



**Planning & Community Dev.**  
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**AGENDA**  
**Molalla Planning Commission**  
**6:30 PM, August 4, 2021**

**Meeting Location: Molalla Adult Center**  
**315 Kennel Avenue.**  
**Molalla, OR 97038**

The Planning Commission Meeting will begin at 6:30pm. The Planning Commission has adopted Public Participation Rules. Copies of these rules and public comment cards are available at the entry desk. Public comment cards must be turned in prior to the start of the Commission meeting. The City will endeavor to provide a qualified bilingual interpreter, at no cost, if requested at least 48 hours prior to the meeting. To obtain services call the City Recorder at (503) 829-6855.

- I. CALL TO ORDER**
- II. FLAG SALUTE AND ROLL CALL**
- III. PUBLIC COMMENT** – Limited to 3 minutes per person
- IV. MINUTES:**
  - July 7, 2021 Planning Commission Meeting
- V. QUASI-JUDICIAL HEARING:**
  - SUB01-2021 and SDR03-2021 (consolidated) – Tax Lot 52E05 02002 (River Meadows Subdivision)
- VI. DISCUSSIONS:**
  - DCA12-2021 – Mural Code
- VII. REPORTS & ANNOUNCEMENTS:**
  - Planners Report
  - Directors Report
- VIII. ADJOURNMENT:**



**Molalla Planning Commission  
MINUTES Molalla Adult  
Center  
315 Kennel Ave., Molalla, OR  
97038  
July 7, 2021**

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The July 7, 2021 meeting of the Molalla Planning Commission was called to order by Chair Rae Botsford at 6:35pm.

**COMMISSIONER ATTENDANCE:**

Chair Rae Lynn Botsford – Present  
Commissioner Rick Deaton – Present  
Commissioner Doug Eaglebear – Present  
Commissioner Jennifer Satter – Absent  
Commissioner Jacob Giberson – Present  
Commissioner Connie Farrens – Present  
Commissioner Sarah Schoenborn – Absent

**STAFF IN ATTENDANCE:**

Mac CortHELL, Planning Director - Present  
Dan Zinder, Associate Planner – Present  
Julie Larson, Planning Specialist - Present  
Gerald Fisher, Public Works Director - Present

**AGENDA:**

- I. CALL TO ORDER**
- II. FLAG SALUTE AND ROLL CALL**
- III. PUBLIC COMMENT** – Limited to 3 minutes per person  
No Public Comment
- IV. MINUTES:**
  - June 2, 2021 Planning Commission MeetingPlanning Commission approves minutes 5-0
- V. PUBLIC HEARING:**
  - SDR02-2021 – Scandia (525 W Main)Begins at 0:05:44 of meeting video. (*Link posted below*)

Associate Planner Zinder presented the staff report and material for planning file SDR02-2021, a Site Design Review application for Scandia. This application establishes appropriate land use approvals for a new warehousing and distribution use on a 1.8 acre site located at 525/535 W Main Street in Molalla between W Main St./OR-211 and W Heintz St.

Garrett Stephens and Mike Rogers made public comments in favor of approval.

After discussion, Commissioner Giberson made a motion to approve SDR02-2021, Commissioner Farrens made a second motion. Motion passes 5-0

## **VI. ORDINANCES:**

- DCA09-2021 – Use Compatibility between Residential & Industrial Properties

Begins at 0:45:23 of meeting video. (*Link posted below*)

Associate Planner Zinder presented the staff report and material for planning file DCA09-2021. This is a proposal to amend Molalla Municipal Code (MCC) Section 17-2.2.030 to require Conditional Use Permits for mitigating noise, odor, and other potential sources of incompatibility between Residential and Industrial uses.

After discussion, Commissioner Giberson made a motion to recommend adoption of ORD2021-10 to the Molalla City Council, Commissioner Farrens made a second motion. Motion passes 5-0

## **VII. DISCUSSION ITEMS:**

- Economic Development Roadmap

Begins at 1:01:39 of meeting video. (*Link posted below*)

- DCA10-2021 – PSP (Public & Semi Public) Reconciliation

Begins at 1:19:51 of meeting video. (*Link posted below*)

- DCA11 & 12-2021 – Sign and Mural Code

Begins at 1:26:56 of meeting video. (*Link posted below*)

- DCA13 – Multifamily in Commercial Zones

Begins at 0:49:54 of meeting video. (*Link posted below*)

Planning Director Mac Corthell presented the staff report and material for planning file DCA13-2021. This is a proposal for consideration of a code amendment that modifies Molalla Municipal Code (MCC) Section 17-2.3.090 Dwellings in Commercial and

Industrial Zones, to ensure that residential uses developed in Commercial Zones contain commercial components.

After discussion, Commissioner Giberson made a motion to recommend the proposed amendment to the Development Code for approval by the Molalla City Council, Commissioner Deaton made a second motion. Motion passes 5-0

**VI. REPORTS AND ANNOUNCEMENTS**

- Planner's Report

Begins at 1:46:22 of meeting video. (*Link posted below*)

- Directors Report

Begins at 1:36:30 of meeting video. (*Link posted below*)

**VIII. ADJOURNMENT**

Meeting adjourned at 8:29PM

**PLANNING COMMISSION MEETING CAN BE VIEWED IN IT'S ENTIRIETY HERE:**

**[July 7, 2021 Planning Commission Meeting Video](#)**

\_\_\_\_\_  
Chair, Rae Lynn Botsford

\_\_\_\_\_  
Date

ATTEST: \_\_\_\_\_  
Mac Corthell, Planning Director

## CITY OF MOLALLA STAFF REPORT

### Consolidated Review for SUB01-2021 and SDR03-2021; Taxlot 52E05 02002 – River Meadows Subdivision

**Date:** July 27, 2021 for the August 4, 2021 Planning Commission Meeting

**File No.:** Consolidated Review for SUB01-2021 and SDR03-2021

**Proposal:** Site design review and subdivision for a 30-Lot subdivision.

**Address:** Unaddressed

**Tax Lots:** 52E05 02002

**Applicant:** Dave Carter  
PO Box 352  
Beavercreek, OR 97004

**Property Owners:** Dale and Julie Bystrom

**Applicable Standards:** **Applicable Standards: Molalla Municipal Code, Title 17, Development Code**

#### **Division II, Zoning Regulations**

*Section 17-2.2.030 Allowed Uses*

*Section 17-2.2.040 Lot and Development Standards*

*Section 17-2.2.060 Residential Density Standards*

#### **Division III, Community Design Standards**

*Chapter 17-3.3 Access and Circulation*

*Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting*

*Chapter 17-3.5 Parking and Loading*

*Chapter 17-3.6 Public Facilities*

**Division IV, Application Review Procedures and Approval Criteria**

*Chapter 17-4.1.040 Type III Procedure (Quasi-Judicial Review –  
Public Hearing)*

*Chapter 17-4.2.050 Approval Criteria (Site Design Review)*

*Section 17-4.3.070 Preliminary Plat Approval Criteria*

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TABLE OF CONTENTS:

- I. Executive Summary
- II. Recommendations
- III. Conditions of Approval

EXHIBITS:

EXHIBIT A: Findings of Fact for SUB01-2021

EXHIBIT B: Findings of Fact for SDR03-2021

EXHIBIT C: Consolidated Application Package For SDR03-2021  
AND SUB01-2021

EXHIBIT D: Amendment to SUB01-2021 and SDR03-2021  
Application Package – Tract C Ownership and Maintenance

EXHIBIT E: Molalla Public Works Comments

EXHIBIT F: Molalla Fire Department Comments

EXHIBIT G: Clackamas County Development Engineering  
Comments

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## I. EXECUTIVE SUMMARY

### **Proposal:**

The Applicants seek approval for a subdivision and site design review for a 30-Lot subdivision on a 5.97 ac parcel in Molalla. The subject parcel is located north of Lexington Estates Subdivision between Rachel LN and Vick RD. The applicant proposes to access the site by extending Rachel LN from the existing stub-out on the northern side of Lexington Estates. The Applicant's proposal includes the installation of underground public and franchise utilities, platting a public tract for construction of a public stormwater facility, platting a public tract for construction of a multi-purpose path, and platting a private tract for construction of a private outdoor recreation space.

### **Site Description:**

The subject parcel is a 5.97 ac triangularly shaped parcel located on Clackamas County Taxlot 52E05 02002 between Rachel LN (City of Molalla) and Vick RD (Clackamas County). The southern portion of the property slopes slightly to the northwest and the northern portion slopes slightly to the north to its lowest elevation along Vick RD. The parcel is currently vacant except for a small grove of evergreen trees bordering the parcel and the northern boundary of Lexington Estates. The subject parcel is contiguous with the City on its southern boundary and is surrounded by unincorporated land to the east, west, and north. The current zoning of the subject parcel is Low-Density Residential (R-1) and no change to the zoning designation is proposed.

### **Surrounding Zoning and Land Uses:**

The property's southern boundary is adjacent to the R-1 zoned Lexington Estates Subdivision. Lexington Estates is built out with single family homes and the back yards of four homes and side yard of one home abut the property. Properties to the north, east, and west are zoned for Exclusive Farm Use (EFU). Properties to the west and north are homesteads with substantially large agricultural uses on them. Directly east of the property is an abandoned railroad right-of-way identified as a potential future site for a multi-use recreation pathway in the 2014 City of Molalla Parks, Recreation, and Trails Master Plan. The plan notes that the parcel has existing, informal use as a pathway. Further east are several smaller homes and one large agricultural property.

### **Public Agency Responses:**

Staff circulated notice of the project to the City's Public Works Director, Fire Marshal, and Clackamas County Development Engineering on June 29, 2021. The City has included responses from Clackamas County Development Engineering, Molalla Fire District, and Molalla Public Works as Exhibits G, E, and F respectively, and/or integrated their comments into the proposed findings and conditions of this decision.



**Public Notice and Comments:**

Per MMC 17-4.1.040, notice of the public hearing was sent to all property owners within 300 feet of the subject properties and to a group of interested parties on July 6, 2021. Notice was published in the Molalla Pioneer on July 21, 2021 and on the City's website on July 13, 2021. Signage containing public notice information was posted on the property on July 13, 2021. As of July 27, 2021 Staff had received no public comment on the application.

## I. Recommendation

Based on the application materials and findings demonstrating present or conditioned compliance with the applicable criteria, staff recommends approval of Site Design Review SDR03-2021 and Subdivision SUB01-2021, subject to the conditions of approval to follow. This approval is based on the Applicant's written narrative, site plans, preliminary partition plat, and supplemental application materials. Any modifications to the approved plans other than those required by the conditions of this decision will require a new land use application and approval.

## II. Conditions of Approval

### 1. Conditions Requiring Resolution Prior To Final Plat Approval

- a. The Applicant shall submit for final plat approval within two years of preliminary plat approval or otherwise receive an extension in accordance with MMC 17-4.3.030. Failure to do so will result in lapse of this decision.
- b. Applicant shall be required to submit sanitary sewer design plans to Oregon DEQ for review and approval. Applicant shall provide a Certificate of Capacity to Oregon DEQ at time of plan submission. No Public Works permit can be issued without DEQ's approval of the sewer system and the Certificate of Capacity.
- c. The Applicant shall submit separate engineering drawings reflecting the installation of public utilities. All public improvements shall be completed and accepted by the Public Works Department prior to issuance of any building permit. No connections to City service shall be allowed until public improvements are completed (MMC 17-3.6.080).
  - i. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance.
  - ii. Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements if additional modifications or expansion of the sight distance onto adjacent streets is required.
  - iii. The Applicant shall design and construct public sidewalks that conform to the current version of the Public Works Design Standards and Transportation Systems Plan prior to final plat approval (MMC 17-3.3.040 B, 2).

- iv. For each of Rachel LN, Wingfield DR, and Sarah LN, the Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking aisles), curb and gutter, 6-foot curb tight sidewalk, and streetlighting (MMC 17-3.6.020).
- v. Applicant shall construct Type 3 barricades at the end of each of Rachel LN, Wingfield DR, and Sarah LN with signage as required by the Molalla Public Works Department (MMC 17-3.6.020).
- vi. Access to public streets shall be limited to Rachel Lane, with the exception of lots 24 and 26, which shall obtain access via Wingfield Drive. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction (MMC 17-3.6.020).
- vii. Applicant shall design and construct a concrete pedestrian pathway meeting the Molalla Standard Specifications for Public Works Construction on Tract "C" (MMC 17-3.6.020).
- viii. All walkways abutting public streets shall be raised 6 inches from the abutting roadway or otherwise separated from vehicle maneuvering areas (MMC 17-3.3.040 B, 3).
- ix. All utilities to the project shall be served by underground services. No overhead crossings of public right of way shall be approved by the city (Molalla Public Works Standards).
- x. Permitting for the proposed fence shall be authorized through engineered plans submitted after the approval of this review (MMC 17-3.4.040 E).
- xi. Street lighting shall be installed along all streets as required in compliance with the standards of MMC 17-3.4.050, Molalla Public Works Design Standards, and AASHTO lighting requirements (MMC 17-3.4.050).
- xii. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards.
- xiii. All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.
- xiv. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.

- xv. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.
  - xvi. All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.
  - xvii. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.
  - xviii. General Wetland Requirements – The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property prior to City approval of occupancy.
  - xix. General Erosion Control – The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.
  - xx. Hydrant locations shall be submitted to the Molalla Fire Department for approval. Addressing visibility must conform to Section 505 Of the 2019 Oregon Fire Code.
- d. The Applicant shall obtain a Development Permit from the Clackamas County Department of Transportation and Development Engineering for review and approval of frontage improvements, stormwater conveyance and sight distance prior to site improvements. The permit shall be obtained prior to commencement of site work and recording of the subdivision plat. To obtain the permit, the applicant shall submit construction plans prepared and stamped by an Engineer registered in the State of Oregon and provide a performance guarantee equal to 125% of the estimated cost of the construction within County right-of-way and pay a plan review and inspection fee. All required improvements within County right-of-way shall be designed, constructed,

inspected and approved, pursuant to Clackamas County Roadway Standards (MMC 17-3.6.020 E).

- i. All utility extensions and connections shall be shown on the approved plans providing pavement restorations consistent with Chapter 7 of the Clackamas County Roadway Standards.
- ii. The applicant shall design and construct up to half-street frontage improvements along S Vick RD prior to final plat approval consisting of:
  - (1) 20-feet of pavement (structural section to meet C100)
  - (2) Access driveway for stormwater maintenance facility meeting standard detail D650.
  - (3) Off-site asphaltic tapers shall be provided in accordance with Roadway Standards Section 250.6.4
  - (4) Inspection and evaluation of existing culverts under and along S Vick RD for structural deficiencies, alignment and flow. Replacement may be required.
- e. Tract "C" shall be dedicated to the homeowners association for the subdivision (MMC 17-3.6.030).
- f. The Applicant shall dedicate a public access easement for Tract "C." Maintenance responsibilities shall remain with the homeowner's association, and must be included in the easement language (MMC 17-3.6.020).
- g. A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements (MMC 17-3.6.070).
- h. All proposed dedications and easements shall be identified on the final plat (MMC 17-4.3.070).
- i. The Applicant shall verify the public right-of-way width and location along the entire site frontage of S Vick RD. The right-of-way and width shall be verified by a professional surveyor to the satisfaction of DTD Engineering and Survey Departments. The applicant shall dedicate 35-foot half-street right-of-way on S Vick RD, per standard detail C140 (MMC 17-3.6.020).
- j. As a condition of approval, the Applicant shall dedicate a minimum 8-foot public utility and sidewalk easement along the entire frontage of S Vick RD (Clackamas County Roadway Standards).

## 2. Conditions Requiring Resolution Prior To Submitting Building Permit Applications to the Molalla Planning Department:

- a. Each individual lot shall require an approach permit (MMC 17-3.3.030 B).
- b. All lots in the proposed development shall take access from either the extended Rachel LN or Wingfield DR. All streets and driveway approaches shall be designed and constructed in compliance with the standards of MMC 17-3.3.030 D.
- c. All driveway approaches shall be designed and constructed consistent with the current version of the Public Works Design Standards and Transportation Systems Plan (MMC 17-3.3.030 F).

## 3. Conditions to be Met Prior To Occupancy:

- a. Each lot shall be developed in compliance with access and circulation standards of MMC Chapter 17-3.3.
- b. Prior to Final Inspection by Clackamas County, the applicant shall provide and maintain minimum Stopping Sight and Intersection Sight Distance at the stormwater maintenance access along S Vick RD. The applicant shall provide a minimum of 495 feet of stopping sight distance and 610 feet of intersection sight distance at the intersection of S Vick RD. Intersection sight distance shall restrict plantings at maturity, retaining wall, embankments, trees, fences or any other objects that obstruct vehicular sight distance.

## 4. Ongoing Conditions:

- a. No visual obstructions shall be placed in vision clearance areas (MMC 17-3.3.030 G).
- b. No proposed fencing shall be made of prohibited materials, as detailed in MMC 17-3.4
- c. Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner (MMC 17-3.4.040 F).
- d. Parking for each home constructed on the proposed lots shall comply with off-street

- parking requirements, as applicable (MMC 17-3.5).
- e. Per Oregon Fire Code, subdivisions in excess of thirty (30) units shall have either a secondary means of egress or the requirement that all homes in the subdivision are sprinkled. The proposed subdivision is for 30 single-family lots. Any units developed in excess of thirty (30) units within River Meadows Subdivision shall require either the development of a secondary egress or sprinkling of each home within River Meadows Subdivision (Oregon Fire Code)
  - f. The Applicant shall maintain clear space in and around hydrants as per Appendix "D" of the 2019 Oregon fire Code.

## **Exhibit A:**

### *City Staff's Findings of Fact for SUB01-2021*

A. Approval Criteria. The Planning Commission may approve, approve with conditions, or deny a preliminary plat. The Planning Commission decision shall be based on findings of compliance with all of the following approval criteria:

1. The land division application shall conform to the requirements of Chapter 17-4.3;

### 17-4.3.020 General Requirements

*17-4.3.020(A) Subdivision and Partition Approval Through Two-Step Process. Applications for subdivision or partition approval shall be processed by means of a preliminary plat evaluation and a final plat evaluation, according to the following two steps:*

- 1. The preliminary plat must be approved before the final plat can be submitted for approval consideration; and*
- 2. The final plat must demonstrate compliance with all conditions of approval of the preliminary plat.*

**FINDINGS:** The Applicant's submitted application is for a preliminary plat approval. Final Plat approval by the City of Molalla (MMC 17-4.3.090) will be required prior to filing and recording with Clackamas County (MMC 17-4.3.100).

*17-4.3.020(B) Compliance with ORS Chapter 92. All subdivision and partition proposals shall conform to state regulations in ORS Chapter 92 Subdivisions and Partitions.*

**FINDINGS:** This proposal conforms to the regulations in ORS Chapter 92. The proposal meets this criterion.

*17-4.3.020(C) Future Re-Division Plan. When subdividing or partitioning tracts into large lots (i.e., greater than three times or 300 percent the minimum lot size allowed by the underlying land use district), the lots shall be of such size, shape, and orientation as to facilitate future re-division and extension of streets and utilities. The applicant shall submit a future re-division plan, or shadow plan, indicating how re-division of oversized lots and extension of planned public facilities to adjacent parcels can occur in the future. (See also Section 17-4.3.040 Pre-Planning for Large Sites.)*

**FINDINGS:** The Applicant's submitted application does not propose any lots greater than three times the minimum lot size. Staff finds that this criterion does not apply.



**17-4.3.020(D) Adequate Utilities.** *All lots created through land division shall have adequate public utilities and facilities such as streets, water, sewer, gas, and electrical systems, pursuant to Chapter 17-3.6. These systems shall be located and constructed underground where feasible.*

**FINDINGS:** The Applicant's submitted site and utilities plan shows that all lots proposed in the subdivision will be served by new public streets and adequate underground public facilities. The proposal meets this criterion.

**17-4.3.020(E) Adequate Drainage.** *All subdivision and partition proposals shall have adequate surface water drainage facilities that reduce exposure to flood damage and improve water quality. Water quality or quantity control improvements may be required, pursuant to Chapter 17-3.6.*

**FINDINGS:** As detailed in the Applicant's submitted drainage report, Tract "A" from the Applicant's submitted site and utilities plan shows a water quality pond designed for projected stormwater flows. Lots are served by underground stormwater facilities that flow into the pond on Tract "A". The proposal meets this criterion.

**17-4.3.020(F) Adequate Access.** *All lots created or reconfigured shall have adequate vehicle access and parking, as may be required, pursuant to Chapter 17-3.3. (Ord. 2017-08 §1)*

**FINDINGS:** The Applicant's submitted application shows that all lots are served by the proposed public street network. This criterion can be met subject to a condition of approval. As a condition of approval, each lot shall be developed in compliance with access and circulation standards of MMC Chapter 17-3.3.

### 17-4.3.030 Preliminary Plat Approvals Process

A. **Review of Preliminary Plat.** Preliminary plats for partitions shall be processed using the Type II procedure under Section 17-4.1.030. Subdivisions shall be processed using the Type III procedure under Section 17-4.1.040. All preliminary plats, including partitions and subdivisions, are subject to the approval criteria in Section 17-4.3.070.

**FINDINGS:** The Applicant's submitted proposal is for a 30-Lot subdivision. Per MMC 17-5.1.020 Definitions, any proposal resulting in four (4) or more lots constitutes a subdivision and is subject to a Type III approvals process. This application was processed as a Type III approval.

B. **Preliminary Plat Approval Period.** Preliminary plat approval shall be effective for a period of two years from the date of approval. The preliminary plat shall lapse if a final plat has not been submitted or other assurance provided, pursuant to Section 17-4.3.090, within

the two-year period. The Planning Commission may approve phased subdivisions, pursuant to subsection D, with an overall time frame of more than two years between preliminary and final plat approvals.

**FINDINGS:** This criterion is met subject to a condition of approval. As a condition of approval, the Applicant shall submit for final plat approval within two years of preliminary plat approval or otherwise receive an extension in accordance with MMC 17-4.3.030 to prevent a lapse of the decision herein.

Criteria C and D do not apply.

### 17-4.3.040 Lot Size Averaging, Flag Lots, and Infill Development

- A. **Lot Size Averaging.** To allow flexibility in subdivision design and to address physical constraints, such as topography, existing development, significant trees, and other natural and built features, the approval body may grant a 20 percent modification to the lot area and/or lot dimension (width/depth) standards in Chapter 17-2.2, provided that the overall density of the subdivision does not exceed the allowable density of the district and the approval body finds that all of the following are met:
1. Granting the modification is necessary to achieve planned housing densities, as allowed by the underlying zone, or to improve development compatibility with natural features or adjacent land uses;
  2. The Planning Official may require screening, buffering, or other transitions in site design where substandard lots are proposed to abut standard- or larger-sized lots.

**FINDINGS:** All proposed lots meet minimum lot area and dimensions. This criterion does not apply.

- B. **Flag Lots.** Flag lots may be created only when a through street cannot be extended to serve abutting uses or future development. A flag lot driveway (“flag pole”) shall serve not more than two dwelling units, including accessory dwellings and dwellings on individual lots. The City Engineer may approve additional units. The layout of flag lots, the placement of buildings on such lots, and the alignment of shared drives shall be designed so that future street connections can be made as adjacent properties develop, to the extent practicable, and in accordance with the standards of Section 17-3.6.020.D.

**FINDINGS:** The Applicant’s submitted site plan shows two flag lots; lots 19 and 21. Flag lots were only proposed in areas where a through street was not practical. Each flag lot driveway serves a single lot. No flag-pole serves more than two dwelling units. This criterion is met.

C. **Infill Development and Mid-Block Lanes.** Where consecutive flag lot developments or other infill development could have the effect of precluding local street extensions through a long block, the Planning Official and City Engineer may require the improvement of mid-block lanes through the block. Mid-block lanes are private drives serving more than two dwelling units with reciprocal access easements; such lanes are an alternative to requiring public right-of-way street improvements where physical site constraints preclude the development of a standard street. Mid-block lanes, at a minimum, shall be paved, have adequate storm drainage (surface retention, where feasible, is preferred), meet the construction standards for alleys, and conform to the standards of subsections D and E.

**FINDINGS:** No mid-block lanes are proposed nor are any practical in this development. This criterion does not apply.

D. **Emergency Vehicle Access.** A drive serving more than one lot shall have a reciprocal access and maintenance easement recorded for all lots it serves. No fence, structure, or other obstacle shall be placed within the drive area. Where required, emergency vehicle apparatus lanes, including any required turn-around, shall conform to applicable building and fire code requirements. Fire sprinklers may also be required for buildings that cannot be fully served by fire hydrants (i.e., due to distance from hydrant or insufficient fire flow).

**FINDINGS:** The Applicant's submitted site plan (pg. C2) shows a conforming turnaround for fire apparatus. This criterion is met.

E. **Maximum Drive Lane Length.** The maximum length of a drive serving more than one dwelling is subject to requirements of the Uniform Fire Code. (Ord. 2017-08 §1)

**FINDINGS:** The Applicant's submitted site plan does not show any driveway accesses greater than 75ft. This criterion is met.

2. All proposed lots, blocks, and proposed land uses shall conform to the applicable provisions of Division II Zoning Regulations, except as modified by the provisions of Chapter 17-4.3 (e.g., lot size averaging);

### 17-2.2.030 Allowed Uses

**Findings:** The Applicant's submitted application is for a 30-Lot subdivision. Each lot is designated for single-family, detached development. Per MMC Table 17-2.2.030 Single-Family Dwelling, Non-Attached are a permitted use in the zone. Criterion is met.

### 17-2.2.040 Lot and Development Standards

**Findings:**

**Residential Density** – Residential density standards in the R-1 zone require density between 4-8 dwelling units per buildable acre. The Applicant’s submitted application shows 30 units spanning 4.048 buildable acres, which would allow for between 16-32 dwelling units per density standards. This criterion is met.

**Minimum Lot Area** – Minimum lot standards for an SFR in the R-1 zone is 5000 sqft. The Applicant’s submitted preliminary plat shows that all proposed lots are greater than 5000 sqft. This criterion is met.

**Minimum Lot Width and Depth** – Minimum lot width in the R-1 zone is 50ft for an interior, single family lot. Minimum lot width for a corner lot in the R-1 zone is 60ft for a single-family lot. Minimum lot depth in the R-1 zone is 80ft. The Applicant’s preliminary plat shows that each lot within the proposed subdivision meets these standards. This criterion is met.

**Building and Structure Height** – Maximum building height in the R-1 zone is 30ft. Structure heights shall be provided in conformance with applicable MMC Division II standards at the time of building permit submission. This criterion does not apply.

**Maximum Lot Coverage** - Maximum foundation plane coverage in the R-1 zone is 40%. Lot coverage shall be in conformance with applicable MMC Division II standards at the time of building permit submission. This criterion does not apply.

**Minimum Landscape Area % (includes required parking lot, landscaping, and required screening)** – Minimum landscaped area in the R-1 zone is 20%. Landscaping shall be provided in conformance with applicable MMC Division II and Division III standards at the time of building permit submission. This criterion does not apply.

**Minimum Setbacks -**

**Front Setback Requirement: 10ft**

**Garage Setback Requirement: 16ft**

**Side Setback Requirement: Total of 10ft with no side less than 3ft**

**Rear Setback Requirement: 10ft\***

Each lot shall be developed with setbacks that are in conformance with applicable MMC Division II standards at the time of building permit submission. This criterion does not apply.

## **17-2.2.060 Residential Density Standards**

- A. Residential care homes and facilities, senior housing, accessory dwellings, and subdivisions where the average slope exceeds 15 percent are exempt from the minimum density standard.

**Findings:** The Applicant's submitted application does not propose any of these uses. This criterion does not apply.

- B. The density standards may be averaged over more than one development phase (i.e., as in a master planned development). Duplex lots used to comply with the density standard shall be so designated on the final subdivision plat. Density standards shall be listed in conditions of approval to ensure proposed density is met.

**Findings:** The Applicant's submitted application only proposes a single phase. This criterion does not apply.

- C. Partitions and construction of single-family homes on lots exceeding 20,000 square feet shall be located and constructed so that future division of such lots can occur and planned public facilities can be extended based on the minimum lot size and other applicable City standards.

**Findings:** No lots from the Applicant's submitted application are proposed to exceed 20,000 square feet. This criterion does not apply.

- D. Minimum and maximum housing densities are calculated by multiplying the total net buildable area by the applicable density standard. Net buildable area is defined as the area of a site for residential or non-residential development, excluding street rights-of way and other publicly dedicated improvements such as parks, open space, and stormwater detention and retention facilities. "Net buildable area" is expressed either in acres or square feet.

**Findings:** The net buildable area of the subject property was calculated by excluding all public right-of-way and publicly dedicated facilities as required in this section. As reviewed above, the proposed 30 lots comply with the allowed density range (16-32 units) for this property. Criterion is met.

- E. Areas reserved for flag lot access (flag poles) are not counted for the purpose of calculating density.

**Findings:** The Applicant's submitted calculations for net buildable area excluded flag poles as required. This criterion is met.

- 3. Access to individual lots, and public improvements necessary to serve the development, including, but not limited to, water, sewer, and streets, shall conform to Division III Community Design Standards;

### 17-3.3.030 Vehicular Access and Circulation

- A. **Purpose and Intent.** Section 17-3.3.030 implements the street access policies of the City of Molalla Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. “Safety,” for the purposes of this chapter, extends to all modes of transportation.
- B. **Permit Required.** Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

**Findings:** The Applicant’s submitted application show that Rachel Lane will be extended to serve the proposed development. Each individual lot shall require an approach permit prior to building permit. The applicant will be required to comply with these criteria prior to building permit approval. These criteria do not apply.

- C. **Traffic Study Requirements.** The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

**Response:** The Applicant submitted a Traffic Impact Study prepared by a Registered Engineer and addressing the appropriate intersection impacts as part of the application package.

- D. **Approach and Driveway Development Standards.** Approaches and driveways shall conform to all of the following development standards:
  1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.
  2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.
  3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.
  4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.
  5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the

owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.
7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.
8. Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.
9. Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.
10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.
11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.
12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.
13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.
14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.
15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.
16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.

**Findings:** Criteria 1-16 are met subject to conditions of approval. The proposed development will be served by an extension of Rachel Lane, a local street. All lots in the proposed development shall take access from either the extended Rachel LN or Wingfield

DR. All streets and driveway approaches shall be designed and constructed in compliance with the standards of MMC 17-3.3.030 D. This criterion is met with a condition of approval.

17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

**Findings:** The proposed development is not adjacent to any ODOT facilities. This criterion does not apply.

18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing development.
19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.
20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

**Findings:** Criteria 18-20 are met subject to conditions of approval. The proposed development will be served by an extension of Rachel Lane, a local street. All lots in the proposed development shall take access from either the extended Rachel LN or Wingfield DR. All streets and driveway approaches shall be designed and constructed in compliance with the standards of MMC 17-3.3.030 D.

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.050.

**Findings:** The Applicant submitted a storm drainage report with the application package. Additional stormwater analysis is provided in Staff responses to Section 17-3.6.050. This criterion is met.

- E. **Approach Separation from Street Intersections.** Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.
- F. **Approach Spacing.** Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between



approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

**Findings:** Criteria E and F are met subject to conditions of approval. All proposed streets are to be classified as “local streets” in the Molalla Transportation Systems Plan. The current version of the Molalla Transportation Systems Plan requires a minimum of 50ft between driveway approaches and 150ft between intersections on local streets. As a condition of approval, all driveway approaches shall be designed and constructed consistent with the current version of the Public Works Design Standards and Transportation Systems Plan.

G. **Vision Clearance.** No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in “vision clearance areas” at street intersections.. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

**Findings:** This criterion is met subject to conditions of approval. As an ongoing condition of approval, no visual obstructions shall be placed in vision clearance areas.

H. **Exceptions and Adjustments.** The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures, such as consolidated access River Meadows Subdivision Page of 7 32 (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right-in/ right-out only), or other mitigation alleviate all traffic operations and safety concerns.

I. **Joint Use Access Easement and Maintenance Agreement.** Where the City approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the City for its records, but the City is not responsible for maintaining the driveway or resolving any dispute between property owners.

**Findings:** No joint use or cross accesses are proposed nor are any exceptions or adjustments requested. These criteria do not apply.

### 17-3.3.040 Pedestrian Access and Circulation

B. **Standards.** Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:

- 1. **Continuous Walkway System.** A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

**Findings:** The Applicant’s submitted site plan shows a continuous sidewalk constructed along all streets and in front of each lot. In addition, the Applicant’s submitted site plan shows a pedestrian path to be constructed between Lots 6 and 7 (Tract “C”). The proposed pedestrian pathway is between the extended Rachel LN and will connect to a future walkway along the abandoned Union Pacific railroad corridor, as designated in the current Molalla Parks, Recreation, and Trails Master Plan. Criterion is met.

- 2. **Safe, Direct, and Convenient.** Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:

- a. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

**Findings:** The Applicant’s submitted site plan shows sidewalks to be constructed along all streets in front of each lot, and that are designed to connect with future phases. This criterion is met.

- b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

**Findings:** This criterion is met subject to a condition of approval. As a condition of approval, the Applicant shall design and construct public sidewalks that conform to the current version of the Public Works Design Standards and Transportation Systems Plan prior to final plat approval.

- c. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

**Findings:** No buildings are proposed with this application. This criterion does not apply to this application.

3. **Vehicle/Walkway Separation.** Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

**Findings:** This criterion is met subject to a condition of approval. As a condition of approval all walkways abutting public streets shall be raised 6 inches from the abutting roadway or otherwise separated from vehicle maneuvering areas.

4. **Crosswalks.** Where a walkway crosses a parking area or driveway (“crosswalk”), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

**Response:** The Applicant’s submitted site plan shows crosswalks at all street intersections. Criterion is met.

5. **Walkway Width and Surface.** Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and Transportation System Plan.

**Findings:** The Applicant’s submitted site plan shows that all proposed sidewalks shall be 6ft and the Applicant’s proposed narrative states that all pedestrian facilities will be constructed of concrete. In accordance with the Molalla Transportation Systems Plan, the Applicant’s submitted narrative proposes a 10ft wide multi-use path within a 14ft wide public tract (Tract “C”) between Rachel Lane and the abandoned Union Pacific rail corridor. This criterion is met.

6. **Walkway Construction (Private).** Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

**Findings:** The Applicant's submitted application does not propose any private walkways. This criterion does not apply.

7. **Multi-Use Pathways.** Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

**Findings:** As noted above and shown on the Applicant's submitted plans, a 10-foot wide concrete multi-use path within a 14-foot wide public tract (Tract C) is provided between Lots 6 and 7 to connect Rachel Lane to a future multi-use pathway along the abandoned Union Pacific rail corridor, as designated in the Molalla Parks, Recreation, and Trails Master Plan. This criterion is met.

## Chapter 17-3.6 PUBLIC FACILITIES

### 17-3.6.020 Transportation Standards

**Findings:** Transportation standards are met subject to conditions of approval.

1. The 30-lot subdivision proposal requires a traffic impact analysis, and the applicant has supplied the report with the application. No offsite transportation improvements are required for this development related to traffic.
2. Rachel Lane is a local street under City of Molalla jurisdiction. Per the Molalla Transportation Systems Plan, local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by the Molalla Public Works Department.
3. Wingfield Drive is a local street under City of Molalla jurisdiction. Per the Molalla Transportation Systems Plan, local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by the Molalla Public Works Department.

4. Sarah Lane is a local street under City of Molalla jurisdiction. Local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by the Molalla Public Works Department.
5. Access to public streets shall be limited to Rachel Lane, with the exception for lots 24 and 26, which shall obtain access via Wingfield Drive. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.
6. Applicant proposes a pedestrian access connection to the railroad right of way (future bike and pedestrian trail) at the intersection of Rachel Lane and Wingfield Drive. Tract "C" shall have a public access easement dedication and applicant shall construct a concrete pedestrian pathway meeting the Molalla Standard Specifications for Public Works Construction. Maintenance responsibilities shall remain with the homeowner's association.
7. S Vick RD - The proposed development has a small triangular frontage along S Vick Rd, which is under the jurisdiction of Clackamas County and is classified as a urban minor arterial. According to the tax map, S Vick RD has an existing full right-of-way width of 40 feet. The applicant will be required to dedicate sufficient right-of-way to provide a minimum of 35-foot half-street of right-of-way and establish centerline along the entire frontage of S Vick Rd.

The existing pavement width of S Vick RD is 22-feet. The applicant will be required to provide half-street improvements up to and including pavement widening of 20-feet from centerline along the frontage of S Vick RD in addition to pavement taper per section 250.6.4 of the Roadway Standards (structural section to meet standard detail C100).

The applicant is proposing to use an existing graveled entrance as a maintenance access for the stormwater treatment facility from S Vick Rd with improvements. The subject tax lot is within the UGB and future development and expansion is anticipated along S Vick RD. The applicant will be required to provide a driveway approach to S Vick RD for the maintenance of the proposed stormwater facility meeting standard detail D650.

As a condition of approval, all required improvements within County right-of-way shall be designed, constructed, inspected and approved, pursuant to Clackamas County Roadway Standards prior to Final Plat Approval.

As a condition of approval, the Applicant shall verify the public right-of-way width and location along the entire site frontage of S Vick RD. The right-of-way and width shall be verified by a professional surveyor to the satisfaction of DTD Engineering and Survey Departments. The applicant shall dedicate 35 foot half-street right-of-way on S Vick RD, per standard detail C140 prior to final Plat approval.

As a condition of approval, the Applicant shall dedicate a minimum 8-foot public utility and sidewalk easement along the entire frontage of S Vick RD.

As a condition of approval, the applicant shall design and construct up to half-street frontage improvements along S Vick RD prior to final plat approval consisting of:

- a. 20-feet of pavement (structural section to meet C100)
- b. Access driveway for stormwater maintenance facility meeting standard detail D650.
- c. Off-site asphaltic tapers shall be provided in accordance with Roadway Standards Section 250.6.4
- d. Inspection and evaluation of existing culverts under and along S Vick RD for structural deficiencies, alignment and flow. Replacement may be required.

### **17-3.6.040 Sanitary Sewer and Water Service Improvements**

**Findings:** The Applicant proposes water and sanitary mains that extend to the limits of the project per development requirements. Sanitary mains shall dead end at mainline cleanouts on Wingfield DR, Sarah LN, and Rachel LN. Water mains shall dead end at mainline blowoffs on Wingfield DR, Sarah LN, and Rachel LN. Staff finds that Looping of the waterline is not feasible for this development.

Sanitary Sewer and Water Service standards are met subject to conditions of approval.

#### **Sanitary:**

Applicant shall be required to submit sanitary sewer design plans to Oregon DEQ for review and approval. Applicant shall provide a Certificate of Capacity to Oregon DEQ at

time of plan submission. No Public Works permit can be issued without DEQ's approval of the sewer system and the Certificate of Capacity.

### **Water:**

Applicant shall meet all fire regulations for home construction per the Molalla Fire District. Location of fire hydrants shall be approved by the Fire Marshall prior to submission of plans to Public Works.

### **17-3.6.060 Utilities**

**Findings:** Utilities criteria are met subject to a condition of approval. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

#### **4. The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;**

**Findings:** This criterion is met subject to a condition of approval. The Applicant shall clear the proposed plat name "River Meadows" with the Clackamas County Surveyors office to ensure compliance with ORS Chapter 92.

#### **5. The proposed streets, utilities, and surface water drainage facilities conform to City of Molalla adopted master plans and applicable engineering standards, and allow for transitions to existing and potential future development on adjacent lands. The preliminary plat shall identify all proposed public improvements and dedications;**

**Findings:** The findings and conditions contained within this staff report require that all public improvements be designed and constructed to City of Molalla adopted master plans and applicable engineering standards. The Applicant's submitted application shows public streets and utilities that are stubbed to the western border of the subject site to facilitate future development on adjacent lands. The submitted site plans show a feasible potential layout for an extended street network for future development. Surface water drainage facilities are located on the proposed northern parcel on the site. This facility is self-contained for the proposed development. Additional surface water management on adjacent lands shall be designed and constructed to all applicable standards at the time of development. All proposed public improvements are identified on the submitted site plans.

6. All proposed private common areas and improvements, if any, are identified on the preliminary plat and maintenance of such areas is assured through appropriate legal instrument;

**Findings:** This criterion is met subject to conditions of approval:

As a condition of approval Tract "C" shall be dedicated to the homeowners association for the subdivision and have a public access easement dedication. Maintenance responsibilities shall remain with the homeowner's association. The Applicant proposes a recreational tract "Tract B" to be owned and maintained by the River Meadows Homeowners Association. All proposed dedications and easements shall be identified on the final plat.

7. Evidence that any required state and federal permits, as applicable, have been obtained or can reasonably be obtained prior to development;

**Findings:** This criterion is met subject to conditions of approval.

The Applicant shall be required to submit sanitary sewer design plans to Oregon DEQ for review and approval. Applicant shall provide a Certificate of Capacity to Oregon DEQ at time of plan submission. No Public Works permit can be issued without DEQ's approval of the sewer system and the Certificate of Capacity.

8. Evidence that improvements or conditions required by the City, road authority, Clackamas County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met; and

**Findings:** The required improvements and/or conditions for this application will be met through conditions precedent to Final Plat Approval, Civil Review Submission, Building Permit Application, and Occupancy Permit. The proposal meets this criterion.

9. The architectural standards of Section 17-3.2.030.D are met.

**Findings:** No structures are proposed as a part of this application. This criterion does not apply to this application.



## **Exhibit B:**

*City Staff's Findings of Fact for SDR03-2021*

**A. The application is complete, in accordance with Section 17-4.2.040;**

**Findings:** The City received the Applicant's proposal on May 20<sup>th</sup>, 2021 and deemed it complete in accordance with Section 17-4.2.040 on June 10<sup>th</sup>, 2021.

**B. The application complies with all of the applicable provisions of the underlying Zoning District (Division II), including, but not limited to, building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable standards;**

**17-2.2.030 Allowed Uses**

**Findings:** The Applicant's submitted application is for a 30-Lot subdivision. Each lot is designated for single-family, detached development. Per MMC Table 17-2.2.030 Single-Family Dwelling, Non-Attached are a permitted use in the zone. Criterion is met.

**17-2.2.040 Lot and Development Standards**

**Findings:**

**Residential Density** – Residential density standards in the R-1 zone require density between 4-8 dwelling units per buildable acre. The Applicant's submitted application shows 30 units spanning 4.048 buildable acres, which would allow for between 16-32 dwelling units. This criterion is met.

**Minimum Lot Area** – Minimum lot standards for an SFR in the R-1 zone is 5000 sqft. The Applicant's submitted preliminary plat shows that all proposed lots are greater than 5000 sqft. Criterion is met.

**Minimum Lot Width and Depth** – Minimum lot width for an interior lot in the R-1 zone is 50ft for an interior, single family lot. Minimum lot width for a corner lot in the R-1 zone is 60ft for an interior, single family lot. Minimum lot depth in the R-1 zone is 80ft. The Applicant's preliminary plat shows that each lot within the proposed subdivision meets these standards. Criterion is met.

**Building and Structure Height** – Maximum building height in the R-1 zone is 30ft. Structure heights shall be provided in conformance with applicable MMC Division II standards at the time of building permit submission. This criterion does not apply.

**Maximum Lot Coverage** - Maximum foundation plane coverage in the R-1 zone is 40%. Lot coverage shall be in conformance with applicable MMC Division II standards at the time of building permit submission. This criterion does not apply.

**Minimum Landscape Area % (includes required parking lot, landscaping, and required screening)**  
– Minimum landscaped area in the R-1 zone is 20%. Landscaping shall be provided in conformance with applicable MMC Division II and Division III standards at the time of building permit submission. This criterion does not apply.

**Minimum Setbacks -**

**Front Setback Requirement: 10ft**

**Garage Setback Requirement: 16ft**

**Side Setback Requirement: Total of 10ft with no side less than 3ft**

**Rear Setback Requirement: 10ft\***

Each lot shall be developed with setbacks that are in conformance with applicable MMC Division II standards at the time of building permit submission. This criterion does not apply.

**C. The proposal includes required upgrades, if any, to existing development that does not comply with the applicable zoning district standards, pursuant to Chapter 17-1.4 Nonconforming Situations;**

**Findings:** The subject site is a recently annexed, vacant piece of land. There is not any existing development, nor any nonconforming situations. This criterion does not apply.

**D. The proposal complies with all the Development and Design Standards of Division III, as applicable:**

**Findings:** Applicable Criteria under Division III. Community Design Standards for this project include:

Chapter 17-3.3 Access and Circulation

Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting

Chapter 17-3.5 Parking and Loading

Chapter 17-3.6 Public Facilities

**17-3.3.030 Vehicular Access and Circulation**

- A. **Purpose and Intent.** Section 17-3.3.030 implements the street access policies of the City of Molalla Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. “Safety,” for the purposes of this chapter, extends to all modes of transportation.
- B. **Permit Required.** Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

**Findings:** The Applicant’s submitted application show that Rachel Lane will be extended to serve the proposed development. Each individual lot shall require an approach permit prior to building permit.

- C. **Traffic Study Requirements.** The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

**Response:** The Applicant submitted a Traffic Impact Study prepared by a Registered Engineer and addressing the appropriate intersection impacts as part of the application package.

- D. **Approach and Driveway Development Standards.** Approaches and driveways shall conform to all of the following development standards:
  - 1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.
  - 2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.
  - 3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.
  - 4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.
  - 5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).

6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.
7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.
8. Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.
9. Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.
10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.
11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.
12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.
13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.
14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.
15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.
16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.

**Findings:** Criteria 1-16 are met subject to conditions of approval. The proposed development will be served by an extension of Rachel Lane, a local street. All lots in the proposed development shall take access from either the extended Rachel LN or Wingfield DR. All streets and driveway approaches shall be designed and constructed in compliance with the standards of MMC 17-3.3.030 D.

17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.

**Findings:** The proposed development is not adjacent to any ODOT facilities. This criterion does not apply.

18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is responsible for obtaining all required approvals and permits from that agency prior to commencing development.

19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.

20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

**Findings:** Criteria 18-20 are met subject to conditions of approval. The proposed development will be served by an extension of Rachel Lane, a local street. All lots in the proposed development shall take access from either the extended Rachel LN or Wingfield DR. All streets and driveway approaches shall be designed and constructed in compliance with the standards of MMC 17-3.3.030 D.

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.050.

**Findings:** The Applicant submitted a storm drainage report with the application package. Additional stormwater analysis is provided in Staff responses to Section 17-3.6.050

E. **Approach Separation from Street Intersections.** Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.

F. **Approach Spacing.** Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

**Findings:** Criteria E and F are met subject to conditions of approval. All proposed streets are to be classified as “local streets” in the Molalla Transportation Systems Plan. The current version of the Molalla Transportation Systems Plan requires a minimum of 50ft between driveway approaches and 150ft between intersections on local streets. As a condition of approval, all driveway approaches shall be designed and constructed consistent with the current version of the Public Works Design Standards and Transportation Systems Plan.

G. **Vision Clearance.** No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in “vision clearance areas” at street intersections.. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

**Findings:** This criterion is met subject to conditions of approval. As an ongoing condition of approval, no visual obstructions shall be placed in vision clearance areas.

H. **Exceptions and Adjustments.** The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures, such as consolidated access River Meadows Subdivision Page of 7 32 (removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right-in/ right-out only), or other mitigation alleviate all traffic operations and safety concerns.

I. **Joint Use Access Easement and Maintenance Agreement.** Where the City approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the City for its records, but the City is not responsible for maintaining the driveway or resolving any dispute between property owners.

**Findings:** No joint use or cross accesses are proposed nor are any exceptions or adjustments requested. Criteria H and I do not apply.

### 17-3.3.040 Pedestrian Access and Circulation

C. **Standards.** Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:

- 1. **Continuous Walkway System.** A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

**Findings:** The Applicant’s submitted site plan shows a continuous sidewalk constructed along all streets and in front of each lot. In addition, the Applicant’s submitted site plan shows a pedestrian path to be constructed between Lots 6 and 7 (Tract “C”). The proposed pedestrian pathway is between the extended Rachel LN and will connect to a future walkway along the abandoned Union Pacific railroad corridor, as designated in the current Molalla Parks, Recreation, and Trails Master Plan. Criterion is met.

- 2. **Safe, Direct, and Convenient.** Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:

- d. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

**Findings:** The Applicant’s submitted site plan shows sidewalks to be constructed along all streets in front of each lot, and connecting to future phases. This criterion is met.

- e. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

**Findings:** This criterion is met subject to a condition of approval. As a condition of approval all public sidewalks shall conform to the current version of the Public Works Design Standards and Transportation Systems Plan.

- f. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

**Findings:** No buildings are proposed with this application. This criterion does not apply to this application.



3. **Vehicle/Walkway Separation.** Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

**Findings:** This criterion is met subject to a condition of approval. As a condition of approval all walkways abutting public streets shall be raised 6 inches from the abutting roadway or otherwise separated from vehicle maneuvering areas.

4. **Crosswalks.** Where a walkway crosses a parking area or driveway (“crosswalk”), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

**Response:** The Applicant’s submitted site plan shows crosswalks at all street intersections. Criterion is met.

5. **Walkway Width and Surface.** Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and Transportation System Plan.

**Findings:** The Applicant’s submitted site plan shows that all proposed sidewalks shall be 6ft and the Applicant’s proposed narrative states that all pedestrian facilities will be constructed of concrete. In accordance with the Molalla Transportation Systems Plan, the Applicant’s submitted narrative proposes a 10ft wide multi-use path within a 14ft wide public tract (Tract “C”) between Rachel Lane and the abandoned Union Pacific rail corridor. Criterion is met.

6. **Walkway Construction (Private).** Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

**Findings:** The Applicant’s submitted application does not propose any private walkways. This criterion does not apply.

7. **Multi-Use Pathways.** Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

**Findings:** As noted above and shown on the Applicant’s submitted plans, a 10-foot wide concrete multi-use path within a 14-foot wide public tract (Tract C) is provided between Lots 6 and 7 to connect Rachel Lane to a future multi-use pathway along the abandoned Union Pacific rail corridor, as designated in the Molalla Parks, Recreation, and Trails Master Plan.

## Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting

### 17-3.4.040 Fences and Walls

- A. **Purpose.** This section provides general development standards for fences, and walls that are not part of a building, such as screening walls and retaining walls.
- B. **Applicability.** Section 17-3.4.040 applies to all fences, and to walls that are not part of a building, including modifications to existing fences and walls.
- C. **Height.**
  1. **Residential Zones.** Fences and freestanding walls (i.e., exclusive of building walls) for residential uses shall not exceed the following heights above grade, where grade is measured from the base of the subject fence or wall.
    - a. **Within Front or Street-Facing Side Yard Setback.** Four feet; except the following additional height is allowed:
      - (2) A fence may be constructed to a maximum height of six feet where it is located on a street-facing side yard.
      - (3) A fence may be constructed to a maximum height of six feet where the fence is of open chain link or other “see-through” composition that allows 90 percent light transmission.
      - (4) One incidental garden structure (e.g., arbor or gate) not exceeding eight feet in height and six feet in width is allowed within a front or street-facing yard provided it does not encroach into a required vision clearance area.
    - b. **Within an Interior Side or Rear Yard Setback.** Six feet; except the fence or wall height, as applicable, shall not exceed the distance from the fence or wall line to the nearest primary structure on an adjacent property.

**Findings:** The Applicant proposes building a 6ft fence along the eastern portion of the property, adjacent to the abandoned rail corridor. This is consistent with standards for fencing within the interior or rear yard setback.

Criteria are met.

## 2. Non-Residential Zones.

**Findings:** The Applicant's proposal is in a residential zone. This criterion does not apply.

3. **All Zones.** Fences and walls shall comply with the vision clearance standards of Section 17-3.3.030.G. Other provisions of this Code, or the requirements of the roadway authority, may limit allowable height of a fence or wall below the height limits of this section.

**Findings:** No fences and walls are proposed in vision clearance areas as a part of this application. This criterion does not apply.

- D. **Materials.** Prohibited fence and wall materials include straw bales, tarps, barbed or razor wire (except in the M-2 Heavy Industrial zone); scrap lumber, untreated wood (except cedar or redwood), corrugated metal, sheet metal, scrap materials; dead, diseased, or dying plants; and materials similar to those listed herein.

**Findings:** This criterion is met subject to a condition of approval. As an ongoing condition of approval, no proposed fencing shall be made of prohibited materials, as detailed in MMC 17-3.4

- E. **Permitting.** A Type I approval is required to install a fence of six feet or less in height, or a wall that is four feet or less in height. All other walls and fences require review and approval by the Planning Official through a Type II procedure. The Planning Official may require installation of walls or fences as a condition of approval for development, as provided by other Code sections. A building permit may be required for some fences and walls, pursuant to applicable building codes. Walls greater than four feet in height shall be designed by a Professional Engineer licensed in the State of Oregon.

**Findings:** This criterion is met subject to a condition of approval. As a condition of approval, permitting for the proposed fence shall be authorized through engineered plans submitted after the approval of this review.

F. **Maintenance.** Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner. (Ord. 2017-08 §1)

**Findings:** This criterion is met subject to a condition of approval. As an ongoing condition of approval, fences and walls shall be maintained in good condition, or otherwise replaced by the property owner.

### 17-3.4.050 Outdoor Lighting

C. **Standards.**

1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.
2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.
3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.
4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.
5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.
6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.

**Findings:** The Applicant's submitted site plan shows street lighting along Rachel LN and Wingfield DR. These criteria is met subject to a condition of approval. As a condition of approval, street lighting shall be installed along all streets as required in compliance with the standards of MMC 17-3.4.050, Molalla Public Works Design Standards, and AASHTO lighting requirements.

## Chapter 17-3.5 Parking and Loading

**Findings:** No parking is proposed as part of this application. This chapter is met subject to a condition of approval. As an ongoing condition of approval, parking for each home constructed on the proposed lots shall comply with off-street parking requirements, as applicable.

## Chapter 17-3.6 Public Facilities

### **17-3.6.020 Transportation Standards**

**Findings:** Transportation standards are met subject to conditions of approval.

1. The 30-lot subdivision proposal requires a traffic impact analysis, and the applicant has supplied the report with the application. No offsite transportation improvements are required for this development related to traffic.
2. Rachel Lane is a local street under City of Molalla jurisdiction. Per the Molalla Transportation Systems Plan, local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by the Molalla Public Works Department.
3. Wingfield Drive is a local street under City of Molalla jurisdiction. Per the Molalla Transportation Systems Plan, local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by the Molalla Public Works Department.
4. Sarah Lane is a local street under City of Molalla jurisdiction. Local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type

3 barricades at the end of the roadway with signage as required by the Molalla Public Works Department.

5. Access to public streets shall be limited to Rachel Lane, with the exception for lots 24 and 26, which shall obtain access via Wingfield Drive. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.
6. Applicant proposes a pedestrian access connection to the railroad right of way (future bike and pedestrian trail) at the intersection of Rachel Lane and Wingfield Drive. Tract "C" shall have a public access easement dedication and applicant shall construct a concrete pedestrian pathway meeting the Molalla Standard Specifications for Public Works Construction. Maintenance responsibilities shall remain with the homeowner's association.
7. S Vick RD - The proposed development has a small triangular frontage along S Vick Rd, which is under the jurisdiction of Clackamas County and is classified as a urban minor arterial. According to the tax map, S Vick RD has an existing full right-of-way width of 40 feet. The applicant will be required to dedicate sufficient right-of-way to provide a minimum of 35-foot half-street of right-of-way and establish centerline along the entire frontage of S Vick Rd.

The existing pavement width of S Vick RD is 22-feet. The applicant will be required to provide half-street improvements up to and including pavement widening of 20-feet from centerline along the frontage of S Vick RD in addition to pavement taper per section 250.6.4 of the Roadway Standards (structural section to meet standard detail C100).

The applicant is proposing to use an existing graveled entrance as a maintenance access for the stormwater treatment facility from S Vick Rd with improvements. The subject tax lot is within the UGB and future development and expansion is anticipated along S Vick RD. The applicant will be required to provide a driveway approach to S Vick RD for the maintenance of the proposed stormwater facility meeting standard detail D650.

As a condition of approval, all required improvements within County right-of-way shall be designed, constructed, inspected and approved, pursuant to Clackamas County Roadway Standards prior to Final Plat Approval.

As a condition of approval, the Applicant shall verify the public right-of-way width and location along the entire site frontage of S Vick RD. The right-of-way and

width shall be verified by a professional surveyor to the satisfaction of DTD Engineering and Survey Departments. The applicant shall dedicate 35 foot half-street right-of-way on S Vick RD, per standard detail C140 prior to final Plat approval.

As a condition of approval, the Applicant shall dedicate a minimum 8-foot public utility and sidewalk easement along the entire frontage of S Vick RD.

As a condition of approval, the applicant shall design and construct up to half-street frontage improvements along S Vick RD prior to final plat approval consisting of:

- a. 20-feet of pavement (structural section to meet C100)
- b. Access driveway for stormwater maintenance facility meeting standard detail D650.
- c. Off-site asphaltic tapers shall be provided in accordance with Roadway Standards Section 250.6.4
- d. Inspection and evaluation of existing culverts under and along S Vick RD for structural deficiencies, alignment and flow. Replacement may be required.

### 17-3.6.030 Public Use Areas

#### A. Dedication of Public Use Areas.

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.
2. The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale.

**Findings:** These criteria are met subject to conditions of approval. The Applicant's submitted site plan proposes a 14ft wide parcel, "Tract C," with a 10ft wide concrete path. This tract is to serve as a connection to the adjacent abandoned rail corridor to the east, identified in the 2014 City of Molalla Parks, Recreation, and Trails Master Plan as a future multi-use path. Tract "C" shall be dedicated to the homeowners association for the subdivision and have a public access easement dedication. Maintenance responsibilities shall remain with the homeowner's association. The Applicant proposes a recreational tract "Tract B" to be owned and maintained by the River

Meadows Homeowners Association. All proposed dedications and easements shall be identified on the final plat. All easements and homeowners association dedications shall be identified on the final plat.

### **17-3.6.040 Sanitary Sewer and Water Service Improvements**

**Findings:** The Applicant proposes water and sanitary mains that extend to the limits of the project per development requirements. Sanitary mains shall dead end at mainline cleanouts on Wingfield DR, Sarah LN, and Rachel LN. Water mains shall dead end at mainline blowoffs on Wingfield DR, Sarah LN, and Rachel LN. Staff finds that Looping of the waterline is not feasible for this development.

Sanitary Sewer and Water Service standards can be met subject to conditions of approval.

#### **Sanitary:**

Applicant shall be required to submit sanitary sewer design plans to Oregon DEQ for review and approval. Applicant shall provide a Certificate of Capacity to Oregon DEQ at time of plan submission. No Public Works permit can be issued without DEQ's approval of the sewer system and the Certificate of Capacity.

#### **Water:**

Applicant shall meet all fire regulations for home construction per the Molalla Fire District. Location of fire hydrants shall be approved by the Fire Marshall prior to submission of plans to Public Works.

### **17-3.6.050 Storm Drainage and Surface Water Management Facilities**

**Findings:** Transportation standards are met subject to conditions of approval.

1. All storm improvements in the development shall meet the requirements of the Molalla Standard Specifications for Public Works Construction.
2. Applicant proposes storm improvements draining to a private detention facility at the north end of the project. Access to facility from Rachel Lane shall meet the requirements of the Molalla Standard Specifications for Public Works Construction. Applicant shall provide copy of Clackamas County approval for discharge of drainage to Vick Road. Maintenance of the facility shall be the responsibility of the development. Applicant shall be required to sign a stormwater maintenance and covenant agreement for the operation and maintenance of the detention facility and discharge piping on Tract "A".



3. The applicant has proposed to use the existing culverts traversing under and along S Vick Rd for downstream conveyance of the proposed stormwater facility serving the proposed development. A recent site visit showed the existing culvert to be partially blocked with debris and a change of pipe material under S Vick Rd. The applicant will be required to provide an inspection of the existing culverts under and along S Vick Rd for structural deficiencies, flow, and alignment. Replacement of the culverts may be required and warranted.

### 17-3.6.060 Utilities

**Findings:** Utilities standards are met subject to a condition of approval. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

### 17-3.6.070 Easements

**Findings:** Easement standards are met subject to conditions of approval. A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements. Once completed, applicant will be required to record easements with the County Recorder's Office and return the original document to the City prior to City approval of occupancy.

The Applicant's submitted site plan and preliminary plat shows a 15' public storm easement crossing the western portion of Lot 22 between the proposed detention pond on Tract A and the Rachel LN extension.

The Applicant's submitted site plan proposes a 14ft wide parcel, "Tract C," with a 10ft wide concrete path. This tract is to serve as a connection to the adjacent abandoned rail corridor to the east, identified in the 2014 City of Molalla Parks, Recreation, and Trails Master Plan as a future multi-use path. Tract "C" shall be dedicated to the homeowners association for the subdivision and have a public access easement dedication. Maintenance responsibilities shall remain with the homeowner's association.

All easements shall be identified on the final plat.

### 17-3.6.80 Construction Plan Approval

**Findings:** Construction Plan Approval standards are met subject to conditions of approval. From the materials submitted, it appears that the storm drain, domestic water, and sanitary sewer

facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of public utilities will be required. All public improvements shall be completed and accepted by the Public Works Department prior to issuance of any building permit. No connections to City service shall be allowed until public improvements are completed.

Additionally, a Development Permit is required from the Clackamas County Department of Transportation and Development Engineering for review and approval of frontage improvements, stormwater conveyance and sight distance prior to site improvements. The permit shall be obtained prior to commencement of site work and recording of the subdivision plat. To obtain the permit, the applicant shall submit construction plans prepared and stamped by an Engineer registered in the State of Oregon and provide a performance guarantee equal to 125% of the estimated cost of the construction within County right-of-way and pay a plan review and inspection fee. The fee will be calculated as a percentage of the construction costs if it exceeds the minimum permit fee. The minimum fee and the percentage will be determined by the current fee structure at the time of the Development Permit Application. All utility extensions and connections shall be shown on the approved plans providing pavement restorations consistent with Chapter 7 of the Clackamas County Roadway Standards. Prior to Final Inspection, the applicant shall provide and maintain minimum Stopping Sight and Intersection Sight Distance at the stormwater maintenance access along S Vick RD. The applicant shall provide a minimum of 495 feet of stopping sight distance and 610 feet of intersection sight distance at the intersection of S Vick RD. Intersection sight distance shall restrict plantings at maturity, retaining wall, embankments, trees, fences or any other objects that obstruct vehicular sight distance.

City of Molalla Construction plan approval requirements include:

- A. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance.
- B. Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements if additional modifications or expansion of the sight distance onto adjacent streets is required.
- C. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards.

- D. All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.
- E. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.
- F. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.
- G. Sanitary sewer designs require review by Oregon Department of Environmental Quality. Applicant shall be responsible for submission of plans to state agency and all associated fees. Applicant's Engineer will be required to submit final report to DEQ and provide a copy of the report to the City.
- H. All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.
- I. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.
- J. General Wetland Requirements – The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property prior to City approval of occupancy.
- K. General Erosion Control – The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of

Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.

- E. For non-residential uses, all adverse impacts to adjacent properties, such as light, glare, noise, odor, vibration, smoke, dust, or visual impact, are avoided; or where impacts cannot be avoided, they are minimized; and

**Findings:** This project is for a residential use. This criterion does not apply.

- F. The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable. Note: Compliance with other City codes and requirements, though not applicable land use criteria, may be required prior to issuance of building permits. (Ord. 2017-08 §1)

**Findings:** Staff is not aware of any prior applicable land use decisions. This criterion is met.

## Exhibit C:

*Consolidated Application Package For SDR03-  
2021 and SUB01-2021*



**Planning & Community Development**  
 117 N. Molalla Avenue  
 Molalla, OR. 97038  
 (503) 759-0219  
 Fax: (503) 829-3676

<i>FOR OFFICE USE ONLY:</i>	
Planning File No. : _____	City Approval: _____
Date Received: _____ Fee: _____	Title _____
Land Use Type: II	Date: _____
Received by: _____	Fee Paid: _____

## APPLICATION FOR LAND USE ACTION

Type of Land Use Action Requested: (check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Annexation  | <input type="checkbox"/> Conditional Use               |
| <input type="checkbox"/> Plan Amendment (Proposed Zone _____)                  | <input type="checkbox"/> Partition (# of lots _____)   |
| <input type="checkbox"/> Planned Unit Development                              | <input type="checkbox"/> Subdivision (# of lots _____) |
| <input checked="" type="checkbox"/> Site Design Review                         | <input type="checkbox"/> Other: _____                  |
| <input type="checkbox"/> Variance (list standards to be varied in description) |  |

**Owner/Applicant:**

Applicant: DAVE CARTER Phone: 503 890 6458  
 Applicant Address: PO BOX 352 Email: davecarter@comcast.net  
 Owner: Bystrom Phone: Beverly Creek OR 97004  
 Owner Address: \_\_\_\_\_ Email: 503 829-8558  
 Contact for additional info: \_\_\_\_\_ Email: bystromfam@aol.com

**Property Information:**

Address: no situs  
 Assessors Map/Taxlot #: TL 05006921 52 EQ 502002  
 Current Use of Site: Vacant Zoning Designation: R-1  
 Intended Use: Single Family Homes

**Proposed Action:**

Site Design Review

Proposed Use: SFH

Proposed No. of Phases (one each year): 1

**Authorizing Signatures:**

I hereby certify that the information on this application and attachments are correct and that the property affected by this application is in the exclusive ownership or control of the applicant, or that the applicant has the consent of all partners in ownership of the affected property. An authorization letter from the property owner has been attached in the event that the owner's signature has not been provided below.

**Property Owner(s):**

<u>Bystrom</u> Print or Type	<u>Dah Bystrom</u> Signature
<u>Jolie Bystrom</u> Print or Type	<u>Jolie Bystrom</u> Signature

**Applicant(s) or Authorized Agent:**

<u>DAVE CARTER</u> Print or Type	<u>DAVE CARTER</u> Signature
_____	_____
Print or Type	Signature

The following materials must be submitted with your application or it will not be accepted at the counter. Once taken at the counter, the City has up to 30 days to review the materials submitted to determine if we have everything we need to complete the review. Applicant can verify submittal includes specific materials necessary for the application per checklist.

- 3 Copies of Application Form\*** completely filled out and signed by the property owner (or person with authority to make decisions on the property).
- Copy of Deed** to verify ownership, easements, etc.
- At least 3 folded** sets of plans\*
- At least 3 copies** of narrative addressing application criteria\*
- Fee** (along with calculations utilized to determine fee if applicable)

**\*Please Note** that the required numbers of copies identified on the checklist are required for completeness; however, upon initial submittal applicants are encouraged to submit only 3 copies for completeness review. Prior to completeness, the required number of copies identified on the checklist and one full electronic copy will be required to be submitted.



**Planning & Community Development**  
 117 N. Molalla Avenue  
 Molalla, OR. 97038  
 (503) 759-0219  
 Fax: (503) 829-3676

<i>FOR OFFICE USE ONLY:</i>	
Planning File No. : _____	City Approval: _____
Date Received: _____ Fee: _____	Title _____
Land Use Type: II _____	Date: _____
Received by: _____	Fee Paid: _____

## APPLICATION FOR LAND USE ACTION

Type of Land Use Action Requested: (check all that apply)

- |  |  |
|--|--|
| <input type="checkbox"/> Annexation  | <input type="checkbox"/> Conditional Use                               |
| <input type="checkbox"/> Plan Amendment (Proposed Zone _____)                  | <input type="checkbox"/> Partition (# of lots _____)                   |
| <input type="checkbox"/> Planned Unit Development                              | <input checked="" type="checkbox"/> Subdivision (# of lots <u>30</u> ) |
| <input checked="" type="checkbox"/> Site Design Review                         | <input type="checkbox"/> Other: _____                                  |
| <input type="checkbox"/> Variance (list standards to be varied in description) |  |

**Owner/Applicant:**

Applicant: DAVE CARTER Phone: 503 890 6458  
 Applicant Address: P.O. Box 352 Email: davecarter@gmail.com  
 Owner: Bystrom Phone: 503 829-8558  
 Owner Address: 38589 S. Blair RD Email: 97004  
 Contact for additional info: Molalla OR 97038 bystromfam@aol.com

**Property Information:**

Address: 710 situs  
 Assessors Map/Taxlot #: 552 TR 05006921 5220502002  
 Current Use of Site: Vacant Zoning Designation: R-1  
 Intended Use: Single Family Homes

**Proposed Action:**

Subdivision For 30 Lots

Proposed Use: SFH

Proposed No. of Phases (one each year): 1





River Meadows Subdivision  
Tax Lot 2002, 52E05  
Molalla, Oregon



May 2021

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## **I. Introduction**

The proposed subdivision is part of the planned progression of land use planning for this area of Molalla. The subject property is located within the urban growth boundary of the city of Molalla and was annexed into the city limits by the Molalla City Council in January, 2021 by Ordinance 2021-02. The applicant requests site design and subdivision approval to construct a residential subdivision to include the following:

- 30 lots;
- Installation of underground public and franchise utilities;
- Platting a public tract and construction of a public stormwater facility;
- Platting a public tract and construction of a multi-purpose path;
- Platting a private tract and construction of a private outdoor recreation space.

A pre-application conference was held with the City to review the project on April 15, 2021 (Pre04-2021). In addition, on May 8, 2021, the applicant held a neighborhood meeting in accordance with the provisions of Section 17-4.1.070 to discuss the project with interested property owners in the vicinity of the development. Input received at these meetings was considered in preparation of the proposed application.

## **II. General Project Description**

The project site consists of a single parcel located at Township 5 South, Range 2 East, Section 05, tax lot 2002. The property contains 5.996 acres and is vacant. The property is gently sloping down from south to north with about 17 feet of elevation difference between the southern and northern property lines. The parcel is bordered on its western, eastern, and northern boundaries by property located in unincorporated Clackamas County. An abandoned rail corridor owned by Union Pacific borders the entire eastern boundary of the subject property.

The property is zoned R-1, Low Density Residential and the applicant proposes constructing single family detached dwellings on the proposed lots as permitted by this zone. Access to the proposed subdivision will be from an extension of Rachel Lane, an existing local street stubbed to the southern boundary of the property. The parcel also contains 22 feet of frontage on South Vick Road but this road will only be used to provide access to the proposed public stormwater facility on Tract A. The proposed subdivision also includes a 2,481 square foot private outdoor area (Tract B) proposed to contain a picnic table and bench and a 14 foot wide tract (Tract C) to allow construction of a multi-use path as requested by the city between the subject property and the railroad corridor east of the site. The applicant intends to record CC&R's with the subdivision final plat and a Homeowners Association will also be formed.

## **II. Application Approval Requests**

The applicant requests the following approvals with this application:

- Type III Site Design and Preliminary Plat Subdivision Review

## **III. Items Submitted With This Application**

Exhibit A - Land Use Application

Exhibit B - Title Report

Exhibit C - Project Narrative

Exhibit D - Civil Plans

- Sheet T - Preliminary Title Sheet
- Sheet EC - Existing Conditions Plan
- Sheet D - Preliminary Demolition Plan
- Sheet C1 - Preliminary Plat
- Sheet C2 - Preliminary Site Plan
- Sheet C3 - Preliminary Street Profiles
- Sheet C4 - Preliminary Grading Plan
- Sheet C5 - Preliminary Utility Plan

Exhibit E - Storm Drainage Report

Exhibit F - Traffic Impact Study

Exhibit G - Neighborhood Meeting Documentation

#### IV. Review of Applicable Approval Criteria

Development applications are required to comply with development standards set forth in the Molalla Development Code. This section addresses all applicable review criteria. Pertinent code provisions are cited below in regular text followed by a response describing how the proposal complies with this standard written in *italics*. The following code chapters have been reviewed in this narrative:

<u>Chapter</u>	<u>Title</u>
17-2.2	- Zoning District Regulations
17-3.3.	- Access and Circulation
17-3.4	- Landscaping, Fences and Walls, Outdoor Lighting
17-3.5	- Parking and Loading
17-3.6	- Public Facilities
17-4.1	- General Review Procedures
17-4.2	- Site Design Review
17-4.3	- Land Divisions and Property Lines Adjustments

#### CHAPTER 17-2.2 ZONING DISTRICT REGULATIONS

##### 17-2.2.030 Allowed Uses

A. **Uses Allowed in Base Zones.** Allowed uses include those that are permitted, those that are permitted subject to special use standards, and those that are allowed subject to approval of a conditional use permit, as identified by Table 17-2.2.030. Allowed uses fall into four general categories: Residential, Public and Institutional, Commercial, and Other. If Table 17-2.2.030 does not list a specific use, and Division V Definitions does not identify the use or include it as an example of an allowed use, the City may find that use is allowed, or is not allowed, by following the procedures of Section 17-1.5.010 Code Interpretations. Uses not listed in Table 17-2.2.030 and not found to be similar to an allowed use are prohibited.

*Response: Table 17-2.2.030 identifies "Single-Family Dwelling, Non-Attached" as a permitted use in the R-1 zone. The applicant proposes this dwelling type as permitted.*

##### 17-2.2.040 Lot and Development Standards

- A. Development Standards.** Section 17-2.2.040 provides the general lot and development standards for each of the City’s base zoning districts. The standards of Section 17-2.2.040 are organized into two tables: Table 17-2.2.040.D applies to residential zones, and Table 17-2.2.040.E applies to non-residential zones.  
*Response: As reviewed below, the proposal complies with all relevant standards for residential zones in Table 17-2.2.040.D.*
- B. Design Standards.** City standards for Access, Circulation, Site and Building Design, Parking, Landscaping, Fences and Screening, and Public Improvements, among others, are located in Division III. Notwithstanding the provisions of Section 17-2.2.040 and Division III, different standards may apply in specific locations, such as at street intersections, within overlay zones, adjacent to natural features, and other areas as may be regulated by this Code or subject to state or federal requirements. For requirements applicable to the City’s overlay zones, please refer to Chapter 17-2.4.  
*Response: The application is reviewed relative to Division III requirements below.*
- D. Lot and Development Standards for Residential Districts.** The development standards in Table 17-2.2.040.D apply to all new development as of November 10, 2017 in residential zones.  
*Response: This section requires residential density in the R-1 zone to contain a minimum of four and a maximum of eight dwelling units per net buildable acre. It also requires a minimum lot size of 5,000 square feet for single-family, detached dwellings. The total site area contains 5.966 acres and a net buildable area of 4.048 acres after deducting publicly dedicated improvements and flagpoles. The subject property requires a minimum of 16 dwelling units (4.048 x 4 units = 16.192) and allows a maximum of 32 dwellings units ( 4.048 x 8 = 32.384). The proposal includes 30 units in compliance with the density range. All lots comply with relevant code standards as reviewed below.*

Development Standard (single-family detached dwelling)	Required	Proposed
Minimum Lot Area	5,000 square feet	5,035 sf. To 8,527 s.f. Complies
Minimum Lot Width (corner lot)	60 feet	Complies
Minimum Lot Width (interior lot)	50 feet	Complies
Minimum Lot Depth	80 feet	Complies

**17-2.2.060 Residential Density Standards**

To ensure efficient use of buildable lands and to provide for a range of needed housing in conformance with the Comprehensive Plan, all new developments in the residential districts shall conform to the minimum and maximum densities prescribed in Table 17-2.2.040.D, except as provided below in subsections A through E:

- A. Residential care homes and facilities, senior housing, accessory dwellings, and subdivisions where the average slope exceeds 15 percent are exempt from the minimum density standard.

*Response: The applicant does not propose any of these uses and this section is not applicable.*

- B. The density standards may be averaged over more than one development phase (i.e., as in a master planned development). Duplex lots used to comply with the density standard shall be so designated on the final subdivision plat. Density standards shall be listed in conditions of approval to ensure proposed density is met.

*Response: Only a single phase is proposed and this section is not applicable.*

- C. Partitions and construction of single-family homes on lots exceeding 20,000 square feet shall be located and constructed so that future division of such lots can occur and planned public facilities can be extended based on the minimum lot size and other applicable City standards.

*Response: No lots are proposed to exceed 20,000 square feet and this section is not applicable.*

- D. Minimum and maximum housing densities are calculated by multiplying the total net buildable area by the applicable density standard. Net buildable area is defined as the area of a site for residential or non-residential development, excluding street rights-of-way and other publicly dedicated improvements such as parks, open space, and stormwater detention and retention facilities. "Net buildable area" is expressed either in acres or square feet.

*Response: The net buildable area of the subject property was calculated by excluding all public right-of-way and publicly dedicated facilities as allowed in this section. As reviewed above, the proposed 30 lots complies with the allowed density range (16 - 32 units) for this property.*

- E. Areas reserved for flag lot access (flag poles) are not counted for the purpose of calculating density.

*Response: The net buildable area also excluded flag poles as required.*

## **CHAPTER 17-3.3 ACCESS AND CIRCULATION**

### **17-3.3.010 Applicability**

Chapter 17-3.3 applies to new development and changes in land use necessitating a new or modified street or highway connection. Except where the standards of a roadway authority other than the City supersede City standards, Chapter 17-3.3 applies to all connections to a street or highway, and to driveways and walkways. The Planning Official, through a Type II procedure, may grant adjustments to Chapter 17-3.3, pursuant to the criteria of Chapter 17-4.7 Adjustments and Variances. For street improvement requirements, refer to Section 17-3.6.020.

*Response: A new development is proposed and the requirements of this section are applicable.*

### **17-3.3.010 Vehicular Access and Circulation**

A. **Purpose and Intent.** Section 17-3.3.030 implements the street access policies of the City of Molalla Transportation System Plan. It is intended to promote safe vehicle access and egress to properties, while maintaining traffic operations in conformance with adopted standards. “Safety,” for the purposes of this chapter, extends to all modes of transportation.

*Response: The requirements of this section is addressed below.*

B. **Permit Required.** Vehicular access to a public street (e.g., a new or modified driveway connection to a street or highway) requires an approach permit approved by the applicable roadway authority.

*Response: Rachel Lane will be extended to serve the proposed development.*

C. **Traffic Study Requirements.** The City, in reviewing a development proposal or other action requiring an approach permit, may require a traffic impact analysis, pursuant to Section 17-3.6.020, to determine compliance with this Code.

*Response: A Traffic Impact Study prepared by a Registered Engineer is included with the application package.*

D. **Approach and Driveway Development Standards.** Approaches and driveways shall conform to all of the following development standards:

1. The number of approaches on higher classification streets (e.g., collector and arterial streets) shall be minimized; where practicable, access shall be taken first from a lower classification street.
2. Approaches shall conform to the spacing standards of subsections E and F, below, and shall conform to minimum sight distance and channelization standards of the roadway authority.
3. Driveways shall be paved and meet applicable construction standards. Where permeable paving surfaces are allowed or required, such surfaces shall conform to applicable Public Works Design Standards.
4. The City Engineer may limit the number or location of connections to a street, or limit directional travel at an approach to one-way, right-turn only, or other restrictions, where the roadway authority requires mitigation to alleviate safety or traffic operations concerns.
5. Where the spacing standards of the roadway authority limit the number or location of connections to a street or highway, the City Engineer may require a driveway extend to one or more edges of a parcel and be designed to allow for future extension and inter-parcel circulation as adjacent properties develop. The City Engineer may also require the owner(s) of the subject site to record an access easement for future joint use of the approach and driveway as the adjacent property(ies) develop(s).
6. Where applicable codes require emergency vehicle access, approaches and driveways shall be designed and constructed to accommodate emergency vehicle apparatus and shall conform to applicable fire protection requirements. The City Engineer may restrict parking, require signage, or require other public safety improvements pursuant to the recommendations of an emergency service provider.
7. As applicable, approaches and driveways shall be designed and constructed to accommodate truck/trailer-turning movements.



8. Except where the City Engineer and roadway authority, as applicable, permit an open access with perpendicular or angled parking, driveways shall accommodate all projected vehicular traffic on-site without vehicles stacking or backing up onto a street.
9. Driveways shall be designed so that vehicle areas, including, but not limited to, drive-up and drive-through facilities and vehicle storage and service areas, do not obstruct any public right-of-way.
10. Approaches and driveways shall not be wider than necessary to safely accommodate projected peak hour trips and turning movements, and shall be designed to minimize crossing distances for pedestrians.
11. As it deems necessary for pedestrian safety, the City Engineer, in consultation with the roadway authority, as applicable, may require that traffic-calming features, textured driveway surfaces (e.g., pavers or similar devices), curb extensions, signage or traffic control devices, or other features, be installed on or in the vicinity of a site as a condition of development approval.
12. Construction of approaches along acceleration or deceleration lanes, and along tapered (reduced width) portions of a roadway, shall be avoided; except where no reasonable alternative exists and the approach does not create safety or traffic operations concern.
13. Approaches and driveways shall be located and designed to allow for safe maneuvering in and around loading areas, while avoiding conflicts with pedestrians, parking, landscaping, and buildings.
14. Where sidewalks or walkways occur adjacent to a roadway, driveway aprons constructed of concrete shall be installed between the driveway and roadway edge. The roadway authority may require the driveway apron be installed outside the required sidewalk or walkway surface, consistent with Americans with Disabilities Act (ADA) requirements, and to manage surface water runoff and protect the roadway surface.
15. Where an accessible route is required pursuant to ADA, approaches and driveways shall meet accessibility requirements where they coincide with an accessible route.
16. The City Engineer may require changes to the proposed configuration and design of an approach, including the number of drive aisles or lanes, surfacing, traffic-calming features, allowable turning movements, and other changes or mitigation, to ensure traffic safety and operations.  
*Response: The proposed development will be served by an extension of Rachel Lane, a local street. All streets and driveway approaches will be designed in compliance with the requirements of these sections.*
17. Where a new approach onto a state highway or a change of use adjacent to a state highway requires ODOT approval, the applicant is responsible for obtaining ODOT approval. The City Engineer may approve a development conditionally, requiring the applicant first obtain required ODOT permit(s) before commencing development, in which case the City will work cooperatively with the applicant and ODOT to avoid unnecessary delays.
18. Where an approach or driveway crosses a drainage ditch, canal, railroad, or other feature that is under the jurisdiction of another agency, the applicant is

responsible for obtaining all required approvals and permits from that agency prior to commencing development.

19. Where a proposed driveway crosses a culvert or drainage ditch, the City Engineer may require the developer to install a culvert extending under and beyond the edges of the driveway on both sides of it, pursuant to applicable Public Works Design Standards.
20. Except as otherwise required by the applicable roadway authority or waived by the City Engineer temporary driveways providing access to a construction site or staging area shall be paved or graveled to prevent tracking of mud onto adjacent paved streets.

*Response: The proposal will be designed in compliance with these sections as applicable.*

21. Development that increases impervious surface area shall conform to the storm drainage and surface water management requirements of Section 17-3.6.050.

*Response: A storm drainage report is included with the application package.*

- E. Approach Separation from Street Intersections.** Except as provided by subsection H, minimum distances shall be maintained between approaches and street intersections consistent with the current version of the Public Works Design Standards and Transportation System Plan.

*Response: All driveways serving individual lots will be designed in accordance with applicable standards.*

- F. Approach Spacing.** Except as provided by subsection H or as required to maintain street operations and safety, the following minimum distances shall be maintained between approaches consistent with the current version of the Public Works Design Standards and Transportation System Plan.

*Response: All driveways serving individual lots will be designed in accordance with applicable standards.*

- G. Vision Clearance.** No visual obstruction (e.g., sign, structure, solid fence, or shrub vegetation) greater than 2.5 feet in height shall be placed in “vision clearance areas” at street intersections.. The minimum vision clearance area may be modified by the Planning Official through a Type I procedure, upon finding that more or less sight distance is required (i.e., due to traffic speeds, roadway alignment, etc.). Placement of light poles, utility poles, and tree trunks should be avoided within vision clearance areas.

*Response: Vision clearance areas will be maintained at all driveways and street intersections as required by this section.*

- H. Exceptions and Adjustments.** The City Engineer may approve adjustments to the spacing standards of subsections E and F, above, where an existing connection to a City street does not meet the standards of the roadway authority and the proposed development moves in the direction of code compliance. The Planning Official through a Type II procedure may also approve a deviation to the spacing standards on City streets where it finds that mitigation measures, such as consolidated access

(removal of one access), joint use driveways (more than one property uses same access), directional limitations (e.g., one-way), turning restrictions (e.g., right-in/right-out only), or other mitigation alleviate all traffic operations and safety concerns.

*Response: No exceptions or adjustments to city standards have been requested with this application.*

- I. **Joint Use Access Easement and Maintenance Agreement.** Where the City approves a joint use driveway, the property owners shall record an easement with the deed allowing joint use of and cross access between adjacent properties. The owners of the properties agreeing to joint use of the driveway shall record a joint maintenance agreement with the deed, defining maintenance responsibilities of property owners. The applicant shall provide a fully executed copy of the agreement to the City for its records, but the City is not responsible for maintaining the driveway or resolving any dispute between property owners.

*Response: No joint use or cross accesses are proposed.*

#### 17-3.3.040 Pedestrian Access and Circulation

- B. **Standards.** Developments shall conform to all of the following standards for pedestrian access and circulation as generally illustrated in Figure 17-3.3-3:
  1. **Continuous Walkway System.** A pedestrian walkway system shall extend throughout the development site and connect to adjacent sidewalks, if any, and to all future phases of the development, as applicable.

*Response: Sidewalks will be constructed along all streets in front of each lot. In addition, a pedestrian path as requested by the city is proposed to be constructed between Lots 6 and 7 to provide a pedestrian connection to the abandoned Union Pacific railroad corridor.*
  2. **Safe, Direct, and Convenient.** Walkways within developments shall provide safe, reasonably direct, and convenient connections between primary building entrances and all adjacent parking areas, recreational areas, playgrounds, and public rights-of-way conforming to the following standards:
    - a. The walkway is reasonably direct when it follows a route that does not deviate unnecessarily from a straight line or it does not involve a significant amount of out-of-direction travel.

*Response: Sidewalks will be constructed along all streets in front of each lot.*
    - b. The walkway is designed primarily for pedestrian safety and convenience, meaning it is reasonably free from hazards and provides a reasonably smooth and consistent surface and direct route of travel between destinations. The Planning Official may require landscape buffering between walkways and adjacent parking lots or driveways to mitigate safety concerns.

*Response: All pedestrian facilities will be designed for pedestrian safety and convenience.*

- c. The walkway network connects to all primary building entrances, consistent with the building design standards of Chapter 17-3.2 and, where required, Americans with Disabilities Act (ADA) requirements.

*Response: This section is not applicable except ADA compliant ramps will be provided at all street crossings.*

3. **Vehicle/Walkway Separation.** Except as required for crosswalks, per subsection 4, below, where a walkway abuts a driveway or street it shall be raised six inches and curbed along the edge of the driveway or street. Alternatively, the Planning Official may approve a walkway abutting a driveway at the same grade as the driveway if the walkway is physically separated from all vehicle-maneuvering areas. An example of such separation is a row of bollards (designed for use in parking areas) with adequate minimum spacing between them to prevent vehicles from entering the walkway.

*Response: This section is not applicable.*

4. **Crosswalks.** Where a walkway crosses a parking area or driveway (“crosswalk”), it shall be clearly marked with contrasting paving materials (e.g., pavers, light-color concrete inlay between asphalt, or similar contrasting material). The crosswalk may be part of a speed table to improve driver-visibility of pedestrians. Painted or thermo-plastic striping and similar types of non-permanent applications are discouraged, but may be approved for lesser used crosswalks not exceeding 24 feet in length.

*Response: Crosswalks are shown on the submitted Preliminary Site Plan at all street intersections.*

5. **Walkway Width and Surface.** Walkways, including access ways required for subdivisions pursuant to Chapter 17-4.3, shall be constructed of concrete, asphalt, brick or masonry pavers, or other durable surface, as approved by the City Engineer, and not less than six feet wide. Multi-use paths (i.e., designed for shared use by bicyclists and pedestrians) shall be concrete or asphalt and shall conform to the current version of the Public Works Design Standards and Transportation System Plan.

*Response: All pedestrian facilities will be constructed of concrete. A 10-foot wide multi-use path within a 14-foot wide public tract (Tract C) is proposed to be constructed to connect Rachel Lane to the abandoned Union Pacific rail corridor.*

6. **Walkway Construction (Private).** Walkway surfaces may be concrete, asphalt, brick or masonry pavers, or other City-approved durable surface meeting ADA requirements. Walkways shall be not less than six feet in width in commercial and mixed use developments and where access ways are required for subdivisions under Division IV.

*Response: No private walkways are proposed.*

7. **Multi-Use Pathways.** Multi-use pathways, where approved, shall be a minimum width and constructed of materials consistent with the current version of the Public Works Design Standards and Transportation System Plan.

*Response: As noted above and shown on submitted plans, a 10-foot wide concrete multi-use path within a 14-foot wide public tract (Tract C) as requested by the city is proposed to be constructed between Lots 6 and 7 to connect Rachel Lane to the abandoned Union Pacific rail corridor.*

## **CHAPTER 17-3.4 LANDSCAPING, FENCES AND WALLS, OUTDOOR LIGHTING**

### **17-3.4.020 Applicability**

- B. Section 17-3.4.040 establishes design standards for when a fence, or a wall not attached to a building, is to be erected, extended, or otherwise altered. It also applies to situations where this Code requires screening or buffering (e.g., outdoor or unenclosed storage uses). The standards of Section 17-3.4.040 supplement the development standards in Tables 17-2.2.030 and 17-2.2.040 and any applicable Special Use requirements under Chapter 17-2.3.

*Response: The requirements of this section will be complied with as applicable.*

- C. Section 17-3.4.050, Outdoor Lighting, applies to all new outdoor lighting, i.e., lighting that is installed after November 10, 2017.

*Response: Street lighting will be installed along all streets as required.*

- D. The Planning Official, through a Type II procedure, may grant adjustments to Chapter 17-3.4, pursuant to the criteria of Chapter 17-4.7 Adjustments and Variances. (Ord. 2017-08 §1)

*Response: No adjustments or variances have been requested with this application.*

### **17-3.4.040 Fences and Walls**

- B. **Applicability.** Section 17-3.4.040 applies to all fences, and to walls that are not part of a building, including modifications to existing fences and walls.

*Response: The applicant proposes constructing a six-foot tall fence along the entire eastern property boundary of the subdivision.*

### **C. Height.**

1. **Residential Zones.** Fences and freestanding walls (i.e., exclusive of building walls) for residential uses shall not exceed the following heights above grade, where grade is measured from the base of the subject fence or wall.

- a. **Within Front or Street-Facing Side Yard Setback.** Four feet; except the following additional height is allowed:

- (1) A fence may be constructed to a maximum height of six feet where it is located on a street-facing side yard.
- (2) A fence may be constructed to a maximum height of six feet where the fence is of open chain link or other “see-through” composition that allows 90 percent light transmission.
- (3) One incidental garden structure (e.g., arbor or gate) not exceeding eight feet in height and six feet in width is allowed within a front or street-facing yard provided it does not encroach into a required vision clearance area.

- b. **Within an Interior Side or Rear Yard Setback.** Six feet; except the fence or wall height, as applicable, shall not exceed the distance from the fence or wall line to the nearest primary structure on an adjacent property.

*Response: The only fence proposed with the subdivision phase of the development is a six-foot tall fence in the rear yards of Lots 1 - 17 and Tract A. The proposal complies with this standard.*

3. **All Zones.** Fences and walls shall comply with the vision clearance standards of Section 17-3.3.030.G. Other provisions of this Code, or the requirements of the roadway authority, may limit allowable height of a fence or wall below the height limits of this section.

*Response: All fencing will comply with vision clearance standards.*

- D. **Materials.** Prohibited fence and wall materials include straw bales, tarps, barbed or razor wire (except in the M-2 Heavy Industrial zone); scrap lumber, untreated wood (except cedar or redwood), corrugated metal, sheet metal, scrap materials; dead, diseased, or dying plants; and materials similar to those listed herein.

*Response: None of the prohibited fencing materials listed in this section will be used.*

- E. **Permitting.** A Type I approval is required to install a fence of six feet or less in height, or a wall that is four feet or less in height. All other walls and fences require review and approval by the Planning Official through a Type II procedure. The Planning Official may require installation of walls or fences as a condition of approval for development, as provided by other Code sections. A building permit may be required for some fences and walls, pursuant to applicable building codes. Walls greater than four feet in height shall be designed by a Professional Engineer licensed in the State of Oregon.

*Response: The only fence proposed with the subdivision phase of the development is a six-foot tall fence in the rear yards of Lots 1 - 17 and Tract A. All other fencing in conjunction with construction of homes on the lots will require Type I approval as specified in this section.*

- F. **Maintenance.** Fences and walls shall be maintained in good condition, or otherwise replaced by the property owner.

*Response: The requirements of this section is likely to be contained in CC&R recorded with the development.*

#### **17-3.4.050 Outdoor Lighting**

##### **C. Standards.**

1. Light poles, except as required by a roadway authority or public safety agency, shall not exceed a height of 20 feet; pedestal- or bollard-style lighting shall be used to illuminate walkways. Flag poles, utility poles, and streetlights are exempt from this requirement.
2. Where a light standard is placed over a sidewalk or walkway, a minimum vertical clearance of eight feet shall be maintained.
3. Outdoor lighting levels shall be subject to review and approval through Site Design Review. As a guideline, lighting levels shall be no greater than necessary to provide for pedestrian safety, property or business identification, and crime prevention.

4. Except as provided for up-lighting of flags and permitted building-mounted signs, all outdoor light fixtures shall be directed downward, and have full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.
5. Lighting shall be installed where it will not obstruct public ways, driveways, or walkways.
6. Walkway lighting in private areas shall have a minimum average illumination of not less than 0.2 foot-candles. Lighting along public walkways shall meet the current version of the Public Works Design Standards and AASHTO lighting requirements.  
*Response: Street lighting as required will be installed along all streets.*

## **CHAPTER 17-3.5 PARKING AND LOADING**

### **17-3.5.020 Applicability and General Regulations**

- A. **Where the Regulations Apply.** The regulations of this chapter apply to all parking areas in all zones, at all times, whether parking is required by this Code or put in for the convenience of property owners or users.
- B. **Occupancy.** All required parking areas must be developed in accordance with the requirements of this Code prior to occupancy of any structure on the subject site. Where landscaping, screening, or other improvements are required pursuant to this Code, all such improvements must be installed and approved by the Planning Official prior to occupancy.

*Response: Each home constructed on the proposed lots will contain off-street parking as required.*

### **17-3.5.030 Automobile Parking**

#### **A. Minimum Number of Off-Street Automobile Parking Spaces**

*Response: Each single-family dwelling is required to provide a minimum of one off-street parking space per dwelling. All homes will be provided with a minimum of two off-street parking spaces, one in the garage and one in front of the garage. The majority of homes however are likely to contain a total of four off-street parking spaces (two in the garage and two in front of garage).*

## **CHAPTER 17-3.6 PUBLIC FACILITIES**

### **17-3.6.010 Purpose and Applicability**

- B. **Applicability.** Chapter 17-3.6 applies to all new development, including projects subject to Land Division (Subdivision or Partition) approval and developments subject to Site Design Review where public facility improvements are required. All public facility improvements within the city shall occur in accordance with the standards and procedures of this chapter. When a question arises as to the intent or application of any standard, the City Engineer shall interpret the Code pursuant to Chapter 17-1.5.  
*Response: A subdivision is proposed and the requirements of this section are applicable.*

- C. **Public Works Design Standards.** All public facility improvements, including, but not limited to, sanitary sewer, water, transportation, surface water and storm drainage and parks projects, whether required as a condition of development or provided voluntarily, shall conform to the City of Molalla Public Works Design Standards. Where

a conflict occurs between this Code and the Public Works Design Standards, the provisions of the Public Works Design Standards shall govern.

*Response: All proposed public facilities are designed in conformance with the city's Public Works Design Standards.*

- D. **Public Improvement Requirement.** No building permit may be issued until all required public facility improvements are in place and approved by the City Engineer, or otherwise bonded, in conformance with the provisions of this Code and the Public Works Design Standards. Improvements required as a condition of development approval, when not voluntarily provided by the applicant, shall be roughly proportional to the impact of the development on public facilities. Findings in the development approval shall indicate how the required improvements directly relate to and are roughly proportional to the impact of development.

*Response: The applicant understands no building permits for any of the lots will be issued until all required public facility improvements are constructed and approved or otherwise bonded.*

### **17-3.6.020 Transportation Standards**

#### **A. General Requirements.**

1. Except as provided by subsection A.5, existing substandard streets and planned streets within or abutting a proposed development shall be improved in accordance with the standards of Chapter 17-3.6 as a condition of development approval.

*Response: There are no existing streets on the subject property. All new streets will be improved in accordance with city standards.*

2. All street improvements, including the extension or widening of existing streets and public access ways, shall conform to Section 17-3.6.020, and shall be constructed consistent with the City of Molalla Public Works Design Standards.

*Response: All streets will be improved in accordance with city standards.*

3. All new streets shall be contained within a public right-of-way. Public access ways (e.g., pedestrian ways) may be contained within a right-of-way or a public access easement, subject to review and approval of the City Engineer.

*Response: All streets will be contained within a public right-of-way. The proposed multi-use path will be contained in a public tract (Tract C) dedicated to the city.*

4. The purpose of this subsection is to coordinate the review of land use applications with roadway authorities and to implement Section 660-012-0045(2)(e) of the State Transportation Planning Rule, which requires the City to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. The following provisions also establish when a proposal must be reviewed for potential traffic impacts; when a Transit Analysis Letter (TAL) or Traffic Impact Analysis (TIA) must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; the required contents of a TAL/TIA; and who is qualified to prepare the analysis.



*Response: A Traffic Impact Study prepared by a Registered Engineer is included with the application package.*

- a. **Determining the Required Level of Transportation Analysis and Documentation.** A Transportation Impact Analysis (TIA) is required for developments that are expected to have an impact on the transportation system. The analysis shall be based upon the latest edition of the ITE Trip Generation Manual or an agreed-upon alternative methodology where credible data is available to support the alternative methodology. When specific criteria generally associated with small developments are met, a Transportation Analysis Letter (TAL) may be substituted for the required TIA. At the discretion of the City Engineer, a TAL may satisfy the City's transportation analysis requirements, in lieu of a TIA when a development meets all the following criteria:

*Response: A Traffic Impact Study is included with the application package.*

- c. **Transportation Impact Analysis Contents.** The following information shall be included in each TIA submitted to the City. Additional information specified by the City in the scoping summary or through the pre-application meeting or other project meetings shall also be included.

*Response: A Traffic Impact Study in conformance with the requirements of this section is included with the application package.*

**B. Street Location, Alignment, Extension, and Grades.**

1. All new streets, to the extent practicable, shall connect to the existing street network and allow for the continuation of an interconnected street network, consistent with adopted public facility plans and pursuant to subsection D Transportation Connectivity and Future Street Plans.

*Response: Access to the proposed subdivision will be from an extension of Rachel Lane from the south. As shown on submitted plans, two east-west oriented streets will be stubbed to the western property line of the subdivision. These streets can be extended with future annexation of these properties.*

2. Specific street locations and alignments shall be determined in relation to existing and planned streets, topographic conditions, public convenience and safety, and in appropriate relation to the proposed use of the land to be served by such streets.

*Response: The proposed street system is designed in consideration of the requirements of this section.*

3. Grades of streets shall conform as closely as practicable to the original (pre-development) topography to minimize grading.

*Response: The proposed street system is designed to minimize grading as specified in this section.*

4. New streets and street extensions exceeding a grade of 10 percent over a distance more than 200 feet, to the extent practicable, shall be avoided. Where such grades are unavoidable, the City Engineer may approve an exception to the 200-foot standard and require mitigation, such as a secondary access for the subdivision,

installation of fire protection sprinkler systems in dwellings, or other mitigation to protect public health and safety.

**Response:** *As shown on Sheet C3, the grade of all streets is approximately one percent in compliance with this section.*

5. Where the locations of planned streets are shown on a local street network plan, the development shall implement the street(s) shown on the plan.

**Response:** *No streets except the extension of Rachel Lane are shown on the city's transportation plan.*

6. Where required local street connections are not shown on an adopted City street plan, or the adopted street plan does not designate future streets with sufficient specificity, the development shall provide for the reasonable continuation and connection of existing streets to adjacent developable properties, conforming to the standards of this Code.

**Response:** *In conformance with this section the proposed subdivision includes two east-west oriented street stubbed to the western boundary of the subject property.*

7. Existing street-ends that abut a proposed development site shall be extended with the development, unless prevented by environmental or topographical constraints, existing development patterns, or compliance with other standards in this Code. In such situations, the applicant must provide evidence that the environmental or topographic constraint precludes reasonable street connection.

**Response:** *The only existing street-end abutting the subject property is Rachel Lane which will be extended as the primary access serving the development.*

8. Proposed streets and any street extensions required pursuant to this section shall be located, designed, and constructed to allow continuity in street alignments and to facilitate future development of vacant or redevelopable lands.

**Response:** *In conformance with this section, the proposed subdivision includes two east-west oriented street stubbed to the western boundary of the subject property.*

### C. Rights-of-Way and Street Section Widths.

1. Street rights-of-way and section widths shall comply with the current version of the Public Works Design Standards and Transportation System Plan. The standards are intended: to provide for streets of suitable location, width, and design to accommodate expected vehicle, pedestrian, and bicycle traffic; to afford satisfactory access to law enforcement, fire protection, sanitation, and road maintenance equipment; and to provide a convenient and accessible network of streets, avoiding undue hardships to adjoining properties.

**Response:** *All streets are designed in conformance with city standards.*

2. All streets shall be improved in accordance with the construction standards and specifications of the applicable roadway authority, including requirements for pavement, curbs, drainage, striping, and traffic control devices. Where a planter strip is provided it shall consist of a minimum five-foot-wide strip between the sidewalk and the curb or roadway. Where a swale is provided, it shall either be placed between

the roadway and sidewalk or behind the sidewalk on private property, subject to City Engineer approval and recording of required public drainage way and drainage way maintenance easements. Streets with parking on one side only should be avoided. When used, they must be posted NO PARKING.

*Response: All streets are proposed to contain a curb-tight sidewalk and improved in accordance with city standards.*

3. Where a range of street width or improvement options is indicated, the City Engineer shall determine requirements based on the advice of a qualified professional and all of the following factors:
  - a. Street classification and requirements of the roadway authority, if different than the City's street classifications and requirements;
  - b. Existing and projected street operations relative to applicable standards;
  - c. Safety of motorists, pedestrians, bicyclists, and South Clackamas Transit District (SCTD) users, including consideration of accident history;
  - d. Convenience and comfort for pedestrians, bicyclists, and SCTD users;
  - e. Provision of on-street parking;
  - f. Placement of utilities;
  - g. Street lighting;
  - h. Slope stability, erosion control, and minimizing cuts and fills;
  - i. Surface water management and storm drainage requirements;
  - j. Emergency vehicles or apparatus and emergency access, including evacuation needs;
  - k. Transitions between varying street widths (i.e., existing streets and new streets); and
  - l. Other factors related to public health, safety, and welfare.

*Response: All streets are proposed to contain 36-feet of asphalt and two, five-foot wide sidewalks within a 50 foot right-of-way as required.*

- D. **Transportation Connectivity and Future Street Plans.** The following standards apply to the creation of new streets:

1. **Intersections.** Streets shall be located and designed to intersect as nearly as possible to a right angle. Street intersections shall meet the current requirements of the Public Works Design Standards and Transportation System Plan.

*Response: All street intersections are aligned as near a right angle as possible but the street layout has also been designed to ensure the short streets stubbed to the western property line are perpendicular to this line.*

2. **Access Ways.** The Planning Commission, in approving a land use application with conditions shall require a developer to provide an access way where the creation of a cul-de-sac or dead-end street is unavoidable and the access way connects or may in the future connect, the end of the street to another street, a park, or a public access way, except where the City Engineer and City Planner determine the access way is not feasible. Where an access way is required, it shall be not less than 10 feet wide and shall contain a minimum eight-foot-wide concrete surface or other all-weather surface approved by the City Engineer. Access ways shall be

contained within a public right-of-way or public access easement, as required by the City.

*Response: No cul-de-sacs are proposed. A public multi-use accessway (Tract C) is proposed to connect Rachel Lane to the Union Pacific abandoned railroad corridor. This facility is proposed to be a 10 foot wide path within a 14 foot public tract. The proposed street system provides logical street connections to adjoining property to the west.*

3. **Connectivity to Abutting Lands.** The street system of a proposed subdivision shall be designed to connect to existing, proposed, and planned streets adjacent to the subdivision. Wherever a proposed development abuts unplatted land or a future development phase of an existing development, street stubs shall be provided to allow access to future abutting subdivisions and to logically extend the street system into the surrounding area. Street ends shall be designed to facilitate future extension in terms of grading, width, and temporary barricades.

*Response: The proposed street system provides logical street connections to the adjoining property to the west. This property is currently located outside the city's UGB and city limits. The ends of these streets are proposed to include a barricade and signage as required.*

4. **Street Connectivity and Formation of Blocks.** In order to promote efficient vehicular and pedestrian circulation throughout the City, subdivisions and site developments shall be served by an interconnected street network, pursuant to the current version of the Public Works Design Standards and Transportation System Plan. Where a street connection cannot be made due to physical site constraints, approach spacing requirements, access management requirements, or similar restrictions; a pedestrian access way connection shall be provided pursuant to Chapter 17-3.3. Streets and accessways need not be required where one or more of the following conditions exist:

- a. Physical or topographic conditions make a street or accessway 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 accessways would violate provisions of leases, easements, covenants, restrictions or other agreements existing as of May 1, 1995, which preclude a required street or accessway connection.

*Response: The subject property is generally long and narrow and is bordered by undevelopable property to the east and property currently outside the city's UGB to the west and north. For this reason a street connection to the east is not practical or required.*

5. **Cul-de-Sac Streets.** A cul-de-sac street shall only be used where the City Engineer determines that environmental or topographical constraints, existing development patterns, or compliance with other applicable City requirements preclude a street

extension. Where the City determines that a cul-de-sac is allowed, cul-de-sac length, turn-around type, and pedestrian access to adjoining properties shall meet the requirements of the current version of the Public Works Design Standards and Transportation System Plan and subsection D.2.

*Response: No cul-de-sac streets are proposed.*

6. **Future Street Plan.** Where a subdivision is proposed adjacent to other developable land, a future street plan shall be filed by the applicant in conjunction with an application for a subdivision in order to facilitate orderly development of the street system. The plan shall show the pattern of existing and proposed future streets from the boundaries of the proposed land division and shall include other divisible parcels within 600 feet surrounding and adjacent to the proposed subdivision. The street plan is binding when part of a multi-phased master planned development. The plan must demonstrate, pursuant to City standards, that the proposed development does not preclude future street connections to adjacent development land.

*Response: A future street plan in compliance with this section is included for the property to the west of the subject property on Sheet C2.*

7. **Private Streets and Gated Drives.** Private streets and gated drives serving more than two dwellings (i.e., where a gate limits access to a development from a public street), are prohibited.

*Response: No private streets or gated drives are proposed.*

- E. **Engineering Design Standards.** Street design shall conform to the standards of the applicable roadway authority; for City streets that is the current version of the Public Works Design Standards and Transportation System Plan. Where a conflict occurs between this Code and the Public Works Design Standards, the provisions of the Design Standards shall govern.

*Response: All streets are designed in compliance with city standards.*

- F. **Fire Code Standards.** Where Fire Code standards conflict with City standards, the City shall consult with the Fire Marshal in determining appropriate requirements. The City shall have the final determination regarding applicable standards.

*Response: A Fire District apparatus turn-around is identified at the intersection of Rachel Lane and Sarah Lane as shown on Sheet C2.*

- G. **Substandard Existing Right-of-Way.** Where an existing right-of-way adjacent to a proposed development is less than the standard width, the City Engineer may require the dedication of additional rights-of-way at the time of Subdivision, Partition, or Site Plan Review, pursuant to the standards in the Public Works Design Standards and Transportation System Plan.

*Response: No existing rights-of-way are adjacent to the subject property.*

- H. **Traffic Calming.** The City may require the installation of traffic calming features such as traffic circles, curb extensions, reduced street width (parking on one side), medians with pedestrian crossing refuges, speed tables, speed humps, or special

paving to slow traffic in neighborhoods or commercial areas with high pedestrian traffic.

*Response: No traffic calming measures have been identified.*

- I. **Sidewalks, Planter Strips, and Bicycle Lanes.** Except where the City Engineer grants a deferral of public improvements, pursuant to Chapter 17-4.2 or Chapter 17-4.3, sidewalks, planter strips, and bicycle lanes shall be installed concurrent with development or widening of new streets, pursuant to the requirements of this chapter. Maintenance of sidewalks and planter strips in the right-of-way is the continuing obligation of the adjacent property owner.

*Response: The applicant intends to construct all public improvements concurrent with development or as the city requests.*

- J. **Streets Adjacent to Railroad Right-of-Way.** When a transportation improvement is proposed within 300 feet of a railroad crossing, or a modification is proposed to an existing railroad crossing, the Oregon Department of Transportation and the rail service provider shall be notified and given an opportunity to comment, in conformance with the provisions of Division IV. Private crossing improvements are subject to review and licensing by the rail service provider.

*Response: The subject property is located adjacent to a Union Pacific abandoned rail corridor. No railroad crossings are located within 300 feet of the property.*

- K. **Street Names.** No new street name shall be used which will duplicate or be confused with the names of existing streets in the City of Molalla or vicinity. Street names shall be submitted to the City for review and approval in consultation with Clackamas County and emergency services.

*Response: Rachel Lane is an existing street to be extended onto the property. The applicant has proposed street names with the preliminary plat for the two east-west oriented streets. The applicant defers to the city for approval of these street names.*

- L. **Survey Monuments.** Upon completion of a street improvement and prior to acceptance by the City, it shall be the responsibility of the developer's registered professional land surveyor to provide certification to the City that all boundary and interior monuments have been reestablished and protected.

*Response: Following completion of street improvements and acceptance by the city, the applicant's Surveyor will certify all boundary and interior monuments as required.*

- M. **Street Signs.** The city, county, or state with jurisdiction shall install all signs for traffic control and street names. The cost of signs required for new development shall be the responsibility of the developer. Street name signs shall be installed at all street intersections. Stop signs and other signs may be required.

*Response: The applicant understands the requirements of this section.*

- N. **Streetlight Standards.** Streetlights shall be relocated or new lights installed, as applicable, with street improvement projects. Streetlights shall conform to City

standards, be directed downward, and full cutoff and full shielding to preserve views of the night sky and to minimize excessive light spillover onto adjacent properties.  
*Response: The location and specifications for street lighting will be determined during submittal of Construction Plans.*

O. **Mail Boxes.** Mailboxes shall conform to the requirements of the United States Postal Service and the State of Oregon Structural Specialty Code.  
*Response: The location and type of mailboxes will be determined with Construction Plans.*

P. **Street Cross-Sections.** The final lift of pavement shall be placed on all new constructed public roadways prior to final City acceptance of the roadway.  
*Response: The applicant understands the requirements of this section.*

### 17-3.6.030 Public Use Areas

#### A. Dedication of Public Use Areas

1. Where a proposed park, playground, or other public use shown in a plan adopted by the City is located in whole or in part in a subdivision, the City may require the dedication or reservation of this area on the final plat for the subdivision, provided that the impact of the development on the City park system is roughly proportionate to the dedication or reservation being made.
2. The City may purchase or accept voluntary dedication or reservation of areas within the subdivision that are suitable for the development of parks and other public uses; however, the City is under no obligation to accept such areas offered for dedication or sale

B. **System Development Charge Credit.** Dedication of land to the City for public use areas, voluntary or otherwise, may be eligible as a credit toward any required system development charge for parks. (Ord. 2017-08 §1)

*Response: No public use areas are included with this proposal.*

### 17-3.6.040 Sanitary Sewer and Water Service Improvements

A. **Sewers and Water Mains Required.** All new development is required to connect to City water and sanitary sewer systems. Sanitary sewer and water system improvements shall be installed to serve each new development and to connect developments to existing mains in accordance with the adopted facility master plans and applicable Public Works Design Standards. Where streets are required to be stubbed to the edge of the subdivision, sewer and water system improvements and other utilities shall also be stubbed with the streets, except as may be waived by the City Engineer where alternate alignment(s) are provided.

*Response: All proposed utilities are shown on Sheet C5, Preliminary Utility Plan.*

B. **Sewer and Water Plan Approval.** Development permits for sewer and water improvements shall not be issued until the City Engineer has approved all sanitary sewer and water plans in conformance with City standards.

*Response: The applicant understands the City Engineer will need to review and approve all sewer and water plans.*

C. **Over-Sizing.** The City may require as a condition of development approval that sewer and water lines serving new development be sized to accommodate future development within the area as projected by the applicable facility master plans, and the City may authorize other cost-recovery or cost-sharing methods as provided under state law.

*Response: The applicant understands the city may require water line over-sizing if it is warranted.*

D. **Inadequate Facilities.** Development permits may be restricted or rationed by the Planning Commission where a deficiency exists in the existing water or sewer system that cannot be rectified by the development and which, if not rectified, will result in a threat to public health or safety, surcharging of existing mains, or violations of state or federal standards pertaining to operation of domestic water and sewerage treatment systems. The City Engineer may require water booster pumps, sanitary sewer lift stations, and other critical facilities be installed with backup power. (Ord. 2017-08 §1)

*Response: The details of capacity of the city's sanitary sewer will be evaluated as part of the application review. The applicant is not aware of any known sewer capacity issues.*

#### **17-3.6.050 Storm Drainage and Surface Water Management Facilities**

A. **General Provisions.** The City shall issue a development permit only where adequate provisions for stormwater runoff have been made in conformance with the requirements of the current version of the Public Works Design Standards and Stormwater Master Plan.

*Response: A public stormwater detention facility is proposed at the north end of the development (Tract A). The storm drainage report submitted with this application reviews the capacity and details of this facility.*

B. **Accommodation of Upstream Drainage.** Culverts and other drainage facilities shall be large enough to accommodate existing and potential future runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the City Engineer.

*Response: No upstream drainage enters the subject property that needs to be accommodated.*

C. **Effect on Downstream Drainage.** Where it is anticipated by the City Engineer that the additional runoff resulting from the development will overload an existing drainage facility, the City shall withhold approval of the development until provisions have been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with City standards.

*Response: The submitted storm drainage report details the effects on downstream drainage. No issues with the capacity of these facilities is anticipated.*



- D. **Over-Sizing.** The City may require as a condition of development approval that sewer, water, or storm drainage systems serving new development be sized to accommodate future development within the area as projected by the applicable facility master plan, provided that the City may grant the developer credit toward any required system development charge for the same pursuant to the System Development Charge.

*Response: The applicant understands the city may require over-sizing these facilities if it is warranted.*

- E. **Existing Watercourse.** Where a proposed development is traversed by a watercourse, drainage way, channel, or stream, the City may require a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance to protect the public health and safety.

*Response: The subject property is not traversed by a watercourse or drainageway.*

### **17-3.6.060 Utilities**

The following standards apply to new development where extension of electric power, gas, or communication lines is required:

- A. **General Provision.** The developer of a property is responsible for coordinating the development plan with the applicable utility providers and paying for the extension and installation of utilities not otherwise available to the subject property.

*Response: The applicant understands his responsibility to coordinate with utility providers and pay required fees to extend these utilities to serve the development.*

#### **B. Underground Utilities.**

1. **General Requirement.** The requirements of the utility service provider shall be met. All utility lines in new subdivisions, including, but not limited to, those required for electric, communication, and lighting, and related facilities, shall be placed underground, except where the City Engineer determines that placing utilities underground would adversely impact adjacent land uses. The Planning Official may require screening and buffering of above ground facilities to protect the public health, safety, or welfare.

*Response: All utilities are proposed to placed underground.*

2. **Subdivisions.** In order to facilitate underground placement of utilities, the following additional standards apply to all new subdivisions:
- The developer shall make all necessary arrangements with the serving utility to provide the underground services. Care shall be taken to ensure that no aboveground equipment obstructs vision clearance areas for vehicular traffic, per Chapter 17-3.3 Access and Circulation.
  - The City Engineer reserves the right to approve the location of all surface-mounted facilities.
  - All underground utilities installed in streets must be constructed and approved by the applicable utility provider prior to the surfacing of the streets.
  - Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.

*Response: The applicant understands he is responsible for making arrangements with utilities companies and installing utilities in accordance with the requirements of this section.*

- C. **Exception to Undergrounding Requirement.** The City Engineer may grant exceptions to the undergrounding standard where existing physical constraints, such as geologic conditions, streams, or existing development conditions make underground placement impractical. (Ord. 2017-08 §1)

*Response: No exceptions to under grounding utilities is anticipated.*

#### **17-3.6.070 Easements**

- A. **Provision.** The developer shall make arrangements with the City and applicable utility providers for each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development.
- B. **Standard.** Utility easements shall conform to the requirements of the utility service provider. All other easements shall conform to the City of Molalla Public Works Design Standards.
- C. **Recordation.** All easements for sewers, storm drainage and water quality facilities, water mains, electric lines, or other utilities shall be recorded and referenced on a survey or final plat, as applicable. See Chapter 17-4.2 Site Design Review, and Chapter 17-4.3 Land Divisions and Property Line Adjustments.

*Response: The Preliminary Plat includes 10-foot deep public utility easements along the street frontage of all lots. In addition, as shown on the Preliminary Plat, a 15 foot wide public storm drainage easement is proposed along the northern line of Lot 17 to accommodate construction of a pipe in this location.*

#### **17-3.6.080 Construction Plan Approval**

No development, including sanitary sewers, water, streets, parking areas, buildings, or other development, shall commence without plans having been approved by the City of Molalla Public Works Department and permits issued. Permit fees are required to defray the cost and expenses incurred by the City for construction and other services in connection with the improvement. Permit fees are as set by City Council resolution. (Ord. 2017-08 §1)

*Response: The applicant understands Construction Plans require city approval prior to construction.*

#### **17-3.6.090 Facility Installation**

- A. **Conformance Required.** Improvements installed by the developer, either as a requirement of these regulations or at the developer's option, shall conform to the requirements of this chapter, approved construction plans, and to improvement standards and specifications adopted by the City.
- B. **Adopted Installation Standards.** The City of Molalla has adopted Public Works Design Standards for public improvements and private utility installation within the public right-of-way.
- C. **Commencement.** Work in a public right-of-way shall not begin until all applicable agency permits have been approved and issued.

D. **Resumption.** If work is discontinued for more than six months, it shall not be resumed until the Public Works Director is notified in writing and grants approval of an extension.

E. **City Inspection.** Improvements shall be constructed under the inspection of the City Engineer. The City Engineer may approve minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest, except that substantive changes to the approved design shall be subject to review under Chapter 17-4.5 Modifications to Approved Plans and Conditions of Approval. Any survey monuments that are disturbed before all improvements are completed by the developer or subdivider shall be replaced at the developer or subdivider's expense prior to final acceptance of the improvements.

*Response: The applicant understands the requirements of this section regarding plan approval, construction, and inspection of all public facilities.*

F. **Engineer's Certification and As-Built Plans.** In accordance with the current version of the Public Works Design Standards, a registered civil engineer shall provide written certification in a form required by the City that all improvements, workmanship, and materials meet current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to City's acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide two sets of "as-built" plans, one paper set and one electronic set for permanent filing with the City. If required by the City, the developer or subdivider shall provide a warranty bond pursuant to Section 17-3.6.100.

*Response: The applicant and his registered civil engineer are aware written certification that all improvements were installed according to approved plans and conditions of approval and these improvements are of high quality and that a paper set and a digital set of "as built" plans shall be submitted to the city.*

#### **17-3.6.100 Performance Guarantee and Warranty**

A. **Performance Guarantee Required.** The City at its discretion may approve a final plat or building permit when it determines that all of the public improvements required for the site development or land division, or phase thereof, are complete and the applicant has an acceptable assurance for the balance of said improvements. The applicant shall provide a performance and payment bond in accordance with the current version of the Public Works Design Standards.

B. **Determination of Sum.** The assurance of performance shall be for a sum determined by the City Engineer as required to cover the cost of the improvements and repairs, including related engineering and incidental expenses, plus reasonable inflationary costs. The assurance shall not be less than 150 percent of the estimated improvement costs.

C. **Itemized Improvement Estimate.** The applicant shall furnish to the City an itemized improvement estimate, certified by a registered civil engineer, to assist the City in calculating the amount of the performance assurance.

D. **Agreement.** A written agreement between the City and applicant shall be signed recorded. The agreement may include a provision for the construction of the

improvements in stages and for the extension of time under specific conditions. The agreement shall contain all of the following:

1. The period within which all required improvements and repairs shall be completed;
2. A provision that if work is not completed within the period specified, the City may complete the work and recover the full cost and expenses from the applicant;
3. The required improvement fees and deposits.

- E. **When Applicant Fails to Perform.** In the event the applicant fails to carry out all provisions of the agreement and the City has un-reimbursed costs or expenses resulting from such failure, the City shall call on the bond, cash deposit, or letter of credit for reimbursement.
- F. **Termination of Performance Guarantee.** The applicant shall not cause termination, nor allow expiration, of the guarantee without first securing written authorization from the City.
- G. **Warranty Bond.** A warranty bond good for two years is required on all public improvements and landscaping when installed in the public right-of-way. The warranty bond shall equal 120 percent of the total cost of improvements and begin upon acceptance of said improvements by the City.

*Response: The applicant understands the requirements of these sections regarding the completion and bonding of public improvements.*

## CHAPTER 17-4..1 GENERAL REVIEW PROCEDURES

### 17-4.1.070 Neighborhood Contact

- A. **Purpose and Applicability.** Applicants for master planned development, subdivision, or site design review on projects involving parcels or lots larger than one acre and located adjacent to any residential zone, and property owner-applicants for zone changes, are recommended to contact neighboring property owners and offer to a hold meeting with them prior to submitting an application. This is to ensure that affected property owners are given an opportunity to preview a proposal and offer input to the applicant before a plan is formally submitted to the City, thereby raising any concerns about the project and the project's compatibility with surrounding uses early in the design process when changes can be made relatively inexpensively.

*Response: A neighborhood meeting was conducted by the applicant on Saturday, May 8, 2021 in accordance with these provisions.*

- B. **Notice.** Notice of the meeting should be given in writing and delivered in person, or by certified mail, to all of the property owners whose property is located within 300 feet of the site, at their addresses of record at the Clackamas County Assessor's office, at least 14 days before the meeting and at least 21 days before submitting the application to the City. The notice should state the time, place, and purpose of the meeting, including a description of the proposed development.

*Response: Notice of the meeting was sent to all property owners on a mailing list prepared by the City of Molalla on April 23, 2021, 15 days prior to the meeting. This notice contained all of the information required by this section.*

C. **Meeting Place, Date, and Time.** The meeting should be held within the City limits at a location obtained or provided by the applicant with sufficient room for the expected attendance. The meeting place should be accessible to persons with disabilities. It should be scheduled at a date and time reasonably calculated to allow maximum participation by interested property owners.

*Response: The neighborhood meeting was held in the open near the northern end of Rachel Lane.*

D. **Conduct of Meeting.** At the meeting, the applicant, or the applicant's agent, should present sufficient information about the proposed development to inform the property owners in attendance of the nature of the proposal and impacts it may have on neighboring properties, including transportation impacts. Persons attending should be allowed to ask questions and make comments. The applicant, or the applicant's agent, should make a sound or video recording or keep written minutes of the meeting that give a true reflection of the matters discussed at the meeting and the views of the participants. The applicant should also make a list of names of persons attending the meeting.

*Response: The applicant conducted the meeting by providing a brief description of the project and then opening the meeting up to questions from those in attendance.*

E. **Filing Requirements.** Proof of having held the meeting, even if no affected property owners attend, is required and should be submitted to the City with a land use application. Copies of the following information should accompany the land use application: a copy of the notice mailed, certified mail receipts, all addresses to which notice was mailed (e.g., copy of mailing labels), a certificate of personal service for those persons who were provided notice by personal service (including the date of service and the name of the person who provided service), a record or minutes of the meeting with a list of attendees, and copies of the meeting notice and all other written materials provided prior to or distributed at the meeting.

*Response: All of the information required by this section is included with the application package.*

## **CHAPTER 17-4.2 SITE DESIGN REVIEW**

### **17-4.2.050 Approval Criteria**

An application for Site Design Review shall be approved if the proposal meets all of the following criteria. The Planning Official, in approving the application, may impose reasonable conditions of approval, consistent with the applicable criteria.

A. The application is complete, in accordance with Section 17-4.2.040;

*Response: All of the items in Section 17-4.2.040 as requested by the city have been included with the application package to allow the city to deem the application complete. The proposal complies with this criteria.*

B. The application complies with all of the applicable provisions of the underlying Zoning District (Division II), including, but not limited to, building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other applicable standards;

*Response: As reviewed in this narrative, the proposed subdivision complies with or can be conditioned to comply with all applicable provisions of the R-1 zoning district. Several of the items listed in this code section including setbacks, floor area, lot coverage, and building orientation will be reviewed with building permits for homes constructed on these lots. The proposal complies with this criteria.*

- C. The proposal includes required upgrades, if any, to existing development that does not comply with the applicable zoning district standards, pursuant to Chapter 17-1.4 Nonconforming Situations;

*Response: No upgrades to existing development have been identified or are any warranted. No nonconforming situations as detailed in Chapter 17-1.4 are applicable to the proposal. The proposal complies with this criteria.*

- D. The proposal complies with all of the Development and Design Standards of Division III, as applicable, including, but not limited to:

1. Chapter 17-3.3 Access and Circulation,
2. Chapter 17-3.4 Landscaping, Fences and Walls, Outdoor Lighting,
3. Chapter 17-3.5 Parking and Loading,
4. Chapter 17-3.6 Public Facilities, and
5. Chapter 17-3.7 Signs;

*Response: As reviewed in this narrative, the proposed subdivision complies with or can be conditioned to comply with all applicable provisions in the chapters listed above and the proposal complies with this criteria.*

- E. For non-residential uses, all adverse impacts to adjacent properties, such as light, glare, noise, odor, vibration, smoke, dust, or visual impact, are avoided; or where impacts cannot be avoided, they are minimized; and

*Response: The proposal is for a residential subdivision and this criteria is not applicable.*

- F. The proposal meets all existing conditions of approval for the site or use, as required by prior land use decision(s), as applicable.

*Response: The applicant is not aware of any prior land use decisions that would affect the proposed development. This criterion is not applicable.*

## **CHAPTER 17-4.3 LAND DIVISIONS AND PROPERTY LINE ADJUSTMENTS**

### **17-4.3.020 General Requirements**

- A. **Subdivision and Partition Approval Through Two-Step Process.** Applications for subdivision or partition approval shall be processed by means of a preliminary plat evaluation and a final plat evaluation, according to the following two steps:
1. The preliminary plat must be approved before the final plat can be submitted for approval consideration; and
  2. The final plat must demonstrate compliance with all conditions of approval of the preliminary plat.

*Response: The applicant is aware the platting process involves two steps: preliminary plat and final plat.*

- B. **Compliance With Oregon Revised Statutes (ORS) Chapter 92.** All subdivision and partition proposals shall conform to state regulations in ORS Chapter 92 Subdivisions and Partitions.

*Response: The proposed development has been designed in compliance with ORS Chapter 92 and relevant provisions of the Molalla Development Code.*

- C. **Future Re-Division Plan.** When subdividing or partitioning tracts into large lots (i.e., greater than three times or 300 percent the minimum lot size allowed by the underlying land use district), the lots shall be of such size, shape, and orientation as to facilitate future re-division and extension of streets and utilities. The applicant shall submit a future re-division plan, or shadow plan, indicating how re-division of oversized lots and extension of planned public facilities to adjacent parcels can occur in the future. (See also Section 17-4.3.040 Pre-Planning for Large Sites.)

*Response: No lots as defined in this section are proposed.*

- D. **Adequate Utilities.** All lots created through land division shall have adequate public utilities and facilities such as streets, water, sewer, gas, and electrical systems, pursuant to Chapter 17-3.6. These systems shall be located and constructed underground where feasible.

*Response: All lots proposed in the subdivision will be served by a new public street and will be served by adequate public utilities including water, sewer, gas, and electrical service. All of these facilities will be constructed underground as required.*

- E. **Adequate Drainage.** All subdivision and partition proposals shall have adequate surface water drainage facilities that reduce exposure to flood damage and improve water quality. Water quality or quantity control improvements may be required, pursuant to Chapter 17-3.6.

*Response: As detailed in the storm drainage report included with the application, a water quality pond (Tract A) will be constructed to treat and detain stormwater runoff before it is released into the roadside ditch along South Vicks Road.*

- F. **Adequate Access.** All lots created or reconfigured shall have adequate vehicle access and parking, as may be required, pursuant to Chapter 17-3.3.

*Response: All lots are of a sufficient size to accommodate off-street parking as required.*

#### **17-4.3.030 Preliminary Plat Approval Process**

- A. **Review of Preliminary Plat.** Preliminary plats for partitions shall be processed using the Type II procedure under Section 17-4.1.030. Subdivisions shall be processed using the Type III procedure under Section 17-4.1.040. All preliminary plats, including partitions and subdivisions, are subject to the approval criteria in Section 17-4.3.070.

*Response: The applicant is aware the proposal will be reviewed following a Type III process. Relevant approval criteria are reviewed in Section 17-4.3.070 below.*

- B. **Preliminary Plat Approval Period.** Preliminary plat approval shall be effective for a period of two years from the date of approval. The preliminary plat shall lapse if a

final plat has not been submitted or other assurance provided, pursuant to Section 17-4.3.090, within the two-year period. The Planning Commission may approve phased subdivisions, pursuant to subsection D, with an overall time frame of more than two years between preliminary and final plat approvals.

*Response: The applicant is aware of the two year effective period for preliminary plat approval.*

**D. Phased Subdivision.** The Planning Commission may approve plans for phasing a subdivision, and changes to approved phasing plans, provided the applicant's proposal meets all of the following criteria:

1. In no case shall the construction time period (i.e., for required public improvements, utilities, streets) for the first subdivision phase be more than one year;
2. Public facilities shall be constructed in conjunction with or prior to each phase;
3. The phased development shall not result in requiring the City or a third party (e.g., owners of lots) to construct public facilities that are required as part of the approved development proposal; and
4. The proposed phasing schedule shall be reviewed with the preliminary subdivision plat application. (Ord. 2019-16 §1; Ord. 2017-08 §1)

*Response: Only a single phase is proposed and this section is not applicable.*

#### **17-4.3.050 Lot Size Averaging, Flag Lots, and Infill Development**

**A. Lot Size Averaging.** To allow flexibility in subdivision design and to address physical constraints, such as topography, existing development, significant trees, and other natural and built features, the approval body may grant a 20 percent modification to the lot area and/or lot dimension (width/depth) standards in Chapter 17-2.2, provided that the overall density of the subdivision does not exceed the allowable density of the district and the approval body finds that all of the following are met:

1. Granting the modification is necessary to achieve planned housing densities, as allowed by the underlying zone, or to improve development compatibility with natural features or adjacent land uses;
2. The Planning Official may require screening, buffering, or other transitions in site design where substandard lots are proposed to abut standard-or larger-sized lots.

*Response: The application does not include a proposal for lot size averaging.*

**B. Flag Lots.** Flag lots may be created only when a through street cannot be extended to serve abutting uses or future development. A flag lot driveway ("flag pole") shall serve not more than two dwelling units, including accessory dwellings and dwellings on individual lots. The City Engineer may approve additional units. The layout of flag lots, the placement of buildings on such lots, and the alignment of shared drives shall be designed so that future street connections can be made as adjacent properties develop, to the extent practicable, and in accordance with the standards of Section 17-3.6.020.D.

*Response: Two flag lots (Lots 19 and 21) are proposed. Each flag lot driveway will serve only a single lot. The proposal complies with this standard.*

**D. Emergency Vehicle Access.** A drive serving more than one lot shall have a reciprocal access and maintenance easement recorded for all lots it serves. No fence, structure,



or other obstacle shall be placed within the drive area. Where required, emergency vehicle apparatus lanes, including any required turn-around, shall conform to applicable building and fire code requirements. Fire sprinklers may also be required for buildings that cannot be fully served by fire hydrants (i.e., due to distance from hydrant or insufficient fire flow).

*Response: A fire apparatus turn-around template is included on Sheet C2 to showing how a fire apparatus will have adequate room to turn-around at the intersection of Rachel Lane and Sarah Lane.*

- E. **Maximum Drive Lane Length.** The maximum length of a drive serving more than one dwelling is subject to requirements of the Uniform Fire Code.

*Response: No driveways will exceed the maximum length allowed by this section.*

#### **17-4.3.060 Preliminary Plat Submission Requirements**

Applications for Preliminary Plat approval shall contain all of the following information:

A. **General Submission Requirements.**

1. Information required for a Type III review (see Section 17-4.1.040); and
2. **Public Facilities and Services Impact Study.** The impact study shall quantify and assess the effect of the development on public facilities and services. The City shall advise as to the scope of the study, which shall address, at a minimum, the transportation system, including required improvements for motorized and non-motorized vehicles and pedestrians; the drainage system; the parks system (for subdivisions and planned unit developments of 20 or more dwelling units); water system; and sewer system. For each system and type of impact, the study shall propose improvements necessary to meet City standards under adopted ordinances and facility master plans. The City may require a Traffic Impact Analysis pursuant to Section 17-3.6.020.A.4.

*Response: All of the items required for the application to be reviewed and approved through a Type III process have been included with the application package. The adequacy of public facilities was reviewed with annexation of the property in January 2021 and a traffic impact study is included with the application package as required.*

- B. **Preliminary Plat Information.** In addition to the general information described in subsection A, above, the preliminary plat application shall consist of drawings and supplementary written material (i.e., on forms and/or in a written narrative) adequate to provide all of the following information, in quantities determined by the Planning Official:

*Response: The preliminary plat submittal package includes all of the drawings and reports requested by the city.*

#### **17-4.3.070 Preliminary Plat Approval Criteria**

- A. **Approval Criteria.** The Planning Commission may approve, approve with conditions, or deny a preliminary plat. The Planning Commission decision shall be based on findings of compliance with all of the following approval criteria:

1. The land division application shall conform to the requirements of Chapter 17-4.3;

**Response:** As reviewed above, the proposal complies with all relevant provisions in Chapter 17-4.3.

2. All proposed lots, blocks, and proposed land uses shall conform to the applicable provisions of Division II Zoning Regulations, except as modified by the provisions of Chapter 17-4.3 (e.g., lot size averaging);

**Response:** As detailed in this narrative above, all lots and blocks conform with applicable provisions of Division II.

3. Access to individual lots, and public improvements necessary to serve the development, including, but not limited to, water, sewer, and streets, shall conform to Division III Community Design Standards;

**Response:** As detailed in this narrative above, all public improvements conform with Division II standards.

4. The proposed plat name is not already recorded for another subdivision, and satisfies the provisions of ORS Chapter 92;

**Response:** The proposed plat name, "River Meadows" will be cleared with the Clackamas County Surveyors Office in compliance with ORS Chapter 92 as required.

5. The proposed streets, utilities, and surface water drainage facilities conform to City of Molalla adopted master plans and applicable engineering standards, and allow for transitions to existing and potential future development on adjacent lands. The preliminary plat shall identify all proposed public improvements and dedications;

**Response:** All public facilities are designed to comply with all applicable master plans.

6. All proposed private common areas and improvements, if any, are identified on the preliminary plat and maintenance of such areas is assured through appropriate legal instrument;

**Response:** Tract B is proposed as an outdoor recreation space to be owned and maintained by a Homeowners Association formed for this purpose.

7. Evidence that any required state and federal permits, as applicable, have been obtained or can reasonably be obtained prior to development;

**Response:** No State or federal permits are required at this time to allow approval of the proposed development.

8. Evidence that improvements or conditions required by the City, road authority, Clackamas County, special districts, utilities, and/or other service providers, as applicable to the project, have been or can be met; and

**Response:** All improvements or conditions can be met with approval of the proposed subdivision.

9. The architectural standards of Section 17-3.2.030.D are met.

*Response: The requirements of this Section 17-3.2.030(D) will be reviewed by the city in detail with submittal of building permits for the homes proposed to be constructed on the platted lots.*

- B. Conditions of Approval.** The Planning Commission may attach such conditions as are necessary to carry out provisions of this Code, and other applicable ordinances and regulations.

*Response: The applicant is aware the Planning Commission may include conditions with approval of the application.*

#### **IV. Conclusion**

The applicant requests land use approval to construct a 30 lot residential subdivision on 5.996 acres zoned R-1, Low Density Residential. The subject property is located within the Molalla urban growth boundary and was annexed into the city limits by the Molalla City Council in January, 2021 by Ordinance 2021-02. A pre-application conference was held with the City to review the project on April 15, 2021 (Pre04-2021) and a neighborhood meeting was held by the applicant on May 8, 2021. As reviewed in this narrative, the proposal complies with all relevant standards and criteria of the Molalla Development Code and the applicant respectfully requests the application be approved as submitted.

KNOW ALL MEN BY THESE PRESENTS, That FRANCES ALBERTA RUSSELL, also known as FRANCES A. RUSSELL and OTTO RUSSELL, Grantor, for consideration as hereinafter stated to US paid by the Grantees herein, do hereby grant, bargain, sell and convey unto DALE A. BYSTROM and JULIE ANN BYSTROM

husband and wife, Grantees, as tenants by the entirety, the following described real property, situate in the County of Clackamas and State of Oregon, to-wit:

Part of the Joseph T. Wingfield D.L.C. No. 48, in Sections 4, 5 and 8, T. 5S, R. 2E., of the W.M., in the County of Clackamas and State of Oregon, described as follows:

Beginning at an iron pipe in the North Boundary of said D.L.C. which is North 82° 03' West, 1956.9 feet from the Northeast corner of said D.L.C.; thence South 8° 29' West 2681.00 feet to a point; thence South 82° East 660.00 feet to a point; thence North 8° East to a point on the Southwesterly right of way line of the Southern Pacific Railway; thence Northwesterly along said right of way line to the North boundary of said D.L.C.; thence North 82° West to the point of beginning.

To Have and to Hold the granted premises unto the said Grantees, as tenants by the entirety, their Heirs and Assigns forever.

The Grantor do covenant that they are lawfully seized in fee simple of the above granted premises free from all encumbrances, EXCEPT Taxes for the year 73/74: \$430.10 Pd. Code 35-7 A/C #34822. The rights of the public in and to that portion of the above property lying within the boundaries of roads.

and that they will and their heirs, executors and administrators, shall warrant and forever defend the granted premises, against the lawful claims and demands of all persons, except as stated above.

The true and actual consideration for this transfer is \$ 55,000.00. The true and actual consideration for this transfer is \$ 55,000.00. (\*Strike inapplicable phrases—the dollar amount should include all encumbrances to be paid by purchaser.)

Witness my hand and seal this 1 day of AUGUST, 1974.

Frances Alberta Russell (SEAL)
Frances A. Russell
Otto Russell (SEAL)
Otto Russell (SEAL)

STATE OF OREGON
County of Clackamas ss.

STATE OF OREGON
County of ss.

On this 1 day of August, 1974, personally appeared the above named Frances Alberta Russell also known as Frances A. Russell and Otto Russell,

I certify that the within instrument was received for record on at o'clock, and was recorded in Book Page Record of Deeds of said county.

and acknowledged the foregoing instrument to be their voluntary act and deed.

Recorder of Conveyances

Before me, Notary Public for Oregon, My Commission Expires 2-5-77

By Deputy

UNTIL A CHANGE IS REQUESTED, ALL TAX STATEMENTS SHALL BE SENT TO THE FOLLOWING ADDRESS:

Department of Veterans Affairs
General Service Building
Albany Oregon 97306

WARRANTY DEED Tenancy by the Entirety

Furnished as a courtesy by WILLAMETTE VALLEY TITLE CO.

Return to: Dale Systrom
213 4th St.
Notary Public
4:20 PM GEORGE D. POPPEN, County Clerk

SEAL DOCUMENT

RECORDED AUG 6 - 1974

74 22056 74 22056



## PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein Chicago Title Company of Oregon hereby reports that it is prepared to issue, or cause to be issued, as of the specified date, a policy or policies of title insurance describing the land and the estate or interest hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.

The printed Exceptions and Exclusions from the coverage of said policy or policies are set forth in Exhibit One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a/an Florida corporation.

**Please read the exceptions shown or referred to herein and the Exceptions and Exclusions set forth in Exhibit One of this report carefully. The Exceptions and Exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.**

**It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.**

This preliminary report is for the exclusive use of the parties to the contemplated transaction, and the Company does not have any liability to any third parties nor any liability until the full premium is paid and a policy is issued. Until all necessary documents are placed of record, the Company reserves the right to amend or supplement this preliminary report.

*Countersigned*

A handwritten signature in cursive script that reads "Maggie Metcalf".



# Chicago Title

Company of Oregon

10151 SE Sunnyside Road, Ste 300, Clackamas, OR 97015  
(503)794-5860 FAX (503)353-1468

## PRELIMINARY REPORT

**ESCROW OFFICER:** Libby Cox  
Libby.Cox@ctt.com  
503-794-5875

**ORDER NO.:** 472520001290  
**Supplement 1:** Eff date/Taxes/City  
Lien

**TITLE OFFICER:** Mollie Rowe

**TO:** Chicago Title Company of Oregon  
10151 SE Sunnyside Road, Ste 300  
Clackamas, OR 97015

**ESCROW LICENSE NO.:** 201004072

**OWNER/SELLER:** Dale Bystrom and Julie Ann Bystrom, Trustee, or their successors in trust under the Dale and Julie Bystrom

**BUYER/BORROWER:** David Carter, and/or assigns

**PROPERTY ADDRESS:** No Situs Address, Molalla, OR 97038

**EFFECTIVE DATE:** January 8, 2021, 08:00 AM

1. THE POLICY AND ENDORSEMENTS TO BE ISSUED AND THE RELATED CHARGES ARE:

	<u>AMOUNT</u>	<u>PREMIUM</u>
ALTA Owner's Policy 2006 <b>Owner's Standard</b>	\$ 900,000.00	\$ 1,950.00
ALTA Loan Policy 2006 <b>Extended Lender's</b>	\$ 895,000.00	\$ 683.00
OTIRO 209.10-06 - Restrictions, Encroachments, Minerals - Current Violations (ALTA 9.10-06)		\$ 100.00
OTIRO 222-06 - Location (ALTA 22-06)		\$ 0.00
OTIRO 208.1-06 - Environmental Protection Lien (ALTA 8.1-06)		\$ 0.00
Government Lien Search		\$ 30.00

2. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

A Fee

3. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

Dale Bystrom and Julie Ann Bystrom, Trustee, or their successors in trust under the Dale and Julie Bystrom Joint Revocable Trust dated April 3, 2015

4. THE LAND REFERRED TO IN THIS REPORT IS SITUATED IN THE CITY OF MOLALLA, COUNTY OF CLACKAMAS, STATE OF OREGON, AND IS DESCRIBED AS FOLLOWS:

SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

**EXHIBIT "A"**  
Legal Description

A tract of land, being a part of that certain tract of land conveyed to Dale A. Bystrom, et ux, by "Deed Recorded" as Fee No. 74-22056, Deed Records of Clackamas County, situated in the Joseph Wingfield D.L.C. No. 48, in the Northeast one Quarter of Section 8, Township 5 South, Range 2 East, "Willamette Meridian", being more particularly described as follows:

BEGINNING at a 1 inch iron pipe at the Northeast corner of Lot 8, Del Mar Terrace, Plat No. 3289, Survey Records; thence North 81° 59' 12" West along the North line of said Lot 8, 19.26 feet; thence, tracing the Northeasterly and Northerly boundary of that tract of land conveyed to Century Land Development, LLC by "Deed Recorded" as Fee No. 2002-127037, Deed Records of Clackamas County, North 08° 00' 44" East 102.15 feet; thence South 81° 59' 12" East, 41.00 feet; thence North 11° 16' 10" East, 153.65 feet; thence North 63° 58' 09" West, 104.15 feet; thence Southwesterly around the arc of a 350.00 foot radius curve to the right, through a central angle of 07° 20' 52", an arc distance of 44.89 feet (the long chord of which bears South 19° 52' 25" West 44.85 feet) to a point on the curve; thence North 73° 48' 01" West 17.68 feet to the West line of the Bystrom tract; thence North 08° 29' 29" East, along the West line of said Bystrom tract, 1092.33 feet to a ½ inch iron pipe and the true point of beginning; thence North 08° 29' 40" West 1319.54 feet to the south right of way line of Vick Road, County Road No. 889; thence South 82° 01' 53" East, along the Southerly right of way line of Vick Road, 22.63 feet to the east line of said Bystrom tract; thence South 06° 24' 59" East, along the East line of said Bystrom tract, 1361.73 feet to the point of Intersection of the Easterly extension of the North line of that certain tract of land described in "Deed Recorded" as Fee No. 85-24951; thence North 82° 00' 15" West, along said extended line, 373.34 feet to a ½ inch iron pipe on the westerly line of said Bystrom tract, the true point of beginning.

**AS OF THE DATE OF THIS REPORT, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN THE POLICY FORM WOULD BE AS FOLLOWS:**

**GENERAL EXCEPTIONS:**

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests or claims, which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
3. Easements, or claims of easement, which are not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof; water rights, claims or title to water.
4. Any encroachment (of existing improvements located on the Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the subject Land.
5. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the Public Records.

**SPECIFIC ITEMS AND EXCEPTIONS:**

6. The Land has been classified as Farmland, as disclosed by the tax roll. If the Land becomes disqualified, said Land may be subject to additional taxes and/or penalties.
7. City Liens, if any, in favor of the City of Molalla. None found as of March 9, 2020.
8. Rights of the public to any portion of the Land lying within the boundaries of streets, roads and highways.
9. Please be advised that our search did not disclose any open Deeds of Trust of record. If you should have knowledge of any outstanding obligation, please contact the Title Department immediately for further review prior to closing.
10. We find no Notice of Completion recorded on said Land.
11. Any invalidity or defect in the title of the vestees in the event that the trust referred to herein is invalid or fails to grant sufficient powers to the trustee(s) or in the event there is a lack of compliance with the terms and provisions of the trust instrument.

If title is to be insured in the trustee(s) of a trust (or if their act is to be insured), this Company will require a copy of said Trust Agreement or a Trust Certification pursuant to ORS Chapter 130.860.

The Company reserves the right to make additional requirements or add additional items or exceptions after review of the requested documentation.

If the forthcoming conveyance/encumbrance is to be executed by the original trustee(s), it will not be necessary to furnish a copy of the trust agreement.



12. Facts, rights, interests or claims which are not shown by the public records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

To remove this item, the Company will require an affidavit and indemnity on a form supplied by the Company.

13. Any lien or right to a lien for services, labor, material, equipment rental or workers compensation heretofore or hereafter furnished, imposed by law and not shown by the public records.

To remove this item, the Company will require an affidavit and indemnity on a form supplied by the Company.

14. Any encroachment (of existing improvements located on the subject Land onto adjoining land or of existing improvements located on adjoining land onto the subject Land), encumbrance, violation, variation or adverse circumstance affecting the title that would be disclosed by an accurate and complete land survey of the subject Land.

The Company will require an inspection of the premises, and this exception may be eliminated or limited as a result thereof.

**ADDITIONAL REQUIREMENTS/NOTES:**

- A. Note: Property taxes for the fiscal year shown below are paid in full.

Fiscal Year:	2020-2021
Amount:	\$89.89
Levy Code:	035-002
Account No.:	05006921
Map No.:	52E05 02002

Prior to close of escrow, please contact the Tax Collector's Office to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

- B. In addition to the standard policy exceptions, the exceptions enumerated above shall appear on the final 2006 ALTA Policy unless removed prior to issuance.
- C. Note: There are no matters against the party(ies) shown below which would appear as exceptions to coverage in a title insurance product:  
  
Parties: David Carter
- D. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.
- E. Note: No utility search has been made or will be made for water, sewer or storm drainage charges unless the City/Service District claims them as liens (i.e. foreclosable) and reflects them on its lien docket as of the date of closing. Buyers should check with the appropriate city bureau or water service district and obtain a billing cutoff. Such charges must be adjusted outside of escrow.
- F. Note: Effective January 1, 2008, Oregon law (ORS 314.258) mandates withholding of Oregon income taxes from sellers who do not continue to be Oregon residents or qualify for an exemption. Please contact your Escrow Closer for further information.

G. Notice: Please be aware that due to the conflict between federal and state laws concerning the cultivation, distribution, manufacture or sale of marijuana, the Company is not able to close or insure any transaction involving Land that is associated with these activities.

H. Recording Charge (Per Document) is the following:

County	First Page	Each Additional Page
Multnomah	\$82.00	\$5.00
Washington	\$81.00	\$5.00
Clackamas	\$93.00	\$5.00

Note: When possible the company will record electronically. An additional charge of \$5.00 applies to each document that is recorded electronically.

I. THE FOLLOWING NOTICE IS REQUIRED BY STATE LAW: YOU WILL BE REVIEWING, APPROVING AND SIGNING IMPORTANT DOCUMENTS AT CLOSING. LEGAL CONSEQUENCES FOLLOW FROM THE SELECTION AND USE OF THESE DOCUMENTS. YOU MAY CONSULT AN ATTORNEY ABOUT THESE DOCUMENTS. YOU SHOULD CONSULT AN ATTORNEY IF YOU HAVE QUESTIONS OR CONCERNS ABOUT THE TRANSACTION OR ABOUT THE DOCUMENTS. IF YOU WISH TO REVIEW TRANSACTION DOCUMENTS THAT YOU HAVE NOT SEEN, PLEASE CONTACT THE ESCROW AGENT.

J. Note: This map/plat is being furnished as an aid in locating the herein described Land in relation to adjoining streets, natural boundaries and other land. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the Company does not insure dimensions, distances or acreage shown thereon.

## EXHIBIT ONE

### 2006 AMERICAN LAND TITLE ASSOCIATION LOAN POLICY (06-17-06) EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

- (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
  - the occupancy, use, or enjoyment of the Land;
  - the character, dimensions or location of any improvement erected on the land;
  - the subdivision of land; or
  - environmental protection;or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
- Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
- Defects, liens, encumbrances, adverse claims, or other matters
  - created, suffered, assumed or agreed to by the Insured Claimant;
  - not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;

- resulting in no loss or damage to the Insured Claimant;
  - attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13, or 14); or
  - resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
- Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with the applicable doing-business laws of the state where the Land is situated.
  - Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.
  - Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
    - a fraudulent conveyance or fraudulent transfer, or
    - a preferential transfer for any reason not stated in the Covered Risk 13(b) of this policy.
  - Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

#### SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

- Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
- Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
- Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
- Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
- Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

### 2006 AMERICAN LAND TITLE ASSOCIATION OWNER'S POLICY (06-17-06) EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses that arise by reason of:

- (a) Any law, ordinance or governmental regulation (including but not limited to building and zoning) restricting, regulating, prohibiting or relating to
  - the occupancy, use, or enjoyment of the Land;
  - the character, dimensions or location of any improvement erected on the land;
  - the subdivision of land; or
  - environmental protection;or the effect of any violation of these laws, ordinances or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
- (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
- Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
- Defects, liens, encumbrances, adverse claims, or other matters
  - created, suffered, assumed or agreed to by the Insured Claimant;

- not known to the Company, not recorded in the Public Records at Date of Policy, but known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
  - resulting in no loss or damage to the Insured Claimant;
  - attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
  - resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
- Any claim, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
    - a fraudulent conveyance or fraudulent transfer, or
    - a preferential transfer for any reason not stated in the Covered Risk 9 of this policy.
  - Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage.

#### SCHEDULE B - GENERAL EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

- Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
- Facts, rights, interests or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.
- Easements, or claims of easement, not shown by the Public Records; reservations or exceptions in patents or in Acts authorizing the issuance thereof, water rights, claims or title to water.
- Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
- Any lien for services, labor or material heretofore or hereafter furnished, or for contributions due to the State of Oregon for unemployment compensation or worker's compensation, imposed by law and not shown by the Public Records.

## WIRE FRAUD ALERT

This Notice is not intended to provide legal or professional advice.  
If you have any questions, please consult with a lawyer.

All parties to a real estate transaction are targets for wire fraud and many have lost hundreds of thousands of dollars because they simply relied on the wire instructions received via email, without further verification. **If funds are to be wired in conjunction with this real estate transaction, we strongly recommend verbal verification of wire instructions through a known, trusted phone number prior to sending funds.**

In addition, the following non-exclusive self-protection strategies are recommended to minimize exposure to possible wire fraud.

- **NEVER RELY** on emails purporting to change wire instructions. Parties to a transaction rarely change wire instructions in the course of a transaction.
- **ALWAYS VERIFY** wire instructions, specifically the ABA routing number and account number, by calling the party who sent the instructions to you. DO NOT use the phone number provided in the email containing the instructions, use phone numbers you have called before or can otherwise verify. **Obtain the number of relevant parties to the transaction as soon as an escrow account is opened.** DO NOT send an email to verify as the email address may be incorrect or the email may be intercepted by the fraudster.
- **USE COMPLEX EMAIL PASSWORDS** that employ a combination of mixed case, numbers, and symbols. Make your passwords greater than eight (8) characters. Also, change your password often and do NOT reuse the same password for other online accounts.
- **USE MULTI-FACTOR AUTHENTICATION** for email accounts. Your email provider or IT staff may have specific instructions on how to implement this feature.

For more information on wire-fraud scams or to report an incident, please refer to the following links:

**Federal Bureau of Investigation:**

<http://www.fbi.gov>

**Internet Crime Complaint Center:**

<http://www.ic3.gov>

## **FIDELITY NATIONAL FINANCIAL PRIVACY NOTICE**

Effective April 9, 2020

Fidelity National Financial, Inc. and its majority-owned subsidiary companies (collectively, "FNF," "our," or "we") respect and are committed to protecting your privacy. This Privacy Notice explains how we collect, use, and protect personal information, when and to whom we disclose such information, and the choices you have about the use and disclosure of that information.

A limited number of FNF subsidiaries have their own privacy notices. If a subsidiary has its own privacy notice, the privacy notice will be available on the subsidiary's website and this Privacy Notice does not apply.

### **Collection of Personal Information**

FNF may collect the following categories of Personal Information:

- contact information (e.g., name, address, phone number, email address);
- demographic information (e.g., date of birth, gender, marital status);
- identity information (e.g. Social Security Number, driver's license, passport, or other government ID number);
- financial account information (e.g. loan or bank account information); and
- other personal information necessary to provide products or services to you.

We may collect Personal Information about you from:

- information we receive from you or your agent;
- information about your transactions with FNF, our affiliates, or others; and
- information we receive from consumer reporting agencies and/or governmental entities, either directly from these entities or through others.

### **Collection of Browsing Information**

FNF automatically collects the following types of Browsing Information when you access an FNF website, online service, or application (each an "FNF Website") from your Internet browser, computer, and/or device:

- Internet Protocol (IP) address and operating system;
- browser version, language, and type;
- domain name system requests; and
- browsing history on the FNF Website, such as date and time of your visit to the FNF Website and visits to the pages within the FNF Website.

Like most websites, our servers automatically log each visitor to the FNF Website and may collect the Browsing Information described above. We use Browsing Information for system administration, troubleshooting, fraud investigation, and to improve our websites. Browsing Information generally does not reveal anything personal about you, though if you have created a user account for an FNF Website and are logged into that account, the FNF Website may be able to link certain browsing activity to your user account.

### **Other Online Specifics**

**Cookies.** When you visit an FNF Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. Information gathered using cookies helps us improve your user experience. For example, a cookie can help the website load properly or can customize the display page based on your browser type and user preferences. You can choose whether or not to accept cookies by changing your Internet browser settings. Be aware that doing so may impair or limit some functionality of the FNF Website.

Web Beacons. We use web beacons to determine when and how many times a page has been viewed. This information is used to improve our websites.

Do Not Track. Currently our FNF Websites do not respond to "Do Not Track" features enabled through your browser.

Links to Other Sites. FNF Websites may contain links to unaffiliated third-party websites. FNF is not responsible for the privacy practices or content of those websites. We recommend that you read the privacy policy of every website you visit.

### **Use of Personal Information**

FNF uses Personal Information for three main purposes:

- To provide products and services to you or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you about our, our affiliates', and others' products and services, jointly or independently.

### **When Information Is Disclosed**

We may disclose your Personal Information and Browsing Information in the following circumstances:

- to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to nonaffiliated service providers who provide or perform services or functions on our behalf and who agree to use the information only to provide such services or functions;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to jointly market financial products or services to you;
- to law enforcement or authorities in connection with an investigation, or in response to a subpoena or court order; or
- in the good-faith belief that such disclosure is necessary to comply with legal process or applicable laws, or to protect the rights, property, or safety of FNF, its customers, or the public.

The law does not require your prior authorization and does not allow you to restrict the disclosures described above. Additionally, we may disclose your information to third parties for whom you have given us authorization or consent to make such disclosure. We do not otherwise share your Personal Information or Browsing Information with nonaffiliated third parties, except as required or permitted by law. We may share your Personal Information with affiliates (other companies owned by FNF) to directly market to you. Please see "Choices with Your Information" to learn how to restrict that sharing.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of bankruptcy, reorganization, insolvency, receivership, or an assignment for the benefit of creditors. By submitting Personal Information and/or Browsing Information to FNF, you expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings.

### **Security of Your Information**

We maintain physical, electronic, and procedural safeguards to protect your Personal Information.

### **Choices With Your Information**

If you do not want FNF to share your information among our affiliates to directly market to you, you may send an "opt out" request by email, phone, or physical mail as directed at the end of this Privacy Notice. We do not share your Personal Information with nonaffiliates for their use to direct market to you without your consent.

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you.

For California Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties, except as permitted by California law. For additional information about your California privacy rights, please visit the "California Privacy" link on our website (<https://fnf.com/pages/californiaprivacy.aspx>) or call (888) 413-1748.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information or Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not disclose information about your creditworthiness to our affiliates and will not disclose your personal information, financial information, credit report, or health information to nonaffiliated third parties to market to you, other than as permitted by Vermont law, unless you authorize us to make those disclosures.

### **Information From Children**

The FNF Websites are not intended or designed to attract persons under the age of eighteen (18). We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian.

### **International Users**

FNF's headquarters is located within the United States. If you reside outside the United States and choose to provide Personal Information or Browsing Information to us, please note that we may transfer that information outside of your country of residence. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection, transfer, and use of such information in accordance with this Privacy Notice.

### **FNF Website Services for Mortgage Loans**

Certain FNF companies provide services to mortgage loan servicers, including hosting websites that collect customer information on behalf of mortgage loan servicers (the "Service Websites"). The Service Websites may contain links to both this Privacy Notice and the mortgage loan servicer or lender's privacy notice. The sections of this Privacy Notice titled When Information is Disclosed, Choices with Your Information, and Accessing and Correcting Information do not apply to the Service Websites. The mortgage loan servicer or lender's privacy notice governs use, disclosure, and access to your Personal Information. FNF does not share Personal Information collected through the Service Websites, except as required or authorized by contract with the mortgage loan servicer or lender, or as required by law or in the good-faith belief that such disclosure is necessary: to comply with a legal process or applicable law, to enforce this Privacy Notice, or to protect the rights, property, or safety of FNF or the public.

### **Your Consent To This Privacy Notice; Notice Changes; Use of Comments or Feedback**

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information in accordance with this Privacy Notice. We may change this Privacy Notice at any time. The Privacy Notice's effective date will show the last date changes were made. If you provide information to us following any change of the Privacy Notice, that signifies your assent to and acceptance of the changes to the Privacy Notice. We may use comments or feedback that you submit to us in any manner without notice or compensation to you.

**Accessing and Correcting Information; Contact Us**

If you have questions, would like to correct your Personal Information, or want to opt-out of information sharing for affiliate marketing, send your requests to [privacy@fnf.com](mailto:privacy@fnf.com), by phone to (888) 934-3354, or by mail to:

Fidelity National Financial, Inc.  
601 Riverside Avenue,  
Jacksonville, Florida 32204  
Attn: Chief Privacy Officer



# RIVER MEADOWS SUBDIVISION



SYMONS ENGINEERING  
CONSULTANTS, INC.

12805 s.e. foster road  
portland, oregon 97236  
phone 503 760 1353  
www.symonsengineering.com



## VICINITY MAP

NO SCALE

## SITE DATA

ZONING: LOW DENSITY RESIDENTIAL (R-1)  
TAX MAP: 5S2E5  
TAX LOT: 2002  
SITE AREA: 261,295 SF / 5.999 ACRES

## PROJECT CONTACTS

**OWNER/DEVELOPER**  
DAVE CARTER  
PO BOX 352  
BEAVERCREEK, OR 97005  
503-890-6458

**CIVIL ENGINEER**  
SYMONS ENGINEERING CONSULTANTS  
12805 SE FOSTER RD  
PORTLAND, OR 97236  
CONTACT: DAN SYMONS  
503-760-1353

**SURVEYOR**  
TOWNSHIP SURVEYS  
1415 WASHINGTON ST  
OREGON CITY, OR 97045  
CONTACT: LEE SPURGEON  
503-656-4915

**TRAFFIC ENGINEER**  
ARD ENGINEERING  
CONTACT: MICHAEL ARD  
503-537-8511

**LAND USE PLANNING**  
TRACY BROWN PLANNING CONSULTANTS  
SANDY, OR  
CONTACT: TRACY BROWN  
503-781-0453

**ENVIRONMENTAL CONSULTANT**  
ENVIRONMENTAL MANAGEMENT SYSTEMS, INC  
4080 SE INTERNATIONAL WAY, STE B-112  
MILWAUKIE, OR 97222  
CONTACT: BOB SWEENEY  
503-353-9691

## DRAWING INDEX

- T PRELIMINARY TITLE SHEET
- EC EXISTING CONDITIONS PLAN
- D PRELIMINARY DEMOLITION PLAN
- C1 PRELIMINARY PLAT
- C2 PRELIMINARY SITE PLAN
- C3 PRELIMINARY STREET PROFILES
- C4 PRELIMINARY GRADING PLAN
- C5 PRELIMINARY UTILITY PLAN

## CIVIL LEGEND

— — — — —	EXISTING PROPERTY LINE
— — — — —	NEW PROPERTY LINE
— — — — —	OFFSITE PROPERTY LINE
— — — — —	OLD PROPERTY LINE
-----229-----	EXISTING CONTOUR
-----229-----	NEW CONTOUR
— — — — —	NEW EASEMENT LINE
— — — — —	EXISTING EASEMENT LINE
- x — — — — x -	EXISTING FENCE LINE
- x — — — — x -	NEW FENCE LINE
- - - - - G - - - - -	EXISTING GAS LINE
— — — — — G — — — — —	NEW GAS LINE
— — — — — E/T — — — — —	EXISTING ELECTRICAL/TELEPHONE LINE
— — — — — E — — — — —	EXISTING ELECTRICAL LINE
— — — — — O/H — — — — —	EXISTING OVERHEAD LINE
— — — — — F/O — — — — —	EXISTING FIBER OPTICS LINE
— — — — — T/D — — — — —	EXISTING TELEPHONE/DATA LINE
— — — — — E — — — — —	NEW ELECTRICAL LINE
— — — — — E/T — — — — —	NEW ELECTRICAL/TELEPHONE LINE
— — — — — F/O — — — — —	NEW FIBER OPTICS LINE
— — — — — T/D — — — — —	NEW TELEPHONE/DATA LINE
- - - - - SS - - - - -	EXISTING SANITARY SEWER LINE
— — — — — SS — — — — —	NEW SANITARY SEWER LINE
- - - - - ST - - - - -	EXISTING STORM SEWER LINE
— — — — — ST — — — — —	NEW STORM SEWER LINE
- - - - - W - - - - -	EXISTING WATER LINE
— — — — — W — — — — —	NEW WATER LINE
~~~~~	EXISTING UTILITY TO BE REMOVED
-----	EROSION CONTROL
-----	STREET CENTERLINE
-----	SAWCUT
.....	EXISTING ASPHALT EDGE
-----	NEW ASPHALT EDGE
=====	EXISTING CURB
=====	NEW CURB
-----	EXISTING EDGE OF GRAVEL
-----	NEW EDGE OF GRAVEL
.....	EXISTING CONCRETE SURFACE
.....	NEW CONCRETE SURFACE
■	PROPOSED AC

## CLIENT

DAVE CARTER  
PO BOX 352  
BEAVERCREEK, OR 97004  
503-890-6458

## PROJECT

RIVER MEADOWS  
SUBDIVISION

## SITE ADDRESS

582E05 TL 2002  
MOLALLA, OR

SHEET NAME  
PRELIMINARY  
TITLE SHEET

## REVISION

- △ 05/20/2021 SITE DESIGN & PRELIMINARY PLAT APPLICATION
- △
- △
- △
- △
- △

ISSUE DATE **MAY 20, 2021**

DRAWING FILE **20-18 PRELIM TITLEDWG**

PROJECT NUMBER **18-22**

T

NOT FOR CONSTRUCTION



**SYMONS ENGINEERING  
CONSULTANTS, INC.**

12805 s.e. foster road  
portland, oregon 97236  
phone 503 760 1353  
www.symonsengineering.com

CLIENT

**DAVE CARTER**  
PO BOX 352  
BEAVERCREEK, OR 97004  
503-890-6458

PROJECT

# RIVER MEADOWS SUBDIVISION

SITE ADDRESS

**582E05 TL 2002  
MOLALLA, OR**

SHEET NAME

**EXISTING CONDITIONS  
PLAN**

REVISION

- △ 05/20/2021 SITE DESIGN & PRELIMINARY PLAT APPLICATION
- △
- △
- △
- △

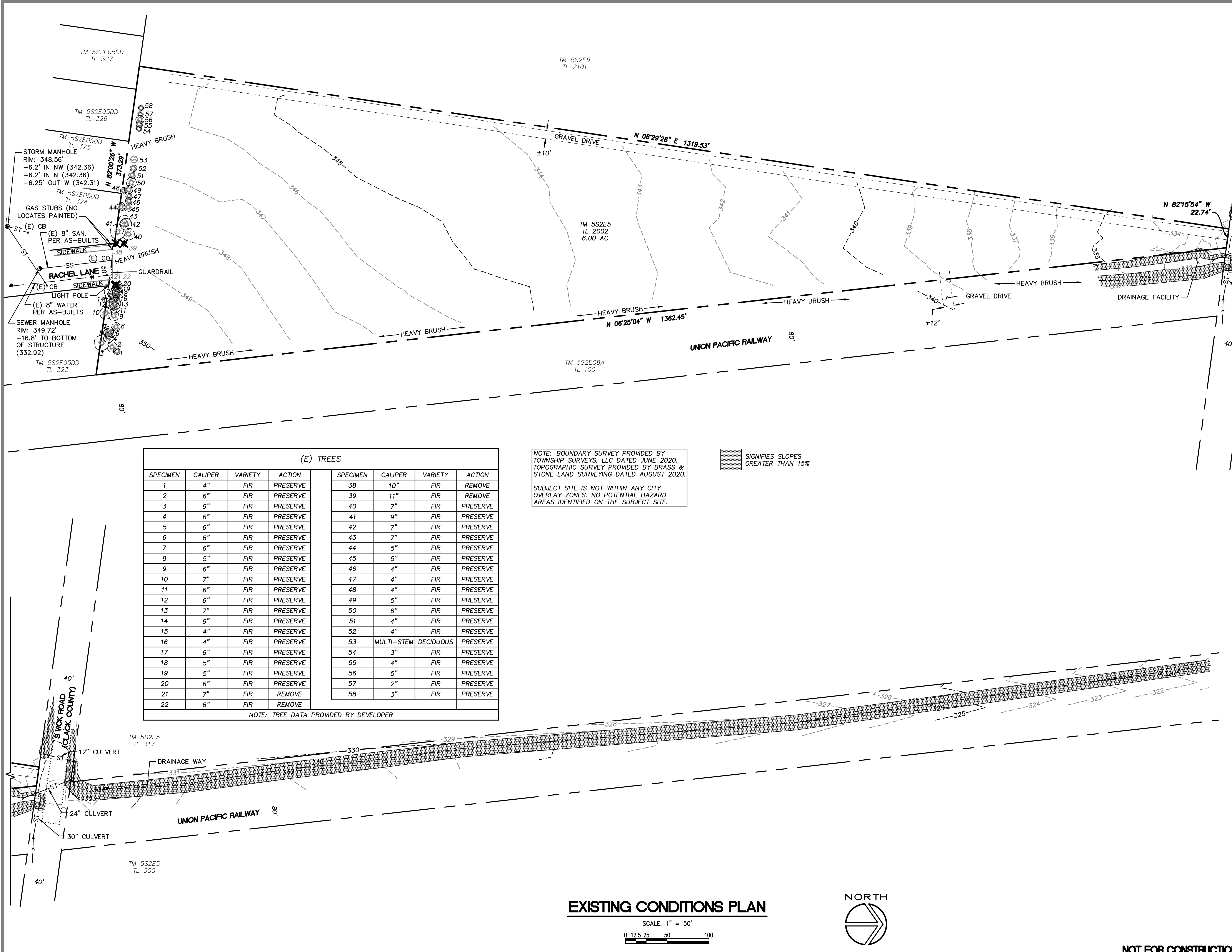
ISSUE DATE **MAY 20, 2021**

DRAWING FILE **20-18 EX COND DWG**

PROJECT NUMBER **18-22**

# EC

NOT FOR CONSTRUCTION



(E) TREES			
SPECIMEN	CALIPER	VARIETY	ACTION
1	4"	FIR	PRESERVE
2	6"	FIR	PRESERVE
3	9"	FIR	PRESERVE
4	6"	FIR	PRESERVE
5	6"	FIR	PRESERVE
6	6"	FIR	PRESERVE
7	6"	FIR	PRESERVE
8	5"	FIR	PRESERVE
9	6"	FIR	PRESERVE
10	7"	FIR	PRESERVE
11	6"	FIR	PRESERVE
12	6"	FIR	PRESERVE
13	7"	FIR	PRESERVE
14	9"	FIR	PRESERVE
15	4"	FIR	PRESERVE
16	4"	FIR	PRESERVE
17	6"	FIR	PRESERVE
18	5"	FIR	PRESERVE
19	5"	FIR	PRESERVE
20	6"	FIR	PRESERVE
21	7"	FIR	REMOVE
22	6"	FIR	REMOVE
38	10"	FIR	REMOVE
39	11"	FIR	REMOVE
40	7"	FIR	PRESERVE
41	9"	FIR	PRESERVE
42	7"	FIR	PRESERVE
43	7"	FIR	PRESERVE
44	5"	FIR	PRESERVE
45	5"	FIR	PRESERVE
46	4"	FIR	PRESERVE
47	4"	FIR	PRESERVE
48	4"	FIR	PRESERVE
49	5"	FIR	PRESERVE
50	6"	FIR	PRESERVE
51	4"	FIR	PRESERVE
52	4"	FIR	PRESERVE
53	MULTI-STEM	DECIDUOUS	PRESERVE
54	3"	FIR	PRESERVE
55	4"	FIR	PRESERVE
56	5"	FIR	PRESERVE
57	2"	FIR	PRESERVE
58	3"	FIR	PRESERVE

NOTE: TREE DATA PROVIDED BY DEVELOPER

NOTE: BOUNDARY SURVEY PROVIDED BY TOWNSHIP SURVEYS, LLC DATED JUNE 2020. TOPOGRAPHIC SURVEY PROVIDED BY BRASS & STONE LAND SURVEYING DATED AUGUST 2020. SUBJECT SITE IS NOT WITHIN ANY CITY OVERLAY ZONES. NO POTENTIAL HAZARD AREAS IDENTIFIED ON THE SUBJECT SITE.

SIGNIFIES SLOPES GREATER THAN 15%

## EXISTING CONDITIONS PLAN

SCALE: 1" = 50'  
0 12.5 25 50 100



**DEMOLITION KEYNOTES**

1. REMOVE (E) GUARDRAIL & SIGNAGE TO ALLOW FOR NEW STREET CONNECTION.
2. REMOVE (E) TREE. SEE EXISTING CONDITIONS PLAN.
3. WITHIN FOOTPRINT OF NEW STREET & PROPOSED GRADING, STRIP TOPSOIL & REMOVE ALL ORGANIC MATERIAL & DEBRIS IN ACCORDANCE W/ GEOTECHNICAL ENGINEER'S REQUIREMENTS.
4. REMOVE (E) CAP & BLOW-OFF ASSEMBLY FROM (E) 8" WATER MAIN TO ALLOW FOR CONNECTION & EXTENSION.
5. REMOVE (E) SANITARY CLEANOUT & REPLACE WITH NEW MANHOLE PER PRELIMINARY UTILITY PLAN.
6. REMOVE (E) GRAVEL ACCESS ROAD TO NEIGHBORING PROPERTY.



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BEAVERCREEK, OR 97004  
503-890-6458

**PROJECT**

**RIVER MEADOWS  
SUBDIVISION**

**SITE ADDRESS**

**582E05 TL 2002  
MOLALLA, OR**

**SHEET NAME**

**PRELIMINARY DEMOLITION  
PLAN**

**REVISION**

- △ 05/20/2021 SITE DESIGN & PRELIMINARY PLAT APPLICATION
- △
- △
- △
- △

**ISSUE DATE** MAY 20, 2021

**DRAWING FILE** 20-18 PRELIM DEMODWG

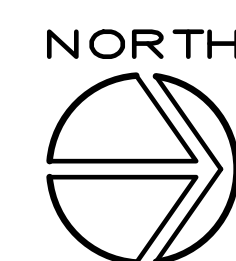
**PROJECT NUMBER** 18-22

**D**



**PRELIMINARY DEMOLITION PLAN**

SCALE: 1" = 50'  
0 12.5 25 50 100



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PROJECT

# RIVER MEADOWS SUBDIVISION

SITE ADDRESS

**582E05 TL 2002  
MOLALLA, OR**

SHEET NAME  
**PRELIMINARY  
PLAT**

REVISION

- △ 05/20/2021 SITE DESIGN & PRELIMINARY PLAT APPLICATION
- △
- △
- △
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- △

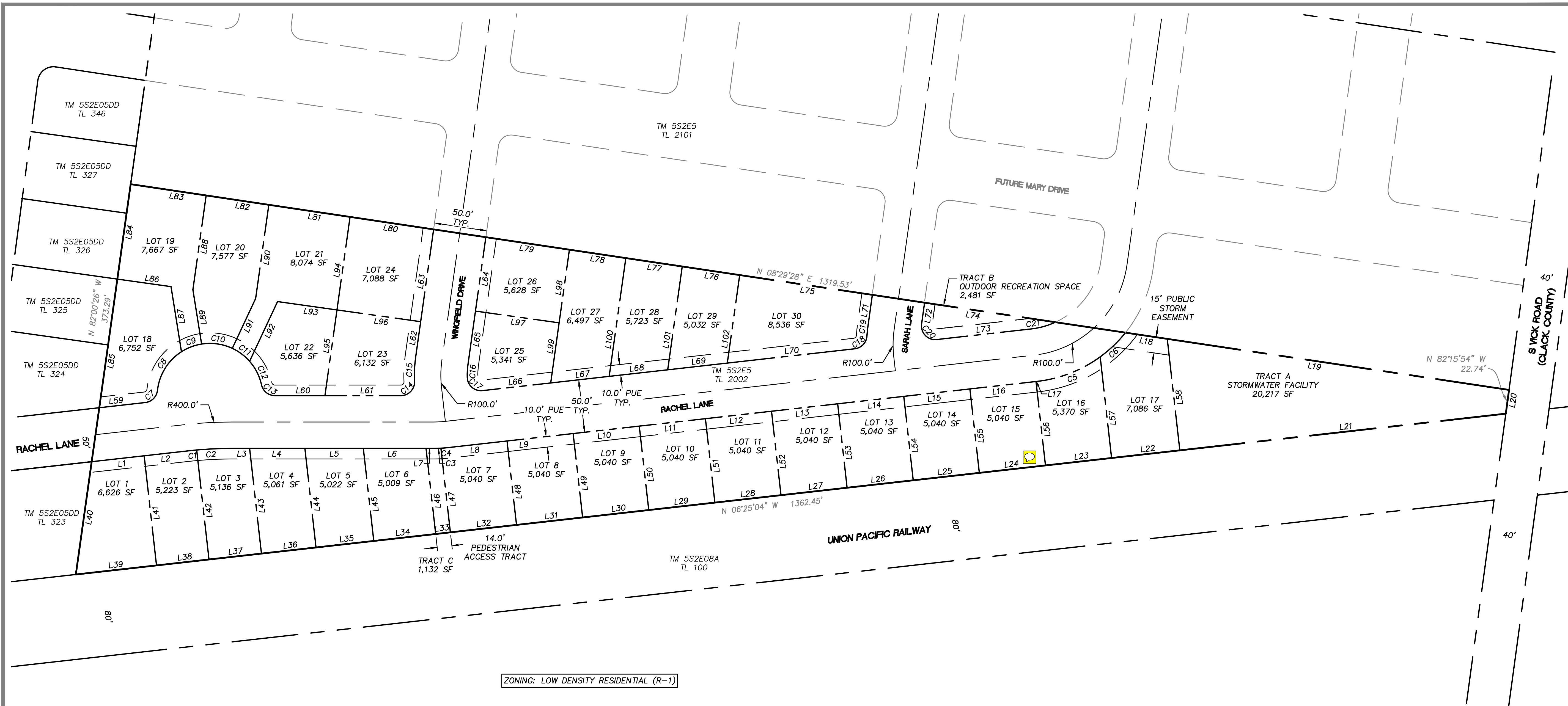
ISSUE DATE **MAY 20, 2021**

DRAWING FILE **20-10 PRELIM PLAT.DWG**

PROJECT NUMBER **18-22**

# C1

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ZONING: LOW DENSITY RESIDENTIAL (R-1)

LINE	LENGTH	BEARING
L1	50.00	N6°24'59"W
L2	41.42	N6°24'59"W
L3	16.77	N0°00'00"E
L4	52.33	N0°00'00"E
L5	55.35	N0°00'00"E
L6	59.37	N0°00'00"E
L7	7.10	N0°00'00"E
L8	55.97	N6°25'04"W
L9	63.00	N6°25'04"W
L10	63.00	N6°25'04"W
L11	63.00	N6°25'04"W
L12	63.00	N6°25'04"W
L13	63.00	N6°25'04"W
L14	63.00	N6°25'04"W
L15	63.00	N6°25'04"W
L16	63.00	N6°25'04"W
L17	1.06	N6°25'04"W
L18	39.99	N8°29'28"E
L20	22.74	N82°15'54"W
L21	310.60	N6°25'04"W
L22	65.00	N6°25'04"W
L23	63.00	N6°25'04"W

LINE	LENGTH	BEARING
L24	63.00	N6°25'04"W
L25	63.00	N6°25'04"W
L26	63.00	N6°25'04"W
L27	63.00	N6°25'04"W
L28	63.00	N6°25'04"W
L29	63.00	N6°25'04"W
L30	63.00	N6°25'04"W
L31	63.00	N6°25'04"W
L32	63.00	N6°25'04"W
L33	14.00	N6°25'04"W
L34	59.00	N6°25'04"W
L35	55.00	N6°25'04"W
L36	52.00	N6°25'04"W
L37	50.00	N6°25'04"W
L38	50.00	N6°25'04"W
L39	76.85	N6°25'04"W
L40	107.87	N82°00'26"W
L41	104.47	N83°34'56"E
L42	104.38	N83°34'56"E
L43	100.25	N83°34'56"E
L44	94.40	N83°34'56"E
L45	88.21	N83°34'56"E

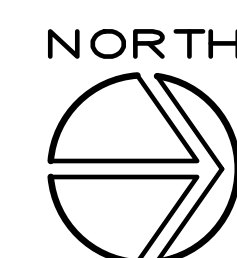
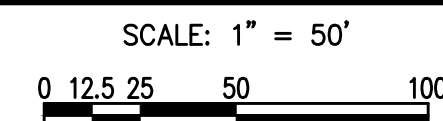
LINE	LENGTH	BEARING
L46	81.58	N83°34'56"E
L47	80.20	N83°34'56"E
L48	80.00	N83°34'56"E
L49	80.00	N83°34'56"E
L50	80.00	N83°34'56"E
L51	80.00	N83°34'56"E
L52	80.00	N83°34'56"E
L53	80.00	N83°34'56"E
L54	80.00	N83°34'56"E
L55	80.00	N83°34'56"E
L56	80.00	N83°34'56"E
L57	96.42	N83°34'56"E
L61	71.87	N0°00'00"E
L62	33.67	N82°00'26"W
L63	88.26	N82°00'26"W
L64	70.69	S82°00'26"E
L65	50.80	S82°00'26"E
L66	64.95	N6°25'04"W
L67	55.75	N6°25'04"W
L68	55.75	N6°25'04"W
L69	56.79	N6°25'04"W
L70	121.44	N6°25'04"W

LINE	LENGTH	BEARING
L71	30.00	N82°00'26"W
L72	20.41	S82°00'26"E
L73	90.05	N6°25'04"W
L74	125.27	N8°29'28"E
L75	127.27	N8°29'28"E
L76	55.00	N8°29'28"E
L77	54.00	N8°29'28"E
L78	54.00	N8°29'28"E
L79	80.00	N8°29'28"E
L80	80.00	N8°29'28"E
L81	77.75	N8°29'28"E
L82	60.00	N8°29'28"E
L83	72.25	N8°29'28"E
L84	90.78	N82°00'26"W
L85	123.02	N82°00'26"W
L86	51.33	N7°59'34"E
L88	90.15	S82°00'26"E
L90	89.63	S82°00'26"E
L93	56.83	S7°59'34"W
L94	88.95	N82°00'26"W
L95	81.97	N82°00'26"W
L96	80.00	S7°59'34"W

LINE	LENGTH	BEARING
L97	80.00	S7°59'34"W
L98	70.00	N82°00'26"W
L99	57.50	N82°00'26"W
L100	113.15	N82°00'26"W
L101	98.80	N82°00'26"W
L102	84.19	N82°00'26"W

CURVE	RADIUS	LENGTH	DELTA	CHORD	DIRECTION
C1	375.00	8.58	1°18'38"	8.58	S5°45'40"E
C2	375.00	33.42	5°06'21"	33.41	S2°33'10"E
C3	125.00	6.97	3°11'43"	6.97	N1°35'52"W
C4	125.00	7.03	3°13'21"	7.03	N4°48'24"W
C5	125.00	64.80	29°42'11"	64.08	N21°16'09"W
C6	125.00	33.24	15°14'08"	33.14	N43°44'19"W
C7	13.00	17.54	77°18'20"	16.24	N45°04'09"W
C8	50.00	44.55	51°03'11"	43.09	S58°11'43"E
C9	50.00	20.58	23°34'41"	20.43	S20°52'47"E
C10	50.00	29.82	34°10'01"	29.38	S7°59'34"W
C11	50.00	20.58	23°34'41"	20.43	S36°51'55"W
C12	50.00	25.28	28°57'50"	25.01	S63°08'10"W
C13	13.00	17.61	77°37'05"	16.29	N38°48'33"E
C14	13.00	21.02	92°37'48"	18.80	N46°18'54"W
C15	125.00	23.18	10°37'22"	23.14	S87°19'07"E
C16	75.00	12.48	9°32'14"	12.47	S86°46'33"E
C17	13.00	21.53	94°52'24"	19.15	N41°01'08"E
C18	13.00	18.12	79°51'31"	16.69	N46°20'50"W
C19	125.00	9.31	4°16'09"	9.31	S84°08'31"E
C20	13.00	23.69	104°24'38"	20.55	N45°47'15"E
C21	75.00	23.89	18°14'55"	23.79	N15°32'32"W

**PRELIMINARY  
PLAT**





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PROJECT

**RIVER MEADOWS  
SUBDIVISION**

SITE ADDRESS

582E05 TL 2002  
MOLALLA, OR

SHEET NAME  
**PRELIMINARY  
SITE PLAN**

REVISION

△ 05/20/2021 SITE DESIGN & PRELIMINARY  
PLAT APPLICATION

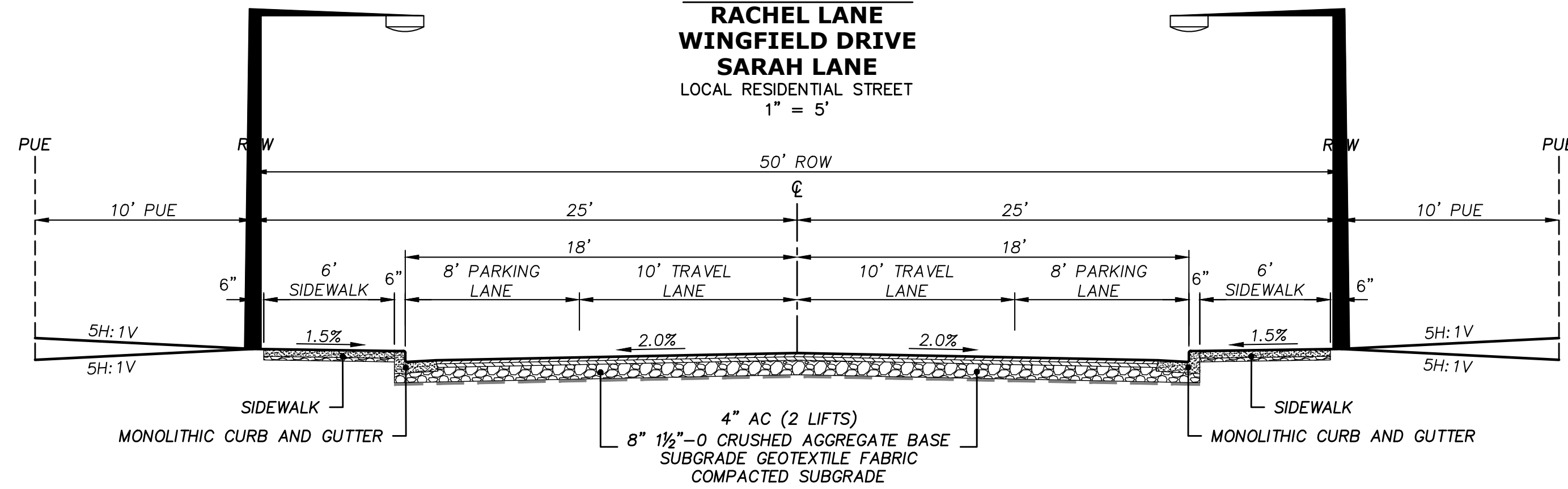
ISSUE DATE **MAY 20, 2021**

DRAWING FILE **20-18 PRELM STREETS.DWG**

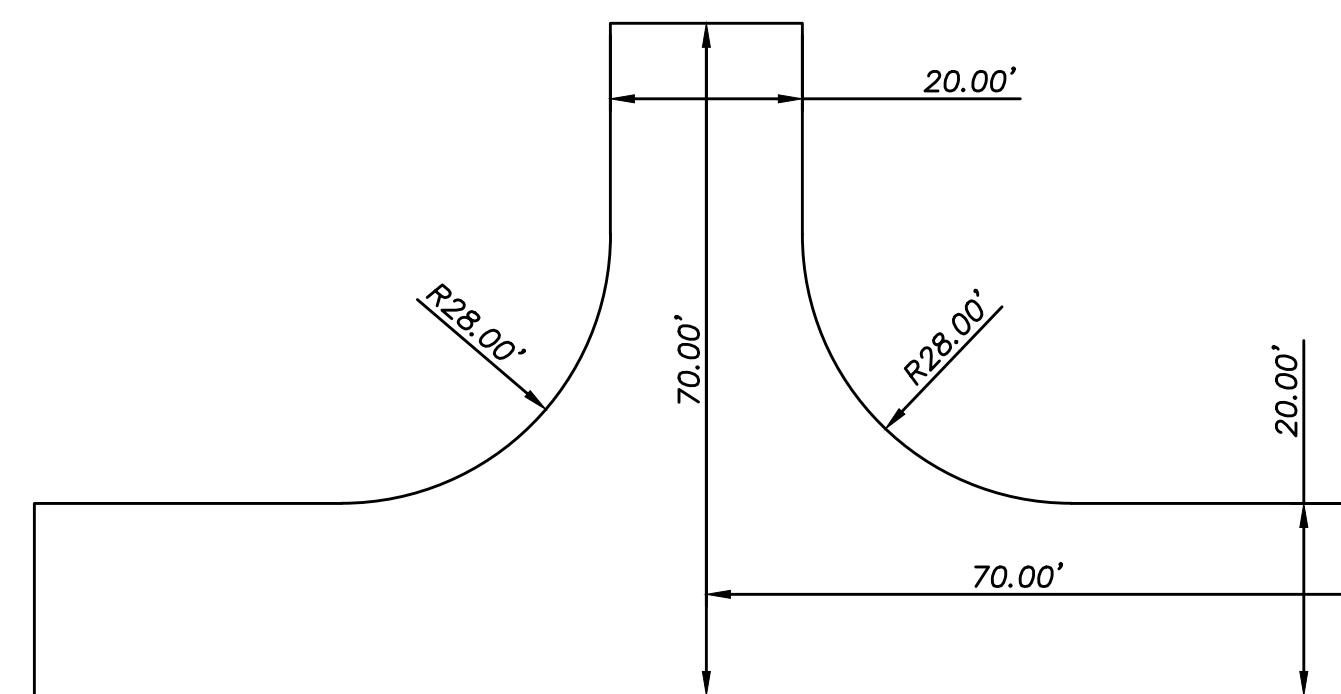
PROJECT NUMBER **18-22**

**C2**

**TYPICAL SECTION  
RACHEL LANE  
WINGFIELD DRIVE  
SARAH LANE**  
LOCAL RESIDENTIAL STREET  
1" = 5'

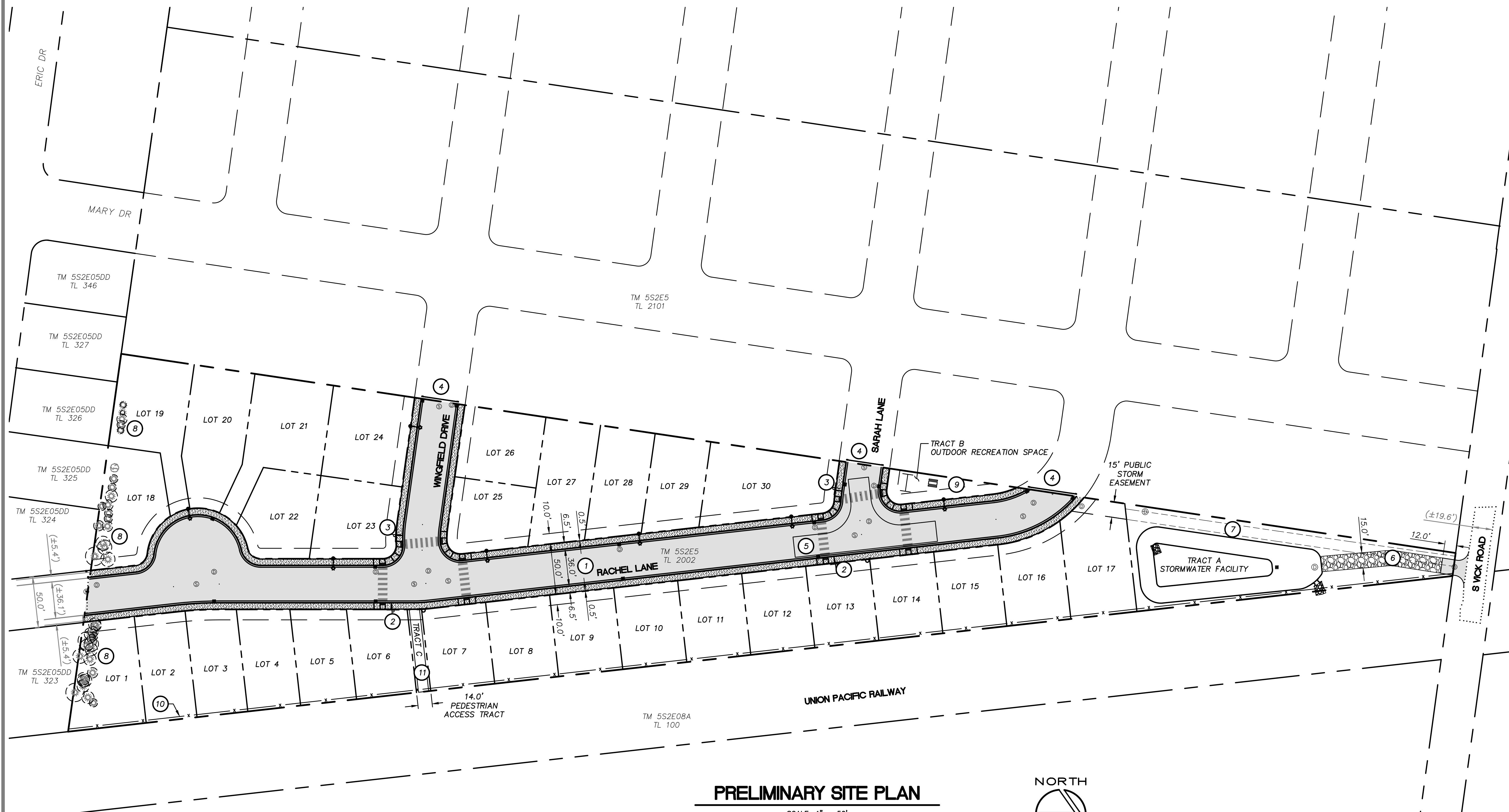


**FIRE DISTRICT TURN AROUND**  
1" = 20'



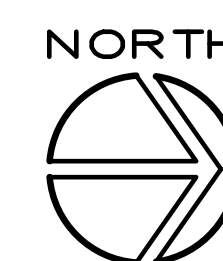
**# SITE KEYNOTES**

1. NEW STREET, CURB & GUTTER, & SIDEWALK PER TYPICAL SECTION ON THIS SHEET.
2. NEW STREET NAME SIGNS ON NEW POST.
3. NEW STREET NAME SIGNS & STOP SIGN ON NEW POST.
4. NEW TEMPORARY DEAD-END STREET BARRICADE & SIGNAGE.
5. FIRE DISTRICT TURN AROUND PER DIAGRAM ON THIS SHEET.
6. NEW 15' WIDE STORMWATER FACILITY ACCESS ROAD TO BE SECURED WITH 12' LOCKING GATE. AC/GRAVEL SURFACING AS SHOWN ON PLAN.
7. (E) GRAVEL ROAD TO REMAIN WITHIN EXTENTS OF TRACT B.
8. (E) TREES TO REMAIN. SEE EXISTING CONDITIONS PLAN. TREES TO BE THINNED & PRUNED FOR IMPROVED HEALTH, BRIARS TO BE REMOVED.
9. NEW COMMON AREA WITH PICNIC TABLE & SWING SET.
10. NEW 6' TALL FENCE ALONG EAST PROPERTY BOUNDARY.
11. NEW 10' WIDE MULTI-USE PATH THROUGH TRACT C TO PROVIDE FUTURE CONNECTION TO ADJACENT PROPERTY.



**PRELIMINARY SITE PLAN**

SCALE: 1" = 50'  
0 12.5 25 50 100



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PROJECT

**RIVER MEADOWS  
SUBDIVISION**

SITE ADDRESS

582E05 TL 2002  
MOLALLA, OR

SHEET NAME  
**PRELIMINARY  
STREET PROFILES**

REVISION

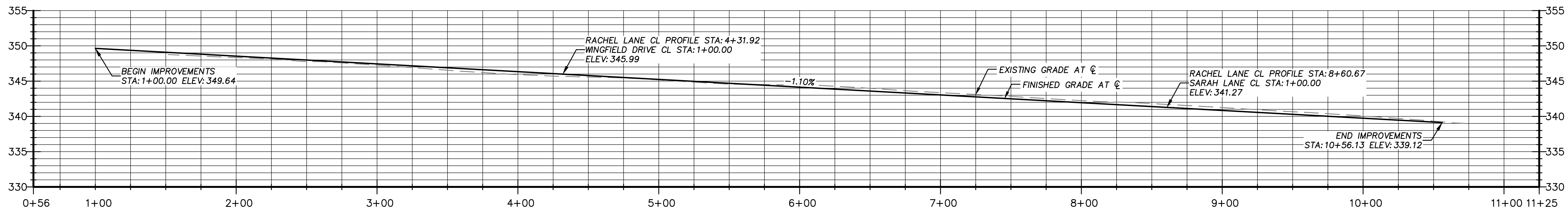
- △ 05/20/2021 SITE DESIGN & PRELIMINARY PLAT APPLICATION
- △
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- △

ISSUE DATE **MAY 20, 2021**

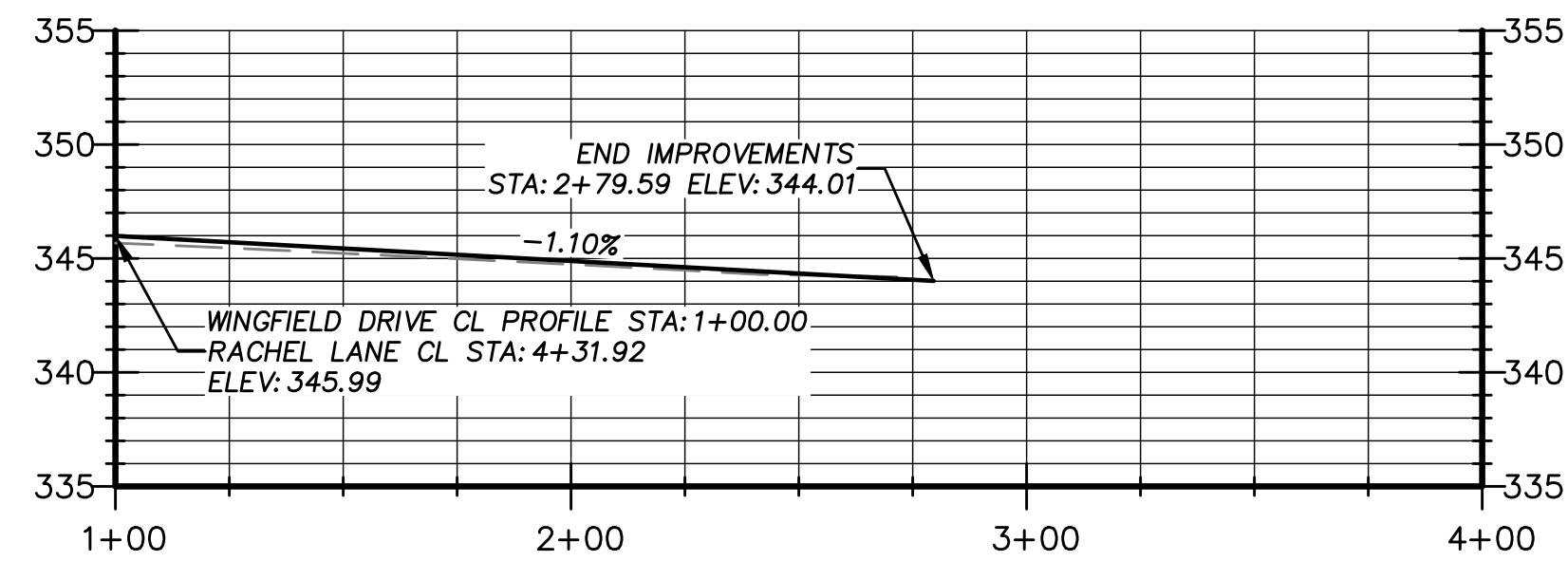
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PROJECT NUMBER **18-22**

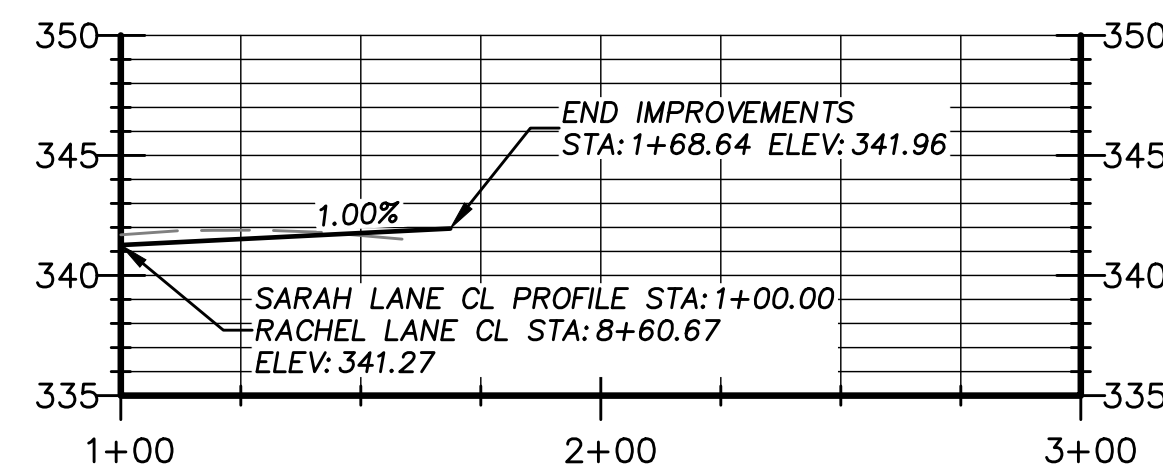
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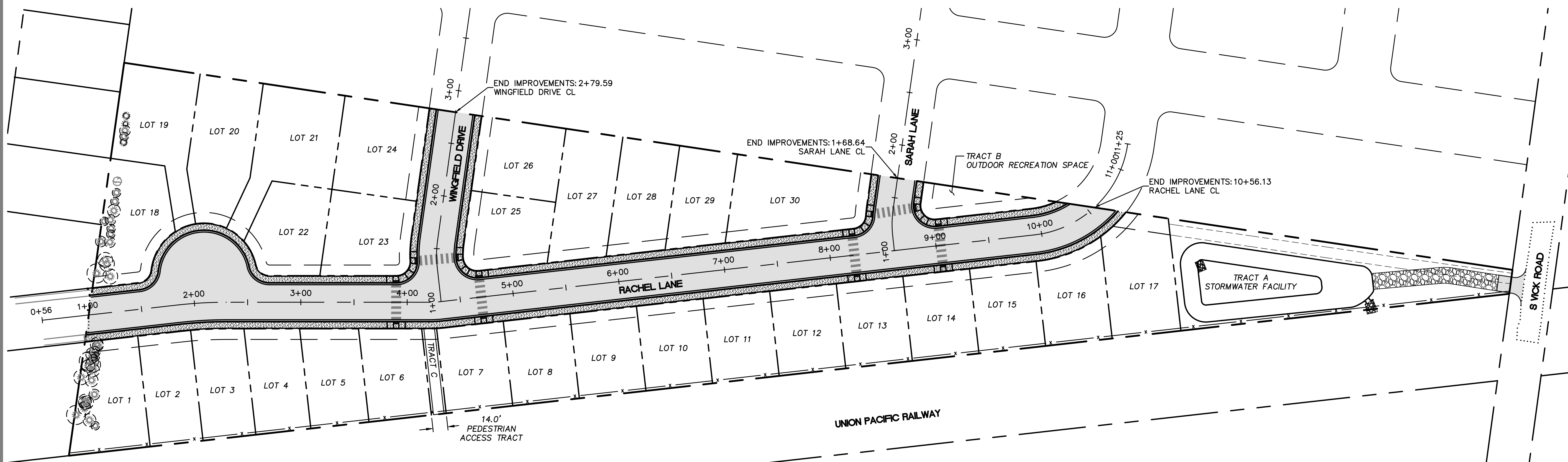
**RACHEL LANE CL PROFILE**  
HORZ. SCALE: 1"=40'  
VERT. SCALE: 1"=8'



**WINGFIELD DRIVE CL PROFILE**  
HORZ. SCALE: 1"=40'  
VERT. SCALE: 1"=8'



**SARAH LANE CL PROFILE**  
HORZ. SCALE: 1"=40'  
VERT. SCALE: 1"=8'



**PRELIMINARY STREET PROFILES**

SCALE: 1" = 50'  
0 12.5 25 50 100



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PROJECT

RIVER MEADOWS  
SUBDIVISION

SITE ADDRESS

582E05 TL 2002  
MOLALLA, OR

SHEET NAME  
PRELIMINARY  
GRADING PLAN

REVISION

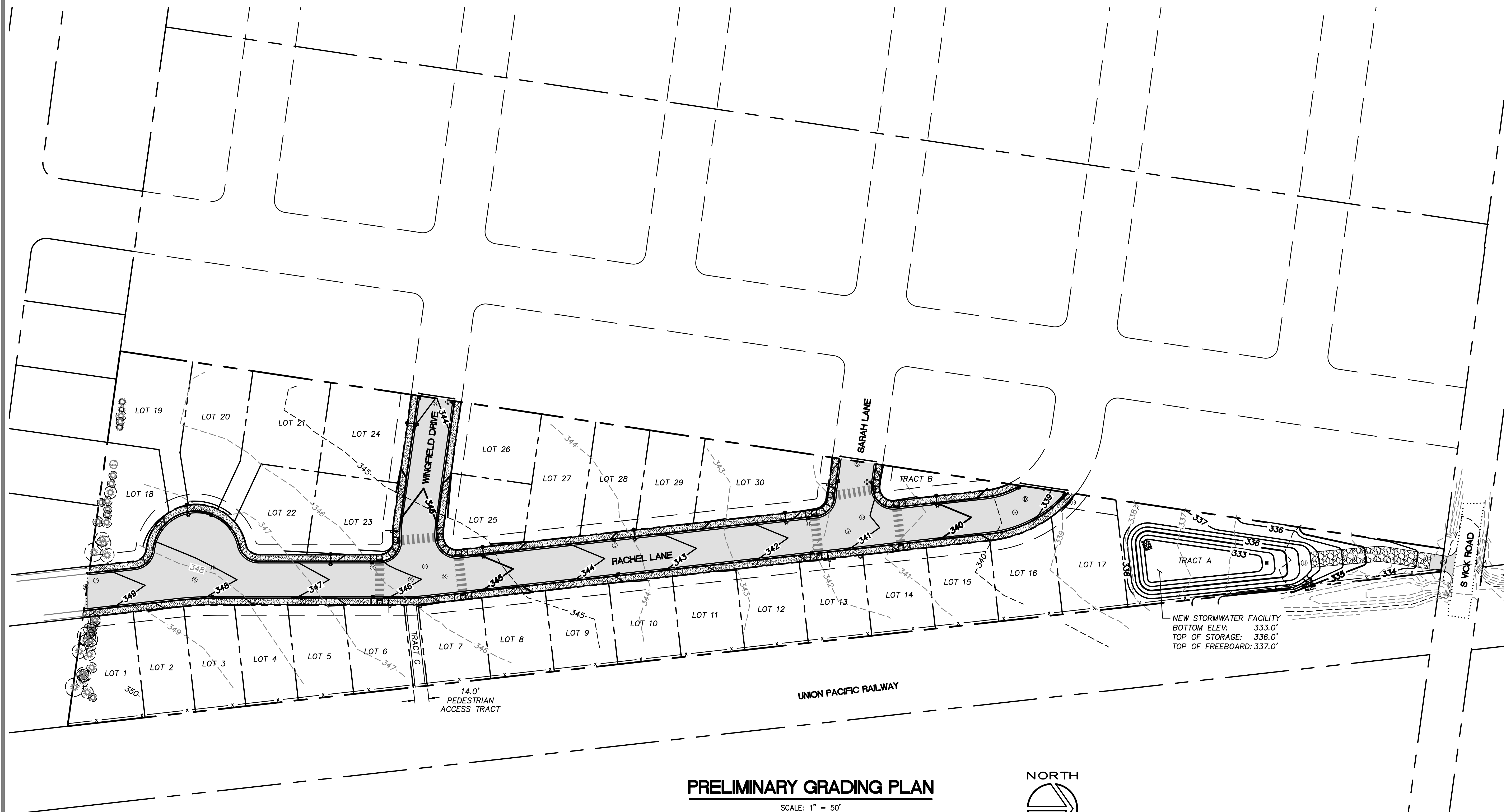
- △ 05/20/2021 SITE DESIGN & PRELIMINARY PLAT APPLICATION
- △
- △
- △
- △

ISSUE DATE MAY 20, 2021

DRAWING FILE 20-18 PRELM GRADING.DWG

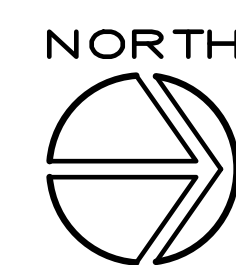
PROJECT NUMBER 18-22

C4



PRELIMINARY GRADING PLAN

SCALE: 1" = 50'  
0 12.5 25 50 100



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PROJECT

**RIVER MEADOWS  
SUBDIVISION**

SITE ADDRESS

582E05 TL 2002  
MOLALLA, OR

SHEET NAME  
**PRELIMINARY  
UTILITY PLAN**

REVISION

△ 05/20/2021 SITE DESIGN & PRELIMINARY  
PLAT APPLICATION

ISSUE DATE **MAY 20, 2021**

DRAWING FILE **20-18 PRELIM UTILITY.DWG**

PROJECT NUMBER **18-22**

**C5**

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**# STORM KEYNOTES**

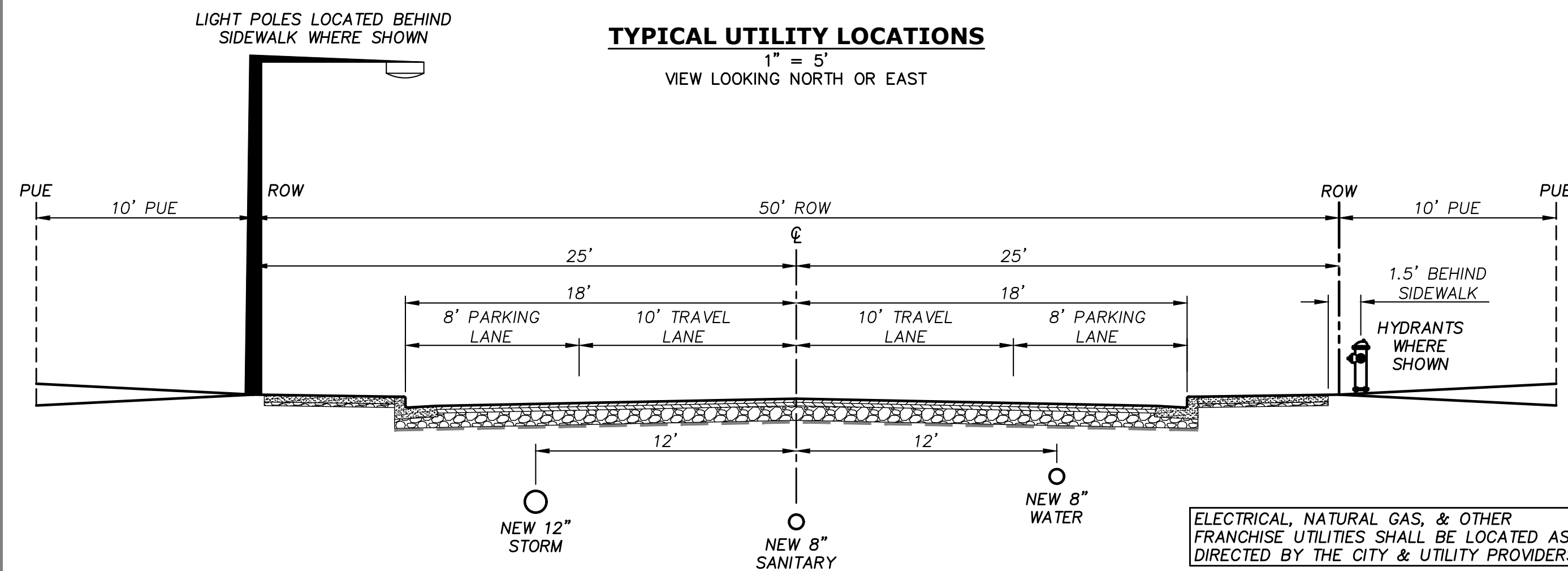
1. NEW 12" STORM MAIN TO DRAIN NORTH TO NEW STORMWATER FACILITY.
2. NEW G-2 INLET (TYP).
3. NEW SUMPED PRE-TREATMENT MANHOLE PRIOR TO DISCHARGING TO NEW FACILITY.
4. NEW RIP-RAP OUTFALL TO NEW FACILITY.
5. NEW STORMWATER FACILITY. 3' PONDING DEPTH, 1' FREEBOARD.
6. NEW OUTLET STRUCTURE.
7. NEW FLOW CONTROL MANHOLE.
8. NEW OUTFALL TO (E) DRAINAGE FACILITY (IN CLACKAMAS COUNTY RIGHT-OF-WAY).
9. NEW EMERGENCY SPILLWAY TO (E) DRAINAGE FACILITY.
10. NEW ACCESS ROAD TO NEW STORM FACILITY, SEE PRELIMINARY SITE PLAN.
11. (E) 24" CULVERT CONVEYS STORMWATER FROM (E) DRAINAGE FACILITY ACROSS S VICK ROAD TO (E) DRAINAGE WAY.

**# SANITARY & WATER KEYNOTES**

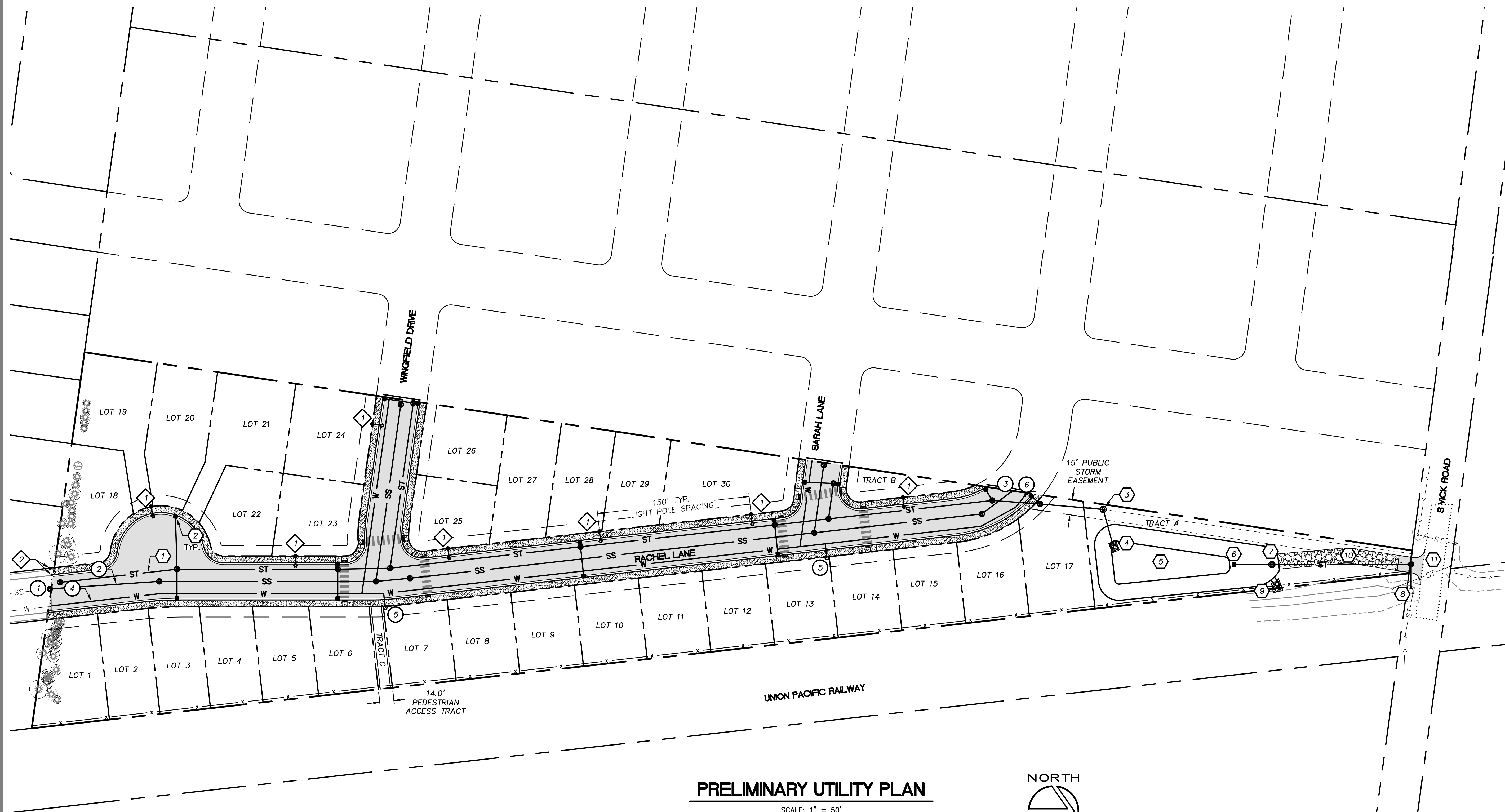
1. INSTALL NEW SANITARY MANHOLE IN PLACE OF (E) CLEANOUT.
2. NEW 8" SANITARY MAIN TO DRAIN SOUTH TO (E) SANITARY SYSTEM.
3. NEW CLEANOUT AT UPSTREAM TERMINUS OF NEW SANITARY SYSTEM.
4. NEW 8" WATER MAIN EXTENSION FROM (E) STUB SOUTH OF SUBJECT PROPERTY.
5. NEW FIRE HYDRANT.
6. NEW 2" BLOW-OFF AT THE TERMINUS OF WATER MAIN EXTENSION.

**# POWER & GAS KEYNOTES**

1. NEW STREET LIGHT. 150' SPACING, TYP.
2. EXISTING GAS STUBS.



ELECTRICAL, NATURAL GAS, & OTHER FRANCHISE UTILITIES SHALL BE LOCATED AS DIRECTED BY THE CITY & UTILITY PROVIDERS.

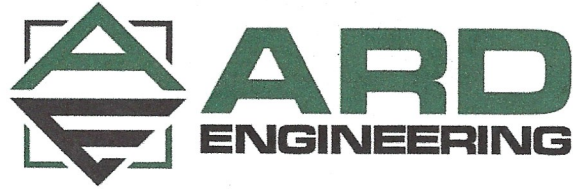


**PRELIMINARY UTILITY PLAN**

SCALE: 1" = 50'  
0 12.5 25 50 100







# RIVER MEADOWS SUBDIVISION TRAFFIC IMPACT STUDY

MOLALLA, OREGON



EXPIRES: 12/31/2021

**PREPARED FOR:**

Dave Carter

**PREPARED BY:**

Michael Ard, PE  
Ard Engineering

**DATE:**

May 19, 2021



## TABLE OF CONTENTS

Executive Summary .....	3
Project Description & Location .....	4
Existing Conditions .....	5
Site Trips.....	9
Future Conditions Analysis .....	11
Safety Analysis .....	15
Conclusions .....	16
Appendix .....	17



## EXECUTIVE SUMMARY

1. A property located on the west side of the Union Pacific Right north of Eric Drive and south of S Vick Road in the City of Molalla is proposed for development with 30 new single-family homes. The site will take access via an extension of Rachel Lane into the site from the south.
2. Upon completion of development, the subject property is projected to generate 22 site trips during the morning peak hour, 30 trips during the evening peak hour, and 284 daily trips.
3. Based on the operational analysis, the study intersections are projected to operate acceptably through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended.
4. A review of ODOT's crash data showed no reported crashes during the most recent five years for any of the study intersections. No specific crash mitigations are recommended in conjunction with the proposed development.
5. Based on the warrant analysis, no new traffic signals or turn lanes are recommended in conjunction with the proposed development.



## **PROJECT DESCRIPTION & LOCATION**

### ***INTRODUCTION***

The property located at the north end of Rachel Lane west of the Union Pacific Right of Way and south of S Vick Road is proposed for development with a 30-lot residential subdivision.

This report addresses the potential transportation impacts of the proposed development on the surrounding street system. Based on discussions with City of Molalla staff, an operational and safety analysis was conducted for the intersections of Mary Drive at Anne Lane, Mary Drive at Burghardt Drive, and Mary Drive at Toliver Road.

The purpose of this analysis is to determine whether the surrounding transportation system is capable of safely and efficiently supporting the proposed use and to identify any necessary improvements and mitigations.

### ***SITE LOCATION AND STUDY AREA DESCRIPTION***

The project site has an area of approximately 6 acres. It is located on the west side of the Union Pacific Railroad right-of-way, immediately north of Eric Drive and south of S Vick Road in Molalla, Oregon. The site is surrounded by the existing residential development to the south, and primarily agricultural areas to the north, east, and west. The subject property will take access via an extension of Rachel Lane at the south side of the subject property.

Mary Drive is classified by the City of Molalla as a Major Collector. It has a two-lane cross-section, with one through lane in each direction and no centerline striping. It has a statutory residential speed limit of 25 mph. On-street parking, curbs and sidewalks are generally available on both sides of the roadway.

Anne Lane is classified by the City of Molalla as a Local street. It has a two-lane cross-section, with one through lane in each direction and no centerline striping. It has a statutory residential speed limit of 25 mph. On-street parking, curbs and sidewalks are generally available on both sides of the roadway.

Burghardt Drive is classified by the City of Molalla as a Local street. It has a two-lane cross-section, with one through lane in each direction and no centerline striping. It has a statutory residential speed limit of 25 mph. On-street parking, curbs and sidewalks are generally available on both sides of the roadway.

Toliver Road is classified by the City of Molalla as a Major Collector. It has a two-lane cross-section, with one through lane in each direction and solid double yellow centerline striping to prohibit passing. It has a posted speed limit of 25mph in the vicinity of Mary Drive. Partial sidewalks and bike lanes are also available in the vicinity of Mary Drive.



## **EXISTING CONDITIONS**

The intersection of Anne Lane at Mary Drive is a four-way intersection operating under all-way stop control. Vehicles approaching via both Anne Lane and Mary Drive are required to stop prior to entering the intersection. Each approach has a single, shared lane for all turning movements.

The intersection of Burghardt Drive at Mary Drive is also a four-way intersection operating under all-way stop control. Vehicles approaching via both Anne Lane and Mary Drive are required to stop prior to entering the intersection. Each approach has a single, shared lane for all turning movements.

Toliver Road at Mary Drive is a T-intersection. Through traffic traveling along Toliver Road is free flowing, while vehicles approaching via Mary Drive are required to stop and yield to through traffic prior to entering Toliver Road. Each approach has a single, shared lane for all turning movements. A marked crosswalk is in place crossing Mary Drive on the north side of the intersection.

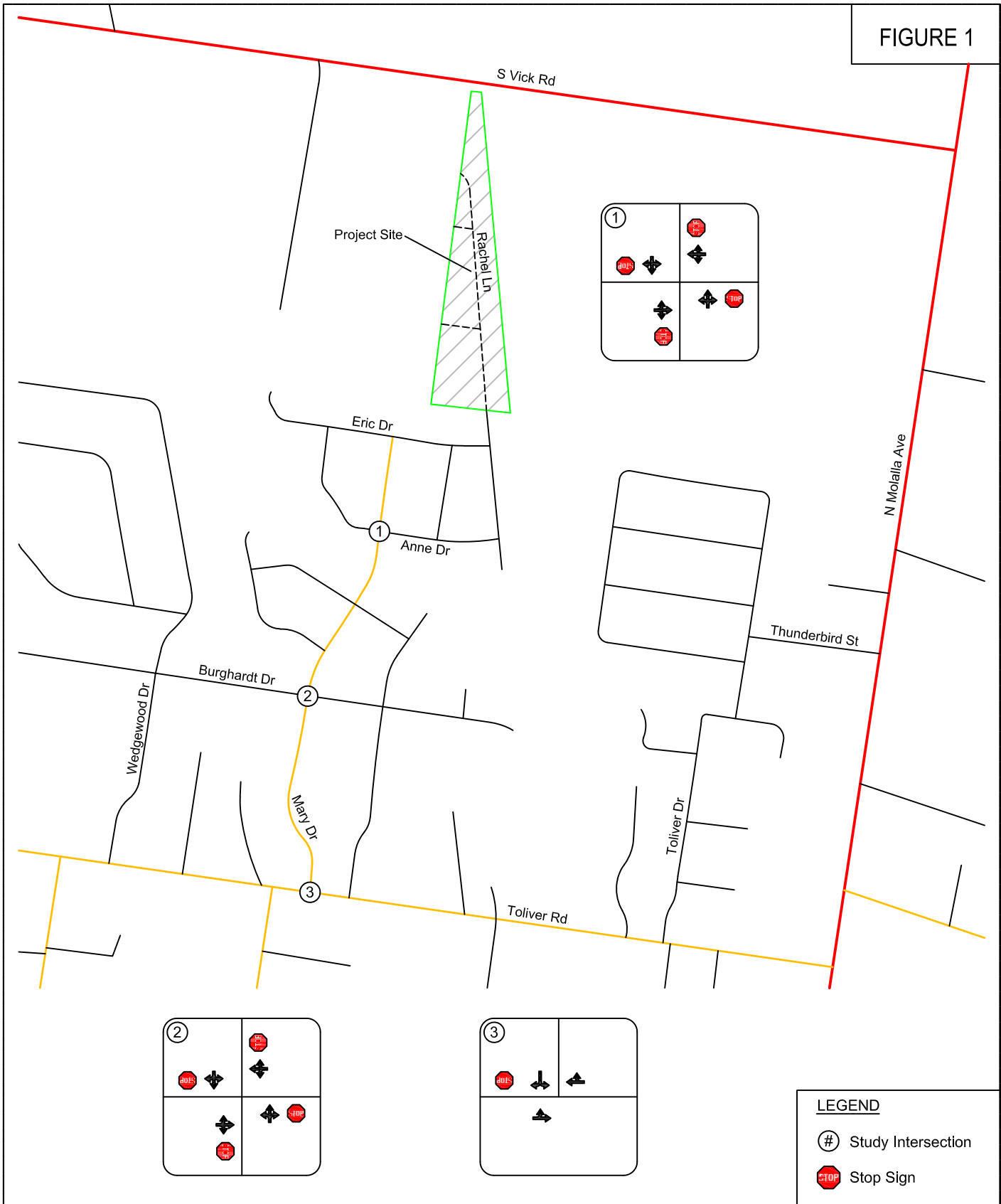
A vicinity map displaying the project site, vicinity streets, and study intersections including lane configurations is provided in Figure 1 on page 6.

### ***TRAFFIC COUNT DATA***

Traffic counts were conducted at the intersections of Anne Lane at Mary Drive, Burghardt Drive at Mary Drive, and Toliver Road at Mary Drive on Wednesday, April 7, 2021 from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Data was used from the highest-volume hour during each analysis period.

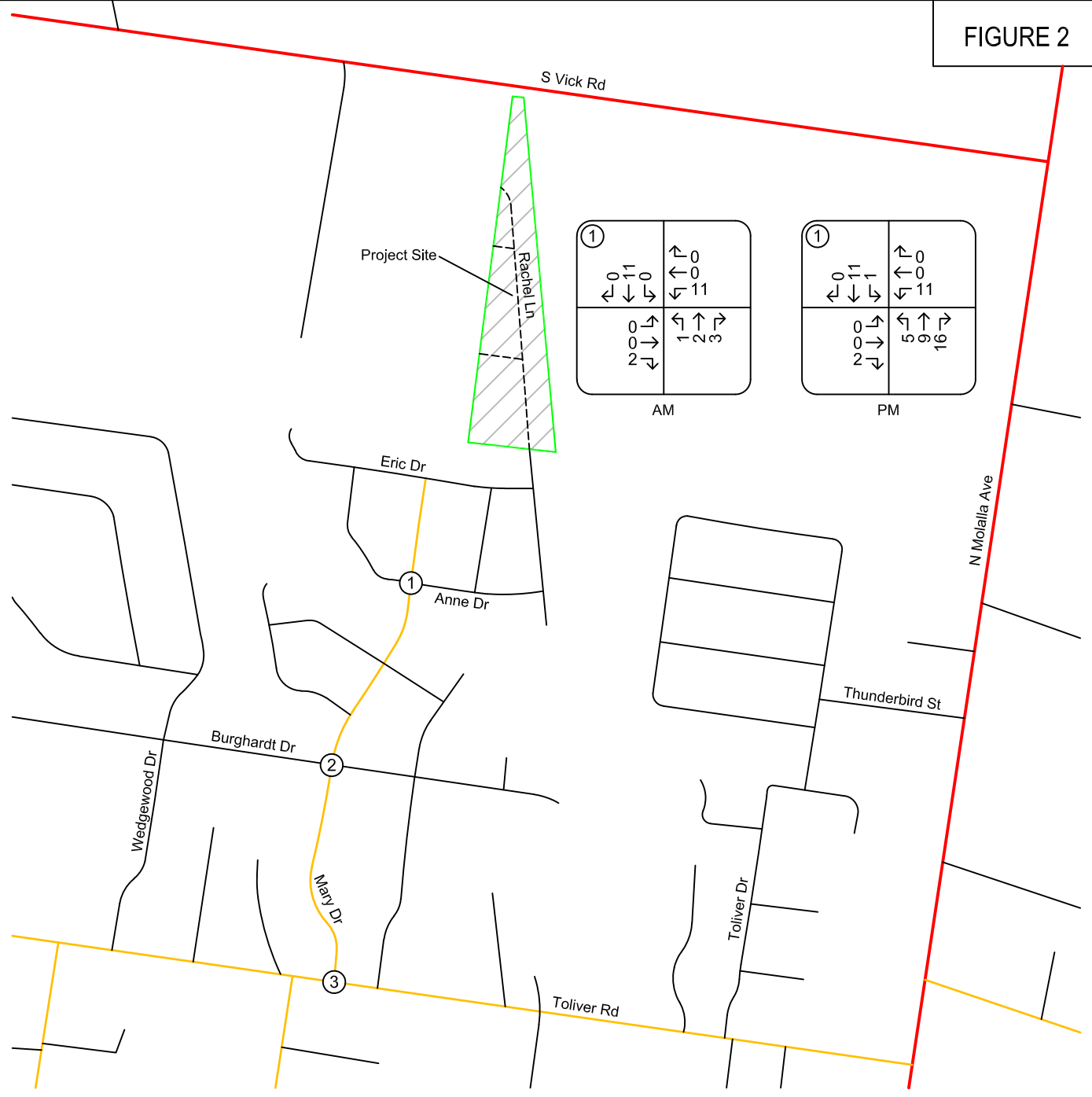
Figure 2 on page 7 shows the existing year 2021 traffic volumes during the morning and evening peak hours at each of the study intersections.

FIGURE 1



VICINITY MAP  
 Study Intersections  
 Lane Configurations and Traffic Control

FIGURE 2



①

0 ←	11 ←	0 →	↑	0 ↑	0 ↑
0 ↓	1 ↓	0 ↓	↑	0 ↑	11 ↑
0 ←	0 ←	2 ←	↑	1 ↑	2 ↑
0 ↓	0 ↓	2 ↓	↑	3 ↑	3 ↑

AM

①

0 ←	11 ←	1 →	↑	0 ↑	0 ↑
0 ↓	1 ↓	0 ↓	↑	0 ↑	11 ↑
0 ←	0 ←	5 ←	↑	9 ↑	16 ↑
0 ↓	2 ↓	2 ↓	↑	0 ↑	0 ↑

PM

②

16 ←	20 ←	0 →	↑	4 ↑	0 ↑
11 ↓	3 ↓	11 ↓	↑	2 ↑	0 ↑
13 ←	4 ←	11 ←	↑	6 ↑	5 ↑
13 ↓	4 ↓	11 ↓	↑	0 ↑	0 ↑

AM

②

13 ←	21 ←	0 →	↑	1 ↑	0 ↑
13 ↓	4 ↓	11 ↓	↑	0 ↑	1 ↑
13 ←	4 ←	11 ←	↑	33 ↑	3 ↑
13 ↓	4 ↓	11 ↓	↑	0 ↑	0 ↑

PM

③

20 ←	17 ←	3 →	↑	3 ↑	125 ↑
12 ↓	130 ↓	0 ↓	↑	0 ↑	0 ↑
12 ←	130 ←	0 →	↑	0 ↑	0 ↑
12 ↓	130 ↓	0 ↓	↑	0 ↑	0 ↑

AM

③

17 ←	22 ←	29 →	↑	29 ↑	125 ↑
35 ↓	171 ↓	0 ↓	↑	0 ↑	0 ↑
35 ←	171 ←	0 →	↑	0 ↑	0 ↑
35 ↓	171 ↓	0 ↓	↑	0 ↑	0 ↑

PM



TURNING MOVEMENT VOLUMES  
2021 Existing Conditions  
Morning and Evening Peak Hours



### ***OPERATIONAL ANALYSIS***

An operational analysis was conducted for the study intersections using Synchro software. The analysis was conducted for the weekday morning and evening peak hours.

The purpose of the existing conditions analysis is to establish how the study area intersections operate currently and allow for calibration of the operational analysis if required.

The results of the operational analysis are reported based on delay, Level of Service (LOS), and volume-to-capacity ratio (v/c). Delays are reported in seconds. Level of service is reported as a letter grade and can range from A to F, with level of service A representing nearly free-flow conditions and level of service F representing high delays and severe congestion. A report of level of service D generally indicates moderately high but tolerable delays, and typically occurs prior to reaching intersection capacity. The reported v/c ratios represent the portion of the available intersection capacity that is being utilized on the worst intersection approach. A v/c ratio of 1.0 would indicate that the approach is operating at capacity.

A summary of the existing conditions operational analysis is provided in Table 1 below. For each intersection, the reported delays and levels-of-service represent the approach lane which experiences the highest delay.

Based on the analysis, the study intersections are currently operating acceptably during the morning and evening peak hours. Detailed capacity analysis worksheets are provided in the technical appendix.

**Table 1 - Operational Analysis Summary: 2021 Existing Conditions**

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
Mary Drive at Anne Lane	7.3	A	0.02	7.3	A	0.04
Mary Drive at Burghardt Drive	7.4	A	0.04	7.4	A	0.07
Mary Drive at Toliver Road	10.3	B	0.07	11.1	B	0.07





## SITE TRIPS

The proposed new development will consist of 30 single-family dwellings. To estimate the number of trips that will be generated by the proposed development, trip rates from the *TRIP GENERATION MANUAL, 10<sup>th</sup> EDITION* were used. Data from land-use code 210, *Single-Family Detached* were used. The trip estimates are based on the number of dwelling units.

A summary of the trip generation calculations is provided in Table 3 below. A detailed trip generation worksheet is also included in the technical appendix.

**Table 3 - Proposed Development Trip Generation Summary**

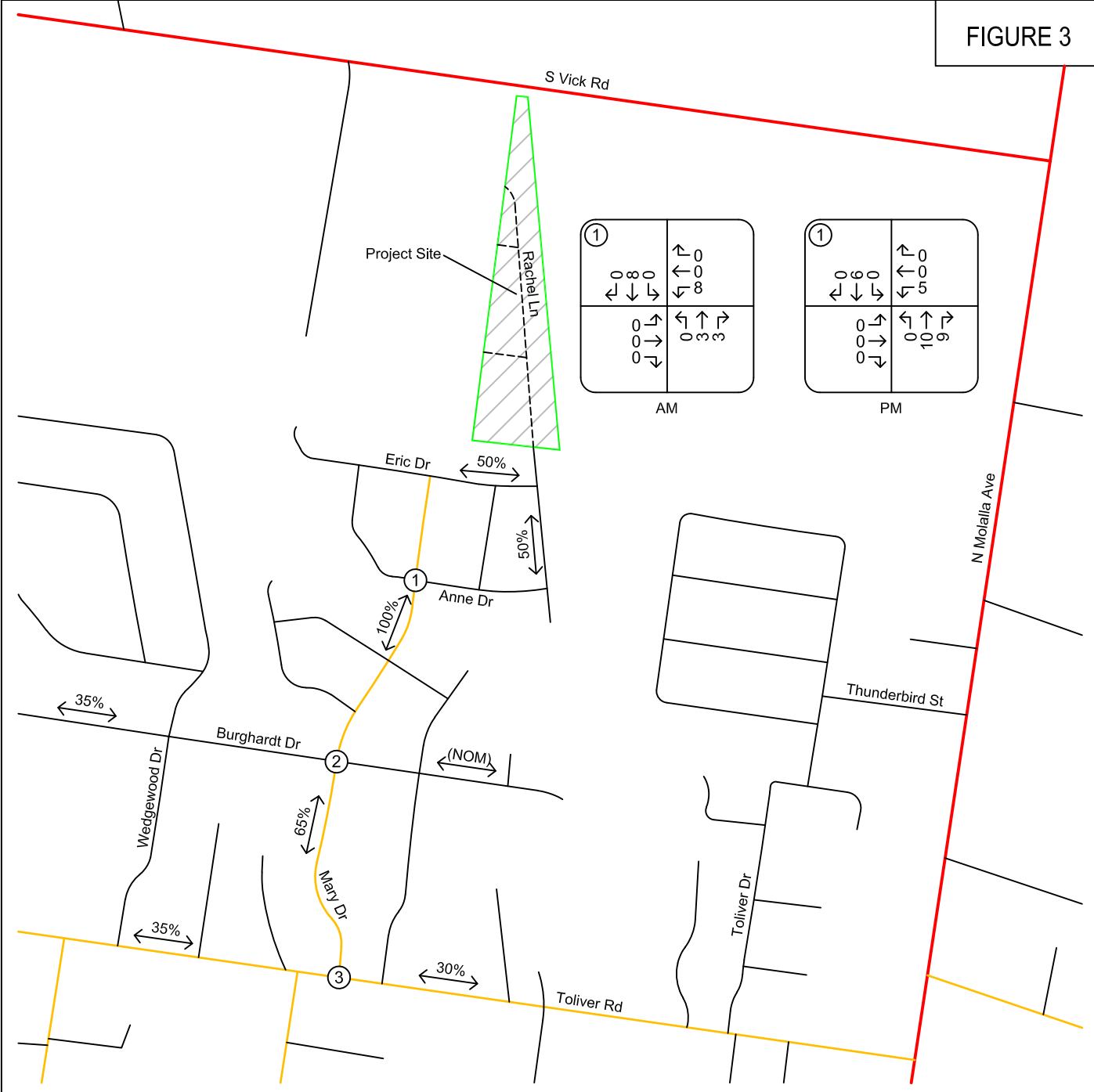
	AM Peak Hour			PM Peak Hour			Daily Total
	In	Out	Total	In	Out	Total	
30 Single-Family Homes	6	16	22	19	11	30	284

## *TRIP DISTRIBUTION*

The directional distribution of site trips to and from the project site was estimated based the existing travel patterns in the site vicinity. Overall, 35 percent of the anticipated site trips are projected to travel to and from the west on Burghardt Drive, 35 percent will travel to and from the west on Toliver Road, and 30 percent will travel to and from the east on Toliver Road.

The trip distribution percentages and trip assignment for the proposed development are shown in Figure 3 on page 10.

FIGURE 3



①

0 ←	8 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	8 ↑
0 ←	0 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	3 ↑

AM

①

0 ←	6 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	5 ↑
0 ←	0 ↓	0 →	10 ↑
0 ←	0 ↓	0 →	9 ↑

PM

②

6 ←	10 ↓	0 →	0 ↑
0 ←	2 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	4 ↑
0 ←	0 ↓	0 →	0 ↑

AM

②

4 ←	7 ↓	0 →	0 ↑
0 ←	7 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	12 ↑
0 ←	0 ↓	0 →	10 ↑

PM

③

5 ←	5 ↓	0 →	2 ↑
0 ←	2 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	0 ↑

AM

③

4 ←	3 ↓	0 →	6 ↑
0 ←	6 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	0 ↑
0 ←	0 ↓	0 →	0 ↑

PM



**TRAFFIC VOLUMES**  
 Proposed Development - Site Trips  
 Morning and Evening Peak Hours



## **FUTURE CONDITIONS ANALYSIS**

### ***BACKGROUND VOLUMES***

In order to determine the expected impact of site trips on the study area intersections, it is necessary to compare traffic conditions both with and without the addition of the projected traffic from the proposed development. Since the proposed buildings cannot be constructed and occupied immediately, the comparison is made for future traffic conditions at the time of project completion. It is anticipated that the proposed use will be completed and fully occupied within two years. Accordingly, the analysis was conducted for year 2023 traffic conditions.

Prior to adding the projected site trips to the study intersections, the existing traffic volumes were adjusted to account for background traffic growth over time. Background growth is expected to occur regardless of whether or not the proposed residential development is constructed, and accounts for other developments outside the immediate project area.

Based on historical population data, the City of Molalla has been growing at an average rate of approximately 1.2 percent per year for the past several years. In order to provide a conservative analysis, a background growth rate of 2.0 percent per year was applied for two years in order to derive the year 2023 background traffic volumes.

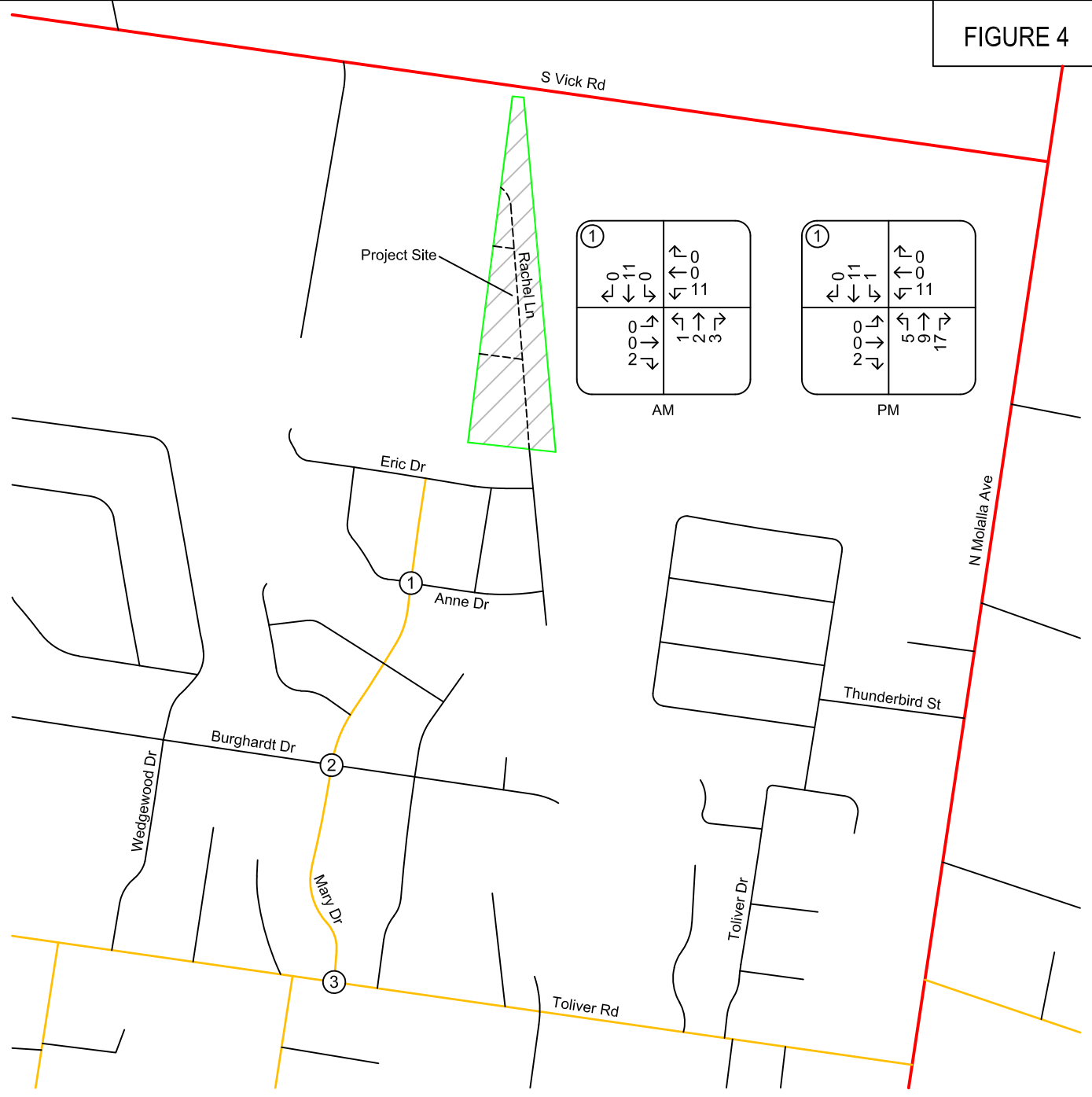
Figure 4 on page 12 shows the projected year 2023 background traffic volumes at the study intersections during the morning and evening peak hours.

### ***BACKGROUND VOLUMES PLUS SITE TRIPS***

Peak hour trips calculated to be generated by the proposed development were added to the projected year 2023 background traffic volumes to obtain the year 2023 total traffic volumes following completion of the proposed development.

Figure 5 on page 13 shows the projected year 2023 morning and evening peak hour traffic volumes including both background growth and site trips from the proposed development.

FIGURE 4



①

0 ←	11 ←	0 →	↑	0 ↑	0 ↑
0 ↓	11 ↓	0 ↓	↑	0 ↓	11 ↓
0 ←	0 ←	2 →	↑	1 ↑	2 ↑
2 ↓	2 ↓	2 ↓	↑	3 ↑	3 ↑

AM

①

0 ←	11 ←	1 →	↑	0 ↑	0 ↑
0 ↓	11 ↓	1 ↓	↑	0 ↓	11 ↓
0 ←	0 ←	5 →	↑	9 ↑	6 ↑
2 ↓	2 ↓	2 ↓	↑	17 ↑	17 ↑

PM

②

17 ←	21 ←	0 →	↑	4 ↑	0 ↑
11 ↓	3 ↓	11 ↓	↑	2 ↑	5 ↑
14 ←	22 ←	0 →	↑	0 ↑	1 ↑
11 ↓	4 ↓	11 ↓	↑	0 ↓	16 ↓

AM

②

14 ←	22 ←	0 →	↑	0 ↑	1 ↑
14 ↓	4 ↓	11 ↓	↑	0 ↓	16 ↓
12 ←	18 ←	3 →	↑	3 ↑	130 ↑
135 ↓	12 ↓	135 ↓	↑	3 ↓	34 ↓

PM

③

18 ←	23 ←	30 →	↑	30 ↑	130 ↑
36 ↓	178 ↓	36 ↓	↑	178 ↑	178 ↑

AM

③

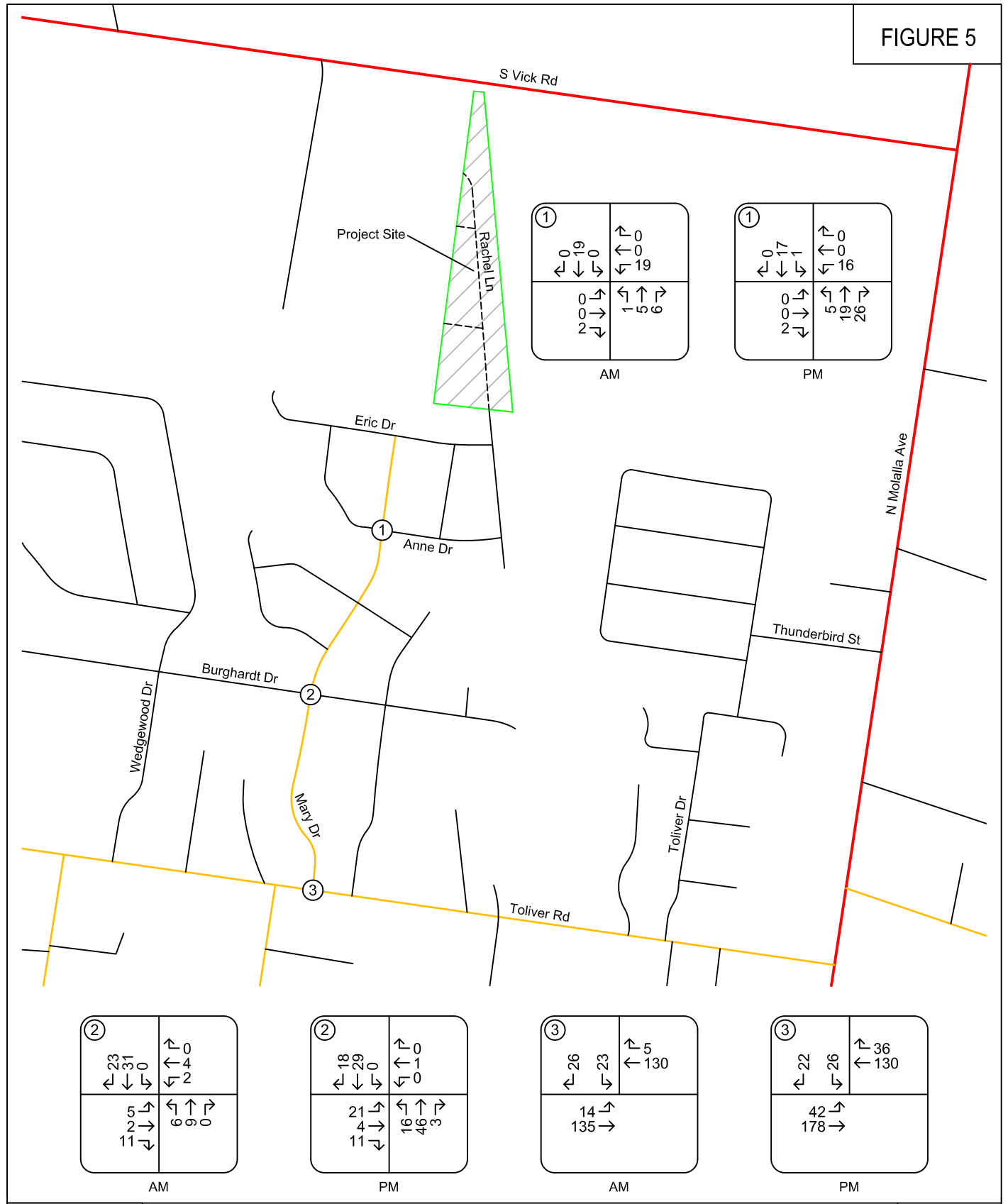
18 ←	23 ←	30 →	↑	30 ↑	130 ↑
36 ↓	178 ↓	36 ↓	↑	178 ↑	178 ↑

PM



TRAFFIC VOLUMES  
 2023 Background Conditions  
 Morning and Evening Peak Hours

FIGURE 5



**TRAFFIC VOLUMES**  
 2023 Background Plus Site Trips Conditions  
 Morning and Evening Peak Hours



**OPERATIONAL ANALYSIS**

The future conditions operational analysis was again conducted using Synchro software, with outputs based on the analysis methodologies contained in the *HIGHWAY CAPACITY MANUAL*. The analysis was prepared for the morning and evening peak hours.

The results of the future conditions operational analysis are summarized in Table 3 below. Detailed analysis worksheets are included in the technical appendix.

**Table 3 - Operational Analysis Summary: Year 2023 Future Conditions**

Intersection	AM Peak Hour			PM Peak Hour		
	Delay	LOS	v/c	Delay	LOS	v/c
<b>Mary Drive at Anne Lane</b>						
2023 Background Conditions	7.3	A	0.02	7.3	A	0.04
2023 Background plus Site Trips	7.4	A	0.03	7.4	A	0.07
<b>Mary Drive at Burghardt Drive</b>						
2023 Background Conditions	7.4	A	0.05	7.4	A	0.07
2023 Background plus Site Trips	7.5	A	0.07	7.5	A	0.09
<b>Mary Drive at Toliver Road</b>						
2023 Background Conditions	10.4	B	0.07	11.2	B	0.08
2023 Background plus Site Trips	10.6	B	0.09	11.4	B	0.09

Based on the results of the operational analysis, the study intersections are projected to operate with low delays, acceptable levels of service, and well within capacity through year 2023 either with or without the addition of site trips from the proposed River Meadows 30-lot residential subdivision. No operational mitigations are recommended in conjunction with the proposed development.



## **SAFETY ANALYSIS**

### ***CRASH DATA ANALYSIS***

Using data obtained from the Oregon Department of Transportation, a review of the five most recent years of available crash history (from January 2015 to December 2019) was performed for the three study intersections. Based on the ODOT data, there were no reported crashes at any of the study intersections during the five-year analysis period.

Based on the crash data, no significant safety hazards were identified, and no specific safety mitigations are recommended.

### ***TRAFFIC SIGNAL AND TURN LANE WARRANT ANALYSIS***

The *Manual on Uniform Traffic Control Devices* establishes national standards regarding when installation of a traffic signal can be considered. The warrants are based on factors including traffic volumes and speeds, pedestrian activity, and crash history.

By inspection, the traffic volumes at the Anne Lane and Burghardt Drive intersections are far too low to meet traffic signal warrants. However, a traffic signal warrant analysis was conducted for the intersection of Mary Drive at Toliver Road. Based on the analysis, traffic signal warrants will not be met with completion of the proposed development. Accordingly, no new traffic signals are recommended in conjunction with the proposed development.

Major-street turn lane warrants are primarily based on safety considerations. A major-street left-turn lane provides a refuge for drivers to move out of the through travel lane while waiting for a gap in the opposing through traffic stream prior to turning left. A major-street right-turn lane allows right-turning drivers to decelerate outside the through travel lane prior to turning. The turn lane warrants apply to free-flowing intersection approaches. As such, turn lane warrants were examined for the eastbound and westbound Toliver Road approaches to Mary Drive.

Left-turn lane warrants are based on volume of advancing and opposing traffic, the number of through travel lanes, and the number of vehicles turning left. Based on the warrant analysis, no new left-turn lanes are projected to be warranted upon completion of the proposed development.

Right-turn lane warrants are based on the number of vehicles making right turns, the speed of through traffic, and the volume of traffic in the outside lane. Again, based on the warrant analysis, no new right-turn lanes are projected to be warranted upon completion of the proposed development.



## **CONCLUSIONS**

Based on the operational analysis, the study intersections are projected to operate acceptably through 2023 either with or without the addition of site trips from the proposed development. No operational mitigations are necessary or recommended.

A review of ODOT's crash data showed no reported crashes during the most recent five years for any of the study intersections. No specific crash mitigations are recommended in conjunction with the proposed development.

Based on the warrant analysis, no new traffic signals or turn lanes are recommended in conjunction with the proposed development.





## APPENDIX



**RIVER MEADOWS  
PRELIMINARY  
SUBDIVISION LAYOUT A-6**

SCALE: 1" = 50'  
0 25 50 100



**RESIDENTIAL DENSITY SUMMARY**

TOTAL SITE AREA = 261,205 SF (5.996 ACRES)  
 PUBLICLY DEDICATED IMPROVEMENTS + FLAGPOLES = 73,072 SF (1.677 ACRES)  
 NET BUILDABLE AREA = 188,133 SF (4.319 ACRES)  
 MIN. DWELLING UNITS = 17.27 (4x BUILDABLE AREA) PER NET ACRE  
 MAX. DWELLING UNITS = 34.55 (8x BUILDABLE AREA) PER NET ACRE

**IMPERVIOUS AREA SUMMARY**

PUBLIC IMPERVIOUS AREA = 59,083 SF  
 PRIVATE IMPERVIOUS AREA (31 LOTS x 2600 SF) = 77,900 SF  
 TOTAL IMPERVIOUS AREA = 136,983 SF

Location: 2 Mary Dr & Burghardt Dr AM



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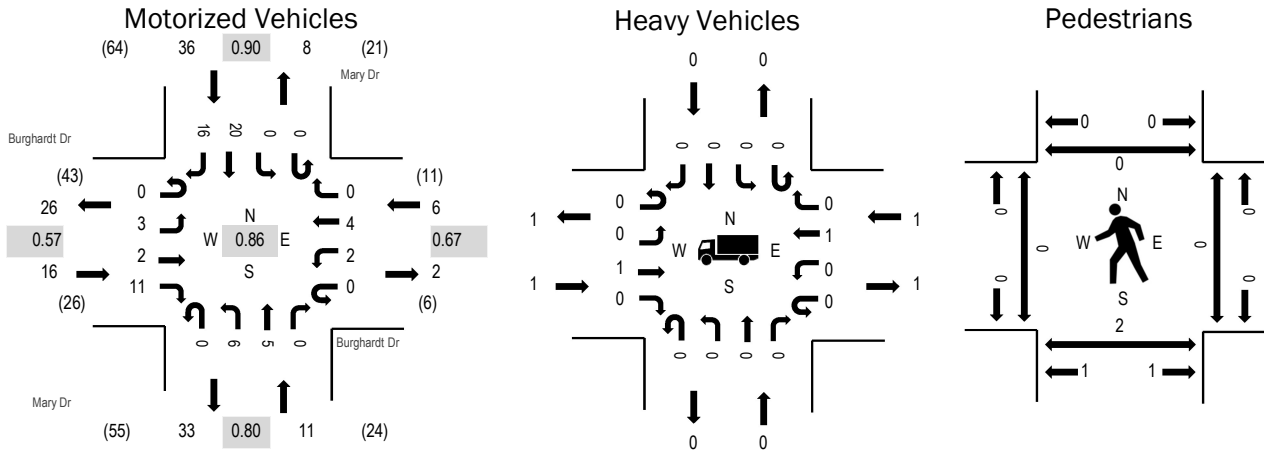
Location: 2 Mary Dr & Burghardt Dr AM

Date: Wednesday, April 7, 2021

Peak Hour: 07:10 AM - 08:10 AM

Peak 15-Minutes: 07:10 AM - 07:25 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	6.3%	0.57
WB	16.7%	0.67
NB	0.0%	0.80
SB	0.0%	0.90
All	2.9%	0.86

Traffic Counts - Motorized Vehicles

Interval Start Time	Burghardt Dr Eastbound				Burghardt Dr Westbound				Mary Dr Northbound				Mary Dr Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	3	63
7:05 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2	65
7:10 AM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	2	6	69
7:15 AM	0	1	0	3	0	0	0	0	0	0	0	0	0	0	1	1	6	68
7:20 AM	0	0	0	1	0	0	2	0	0	1	1	0	0	0	0	3	8	67
7:25 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	1	4	64
7:30 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	2	6	64
7:35 AM	0	1	0	1	0	0	0	0	0	2	0	0	0	0	2	1	7	68
7:40 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	3	67
7:45 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	3	6	69
7:50 AM	0	0	0	1	0	1	1	0	0	0	2	0	0	0	3	1	9	66
7:55 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	3	62
8:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	1	5	62
8:05 AM	0	0	1	1	0	0	0	0	0	0	1	0	0	0	3	0	6	
8:10 AM	0	0	0	1	0	0	0	0	0	1	1	0	0	0	2	0	5	
8:15 AM	0	1	0	2	0	0	0	0	0	0	1	0	0	0	0	1	5	
8:20 AM	0	0	0	1	0	0	1	0	0	0	1	0	0	1	0	1	5	
8:25 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	
8:30 AM	0	0	0	1	0	1	0	1	0	0	1	0	0	0	2	4	10	
8:35 AM	0	1	0	0	0	0	0	0	0	0	0	1	0	0	3	1	6	
8:40 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	1	5	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	
8:50 AM	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	2	5	
8:55 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	3	
Count Total	0	5	3	18	0	3	7	1	0	7	15	2	0	1	34	29	125	
Peak Hour	0	3	2	11	0	2	4	0	0	6	5	0	0	0	20	16	69	

Location: 2 Mary Dr & Burghardt Dr AM

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0	7:05 AM	0	2	0	0	2
7:10 AM	1	0	0	0	1	7:10 AM	0	0	0	0	0	7:10 AM	0	1	0	0	1
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	1	0	0	1
7:20 AM	0	0	1	0	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	0	1	0	1	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	2	0	2	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	1	1	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	1	0	4	1	6	Count Total	0	0	0	0	0	Count Total	0	4	0	0	4
Peak Hour	1	0	1	0	2	Peak Hour	0	0	0	0	0	Peak Hour	0	2	0	0	2

Location: 3 Mary Dr & Toliver Rd AM



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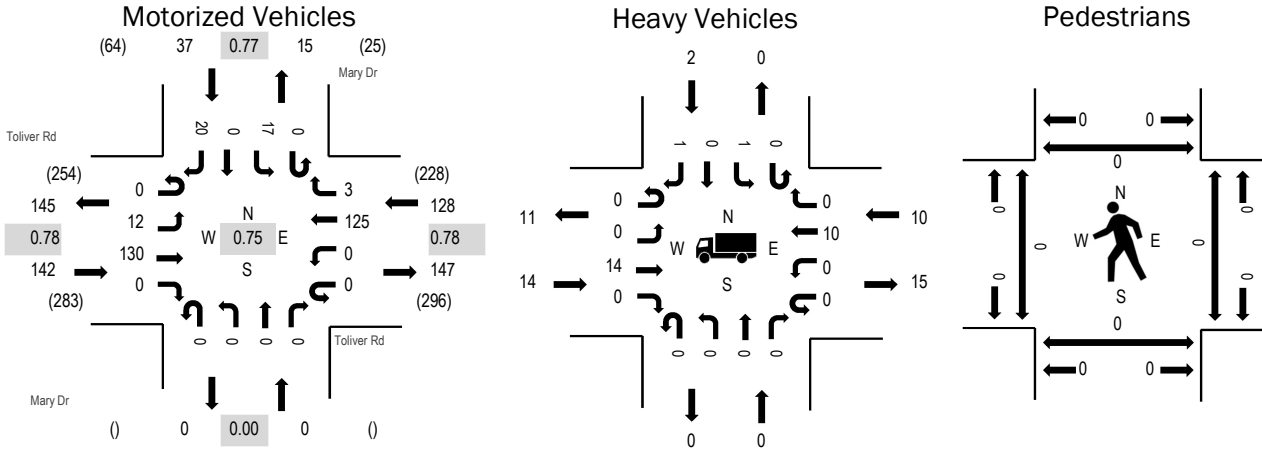
Location: 3 Mary Dr & Toliver Rd AM

Date: Wednesday, April 7, 2021

Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:45 AM - 09:00 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	9.9%	0.78
WB	7.8%	0.78
NB	0.0%	0.00
SB	5.4%	0.77
All	8.5%	0.75

Traffic Counts - Motorized Vehicles

Interval Start Time	Toliver Rd Eastbound				Toliver Rd Westbound				Mary Dr Northbound				Mary Dr Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	1	4	0	0	0	7	0	0	0	0	0	0	0	0	0	12	268
7:05 AM	0	0	8	0	0	0	7	0	0	0	0	0	0	1	0	0	16	278
7:10 AM	0	0	14	0	0	0	10	0	0	0	0	0	0	1	0	0	25	286
7:15 AM	0	0	13	0	0	0	22	0	0	0	0	0	0	2	0	3	40	288
7:20 AM	0	1	19	0	0	0	10	1	0	0	0	0	0	1	0	2	34	260
7:25 AM	0	0	11	0	0	0	13	0	0	0	0	0	0	0	0	2	26	244
7:30 AM	0	2	12	0	0	0	4	0	0	0	0	0	0	1	0	0	19	249
7:35 AM	0	0	4	0	0	0	6	2	0	0	0	0	0	2	0	2	16	250
7:40 AM	0	0	17	0	0	0	3	0	0	0	0	0	0	1	0	1	22	263
7:45 AM	0	0	12	0	0	0	7	0	0	0	0	0	0	2	0	0	21	262
7:50 AM	0	1	15	0	0	0	2	1	0	0	0	0	0	0	0	2	21	267
7:55 AM	0	0	7	0	0	0	4	1	0	0	0	0	0	2	0	2	16	286
8:00 AM	0	1	9	0	0	0	8	0	0	0	0	0	0	2	0	2	22	307
8:05 AM	0	0	3	0	0	0	16	0	0	0	0	0	0	0	0	5	24	
8:10 AM	0	2	13	0	0	0	8	1	0	0	0	0	0	3	0	0	27	
8:15 AM	0	1	6	0	0	0	3	0	0	0	0	0	0	1	0	1	12	
8:20 AM	0	0	7	0	0	0	9	1	0	0	0	0	0	0	0	1	18	
8:25 AM	0	4	14	0	0	0	11	0	0	0	0	0	0	0	0	2	31	
8:30 AM	0	1	6	0	0	0	8	0	0	0	0	0	0	3	0	2	20	
8:35 AM	0	0	11	0	0	0	13	0	0	0	0	0	0	3	0	2	29	
8:40 AM	0	1	4	0	0	0	13	0	0	0	0	0	0	2	0	1	21	
8:45 AM	0	0	13	0	0	0	9	0	0	0	0	0	0	1	0	3	26	
8:50 AM	0	1	20	0	0	0	18	1	0	0	0	0	0	0	0	0	40	
8:55 AM	0	1	24	0	0	0	9	0	0	0	0	0	0	2	0	1	37	
Count Total	0	17	266	0	0	0	220	8	0	0	0	0	0	30	0	34	575	
Peak Hour	0	12	130	0	0	0	125	3	0	0	0	0	0	17	0	20	307	

Location: 3 Mary Dr & Toliver Rd AM

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	2	0	0	0	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	2	0	2	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	0	10	0	10	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	2	0	2	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	2	0	0	0	2	7:30 AM	0	0	1	0	1	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	2	0	1	0	3	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	2	0	0	0	2	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	1	0	0	0	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	2	0	1	0	3	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	2	0	2	0	4	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	1	0	0	0	1	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	2	0	1	0	3	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	2	0	0	0	2	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	1	0	0	0	1	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	2	0	0	0	2	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	2	0	0	0	2	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	1	2	3	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	5	0	5	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	2	0	0	0	2	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	1	0	1	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	25	0	26	2	53	Count Total	0	0	1	0	1	Count Total	0	0	0	0	0
Peak Hour	14	0	10	2	26	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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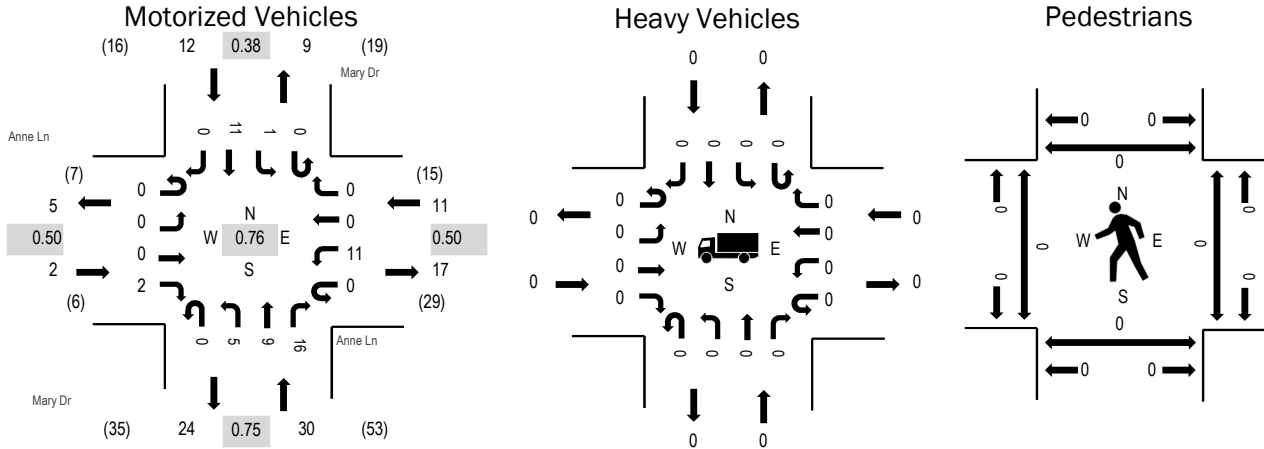
Location: 1 Mary Dr & Anne Ln PM

Date: Wednesday, April 7, 2021

Peak Hour: 04:25 PM - 05:25 PM

Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.50
WB	0.0%	0.50
NB	0.0%	0.75
SB	0.0%	0.38
All	0.0%	0.76

Traffic Counts - Motorized Vehicles

Interval Start Time	Anne Ln Eastbound				Anne Ln Westbound				Mary Dr Northbound			Mary Dr Southbound				Total	Rolling Hour		
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru			Right	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
4:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44
4:10 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	48
4:15 PM	0	0	1	0	0	0	0	0	0	0	3	0	0	0	1	0	0	5	53
4:20 PM	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	4	53
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	55
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3	54
4:35 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	3	0	0	5	53
4:40 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	51
4:45 PM	0	0	0	0	0	2	0	0	0	0	2	4	0	0	0	0	0	8	51
4:50 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0	0	3	47
4:55 PM	0	0	0	1	0	3	0	0	0	0	0	1	0	0	0	0	0	5	50
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	3	49
5:05 PM	0	0	0	0	0	0	0	0	0	1	0	3	0	0	0	0	0	4	
5:10 PM	0	0	0	0	0	4	0	0	0	1	1	1	0	0	0	0	0	7	
5:15 PM	0	0	0	1	0	0	0	0	0	1	2	1	0	0	0	0	0	5	
5:20 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	1	1	0	0	6	
5:25 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	2	
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	
5:35 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	3	
5:40 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	0	0	3	
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	0	0	4	
5:50 PM	0	0	0	0	0	2	0	0	0	0	2	2	0	0	0	0	0	6	
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	
Count Total	0	0	1	5	0	15	0	0	0	7	19	27	0	1	15	0	0	90	
Peak Hour	0	0	0	2	0	11	0	0	0	5	9	16	0	1	11	0	0	55	

Location: 1 Mary Dr & Anne Ln PM

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	2	0	2	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	1	0	0	1
4:15 PM	1	0	0	1	2	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	2	2	0	4	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	2	0	0	0	2	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	1	0	0	1	5:45 PM	2	0	0	0	2
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	1	1	0	1	3	Count Total	2	3	4	0	9	Count Total	2	1	0	0	3
Peak Hour	0	0	0	0	0	Peak Hour	2	2	2	0	6	Peak Hour	0	0	0	0	0



Location: 2 Mary Dr & Burghardt Dr PM



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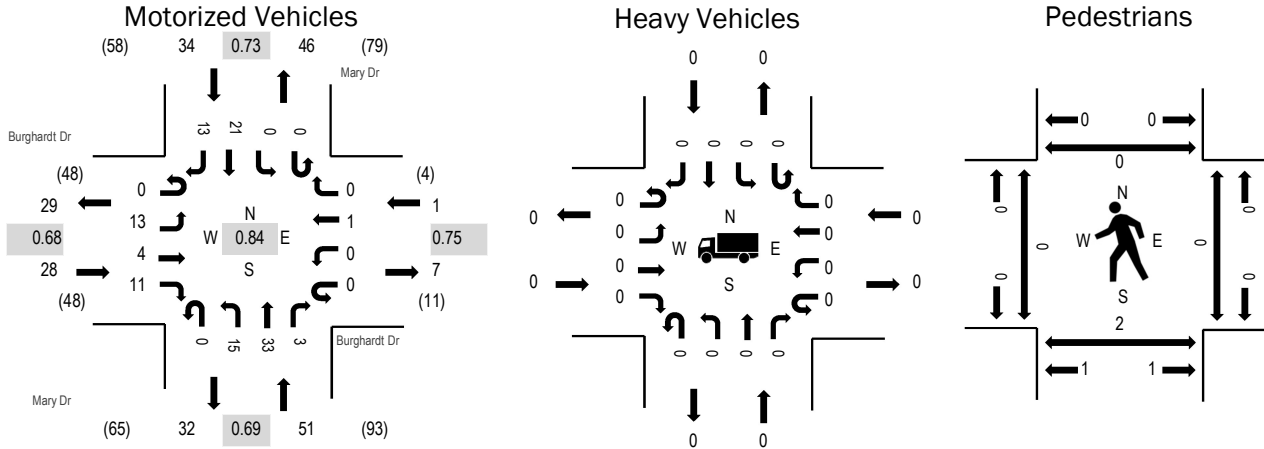
Location: 2 Mary Dr & Burghardt Dr PM

Date: Wednesday, April 7, 2021

Peak Hour: 04:30 PM - 05:30 PM

Peak 15-Minutes: 05:05 PM - 05:20 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.68
WB	0.0%	0.75
NB	0.0%	0.69
SB	0.0%	0.73
All	0.0%	0.84

Traffic Counts - Motorized Vehicles

Interval Start Time	Burghardt Dr Eastbound				Burghardt Dr Westbound				Mary Dr Northbound				Mary Dr Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	1	0	1	0	0	0	0	0	1	0	0	0	0	2	0	5	98
4:05 PM	0	1	1	0	0	1	0	0	0	1	0	0	0	0	3	0	7	99
4:10 PM	0	1	0	1	0	0	0	0	0	2	5	0	0	0	1	0	10	103
4:15 PM	0	1	0	3	0	0	0	0	0	2	1	0	0	0	0	0	7	108
4:20 PM	0	0	0	1	0	0	0	0	0	1	3	0	0	0	1	1	7	109
4:25 PM	0	1	0	0	0	1	0	0	0	1	0	0	0	0	4	1	8	112
4:30 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	2	6	114
4:35 PM	0	0	0	1	0	0	0	0	0	1	3	1	0	0	1	3	10	112
4:40 PM	0	3	0	2	0	0	0	0	0	0	2	0	0	0	0	0	7	111
4:45 PM	0	1	1	0	0	0	1	0	0	0	5	0	0	0	3	1	12	108
4:50 PM	0	0	0	1	0	0	0	0	0	1	2	0	0	0	3	1	8	104
4:55 PM	0	1	0	0	0	0	0	0	0	2	3	0	0	0	4	1	11	106
5:00 PM	0	0	0	1	0	0	0	0	0	0	3	0	0	0	1	1	6	105
5:05 PM	0	2	1	0	0	0	0	0	0	2	3	0	0	0	2	1	11	
5:10 PM	0	1	0	1	0	0	0	0	0	5	4	0	0	0	4	0	15	
5:15 PM	0	3	0	0	0	0	0	0	0	2	2	0	0	0	0	1	8	
5:20 PM	0	0	1	2	0	0	0	0	0	1	3	1	0	0	1	1	10	
5:25 PM	0	2	1	2	0	0	0	0	0	1	2	1	0	0	0	1	10	
5:30 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	4	
5:35 PM	0	1	0	3	0	0	0	0	0	1	0	0	0	0	4	0	9	
5:40 PM	0	2	0	0	0	0	0	0	0	1	0	0	0	0	1	0	4	
5:45 PM	0	0	1	0	0	0	0	0	0	1	5	0	0	0	0	1	8	
5:50 PM	0	0	0	0	0	1	0	0	0	0	6	0	0	0	2	1	10	
5:55 PM	0	0	0	1	0	0	0	0	0	2	4	2	0	0	1	0	10	
Count Total	0	21	6	21	0	3	1	0	0	30	58	5	0	0	41	17	203	
Peak Hour	0	13	4	11	0	0	1	0	0	15	33	3	0	0	21	13	114	

Location: 2 Mary Dr & Burghardt Dr PM

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	1	0	0	1	2
4:10 PM	0	1	0	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1
4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0	4:20 PM	2	0	0	0	2
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	1	0	0	1
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	1	0	0	1
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	1	0	0	1	Count Total	0	0	0	0	0	Count Total	4	2	0	1	7
Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0	Peak Hour	0	2	0	0	2

Location: 3 Mary Dr & Toliver Rd PM



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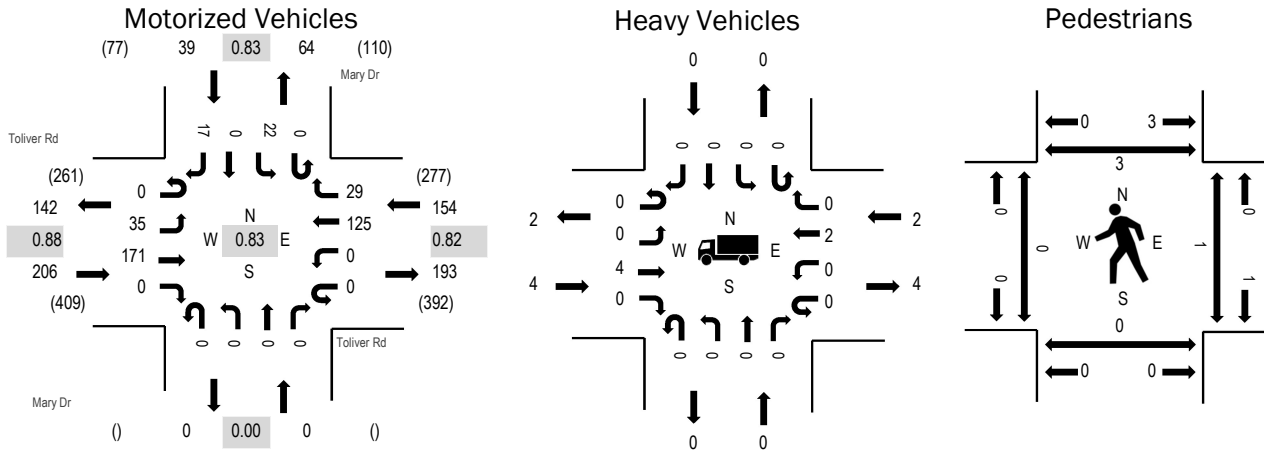
Location: 3 Mary Dr & Toliver Rd PM

Date: Wednesday, April 7, 2021

Peak Hour: 04:50 PM - 05:50 PM

Peak 15-Minutes: 05:10 PM - 05:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	1.9%	0.88
WB	1.3%	0.82
NB	0.0%	0.00
SB	0.0%	0.83
All	1.5%	0.83

Traffic Counts - Motorized Vehicles

Interval Start Time	Toliver Rd Eastbound				Toliver Rd Westbound				Mary Dr Northbound				Mary Dr Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	13	0	0	0	12	2	0	0	0	0	0	3	0	1	31	367
4:05 PM	0	0	15	0	0	0	9	2	0	0	0	0	0	2	0	1	29	367
4:10 PM	0	2	21	0	0	0	11	4	0	0	0	0	0	0	0	2	40	377
4:15 PM	0	1	14	0	0	0	8	1	0	0	0	0	0	2	0	0	26	384
4:20 PM	0	2	12	0	0	0	15	2	0	0	0	0	0	1	0	1	33	388
4:25 PM	0	1	17	0	0	0	10	1	0	0	0	0	0	3	0	1	33	398
4:30 PM	0	2	18	0	0	0	7	0	0	0	0	0	0	2	0	2	31	385
4:35 PM	0	5	20	0	0	0	5	2	0	0	0	0	0	1	0	2	35	387
4:40 PM	0	2	12	0	0	0	7	0	0	0	0	0	0	2	0	1	24	379
4:45 PM	0	2	12	0	0	0	6	3	0	0	0	0	0	3	0	1	27	392
4:50 PM	0	2	12	0	0	0	12	2	0	0	0	0	0	3	0	3	34	399
4:55 PM	0	2	13	0	0	0	5	2	0	0	0	0	0	1	0	1	24	391
5:00 PM	0	3	12	0	0	0	10	2	0	0	0	0	0	2	0	2	31	396
5:05 PM	0	7	18	0	0	0	10	2	0	0	0	0	0	0	0	2	39	
5:10 PM	0	2	17	0	0	0	15	8	0	0	0	0	0	3	0	2	47	
5:15 PM	0	2	13	0	0	0	9	2	0	0	0	0	0	3	0	1	30	
5:20 PM	0	4	24	0	0	0	11	2	0	0	0	0	0	2	0	0	43	
5:25 PM	0	3	8	0	0	0	6	2	0	0	0	0	0	1	0	0	20	
5:30 PM	0	3	13	0	0	0	14	1	0	0	0	0	0	1	0	1	33	
5:35 PM	0	2	11	0	0	0	8	1	0	0	0	0	0	3	0	2	27	
5:40 PM	0	1	13	0	0	0	16	2	0	0	0	0	0	3	0	2	37	
5:45 PM	0	4	17	0	0	0	9	3	0	0	0	0	0	0	0	1	34	
5:50 PM	0	4	12	0	0	0	6	1	0	0	0	0	0	0	0	3	26	
5:55 PM	0	5	11	0	0	0	7	2	0	0	0	0	0	3	0	1	29	
Count Total	0	61	348	0	0	0	228	49	0	0	0	0	0	44	0	33	763	
Peak Hour	0	35	171	0	0	0	125	29	0	0	0	0	0	22	0	17	399	

Location: 3 Mary Dr & Toliver Rd PM

**Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles on Crosswalk**

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	0	0	0	1	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	3	3
4:05 PM	1	0	1	0	2	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	1	1
4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	0	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	0	1	0	1	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	1	0	0	0	1	4:35 PM	1	0	0	0	1	4:35 PM	0	0	0	0	0
4:40 PM	1	0	0	0	1	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	1	0	1	0	2	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	1	1
5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	2	2
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	2	0	0	0	2	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	1	0	1	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	1	0	1	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	9	0	4	0	13	Count Total	1	0	1	0	2	Count Total	0	0	1	7	8
Peak Hour	4	0	2	0	6	Peak Hour	0	0	1	0	1	Peak Hour	0	0	1	3	4

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	11	0	0	1	2	3	0	11	0
Future Vol, veh/h	0	0	2	11	0	0	1	2	3	0	11	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	16	0	0	1	3	4	0	16	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.4	7.3	6.8	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	0%	100%	0%
Vol Thru, %	33%	0%	0%	100%
Vol Right, %	50%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	2	11	11
LT Vol	1	0	11	0
Through Vol	2	0	0	11
RT Vol	3	2	0	0
Lane Flow Rate	9	3	16	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.009	0.003	0.018	0.017
Departure Headway (Hd)	3.712	3.389	4.18	3.974
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	967	1059	860	904
Service Time	1.723	1.4	2.187	1.983
HCM Lane V/C Ratio	0.009	0.003	0.019	0.018
HCM Control Delay	6.8	6.4	7.3	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0.1	0.1

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	11	2	4	0	6	5	0	0	20	16
Future Vol, veh/h	3	2	11	2	4	0	6	5	0	0	20	16
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	6	6	6	17	17	17	2	2	2	2	2	2
Mvmt Flow	3	2	13	2	5	0	7	6	0	0	23	19
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.2	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	19%	33%	0%
Vol Thru, %	45%	12%	67%	56%
Vol Right, %	0%	69%	0%	44%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	16	6	36
LT Vol	6	3	2	0
Through Vol	5	2	4	20
RT Vol	0	11	0	16
Lane Flow Rate	13	19	7	42
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.019	0.008	0.043
Departure Headway (Hd)	4.119	3.726	4.364	3.721
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	871	961	821	965
Service Time	2.132	1.747	2.386	1.733
HCM Lane V/C Ratio	0.015	0.02	0.009	0.044
HCM Control Delay	7.2	6.8	7.4	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0	0.1

HCM 6th TWSC  
3: Toliver Road & Mary Drive

05/07/2021

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	12	130	125	3	17	20
Future Vol, veh/h	12	130	125	3	17	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	10	10	8	8	5	5
Mvmt Flow	16	173	167	4	23	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	171	0	-	0	374
Stage 1	-	-	-	-	169
Stage 2	-	-	-	-	205
Critical Hdwy	4.2	-	-	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	2.29	-	-	-	3.545
Pot Cap-1 Maneuver	1359	-	-	-	621
Stage 1	-	-	-	-	854
Stage 2	-	-	-	-	822
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1359	-	-	-	613
Mov Cap-2 Maneuver	-	-	-	-	613
Stage 1	-	-	-	-	843
Stage 2	-	-	-	-	822

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1359	-	-	-	728
HCM Lane V/C Ratio	0.012	-	-	-	0.068
HCM Control Delay (s)	7.7	0	-	-	10.3
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	11	0	0	5	9	16	1	11	0
Future Vol, veh/h	0	0	2	11	0	0	5	9	16	1	11	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	14	0	0	7	12	21	1	14	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7.3	6.9	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	0%	100%	8%
Vol Thru, %	30%	0%	0%	92%
Vol Right, %	53%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	2	11	12
LT Vol	5	0	11	1
Through Vol	9	0	0	11
RT Vol	16	2	0	0
Lane Flow Rate	39	3	14	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.04	0.003	0.017	0.018
Departure Headway (Hd)	3.688	3.44	4.232	4.009
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	973	1040	847	895
Service Time	1.702	1.461	2.25	2.024
HCM Lane V/C Ratio	0.04	0.003	0.017	0.018
HCM Control Delay	6.9	6.5	7.3	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.1	0.1



Intersection												
Intersection Delay, s/veh	7.2											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	13	4	11	0	1	0	15	33	3	0	21	13
Future Vol, veh/h	13	4	11	0	1	0	15	33	3	0	21	13
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	15	5	13	0	1	0	18	39	4	0	25	15
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.2	7.4	7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	46%	0%	0%
Vol Thru, %	65%	14%	100%	62%
Vol Right, %	6%	39%	0%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	51	28	1	34
LT Vol	15	13	0	0
Through Vol	33	4	1	21
RT Vol	3	11	0	13
Lane Flow Rate	61	33	1	40
Geometry Grp	1	1	1	1
Degree of Util (X)	0.068	0.037	0.001	0.043
Departure Headway (Hd)	4.049	3.967	4.135	3.811
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	886	899	861	939
Service Time	2.069	2.007	2.182	1.837
HCM Lane V/C Ratio	0.069	0.037	0.001	0.043
HCM Control Delay	7.4	7.2	7.2	7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.1

HCM 6th TWSC  
3: Toliver Road & Mary Drive

05/07/2021

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	35	171	125	29	22	17
Future Vol, veh/h	35	171	125	29	22	17
Conflicting Peds, #/hr	3	0	0	4	4	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	42	206	151	35	27	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	190	0	-	0	467 176
Stage 1	-	-	-	-	173 -
Stage 2	-	-	-	-	294 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1384	-	-	-	554 867
Stage 1	-	-	-	-	857 -
Stage 2	-	-	-	-	756 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1379	-	-	-	531 861
Mov Cap-2 Maneuver	-	-	-	-	531 -
Stage 1	-	-	-	-	824 -
Stage 2	-	-	-	-	753 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1379	-	-	-	638
HCM Lane V/C Ratio	0.031	-	-	-	0.074
HCM Control Delay (s)	7.7	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

# Trip Generation Calculation Worksheet



Land Use Description: Single-Family Detached Housing  
 ITE Land Use Code: 210  
 Independent Variable: Dwelling Units  
 Quantity: 30 Dwelling Units

## Summary of ITE Trip Generation Data

### **AM Peak Hour of Adjacent Street Traffic**

Trip Rate: 0.74 trips per dwelling unit  
 Directional Distribution: 25% Entering 75% Exiting

### **PM Peak Hour of Adjacent Street Traffic**

Trip Rate: 0.99 trips per dwelling unit  
 Directional Distribution: 63% Entering 37% Exiting

### **Total Weekday Traffic**

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

## Site Trip Generation Calculations

30 Dwelling Units

	Entering	Exiting	Total
AM Peak Hour	6	16	22
PM Peak Hour	19	11	30
Weekday	142	142	284

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

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	11	0	0	1	2	3	0	11	0
Future Vol, veh/h	0	0	2	11	0	0	1	2	3	0	11	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	16	0	0	1	3	4	0	16	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.4	7.3	6.8	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	0%	100%	0%
Vol Thru, %	33%	0%	0%	100%
Vol Right, %	50%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	6	2	11	11
LT Vol	1	0	11	0
Through Vol	2	0	0	11
RT Vol	3	2	0	0
Lane Flow Rate	9	3	16	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.009	0.003	0.018	0.017
Departure Headway (Hd)	3.712	3.389	4.18	3.974
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	967	1059	860	904
Service Time	1.723	1.4	2.187	1.983
HCM Lane V/C Ratio	0.009	0.003	0.019	0.018
HCM Control Delay	6.8	6.4	7.3	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0.1	0.1

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	2	11	2	4	0	6	5	0	0	21	17
Future Vol, veh/h	3	2	11	2	4	0	6	5	0	0	21	17
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	6	6	6	17	17	17	2	2	2	2	2	2
Mvmt Flow	3	2	13	2	5	0	7	6	0	0	24	20
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.8	7.4	7.2	6.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	55%	19%	33%	0%
Vol Thru, %	45%	12%	67%	55%
Vol Right, %	0%	69%	0%	45%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	11	16	6	38
LT Vol	6	3	2	0
Through Vol	5	2	4	21
RT Vol	0	11	0	17
Lane Flow Rate	13	19	7	44
Geometry Grp	1	1	1	1
Degree of Util (X)	0.015	0.019	0.008	0.046
Departure Headway (Hd)	4.121	3.73	4.368	3.72
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	871	959	820	965
Service Time	2.135	1.753	2.392	1.731
HCM Lane V/C Ratio	0.015	0.02	0.009	0.046
HCM Control Delay	7.2	6.8	7.4	6.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0.1	0	0.1

HCM 6th TWSC  
3: Toliver Road & Mary Drive

05/07/2021

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	12	135	130	3	18	21
Future Vol, veh/h	12	135	130	3	18	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	10	10	8	8	5	5
Mvmt Flow	16	180	173	4	24	28

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	177	0	-	0	387
Stage 1	-	-	-	-	175
Stage 2	-	-	-	-	212
Critical Hdwy	4.2	-	-	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	2.29	-	-	-	3.545
Pot Cap-1 Maneuver	1352	-	-	-	610
Stage 1	-	-	-	-	848
Stage 2	-	-	-	-	816
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1352	-	-	-	602
Mov Cap-2 Maneuver	-	-	-	-	602
Stage 1	-	-	-	-	837
Stage 2	-	-	-	-	816

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1352	-	-	-	718
HCM Lane V/C Ratio	0.012	-	-	-	0.072
HCM Control Delay (s)	7.7	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	11	0	0	5	9	17	1	11	0
Future Vol, veh/h	0	0	2	11	0	0	5	9	17	1	11	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	14	0	0	7	12	22	1	14	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7.3	6.9	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	0%	100%	8%
Vol Thru, %	29%	0%	0%	92%
Vol Right, %	55%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	2	11	12
LT Vol	5	0	11	1
Through Vol	9	0	0	11
RT Vol	17	2	0	0
Lane Flow Rate	41	3	14	16
Geometry Grp	1	1	1	1
Degree of Util (X)	0.042	0.003	0.017	0.018
Departure Headway (Hd)	3.678	3.442	4.234	4.01
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	976	1039	846	895
Service Time	1.691	1.465	2.254	2.025
HCM Lane V/C Ratio	0.042	0.003	0.017	0.018
HCM Control Delay	6.9	6.5	7.3	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.1	0.1

<b>Intersection</b>												
Intersection Delay, s/veh	7.2											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	4	11	0	1	0	16	34	3	0	22	14
Future Vol, veh/h	14	4	11	0	1	0	16	34	3	0	22	14
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	5	13	0	1	0	19	40	4	0	26	17
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.2	7.2	7.4	7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	30%	48%	0%	0%
Vol Thru, %	64%	14%	100%	61%
Vol Right, %	6%	38%	0%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	53	29	1	36
LT Vol	16	14	0	0
Through Vol	34	4	1	22
RT Vol	3	11	0	14
Lane Flow Rate	63	35	1	43
Geometry Grp	1	1	1	1
Degree of Util (X)	0.071	0.038	0.001	0.045
Departure Headway (Hd)	4.055	3.986	4.144	3.811
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	885	894	859	939
Service Time	2.075	2.029	2.193	1.837
HCM Lane V/C Ratio	0.071	0.039	0.001	0.046
HCM Control Delay	7.4	7.2	7.2	7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0.1	0	0.1



HCM 6th TWSC  
3: Toliver Road & Mary Drive

05/07/2021

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	36	178	130	30	23	18
Future Vol, veh/h	36	178	130	30	23	18
Conflicting Peds, #/hr	3	0	0	4	4	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	214	157	36	28	22

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	197	0	-	0	483 182
Stage 1	-	-	-	-	179 -
Stage 2	-	-	-	-	304 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1376	-	-	-	542 861
Stage 1	-	-	-	-	852 -
Stage 2	-	-	-	-	748 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1371	-	-	-	518 855
Mov Cap-2 Maneuver	-	-	-	-	518 -
Stage 1	-	-	-	-	818 -
Stage 2	-	-	-	-	745 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1371	-	-	-	626
HCM Lane V/C Ratio	0.032	-	-	-	0.079
HCM Control Delay (s)	7.7	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	19	0	0	1	5	6	0	19	0
Future Vol, veh/h	0	0	2	19	0	0	1	5	6	0	19	0
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	27	0	0	1	7	9	0	27	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.5	7.4	6.8	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	8%	0%	100%	0%
Vol Thru, %	42%	0%	0%	100%
Vol Right, %	50%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	12	2	19	19
LT Vol	1	0	19	0
Through Vol	5	0	0	19
RT Vol	6	2	0	0
Lane Flow Rate	17	3	27	27
Geometry Grp	1	1	1	1
Degree of Util (X)	0.018	0.003	0.032	0.03
Departure Headway (Hd)	3.724	3.43	4.213	4
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	962	1042	851	896
Service Time	1.744	1.454	2.23	2.018
HCM Lane V/C Ratio	0.018	0.003	0.032	0.03
HCM Control Delay	6.8	6.5	7.4	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0.1	0.1

Intersection

Intersection Delay, s/veh 7.1

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	2	11	2	4	0	6	9	0	0	31	23
Future Vol, veh/h	5	2	11	2	4	0	6	9	0	0	31	23
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Heavy Vehicles, %	6	6	6	17	17	17	2	2	2	2	2	2
Mvmt Flow	6	2	13	2	5	0	7	10	0	0	36	27
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7	7.5	7.2	7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	28%	33%	0%
Vol Thru, %	60%	11%	67%	57%
Vol Right, %	0%	61%	0%	43%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	15	18	6	54
LT Vol	6	5	2	0
Through Vol	9	2	4	31
RT Vol	0	11	0	23
Lane Flow Rate	17	21	7	63
Geometry Grp	1	1	1	1
Degree of Util (X)	0.02	0.022	0.009	0.065
Departure Headway (Hd)	4.11	3.836	4.413	3.741
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	872	932	811	959
Service Time	2.13	1.864	2.441	1.756
HCM Lane V/C Ratio	0.019	0.023	0.009	0.066
HCM Control Delay	7.2	7	7.5	7
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0.2

HCM 6th TWSC  
3: Toliver Road & Mary Drive

05/07/2021

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	14	135	130	5	23	26
Future Vol, veh/h	14	135	130	5	23	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	10	10	8	8	5	5
Mvmt Flow	19	180	173	7	31	35

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	180	0	-	0	395
Stage 1	-	-	-	-	177
Stage 2	-	-	-	-	218
Critical Hdwy	4.2	-	-	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	2.29	-	-	-	3.545
Pot Cap-1 Maneuver	1349	-	-	-	604
Stage 1	-	-	-	-	846
Stage 2	-	-	-	-	811
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1349	-	-	-	594
Mov Cap-2 Maneuver	-	-	-	-	594
Stage 1	-	-	-	-	832
Stage 2	-	-	-	-	811

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1349	-	-	-	710
HCM Lane V/C Ratio	0.014	-	-	-	0.092
HCM Control Delay (s)	7.7	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Intersection Delay, s/veh	7.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	0	2	16	0	0	5	19	26	1	17	0
Future Vol, veh/h	0	0	2	16	0	0	5	19	26	1	17	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	3	21	0	0	7	25	34	1	22	0
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	6.6	7.4	7	7.2
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	10%	0%	100%	6%
Vol Thru, %	38%	0%	0%	94%
Vol Right, %	52%	100%	0%	0%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	50	2	16	18
LT Vol	5	0	16	1
Through Vol	19	0	0	17
RT Vol	26	2	0	0
Lane Flow Rate	66	3	21	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.068	0.003	0.025	0.027
Departure Headway (Hd)	3.701	3.504	4.29	4.035
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	969	1017	833	888
Service Time	1.719	1.54	2.322	2.057
HCM Lane V/C Ratio	0.068	0.003	0.025	0.027
HCM Control Delay	7	6.6	7.4	7.2
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.2	0	0.1	0.1

Intersection

Intersection Delay, s/veh 7.3

Intersection LOS A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	21	4	11	0	1	0	16	46	3	0	29	18
Future Vol, veh/h	21	4	11	0	1	0	16	46	3	0	29	18
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	5	13	0	1	0	19	55	4	0	35	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left SB		NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right NB		SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.4	7.3	7.5	7.1
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	58%	0%	0%
Vol Thru, %	71%	11%	100%	62%
Vol Right, %	5%	31%	0%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	36	1	47
LT Vol	16	21	0	0
Through Vol	46	4	1	29
RT Vol	3	11	0	18
Lane Flow Rate	77	43	1	56
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.049	0.001	0.06
Departure Headway (Hd)	4.074	4.099	4.199	3.839
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	878	867	844	929
Service Time	2.105	2.155	2.265	1.877
HCM Lane V/C Ratio	0.088	0.05	0.001	0.06
HCM Control Delay	7.5	7.4	7.3	7.1
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.2	0	0.2

HCM 6th TWSC  
3: Toliver Road & Mary Drive

05/07/2021

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	42	178	130	36	26	22
Future Vol, veh/h	42	178	130	36	26	22
Conflicting Peds, #/hr	3	0	0	4	4	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	214	157	43	31	27

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	204	0	-	0	503 186
Stage 1	-	-	-	-	183 -
Stage 2	-	-	-	-	320 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1368	-	-	-	528 856
Stage 1	-	-	-	-	848 -
Stage 2	-	-	-	-	736 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1363	-	-	-	502 850
Mov Cap-2 Maneuver	-	-	-	-	502 -
Stage 1	-	-	-	-	809 -
Stage 2	-	-	-	-	733 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1363	-	-	-	618
HCM Lane V/C Ratio	0.037	-	-	-	0.094
HCM Control Delay (s)	7.7	0	-	-	11.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

# Preliminary Traffic Signal Warrant Analysis



Project Name: River Meadows Subdivision  
 Intersection: Toliver Road at Mary Drive  
 Scenario: 2023 Background Plus Site Trips

Number of Major Street Lanes: 1 PM Peak Hour Volume 386 (sum of both approaches)  
 Number of Minor Street Lanes 1 PM Peak Hour Volume 43 (highest-volume approach)<sup>a</sup>  
 Posted or 85th percentile speed > 40 mph: No  
 Isolated Population Less than 10,000: Yes

## Warrant 1, Eight-Hour Vehicular Volume

### Condition A - Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

### Condition B - Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on minor street (total of both approaches)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

### Warrant Analysis Calculations

	8th Highest Hour <sup>b</sup>	Minimum Volume	Warrant Satisfied?
<b>Condition A - Minimum Vehicular Volume</b>			
Major Street Volume	218	350	
Minor Street Volume	24	105	<b>No</b>
<b>Condition B - Interruption of Continuous Traffic</b>			
Major Street Volume	218	525	
Minor Street Volume	24	53	<b>No</b>
<b>Combination Warrant<sup>c</sup></b>			
Major Street Volume	218	420	
Minor Street Volume	24	84	<b>No</b>

<sup>a</sup> Minor-Street right turn volumes are reduced to account for the impact of right-turns on red.

<sup>b</sup> Eighth-highest hour volumes are calculated as 5.65 percent of the expected daily traffic volume.

<sup>c</sup> This warrant should be used only after adequate trial of other alternatives has failed to solve traffic problems.



## Left-Turn Lane Warrant Analysis

Two-Lane Roadway, Major-Street Approach, Stop-Controlled Intersection



Location: River Meadows Subdivision  
 Scenario: 2023 Background plus Site Trips  
 Date: 5/7/2021

Variable	Value
85 <sup>th</sup> percentile speed, mph:	25
Left turn volume ( $V_A$ ), veh/h:	42
Percent of left-turns in advancing volume ( $V_A$ ), %:	19%
Advancing volume ( $V_A$ ), veh/h:	220
Opposing volume ( $V_O$ ), veh/h:	166

Variable	Value
Limiting advancing volume ( $V_A$ ), veh/h:	426
<b>Guidance for determining the need for a major-road left-turn bay:</b>	
<b>Left-turn treatment NOT warranted.</b>	

### CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

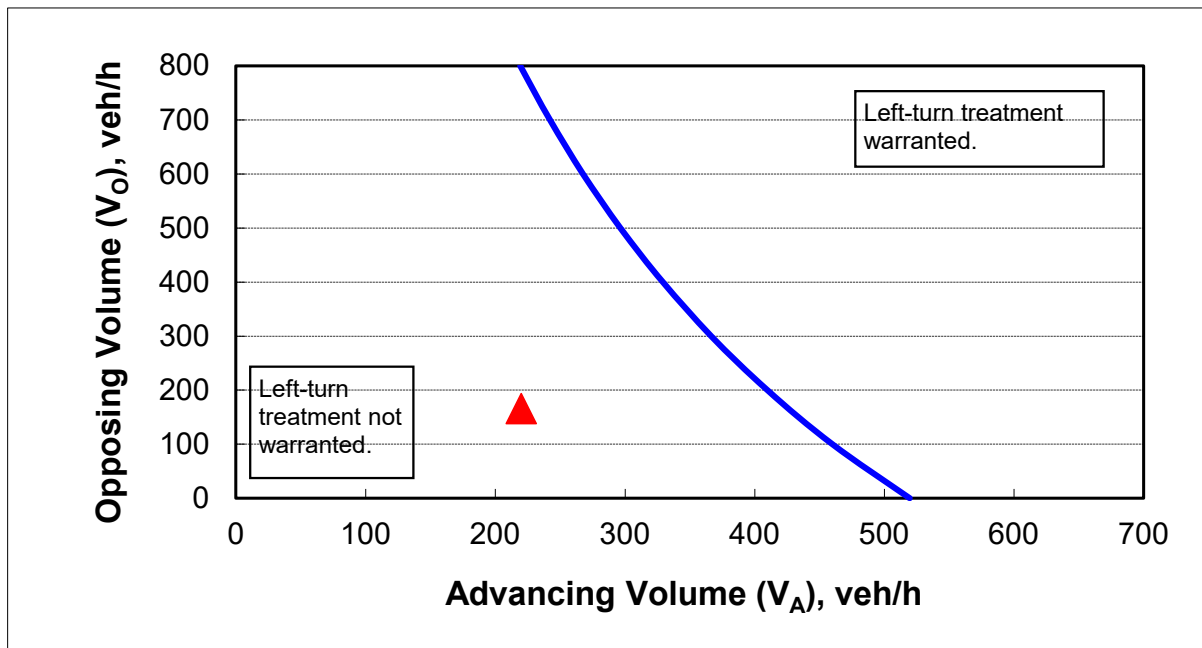
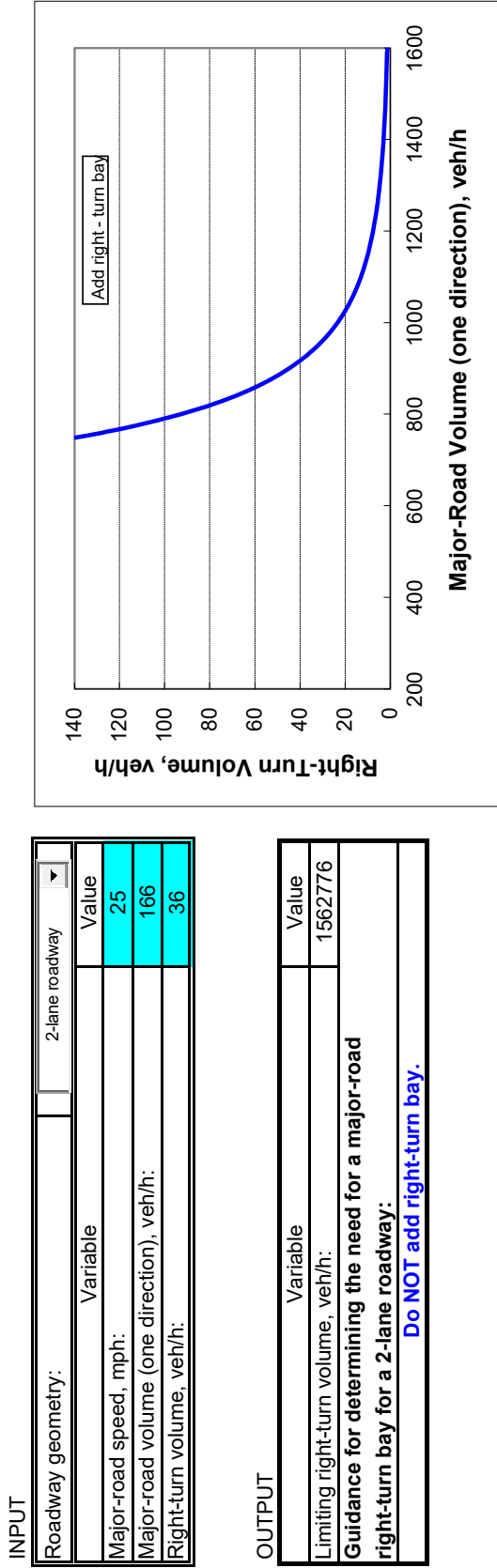


Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.





**SEC**  
*Symons Engineering Consultants, Inc.*

*12805 S.E. Foster Road  
Portland, OR 97236  
(503) 760-1353*

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## **PRELIMINARY DRAINAGE REPORT**

for

### **RIVER MEADOWS SUBDIVISION**

5S2E05 TL 2002  
Molalla, Oregon

MAY 2021

## TABLE OF CONTENTS

0.0	PROJECT INFORMATION	PAGE 3
0.1	Owner .....	3
0.2	Contractor / Agent .....	3
0.3	Reviewing Agency .....	3
0.4	Project Engineer .....	3
1.0	PROJECT OVERVIEW & DESCRIPTION	PAGE 4
1.1	Vicinity Map .....	4
1.2	Project Description .....	4
2.0	EXISTING CONDITIONS	PAGE 5
2.1	Site Description .....	5
2.2	Soil Conditions .....	5
2.3	Hydrologic Analysis .....	5
2.4	Drainage Basin Description .....	6
3.0	DEVELOPED CONDITIONS	PAGE 7
3.1	Drainage System Description .....	7
3.2	Run-On & Run-Off .....	8
3.3	Downstream Analysis .....	8
3.4	Hydraulic Analysis .....	8
3.5	Operation & Maintenance .....	9

### STORMWATER FACILITIES DETAILS & EXHIBITS

APPENDIX A	Basin Map
APPENDIX B	Custom Soil Resource Report
APPENDIX C	WES BMP Sizing Tool Report
APPENDIX D	HydroCAD Results
APPENDIX E	Operation & Maintenance

0.0 PROJECT INFORMATION

0.1 Owner

Dave Carter  
PO Box 352  
Beavercreek, OR 97004

0.2 Contractor / Agent

TBD

0.3 Reviewing Agency

City of Molalla  
PO Box 248  
117 N Molalla Avenue  
Molalla, OR 97038

0.4 Project Engineer

Dan Symons, P.E.  
Symons Engineering Consultants  
12805 SE Foster Rd.  
Portland, OR 97236  
503.760.1353

## 1.0 PROJECT OVERVIEW & DESCRIPTION

### 1.1 Vicinity Map



### 1.2 Project Description

Proposed for tax lot number 52E05 02002 is a subdivision of the existing 5.97 acre parcel, currently zoned Low Density Residential and within the Molalla Urban Growth Boundary (UGB), to 30 single-family residential lots along with all the required public infrastructure improvements and connections.

## 2.0 EXISTING CONDITIONS

### 2.1 Site Description

A triangular shaped piece of land, previously used as farmland, the property slopes from the southeast, at an elevation of about 350' on the north side of Eric Drive (surrounded by single-family homes) to the north property line along Vick Road at an elevation of about 335' (surrounded by exclusive farm use). The easterly edge of the property abuts the old railway and the western edge abuts farmland.

### 2.2 Soil Conditions

Soils underlying the proposed subdivision, Dayton Silt Loam, are classed as Hydrologic D soils. These soils are tight in formation and do not readily transmit water. Infiltration is not expected given these site constraints. See Appendix B for the Custom Soil Resource Report.

### 2.3 Hydrologic Analysis

Historic conditions must be evaluated in a model to quantify the allowable runoff for this site for the design storm events. A meadow was selected as the cover type most closely matching historical conditions prior to being developed for agriculture. Policy restricts post-developed runoff rates to historic runoff rates for the given design storms; 2-YR, 10-YR, and 25-YR.

Site Conditions: Hydrologic Soil Group: D, static groundwater ~45' bgs.

Hydrologic modeling parameters used:

24-HR RAINFALL		CURVE NUMBERS	
DESIGN STORM	(IN)	C <sub>N</sub>	DESCRIPTIONS
2-YR	2.50	98	ROOFS
5-YR	3.10	98	PAVEMENT
10-YR	3.45	98	RAIN ON WATER
25-YR	3.90	91	GRAVEL: D-SOIL
50-YR	4.20	80	D-SOIL: >75% COVER (GOOD)
100-YR	4.50	78	D-SOIL: MEADOW (HISTORIC)

NRCS TYPE 1A STORM DISTRIBUTION

Stormwater runoff for historical conditions were modeled to provided target discharge flow rates for post-development stormwater management.

The most downstream end of the stormwater tract will not be captured to the detention pond or stormwater management system. This unmitigated runoff from

mostly landscaped surfaces and the stormwater maintenance access road. To account for this unmitigated runoff the allowable discharge rates for design flows were reduced as follows:

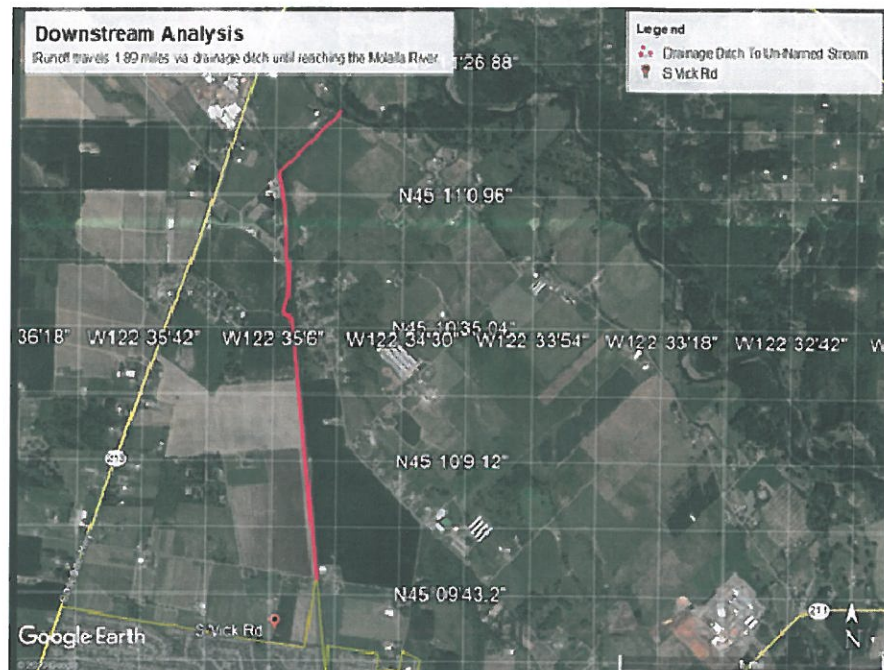
RIVER MEADOWS	PEAK FLOW RATES (cfs)		
	2-YR	10-YR	25-YR
HISTORIC DISCHARGE (264,050 SF)	0.78	1.76	2.28
UMITIGATED RUNOFF (6,887 SF)	0.04	0.07	0.09
ALLOWABLE DISCHARGE (257,163 SF)	0.74	1.69	2.20

See Appendix D for HydroCAD modeling results.

## 2.4 Drainage Basin Description

Natural drainage paths have been modified from historic conditions by farming practices. Drainage, at present, circumnavigates farmed fields into the ditches and culverts that have been constructed and maintained to match the layout of local roads and rail lines.

The portion of drainage ditch network our project drains to is surrounded by exclusive farm use. This ditchwork continues northward until it reaches the riparian corridor of the Molalla River. This drainage pathway remains somewhat hydrologically isolated between the rail line and HWY 213 while flowing northward for almost 2 miles, and then slightly to the northeast, to join the Molalla River.





### 3.0 DEVELOPED CONDITIONS

#### 3.1 Drainage System Description

A stormwater management system has been designed to collect, treat, and convey all surface runoff from developed surfaces in an extended dry-detention stormwater pond at the northern end of the property.

Rachel Lane is to be extended northward down the center of the parcel. A 12" stormwater sewer main is proposed along Rachel Lane. Catch basins collect runoff from paved surfaces (both street and sidewalk) in the ROW and connect via 10" lines to the stormwater sewer main. Catch basins have been placed so flows will be captured prior to being allowed to discharge over the property line. Manholes are placed at alignment and grade changes along the main stormwater sewer line. Each single-family residential lot is provided a 6" stormwater sewer lateral (tee) with a cleanout located at the ROW frontage. Stormwater piping was sized for the 25-YR event.

Stormwater is piped to a water quality manhole where a required sump volume aids in sedimentation and the removal of suspended solids from the stormwater effluent. Stormwater then fills the detention pond where water quality treatment is provided through bioremediation in the vegetation and soil media of the stormwater pond, and a flow control riser detains stormwater in the pond to discharge at a rate calculated to match historic conditions.

Whatever infiltration or subsurface flows remain available in the hydrologic D soils will be accessed once the engineered soil media in the detention pond is saturated. However, no part of the stormwater management system was designed to rely upon infiltration.

No structures or utilities are threatened by flooding if the stormwater detention pond fills and overtops. Tailwater effects or outlet blockages which could cause the pond to fill and then overtop will access the emergency spillway.

Flow control is provided. The 2-YR, 10-YR, & 25-YR design storm events are successfully constrained to allowable discharge flow rates:

RIVER MEADOWS	PEAK FLOW RATES (cfs)						TIME OF CONCENTRATION (min)	
	2-YR		10-YR		25-YR		HIST.	POST-DEV
	ALLOWABLE	POST-DEV	ALLOWABLE	POST-DEV	ALLOWABLE	POST-DEV		
IMPERVIOUS AREA RUNOFF	0.74	0.38	1.69	0.78	2.20	1.22	11.0	5.0

The 100-YR design storm event is conveyed.

See Appendix A for a Basin Map.

### 3.2 Run-On & Run-Off

Currently, rainfall falls on crop cover and collects, first as sheet flow, then shallow concentrated flow, to the existing drainage ditches at the northerly end of the property and flows north (under Vick Road) in roadside drainage ditching until reaching the Molalla River. Existing grade also directs some flow to the westerly property line.

A small amount of impervious area run-on exists from the paved stub on Rachel Lane just south of the site. The stormwater management system has been sized to account for this run-on. These flows will be collected, detained, treated for water quality and flow control, and then discharged to the existing surface water connected to the drainage ditch along Vick Road.

### 3.3 Downstream Analysis

There are no known blockages or limitation to flow in the existing downstream drainage system. Discharge flow rates from development are attenuated to match historic conditions before leaving the site. Adverse downstream effects are not anticipated due to proposed development.

### 3.4 Hydraulic Analysis

Hydraulic Analysis was conducted using an iterative process with the WES BMP Sizing Tool and modeling the Santa Barbara Urban Hydrology (SBUH) runoff characteristics for NRCS TYPE 1A Storms using HydroCAD modeling software.

First, the WES BMP Sizing Tool was used to create and then confirm the size of the detention pond for this proposed subdivision development. See Appendix C for WES BMP Sizing Tool Report.

For the most part the design of the detention pond and flow control structure conform to standard details. However, maintaining free discharge to the existing ditch drainage system and respecting on-site grading and contours renders the BMP Sizing Tool's prescribed orifice controls unusable.

Then, another orifice configuration was determined to 1) accommodate the available discharge elevation, while 2) maintaining the flow path for the water quality design storm, and 3) maintaining all flow control to allowable discharge rates. This configuration was modeled in HydroCAD. See Appendix D for HydroCAD Results.

Finally, the output from HydroCAD was then imported, using the method provided by WES, as Custom Pond Geometry to confirm the proposed alternate orifice design and pond sizing still meets flow-duration and flow-frequency curve matching to reduce the effects of hydromodification.

The slip sheet from excel converts the Stage-Discharge-Storage relationship exported from HydroCAD to custom pond geometry that the Sizing Tool can evaluate. The blue line from the flow-frequency and flow-duration charts on the second WES BMP Sizing Report is even more constrained than it is on the first – meaning our proposed design and orifice control is more conservative than the initially proposed configuration.

### 3.5 Operation & Maintenance

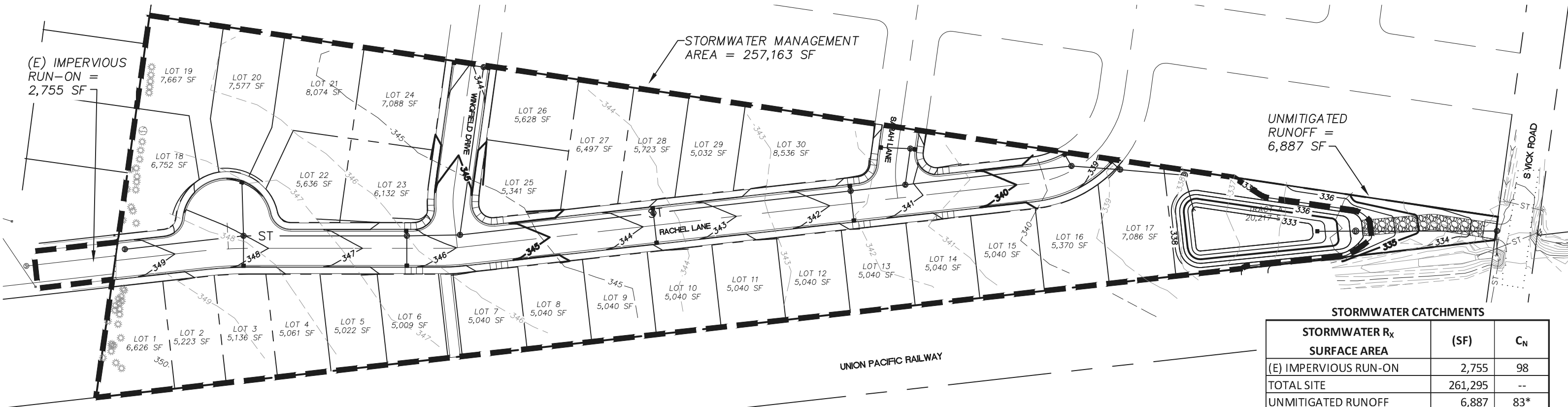
Operation and maintenance for the stormwater management system will be provided by the City of Molalla. Stormwater will be managed for the entire subdivision in the proposed stormwater detention pond. Gated stormwater maintenance access will be provided from Vick Rd. A 15' wide gravel access road is paved for the driveway apron to reduce the transport of sediment onto the street. Both the Water Quality Manhole and Flow Control Manhole will be accessible to within 10' by truck for regular maintenance of these two structures.

Private property owners of the single-family residences will be responsible for the stormwater cleanout and downspout connections located on each individual property.

See Appendix E for Operation & Maintenance details.

# APPENDIX A

## Basin Map



(E) IMPERVIOUS  
RUN-ON =  
2,755 SF

STORMWATER MANAGEMENT  
AREA = 257,163 SF

UNMITIGATED  
RUNOFF =  
6,887 SF

**STORMWATER CATCHMENTS**

STORMWATER R <sub>x</sub> SURFACE AREA	(SF)	C <sub>N</sub>
(E) IMPERVIOUS RUN-ON	2,755	98
TOTAL SITE	261,295	--
UNMITIGATED RUNOFF	6,887	83*
STORMWATER R <sub>x</sub> AREA	257,163	--

\*COMPOSITE CURVE NUMBER

HISTORICAL SURFACE AREA	(SF)	C <sub>N</sub>
RUN-ON AS MEADOW	2,755	78
TOTAL SITE AS MEADOW	261,295	78
HISTORIC TOTAL	264,050	78

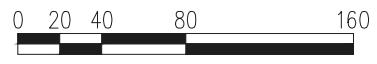
UNMITIGATED RUNOFF SURFACE AREA	(SF)	C <sub>N</sub>
PAVING	180	98
GRAVEL	1,825	91
GREEN SPACE	4,882	80
UNMITIGATED RUNOFF TOTAL	6,887	83*

\*COMPOSITE CURVE NUMBER

POST-DEVELOPMENT SURFACE AREA	(SF)	C <sub>N</sub>
LOTS: ROOFS	71,700	98
LOTS: DRIVEWAYS	10,800	98
LOTS: GREEN SPACE	93,076	80
PAVING	64,458	98
POND	8,064	98
GREEN SPACE	9,065	80
STORMWATER R <sub>x</sub> AREA	257,163	--

# BASIN MAP

SCALE: 1" = 80'



APPENDIX B

Custom Soil Resource Report

# Custom Soil Resource Report for Clackamas County Area, Oregon

## RIVER MEADOWS



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

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<b>Preface</b> .....	2
<b>Soil Map</b> .....	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Clackamas County Area, Oregon.....	10
29—Dayton silt loam.....	10

# Soil Map

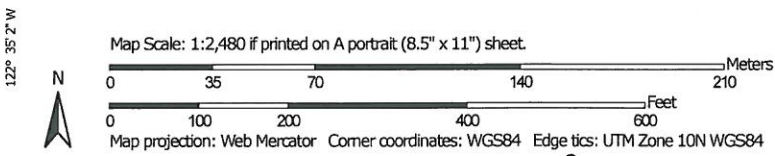
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map



Soil Map may not be valid at this scale.



## MAP LEGEND

- Area of Interest (AOI)
- Spoil Area
- Area of Interest (AOI)
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points
- Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Streams and Canals
- Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads
- Background
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Clackamas County Area, Oregon  
 Survey Area Data: Version 16, Jun 11, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 19, 2015—Sep 13, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
29	Dayton silt loam	7.0	100.0%
<b>Totals for Area of Interest</b>		<b>7.0</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

## Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Clackamas County Area, Oregon

### 29—Dayton silt loam

#### Map Unit Setting

*National map unit symbol:* 2242  
*Elevation:* 150 to 400 feet  
*Mean annual precipitation:* 40 to 50 inches  
*Mean annual air temperature:* 52 to 54 degrees F  
*Frost-free period:* 165 to 210 days  
*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Dayton, thick surface, and similar soils:* 90 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Dayton, Thick Surface

##### Setting

*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Stratified glaciolacustrine deposits

##### Typical profile

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 21 inches:* silty clay loam  
*H3 - 21 to 60 inches:* clay

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* 12 to 24 inches to abrupt textural change  
*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water capacity:* Low (about 4.5 inches)

##### Interpretive groups

*Land capability classification (irrigated):* 4w  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Forage suitability group:* Poorly Drained (G002XY006OR)  
*Other vegetative classification:* Poorly Drained (G002XY006OR)  
*Hydric soil rating:* Yes

#### Minor Components

##### Concord

*Percent of map unit:* 3 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread



Custom Soil Resource Report

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Poorly Drained (G002XY006OR)  
*Hydric soil rating:* Yes

**Huberly**

*Percent of map unit:* 2 percent  
*Landform:* Swales on terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Other vegetative classification:* Poorly Drained (G002XY006OR)  
*Hydric soil rating:* Yes

APPENDIX C

WES BMP Sizing Tool Report

## WES BMP Sizing Report

### Project Information

Project Name	River Meadows
Project Type	Subdivision
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	OutofDistrict

### Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
ROW - Run On Paving	2,755	Grass	ConventionalConcrete	D	Detention Pond
ROW - Onsite Paving	61,703	Grass	ConventionalConcrete	D	Detention Pond
ROW - Green Space	9,065	Grass	LandscapeDsoil	D	Detention Pond
ROW - Rain on Water	8,064	Grass	ConventionalConcrete	D	Detention Pond
LOTS - Roofs	71,700	Grass	Roofs	D	Detention Pond
LOTS - Driveway	10,800	Grass	ConventionalConcrete	D	Detention Pond
LOTS - Green Space	93,076	Grass	LandscapeDsoil	D	Detention Pond

### LID Facility Sizing Details

#### Pond Sizing Details

Pond ID	Design Criteria(1)	Facility Soil Type	Max Depth (ft)(2)	Top Area (sq-ft)	Side Slope (1:H)	Facility Vol. (cu-ft)(3)	Water Storage Vol. (cu-ft)(4)	Adequate Size?
Detention Pond	FCWQT	D1	6.00	8,064.0	4	27,128.7	21,832.8	Yes

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.
4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.

# Simple Pond Geometry Configuration

Pond ID: Detention Pond  
 Design: FlowControlAndTreatment

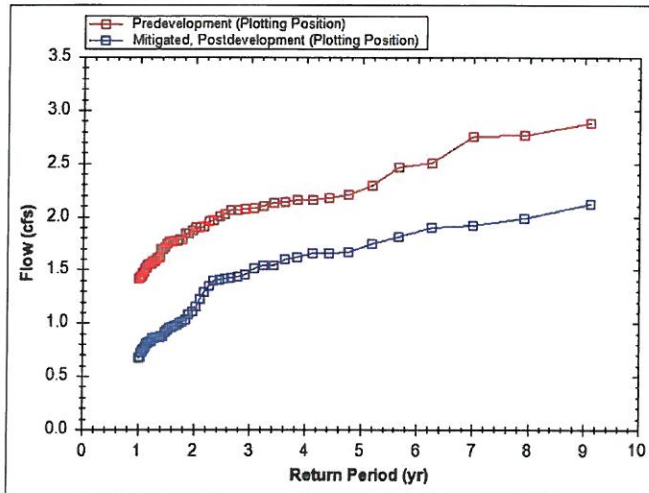
## Shape Curve

Depth (ft)	Area (sq ft)
6.0	8,064.0

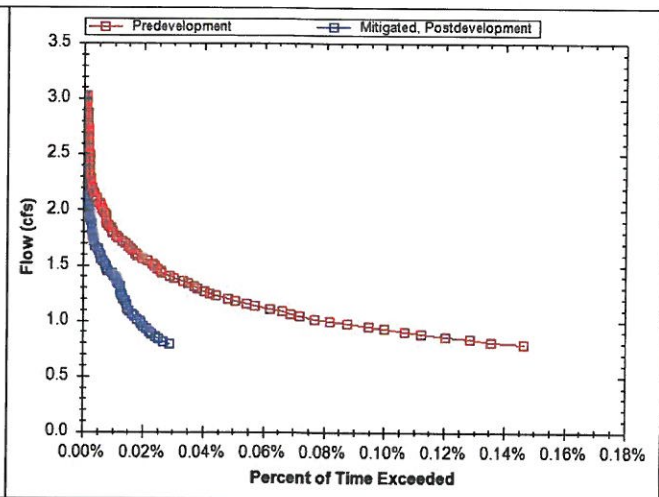
## Outlet Structure Details

Lower Orifice Invert (ft)	0.0
Lower Orifice Dia (in)	3.5
Upper Orifice Invert(ft)	4.0
Upper Orifice Dia (in)	7.8
Overflow Weir Invert(ft)	5.0
Overflow Weir Length (ft)	6.3

Flow Frequency Chart



Flow Duration Chart



Export from HydroCAD	
Elevation (ft)	Discharge (cfs)
333	0
333.1	0.033
333.2	0.136
333.3	0.188
333.4	0.196
333.5	0.205
333.6	0.213
333.7	0.221
333.8	0.229
333.9	0.237
334	0.245
334.1	0.254
334.2	0.262
334.3	0.27
334.4	0.278
334.5	0.287
334.6	0.295
334.7	0.303
334.8	0.312
334.9	0.321
335	0.329
335.1	0.338
335.2	0.347
335.3	0.356
335.4	0.365
335.5	0.374
335.6	0.383
335.7	0.392
335.8	0.401
335.9	0.41
336	0.42
336.1	0.429
336.2	0.438
336.3	0.562
336.4	1.054
336.5	1.75
336.6	2.922
336.7	3.924
336.8	5.008
336.9	6.263
337	7.68

Export from HydroCAD	
Elevation (ft)	Storage (cf)
333	0
333.1	343
333.2	698
333.3	1,067
333.4	1,448
333.5	1,843
333.6	2,252
333.7	2,675
333.8	3,112
333.9	3,563
334	4,029
334.1	4,510
334.2	5,005
334.3	5,516
334.4	6,042
334.5	6,584
334.6	7,141
334.7	7,715
334.8	8,304
334.9	8,910
335	9,533
335.1	10,173
335.2	10,829
335.3	11,503
335.4	12,194
335.5	12,902
335.6	13,628
335.7	14,372
335.8	15,134
335.9	15,914
336	16,713
336.1	17,531
336.2	18,366
336.3	19,220
336.4	20,093
336.5	20,985
336.6	21,895
336.7	22,825
336.8	23,775
336.9	24,744
337	25,732

Synthetic SA		Delta Vol (cf)		SA (Synth) (sf)	
Depth (ft)	Volume (cf)	Delta Depth (ft)	Delta Vol (cf)	Delta Depth (ft)	SA (Synth) (sf)
0.00	0	0	0	0	0
0.10	343	0.1	343	0.1	3430
0.20	698	0.1	355	0.1	3550
0.30	1067	0.1	369	0.1	3690
0.40	1448	0.1	381	0.1	3810
0.50	1843	0.1	395	0.1	3950
0.60	2252	0.1	409	0.1	4090
0.70	2675	0.1	423	0.1	4230
0.80	3112	0.1	437	0.1	4370
0.90	3563	0.1	451	0.1	4510
1.00	4029	0.1	466	0.1	4660
1.10	4510	0.1	481	0.1	4810
1.20	5005	0.1	495	0.1	4950
1.30	5516	0.1	511	0.1	5110
1.40	6042	0.1	526	0.1	5260
1.50	6584	0.1	542	0.1	5420
1.60	7141	0.1	557	0.1	5570
1.70	7715	0.1	574	0.1	5740
1.80	8304	0.1	589	0.1	5890
1.90	8910	0.1	606	0.1	6060
2.00	9533	0.1	623	0.1	6230
2.10	10173	0.1	640	0.1	6400
2.20	10829	0.1	656	0.1	6560
2.30	11503	0.1	674	0.1	6740
2.40	12194	0.1	691	0.1	6910
2.50	12902	0.1	708	0.1	7080
2.60	13628	0.1	726	0.1	7260
2.70	14372	0.1	744	0.1	7440
2.80	15134	0.1	762	0.1	7620
2.90	15914	0.1	780	0.1	7800
3.00	16713	0.1	799	0.1	7990
3.10	17531	0.1	818	0.1	8180
3.20	18366	0.1	835	0.1	8350
3.30	19220	0.1	854	0.1	8540
3.40	20093	0.1	873	0.1	8730
3.50	20985	0.1	892	0.1	8920
3.60	21895	0.1	910	0.1	9100
3.70	22825	0.1	930	0.1	9300
3.80	23775	0.1	950	0.1	9500
3.90	24744	0.1	969	0.1	9690
4.00	25732	0.1	988	0.1	9880

Custom Geometry (WES BMP)		
Depth (ft)	Area (sf)	Flow (cfs)
0.00	0	0.000
0.10	3430	0.033
0.20	3550	0.136
0.30	3690	0.188
0.40	3810	0.196
0.50	3950	0.205
0.60	4090	0.213
0.70	4230	0.221
0.80	4370	0.229
0.90	4510	0.237
1.00	4660	0.245
1.10	4810	0.254
1.20	4950	0.262
1.30	5110	0.270
1.40	5260	0.278
1.50	5420	0.287
1.60	5570	0.295
1.70	5740	0.303
1.80	5890	0.312
1.90	6060	0.321
2.00	6230	0.329
2.10	6400	0.338
2.20	6560	0.347
2.30	6740	0.356
2.40	6910	0.365
2.50	7080	0.374
2.60	7260	0.383
2.70	7440	0.392
2.80	7620	0.401
2.90	7800	0.410
3.00	7990	0.420
3.10	8180	0.429
3.20	8350	0.438
3.30	8540	0.562
3.40	8730	1.054
3.50	8920	1.750
3.60	9100	2.922
3.70	9300	3.924
3.80	9500	5.008
3.90	9690	6.263
4.00	9880	7.680

## WES BMP Sizing Report

### Project Information

Project Name	River Meadows
Project Type	Subdivision
Location	
Stormwater Management Area	0
Project Applicant	
Jurisdiction	OutofDistrict

### Drainage Management Area

Name	Area (sq-ft)	Pre-Project Cover	Post-Project Cover	DMA Soil Type	BMP
ROW - Run On Paving	2,755	Grass	ConventionalConcrete	D	Detention Pond
ROW - Onsite Paving	61,703	Grass	ConventionalConcrete	D	Detention Pond
ROW - Green Space	9,065	Grass	LandscapeDsoil	D	Detention Pond
ROW - Rain on Water	8,064	Grass	ConventionalConcrete	D	Detention Pond
LOTS - Roofs	71,700	Grass	Roofs	D	Detention Pond
LOTS - Driveway	10,800	Grass	ConventionalConcrete	D	Detention Pond
LOTS - Green Space	93,076	Grass	LandscapeDsoil	D	Detention Pond

### LID Facility Sizing Details

#### Pond Sizing Details

Pond ID	Design Criteria(1)	Facility Soil Type	Max Depth (ft)(2)	Top Area (sq-ft)	Side Slope (1:H)	Facility Vol. (cu-ft)(3)	Water Storage Vol. (cu-ft)(4)	Adequate Size?
Detention Pond	FCWQT	D1	6.00	8,064.0	4	27,128.7	21,832.8	Yes

1. FCWQT = Flow control and water quality treatment, WQT = Water quality treatment only

2. Depth is measured from the bottom of the facility and includes the three feet of media (drain rock, separation layer and growing media).

3. Maximum volume of the facility. Includes the volume occupied by the media at the bottom of the facility.
4. Maximum water storage volume of the facility. Includes water storage in the three feet of soil media assuming a 40 percent porosity.



## Custom Pond Geometry Configuration

Pond ID: Detention Pond

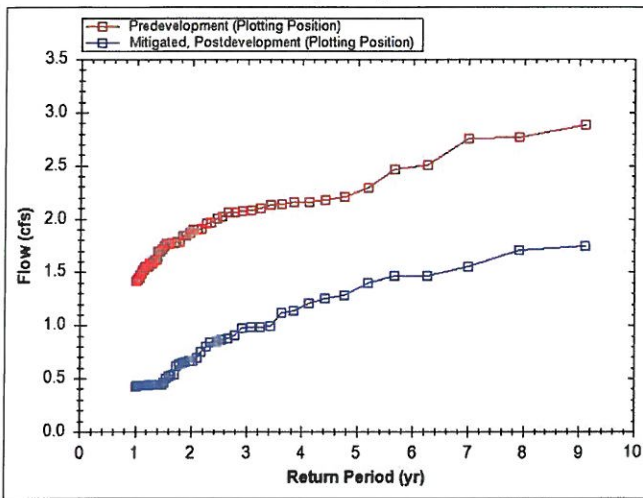
Design: FlowControlAndTreatment

### Shape Curve

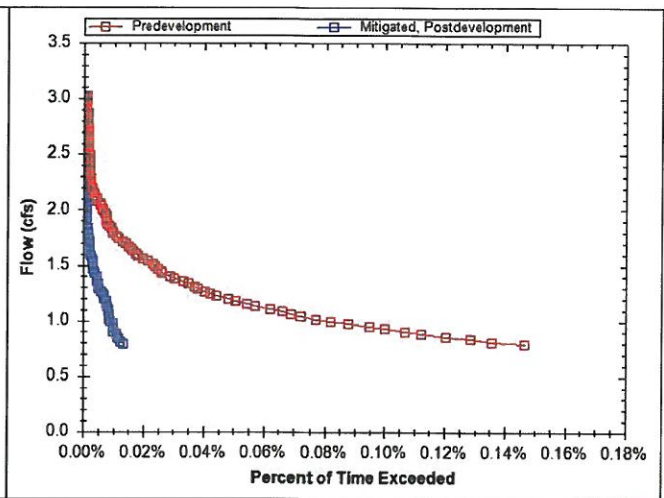
Depth (ft)	Area (sq ft)	Discharge (cfs)
.0	.0	.0
.1	3,430.0	.0
.2	3,550.0	.1
.3	3,690.0	.2
.4	3,810.0	.2
.5	3,950.0	.2
.6	4,090.0	.2
.7	4,230.0	.2
.8	4,370.0	.2
.9	4,510.0	.2
1.0	4,660.0	.2
1.1	4,810.0	.3
1.2	4,950.0	.3
1.3	5,110.0	.3
1.4	5,260.0	.3
1.5	5,420.0	.3
1.6	5,570.0	.3
1.7	5,740.0	.3
1.8	5,890.0	.3
1.9	6,060.0	.3
2.0	6,230.0	.3
2.1	6,400.0	.3
2.2	6,560.0	.3
2.3	6,740.0	.4
2.4	6,910.0	.4
2.5	7,080.0	.4
2.6	7,260.0	.4
2.7	7,440.0	.4
2.8	7,620.0	.4
2.9	7,800.0	.4
3.0	7,990.0	.4
3.1	8,180.0	.4
3.2	8,350.0	.4

3.3	8,540.0	.6
3.4	8,730.0	1.1
3.5	8,920.0	1.8
3.6	9,100.0	2.9
3.7	9,300.0	3.9
3.8	9,500.0	5.0
3.9	9,690.0	6.3
4.0	9,880.0	7.7

Flow Frequency Chart



Flow Duration Chart



## APPENDIX D

### HydroCAD Results



HISTORICAL

264,050 SF



UNMITIGATED  
RUNOFF

6,887 SF



IMPERVIOUS  
SURFACES



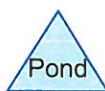
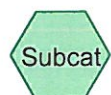
GREEN SPACE

STORMWATER Rx  
AREA

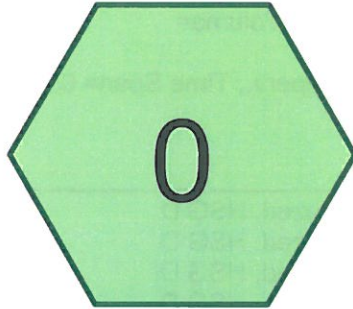


POND & FC  
STRUCTURE

257,163 SF

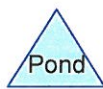


**Routing Diagram for River Meadows - May 2021**  
Prepared by Symons Engineering Consultants, Printed 5/19/2021  
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HISTORICAL

264,050 SF



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**Summary for Subcatchment 0: HISTORICAL**

Runoff = 0.778 cfs @ 8.03 hrs, Volume= 0.398 af, Depth= 0.79"

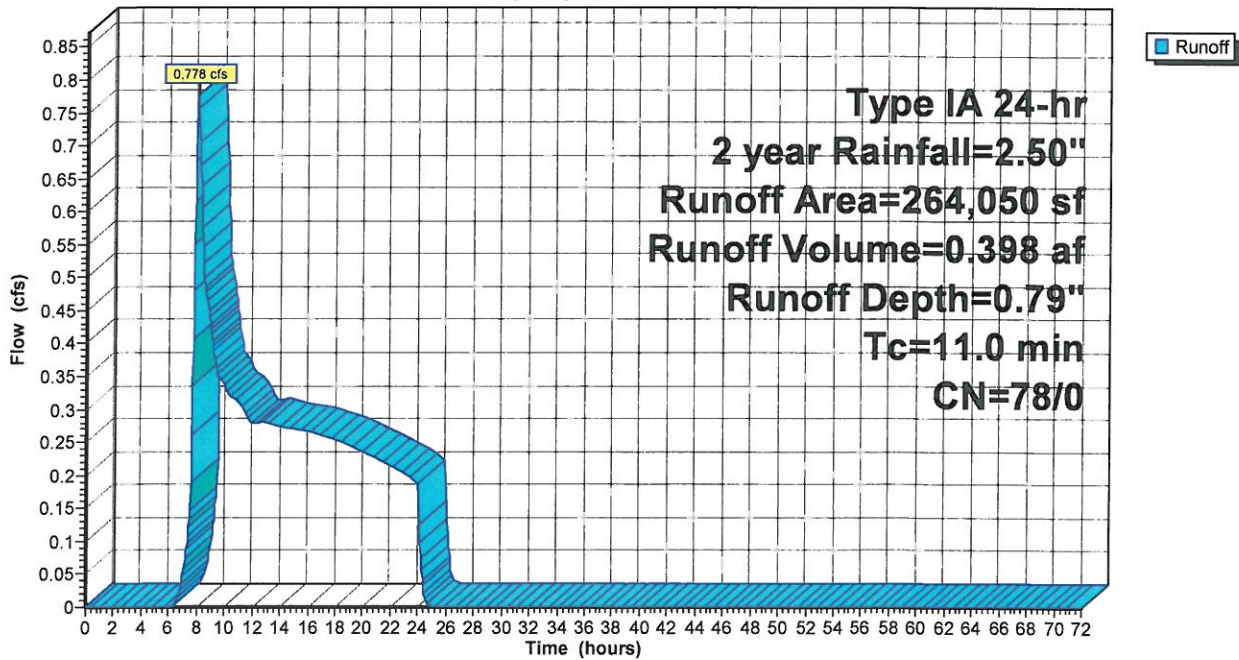
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 2 year Rainfall=2.50"

Area (sf)	CN	Description
2,755	78	Meadow, non-grazed, HSG D
61,703	78	Meadow, non-grazed, HSG D
9,065	78	Meadow, non-grazed, HSG D
* 8,064	78	Meadow, non-grazed, HSG D
* 71,700	78	Meadow, non-grazed, HSG D
* 10,800	78	Meadow, non-grazed, HSG D
* 93,076	78	Meadow, non-grazed, HSG D
* 6,887	78	Meadow, non-grazed, HSG D
264,050	78	Weighted Average
264,050	78	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0					Direct Entry, DIRECT - HISTORICAL

**Subcatchment 0: HISTORICAL**

Hydrograph



**Summary for Subcatchment 0: HISTORICAL**

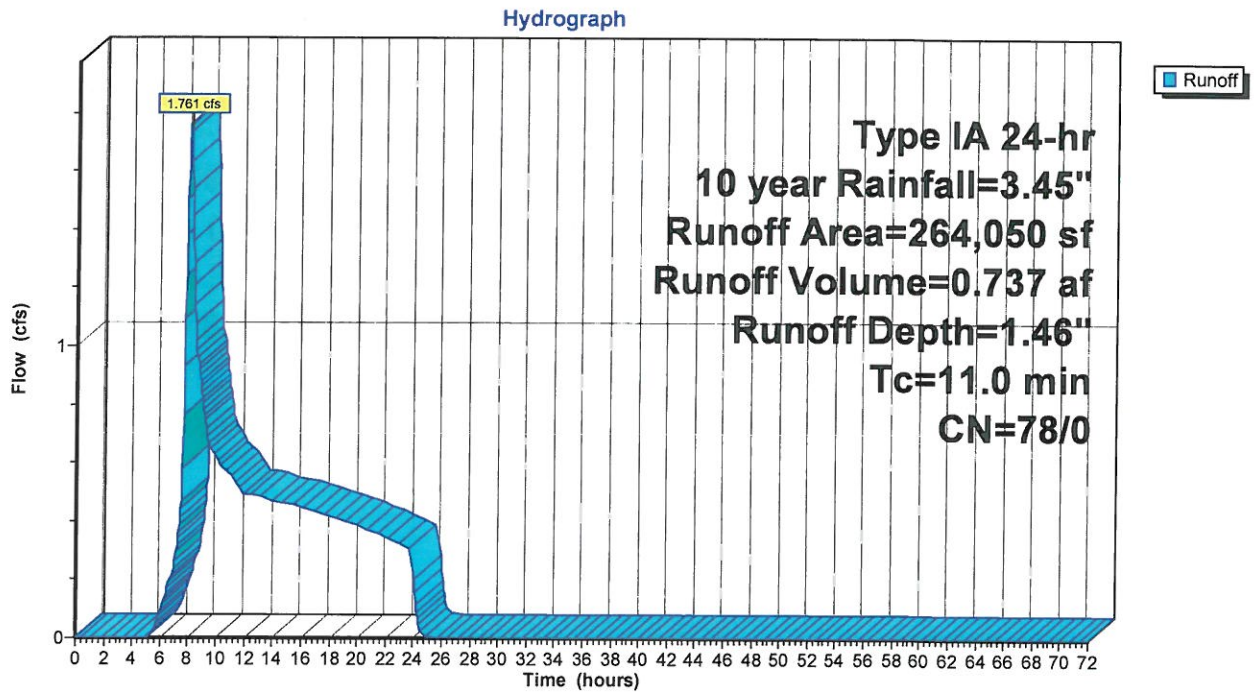
Runoff = 1.761 cfs @ 8.01 hrs, Volume= 0.737 af, Depth= 1.46"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 10 year Rainfall=3.45"

Area (sf)	CN	Description
2,755	78	Meadow, non-grazed, HSG D
61,703	78	Meadow, non-grazed, HSG D
9,065	78	Meadow, non-grazed, HSG D
* 8,064	78	Meadow, non-grazed, HSG D
* 71,700	78	Meadow, non-grazed, HSG D
* 10,800	78	Meadow, non-grazed, HSG D
* 93,076	78	Meadow, non-grazed, HSG D
* 6,887	78	Meadow, non-grazed, HSG D
264,050	78	Weighted Average
264,050	78	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0					Direct Entry, DIRECT - HISTORICAL

**Subcatchment 0: HISTORICAL**



**Summary for Subcatchment 0: HISTORICAL**

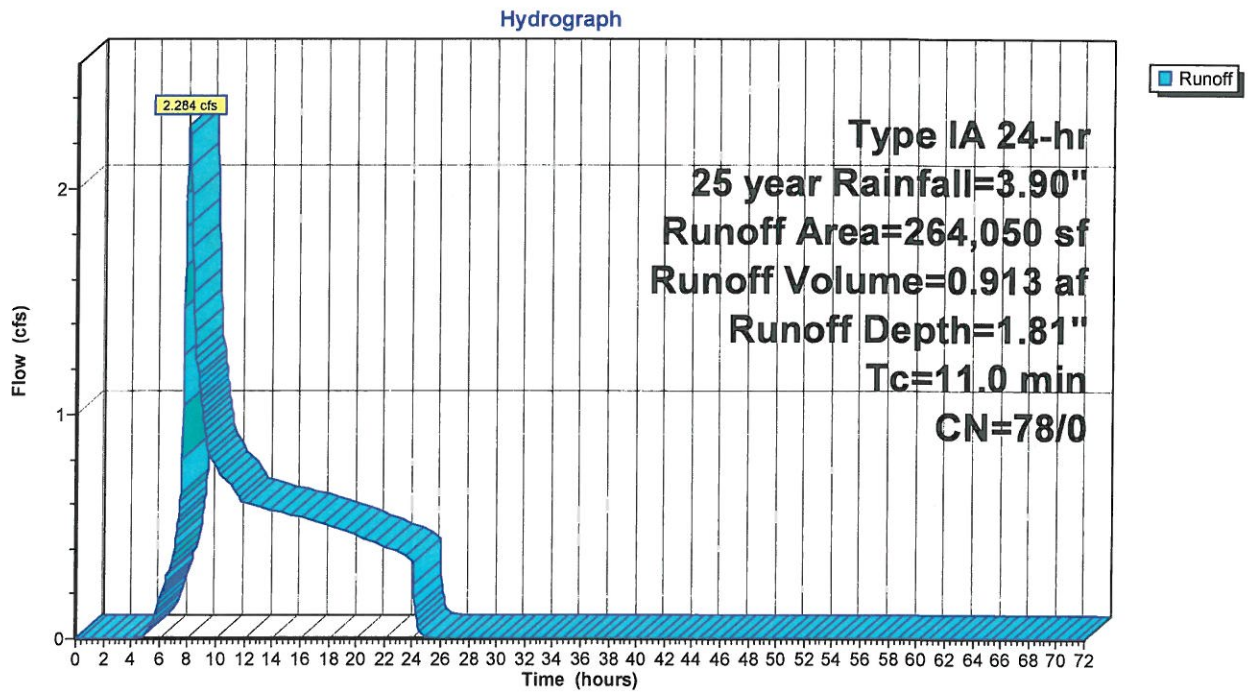
Runoff = 2.284 cfs @ 8.01 hrs, Volume= 0.913 af, Depth= 1.81"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 25 year Rainfall=3.90"

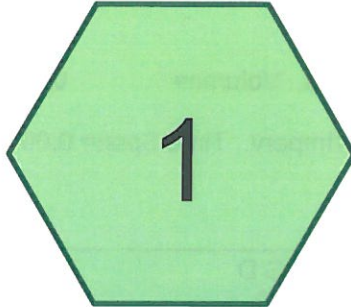
Area (sf)	CN	Description
2,755	78	Meadow, non-grazed, HSG D
61,703	78	Meadow, non-grazed, HSG D
9,065	78	Meadow, non-grazed, HSG D
* 8,064	78	Meadow, non-grazed, HSG D
* 71,700	78	Meadow, non-grazed, HSG D
* 10,800	78	Meadow, non-grazed, HSG D
* 93,076	78	Meadow, non-grazed, HSG D
* 6,887	78	Meadow, non-grazed, HSG D
264,050	78	Weighted Average
264,050	78	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.0					Direct Entry, DIRECT - HISTORICAL

**Subcatchment 0: HISTORICAL**

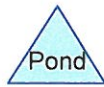






# UNMITIGATED RUNOFF

6,887 SF



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**Summary for Subcatchment 1: UNMITIGATED RUNOFF**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 0.038 cfs @ 7.98 hrs, Volume= 0.014 af, Depth= 1.09"

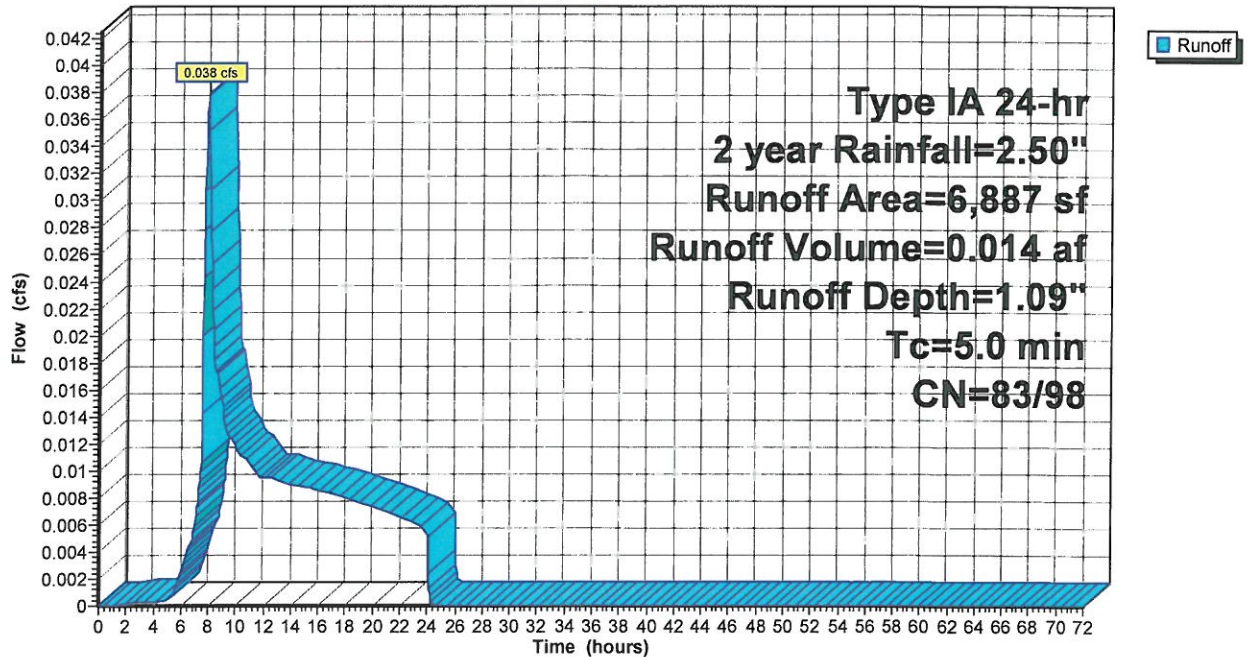
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
Type IA 24-hr 2 year Rainfall=2.50"

Area (sf)	CN	Description
180	98	Paved parking, HSG D
1,825	91	Gravel roads, HSG D
4,882	80	>75% Grass cover, Good, HSG D
6,887	83	Weighted Average
6,707	83	97.39% Pervious Area
180	98	2.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 1: UNMITIGATED RUNOFF**

Hydrograph



**Summary for Subcatchment 1: UNMITIGATED RUNOFF**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

Runoff = 0.070 cfs @ 7.98 hrs, Volume= 0.024 af, Depth= 1.85"

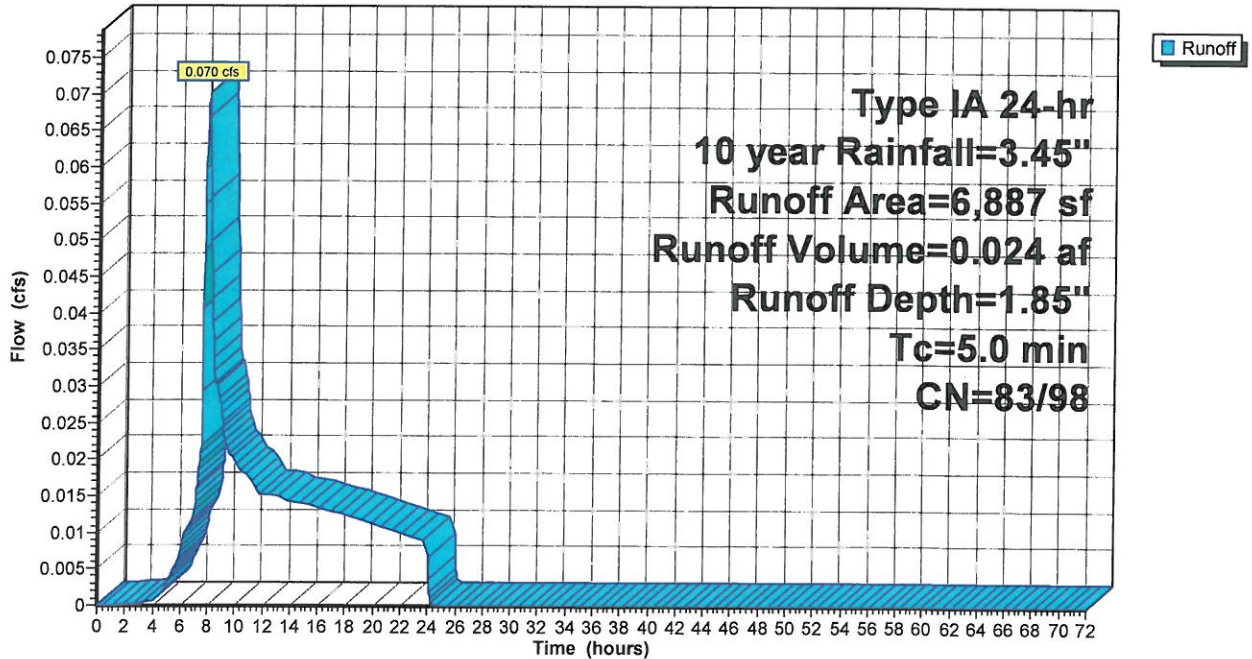
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs,  $dt = 0.05$  hrs  
 Type IA 24-hr 10 year Rainfall=3.45"

Area (sf)	CN	Description
180	98	Paved parking, HSG D
1,825	91	Gravel roads, HSG D
4,882	80	>75% Grass cover, Good, HSG D
6,887	83	Weighted Average
6,707	83	97.39% Pervious Area
180	98	2.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 1: UNMITIGATED RUNOFF**

Hydrograph



**Summary for Subcatchment 1: UNMITIGATED RUNOFF**

[49] Hint: Tc<2dt may require smaller dt

Runoff = 0.086 cfs @ 7.97 hrs, Volume= 0.029 af, Depth= 2.24"

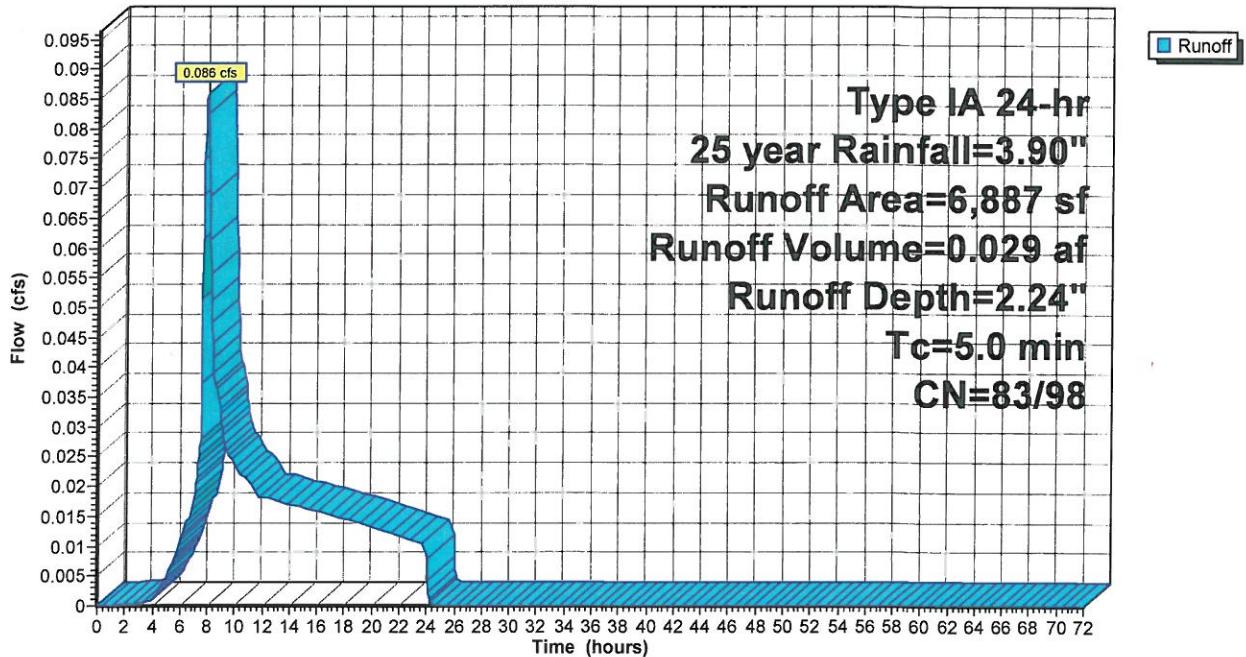
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 25 year Rainfall=3.90"

Area (sf)	CN	Description
180	98	Paved parking, HSG D
1,825	91	Gravel roads, HSG D
4,882	80	>75% Grass cover, Good, HSG D
6,887	83	Weighted Average
6,707	83	97.39% Pervious Area
180	98	2.61% Impervious Area

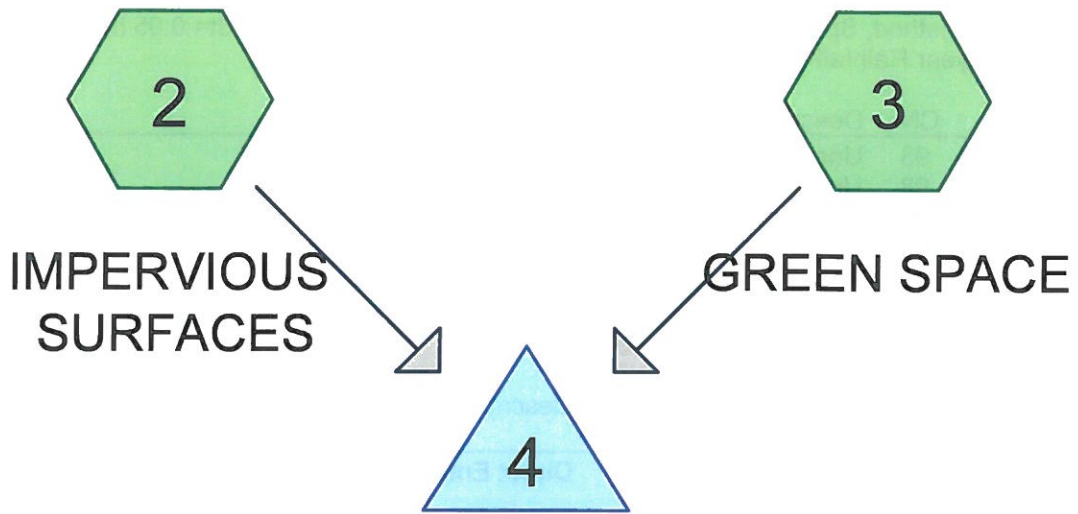
Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 1: UNMITIGATED RUNOFF**

Hydrograph



STORMWATER Rx  
AREA



POND & FC  
STRUCTURE

257,163 SF



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**Summary for Subcatchment 2: IMPERVIOUS SURFACES**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

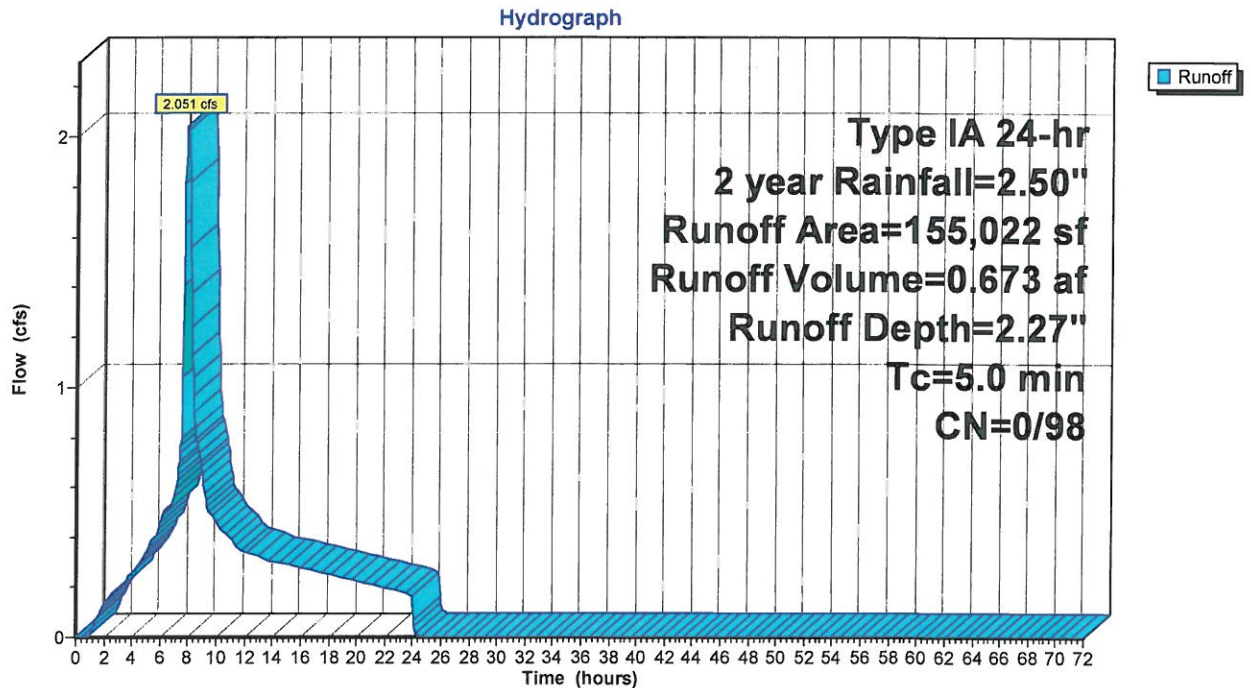
Runoff = 2.051 cfs @ 7.90 hrs, Volume= 0.673 af, Depth= 2.27"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs,  $dt = 0.05$  hrs  
 Type IA 24-hr 2 year Rainfall=2.50"

Area (sf)	CN	Description
2,755	98	Unconnected pavement, HSG D
61,703	98	Unconnected pavement, HSG D
71,700	98	Unconnected roofs, HSG D
* 10,800	98	Unconnected pavement, HSG D
8,064	98	Water Surface, HSG D
155,022	98	Weighted Average
155,022	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 2: IMPERVIOUS SURFACES**



**Summary for Subcatchment 3: GREEN SPACE**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 0.416 cfs @ 7.99 hrs, Volume= 0.174 af, Depth= 0.89"

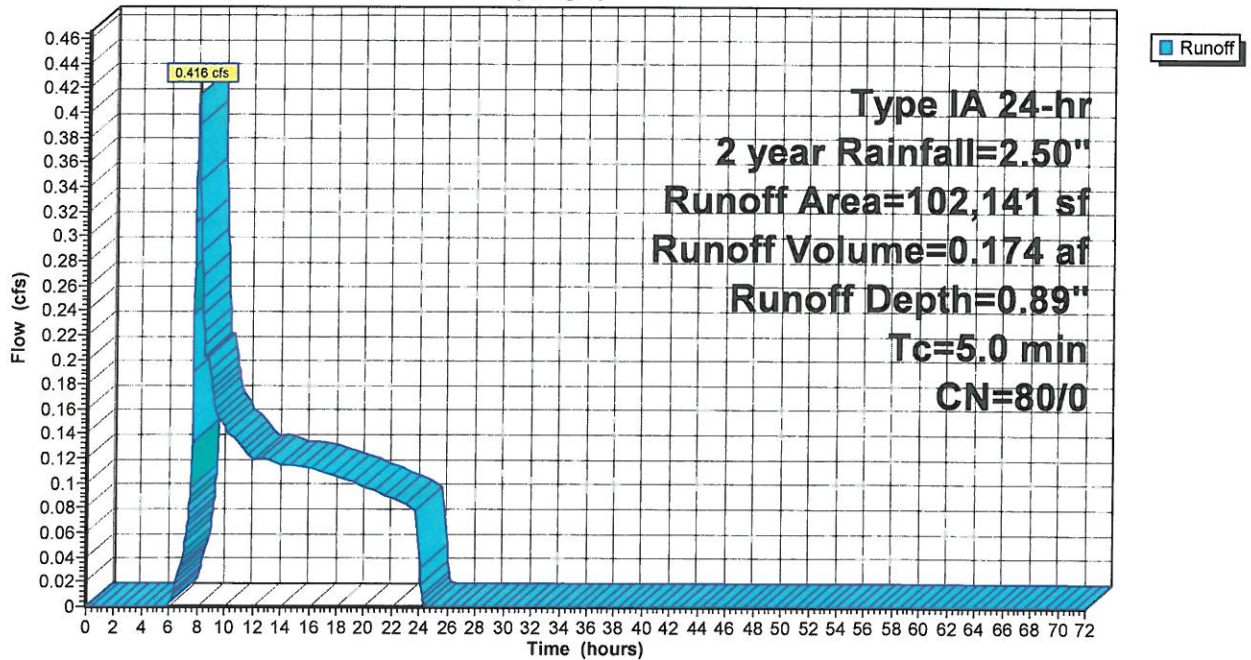
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 2 year Rainfall=2.50"

Area (sf)	CN	Description
9,065	80	>75% Grass cover, Good, HSG D
93,076	80	>75% Grass cover, Good, HSG D
102,141	80	Weighted Average
102,141	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 3: GREEN SPACE**

Hydrograph



**Summary for Pond 4: POND & FC STRUCTURE**

Inflow Area = 5.904 ac, 60.28% Impervious, Inflow Depth = 1.72" for 2 year event  
 Inflow = 2.446 cfs @ 7.93 hrs, Volume= 0.847 af  
 Outflow = 0.379 cfs @ 16.62 hrs, Volume= 0.846 af, Atten= 85%, Lag= 521.6 min  
 Primary = 0.379 cfs @ 16.62 hrs, Volume= 0.846 af  
 Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 335.56' @ 16.62 hrs Surf.Area= 7,269 sf Storage= 13,303 cf  
 Flood Elev= 337.00' Surf.Area= 9,989 sf Storage= 25,732 cf

Plug-Flow detention time= 449.9 min calculated for 0.846 af (100% of inflow)  
 Center-of-Mass det. time= 450.5 min ( 1,160.8 - 710.3 )

Volume	Invert	Avail.Storage	Storage Description
#1	333.00'	25,654 cf	<b>EXTENDED DRY DETENTION POND (Irregular)</b> Listed below (Recalc)
#2	333.00'	79 cf	<b>5.00'D x 4.00'H FC MH</b>
		25,732 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
333.00	3,344	282.1	0	0	3,344
334.00	4,714	324.1	4,009	4,009	5,393
335.00	6,293	366.2	5,485	9,494	7,731
336.00	8,064	406.0	7,160	16,654	10,207
337.00	9,969	442.4	9,000	25,654	12,701

Device	Routing	Invert	Outlet Devices
#1	Primary	333.00'	<b>12.000" Round 12" PVC</b> L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 333.00' / 332.75' S= 0.0050 ' / Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	336.25'	<b>12.000" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	333.00'	<b>1.000" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	333.00'	<b>2.000 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#5	Secondary	336.50'	<b>4.2' long x 3.7' breadth Emergency Spillway</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.55 2.69 2.68 2.66 2.66 2.65 2.67 2.67 2.69 2.75 2.79 2.82 2.87 3.01 3.14 3.32



**River Meadows - May 2021**

Prepared by Symons Engineering Consultants

HydroCAD® 10.00-25 s/n 04326 © 2019 HydroCAD Software Solutions LLC

Type IA 24-hr 2 year Rainfall=2.50"

Printed 5/19/2021

Page 13

**Primary OutFlow** Max=0.379 cfs @ 16.62 hrs HW=335.56' (Free Discharge)

1=12" PVC (Passes 0.379 cfs of 5.228 cfs potential flow)

2=Orifice/Grate ( Controls 0.000 cfs)

3=Orifice/Grate (Orifice Controls 0.042 cfs @ 7.70 fps)

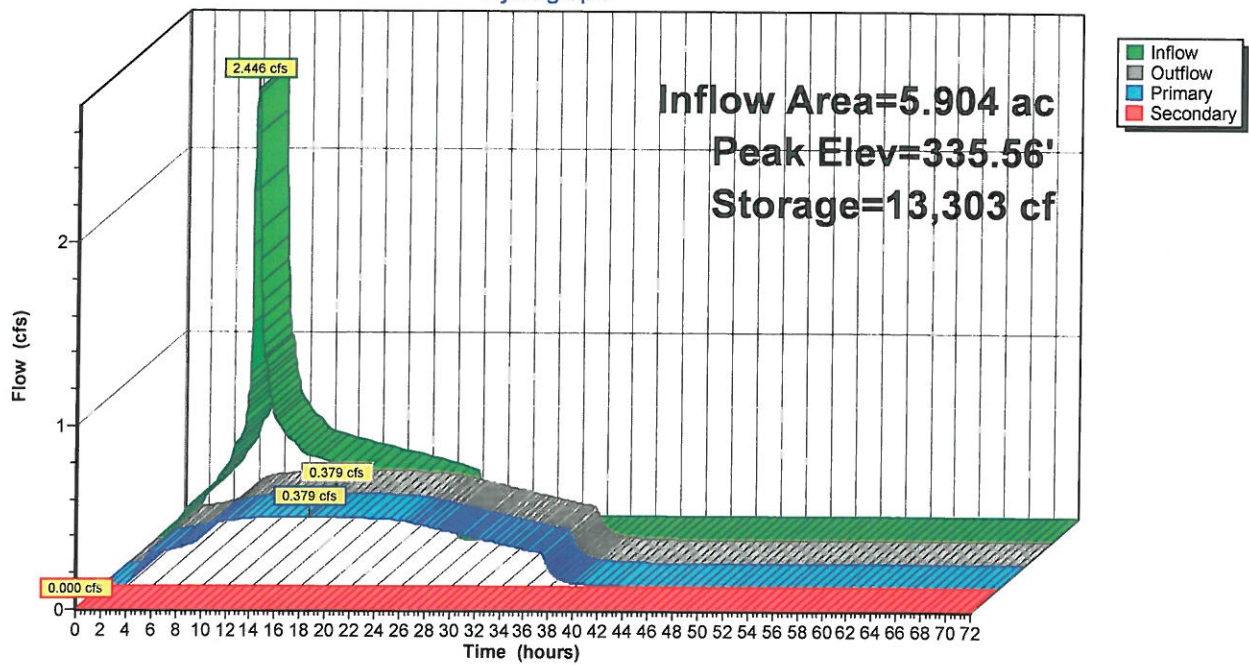
4=Exfiltration (Exfiltration Controls 0.337 cfs)

**Secondary OutFlow** Max=0.000 cfs @ 0.00 hrs HW=333.00' (Free Discharge)

5=Emergency Spillway ( Controls 0.000 cfs)

**Pond 4: POND & FC STRUCTURE**

Hydrograph



**Summary for Subcatchment 2: IMPERVIOUS SURFACES**

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

Runoff = 2.873 cfs @ 7.90 hrs, Volume= 0.954 af, Depth= 3.22"

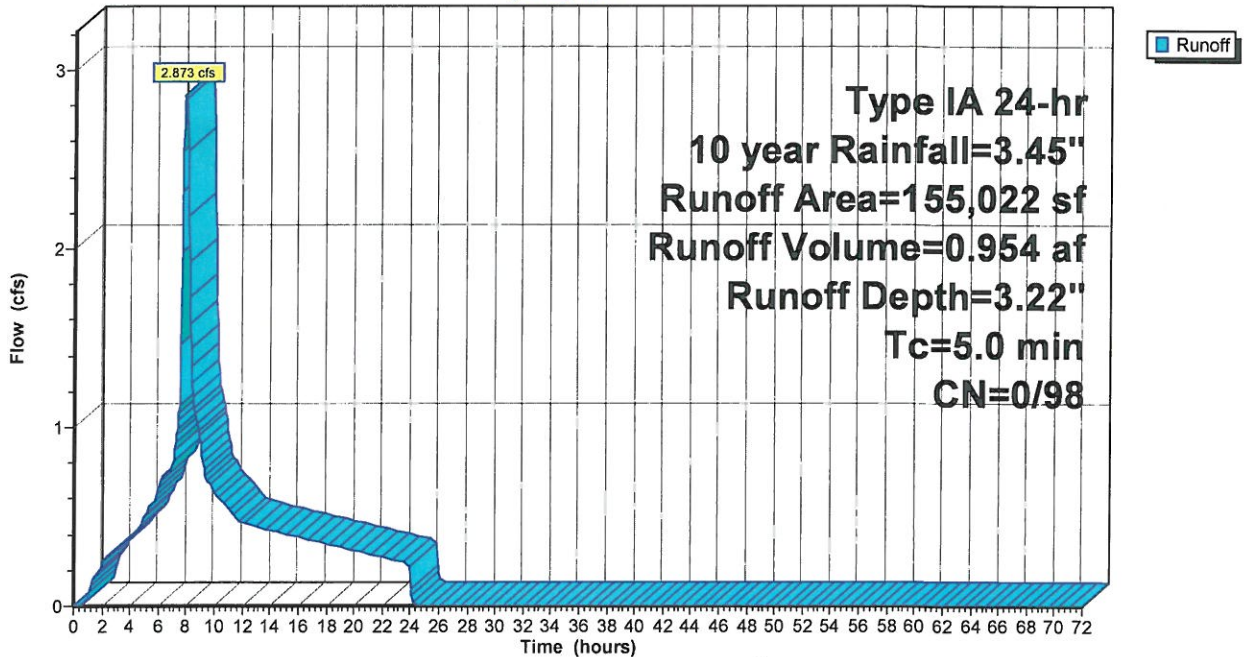
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs,  $dt = 0.05$  hrs  
 Type IA 24-hr 10 year Rainfall=3.45"

Area (sf)	CN	Description
2,755	98	Unconnected pavement, HSG D
61,703	98	Unconnected pavement, HSG D
71,700	98	Unconnected roofs, HSG D
* 10,800	98	Unconnected pavement, HSG D
8,064	98	Water Surface, HSG D
155,022	98	Weighted Average
155,022	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 2: IMPERVIOUS SURFACES**

Hydrograph



### Summary for Subcatchment 3: GREEN SPACE

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 0.854 cfs @ 7.98 hrs, Volume= 0.312 af, Depth= 1.60"

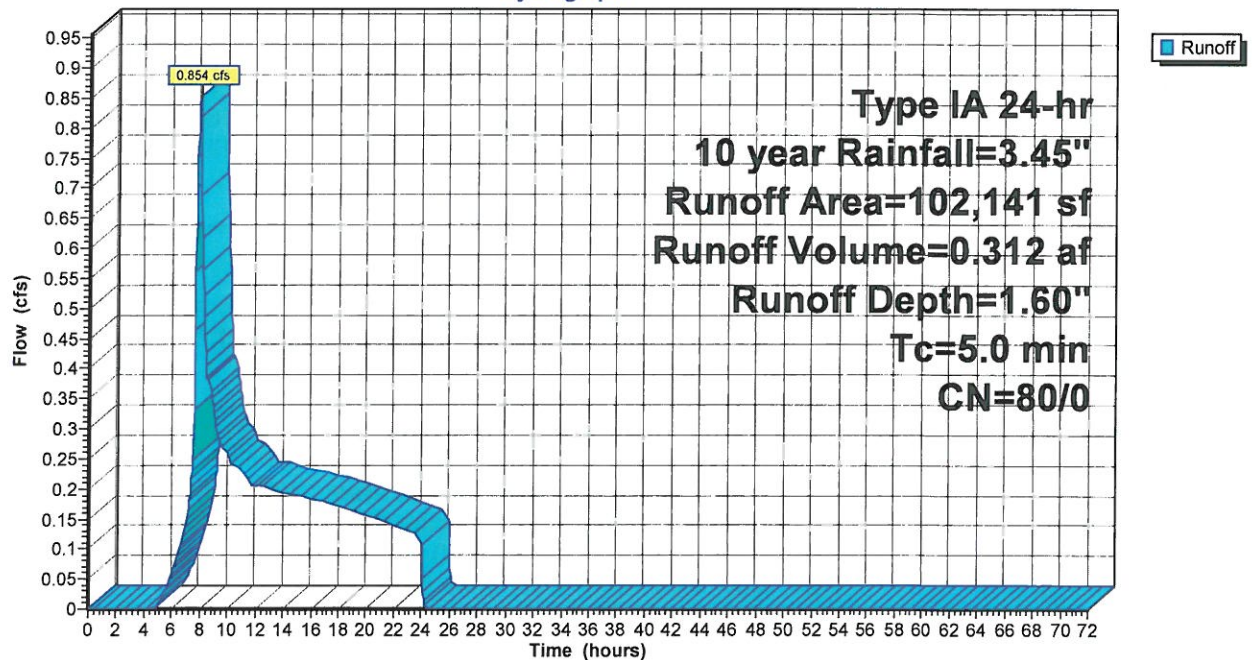
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 10 year Rainfall=3.45"

Area (sf)	CN	Description
9,065	80	>75% Grass cover, Good, HSG D
93,076	80	>75% Grass cover, Good, HSG D
102,141	80	Weighted Average
102,141	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

### Subcatchment 3: GREEN SPACE

Hydrograph



**Summary for Pond 4: POND & FC STRUCTURE**

Inflow Area = 5.904 ac, 60.28% Impervious, Inflow Depth = 2.57" for 10 year event  
 Inflow = 3.701 cfs @ 7.92 hrs, Volume= 1.266 af  
 Outflow = 0.778 cfs @ 11.04 hrs, Volume= 1.265 af, Atten= 79%, Lag= 187.0 min  
 Primary = 0.778 cfs @ 11.04 hrs, Volume= 1.265 af  
 Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 336.35' @ 11.04 hrs Surf.Area= 8,728 sf Storage= 19,656 cf  
 Flood Elev= 337.00' Surf.Area= 9,989 sf Storage= 25,732 cf

Plug-Flow detention time= 499.3 min calculated for 1.265 af (100% of inflow)  
 Center-of-Mass det. time= 498.8 min ( 1,200.0 - 701.2 )

Volume	Invert	Avail.Storage	Storage Description
#1	333.00'	25,654 cf	<b>EXTENDED DRY DETENTION POND (Irregular)</b> Listed below (Recalc)
#2	333.00'	79 cf	<b>5.00'D x 4.00'H FC MH</b>
		25,732 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
333.00	3,344	282.1	0	0	3,344
334.00	4,714	324.1	4,009	4,009	5,393
335.00	6,293	366.2	5,485	9,494	7,731
336.00	8,064	406.0	7,160	16,654	10,207
337.00	9,969	442.4	9,000	25,654	12,701

Device	Routing	Invert	Outlet Devices
#1	Primary	333.00'	<b>12.000" Round 12" PVC</b> L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 333.00' / 332.75' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	336.25'	<b>12.000" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	333.00'	<b>1.000" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	333.00'	<b>2.000 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#5	Secondary	336.50'	<b>4.2' long x 3.7' breadth Emergency Spillway</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.55 2.69 2.68 2.66 2.66 2.65 2.67 2.67 2.69 2.75 2.79 2.82 2.87 3.01 3.14 3.32

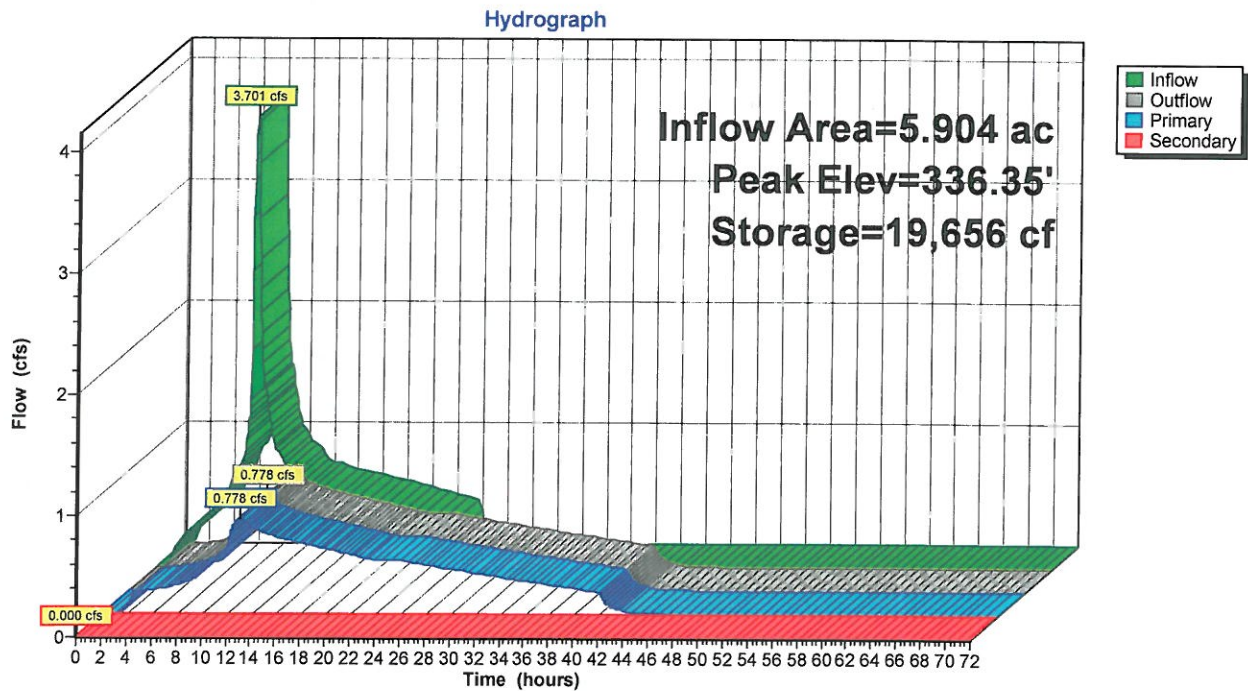
Primary OutFlow Max=0.778 cfs @ 11.04 hrs HW=336.35' (Free Discharge)

- 1=12" PVC (Passes 0.778 cfs of 6.274 cfs potential flow)
- 2=Orifice/Grate (Weir Controls 0.326 cfs @ 1.04 fps)
- 3=Orifice/Grate (Orifice Controls 0.048 cfs @ 8.81 fps)
- 4=Exfiltration (Exfiltration Controls 0.404 cfs)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=333.00' (Free Discharge)

- 5=Emergency Spillway ( Controls 0.000 cfs)

### Pond 4: POND & FC STRUCTURE



### Summary for Subcatchment 2: IMPERVIOUS SURFACES

[49] Hint:  $T_c < 2dt$  may require smaller  $dt$

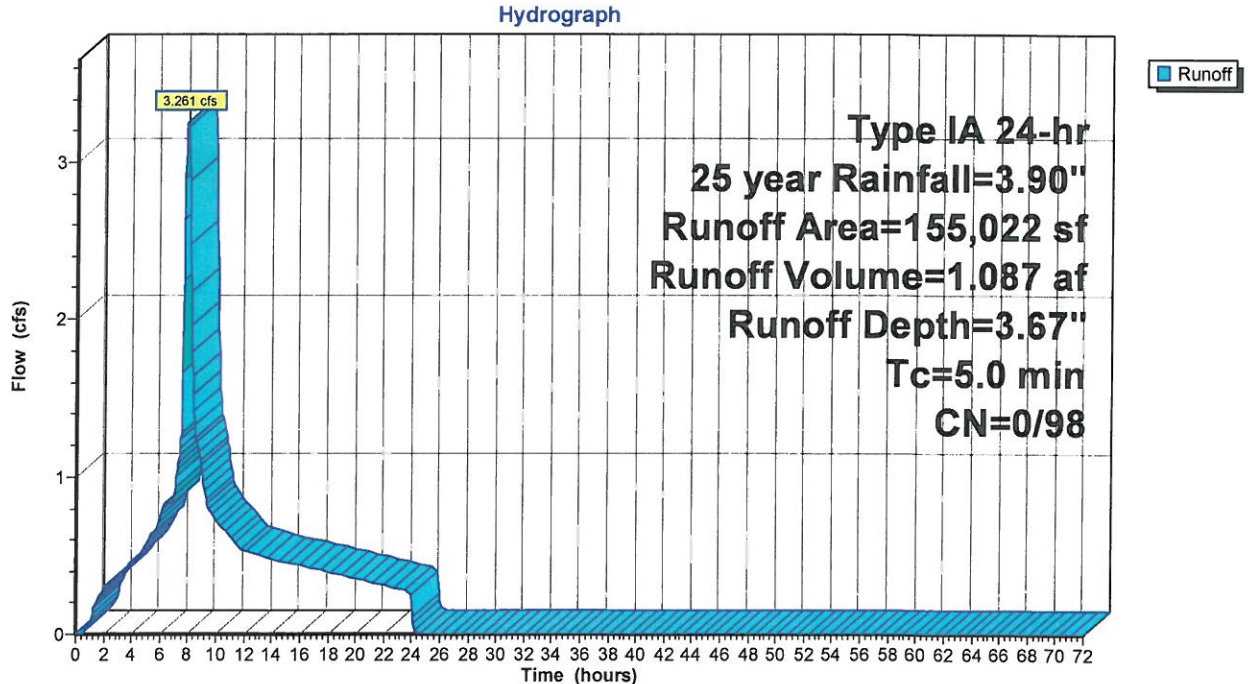
Runoff = 3.261 cfs @ 7.90 hrs, Volume= 1.087 af, Depth= 3.67"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs,  $dt = 0.05$  hrs  
 Type IA 24-hr 25 year Rainfall=3.90"

Area (sf)	CN	Description
2,755	98	Unconnected pavement, HSG D
61,703	98	Unconnected pavement, HSG D
71,700	98	Unconnected roofs, HSG D
* 10,800	98	Unconnected pavement, HSG D
8,064	98	Water Surface, HSG D
155,022	98	Weighted Average
155,022	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

### Subcatchment 2: IMPERVIOUS SURFACES



**Summary for Subcatchment 3: GREEN SPACE**

[49] Hint:  $T_c < 2dt$  may require smaller dt

Runoff = 1.082 cfs @ 7.98 hrs, Volume= 0.383 af, Depth= 1.96"

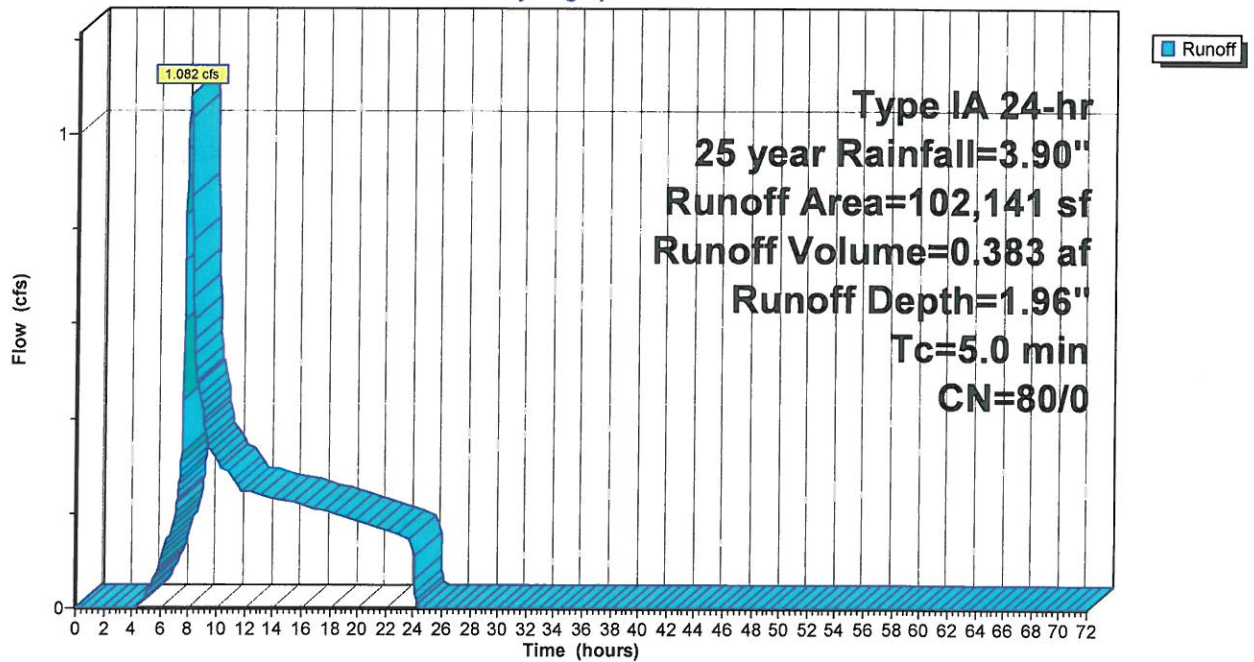
Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Type IA 24-hr 25 year Rainfall=3.90"

Area (sf)	CN	Description
9,065	80	>75% Grass cover, Good, HSG D
93,076	80	>75% Grass cover, Good, HSG D
102,141	80	Weighted Average
102,141	80	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					Direct Entry, DIRECT

**Subcatchment 3: GREEN SPACE**

Hydrograph



**Summary for Pond 4: POND & FC STRUCTURE**

Inflow Area = 5.904 ac, 60.28% Impervious, Inflow Depth = 2.99" for 25 year event  
 Inflow = 4.315 cfs @ 7.92 hrs, Volume= 1.470 af  
 Outflow = 1.215 cfs @ 9.28 hrs, Volume= 1.469 af, Atten= 72%, Lag= 81.4 min  
 Primary = 1.215 cfs @ 9.28 hrs, Volume= 1.469 af  
 Secondary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.05 hrs  
 Peak Elev= 336.43' @ 9.28 hrs Surf.Area= 8,870 sf Storage= 20,320 cf  
 Flood Elev= 337.00' Surf.Area= 9,989 sf Storage= 25,732 cf

Plug-Flow detention time= 447.2 min calculated for 1.469 af (100% of inflow)  
 Center-of-Mass det. time= 446.7 min ( 1,144.4 - 697.7 )

Volume	Invert	Avail.Storage	Storage Description
#1	333.00'	25,654 cf	<b>EXTENDED DRY DETENTION POND (Irregular)</b> Listed below (Recalc)
#2	333.00'	79 cf	<b>5.00'D x 4.00'H FC MH</b>
		25,732 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
333.00	3,344	282.1	0	0	3,344
334.00	4,714	324.1	4,009	4,009	5,393
335.00	6,293	366.2	5,485	9,494	7,731
336.00	8,064	406.0	7,160	16,654	10,207
337.00	9,969	442.4	9,000	25,654	12,701

Device	Routing	Invert	Outlet Devices
#1	Primary	333.00'	<b>12.000" Round 12" PVC</b> L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 333.00' / 332.75' S= 0.0050 ' S= 0.0050 ' Cc= 0.900 n= 0.011 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	336.25'	<b>12.000" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#3	Device 1	333.00'	<b>1.000" Horiz. Orifice/Grate</b> C= 0.600 Limited to weir flow at low heads
#4	Device 1	333.00'	<b>2.000 in/hr Exfiltration over Surface area</b> Phase-In= 0.01'
#5	Secondary	336.50'	<b>4.2' long x 3.7' breadth Emergency Spillway</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.40 2.55 2.69 2.68 2.66 2.66 2.65 2.67 2.67 2.69 2.75 2.79 2.82 2.87 3.01 3.14 3.32



Primary OutFlow Max=1.215 cfs @ 9.28 hrs HW=336.43' (Free Discharge)

1=12" PVC (Passes 1.215 cfs of 6.364 cfs potential flow)

2=Orifice/Grate (Weir Controls 0.756 cfs @ 1.37 fps)

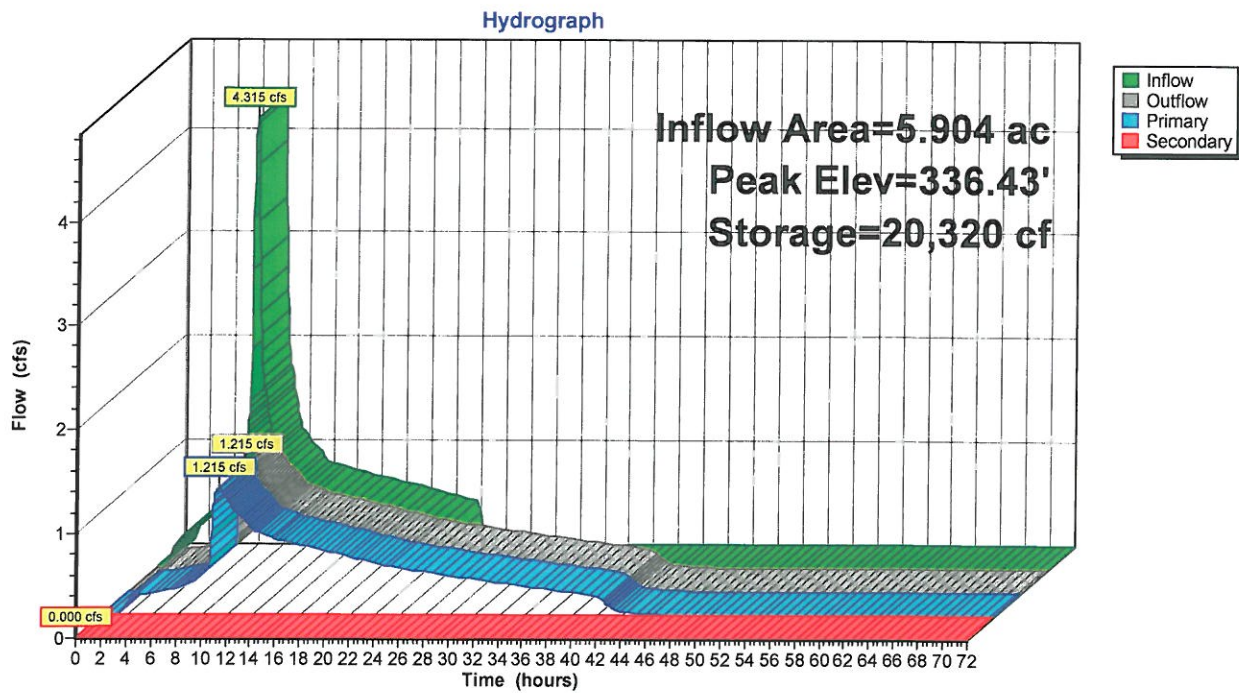
3=Orifice/Grate (Orifice Controls 0.049 cfs @ 8.91 fps)

4=Exfiltration (Exfiltration Controls 0.411 cfs)

Secondary OutFlow Max=0.000 cfs @ 0.00 hrs HW=333.00' (Free Discharge)

5=Emergency Spillway ( Controls 0.000 cfs)

### Pond 4: POND & FC STRUCTURE



## APPENDIX E

### Operation & Maintenance

## Rain Gardens

*NO pesticide, herbicide, or fungicide use is allowed.*

Clean up spills immediately. Remove and replace contaminated soil. Call Metro (503.797.1700) to determine proper disposal requirements of spill response materials and contaminated soil. Record the date and spill response measures in the inspection log.

Structural Repairs	Spring	Summer	Fall	Winter	24-hr Precip > 1"
Replace or repair inlets if they are cracked or broken. Reseal inlet pipes if they are not watertight.	X		X		
Check overflow caps and replace if cracked or missing.	X		X		X
Check flow spreader, if present, and repair, as necessary. Check inlet protection and replace or replenish rock, as necessary.	X		X		

Ponding Area	Spring	Summer	Fall	Winter	24-hr Precip > 1"
Remove trash.	X	X	X	X	X
Remove sediment from ponding area, forebays, and inlets.	X		X		X
Repair any erosion around edges of concrete forebay if erosion is occurring.		X	X		X
Check trench drains discharging to the facility and remove any soil or debris.	X	X	X	X	X
Check for channeled flow in facility; fill in channels with soil and add plants to disperse flow.		X	X		X
Add 3" of mulch or topsoil to bare areas and reseed or replant to achieve 100% coverage at maturity. Do not add bark dust or bark chips; they will float and then clog the outlet or create bare spots.	X				
Remove weeds, invasive plants, and dead plants. Replant or reseed to achieve 100% coverage at maturity	X	X	X		
Thin grasses (remove dead blades) or remove top third of previous year's growth.	X				
Prune shrubs and trees.	X			X	
If facility drains slowly, rake soil to stop crusting. Replace or amend soil if ponding occurs more than 24 hours.	X		X	X	X
If ponding occurs more than 48 hours, notify City stormwater engineers (503.742.4567).	X		X	X	X

### Stormwater Facilities Inspection and Maintenance Log



<b>OWNER:</b>	<b>CONTACT INFO:</b>
<b>FACILITY LOCATION/ADDRESS:</b>	
<b>FACILITY TYPE:</b>	
<b>ACCESS NOTES:</b>	

Refer to the facility's quarterly inspection requirements in the O&M Plan before conducting inspections and maintenance actions.

**INSPECTION YEAR:**

WINTER INSPECTION LOG	SPRING INSPECTION LOG	SUMMER INSPECTION LOG	FALL INSPECTION LOG
<b>DATE:</b> <b>INSPECTOR NAME:</b> <b>COMPONENTS INSPECTED*:</b> STRUCTURAL: <input type="checkbox"/> PONDING AREA: <input type="checkbox"/> VEGETATION: <input type="checkbox"/> <b>MAINTENANCE ACTIONS PERFORMED:</b>	<b>DATE:</b> <b>INSPECTOR NAME:</b> <b>COMPONENTS INSPECTED*:</b> STRUCTURAL: <input type="checkbox"/> PONDING AREA: <input type="checkbox"/> VEGETATION: <input type="checkbox"/> <b>MAINTENANCE ACTIONS PERFORMED:</b>	<b>DATE:</b> <b>INSPECTOR NAME:</b> <b>COMPONENTS INSPECTED*:</b> STRUCTURAL: <input type="checkbox"/> PONDING AREA: <input type="checkbox"/> VEGETATION: <input type="checkbox"/> <b>MAINTENANCE ACTIONS PERFORMED:</b>	<b>DATE:</b> <b>INSPECTOR NAME:</b> <b>COMPONENTS INSPECTED*:</b> STRUCTURAL: <input type="checkbox"/> PONDING AREA: <input type="checkbox"/> VEGETATION: <input type="checkbox"/> <b>MAINTENANCE ACTIONS PERFORMED:</b>

\* Structural Components include all 'hard' elements of the facility (inlets, flow spreaders, liners, overflow caps, etc.).  
 Ponding Area includes areas on the surface or underground where stormwater accumulates. Inspect for blockages, sediment, and trash.  
 Vegetation includes maintaining vegetation, so the facility can function as designed (i.e., tree pruning, weed removal, mowing, grass management).

## Exhibit D:

*Amendment to SUB01-2021 and SDR03-2021  
Application Package – Tract C Ownership and  
Maintenance*

## Dan Zinder

---

**From:** D. Carter <dahacar@gmail.com>  
**Sent:** Wednesday, July 21, 2021 10:04 AM  
**To:** Dan Zinder  
**Cc:** Dan Symons; Mac Corthell  
**Subject:** Re: SDR03-2021/SUB01-2021 - Tract C Ownership/Management Clarification

Dear Mr. Zinder,

I'm fine the amendment, "adding Tract C to the HOA tracts and having the HOA take care of the pathway."

Dave Carter  
River Meadows  
503 890 6458

On Wed, Jul 21, 2021 at 9:54 AM Dan Zinder <[dzinder@cityofmolalla.com](mailto:dzinder@cityofmolalla.com)> wrote:

Dave and Dan,

The City is wrapping up our staff report on River Meadows. The only significant discrepancy between the City's review and what was submitted is in regards to ownership and maintenance of Tract C. I spoke with Dave on the phone this morning and he said he supports putting Tract C under HOA ownership/maintenance with a Public Access Easement over it, as the City would prefer. The City thus proposes to include an amendment to your submitted application in our staff report. This can be accomplished through this email chain.

For reference, your submitted application describes the ownership arrangement in response to *MMC Section 17-3.6.020, 3 Transportation Standards* for Tract C as follows:

*"The proposed multi-use path will be contained in a public tract (Tract C) dedicated to the city."*

The City proposed the following arrangement and modification to the proposal:

*“The proposed multi-use path, Tract C, shall be dedicated to the subdivision’s homeowner’s association and have a public access easement dedication. Maintenance responsibilities for Tract C shall remain with the homeowner’s association.*

If you are amenable to this amendment please respond so and we will include it in our staff report to the Planning Commission.

In coming days, we’ll send the completed staff report to you for review but we believe this to be the major point to iron out as we finalize it.

Thank you,

**Dan Zinder**

*Associate Planner, City of Molalla*

117 N Molalla Ave | PO Box 248

Direct: 503.759.0226 | Office: 503.829.6855

--

Dave Carter  
503 850 4256 desk  
503 890 6458 cell  
[dahacar@gmail.com](mailto:dahacar@gmail.com)

## Exhibit E:

### *Molalla Public Works Comments*



June 30, 2021

TO: Mac Corthell, Planning Director  
Dan Zinder, Assistant Planner  
Julie Larson, Planning Specialist

FROM: Gerald Fisher, Public Works Director

**RE: River Meadows Subdivision (SDR03-2021)**

Based on a review of the materials submitted, Staff has prepared the following comments. These comments are applicable to the subject application; any subsequent modifications may require amendments and/or additions. These conditions do not include requirements already set forth in the municipal code.

**CONDITIONS**

1. Specific Requirements to This Site:

A. Street:

1. The 30-lot subdivision proposal requires a traffic impact analysis, and the applicant has supplied the report with the application. No offsite transportation improvements are required for this development related to traffic.
2. Rachel Lane: Rachel Lane is a local street under City of Molalla jurisdiction. Local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by public works.
3. Wingfield Drive: Wingfield Drive is a local street under City of Molalla jurisdiction. Local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway with signage as required by public works.
4. Sarah Lane: Sarah Lane is a local street under City of Molalla jurisdiction. Local streets require 50 feet of right-of-way and 34 feet of pavement. Applicant will be required to dedicate 50 feet of right-of-way and construct road improvements to City standards for 34 feet of pavement (two 10-foot travel lanes and two 7-foot parking), curb and gutter, 6-foot curb tight sidewalk, and streetlighting. No stop signs will be required on this low volume roadway. Applicant shall construct Type 3 barricades at the end of the roadway

with signage as required by public works.

5. Access to public streets shall be limited to Rachel Lane, exception for lots 24 and 26 to Wingfield Drive. Access spacing shall conform to the Transportation Systems Plan. The proposed width of accesses shall meet the Molalla Standard Specifications for Public Works Construction.
6. Applicant proposes a pedestrian access connection to the railroad right of way (future bike and pedestrian trail) at the intersection of Rachel Lane and Wingfield Drive. Tract "C" shall have a public access easement dedication and applicant shall construct a concrete pedestrian pathway meeting the Molalla Standard Specifications for Public Works Construction. Maintenance responsibilities shall remain with the homeowner's association.
7. If improvements of Vick Road are not required at this time by Clackamas County, the applicant shall sign a waiver of remonstrance for roadway improvements to the City of Molalla. The owner of Tract "A" shall be responsible for the cost of the improvements fronting Vick Road.
8. Transportation SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from transportation SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

B. Storm:

1. All storm improvements in the development shall meet the requirements of the Molalla Standard Specifications for Public Works Construction.
2. Applicant proposes storm improvements draining to a private detention facility at the north end of the project. Access to facility from Rachel Lane shall meet the requirements of the Molalla Standard Specifications for Public Works Construction. Applicant shall provide copy of Clackamas County approval for discharge of drainage to Vick Road. Maintenance of the facility shall be the responsibility of the development. Applicant shall be required to sign a stormwater maintenance and covenant agreement for the operation and maintenance of the detention facility and discharge piping on Tract "A".
3. Stormwater SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from stormwater SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

C. Sanitary:

1. Applicant proposes sanitary mains extend to the limits of the project per development requirements. Sanitary mains shall dead end at mainline cleanouts on Wingfield, Sarah, and Rachel.
2. Applicant shall be required to submit sanitary sewer design plans to Oregon DEQ for review and approval. Applicant shall provide a Certificate of Capacity to Oregon DEQ at time of plan submission. No Public Works permit can be issued without DEQ's approval of the sewer system and the Certificate of Capacity.
3. Sanitary SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from sanitary SDC charges. SDC's shall be calculated in accordance with the SDC methodology.

D. Water:

1. Applicant proposes water mains extend to the limits of the project per development requirements. Water mains shall dead end at mainline blowoff's on Wingfield, Sarah,

- and Rachel.
2. Looping of the waterline is not feasible for this development. Applicant shall meet all fire regulations for home construction per the Molalla Fire District. Location of fire hydrants shall be approved by the Fire Marshall prior to submission of plans to Public Works.
  3. Water SDC's – In accordance with MMC 13.14 this design review does increase the impacts to the public improvement facility and is therefore not exempt from water SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- E. Parks:
1. Parks SDC's – In accordance with SMC 13.70.110 this residential development is not exempt from parks SDC charges. SDC's shall be calculated in accordance with the SDC methodology.
- F. Franchise Utility Services:
1. All utilities to the project shall be served underground services. No overhead crossings of public right of way shall be approved by the city.

## **DESIGN REQUIREMENTS & POLICIES**

1. General Requirements:
  - A. For residential development projects, all public improvements shall be completed and accepted by the Public Works Department prior to issuance of building permits. No connections to City service shall be allowed until public improvements are completed.
  - ~~B. For commercial and industrial development projects, all public improvements shall be completed and accepted by the Public Works Department prior to issuance of any occupancy.~~
  - C. From the materials submitted, it appears that the storm drain, domestic water, and sanitary sewer facilities will be obtained from main line connections and/or extensions. Separate engineering drawings reflecting the installation of these public utilities will be required.
  - D. No construction of, or connection to, any existing or proposed public utility/improvements will be permitted until all plans are approved by Staff, all fees have been paid, all necessary permits, bonding, right-of-way, and easements have been obtained and approved by staff, and Staff is notified a minimum of 24 hours in advance.
  - E. Staff reserves the right to require revisions/modifications to the public improvement construction plans and completed street improvements if additional modifications or expansion of the sight distance onto adjacent streets is required.
  - F. All public utility/improvement plans submitted for review shall be based upon a 22"x 34" format and shall be prepared in accordance with the City of Molalla Public Work's Standards.
  - G. All survey monuments on the subject site or that may be subject to disturbance within the construction area, or the construction of any off-site improvements shall be adequately referenced and protected prior to commencement of any construction activity. If the survey monuments are disturbed, moved, relocated, or destroyed as a result of any construction, the project shall, at its cost, retain the services of a registered professional land surveyor in the State of Oregon to restore the monument to its original condition and file the necessary surveys as required by Oregon State law. A copy of any recorded survey shall be submitted to Staff.

- H. Plans submitted for review shall meet the requirements described in Section 1 of the Molalla Standard Specifications for Public Works Construction.
- I. The applicant shall contact the Oregon Water Resources Department and inform them of any existing wells located on the subject site. Any existing well shall be limited to irrigation purposes only. Proper separation, in conformance with applicable State standards, shall be maintained between irrigation systems, public water systems, and public sanitary systems. Should the project abandon any existing wells, they shall be properly abandoned in conformance with State standards and supply the City with a copy of the final document.
- J. Sanitary sewer designs require review by Oregon Department of Environmental Quality. Applicant shall be responsible for submission of plans to state agency and all associated fees. Applicant's Engineer will be required to submit final report to DEQ and provide a copy of the report to the City.
- K. All utilities will be stubbed out to the far end of each street for future extension. The project shall utilize existing water, sewer, and storm water 'stub-outs' wherever possible. Water for domestic and fire protection shall be looped through the proposed site. Any 'stub-outs' determined to be not needed for the proposed development or any future development of the subject property shall be abandoned in accordance with the Molalla Standard Specifications for Public Works Construction.
- L. All public improvement designs shall meet the requirements of the Molalla Standard Specifications for Public Works Construction as amended by the Public Works Director.
- M. General Easements – A 10-foot-wide public utility easement shall be dedicated to the City adjacent to all public right-of-way and no structures are allowed to encroach into the easement. Applicant shall be required to submit a legal description and exhibit map for review and sign City easements. Once completed, applicant will be required to record easements with the County Recorder's Office and return the original document to the City prior to final occupancy.
- N. General Wetland Requirements – The applicant will be required to provide Public Works with a letter of concurrence from the Department of State Lands regarding any wetlands on the subject property.
- O. General Erosion Control – The applicant shall install, operate, and maintain adequate erosion control measures in conformance with the standards adopted by the City of Molalla and DEQ during the construction of any public/private utility and building improvements until such time as approved permanent vegetative materials have been installed. Applicant or Applicant's Contractor shall be responsible for all erosion control requirements under the 1200-C permit and shall coordinate directly with DEQ for questions related to 1200-C permit compliance.

## Exhibit F:

*Molalla Fire Department Comments*

## SDR03-2021 – Comments from Molalla Fire

1. Per Oregon Fire Code, subdivisions in excess of thirty (30) units shall have either a secondary means of egress or the requirement that all homes in the subdivision are sprinkled. The proposed subdivision is for 30 single-family lots. Any units developed in excess of thirty (30) units within River Meadows Subdivision shall require either the development of a secondary egress or sprinkling of each home within River Meadows Subdivision (Oregon Fire Code)
2. The Applicant shall maintain clear space in and around hydrants as per Appendix "D" of the 2019 Oregon fire Code.
3. Hydrant locations shall be submitted to the Molalla Fire Department for approval. Addressing visibility must conform to Section 505 Of the 2019 Oregon Fire Code.

The above comments are based solely on the site plan provided. Molalla Fire reserves the right to review and comment on the plans that are to be submitted for full review or revisions to plans that have already been reviewed. Review of submitted plans is not an approval of omissions, oversights or authorization of non-compliance with any regulations of this agency or of the regulations of any other agency. This decision should not be considered a precedent setting recommendation, as we will review each project on a case by case basis.

**Exhibit G:**  
*Clackamas County Development Engineering  
Comments*

## MEMORANDUM

**TO:** Mac Corthell

**FROM:** Jonny Gish Traffic Development Engineering

**DATE:** 7/20/2021

**RE:** SD03-2021  
River Meadows Subdivision  
52E05 02002

Clackamas County Development Engineering staff has visited the site and reviewed this application with the attached site plan. We have the following comments:

### **Facts and Findings:**

The applicant has proposed a 30-lot subdivision, which would subdivide tax lot 52E05 00200, which is located within the limits City of Molalla. The proposed development has a small triangular frontage along S Vick Rd, which is under the jurisdiction of Clackamas County and is classified as a urban minor arterial.

According to the tax map, S Vick Rd has an existing full right-of-way width 40 feet. The applicant will be required to dedicate sufficient right-of-way to provide a minimum of 35-foot half-street of right-of-way and establish centerline along the entire frontage of S Vick Rd.

The existing pavement width of S Vick Rd is 22-feet. The applicant will be required to provide half-street improvements up to and including pavement widening of 20-feet from centerline along the frontage of S Vick Rd in addition to pavement taper per section 250.6.4 of the Roadway Standards (structural section to meet standard detail C100).

The applicant is proposing to use an existing graveled entrance as a maintenance access for the stormwater treatment facility from S Vick Rd with improvements. The subject tax lot is within the UGB and future development and expansion is anticipated along S Vick Rd. The applicant will be required to provide a driveway approach to S Vick Rd for the maintenance of the proposed stormwater facility meeting standard detail D650.

The applicant has proposed to use the existing culverts traversing under and along S Vick Rd for downstream conveyance of the proposed stormwater facility serving the proposed development. A recent site visit showed the existing culvert to be partially blocked with debris and a change of pipe material under S Vick Rd. The applicant will be required to provide an inspection of the



existing culverts under and along S Vick Rd for structural deficiencies, flow and alignment. Replacement of the culverts may be required and warranted.

**Conclusion:**

The preface language in the three paragraphs which follow this paragraph shall not be interpreted as a condition of approval or included by Planning staff as a condition of approval.

If the City of Molalla approves the request, the following conditions of approval are recommended. If the applicant is advised to or chooses to modify the proposal in terms of access location and or design following the preparation of these comments this office requests an opportunity to review and comment on such changes prior to decision being made.

The following items are project requirements from the Clackamas County Department of Transportation and Development. These conditions of approval are not intended to include every engineering requirement necessary for the successful completion of this project, but are provided to illustrate to the applicant specific details regarding the required improvements that may prove helpful in determining the cost and scope of the project. These conditions are based upon the requirements detailed in the Clackamas County Roadway Standards. Additional requirements beyond those stated in the conditions of approval may be required. The applicant may discuss the requirements of the project with staff at any time.

The requirements detailed in these conditions of approval, derived from the Development Standards, are based upon nationally accepted standards and engineering judgement and may be modified pursuant to Section 170 of the roadway Standards. The applicant is required to provide sufficient justification to staff in the request. Staff shall determine if a modification is warranted.

**Recommended Conditions of Approval:**

1. **Prior to site improvements:** a Development Permit is required from the Clackamas County Department of Transportation and Development Engineering for review and approval of frontage improvements, stormwater conveyance and sight distance. The permit shall be obtained prior to commencement of site work and recording of the subdivision plat. To obtain the permit, the applicant shall submit construction plans prepared and stamped by an Engineer registered in the State of Oregon and provide a performance guarantee equal to 125% of the estimated cost of the construction within County right-of-way and pay a plan review and inspection fee. The fee will be calculated as a percentage of the construction costs if it exceeds the minimum permit fee. The minimum fee and the percentage will be determined by the current fee structure at the time of the Development Permit Application.
2. **Prior to Development Permit issuance:** All utility extensions and connections shall be shown on the approved plans providing pavement restorations consistent with Chapter 7 of the Roadway Standards.
3. **Prior to final Plat approval:** all required improvements within County right-of-way shall be designed, constructed, inspected and approved, pursuant to Clackamas County *Roadway Standards*.

4. **Prior to final Plat approval:** Applicant shall verify the public right-of-way width and location along the entire site frontage of S Vick Rd. The right-of-way and width shall be verified by a professional surveyor to the satisfaction of DTD Engineering and Survey Departments. The applicant shall dedicate 35 foot half-street right-of-way on S Vick Rd, per standard detail C140,
5. **Prior to final Plat approval:** The applicant shall dedicate a minimum 8-foot public utility and sidewalk easement along the entire frontage of S Vick Rd.
6. **Prior to final plat approval:** The applicant shall design and construct up to half-street frontage improvements along S Vick Rd consisting of:
  - a. 20-feet of pavement (structural section to meet C100)
  - b. Access driveway for stormwater maintenance facility meeting standard detail D650.
  - c. Off-site asphaltic tapers shall be provided in accordance with *Roadway Standards* Section 250.6.4
  - d. Inspection and evaluation of existing culverts under and along S Vick Rd for structural deficiencies, alignment and flow. Replacement may be required.
7. **Prior to Final Inspection:** The applicant shall provide and maintain minimum Stopping Sight and Intersection Sight Distance at the stormwater maintenance access. The applicant shall provide a minimum of 495 feet of stopping sight distance and 610 feet of intersection sight distance at the intersection of S Vick Rd. Intersection sight distance shall restrict plantings at maturity, retaining wall, embankments, trees, fences or any other objects that obstruct vehicular sight distance.



Planning Department  
117 N Molalla Avenue  
PO Box 248  
Molalla, Oregon 97038  
Phone: (503) 759-0205  
communityplanner@cityofmolalla.com

## Staff Report: DCA12-2021

### Planning Commission Discussion

**Subject:** Continued Mural Code Discussion

**Staff Recommendation:** Provide guidance on prototype Mural Code.

**Date of Meeting to Be Presented** 7/7/21 – PC Discussion, 8/4/21 – PC Discussion

**Background:**

**7/7/21 PC** discussed mural code and why one might be advisable. PC asked staff to gather more information on mural processes in the general area and return to PC at a later date.

Murals- The City is currently without a mural code which creates ambiguity in the community about if a mural can be placed and what the parameters are in placing one.

The intent of developing a mural code is to enliven and encourage integration of local heritage into currently dead spaces, provide parameters for mural placement, and provide a process by which murals can be applied for and approved.

**8/4/21 PC** to review Mural Code outlines, discuss potential prohibitions, and discuss bifurcation of Mural categories.

**Attachments:**

1 – Sample Mural Ordinance Outlines, Rough Proposed Molalla Ordinance Outline (partial)

**Exhibits:**

- A – Milwaukie Mural Ordinance
- B – Florence Mural Ordinance
- C – Portland Mural Ordinance

<b>Sample Mural Ordinance Outlines</b>	
<b>City of Milwaukie</b>	<b>City of Florence</b>
Purpose	Purpose
Definitions	Definitions
Prohibition of Compensation	Prohibited Murals
Violations and Enforcement	Mural Permit Application
<b>PUBLIC ART MURALS</b> 1. Standards Allowed Locations (Zone) Prohibited Locations 2. Public Ownership, Duration, Alteration Public Ownership Duration and Alteration 3. Physical Standards Dimensions Materials Placement 4. Structural Permit 5. Lighting 6. Application 7. Administrative Review 8. Public Notice 9. Ad Hoc Mural Committee Review 10. Arts Committee Review 11. Appeals 12. Mural Maintenance	Mural Permit Criteria
<b>ORIGINAL ART MURALS</b> 1. Standards 2. Review and Permitting of Original Art Murals	Structural Review
<b>City of Portland</b>	Suspension or Revocation
Purpose	Inspections and Expiration of Permit
Where These Regulations Apply	Maintenance of a Permitted Mural
Definitions	Alterations to a Permitted Mural
Allowed and Prohibited Original Art Murals	Removal of a Permitted Mural
Neighborhood Involvement Process	Enforcement
Administrative Rules	Appeals
Violations and Enforcement	

Proposed Molalla Mural Ordinance Outline (partial)	
Sections	Comments
<b>Purpose</b>	
<b>Definitions</b>	
<b>General Prohibitions</b>	Compensation (Mil), Electrical/Mechanical/Changing Images (Flo, Mil),
<b>Mural Standards</b> – These are the physical standards for murals placed in Molalla.	Milwaukie has 2 classes of mural with differing standards (Public and Original), while Florence provides 1 set of standards for all murals.  Potential Standards Categories: Dimensions, Materials, Placement, aesthetic compatibility, original work of art, maintenance requirement, lighting.  Note- Florence uses the aesthetic compatibility section to insure appropriate signage.

## Amendments

### TITLE 20 PUBLIC ART

#### CHAPTER 20.04 ART MURALS

##### 20.04.010 PURPOSE

The purpose of this title, and the policy of the City of Milwaukie, is to permit and encourage art murals under certain terms and conditions. Art murals comprise a unique medium of expression that serves the public interest. Art murals have purposes distinct from signs and confer different benefits. Such purposes and benefits include: improved aesthetics; avenues for original artistic expression; public access to original works of art; community participation in the creation of original works of art; community building through the presence of, and identification with, original works of art; and a reduction in the incidence of graffiti and other crime. Art murals can increase community identity and foster a sense of place and enclosure if they are located at heights and scales visible to pedestrians and are retained for periods of 5 years or more.

##### 20.04.020 DEFINITIONS

Words used in this title have their normal dictionary meaning unless they are listed in this chapter or unless this title specifically refers to another title. Words listed in this chapter have the specific meaning stated or referenced unless the context clearly indicates another meaning.

"Applicant" means the party that is primarily responsible for the design and installation of an art mural.

"Original art mural" means a hand-painted image on the exterior wall of a building that may comprise up to 40% of the surface area of a building wall.

"Public art mural" means a hand-painted, hand-tiled, or digitally printed image on the exterior wall of a building where the wall or surface is either on City-owned property or has a public art easement and is viewable from another property or right-of-way.

"Mural easement" means an easement granted to the City of Milwaukie by a property owner for purposes of installing and maintaining a public art mural on the surface of a structure or building.

"Compensation" means the exchange of something of value. It includes, without limitation, money, securities, real property interest, barter of goods or services, promise of future payment, or forbearance of debt. "Compensation" does not include goodwill, or an exchange of value, that a building owner (or leaseholder with a right to possession of the wall upon which the mural is to be placed) provides to an artist, muralist, or other entity, where the compensation is only for the creation and/or maintenance of the mural on behalf of the building owner or leaseholder, and where the building owner or leaseholder fully controls the content of the art mural.

"Owner" means the entity(ies) that own(s) the real property that contains the building or structure upon which a public art mural is installed. In the case where a public art mural is installed in the right-of-way, the owner means the entity(ies) with jurisdiction over that right-of-way.

"Right-of-way" means an area that allows for the passage of people or goods. Right-of-way includes passageways such as freeways, pedestrian connections, alleys, and all streets. A right-

## Proposed Code Amendment

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of-way may be dedicated or deeded to the public for public use and under the control of a public agency, or it may be privately owned.

"Ad Hoc Mural Committee" means the committee assembled on an ad hoc basis to review and make a recommendation to the Milwaukie Arts Committee regarding a mural application, based on criteria established in the Milwaukie Mural Arts Program administrative rules and procedures.

### **20.04.030 PROHIBITION OF COMPENSATION**

No compensation will be given or received for the display of art murals or for the right to place the mural on another's property. The applicant shall certify in the permit application that no compensation will be given or received for the display of the mural or the right to place the mural on the property.

### **20.04.040 VIOLATIONS AND ENFORCEMENT**

It is unlawful to violate any provision of this title; any administrative rules adopted by the City of Milwaukie pursuant to this title; or any representations made, or conditions or criteria agreed to, in an art mural permit application. This applies to any applicant for an art mural permit, the proprietor of a use or development on which a permitted art mural is located, or the owner of the land on which the permitted art mural is located.

#### **A. Notice of Violations**

The City Manager, or designee, must give written notice of any violation to the property owner. Failure of the property owner to receive the notice of the violation does not invalidate any enforcement actions taken by the City.

#### **B. Responsibility for Enforcement**

The regulations of this title, and the conditions of art mural permit approvals, shall be enforced by the City Manager, or designee.

### **20.04.050 PUBLIC ART MURALS**

#### **A. Standards for Public Art Murals**

##### **1. Allowed Locations**

Public art murals are only allowed on buildings or structures as described below, unless a public art mural is specifically prohibited by Subsection 20.04.050.A.2. Zoning designations refer to the base zones established in Title 19.

##### **a. Downtown Zones**

Public art murals are allowed in areas zoned Downtown Commercial, Downtown Office, Downtown Storefront, Downtown Residential, or Downtown Open Space.

##### **b. Commercial Zones**

Public art murals are allowed in areas zoned General Commercial or Community Shopping Commercial.

##### **c. Industrial Zones**

Public art murals are allowed in areas zoned Manufacturing or Business Industrial.

d. Community Service Uses

Public art murals are allowed on uses that have received approval as a community service use, per Section 19.904.

2. Specifically Prohibited Locations

Public art murals are specifically prohibited on buildings or structures that are designated as a Contributing or Significant Historic resource per Section 19.403.

B. Public Ownership, Duration and Alteration

1. Public Ownership

The mural must be on the surface of a building or structure that is either on property owned by the City of Milwaukie or for which a mural easement to the City has been granted.

2. Duration and Alteration

The public art mural shall remain in place, without alteration, for a minimum period of 5 years. "Alterations" includes any change to a permitted mural, including, but not limited to, any change to the image(s), materials, colors, or size of the permitted mural. "Alteration" does not include naturally occurring changes to the mural caused by exposure to the elements or the passage of time. Minor changes to the permitted mural that result from the maintenance or repair of the mural shall not constitute "alteration." Such minor changes may include slight and unintended deviations from the original image, colors, or materials that occur when the permitted mural is repaired due to the passage of time or as a result of vandalism.

Public art murals may be removed within the first 5 years of the date of registration, per the terms of the public art easement and under any of the following circumstances:

- a. The property on which the mural is located is sold.
- b. The structure or property is substantially remodeled or altered in a way that precludes continuance of the mural.
- c. The property undergoes a change of use authorized by the Planning Department.

C. Physical Standards

1. Dimensions

A public art mural may wrap around a wall edge or corner and/or may extend above the wall height.

2. Materials

Public art mural materials may include the following: paint, painted wood or plastic surfaces affixed to a building or structure, mosaics of ceramic tile and/or glass, vinyl or pella, or similar materials. The Ad Hoc Mural Committee and Milwaukie Arts Committee may consider other materials in their review of a proposed public art mural.

3. Placement

No new public art mural shall obstruct the functioning of any building opening, including, but not limited to, windows, doors, and vents.



## Proposed Code Amendment

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### D. Structural Permit

Public art murals that are affixed to a building, or contain elements that extend above or around a wall, shall require structural permit approval as deemed necessary by the Milwaukie Building Official.

### E. Lighting

No new or existing public art mural may consist of, or contain, electrical or mechanical components or changing images; i.e., moving structural elements, flashing or sequential lights, lighting elements, or other automated methods that result in movement, the appearance of movement, or change of mural image or message. Static illumination, which is turned off and back on not more than once every 24 hours, is permitted.

Lighting may be required for safety or crime deterrent purposes with consideration to impacts to surrounding properties, as determined by the City Building Official.

### F. Application

An applicant shall initiate a proposal to place a public art mural by filing an application with the City. The application shall be made on forms provided by the City, include the application fee for review of a public art mural, and include any accompanying materials deemed necessary by the City for review of the public art mural proposal (such as proposed designs, site photos, and building or structure elevation drawings).

Any fees shall be in accordance with the City's fee schedule.

### G. Administrative Review

1. Upon submission of a complete application for a public art mural, the City Manager, or designee, shall review the proposal for conformance with the standards in Subsection 20.04.050.A.
2. Upon finding that the proposed public art mural conforms with the standards in Subsection 20.04.050.A, the City Manager, or designee, shall inform the applicant in writing that the proposed public art mural meets the standards in Subsection 20.04.050.A. The City Manager, or designee, shall then provide the applicant with the materials necessary to complete the public notice requirements in Subsection 20.04.050.H.2.
3. Prior to the Ad Hoc Mural Committee review, the applicant shall provide documentation to the City Manager, or designee, that they complied with the public notice requirements of Subsection 20.04.050.H.2.

### H. Public Notice

#### 1. Mailed Notice

Mailed notice is intended as a courtesy and to provide the Neighborhood District Associations (NDAs) a chance to invite the applicant to discuss the proposal.

- a. The City Manager, or designee, shall mail a notice to the chairperson of the NDA(s) containing, or whose boundary is within 300 feet of, the site of the proposed mural.
- b. The notice shall be mailed at least 14 days prior to the Ad Hoc Mural Committee's review of the proposed mural.
- c. The notice shall include instructions for submitting comments; the name and contact information for the applicant and owner; contact information for the City

Manager, or designee; and a legibly-sized color representation of the proposed public art mural.

2. Posted Notice

A notice shall be posted at the site of the proposed public art mural and shall conform to the following standards.

- a. The notice shall be posted at least 14 days prior to the Ad Hoc Mural Committee's meeting to review the proposed mural. The City Manager, or designee, shall provide the applicant with materials to be posted. The applicant shall be responsible for ensuring that the notice is posted and remains posted. If the notice is damaged or removed, the applicant shall replace the notice as soon as practicable.
- b. The notice shall be durable and waterproof.
- c. The notice shall be clearly visible from the public right-of-way and be at least 11 x 17 in. The City Manager, or designee, may require more than 1 sign to be posted, depending on specific site characteristics.
- d. The notice shall include the name and contact information for the applicant and owner; contact information for the City Manager, or designee; and a legibly-sized color representation of the proposed public art mural.

I. Ad Hoc Mural Committee Review

The Ad Hoc Mural Committee shall review the proposed public art mural. The intent of this review is to explore the feasibility of the mural, evaluate the community support for the proposed mural, assess the mural given its context and its placement on either a City building or building with a public art easement, and to make a recommendation to the Milwaukie Arts Committee for approval, approval with conditions, or denial of the public art mural application.

1. Committee Composition

The Ad Hoc Mural Committee shall be selected by the City Manager, or designee, and will be comprised of a minimum of 3 members and maximum of 5 members. A majority of the members shall be professional mural artists and/or professional public art administrators. At least 1 member shall also reside, own property, or own a business within the neighborhood where the mural is proposed.

Further selection criteria may be set forth in the Milwaukie Mural Arts Program administrative rules and procedures.

2. Review Process

The Ad Hoc Mural Committee shall be convened by the City Manager, or designee, and shall meet within 30 business days of the submitted mural application being deemed complete.

3. Review Criteria

a. Scale

Appropriateness of scale to the wall upon which the mural will be painted/attached and to the surrounding physical features.

## Proposed Code Amendment

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- b. Context  
Architectural, geographical, sociocultural, and/or historical relevance to the site.
  - c. Community Support  
General support/advocacy from the building owner/user, surrounding neighborhood, adjacent businesses, and/or arts community.
  - d. Feasibility  
Demonstrated ability to complete the proposed mural on time and within budget.
  - e. Media  
Appropriate media proposed to ensure the mural's longevity and durability.
  - f. Structural and Surface Stability  
Commitment to repair the mural surface as necessary before painting and a plan for mitigating graffiti through design and/or graffiti coating.
  - g. Signed Easement Form from Building Owner  
Commitment to keep the mural in place as approved for a minimum of 5 years and to maintain the mural during that time.
  - h. Public Accessibility, Safety and Lighting  
Compliance with City codes for safety, accessibility, and lighting.
- J. Milwaukie Arts Committee Review
- 1. Authority  
The Milwaukie Arts Committee shall have the authority to determine if an application for a public art mural substantially meets all of the applicable requirements and to issue a final approval, approval with conditions, or denial of the public art mural application.
  - 2. Notice of Decision  
The City Manager, or designee, shall issue the notice of decision in writing. The decision shall include the following information:
    - a. A brief summary of the proposal.
    - b. A description of the subject property reasonably sufficient to inform the reader of its location, including street address, if available, map and tax lot number, and zoning designation.
    - c. A statement of the facts that the review authority relied upon to determine whether the application satisfied, or failed to satisfy, each applicable approval criterion.
    - d. The decision to approve or deny the application and, if approved, any conditions of approval necessary to ensure compliance with the applicable criteria.
    - e. The date upon which the decision rendered shall become final, unless appealed. The decision shall state the date and time by which an appeal must be filed. The statement shall reference the requirements for filing an appeal of the decision.
    - f. A statement that the complete public art mural application file is available for review, including findings, conclusions, and any conditions of approval. The decision shall list when and where the case file is available and the name and

telephone number of the City representative to contact about reviewing the case file.

K. Appeals

A decision on the approval, approval with conditions, or denial of the public art mural application may be appealed by filing a written request to the City Manager within 15 days of the date on the notice of decision. If the 15<sup>th</sup> day falls upon a weekend or legal holiday, the end of the appeal period shall be extended to the end of the next business day.

L. Mural Maintenance

Public art murals shall be maintained by the property owner for 5 years and per the terms outlined in the public art easement.

**20.04.060 ORIGINAL ART MURALS**

A. Standards for Original Art Murals

1. Original art murals are allowed on properties described in this subsection.
  - a. Properties in the sign districts 14.16.020 Residential-Office-Commercial Zone, 14.16.030 Neighborhood Commercial Zone, 14.16.040 Commercial Zone, 14.16.050 Manufacturing Zone, and 14.16.060 Downtown Zones.
  - b. Community service use properties, as defined in Subsection 19.904.2, regardless of the sign district in which the property is located.
  - c. Irrespective of Subsections 20.04.060.A.1.a and b, properties designated as significant or contributing historic resources, per Section 19.403, are not eligible for original art murals as allowed in this subsection. This does not prohibit any signage otherwise allowed by the sign district in which the historic resource is located or under Section 14.12.010.
2. An original art mural may comprise up to 40% of the surface area of a building wall. The area allowed for an original art mural is considered in conjunction with the size regulations for other wall signs, as allowed by the sign districts in Chapter 14.16, so that the combination of the wall sign and original art mural shall not exceed 40% of the wall face.
3. An original art mural may wrap around the corner of a building, but the area of the mural on each wall shall be calculated separately.
4. The area of an original art mural includes the area within a rectangular-shaped perimeter enclosing the limits of any lettering, writing, representation, emblem, symbol, figure, drawing, character, or large-scale pattern. If the mural consists of more than 1 section without a painted background, each section area will be calculated and all areas will be totaled. If the mural consists of more than 1 section with a painted image background, the area is calculated within a perimeter enclosing the entire limits of the mural. To simplify area calculation, the smallest dimension of any rectangular-shaped perimeter enclosing a section of the mural shall measure two feet.
5. No compensation may be given or received for placement of an original art mural. Prior to issuance of a sign permit for an original art mural, the building owner shall provide an affidavit that no compensation was or will be received for placement of the original art mural.

## Proposed Code Amendment

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6. Where compensation is involved, nothing in Subsections 20.04.060.A.1 or 5 shall prohibit an original art mural from being permitted as a wall sign, as allowed per the sign district in which the property is located.

### B. Review and Permitting of Original Art Murals

#### 1. Authority

The Milwaukie Planning Director, or designee, shall have the authority to determine if an application for an original art mural meets all of the applicable requirements and to issue a final approval, approval with conditions, or denial of the original art mural application.

#### 2. Notice of Decision

The Planning Director, or designee, shall issue the original art mural permit in writing.

TITLE 10  
CHAPTER 26

MURAL REGULATIONS

SECTION:

- 10-26-1: Purpose, General Provisions
- 10-26-2: Definitions
- 10-26-3: Prohibited Murals
- 10-26-4: Exemption from Permit Requirement
- 10-26-5: Mural Permit Application
- 10-26-6: Mural Permit Criteria
- 10-26-7: Structural Review
- 10-26-8: Suspension or Revocation
- 10-26-9: Inspections and Expiration of Permit
- 10-26-10: Maintenance of a Permitted Mural
- 10-26-11: Alterations to a Permitted Mural
- 10-26-12: Removal of a Permitted Mural
- 10-26-13: Enforcement
- 10-26-14: Appeals

**10-26-1: PURPOSE, GENERAL PROVISIONS:** The purpose of this chapter is to allow for murals on a content-neutral basis while maintaining specific standards with regard to the location, size, quantity and installation. Murals provide benefits distinct from signs, such as improved aesthetics and community identity if they are located at heights and scales visible to pedestrians.

**10-26-2: DEFINITIONS:**

ALTERATION	Any change to a permitted mural, including but not limited to any change to the image(s), materials, colors or size of the mural. "Alteration" does not include maintenance or repair of a permitted mural.
COMMUNITY DEVELOPMENT DIRECTOR	The Florence Community Development Director or his or her designee. For the ease of reference in this section, the Community Development Director shall be referred to by the term "Director."
MURAL	A work of visual art which is tiled or painted directly upon, or affixed directly to a fence, wall or an exterior wall of a building and exceeds the maximum size of wall sign allowed in a sign district. Visual art that is intended to communicate an informational message is not considered a mural and is regulated under the sign code.
PERMITTED MURAL	A mural for which a permit has been issued by the City of Florence pursuant to this chapter.

**10-26-3: PROHIBITED MURALS:**

- A. Murals that include any of the following are prohibited and are nuisances. A mural shall not include:
1. Electrical or mechanical components; or
  2. Changing images.

**10-26-4: PROHIBITED MURALS:**

A mural that is not visible from the public right-of-way and not visible from public property is allowed without a mural permit.

**10-26-5: MURAL PERMIT APPLICATION:**

- A. A mural permit application shall be considered by the City Council and shall proceed under the procedures of FCC 10-1-1-5, "Land Use Hearings."
- B. The general application requirements of FCC 10-4-1-4 shall apply, except for the submittal information required under FCC 10-1-1-4-B-2 and B-3. An application for a mural permit must contain the following information:
  - 1. Authorization from the property owner of the location where the mural is to be installed and agreement to maintain the mural for the life of the mural, unless the mural is removed under the circumstances specified in Section 10-26-11 of this Title.
  - 2. A site plan drawn to scale that shows the location of existing structures and where the mural is to be installed, location of property lines, abutting right-of-way, names of streets, information of other murals on abutting properties and north arrow.
  - 3. A map (e.g. tax map or aerial map) that shows the existing land use on-site and the surrounding land uses within three-hundred feet (300') of the site.
  - 4. A color image of the proposed mural with dimensions drawn to scale.
  - 5. A building elevation depicted to scale showing the proposed building area where the mural is to be installed. Information detailing the existing building materials and architectural features, as well as proposed mural materials, construction size, and depth.
  - 6. Information regarding the expected life span of the mural and maintenance plan for the life of the mural. The maintenance plan shall specify the frequency of maintenance and provisions to address fading and vandalism (i.e. durable exterior paints, cleanable surfaces, and/or other measures that will discourage vandalism or facilitate easier and cheaper repair of the mural if needed).

**10-26-6: MURAL PERMIT CRITERIA:** No person may commence mural installation on a site without first obtaining a mural permit. Murals without a mural permit are signs regulated by Title 4, Chapter 7. Use of murals does not affect the amount or type of signage otherwise allowed by the sign regulations of Title 4 Chapter 7. For approval, a mural permit application must meet the following criteria.

- A. The Mural is compatible with the aesthetic appearance of adjacent buildings and the surrounding community character.

In evaluating this criterion, the following are examples of factors that can be used to measure compatibility and community character.

- 1. The mural is harmonious with or integrates aspects of special architectural and design features of surrounding buildings or the larger neighborhood.
- 2. The mural may reflect the diversity of the world.
- 3. The mural may reflect historic, cultural, or natural heritage.
- 4. The mural respects the original character of the building and surrounding buildings

- B. The mural will enhance the building appearance and overall visual attractiveness of the City. The overall objective is for viewers of all ages to experience a sensation of engagement, humor, wonder or delight, or all of these emotions.

In evaluating this criterion, the following are examples of factors that can be used to measure appearance and attractiveness.

1. The mural will not adversely dominate the building or surrounding area.
  2. The mural will not create traffic or safety hazards.
  3. The mural is harmonious with the scale, color, details, materials, and proportion of the building.
- C. Internal illumination of a mural is not permitted. External illumination is allowed and shall be consistent with the illumination standards of Section 4-7-25 of this Code.
  - D. Murals are permitted only on the flat planes of walls and may extend no more than six inches (6") from the plane of the wall, unless approved by the City Council.
  - E. Murals shall be installed for durability and maintained for the life of the mural or until the mural is removed. Murals shall consist of materials that have proven performance for withstanding the coastal climate.
  - F. The Mural shall use materials, coatings, or other protective techniques that will be resistive to vandalism and graffiti.
  - G. The creator/artist is under contract or other obligation to complete the Mural.
  - H. The Mural is an original work of art
  - I. If a mural installation includes any changes to a building that would otherwise require Design Review as described in Title 10 Chapter 6, those changes must be approved through the Design Review process simultaneous with approval of the Mural Permit. Murals may not otherwise result in the site property or structure becoming out of compliance with other land use code provisions, prior land use approvals, or prior conditions of approval governing the building or property on which the mural is to be located.

In applying the above criteria, the City shall make its decision in accordance with applicable constitutional requirements.

**10-26-7: STRUCTURAL REVIEW:** Murals with any element that weighs more than 7 pounds per square foot or in total weigh more than 400 pounds require structural review.

**10-26-8: SUSPENSION OR REVOCATION:**

- A. The Director may suspend or revoke a permit issued under the provisions of Title 10. The Director will inform the permit holder of the suspension or revocation in writing. Permits may be suspended or revoked upon a finding that:
  1. The permit issued on the basis of incorrect information supplied by the applicant; or
  2. The permit is issued in violation of any provisions of Title 10.



**10-26-9: INSPECTIONS AND EXPIRATION OF PERMIT:**

- A. Inspections: The Director will conduct inspection of murals for which a permit has been issued. The permit holder must notify the Director when the work is ready for inspection.

The inspection shall verify that the mural is in conformance with the application and in conformance with the provisions of this Chapter. Structural inspections shall be completed in conjunction with any required building or structural permits and shall verify the applicable requirements from the applicable codes. The inspector shall take at least one photo to be kept on file to document the site, mural size, mural location and mural image consistency.

The Director may conduct inspections whenever it is necessary to enforce any provision of the City Code, to determine compliance with the City Code, or whenever the Director has reasonable cause to believe there exists any violation of the City Code.

- B. Expiration of Permit: If inspection approval has not been obtained by the applicant within twelve months of issuance of a mural permit, the permit is void, and no further work on the mural may be done at the premises until a new permit has been secured and a new fee paid.

- C. Extensions of Permit: The Director may extend a permit for one period of twelve months upon finding the following criteria have been met.

1. The request for an extension is made in writing prior to expiration of the original approval.
2. There are special or unusual circumstances that exist which warrant an extension.
3. No material changes of surrounding land uses or zoning has occurred.

The Director may deny the request for an extension of the mural permit if new land use regulations have been adopted that affect the applicant's proposal.

**10-26-10: MAINTENANCE OF A PERMITTED MURAL:** For any mural approved after March 21, 2011, the building owner is responsible for ensuring that a permitted mural is maintained in good condition, fading is addressed and the mural is repaired in the case of vandalism or accidental destruction in accordance with the approved maintenance plan.

**10-26-11: ALTERATIONS TO A PERMITTED MURAL:** Alterations of the mural must be approved by obtaining a new permit through the process described in Section 10-26-3 of this Chapter.

**10-26-12: REMOVAL OF A PERMITTED MURAL:**

Prior to removal of a mural the property owner must notify the Community Development Department at least 30 days prior to its removal with a letter stating the intent to remove the mural. Any associated materials that were used to affix or secure the mural to the wall must be removed at the time of the removal of the mural or incorporated into a new mural application. This includes, but is not limited to mounting hardware or brackets, caulk or grout, and adhesives or glues.

**10-26-13: ENFORCEMENT:**

- A. Violations: It is unlawful to violate any provisions of this Chapter. This applies to any person undertaking an application for a Mural Permit, to the building tenant or owner of the Mural site. For the ease of reference in this section, all of these persons are referred by the term "operator".

- B. Notice of violations: The Community Development Director must give written notice of any violation of the City Code to the operator. Failure of the operator to receive the notice of the violation does not invalidate any enforcement actions taken by the City.
- C. Responsibility for enforcement: The regulations of this Chapter may be enforced by the Director pursuant to Florence City Code 10-1-1-8.

**10-26-14: APPEALS:** Under this Chapter, any quasi-judicial decision of the City Council may be appealed to the Land Use Board of Appeals in accordance with state law.

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Amended by Ordinance 6, Series 1999 effective 4-19-99  
Amended by Ordinance 17, Series 1999 effective 1-7-2000  
Amended by Ordinance, Series 2000 effective 7-21-2000  
Amended by Ordinance 16 Series 2009 effective 10-12-2009  
Section 10-26-6 Amended by Ord. No. 9, Series 2009  
Sections 10-26-3-1, 10-26-32, 10-26-4, 10-26-5, 10-26-6, 10-26-7, 10-7-8 and 10-26-9 Deleted, and  
Sections 10-26-1, 10-26-2, 10-26-3, and Title Amended by Ord. No. 4, Series 2011 effective April 22,  
2011  
Sections 10-26-1, 10-26-2, and 10-26-3 Amended, and Sections 10-26-4 through 10-26-14 Added by  
Ord. No. 5, Series 2011 effective April 22, 2011

## City of Portland Original Art Mural Ordinance

### 4.10.010 Purpose of This Title.

The purpose of this Title and the policy of the City of Portland is to permit and encourage original art murals on a content-neutral basis on certain terms and conditions. Original art murals comprise a unique medium of expression which serves the public interest. Original art murals have purposes distinct from signs and confer different benefits. Such purposes and benefits include: improved aesthetics; avenues for original artistic expression; public access to original works of art; community participation in the creation of original works of art; community building through the presence of and identification with original works of art; and a reduction in the incidence of graffiti and other crime. Murals can increase community identity and foster a sense of place and enclosure if they are located at heights and scales visible to pedestrians, are retained for longer periods of time and include a neighborhood process for discussion.

### 4.11.010 Where These Regulations Apply.

The regulations of this title apply to all Original Art Murals installed on sites within the City of Portland. It does not apply to installations that are in the right-of-way, unless the installation is part of a building or structure that extends from the site over a right-of-way.

### 4.12.010 General.

Words used in this Title have their normal dictionary meaning unless they are listed in Section 4.12.020 or unless this Title specifically refers to another Title. Words listed in Section 4.12.020 have the specific meaning stated or referenced unless the context clearly indicates another meaning.

### 4.12.020 Definitions.

(Amended by Ordinance No. 189656, effective September 20, 2019.)

**A. Alteration.** Any change to the Permitted Original Art Mural, including but not limited to any change to the image(s), materials, colors or size of the Permitted Original Art Mural. "Alteration" does not include naturally occurring changes to the Permitted Original Art Mural caused by exposure to the elements or the passage of time. Minor changes to the Permitted Original Art Mural which result from the maintenance or repair of the Permitted Original Art Mural shall not constitute "alteration" of the Permitted Original Art Mural within the meaning of this Title. This can include slight and unintended deviations from the original image, colors or materials that occur when the Permitted Original Art Mural is repaired due to the passage of time, or as a result of vandalism such as graffiti.

**B. Changing Image Mural.** A mural that, through the use of moving structural elements, flashing or sequential lights, lighting elements, or other automated method, results in movement, the appearance of movement or change of mural image or message. Changing image murals do not include otherwise static murals where illumination is turned off and back on not more than once every 24 hours.

**C. Compensation.** The exchange of something of value. It includes, without limitation, money, securities, real property interest, barter of goods or services, promise of future payment, or forbearance of debt. "Compensation" does not include:

1. goodwill; or

2. an exchange of value that a property owner (or leaseholder with a right to possession of the wall upon which the mural is to be placed) provides to an artist, muralist or other entity where the compensation is only for the creation and/or maintenance of the mural on behalf of the property owner or leaseholder, and the property owner or leaseholder fully controls the content of the mural.

**D. Conservation District.** A collection of individual resources that is of historic or cultural significance at the local or neighborhood level, as identified through an inventory and designation process and mapped as such in Title 33, Planning and Zoning.

**E. Conservation Landmark.** A structure, site, tree, landscape, or other object that is of historic or cultural interest at the local or neighborhood level, as identified through an inventory and designation process and mapped as such in Title 33, Planning and Zoning.

**F. Design Overlay Zones.** These are areas where design and neighborhood character are of special concern. They are identified by having a “d” (Design Overlay) designation on the City’s official Zoning Maps, as regulated by Title 33, Planning and Zoning.

**G. Grade Plane.** A reference plane representing the average of finished ground level adjoining the building at exterior walls. Where the finished ground level slopes away from the exterior walls, the reference plane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 feet (1,829 mm) from the building, between the building and a point 6 feet (1,829 mm) from the building. This definition is adopted from the Oregon Structural Specialty Code.

**H. Historic District.** A collection of individual resources that is of historic or cultural significance at the local, state, or national level, as identified through an inventory and designation process and mapped as such in Title 33, Planning and Zoning.

**I. Historic Landmark.** A structure, site, tree, landscape, or other object that is of historic or cultural significance, as identified through a historic landmark designation process and mapped as such on the City’s inventory of Historic Landmarks. Historic Landmarks are regulated by Title 33, Planning and Zoning.

**J. Original Art Mural.** A hand-produced work of visual art which is tiled or painted by hand directly upon, or affixed directly to an exterior wall of a building or structure. Original Art Mural does not include:

1. mechanically produced or computer generated prints or images, including but not limited to digitally printed vinyl;
2. murals containing electrical or mechanical components; or
3. changing image murals.

**K. Permitted Original Art Mural.** An Original Art Mural for which a permit has been issued by the City of Portland pursuant to this Title.

**L. Public Right-of-Way.** An area that allows for the passage of people or goods, that has been dedicated or deeded to the public for public use. Public Rights-of-Way include passageways such as freeways, pedestrian connections, alleys, and all streets.

#### **4.20.010 Allowed Original Art Murals.**

(Amended by Ordinance Nos. 185915 and 189656, effective September 20, 2019.) Original Art Murals that meet all of the following criteria and which are not prohibited will be allowed upon satisfaction of the applicable permit requirements:

- A.** No part of the mural shall exceed 30 feet in height measured from the grade plane.
- B.** The mural shall remain in place, without alterations, for a period of 2 years, except in limited circumstances to be specified in the Bureau of Development Services Administrative Rules. The applicant shall certify in the permit application that the applicant agrees to maintain the mural in place for a period of 2 years without alteration.
- C.** The mural shall not extend more than 6 inches from the plane of the surface upon which it is tiled or painted or to which it is affixed.
- D.** In Design Overlay Zones, the mural shall meet all of the additional, objective Design Standards for Original Art Murals, as established in the Bureau of Development Services Administrative Rules.
- E.** In the Historic Resource Overlay Zone, murals may be allowed on buildings or structures that have been identified as non-contributing structures within Historic and Conservation Districts. These murals shall meet all of the additional, objective Design Standards for Original Art Murals, as established in the Bureau of Development Services Administrative Rules.

#### **4.20.020 Prohibited Murals.**

(Amended by Ordinance No. 189656, effective September 20, 2019.) The following are prohibited:

- A.** Murals on sites developed with residential buildings with fewer than five dwelling units on the site.
- B.** Murals on sites with historic or conservation landmarks.
- C.** Murals on sites containing buildings that have been identified as contributing structures to a historic or conservation district.
- D.** Murals for which compensation is given or received for the display of the mural or for the right to place the mural on another's property. The applicant shall certify in the permit application that no compensation will be given or received for the display of the mural or the right to place the mural on the property.

E. Murals which would result in a property becoming out of compliance with the provisions of Title 33, Planning and Zoning, or land use conditions of approval for the development on which the mural is to be located.

F. Murals on stormwater facilities.

#### **4.20.030 Relationship of Permitted Original Art Mural to other Regulations.**

The exemption of PCC Subsection 32.12.020 J. applies only to Original Art Murals for which a permit has been obtained under this Title and any adopted Administrative Rules. Issuance of an Original Art Mural Permit does not exempt the permittee from complying with any other applicable requirements of the Portland City Code, including but not limited to Titles 24 and 33.

#### **4.20.040 Exceptions to this Title.**

Exceptions to the regulations of this Title are prohibited.

#### **4.30.010 Establishment of Neighborhood Involvement Process for Permits.**

The Bureau of Development Services shall adopt through Administrative Rule a community involvement process requiring an applicant for an Original Art Mural permit to provide notice of and to hold a community meeting on the mural proposal at which interested members of the public may review and comment upon the proposed mural. No Original Art Mural permit shall be issued until the applicant certifies that he or she has completed the required Neighborhood Involvement Process. This is a process requirement only and in no event will an Original Art Mural permit be granted or denied based upon the content of the mural.

#### **4.50.010 Violations.**

It is unlawful to violate any provision of this Title, any Administrative Rules adopted by the Bureau of Development Services pursuant to this Title, or any representations made or conditions or criteria agreed to in an Original Art Mural permit application. This applies to any applicant for an Original Art Mural permit, to the proprietor of a use or development on which a permitted Original Art Mural is located, or to the owner of the land on which the permitted Original Art Mural is located. For the ease of reference in this Title, all of these persons are referred to by the term "operator."

#### **4.50.020 Notice of Violations.**

The Bureau of Development Services must give written notice of any violation to the operator. Failure of the operator to receive the notice of the violation does not invalidate any enforcement actions taken by the City.

#### **4.50.030 Responsibility for Enforcement.**

The regulations of this Title, and the conditions of Original Art Mural permit approvals, shall be enforced by the Director of the Bureau of Development Services pursuant to Chapter 3.30 and Title 22 of the City Code.

#### **4.40.010 Administrative Rules to Be Adopted**

The Bureau of Development Services is authorized and directed to adopt and administer Administrative Rules implementing this Title, and setting forth the substantive and procedural requirements and fees for an Original Art Mural Permit. Such fees shall in no event exceed the actual costs of administration.