	263	3485
8:20 AM	11	4	8	0	34	20	4	0	5	83	6	0	8	62	8	0	253	3449
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	224	148	132	0	480	164	76	0	36	1304	96	0	64	884	188	0	3796	
Heavy Trucks	16	4	0		12	20	4		4	60	8		0	80	8		216	
Pedestrians		0				0				4				0			4	
Bicycles	1	0	0		1	0	0		0	0	0		0	0	0		2	
Railroad																		
Stopped Buses																		

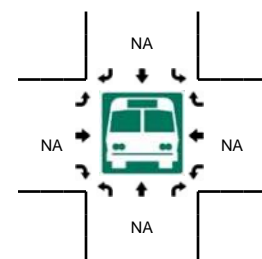
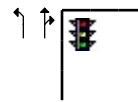
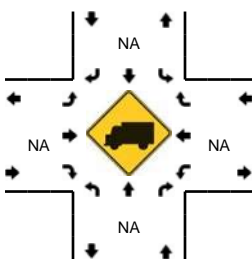
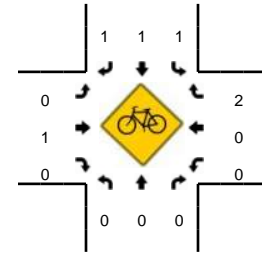
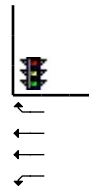
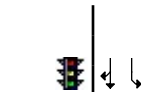
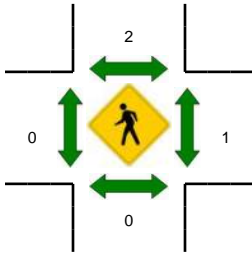
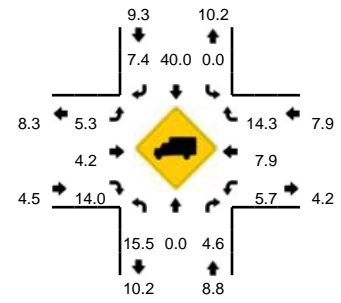
Comments:

LOCATION: Brutscher St -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505603
DATE: Thu, Sep 14 2017



Peak-Hour: 6:55 AM -- 7:55 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

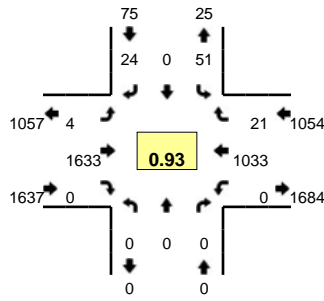


5-Min Count Period Beginning At	Brutscher St (Northbound)				Brutscher St (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:25 AM	0	0	4	0	0	0	6	0	0	139	1	0	4	36	3	0	193	
6:30 AM	2	0	10	0	0	0	2	0	1	154	3	0	3	50	0	0	225	
6:35 AM	1	0	4	0	1	0	1	0	0	173	1	0	3	48	2	0	234	
6:40 AM	2	1	10	0	1	2	0	0	4	133	1	0	6	51	0	0	211	
6:45 AM	2	1	9	0	2	0	1	0	1	170	1	0	2	66	4	0	259	
6:50 AM	1	2	14	0	4	0	3	0	1	140	5	0	11	59	3	0	243	
6:55 AM	3	0	4	0	1	1	2	0	1	148	3	0	5	73	1	0	242	2513
7:00 AM	3	0	5	0	2	0	1	0	0	126	2	0	7	55	4	0	205	2547
7:05 AM	4	0	12	0	2	0	1	0	1	117	2	0	3	73	2	0	217	2604
7:10 AM	4	0	4	0	1	0	3	0	2	132	1	0	6	64	3	0	220	2643
7:15 AM	4	0	11	0	0	0	3	0	1	158	2	0	10	62	2	0	253	2717
7:20 AM	8	0	3	0	1	1	1	0	1	124	6	0	2	71	1	0	219	2721
7:25 AM	7	0	11	0	0	0	2	0	2	145	7	1	3	94	3	0	275	2803
7:30 AM	6	1	6	0	1	0	2	0	3	128	4	0	9	92	0	0	252	2830
7:35 AM	3	1	6	0	1	2	2	0	0	144	2	0	3	81	6	0	251	2847
7:40 AM	2	0	15	0	1	0	9	0	3	131	6	0	9	65	3	0	244	2880
7:45 AM	7	1	7	0	1	0	1	0	0	137	4	0	3	98	1	0	260	2881
7:50 AM	7	0	3	0	0	1	0	0	4	111	4	0	10	94	2	0	236	2874
7:55 AM	10	2	10	0	4	0	2	0	1	122	5	1	5	78	1	0	241	2873
8:00 AM	10	1	11	0	1	0	2	0	1	83	14	0	9	80	2	0	214	2882
8:05 AM	8	0	6	0	0	1	3	0	1	106	1	0	1	90	4	0	221	2886
8:10 AM	16	2	6	0	0	1	1	0	2	100	5	1	4	80	2	0	220	2886
8:15 AM	6	0	5	0	2	1	2	0	3	93	5	1	15	69	0	0	202	2835
8:20 AM	7	1	9	0	2	0	1	0	1	114	7	1	8	60	0	0	211	2827
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	64	8	92	0	8	8	24	0	20	1668	52	4	60	1068	36	0	3112	
Heavy Trucks	16	0	0	0	0	0	0	0	0	40	4	0	0	92	0	0	152	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	8	
Bicycles	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	3	
Railroad																		
Stopped Buses																		

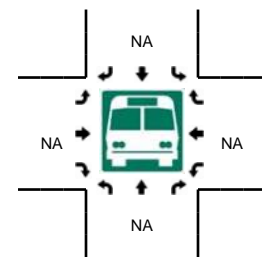
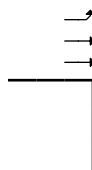
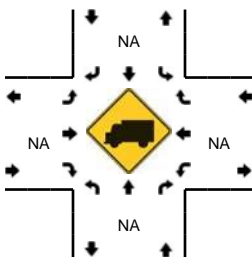
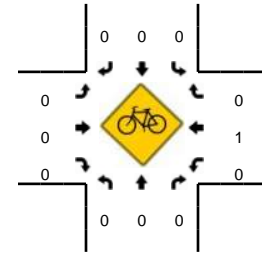
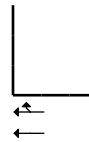
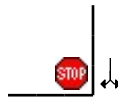
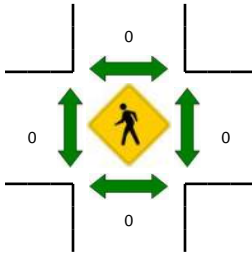
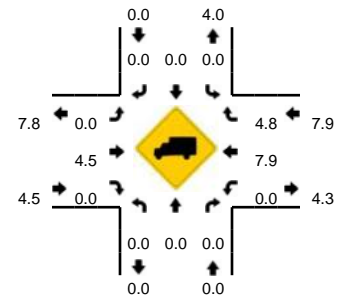
Comments:

LOCATION: Vittoria Way -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505605
DATE: Thu, Sep 14 2017



Peak-Hour: 6:55 AM -- 7:55 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

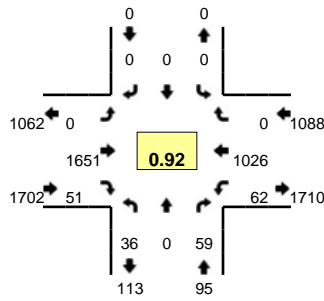


5-Min Count Period Beginning At	Vittoria Way (Northbound)				Vittoria Way (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:25 AM	0	0	0	0	10	0	0	0	0	155	0	0	0	39	3	0	207	
6:30 AM	0	0	0	0	7	0	2	0	0	141	0	0	0	54	1	0	205	
6:35 AM	0	0	0	0	3	0	2	0	0	182	0	0	0	60	1	0	248	
6:40 AM	0	0	0	0	4	0	1	0	0	126	0	0	0	63	0	0	194	
6:45 AM	0	0	0	0	1	0	3	0	1	180	0	0	0	69	0	0	254	
6:50 AM	0	0	0	0	4	0	3	0	0	131	0	0	0	65	0	0	203	
6:55 AM	0	0	0	0	7	0	1	0	0	156	0	0	0	89	1	0	254	2446
7:00 AM	0	0	0	0	3	0	0	0	0	123	0	0	0	66	2	0	194	2477
7:05 AM	0	0	0	0	6	0	2	0	0	142	0	0	0	76	1	0	227	2532
7:10 AM	0	0	0	0	5	0	3	0	0	125	0	0	0	78	2	0	213	2590
7:15 AM	0	0	0	0	5	0	1	0	1	165	0	0	0	66	0	0	238	2633
7:20 AM	0	0	0	0	6	0	1	0	1	131	0	0	0	72	2	0	213	2650
7:25 AM	0	0	0	0	5	0	3	0	1	133	0	0	0	106	4	0	252	2695
7:30 AM	0	0	0	0	3	0	2	0	0	130	0	0	0	95	2	0	232	2722
7:35 AM	0	0	0	0	3	0	2	0	1	153	0	0	0	97	4	0	260	2734
7:40 AM	0	0	0	0	3	0	1	0	0	130	0	0	0	72	1	0	207	2747
7:45 AM	0	0	0	0	2	0	2	0	0	147	0	0	0	113	1	0	265	2758
7:50 AM	0	0	0	0	3	0	6	0	0	98	0	0	0	103	1	0	211	2766
7:55 AM	0	0	0	0	2	0	1	0	0	124	0	0	0	90	3	0	220	2732
8:00 AM	0	0	0	0	2	0	3	0	3	91	0	0	0	89	1	0	189	2727
8:05 AM	0	0	0	0	1	0	0	0	0	99	0	0	0	80	1	0	181	2681
8:10 AM	0	0	0	0	1	0	0	0	2	95	0	0	0	97	0	0	195	2663
8:15 AM	0	0	0	0	4	0	1	0	1	95	0	0	0	80	2	0	183	2608
8:20 AM	0	0	0	0	1	0	0	0	4	113	0	0	0	81	1	0	200	2595
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	44	0	28	0	8	1664	0	0	0	1192	40	0	2976	
Heavy Trucks	0	0	0	0	0	0	0	0	0	48	0	0	0	104	0	0	152	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Railroad																		
Stopped Buses																		

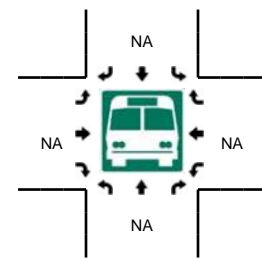
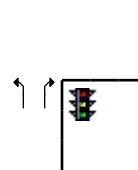
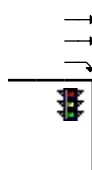
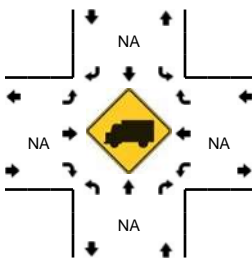
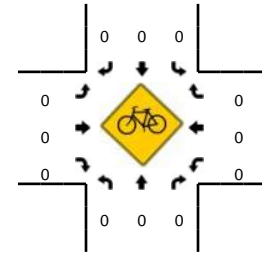
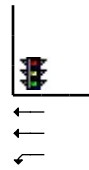
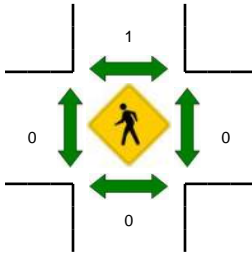
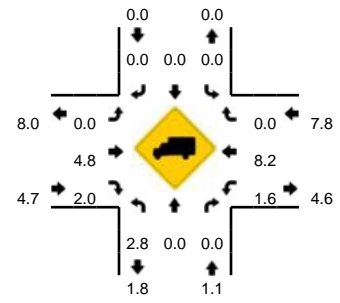
Comments:

LOCATION: Providence Dr -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505607
DATE: Thu, Sep 14 2017



Peak-Hour: 6:55 AM -- 7:55 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

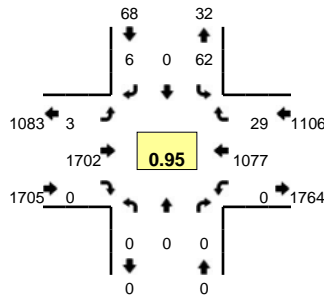


5-Min Count Period Beginning At	Providence Dr (Northbound)				Providence Dr (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:25 AM	1	0	2	0	0	0	0	0	0	167	3	0	4	42	0	0	219	
6:30 AM	0	0	6	0	0	0	0	0	0	149	3	0	3	53	0	0	214	
6:35 AM	0	0	3	0	0	0	0	0	0	184	6	0	6	64	0	0	263	
6:40 AM	1	0	5	0	0	0	0	0	0	132	2	0	6	60	0	0	206	
6:45 AM	0	0	1	0	0	0	0	0	0	174	6	0	2	69	0	0	252	
6:50 AM	2	0	3	0	0	0	0	0	0	130	4	0	4	63	0	0	206	
6:55 AM	2	0	4	0	0	0	0	0	0	146	4	0	14	86	0	0	256	2501
7:00 AM	1	0	2	0	0	0	0	0	0	132	3	0	6	68	0	0	212	2556
7:05 AM	0	0	3	0	0	0	0	0	0	143	5	0	4	77	0	0	232	2619
7:10 AM	3	0	9	0	0	0	0	0	0	131	2	0	3	80	0	0	228	2677
7:15 AM	2	0	3	0	0	0	0	0	0	164	2	0	3	62	0	0	236	2711
7:20 AM	2	0	10	0	0	0	0	0	0	128	6	0	4	74	0	0	224	2748
7:25 AM	4	0	2	0	0	0	0	0	0	141	4	0	6	106	0	0	263	2792
7:30 AM	6	0	8	0	0	0	0	0	0	126	3	0	7	93	0	0	243	2821
7:35 AM	4	0	6	0	0	0	0	0	0	163	4	0	5	97	0	0	279	2837
7:40 AM	5	0	7	0	0	0	0	0	0	130	6	0	4	71	0	0	223	2854
7:45 AM	4	0	2	0	0	0	0	0	0	150	5	0	6	116	0	0	283	2885
7:50 AM	3	0	3	0	0	0	0	0	0	97	7	0	0	96	0	0	206	2885
7:55 AM	2	0	2	0	0	0	0	0	0	111	14	0	6	98	0	0	233	2862
8:00 AM	1	0	3	0	0	0	0	0	0	81	1	0	5	82	0	0	173	2823
8:05 AM	8	0	3	0	0	0	0	0	0	93	7	0	4	75	0	0	190	2781
8:10 AM	1	0	3	0	0	0	0	0	0	92	5	0	4	96	0	0	201	2754
8:15 AM	2	0	0	0	0	0	0	0	0	91	10	0	3	76	0	0	182	2700
8:20 AM	3	0	1	0	0	0	0	0	0	102	8	0	6	80	0	0	200	2676
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	56	0	64	0	0	0	0	0	0	1720	44	0	72	1184	0	0	3140	
Heavy Trucks	0	0	0	0	0	0	0	0	0	52	0	0	4	96	0	0	152	
Pedestrians	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

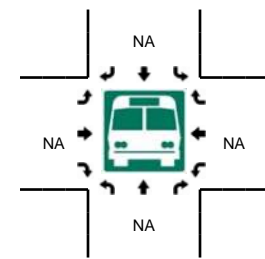
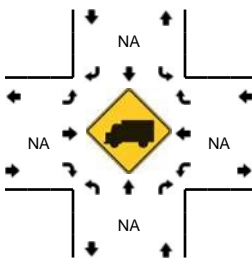
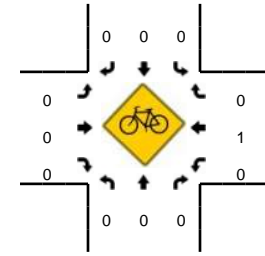
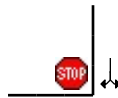
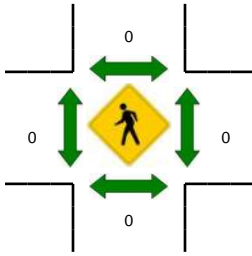
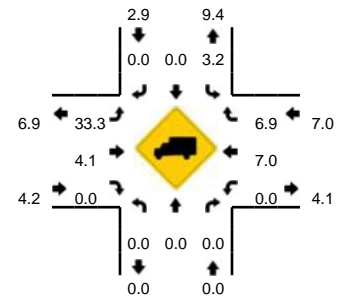
Comments:

LOCATION: NE Benjamin Rd -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505609
DATE: Thu, Sep 14 2017



Peak-Hour: 6:55 AM -- 7:55 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

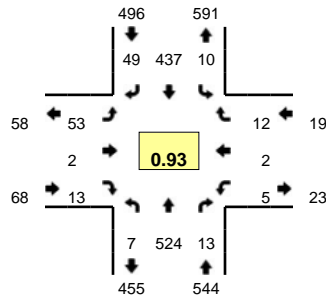


5-Min Count Period Beginning At	NE Benjamin Rd (Northbound)				NE Benjamin Rd (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:25 AM	0	0	0	0	3	0	2	0	1	155	0	0	0	47	0	0	208	
6:30 AM	0	0	0	0	2	0	0	0	0	160	0	0	0	49	0	0	211	
6:35 AM	0	0	0	0	4	0	0	0	0	180	0	0	0	71	0	0	255	
6:40 AM	0	0	0	0	7	0	0	0	0	156	0	0	0	70	1	0	234	
6:45 AM	0	0	0	0	6	0	0	0	0	170	0	0	0	74	3	0	253	
6:50 AM	0	0	0	0	3	0	1	0	0	141	0	0	0	73	3	0	221	
6:55 AM	0	0	0	0	4	0	1	0	0	127	0	0	0	95	2	0	229	2520
7:00 AM	0	0	0	0	7	0	1	0	0	154	0	0	0	72	2	0	236	2601
7:05 AM	0	0	0	0	7	0	0	0	0	139	0	0	0	77	2	0	225	2650
7:10 AM	0	0	0	0	10	0	0	0	0	145	0	0	0	85	1	0	241	2722
7:15 AM	0	0	0	0	10	0	1	0	1	149	0	0	0	60	1	0	222	2742
7:20 AM	0	0	0	0	1	0	0	0	0	158	0	0	0	95	1	0	255	2790
7:25 AM	0	0	0	0	2	0	0	0	1	126	0	0	0	107	7	0	243	2825
7:30 AM	0	0	0	0	8	0	0	0	0	150	0	0	0	101	1	0	260	2874
7:35 AM	0	0	0	0	3	0	1	0	0	153	0	0	0	86	6	0	249	2868
7:40 AM	0	0	0	0	3	0	1	0	0	152	0	0	0	76	3	0	235	2869
7:45 AM	0	0	0	0	5	0	1	0	1	136	0	0	0	116	2	0	261	2877
7:50 AM	0	0	0	0	2	0	0	0	0	113	0	0	0	107	1	0	223	2879
7:55 AM	0	0	0	0	5	0	0	0	0	106	0	0	0	99	5	0	215	2865
8:00 AM	0	0	0	0	6	0	0	0	0	105	0	0	0	82	4	0	197	2826
8:05 AM	0	0	0	0	1	0	1	0	0	103	0	0	0	82	8	0	195	2796
8:10 AM	0	0	0	0	5	0	1	0	1	81	0	0	0	93	1	0	182	2737
8:15 AM	0	0	0	0	4	0	1	0	0	106	0	0	0	78	4	0	193	2708
8:20 AM	0	0	0	0	1	0	1	0	0	94	0	0	0	93	1	0	190	2643
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	44	0	0	0	4	1736	0	0	0	1212	36	0	3032	
Heavy Trucks	0	0	0	0	0	0	0	0	0	56	0	0	0	80	8	0	144	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
Railroad																		
Stopped Buses																		

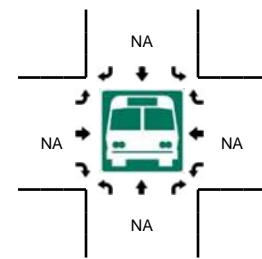
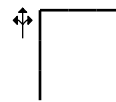
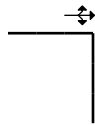
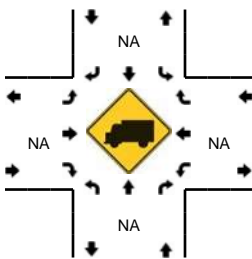
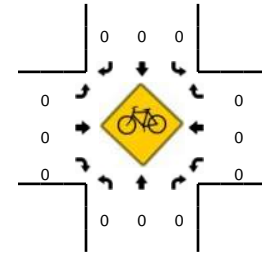
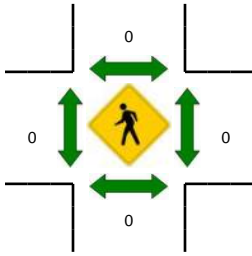
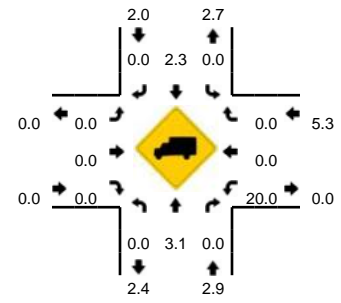
Comments:

LOCATION: Springbrook Rd -- Crestview Dr
CITY/STATE: Newberg, OR

QC JOB #: 14505612
DATE: Thu, Sep 14 2017



Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

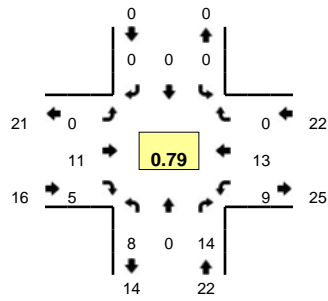


5-Min Count Period Beginning At	Springbrook Rd (Northbound)				Springbrook Rd (Southbound)				Crestview Dr (Eastbound)				Crestview Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	27	0	0	0	40	0	1	4	1	0	0	0	0	0	0	73	913
4:05 PM	1	31	0	0	1	55	3	0	2	0	0	0	1	0	1	0	95	925
4:10 PM	0	34	1	0	1	41	2	0	2	0	1	0	0	0	1	0	83	933
4:15 PM	2	26	2	0	1	35	2	0	0	0	0	0	1	0	1	0	70	923
4:20 PM	1	47	0	0	0	27	3	0	2	0	2	0	0	0	1	0	83	930
4:25 PM	1	36	1	0	0	32	6	0	1	0	0	0	0	0	0	0	77	939
4:30 PM	1	39	0	0	0	32	1	0	2	0	2	0	2	0	2	0	81	942
4:35 PM	1	31	3	0	0	38	4	0	3	0	0	0	2	0	0	0	82	922
4:40 PM	0	39	1	0	0	56	2	1	0	0	0	0	1	0	2	0	102	953
4:45 PM	2	47	1	0	2	40	4	0	2	0	0	0	0	0	2	0	100	986
4:50 PM	0	46	0	0	1	44	8	0	0	0	2	0	0	0	0	0	101	1017
4:55 PM	1	46	3	0	0	30	12	0	6	0	1	0	0	0	1	0	100	1047
5:00 PM	0	44	1	0	0	25	3	0	15	0	3	0	2	0	1	0	94	1068
5:05 PM	2	46	0	0	0	30	6	0	8	0	3	0	1	0	1	0	97	1070
5:10 PM	1	44	2	0	0	37	1	0	8	0	1	0	0	0	1	0	95	1082
5:15 PM	1	46	1	0	0	30	1	0	4	0	0	0	0	2	0	0	85	1097
5:20 PM	0	43	0	0	1	47	4	0	3	0	0	0	0	0	2	0	100	1114
5:25 PM	0	45	1	0	2	29	2	0	1	0	1	0	0	0	0	0	81	1118
5:30 PM	0	31	2	0	0	40	3	1	3	2	2	0	0	0	2	0	86	1123
5:35 PM	0	47	1	0	2	29	3	0	3	0	0	0	1	0	0	0	86	1127
5:40 PM	1	41	0	0	0	33	0	0	1	1	0	0	1	0	0	0	78	1103
5:45 PM	1	29	1	0	1	41	1	0	7	0	0	0	1	0	2	0	84	1087
5:50 PM	3	34	0	0	1	34	2	0	4	0	0	0	2	1	0	0	81	1067
5:55 PM	1	27	0	0	0	37	0	0	0	0	0	0	0	0	0	0	65	1032
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	8	528	8	0	12	560	56	4	8	0	8	0	4	0	16	0	1212	
Heavy Trucks	0	12	0	0	0	8	0	0	0	0	0	0	0	0	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

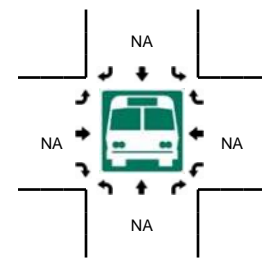
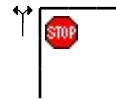
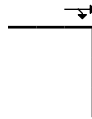
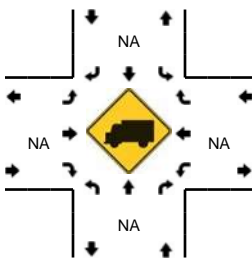
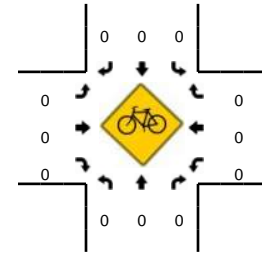
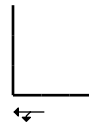
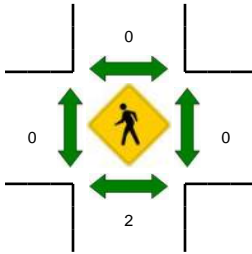
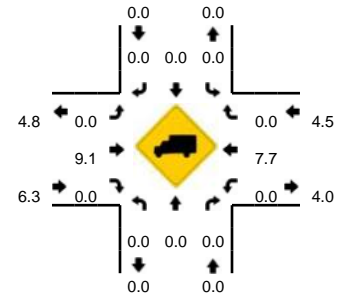
Comments:

LOCATION: N Libra St -- Crestview Dr
CITY/STATE: Newberg, OR

QC JOB #: 14566407
DATE: Wed, Nov 15 2017



Peak-Hour: 3:40 PM -- 4:40 PM
Peak 15-Min: 4:25 PM -- 4:40 PM

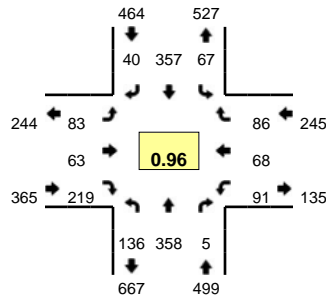


5-Min Count Period Beginning At	N Libra St (Northbound)				N Libra St (Southbound)				Crestview Dr (Eastbound)				Crestview Dr (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
3:10 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	3	
3:15 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4	
3:20 PM	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	
3:25 PM	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	4	
3:30 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	4	
3:35 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2	
3:40 PM	0	0	1	0	0	0	0	0	0	0	0	1	0	1	1	0	0	4	
3:45 PM	0	0	1	0	0	0	0	0	0	0	2	1	0	0	1	0	0	5	
3:50 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	5	
3:55 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	0	0	5	47
4:00 PM	2	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	4	49
4:05 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	1	0	0	5	48
4:10 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	47
4:15 PM	0	0	3	0	0	0	0	0	0	0	1	0	0	1	0	0	0	5	48
4:20 PM	1	0	2	0	0	0	0	0	0	0	2	0	0	1	0	0	0	6	51
4:25 PM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	0	0	4	51
4:30 PM	2	0	0	0	0	0	0	0	0	0	1	1	0	1	3	0	0	8	55
4:35 PM	2	0	1	0	0	0	0	0	0	0	0	1	0	2	1	0	0	7	60
4:40 PM	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	59
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	56
4:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	53
4:55 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	51
5:00 PM	0	0	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6	53
5:05 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	50
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
All Vehicles	16	0	8	0	0	0	0	0	0	8	8	0	12	24	0	0	76		
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0		
Pedestrians	0				0				0				0				0		
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0		
Railroad																			
Stopped Buses																			

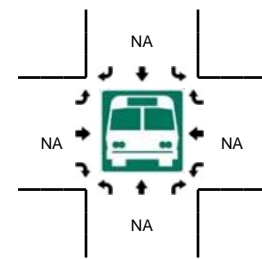
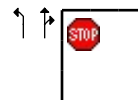
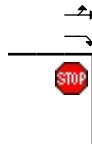
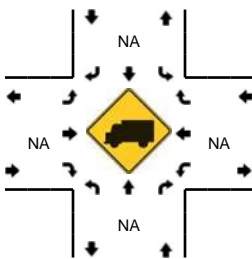
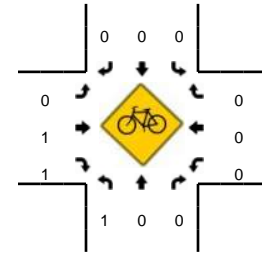
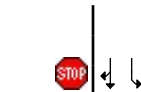
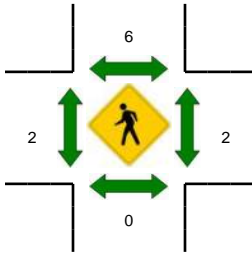
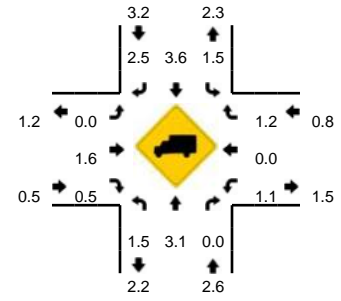
Comments:

LOCATION: N Springbrook Rd -- Haworth Ave
CITY/STATE: Newberg, OR

QC JOB #: 14566405
DATE: Wed, Nov 15 2017



Peak-Hour: 4:20 PM -- 5:20 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

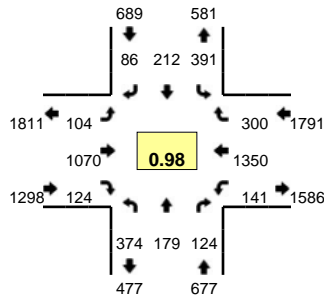


5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				Haworth Ave (Eastbound)				Haworth Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:50 PM	8	18	1	0	5	30	3	0	5	5	10	0	9	4	7	0	105	
3:55 PM	10	24	0	0	3	28	5	0	10	1	18	0	10	7	4	0	120	1317
4:00 PM	11	21	3	0	2	21	3	0	7	4	11	0	7	2	1	0	93	1309
4:05 PM	14	24	1	0	9	33	5	0	7	5	18	0	7	4	3	0	130	1328
4:10 PM	11	22	2	0	6	31	5	0	7	4	13	0	11	10	5	0	127	1340
4:15 PM	12	25	0	0	6	29	3	0	8	5	11	0	11	7	7	0	124	1359
4:20 PM	8	33	0	0	9	28	5	0	4	9	12	0	6	6	7	0	127	1360
4:25 PM	13	22	1	0	3	33	3	0	5	4	12	0	10	4	1	0	111	1367
4:30 PM	14	30	0	0	4	23	5	0	12	3	18	0	6	8	6	0	129	1380
4:35 PM	12	31	0	0	5	30	4	0	10	4	16	0	9	3	5	0	129	1402
4:40 PM	9	33	2	0	5	28	6	0	5	7	27	0	4	6	10	0	142	1424
4:45 PM	14	22	1	0	3	28	2	0	8	2	18	0	8	7	8	0	121	1458
4:50 PM	12	26	1	0	2	31	5	0	6	4	23	0	12	9	8	0	139	1492
4:55 PM	6	23	0	0	9	34	3	0	9	5	17	0	5	7	7	0	125	1497
5:00 PM	13	29	0	0	6	29	2	0	9	7	23	0	8	8	10	0	144	1548
5:05 PM	13	36	0	0	6	27	0	0	3	4	16	0	6	3	8	0	122	1540
5:10 PM	13	31	0	0	8	31	2	0	6	10	14	0	11	3	6	0	135	1548
5:15 PM	9	42	0	0	7	35	3	0	6	4	23	0	6	4	10	0	149	1573
5:20 PM	19	26	2	0	2	27	3	0	3	5	16	0	10	6	6	0	125	1571
5:25 PM	8	24	0	0	1	29	4	0	7	5	12	0	10	5	6	0	111	1571
5:30 PM	14	20	2	0	3	23	3	0	6	5	7	0	5	7	7	0	102	1544
5:35 PM	18	31	1	0	3	21	3	0	7	5	18	0	4	4	5	0	120	1535
5:40 PM	10	36	2	0	2	16	5	0	3	6	15	0	11	7	5	0	118	1511
5:45 PM	11	24	0	0	2	17	1	0	1	6	5	0	14	3	4	0	88	1478
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	124	312	4	0	68	376	40	0	96	64	252	0	100	96	100	0	1632	
Heavy Trucks	0	16	0	0	0	4	0	0	0	4	4	0	0	0	0	0	28	
Pedestrians		0				8				0				0			8	
Bicycles		0				0				0	1			0			1	
Railroad																		
Stopped Buses																		

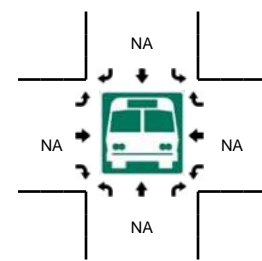
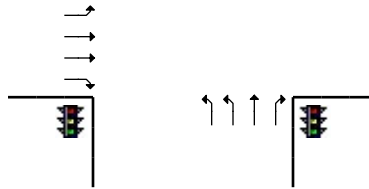
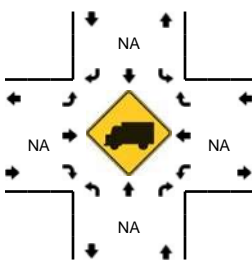
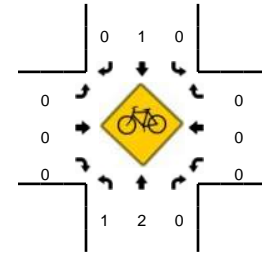
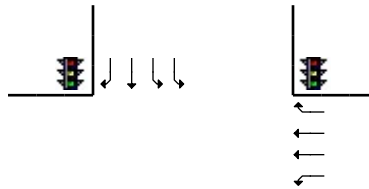
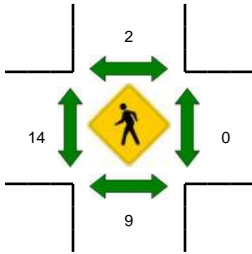
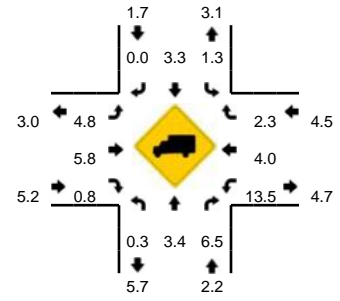
Comments:

LOCATION: N Springbrook Rd -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505602
DATE: Thu, Sep 14 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

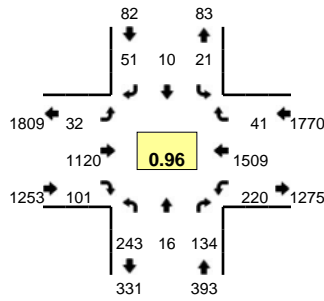


5-Min Count Period Beginning At	N Springbrook Rd (Northbound)				N Springbrook Rd (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	30	10	12	0	29	9	5	0	12	90	11	0	16	105	20	0	349	4050
4:05 PM	31	12	9	0	20	16	9	0	7	103	12	0	15	114	22	0	370	4104
4:10 PM	25	14	16	0	33	11	7	0	3	90	5	1	8	111	23	0	347	4133
4:15 PM	34	14	10	0	31	10	6	0	7	99	14	1	12	129	21	0	388	4191
4:20 PM	33	18	15	0	28	15	16	0	7	91	10	0	16	115	24	0	388	4241
4:25 PM	27	18	14	0	31	17	8	0	11	93	8	0	17	99	29	0	372	4270
4:30 PM	42	14	13	0	36	8	8	0	12	96	10	0	17	118	15	0	389	4304
4:35 PM	29	13	7	0	27	15	7	0	8	81	5	1	15	133	20	0	361	4307
4:40 PM	33	12	11	0	15	14	12	0	6	93	11	0	15	137	16	0	375	4338
4:45 PM	28	12	12	0	31	20	9	0	10	98	13	0	12	108	28	0	381	4368
4:50 PM	31	15	10	0	24	11	5	0	11	91	16	0	14	123	25	0	376	4432
4:55 PM	35	18	7	0	26	27	6	0	3	89	9	0	11	96	35	0	362	4458
5:00 PM	40	17	16	1	45	16	9	0	8	86	10	0	11	97	23	0	379	4488
5:05 PM	32	16	10	0	38	17	7	0	7	81	5	0	11	85	22	0	331	4449
5:10 PM	32	17	10	0	27	21	4	0	12	84	11	2	21	103	28	0	372	4474
5:15 PM	26	8	7	0	33	14	5	0	5	104	9	0	9	119	26	0	365	4451
5:20 PM	33	12	10	0	29	9	9	0	9	101	9	0	12	140	21	0	394	4457
5:25 PM	31	14	9	0	29	13	6	0	7	73	11	0	9	138	28	0	368	4453
5:30 PM	20	19	12	0	35	32	6	0	12	90	9	0	9	110	24	1	379	4443
5:35 PM	35	17	8	0	43	18	8	0	7	93	14	0	8	118	16	0	385	4467
5:40 PM	30	14	13	0	31	14	12	0	11	80	8	0	13	113	24	0	363	4455
5:45 PM	36	12	11	0	21	12	10	0	9	81	9	1	14	121	21	1	359	4433
5:50 PM	27	16	5	0	26	15	7	0	11	104	14	0	11	136	19	0	391	4448
5:55 PM	28	13	6	0	25	12	10	0	9	102	15	0	11	120	17	0	368	4454
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	336	180	124	0	372	216	84	0	112	1056	116	0	120	1552	292	4	4564	
Heavy Trucks	0	8	8		8	4	0		4	44	0		16	64	0		156	
Pedestrians		4				0				0				0			4	
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

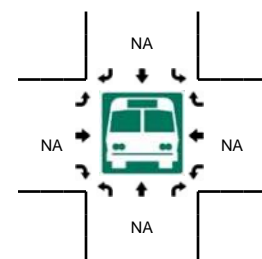
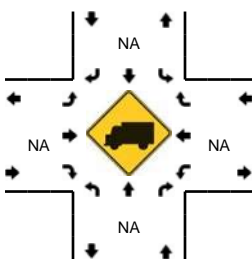
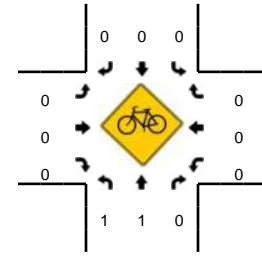
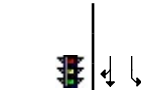
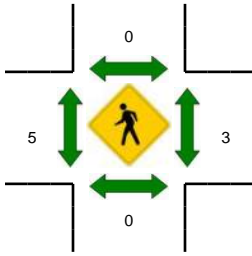
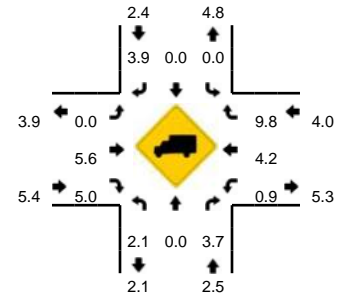
Comments:

LOCATION: Brutscher St -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505604
DATE: Thu, Sep 14 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

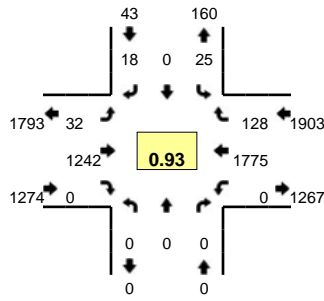


5-Min Count Period Beginning At	Brutscher St (Northbound)				Brutscher St (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	10	1	15	0	1	4	10	0	0	87	5	1	30	121	3	0	288	3289
4:05 PM	16	4	5	0	0	1	6	0	3	88	7	1	20	120	7	0	278	3283
4:10 PM	25	3	7	0	4	2	5	0	2	91	13	1	16	123	5	0	297	3335
4:15 PM	23	2	5	0	1	1	5	0	1	80	7	1	20	135	3	0	284	3307
4:20 PM	17	2	7	0	1	1	6	0	3	118	7	0	17	138	5	0	322	3368
4:25 PM	24	3	9	0	2	1	3	0	1	101	13	2	12	112	5	0	288	3385
4:30 PM	13	2	10	0	1	1	6	0	1	96	11	1	21	151	5	1	320	3433
4:35 PM	17	1	13	0	0	2	9	0	2	77	11	0	18	135	4	0	289	3462
4:40 PM	13	4	8	0	2	1	4	0	0	78	5	0	18	150	0	0	283	3500
4:45 PM	21	1	7	0	1	1	6	0	3	78	12	0	22	117	4	0	273	3469
4:50 PM	29	5	12	0	1	2	5	0	2	81	10	0	22	118	1	0	288	3501
4:55 PM	22	0	11	0	1	0	6	0	2	118	9	0	13	127	4	0	313	3523
5:00 PM	23	0	12	0	1	1	2	0	3	82	7	0	21	112	6	0	270	3505
5:05 PM	23	2	13	0	5	0	7	0	2	102	5	0	19	99	4	0	281	3508
5:10 PM	19	0	19	0	1	1	6	0	0	92	9	1	21	142	0	0	311	3522
5:15 PM	14	1	15	0	1	0	1	0	3	98	9	0	15	130	4	0	291	3529
5:20 PM	17	1	8	0	4	0	4	0	0	83	7	1	15	124	2	0	266	3473
5:25 PM	19	3	5	0	3	0	2	0	2	94	9	1	18	132	4	0	292	3477
5:30 PM	14	0	9	0	2	0	3	0	2	98	10	2	22	132	1	0	295	3452
5:35 PM	21	1	9	0	0	2	6	0	5	94	7	1	20	139	6	0	311	3474
5:40 PM	21	2	14	0	1	3	3	0	2	100	7	0	12	137	5	0	307	3498
5:45 PM	16	2	12	0	2	3	4	0	0	70	12	0	16	142	4	0	283	3508
5:50 PM	15	1	15	0	0	0	5	0	1	77	9	0	29	124	2	0	278	3498
5:55 PM	26	0	15	0	0	2	5	0	2	86	10	0	7	101	3	0	257	3442
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	224	12	128	0	12	20	48	0	36	1168	96	12	216	1632	48	0	3652	
Heavy Trucks	4	0	0		0	0	4		0	72	4		0	64	8		156	
Pedestrians		0				0				4				0			4	
Bicycles	1	0	0		0	0	0		0	0	0		0	0	0		1	
Railroad																		
Stopped Buses																		

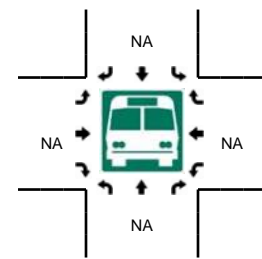
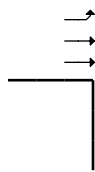
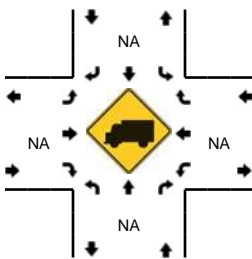
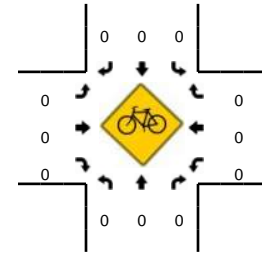
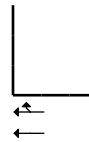
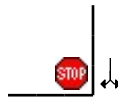
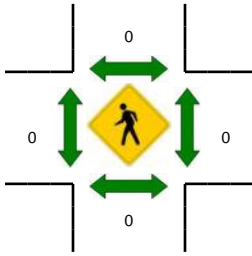
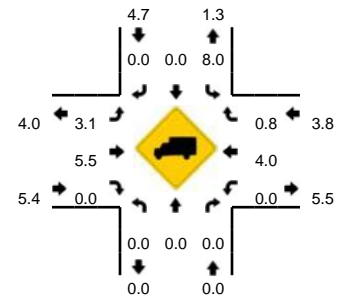
Comments:

LOCATION: Vittoria Way -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505606
DATE: Thu, Sep 14 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

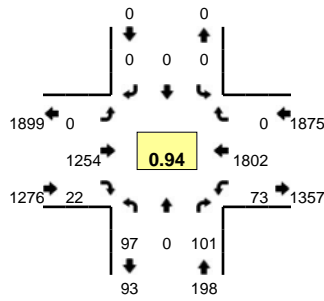


5-Min Count Period Beginning At	Vittoria Way (Northbound)				Vittoria Way (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	1	0	2	98	0	0	0	133	5	0	240	2850
4:05 PM	0	0	0	0	0	0	2	0	1	95	0	0	0	140	10	0	248	2876
4:10 PM	0	0	0	0	2	0	2	0	1	103	0	0	0	167	5	0	280	2938
4:15 PM	0	0	0	0	2	0	2	0	1	76	0	0	0	154	3	0	238	2917
4:20 PM	0	0	0	0	1	0	2	0	3	107	0	0	0	144	10	0	267	2937
4:25 PM	0	0	0	0	1	0	0	0	0	117	0	0	0	139	6	0	263	2976
4:30 PM	0	0	0	0	0	0	1	0	2	115	0	0	0	172	11	0	301	3061
4:35 PM	0	0	0	0	2	0	1	0	1	87	0	0	0	147	12	0	250	3071
4:40 PM	0	0	0	0	1	0	0	0	1	91	0	0	0	156	14	0	263	3111
4:45 PM	0	0	0	0	0	0	3	0	0	88	0	0	0	157	10	0	258	3127
4:50 PM	0	0	0	0	2	0	0	0	2	88	0	0	0	148	11	0	251	3134
4:55 PM	0	0	0	0	1	0	1	0	1	107	0	0	0	139	8	0	257	3116
5:00 PM	0	0	0	0	3	0	0	0	1	101	0	0	0	129	15	0	249	3125
5:05 PM	0	0	0	0	0	0	3	0	3	116	0	0	0	134	9	0	265	3142
5:10 PM	0	0	0	0	1	0	0	0	8	112	0	0	0	158	13	0	292	3154
5:15 PM	0	0	0	0	3	0	0	0	4	112	0	0	0	142	10	0	271	3187
5:20 PM	0	0	0	0	4	0	3	0	5	96	0	0	0	146	7	0	261	3181
5:25 PM	0	0	0	0	5	0	2	0	2	84	0	0	0	148	9	0	250	3168
5:30 PM	0	0	0	0	1	0	1	0	2	105	0	0	0	158	14	0	281	3148
5:35 PM	0	0	0	0	3	0	3	0	1	88	0	0	0	176	8	0	279	3177
5:40 PM	0	0	0	0	2	0	2	0	3	145	0	0	0	140	14	0	306	3220
5:45 PM	0	0	0	0	3	0	1	0	1	82	0	0	0	161	7	0	255	3217
5:50 PM	0	0	0	0	1	0	3	0	1	88	0	0	0	151	5	0	249	3215
5:55 PM	0	0	0	0	1	0	0	0	2	94	0	0	0	123	6	0	226	3184
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	24	0	24	0	24	1352	0	0	0	1896	144	0	3464	
Heavy Trucks	0	0	0	0	0	0	0	0	0	72	0	0	0	76	0	0	148	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

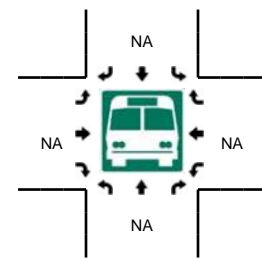
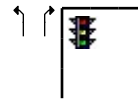
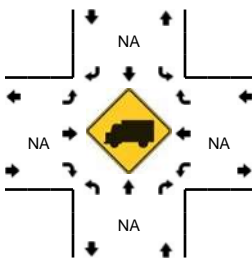
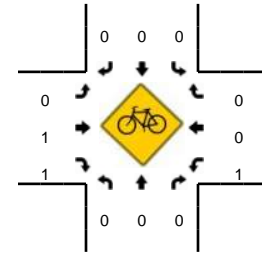
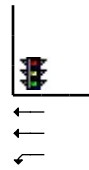
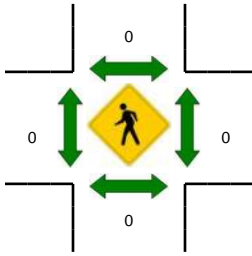
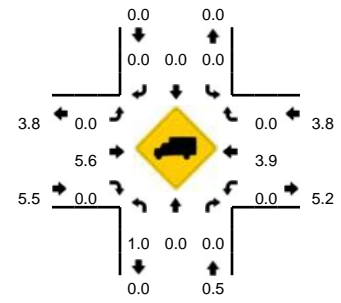
Comments:

LOCATION: Providence Dr -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505608
DATE: Thu, Sep 14 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

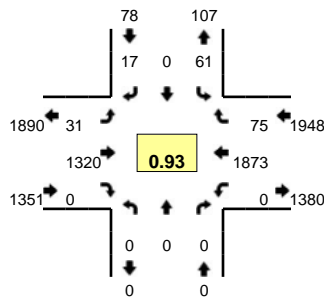


5-Min Count Period Beginning At	Providence Dr (Northbound)				Providence Dr (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	0	2	0	0	0	0	0	0	98	6	0	6	133	0	0	253	2940
4:05 PM	10	0	5	0	0	0	0	0	0	93	4	0	7	137	0	0	256	2965
4:10 PM	22	0	11	0	0	0	0	0	0	101	5	0	7	149	0	0	295	3032
4:15 PM	6	0	5	0	0	0	0	0	0	77	2	0	7	157	0	0	254	3028
4:20 PM	7	0	5	0	0	0	0	0	0	106	0	0	8	140	0	0	266	3033
4:25 PM	7	0	5	0	0	0	0	0	0	117	0	0	2	142	0	0	273	3076
4:30 PM	9	0	9	0	0	0	0	0	0	115	1	0	5	169	0	0	308	3155
4:35 PM	10	0	10	0	0	0	0	0	0	91	2	0	5	154	0	0	272	3173
4:40 PM	11	0	8	0	0	0	0	0	0	92	2	0	6	151	0	0	270	3223
4:45 PM	11	0	4	0	0	0	0	0	0	87	1	0	4	156	0	0	263	3238
4:50 PM	8	0	4	0	0	0	0	0	0	85	2	0	2	153	0	0	254	3242
4:55 PM	6	0	9	0	0	0	0	0	0	105	1	0	7	139	0	0	267	3231
5:00 PM	9	0	4	0	0	0	0	0	0	99	2	0	3	138	0	2	257	3235
5:05 PM	11	0	14	0	0	0	0	0	0	117	1	0	6	132	0	0	281	3260
5:10 PM	5	0	11	0	0	0	0	0	0	121	3	0	9	165	0	0	314	3279
5:15 PM	12	0	16	0	0	0	0	0	0	116	2	0	8	140	0	0	294	3319
5:20 PM	9	0	9	0	0	0	0	0	0	94	4	0	6	142	0	0	264	3317
5:25 PM	6	0	11	0	0	0	0	0	0	93	2	0	6	154	0	0	272	3316
5:30 PM	11	0	2	0	0	0	0	0	0	100	0	0	7	161	0	0	281	3289
5:35 PM	6	0	7	0	0	0	0	0	0	91	1	0	8	173	0	0	286	3303
5:40 PM	3	0	10	0	0	0	0	0	0	146	3	0	5	149	0	0	316	3349
5:45 PM	1	0	2	0	0	0	0	0	0	86	1	0	4	170	0	0	264	3350
5:50 PM	9	0	5	0	0	0	0	0	0	90	1	0	0	146	0	0	251	3347
5:55 PM	5	0	6	0	0	0	0	0	0	91	3	0	7	121	0	0	233	3313
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	112	0	164	0	0	0	0	0	0	1416	24	0	92	1748	0	0	3556	
Heavy Trucks	0	0	0	0	0	0	0	0	0	108	0	0	0	68	0	0	176	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	
Railroad																		
Stopped Buses																		

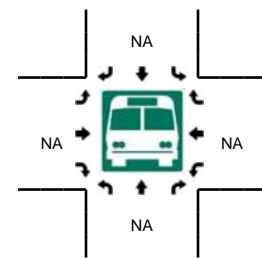
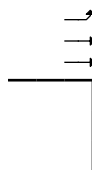
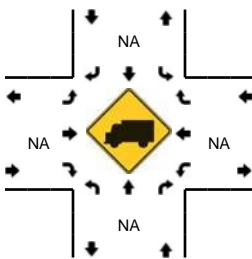
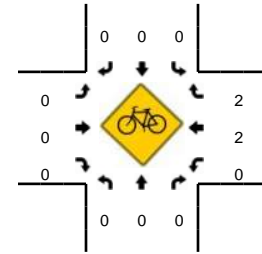
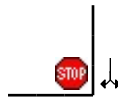
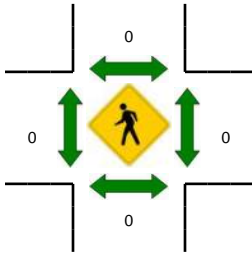
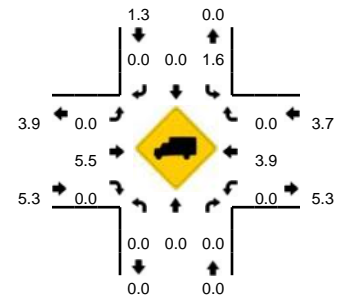
Comments:

LOCATION: NE Benjamin Rd -- OR 99W
CITY/STATE: Newberg, OR

QC JOB #: 14505610
DATE: Thu, Sep 14 2017



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:10 PM -- 5:25 PM



5-Min Count Period Beginning At	NE Benjamin Rd (Northbound)				NE Benjamin Rd (Southbound)				OR 99W (Eastbound)				OR 99W (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	2	105	0	0	0	137	4	0	249	2869
4:05 PM	0	0	0	0	8	0	1	0	1	103	0	0	0	150	11	0	274	2932
4:10 PM	0	0	0	0	3	0	1	0	2	114	0	0	0	151	2	0	273	2975
4:15 PM	0	0	0	0	2	0	1	0	1	82	0	0	0	168	8	0	262	3002
4:20 PM	0	0	0	0	3	0	1	0	1	105	0	0	0	128	7	0	245	2982
4:25 PM	0	0	0	0	1	0	0	0	2	100	0	0	0	160	6	0	269	3025
4:30 PM	0	0	0	0	3	0	0	0	2	126	0	0	0	166	5	0	302	3086
4:35 PM	0	0	0	0	3	0	3	0	0	110	0	0	0	155	6	0	277	3114
4:40 PM	0	0	0	0	5	0	0	0	0	108	0	0	0	164	4	0	281	3171
4:45 PM	0	0	0	0	3	0	1	0	1	92	0	0	0	186	4	0	287	3222
4:50 PM	0	0	0	0	5	0	1	0	3	85	0	0	0	139	1	0	234	3220
4:55 PM	0	0	0	0	5	0	0	0	1	105	0	0	0	131	7	0	249	3202
5:00 PM	0	0	0	0	3	0	6	0	4	106	0	0	0	139	5	0	263	3216
5:05 PM	0	0	0	0	3	0	0	0	3	124	0	0	0	133	4	0	267	3209
5:10 PM	0	0	0	0	6	0	0	0	1	128	0	0	0	178	7	0	320	3256
5:15 PM	0	0	0	0	2	0	1	0	3	137	0	0	0	153	10	0	306	3300
5:20 PM	0	0	0	0	4	0	0	0	6	104	0	0	0	164	8	0	286	3341
5:25 PM	0	0	0	0	5	0	4	0	2	96	0	0	0	168	5	0	280	3352
5:30 PM	0	0	0	0	7	0	2	0	0	97	0	0	0	150	10	0	266	3316
5:35 PM	0	0	0	0	7	0	1	1	3	102	0	0	0	172	8	0	294	3333
5:40 PM	0	0	0	0	10	0	1	0	4	144	0	0	0	160	6	0	325	3377
5:45 PM	0	0	0	0	1	0	2	0	3	78	0	0	0	165	5	0	254	3344
5:50 PM	0	0	0	0	3	0	2	0	1	105	0	0	0	140	3	0	254	3364
5:55 PM	0	0	0	0	1	0	3	0	2	100	0	0	0	133	7	0	246	3361
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	48	0	4	0	40	1476	0	0	0	1980	100	0	3648	
Heavy Trucks	0	0	0	0	0	0	0	0	0	80	0	0	0	84	0	0	164	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	
Railroad																		
Stopped Buses																		

Comments:

Appendix C
Year 2017 Existing Conditions
Level of Service Worksheets

Intersection: Pacific Highway/Providence Drive
Scenario: Weekday AM Peak 15 minutes + 15 min

Saturation Flow Summary (7:25 - 7:55 AM)

Westbound

start	end	Green Time (seconds)	Number of Vehicles	Number of headways	Flow Rate (Calculated)	Notes	Flow Rate (Usable)
7:27:14	7:27:16	0:00:02	2	1	1800		1800
7:29:14	7:29:21	0:00:07	4	3	1543		1543
7:31:12	7:31:20	0:00:08	5	4	1800		1800
7:35:12	7:35:26	0:00:14	8	7	1800		1800
7:37:08	7:37:15	0:00:07	4	3	1543		1543
7:39:11	7:39:21	0:00:10	5	4	1440		1440
7:43:08	7:43:10	0:00:02	2	1	1800		1800
7:49:15	7:49:23	0:00:08	4	3	1350	truck	
7:53:08	7:53:15	0:00:07	5	4	2057		2057
		0:00:00					
		0:00:00					
		0:00:00					
		0:00:00					
		0:00:00					
Average Saturation Flow Rate ***					1681		1723

All observations based on queue lengths of 5 vehicles or greater, and based on the 4th vehicle to enter the intersection after beginning of green

Intersection: Pacific Highway/Providence Drive
Scenario: Weekday PM Peak 15 minutes + 15 min

Saturation Flow Summary (5:05 - 5:35 PM)

Westbound

start	end	Green Time (seconds)	Number of Vehicles	Number of headways	Flow Rate (Calculated)	Notes	Flow Rate (Usable)
17:06:23	17:06:39	0:00:16	9	8	1800		1800
17:08:53	17:09:17	0:00:24	11	10	1500		1500
17:10:53	17:11:01	0:00:08	4	3	1350	truck	
17:13:29	17:13:46	0:00:17	9	8	1694		1694
17:15:43	17:15:47	0:00:04	3	2	1800		1800
17:20:28	17:20:33	0:00:05	4	3	2160		2160
17:22:42	17:22:49	0:00:07	4	3	1543		1543
17:25:05	17:25:10	0:00:05	3	2	1440		1440
17:27:23	17:27:30	0:00:07	4	3	1543		1543
17:29:47	17:29:58	0:00:11	6				
17:32:09	17:32:17	0:00:08	5				
17:34:32	17:34:42	0:00:10	6				
		0:00:00					
		0:00:00					
Average Saturation Flow Rate ***					1648		1685

All observations based on queue lengths of 5 vehicles or greater, and based on the 4th vehicle to enter the intersection after beginning of green

HCS 2010 Roundabouts Report

General Information					Site Information				
Analyst	ZHB				Intersection	Springbrook/Crestview			
Agency or Co.	KAI				E/W Street Name	Crestview Dr			
Date Performed	10/21/2017				N/S Street Name	Springbrook Rd			
Analysis Year	2017				Analysis Time Period (hrs)	0.25			
Time Period	Existing AM				Peak Hour Factor	0.66			
Project Description	Crestview Crossing				Jurisdiction				

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	2	54	8	69	0	4	9	7	2	64	314	3	1	7	349	135
Percent Heavy Vehicles, %	9	9	13	3	0	0	0	0	2	2	4	0	25	25	4	7
Flow Rate (v _{pce}), pc/h	3	89	14	108	0	6	14	11	3	99	495	5	2	13	550	219
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9734			4.9734			4.9734			4.9734		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

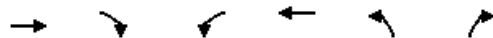
Flow Computations, Capacity and v/c Ratios													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Entry Flow (v _e), pc/h		214			31			602			784		
Entry Volume veh/h		202			31			581			746		
Circulating Flow (v _c), pc/h		574			691			121			125		
Exiting Flow (v _{ex}), pc/h		32			335			597			667		
Capacity (c _{pce}), pc/h		769			682			1220			1215		
Capacity (c), veh/h		724			682			1177			1155		
v/c Ratio (x)		0.28			0.05			0.49			0.65		

Delay and Level of Service													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Lane Control Delay (d), s/veh		8.3			5.8			8.5			11.8		
Lane LOS		A			A			A			B		
95% Queue, veh		1.1			0.1			2.8			5.0		
Approach Delay, s/veh		8.3			5.8			8.5			11.8		
Approach LOS		A			A			A			B		
Intersection Delay, s/veh LOS	10.0						A						

HCM Unsignalized Intersection Capacity Analysis

2: Libra St & Crestview Dr

01/12/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Volume (veh/h)	3	5	8	11	6	5
Future Volume (Veh/h)	3	5	8	11	6	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	2%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	4	7	12	16	9	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			11		48	8
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			11		48	8
tC, single (s)			4.1		6.6	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			99		99	99
cM capacity (veh/h)			1621		919	1081




















Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	11	28	16
Volume Left	0	12	9
Volume Right	7	0	7
cSH	1700	1621	983
Volume to Capacity	0.01	0.01	0.02
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	3.1	8.7
Lane LOS		A	A
Approach Delay (s)	0.0	3.1	8.7
Approach LOS			A

Intersection Summary			
Average Delay		4.1	
Intersection Capacity Utilization		17.7%	ICU Level of Service
Analysis Period (min)		15	A

HCM Unsignalized Intersection Capacity Analysis

3: Springbrook Rd & Haworth Ave/Shopping Center






























01/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	61	27	174	37	13	15	66	230	5	16	336	69
Future Volume (vph)	61	27	174	37	13	15	66	230	5	16	336	69
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	73	33	210	45	16	18	80	277	6	19	405	83
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	106	210	79	80	283	19	488					
Volume Left (vph)	73	0	45	80	0	19	0					
Volume Right (vph)	0	210	18	0	6	0	83					
Hadj (s)	0.42	-0.65	0.05	0.58	0.10	0.72	0.01					
Departure Headway (s)	7.7	6.6	7.8	7.3	6.8	7.2	6.5					
Degree Utilization, x	0.23	0.38	0.17	0.16	0.53	0.04	0.88					
Capacity (veh/h)	448	519	423	471	501	480	547					
Control Delay (s)	11.7	12.4	12.4	10.5	16.1	9.3	38.3					
Approach Delay (s)	12.2		12.4	14.9		37.2						
Approach LOS	B		B	B		E						
Intersection Summary												
Delay			23.0									
Level of Service			C									
Intersection Capacity Utilization			48.1%		ICU Level of Service		A					
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

4: Springbrook Rd & OR 99W

01/12/2018

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 			 		
Traffic Volume (vph)	43	1242	75	81	754	150	179	140	99	425	120	70
Future Volume (vph)	43	1242	75	81	754	150	179	140	99	425	120	70
Ideal Flow (vphpl)	1750	1750	1750	1750	1800	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%			0%			3%			0%	
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Fl _t Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1583	3197	1430	2906	3138	1403	2997	1642	1423	3101	1577	1408
Fl _t Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1583	3197	1430	2906	3138	1403	2997	1642	1423	3101	1577	1408
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	48	1396	84	91	847	169	201	157	111	478	135	79
RTOR Reduction (vph)	0	0	45	0	0	88	0	0	96	0	0	69
Lane Group Flow (vph)	48	1396	39	91	847	81	201	157	15	478	135	10
Confl. Peds. (#/hr)							3					3
Heavy Vehicles (%)	5%	4%	4%	11%	9%	6%	6%	5%	3%	4%	11%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	7.2	55.2	55.2	9.3	57.3	57.3	24.1	16.0	16.0	23.0	14.9	14.9
Effective Green, g (s)	7.2	55.2	55.2	9.3	57.3	57.3	24.1	16.0	16.0	23.0	14.9	14.9
Actuated g/C Ratio	0.06	0.46	0.46	0.08	0.48	0.48	0.20	0.13	0.13	0.19	0.12	0.12
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.3	4.2	4.2	2.3	4.0	4.0	2.3	2.3	2.3	2.3	2.3	2.3
Lane Grp Cap (vph)	94	1470	657	225	1498	669	601	218	189	594	195	174
v/s Ratio Prot	0.03	c0.44		0.03	c0.27		0.07	c0.10		c0.15	0.09	
v/s Ratio Perm			0.03			0.06			0.01			0.01
v/c Ratio	0.51	0.95	0.06	0.40	0.57	0.12	0.33	0.72	0.08	0.80	0.69	0.06
Uniform Delay, d1	54.7	31.1	18.0	52.7	22.4	17.4	41.1	49.9	45.5	46.4	50.4	46.3
Progression Factor	1.00	1.00	1.00	0.95	0.87	1.38	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.9	14.2	0.2	0.6	1.5	0.3	0.2	10.1	0.1	7.5	8.9	0.1
Delay (s)	57.5	45.3	18.2	50.8	21.0	24.3	41.3	59.9	45.6	53.9	59.3	46.4
Level of Service	E	D	B	D	C	C	D	E	D	D	E	D
Approach Delay (s)		44.2			23.9			48.5			54.1	
Approach LOS		D			C			D			D	
Intersection Summary												
HCM 2000 Control Delay			40.6				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)			16.5		
Intersection Capacity Utilization			70.4%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: Brutscher St & OR 99W

01/12/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1601	43	70	922	28	58	3	87	11	5	27
Future Volume (vph)	19	1601	43	70	922	28	58	3	87	11	5	27
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		2%			0%			0%			-2%	
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	0.99		1.00	0.99	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.85		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1567	3165	1265	1568	3079	1273	1433	1408		1678	1361	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.73	1.00		0.56	1.00	
Satd. Flow (perm)	1567	3165	1265	1568	3079	1273	1109	1408		991	1361	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	1740	47	76	1002	30	63	3	95	12	5	29
RTOR Reduction (vph)	0	0	13	0	0	7	0	86	0	0	26	0
Lane Group Flow (vph)	21	1740	34	76	1002	23	63	12	0	12	8	0
Confl. Peds. (#/hr)	2					2			1	1		
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	5%	4%	14%	6%	8%	14%	16%	0%	5%	0%	40%	7%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases			2			6	4			8		
Actuated Green, G (s)	3.2	86.6	86.6	9.2	92.6	92.6	11.7	11.7		11.7	11.7	
Effective Green, g (s)	3.2	86.6	86.6	9.2	92.6	92.6	11.7	11.7		11.7	11.7	
Actuated g/C Ratio	0.03	0.72	0.72	0.08	0.77	0.77	0.10	0.10		0.10	0.10	
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.3	4.8	4.8	2.3	4.8	4.8	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	41	2284	912	120	2375	982	108	137		96	132	
v/s Ratio Prot	0.01	c0.55		c0.05	0.33			0.01			0.01	
v/s Ratio Perm			0.03			0.02	c0.06			0.01		
v/c Ratio	0.51	0.76	0.04	0.63	0.42	0.02	0.58	0.09		0.12	0.06	
Uniform Delay, d1	57.6	10.3	4.8	53.8	4.6	3.2	51.8	49.3		49.5	49.2	
Progression Factor	1.29	0.22	0.06	0.96	0.95	0.89	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	1.2	0.0	8.1	0.5	0.0	6.5	0.2		0.4	0.1	
Delay (s)	77.7	3.5	0.3	59.9	4.9	2.9	58.3	49.5		49.9	49.3	
Level of Service	E	A	A	E	A	A	E	D		D	D	
Approach Delay (s)		4.3			8.6			53.0			49.5	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖↗		↖	
Traffic Vol, veh/h	4	1650	1041	21	52	24
Future Vol, veh/h	4	1650	1041	21	52	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	2	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	4	8	5	0	0
Mvmt Flow	4	1774	1119	23	56	26

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1142	0	571
Stage 1	-	-	1131
Stage 2	-	-	896
Critical Hdwy	4.1	-	6.9
Critical Hdwy Stg 1	-	-	5.8
Critical Hdwy Stg 2	-	-	5.8
Follow-up Hdwy	2.2	-	3.3
Pot Cap-1 Maneuver	619	-	469
Stage 1	-	-	274
Stage 2	-	-	364
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	619	-	469
Mov Cap-2 Maneuver	-	-	165
Stage 1	-	-	274
Stage 2	-	-	362

Approach	EB	WB	SB
HCM Control Delay, s	0	0	33.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	619	-	-	-	207
HCM Lane V/C Ratio	0.007	-	-	-	0.395
HCM Control Delay (s)	10.9	-	-	-	33.3
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.8

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis
7: Providence Dr & OR 99W

01/12/2018

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↑
Traffic Volume (vph)	1651	51	62	1026	36	59
Future Volume (vph)	1651	51	62	1026	36	59
Ideal Flow (vphpl)	1750	1750	1750	1800	1750	1750
Grade (%)	-3%			2%	3%	
Total Lost time (s)	6.0	6.0	4.5	4.5	4.5	4.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Fr _t	1.00	0.85	1.00	1.00	1.00	0.85
Fl _t Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3214	1480	1614	3135	1590	1465
Fl _t Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3214	1480	1614	3135	1590	1465
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	1795	55	67	1115	39	64
RTOR Reduction (vph)	0	6	0	0	0	60
Lane Group Flow (vph)	1795	49	67	1115	39	4
Heavy Vehicles (%)	5%	2%	2%	8%	3%	0%
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	87.1	87.1	9.8	102.9	8.1	8.1
Effective Green, g (s)	87.1	87.1	9.8	102.9	8.1	8.1
Actuated g/C Ratio	0.73	0.73	0.08	0.86	0.07	0.07
Clearance Time (s)	6.0	6.0	4.5	4.5	4.5	4.5
Vehicle Extension (s)	5.0	5.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	2332	1074	131	2688	107	98
v/s Ratio Prot	c0.56		c0.04	0.36	c0.02	
v/s Ratio Perm		0.03				0.00
v/c Ratio	0.77	0.05	0.51	0.41	0.36	0.04
Uniform Delay, d ₁	10.2	4.7	52.8	1.9	53.5	52.3
Progression Factor	1.30	0.61	1.00	1.00	1.00	1.00
Incremental Delay, d ₂	1.8	0.1	4.4	0.5	2.9	0.3
Delay (s)	15.1	2.9	57.2	2.4	56.4	52.6
Level of Service	B	A	E	A	E	D
Approach Delay (s)	14.7			5.5	54.0	
Approach LOS	B			A	D	

Intersection Summary

HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖↗		↖	
Traffic Vol, veh/h	3	1702	1077	29	62	6
Future Vol, veh/h	3	1702	1077	29	62	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	-2	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	33	4	7	7	3	0
Mvmt Flow	3	1792	1134	31	65	6

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1164	0	582
Stage 1	-	-	1149
Stage 2	-	-	902
Critical Hdwy	4.76	-	6.7
Critical Hdwy Stg 1	-	-	5.46
Critical Hdwy Stg 2	-	-	5.46
Follow-up Hdwy	2.53	-	3.3
Pot Cap-1 Maneuver	447	-	477
Stage 1	-	-	298
Stage 2	-	-	391
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	447	-	477
Mov Cap-2 Maneuver	-	-	181
Stage 1	-	-	298
Stage 2	-	-	388

Approach	EB	WB	SB
HCM Control Delay, s	0	0	34.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	447	-	-	-	191
HCM Lane V/C Ratio	0.007	-	-	-	0.375
HCM Control Delay (s)	13.1	-	-	-	34.7
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	1.6

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCS 2010 Roundabouts Report

General Information					Site Information				
Analyst	ZHB				Intersection	Springbrook/Crestview			
Agency or Co.	KAI				E/W Street Name	Crestview Dr			
Date Performed	10/21/2017				N/S Street Name	Springbrook Rd			
Analysis Year	2017				Analysis Time Period (hrs)	0.25			
Time Period	Existing PM				Peak Hour Factor	0.93			
Project Description	Crestview Crossing				Jurisdiction				

Volume Adjustments and Site Characteristics																
Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment	LTR				LTR				LTR				LTR			
Volume (V), veh/h	0	53	2	13	0	5	2	12	0	7	524	13	2	8	437	49
Percent Heavy Vehicles, %	0	0	0	0	20	20	0	0	0	0	3	0	0	0	2	0
Flow Rate (v _{pce}), pc/h	0	57	2	14	0	6	2	13	0	8	580	14	2	9	479	53
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment													
Approach	EB			WB			NB			SB			
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	
Critical Headway (s)		4.9734			4.9734			4.9734			4.9734		
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087		

Flow Computations, Capacity and v/c Ratios												
Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v _e), pc/h		73			21			602			543	
Entry Volume veh/h		73			20			585			534	
Circulating Flow (v _c), pc/h		496			647			70			16	
Exiting Flow (v _{ex}), pc/h		25			63			652			499	
Capacity (c _{pce}), pc/h		832			714			1285			1358	
Capacity (c), veh/h		832			680			1249			1334	
v/c Ratio (x)		0.09			0.03			0.47			0.40	

Delay and Level of Service												
Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.2			5.6			7.7			6.5	
Lane LOS		A			A			A			A	
95% Queue, veh		0.3			0.1			2.6			2.0	
Approach Delay, s/veh		5.2			5.6			7.7			6.5	
Approach LOS		A			A			A			A	
Intersection Delay, s/veh LOS	7.0						A					

HCM Unsignalized Intersection Capacity Analysis

2: Libra St & Crestview Dr

12/21/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Volume (veh/h)	11	5	9	13	8	14
Future Volume (Veh/h)	11	5	9	13	8	14
Sign Control	Free			Free	Stop	
Grade	0%			0%	2%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	14	6	11	16	10	18
Pedestrians						2
Lane Width (ft)						12.0
Walking Speed (ft/s)						3.5
Percent Blockage						0
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			22		57	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			22		57	19
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	98
cM capacity (veh/h)			1604		947	1063




















Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	20	27	28
Volume Left	0	11	10
Volume Right	6	0	18
cSH	1700	1604	1018
Volume to Capacity	0.01	0.01	0.03
Queue Length 95th (ft)	0	1	2
Control Delay (s)	0.0	3.0	8.6
Lane LOS		A	A
Approach Delay (s)	0.0	3.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		4.3	
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis

3: Springbrook Rd & Haworth Ave/Shopping Center






























12/21/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	83	63	219	91	68	86	136	358	5	67	357	40
Future Volume (vph)	83	63	219	91	68	86	136	358	5	67	357	40
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	86	66	228	95	71	90	142	373	5	70	372	42
Direction, Lane #	EB 1	EB 2	WB 1	NB 1	NB 2	SB 1	SB 2					
Volume Total (vph)	152	228	256	142	378	70	414					
Volume Left (vph)	86	0	95	142	0	70	0					
Volume Right (vph)	0	228	90	0	5	0	42					
Hadj (s)	0.30	-0.68	-0.12	0.53	0.04	0.53	0.00					
Departure Headway (s)	9.0	8.0	8.6	8.8	8.3	8.8	8.2					
Degree Utilization, x	0.38	0.51	0.61	0.35	0.87	0.17	0.95					
Capacity (veh/h)	379	428	395	398	426	399	426					
Control Delay (s)	16.3	17.9	24.4	15.2	44.9	12.4	58.4					
Approach Delay (s)	17.3		24.4	36.8		51.8						
Approach LOS	C		C	E		F						
Intersection Summary												
Delay			34.8									
Level of Service			D									
Intersection Capacity Utilization			59.5%		ICU Level of Service					B		
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

4: Springbrook Rd & OR 99W

12/21/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 		 			 		
Traffic Volume (vph)	104	1070	124	141	1350	300	374	179	124	391	212	86
Future Volume (vph)	104	1070	124	141	1350	300	374	179	124	391	212	86
Ideal Flow (vphpl)	1750	1750	1750	1750	1800	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%			0%			3%			0%	
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	0.97	1.00	1.00	0.97	1.00	1.00
Frbp, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1583	3137	1440	2854	3288	1423	3177	1674	1361	3193	1699	1438
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1583	3137	1440	2854	3288	1423	3177	1674	1361	3193	1699	1438
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	106	1092	127	144	1378	306	382	183	127	399	216	88
RTOR Reduction (vph)	0	0	56	0	0	138	0	0	111	0	0	76
Lane Group Flow (vph)	106	1092	71	144	1378	168	382	183	16	399	216	12
Confl. Peds. (#/hr)	2		9	9		2	14					14
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	5%	6%	1%	13%	4%	2%	0%	3%	6%	1%	3%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.5	77.8	77.8	11.7	77.0	77.0	15.1	17.7	17.7	16.3	18.9	18.9
Effective Green, g (s)	12.5	77.8	77.8	11.7	77.0	77.0	15.1	17.7	17.7	16.3	18.9	18.9
Actuated g/C Ratio	0.09	0.56	0.56	0.08	0.55	0.55	0.11	0.13	0.13	0.12	0.13	0.13
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0	4.0	4.0	4.0	4.0
Vehicle Extension (s)	2.3	4.2	4.2	2.3	4.0	4.0	2.3	2.3	2.3	2.3	2.3	2.3
Lane Grp Cap (vph)	141	1743	800	238	1808	782	342	211	172	371	229	194
v/s Ratio Prot	c0.07	0.35		0.05	c0.42		0.12	0.11		c0.12	c0.13	
v/s Ratio Perm			0.05			0.12			0.01			0.01
v/c Ratio	0.75	0.63	0.09	0.61	0.76	0.22	1.12	0.87	0.09	1.08	0.94	0.06
Uniform Delay, d1	62.2	21.2	14.5	61.9	24.4	16.1	62.5	60.0	54.1	61.9	60.0	52.8
Progression Factor	1.00	1.00	1.00	0.96	1.16	3.14	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.7	1.7	0.2	2.2	2.0	0.4	84.1	28.6	0.1	68.3	43.5	0.1
Delay (s)	80.9	22.9	14.7	61.6	30.2	50.9	146.5	88.6	54.2	130.2	103.5	52.9
Level of Service	F	C	B	E	C	D	F	F	D	F	F	D
Approach Delay (s)		26.8			36.2			114.3			112.3	
Approach LOS		C			D			F			F	

Intersection Summary
























HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

5: Brutscher St & OR 99W

12/21/2017

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	1120	101	220	1509	41	243	16	134	21	10	51
Future Volume (vph)	32	1120	101	220	1509	41	243	16	134	21	10	51
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		2%			0%			0%			-2%	
Total Lost time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	0.99	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.87		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1646	3105	1402	1646	3197	1352	1620	1442		1674	1471	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.72	1.00		0.52	1.00	
Satd. Flow (perm)	1646	3105	1402	1646	3197	1352	1221	1442		911	1471	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	33	1167	105	229	1572	43	253	17	140	22	10	53
RTOR Reduction (vph)	0	0	40	0	0	13	0	110	0	0	42	0
Lane Group Flow (vph)	33	1167	65	229	1572	30	253	47	0	22	21	0
Confl. Peds. (#/hr)							5		3	3		5
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	6%	5%	1%	4%	10%	2%	0%	4%	0%	0%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			4				8
Permitted Phases			2			6	4			8		
Actuated Green, G (s)	5.4	74.9	74.9	22.3	91.8	91.8	30.3	30.3		30.3	30.3	
Effective Green, g (s)	5.4	74.9	74.9	22.3	91.8	91.8	30.3	30.3		30.3	30.3	
Actuated g/C Ratio	0.04	0.54	0.54	0.16	0.66	0.66	0.22	0.22		0.22	0.22	
Clearance Time (s)	4.0	4.5	4.5	4.0	4.5	4.5	4.0	4.0		4.0	4.0	
Vehicle Extension (s)	2.3	4.8	4.8	2.3	4.8	4.8	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	63	1661	750	262	2096	886	264	312		197	318	
v/s Ratio Prot	0.02	c0.38		c0.14	c0.49			0.03				0.01
v/s Ratio Perm			0.05			0.02	c0.21			0.02		
v/c Ratio	0.52	0.70	0.09	0.87	0.75	0.03	0.96	0.15		0.11	0.07	
Uniform Delay, d1	66.0	24.3	15.9	57.5	16.3	8.5	54.2	44.4		44.0	43.6	
Progression Factor	0.81	1.07	1.81	0.95	0.80	0.29	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	1.7	0.2	19.9	1.8	0.1	43.5	0.2		0.2	0.1	
Delay (s)	57.2	27.7	28.8	74.5	14.9	2.5	97.7	44.6		44.2	43.7	
Level of Service	E	C	C	E	B	A	F	D		D	D	
Approach Delay (s)		28.6			22.0			77.4			43.8	
Approach LOS		C			C			E			D	

Intersection Summary

HCM 2000 Control Delay	31.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖	↗	↖	↗
Traffic Vol, veh/h	32	1250	1775	128	26	18
Future Vol, veh/h	32	1250	1775	128	26	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	-2	2	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	5	4	1	8	0
Mvmt Flow	34	1344	1909	138	28	19

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	2046	0	1023
Stage 1	-	-	1977
Stage 2	-	-	741
Critical Hdwy	4.16	-	6.9
Critical Hdwy Stg 1	-	-	5.96
Critical Hdwy Stg 2	-	-	5.96
Follow-up Hdwy	2.23	-	3.3
Pot Cap-1 Maneuver	268	-	237
Stage 1	-	-	87
Stage 2	-	-	417
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	268	-	237
Mov Cap-2 Maneuver	-	-	68
Stage 1	-	-	87
Stage 2	-	-	364

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	74.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	268	-	-	-	96
HCM Lane V/C Ratio	0.128	-	-	-	0.493
HCM Control Delay (s)	20.4	-	-	-	74.5
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	2.2

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM Signalized Intersection Capacity Analysis

7: Providence Dr & OR 99W

12/21/2017

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↓	↑↑	↓	↓
Traffic Volume (vph)	1254	22	73	1806	97	101
Future Volume (vph)	1254	22	73	1806	97	101
Ideal Flow (vphpl)	1750	1750	1750	1800	1750	1750
Grade (%)	-3%			2%	3%	
Total Lost time (s)	6.0	6.0	4.5	4.5	4.5	4.5
Lane Util. Factor	0.95	1.00	1.00	0.95	1.00	1.00
Frbp, ped/bikes	1.00	0.98	1.00	1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	3184	1479	1646	3256	1621	1465
Flt Permitted	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (perm)	3184	1479	1646	3256	1621	1465
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	1334	23	78	1921	103	107
RTOR Reduction (vph)	0	3	0	0	0	95
Lane Group Flow (vph)	1334	20	78	1921	103	12
Confl. Bikes (#/hr)		1				
Heavy Vehicles (%)	6%	0%	0%	4%	1%	0%
Turn Type	NA	Perm	Prot	NA	Prot	Perm
Protected Phases	2		1	6	8	
Permitted Phases		2				8
Actuated Green, G (s)	96.9	96.9	12.9	115.8	15.2	15.2
Effective Green, g (s)	96.9	96.9	12.9	115.8	15.2	15.2
Actuated g/C Ratio	0.69	0.69	0.09	0.83	0.11	0.11
Clearance Time (s)	6.0	6.0	4.5	4.5	4.5	4.5
Vehicle Extension (s)	5.0	5.0	4.0	4.0	4.0	4.0
Lane Grp Cap (vph)	2203	1023	151	2693	175	159
v/s Ratio Prot	0.42		0.05	c0.59	c0.06	
v/s Ratio Perm		0.01				0.01
v/c Ratio	0.61	0.02	0.52	0.71	0.59	0.07
Uniform Delay, d1	11.4	6.7	60.6	5.1	59.4	56.1
Progression Factor	0.79	1.03	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.0	0.0	3.9	1.6	5.9	0.3
Delay (s)	10.0	7.0	64.5	6.7	65.3	56.3
Level of Service	B	A	E	A	E	E
Approach Delay (s)	10.0			9.0	60.7	
Approach LOS	A			A	E	
Intersection Summary						
HCM 2000 Control Delay			12.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.73			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			66.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Intersection

Int Delay, s/veh 3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↗	↗		↘	
Traffic Vol, veh/h	31	1320	1873	75	61	17
Future Vol, veh/h	31	1320	1873	75	61	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	250	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	1	-
Grade, %	-	0	0	-	-2	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	5	4	0	2	0
Mvmt Flow	33	1419	2014	81	66	18

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	2095	0	2830
Stage 1	-	-	2054
Stage 2	-	-	776
Critical Hdwy	4.1	-	6.44
Critical Hdwy Stg 1	-	-	5.44
Critical Hdwy Stg 2	-	-	5.44
Follow-up Hdwy	2.2	-	3.52
Pot Cap-1 Maneuver	267	-	~ 19
Stage 1	-	-	106
Stage 2	-	-	452
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	267	-	~ 17
Mov Cap-2 Maneuver	-	-	81
Stage 1	-	-	106
Stage 2	-	-	396

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	142
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	267	-	-	-	95
HCM Lane V/C Ratio	0.125	-	-	-	0.883
HCM Control Delay (s)	20.4	-	-	-	142
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	0.4	-	-	-	5

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Appendix D
ODOT Crash Data

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Libra St & Crestview Dr
January 1, 2011 through December 31, 2015

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
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YEAR:

TOTAL

FINAL TOTAL

Disclaimer: A higher number of crashes may be reported as of 2011 compared to prior years. This does not reflect an increase in annual crashes. The higher numbers result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CONTINUOUS SYSTEM CRASH LISTING

091 PACIFIC HIGHWAY WEST

OR 99W & Springbrook Rd
 January 1, 2011 through December 31, 2015

SER#	UNLOC?	S D P R S W E A U C O L G H R	DATE	COUNTY	RD# FC CMPT/MLG MILEPNT LRS	CONN # FIRST STREET SECOND STREET INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF- CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	PRTC P#	INJ SVRTY	A S G E X RES	LICNS LOC	PED ERROR	ACTN EVENT	CAUSE
													02 NONE PRVTE PSNGR CAR	0 STOP NE SW						011	00
															01	DRVR NONE	86 M	OR-Y OR<25	000	000	00
01210	N N N		12/27/2012	YAMHILL	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE	0 STRGHT							000	27
NO RPT			Thu 9P	NEWBERG	MN 0	PACIFIC HY 99W	NE		TRF SIGNAL	N DRY	REAR	PRVTE	NE SW							000	00
				NEWBERG UA	22.05	SPRINGBROOK RD	06	2		N DLIT	PDO	PSNGR CAR		01	DRVR NONE	30 F	OR-Y OR<25	016,026	038	000	27
No	45 18	23.12	-122	56 48.94	009100100S00															000	00
													02 NONE PRVTE PSNGR CAR	0 STOP NE SW						011	00
														01	DRVR NONE	47 M	OR-Y OR<25	000	000	000	00
00766	N N N		09/02/2013	YAMHILL	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE	0 STRGHT							000	07
NO RPT			Mon 5P	NEWBERG	MN 0	PACIFIC HY 99W	NE		TRF SIGNAL	N DRY	REAR	PRVTE	NE SW							000	00
				NEWBERG UA	22.05	SPRINGBROOK RD	06	1		N DAY	INJ	PSNGR CAR		01	DRVR NONE	22 F	OR-Y OR<25	026	000	000	07
No	45 18	23.12	-122	56 48.94	009100100S00															000	07
													02 NONE PRVTE PSNGR CAR	0 STOP NE SW						011	00
														01	DRVR INJC	52 F	OR-Y OR<25	000	000	000	00
														02	PSNG INJC	17 F		000	000	000	00
00947	N N N		10/26/2013	YAMHILL	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE	0 TURN-L							000	07
NONE			Sat 10A	NEWBERG	MN 0	PACIFIC HY 99W	NE		L-GRN-SIG	N DRY	REAR	PRVTE	NE S							000	00
				NEWBERG UA	22.05	SPRINGBROOK RD	06	0		N DAY	INJ	PSNGR CAR		01	DRVR NONE	48 M	OR-Y OR>25	026	000	000	07
No	45 18	23.12	-122	56 48.94	009100100S00															000	07
													02 NONE PRVTE PSNGR CAR	0 STOP NE SW						012	00
														01	DRVR INJC	24 M	OR-Y OR<25	000	000	000	00
														02	PSNG INJC	23 F		000	000	000	00
00636	N N N		06/11/2014	YAMHILL	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE	0 STRGHT							000	07
NONE			Wed 8A	NEWBERG	MN 0	PACIFIC HY 99W	NE		TRF SIGNAL	N DRY	REAR	PRVTE	NE SW							000	00
				NEWBERG UA	22.05	SPRINGBROOK RD	06	0		N DAY	PDO	PSNGR CAR		01	DRVR NONE	30 M	OR-Y OR<25	026	000	000	07
No	45 18	23.12	-122	56 48.94	009100100S00															000	07
													02 NONE PRVTE PSNGR CAR	0 STOP NE SW						011	004
														01	DRVR NONE	65 M	OR-Y OR<25	000	000	000	00
00630	N N N		06/12/2014	YAMHILL	1 14		INTER	CROSS	N	N CLR	S-1STOP	01 NONE	0 STRGHT							000	07
NONE			Thu 12P	NEWBERG	MN 0	PACIFIC HY 99W	NE		TRF SIGNAL	N DRY	REAR	PRVTE	NE SW							000	00
				NEWBERG UA	22.05	SPRINGBROOK RD	06	0		N DAY	PDO	PSNGR CAR		01	DRVR NONE	70 M	OR-Y OR<25	026	000	000	07
No	45 18	23.12	-122	56 48.94	009100100S00															000	07

