
Annexation Narrative

E Lincoln Road Townhomes

AVALON ENGINEERING

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City of Woodburn, Oregon

Prepared for:

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PROJECT DESCRIPTION

This project is a development of a twenty-six-lot residential subdivision on a 2.32-acre property located near 1651 E Lincoln Road in Woodburn, Oregon. The property can also be located by the Marion County Map under the following information: 051W17AB00602.

The development proposes to construct twenty-six townhomes, construction of two public streets, of which one will connect to E Lincoln Road that will provide access for the new homes and frontage improvements on E Lincoln Road

EXISTING CONDITIONS

The property currently is a vacant parcel of land, it used to be farm land for growing cane berries. The cane berries and supporting wires and posts have since been removed and is now just pasture land and has access from E Lincoln Road. This site is outside the city limits, but inside the urban growth boundary for the city of Woodburn. The northern property line of this site is the Woodburn city limits.

PROPOSED DEVELOPMENT

The proposed development will consist of a total of twenty-six lots for the new residential homes and access to these new homes will come of two new public streets that will connect to the existing public street that is E Lincoln Road.

These new lots will require new services for sanitary sewer and water.

There is an existing sanitary sewer main that ends at a cleanout about 416 feet west of the project site on E Lincoln Road and the new sanitary sewer main can connect to this.

There is an existing water main that ends at about 406 feet west of the project site on E Lincoln Road. The new water main will connect to the one in E Lincoln Road where it will be continued through the subdivision and towards the northern end of the project site where it can connect into an existing water line in the adjacent commercial site. This connection will form a loop in the water supply system.

As for the stormwater runoff that is a little bit trickier. There are several options in which direction to take the storm water pipe system. One is to the west through the commercial development and connect into the storm water conveyance system in Highway 99E. Another is to take it south and then east where it can be discharged into the existing ditch system along the north side of E Lincoln Road. But our best option might be to take it east along the neighbor's northern property line and connect it into the existing storm sewer system in Kennedy Street. This will require obtaining an easement from the easterly neighbor and negotiations are currently in progress. Whatever direction is chosen, it first has to go through a water quality/detention facility before it connects into the existing storm drainage system.

CODE COMPLIANCE

This section will demonstrate that this project is in either compliance with the criteria of the Woodburn Development Ordinance or if any Zoning Adjustments or Variances will be required.

Section 5.04.01 Annexation

A. Purpose: The purpose of this Type IV review is to provide a procedure to incorporate contiguous territory into the City in compliance with state requirements, Woodburn Comprehensive Plan, and Woodburn Development Ordinance.

B. Mandatory Pre-Application Conference: Prior to requesting annexation to the City, a Pre- Application Conference (Section 4.01.04) is required. This provides the city an opportunity to understand the proposed annexation and an opportunity to provide information on the likely impacts, limitations, requirements, approval standards, and other information that may affect the proposal.

Comment: A Pre-Application Conference has already taken place.

C. Criteria:

1. Compliance with applicable Woodburn Comprehensive Plan goals and policies regarding annexation.
2. Territory to be annexed shall be contiguous to the City and shall either:

- a. Link to planned public facilities with adequate capacity to serve existing and future development of the property as indicated by the Woodburn Comprehensive Plan; or
- b. Guarantee that public facilities have adequate capacity to serve existing and future development of the property.

Comment: The proposed development is currently outside the City Limits, but according to the Comprehensive Plan it is zoned Residential Single Family (RS). Upon Annexation this proposed development will be zoned Residential Single Family (RS).

3. Annexations shall show a demonstrated community need for additional territory and development based on the following considerations:

a. Lands designated for residential and community uses should demonstrate substantial conformance to the following:

- 1) The territory to be annexed should be contiguous to the City on two or more sides;

Comment: The proposed development has the City Limits as the northern property line of the site. There is a property to the west that is currently outside the city limits, but adjacent to the city limits. This could also be annexed and developed in the near future as well as the property to the east.

- 2) The territory to be annexed should not increase the inventory of buildable land designated on the Comprehensive Plan as Low or Medium Density Residential within the City to more than a 5-year supply;

Comment: The proposed development is 2.32 acres in size and when fully built out will have twenty-six new townhomes. Twenty-six new lots are a lot less than a 5-year supply.

- 3) The territory proposed for annexation should reflect the City's goals for directing growth by using public facility capacity that has been funded by the City's capital improvement program;

Comment: As part of the proposed development, there will have to be an extension of the public sanitary sewer line and the public water line that currently terminate at the city limits on E Lincoln Road. The construction of these utilities may encourage further development in this area or connection to these utilities as they will be closer to their properties.

- 4) The site is feasible for development and provides either:
 - a) Completion or extension of the arterial/collector street pattern as depicted on the Woodburn Transportation System Plan; or
 - b) Connects existing stub streets, or other discontinuous streets, with another public street.

Comment: E Lincoln Road is the boundary street for this project. It has no curb, gutter and sidewalk, but has a pavement width of 22 feet and a Right-Of-Way width of 50 feet in the vicinity of this project and 40 feet elsewhere. In the latest TSP E Lincoln Road is designated as a Service Collector with a Right-Of-Way width requirement of 72 feet. A 6-foot right of way dedication will be required along the frontage of the project site. This 6-foot right of way dedication will at least give the half Right-Of-Way requirement for a Service Collector. There are no other public streets adjacent to this project, that will probably happen upon further development in this area.

- 5) Annexed fulfills a substantial unmet community need, that has been identified by the City Council after a public hearing. Examples of community needs include park space and conservation of significant natural or historic resources.

Comment: Unfortunately, this property is not a significant natural or historic resource, it is just plain dirt. But on the bright side, depending on which site layout is finally chosen, there might be some land left over than can be designated as park space.

b. Lands designated for commercial, industrial and other uses should demonstrate substantial conformance to the following criteria:

- 1) The proposed use of the territory to be annexed shall be for industrial or other uses providing employment opportunities;
- 2) The proposed industrial or commercial use of the territory does not require the expansion of infrastructure, additional service capacity, or incentives that are in excess of the costs normally borne by the community for development;
- 3) The proposed industrial or commercial use of the territory provides an economic opportunity for the City to diversify its economy.

Comment: Not Applicable, upon annexation this property will be zoned Residential and not Industrial or Commercial.

D. Procedures:

1. An annexation may be initiated by petition based on the written consent of:
 - a. The owners of more than half of the territory proposed for annexation and more than half of the resident electors within the territory proposed to be annexed; or
 - b. One hundred percent of the owners and fifty percent of the electors within the territory proposed to be annexed; or
 - c. A lesser number of property owners.
2. If an annexation is initiated by property owners of less than half of property to be annexed, after holding a public hearing and if the City Council approves the proposed annexation, the City Council shall call for an election within the territory to be annexed. Otherwise no election on a proposed annexation is required.
3. The City may initiate annexation of an island (ORS 222.750), with or without the consent of the property owners or the resident electors. An island is an unincorporated territory surrounded by the boundaries of the City. Initiation of such an action is at the discretion of the City Council.

Comment: There are two owners on this property and they both are in consent of annexation of this property. Since the property is vacant land and has no residence, thereby has no legal address it is not able to have any registered voters attached to this property.

E. Zoning Designation for Annexed Property: All land annexed to the City shall be designated consistent with the Woodburn Comprehensive Plan, unless an application to re-designate the property is approved as part of the annexation process.

Comment: The proposed development is currently outside the City Limits, but according to the Comprehensive Plan it is zoned Residential Single Family (RS). Upon Annexation this proposed development will be zoned Residential Single Family (RS). And that is what we would like.

F. The timing of public improvements is as follows:

1. Street dedication is required upon annexation.

Comment: There required street dedication will be shown on the preliminary plat as part of the planning approval process and subsequently the final plat that is to be recorded with Marion County.

2. Dedication of public utility easements (PUE) is required upon annexation.

Comment: There required public utility easements (PUE) will be shown on the preliminary plat as part of the planning approval process and subsequently the final plat that is to be recorded with Marion County.

3. Street improvements are required upon development.

Comment: There will be two new internal streets that will service the twenty-six new townhomes as well as frontage improvements along E Lincoln Road.

4. Connection to the sanitary sewer system is required upon development or septic failure.

Comment: There will be an extension of the existing sanitary system in E Lincoln Road up to the eastern property line of the project site. There will also be a new sanitary sewer system in the new internal streets that will service the new twenty-six townhomes.

5. Connection to the public water system is required upon development or well failure.

Comment: There will be an extension of the existing water system in E Lincoln Road up to the eastern property line of the project site. There will also be a new water line in the new internal streets that will service the new twenty-six townhomes

6. Connection to the public storm drain system is required upon development.

Comment: As part of the city of Woodburn's storm drainage requirements there will be a storm water detention facility. This facility will detain the difference between the storm water runoff for the predetermined pre and post development conditions. After the necessary detention requirement have been met, the storm water runoff will be released back into the existing storm drainage system.

Preliminary Subdivision Narrative

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January 25th, 2023

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EXISTING CONDITIONS

The property currently is a vacant parcel of land, it used to be farm land for growing cane berries. The cane berries and supporting wires and posts have since been removed and is now just pasture land and has access from E Lincoln Road. This site slopes from the north west corner of the property towards the south and east.

PROPOSED DEVELOPMENT

The proposed development will consist of a total of twenty-six lots for the new residential homes and access to these new homes will come of two new public streets that will connect to the existing public street that is E Lincoln Road.

These new lots will require new services for sanitary sewer and water.

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CODE COMPLIANCE

This section will demonstrate that this project is in either compliance with the criteria of the Woodburn Development Ordinance or if any Zoning Adjustments or Variances will be required.

Section 2.02 Residential Zones

A. the City of Woodburn is divided into the following residential zones:

1. The Residential Single Family (RS) zone is intended to establish standard density single-family residential developments (typically 6,000 square foot lots).

Comment: The proposed development is currently outside the City Limits, but according to the Comprehensive Plan it is zoned Residential Single Family (RS). Upon Annexation this proposed development will be zoned Residential Single Family (RS).

B. Approval Types (Table 2.02A)

1. Permitted Uses (P) are allowed outright, subject to the general development standards of this Ordinance.

Comment: Per Table 2.02A Under Section A single-family detached dwellings (houses), Duplexes, Triplexes, Quadplexes and Townhouses in a group or groups of maximum 4 attached dwellings or Townhouses in any number within a group are permitted outright in the Residential Single Family (RS) zone

C. Development Standards (Tables 2.02B-F)

Comment: Since the proposed development will consist of townhomes then only the standards that are relevant to townhomes will be addressed.

Residential Single-Family (RS) - Site Development Standards Table 2.02B

Per Table, 2.02B Minimum lot area is 1,500 SF for Townhouse lot.

Comment: All Lots meet this requirement.

Per Table 2.02B, The Minimum Lot width is 15 feet for a Townhouse lot.

Comment: All lots meet this requirement.

Per Table 2.02B, the minimum Average Lot depth is 90-feet, for an interior or flag single-family lot.

Comment: There is nothing in table 2.02B that shows the Average Lot depth for townhouse lots, but all lots are 90-feet or greater.

Per Table, 2.02B The Minimum Street frontage is 15-feet for Townhouse lot.

Comment: All lots meet this requirement.

Per Table 2.02B Residential Density, Minimum (units per net acre), 5.2

Comment: The total site is 101,222.09 square feet (2.32 acres). Once you subtract the right of way dedication 36,459.37 square feet (0.836 acres), open space 3,500.11 square feet (0.080 acres) and the water quality/detention facility 3134.24 square feet (0.071 acres) we are left with 58,128.37 square feet (1.334 acres). The number of units required to meet the minimum density is 5.2 x 1.334, which equals 6.93. We have twenty-six units. The minimum density requirements have been met.

Per Table, 2.02B Front yard setbacks and setback abutting a street are per Table 2.02G.

Comment: All lots meet this standard.

Per Table, 2.02B Side yard setbacks for Townhouse lot is zero for common wall and 5-feet for End unit exterior wall.

Comment: All lots meet this standard.

Per Table 2.02B for primary structures 28-ft or more in height, the rear yard setback is 36-ft.

Comment: All lots meet this standard

Per Table 2.02B, Townhouses are exempt from Maximum Lot Coverage.

Comment: All lots meet this standard.

Section 3.01 Streets, Greenways & Other Off-Street Bicycle/Pedestrian Corridors, and Bus Transit

The purpose of this Section is to provide for attractive, safe, comfortable, interesting, and efficient streets, off-street bicycle/pedestrian corridors and facilities, and transit improvements within the city, especially to include and be equitable toward Woodburn residents who cannot or do not own private vehicles or drive, to implement the Woodburn Comprehensive Plan and the Transportation System Plan (TSP), to use civil engineering of streets to reduce speeding, to guide City capital improvement projects, and to have developers upgrade nonconforming streets and construct extended and new streets and off-street bicycle/pedestrian facilities that conform. An objective is to have developers construct or fund street improvements, and other proportional share of improvements for the public, to lessen the cost of land development to the City in order to lessen taxpayer burden for landowners in the context of Oregon Ballot Measures 5 (1990) and 50 (1997). The provision of streets is guided by the applicable goals and policies of the Comprehensive Plan, the TSP, the Highway 99E Corridor Plan, creek greenway plans, the Transit Plan, and other WDO sections.

3.01.01 Applicability

A. Right-of-way standards apply to all public streets and public alleys.

B. Improvement standards apply to all public and private streets, public alleys, sidewalks, landscape strips, and on and off-street public bicycle pedestrian corridors. Standards do not exclude conformance with the public works construction code that the Public Works Department administers.

C. The Woodburn Transportation System Plan (TSP) designates the functional class of major thoroughfares and local streets.

D. This applies to all development as Section 1.02 defines, and is not limited to partitions, subdivisions, multi-family, commercial or industrial construction, or establishment of a manufactured dwelling or recreational vehicle park; however, a lesser set of standards applies to infill residential development of 4 or fewer dwellings and where no land division or Planned Unit Development is applicable, including construction of a single-family dwelling or placement of a manufactured dwelling on an infill lot. See Section 3.01.03C.2.

3.01.02 Street General Provisions

- A. No development shall be approved, or access permit issued, unless the internal streets, boundary streets and connecting streets are constructed to at least the minimum standards set forth in this Section, or are required to be so constructed as a condition of approval.
- B. Private streets are prohibited, except in manufactured dwelling parks, pursuant to State statute (ORS Chapter 446 and OAR 918-600). All private streets in manufactured dwelling parks shall comply with statute and WDO standards.
- C. Materials and construction shall comply with specifications of the City of Woodburn.
- D. The standards of this Section may be modified, subject to approval of a Street Adjustment, Planned Unit Development, Zoning Adjustment, or Variance. Other sections restrict where and how these application types apply.
- E. When all public improvements are due: The construction of all public improvements, their passing City inspections, and acceptance by the City are due no later than by either 5.01.06B in the context of land division final plat application to the City or by building permit issuance, except if (1) the developer applies to the City through the Public Works Department for deferral and (2) the City Administrator or designee issues a document approving and describing a bond or performance guarantee pursuant to Section 4.02.08. Administration of bonding and performance guarantees for improvements that are public defaults to the Public Works Department, and the department shall notify the Community Development Director of deferral applications and any approvals and conditions of approval.
- F. Fees in-lieu: Per Section 4.02.12

3.01.03 Street Improvements Required for Development

A. With development, the Internal, Boundary, and Connecting streets shall be constructed to at least the minimum standards set forth below.

B. Internal Streets

Internal streets shall meet all standards of WDO and the TSP.

Comment: Continental Street which runs east to west and Zephyr Street which tees into Continental and will connect to E Lincoln Road will be the internal streets for this development. They would be designated as local streets in the Transportation System Plan. Continental Street will provide access to fourteen new lots and Zephyr Street will provide access to the twelve new lots as well as the two existing lots to the west.

C. Boundary Streets

1. The minimum improvements for a Boundary Street may be termed “half-street” improvements and shall be as follows, except per subsection 2:

- a. One paved 11-foot travel lane in each direction, even though this results in required improvements being slightly more than half-street by exceeding what the applicable cross section figure would require for a half-street;
- b. On-street parking on the side of the street abutting the development, if the required cross section includes on-street parking;
- c. Curb on the side of the street abutting the development;
- d. Drainage facilities on the side of the street abutting the development;
- e. Landscape strip with street trees and lawn grass on the side of the street abutting the development; and
- f. Sidewalk on the side of the street abutting the development.

Comment: E Lincoln Road is the boundary street for this project. It has no curb, gutter and sidewalk, but has a pavement width of 22 feet and a Right-Of-Way width of 50 feet in the vicinity of this project and 40 feet elsewhere. In the latest TSP E Lincoln Road is designated as a Service Collector with a Right-Of-Way width requirement of 72 feet. A 6-foot right of way dedication will be required along the frontage of the project site. The configuration of the Service Collector between the curbs are as follows: a 12-foot center/left turn lane, two 12-foot travel lanes and two 5-foot bike lanes which are optional. What will be constructed is half of the 12-foot center/left turn lane, a 12-foot travel lane and a 5-foot bike lane for a total width of 23 feet from center of right-of-way to face of new curb. Since the face of new curb will be at a 23-foot offset from the centerline of the right-of-way, a transition from new curb to existing pavement would be required and should not be a problem.

2. Infill residential development of 4 or fewer dwellings and where no land division or Planned Unit Development is applicable, per Section 3.01.01D: A developer shall:

- a. Dedicate ROW per the required cross section;
- b. Dedicate one or more streetside PUEs per Section 3.02.01B;
- c. Either construct sidewalk per the required cross section or pay fee in-lieu per Section 4.02.12;
- d. Plant a street tree or trees per Section 3.06.03A and specifically sited to conform with where a landscape strip would be per the required cross section, or pay fee in-lieu per Section 4.02.12; and
- e. Provide minimum access per Section 3.04, and where a driveway approach, apron, curb cut, or ramp within ROW is relevant, have it meet the public works construction code.

Comment: Not Applicable this is not an Infill residential development

D. Connecting Streets

1. The minimum improvements for a Connecting Street shall be one paved 11-foot travel lane in each direction.
2. Connecting streets shall extend from the boundary street of a development, to the nearest intersection that meets the cross-section and improvement requirements of this Section, or 1,000 feet, whichever is less.

Comment: Any connecting streets in the vicinity of this project that are in the Woodburn city limits are already fully improved with curb, gutter and sidewalk. No further improvements are proposed.

E. When the Director determines that a required improvement of a Boundary Street would not be timely, such as due to pending development of properties in the immediate vicinity or the area for Boundary Street ROW being wholly on adjacent property outside a developer's control, the developer shall pay fees in-lieu per Section 4.02.12.

F. When the Director determines that a required improvement of a Boundary or Connecting Street would not be feasible, due to physical constraints of properties in the immediate vicinity or an inability to obtain right-of-way dedication from property outside a developer's control, the developer shall pay fees in-lieu per Section 4.02.12, the Director may approve construction of a partial-width street to the minimum standards set forth above, or a combination of both.

G. ADA: The minimum standards of this Section 3.01 apply to development such that implementation includes constructing new or upgrading existing public improvements to be ADA-compliant.

Comment: Any sidewalk ramps etc. that need to be constructed on this project will be ADA-compliant. This condition can be met.

Section 3.02 Utilities and Easements

The purpose of this Section is to ensure that adequate easements for public utilities and drainage are provided for all developments, to identify, memorialize, and reserve future street corridors where developers do not dedicate right-of-way (ROW), to secure public access to off-street public bicycle/pedestrian facilities where developers do not dedicate corridors of land to the City, to establish standards for street lighting, and to require that new developments be served with buried or underground utilities.

3.02.01 Public Utility Easements & Public Access Easements

A. the Director shall require dedication of specific easements for the construction and Maintenance of municipal water, sewerage and storm drainage facilities located on private property.

Comment: Any specific easements for the construction and maintenance of municipal water, sewerage and storm drainage facilities located on private property shall be obtained prior to construction. This condition can be met.

B. Streetside: A streetside public utility easement (PUE) shall be dedicated along each lot line abutting a public street at minimum width 5 feet. Partial exemption for townhouse corner lot: Where such lot is 18 to less than 20 feet wide, along the longer frontage, streetside PUE minimum width shall be 3 feet; or, where the lot is narrower than 18 feet, the longer side frontage is exempt from streetside PUE.

Comment: There will be a 5-ft PUE along the new internal streets and E Lincoln Road, even though PGE will most likely require a 10-ft PUE.

C. Off-street: The presumptive minimum width of an off-street PUE shall be 16 feet, and the Public Works Director in writing may establish a different width as a standard.

D. City & public access: The minimum width of a public access easement along either a bicycle/pedestrian corridor or sidewalk overlap of property, where the easement serves instead of dedication of either land or ROW to the City, shall be per Section 3.01.07C.

E. As a condition of approval for development, including property line adjustments, partitions, subdivisions, design reviews, Planned Unit Developments (PUDs), Street Adjustments, Zoning Adjustments, or Variances, the Director may require dedication of additional public easements, including off-street public utility easements and other easement types such as those that grant access termed any of bicycle/pedestrian access, cross access, ingress/egress, public access, or shared access, as well as those that identify, memorialize, and reserve future street corridors in place of ROW dedication.

F. Streetside PUE maximum width:

1. Purpose: To prevent developers and franchise utilities from proposing wider than minimum streetside PUEs along tracts or small lots after land use final decision; to prevent particularly for a tract or lot abutting both a street and an alley; to encourage developers to communicate with franchise utilities and define streetside PUE widths during land use review and how to what is defined; to avoid overly constraining yards, and to avoid such PUEs precluding front roofed patios, porches, or stoops

2. Standards: Exempting any lot or tract subject to Figure 3.01B "Major Arterial", the following standards are applicable to a lot or tract with:

a. No alley or shared rear lane: 8 feet streetside.

b. Alley or shared rear lane: Either 8 feet streetside and 5 feet along alley or shared rear lane, or, 5 feet streetside and 8 feet along alley or shared rear lane.

Nothing in this section precludes a streetside PUE from variable width where necessary such as to expand around public fire hydrants

3.02.03 Street Lighting

A. Public Streets

Public streets abutting a development shall be illuminated with street lights installed to the standards of the City and the electric utility. A developer shall provide documentation to the attention of the Public Works Director indicating that any needed illumination complies with the standards. A developer is to refer to Illuminating Engineering Society (IES) of North America Recommended Practice 8, Roadway Lighting (RP-8) or other source as the public works construction code specifies.

Comment: The nearest streetlights are located on the south side of E Lincoln Road about 220 feet west of the project site. New streetlights are proposed to be installed on the new internal streets of Zephyr Street and Continental Street and along the frontage of E Lincoln Road.

3.02.04 Underground Utilities

A. Purpose: To improve streetscape aesthetics, reduce the number of poles errant drivers going off the road can hit, improve reliability of electricity during and after storms, and require larger developments to bury or underground existing electric utilities, developers of larger developments being more likely able to fund such.

B. Street: All permanent utility service within ROW resulting from development shall be underground, except where overhead high-voltage (35,000 volts or more) electric facilities exist as the electric utility documents and the developer submits such documentation.

1. Developments along Boundary Streets shall remove existing electric power poles and lines and bury or underground lines where the following apply:

a. A frontage with electric power poles and lines is or totals minimum 250 feet; and

b. Burial or undergrounding would either decrease or not increase the number of electric power poles. The developer shall submit documentation from the electric utility.

Where the above are not applicable, a developer shall pay a fee in-lieu, excepting residential development that has 4 or fewer dwellings and involves no land division.

2. Fees in-lieu: Per Section 4.02.12.

C. Off-street: All permanent utility service to and within a development shall be underground, except where overhead high-voltage (35,000 volts or more) electric facilities exist.

Comment: All utilities in the new internal streets and along the frontage improvements of E. Lincoln Road will be located underground. This condition can be met.

Section 3.03 – Setbacks and Open Space

The purpose of this Section is to identify the requirements for setbacks, open space and vision clearance requirements. Setbacks and open space provide for adequate air movement, solar access, visibility, aesthetics, emergency access, fire separation, recreation, and vision clearance

3.03.01 Setbacks

A. Setbacks

1. No required setback provided for any building or structure shall be considered as providing a setback for any other building.

2. No required setback for any building or structure shall be considered as providing lot coverage for another building, except for a common area not required to be located within a lot, when owned by a homeowner's association in a Planned Unit Development (PUD).

B. Setbacks shall be open and unobstructed by buildings or structures from the ground to the sky, except as may otherwise be permitted in this Section and in Accessory Structures (Section 2.06).

C. No portion of a lot necessary to meet the standards for lot area, width, frontage, setbacks, lot coverage, open space, or other requirement of this Ordinance shall have more than one owner, except through a zoning adjustment, or variance.

3.03.02 Street Widening Setbacks

A. Street Widening Setbacks are necessary when the existing street right-of-way is less than the designated right-of-way in the Woodburn Transportation System Plan, including as relates to Section 3.01.05F "Local Street Connectivity Plan". Street Widening Setbacks ensure that development will conform with setback and vision clearance requirements, after a full right-of-way has been acquired.

B. Street Widening Setback distances shall be measured at right angles to the center line of street rights-of-way.

C. Where dedicated rights-of-way are less than the Street Widening Setback, the setback abutting a street shall be measured from the Street Widening Setback. All regulations applicable to setbacks abutting streets and vision clearance areas shall apply to the area between the lot line and the Street Widening Setback. Fences and walls are allowed up to the property line.

Comment: a 6-foot right of way dedication to E Lincoln Road is proposed. This dedication should be sufficient for any future improvements required to bring E Lincoln Road up to Service Collector level.

3.03.03 Projections into the Setback Abutting a Street

A. Chimneys, flues, bay windows, steps, eaves, gutters, sills, pilasters, lintels, cornices, planter boxes and other ornamental features may not project more than 24 inches into the setback abutting a street.

B. Covered, unenclosed porches shall maintain at least a 5-foot setback from the property line or Street Widening Setback.

C. A balcony, outside stairway or other unenclosed, unroofed projection may not project into a minimum front or street setback of the primary building so much that it would encroach into the streetside public utility easement (PUE). (Regarding PUEs, see Section 3.02.01.)

D. Arbors, archways, pergolas and trellises shall be exempt from the setback abutting a street.

E. Uncovered decks, not more than 18 inches above final grade, shall maintain at least a three-foot setback from the property line or Street Widening Setback.

F. Flag poles shall maintain at least a five-foot setback from the property line or Street Widening Setback.

3.03.04 Projections into the Side Setback

A. Chimneys, flues, bay windows, steps, eaves, gutters, sills, pilasters, lintels, cornices, planter boxes and other ornamental features may not project more than 24 inches into a side setback.

Woodburn Development Ordinance Section 3.03 Page 159

B. Fire escapes, when not prohibited by any other code or ordinance, may not project into a side setback farther than one-third of the width of the setback, or less than three feet.

C. Uncovered decks, not more than 18 inches above final grade, shall maintain at least a three-foot setback from the property line or Street Widening Setback

3.03.05 Projections into the Rear Setback

- A. Chimneys, flues, bay windows, steps, eaves, gutters, sills, pilasters, lintels, cornices, planter boxes and other ornamental features may project not more than 24 inches into the rear setback.
- B. A balcony, outside stairway or other unenclosed, unroofed projection may not project more than 10 feet into a rear setback. In no case shall such a projection come closer than 5 feet from any lot line or Street Widening Setback.
- C. Covered, unenclosed porches, extending not more than 10 feet beyond the rear walls of the building, shall maintain at least a 10-foot setback from the rear property line or 5 feet from Street Widening Setback, or, may have a zero setback along an alley or shared rear lane except it shall be set back to not encroach with the PUE, if any, along the alley or shared rear lane.
- D. Uncovered decks not more than 18 inches above final grade shall maintain at least a three-foot setback from the property line or Street Widening Setback.
- E. No permitted projection into a rear setback shall extend over an alley, unless the projection is minimum 14 feet above alley grade and the Public Works Director in writing authorizes, or, come within six feet of an accessory structure.
- F. Accessory structures are not considered projections into a rear setback, but have separate setback requirements listed in this Ordinance (Section 2.06).

Comment: Any building projections into the rear setback, side setback and setback abutting a street will be taken into consideration during the design process of the building units and will be addressed at the building permit level. This condition can be met.

3.03.06 Vision Clearance Area

- A. A vision clearance area (Figures 3.03A and B) is an area at the intersection of two streets, a street and a driveway, or a street and an alley, in which visual obstructions are limited for safety purposes.
- B. The vision clearance area is formed by a combination of the following lines:
 - 1. At the intersection of two public streets: a line extending 30 feet from the two lot lines adjacent to a street, and a third line drawn across the corner of the lot that connects the ends of the lines.
 - 2. At the intersection of a public street and a private street: a line extending 30 feet from the lot line adjacent to the public street, a line extending 30 feet from the outside edge of the pavement on private street, and a third line drawn across the corner of the lot that connects the ends of the lines.
 - 3. Within the DDC zone (Figure 3.03B): a line extending 20 feet from the two curb lines, and a third line drawn across the corner of the lot that connects the ends of the lines.
 - 4. At the intersection of a public street and an alley: a line extending ten feet from the intersection along the back of curb, a line extending ten feet from the property line along the alley and a line drawn across the corner of the lot that connects the ends of the lines.
 - 5. At the intersection of a public street and a driveway: a line extending ten feet from the intersection along the back of curb, a line extending ten feet along the side of the driveway, and a third line drawn across the corner of the lot that connects the ends of the lines.
 - 6. At the intersection of a private street and a driveway: a line extending ten feet from the outside edge of pavement on the private street, a line extending ten feet along the side of the driveway, and a third line drawn across the corner of the lot that connects the ends of the lines.

7. If a street is subject to a Street Widening Setback, the Street Widening Setback shall be used to define the vision clearance area.

C. Vision clearance area shall contain no plants, fences, walls, structures, signs, parking spaces, loading spaces, temporary or permanent obstructions exceeding 42 inches in height (measured from the top of the curb or, where no curb exists, from the street centerline), except:

1. Trees, provided branches and foliage are removed to a height of 7 feet above grade;
2. Utility poles;
3. Utility boxes less than ten inches at the widest dimension; and
4. Traffic control signs and devices.

D. The Director shall have the authority to modify the standards for vision clearance areas upon finding that the modification is appropriate, due to one-way traffic patterns.

Comment: The required Vision Clearance Area will be ensured at the time of construction. Utility poles; utility boxes less than ten inches at the widest dimension; traffic control signs and devices and trees, provided branches and foliage are removed to a height of 7 feet above grade are exempt from the vision clearance area standards. There are no existing trees on the site. Any new street trees will either be planted outside the vision clearance area or if they are within this vision clearance area, they will be limbed to meet the vision clearance standards.

Section 3.04 Vehicular & Bicycle/Pedestrian Access

3.04.01 Applicability and Permit

A. Street Access

Every lot and tract shall have minimum access per subsection 1. or 2.:

1. Direct access to an abutting public street, alley, or shared rear lane; or
2. Access to a public street by means of a public access easement and private maintenance agreement to the satisfaction of the Director, revocable only with the concurrence of the Director, and that is recorded. The easement shall contain text that pursuant to Woodburn Development Ordinance (WDO) 3.04.03B.3, the public shared access (ingress and egress) right of this easement is revocable only with the written concurrence of the Community Development Director.
3. Alley: Where proposed or required, every lot and tract abutting it shall access it instead of a public street.
4. Shared rear lane: Where proposed or required, and it has a public access easement the same as per subsection 2, it may substitute for an alley, and every lot and tract abutting it shall access it instead of a public street.

B. Access to City Streets

A City access permit shall be required for any new or modified vehicular access to a street that is under City jurisdiction.

C. Access to County Roads

Access to a road under the jurisdiction of Marion County shall be subject to County requirements. The Director may incorporate County requirements into the conditions of approval for any application.

D. Access to State Highways

Access to a transportation facility under the jurisdiction of the Oregon Department of Transportation (ODOT) shall be subject to State requirements. The Director may incorporate ODOT requirements into the conditions of approval for any application

Comment: All twenty-six new lots, and the existing two lots will have direct access from either Zephyr Street or Continental Street. There will be no access from E. Lincoln Road. The intersection of Zephyr Street and Continental Street will act as a turn-around for emergency vehicles.

3.04.02 Drive-Throughs

A. Drive-Through Lane Dimensions and Configuration

1. Minimum Lane Width: 10 feet

2. Minimum Lane Length: 50 feet, unobstructed by lateral vehicular access. Precluded lateral vehicular access shall include the access/maneuvering area for off-street parking and overlap onto public street right-of-way. The unobstructed length shall be measured from the drive-up window or stop line, whichever is greater.

3. Buffering/screening: A drive through in yard abutting a street shall be buffered or screened to the same standards as Section 3.06.05B and shall include a minimum number of trees equal to 1 per 30 lineal feet of drive-through aisle. Where a streetside PUE per Section 3.02.01 applies such that, it overlaps or exceeds a drive-through aisle proposed setback, and, per the Public Works Director this would preclude planting of new trees or construction or installation of screening within that area of yard that the PUE overlays, the drive-through aisle street setback shall increase to a minimum equal to the streetside PUE width plus 3 feet.

Comment: Not Applicable. There are no drive-throughs on this project.

3.04.03 Access Management: Driveway Guidelines and Standards

A. Purpose: To implement Woodburn Comprehensive Plan policies, to implement the Highway 99E Corridor Plan, to reduce vehicular points of conflict, to reduce driveways interrupting landscape strips and the pedestrian experience along sidewalk, to preserve the appearance of street-facing yards in developments of other than multiple-family dwellings, and to preserve on-street parking where existing or required of development.

B. Number of Driveways

1. For residential uses, along streets the maximum number of driveways per lot frontage shall be as follows and if and as subsection D further limits:

a. Single-family dwelling and dwelling other than multiple family and other than townhouse: One driveway for every 100 feet of lot frontage. For a corner lot wider than 25 feet, the Director may prohibit a driveway on one of the frontages based on the factors of street functional class and whether the required street cross section includes on-street parking.

b. Townhouse: One driveway as a joint driveway for each pair of lots.

Comment: There will be a joint driveway for each pair of lots. This condition can be met.

c. Cottage cluster: Same as (a.) above except that if parking is pooled into a common facility with no direct driveway access to an individual carport or garage, then two driveways total along either the lot or, if partitioned or subdivided, the lots constituting the cottage cluster project.

Comment: Not Applicable. This not a cottage cluster.

d. Multiple-family dwelling and all other residential uses not listed above: One driveway for every 100 feet of lot frontage.

Comment: Not Applicable. This not a multiple-family dwelling.

2. Oregon Fire Code: A minimum of two driveways shall be provided in developments as follows:

- a. Where OFC Appendix D Section D106 is applicable (100 or more multiple-family dwellings); or
- b. Where OFC Appendix D Section D107 is applicable (30 or more single-family dwellings or duplexes); or

c. With 30 or more dwellings if and where it is unclear what if any OFC Appendix D section would be applicable.

d. Exceptions:

(1) If and as either section provides exception through approved automatic fire sprinkler system as administered by the Fire Marshal no later than during building permit review; or

(2) The Woodburn Fire District Fire Marshal may in writing exempt subject development from a second driveway if determining that instead of a second driveway, one or more development Boundary, Connecting, or Internal Streets, public alleys, or shared rear lanes with public access, can serve as the one or more "fire apparatus access roads" that OFC Appendix D references and requires.

Comment: Not Applicable. There is less than 30 dwelling units, an additional driveway access will not be necessary.

3. For nonresidential uses, the number of driveways should be minimized based on overall site design, including consideration of:

a. The function classification of abutting streets;

b. The on-site access pattern, including parking and circulation, joint access, turnarounds and building orientation;

c. The access needs of the use in terms of volume, intensity and duration characteristics of trip generation.

Comment: Not Applicable. This not a nonresidential use project.

4. Unused driveways shall be closed.

Comment: Not Applicable. There are no unused driveways.

5. For all development and uses, the number of driveways shall be further limited through access management per subsections C & D below.

C. Joint Access

1. Lots that access a Major Arterial, Minor Arterial, Service Collector, or Access Street should be accessed via a shared driveway or instead to an alley or shared rear lane.

Comment: There is no driveway access to E Lincoln Road, which is a Service Collector. This condition can be met.

2. A partition, subdivision, or PUD should be configured so that lots abutting a Major Arterial, Minor Arterial, Service Collector, or Access Street have access to a local street, alley, or shared rear lane. Access to lots with multiple street frontages should be from the street with the lowest functional class.

Comment: There is no driveway access to E Lincoln Road, which is a Service Collector. All accesses to the lots will come off a local street. This condition can be met

3. Every joint driveway or access between separate lots shall be per the same means as in Section 3.04.01A.2.

4. Standards:

a. Easement: Per Section 3.04.01A.2 and minimum width 20 feet.

b. Improvements: The easement and the drive aisle or aisles it follows shall align along centerline. Each shared access drive aisle shall extend to the property line with no terminating curb and no fixed barrier mounted to the drive aisle. The drive aisle minimum width is 20 feet if without side curbs and 21 feet inclusive of side curbs.

Comment: Not Applicable There are no access easements to any of the lots.

D. Access management:

1. Residential development other than multiple-family dwellings: The Director may require that two or more dwellings across two or more lots within a partition, subdivision, or Planned Unit Development to share driveways, for example, by requiring detached houses on adjoining lots to share a driveway along a common lot line.

Comment: There will be a joint driveway for each pair of lots. This condition can be met

2. Commercial: Any development within a commercial zoning district that Section 2.03A lists shall grant shared access to adjacent lots and tracts partly or wholly within any of the same districts. An alley or shared rear lane may substitute for meeting this standard if the alley provides equivalent public access. Zoning Adjustment is permissible.

Comment: Not Applicable, this is not a commercial development

3. Flag lots: For development that proposes a flag lot that resembles Figure 1.02D, Lot 3 by having a pole, the two adjacent lots along the street shall, if resembling figure Lot 2, shall share access via a driveway on the flag lot pole. This section supersedes Figure 3.04A, of which the right side is excerpted and reproduced below:

Comment: Not Applicable, there are no flag lots in this development

4. P/SP: For development within the Public and Semi-Public (P/SP) zoning district, the Director may limit the number of driveways.

Comment: Not Applicable, this is not a development in a (P/SP) zoning district

5. Driveway movements: For development with two or more driveways, the Director may limit turning movements into or out of a driveway or limit a driveway to being inbound or outbound only.

Comment: Not Applicable, each lot is limited to one driveway

E. Interconnected Parking Facilities

1. All uses on a lot shall have common or interconnected off-street parking and circulation facilities.

2. Similar or compatible uses on abutting lots shall have interconnected access and parking facilities.

Comment: Not Applicable, there are no interconnected parking facilities

3.04.04 Driveway & Drive Aisle Improvement Standards

The portion of a driveway on private property shall be paved. Asphalt, brick, poured concrete, concrete pavers, and square or rectangular cobblestone pavers are allowed. Particularly within emergency-only fire lanes and lanes for maintenance vehicle access to private drainage and stormwater management facilities, but also anywhere on private property, reinforced cellular concrete (cast on-site) grass paving surface ("grasscrete") is allowed also. Gravel is allowed only for property with residential zoning, where

no land division is involved, and for existing development other than multiple-family dwelling. Gravel must be minimum 10 feet from the ROW of a street.

Comment: The driveways for each lot will most likely be poured concrete, but other paving surfaces will be considered.

3.04.05 Transportation Impact Analysis

A. This section establishes when a proposal must be reviewed for potential transportation impacts; when developer must submit a transportation impact analysis (TIA) or transportation impact letter or memo with a development application in order to determine whether conditions are needed to mitigate impacts to transportation facilities; the methodology and scope of a TIA or letter or memo; who is qualified to prepare the analysis; and implements Woodburn Comprehensive Plan policies. Where the IMA Overlay District is relevant, see also Section 2.05.02.

B. A transportation study known as a transportation impact analysis (TIA) is required for any of the following:

1. Comprehensive Plan Map Change or Zone Change or rezoning that is quasi-judicial, excepting upon annexation designation of zoning consistent with the Comprehensive Plan.
2. A development would increase vehicle trip generation by 50 peak hour trips or more or 500 average daily trips (ADT) or more.
3. A development would raise the volume-to-capacity (V/C) ratio of an intersection to 0.96 or more during the PM peak hour.
4. Operational or safety concerns documented by the City or an agency with jurisdiction, such as ODOT or the County, and submitted no earlier than a pre-application conference and no later than as written testimony entered into the record before the City makes a land use decision.
5. A development involves or affects streets and intersections documented by ODOT as having a high crash rate, having a high injury rate of persons walking or cycling, having any cyclist and pedestrian deaths, or that partly or wholly pass through school zones that ODOT recognizes.
6. Where ODOT has jurisdiction and ORS or OAR, including OAR 734-051, compels the agency to require.

A developer shall submit a traffic impact letter or memo when the City or an agency with jurisdiction does not require a TIA. A development within the Downtown Development and Conservation (DDC) zoning district is exempt from TIA submittal.

C. A TIA shall evaluate the transportation impacts projected of a development proposal, and where a development would fail to meet a transportation standard or would hinder public safety, shall list and describe mitigation to the satisfaction of the City. To bring about mitigation, the City may apply conditions having rational nexus and rough proportionality, and conditions may establish improvements, fees, and transportation demand management (TDM) for a development above and beyond WDO minimums.

D. Mitigation may include that which allows for or improves walking, cycling, rolling, and public transit and serves transportation demand management (TDM), for example, such as through construction or payment of fees in lieu of bicycle/pedestrian facilities and transit stop improvements, whether on or off-street and on or off-site.

E. Mitigation shall be concurrent with development and due the same as public improvements and fees in-lieu are per Sections 3.01.03 and 4.02.12 with an exception that a condition or conditions of approval may set a later due date for a mitigation item.

F. The methodology for a TIA shall be consistent with City standards, both below and where superseded by any of other sections of the WDO (such as Section 2.05.02 for the IMA Overlay District), another City ordinance, a resolution, written policy, or ODOT or County jurisdiction and application of more stringent

agency standards. Vehicular level of service (LOS) and volume-to-capacity (V/C) ratio shall be as follows:

1. For a signalized and all-way stop-control intersection, the minimum LOS shall be either "E" or if pre-development already operating at lower LOS, then at no lower LOS.
2. For a signalized intersection, the minimum V/C ratio shall be either less than 1.00 regardless of LOS or if pre-development already operating at 1.00 or higher V/C, then at no higher V/C.
3. For an unsignalized intersection, the minimum V/C shall be 0.95 or lower for minimum the major movement through the intersection, or, if pre-development already operating at higher V/C, then at no higher V/C.
4. For developments within the Gateway Commercial General Overlay, Mixed Use Village (MUV), and Neighborhood Nodal Commercial (NNC) zoning districts and intersections partly or wholly within a district, the Director may allow the lower minimum of either LOS "F" or 1.00 V/C, whichever is more generous.
5. Modeling assumptions: The vehicle trip background growth rate shall be minimum zero percent and maximum 0.5 percent. Vehicles per lane per hour shall be minimum 720 for a local class street with signalized intersections.
6. The Director may specify what intersections a TIA is to study.
7. A developer may propose, and the Director may allow, a different analysis and concurrent mitigation based on any of the ITE manual *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach* and the NACTO *Urban Street Design Guide*.

Comment: Not Applicable. A project of this size will have minimal impact of traffic in this area. A traffic impact analysis for this project is deemed unnecessary based on two major requirements. Upon annexation designation of zoning for this property will be consistent with the Comprehensive Plan and this development would not increase vehicle trip generation by 50 peak hour trips or more or 500 average daily trips (ADT) or more. This also makes all other requirements irrelevant.

3.04.06 Bicycle/Pedestrian Access between Sidewalk and Building Entrances

A. Purpose: To provide for those who are not driving apparent, safe, and dignified access to developments from public streets and public off-street bicycle/pedestrian facilities, especially to include and be equitable toward Woodburn residents who cannot or do not own private vehicles or drive, and to implement Woodburn Comprehensive Plan policies.

B. Wide walkway: Excluding residential development other than multiple-family dwellings, 1 wide walkway minimum or with each of two frontages for sites of two or more frontages. Where a development includes or abuts a public off-street bicycle/pedestrian facility, a wide walkway shall also connect to the facility. Minimum width 8 feet, ADA-compliant, and not gated. Gating is allowed only if the development driveway throat or throats are gated.

C. Walkway: Minimum 1 per frontage except where a wide walkway supersedes. Minimum width 6 feet and may have stairs.

For residential development of other than multiple-family dwellings, each lot shall have a walkway minimum 2 feet wide of minimum length such that it connects sidewalk with an entrance to each and every dwelling on a given lot. The walkway shall not overlap a driveway, and where a walkway is flush with a driveway, it shall either (1) be raised minimum 3 inches, have curbing which may be mountable, and be minimum 3 feet and 3 inches wide, or (2) be dyed, patterned, stamped or otherwise treated or of a different paving material than the driveway to visually distinguish it from the adjacent driveway.

D. Walkway and wide walkway crossings: A development with crossings of drive aisles shall have one or more crossings made visually distinct from adjacent vehicular pavement and minimum width equal to that of the walkway.

1. Wide walkways: Minimum width 8 ft each. Every crossing along a wide walkway shall be either an extension of wide walkway poured concrete at the same grade as adjacent vehicular area or in the form of a speed table, also known as a raised walkway crossing, minimum 4 inches high and with vehicular side ramps maximum slope ten percent and with striped warning triangles. ADA-compliant transitions or ramps shall be minimum 5 feet wide. For multiple-family dwelling development, the speed table option shall be a requirement.
2. Walkways: Where there are walkways and any of them cross drive aisles, all of the crossings along minimum 1 walkway shall be either an extension of walkway poured concrete at the same grade as adjacent vehicular area and same width as the walkway or in the form of a speed table, also known as a raised walkway crossing, minimum 4 inches high. A developer shall stripe remaining walkway crossings with any of hatch or ladder pattern or three or more bars perpendicular to the crossing.
3. See Section 3.05.02N regarding crossings within multiple-aisle parking areas.

Section 3.05 – Off-Street Parking and Loading

3.05.02 General Provisions

A. All required parking and loading spaces should be retained and maintained in accordance with the standards of the WDO.

B. The land for off-street parking and loading areas shall either be:

1. Owned in fee title by the owner of the structure or site being served by the parking area, or
2. Subject to legal documentation to the satisfaction of the Director, establishing permanent use of off-street parking that is under separate ownership. The parking, subject to such a parking agreement, shall comply with all requirements and development standards of the WDO. The agreement shall be recorded with the County Recorder and filed with the Director.

Comment: The land for off-street parking and loading areas shall be owned in fee title by the owner of the structure or site being served by the parking Area. Parking will be in the driveway or in the garages. All units will have at least two parking spaces; this meets the off-street parking ratio standards of Table 3.05 A

Section 3.06 – Landscaping

3.06.01 Applicability

The provisions of this Section shall apply:

B. Dwellings other than multiple-family need comply only with the street tree and significant tree provisions of this Section

3.06.03 Landscaping Standards

A. Street Trees

The purpose of the street tree provisions is to get and preserve street trees, to shade those walking and provide them psychological protection from passing vehicles, to calm those driving, to help spatially define streets through canopy, to absorb stormwater and pollutants, to reduce the urban heat island effect, and to raise value of adjacent property.

Within the public street right-of-way abutting a development, street trees shall be planted to City standards, prior to final occupancy or earlier if conditioned.

1. A number of trees equal to one tree per every 30 feet of street frontage within a block face, shall be planted within the right-of-way.

2. Street trees shall be planted according to the Boundary Street classification per the Transportation System Plan:
 - a. Large trees shall be planted along Major and Minor Arterial streets. Regardless of street classification, a developer shall plant large trees also along all streets that either are in the Neighborhood Conservation Overlay District (NCOD) or are boulevards, and for boulevards also in the medians;
 - b. Medium trees shall be planted along Service Collector and Access/Commercial Streets;
 - c. Small trees shall be planted along all other streets.

Refer to Table 3.06B for the definition of size categories at maturity.

3. Root barriers: The developer shall install root barriers per the public works construction code.
4. Fee in-lieu: Per Section 4.02.12.

Comment: The property has 310-feet of frontage onto Continental Street, 320-feet of frontage onto Zephyr Street and 130-feet of frontage onto E Lincoln Road. The applicant will plant street trees at the frontage of the property. The street tree will be an approved street tree

3.06.07 Significant Trees on Private Property

A. The purpose of this Section is to establish processes and standards, which will minimize cutting or destruction of significant trees within the City. Significant trees enhance neighborhoods by creating a sense of character and permanence. In general, significant trees on private property shall be retained, unless determined to be hazardous to life or property.

Comment: Not Applicable, there are no trees on the property.

Section 3.07 – Architectural Design

The purpose of this Section is to set forth the standards and guidelines relating to the Architectural design of buildings in Woodburn. Design standards can promote aesthetically pleasing architecture, increase property values, visually integrate neighborhoods, and enhance the quiet enjoyment of private property.

3.07.02 Single-Family Dwellings, Manufactured Dwellings, & Dwellings Other Than Multiple-Family (“Middle Housing”) on Individual Lots

A. Applicability

This Section shall apply to all new single-family dwellings, dwellings other than multiple-family, and manufactured dwellings on individual lots. It shall apply also to subdivisions and Planned Unit Developments approved on or before August 12, 2013.

Manufactured dwellings have different standards for roofing; otherwise, all standards in this Section apply to manufactured dwellings.

B. Minimum Requirements

1. Design Standards. Each single-family dwelling, duplex, triplex, quadplex, townhouse project, or manufactured dwelling shall meet all the design standards identified in Table 3.07A as required standards and a minimum number of points per subsection (2.) below.

2. Design Options. Each single-family dwelling, duplex, triplex, quadplex, townhouse project, or manufactured dwelling shall meet enough of the menu options identified in Table 3.07A as providing

optional points to total 16 points. Totalling 16 or more points is a requirement, and the choice of any particular menu option is optional.

C. Architectural and Design Standards shall be per Table 3.07A

Comment: As part of the building plan submittal, the applicant will ensure that all homes meet all proposed dwellings standards at the time of development.

Section 3.08 – Partition and Subdivision Standards

3.08.01 Requirements

Comment: The applicant will comply with the standards of ORS Chapter 92 and the Woodburn Development Ordinance.

Section 3.10 – Signs

Comment: Any necessary signs will be installed along the public streets.

PETITION FOR A CONSENT ANNEXATION
AND WAIVER OF TIME LIMIT
PURSUANT TO ORS 222.125

Assessor's map and tax lot #:

05 1W 17AB WOODBURN, TAXLOT 51W17AB00602

Number of property owners: 2 Number of electors residing on the property: 0

This petition must be signed by all owners of the subject property. If the owner is a corporation or an estate, the person signing must be authorized to do so. This petition must also be signed by not less than 50 percent of the electors (registered voters) residing on the property.

We, the owner(s) of the property described above and/or elector(s) residing on said property understand the annexation process can take more than one year but desire to annex to have City services. Therefore, we agree to waive the one-year time limitation on this petition to annex established by Oregon Revised Statutes 222.173, and further agree that this contract shall be effective: indefinitely until _____ (date).

Sylvester Erofeef

Printed name

Signature

2-14-2023

Date

Mailing address: 375 N 1st Street, Woodburn, OR 97071

I am: an owner of the property an elector (registered voter) residing on the property

Julian Erofeef

Printed name

Signature

2-14-2023

Date

Mailing address: 375 N 1st Street, Woodburn, OR 97071

I am: an owner of the property an elector (registered voter) residing on the property

If there are more than 2 owners, print another copy of this page.

RECEIVED

FEB 14 2023

COMMUNITY DEVELOPMENT
DEPARTMENT



Fidelity National Title
Company of Oregon

1220 20th St. SE, Ste 150
Salem, OR 97302
Phone: (503)370-9119 / Fax: (866)498-6060

Julian Erofeeff
Sylvester Erofeeff
Grace Point Contracting, LLC, an Oregon Limited
Liability Company
375 North 1st
Woodburn, OR 97071

Date: October 19, 2021
Escrow No.: 60222110890-JC
Buyer(s): Grace Point Contracting, LLC, an Oregon
Limited Liability Company
Seller(s): Gail Snegirev, aka Agafya Snegirev,
Trustee of the Yakov Ovchinnikov Trust
Property: 2.32 parcel ADJACENT to 1651 E Lincoln
Road
Woodburn, OR 97071

Dear Julian & Sylvester:

The closing of the sale of the property involved in the above escrow has been completed with the recording of the appropriate documents. We enclose the following:

- Final Settlement Statement **Please keep this document for tax purposes*
- Original deed
- Refund check in the amount of \$5,00

Any policy of title insurance to which you may be entitled will be forwarded to you in the near future.

We appreciate having this opportunity to be of service to you and hope you will again choose Fidelity National Title Company of Oregon as your Escrow Agent and Title Insurer for any future sales or purchases.

Sincerely,

Joan Cuff
AVP Senior Escrow Officer
Joan.Cuff@FNF.com

Enclosure(s)

Fidelity National Title Company of Oregon

1220 20th St. SE, Ste 150, Salem, OR 97302
Phone: (503)370-9119 | Fax: (866)498-6060

FINAL BUYER'S STATEMENT

Settlement Date: October 19, 2021
Disbursement Date: October 19, 2021

Escrow Number: 60222110890
Escrow Officer: Joan Cuff
Email: Joan.Cuff@FNF.com

Buyer: Grace Point Contracting, LLC, an Oregon Limited Liability Company
375 North 1st
Woodburn, OR 97071

Seller: Gail Snegirev, aka Agafya Snegirev, Trustee of the Yakov Ovchinnikov Trust
8313 South Gibson Road
Molalla, OR 97038

Property: 2.32 parcel ADJACENT to 1651 E Lincoln Road
Woodburn, OR 97071

		\$	DEBITS	\$	CREDITS
FINANCIAL CONSIDERATION					
Sale Price of Property			330,000.00		
Deposit or earnest money					10,000.00
Buyer's funds to close					321,340.08
PRORATIONS/ADJUSTMENTS					
County Taxes at \$775.20	10/19/21 to 07/01/22 (\$775.20 / 365 X 255 days)		541.58		
TITLE & ESCROW CHARGES					
Title - Escrow Fee	Fidelity National Title Company of Oregon		697.50		
Title - Recording Service Fee to Simplifile	Fidelity National Title Company of Oregon		5.00		
GOVERNMENT CHARGES					
Recording Fees (\$445.00)	Fidelity National Title Company of Oregon		91.00		
Subtotals			331,335.08		331,340.08
Balance Due TO Buyer				5.00	
TOTALS			331,340.08		331,340.08

THIS IS A CERTIFIED COPY OF THE ORIGINAL DOCUMENT(S) BY
FIDELITY NATIONAL TITLE COMPANY OF OREGON

Judy Horne

Fidelity National Title Company of Oregon, Settlement Agent

RECORDING REQUESTED BY:



Fidelity National Title
Company of Oregon

1220 20th St. SE, Ste 150
Salem, OR 97302

GRANTOR'S NAME:

Gail Snegirev, aka Agafya Snegirev, Trustee of the Yakov Ovchinnikov Trust

GRANTEE'S NAME:

Grace Point Contracting, LLC, an Oregon Limited Liability Company

AFTER RECORDING RETURN TO:

Order No.: 60222110890-JC
Grace Point Contracting, LLC, an Oregon Limited Liability Company
375 N. 1st
Woodburn, OR 97071

SEND TAX STATEMENTS TO:

Grace Point Contracting, LLC, an Oregon Limited Liability Company
375 N. 1st
Woodburn, OR 97071

APN: 513288
Map: 051W17AB00602
2.32 parcel ADJACENT to 1651 E Lincoln Road, Woodburn, OR 97071

ORIGINAL

REEL 4553 PAGE 125
MARION COUNTY
BILL BURGESS, COUNTY CLERK
10-19-2021 01:46 pm.
Control Number 678351 \$ 91.00
Instrument 2021 00061302

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

Gail Snegirev, aka Agafya Snegirev, Trustee of the Yakov Ovchinnikov Trust, Grantor, conveys and warrants to **Grace Point Contracting, LLC, an Oregon Limited Liability Company**, Grantee, the following described real property, free and clear of encumbrances except as specifically set forth below, situated in the County of Marion, State of Oregon:

Parcel 3, PARTITION PLAT NO. 95-67, recorded June 26, 1995 in Reel 1244, page 574, in the County of Marion, State of Oregon.

THE TRUE AND ACTUAL CONSIDERATION FOR THIS CONVEYANCE IS THREE HUNDRED THIRTY THOUSAND AND NO/100 DOLLARS (\$330,000.00). (See ORS 93.030).

Subject to:

Property taxes in an undetermined amount, which are a lien but not yet payable, including any assessments collected with taxes to be levied for the fiscal year 2021-2022.

As disclosed by the assessment and tax roll, the premises herein were once specially assessed for farmland, forestland or other special assessment status and later disqualified. Per ORS 308A.700 to 308A.733, additional taxes were imposed and remain as potential additional tax liability for the property. A check with the Assessor's office will be necessary to determine the effect and continuation of the additional tax liability.

Additional Tax Liability Amount: \$3,293.86

Non-Remonstrance Agreement, including the terms and provisions thereof

Recording Date: May 11, 1995
Recording No.: Reel 1236, page 705

Easement(s) for the purpose(s) shown below and rights incidental thereto as delineated or as offered for dedication, on the map of said tract/plat;

Purpose: Private access
Affects: 30 feet wide

Reference is hereby made to said plat for full particulars

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND

Fidelity National Title # 60222110890

RECORDING REQUESTED BY:



Fidelity National Title
Company of Oregon

1220 20th St. SE, Ste 150
Salem, OR 97302

GRANTOR'S NAME:

Gail Snegirev, aka Agafya Snegirev, Trustee of the Yakov Ovchinnikov Trust

GRANTEE'S NAME:

Grace Point Contracting, LLC, an Oregon Limited Liability Company

AFTER RECORDING RETURN TO:

Order No.: 60222110890-JC
Grace Point Contracting, LLC, an Oregon Limited Liability Company
375 N. 1st
Woodburn, OR 97071

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Grace Point Contracting, LLC, an Oregon Limited Liability Company
375 N. 1st
Woodburn, OR 97071

APN: 513288
Map: 051W17AB00602
2.32 parcel ADJACENT to 1651 E Lincoln Road, Woodburn, OR 97071

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

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Fidelity National Title # 60222110890

STATUTORY WARRANTY DEED

(continued)

BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

IN WITNESS WHEREOF, the undersigned have executed this document on the date(s) set forth below.

Dated: 10/19/2021

Yakov Ovchinnikov Trust

BY: *Gail Snegirev*
Gail Snegirev, aka Agafya Snegirev
Trustee

State of Oregon
County of Marion

This instrument was acknowledged before me on 10-19-21 by Gail Snegirev, aka Agafya Snegirev, Trustee of the Yakov Ovchinnikov Trust.

Heather Bazy
Notary Public - State of Oregon

My Commission Expires: 3-26-24



**Preliminary
Storm Water Management Report**

**E. Lincoln Road Townhomes
Tax Lot: 5S1W17AB00602**

Woodburn, Oregon

AVALON ENGINEERING

Preliminary Storm Water Management Report

**E. Lincoln Road Townhomes
Tax Lot: 5S1W17AB00602
Woodburn, Oregon**

Prepared for:

**Grace Point Contracting
375 N. 1st Street
Woodburn, OR 97071**

Prepared By:

**George Snegirev P.E.
Avalon Engineering
200 Sweden Circle
Silverton, OR 97381**



EXPIRES 6-30-2024

February 8th, 2023

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PROJECT DESCRIPTION

This project is a development of a twenty-six-lot residential subdivision on a 2.32-acre property located near 1651 E. Lincoln Road in Woodburn, Oregon. Since the property has no residence on it, it has no legal address other than its tax lot number. The property can also be located by the Marion County Map under the following information: 051W17AB00602.

This development proposes the construction of two public streets, one that will connect to E. Lincoln Road and the other that tees into this street and runs parallel with E. Lincoln Road. There will also be the construction of a water quality / detention facility and frontage improvements on E. Lincoln Road. These improvements will provide access to the twenty-six new townhomes.

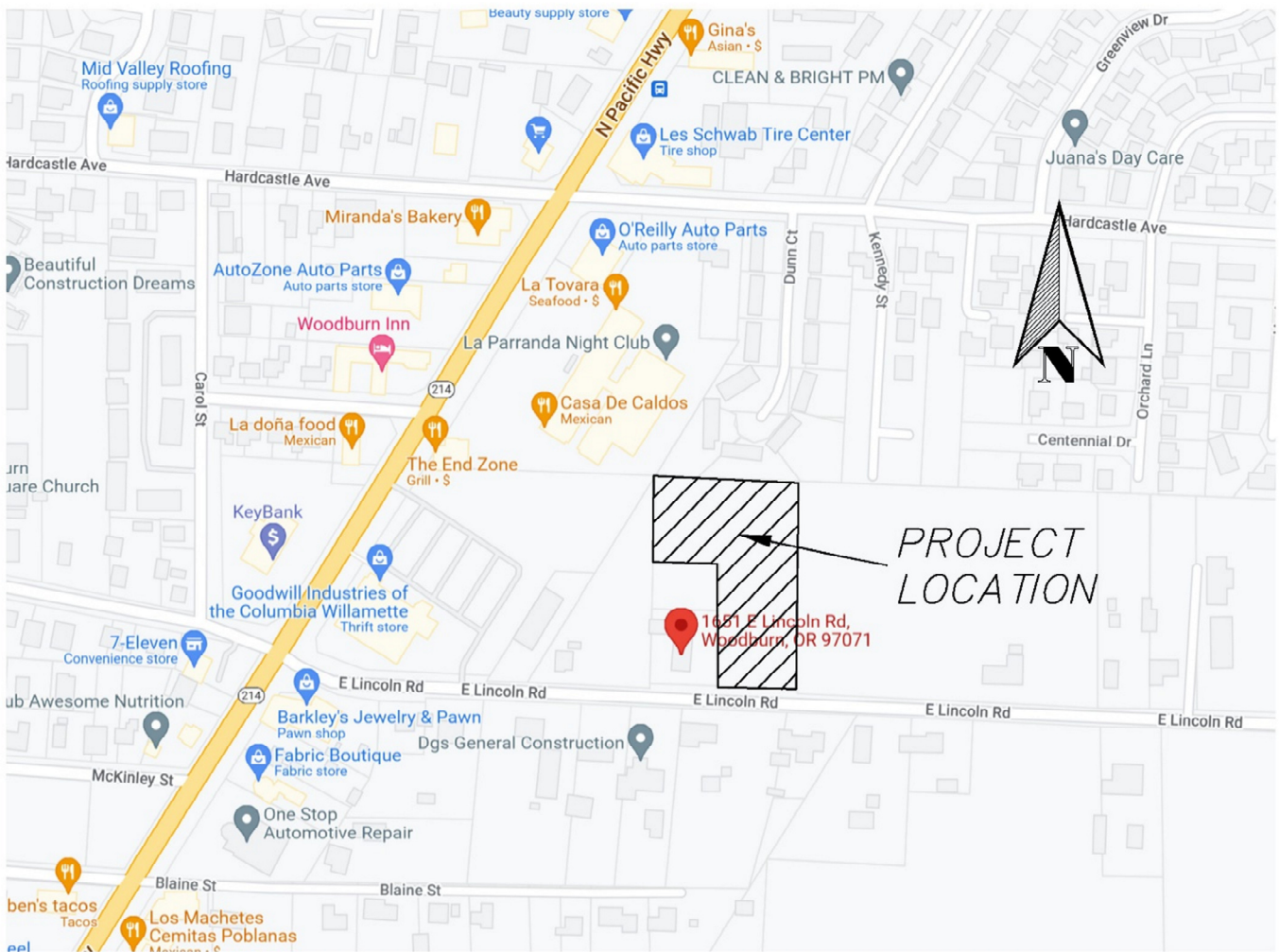


Figure 1: Vicinity Map

EXISTING CONDITIONS

The property used to be farm land, but now is completely empty, no structures, no trees or vegetation and has access from E. Lincoln Road. There is an existing driveway that provides access to the site and adjacent lots to the west. This site is relatively flat for most of the property but it sits a little below E. Lincoln Road. Stormwater runoff from the project site currently flows in two directions, the top third of the site flows from west to east onto the neighboring farm, and the bottom two thirds flows from northwest to southeast and into the ditch on the north side of E. Lincoln Road. The runoff from the pavement of E. Lincoln Road is collected in the ditch where it travels a long way eastward through several culverts before it most likely ends up in the Pudding River. For topography of the site, see the Pre-Development Basin Map below.

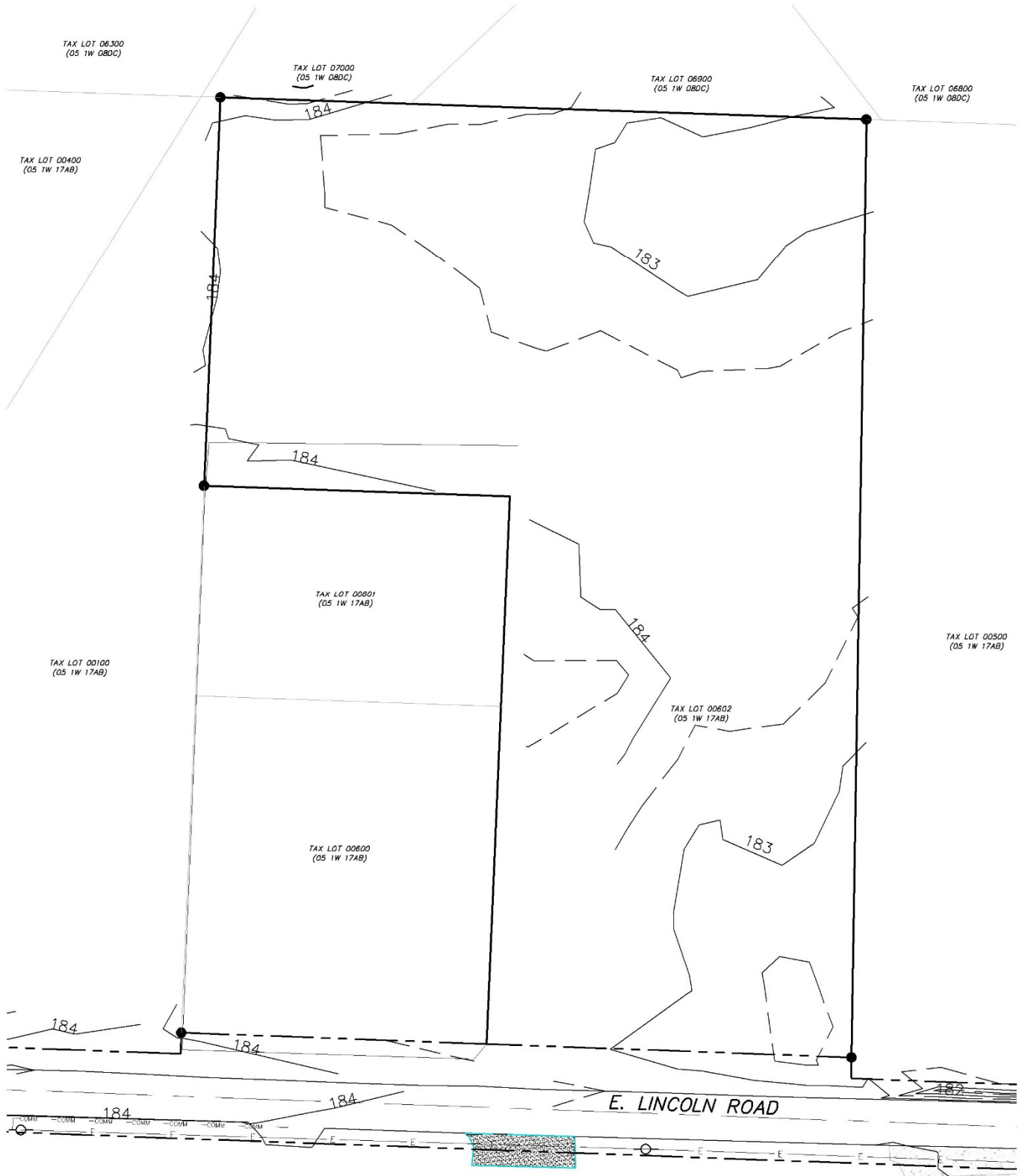


Figure 2: Pre-Developed Basin Map

SOIL INFORMATION

According to the Soil Survey of Marion County, the soil on this site belongs to one soil type (100% Amity silt loam). Amity silt loam belongs to Hydrologic Soil Group C/D. These soils have a slow infiltration rate when thoroughly wet. For more descriptive information on the soil, see soil information in Appendix A.



Figure 3: Marion County Soil Map

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Am	Amity silt loam	2.3	100.0%
Totals for Area of Interest		2.3	100.0%

Figure 4: Area of Interest Soil Types

PROPOSED DRAINAGE

The proposed storm system is shown in Post Development Basin Map on the next page. Since the project site is located near 1651 E. Lincoln Road in Woodburn, Oregon, the construction of the storm drainage system for the development must satisfy the design standards and guidelines of the City of Woodburn.

The objective for now is to determine how much additional storm water runoff will be created by this proposed development, and to simplify matters at this stage, the proposed development will be looked at as one single drainage basin.

There are several options to collect and convey the storm water runoff from the houses and the roadways on this project. The slope of E Lincoln Road runs downhill from west to east in the vicinity of this project. The storm water runoff from E Lincoln Road will travel towards and then along the new curb and gutter that will be built as part of the frontage improvements on E Lincoln. Part of this runoff will be diverted into the throat of the new internal street that will connect into E Lincoln Road. The remainder of the runoff will travel along the curb and gutter and pavement taper and will be discharged into the existing ditch that makes it way in an easterly direction. The surface storm water runoff from the new homes and internal streets will make its way to catch basins and a piped conveyance system which will eventually discharge into the water quality/detention facility that will be located at the northeast corner of the project site. One option for the collection and conveyance of the storm water runoff from the homes is that if the homes are several feet above the street grade, then the roof drain laterals can be discharged through weep holes in the curb and the runoff makes its way to a collection point and into the new piped storm water conveyance system. If all or part of that option does not work then the storm water runoff from the houses will be conveyed through storm sewer laterals that connect to the new piped storm water conveyance system. At one end of the detention facility will be a flow control structure that at first will release this storm water runoff at a predetermined predevelopment rate and also have an overflow system that will release the storm water runoff beyond the 25-year storm water detention volume or maybe even the 100-year detention volume.

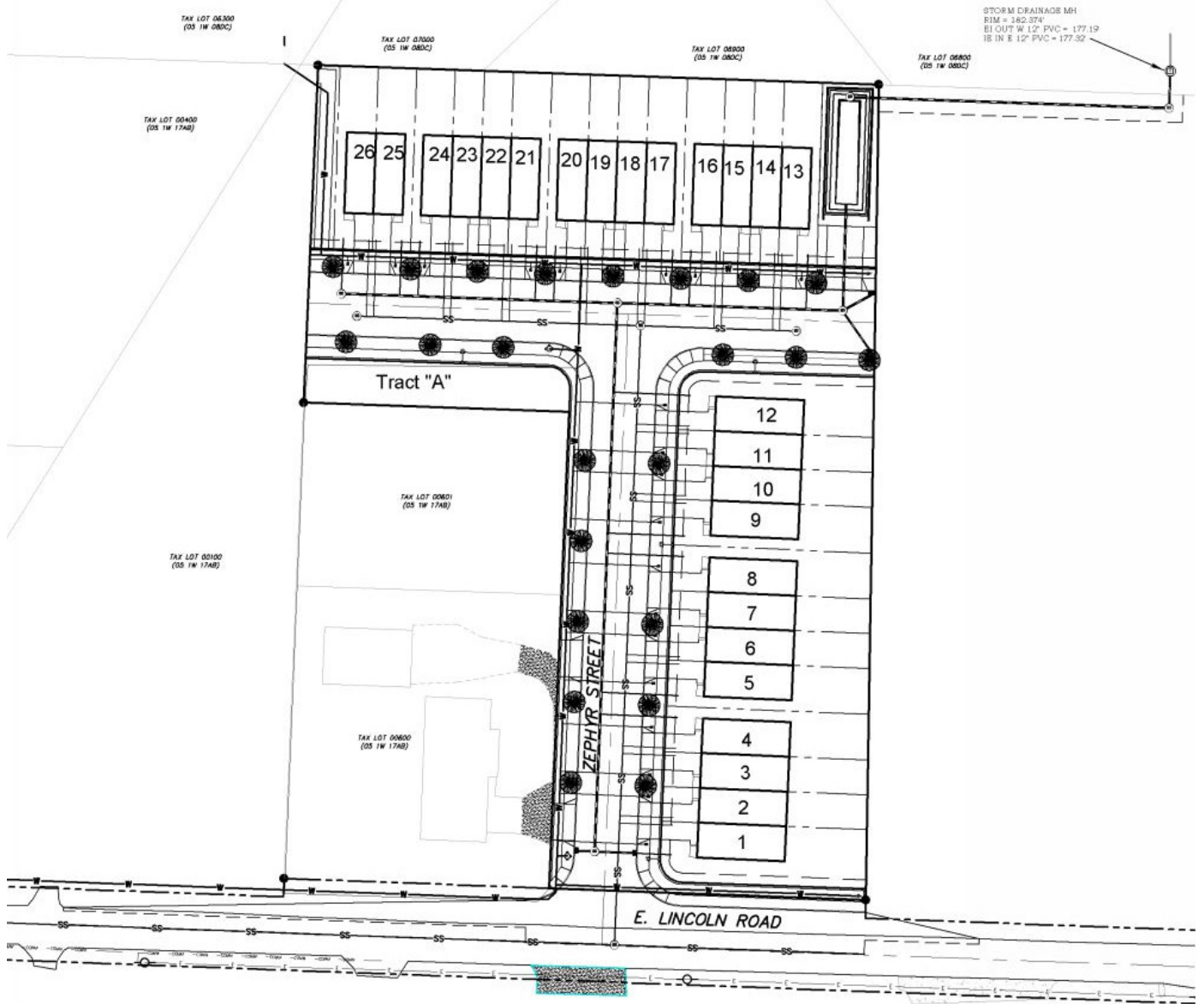


Figure 5: Post-Developed Basin Map

HYDROLOGIC ANALYSIS

Hydrologic analysis for the site has been completed following the Rational Method, with modeling by the Hydraflow Hydrographs computer program. This program enables the user to develop runoff hydrographs to determine the peak flow rates for the different frequency of storm events as well as the detention requirements under a variety of stage-storage options. The Rational Method is a little bit more conservative, but more appropriate for a project of this size. Analysis calculations, supporting information, and computer output are contained in Appendix B.

Following is our calculation process:

- **Determine the soil type and classification.**
- **Calculate Impervious and Pervious areas of the basin areas.**
- **Determine the Runoff Coefficient (C).**
- **Determine flow length and run-off slope.**
- **Determine the Time of Concentrations.**
- **Calculate Peak Flow Rates and Volumes.**
- **Perform Downstream Analysis**
- **Determine whether or not Detention Facility is required**

RUN-OFF SUPPORT INFORMATION AND ANALYSIS

1. *Impervious and Pervious Surface Areas*

The impervious and pervious surface areas of the pre development conditions are the actual areas taken from the surveyed site plan. The impervious and pervious surface areas of the post development condition have been calculated based on the proposed site plan.

Description	Pre-Developed Site (ac)	Post Developed Site (ac)
Pervious Surface	2.464	1.033
Impervious Surface	0.165	1.596
Total Basin Area	2.629	2.629

Table 1: Pervious and Impervious Area

2. *Runoff Coefficient (C)*

The runoff coefficient (C) is a dimensionless coefficient relating the amount of runoff to the amount of precipitation received. It is a larger value for areas with low infiltration and high runoff (pavement, steep gradient), and lower for permeable, well vegetated areas (forest, flat land). Runoff Coefficients are shown below for both pre and post development pervious surface and impervious surface, respectively.

Description	Pre-Developed Site C	Post Developed Site C
Pervious Surface	0.30	0.20
Impervious Surface	0.90	0.90

Table 2: Runoff Coefficients

3. Time of Concentration

Time of concentration is the time for run-off to travel from the hydraulically most distant point of the watershed to the point where the hydrograph is to be calculated. The time of concentration for the pre developed site is calculated as the time it takes storm water runoff to travel from the highest point to the lowest point of the site, which in this case the storm water runoff leaves the northwest corner of the site as it makes it way to the east side of the site. The post developed time of concentration is calculated as the time it takes storm water runoff to leave the intersection of Zephyr and Continental Street as it makes its way down the curb and into the catch basins near the intersection of Zephyr Street and E Lincoln Road and then through the storm water pipe conveyance system and then discharges into the storm water quality/detention facility located at the northeast corner of the site. Calculations and calculated time of concentrations are presented in Appendix B.

Description	Pre-Developed Site	Post Developed Site
Length (feet)	307	787
Average Slope (%)	0.53	0.42
Sheet Flow 2 Year Storm Event (minutes)	18.86	5.89
Shallow Concentrated Flow 2 Year Storm Event (minutes)	0.09	0.07
Channel Flow 2 Year Storm Event (minutes)	0.00	3.07
Total Travel Time	18.95	9.03

Table 3: Time of Concentration

4. Peak Discharge and Volume

Peak discharge rates for the prescribed rainfall events for pre-developed and post-developed site conditions. The computer model output is contained in Appendix B.

Description	Pre-Developed Site	Post Developed Site
Q 5 Year Storm Event (cubic feet per second)	1.008	2.715
Q 10 Year Storm Event (cubic feet per second)	1.106	3.007
Q 25 Year Storm Event (cubic feet per second)	1.277	3.499
Q 100 Year Storm Event (cubic feet per second)	1.622	4.367

Table 4: Peak Flow Rates

Description	Pre-Developed Site	Post Developed Site	Volume Difference
Q 5 Year Storm Event (cubic feet)	1,149	1,466	317
Q 10 Year Storm Event (cubic feet)	1,261	1,624	363
Q 25 Year Storm Event (cubic feet)	1,455	1,889	434
Q 100 Year Storm Event (cubic feet)	1,849	2,358	509

Table 5: Peak Volumes

5. Detention Volumes

The above volumes are based on the hydrograph created using the rational method by the Hydraflow Hydrographs computer program. The duration of the storm event is twice the time for the time to peak which isn't a fair assessment of the storm event. When we use a spreadsheet to run the inflow outflow hydrograph for a much longer duration of the storm event, we get different results. The inflow outflow hydrographs have been computed for the inflow being post 25-year storm event and the outflow rate for the pre-5, 10 and 25-year storm event. The results are shown below and the output from the hydrographs is contained in Appendix B.

Post Developed Site	Pre-Developed Site	Detention Volume
25 Year Storm Event	5 Year Storm Event	1747.56
25 Year Storm Event	10 Year Storm Event	1659.36
25 Year Storm Event	25 Year Storm Event	1505.46
100 Year Storm Event	5 Year Storm Event	2559.82
100 Year Storm Event	10 Year Storm Event	2383.42

Table 6: Detention Volumes

6. Detention Facility Capacity

The water quality/detention facility will be located in the northeast corner of the project site. This facility will have a 12-foot wide bottom and 3:1 side slopes up to a depth of 2-feet. Since we are working in a confined space a retaining wall will be required around three sides of this facility in order to have a top of bank area of 3-feet wide around the facility. The bottom of this wall will be above the 25-year detention volume. The capacity has been calculated using the contour method. Below is a table summarizing the capacity of the detention facility. The calculations for the detention facility capacity are contained in Appendix B.

STAGE	ELEVATION	CONTOUR AREA (sq ft)	INCREMENTAL STORAGE (cu ft)	TOTAL STORAGE CAPACITY (cu ft)
0.0	178.00	684	0	0
1.0	179.00	1134	899	899
1.70	179.70	1492	916	1,816
2.00	180.00	1656	472	2,286
2.17	180.17	1656	281	2,569

Table 7: Detention Facility Storage Capacity

7. Storm Conveyance Capacity Check

At this preliminary stage the only pipe that is worth checking for capacity is the last section of pipe that outfalls at the detention facility since we know all the storm water runoff has to go through this section of pipe.

PIPE	BASIN	PEAK FLOW (CFS)	SLOPE (%)	PIPE DIAMETER (IN)	CAPACITY (CFS)	VELOCITY (FPS)	% FULL
Outfall	Total 25-year Storm Event	3.499	0.36	15	4.515	3.79	77%
Outfall	Total 100 Year Storm Event	4.367	0.36	15	4.515	3.79	97%

Table 8: Storm Conveyance Capacity Check

UPSTREAM CONDITIONS

The main storm water conveyance system near the project site is located on the north side of E Lincoln Road. It is a system of culverts and ditches across the frontage of surrounding properties that mainly collects storm water runoff from the pavement of E Lincoln Road and has no adverse impact on our project site.

DOWNSTREAM ANALYSIS AND DETENTION REQUIREMENTS

A Downstream Analysis has not been performed at this preliminary stage because the most likely scenario is that detention of the storm water runoff will be required. There are several options available to create facilities that will detain the storm water runoff. One option is to create a pond that has storage for the storm water runoff and a flow control structure that releases the storm water runoff at a pre development rate of flow. This requires giving up some land for this facility and the developer is willing to do so to make this a viable project.

SUMMARY

The objective of the storm conveyance system is to pick up the storm event runoff from the roof areas of the homes, the private drives and the landscaping areas around the homes as well as the pavement and sidewalk areas of the public streets. The runoff from the roof areas of the homes can be collected and conveyed through weep holes in the curb or storm sewer laterals that will be connected to the new storm sewer conveyance system in the new internal streets. The site will be graded to follow the existing natural slopes which will allow the storm water runoff from the private drives and landscaping areas towards a collection point that connects into the storm sewer laterals. A new 15-inch storm sewer pipe sloped at 0.30 percent is more than capable of handling the flow of the 25-year storm event. On-site detention will most likely be required and since there is room available, the best option would be to provide an above ground detention facility.

APPENDIX A

SOIL INFORMATION



A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Marion County Area, Oregon

1651 E Lincoln Road, Woodburn
OR



May 12, 2022

Preface

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).

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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alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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Soil Map

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



MAP LEGEND

-  Area of Interest (AOI)
-  Area of Interest (AOI)
- Soils**
-  Soil Map Unit Polygons
-  Soil Map Unit Polygons
-  Soil Map Unit Lines
-  Soil Map Unit Lines
-  Soil Map Unit Points
-  Soil Map Unit Points
- Special Point Features**
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Clay Spot
-  Closed Depression
-  Closed Depression
-  Gravel Pit
-  Gravel Pit
-  Gravelly Spot
-  Gravelly Spot
-  Landfill
-  Landfill
-  Lava Flow
-  Lava Flow
-  Marsh or swamp
-  Marsh or swamp
-  Mine or Quarry
-  Mine or Quarry
-  Miscellaneous Water
-  Miscellaneous Water
-  Perennial Water
-  Perennial Water
-  Rock Outcrop
-  Rock Outcrop
-  Saline Spot
-  Saline Spot
-  Sandy Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Severely Eroded Spot
-  Sinkhole
-  Sinkhole
-  Slide or Slip
-  Slide or Slip
-  Sodic Spot
-  Sodic Spot

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: Marion County Area, Oregon
 Survey Area Data: Version 19, Oct 27, 2021

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
Am	Amity silt loam	2.3	100.0%
Totals for Area of Interest		2.3	100.0%

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.

Marion County Area, Oregon

Am—Amity silt loam

Map Unit Setting

National map unit symbol: 24ns
Elevation: 120 to 350 feet
Mean annual precipitation: 40 to 45 inches
Mean annual air temperature: 52 to 54 degrees F
Frost-free period: 190 to 210 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Amity and similar soils: 85 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Amity

Setting

Landform: Terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed silty alluvium

Typical profile

H1 - 0 to 24 inches: silt loam
H2 - 24 to 37 inches: silty clay loam
H3 - 37 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 2w
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: R002XC007OR - Valley Swale Group
Forage suitability group: Somewhat Poorly Drained (G002XY005OR)
Other vegetative classification: Somewhat Poorly Drained (G002XY005OR)
Hydric soil rating: No

Minor Components

Concord

Percent of map unit: 5 percent
Landform: Terraces

Custom Soil Resource Report

Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Other vegetative classification: Poorly Drained (G002XY006OR)
Hydric soil rating: Yes

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Custom Soil Resource Report

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SUPPORT INFORMATION AND CALCULATIONS FOR TOTAL SITE

Manning's n-Values

<u>Description</u>	<u>Manning's "n"</u>
Pipes	
Reinforced concrete	0.013
Vitrified clay pipe	0.013
Smooth welded pipe	0.011
Corrugated metal pipe	0.023
Polyvinyl chloride (PVC)	0.010
Natural Channels	
Gravel beds, Straight	0.025
Gravel beds, large boulders	0.040
Earth, straight, some grass	0.026
Earth, winding, no vegetation	0.030
Earth, winding	0.050
Miscellaneous	
Smooth surfaces (concrete, asphalt, bare soil)	0.011
Fallow (no residue)	0.05
Cultivated soils	0.06-0.17
Short grass	0.15
Dense grass	0.24
Bermuda grass	0.41
Light underbrush woods	0.40
Dense underbrush woods	0.80

Table 9: Manning's Numbers

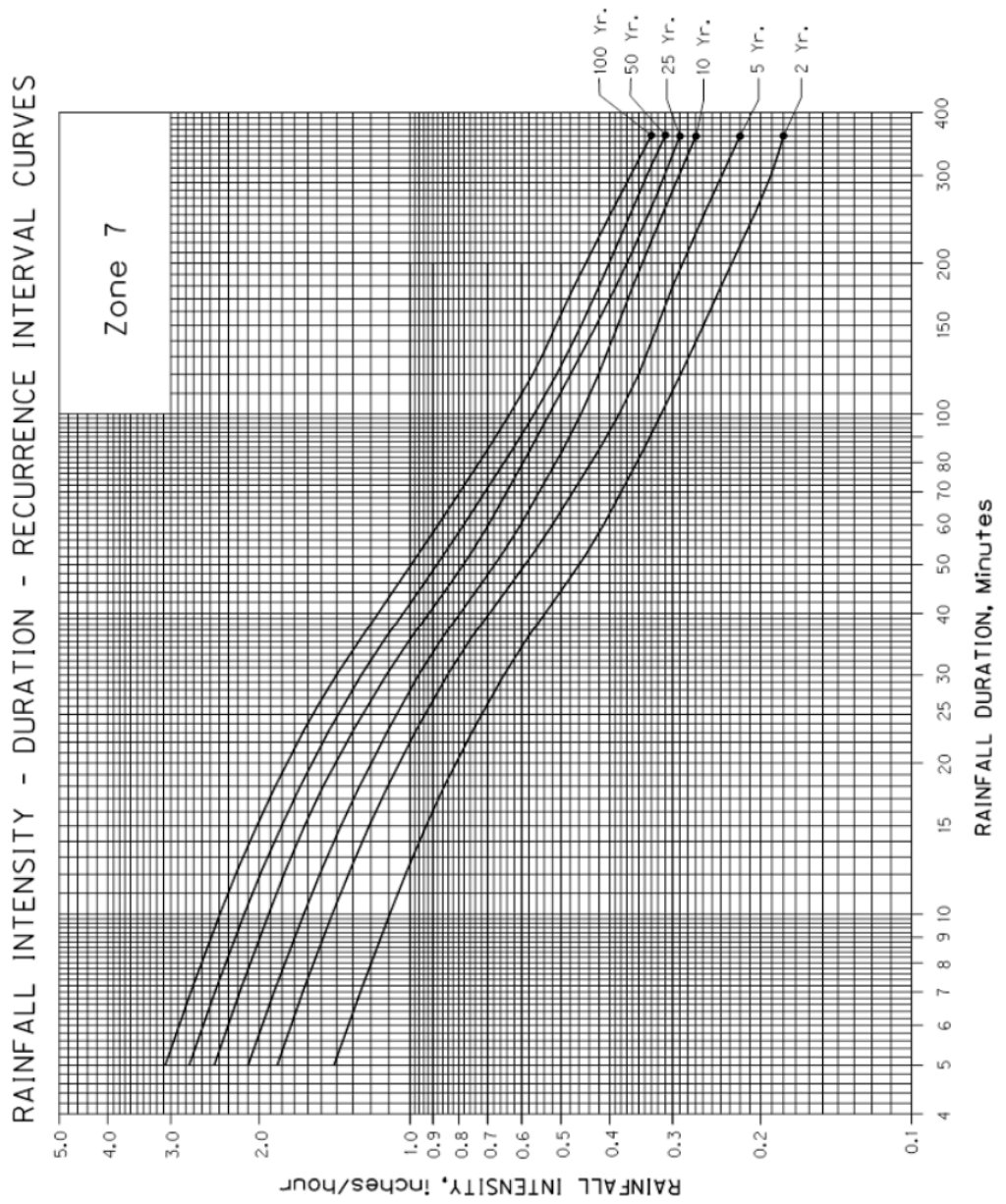


Figure 6: ODOT Zone 7 IDF Curves

Runoff Coefficients (C)

Area Description	Coefficient Value	Typical Design
Business:		
Central business	0.70 - 0.95	
District and local	0.50 - 0.70	
Residential:		
Single family	0.35 - 0.45	
Multi-units detached	0.40 - 0.75	
Suburban	0.25 - 0.40	
Apartments	0.50 - 0.70	
Industrial:		
Light	0.50 - 0.80	
Heavy	0.60 - 0.90	
Parks, cemeteries	0.10 - 0.25	
Playgrounds	0.20 - 0.35	
Railroad yards	0.20 - 0.40	
Lawns		
Sandy soil	0.05 - 0.20	
Heavy soil	0.18 - 0.35	0.30
Unimproved	0.10 - 0.30	0.20
Asphaltic	0.70 - 0.95	0.90
Concrete	0.80 - 0.95	0.90
Roofs	0.75 - 0.95	0.90

Source: ASCE

Table 10: Runoff Coefficients

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 1

Lincoln Road Townhomes pre developed

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.050	0.011	0.011	
Flow length (ft)	= 300.0	0.0	0.0	
Two-year 24-hr precip. (in)	= 2.50	0.00	0.00	
Land slope (%)	= 0.53	0.00	0.00	
Travel Time (min)	= 18.86	+ 0.00	+ 0.00	= 18.86
Shallow Concentrated Flow				
Flow length (ft)	= 6.57	0.00	0.00	
Watercourse slope (%)	= 0.53	0.00	0.00	
Surface description	= Unpaved	Paved	Paved	
Average velocity (ft/s)	=1.17	0.00	0.00	
Travel Time (min)	= 0.09	+ 0.00	+ 0.00	= 0.09
Channel Flow				
X sectional flow area (sqft)	= 0.00	0.00	0.00	
Wetted perimeter (ft)	= 0.00	0.00	0.00	
Channel slope (%)	= 0.00	0.00	0.00	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	=0.00	0.00	0.00	
Flow length (ft)	0.0	0.0	0.0	
Travel Time (min)	= 0.00	+ 0.00	+ 0.00	= 0.00
Total Travel Time, Tc				18.95 min

Figure 7: Pre-Developed Time of Concentration

Hydrograph Report

Hyd. No. 1

Lincoln Road Townhomes pre developed

Hydrograph type	= Rational	Peak discharge	= 1.008 cfs
Storm frequency	= 5 yrs	Time to peak	= 19 min
Time interval	= 1 min	Hyd. volume	= 1,149 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.34*
Intensity	= 1.127 in/hr	Tc by TR55	= 19.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.460 x 0.30) + (0.170 x 0.90)] / 2.630

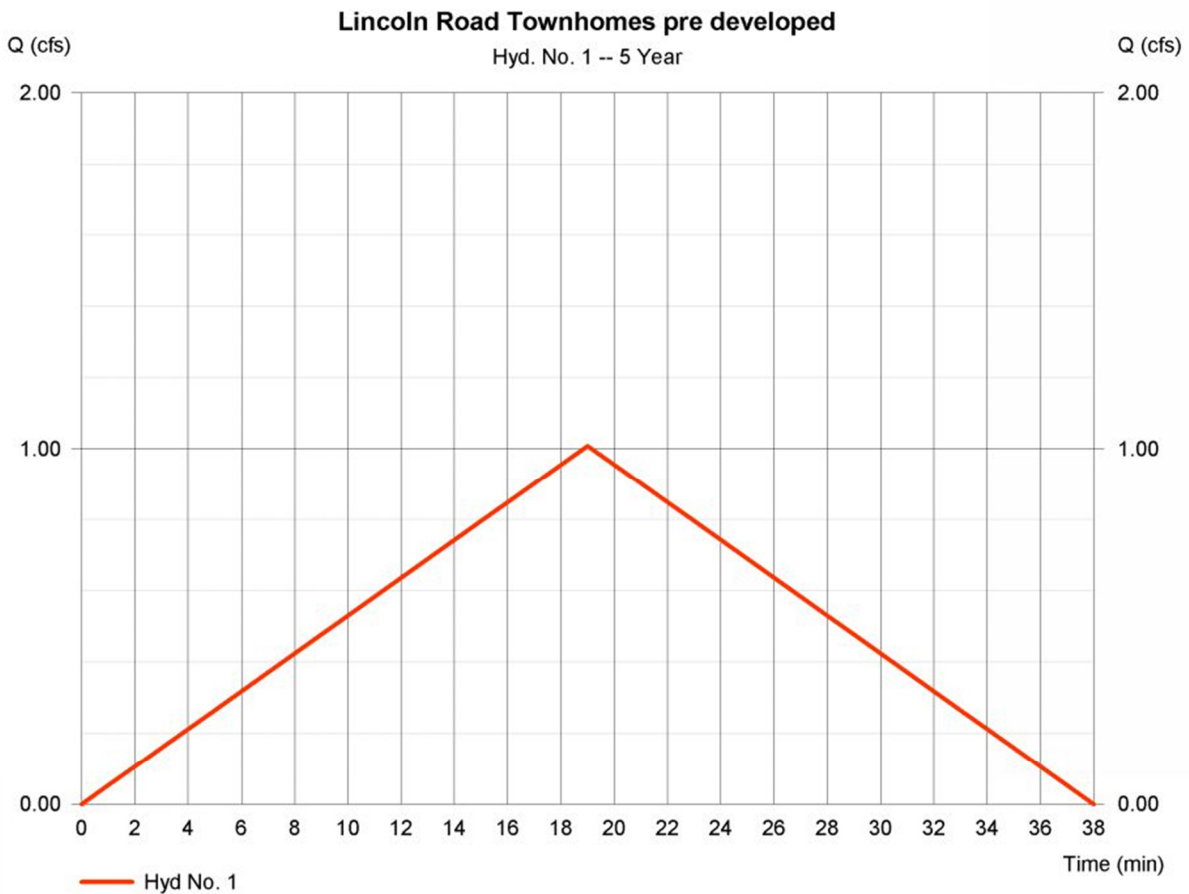


Figure 8: Pre-Developed 5-year Storm Event Hydrograph

Hydrograph Report

Hyd. No. 1

Lincoln Road Townhomes pre developed

Hydrograph type	= Rational	Peak discharge	= 1.106 cfs
Storm frequency	= 10 yrs	Time to peak	= 19 min
Time interval	= 1 min	Hyd. volume	= 1,261 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.34*
Intensity	= 1.237 in/hr	Tc by TR55	= 19.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.460 x 0.30) + (0.170 x 0.90)] / 2.630



Figure 9: Pre-Developed 10-year Storm Event hydrograph

Hydrograph Report

Hyd. No. 1

Lincoln Road Townhomes pre developed

Hydrograph type	= Rational	Peak discharge	= 1.277 cfs
Storm frequency	= 25 yrs	Time to peak	= 19 min
Time interval	= 1 min	Hyd. volume	= 1,455 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.34*
Intensity	= 1.428 in/hr	Tc by TR55	= 19.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.460 x 0.30) + (0.170 x 0.90)] / 2.630

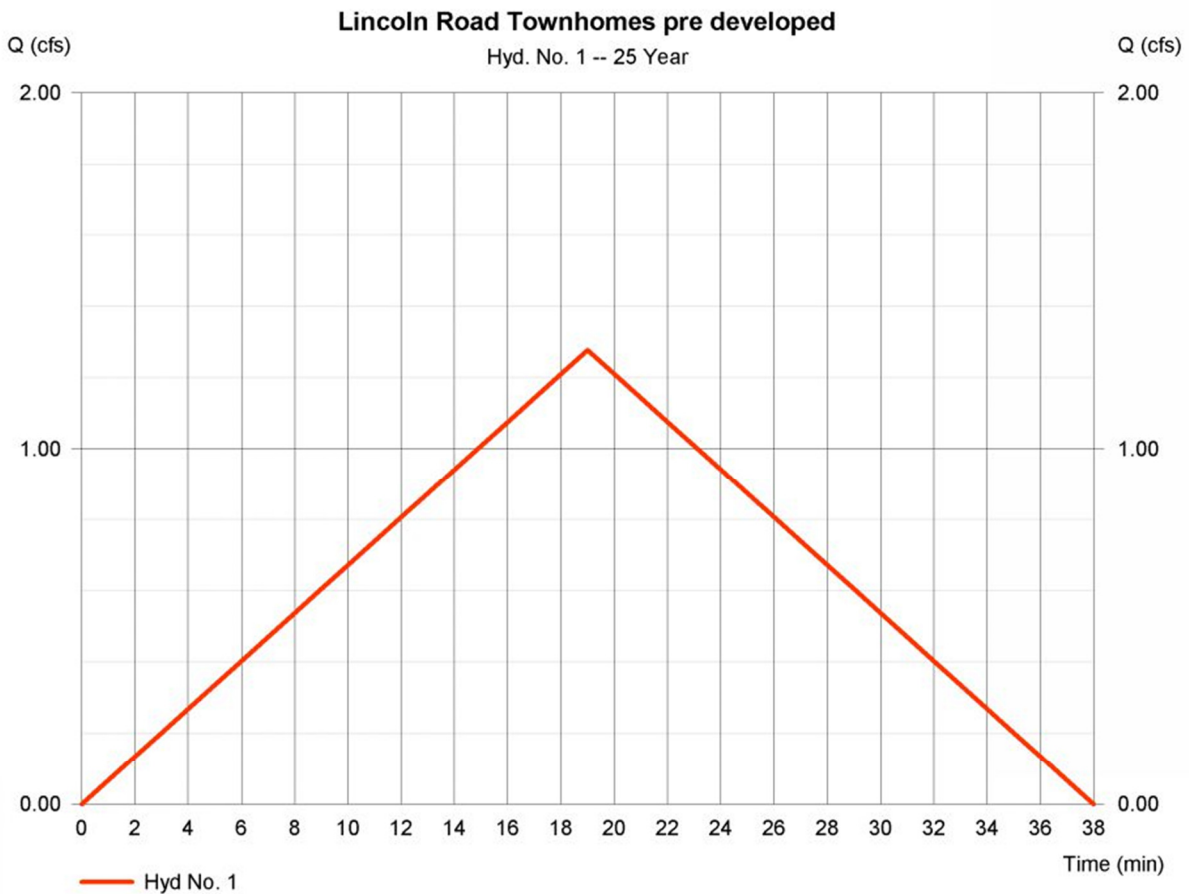


Figure10: Pre-Developed 25-year Storm Event hydrograph

Hydrograph Report

Hyd. No. 1

Lincoln Road Townhomes pre developed

Hydrograph type	= Rational	Peak discharge	= 1.457 cfs
Storm frequency	= 50 yrs	Time to peak	= 19 min
Time interval	= 1 min	Hyd. volume	= 1,661 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.34*
Intensity	= 1.630 in/hr	Tc by TR55	= 19.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.460 x 0.30) + (0.170 x 0.90)] / 2.630

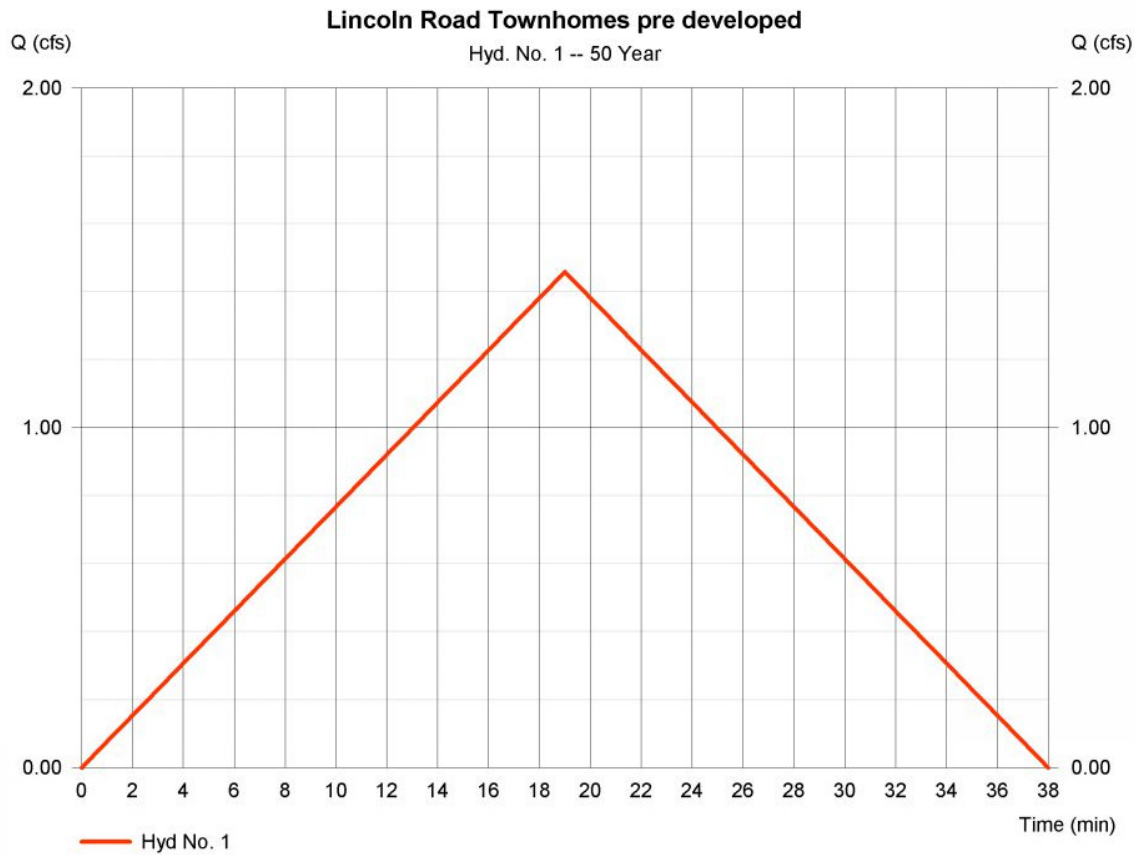


Figure 11: Pre-Developed 50-year Storm Event Hydrograph

Hydrograph Report

Hyd. No. 1

Lincoln Road Townhomes pre developed

Hydrograph type	= Rational	Peak discharge	= 1.622 cfs
Storm frequency	= 100 yrs	Time to peak	= 19 min
Time interval	= 1 min	Hyd. volume	= 1,849 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.34*
Intensity	= 1.813 in/hr	Tc by TR55	= 19.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(2.460 x 0.30) + (0.170 x 0.90)] / 2.630



Figure 12: Pre-Developed 100-year Storm Event Hydrograph

TR55 Tc Worksheet

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Hyd. No. 2

Lincoln Road Townhomes post developed

<u>Description</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>Totals</u>
Sheet Flow				
Manning's n-value	= 0.011	0.011	0.011	
Flow length (ft)	= 34.2	265.8	0.0	
Two-year 24-hr precip. (in)	= 2.50	2.50	0.00	
Land slope (%)	= 1.41	0.50	0.00	
Travel Time (min)	= 0.67	+ 5.22	+ 0.00	= 5.89
Shallow Concentrated Flow				
Flow length (ft)	= 5.88	0.00	0.00	
Watercourse slope (%)	= 0.50	0.00	0.00	
Surface description	= Paved	Paved	Paved	
Average velocity (ft/s)	=1.44	0.00	0.00	
Travel Time (min)	= 0.07	+ 0.00	+ 0.00	= 0.07
Channel Flow				
X sectional flow area (sqft)	= 0.67	1.05	1.05	
Wetted perimeter (ft)	= 2.22	2.77	2.77	
Channel slope (%)	= 0.30	0.32	0.32	
Manning's n-value	= 0.015	0.015	0.015	
Velocity (ft/s)	=2.45	2.94	2.94	
Flow length (ft)	((0))299.6	123.1	58.1	
Travel Time (min)	= 2.04	+ 0.70	+ 0.33	= 3.07
Total Travel Time, Tc				9.02 min

Figure 13: Post Developed Time of Concentration

Hydrograph Report

Hyd. No. 2

Lincoln Road Townhomes post developed

Hydrograph type	= Rational	Peak discharge	= 2.715 cfs
Storm frequency	= 5 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 1,466 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.66*
Intensity	= 1.564 in/hr	Tc by TR55	= 9.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.060 x 0.30) + (1.570 x 0.90)] / 2.630

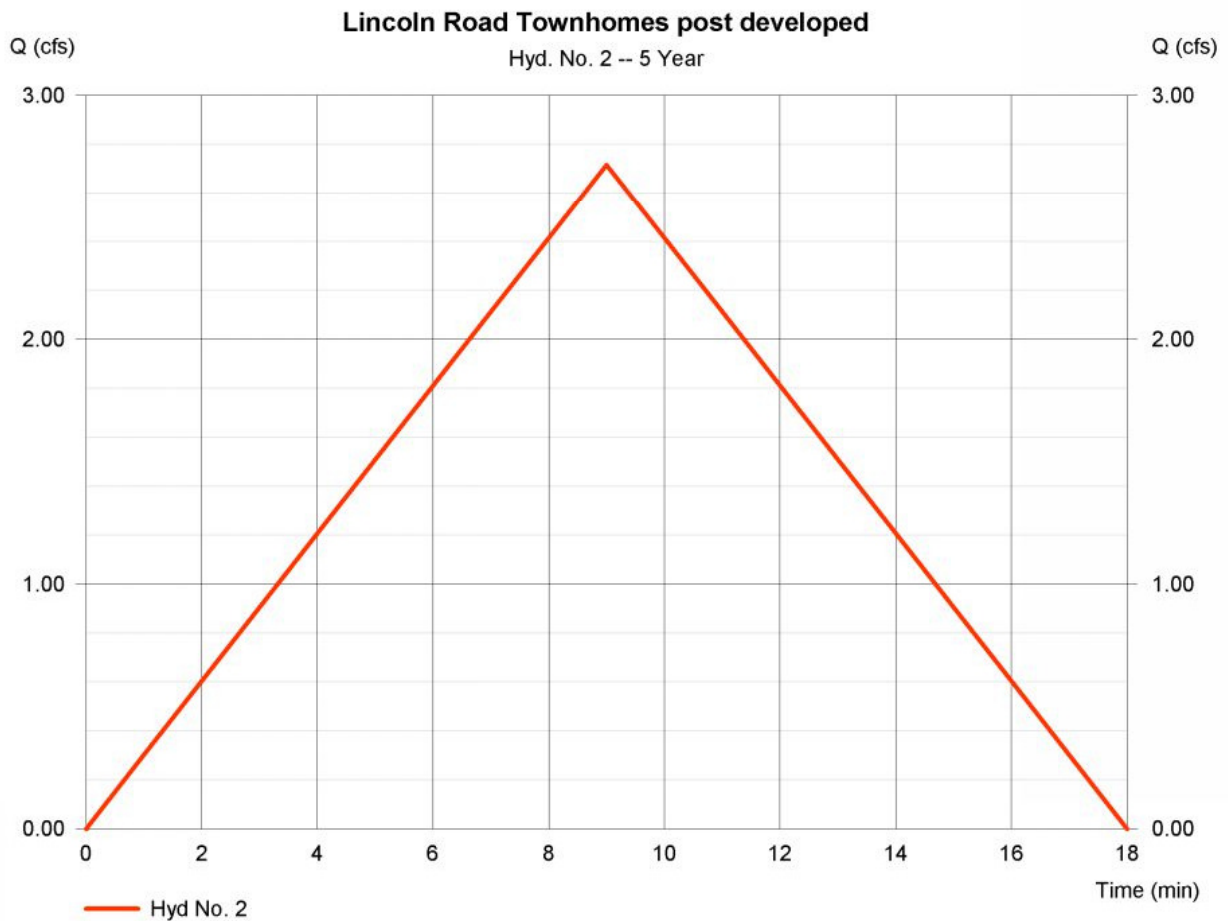


Figure 14: Post Developed 5-year Storm Event Hydrograph

Hydrograph Report

Hyd. No. 2

Lincoln Road Townhomes post developed

Hydrograph type	= Rational	Peak discharge	= 3.007 cfs
Storm frequency	= 10 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 1,624 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.66*
Intensity	= 1.732 in/hr	Tc by TR55	= 9.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.060 x 0.30) + (1.570 x 0.90)] / 2.630

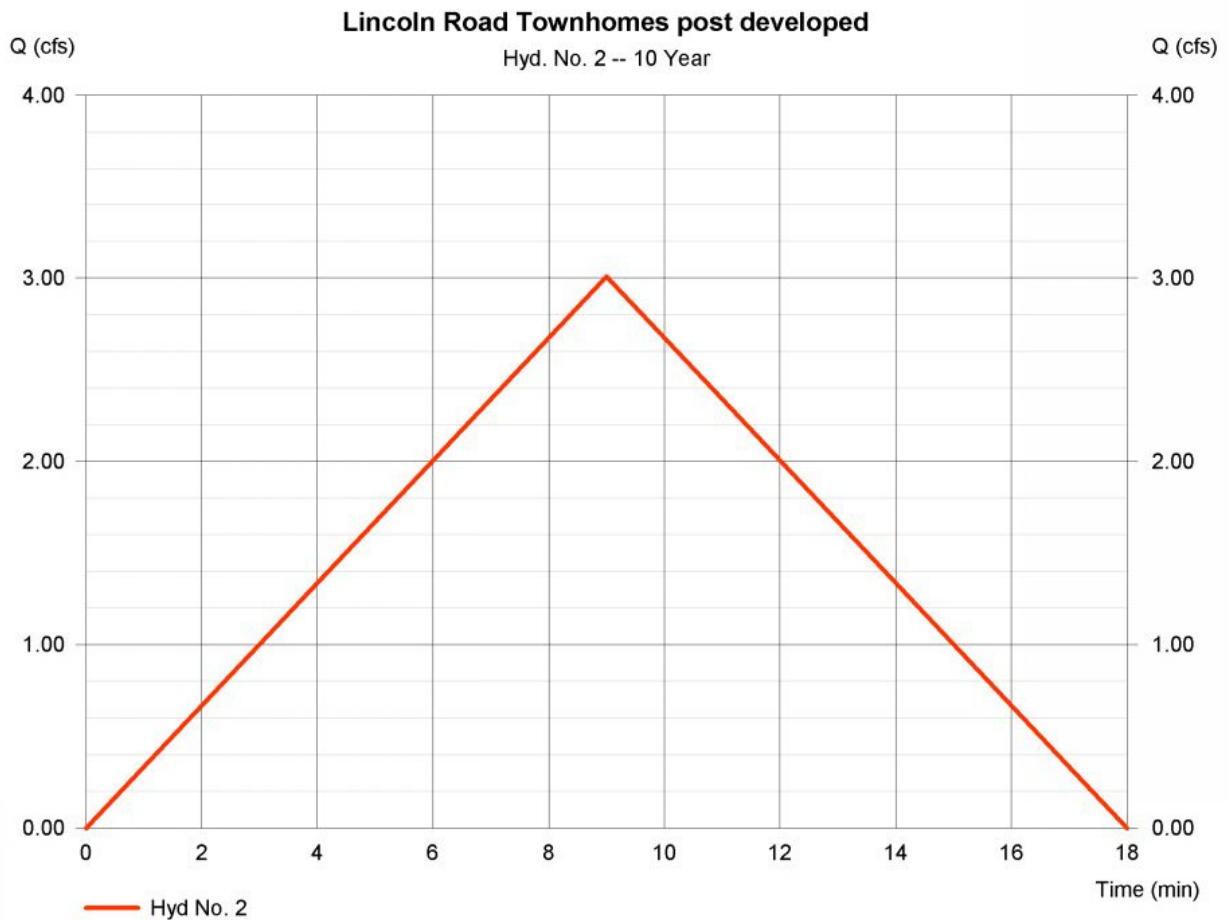


Figure 15: Post Developed 10-year Storm Event Hydrograph

Hydrograph Report

Hyd. No. 2

Lincoln Road Townhomes post developed

Hydrograph type	= Rational	Peak discharge	= 3.499 cfs
Storm frequency	= 25 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 1,889 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.66*
Intensity	= 2.016 in/hr	Tc by TR55	= 9.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.060 x 0.30) + (1.570 x 0.90)] / 2.630

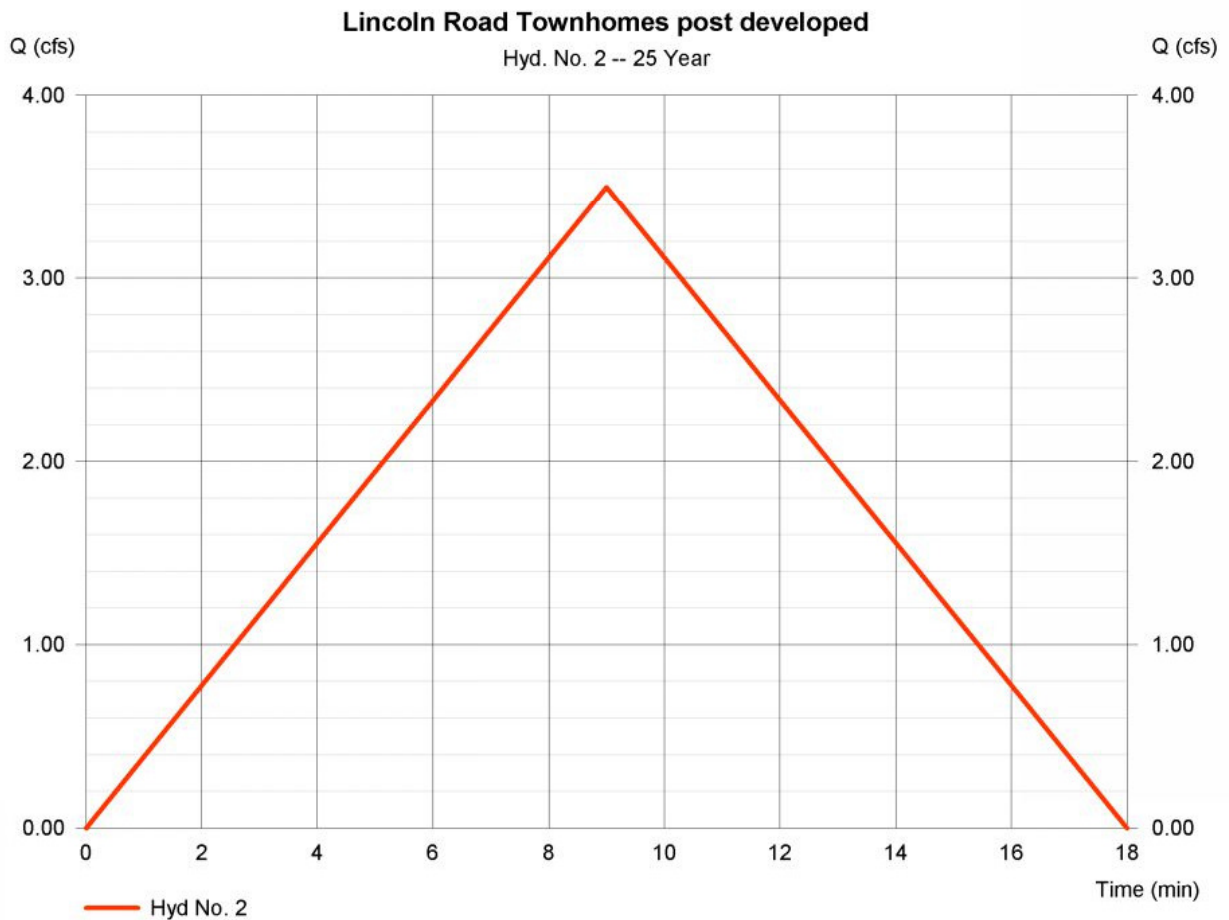


Figure 16: Post Developed 25-year Storm Event Hydrograph

Hydrograph Report

Hyd. No. 2

Lincoln Road Townhomes post developed

Hydrograph type	= Rational	Peak discharge	= 3.972 cfs
Storm frequency	= 50 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 2,145 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.66*
Intensity	= 2.288 in/hr	Tc by TR55	= 9.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.060 x 0.30) + (1.570 x 0.90)] / 2.630

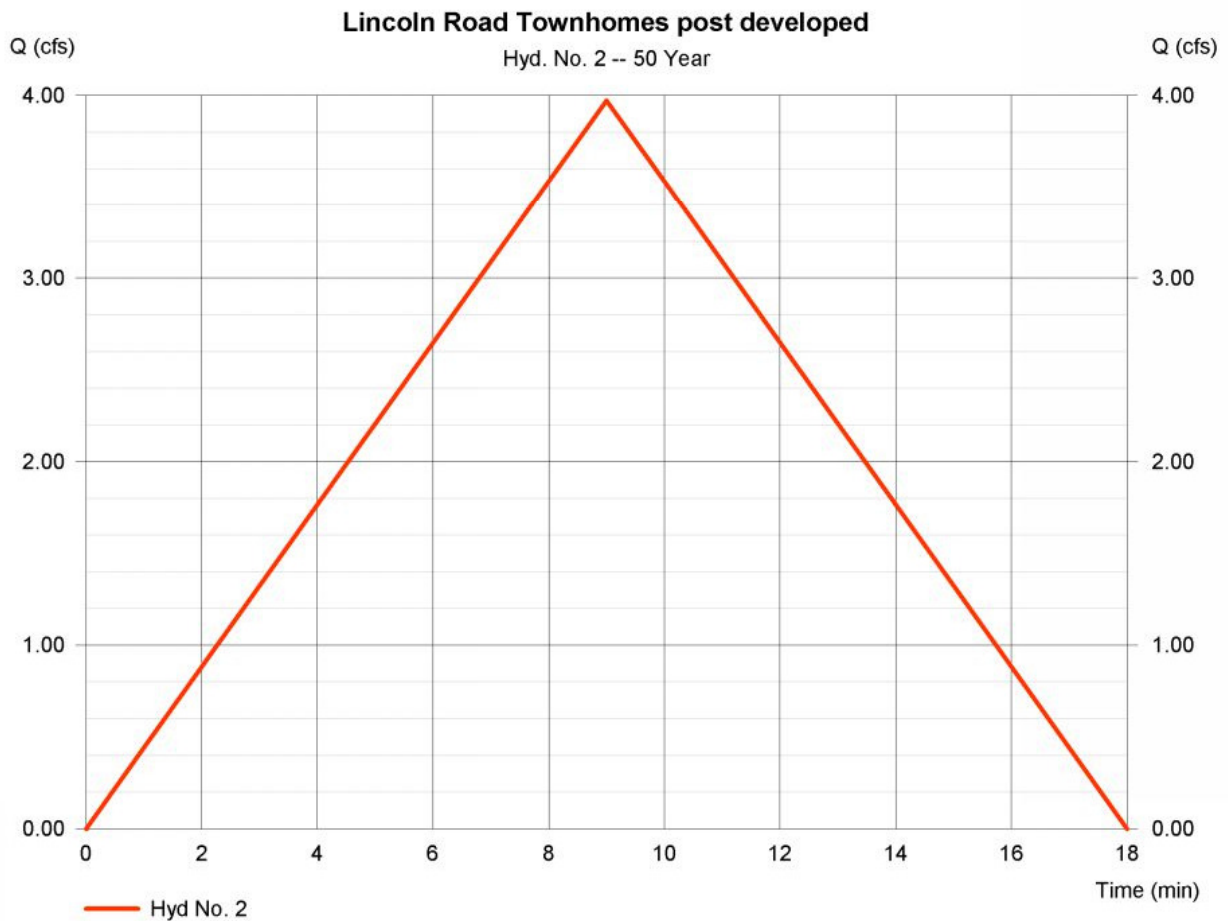


Figure 17: Post Developed 50-year Storm Event Hydrograph

Hydrograph Report

Hyd. No. 2

Lincoln Road Townhomes post developed

Hydrograph type	= Rational	Peak discharge	= 4.367 cfs
Storm frequency	= 100 yrs	Time to peak	= 9 min
Time interval	= 1 min	Hyd. volume	= 2,358 cuft
Drainage area	= 2.630 ac	Runoff coeff.	= 0.66*
Intensity	= 2.516 in/hr	Tc by TR55	= 9.00 min
IDF Curve	= ODOT Zone 7.IDF	Asc/Rec limb fact	= 1/1

* Composite (Area/C) = [(1.060 x 0.30) + (1.570 x 0.90)] / 2.630

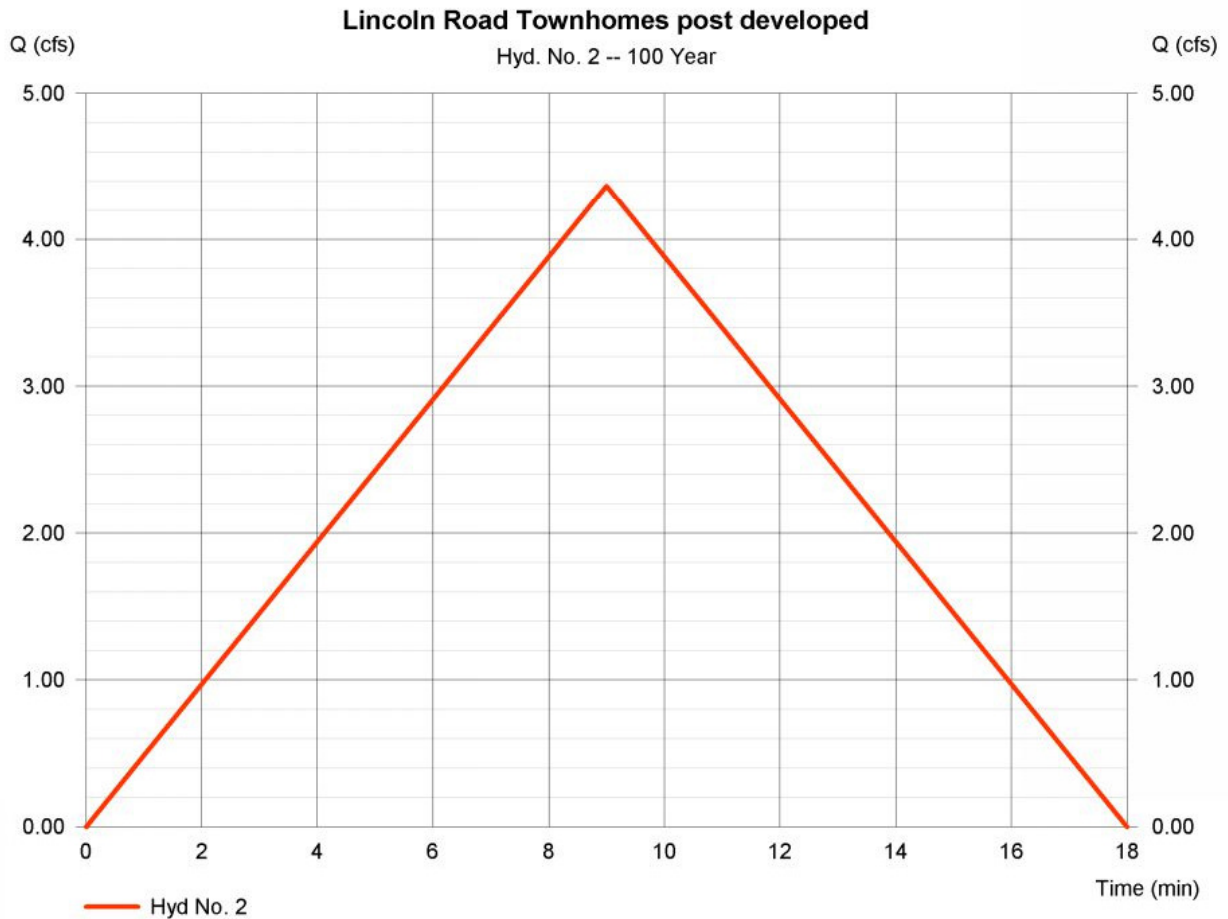


Figure 18: Post Developed 100-year Storm Event Hydrograph

Detention Requirements

Find flows

Pre-dev q5 1.01 cfs

Total Area 2.629 acres

Runoff Coefficient 0.66

Analyze the 25-yr hydrograph

Duration min	Inflow				Outflow		
	Rainfall Intensity in in/hr	Intensity		Allowable outflow in cfs	Cumulative Outflow Volume in cf	Detention Volume Required Storage in cf	
		Inflow Rate in cfs	Inflow Volume in cf				
5	2.45	4.25	1275.33	1.01	302.40	972.93	
10	1.90	3.30	1978.06	1.01	604.80	1373.26	
15	1.70	2.95	2654.76	1.01	907.20	1747.56	
20	1.40	2.43	2915.04	1.01	1209.60	1705.44	
25	1.25	2.17	3253.39	1.01	1512.00	1741.39	
30	1.10	1.91	3435.58	1.01	1814.40	1621.18	
35	1.01	1.75	3680.23	1.01	2116.80	1563.43	
40	0.92	1.60	3831.19	1.01	2419.20	1411.99	
45	0.86	1.49	4029.00	1.01	2721.60	1307.40	
50	0.80	1.39	4164.34	1.01	3024.00	1140.34	
55	0.75	1.30	4294.47	1.01	3326.40	968.07	
60	0.70	1.21	4372.55	1.01	3628.80	743.75	
65	0.67	1.16	4533.92	1.01	3931.20	602.72	
70	0.64	1.11	4664.06	1.01	4233.60	430.46	
75	0.62	1.08	4841.04	1.01	4536.00	305.04	
80	0.60	1.04	4997.20	1.01	4838.40	158.80	
85	0.58	1.01	5132.54	1.01	5140.80	-8.26	
90	0.56	0.97	5247.06	1.01	5443.20	-196.14	
95	0.55	0.95	5390.21	1.01	5745.60	-355.39	
100	0.53	0.92	5517.75	1.01	6048.00	-530.25	
110	0.51	0.88	5840.48	1.01	6652.80	-812.32	
120	0.49	0.85	6121.57	1.01	7257.60	-1136.03	
130	0.47	0.82	6361.02	1.01	7862.40	-1501.38	
140	0.45	0.78	6558.83	1.01	8467.20	-1908.37	
150	0.43	0.75	6714.99	1.01	9072.00	-2357.01	
160	0.42	0.73	6962.77	1.01	9676.80	-2714.03	
170	0.41	0.70	7185.56	1.01	10281.60	-3096.04	
180	0.39	0.68	7383.37	1.01	10886.40	-3503.03	
190	0.38	0.66	7556.19	1.01	11491.20	-3935.01	
200	0.37	0.64	7704.02	1.01	12096.00	-4391.98	
210	0.37	0.63	7979.91	1.01	12700.80	-4720.89	
220	0.36	0.62	8245.39	1.01	13305.60	-5060.21	
230	0.36	0.62	8500.45	1.01	13910.40	-5409.95	
240	0.35	0.61	8745.11	1.01	14515.20	-5770.09	
250	0.35	0.60	8979.35	1.01	15120.00	-6140.65	
260	0.34	0.59	9203.18	1.01	15724.80	-6521.62	
270	0.34	0.58	9416.60	1.01	16329.60	-6913.00	
280	0.33	0.57	9619.62	1.01	16934.40	-7314.78	
290	0.33	0.56	9812.22	1.01	17539.20	-7726.98	
300	0.32	0.56	9994.41	1.01	18144.00	-8149.59	
310	0.32	0.55	10166.19	1.01	18748.80	-8582.61	
320	0.31	0.54	10327.55	1.01	19353.60	-9026.05	
330	0.31	0.53	10478.51	1.01	19958.40	-9479.89	
340	0.30	0.52	10619.06	1.01	20563.20	-9944.14	
350	0.30	0.51	10749.19	1.01	21168.00	-10418.81	
360	0.29	0.50	10868.92	1.01	21772.80	-10903.88	

Detention volume 1747.564

Figure 19: Detention Requirements Post Developed 25-year Storm vs pre-Developed 5-Year Storm Event

Detention Requirements

Find flows

Pre-dev q10 1.11 cfs

Total Area 2.629 acres

Runoff Coefficient 0.66

Analyze the 25-yr hydrograph

Duration min	Inflow			Outflow		
	Rainfall Intensity in in/hr	Intensity		Allowable outflow in cfs	Cumulative Outflow Volume in cf	Detention Volume Required Storage in cf
		Inflow Rate in cfs	Inflow Volume in cf			
5	2.45	4.25	1275.33	1.11	331.80	943.53
10	1.90	3.30	1978.06	1.11	663.60	1314.46
15	1.70	2.95	2654.76	1.11	995.40	1659.36
20	1.40	2.43	2915.04	1.11	1327.20	1587.84
25	1.25	2.17	3253.39	1.11	1659.00	1594.39
30	1.10	1.91	3435.58	1.11	1990.80	1444.78
35	1.01	1.75	3680.23	1.11	2322.60	1357.63
40	0.92	1.60	3831.19	1.11	2654.40	1176.79
45	0.86	1.49	4029.00	1.11	2986.20	1042.80
50	0.80	1.39	4164.34	1.11	3318.00	846.34
55	0.75	1.30	4294.47	1.11	3649.80	644.67
60	0.70	1.21	4372.55	1.11	3981.60	390.95
65	0.67	1.16	4533.92	1.11	4313.40	220.52
70	0.64	1.11	4664.06	1.11	4645.20	18.86
75	0.62	1.08	4841.04	1.11	4977.00	-135.96
80	0.60	1.04	4997.20	1.11	5308.80	-311.60
85	0.58	1.01	5132.54	1.11	5640.60	-508.06
90	0.56	0.97	5247.06	1.11	5972.40	-725.34
95	0.55	0.95	5390.21	1.11	6304.20	-913.99
100	0.53	0.92	5517.75	1.11	6636.00	-1118.25
110	0.51	0.88	5840.48	1.11	7299.60	-1459.12
120	0.49	0.85	6121.57	1.11	7963.20	-1841.63
130	0.47	0.82	6361.02	1.11	8626.80	-2265.78
140	0.45	0.78	6558.83	1.11	9290.40	-2731.57
150	0.43	0.75	6714.99	1.11	9954.00	-3239.01
160	0.42	0.73	6962.77	1.11	10617.60	-3654.83
170	0.41	0.70	7185.56	1.11	11281.20	-4095.64
180	0.39	0.68	7383.37	1.11	11944.80	-4561.43
190	0.38	0.66	7556.19	1.11	12608.40	-5052.21
200	0.37	0.64	7704.02	1.11	13272.00	-5567.98
210	0.37	0.63	7979.91	1.11	13935.60	-5955.69
220	0.36	0.62	8245.39	1.11	14599.20	-6353.81
230	0.36	0.62	8500.45	1.11	15262.80	-6762.35
240	0.35	0.61	8745.11	1.11	15926.40	-7181.29
250	0.35	0.60	8979.35	1.11	16590.00	-7610.65
260	0.34	0.59	9203.18	1.11	17253.60	-8050.42
270	0.34	0.58	9416.60	1.11	17917.20	-8500.60
280	0.33	0.57	9619.62	1.11	18580.80	-8961.18
290	0.33	0.56	9812.22	1.11	19244.40	-9432.18
300	0.32	0.56	9994.41	1.11	19908.00	-9913.59
310	0.32	0.55	10166.19	1.11	20571.60	-10405.41
320	0.31	0.54	10327.55	1.11	21235.20	-10907.65
330	0.31	0.53	10478.51	1.11	21898.80	-11420.29
340	0.30	0.52	10619.06	1.11	22562.40	-11943.34
350	0.30	0.51	10749.19	1.11	23226.00	-12476.81
360	0.29	0.50	10868.92	1.11	23889.60	-13020.68

Detention volume 1659.364

Figure 20: Detention Requirements Post Developed 25-year Storm vs pre-Developed 10-Year Storm Event

Detention Requirements

Find flows

Pre-dev q25 1.28 cfs

Total Area 2.629 acres

Runoff Coefficient 0.66

Analyze the 25-yr hydrograph

Duration min	Inflow			Outflow		
	Rainfall Intensity in in/hr	Intensity		Allowable outflow in cfs	Cumulative Outflow Volume in cf	Detention Volume Required Storage in cf
		Inflow Rate in cfs	Inflow Volume in cf			
5	2.45	4.25	1275.33	1.28	383.10	892.23
10	1.90	3.30	1978.06	1.28	766.20	1211.86
15	1.70	2.95	2654.76	1.28	1149.30	1505.46
20	1.40	2.43	2915.04	1.28	1532.40	1382.64
25	1.25	2.17	3253.39	1.28	1915.50	1337.89
30	1.10	1.91	3435.58	1.28	2298.60	1136.98
35	1.01	1.75	3680.23	1.28	2681.70	998.53
40	0.92	1.60	3831.19	1.28	3064.80	766.39
45	0.86	1.49	4029.00	1.28	3447.90	581.10
50	0.80	1.39	4164.34	1.28	3831.00	333.34
55	0.75	1.30	4294.47	1.28	4214.10	80.37
60	0.70	1.21	4372.55	1.28	4597.20	-224.65
65	0.67	1.16	4533.92	1.28	4980.30	-446.38
70	0.64	1.11	4664.06	1.28	5363.40	-699.34
75	0.62	1.08	4841.04	1.28	5746.50	-905.46
80	0.60	1.04	4997.20	1.28	6129.60	-1132.40
85	0.58	1.01	5132.54	1.28	6512.70	-1380.16
90	0.56	0.97	5247.06	1.28	6895.80	-1648.74
95	0.55	0.95	5390.21	1.28	7278.90	-1888.69
100	0.53	0.92	5517.75	1.28	7662.00	-2144.25
110	0.51	0.88	5840.48	1.28	8428.20	-2587.72
120	0.49	0.85	6121.57	1.28	9194.40	-3072.83
130	0.47	0.82	6361.02	1.28	9960.60	-3599.58
140	0.45	0.78	6558.83	1.28	10726.80	-4167.97
150	0.43	0.75	6714.99	1.28	11493.00	-4778.01
160	0.42	0.73	6962.77	1.28	12259.20	-5296.43
170	0.41	0.70	7185.56	1.28	13025.40	-5839.84
180	0.39	0.68	7383.37	1.28	13791.60	-6408.23
190	0.38	0.66	7556.19	1.28	14557.80	-7001.61
200	0.37	0.64	7704.02	1.28	15324.00	-7619.98
210	0.37	0.63	7979.91	1.28	16090.20	-8110.29
220	0.36	0.62	8245.39	1.28	16856.40	-8611.01
230	0.36	0.62	8500.45	1.28	17622.60	-9122.15
240	0.35	0.61	8745.11	1.28	18388.80	-9643.69
250	0.35	0.60	8979.35	1.28	19155.00	-10175.65
260	0.34	0.59	9203.18	1.28	19921.20	-10718.02
270	0.34	0.58	9416.60	1.28	20687.40	-11270.80
280	0.33	0.57	9619.62	1.28	21453.60	-11833.98
290	0.33	0.56	9812.22	1.28	22219.80	-12407.58
300	0.32	0.56	9994.41	1.28	22986.00	-12991.59
310	0.32	0.55	10166.19	1.28	23752.20	-13586.01
320	0.31	0.54	10327.55	1.28	24518.40	-14190.85
330	0.31	0.53	10478.51	1.28	25284.60	-14806.09
340	0.30	0.52	10619.06	1.28	26050.80	-15431.74
350	0.30	0.51	10749.19	1.28	26817.00	-16067.81
360	0.29	0.50	10868.92	1.28	27583.20	-16714.28

Detention volume 1505.464

Figure 21: Detention Requirements Post Developed 25-year Storm vs pre-Developed 25-Year Storm Event

Detention Requirements

Find flows

Pre-dev q5 1.01 cfs

 Total Area 2.63 acres
 Runoff Coefficient 0.66

Analyze the 100-yr hydrograph

Duration min	Inflow			Outflow		
	Rainfall Intensity in in/hr	Inflow Rate in cfs	Inflow Volume in cf	Allowable outflow in cfs	Cumulative Outflow Volume in cf	Detention Volume Required Storage in cf
	5	3.05	5.29	1588.26	1.01	303.00
10	2.40	4.17	2499.55	1.01	606.00	1893.55
15	2.00	3.47	3124.44	1.01	909.00	2215.44
20	1.75	3.04	3645.18	1.01	1212.00	2433.18
25	1.55	2.69	4035.74	1.01	1515.00	2520.74
30	1.40	2.43	4374.22	1.01	1818.00	2556.22
35	1.28	2.21	4647.60	1.01	2121.00	2526.60
40	1.15	2.00	4790.81	1.01	2424.00	2366.81
45	1.08	1.87	5038.16	1.01	2727.00	2311.16
50	1.00	1.74	5207.40	1.01	3030.00	2177.40
55	0.94	1.63	5384.45	1.01	3333.00	2051.45
60	0.88	1.53	5499.01	1.01	3636.00	1863.01
65	0.84	1.46	5686.48	1.01	3939.00	1747.48
70	0.80	1.39	5832.29	1.01	4242.00	1590.29
75	0.77	1.33	5975.49	1.01	4545.00	1430.49
80	0.73	1.27	6082.24	1.01	4848.00	1234.24
85	0.71	1.22	6241.07	1.01	5151.00	1090.07
90	0.68	1.18	6373.86	1.01	5454.00	919.86
95	0.66	1.14	6480.61	1.01	5757.00	723.61
100	0.63	1.09	6561.32	1.01	6060.00	501.32
110	0.61	1.05	6942.51	1.01	6666.00	276.51
120	0.58	1.01	7273.70	1.01	7272.00	1.70
130	0.56	0.97	7554.90	1.01	7878.00	-323.10
140	0.53	0.93	7786.10	1.01	8484.00	-697.90
150	0.51	0.89	7967.32	1.01	9090.00	-1122.68
160	0.50	0.86	8298.51	1.01	9696.00	-1397.49
170	0.49	0.84	8604.71	1.01	10302.00	-1697.29
180	0.47	0.82	8885.91	1.01	10908.00	-2022.09
190	0.46	0.80	9142.11	1.01	11514.00	-2371.89
200	0.45	0.78	9373.32	1.01	12120.00	-2746.68
210	0.44	0.77	9645.15	1.01	12726.00	-3080.85
220	0.43	0.75	9898.23	1.01	13332.00	-3433.77
230	0.42	0.73	10132.56	1.01	13938.00	-3805.44
240	0.41	0.72	10348.15	1.01	14544.00	-4195.85
250	0.41	0.70	10544.99	1.01	15150.00	-4605.02
260	0.40	0.69	10723.08	1.01	15756.00	-5032.92
270	0.39	0.67	10882.42	1.01	16362.00	-5479.58
280	0.38	0.66	11023.02	1.01	16968.00	-5944.98
290	0.37	0.64	11144.88	1.01	17574.00	-6429.12
300	0.36	0.62	11247.98	1.01	18180.00	-6932.02
310	0.36	0.62	11461.49	1.01	18786.00	-7324.51
320	0.35	0.61	11664.58	1.01	19392.00	-7727.42
330	0.35	0.60	11857.25	1.01	19998.00	-8140.75
340	0.34	0.59	12039.51	1.01	20604.00	-8564.49
350	0.34	0.58	12211.35	1.01	21210.00	-8998.65
360	0.33	0.57	12372.78	1.01	21816.00	-9443.22

Detention volume 2556.216

Figure 22: Detention Requirements Post Developed 100-year Storm vs pre-Developed 5-Year Storm Event

Detention Requirements

Find flows

Pre-dev q10 1.11 cfs

 Total Area 2.63 acres
 Runoff Coefficient 0.66

Analyze the 100-yr hydrograph

Duration min	Inflow			Outflow		
	Rainfall Intensity in in/hr	Intensity		Allowable outflow in cfs	Cumulative Outflow Volume in cf	Detention Volume Required Storage in cf
		Inflow Rate in cfs	Inflow Volume in cf			
5	3.05	5.29	1588.26	1.11	331.80	1256.46
10	2.40	4.17	2499.55	1.11	663.60	1835.95
15	2.00	3.47	3124.44	1.11	995.40	2129.04
20	1.75	3.04	3645.18	1.11	1327.20	2317.98
25	1.55	2.69	4035.74	1.11	1659.00	2376.74
30	1.40	2.43	4374.22	1.11	1990.80	2383.42
35	1.28	2.21	4647.60	1.11	2322.60	2325.00
40	1.15	2.00	4790.81	1.11	2654.40	2136.41
45	1.08	1.87	5038.16	1.11	2986.20	2051.96
50	1.00	1.74	5207.40	1.11	3318.00	1889.40
55	0.94	1.63	5384.45	1.11	3649.80	1734.65
60	0.88	1.53	5499.01	1.11	3981.60	1517.41
65	0.84	1.46	5686.48	1.11	4313.40	1373.08
70	0.80	1.39	5832.29	1.11	4645.20	1187.09
75	0.77	1.33	5975.49	1.11	4977.00	998.49
80	0.73	1.27	6082.24	1.11	5308.80	773.44
85	0.71	1.22	6241.07	1.11	5640.60	600.47
90	0.68	1.18	6373.86	1.11	5972.40	401.46
95	0.66	1.14	6480.61	1.11	6304.20	176.41
100	0.63	1.09	6561.32	1.11	6636.00	-74.68
110	0.61	1.05	6942.51	1.11	7299.60	-357.09
120	0.58	1.01	7273.70	1.11	7963.20	-689.50
130	0.56	0.97	7554.90	1.11	8626.80	-1071.90
140	0.53	0.93	7786.10	1.11	9290.40	-1504.30
150	0.51	0.89	7967.32	1.11	9954.00	-1986.68
160	0.50	0.86	8298.51	1.11	10617.60	-2319.09
170	0.49	0.84	8604.71	1.11	11281.20	-2676.49
180	0.47	0.82	8885.91	1.11	11944.80	-3058.89
190	0.46	0.80	9142.11	1.11	12608.40	-3466.29
200	0.45	0.78	9373.32	1.11	13272.00	-3898.68
210	0.44	0.77	9645.15	1.11	13935.60	-4290.45
220	0.43	0.75	9898.23	1.11	14599.20	-4700.97
230	0.42	0.73	10132.56	1.11	15262.80	-5130.24
240	0.41	0.72	10348.15	1.11	15926.40	-5578.25
250	0.41	0.70	10544.99	1.11	16590.00	-6045.02
260	0.40	0.69	10723.08	1.11	17253.60	-6530.52
270	0.39	0.67	10882.42	1.11	17917.20	-7034.78
280	0.38	0.66	11023.02	1.11	18580.80	-7557.78
290	0.37	0.64	11144.88	1.11	19244.40	-8099.52
300	0.36	0.62	11247.98	1.11	19908.00	-8660.02
310	0.36	0.62	11461.49	1.11	20571.60	-9110.11
320	0.35	0.61	11664.58	1.11	21235.20	-9570.62
330	0.35	0.60	11857.25	1.11	21898.80	-10041.55
340	0.34	0.59	12039.51	1.11	22562.40	-10522.89
350	0.34	0.58	12211.35	1.11	23226.00	-11014.65
360	0.33	0.57	12372.78	1.11	23889.60	-11516.82

Detention volume 2383.416

Figure 23: Detention Requirements Post Developed 100-year Storm vs pre-Developed 10-Year Storm Event

Pond Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2021

Thursday, 02 / 9 / 2023

Pond No. 1 - E Lincoln Townhomes

Pond Data

Contours -User-defined contour areas. Conic method used for volume calculation. Beginning Elevation = 178.00 ft

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	178.00	684	0	0
1.00	179.00	1,134	899	899
1.70	179.70	1,492	916	1,816
2.00	180.00	1,656	472	2,288
2.17	180.17	1,656	281	2,569

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .000	.000	.000	n/a
Orifice Coeff.	= 0.00	0.00	0.00	0.00
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 0.00	0.00	0.00	0.00
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No
Exfil.(in/hr)	= 0.000	(by Wet area)		
TW Elev. (ft)	= 0.00			

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	178.00	---	---	---	---	---	---	---	---	---	---	0.000
1.00	899	179.00	---	---	---	---	---	---	---	---	---	---	0.000
1.70	1,816	179.70	---	---	---	---	---	---	---	---	---	---	0.000
2.00	2,288	180.00	---	---	---	---	---	---	---	---	---	---	0.000
2.17	2,569	180.17	---	---	---	---	---	---	---	---	---	---	0.000

Figure 24: Storage Capacity Detention Facility

Channel Report

<Name>

Circular

Diameter (ft) = 1.25

Invert Elev (ft) = 180.00

Slope (%) = 0.36

N-Value = 0.012

Calculations

Compute by: Known Q

Known Q (cfs) = 3.50

Highlighted

Depth (ft) = 0.88

Q (cfs) = 3.500

Area (sqft) = 0.93

Velocity (ft/s) = 3.78

Wetted Perim (ft) = 2.49

Crit Depth, Yc (ft) = 0.76

Top Width (ft) = 1.14

EGL (ft) = 1.10

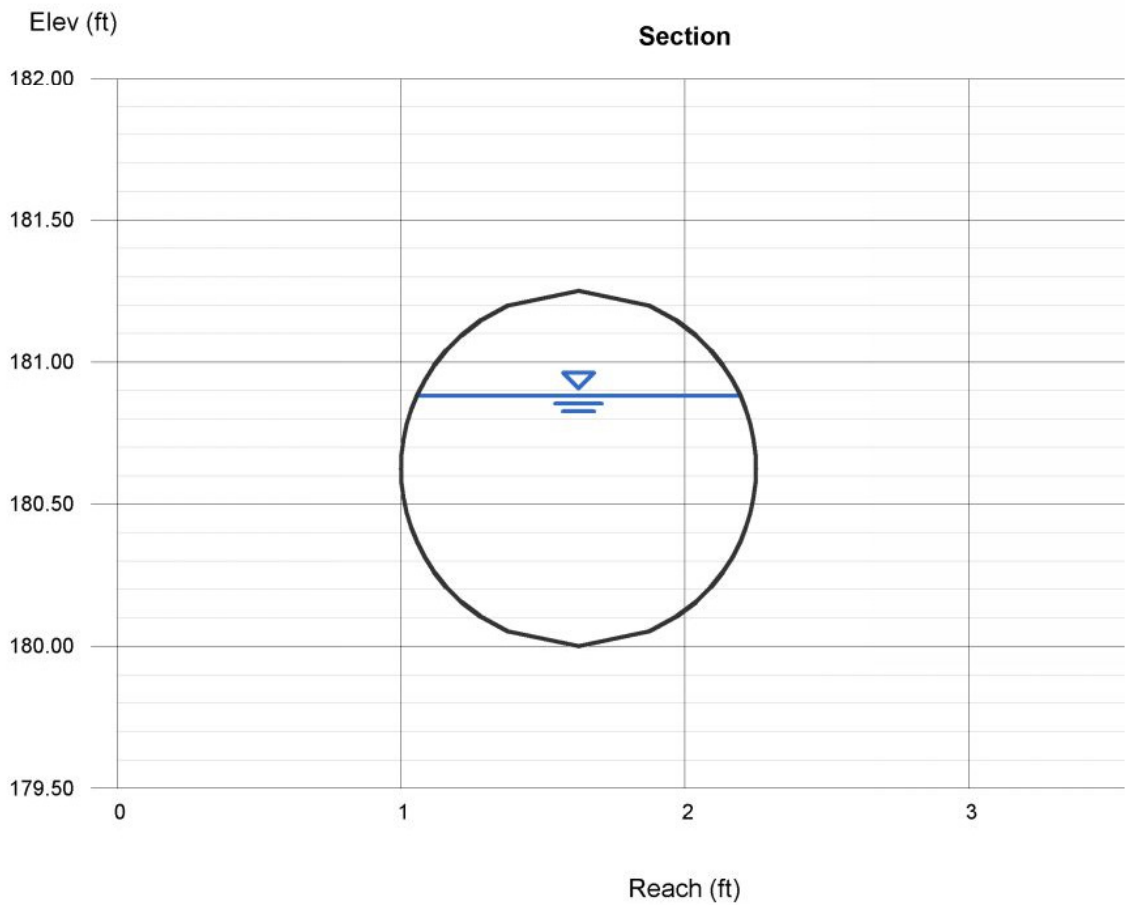
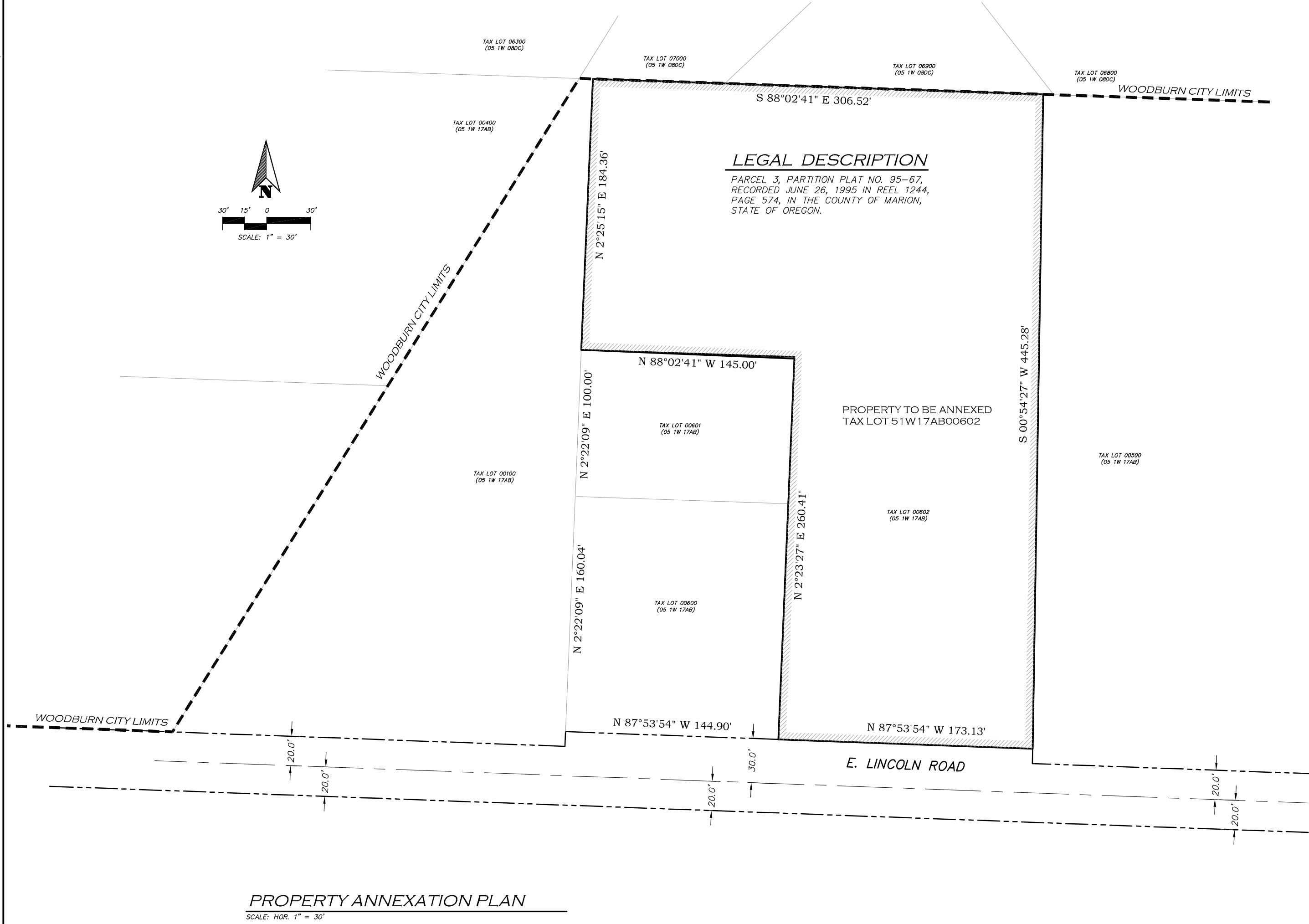
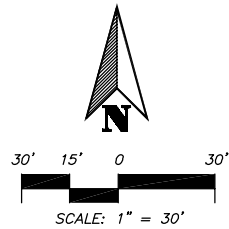


Figure 25: Channel Report

XREF LIST
 Ltscale: 1
 Palscale: 1
 Resolved
 GPC001CX01
 GPC001XX12
 Unresolved



LEGAL DESCRIPTION

PARCEL 3, PARTITION PLAT NO. 95-67,
 RECORDED JUNE 26, 1995 IN REEL 1244,
 PAGE 574, IN THE COUNTY OF MARION,
 STATE OF OREGON.

PROPERTY ANNEXATION PLAN
 SCALE: HOR. 1" = 30'

AVALON ENGINEERING

200 SWEDEN CIRCLE
 SILVERTON, OR 97381
 (503) 807-5048
 avalonengineering123@gmail.com



**E. LINCOLN ROAD TOWNHOMES
 CITY OF WOODBURN, OREGON
 PROPERTY ANNEXATION PLAN**

REV.	DATE	BY

PROJECT NUMBER
GPC001
 DATE: 02/02/23
 SCALE: AS SHOWN
 DRAWN BY: GS
 DESIGNED BY: GS
 CHECKED BY: GS
 FILE: GPC001ANX.dwg

SHEET NUMBER
ANX 1
 CITY OF WOODBURN FILE
 X

NAME: P:\Avalon\GPC001\Planning\GPC001ANX.dwg DATE: FEB 13, 2023 TIME: 9:12 PM