

TO: Planning Commission	Pre-App. Meeting:	July 21, 2018
	App. Submitted:	April 15, 2019
	App. Complete:	November 4, 2019
	Original 120-Day Deadline:	March 3, 2020
	Extended 120-Day Deadline:	May 26, 2020
	Hearing Date:	April 28, 2020

FROM: Joy L. Chang, Senior Planner

Proposal: The applicant proposes to subdivide ±15.76 acre of land into 59 individual lots for single-family detached homes. The properties are zoned Medium Density Residential Low with densities between 5.6 to 8 units per net buildable acre. The proposed planned density of this development is ±7.18 units per net buildable acre. Lots north of Cedar Creek (Lots 1-44) will gain access from new streets from the west (via Middlebrook Subdivision). Lots to the south of Cedar Creek (Lots 45-59) will gain access from SW Brookman Road. The applicant also requested a modification to the Transportation Engineering Design standards for cul-de-sac length (SW Robin Hood Place).

I. BACKGROUND

- A. Applicant:** David Weekley Homes
1905 NW 169th Place, Suite 102
Beaverton OR 97006
- Owners:**
- Tax Lot 100
Gerald and Liz Oulette
17045 SW Brookman Road
Sherwood OR 97140
- Tax Lot 400
Bonnie Jean David
17117 SW Brookman Rd
Sherwood OR 97140
- Applicant's Representative:** Pioneer Design Group, Matt Sprague
9020 Washington Square Rd, Suite 170
Portland OR 97223
503-643-8286

B. Assessor's Information: Tax Map and Lots 3S1060000100 and 3S1060000101

C. Location: The properties are addressed as 17045 and 17117 SW Brookman Road

- D. Parcel Size:** The site is approximately 15.76 acres in size.
- E. Existing Development and Site Characteristics:** The site is in the southwestern portion of the City of Sherwood boundary and is generally located on the north side of SW Brookman Road, approximately 800 feet east of its intersection with SW Oberst Road. There are two existing homes with accessory buildings on the site along with gravel driveway improvements. Furthermore, the adjacent parcel to the east (Map and Tax Lot 3S1060000107) share the same access point, driveway, from SW Brookman Road. This will be further discussed in this report. The site is currently and historically used for rural residential purposes. Cedar Creek traverses through the site.
- F. Site History:** The project site was part of the Brookman Addition Concept Plan area. The Brookman Area was brought into the Sherwood Urban Growth Boundary in 2002 via Metro Ordinance 02-0969B to provide for needed residential land. The area was concept planned between 2007 and 2009. In June 2009, via Ordinance 09-004, the City approved the concept plan and associated implementing Comprehensive Plan and Map Amendments.

In 2017, the property owners requested annexation of the site and required rights-of-way into the City of Sherwood under the annexation method detailed in Senate Bill 1573 and ORS 222. Sherwood City Council approved the annexation on July 25, 2017, under Ordinance 2017-004.

- G. Zoning Classification and Comprehensive Plan Designation:** The property is zoned Medium Density Residential Low (MDRL) according to the Sherwood Plan and Zone Map. Per Section 16.12.010.C, the MDRL zoning district provides for single-family and two-family housing, manufactured housing and other related uses with a density of 5.6 to 8 dwelling units per acre.
- H. Regional Planning:** The City of Sherwood is within Metro's jurisdictional boundary and land annexed into city boundary are required to also annex into the Metro Service District boundary. Even though the site is within the City Boundary, the site has not annexed into Metro's Service District boundary. Therefore, staff recommends the following condition:

RECOMMENDED CONDITION: (B1) Prior to final plat approval, the parcels shall annex into the Metro Service District.

- I. Adjacent Zoning and Land Use:** Properties to the north, east, and west are designated Medium Density Residential High. Properties to the south of Brookman Road are outside the Urban Grown Boundary but within Metro's Urban Reserve Area in Rural Unincorporated Washington County. The city recently granted a preliminary approval for Middlebrook Subdivision (145 residential units) located in the northwest of the site. The northern segment of this proposal would obtain access from two local streets created in the Middlebrook Subdivision.
- J. Review Type:** Proposed subdivisions over 50 lots are quasi-judicial actions and reviewed through a Type IV procedure. Type IV procedures are decided by the Planning Commission with appeals to the City Council.
- K. Public Notice and Hearing:** Notice of the application was mailed to property owners within 1,000 feet, posted on the property and distributed in five locations throughout the City on

January 22, 2020, in accordance with § 16.72.020 of the SZCDC. The notice was published in the *Times* (a newspaper of general circulation) on January 23, 2020, and February 6, 2020, in accordance with §16.72.020 of the SZCDC. A courtesy re-notice was also mailed to property owners within 1,000 feet on April 10, 2020, that included information on public hearing protocol due to the COVID-19 social distancing requirement.

- L. Review Criteria:** Sherwood Zoning and Community Development Code (SZCDC): Division II: §16.12 (Residential Land Use Districts), §16.72 (Procedures for Processing Development Permits), §16.92 (Landscaping), §16.96 (On-Site Circulation), Division VI. Public Infrastructure- §16.106 (Transportation Facilities), §16.110 (Sanitary Sewers), §16.112 (Water), §16.114 (Storm), §16.116 (Fire Protection), §16.118 (Public and Private Utilities), Division VII. (Land Division), §16.120 (Subdivision), §16.128, (Land Division Design Standards), Division VIII. Environmental Resources, §16.134 (Floodplain Overlay), §16.142 (Parks, Trees, and Open Spaces), §16.144 (Wetland, Habitat and Natural Areas) and §16.156 (Energy Conservation).

II. PUBLIC COMMENTS

Public notice was mailed, posted on the property, and posted in five locations throughout the City on January 22, 2020. A courtesy public re-notice to the was also completed on April 13, 2020. Staff has received general inquiries but no formal comments as of the date of this report. Additional comments from the community are welcome up to the close of the public hearing.

III. AGENCY COMMENTS

Staff sent an electronic notice to affected agencies on January 21, 2020. The following is a summary of the comments received. Copies of full comments are included in the record unless otherwise noted.

Sherwood Engineering Department: The Sherwood Engineering Department has provided comments and conditions of approvals that are incorporated in this report and attached as **Exhibit B**. Comments address transportation including the cul-de-sac length, sanitary sewer, environmental, stormwater, water, and grading and erosion sediment control.

Washington County Land Use & Transportation: Naomi Vogel, Associate Planner, provided comments dated March 9, 2020 (**Exhibit C**). She stated that the Traffic Impact Analysis (TIA) and supplemental information by Kittelson & Associates were submitted in accordance with Washington County R&O 86-95, "Determining Traffic Safety Improvement". County staff reviewed the TIA and concurs with the findings/recommendations of the analysis. The proposed street, SW Robin Hood Place, does not meet the County's standard for access to an Arterial because the street is not classified as an Arterial or Collector. The applicant has requested a Design Exception (October 7, 2019) to the County's access standard for Arterials and has received approval by the County Engineer for the proposed public street connection (December 9, 2019). Right-of-way dedication and public improvements are required along SW Brookman. These requirements are further discussed in Section 16.106 Transportation Facilities below.

Oregon Department of Transportation (ODOT): Staff received comments from Marah Danielson and Avi Tayar from ODOT Region 1 (**Exhibit D.1** and **Exhibit D.2**) and B. Scott Nelson from ODOT Region 2 (**Exhibit D.3**). Comments from ODOT Region 1 letter dated January 30, 2020 (**Exhibit D.1**) requested that the applicant provide an updated Traffic Impact Analysis (TIA) that includes accurate results of mobility targets. ODOT Region 2 (**Exhibit D.3**) comments related to the intersection of OR99W and SW Brookman Road that is within their boundary jurisdiction. Comments address safety and operational issues at the intersection and supporting the recommendation for proportional share contribution towards the TSP project to signalize the intersection. ODOT Region 1, comments dated March 17, 2020 (**Exhibit D.2**) discusses the revised TIA dated February 20, 2020, related to the intersections of OR 99W to SW Elwert/SW Sunset and OR 99W to SW Chapman/SW Brookman. These comments and requirements are further discussed in Section 16.106 Transportation Facilities below.

Tualatin Valley Fire and Rescue (TVF&R): Tom Mooney, Deputy Fire Marshall, provided comments in a letter dated January 21, 2020, attached as **Exhibit E**. He states that TFV&R will endorse the proposal predicated meeting criteria and conditions of approval. He addressed parking standards for the proposed private street tracts and required fire hydrant flow test documentation. This is further discussed in Chapter 16.116 of this report.

Clean Water Services (CWS): Jackie Humphries, CWS, provided comments dated February 3, 2020, stating the subject site is currently outside the jurisdictional boundary of Clean Water Services and annexation to CWS must be completed in order to obtain public sanitary or storm sewer services. She also states that a storm water connection permit authorization would be required prior to plat approval and recordation. These items will be discussed and conditioned further within this report. Her comments are attached as **Exhibit F.1**. Additionally, an Amended Service Provider Letter (CWS 19-001036) dated September 17, 2019, was received and approved with conditions. This will be further discussed in this report. See attached **Exhibit F.2**.

Waste Management (WM): Dean Kampfer from Waste Management email correspondence dated March 2, 2020 states that WM is supportive of the subdivision as proposed. **Exhibit G**

Oregon Department of State Lands: A wetland land use notice was sent to the Oregon Department of State Lands on January 21, 2020. Chris Stevenson, from the state, provided the following comments (**Exhibit H**):

- A state permit is required for 50-cubic yards or more of fill removal or other ground alteration in wetlands, below ordinary high water of waterways, within other waters of the state, or below highest measured tide.
- Based on review of the 2019 delineation, the proposed project will impact onsite wetlands. A permit and associated mitigation are required for impacts that are 50 cubic yards or greater.
- This project will likely require a Joint Permit Application, permitting and mitigation.
- A Federal permit may be required by the Army Corps of Engineers.

Portland General Electric (PGE): Email correspondence, dated February 3, 2020, from Jose Marquez, Service & Design Project Manager for PGE, was received stating that PGE has primary services of the other west side of SW Brook Road that could serve the subdivision (**Exhibit I**).

Bonneville Power Administration (BPA): Email correspondence dated January 24, 2020 from Jim Clark, Realty Specialist with BPA, states that the proposal will not impact BPA facilities or operations (**Exhibit J**).

Kinder Morgan Energy, METRO, and NW Natural Gas did not respond or provided “No Comments” to the request for agency comments by the date of this report.

IV. SUBDIVISION REVIEW REQUIRED FINDINGS (16.120 Subdivisions and 16.128 Land Division Design Standards)

16.120.020 - General Subdivision Provisions

- A. Approval of a subdivision occurs through a two-step process: the preliminary plat and the final plat.**
- 1. The preliminary plat shall be approved by the Approval Authority before the final plat can be submitted for approval consideration; and**
 - 2. The final plat shall reflect all conditions of approval of the preliminary plat.**
- B. All subdivision proposals shall conform to all state regulations set forth in ORS Chapter 92, Subdivisions and Partitions.**
- C. Future re-division**
When subdividing tracts into large lots, the Approval Authority shall require that the lots be of such size and shape as to facilitate future re-division in accordance with the requirements of the zoning district and this Division.
- D. Future Partitioning**
When subdividing tracts into large lots which may be resubdivided, the City shall require that the lots be of a size and shape, and apply additional building site restrictions, to allow for the subsequent division of any parcel into lots of smaller size and the creation and extension of future streets.
- E. Lot averaging**
Lot size may be averaged to allow lots less than the minimum lot size allowed in the underlying zoning district subject to the following regulations:
- 1. The average lot area for all lots is not less than allowed by the underlying zoning district.**
 - 2. No lot created under this provision shall be less than 90 % of the minimum lot size allowed in the underlying zoning district.**
 - 3. The maximum lot size cannot be greater than 10 % of the minimum lot size.**
- F. Required Setbacks**
All required building setback lines as established by this Code, shall be shown in the preliminary subdivision plat.
- G. Property Sales**
No property shall be disposed of, transferred, or sold until required subdivision approvals are obtained, pursuant to this Code.

FINDING: Per the applicant’s narrative, this application represents the applicant’s request for preliminary plat approval. The applicant acknowledges that the final plat will reflect all conditions of approval of this preliminary plat. All state regulations set forth in ORS Chapter 92, Subdivision and Partitions are implemented through the City Municipal Code and follow all applicable requirements as identified in the narrative. None of the lots are large enough to be re-divided or partitioned since the minimum lot size for the MDRL zone is 5,000 square feet and the largest lot proposed is 6,839 square feet. Yard setbacks are shown on the preliminary subdivision plat, Sheet P3.1 of Exhibit A. None of the proposed lots will be disposed of, transferred, or sold until required subdivision approvals have been obtained. Therefore, these criteria are met.

The applicant is utilizing lot averaging provisions under Section 16.144.030.B.1. Therefore, the criteria above for lot averaging is not applicable.

16.120.030 - Approval Procedure-Preliminary Plat

A. Approval Authority

1. The approving authority for preliminary and final plats of subdivisions shall be in accordance with Section 16.72.010 of this Code.
 - a. A subdivision application for 4-10 lots will follow a Type II review process.
 - b. A subdivision application for 11-50 lots will follow a Type III review process.
 - c. A subdivision application for over 50 lots will follow a Type IV review process.
2. Approval of subdivisions is required in accordance with this Code before a plat for any such subdivision may be filed or recorded with County. Appeals to a decision may be filed pursuant to Chapter 16.76.

FINDING: The proposal is for 59 lots and should be processed as a Type IV Review. The applicant has applied for a Type IV Review. Per the applicant's narrative, the applicant acknowledges the requirement that approval from the City is required prior to the recordation of the final plat with Washington County. These criteria are met.

B. Phased Development

1. The Approval Authority may approve a time schedule for developing a subdivision in phases, but in no case shall the actual construction time period for any phase be greater than two years without reapplying for a preliminary plat.
2. The criteria for approving a phased subdivision review proposal are:
 - a. The public facilities shall be scheduled to be constructed in conjunction with or prior to each phase to ensure provision of public facilities prior to building occupancy;
 - b. The development and occupancy of any phase shall not be dependent on the use of temporary public facilities:
 - (1) For purposes of this subsection, a temporary public facility is an interim facility not constructed to the applicable City or district standard; and
 - (2) The phased development shall not result in requiring the City or other property owners to construct public facilities that were required as a part of the approval of the preliminary plat.
3. The application for phased development approval shall be reviewed concurrently with the preliminary plat application and the decision may be appealed in the same manner as the preliminary plat.

FINDING: The applicant is proposing to develop the site into two phases – north (Phase 1) and south (Phase 2) of the Cedar Creek drainage as reflected in Sheet P3.0 of the Exhibit A. Per applicant's narrative, the applicant acknowledges the timeframes and criteria listed above, and will comply with these requirements through the anticipated implementation of Condition of Approval. It is also noted that the applicant may choose to develop Phase 2 prior to the development of Phase 1, based on the availability of access to the site. These standards are met.

16.120.040- Approval Criteria: Preliminary Plat

No preliminary plat shall be approved unless:

- A. Streets and roads conform to plats approved for adjoining properties as to widths, alignments, grades, and other standards, unless the City determines that the public interest is served by modifying streets or road patterns.**

FINDING: The proposed subdivision abuts two streets to the west (SW Atfalati Lane and SW Kalapuya Lane) and one street to the south (SW Brookman Road). The preliminary plans show that streets and roads will conform to the street standards as required by the City and County. Therefore, this criterion is met.

- B. Streets and roads held for private use are clearly indicated on the plat and all reservations or restrictions relating to such private roads and streets are set forth thereon.**

FINDING: The applicant is proposed two private streets (Tract A and Tract G) and all reservations or restrictions to the private streets will be part of the Conditions of Approval (conditions B6 and B8). This criterion is met.

- C. The plat complies with applicable zoning district standards and design standards in Division II, and all provisions of Divisions IV, VI, VIII and IX. The subdivision complies with Chapter 16.128 (Land Division Design Standards).**

FINDING: Where applicable, this standard is met and discussed in Divisions IV (Planning Procedures), VI (Public Infrastructure) and VIII (Environmental Resources) of this report. Section IX (Historic Resources) is not addressed, as it is not applicable.

- D. Adequate water, sanitary sewer, and other public facilities exist to support the use of land proposed in the plat.**

FINDING: As discussed in Division VI (Public Infrastructure) of this report there are adequate services to support the proposed subdivision. The applicant's exhibits demonstrate that adequate water, sanitary sewer, and other public facilities will be installed to support the site; and that the proposed public improvements will adequately serve each proposed lot. This standard is met.

- E. Development of additional, contiguous property under the same ownership can be accomplished in accordance with this Code.**

FINDING: There are no additional and adjacent properties under the same ownership. This criterion is not applicable.

- F. Adjoining land can either be developed independently or is provided access that will allow development in accordance with this Code.**

FINDING: The southern border of the site is SW Brookman Road and the northern border is a fully developed single-family subdivision. The northwestern border of the site will be developed with 145 single-family lots through the preliminarily approved Middlebrook

Subdivision. Future roadway connection is not provided to the southwest and east of the site due to existing natural resources. However, a ¾ street is proposed (SW Yamel Terrace) along the northeastern border of the site that can be utilized by the abutting property for access or future development. Therefore, this criterion is met.

G. Tree and woodland inventories have been submitted and approved as per Section 16.142.060.

FINDING: The applicant provided a Preliminary Tree Preservation and Removal Plan Sheet P2.2 and P2.3 of Exhibit A and Arborist Report by Teragan & Associates Inc. dated September 4, 2019, that provides an inventory of the existing trees on site. Based on the analysis identified in Section 16.142 Landscaping, these standards are met.

H. The plat clearly shows the proposed lot numbers, setbacks, dedications and easements.

FINDING: Proposed lot numbers, setbacks, dimensions, dedications, and easements are shown on Preliminary Plans Sheets P3.0 and P3.1 in Exhibit A. This standard is met.

I. A minimum of five percent (5%) open space has been provided per § 16.144.B.8 (Townhome- Standards) or §16.142.020 (Parks, Open Spaces and Trees-Single-Family Residential Subdivisions), if applicable.

ANALYSIS: Based on the net buildable area of the site (8.32 acres), the required 5% open space is 0.42 acres (18,120 square feet). The preliminary plans show Open Space Tract C as 256,841 square feet of Open Space. However, in order to utilize it as “usable open space” criteria under §16.142.030, required sensitive areas and buffers may not be used to calculate open space. Per the applicant’s narrative, the development (as shown on Sheet P3.2) shows approximately 1.08 acres (13% of net buildable area/47,045 square feet) of open space area outside of Sensitive Areas, Vegetated Corridor, and 100-Year Flood Plain.

Furthermore, the applicant is utilizing the provisions under Section 16.144.030.B.1 lot size reduction, that requires equal amount of inventoried resource above and beyond that is already required to be protected and is held in a public or private open space tract or otherwise protected from further development. Per the applicant’s narrative, 8,809 square feet of open space area is needed to accommodate the requirement of Section 16.144.030.B.1 for a total additional open space dedication of 0.88 acres (10.5% of net building area/27,236 square feet).

Standard Net Buildable Area for the Site = 8.32 acres
Standard Required 5% Open Space = 0.42 acres or 18,120 sq. ft.

Open Space Above and Beyond under 16.144.030.B1 = 0.20 acres or 8,809 sq. ft.

Total Open Space Required = ±0.62 acres or 26,929 sq. ft.
5% Open Space + Section 16.144.030.B.1(above and beyond)

Net Buildable area outside of Sensitive Areas, = 1.08 acres or 47,045 sq. ft.
Vegetated Corridor and 100-year Flood Plain

The required Open Space for the site is 26,929 square feet and the proposal is providing 47,045 square feet (13% of net buildable area) of open space exceeding the required standard.

FINDING: Based on the discussion above, this standard is met.

Chapter 16.128 - LAND DIVISION DESIGN STANDARDS

16.128.010 - Blocks

A. Connectivity

1. Block Size

The length, width, and shape of blocks shall be designed to provide adequate building sites for the uses proposed, and for convenient access, circulation, traffic control and safety.

2. Block Length

Block length standards shall be in accordance with Section 16.108.040. Generally, blocks shall not exceed five-hundred thirty (530) feet in length, except blocks adjacent to principal arterial, which shall not exceed one thousand eight hundred (1,800) feet. The extension of streets and the formation of blocks shall conform to the Local Street Network map contained in the Transportation System Plan.

3. Pedestrian and Bicycle Connectivity. Paved bike and pedestrian accessways shall be provided on public easements or right-of-way consistent with Figure 7.401.

FINDING: The preliminary plans show interior blocks 480 feet in length, less than the 530 feet maximum standard. The northern segment of the proposal shows a pedestrian connection between two streets within the development allowing for a shorter pedestrian block length. These blocks are appropriately shaped and sized for residential use and meet the required standards. Furthermore, an extensive network of trails is provided for pedestrian connection that connects the site. Per the applicant's narrative, these accessways will be located within a public pedestrian easement, to ensure public access. Improvements of public streets and rights-of-way will provide for convenient access and connectivity for vehicle, pedestrian and bicycle traffic.

B. Utilities Easements for sewers, drainage, water mains, electric lines, or other utilities shall be dedicated or provided for by deed. Easements shall be a minimum of ten (10) feet in width and centered on rear or side lot lines; except for tie-back easements, which shall be six (6) feet wide by twenty (20) feet long on side lot lines at the change of direction.

FINDING: Per the applicant's statement an 8-foot wide public utility easement is provided along the frontage of the lots to accommodate necessary franchise utilities. A public utility easement is also located over Tracts A and G, as well as over Tract C, where appropriate for public utilities. Installation of the utilities necessary to serve the lots will occur with construction of the subdivision as shown on the Preliminary Composite Utility Plan, Sheet P6 of Exhibit A. This criterion is met as further discussed and conditioned under B12, §16.118 – Public and Private Utilities.

C. Drainages

Where a subdivision is traversed by a watercourse, drainage way, channel or street, drainage easements or rights-of-way shall be provided conforming substantially to the alignment and size of the drainage.

FINDING: Cedar Creek drainage and its associated riparian areas and floodplain are reflected as Tract C on the preliminary plans. Cedar Creek drainage bisects the site and per applicant's narrative, stormwater drainage easement to Clean Water Services will be provided to ensure accesses for public utility needs are met. Sherwood Engineering and Public Works have determined that Tract C will be owned and maintained by the City. Therefore, this criterion is met.

16.128.020 - Pedestrian and Bicycle Ways

Pedestrian or bicycle ways may be required to connect cul-de-sacs, divide through an unusually long or oddly shaped block, or to otherwise provide adequate circulation.

FINDING: Pedestrian and bicycle ways are provided within the proposed subdivision. The proposal includes a 15-foot public pedestrian easement for pedestrian and bicycle accessibility through the northern segment of the subdivision. A pedestrian trail connection from the northern to the southern segment proposed cul-de-sac is also included. This criterion is met.

16.128.030 - Lots

A. Size and Shape

Lot size, width, shape, and orientation shall be appropriate for the location and topography of the subdivision or partition, and shall comply with applicable zoning district requirements, with the following exception:

- 1. Lots in areas not served by public sewer or water supply shall conform to any special County Health Department standards.**

FINDING: The Preliminary Subdivision Plat, Sheets P3 of Exhibit A, shows 59 lots that will comply with the applicable requirements. The 36 of the 59 lots will be utilizing the provisions under §16.144.030.B.1 that allow for a 10% reduction in lot size. All lots can be served by public sewer and water facilities along their street frontages. This criterion is met.

B. Access

All lots in a subdivision shall abut a public street, except as allowed for infill development under Chapter 16.68.

C. Double Frontage

Double frontage and reversed frontage lots are prohibited except where essential to provide separation of residential development from railroads, traffic arteries, adjacent nonresidential uses, or to overcome specific topographical or orientation problems. A five (5) foot wide or greater easement for planting and screening may be required.

D. Side Lot Lines Side lot lines shall, as far as practicable, run at right angles to the street upon which the lots face, except that on curved streets side lot lines shall be radial to the curve of the street.

FINDING: All 59 lots in the subdivision about a public or private street and double frontage lots are not proposed. The preliminary plat shows that side lot lines run at right angles to the abutting street frontage as far as practicable. Therefore, these criteria are met.

E. Grading

Grading of building sites shall conform to the following standards, except when topography of physical conditions warrants special exceptions:

- 1. Cut slopes shall not exceed one (1) and one-half (1 1/2) feet horizontally to one (1) foot vertically.**
- 2. Fill slopes shall not exceed two (2) feet horizontally to one (1) foot vertically.**

STAFF ANALYSIS: The application packet includes a preliminary grading and erosion control plan, Sheet P4.0 and P4.1 of Exhibit A. Final engineering grading and erosion control design plans will need to adhere to all Clean Water Services (CWS) engineering design standards for presentation of grading and erosion control facilities utilized on the project.

Since the total site development disturbance area of 15.72 acres is greater than 5 acres, an NPDES 1200-C permit will be required. The proposed project has obtained an Amended Service Provider Letter (SPL) from CWS (File No. 19-001036). Final Erosion and Sediment Control (ESC) plans will need to comply with all the requirements and conditions of the issued SPL.

The site is located adjacent to a wetland and stream corridor. Prior to commencing any on-site clearing or grading activity, City staff will take in-stream water samples from the nearest upstream and downstream point of the site. The present turbidity shall be recorded and used as an additional tool to help in the determination of whether on-site erosion and sediment control facilities are functioning correctly, or if illicit sediment discharge from the site is occurring during site construction. This information will be provided to the site construction manager at the project's pre-construction meeting with the City.

FINDING: These standards have not been met but can be met as conditioned below.

RECOMMENDED CONDITION: (A13) The applicant shall adhere to all the requirements and conditions listed in the Amended Service Provider Letter issued by CWS (File No. 19-001036).

RECOMMENDED CONDITION: (C1) Prior to Issuance of an Engineering Compliance Agreement, the applicant shall obtain and submit the NPDES 1200C permit issued from CWS for the proposed project, to the City engineering department.

RECOMMENDED CONDITION: (E1) Prior to Final Approval of Engineering Plans, the applicant shall obtain an NPDES 1200C Permit from CWS and submit it to the Engineering Department. Approved Erosion and Sediment Control construction plans shall show and conform with conditions delineated in the NPDES 1200C permit.

RECOMMENDED CONDITION: (E2) Prior to Final Approval of Engineering Plans, the Erosion and Sediment Control plan shall adhere to all CWS engineering design standards for presentation of all Erosion and Sediment Control facilities utilized on the project.

RECOMMENDED CONDITION: (G1) Prior to Final Acceptance of Constructed Public Improvements, all conditions of the CWS Service Provider Letter (CWS File No.19-001036) shall have been constructed and received final inspection approval by the City, in conformance with the conditions and requirements of the SPL.

RECOMMENDED CONDITION: (H3) Prior to Grant of Occupancy, final acceptance of constructed public improvements shall be obtained from the Engineering Department. This acceptance includes complying with all requirements and conditions of the NPDES 1200C Permit.

V. APPLICABLE CODE PROVISIONS

A. DIVISION II– Land Use and Development

Chapter 16.21 RESIDENTIAL LAND USE DISTRICTS

16.12.10 Purpose and Density Requirements

C. Medium Density Residential Low (MDRL)

The MDRL zoning district provides for single-family and two family housing, manufactured housing, multi-family housing and other related uses with a density of 5.6 to 8 dwelling units per acre.

STAFF ANALYSIS: The subject site has the zoning designation of Medium Density Residential Low (MDRL). The planned subdivision includes 59 lots on a net development site area of ±8.32 acres resulting in a net residential density of ±7.09 or rounded to seven (7) dwelling units per acre. This planned density falls within the dwelling units per acre minimum (46 units) and maximum (66 units) within the MDRL zoning district.

FINDING: This standard is met.

16.12.020 Allowed Residential Land Uses

Residential Land Uses

A. The table below identifies the land uses that are allowed in the Residential Districts.

Uses	VLDR	LDR	MDRL	MDRH	HDR
Residential					
Single-Family Attached or Detached Dwellings	P	P	P	P	P

STAFF ANALYSIS: The applicant is proposing a 59-lot subdivision for detached single-family dwellings, which is a permitted use in the MDRL zone.

FINDING: This standard is met.

16.12.30 Residential Land Use Development Standards

A. Generally

No lot area, setback, yard, landscaped area, open space, off-street parking or loading area, or other site dimension or requirement, existing on, or after, the effective date of this Code shall be reduced below the minimum required by this Code. Nor shall the conveyance of any portion of a lot, for other than a public use or right-of-way, leave a lot or structure on the remainder of said lot with less than minimum Code dimensions, area, setbacks or other requirements, except as permitted by Chapter 16.84. (Variances and Adjustments)

B. Development Standards

Except as modified under Chapter 16.68 (Infill Development), Section 16.144.030 (Wetland, Habitat and Natural Areas), Chapter 16.44 (Townhomes), or as otherwise provided, required minimum lot areas, dimensions and setbacks shall be provided in the following table.

C. Development Standards per Residential Zone

Development Standards by Residential District	MDRL	10% Reduction Requested under §16.144.030.B.1
Minimum Lot area (in square feet) Single-Family Detached	5,000	4,500
Minimum Lot width at front property line	25 feet	-
Minimum Lot width at building line; Single-Family	50 feet	45 feet
Lot Depth	80 feet	-
Maximum Height (in feet)	30 or 2 stories	-
Front yard	14 feet	-
Face of garage	20 feet	-
Interior side yard; Single-Family Detached	5 feet	-
Corner lot side yard; Single Family or Two Family:	15 feet	-
Rear yard:	20 feet	-

STAFF ANALYSIS: As shown on Sheet P3, Preliminary Plat of Exhibit A, 23 of the 59 lots will meet the 5,000 square foot minimum lot size requirements. The remaining 36 of the 59 lots will be utilizing the provisions under §16.144.030.B.1 that allows for a 10% reduction in lot size (proposed minimum lot size is 4,500 square feet). Several lots are utilizing the 10% reduction for lot width at the building line (proposed minimum lot width at the building line is 45 feet). Detailed analysis for the provisions under §16.144.030.B.1 are later discussed in this report. As proposed, most of the lots meet the 25-foot minimum lot width at the front property line (street frontage). However, Lots 44, 45, 49, and 53 have lot widths less than 25-feet at the front property line. The proposed lots reflect 45 or 50-foot width at the building line and 80-foot lot depth requirements. As shown, the plan demonstrates that future homes can meet the minimum setback requirements, but height is not shown.

FINDING: These standards can be met as conditioned below.

RECOMMENDED CONDITION: (B2) Prior to Final Plat Approval, each lot shall have a minimum of 25-feet of lot width at the front property line/street frontage.

RECOMMENDED CONDITION: (F1) Prior to issuance of building permits, submit plot plans and building plans showing that the structures meet the minimum front, face of garage, rear, side, corner side yard setback requirements, height and yard requirements.

16.12.040 Community Design

For standards relating to off-street parking and loading, energy conservation, historic resources, environmental resources, landscaping, access and egress, signs, parks and open space, on-site storage, and site design, see Divisions V, VIII, IX.

FINDING: The application does meet or can meet all applicable community design standards as conditioned in this staff report.

16.12.050 Flood Plain

Except as otherwise provided, Section 16.134.020 shall apply.

FINDING: The site does fall within any mapped floodplain, according to the City of Sherwood FEMA Map and Metro Maps. Therefore, Section 16.134.020 applies to this application and discussed further in this staff report.

CHAPTER 16.58 CLEAR VISION AND FENCE STANDARDS

16.58.010 Clear Vision Areas

- A. A clear vision area shall be maintained on the corners of all property at the intersection of two (2) streets, intersection of a street with a railroad, or intersection of a street with an alley or private driveway.**
- B. A clear vision area shall consist of a triangular area, two (2) sides of which are lot lines measured from the corner intersection of the street lot lines for a distance specified in this regulation; or, where the lot lines have rounded corners, the lot lines extended in a straight line to a point of intersection, and so measured, and the third side of which is a line across the corner of the lot joining the non-intersecting ends of the other two (2) sides.**
- C. A clear vision area shall contain no planting, sight obscuring fence, wall, structure, or temporary or permanent obstruction exceeding two and one-half (2 1/2) feet in height, measured from the top of the curb, or where no curb exists, from the established street center line grade, except that trees exceeding this height may be located in this area, provided all branches and foliage are removed to the height of seven (7) feet above the ground on the sidewalk side and ten (10) feet on the street side.**

The following requirements shall govern clear vision areas:

- 1. In all zones, the minimum distance shall be twenty (20) feet.**
- 2. In all zones, the minimum distance from corner curb to any driveway shall be twenty-five (25) feet.**

3. Where no setbacks are required, buildings may be constructed within the clear vision area.

STAFF ANALYSIS: The applicant did not identify clear vision triangles on all corner lots within the development. A clear vision area would be required for all corner lot. The clear vision area will be verified at the time of final platting and plot plan review, prior to issuance of building permits.

FINDING: As proposed, this standard is not met, but can be met as conditioned below.

RECOMMENDED CONDITION: (B3) Prior Final Plat approval, submit a revised tree plan demonstrating compliance with the Clear Vision requirements of Section.16.58 of the Sherwood Zoning and Community Development Code.

RECOMMENDED CONDITION: (B4) Prior to Final Plat approval, show vision clearance easements on all corner lots. Vision Clearance Easements shall be to the City of Sherwood and conform with Section 16.58.010.

CHAPTER 16.60 YARD REQUIREMENTS

16.60.010 Through Lots

On a through lot the front yard requirements of the zone in which such a lot is located shall apply to the street frontage where the lot receives vehicle access, except where access is from an alley, the front yard requirements shall apply to the street opposite the alley.

STAFF ANALYSIS: The applicant has not proposed any through lots and therefore this criterion is not applicable.

16.60.020 Corner Lots

On a corner lot, or a reversed corner lot of a block oblong in shape, the short street side may be used as the front of the lot provided:

- A. The front yard setback shall not be less than twenty-five (25) feet; except where otherwise allowed by the applicable zoning district and subject to vision clearance requirements.**
- B. The side yard requirements on the long street side shall conform to the front yard requirement of the zone in which the building is located.**

STAFF ANALYSIS: There are a couple of corner lots within the proposed 59-lot subdivision. The MDRL zone requires 14-foot front yard and 15-foot street side yard setbacks on corner lots. The setbacks of the MDRL zones are addressed and conditioned above, in Section 16.12.30.C. The applicant's plan demonstrates that the front and street side yard setbacks required by the MDRL zone in Section 16.12.30 can be met. Upon application and approval of building permits, all setbacks will be reviewed to meet the development setback standards of the MDRL zone through conditioned F1.

16.60.030 Yards

- A. Except for landscaping, every part of a required yard (also referred to as minimum setback) shall be open and unobstructed from its lowest point to the sky, except that architectural features such as awnings, fire escapes, open stairways, chimneys, or accessory structures**

permitted in accordance with Chapter 16.50 (Accessory Structures) may be permitted when so placed as not to obstruct light and ventilation.

- B. Where a side or rear yard is not required, and a primary structure is not erected directly on the property line, a primary structure must be set back at least three (3) feet.

STAFF ANALYSIS: No structures are proposed at this time. Compliance with yard requirements will be verified prior to issuance of building permits, as conditioned above.

FINDING: This criterion can be met through condition F1.

16.60.040 Lot Sizes and Dimensions

- A. If a lot or parcel, or the aggregate of contiguous lots or parcels, recorded or platted prior to the effective date of this Code, has an area or dimension which does not meet the requirements of this Code, the lot or aggregate lots may be put to a use permitted outright, subject to the other requirements of the zone in which the property is located.
- B. Exceptions
 1. Residential uses are limited to a single-family dwelling, or to the number of dwelling units consistent with the density requirements of the zone. However, a dwelling cannot be built on a lot with less area than thirty-two hundred (3,200) square feet, except as provided in Chapter 16.68.
 2. Yard requirements of the underlying zone may be modified for infill developments as provided in Chapter 16.68 (Infill Development).

FINDING: As proposed, all lots meet the minimum size and dimension requirements of the MDRL zone with allowances under §16.144.030.B and as conditioned under B2. These standards are met as conditioned.

B. DIVISION V: COMMUNITY DESIGN

CHAPTER 16.92 LANDSCAPING

16.92.010 - Landscaping Plan Required

All proposed developments for which a site plan is required pursuant to Section 16.90.020 shall submit a landscaping plan that meets the standards of this Chapter. All areas not occupied by structures, paved roadways, walkways, or patios shall be landscaped or maintained according to an approved site plan.

STAFF ANALYSIS: The application is for a subdivision, which does not require a site plan review pursuant to Section 16.90.20. The applicant has submitted a Preliminary Street Tree and Open Space plan, Sheet L1 of Exhibit A, which shows proposed landscaping and street trees. All individual lots will require landscaping prior to the granting of occupancy.

FINDING: The proposed landscaping plans show general planting areas on the site specifically in the open space tracts and the rights-of-ways. The proposal did not include a detailed landscape plan (Sheets L1 and L2 of Exhibit A). This standard is not met but can be satisfied with the recommended condition below.

RECOMMENDED CONDITION: (B5) Prior to Final Plat Approval, submit a detailed final landscape plan that meets Section 16.92 landscaping standards and Section 142.040 visual corridors.

16.92.030 Site Area Landscaping and Perimeter Screening Standards

A. Perimeter Screening and Buffering

B. Parking Area Landscaping

C. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas, shall be screened from view from all public streets and any adjacent residential zones. If unfeasible to fully screen due to policies and standards, the applicant shall make efforts to minimize the visual impact of the mechanical equipment.

D. Visual Corridors

Except as allowed by subsection 6. above, new developments shall be required to establish landscaped visual corridors along Highway 99W and other arterial and collector streets, consistent with the Natural Resources and Recreation Plan Map, Appendix C of the Community Development Plan, Part II, and the provisions of Chapter 16.142(Parks, Trees, and Open Space). Properties within the Old Town Overlay are exempt from this standard.

STAFF ANALYSIS: The proposal is for a single-family residential subdivision. The site is zoned Medium Density Residential Low and is surrounded by other residential zoned parcels. No community parking area is proposed and screening of mechanical equipment, outdoor storage, and service and delivery areas are not necessary. The southern segment of the site has access to SW Brookman Road, a County arterial roadway based on the City of Sherwood Transportation System Plan (TSP). A 15-foot wide landscaped visual corridor is required along its entire frontage along SW Brookman Road. The preliminary landscape plan, Sheet L1 of Exhibit A, reflects the 15-foot landscaped visual corridor as Tracts E and F. This standard will be further discussed and conditioned in Section 16.142.040 Visual Corridor.

FINDING: Based on the discussion above, these criteria are met.

16.92.040 - Installation and Maintenance Standards

A. Installation

All required landscaping must be in-ground, except when in raised planters that are used to meet minimum Clean Water Services storm water management requirements. Plant materials must be installed to current nursery industry standards. Plant materials must be properly supported to ensure survival. Support devices such as guy wires or stakes must not interfere with vehicular or pedestrian movement.

B. Maintenance and Mitigation of Landscaped Areas

- 1. Maintenance of existing non-invasive native vegetation is encouraged within a development and required for portions of the property not being developed.**

2. All landscaping shall be maintained in a manner consistent with the intent of the approved landscaping plan.
3. Any required landscaping trees removed must be replanted consistent with the approved landscaping plan and comply with § 16.142, (Parks, Trees and Open Space).

C. Irrigation

The intent of this standard is to ensure that plants will survive the critical establishment period when they are most vulnerable due to lack of watering. All landscaped areas must provide an irrigation system, as stated in Option 1, 2, or 3.

1. **Option 1:** A permanent built-in irrigation system with an automatic controller installed.
2. **Option 2:** An irrigation system designed and certified by a licensed landscape architect or other qualified professional as part of the landscape plan, which provides sufficient water to ensure that the plants become established. The system does not have to be permanent if the plants chosen can survive independently once established.
3. **Option 3:** Irrigation by hand. If the applicant chooses this option, an inspection will be required one (1) year after final inspection to ensure that the landscaping has become established.

D. Deferral of Improvements

Landscaping shall be installed prior to issuance of occupancy permits, unless security equal to one hundred twenty-five (125) percent of the cost of the landscaping is filed with the City. "Security" may consist of a performance bond payable to the City, cash, certified check, or other assurance of completion approved by the City. If the installation of the landscaping is not completed within one (1) year, the security may be used by the City to complete the installation.

FINDING: Maintenance of the required Visual Corridor, shown on the preliminary plans as Tracts E and F, will be by the Homeowners Associations. City of Sherwood will own and maintain Tract C, Open Space. The preliminary landscape plan, Sheet L1 of Exhibit A, states that a permanent underground irrigation system will be provided for all street tree lawn areas. Sheet L2 of Exhibit A also notes that landscape areas will be provided with an automatic underground irrigation system designed by the contractor. The contractor will provide materials and install all irrigation downstream of the water meter. Landscaping on individual lots will be the responsibility of the individual lot owners. The applicant intends to install all landscaping prior to issuance of occupancy permits. Should this become impossible due to plant availability and/or weather, the required security will be filed with the City in accordance with the Code. These standards have not been met, but can be satisfied as conditioned below.

RECOMMENDED CONDITION: (F2) Prior to Issuance of any single-family residence building permit, submit a final landscape plan that addresses the installation and maintenance standards of Section 16.92.040.

RECOMMENDED CONDITION: (H1) Prior to Grant of Occupancy, the individual lot shall be landscaped and all required street trees shall be planted in accordance to city standards.

RECOMMENDED CONDITION: (H2) Prior to Grant of Occupancy, install the landscaping according to the landscape plans or pay a security bond for 125% of the cost of the landscaping payable to the City. If the landscaping is not completed within six months, the security may be used by the City to complete the installation.

RECOMMENDED CONDITION: (A14) Tracts A, E, F and G, will be owned and maintained by the Homeowners neighborhood association.

RECOMMENDED CONDITION: (B6) Prior to Final Plat Approval, provide CC & Rs that document how the private streets (Tracts A and G), visual corridor open spaces (Tracts E and F), and pedestrian trails on Tract C will be maintained by the neighborhood association.

CHAPTER 16.94 OFF-STREET PARKING AND LOADING

16.94.010 Generally

1. Off-Street Parking Required

No building permit shall be issued until plans are approved providing for off-street parking and loading space as required by this Code. Any change in uses or structures that reduces the current off-street parking and loading spaces provided on site, or that increases off-street parking or loading requirements shall be unlawful and a violation of this Code, unless additional off-street parking or loading areas are provided in accordance with Section 16.94.020, or unless a variance from the minimum or maximum parking standards is approved in accordance with Chapter 16.84 Variances.

STAFF ANALYSIS: The applicant proposes adequate parking spaces for the residential uses through attached garages and driveways.

FINDING: This standard applies citywide, except in the Old Town Smockville area, and will be verified prior to the issuance of building permits and is conditioned below.

16.94.020 Off Street Parking

A. Generally

Where square feet are specified, the area measured shall be the gross building floor area primary to the functioning of the proposed use. Where employees are specified, persons counted shall be those working on the premises, including proprietors, during the largest shift at peak season. Fractional space requirements shall be counted as a whole space. The Review Authority may determine alternate off - street parking and loading requirements for a use not specifically listed in this Section based upon the requirements of comparable uses.

FINDING: Section 16.94.020 indicates single-family dwellings required one off-street parking space per dwelling unit. This standard is typically met with the installation of garages and driveways. Compliance is confirmed during plot plan review for individual building lots. This standard is not met but can be as conditioned.

RECOMMENDED CONDITION: (F3) Prior to the issuance of building permits, each lot shall provide for one off-street parking space.

CHAPTER 16.96 ON-SITE CIRCULATION

16.96.010 - On-Site Pedestrian and Bicycle Circulation

A. Purpose

On-site facilities shall be provided that accommodate safe and convenient pedestrian access within new subdivisions, multi-family developments, planned unit developments, shopping centers and commercial districts, and connecting to adjacent residential areas and neighborhood activity centers within one-half mile of the development. Neighborhood activity centers include but are not limited to existing or planned schools, parks, shopping areas, transit stops or employment centers. All new development, (except single-family detached housing), shall provide a continuous system of private pathways/sidewalks.

B. Maintenance

No building permit or other City permit shall be issued until plans for ingress, egress and circulation have been approved by the City. Any change increasing any ingress, egress or circulation requirements, shall be a violation of this Code unless additional facilities are provided in accordance with this Chapter.

STAFF ANALYSIS: The preliminary street plan, Sheet P5, shows on-site street improvements throughout the subdivision that includes six-foot-wide sidewalks and a 15-foot pedestrian path connecting SW Atfalati Lane and SW Kalapuya Lane. The project also provides a connection for the northern and southern portions of the site with an 8-foot wide trail across Cedar Creek as shown on Sheet L1 of Exhibit A. A pedestrian pathways adjacent to the natural resource area (Tract C), ultimately connecting to a future adjacent residential area, is also provided. The proposed improvements will provide for pedestrian and bicycle connectively and circulation.

FINDING: As discussed above, the proposed subdivision provides for adequate and convenient pedestrian and bicycle access. These standards are met as conditioned below.

RECOMMENDED CONDITION: (A16), The pedestrian path on Tract C shall be maintained by the homeowners' association.

C. Joint Access

Two (2) or more uses, structures, or parcels of land may utilize the same ingress and egress when the combined ingress and egress of all uses, structures, or parcels of land satisfied the other requirements of this Code, provided that satisfactory legal evidence is presented to the City in the form of deeds, easements, leases, or contracts to clearly establish the joint use.

STAFF ANALYSIS: The proposal includes two joint access ways that utilize the same ingress and egress. Proposed Tract A will serve Lots 34 and 35 and proposed Tract G will serve lots 53 and 54. These tracts are both private streets and meet private street standards. Covenants, Conditions & Restrictions (CC&Rs) will be required to establish ownership and maintenance provisions. The abutting parcel to the east, addressed at 17033 SW Brookman Road (Map and Tax Lot 3S1060000107) share the same access point as the existing driveway on SW Brookman Road. A $\frac{3}{4}$ street (SW Yamel Terrace) will be created that abuts this parcel and a new access/driveway point can be obtained through SW Yamel Terrace.

FINDINGS: Therefore as discussed above, this criterion is met as conditioned below.

RECOMMENDED CONDITION: (B6) Prior to the final plat approval, provide CC&Rs that document how the private streets (Tracts A and G) will be owned and maintained by the neighborhood association.

RECOMMENDED CONDITION: (E3) Prior to Approval of Engineering Plans, public improvements plans shall include a new driveway access along SW Yamel Terrace that benefits Map/Tax Lot 3S1060000107.

D. Connection to Streets

- 1. Except for joint access per this Section, all ingress and egress to a use or parcel shall connect directly to a public street, excepting alleyways with paved sidewalk.**
- 2. Required private sidewalks shall extend from the ground floor entrances or the ground floor landing of stairs, ramps or elevators to the public sidewalk or curb of the public street which provides required ingress and egress.**

FINDING: Individual ingress and egress connections for individual lots will be through driveway approaches connecting to public streets, with the allowance for joint access (Tracts A and G). Per the applicant's narrative, the private sidewalks will extend from the primary ground floor entrance of each dwelling to the nearest public street sidewalk. This criterion is met.

E. Maintenance of Required Improvements

Required ingress, egress and circulation improvements shall be kept clean and in good repair.

STAFF ANALYSIS: The proposed new streets within the subdivision will be dedicated to the City of Sherwood as public streets - further discussed in Section 16.106 Transportation Facilities. The individual owners will maintain their tax lot ingress and egress access points. The Homeowners Association will maintain the private street tracts (Tract A and G) and visual corridor tracts (Tract E and F).

FINDING: This criterion can be met as conditioned above in B6.

F. Access to Major Roadways

Points of ingress or egress to and from Highway 99W and arterials designated on the Transportation Plan Map, attached as Appendix C of the Community Development Plan, Part II, shall be limited as follows:

- 1. Single and two-family uses and manufactured homes on individual residential lots developed after the effective date of this Code shall not be granted permanent driveway ingress or egress from Highway 99W and arterial roadways. If alternative public access is not available at the time of development, provisions shall be made for temporary access which shall be discontinued upon the availability of alternative access.**
- 2. Other private ingress or egress from Highway 99W and arterial roadways shall be minimized. Where alternatives to Highway 99W or arterials exist or are proposed, any new or altered uses developed after the effective date of this Code shall be required to use the alternative ingress and egress.**
- 3. All site plans for new development submitted to the City for approval after the effective date of this Code shall show ingress and egress from existing or planned local or collector streets, consistent with the Transportation Plan Map and Section VI of the Community Development Plan.**

FINDING: SW Brookman Road is classified as an Arterial on the City Transportation System Plan. Single-family uses cannot have permanent driveway ingress or egress from SW Brookman Road. The proposal includes ingress and egress to the single-family lots from planned local streets consistent with City standards. One public street access (SW Robin Hood Place) is proposed from SW Brookman Road that will serve Lots 45 through 59. A 600-foot access spacing standard is required and the nearest existing street access is SW Oberst Road, approximately 1,050 feet west of the site. These criteria are met.

G. Service Drives

Service drives shall be provided pursuant to Section 16.94.030.

STAFF ANALYSIS: The subject site does not include service drives; therefore, this criterion is not applicable.

16.96.020 Minimum Residential standards

Minimum standards for private, on-site circulation improvements in residential developments:

A. Driveways

1. **Single-Family: One (1) driveway improved with hard surface pavement with a minimum width of ten (10) feet, not to exceed a grade of 14%. Permeable surfaces and planting strips between driveway ramps are encouraged in order to reduce stormwater runoff.**
2. **Two-Family: One (1) shared driveway improved with hard surface pavement with a minimum width of twenty (20) feet; or two (2) driveways improved with hard surface pavement with a minimum width of ten (10) feet each. Permeable surfaces and planting strips between driveway ramps are encouraged in order to reduce stormwater runoff.**
3. **Multi-Family: Improved hard surface driveways are required as follows.....**

STAFF ANALYSIS: Each lot within the proposed subdivision is planned to have a single designated driveway. The application does not include two family uses, shared driveways, or multi-family units. This standard can be met as conditioned below.

RECOMMENDED CONDITION: (F4) Prior to the issuance of building permits the appropriate permit applications and details regarding the design of each driveway will be submitted to the City of Sherwood for review and approval.

B. Sidewalks, Pathways and Curbs

1. **Single, Two-Family, and Manufactured Home on Individual Residential Lot: No on-site sidewalks and curbs are required when not part of a proposed partition or subdivision.**
2. **Multi-family:.....**

STAFF ANALYSIS: As shown on Sheet P5, the Overall Street Plan of Exhibit A, curbs and sidewalks are planned to be installed along the street frontage of each lot in the subdivision, where they abut a public street.

FINDING: This standard is met.

16.98.020 Solid Waste and Recycling Storage

All uses shall provide solid waste and recycling storage receptacles which are adequately sized to accommodate all solid waste generated on site. All solid waste and recycling storage areas and receptacles shall be located out of public view. Solid waste and recycling receptacles for multi-family, commercial, industrial and institutional uses shall be screened by six (6) foot high sight-obscuring fence or masonry wall and shall be easily accessible to collection vehicles.

FINDING: The proposal is for a residential subdivision. Dean Kampfer from Waste Management, email correspondence dated March 2, 2020, indicated that Waste Management is supportive of the subdivision as proposed (**Exhibit G**). This standard is met.

C. DIVISION VI. PUBLIC INFRASTRUCTURE

CHAPTER 16.106 TRANSPORTATION FACILITIES

16.106.010 Generally

A. Creation

Public streets shall be created in accordance with provisions of this Chapter. Except as otherwise provided, all street improvements and rights-of-way shall conform to standards for the City's functional street classification, as shown on the Transportation System Plan (TSP) Map (Figure 15) and other applicable City standards. The following table depicts the guidelines for the street characteristics.

STAFF ANALYSIS: SW Brookman Road is a Washington County Roadway and subject to their jurisdictional control. The required improvements to SW Brookman Road are designed to County standards. The new local streets are designed according to City standards.

B. Street Naming

1. All streets created by subdivision or partition will be named prior to submission of the final plat.
2. Any street created by a public dedication shall be named prior to or upon acceptance of the deed of dedication.
3. An action to name an unnamed street in the City may be initiated by the Council or by a person filing a petition as described in this Section.
4. All streets named shall conform to the general requirements as outlined in this Section.
5. At the request of the owner(s), the City may approve a private street name and address. Private streets are subject to the same street name standards as are public streets. All private street signs will be provided at the owner(s) expense.

C. Street Name Standards

1. All streets named or renamed shall comply with the following criteria:
 - a. Major streets and highways shall maintain a common name or number for the entire alignment.
 - b. Whenever practicable, names as specified in this Section shall be utilized or retained.
 - c. Hyphenated or exceptionally long names shall be avoided.
 - d. Similar names such as Farview and Fairview or Salzman and Saltzman shall be avoided.
 - e. Consideration shall be given to the continuation of the name of a street in another jurisdiction when it is extended into the City.

2. The following classifications (suffixes) shall be utilized in the assignment of all street names:
 - a. Boulevards: North/south arterials providing through traffic movement across the community.
 - b. Roads: East/west arterials providing through traffic movement across the community.
 - c. Avenues: Continuous, north/south collectors or extensions thereof.
 - d. Streets: Continuous, east-west collectors or extensions thereof.
 - e. Drives: Curvilinear collectors (less than 180 degrees) at least 1,000 feet in length or more.
 - f. Lanes: Short east/west local streets under 1,000 feet in length.
 - g. Terraces: short north/south local streets under 1,000 feet in length.
 - h. Court: All east/west cul-de-sacs.
 - i. Place: All north/south cul-de-sacs.
 - j. Ways: All looped local streets (exceeding 180 degrees).
 - k. Parkway: A broad landscaped collector or arterial.

3. Except as provided for by this section, no street shall be given a name that is the same as, similar to, or pronounced the same as any other street in the City unless that street is an extension of an already-named street.

4. All proposed street names shall be approved, prior to use, by the City. D. Preferred Street Names

- D. Whenever practicable, historical names will be considered in the naming or renaming of public roads. Historical factors to be considered shall include, but not be limited to the following:
1. Original holders of Donation Land Claims in Sherwood.
 2. Early homesteaders or settlers of Sherwood.
 3. Heirs of original settlers or long-time (50 or more years) residents of Sherwood.
 4. Explorers of or having to do with Sherwood.
 5. Indian tribes of Washington County.
 6. Early leaders and pioneers of eminence.
 7. Names related to Sherwood's flora and fauna.
 8. Names associated with the Robin Hood legend.

STAFF ANALYSIS: The proposed street names are included on the Preliminary Plat, Sheet P3 of Exhibit A. The street names are in accordance with the above street naming standards.

FINDING: The street naming criteria is met.

CHAPTER 16.106 TRANSPORTATION FACILITIES

16.106.020 - Required Improvements

A. Generally

Except as otherwise provided, all developments containing or abutting an existing or proposed street, that is either unimproved or substandard in right-of-way width or improvement, shall dedicate the necessary right-of-way prior to the issuance of building permits and/or complete acceptable improvements prior to issuance of occupancy

permits. Right-of-way requirements are based on functional classification of the street network as established in the Transportation System Plan, Figure 15.

STAFF ANALYSIS: City of Sherwood Engineering Department reviewed the proposal and submitted comments that are incorporated within the chapter (**Exhibit B**). The submitted plans indicate separate street designs between the northern and southern development areas.

Northern Development Area

The northern development area shows the extension of SW Atfalati Lane and SW Kalapuya Lane which are part of the adjacent Middlebrook Estates Subdivision project, and a connective street of SW Yamel Terrace. SW Atfalati Lane and SW Kalapuya Lane are shown with 28-foot paved width within a 52-foot right-of-way width, which meet City residential street standards with parking limited to one side of the street. SW Yamel Terrace is shown with a 24-foot paved width within a 40-foot (measured) right-of-way width, which meets the City's $\frac{3}{4}$ street standard. A shadow plat of the adjacent (east side) development indicates the future development will construct the remaining part of the street section and right-of-way.

Southern Development Area

The southern development area shows a residential street (SW Robin Hood Place) with a cul-de-sac intersecting with SW Brookman Road. SW Robin Hood Place is shown with a 28-foot paved width within a 52-foot right-of-way width, ending in a 48-foot cul-de-sac. The length of the cul-de-sac (identified as Street B on sheet P5.2) is shown to be 299-foot length, which exceeds City standards for cul-de-sacs.

The southern development area fronts SW Brookman Road, and will require dedication of 33-feet of right-of-way to meet WACO's standards for half of a 5-lane arterial right-of-way section width of 53-feet as measured from the existing right-of-way centerline.

Frontage improvements along SW Brookman Road are required per City standards. However, to meet WACO standards for a 5-lane arterial, significant grading of the existing road section would need to take place. The cost of reconstructing SW Brookman Road to meet WACO design standards would be very expensive and not proportional to the impacts of a 59 lot subdivision. WACO has performed a review of the proposed sight distance based on existing SW Brookman Road vertical alignment conditions and has concluded that the proposed location and elevation of SW Robin Hood Place would meet WACO sight distance requirements.

Given the significant grade differences required to meet WACO design standards, many frontage improvements along SW Brookman Road are being deferred until such time that SW Brookman Road is improved as a WACO capital improvement project. The deferred frontage improvement items include 1) asphalt pavement, 2) base rock, 3) curb and gutter, 4) sidewalks/multi-use path, 5) planter strip plantings, 6) street trees, 7) street lighting systems, 8) irrigation systems, 9) required street signage and striping, 10) storm drainage collection and conveyance system, and 11) undergrounding of any overhead private utilities.

Given the improvement deferral, a fee in-lieu-of construction for the required frontage improvements will be required. The in-lieu fee amount will be based on the estimated cost of the deferred items with a 125% multiplying factor to account for the difference in the value of the improvements over time, as approved by the City Engineer.

FINDINGS: This criterion is not met as discussed above, but can be satisfied as conditioned below.

RECOMMENDED CONDITION: (A17) WACO Transportation Development Tax (TDT) credit eligible offsets will be based on requirements and limitations established by WACO Ordinance Mo. 691A, as modified by Ordinances 729, 741, 746-A, 751 and 793-A, and as described in WACO's *Countywide Transportation Development Tax Procedures Manual*, dated July 2019. City Transportation SDC credit eligible off-sets will be based on requirements and limitations established by City of Sherwood Municipal Code Chapter 15.16 – System Development Charges and Chapter 15.20 – Park and Recreation System Development Charges on New Development.

RECOMMENDED CONDITION: (B7) Prior to Final Plat Approval, the applicant shall show a 33-foot wide right-of-way dedication to WACO along the SW Brookman Road frontage.

RECOMMENDED CONDITION: (B4) Prior to Final Plat Approval, show clear vision easements on all corner lots fronting public streets. The clear vision easement shall be to the City of Sherwood and conform with SZCDC Section 16.58.010.

RECOMMENDED CONDITION: (B8) Prior to Final Plat Approval, all proposed private streets shall comply with all the standards stated in the SZCDC Section 16.118.050 (Private Streets).

RECOMMENDED CONDITION: (E4) Prior to Final Approval of Engineering Plans, the applicant shall pay a fee in-lieu-of construction for deferred frontage improvements along SW Brookman Road. The fee in-lieu-of construction amount will be set at 125% of the estimated deferred frontage improvements construction cost, as approved by the City Engineer. The deferred frontage improvements are identified as being;

- 1) Asphalt Pavement section conforming to the City Engineering Design and Standard Details Manual, Section 210.2.2 for asphalt thickness requirements for arterial road sections.
- 2) Standard Base Rock section conforming to the City Engineering Design and Standard Details Manual, Section 210.2.1 for leveling course rock and base rock thickness requirements for arterial roads.
- 3) Concrete curb and cutter
- 4) Concrete sidewalk/multi-use path
- 5) Street planter strip plantings
- 6) Street lighting system (including lights, foundations, and conduits)
- 7) Street trees
- 8) Street signage and striping conforming to the City Engineering Design and Standard Details Manual, Section 340.
- 9) Irrigation system (including piping, valves, controllers, sprinkler heads)
- 10) Stormwater drainage collection, conveyance, and treatment systems for public roadway.
- 11) Undergrounding of existing overhead utilities.

Funds are to be deposited into WACO TDT funds account and dedicated strictly to a future WACO SW Brookman Road capital improvement project.

RECOMMENDED CONDITION: (E5) Prior to Final Approval of Engineering Plans, the street lighting design shall include a photometric analysis report for review and approval by City Engineering. City lighting standards require Westbrooke fixtures on all internal streets to the subdivision, and Cobrahead fixtures along the SW Brookman Road right-of-way.

RECOMMENDED CONDITION: (E6) Prior to Final Approval of Engineering Plans, the applicant shall obtain any necessary Right-of-Way Permits from WACO for constructing public improvements within the SW Brookman Road right-of-way.

RECOMMENDED CONDITION: (G2) Prior to Final Acceptance of Constructed Public Improvements, connection of the northern development area to the public transportation improvements being constructed by the adjacent Middlebrook Subdivision, will not be permitted until such time as the public transportation improvements being constructed by the Middlebrook Subdivision have been constructed, have received final inspection approval, and have been accepted as public infrastructure by the City. Until that time, a minimum 10-foot physical separation between the Reserve at Cedar Creek site development public transportation infrastructure improvements and the adjacent Middlebrook Subdivision public transportation infrastructure improvements shall be maintained.

RECOMMENDED CONDITION: (H4) Prior to Final Grant of Occupancy, all TDT and SDC credit requests on credit eligible public improvements must be submitted in accordance with WACO Ordinance Mo. 691A, as modified by Ordinances 729, 741, 746-A, 751 and 793-A, and City of Sherwood Municipal Code Chapter 15.16 – System Development Charges and Chapter 15.20 – Park and Recreation System Development Charges on New Development, and conform and comply with the standards and requirements stated therein.

RECOMMENDED CONDITION: (E7) Prior to Final Approval of Engineering Plans, SW Yamel Terrace shall be designed to include a curblin along the east side of the $\frac{3}{4}$ street paved width per City standards.

RECOMMENDED CONDITION: (G3) Prior to Final Acceptance of Constructed Public Improvements, all private streets shall comply with all the standards stated in the SZCDC Section 16.118.050 (Private Streets).

City Engineer's Comment: *Discussion with City Transportation Engineering (DKS Associates) requesting feedback on any potential safety concerns for SW Brookman Road. Two potential safety concerns were identified are; 1) narrow roadway width, and 2) edge drop-off conditions. SW Brookman Road generally has a narrow paved width section (18 to 20 feet), much narrower than what is typically found on City residential streets. The drop-off edge condition is most concerning in that driver reaction to right side tires falling off the road, result in overcorrection, then driving off the left side of the road. The narrow road pavement section width does not allow for much maneuvering room. This is a physical condition of the road that the City identifies as a potential safety issue, and that the City does not have the funds to correct for in the near future, and that the City cannot condition the developer to correct for as the cost of the needed improvements are not proportional to the impacts generated by the development. It is recommended that at a minimum, pavement edgelines/foglines be re-established along the project frontage along SW Brookman Road prior to Grant of Occupancy.*

Oregon Department of Transportation (ODOT) - ODOT Regions 1 and 2 comments and conditions are listed in **Exhibits D.2 and D.3**. They reviewed the TIA prepared by Kittelson and Associates dated February 20, 2020 and provided the following comment:

OR 99W and SW Elwert/SW Sunset intersection

The TIA shows that this intersection is operating above the Oregon Highway Plan mobility target under existing conditions as well as with the proposed development (an increase from

a 1.06 v/c ratio to a 1.07 v/c ratio). On page 30 of the TIA, the report states, "Given that the already over-capacity v/c ratio change is less than .03 assuming no signal timing changes, the City of Sherwood could make a finding that site development impacts do not require mitigation per ODOT Policy Statement findings relative to the change in v/c ratio." The Oregon Highway Policy that is referenced is 1F action 5 which states, "For purposes of evaluating amendments to the transportation system plan, acknowledged comprehensive plans and land use regulations subject to OAR 660-012-0060. The proposed land use action is for a subdivision and is not subject to OAR 660-012-0060, therefore this policy is not applicable. Since the mobility target under existing conditions is already exceeded, the performance standard is to avoid further degradation which is not met.

OR 99W/SW Chapman/SW Brookman intersection

- a. This intersection does not meet the Oregon Highway Plan mobility target under existing conditions as well as with the proposed development. Therefore, the performance standard is no further degradation. The city's Transportation System Plan identifies a project to signalize this intersection to address the capacity deficiencies. While the project to install a signal at this intersection would mitigate the proposed development, it is a high cost improvement. Therefore, ODOT recommends that the applicant be required to contribute a proportionate share contribution towards the signalization of the intersection based on the critical movement at the intersection.
- b. This intersection is located within the ODOT Region 2 boundary. Attached is a letter from Region 2 (**Exhibit D.3**) which addresses safety and operational issues at the intersection and supporting the recommendation for proportionate share contribution towards the TSP project to signalize the intersection.

ODOT recommendations stated above have been conditioned under E9 in Section 16.106.080 Traffic Impact Analysis (TIA).

Washington County Department of Land Use & Transportation – Naomi Vogel, Associate Planner, provided comments dated March 9, 2020 (**Exhibit C**). She stated that the Traffic Impact Analysis (TIA) and supplemental information by Kittelson & Associates (February 12, 2020) were submitted in accordance with Washington County R&O 86-95, "Determining Traffic Safety Improvements" for development. County staff reviewed the TIA and concurs with the findings/recommendations of the analysis.

County Access Spacing Standard - The proposed street, SW Robin Hood Place, does not meet the County's standard for access to an Arterial because the street is not classified as an Arterial or Collector. However, the applicant has requested a Design Exception (October 7, 2019) to the County's access standard for Arterials and has received approval by the County Engineer for the proposed public street connection (December 9, 2019).

RECOMMENDED CONDITION: (D1) Prior to Issuance of a Site Grading Permit, the applicant shall submit for a Washington County Facility Permit for the public improvements along SW Brookman Road per Exhibit C.

RECOMMENDED CONDITION: (B7) Prior to Final Plat Approval, dedication of additional right-of-way to provide 53 feet from the centerline of SW Brookman Road, including adequate corner radius at the intersection with the new public street.

RECOMMENDED CONDITION: (H5) Prior to Grant of Occupancy, the roadway improvements required by Washington County, shall be completed and approved by Washington County per Exhibit C.

RECOMMENDED CONDITION: (E4) Prior to Final Approval of Engineering Plans, the applicant shall pay a fee in-lieu-of construction for deferred frontage improvements along SW Brookman Road. The fee in-lieu-of construction amount will be set at 125% of the estimated deferred frontage improvements construction cost, as approved by the City Engineer. The deferred frontage improvements are identified as being;

- 1) Asphalt Pavement section conforming to the City Engineering Design and Standard Details Manual, Section 210.2.2 for asphalt thickness requirements for arterial road sections.
- 2) Standard Base Rock section conforming to the City Engineering Design and Standard Details Manual, Section 210.2.1 for leveling course rock and base rock thickness requirements for arterial roads.
- 3) Concrete curb and cutter
- 4) Concrete sidewalk/multi-use path
- 5) Street planter strip plantings
- 6) Street lighting system (including lights, foundations and conduits)
- 7) Street trees
- 8) Street signage and striping conforming to the City Engineering Design and Standard Details Manual, Section 340.
- 9) Irrigation system (including piping, valves, controllers, sprinkler heads)
- 10) Stormwater drainage collection, conveyance, and treatment systems for public roadway.
- 11) Undergrounding of existing overhead utilities.

Funds are to be deposited into WACO TDT funds account and dedicated strictly to a future WACO SW Brookman Road capital improvement project.

B. Existing Streets

Except as otherwise provided, when a development abuts an existing street, the improvements requirement shall apply to that portion of the street right-of-way located between the centerline of the right-of-way and the property line of the lot proposed for development. In no event shall a required street improvement for an existing street exceed a pavement width of thirty (30) feet.

STFF ANALYSIS: This criterion is satisfied as discussed and conditioned above.

C. Proposed Streets

1. **Except as otherwise provided, when a development includes or abuts a proposed street, in no event shall the required street improvement exceed a pavement width of forty (40) feet.**
2. **Half Streets: When a half street is created, a minimum of 22 feet of driving surface shall be provided by the developer.**

STAFF ANALYSIS: The proposed local streets are planned to be constructed to City standards with pavement width of less than 40 feet. SW Atfalati Lane, SW Kalapuya Lane, and SW Robin Hood Place will all have 28-feet of paved width. SW Yamel Terrace, as shown on the Preliminary Street Pan, Sheet P5 of Exhibit A, is planned to be improved to $\frac{3}{4}$ of the standard residential street width. Twenty-two feet diving surface is planned for Yamel Terrace. This standard is met.

FINDING: Based on the discussion above, these criteria are met.

D. Extent of Improvements

1. **Streets required pursuant to this Chapter shall be dedicated and improved consistent with Chapter 6 of the Community Development Plan, the TSP and applicable City specifications included in the City of Sherwood Construction Standards. Streets shall include curbs, sidewalks, catch basins, street lights, and street trees. Improvements shall also include any bikeways designated on the Transportation System Plan map. Applicant may be required to dedicate land for required public improvements only when the exaction is directly related to and roughly proportional to the impact of the development, pursuant to Section 16.106.090.**

STAFF ANALYSIS: Right-of-way dedication and street improvements as shown on the Preliminary plans include curbs, sidewalks, catch basins, streetlights, and street trees. The Transportation System Plan identifies SW Brookman Road for future bike lanes. Interim and ultimate frontage improvements to SW Brookman Road are planned to be provided to meet Washington County standards.

FINDING: This standard is met.

2. **If the applicant is required to provide street improvements, the City Engineer may accept a future improvements guarantee in lieu of street improvements if one or more of the following conditions exist, as determined by the City:**
 - a. **A partial improvement is not feasible due to the inability to achieve proper design standards;**
 - b. **A partial improvement may create a potential safety hazard to motorists or pedestrians.**
 - c. **Due to the nature of existing development on adjacent properties it is unlikely that street improvements would be extended in the foreseeable future and the improvement associated with the project under review does not, by itself, provide a significant improvement to street safety or capacity;**
 - d. **The improvement would be in conflict with an adopted capital improvement plan;**
 - e. **The improvement is associated with an approved land partition on property zoned residential use and the proposed land partition does not create any new streets;**
or
 - f. **Additional planning work is required to define the appropriate design standards for the street and the application is for a project that would contribute only a minor portion of the anticipated future traffic on the street.**

STAFF ANALYSIS: Based on the Traffic Impact Analysis and ODOT recommendations, the applicant will be required to pay the City a fee in lieu for the following:

- SW Sunset Boulevard/SW Woodhaven Drive intersection
- SW Sunset Boulevard/SW Timbrel Lane intersection
- Hill Road-SW Main Street/SW Sunset Boulevard intersection
- SW Baker Road/SW Murdock Road/SW Sunset Boulevard intersection
- SW Brookman Road/Hwy 99W signalization

The payment for the fee in lieu have been conditioned under E9 and further discussed in Section 16.106.080 (Traffic Impact Analysis) of this staff report. The criteria are met.

E. Transportation Facilities Modifications

- 1. A modification to a standard contained within this Chapter and Section 16.58.010 and the standard cross sections contained in Chapter 8 of the adopted TSP may be granted in accordance with the procedures and criteria set out in this section.**
- 2. A modification request concerns a deviation from the general design standards for public facilities, in this Chapter, Section 16.58.010, or Chapter 8 in the adopted Transportation System Plan. The standards that may be modified include but are not limited to:**
 - a. Reduced sight distances.**
 - b. Vertical alignment.**
 - c. Horizontal alignment.**
 - d. Geometric design (length, width, bulb radius, etc.).**
 - e. Design speed.**
 - f. Crossroads.**
 - g. Access policy.**
 - h. A proposed alternative design which provides a plan superior to these standards.**
 - i. Low impact development.**
 - j. Access Management Plans**
- 3. Modification Procedure**
 - a. A modification shall be proposed with the application for land use approval.**
 - b. A modification is processed as a Type II application. Modification requests shall be processed in conjunction with the underlying development proposal.**
 - c. When a modification is requested to provide a green street element that is not included in the Engineering Design Manual, the modification process will apply, but the modification fee will be waived.**
- 4. Criteria for Modification: Modifications may be granted when criterion 4a and any one of criteria 4b through 4e are met:**
 - a. Consideration shall be given to public safety, durability, cost of maintenance, function, appearance, and other appropriate factors to advance the goals of the adopted Sherwood Comprehensive Plan and Transportation System Plan as a whole. Any modification shall be the minimum necessary to alleviate the hardship or disproportional impact.**
 - b. Topography, right-of-way, existing construction or physical conditions, or other geographic conditions impose an unusual hardship on the applicant, and an equivalent alternative which can accomplish the same design purpose is available.**
 - c. A minor change to a specification or standard is required to address a specific design or construction problem which, if not enacted, will result in an unusual hardship. Self-imposed hardships shall not be used as a reason to grant a modification request.**
 - d. An alternative design is proposed which will provide a plan equal to or superior to the existing street standards.**
 - e. Application of the standards of this chapter to the development would be grossly disproportional to the impacts created.**

STAFF ANALYSIS: The length of the proposed SW Robin Hood Street cul-de-sac exceeds the 200-foot maximum length standards specified in Section 16.106.040.(E). The applicant has

requested a modification to the standards under Section 16.106.020.E.(1 thru 4). The applicant has not provided a rationale as to why a grant of modification is needed.

However, the City Engineer is open to granting an engineering design modification request to the cul-de-sac length, based design recommendations found in the publication *Residential Streets (3rd Edition)* published by the Urban Land Institute (ULI). ULI design recommendation is on a trip count maximum of 200 trips per day for the cul-de-sac, with 8 to 10 trips per dwelling unit. This equates to a maximum lot count of 20 to 25 lots. The lot count for the southern development area is listed at 15 lots and a cul-de-sac length of 260 feet. The analysis indicates that the maximum trip count would be 150 daily trips, well within the recommended trip limit.

FINDING: Based on the above discussion, the criteria can be met as conditioned below.

RECOMMENDED CONDITION: (E8) Prior to Final Approval of Engineering Plans, the applicant shall submit a separate design variation request for each non-conforming public infrastructure design element, to the City Engineer for review and approval.

16.106.030 Location

A. Generally

The location, width and grade of streets shall be considered in their relation to existing and planned streets, topographical conditions, and proposed land uses. The proposed street system shall provide adequate, convenient and safe traffic and pedestrian circulation, and intersection angles, grades, tangents, and curves shall be adequate for expected traffic volumes. Street alignments shall be consistent with solar access requirements as per Chapter 16.156, and topographical considerations.

STAFF ANALYSIS: The proposed subdivision and the streets that serve the lots have been designed and located to serve the planned lots and satisfy access management standards (as far as practicable) for future streets adjacent to the subject site. As discussed above, safe and convenient pedestrian and bicycle access through the site is provided by sidewalks and paths. Street alignments are consistent with the solar access requirements of Chapter 16.156 as further discussed in the chapter. The criteria are met.

B. Street Connectivity and Future Street Systems

1. Future Street Systems. The arrangement of public streets shall provide for the continuation and establishment of future street systems as shown on the Local Street Connectivity Map contained in the adopted Transportation System Plan (Figure 16).

STAFF ANALYSIS: The City's TSP, Local Street Connectivity Map, Figure 18 does show conceptual street connections with SW Brookman Road. The streets included in the application, as shown on the Conceptual & Future Development Plan, Sheet P7 of Exhibit A, provide for the continuation of establishing a future street system adjacent to the site. The criterion is met.

2. Connectivity Map Required. New residential, commercial, and mixed use development involving the construction of new streets shall be submitted with a site plan that implements, responds to and expands on the Local Street Connectivity map contained in the TSP.

a. A project is deemed to be consistent with the Local Street Connectivity map when it

provides a street connection in the general vicinity of the connection(s) shown on the map, or where such connection is not practicable due to topography or other physical constraints; it shall provide an alternate connection approved by the decision-maker.

- b. Where a developer does not control all of the land that is necessary to complete a planned street connection, the development shall provide for as much of the designated connection as practicable and not prevent the street from continuing in the future.
- c. Where a development is disproportionately impacted by a required street connection, or it provides more than its proportionate share of street improvements along property line (i.e., by building more than 3/4 width street), the developer shall be entitled to System Development charge credits, as determined by the City Engineer.
- d. Driveways that are more than 24 feet in width shall align with existing streets or planned streets as shown in the Local Street Connectivity Map in the adopted Transportation System Plan (Figure 17), except where prevented by topography, rail lines, freeways, pre-existing development, or leases, easements, or covenants.

STAFF ANALYSIS: The Preliminary Plans (Exhibit A) are consistent with the City's TSP, Local Street Connectivity Map (Figure 18). The subdivision is divided into the northern and southern segments. The southern segment has one main access to SW Brookman road via SW Robin Hood Place. This roadway ends into a cul-de-sac due to significant natural resources (Cedar Creek). The northern segment is obtaining access from the proposed Middlebrook Subdivision to the west. The proposed streets (SW Atfalati Lane and SW Kalapuya Lane will be extended through this proposal. The northern segment also includes a north/south local street, SW Yamel Terrace, that will be constructed to ¾ width street and will provide a connection to the adjacent parcel to the east. The applicable criteria above are met.

3. Block Length.

For new streets except arterials, block length shall not exceed 530 feet. The length of blocks adjacent to arterials shall not exceed 1,800 feet.

STAFF ANALYSIS: All of the interior blocks are shorter than 530 feet in length as reflected in the preliminary plans, Exhibit A. SW Kalapuya Lane and SW Atfalati Lane are approximately 480 feet within the development and extends to the proposed streets from Middlebrook subdivision to the west. The proposal also includes a pedestrian connection between the two streets within the development to shorten the proposed pedestrian block length. Cedar Creek and its associated Flood Plain bisects the site, therefore, vehicular block connection to the south is not feasible. However, a pedestrian connection has been provided between the northern and southern segments of the site. The proposal does not include blocks along arterials. The criterion is met.

4. Where streets must cross water features identified in Title 3 of the Urban Growth Management Functional Plan (UGMFP), provide crossings at an average spacing of 800 to 1,200 feet, unless habitat quality or length of crossing prevents a full street connection.

STAFF ANALYSIS: The applicant is not proposing any full street connections over water features. This criterion is not applicable.

5. **Where full street connections over water features identified in Title 3 of the UGMFP cannot be constructed in centers, main streets and station communities (including direct connections from adjacent neighborhoods), or spacing of full street crossings exceeds 1,200 feet, provide bicycle and pedestrian crossings at an average spacing of 530 feet, unless exceptional habitat quality or length of crossing prevents a connection.**

STAFF ANALYSIS: The applicant is not proposing any full street connections over water features. The proposal includes a pedestrian connection over Cedar Creek and its Flood Plain. Therefore, these criteria are met.

6. **Pedestrian and Bicycle Connectivity. Paved bike and pedestrian access ways consistent with cross section standards in Figure 8-6 of the TSP shall be provided on public easements or right- of-way when full street connections are not possible, with spacing between connections of no more than 300 feet. Multi-use paths shall be built according to the Pedestrian and Bike Master Plans in the adopted TSP.**

STAFF ANALYSIS: The proposed subdivision design includes pedestrian paths in pedestrian access easement to allow for increased pedestrian connectivity. This criterion is met.

7. **Exceptions. Streets, bike, and pedestrian connections need not be constructed when any of the following conditions exists:**
 - a. **Physical or topographic conditions make a street or access way connection impracticable. Such conditions include but are not limited to freeways, railroads, steep slopes, wetlands or other bodies of water where a connection could not reasonably be provided.**
 - b. **Buildings or other existing development on adjacent lands physically preclude a connection now or in the future considering the potential for redevelopment; or**
 - c. **Where streets or access ways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or access way connection.**

STAFF ANALYSIS: As stated before, street connections cannot be created between the northern and southern segments of the site due to existing natural resources (Cedar Creek and its flood Plain). These resources further constrain block creation. The applicant provided an extensive network of pedestrian paths through pedestrian access easement to help mitigate the impact of the block lengths. The criteria are met.

C. Underground Utilities

All public and private underground utilities, including sanitary sewers and storm water drains, shall be constructed prior to the surfacing of streets. Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.

STAFF ANALYSIS: Per City Engineering, all new utilities shall be placed underground unless covered by exceptions noted under Section 16.118.040 and as approved by the City Engineer.

FINDING: This criterion is not met but can be satisfied with the condition below.

RECOMMENDED CONDITION: (A18) All new utilities shall be placed underground unless covered by exceptions noted under Section 16.1183.040, and as approved by the City Engineer.

D. Additional Setbacks

Generally additional setbacks apply when the width of a street right-of-way abutting a development is less than the standard width under the functional classifications in Section VI of the Community Development Plan. Additional setbacks are intended to provide unobstructed area for future street right-of-way dedication and improvements, in conformance with Section VI. Additional setbacks shall be measured at right angles from the centerline of the street.

	Classification	Additional Setback
1	Principal Arterial (99W)	61 feet
2	Arterial	37 feet
3	Collector	32 feet
4	Neighborhood Route	32 feet
5	Local	26 feet

FINDING: The streets proposed and adjacent to the site will be developed to standard width and additional setbacks are not required. Therefore, this criterion is not applicable.

16.106.040 Design

Standard cross sections showing street design and pavement dimensions are located in the City of Sherwood's Engineering Design Manual.

A. Reserve Strips

Reserve strips or street plugs controlling access or extensions to streets are not allowed unless necessary for the protection of the public welfare or of substantial property rights. All reserve strips shall be dedicated to the appropriate jurisdiction that maintains the street.

STAFF ANALYSIS: Reserve strips and street plugs are not included with this proposal. This criterion is not applicable.

B. Alignment

All proposed streets shall, as far as practicable, be in alignment with existing streets. In no case shall the staggering of streets create a "T" intersection or a dangerous condition. Street offsets of less than one hundred (100) feet are not allowed.

STAFF ANALYSIS: The preliminary plans (Exhibit A) shows that streets are planned to align in a safe manner. Streets are not offset by less than 100 feet and dangerous conditions are not created. This criterion is met.

FINDING: These criteria have been satisfied.

C. Future Extension

Where necessary to access or permit future subdivision or development of adjoining land, streets must extend to the boundary of the proposed development and provide the

required roadway width. Dead-end streets less than 100' in length must comply with the Engineering Design Manual.

A durable sign must be installed at the applicant's expense. The sign is required to notify the public of the intent to construct future streets. The sign must read as follows: "This road will be extended with future development. For more information, contact the City of Sherwood Engineering Department."

FINDING: The Conceptual Future Connectivity Plan, Sheet P7 of Exhibit A, the northern segment of the site shows an extension of streets from the approved development from the west, Middlebrook Subdivision. These same streets (SW Atfalati Lane and SW Kalapuya Lane) are extended through the northern segment of the site and could provide connections for potential future development to the east. A $\frac{3}{4}$ street (SW Yamel Terrace) is proposed that abuts the eastern property boundary, thereby creating the opportunity for future connection to the east. Each street complies with the Engineering Design Manual and the required signs will be installed per City standards.

The southern segment of the site is surrounded by Cedar Creek and its associated floodplain, wetlands, and vegetated areas to the north and west, and by an unnamed tributary to Cedar Creek to the east. One single street access to SW Brookman Road is proposed and no additional opportunities to connect streets are available.

This criterion is met to the extent practicable.

D. Intersection Angles

Streets shall intersect as near to ninety (90) degree angles as practical, except where topography requires a lesser angle. In all cases, the applicant shall comply with the Engineering Design Manual.

FINDING: As designed and shown in the preliminary plans, Exhibit A, new streets are planned to intersect near to 90-degree angles and comply with the Engineering Design Manual. This standard is met.

E. Cul-de-sacs

- 1. All cul-de-sacs shall be used only when exceptional topographical constraints, existing development patterns, or compliance with other standards in this code preclude a street extension and circulation. A cul-de-sac shall not be more than two hundred (200) feet in length and shall not provide access to more than 25 dwelling units.**
- 2. All cul-de-sacs shall terminate with a turnaround in accordance with the specifications in the Engineering Design Manual. The radius of circular turnarounds may be larger when they contain a landscaped island, parking bay in their center, Tualatin Valley Fire and Rescue submits a written request, or an industrial use requires a larger turnaround for truck access.**
- 3. Public easements, tracts, or right-of-way shall provide paved pedestrian and bicycle access ways at least 6 feet wide where a cul-de-sac or dead-end street is planned, to connect the ends of the streets together, connect to other streets, or connect to other existing or planned developments in accordance with the standards of this Chapter, the TSP, the Engineering Design Manual or other provisions identified in this Code for the preservation of trees.**

STAFF ANALYSIS: The applicant proposes a cul-de-sac (SW Robin Hood Place) in the southern segment of the site that provides access to 15 lots. Per the applicant's narrative, the cul-de-sac is necessary due to site constraints created by Cedar Creek and its floodplain to the north. The cul-de-sac is over 200 feet in length – SW Robin Hood Place is approximately 299-feet in length. The applicant will be required to obtain a Design Modification for the cul-de-sac length exceeding the 200-foot standard and is conditioned above in E8.

FINDING: Based on the above discussion, the criteria can be met as conditioned above, in this staff report.

F. Grades and Curves

Grades shall be evaluated by the City Engineer and comply with the Engineering Design Manual.

FINDING: The street grade has been designed in accordance with the City's Public Works Design Standards. This standard is met.

G. Streets Adjacent to Railroads

Streets adjacent to railroads shall run approximately parallel to the railroad and be separated by a distance suitable to allow landscaping and buffering between the street and railroad. Due consideration shall be given at cross streets for the minimum distance required for future grade separations and to provide sufficient depth to allow screening of the railroad.

FINDING: This criterion is not applicable; no proposed streets are planned adjacent to railroads.

H. Buffering of Major Streets

Where a development abuts Highway 99W, or an existing or proposed principal arterial, arterial or collector street, or neighborhood route, adequate protection for residential properties must be provided, through and local traffic be separated, and traffic conflicts minimized. In addition, visual corridors pursuant to Section 16.142.040, and all applicable access provisions of Chapter 16.96, are to be met. Buffering may be achieved by: parallel access streets, lots of extra depth abutting the major street with frontage along another street, or other treatment suitable to meet the objectives of this Code.

STAFF ANALYSIS: The applicant is proposing a 15-foot wide landscaped visual corridor along the SW Brookman Road - a County Arterial roadway. Requirements for the Visual Corridor along with conditions of approvals will be further discussed in the staff report under Section 16.142.040 Visual Corridors.

FINDING: Based on the discussion above, this criterion is met.

I. Median Islands

As illustrated in the adopted Transportation System Plan, Chapter 8, median islands may be required on arterial or collector streets for the purpose of controlling access, providing pedestrian safety or for aesthetic purposes.

FINDING: The frontage improvements along SW Brookman Road do not include a median at this time. This standard is not applicable.

J. Transit Facilities

Development along an existing or proposed transit route, as illustrated in Figure 7-2 in the TSP, is required to provide areas and facilities for bus turnouts, shelters, and other transit-related facilities to Tri-Met specifications. Transit facilities shall also meet the following requirements:

1. Locate buildings within 20 feet of or provide a pedestrian plaza at major transit stops.
2. Provide reasonably direct pedestrian connections between the transit stop and building entrances on the site.
3. Provide a transit passenger landing pad accessible to disabled persons (if not already existing to transit agency standards).
4. Provide an easement or dedication for a passenger shelter and underground utility connection from the new development to the transit amenity if requested by the public transit provider.
5. Provide lighting at a transit stop (if not already existing to transit agency standards).

FINDING: Transit System and Potential Enhancements, Figure 14, of the Transportation System Plan shows SW Brookman Road as a “Potential Local Enhancement”. However, as noted in Figure 14, these potential local enhancement areas could be selected for future enhancement through further planning studies. Therefore, SW Brookman Road is not considered an existing or proposed transit route and the criteria does not apply.

K. Traffic Controls

1. Pursuant to Section 16.106.080, or as otherwise required by the City Engineer, an application must include a traffic impact analysis to determine the number and types of traffic controls necessary to accommodate anticipated traffic flow.
2. For all other proposed developments including commercial, industrial or institutional uses with over an estimated 400 ADT, or as otherwise required by the City Engineer, the application must include a traffic impact analysis to determine the number and types of traffic controls necessary to accommodate anticipated traffic flow.

STAFF ANALYSIS: Per applicant’s narrative, a Transportation Impact Analysis (TIA) is included with the application, prepared by Kittelson and Associates, dated September 19, 2019. As discussed in the TIA, City of Sherwood Municipal Code Section 16.106.080 requires analysis of all intersections where fifty (50) or more peak hour vehicle trips can be expected to result from the development. The 12 intersections included in the TIA are identical to the Middlebrook Subdivision study for consistency; however, only the proposed shared site access on SW Brookman Road is projected to experience 50 or more peak hour vehicle trips resulting from this development.

The TIA found the following with regard to intersection impacts:

Four off-site study intersections were identified that require mitigation to comply with applicable agency requirements in the future. These mitigation measures are not triggered by the proposed development but rather by growth in regional traffic. As discussed herein, the proposed homes have an incremental additional traffic impact at each of the four intersections. The recommended mitigation associated with The Reserve at Cedar Creek development is:

With site development and subject to City review, pay a proportionate share contribution (estimated to be \$106,947 in total) towards future improvements at the following intersections:

- SW Sunset Boulevard / SW Woodhaven Drive (study intersection #2): \$19,849 toward the construction of a planned future traffic signal;
- SW Sunset Boulevard / SW Timbrel Lane (study intersection #3): \$14,858 toward the construction of a planned future mini-roundabout;
- SW Ladd Hill Road-SW Main Street / SW Sunset Boulevard (study intersection #4): \$17,025 toward the construction of a planned future traffic signal; and
- SW Baker Road-SW Murdock Road / SW Sunset Boulevard (study intersection #5): \$55,215 toward the construction of planned future north and southbound turn lanes.

FINDING: Based on the discussion above, the criteria is met.

L. Traffic Calming

1. **The following roadway design features, including internal circulation drives, may be required by the City in new construction in areas where traffic calming needs are anticipated:**
 - a. **Curb extensions (bulb-outs).**
 - b. **Traffic diverters/circles.**
 - c. **Alternative paving and painting patterns.**
 - d. **Raised crosswalks, speed humps, and pedestrian refuges.**
 - e. **Other methods demonstrated as effective through peer reviewed Engineering studies.**

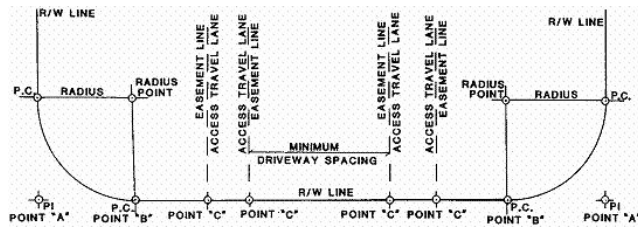
2. **With approval of the City Engineer, traffic calming measures such as speed humps and additional stop signs can be applied to mitigate traffic operations and/or safety problems on existing streets. They should not be applied with new street construction unless approved by the City Engineer and Tualatin Valley Fire & Rescue.**

FINDING: The applicant is not proposing and is not required to supply any of the above listed traffic calming measures. These criteria do not apply.

M. Vehicular Access Management

All developments shall have legal access to a public road. Access onto public streets shall be permitted upon demonstration of compliance with the provisions of adopted street standards in the Engineering Design Manual.

1. **Measurement: See the following access diagram where R/W = Right-of-Way; and P.I. = Point-of-Intersection where P.I. shall be located based upon a 90 degree angle of intersection between ultimate right-of-way lines.**
 - a. **Minimum right-of-way radius at intersections shall conform to City standards.**
 - b. **All minimum distances stated in the following sections shall be governed by sight distance requirements according to the Engineering Design Manual.**
 - c. **All minimum distances stated in the following sections shall be measured to the nearest easement line of the access or edge of travel lane of the access on both sides of the road.**
 - d. **All minimum distances between accesses shall be measured from existing or approved accesses on both sides of the road.**
 - e. **Minimum spacing between driveways shall be measured from Point "C" to Point "C" as shown below:**



2. Roadway Access

No use will be permitted to have direct access to a street or road except as specified below. Access spacing shall be measured from existing or approved accesses on either side of a street or road. The lowest functional classification street available to the legal lot, including alleys within a public easement, shall take precedence for new access points.

a. Local Streets:

Minimum right-of-way radius is fifteen (15) feet. Access will not be permitted within ten (10) feet of Point "B," if no radius exists, access will not be permitted within twenty-five (25) feet of Point "A." Access points near an intersection with a Neighborhood Route, Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. This requirement may result in access spacing greater than ten (10) feet.

b. Neighborhood Routes:

Minimum spacing between driveways (Point "C" to Point "C") shall be fifty (50) feet with the exception of single family residential lots in a recorded subdivision. Such lots shall not be subject to a minimum spacing requirement between driveways (Point "C" to Point "C"). In all instances, access points near an intersection with a Neighborhood Route, Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. This requirement may result in access spacing greater than fifty (50) feet.

c. Collectors:

All commercial, industrial and institutional uses with one-hundred-fifty (150) feet or more of frontage will be permitted direct access to a Collector. Uses with less than one-hundred-fifty (150) feet of frontage shall not be permitted direct access to Collectors unless no other alternative exists. Where joint access is available it shall be used, provided that such use is consistent with Section 16.96.040, Joint Access. No use will be permitted direct access to a Collector within one-hundred (100) feet of any present Point "A." Minimum spacing between driveways (Point "C" to Point "C") shall be one-hundred (100) feet. In all instances, access points near an intersection with a Collector or Arterial shall be located beyond the influence of standing queues of the intersection in accordance with AASHTO standards. This requirement may result in access spacing greater than one hundred (100) feet.

d. Arterials and Highway 99W - Points of ingress or egress to and from Highway 99W and arterials designated on the Transportation Plan Map, attached as Figure 1 of the Community Development Plan, Part II, shall be limited as follows:

- (1) Single and two-family uses and manufactured homes on individual residential lots developed after the effective date of this Code shall not be granted permanent driveway ingress or egress from Highway 99W or arterials. If alternative public access is not available at the time of development,

provisions shall be made for temporary access which shall be discontinued upon the availability of alternative access.

- (2) Other private ingress or egress from Highway 99W and arterial roadways shall be minimized. Where alternatives to Highway 99W or arterials exist or are proposed, any new or altered uses developed after the effective date of this Code shall be required to use the alternative ingress and egress. Alternatives include shared or crossover access agreement between properties, consolidated access points, or frontage or backage roads. When alternatives do not exist, access shall comply with the following standards:
 - (a) Access to Highway 99W shall be consistent with ODOT standards and policies per OAR 734, Division 51, as follows: Direct access to an arterial or principal arterial will be permitted provided that Point 'A' of such access is more than six hundred (600) feet from any intersection Point 'A' or other access to that arterial (Point 'C').
 - (b) The access to Highway 99W will be considered temporary until an alternative access to public right-of-ways is created. When the alternative access is available the temporary access to Highway 99W shall be closed.
- (3) All site plans for new development submitted to the City for approval after the effective date of this Code shall show ingress and egress from existing or planned local, neighborhood route or collector streets, including frontage or backage roads, consistent with the Transportation Plan Map and Chapter 6 of the Community Development Plan.

3. Exceptions to Access Criteria for City-Owned Streets

- a. Alternate points of access may be allowed if an access management plan which maintains the classified function and integrity of the applicable facility is submitted to and approved by the City Engineer as the access management plan must be included as part of the land use submittal or an application for modification as described in § 16.106.020E. (Transportation Facilities Modifications).
- b. Access in the Old Town (OT) Overlay Zone
Access points in the OT Overlay Zone shown in an adopted plan such as the Transportation System Plan, are not subject to the access spacing standards and do not need a variance. However, the applicant shall submit a partial access management plan for approval by the City Engineer. The approved plan shall be implemented as a condition of development approval.

STAFF ANALYSIS: The preliminary plans (Exhibit A) demonstrate that the vehicular access management standards above are met. The site does not access Highway 99W and is not in the Old Town Overlay District. The applicable criteria are met.

N. Private Streets

1. The construction of a private street serving a single-family residential development is prohibited unless it provides principal access to two or fewer residential lots or parcels (i.e. flag lots).
2. Provisions shall be made to assure private responsibility for future access and maintenance through recorded easements. Unless otherwise specifically authorized, a private street shall comply with the same standards as a public street identified in the Community Development Code and the Transportation System Plan.
3. A private street shall be distinguished from public streets and reservations or restrictions

relating to the private street shall be described in land division documents and deed records

5. A private street shall also be signed differently from public streets and include the words "Private Street".

FINDING: The proposal includes two private streets, labeled as Tracts A and G on the preliminary plans (Exhibit A). These private streets will each serve two single-family dwellings. A Homeowners Association will own and maintain these private streets as previously conditioned under B6. The criteria are met as conditioned.

16.106.060 Sidewalks

A. Required Improvements

1. Except as otherwise provided, sidewalks shall be installed on both sides of a public street and in any special pedestrian way within new development.
2. For Highway 99W, arterials, or in special industrial districts, the City Manager or designee may approve a development without sidewalks if alternative pedestrian routes are available.
3. In the case of approved cul-de-sacs serving less than fifteen (15) dwelling units, sidewalks on one side only may be approved by the City Manager or designee.

FINDING: As shown on P5, Overall Street Plan of Exhibit A, all new streets (with the exception of $\frac{3}{4}$ street improvement of SW Yamel Terrace and the two private street tracts) include sidewalks on both sides of the street. Sidewalks are also proposed within all pedestrian access easements. Frontage improvements along SW Brookman Road, including sidewalks, are deferred and the applicant is required to pay a fee-in-lieu for future construction. The applicable criteria are met.

B. Design Standards

1. Arterial and Collector Streets Arterial and collector streets shall have minimum eight (8) foot wide sidewalks/multi- use path, located as required by this Code.
2. Local Streets
Local streets shall have minimum five (5) foot wide sidewalks, located as required by this Code.
3. Handicapped Ramps
Sidewalk handicapped ramps shall be provided at all intersections.

STAFF ANALYSIS: SW Brookman Road is classified as an Arterial and is under the jurisdiction of Washington County. Frontage improvements along SW Brookman Road are required per City standards. However, to meet WACO standards for a 5-lane arterial, significant grading of the existing road section would need to take place. The cost of reconstructing SW Brookman Road to meet WACO design standards would be very expensive and not proportional to the impacts of a 59 lot subdivision. Given the significant grade differences required to meet WACO design standards, many frontage improvements along SW Brookman Road are being deferred until such time that SW Brookman Road is improved as a WACO capital improvement project. Given the improvement deferment, a fee in-lieu-of construction for the required frontage improvements will be required. The proposed local streets will have a minimum of five-foot wide sidewalks.

FINDING: These criteria are met.

C. Pedestrian and Bicycle Paths

Provide bike and pedestrian connections on public easements or right-of-way when full street connections are not possible, with spacing between connections of no more than 330 feet except where prevented by topography, barriers such as railroads or highways, or environmental constraints such as rivers and streams.

STAFF ANALYSIS: The planned subdivision provides bicycle and pedestrian connections where appropriate and possible. The criterion is met.

16.106.070 Bike Lanes

If shown in Figure 13 of the Transportation System Plan, bicycle lanes shall be installed in public rights-of-way, in accordance with City specifications. Bike lanes shall be installed on both sides of designated roads, should be separated from the road by a twelve-inch stripe or other means approved by Engineering Staff, and should be a minimum of five (5) feet wide.

FINDING: Figure 13 of the Transportation System Plan identifies proposed bicycle lanes on SW Brookman Road. SW Brookman Road is under the jurisdiction control of Washington County. The planned right-of-way dedication and interim improvements, as reflected in the preliminary plan of Exhibit A, are in accordance with Washington County standards. As previously discussed, many of the frontage improvements along SW Brookman Road are being deferred until such time SW Brookman Road is improved as a Washington County Capital Improvement Project. A fee-in-lieu of construction for the required frontage improvements will be required in condition E4. This criterion is met.

Traffic Impact Analysis (TIA)

A. Purpose

The purpose of this section is to implement Sections 660-012-0045(2)(b) and -0045(2)(e) of the State Transportation Planning Rule (TPR), which require the City to adopt performance standards and a process to apply conditions to land use proposals in order to minimize impacts on and protect transportation facilities. This section establishes requirements for when a traffic impact analysis (TIA) must be prepared and submitted; the analysis methods and content involved in a TIA; criteria used to review the TIA; and authority to attach conditions of approval to minimize the impacts of the proposal on transportation facilities.

This section refers to the TSP for performance standards for transportation facilities as well as for projects that may need to be constructed as mitigation measures for a proposal's projected impacts. This section also relies on the City's Engineering Design Manual to provide street design standards and construction specifications for improvements and projects that may be constructed as part of the proposal and mitigation measures approved for the proposal.

B. Applicability

A traffic impact analysis (TIA) shall be required to be submitted to the City with a land use application at the request of the City Engineer or if the proposal is expected to involve one (1) or more of the following:

- 1. An amendment to the Sherwood Comprehensive Plan or zoning map.**

2. A new direct property approach road to Highway 99W is proposed.
3. The proposed development generates fifty (50) or more PM peak-hour trips on Highway 99W, or one hundred (100) PM peak-hour trips on the local transportation system.
4. An increase in use of any adjacent street or direct property approach road to Highway 99W by ten (10) vehicles or more per day that exceed the twenty thousand-pound gross vehicle weight.
5. The location of an existing or proposed access driveway does not meet minimum spacing or sight distance requirements, or is located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, thereby creating a safety hazard.
4. A change in internal traffic patterns that may cause safety problems, such as back up onto the highway or traffic crashes in the approach area.

STAFF ANALYSIS: Per City Engineer Comments, **Exhibit B**, a TIA has been submitted and results identified four intersection impacts where proportionate share cost fee in-lieu-of construction amounts are recommended. The four listed intersections are:

- 1) SW Sunset Boulevard/SW Woodhaven Drive - \$19,849 for proportionate share cost of signalized intersection improvements.
- 2) SW Sunset Boulevard/SW Timbrel Lane - \$14,858 for proportionate share cost of traffic mini-roundabout improvements.
- 3) SW Ladd Hill Road-SW Main Street/SW Sunset Boulevard - \$17,025 for proportionate share cost of signalized intersection improvements.
- 4) SW Baker Road/SW Murdock Road/SW Sunset Boulevard - \$55,215 for proportionate share cost of addition of future intersection turn lanes improvements.

Given the current transportation planning efforts for SW Brookman Road, ODOT, WACO and the City feel that conditioning full improvement to the intersection of SW Brookman Road and Hwy 99W would not be in the best interest of ODOT, WACO and City or the applicant. If build-out intersection improvements were required to the SW Brookman Road/Hwy 99W intersection, it is viewed that a fully signalized intersection would possibly be required by ODOT. The cost of this level of improvement would probably not be proportional to the impacts that the development would create.

The applicant's TIA indicates that the SW Brookman Road/Hwy 99W intersection currently fails to meet capacity and mobility requirements. The TIA notes that the additional trips generated by the proposed development does not significantly increase the deficit capacity issue. The TIA did not identify any corrective action other than to say the future ODOT/WACO improvements to the intersection would alleviate the issue. However, the TIA performed for the adjacent Middlebrook Subdivision did identify a temporary mitigation measure of a right-turn lane that would be appropriate to mitigate development impacts.

As part of the Middlebrook Subdivision land use process, ODOT conditioned that the intersection of SW Brookman Road and Hwy 99W be converted into a right-in/right-out configuration, with a proportionate share fee in-lieu-of construction for a right turn lane being paid to the City in a set aside fund strictly dedicated to a future signalized intersection improvement. For comparison, the Middlebrook Subdivision was required to pay a fee in-lieu amount of \$109,430. The Middlebrook Subdivision is comprised of 145 single family lots, which means that a per lot fee in-lieu amount of \$754.69. Applying this per lot amount to the Reserve at Cedar Creek's 59 lots results in a proportionate share fee in-lieu amount of \$44,526.69.

Since the time of the Middlebrook Subdivision land use approval process, ODOT Region 2 modified the SW Brookman Road & Hwy 99W intersection requirements from right-in/right-out, to right-in/right-out with southbound left-in and eastbound through movements. In a letter from ODOT Region 1 dated January 30, 2020, six items of concern have been described with a conclusion that the TIA be revised to take into account the change in access requirements, and to assign mitigation requirements and proportional fee in-lieu-of construction payments accordingly. The January 30, 2020, ODOT letter is attached to these review comments for reference (**Exhibit D.1**).

FINDING: Based on the above discussion, the standards can be satisfied with the following conditions

RECOMMENDED CONDITION: (E9) Prior to Final Approval of Engineering Plans, the applicant shall pay fee in-lieu-of construction amounts as follows:

- SW Sunset Boulevard/SW Woodhaven Drive - \$19,849 for proportionate share cost of signalized intersection improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Woodhaven Drive & SW Sunset Boulevard signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards Washington County (WACO) TDT and/or City Transportation SDC fee assessments on the developments single-family residential units.
- SW Sunset Boulevard/SW Timbrel Lane - \$14,858 for proportionate share cost of traffic mini-roundabout improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Timbrel Lane & SW Sunset Boulevard traffic roundabout improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards WACO TDT and/or 54% credit eligible towards City Transportation SDC fee assessments on the developments single-family residential units.
- SW Ladd Hill Road-SW Main Street/SW Sunset Boulevard - \$17,025 for proportionate share cost of signalized intersection improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Ladd Hill Road-SW Main Street & SW Sunset Boulevard signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards WACO TDT and/or City Transportation SDC fee assessments on the developments single-family residential units.
- SW Baker Road/SW Murdock Road/SW Sunset Boulevard - \$55,215 for proportionate share cost of addition of future intersection turn lanes improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Baker Road-SW Murdock Road/SW Sunset Boulevard signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 75% credit eligible towards WACO TDT and/or 100% credit eligible towards City Transportation SDC fee assessments on the developments single-family residential units.
- SW Brookman Road/Hwy 99W - \$44,526.69 for proportionate share cost of addition of signalized intersection improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Brookman Road & Hwy 99W signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards Washington County (WACO) TDT fee assessments on the development of single-family residential units.

CHAPTER 16.110 SANITARY SEWERS

16.110.010 - Required Improvements

Sanitary sewers shall be installed to serve all new developments and shall connect to existing sanitary sewer mains. Provided, however, that when impractical to immediately connect to a trunk sewer system, the use of septic tanks may be approved, if sealed sewer laterals are installed for future connection and the temporary system meets all other applicable City, Clean Water Services, Washington County and State sewage disposal standards

STAFF ANALYSIS: Per City Engineering comments, the submitted plans show the connection of public sanitary sewer service mains to a public sanitary sewer trunk line. Authority for approval of the trunk line design lies with CWS, as part of the larger regional Brookman Sanitary Sewer Trunk Extension Project. This smaller portion of the regional trunk line is being constructed as part of the Middlebrook Estates Subdivision, ending at a point that provides access to the proposed Reserve at Cedar Creek subdivision project.

To allow for further extension of the Brookman Sanitary Sewer Trunk Extension Project the applicant will be conditioned to dedicate a 20-foot wide public sanitary sewer easement across the entirety of the applicant's property in alignment with the proposed Brookman Sanitary Sewer Trunk Extension Project as defined by CWS.

FINDING: As conditioned below, the proposed subdivision will be able to provide sanitary sewer.

RECOMMENDED CONDITION: (G4) Prior to Final Acceptance of Constructed Public Improvements, connection to that portion of the Brookman Sanitary Sewer Trunk Extension Project being constructed by the adjacent Middlebrook Subdivision, will not be permitted until such time as that portion of the sanitary trunk line have been constructed, have received final inspection approval, and have been accepted as public infrastructure by the City. Until that time, a minimum 10-foot physical separation between the Reserve at Cedar Creek site development public sanitary infrastructure improvements and the adjacent Middlebrook Subdivision public sanitary infrastructure improvements shall be maintained.

RECOMMENDED CONDITION: (G5) Prior to Final Acceptance of Constructed Public Improvements, all private sanitary laterals shall be installed in compliance with the current Oregon Plumbing Specialty Code.

RECOMMENDED CONDITION: (G6) Prior to Final Acceptance of Constructed Public Improvements, any public sanitary sewer to be located on private property shall have a recorded public sanitary sewer easement encompassing the related public sanitary sewer improvement meeting Sherwood Engineering standards.

RECOMMENDED CONDITION: (G7) Prior to Final Acceptance of Constructed Public Improvements, a 20-foot wide public sanitary sewer easement across the entirety of the applicant's property in alignment with the proposed Brookman Sanitary Sewer Trunk Line Extension project as specified by CWS, shall be dedicated to the City.

16.110.020 - Design Standards

A. Capacity

Sanitary sewers shall be constructed, located, sized, and installed at standards consistent with this Code, the Sanitary Sewer Service Plan Map in the Sanitary Sewer

Master Plan, and other applicable Clean Water Services and City standards, in order to adequately serve the proposed development and allow for future extensions.

B. Over-Sizing

1. When sewer facilities will, without further construction, directly serve property outside a proposed development, gradual reimbursement may be used to equitably distribute the cost of that over-sized system.

2. Reimbursement shall be in an amount estimated by the City to be a proportionate share of the cost for each connection made to the sewer by property owners outside of the development, for a period of ten (10) years from the time of installation of the sewers. The boundary of the reimbursement area and the method of determining proportionate shares shall be determined by the City. Reimbursement shall only be made as additional connections are made and shall be collected as a surcharge in addition to normal connection charges.

STAFF ANALYSIS: As discussed and conditioned above, this criterion can be satisfied.

16.110.030 Service Availability

Approval of construction plans for new facilities pursuant to Chapter 16.106, and the issuance of building permits for new development to be served by existing sewer systems shall include certification by the City that existing or proposed sewer facilities are adequate to serve the development

STAFF ANALYSIS: As discussed and conditioned above, this criterion can be satisfied.

CHAPTER 16.112 - WATER SUPPLY

16.112.010 Required Improvements

Water lines and fire hydrants conforming to City and Fire District standards shall be installed to serve all building sites in a proposed development. All waterlines shall be connected to existing water mains or shall construct new mains appropriately sized and located in accordance with the Water System Master Plan.

STAFF ANALYSIS: Per City Engineering comments, the proposed development submittal indicates the extension of the public water system previously constructed by the Middlebrook Subdivision. The extension through the northern development area will loop an 8-inch waterline down SW Atfalati Lane, SW Yamel Terrace and back on SW Kalapuya Lane. The southern development area portion will extend a new 12-inch line down SW Brookman Road from the line constructed with the Middlebrook Subdivision. The 12-Inch line will extend along the SW Brookman Road right-of-way from property line to property line. Then a new 8-inch line will be constructed from the 12-inch line in SW Brookman Road north along the SW Robin Hood Place alignment to the end of the cul-de-sac.

FINDING: As conditioned below, the proposed subdivision will be able to provide water service.

RECOMMENDED CONDITION: (E10) Prior to Final Approval of Engineering Plans, the Engineering Department shall provide review and approval of related public water improvement plans and reports. Public water system plans shall meet City standards. All public water pipes shall have joint restraints.

RECOMMENDED CONDITION: (E11) Prior to Final Approval of Engineering Plans, the applicant shall obtain and provide a letter from Sherwood Public Works Department, that the existing public water system has the capacity and pressure to provide appropriate public water and fire service to the proposed development.

RECOMMENDED CONDITION: (G8) Prior to Final Acceptance of Constructed Public Improvements, connection to that portion of the public water system being constructed by the adjacent Middlebrook Subdivision, will not be permitted until such time as that portion of the public water system is constructed, has received final inspection approval, and is accepted as public infrastructure by the City. Until that time, a minimum 10-foot physical separation between the proposed site development public water system and the Middlebrook Subdivision public water systems shall be maintained.

RECOMMENDED CONDITION: (G9) Prior to Final Acceptance of Constructed Public Improvements, the installation of the 12-inch waterline running down SW Brookman Road, shall extend the entire length of the property frontage right-of-way line.

RECOMMENDED CONDITION: (H6) Prior to Issuance of Occupancy of any residential lot structures, all service laterals shall be installed in compliance with the current Oregon Plumbing Specialty Code.

16.112.020 Design Standards

A. Capacity

Water lines providing potable water supply shall be sized, constructed, located and installed at standards consistent with this Code, the Water System Master Plan, the City's Design and Construction Manual, and with other applicable City standards and specifications, in order to adequately serve the proposed development and allow for future extensions.

STAFF ANALYSIS: Per the City Code, water services will be required for all new lots within the proposed subdivision. As conditioned above, this subdivision will satisfy this criterion.

B. Fire Protection

All new development shall comply with the fire protection requirements of Chapter 16.116, the applicable portions of Chapter 7 of the Community Development Plan, and the Fire District.

STAFF ANALYSIS: Tom Mooney, Deputy Fire Marshal, Tualatin Valley Fire and Rescue submitted a review letter dated January 21, 2020, **Exhibit E**, addressing no parking signage on the private streets, fire hydrant flow test or modeling requirement, and other applicable standards. This is further discussed in Chapter 16.116 of this report.

FINDING: This standard is not, met but can be as conditioned below in F5.

C. Over-Sizing

- 1. When water mains will, without further construction, directly serve property outside a proposed development, gradual reimbursement may be used to equitably distribute the cost of that over-sized system.**

2. Reimbursement shall be in an amount estimated by the City to be the proportionate share of the cost of each connection made to the water mains by property owners outside the development, for a period of ten (10) years from the time of installation of the mains. The boundary of the reimbursement area and the method of determining proportionate shares shall be determined by the City. Reimbursement shall only be made as additional connections are made and shall be collected as a surcharge in addition to normal connection charges.
3. When over-sizing is required in accordance with the Water System Master Plan, it shall be installed per the Water System Master Plan. Compensation for over-sizing may be provided through direct reimbursement, from the City, after mainlines have been accepted. Reimbursement of this nature would be utilized when the cost of over-sizing is for system wide improvements.

STAFF ANALYSIS: As discussed and conditioned above, this criterion will be satisfied.

16.112.030 Service Availability

Approval of construction plans for new water facilities pursuant to Chapter 16.106, and the issuance of building permits for new development to be served by existing water systems shall include certification by the City that existing or proposed water systems are adequate to serve the development.

STAFF ANALYSIS: As discussed and conditioned above, this criterion will be satisfied.

CHAPTER 16.114 - STORM WATER

16.114.010 - Required Improvements

Storm water facilities, including appropriate source control and conveyance facilities, shall be installed in new developments and shall connect to the existing downstream drainage systems consistent with the Comprehensive Plan and the requirements of the Clean Water Services water quality regulations contained in their Design and Construction Standards R&O 04-9, or its replacement.

16.114.020 - Design Standards

A. Capacity

Storm water drainage systems shall be sized, constructed, located, and installed at standards consistent with this Code, the Storm Drainage Master Plan Map, attached as Exhibit E, Chapter 7 of the Community Development Plan, other applicable City standards, the Clean Water Services Design and Construction Standards R&O 04-9 or its replacement, and hydrologic data and improvement plans submitted by the developer.

B. On-Site Source Control

Storm water detention and groundwater recharge improvements, including but not limited to such facilities as dry wells, detention ponds, and roof top ponds shall be constructed according to Clean Water Services Design and Construction Standards.

C. Conveyance System

The size, capacity and location of storm water sewers and other storm water conveyance improvements shall be adequate to serve the development and accommodate upstream

and downstream flow. If an upstream area discharges through the property proposed for development, the drainage system shall provide capacity to the receive storm water discharge from the upstream area. If downstream drainage systems are not sufficient to receive an increase in storm water caused by new development, provisions shall be made by the developer to increase the downstream capacity or to provide detention such that the new development will not increase the storm water caused by the new development.

STAFF ANALYSIS: Per City Engineering, the proposed development submittal included an Amended Service Provider Letter issued by CWS (File No.19-001036), **Exhibit F.2.**

A preliminary stormwater drainage report prepared by PDG, dated April 15th, 2019 has been submitted. Within the preliminary drainage report the following important items are noted:

- 1) There is an existing flood plain on the property with a 100-year flood plain elevation of 176.
- 2) Cedar Creek runs southwest to northeast through the center of the property (between the northern development area and the southern development area).
- 3) There are no identified downstream conveyance system deficiencies within 1/4 mile of the site, hence no on-site detention is required.
- 4) Two separate stormwater treatment swales will be provided, one for the northern development area and one for the southern development area. These treatment swales are designed to meet CWS standards.

Land Use Application was submitted to the City prior to April 22, 2019. Under CWS regulations, the application is eligible to be conditioned under CWS regulations and policies in-place prior to the changes in regulations and policies requiring hydromodification.

An environmental report prepared by ESA described an existing culvert crossing of Cedar Creek used for private access to the northern part of the existing tax lot from the southern part. No analysis of the condition of this culvert has been provided in the stormwater report, particularly for continued use as a vehicular access between development areas.

Clean Water Services correspondence dated February 3, 2020, states that the site is currently outside the jurisdictional boundary of Clean Water Services. The site must complete the annexation process in order for public sanitary or storm sewer services to be provided. Furthermore, a storm water connection permit authorization will be required prior to plat approval and recordation. Application for a CWS Permit Authorization must be in accordance with the requirements of the Design and Construction Standards, Resolution and Order No. 17-5 (or current R&O in effect at the time of Engineering plan submittal). **Exhibit F.1.**

FINDING: As conditioned below, the proposed subdivision will be able to provide stormwater service.

RECOMMENDED CONDITION: (B9) Prior to Final Plat Approval, the site shall annex into Clean Water Services Service District.

RECOMMENDED CONDITION: (B10) Prior to Final Plat Approval, the stormwater treatment facilities shall be shown as being located in individual tracts of land dedicated to the City of Sherwood.

RECOMMENDED CONDITION: (B11) Prior to Final Plat Approval, an easement over the vegetated corridors tracts of land granting access to CWS shall be recorded with the plat.

RECOMMENDED CONDITION: (C2) Prior to Issuance of an Engineering Compliance Agreement, the applicant shall obtain a Stormwater Connection Permit issued from CWS per Exhibit F.

RECOMMENDED CONDITION: (E12) Prior to Final Engineering Plan Approval, submitted site development plans shall provide for compliance with all requirements and conditions stated in the CWS issued Amended Service Provider Letter (File No. 19-001036).

RECOMMENDED CONDITION: (E13) Prior to Final Engineering Plan Approval, a structural condition analysis and report shall be performed by a licensed professional engineer, to determine if the structural integrity of this culvert is sufficient for continued use as a vehicle/pedestrian infrastructure. If the culvert is found to be unfit for continued use, replacement of the culvert may be required which may include acquisition of any necessary State or Federal permits (CWS, DEQ, USACE, NMFS, etc.). Any necessary permits and associated requirements will also become part of the Final Engineering Plan Approval requirements.

RECOMMENDED CONDITION: (E14) Prior to Final Engineering Plan Approval, submitted site development stormwater improvement plans shall provide for City access to stormwater outfall/outlet structures for maintenance purposes.

RECOMMENDED CONDITION: (E15) Prior to Final Engineering Plan Approval, a Final Stormwater Drainage Report shall be provided to City Engineering for review and approval.

RECOMMENDED CONDITION: (E16) Prior to Final Engineering Plan Approval, a Stormwater Connection Permit shall be obtained from CWS.

RECOMMENDED CONDITION: (G10) Prior to Final Acceptance of Constructed Public Improvements, the proposed development shall provide stormwater improvements as needed to serve new street and lot improvements meeting CWS and City of Sherwood standards.

RECOMMENDED CONDITION: (G11) Prior to Final Acceptance of Constructed Public Improvements, any public stormwater system that is located on private property shall have a recorded public stormwater easement encompassing the related public stormwater sewer improvement meeting Sherwood Engineering standards.

RECOMMENDED CONDITION: (H7) Prior to Grant of Occupancy for any building, the proposed development shall provide storm sewer improvements as needed to serve new street improvements and service all parcels within the subject development meeting CWS and City standards.

RECOMMENDED CONDITION: (G12) Prior to Final Acceptance of Constructed Public Improvements, all private stormwater laterals shall be installed in compliance with the current Oregon Plumbing Specialty Code.

16.114.030 Service Availability

Approval of construction plans for new storm water drainage facilities pursuant to Chapter 16.106, and the issuance of building permits for new development to be served by existing storm water drainage systems shall include certification by the City that existing or proposed drainage facilities are adequate to serve the development.

STAFF ANALYSIS: This application does not include the approval of construction plans and therefore this criterion is not applicable.

CHAPTER 16.116 FIRE PROTECTION

16.116.010 - Required Improvements

When land is developed so that any commercial or industrial structure is further than two hundred and fifty (250) feet or any residential structure is further than five hundred (500) feet from an adequate water supply for fire protection, as determined by the Fire District, the developer shall provide fire protection facilities necessary to provide adequate water supply and fire safety.

STAFF ANALYSIS: The Preliminary Composite Utility Plan, Sheet P6 of Exhibit A, shows planned fire protection facilities. Tom Mooney, Deputy Fire Marshal, Tualatin Valley Fire and Rescue submitted comments dated January 21, 2020, and states the fire hydrant locations acceptable as per plans on Sheet P6.

He also highlights the following requirements:

- Install no parking signs along Tract A and Tract G on both sides.
- Provide documentation of fire hydrant flow test or modeling.
- If private hydrants will be installed, then TVF&R will review and field inspect the installation.

FINDINGS: Based on the discussion above, the criterion can be met as conditioned below.

RECOMMENDED CONDITION: (F5) Prior to the issuance of building permits for the propose subdivision, the applicant shall provide the Planning Department with a letter or email, from TVFR District Fire marshal that indicates the concerns within his letter, attached as Exhibit E, have been addressed to the district's satisfaction.

16.116.020 Standards

A. Capacity

All fire protection facilities shall be approved by and meet the specifications of the Fire District, and shall be sized, constructed, located, and installed consistent with this Code, Chapter 7 of the Community Development Plan, and other applicable City standards, in order to adequately protect life and property in the proposed development.

B. Fire Flow

Standards published by the Insurance Services Office, entitled "Guide for Determination of Required Fire Flows" shall determine the capacity of facilities required to furnish an adequate fire flow. Fire protection facilities shall be adequate to convey quantities of water, as determined by ISO standards, to any outlet in the system, at no less than twenty (20) pounds per square inch residual pressure. Water supply for fire protection purposes shall be restricted to that available from the City water system. The location of hydrants shall be taken into account in determining whether an adequate water supply exists.

C. Access to Facilities

Whenever any hydrant or other appurtenance for use by the Fire District is required by this Chapter, adequate ingress and egress shall be provided. Access shall be in the form of an improved, permanently maintained roadway or open paved area, or any combination thereof, designed, constructed, and at all times maintained, to be clear and unobstructed. Widths, height clearances, ingress and egress shall be adequate for District firefighting equipment. The Fire District, may further prohibit vehicular parking along private accessways in order to keep them clear and unobstructed, and cause notice to that effect to be posted.

D. Hydrants

Hydrants located along private, accessways shall either have curbs painted yellow or otherwise marked prohibiting parking for a distance of at least fifteen (15) feet in either direction, or where curbs do not exist, markings shall be painted on the pavement, or signs erected, or both, given notice that parking is prohibited for at least fifteen (15) feet in either direction.

16.116.030 Miscellaneous Requirements

A. Timing of Installation

When fire protection facilities are required, such facilities shall be installed and made serviceable prior to or at the time any combustible construction begins on the land unless, in the opinion of the Fire District, the nature or circumstances of said construction makes immediate installation impractical.

B. Maintenance of Facilities

All on-site fire protection facilities, shall be maintained in good working order. The Fire District may conduct periodic tests and inspection of fire protection and may order the necessary repairs or changes be made within ten (10) days.

C. Modification of Facilities

On-site fire protection facilities, may be altered or repaired with the consent of the Fire District; provided that such alteration or repairs shall be carried out in conformity with the provisions of this Chapter.

STAFF ANALYSIS: As designed, the Reserve at Cedar Creek subdivision is planned with new lots within 500 feet from a fire hydrant. The planned subdivision does include two private streets that are conditioned to be posted with No Parking signs on both sides of the street.

FINDING: The applicant will be able to meet all applicable criteria in this section as conditioned above. The applicant will need to address and satisfy all requirements in the Deputy Fire Marshall's letter dated, January 21, 2020, as shown in Exhibit E.

CHAPTER 16.118 - PUBLIC AND PRIVATE UTILITIES

16.118.010 - Purpose

Public telecommunication conduits as well as conduits for franchise utilities including, but not limited to, electric power, telephone, natural gas, lighting, and cable television shall be installed to serve all newly created lots and developments in Sherwood.

16.118.020 - Standard

- A. Installation of utilities shall be provided in public utility easements and shall be sized, constructed, located and installed consistent with this Code, Chapter 7 of the Community Development Code, and applicable utility company and City standards.**
- B. Public utility easements shall be a minimum of eight (8) feet in width unless a reduced width is specifically exempted by the City Engineer. An eight-foot wide public utility easement (PUE) shall be provided on private property along all public street frontages. This standard does not apply to developments within the Old Town Overlay.**
- C. Where necessary, in the judgment of the City Manager or his designee, to provide for orderly development of adjacent properties, public and franchise utilities shall be extended through the site to the edge of adjacent property(ies).**
- D. Franchise utility conduits shall be installed per the utility design and specification standards of the utility agency.**
- E. Public Telecommunication conduits and appurtenances shall be installed per the City of Sherwood telecommunication design standards.**
- F. Exceptions: Installation shall not be required if the development does not require any other street improvements. In those instances, the developer shall pay a fee in lieu that will finance installation when street or utility improvements in that location occur.**

FINDING: As shown on Sheet P3, Preliminary Plat of Exhibit A, all planned lots are provided with an 8-foot wide public utility easement along the adjacent street frontage. This utility easement is intended to provide adequate area for franchise utilities. To satisfy the standards in this section the following conditions are recommended.

RECOMMENDED CONDITION: (B12) Prior to Final Approval of Plat, the applicant shall show a minimum 8-foot wide public utility easement (PUE) on private property along all public street frontages unless otherwise approved by the City Engineer.

RECOMMENDED CONDITION: (G13) Prior to Final Acceptance of Public Improvements, Sherwood Broadband utilities (vaults and conduits) shall be installed along the subject property's frontage per requirements set forth in City Ordinance 2005-017 and City Resolution 2005-074.

16.118.030 Underground Facilities

Except as otherwise provided, all utility facilities, including but not limited to, electric power, telephone, natural gas, lighting, cable television, and telecommunication cable, shall be placed underground, unless specifically authorized for above ground installation, because the points of connection to existing utilities make underground installation impractical, or for other reasons deemed acceptable by the City.

STAFF ANALYSIS: Per City Engineering, all new utilities shall be placed underground per City of Sherwood standards. Underground facilities were previously addressed and conditioned (A18) above in section 16.106.030 of the staff report. This criterion is met.

16.118.040 Exceptions

Surface-mounted transformers, surface-mounted connection boxes and meter cabinets, temporary utility service facilities during construction, high capacity electric and communication feeder lines, and utility transmission lines operating at fifty thousand (50,000) volts or more may be located above ground. The City reserves the right to approve location of all surface-mounted transformers.

STAFF ANALYSIS: The applicant's criterion is not applicable, as no exception is being proposed.

16.118.050 Private Streets

The construction of new private streets, serving single-family residential developments shall be prohibited unless it provides principal access to two or fewer residential lots or parcels i.e. flag lots. Provisions shall be made to assure private responsibility for future access and maintenance through recorded easements. Unless otherwise specifically authorized, a private street shall comply with the same standards as a public street identified in the Community Development Code and the Transportation System Plan. A private street shall be distinguished from public streets and reservations or restrictions relating to the private street shall be described in land division documents and deed records. A private street shall also be signed differently from public streets and include the words "Private Street".

STAFF ANALYSIS: Two private streets are included in this proposal and are reflected as Tracts A and G. These private streets will each serve two single-family dwellings and will be dedicated on the plat as private streets. Tracts A and G will be owned and maintained by the Homeowners Association.

FINDINGS: This standard is met as discussed above and as previously conditioned under B6 of ownership and maintenance of Tracts A and G.

D. Division VIII: ENVIRONMENTAL RESOURCES

CHAPTER 16.134 FLOODPLAIN (FP) OVERLAY

16.134.010 - Generally

Special resource zones are established to provide for preservation, protection, and management of unique natural and environmental resources in the City that are deemed to require additional standards beyond those contained elsewhere in this Code. Special resource zones may be implemented as underlying or overlay zones depending on patterns of property ownership and the nature of the resource. A property or properties may be within more than one resource zone. In addition, the City may identify special resource areas and apply a PUD overlay zone in advance of any development in order to further protect said resources.

The areas of special flood hazard identified by the Federal Insurance Administration in a scientific and engineering report entitled, "The Flood Insurance Study for Washington County, Oregon and Incorporated Areas," (flood insurance study) dated October 19, 2018, with accompanying Flood Insurance Maps are hereby adopted by reference and declared to be a part of this ordinance. The Flood Insurance Study is on file with the Sherwood City Engineer at Sherwood City Hall.

16.134.020 - Purpose

The purpose of this ordinance is to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by complying with the provisions of this chapter.

- A. The FP zoning district is an overlay district that controls and regulates flood hazard areas in order to protect the public health, safety and general welfare; to reduce potential flood damage losses; and to protect floodways and natural drainageways from encroachment by uses which may adversely affect water

quality and water flow and subsequent upstream or downstream flood levels. The FP zone shall be applied to all areas within the base flood, and shall supplement the regulations of the underlying zoning district.

- B. FP zoning districts are areas within the base flood as identified by the Federal Emergency Management Agency (FEMA) in a Flood Insurance Study (FIS) and in Flood Insurance Rate Maps (FIRM) published for the City and surrounding areas, or as otherwise identified in accordance with Section 16.134.020C. These FEMA documents are adopted by reference as part of this Code, and are on file at the City.
- C. When base flood elevation data is not available from the FIS or FIRM, the City shall obtain, review, and reasonably utilize any base flood elevation and floodway data available from a federal, state, or other source, and standards developed by the FEMA, in order to administer the provisions of this Code.
- D. In areas where a regulatory floodway has not been designated, and where the Flood Insurance Study indicates that it is possible to calculate a floodway, no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

FINDING: Cedar Creek flows from west to east across the site, dividing the site into north and south development areas. An environmental assessment report prepared by ESA, dated August 15, 2019, has been included in the submittal, along with a Wetland Delineation Report approval letter from DSL (WD# 2019-0476). The site abuts wetlands that include a FEMA defined 100-year flood plain limit. The submitted plans identify the flood plain limits which indicates a flood plain elevation between 166 and 168. Per the applicant's narrative, the base flood elevation of Cedar Creek closest to the site is approximately 176 feet above MSL. The lowest elevation on the subject site is approximately 164 feet, adjacent to the existing driveway crossing. These criteria are applicable.

16.134.030 - Greenways

The FP zoning districts overlaying the Rock Creek and Cedar Creek floodplains are designated greenways in accordance with Chapter 5 of the Community Development Plan. All development in these two floodplains shall be governed by the policies in Division V, Chapter 16.142 of this Code, in addition to the requirements of this Section and the Clean Water Services Design and Construction Standards R&O 07-20, or its replacement.

16.134.040 - Development Review and Floodplain Administrator Duties

- A. The City Engineer is the designated local Floodplain Administrator and is responsible for maintaining local floodplain management records for the City.
- B. Provided land is not required to be dedicated as per Section 16.134.030, a conditional use permit (CUP) is required before any use, construction, fill, or alteration of a floodplain, floodway, or watercourse, or any other development begins within any FP zone, except as provided in Section 16.134.050.
- C. Application for a CUP for development in a floodplain shall conform to the requirements of Chapter 16.82 and may include, but is not limited to, plans and scale drawings showing the nature, location, dimensions, and elevations of the area in

question, existing or proposed structures, fill, storage of materials, and drainage facilities.

- D.** The following specific information is required in a floodplain CUP application and shall be certified and verified by a registered civil engineer or architect. The City shall maintain such certifications as part of the public record. All certifications shall be based on the as-built elevations of lowest building floors.
- 1.** Elevations in relation to the current FIRM and FIS of the lowest floor (including basement) of all structures;
 - 2.** Elevations in relation to the current FIRM and FIS to which any structure has been flood proofed.
 - 3.** That the flood proofing methods for any structure meet the requirements of this section, Floodplain Structures.
 - 4.** Description of the extent to which any watercourse will be altered or relocated as a result of the proposed development.
 - 5.** A base flood survey and impact study made by a registered civil engineer.
 - 6.** Proof all necessary notifications have been sent to, and permits have been obtained from, those federal, state, or other local government agencies for which prior approval of the proposed development is required.
 - 7.** Any other information required by this section, by any applicable federal regulations, or as otherwise determined by the City to be necessary for the full and proper review of the application.
- E.** The floodplain administrator shall review all development permits to determine if the proposed development is located in the floodway. If located in the floodway, assure that the encroachment provisions of Section 16.134.070.F are met.
- F.** Where base flood elevation data is provided through the Flood Insurance Study, FIRM or required under Section 16.134.020.C the local Floodplain Administrator shall:
- 1.** Obtain and record the actual elevation (in relation to mean sea level) of the lowest floor (including basement) of all new and substantially improved structures, and
 - 2.** If the structure has been floodproofed in accordance with Sections 16.134.090.A.3 and D.1.a, then obtain the elevation (in relation to mean sea level) to which the structure was floodproofed, and
 - 3.** Maintain all elevation and floodproofing certificates required under Section 16.134.040.D, and
 - 4.** Maintain for public inspection all records pertaining to the provisions of this ordinance.
- G.** Where elevation data is not available as per subsection D of this section, or from other sources as per Section 16.134.020.C, a floodplain CUP shall be reviewed using other relevant data, as determined by the City, such as historical information, high water marks, and other evidence of past flooding. The City may require utility structures and habitable building floor elevations, and building flood proofing, to be at least two feet above the probable base flood elevation, in such circumstances where more definitive flood data is not available.
- H.** The floodplain administrator shall:
- 1.** Notify adjacent communities, the Department of Land Conservation and Development and other appropriate state and federal agencies, prior to any alteration or relocation of a watercourse, and submit evidence of such notification to the Federal Insurance Administration as required in Section 16.134.100.C.
 - 2.** Require that maintenance is provided within the altered or relocated portion of said watercourse so that the flood carrying capacity is not diminished.

- I. The floodplain administrator shall make interpretations where needed, as to exact location of the boundaries of the areas of special flood hazards (for example, where there appears to be a conflict between a mapped boundary and actual field conditions). The person contesting the location of the boundary shall be given a reasonable opportunity to appeal the interpretation. Such appeals shall be granted consistent with the standards of Section 60.6 of the Rules and Regulations of the National Flood Insurance Program (44 CFR 59-76).
- J. Variances to any standard within the floodplain overlay shall comply with the provisions of the Code of Federal Regulations (CFR) section 44 CFR 60.6(a)(1)-(7).

16.134.050 - Permitted Uses

In the FP zone the following uses are permitted outright, and do not require a CUP, provided that floodway flow, or floodplain capacity, will not be impeded, as determined by the City, and when greenway dedication is not required as per Section 16.134.030.

- A. Agricultural uses, provided that associated structures are not allowed, except for temporary building and boundary fences that do not impede the movement of floodwaters and flood-carried materials.
- B. Open space, park and recreational uses, and minor associated structures, if otherwise allowed in the underlying zoning district that do not impede the movement of floodwaters and flood-carried materials.
- C. Public streets and appurtenant structures, and above and underground utilities, subject to the provisions of Sections 16.134.080 and 16.134.090.
- D. Other accessory uses allowed in the underlying zoning district that do not involve structures, and will not, in the City's determination, materially alter the stability or *storm drainage absorption capability of the floodplain*.

16.134.060 - Conditional Uses

In the FP zone the following uses are permitted as conditional uses, subject to the provisions of this Section and Chapter 16.82, when greenway dedication is not required as per this Section.

Greenways:

- A. Any permitted or conditional use allowed in the underlying zoning district, when located in the flood fringe only, as specifically defined by this Code.

16.134.070 - Prohibited Uses

In the FP zone the following uses are expressly prohibited:

- A. The storage or processing of materials that are buoyant, flammable, contaminants, explosive, or otherwise potentially injurious to human, animal or plant life.
- B. Public and private sewerage treatment systems, including drainfields, septic tanks and individual package treatment plants.
- C. Any use or activity not permitted in the underlying zoning district.
- D. Any use or activity that, in the City's determination, will materially alter the stability or storm drainage absorption capability of the floodplain.
- E. Any use or activity that, in the City's determination, could create an immediate or potential hazard to the public health, safety and welfare, if located in the floodplain.
- F. Any use, activity, or encroachment located in the floodway, including fill, new construction, improvements to existing developments, or other development,

except as otherwise allowed by Section 16.134.050 and unless certification by a registered professional engineer or architect is provided demonstrating through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the use, activity, or encroachment will not result in any increase to flood levels during the occurrence of the base flood discharge.

- a. If paragraph F of this section is satisfied, all new construction and substantial improvements shall comply with all applicable flood hazard provisions of Sections 16.134.080 and .090, or ASCE 24, whichever is more stringent.
- G. The storage of recreational vehicles. This is the most restrictive provision wherein.

16.134.080 - Floodplain Development

A. Floodplain Alterations

1. Floodplain Survey

The floodplain, including the floodway and flood fringe areas, shall be surveyed by a registered land surveyor or civil engineer, and approved by the City, based on the findings of the flood insurance study and other available data. Such delineation shall be based on the current FIRM and FIS data and be field-located from recognized valid benchmarks.

2. Grading Plan

Alteration of the existing topography of floodplain areas may be made upon approval of a grading plan by the City. The plan shall include both existing and proposed topography and a plan for alternate drainage. Contour intervals for existing and proposed topography shall be included and shall be not more than one foot for ground slopes up to five percent (5%) and for areas immediately adjacent to a stream or drainage way, two feet for ground slopes between five and ten percent (5% to 10%), and five feet for greater slopes.

3. Fill and Diked Lands

- a. Proposed floodplain fill or diked lands may be developed if a site plan for the area to be altered within the floodplain is prepared and certified by a registered civil engineer and approved by the Commission pursuant to the applicable provisions of this Code.
- b. Vehicular access shall be provided from a street above the elevation of the base flood to any proposed fill or dike area if the area supports structures for human occupancy. Unoccupied fill or dike areas shall be provided with emergency vehicle access.

4. Alteration Site Plan

- a. The certified site plan prepared by a registered civil engineer or architect for an altered floodplain area shall show that:
 - (1) Proposed improvements will not alter the flow of surface water during flooding such as to cause a compounding of flood hazards or changes in the direction or velocity of floodwater flow.
 - (2) No structure, fill, storage, impervious surface or other uses alone, or in combination with existing or future uses, will materially reduce the capacity of the floodplain or increase in flood heights.
 - (3) Proposed floodplain fill or diked areas will benefit the public health, safety and welfare and incorporate adequate erosion and storm drainage controls, such as pumps, dams and gates.
 - (4) No serious environmental degradation shall occur to the natural features and existing ecological balance of upstream and downstream areas.

- (5) On-going maintenance of altered areas is provided so that flood-carrying capacity will not be diminished by future erosion, settling, or other factors.**
- b. Applicants must obtain a conditional letter of map revision (CLOMR) from FEMA before any encroachment, including fill, new construction, substantial improvement, or other development, in the regulatory floodway is permitted. Applicants are responsible for preparing technical data to support the CLOMR application and paying any processing or application fees to FEMA.**

FINDING: Per applicant's narrative, the applicant has obtained the base flood elevation from FEMA Maps for the site and Cedar Creek, and has mapped the flood elevation on plans submitted with the application. As designed, no permanent impact to the Cedar Creek flood plain, which is proposed to be contained entirely within the boundaries of Tract C, are anticipated and therefore the requirements listed above generally are not applicable to the application. Pedestrian and bicycle trails within the flood plain will utilize existing formed hard surface areas, including the crossing of Cedar Creek, which will utilize the existing driveway culvert crossing. Uses in the floodplain area will be limited to the pedestrian and bicycle trail, and temporary impacts to the flood plain for public utilities, both of which are identified as permitted uses under Section 16.134.050.B and C, respectively. The above criteria, as applicable can be met.

5. Subdivisions and Partitions

All proposed subdivisions or partitions including land within an FP zone must establish the boundaries of the base flood by survey and dedicate said land as per Section 16.134.030. The balance of the land and development must:

- a. Be designed to include adequate drainage to reduce exposure to flood damage, and have public sewer, gas, electrical and other utility systems so located and constructed to minimize potential flood damage, as determined by the City.**
- b. Provide for each parcel or lot intended for structures, a building site which is at or above the base flood elevation, and meets all setback standards of the underlying zoning district.**
- c. Where base flood elevation data is not provided, or is not available from an authoritative source, it shall be generated by the applicant for subdivision proposals and other proposed developments which contain at least fifty (50) lots or five acres, whichever is less.**

FINDING: Per the applicant's narrative, the applicant has obtained the base flood elevation from FEMA Maps for the site and Cedar Creed, and has mapped the flood elevation on plans submitted with the application. All aspects of the subdivision have been designed to include adequate drainage to reduce exposure to flood damage, and have public sewer, gas, electrical and other utility systems so location and constructed to minimize potential flood damage, and will be determined by the City and agency partners through the review of final engineering plans. Each residential lot within the subdivision contains a building site that is above the delineated base flood elevation and meets all setback standards of the zone. Condition H8 stated below will require a completed FEMA Elevation Certificate Form for each residential structure abutting the floodplain. These criteria can be met.

16.134.090 - Floodplain Structures

Structures in the FP zone permitted in accordance with this section, shall be subject to the following conditions, in addition to the standards of the underlying zoning district:

A. Generally

- 1. All structures, including utility equipment, and manufactured housing dwellings, shall be anchored to prevent lateral movement, floatation, or collapse during flood conditions, and shall be constructed of flood-resistant materials, to standards approved by the City, State Structural and Plumbing Specialty Codes and applicable building codes.**
- 2. The lowest floor elevation of a structure designed for human occupancy must be at least one and one-half feet above the base flood elevation and the building site must comply with the provisions of Section 16.134.080.A.**
- 3. The lower portions of all structures shall be flood proofed according to the provisions of the State Structural and Plumbing Specialty Code to an elevation of at least one and one-half feet above the base flood elevation.**
- 4. The finished ground elevation of any under floor crawl space shall be above the grade elevation of an adjacent street, or natural or approved drainage way unless specifically approved by the City. A positive means of drainage from the low point of such crawl space shall be provided.**
- 5. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.**

FINDING: The site abuts wetlands that include a FEMA defined 100-year flood plain limit. The plans identify the flood plain limits which indicates a flood plain elevation between 166 and 168. The applicant submittal indicates that each residential structure built in the subdivision shall meet FEMA requirements for the ground finished floor elevation being 1.5-feet above the 100-year flood plain elevation. These standards can be satisfied as conditioned below.

RECOMMENDED CONDITION: (E17) Prior to Final Approval of Engineering Plans, a Flood Plain Certificate for the site flood plain elevation shall be submitted to the City for its records.

RECOMMENDED CONDITION: (H8) Prior to Grant of Occupancy, for each residential structure constructed within the subdivision and abutting the Flood Plain corridor, a completed FEMA Elevation Certificate Form shall be submitted to the City for its records.

B. Utilities

- 1. Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities located within structures shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.**
- 2. Electrical service equipment, or other utility structures, shall be constructed at or above the base flood elevation. All openings in utility structures shall be sealed and locked.**
- 3. Water supply and sanitary sewer systems (not prohibited under section 16.134.070.B shall be approved by the Washington County Health Department, and shall be designed to minimize or eliminate the infiltration of floodwaters into the systems, or any discharge from systems into floodwaters.**

- a. **On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding consistent with Washington County Health Authority and Oregon Department of Environmental Quality.**

FINDING: The application included the Preliminary Composite Plan, Sheet P6 of Exhibit A, that shows utilities (Sanitary Sewer and Water) within the Cedar Creek flood plain corridor. The final design of these utilities will be reviewed and approved with the public improvement plans. Per the applicant's narrative, all water supply and sanitary sewer systems will be designed and permitted to meet or exceed the standards of the applicable jurisdictional district and approved by the City. These systems will be designed to minimize or eliminate the infiltration of floodwaters into the systems, or any discharge from systems into floodwaters. These criteria will be met.

C. Residential Structures

1. **All residential structures shall have the lowest floor, including basement, elevated to at least one and one-half feet above the base flood elevation.**
2. **Fully enclosed areas below the lowest floor that are subject to flooding are not permitted unless they are designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered engineer or architect, or must meet or exceed the following minimum criteria:**
 - a. **A minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided.**
 - b. **The bottom of all openings shall be no higher than one foot above grade.**
 - c. **Openings may be equipped with screens, louvers, or other coverings or devices, provided they permit the automatic entry and exit of floodwaters.**
3. **Shall be constructed with materials resistant to flood damage.**

FINDING: Per the applicant's narrative, all residential structures located on the site will be situated such that all construction is located at least one and one-half feet above the base flood elevation. Condition H8 stated above will require a completed FEMA Elevation Certificate Form for each residential structure abutting the floodplain. This criterion will be met and will be confirmed at the time of building permit approval.

D. Non-Residential Construction

1. **All commercial, industrial or other non-residential structures shall have either the lowest floor, including basement, elevated to the level of the base flood elevation; or, together with attendant utility and sanitary facilities, shall:**
 - a. **Be flood proofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water.**
 - b. **Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy.**
 - c. **Be certified by a Registered Professional Engineer or Architect that the design and methods of construction are in accordance with accepted standards of practice for meeting all provisions of this Section. A record of such certificates shall be maintained by the Floodplain Administrator in accordance with Section 16.134.040.A.**

- d. **Nonresidential structures that are elevated and not flood proofed must meet the same standards for space below the lowest floor as per Section 16.134.090.C.2.**
- E. **Manufactured Dwellings**
 - 1. **Manufactured dwellings supported on solid foundation walls shall be constructed with flood openings that comply with paragraph C.2 of this section;**
 - 2. **The bottom of the longitudinal chassis frame beam in A zones (excluding coastal A zones), shall be at or above BFE;**
 - 3. **The manufactured dwelling shall be anchored to prevent flotation, collapse, and lateral movement during the base flood. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors (Reference FEMA's "Manufactured Home Installation in Flood Hazard Areas" guidebook for additional techniques), and;**
 - 4. **Electrical crossover connections shall be a minimum of 12 inches above BFE.**
- F. **Recreational Vehicles**

Except where prohibited under Section 16.134.070.G Recreational vehicles placed on sites are required to:

 - 1. **Be on the site for fewer than 180 consecutive days, and**
 - 2. **Be fully licensed and ready for highway use, on its wheels or jacking system, is attached to the site only by quick disconnect type utilities and security devices, and has no permanently attached additions; or**
 - 3. **Meet the requirements of paragraph E of this section and the elevation and anchoring requirements for manufactured dwellings.**

FINDING: The proposal does not include commercial, industrial or other non-residential structures. Manufactured dwellings and recreational vehicles are not proposed. These criteria are not applicable.

16.134.100 - Additional Requirements

- A. **Dimensional standards or developments in the FP zone are the same as in the underlying zoning district, except as provided in Section 16.134.100.**
- B. **Approval of a site plan pursuant to Chapter 16.90 that includes portions of the FP overlay may be conditioned by the City to protect the best interests of the surrounding area or the community as a whole, and to carry out the terms of the Comprehensive Plan. These conditions may include, but are not limited to:**
 - 1. **Increasing the required lot sizes, yard dimensions, modifying street widths, or off-street parking spaces.**
 - 2. **Limiting the height, size, or location of buildings.**
 - 3. **Controlling the location and number of vehicle access points.**
 - 4. **Limiting the number, size, location, or lighting of signs.**
 - 5. **Requiring diking, fencing, screening, landscaping, or other facilities to protect the proposed development, or any adjacent or nearby property.**
 - 6. **Designating sites for open space or water retention purposes.**
 - 7. **Construction, implementation, and maintenance of special drainage facilities and activities.**

FINDING: Cedar Creek floodplain is identified as Open Space, Tract C. No development is proposed, with the exception of a community and connection pedestrian trails. These criteria can be met as conditioned below.

RECOMMENDED CONDITION: (B13) Prior to Final Plat Approval, all vegetated corridors shall be dedicated to the City in recorded tracts of land.

C. FEMA Notification.

1. **Notify FEMA within six months of project completion when a conditional letter of map revision (CLOMR) has been obtained from FEMA or when development altered a watercourse, modified floodplain boundaries, or modified base flood elevations. This notification shall be provided as a letter of map revision (LOMR).**
2. **The applicant is responsible for preparing technical data to support the LOMR application and paying any processing or application fees to FEMA.**
3. **The floodplain administrator is under no obligation to sign the Community Acknowledgement Form, which is part of the CLOMR/LOMR application, until the applicant demonstrates that the project will or has met the requirements of this Code and all applicable state and federal laws.**

FINDINGS: Per the applicant's narrative, no activities are proposed within the Cedar Creek floodplain which would necessitate the requirement for a LMA, CLOMR, or LOMR. This criterion is not applicable.

CHAPTER 16.142 PARKS, TREES, AND OPEN SPACE

16.142.010 Purpose

This Chapter is intended to assure the provision of a system of public and private recreation and open space areas and facilities consistent with this Code and applicable portions of Chapter 5 of the Community Development Plan Part 2. The standards of this section do not supersede the open space requirements of a Planned Unit Development, found in Chapter 16.40 - Planned Unit Development (PUD).

16.142.030 Single-Family or Duplex Residential Subdivisions

- A. A minimum of five percent (5%) of the net buildable site (after exclusion of public right-of-way and environmentally constrained areas) shall be maintained as "open space". Open space must include usable areas such as public parks, swimming and wading pools, grass areas for picnics and recreational play, walking paths, and other like space. The following may not be used to calculate open space:**
1. **Required yards or setbacks.**
 2. **Required visual corridors.**
 3. **Required sensitive areas and buffers.**
 4. **Any area required to meet a standard found elsewhere in this code.**

STAFF ANALYSIS: As previously discussed, based on the net buildable area of the site (8.32 acres), the required 5% open space is 0.42 acres (18,120 square feet). The preliminary plans show Open Space Tract C as 256,841 square feet of Open Space. However, in order to utilize it as "usable open space" criteria under §16.142.030, required sensitive areas and buffers may not be used to calculate open space. Per the applicant's narrative, the development (as shown on

Sheet P3.2) shows approximately 1.08 acres (13% of net buildable area/47,045 square feet) of open space area outside of Sensitive Areas, Vegetated Corridor, and 100-Year Flood Plain.

Furthermore, the applicant is utilizing the provisions under Section 16.144.030.B.1 lot size reduction, that requires equal amount of inventoried resource above and beyond that is already required to be protected and is held in a public or private open space tract or otherwise protected from further development. Per the applicant's narrative, 8,809 square feet of open space area is needed to accommodate the requirement of Section 16.144.030.B.1 for a total additional open space dedication of 0.88 acres (10.5% of net building area/27,236 square feet).

Standard Net Buildable Area for the Site = 8.32 acres
Standard Required 5% Open Space = 0.42 acres or 18,120 sq. ft.

Open Space Above and Beyond under 16.144.030.B.1 = 0.20 acres or 8,809 sq. ft.

Total Open Space Required = ±0.62 acres or 26,929 sq. ft.
5% Open Space + 16.144.030.B.1(above and beyond)

Net Buildable area outside of Sensitive Areas, = 1.08 acres or 47,045 sq. ft.
Vegetated Corridor, and 100-year Flood Plain

The required Open Space for the site is 26,929 square feet and the proposal is providing 47,045 square feet (13% of net buildable area) of open space exceeding the required standard.

FINDING: Based on the discussion above, this standard is met.

B. Enhanced streetscapes such as "boulevard treatments" in excess of the minimum public street requirements may count toward a maximum of 10,000 square feet of the open space requirement.

- 1. Example: if a 52-foot-wide right-of-way [ROW] is required for a 1,000-foot-long street and a 62-foot wide ROW with 5-foot additional plantings/meandering pathway is provided on each side of the street, the additional 10-foot-wide area x 1,000 linear feet, or 10,000 square feet, counts toward the open space requirement.**

FINDING: The proposed subdivision and street designs do not include boulevard treatments. This criterion is not applicable.

C. The open space shall be conveyed in accordance with one of the following methods:

- 1. By dedication to the City as public open space (if acceptable to the City). Open space proposed for dedication to the City must be acceptable to the City Manager or the Manager's designee with regard to the size, shape, location, improvement, environmental condition, and budgetary and maintenance abilities;**
- 2. By leasing or conveying title (including beneficial ownership) to a corporation, homeowners' association or other legal entity, with the City retaining the development rights to the open space. The terms of such lease or other instrument of conveyance must include provisions (e.g., maintenance, property tax payment, etc.) suitable to the City.**

STAFF ANALYSIS: Below is a list of tracts along with their uses. Ownerships and maintenance responsibilities are also identified.

TRACT - USE	OWNERSHIP
Tract A – Private Street	Homeowners Association
Tract B – Water Quality Facility	City
Tract C – Open Space	City
Tract C – Pedestrian Trails	Homeowners Association
Tract D – Water Quality Facility	City
Tract E – Visual Corridor	Homeowners Association
Tract F – Visual Corridor	Homeowners Association
Tract G – Private Street	Homeowners Association

Based on the above table, Tracts A, E, F, G and C (pedestrian trails) will be dedicated to the homeowners’ association for maintenance, preservation and management. CC&Rs will be required. These tracts will be developed by the applicant as part of the subdivision site development.

City of Sherwood Public Works and Engineering Departments have determined that Open Space Tract C would be owned and maintained by the City. However, the pedestrian trails in Tract C will be maintained by the Homeowners Association. Tracts B and D are both water quality tracts that will also be owned and maintained by the City.

FINDING: Based on the above discussion, the applicant does not meet this criterion, but can do so with the following conditions.

RECOMMENDED CONDITION: (A14) Tracts “A”, “E”, “F”, and “G” shall be owned and maintained by the homeowners’ association.

RECOMMENDED CONDITION: (A15) Tracts “B”, “C”, and “D” shall be owned and maintained by the City of Sherwood.

RECOMMENDED CONDITION: (A16) Tract “C” pedestrian trails shall be maintained by the homeowners’ association.

RECOMMENDED CONDITION: (B6) Prior to the final plat approval, provide CC&R’s that document how the private streets (Tracts “A” and “G”), visual corridors (Tracts “E” and “F”), and pedestrian trails in Tract “C” will be maintained by the neighborhood association.

D. The density of a single-family residential subdivision shall be calculated based on the net buildable site prior to exclusion of open space per this Section.

- 1. Example: a 40,000 square foot net buildable site would be required to maintain 2,000 square feet (5%) of open space but would calculate density based on 40,000 square feet.**

FINDING: The density for this residential subdivision was calculated based on the net buildable area prior to the exclusion of open space. This criterion is met.

E. If a proposed residential subdivision contains or is adjacent to a site identified as "parks" on the Acquisition Map of the Parks Master Plan (2006) or has been identified for acquisition by the Sherwood Parks and Recreation Board, establishment of open

space shall occur in the designated areas if the subdivision contains the park site, or immediately adjacent to the parks site if the subdivision is adjacent to it.

- F. If the proposed residential subdivision does not contain or is not adjacent to a site identified on the Parks Master Plan map or otherwise identified for acquisition by the Parks and Recreation Board, the applicant may elect to convey off-site park/open space.
- G. This standard does not apply to a residential partition provided that a development may not use phasing or series partitions to avoid the minimum open space requirement. A partition of land that was part of an approved partition within the previous five (5) years shall be required to provide the minimum five percent (5%) open space in accordance with subsection (A) above.
- H. The value of the open space conveyed under Subsection (A) above may be eligible for Parks System Development Charges (SDCs) credits based on the methodology identified in the most current Parks and Recreation System Development Charges Methodology Report.

FINDING: The Brookman Addition Concept Plan does not identify a park site within or immediately adjacent to the development site. Per the applicant’s narrative, the applicant has not elected to convey off-site park/open space. These criteria are met.

16.142.040 Visual Corridors

A. Corridors Required

New developments located outside of the Old Town Overlay with frontage on Highway 99W, or arterial or collector streets designated on Figure 8-1 of the Transportation System Plan shall be required to establish a landscaped visual corridor according to the following standards:

	Category	Width
1.	Highway 99W	25 feet
2.	Arterial	15 feet
3.	Collector	10 feet

In residential developments where fences are typically desired adjoining the above described major street the corridor may be placed in the road right-of-way between the property line and the sidewalk. In all other developments, the visual corridor shall be on private property adjacent to the right-of-way.

B. Landscape Materials

The required visual corridor areas shall be planted as specified by the review authority to provide a continuous visual and/or acoustical buffer between major streets and developed uses. Except as provided for above, fences and walls shall not be substituted for landscaping within the visual corridor. Uniformly planted, drought resistant street trees and ground cover, as specified in Section 16.142.060, shall be planted in the corridor by the developer. The improvements shall be included in the compliance agreement. In no case shall trees be removed from the required visual corridor.

C. Establishment and Maintenance

Designated visual corridors shall be established as a portion of landscaping requirements pursuant to Chapter 16.92. To assure continuous maintenance of the visual corridors, the review authority may require that the development rights to the corridor areas be dedicated to the City or that restrictive covenants be recorded prior to the issuance of a building permit.

STAFF ANALYSIS: SW Brookman Road is classified as an Arterial and therefore, a 15-foot landscaped visual corridor is required. The proposal includes two visual corridor open space tracts (Tracts E and F) both adjacent to SW Brookman Road.

The Preliminary Street Trees and Open Space Planting Plan, Sheets L1 and L2 of Exhibit A identifies plantings of trees and grass/sod. The standard above requires continuous visual and/or acoustical buffer between major streets and developed uses. A revised landscape plan will be required showing visual corridor plantings that can meet Section 142.040.

Per applicant narrative, the landscaped visual corridor can be maintained by a Homeowner's Association (HOA) and implemented through CC&R's.

FINDING: As discussed above, the standards are not met, but can be satisfied as conditioned below.

RECOMMENDED CONDITION: (B14) Prior to final plat approval, submit verification of perpetual maintenance of the landscaped visual corridor through evidence of a homeowners' association being established with authority to assess funds to ensure maintenance or another acceptable means.

RECOMMENDED CONDITION: (F6) Prior to issuance of any building permits, install the landscaped visual corridor or bond for the installation of improvements per revised approved Landscape, Tree and Open Space Plan.

RECOMMENDED CONDITION: (B15) Prior to final plat approval, provide revised plans that show the cross-section and landscape plans including the specific planting materials to be installed within the visual corridors along SW Brookman Road meeting the standards of Section 16.142.040.

RECOMMENDED CONDITION: (H9) Prior to Grant of Occupancy, install the visual corridor landscaping per the landscape plans submitted during the final plat review.

D. Required Yard

Visual corridors may be established in required yards, except that where the required visual corridor width exceeds the required yard width, the visual corridor requirement shall take precedence. In no case shall buildings be sited within the required visual corridor, with the exception of front porches on townhomes, as permitted in Section 16.44.010(E)(4)(c).

STAFF ANALYSIS: The 15-foot visual corridor is located adjacent to the subject site and is not in a required yard. This criterion does not apply.

- E. Pacific Highway 99W Visual Corridor 1. Provide a landscape plan for the highway median paralleling the subject frontage. In order to assure continuity, appropriate plant materials and spacing, the plan shall be coordinated with the City Planning Department and ODOT. 2. Provide a visual corridor landscape plan with a variety of trees and shrubs. Fifty percent (50%) of the visual corridor plant materials shall consist of groupings of at least five (5) native evergreen trees a minimum of ten (10) feet in height each, spaced no less than fifty (50) feet apart, if feasible. Deciduous trees shall be a minimum of four (4) inches DBH and twelve (12) feet high, spaced no less than twenty-five (25) feet apart, if feasible.**

FINDING: This criterion does not apply as the site does not abut Pacific Highway 99W.

16.142.060 - Street Trees

A. Installation of Street Trees on New or Redeveloped Property.

Trees are required to be planted to the following specifications along public streets abutting or within any new development or re-development. Planting of such trees shall be a condition of development approval. The City shall be subject to the same standards for any developments involving City-owned property, or when constructing or reconstructing City streets. After installing street trees, the property owner shall be responsible for maintaining the street trees on the owner's property or within the right-of-way adjacent to the owner's property.

- 1. Location:** Trees shall be planted within the planter strip along a newly created or improved streets. In the event that a planter strip is not required or available, the trees shall be planted on private property within the front yard setback area or within public street right-of-way between front property lines and street curb lines or as required by the City.
- 2. Size:** Trees shall have a minimum trunk diameter of two (2) caliper inches, which is measured six inches above the soil line, and a minimum height of six (6) feet when planted.
- 3. Types:** Developments shall include a variety of street trees. The trees planted shall be chosen from those listed in 16.142.080 of this Code.
- 4. Required Street Trees and Spacing:**
 - a.** The minimum spacing is based on the maximum canopy spread identified in the recommended street tree list in section 16.142.080 with the intent of providing a continuous canopy without openings between the trees. For example, if a tree has a canopy of forty (40) feet, the spacing between trees is forty (40) feet. If the tree is not on the list, the mature canopy width must be provided to the planning department by a certified arborist.
 - b.** All new developments shall provide adequate tree planting along all public streets. The number and spacing of trees shall be determined based on the type of tree and the spacing standards described in a. above and considering driveways, street light locations and utility connections. Unless exempt per below, trees shall not be spaced more than forty (40) feet apart in any development.
 - c.** A new development may exceed the forty-foot spacing requirement under section b. above, under the following circumstances:

- (1) Installing the tree would interfere with existing utility lines and no substitute tree is appropriate for the site; or
- (2) There is not adequate space in which to plant a street tree due to driveway or street light locations, vision clearance or utility connections, provided the driveways, street light or utilities could not be reasonably located elsewhere so as to accommodate adequate room for street trees; and
- (3) The street trees are spaced as close as possible given the site limitations in (1) and (2) above.
- (4) The location of street trees in an ODOT or Washington County right-of-way may require approval, respectively, by ODOT or Washington County and are subject to the relevant state or county standards.
- (5) For arterial and collector streets, the City may require planted medians in lieu of paved twelve-foot wide center turning lanes, planted with trees to the specifications of this subsection.

STAFF ANALYSIS: The applicant has proposed street trees within the planned subdivision. Per Sheet L1, Preliminary Street Trees and Open Space Planting Plan of Exhibit A, the street trees are located within planter strips adjacent to proposed new roadways within the subdivision. The proposed street trees are listed in the Recommended Street Tree list in Section 16.142. This criterion is met.

B. Removal and Replacement of Street Trees.

The removal of a street tree shall be limited and in most cases, necessitated by the tree. A person may remove a street tree as provided in this section. The person removing the tree is responsible for all costs of removal and replacement. Street trees less than five (5) inches DBH can be removed by right by the property owner or his or her assigns, provided that they are replaced. A street tree that is removed must be replaced within six (6) months of the removal date.

1. Criteria for All Street Tree Removal for trees over five (5) inches DBH. No street tree shall be removed unless it can be found that the tree is:
 - a. Dying, becoming severely diseased, or infested or diseased so as to threaten the health of other trees, or
 - b. Obstructing public ways or sight distance so as to cause a safety hazard, or
 - c. Interfering with or damaging public or private utilities, or
 - d. Defined as a nuisance per City nuisance abatement ordinances.
2. Street trees between five (5) and ten (10) inches DBH may be removed if any of the criteria in 1. above are met and a tree removal permit is obtained.
 - a. The Tree Removal Permit Process is a Type I land use decision and shall be approved subject to the following criteria:
 - (1) The person requesting removal shall submit a Tree Removal Permit application that identifies the location of the tree, the type of tree to be removed, the proposed replacement and how it qualifies for removal per Section 1. above.
 - (2) The person shall post a sign, provided by the City, adjacent to the tree for ten (10) calendar days prior to removal that provides notice of the removal application and the process to comment on the application.

- (3) If an objection to the removal is submitted by the City or to the City during the ten (10) calendar day period, an additional evaluation of the tree will be conducted by an arborist to determine whether the tree meets the criteria for street tree removal in Section 1. above. The person requesting the Tree Removal Permit shall be responsible for providing the arborist report and associated costs.
- (4) Upon completion of the additional evaluation substantiating that the tree warrants removal per Section 1. above or if no objections are received within the ten-day period, the tree removal permit shall be approved.
- (5) If additional evaluation indicates the tree does not warrant removal, the Tree Removal Permit will be denied.

3. Street trees over ten (10) inches DBH may be removed through a Type I review process subject to the following criteria.

- a. The applicant shall provide a letter from a certified arborist identifying:
 - (1) The tree's condition,
 - (2) How it warrants removal using the criteria listed in Section 1. above, and identifying any reasonable actions that could be taken to allow the retention of the tree.
- b. The applicant shall provide a statement that describes whether and how the applicant sought assistance from the City, HOA or neighbors to address any issues or actions that would enable the tree to be retained.
- c. The person shall post a sign, provided by the City, adjacent to the tree for ten (10) calendar days prior to removal that provides notice of the removal application and the process to comment on the application.
- d. Review of the materials and comments from the public confirm that the tree meets the criteria for removal in Section 1. above.

STAFF ANALYSIS: The criteria above (B1-3) are not applicable, as the applicant is not proposing to remove existing street trees.

A. Homeowner's Association Authorization.

The Planning Commission may approve a program for the adoption, administration and enforcement by a homeowners' association (HOA) of regulations for the removal and replacement of street trees within the geographic boundaries of the association.

1. An HOA that seeks to adopt and administer a street tree program must submit an application to the City. The application must contain substantially the following information:
 - a. The HOA must be current and active. The HOA should meet at least quarterly and the application should include the minutes from official HOA Board meetings for a period not less than eighteen (18) months (six (6) quarters) prior to the date of the application.
 - b. The application must include proposed spacing standards for street trees that are substantially similar to the spacing standards set forth in 16.142.060.A above.

- c. The application must include proposed street tree removal and replacement standards that are substantially similar to the standards set forth in 16.142.060.B above.
 - d. The application should include a copy of the HOA bylaws as amended to allow the HOA to exercise authority over street tree removal and replacement, or demonstrate that such an amendment is likely within ninety (90) days of a decision to approve the application.
 - e. The application should include the signatures of not less than seventy-five (75) percent of the homeowners in the HOA in support of the application.
2. An application for approval of a tree removal and replacement program under this section shall be reviewed by the City through the Type IV land use process. In order to approve the program, the City must determine:
 - a. The HOA is current and active.
 - b. The proposed street tree removal and replacement standards are substantially similar to the standards set forth in 16.142.060.B above.
 - c. The proposed street tree spacing standards are substantially similar to the standards set forth in 16.142.060.A above.
 - d. The HOA has authority under its bylaws to adopt, administer and enforce the program.
 - e. The signatures of not less than seventy-five (75) percent of the homeowners in the HOA in support of the application.
3. A decision to approve an application under this section shall include at least the following conditions:
 - a. Beginning on the first January 1 following approval and on January 1 every two (2) years thereafter, the HOA shall make a report to the city planning department that provides a summary and description of action taken by the HOA under the approved program. Failure to timely submit the report that is not cured within sixty (60) days shall result in the immediate termination of the program.
 - b. The HOA shall comply with the requirements of Section 12.20 of the Sherwood Municipal Code.
4. The City retains the right to cancel the approved program at any time for failure to substantially comply with the approved standards or otherwise comply with the conditions of approval.
 - a. If an HOA tree removal program is canceled, future tree removals shall be subject to the provisions of section 16.142.060.
 - b. A decision by the City to terminate an approved street tree program shall not affect the validity of any decisions made by the HOA under the approved program that become final prior to the date the program is terminated.
 - c. If the city amends the spacing standards or the removal and replacement standards in this section (SZCDC 16.142.060) the City may require that the HOA amend the corresponding standards in the approved street tree program.
5. An approved HOA tree removal and replacement program shall be valid for five (5) years; however, the authorization may be extended as approved by the City, through a Type II Land Use Review.

STAFF ANALYSIS: Per the applicant's narrative, the applicant is not proposing an HOA managed street tree removal and replacement program as described above. The street trees are planned to be in the public right-of-way and will be managed by the adjacent property owner.

D. Exemption from Replacing Street Trees.

A street tree that was planted in compliance with the Code in effect on the date planted and no longer required by spacing standards of section A.4. above may be removed without replacement provided:

1. Exemption is granted at the time of street tree removal permit or authorized homeowner's association removal per Section 16.142.060.C. above.
2. The property owner provides a letter from a certified arborist stating that the tree must be removed due to a reason identified in the tree removal criteria listed in Section 16.142.060. B.1. above, and
3. The letter describes why the tree cannot be replaced without causing continued or additional damage to public or private utilities that could not be prevented through reasonable maintenance.

E. Notwithstanding any other provision in this section, the city manager or the manager's designee may authorize the removal of a street tree in an emergency situation without a tree removal permit when the tree poses an immediate threat to life, property or utilities. A decision to remove a street tree under this section is subject to review only as provided in ORS 34.100.

F. Trees on Private Property Causing Damage.

Any tree, woodland or any other vegetation located on private property, regardless of species or size, that interferes with or damages public streets or utilities, or causes an unwarranted increase in the maintenance costs of same, may be ordered removed or cut by the City Manager or his or her designee. Any order for the removal or cutting of such trees, woodlands or other vegetation, shall be made and reviewed under the applicable City nuisance abatement ordinances.

G. Penalties. The abuse, destruction, defacing, cutting, removal, mutilation or other misuse of any tree planted on public property or along a public street as per this Section, shall be subject to the penalties defined by Section 16.02.040, and other penalties defined by applicable ordinances and statutes, provided that each tree so abused shall be deemed a separate offense.

STAFF ANALYSIS: As stated above, this application does not include the removal of street trees for any of the reasons listed above, these criteria do not apply.

16.142.070 Trees on Property Subject to Certain Land Use Applications

A. Generally

The purpose of this Section is to establish processes and standards which will minimize cutting or destruction of trees and woodlands within the City. This Section is intended to help protect the scenic beauty of the City; to retain a livable environment through the beneficial effect of trees on air pollution, heat and glare, sound, water quality, and surface water and erosion control; to encourage the retention and planting of tree species native to the Willamette Valley and Western Oregon; to provide an attractive

visual contrast to the urban environment, and to sustain a wide variety and distribution of viable trees and woodlands in the community over time.

B. Applicability

All applications including a Type II - IV land use review, shall be required to preserve trees or woodlands, as defined by this Section to the maximum extent feasible within the context of the proposed land use plan and relative to other codes, policies, and standards of the City Comprehensive Plan.

STAFF ANALYSIS: The proposed subdivision is a Type IV land use review. Therefore, the criteria of this section apply.

C. Inventory

1. To assist the City in making its determinations on the retention of trees and woodlands, land use applications including Type II - IV development shall include a tree and woodland inventory and report. The report shall be prepared by a qualified professional and must contain the following information:
 - a. Tree size (in DBH and canopy area)
 - b. Tree species
 - c. The condition of the tree with notes as applicable explaining the assessment
 - d. The location of the tree on the site
 - e. The location of the tree relative to the planned improvements
 - f. Assessment of whether the tree must be removed to accommodate the development
 - g. Recommendations on measures that must be taken to preserve trees during the construction that are not proposed to be removed.
2. In addition to the general requirements of this Section, the tree and woodland Inventory's mapping and report shall also include, but is not limited to, the specific information outlined in the appropriate land use application materials packet.
3. Definitions for the inventory purposes of this Section
 - a. A tree is a living woody plant having a trunk diameter as specified below at Diameter at Breast Height (DBH). Trees planted for commercial agricultural purposes, and/or those subject to farm forest deferral, such as nut and fruit orchards and Christmas tree farms, are excluded from this definition and from regulation under this Section, as are any living woody plants under six (6) inches at DBH. All trees six (6) inches or greater shall be inventoried.
 - b. A woodland is a biological community dominated by trees covering a land area of 20,000 square feet or greater at a density of at least fifty (50) trees per every 20,000 square feet with at least fifty percent (50%) of those trees of any species having a six (6) inches or greater at DBH. Woodlands planted for commercial agricultural purposes and/or subject to farm forest deferral, such as nut and fruit orchards and Christmas tree farms, are excluded from this definition, and from regulation under this Section.

- c. **A large stature tree is over 20 feet tall and wide with a minimum trunk diameter of 30 inches at DBH.**

FINDING: The applicant provided Preliminary Tree Preservation and Removal Plans, Sheets P2.2 and 2.3 of Exhibit A and a Tree Inventory by Teragan & Associates dated September 4, 2019 (part of Exhibit A). The plans and inventory include the required information listed above. These criteria are met.

D. Retention requirements

1. **Trees may be considered for removal to accommodate the development including buildings, parking, walkways, grading etc., provided the development satisfies of D.2 or D.3, below.**

FINDING: The applicant provided Preliminary Tree Preservation and Removal Plans, Sheets P2.2 and P2.3 of Exhibit A and a Tree Inventory by Teragan & Associates. Per the applicants' narrative, there are numerous trees on the subject site and the removal of trees are necessary to accommodate the required site improvements, including utility installation, earthwork, and grading necessary for street construction, proper drainage, and future home construction. Therefore, this criterion is met.

2. **Required Tree Canopy - Residential Developments (Single Family Attached, Single Family Detached and Two - Family)**

Each net development site shall provide a variety of trees to achieve a minimum total tree canopy of 40 percent. The canopy percentage is based on the expected mature canopy of each tree by using the equation πr^2 to calculate the expected square footage of canopy for each tree. The expected mature canopy is counted for each tree regardless of an overlap of multiple tree canopies.

The canopy requirement can be achieved by retaining existing trees or planting new trees. Required street trees can be used toward the total on site canopy required to meet this standard. The expected mature canopy spread of the new trees will be counted toward the needed canopy cover. A certified arborist or other qualified professional shall provide the estimated tree canopy of the proposed trees to the planning department for review.

STAFF ANALYSIS: The Preliminary Street tree and Open Space Planting Plan, Sheets L1 and L2 of Exhibit A demonstrates that at least 40 percent canopy coverage of the net development site is provided. The applicant proposes a newly planted tree canopy area of 114,778 square feet and an existing tree canopy area of 23,563 square feet. The 40 percent minimum tree canopy coverage based on the net buildable area of 341,153 square feet is 136,462 square feet. The applicant is proposing 138,341 square feet or 40.5 percent tree canopy coverage meeting the minimum requirement.

FINDING: Based on the discussion above, this standard is satisfied.

3. **Required Tree Canopy Non-Residential and Multi-Family Developments**

STAFF ANALYSIS: This criterion does not apply.

4. The City may determine that, regardless of D.1 through D.3, that certain trees or woodlands may be required to be retained. The basis for such a decision shall include; specific findings that retention of said trees or woodlands furthers the purposes and goals of this Section, is feasible and practical both within the context of the proposed land use plan and relative to other policies and standards of the City Comprehensive Plan, and are:
 - a. Within a Significant Natural Area, 100-year floodplain, City greenway, jurisdictional wetland or other existing or future public park or natural area designated by the City Comprehensive Plan, or
 - b. A landscape or natural feature as per applicable policies of the City Comprehensive Plan, or are necessary to keep other identified trees or woodlands on or near the site from being damaged or destroyed due to windfall, erosion, disease or other natural processes, or
 - c. Necessary for soil stability and the control of erosion, for managing and preserving surface or groundwater quantities or quality, or for the maintenance of a natural drainageway, as per Clean Water Services stormwater management plans and standards of the City Comprehensive Plan, or
 - d. Necessary in required buffers between otherwise incompatible land uses, or from natural areas, wetlands and greenways, or
 - e. Otherwise merit retention because of unusual size, size of the tree stand, historic association or species type, habitat or wildlife preservation considerations, or some combination thereof, as determined by the City.

FINDING: The site includes jurisdictional wetlands, flood plain, vegetated corridor, and additional natural open space areas to be retained. The trees within these areas are planned to be protected and retained within Tract C. These criteria are met.

5. Tree retention requirements for properties located within the Old Town Overlay or projects subject to the infill standards of Chapter 16.68 are only subject to retention requirements identified in D.4. above.

STAFF ANALYSIS: This criterion does not apply, as the site is not located in the Old Town Overlay area.

6. The Notice of Decision issued for the land use applications subject to this Section shall indicate which trees and woodlands will be retained as per subsection D of this Section, which may be removed or shall be retained as per subsection D of this Section and any limitations or conditions attached thereto.

STAFF ANALYSIS: This criterion is not applicable at this time of this review, however, the Notice of Decision issued shall indicate which trees will be removed and retained.

7. All trees, woodlands, and vegetation located on any private property accepted for dedication to the City for public parks and open space, greenways, Significant Natural Areas, wetlands, floodplains, or for storm water management or for other purposes, as a condition of a land use approval, shall be retained outright, irrespective of size, species, condition or other factors. Removal of any such trees,

woodlands, and vegetation prior to actual dedication of the property to the City shall be cause for reconsideration of the land use plan approval.

STAFF ANALYSIS: Per applicant's narrative, the applicant is aware of the City's authority to restrict tree removal in the manner described above.

E. Tree Preservation Incentive

F. Additional Preservation Incentives

STAFF ANALYSIS: Per applicant's narrative, the applicant is not pursuing any of the above-listed incentives. The criteria do not apply.

G. Tree Protection During Development

STAFF ANALYSIS: The applicant provided a Preliminary Tree Preservation and Removal Plan (Sheets P2.2 and P2.3) and a tree protection recommendation proposal by Teragan & Associates meeting the requirement of this section. Per the applicant's narrative, final plans will be submitted prior to issuance of any construction permit for this site. This criterion is met.

H. Penalties

Violations of this Section shall be subject to the penalties defined by Section 16.02.040, provided that each designated tree or woodland unlawfully removed or cut shall be deemed a separate offense.

STAFF ANALYSIS: Per applicant's narrative, the applicant is aware of the penalty for the unlawful removal of trees protected by this ordinance.

Chapter 16.144 - WETLAND, HABITAT AND NATURAL AREAS

16.144.010 - Generally

Unless otherwise permitted, residential, commercial, industrial, and institutional uses in the City shall comply with the following wetland, habitat and natural area standards if applicable to the site as identified on the City's Wetland Inventory, the Comprehensive Plan Natural Resource Inventory, the Regionally Significant Fish and Wildlife Habitat Area map adopted by Metro, and by reference into this Code and the Comprehensive Plan. Where the applicability of a standard overlaps, the more stringent regulation shall apply.

STAFF ANALYSIS: The applicant provided a Site Assessment prepared by Environmental Science and Associates (ESA), part of Exhibit A, that identifies and describes those significant resources located within the boundaries and within 50-feet of the site as described below.

16.144.020 - Standards

A. The applicant shall identify and describe the significance and functional value of wetlands on the site and protect those wetlands from adverse effects of the

development. A facility complies with this standard if it complies with the criteria of subsections A.1.a and A.1.b, below:

- 1. The facility will not reduce the area of wetlands on the site, and development will be separated from such wetlands by an area determined by the Clean Water Services Design and Construction Standards R&O 00-7 or its replacement provided Section 16.140.090 does not require more than the requested setback.**
 - a. A natural condition such as topography, soil, vegetation or other feature isolates the area of development from the wetland.**

APPLICANT'S RESPONSE: ESA has identified two primary wetland areas on the site: Wetland A, and Wetlands associated with Cedar Creek.

Wetland A totals 4,208 square feet (0.1 acres) and is an isolated Palustrine forested/Flats wetland (PFO/FLAT). The wetland is located in the north end of the site abutting the Abney Revard #2 subdivision. Wetland A is hydrologically isolated from the other wetlands on site and has no downstream connection to off-site wetlands or waters due to the existing residential development. The wetland determination data plots associated with Wetland A are DP-1 and DP-2. Wetland A was not mapped by any resource mapping in the north end as part of the Brookman Addition Concept Plan.

The Cedar Creek Wetlands are Palustrine Forested and Riverine Flow-Through (PFO/RFT), totaling 29,015 square feet, (0.67 acres) and located within the middle of the site. The wetlands are located both north and south of the Cedar Creek channel and along the western edge of the small tributary in the southeast end of the site.

The two facilities proposed on the site are in the vicinity of the Cedar Creek wetlands. Both facilities are separated from the wetlands by buffer areas, and meet the requirements of CWS 17- 05, as demonstrated by the Amended CWS service provider letter 19-001036 issued for the development and included with this application.

- b. Impact mitigation measures will be designed, implemented, and monitored to provide effective protection against harm to the wetland from sedimentation, erosion, loss of surface or ground water supply, or physical trespass.**

STAFF ANALYSIS: As described in the Clean Water Services Amended Service Provider Letter (19-001036, Exhibit F.2), the planned on-site improvements are subject to mitigation measures to protect water quality according to Clean Water Services standards.

- c. A lesser setback complies with federal and state permits, or standards that will apply to state and federal permits, if required.**

STAFF ANALYSIS: As described in the Amended Service Provider letter from Clean Water Services (Exhibit F.2) Condition 3, authorization from the appropriate state and federal agencies is required.

- 2. If existing wetlands are proposed to be eliminated by the facility, the applicant shall demonstrate that the project can, and will develop or enhance an area of wetland on the site or in the same drainage basin that is at least equal to the area and functional value of wetlands eliminated.**

STAFF ANALYSIS: The Amended Service Provider Letter from Clean Water Services (Exhibit F.2) outlines the planned encroachment areas and required mitigation.

- B. The applicant shall provide appropriate plans and text that identify and describe the significance and functional value of natural features on the site (if identified in the Community Development Plan, Part 2) and protect those features from impacts of the development or mitigate adverse effects that will occur. A facility complies with this standard if:**

STAFF ANALYSIS: The Brookman Addition Concept Plan, adopted in 2009, identified areas where natural resources are present. The applicant included a detailed Site Assessment prepared by ESA describing and delineating the significance and functional value of natural features on the site.

- 1. The site does not contain an endangered or threatened plant or animal species or a critical habitat for such species identified by Federal or State government (and does not contain significant natural features identified in the Community Development Plan, Part 2, Natural Resources and Recreation Plan).**

STAFF ANALYSIS: Based on the Site Assessment by ESA did not identify endangered or threatened plant or animal species or a critical habitat for each species on the site. This criterion does not apply.

- 2. The facility will comply with applicable requirements of the zone.**

STAFF ANALYSIS: The proposed subdivision application complies with applicable requirements of the Medium Density Residential Low zone. This standard is met.

- 3. The applicant will excavate and store topsoil separate from subsurface soil, and shall replace the topsoil over disturbed areas of the site not covered by buildings or pavement or provide other appropriate medium for re-vegetation of those areas, such as yard debris compost.**

STAFF ANALYSIS: Based on the preliminary plans and Site Assessment, the majority of the identified natural resource areas are planned to be retained and protected from disturbance. The disturbed areas will be mitigated according to the Clean Water Services Amended Service Provider Letter (Exhibit F.2). The criterion does not apply.

- 4. The applicant will retain significant vegetation in areas that will not be covered by buildings or pavement or disturbed by excavation for the facility; will replant areas disturbed by the development and not covered by buildings or pavement with native species vegetation unless other vegetation is needed to buffer the facility; will protect disturbed areas and adjoining habitat from potential erosion until replanted vegetation is established; and will provide a plan or plans identifying each area and its proposed use.**

STAFF ANALYSIS: The submitted preliminary plans show areas with significant vegetation are planned to be retained in the natural resource and open space areas. The Preliminary Street Tree and Open Space Planting Plan, L1 of Exhibit A, shows the existing and planned plantings

throughout the site. Per the applicant's narrative, appropriate erosion and sediment control methods will be utilized through the development phase. This criterion is met.

5. **Development associated with the facility will be set back from the edge of a significant natural area by an area determined by the Clean Water Services Design and Construction standards R&O 00-7 or its replacement, provided Section 16.140.090A does not require more than the requested setback. Lack of adverse effect can be demonstrated by showing the same sort of evidence as in subsection A.1 above.**

STAFF ANALYSIS: The wetlands planned to be retained, as described in the Site Assessment by ESA (part of Exhibit A) and Clean Water Services Service Provider letter (**Exhibit F.2**), are provided with 50-foot vegetated corridors that buffer the wetlands from the planned on-site improvements.

- C. **When the Regionally Significant Fish and Wildlife Habitat map indicates there are resources on the site or within 50 feet of the site, the applicant shall provide plans that show the location of resources on the property. If resources are determined to be located on the property, the plans shall show the value of environmentally sensitive areas using the methodologies described in Sections 1 and 2 below...**

STAFF ANALYSIS: The site contains inventoried regionally significant fish and wildlife habitat associated with the Cedar Creek drainage and associated flood plain and wetland areas. The Conceptual Open Space Plan, Sheet P3.2, identifies these and areas. The Site Assessment by ESA (part of Exhibit A) has determined the value of the environmentally sensitive areas. The accuracy of these determinations is demonstrated by the Amended CWS Service Provider Letter (**Exhibit F.2**). Therefore, the criterion is met.

16.144.030 - Exceptions to Standards

In order to protect environmentally sensitive areas that are not also governed by floodplain, wetland and Clean Water Services vegetated corridor regulations, the City allows flexibility of the specific standards in exchange for the specified amount of protection inventoried environmentally sensitive areas as defined in this code.

A. Process

The flexibility of standards is only applicable when reviewed and approved as part of a land use application and shall require no additional fee or permit provided criteria is addressed. In the absence of a land use application, review may be processed as a Type 1 administrative interpretation.

B. Standards modified

1. **Lot size — Notwithstanding density transfers permitted through Chapter 16.40, when a development contains inventoried regionally significant fish and wildlife habitats as defined in Section 16.144.020 above, lot sizes may be reduced up to ten percent (10%) below the minimum lot size of the zone when an equal amount of inventoried resource above and beyond that already required to be protected is held in a public or private open space tract or otherwise protected from further development.**
2. **Setbacks — For residential zones, the setback may be reduced up to thirty percent (30%) for all setbacks except the garage setback provided the following criteria are satisfied:**

- a. The setback reduction must result in an equal or greater amount of significant fish and/or wildlife habitat protection. Protection shall be guaranteed with deed restrictions or public or private tracts.
 - b. In no case shall the setback reduction supersede building code and/or Tualatin Valley Fire and Rescue separation requirements.
 - c. In no case shall the setback be reduced to less than five feet unless otherwise provided for by the underlying zone.
3. Density — per Section 16.10.020 (Net Buildable Acre definition), properties with environmentally sensitive areas on site may opt to exclude the environmentally sensitive areas from the minimum density requirements provided the sensitive areas are protected via tract or restrictive easement. A proposal to remove said area from the density calculation must include: a delineation of the resource in accordance with Section 16.144.020C, the acreage being protected, and the net reduction below the normally required minimum for accurate reporting to Metro.
 4. Parking — Per Section 16.94.020.B.6, 10-25% of the required parking spaces may be reduced in order to protect inventoried regionally significant fish and wildlife habitat areas, provided these resources are protected via deed restrictions or held in public or private tracts.
 5. Landscaping — Per Section 16.92.030.B.6, exceptions may be granted to the landscaping standards in certain circumstances as outlined in that section.

APPLICANT'S RESPONSE: As described above and detailed in the DW Homes Brookman Road - CWS Site Assessment prepared by Environmental Science and Assessment (ESA) and submitted with this application, the subject site contains inventoried regionally significant fish and wildlife habitat associated with the Cedar Creek drainage and associated flood plain and wetland areas.

Accordingly, the applicant requests the ability to reduce lot sizes by up to 10 % to reduce the minimum lot area within the development from 5,000 square feet to 4,500 square feet (actual minimum preliminary measurement is Lot 11 at 4,508 square feet), and to reduce the lot width at the building line from 50 feet to 45 feet (Lot 1).

In total, 36 of the 59 lots are proposed to be reduced in area to between 4,500 square feet and 5,000 square feet. The total area of these lots is a combined 171,191 square feet, against a minimum of 175,000 square feet for 36 standard 5,000 square foot lots. Accordingly, the 8,809 square foot shortfall in lot area is required to be accommodated within open space areas on the site above and beyond that already required to be protected.

As described in the ESA report and site plans, as amended August 15, 2019, a total of 76,749 square feet of Sensitive Area and 129,731 square feet of Vegetated Corridor exists on the site, and is required to be preserved and protected from future development. In addition, when eliminating overlapping areas, a further 1,486 square feet of 100-year flood plain exists, and 18,120 square feet (5% of the net buildable area of the site) of open space is required pursuant to Section 16.142.030 for a total area of 226,086 square feet required to be protected.

As indicated on the Preliminary Plat (Sheet P3), 256,841 square feet of open space area is proposed to be designated for inclusion and protection within Tract C. This equates to 30,755 square feet of open space not otherwise required by Code, which far exceeds the minimum 8,809 square feet required by this Section. This requirement can and will be met, and therefore

the applicant meets the requirements for a 10% reduction in the minimum lot area and lot width at the building line.

FINDING: Staff concurs with the applicant's response. Based on the discussion above these criteria are met.

GENERAL WETLAND STAFF ANALYSIS: The proposed development has received a Wetland Delineation/Determination Concurrence Letter issued by the State of Oregon Department of State Lands (DSL), WD# 2019-0476 dated September 18, 2019 included in Exhibit A.

DLS also provided a Wetland Land Use Notice Response (WN2020-0059) dated February 3, 2020 (**Exhibit H**) that included two requirements; 1) That the proposed activity will impact wetlands and required a State Permit, and 2) a Federal permit may be required by US Army Corps of Engineers (USACE).

No permit or joint permits from USACE, DSL, NMSF, etc. have been submitted with this application. If needed, all necessary permit(s) from outside jurisdictional agencies will need to be obtained and submitted before an Engineering Compliance Agreement is issued for this project.

FINDINGS: Based on the above discussion, the standards can be met as conditioned below.

RECOMMENDED CONDITION: (E18) Prior to Final Approval of Engineering Plans the applicant shall confirm and if necessary provide State of Oregon Division of State Lands (DSL) Permit as required by WN# 2020-059, Wetland Delineation/Determination Concurrence Letter (WD# 2019-0476), and United States Army Corp of Engineers (USACE) permit.

RECOMMENDED CONDITION: (G14) Prior to Acceptance of Public Improvements, the applicant shall have complied with all the requirements and conditions of permit(s) issued by City, CWS, DSL, USACE, and/or NMFS.

16.145 ENERGY CONSERVATION

16.156.010 - Purpose

This Chapter and applicable portions of Chapter 5 of the Community Development Plan provide for natural heating and cooling opportunities in new development. The requirements of this Chapter shall not result in development exceeding allowable densities or lot coverage, or the destruction of existing trees.

16.156.020 - Standards

A. Building Orientation - The maximum number of buildings feasible shall receive sunlight sufficient for using solar energy systems for space, water or industrial process heating or cooling. Buildings and vegetation shall be sited with respect to each other and the topography of the site so that unobstructed sunlight reaches the south wall of the greatest possible number of buildings between the hours of 9:00 AM and 3:00 PM, Pacific Standard Time on December 21st.

STAFF ANALYSIS: The proposed streets on the northern segment run east-west allowing lots to face north or south and maximizing the unshaded exposure of the south sides of homes. Per the applicant's narrative, 45 of the 59 lots (76%) receive excellent solar access. This criterion is met.

B. Wind - The cooling effects of prevailing summer breezes and shading vegetation shall be accounted for in site design. The extent solar access to adjacent sites is not impaired vegetation shall be used to moderate prevailing winter wind on the site.

STAFF ANALYSIS: The site design of the planned subdivision as well as mandatory building setbacks will allow for adequate air circulation and cooling. There is adequate room for the addition of vegetation to moderate prevailing winter winds from the south and east. The criterion is met.

16.156.030 - Variance to Permit Solar Access

Variations from zoning district standards relating to height, setback and yard requirements approved as per Chapter 16.84 may be granted by the Commission where necessary for the proper functioning of solar energy systems, or to otherwise preserve solar access on a site or to an adjacent site.

STAFF ANALYSIS: The proposal does not include a variance from the applicable standards. This criterion is not applicable.

STAFF RECOMMENDATION

Based upon the review of the applicant's submittal information, review of the code, and public and agency comments, staff finds that the proposed subdivision does not fully comply with the standards but can be conditioned, as follows, to comply. Therefore, staff recommends **approval of the Reserve at Cedar Creek Subdivision application, SUB 19-02, subject to the following conditions.**

VII. RECOMMENDATION

A. General Conditions

1. Compliance with the Conditions of Approval is the responsibility of the developer or its successor in interest.
2. Development and construction on the site shall conform substantially to the preliminary plat plans submitted by Pioneer Design Group, dated January 17, 2020, except as modified in the conditions below, (and shall conform specifically to final construction plans reviewed and approved by the City Engineer, the Building Official, Clean Water Services, and Tualatin Valley Fire and Rescue, and Washington County). All plans shall comply with the applicable building, planning, engineering and fire protection codes of the City of Sherwood.
3. The developer is responsible for all costs associated with any remaining public facility improvements and shall assure the construction of all public streets and utilities within and adjacent to the plat as required by these conditions of approval, to the plans, standards, and specifications of the City of Sherwood. The developer shall also provide to the City financial guarantees for construction of all public streets and utilities within and adjacent to the plat, as required by the engineering compliance agreement.

4. **The approval is valid for a period of two (2) years from the date of the signed engineering compliance agreement. The final plat shall be recorded within two years of the date of this decision.** Extensions may be granted by the City as afforded by the Sherwood Zoning and Community Development Code.
5. Placement of construction trailers or temporary storage containers on the subject property shall require a Temporary Use Permit per Section 16.86 of the SZCDC.
6. This approval does not negate the need to obtain permits, as appropriate from other local, state or federal agencies, even if not specifically required by this decision.
7. Retaining walls within public easements or the public right-of-way shall require engineering approval. Retaining walls located on private property that support a surcharge or are over four feet in height measured from the bottom of the footing will require a permit from the Building Department.
8. Sherwood Broadband utilities shall be installed as per requirements set forth in City Ordinance 2005-017 and Resolution 2005-074.
9. All fences within the subdivision shall meet the requirements in Sherwood Zoning and Community Development Code Chapter 16.58.020.
10. The developer shall coordinate the location of mailboxes with the Post Office.
11. Decks, fences, sheds, building additions and other site improvements shall not be located within any easement unless otherwise determined by the City of Sherwood.
12. Restrict and maintain on-site landscaping, utilities, and any other obstructions in the sight distance triangles to provide adequate sight distance at access locations.
13. The applicant shall adhere to all the requirements and conditions listed in the Amended Service Provider Letter issued by CWS (File No. 19-001036).
14. Tracts "A", "E", "F", and "G" shall be owned and maintained by the homeowners' association.
15. Tracts "B", "C", and "D" shall be owned and maintained by the City of Sherwood.
16. The pedestrian trails on Tract "C" shall be maintained by the homeowners' association.
17. WACO Transportation Development Tax (TDT) credit eligible offsets will be based on requirements and limitations established by WACO Ordinance Mo. 691A, as modified by Ordinances 729, 741, 746-A, 751 and 793-A, and as described in WACO's Countywide Transportation Development Tax Procedures Manual, dated July 2019. City Transportation SDC credit eligible off-sets will be based on requirements and limitations established by City of Sherwood Municipal Code Chapter 15.16 – System Development Charges and Chapter 15.20 – Park and Recreation System Development Charges on New Development.
18. All new utilities shall be placed underground unless covered by exceptions noted under Section 16.1183.040, and as approved by the City Engineer.
19. Prior to Building Permit application submittal, obtain address(es) for the site or parcels.

B. Prior to Approval of Final Subdivision Plat

1. Prior to final plat approval, the parcels shall annex into the Metro Service District.
2. Prior to Final Plat Approval, each lot shall have a minimum of 25-feet of lot width at the front property line/street frontage.
3. Prior Final Plat approval, submit a revised tree plan demonstrating compliance with the Clear Vision requirements of Section.16.58 of the Sherwood Zoning and Community Development Code.
4. Prior to Final Plat approval, show vision clearance easements on all corner lots. Vision Clearance Easements shall be to the City of Sherwood and conform with Section 16.58.010.
5. Prior to Final Plat Approval, submit a detailed final landscape plan that meets Section 16.92 landscaping standards and Section 142.040 visual corridors.
6. Prior to Final Plat Approval, provide CC&Rs that document how the private streets (Tracts A and G), visual corridor open spaces (Tracts E and F), and pedestrian trails on Tract C will be maintained by the neighborhood association.
7. Prior to Final Plat Approval, applicant shall show a 33-foot wide right-of-way dedication (53 feet from the centerline) to Washington County along the SW Brookman Road frontage including adequate corner radius at the intersection with the new public street.
8. Prior to Final Plat Approval, all proposed private streets shall comply with all the standards stated in the SZCDC Section 16.118.050 (Private Streets).
9. Prior to Final Plat Approval, the site shall annex into Clean Water Services Service District.
10. Prior to Final Plat Approval, the stormwater treatment facilities shall be shown as being located in individual tracts of land dedicated to the City of Sherwood.
11. Prior to Final Plat Approval, an easement over the vegetated corridors tracts of land granting access to CWS shall be recorded with the plat.
12. Prior to Final Approval of Plat, applicant shall show a minimum 8-foot wide public utility easement (PUE) on private property along all public street frontages unless otherwise approved by the City Engineer.
13. Prior to Final Plat Approval, all vegetated corridors shall be dedicated to the City in recorded tracts of land.
14. Prior to final plat approval, submit verification of perpetual maintenance of the landscaped visual corridor through evidence of a homeowners' association being established with authority to assess funds to ensure maintenance or another acceptable means.
15. Prior to final plat approval, provide revised plans that show the cross section and landscape plans including the specific planting materials to be installed within the visual corridors along SW Brookman Road meeting the standards of Section 16.142.040.

C. Prior to Issuance of City of Sherwood Engineering Compliance Agreement

1. Prior to Issuance of an Engineering Compliance Agreement, the applicant shall obtain and submit the NPDES 1200C permit issued from CWS for the proposed project, to the City engineering department.
2. Prior to Issuance of an Engineering Compliance Agreement, applicant shall obtain a Stormwater Connection Permit issued from CWS per Exhibit F.
3. Prior to Issuance of an Engineering Compliance Agreement, final engineering plan approval by the Engineering Department is required, performance and payment bonds and insurance riders must be submitted to the City.

D. Prior to Grading Permit

1. Prior to Issuance of a Site Grading Permit, the applicant shall submit for a Washington County Facility Permit for the public improvements along SW Brookman Road per Exhibit C.

E. Prior to Approval of Engineering Public Improvement Plans

1. Prior to Final Approval of Engineering Plans, the applicant shall obtain an NPDES 1200C Permit from CWS and submit it to the Engineering Department. Approved Erosion and Sediment Control construction plans shall show and conform with conditions delineated in the NPDES 1200C permit.
2. Prior to Final Approval of Engineering Plans, the Erosion and Sediment Control plan shall adhere to all CWS engineering design standards for presentation of all Erosion and Sediment Control facilities utilized on the project.
3. Prior to Approval of Engineering Plans, public improvements plans shall include a new driveway access along SW Yamel Terrace that benefits Map/Tax Lot 3S1060000107.
4. Prior to Final Approval of Engineering Plans, the applicant shall pay a fee in-lieu-of construction for deferred frontage improvements along SW Brookman Road. The fee in-lieu-of construction amount will be set at 125% of the estimated deferred frontage improvements construction cost, as approved by the City Engineer. The deferred frontage improvements are identified as being:
 - 1) Asphalt Pavement section conforming to the City Engineering Design and Standard Details Manual, Section 210.2.2 for asphalt thickness requirements for arterial road sections.
 - 2) Standard Base Rock section conforming to the City Engineering Design and Standard Details Manual, Section 210.2.1 for leveling course rock and base rock thickness requirements for arterial roads.
 - 3) Concrete curb and cutter
 - 4) Concrete sidewalk/multi-use path
 - 5) Street planter strip plantings
 - 6) Street lighting system (including lights, foundations and conduits)
 - 7) Street trees
 - 8) Street signage and striping conforming to the City Engineering Design and Standard Details Manual, Section 340.
 - 9) Irrigation system (including piping, valves, controllers, sprinkler heads)
 - 10) Stormwater drainage collection, conveyance, and treatment systems for public roadway.
 - 11) Undergrounding of existing overhead utilities.

Funds are to be deposited into WACO TDT funds account and dedicated strictly to a future WACO SW Brookman Road capital improvement project.

5. Prior to Final Approval of Engineering Plans, the street lighting design shall include a photometric analysis report for review and approval by City Engineering. City lighting standards require Westbrooke fixtures on all internal streets to the subdivision, and Cobra head fixtures along the SW Brookman Road right-of-way.
6. Prior to Final Approval of Engineering Plans, the applicant shall obtain any necessary Right-of-Way Permits from WACO for constructing public improvements within the SW Brookman Road right-of-way.
7. Prior to Final Approval of Engineering Plans, SW Yamel Terrace shall be designed to include a curbline along the east side of the $\frac{3}{4}$ street paved width
8. Prior to Final Approval of Engineering Plans, applicant shall submit a separate design variation request for each non-conforming public infrastructure design element, to the City Engineer for review and approval.
9. Prior to Final Approval of Engineering Plans, applicant shall pay fee in-lieu-of construction amounts as follows:
 - SW Sunset Boulevard/SW Woodhaven Drive - \$19,849 for proportionate share cost of signalized intersection improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Woodhaven Drive & SW Sunset Boulevard signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards Washington County (WACO) TDT and/or City Transportation SDC fee assessments on the developments single-family residential units.
 - SW Sunset Boulevard/SW Timbrel Lane - \$14,858 for proportionate share cost of traffic mini-roundabout improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Timbrel Lane & SW Sunset Boulevard traffic roundabout improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards WACO TDT and/or 54% credit eligible towards City Transportation SDC fee assessments on the developments single-family residential units.
 - SW Ladd Hill Road-SW Main Street/SW Sunset Boulevard - \$17,025 for proportionate share cost of signalized intersection improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Ladd Hill Road-SW Main Street & SW Sunset Boulevard signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards WACO TDT and/or City Transportation SDC fee assessments on the developments single-family residential units.
 - SW Baker Road/SW Murdock Road/SW Sunset Boulevard - \$55,215 for proportionate share cost of addition of future intersection turn lanes improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Baker Road-SW Murdock Road/SW Sunset Boulevard signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 75% credit eligible towards WACO TDT and/or 100% credit eligible towards City Transportation SDC fee assessments on the developments single family residential units.

- SW Brookman Road/Hwy 99W - \$44,526.69 for proportionate share cost of addition of signalized intersection improvements. Funds to be deposited into City funds account and dedicated strictly for a future SW Brookman Road & Hwy 99W signalized intersection improvements project. This fee in-lieu-of construction payment shall be treated as 100% credit eligible towards Washington County (WACO) TDT fee assessments on the development of single-family residential units.
10. Prior to Final Approval of Engineering Plans, the Engineering Department shall provide review and approval of related public water improvement plans and reports. Public water system plans shall meet City standards. All public water pipe shall have joint restraints.
 11. Prior to Final Approval of Engineering Plans, applicant shall obtain and provide letter from Sherwood Public Works Department, that existing public water system has the capacity and pressure to provide appropriate public water and fire service to the proposed development.
 12. Prior to Final Engineering Plan Approval, submitted site development plans shall provide for compliance with all requirements and conditions stated in the CWS issued Amended Service Provider Letter (File No. 19-001036).
 13. Prior to Final Engineering Plan Approval, a structural condition analysis and report shall be performed by a licensed professional engineer, to determine if the structural integrity of this culvert is sufficient for continued use as a vehicle/pedestrian infrastructure. If the culvert is found to be unfit for continued use, replacement of the culvert may be required which may include acquisition of any necessary State or Federal permits (CWS, DEQ, USACE, NMFS, etc.). Any necessary permits and associated requirements will also become part of the Final Engineering Plan Approval requirements.
 14. Prior to Final Engineering Plan Approval, submitted site development stormwater improvement plans shall provide for City access to stormwater outfall/outlet structures for maintenance purposes.
 15. Prior to Final Engineering Plan Approval, a Final Stormwater Drainage Report shall be provided to City Engineering for review and approval.
 16. Prior to Final Engineering Plan Approval, a Stormwater Connection Permit shall be obtained from CWS.
 17. Prior to Final Approval of Engineering Plans, a Flood Plain Certificate for the site flood plain elevation shall be submitted to the City for its records.
 18. Prior to Final Approval of Engineering Plans the applicant shall confirm and if necessary provide State of Oregon Division of State Lands (DSL) Permit as required by WN# 2020-059, Wetland Delineation/Determination Concurrence Letter (WD# 2019-0476), and United States Army Corp of Engineers (USACE) permit.

F. Prior to Issuance of Building Permits

1. Prior to issuance of building permits, submit plot plans and building plans showing that the structures meet the minimum front, face of garage, rear, side, corner side yard setback requirements, height and yard requirements.
2. Prior to Issuance of any single-family residence building permit, submit a final landscape plan that addresses the installation and maintenance standards of Section 16.92.040.
3. Prior to the issuance of building permits, each lot shall provide for one off-street parking space.

4. Prior to the issuance of building permits the appropriate permit applications and details regarding the design of each driveway will be submitted to the City of Sherwood for review and approval.
5. Prior to the issuance of building permits for the propose subdivision, the applicant shall provide the Planning Department with a letter or email, from TVFR District Fire marshal that indicates the concerns within his letter, attached as Exhibit E, have been addressed to the district's satisfaction.
6. Prior to issuance of any building permits, install the landscaped visual corridor or bond for the installation of improvements per revised approved Landscape, Tree and Open Space Plan.

G. Prior to Acceptance of Constructed Public Improvements

1. Prior to Final Acceptance of Constructed Public Improvements, all conditions of the CWS Service Provider Letter (CWS File No.19-001036) shall have been constructed and received final inspection approval by the City, in conformance with the conditions and requirements of the SPL.
2. Prior to Final Acceptance of Constructed Public Improvements, connection of the northern development area to the public transportation improvements being constructed by the adjacent Middlebrook Subdivision, will not be permitted until such time as the public transportation improvements being constructed by the Middlebrook Subdivision have been constructed, have received final inspection approval, and have been accepted as public infrastructure by the City. Until that time, a minimum 10-foot physical separation between the Reserve at Cedar Creek site development public transportation infrastructure improvements and the adjacent Middlebrook Subdivision public transportation infrastructure improvements shall be maintained.
3. Prior to Final Acceptance of Constructed Public Improvements, all private streets shall comply with all the standards stated in the SZCDC Section 16.118.050 (Private Streets).
4. Prior to Final Acceptance of Constructed Public Improvements, connection to that portion of the Brookman Sanitary Sewer Trunk Extension Project being constructed by the adjacent Middlebrook Subdivision, will not be permitted until such time as that portion of the sanitary trunk line have been constructed, have received final inspection approval, and have been accepted as public infrastructure by the City. Until that time, a minimum 10-foot physical separation between the Reserve at Cedar Creek site development public sanitary infrastructure improvements and the adjacent Middlebrook Subdivision public sanitary infrastructure improvements shall be maintained.
5. Prior to Final Acceptance of Constructed Public Improvements, all private sanitary laterals shall be installed in compliance with the current Oregon Plumbing Specialty Code.
6. Prior to Final Acceptance of Constructed Public Improvements, any public sanitary sewer to be located on private property shall have a recorded public sanitary sewer easement encompassing the related public sanitary sewer improvement meeting Sherwood Engineering standards.
7. Prior to Final Acceptance of Constructed Public Improvements, a 20-foot wide public sanitary sewer easement across the entirety of the applicant's property in alignment with the proposed Brookman Sanitary Sewer Trunk Line Extension project as specified by CWS, shall be dedicated to the City.
8. Prior to Final Acceptance of Constructed Public Improvements, connection to that portion of the public water system being constructed by the adjacent Middlebrook Subdivision, will not be permitted until such time as that portion of the public water system is constructed, has

received final inspection approval, and is accepted as public infrastructure by the City. Until that time, a minimum 10-foot physical separation between the proposed site development public water system and the Middlebrook Subdivision public water systems, shall be maintained.

9. Prior to Final Acceptance of Constructed Public Improvements, the installation of the 12-inch waterline running down SW Brookman Road, shall extend the entire length of the property frontage right-of-way line.
10. Prior to Final Acceptance of Constructed Public Improvements, the proposed development shall provide stormwater improvements as needed to serve new street and lot improvements meeting CWS and City of Sherwood standards.
11. Prior to Final Acceptance of Constructed Public Improvements, any public stormwater system that is located on private property shall have a recorded public stormwater easement encompassing the related public stormwater sewer improvement meeting Sherwood Engineering standards.
12. Prior to Final Acceptance of Constructed Public Improvements, all private stormwater laterals shall be installed in compliance with the current Oregon Plumbing Specialty Code.
13. Prior to Final Acceptance of Public Improvements, Sherwood Broadband utilities (vaults and conduits) shall be installed along the subject property's frontage per requirements set forth in City Ordinance 2005-017 and City Resolution 2005-074.
14. Prior to Acceptance of Public Improvements, the applicant shall have complied with all the requirements and conditions of permit(s) issued by City, CWS, DSL, USACE, and/or NMFS.

H. Prior to Occupancy of Structures

1. Prior to Grant of Occupancy, the individual lot shall be landscaped and all required street trees shall be planted in accordance to city standards.
2. Prior to Grant of Occupancy, install the landscaping according to the landscape plans or pay a security bond for 125% of the cost of the landscaping payable to the City. If the landscaping is not completed within six months, the security may be used by the City to complete the installation.
3. Prior to Grant of Occupancy, final acceptance of constructed public improvements shall be obtained from the Engineering Department. This acceptance includes complying with all requirements and conditions of the NPDES 1200C Permit.
4. Prior to Final Grant of Occupancy, all TDT and SDC credit requests on credit eligible public improvements must be submitted in accordance with WACO Ordinance Mo. 691A, as modified by Ordinances 729, 741, 746-A, 751 and 793-A, and City of Sherwood Municipal Code Chapter 15.16 – System Development Charges and Chapter 15.20 – Park and Recreation System Development Charges on New Development, and conform and comply with the standards and requirements stated therein.
5. Prior to Grant of Occupancy, the roadway improvements required by Washington County, shall be completed and approved by Washington County per Exhibit C.
6. Prior to Issuance of Occupancy of any residential lot structures, all service laterals shall be installed in compliance with the current Oregon Plumbing Specialty Code.

7. Prior to Grant of Occupancy for any building, the proposed development shall provide storm sewer improvements as needed to serve new street improvements and service all parcels within the subject development meeting CWS and City standards.
8. Prior to Grant of Occupancy, for each residential structure constructed within the subdivision and abutting the Flood Plain corridor, a completed FEMA Elevation Certificate Form shall be submitted to the City for its records.
9. Prior to Grant of Occupancy, install the visual corridor landscaping per the landscape plans submitted during the final plat review.

VII. Exhibits

- A. Applicant's submittal with narrative and supporting documents dated January 17, 2020
- B. Engineering comments dated March 11, 2020 amended April 19, 2020
- C. Washington County LUT comments dated March 9, 2020
- D.1 ODOT comments dated January 30, 2020
- D.2 ODOT comments dated March 17, 2020
- D.3 ODOT Region 2 comments dated March 6, 2020
- E. Tualatin Valley Fire & Rescue comments dated January 21, 2020
- F.1 Clean Water Services comments dated February 3, 2020
- F.2 Amended Service Provider Letter (CWS 19-001036) dated September 17, 2019
- G. Waste Management comments dated March 2, 2020
- H. Department of State Lands, Wetland Land Use Notice Response dated February 3, 2020
- I. Portland General Electric comments dated February 3, 2020
- J. Bonneville Power Administration comments dated January 24, 2020

The preliminary subdivision approval is valid for a period of two (2) years from the date of the decision, per Section 16.120.050.