PLANNING COMMISSION
Meeting Agenda
Monday, June 11, 2018
7:00 PM
City Council Chambers – 222 NE 2nd Avenue

Commissioner John Savory (Chair)

Commissioner Larry Boatright (Vice Chair) | **Commissioner John Serlet**
Commissioner Derrick Mottern | **Commissioner Tyler Hall**
Commissioner Shawn Varwig | **Commissioner Andrey Chernishov**

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1. CALL TO ORDER

a. Invocation and Pledge of Allegiance

2. CITIZEN INPUT ON NON-AGENDA ITEMS

(This is an opportunity for audience members to address the Planning Commission on items not on the agenda. Each person will be given 3 minutes to speak. You are first required to fill out a testimony/comment card prior to speaking and hand it to the Recording Secretary. These forms are available by the sign-in podium. Staff and the Planning Commission will make every effort to respond to questions raised during citizen input before tonight's meeting ends or as quickly as possible thereafter.

3. MINUTES

a. Approval of Planning Commission Minutes for May 14, 2018.

4. NEW BUSINESS

5. PUBLIC HEARING

(To testify, please fill out a testimony/comment card and give to the Recording Secretary.)

a. Consider a request for a Subdivision/Variance of 11.81 acres into a 69-lot subdivision in two phases for low and medium density residential development in the SW Canby Development Concept Plan **(SUB/VAR 18-01)**.

***6.* FINAL DECISIONS - None**

(Note: These are final, written versions of previous oral decisions. No public testimony.)

a. **SUB/VAR 18-01** Beck Pond Subdivision

***7.* ITEMS OF INTEREST/REPORT FROM PLANNING STAFF**

a. Next regularly scheduled Planning Commission meeting – Monday, June 25, 2018
- Canby Townhomes, 1300 SE 13th Ave.
- Mike Patterson's Light Industrial Re-Development, 254 S Pine St

8. ITEMS OF INTEREST/GUIDANCE FROM PLANNING COMMISSION

9. ADJOURNMENT

The meeting location is accessible to persons with disabilities. A request for an interpreter for the hearing impaired or for other accommodations for person with disabilities should be made at least 48 hours before the meeting at 503-266-7001. A copy of this agenda can be found on the City's web page at www.canbyoregon.gov . City Council and Planning Commission Meetings are broadcast live and can be viewed on OCTS Channel 5. For a schedule of the playback times, please call 503-263-6287.

PUBLIC HEARING FORMAT

The public hearing will be conducted as follows:

- **STAFF REPORT**
- **QUESTIONS** (If any, by the Planning Commission or staff)
- **OPEN PUBLIC HEARING FOR TESTIMONY**:
  - **APPLICANT** (Not more than 15 minutes)
  - **PROPONENTS** (Persons in favor of application) (Not more than 5 minutes per person)
  - **OPPONENTS** (Persons opposed to application) (Not more than 5 minutes per person)
  - **NEUTRAL** (Persons with no opinion) (Not more than 5 minutes per person)
  - **REBUTTAL** (By applicant, not more than 10 minutes)
- **CLOSE PUBLIC HEARING** (No further public testimony allowed)
- **QUESTIONS** (If any by the Planning Commission)
- **DISCUSSION** (By the Planning Commission)
- **DECISION** (By the Planning Commission)

- All interested persons in attendance shall be heard on the matter. If you wish to testify on this matter, please be sure to complete a Testimony Card and hand it to the Recording Secretary. When the Chair calls for Proponents, if you favor the application; or Opponents if you are opposed to the application please come forward and take a seat, speak into the microphone so the viewing public may hear you, and state your name, address, and interest in the matter. You may be limited by time for your statement, depending upon how many people wish to testify.

EVERYONE PRESENT IS ENCOURAGED TO TESTIFY, EVEN IF IT IS ONLY TO CONCUR WITH PREVIOUS TESTIMONY. All questions must be directed through the Chair. Any evidence to be considered must be submitted to the hearing body for public access.

Testimony and evidence must be directed toward the applicable review criteria contained in the staff report, the Comprehensive Plan, or other land use regulations which the person believes to apply to the decision.

Failure to raise an issue accompanied by statements or evidence sufficient to afford the decision-maker and interested parties an opportunity to respond to the issue, may preclude appeal to the City Council and the Land Use Board of Appeals based on that issue.

Failure of the applicant to raise constitutional or other issues relating to proposed conditions of approval with sufficient specificity to allow the local government to respond to the issue may preclude an action for damages in circuit court.

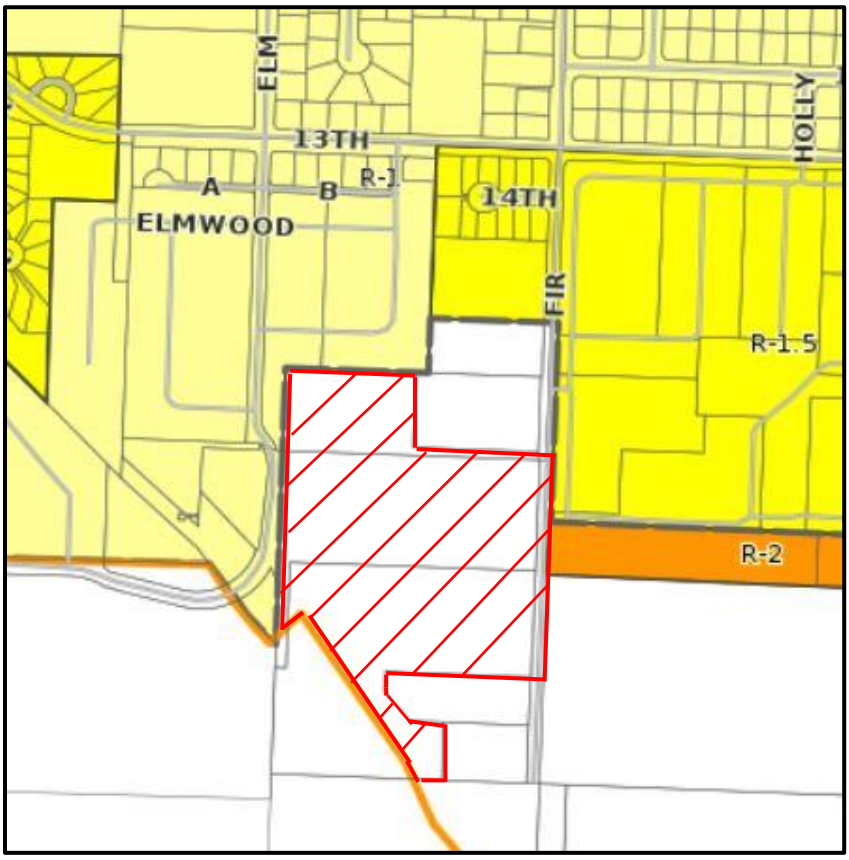
Before the conclusion of the initial evidentiary hearing, any participant may ask the hearings body for an opportunity to present additional relevant evidence or testimony that is within the scope of the hearing. The Planning Commission shall grant such requests by continuing the public hearing or leaving the record open for additional written evidence or testimony. Any such continuance of extension shall be subject to the limitations of the 120-day rule, unless the continuance or extension is requested or agreed to by the applicant.

If additional documents or evidence are provided by any party, the Planning Commission may, if requested, allow a continuance or leave the record open to allow the parties a reasonable opportunity to respond. Any such continuance or extension of the record requested by an applicant shall result in a corresponding extension of the 120-day time period.

City of Canby

BECK POND SUBDIVISION STAFF REPORT
FILE #: SUB 18-01/VAR 18-01
Prepared for the June 11, 2018 Planning Commission Meeting

LOCATION: 1555 and 1715 S. Fir Street.
ZONING: R-1, Low Density Residential/R-1.5, Medium Density Residential
TAX LOTS: 41E04CA01600, 41E04C01401, 01500 (Red-bordered property in map below)



OWNER: Rodney J. and Carol M. Beck and Nadine Beck, Trustee, Beck Joint Trust
APPLICANT: Stafford Development Company, LLC – Gordon Root, Levi Levasa
REPRESENTATIVE: RYAN O'BRIEN
APPLICATION TYPE: Subdivision/Variance (Type III)
CITY FILE NUMBER: SUB 18-01/VAR 18-01

I. PROJECT OVERVIEW & EXISTING CONDITIONS

The applicants propose to subdivide properties consisting of 11.81 total acres into a 69 lot subdivision in two phases for low-density and medium-density residential development. A variance is also requested to increase the maximum required 400 foot block length to 591 feet. The existing three parcels are currently in residential/agriculture use. The subject properties are located on the west side of S. Fir Street extending west to border on S. Elm Street and situated approximately 925 feet south of SE 13th Avenue to extend south and border on the Canby Urban Growth Boundary. The properties were annexed by Ordinance No. 1470 on February 21, 2018 as a 20.26 net acre (22.54 gross acres) annexation that included a Zone Change Application which changed the zone of the subject properties from Clackamas County Exclusive Farm Use Zone to City of Canby R-1 Low Density Residential Zone and R-1.5 Medium Density Residential Zone and in accordance with the corresponding designation in the Canby Comprehensive Plan. Four of the annexed tax lots are not included in this subdivision. The parcels were included in the Southwest Canby Development Concept Plan (SCDCP) that was approved by the City Council in 2018. Although the subdivision comprises 11.81 acres of the approved SCDCP, it generally follows the development patterns delineated in the development concept plan map, with the exception of a modification to the length of "F" Street that now ends at 16th Avenue instead of extending farther north to stub into the adjacent property (tax lot 41E04CA01500) that is not part of this subdivision but was included in the SCDCP. The termination of "F" Street at the 16th Avenue intersection created a block on 16th Avenue 591 feet long instead of a required maximum of 400 feet and forced the applicant to file a Variance Application to accompany the subdivision request. The properties are bordered by various sized parcels in residential and agriculture uses. A portion of the subdivision along the Molalla River is delineated as a pedestrian trail/park as designated in the SCDCP.

II. ATTACHMENTS

A. Application form
B. Application narrative
C. Pre-application meeting minutes
D. Neighborhood meeting notice, notes, and attendance sheet
E. Preliminary Plat Map and Associated Drawings
F. Agency Comments
G. Citizen Comments
H. Geotechnical Report
I. Traffic Impact Analysis
J. Approved SCDCP

III. APPLICABLE CRITERIA & FINDINGS

Applicable criteria used in evaluating this application are listed in the following sections of the *City of Canby's Land Development and Planning Ordinance*:

- 16.08 General Provisions

- 16.10 Off-street Parking and Loading
- 16.16 R-1 Low Density Residential Zone
- 16.18 R-1.5 Medium Density Residential Zone
- 16.46 Access Limitations on Project Density
- 16.62 Subdivisions-Applications
- 16.64 Subdivisions-Design Standards
- 16.86 Street Alignments
- 16.88 General Standards & Procedures
- 16.89 Application and Review Procedures
- 16.120 Parks, Open Space, and Recreation Land General Provisions
- Southwest Canby Development Concept Plan
- City of Canby Comprehensive Plan

Findings:

As previously mentioned, the subject properties were included with a 22.54 acre annexation that involved seven separate parcels. Properties identified as tax lots 41E04CA01500, 41E04D01400, 01500, 01600 which are within the annexed area are not part of this subdivision. Annexed parcels included in the subdivision, are tax lots 41E04CA01600, 41E04C01401, 41E04C01500. A Development Concept Plan for the properties was also approved by the City Council in 2018 and a copy is attached to the file. A Traffic Impact Study (TIS) for development resulting in future subdivisions was performed by DKS in September 2017 for the SCDCP as well as for the Beck Pond Subdivision which reached the following conclusions for the subdivision.

- *"The increase in vehicle trips associated with the proposed project (68 trips during the AM peak hour and 90 trips during the PM peak hour) would not significantly impact traffic operations along the surrounding transportation network.*
- *Site intersections shall be kept clear of objects (e.g. landscaping, objects, etc.) that could potentially limit vehicle sight distance."*

Public utilities are currently located at S. Fir Street along the east side of the proposed subdivision and also to the west from S Elm Street and can be extended as development occurs. Storm drainage for streets is shown collected and directed to intersections within the subdivision and to existing lines on S. Fir Street and S. Elm Street.

The subject properties are zoned R-1 and R-1.5 and only single-family homes are proposed within this subdivision. The zone boundary that divides the two zones extends north to south through the subject property and the applicant has designed the subdivision in a manner that places six lots across the zone boundary. The proposed lots are listed in the applicant's narrative as 42, 45, 67, 62, 63, and 58. Section 16.08.030 states the following:

> *"Unless otherwise specified, zone boundaries are lot lines or the centerline of streets, railroad rights-of-way, or such lines extended. Where a zone boundary divides a lot into two or more zones, the entire lot shall be considered to be in the zone containing the*

greater lot area, provided the boundary adjustment is a distance of less than twenty feet. (Ord. 740 section 10.3.05(C), (1984)"

The applicant's site plan delineates the distance between the zone boundary and the nearest property line on the lots dissected by the zone boundary and none of the distances exceeds the twenty foot noted above. Therefore, the zone boundaries of six lots that contain two different zone districts shall be adjusted on the official city zoning map to reflect the single zone designation that was predominate on each of the adjusted lots.

Findings: As required in Section 16.10.070(B), sidewalks are planned along both sides of the street frontages with a six foot sidewalk and a five foot planter strip adjacent to a 34 foot wide street. A 12 foot PUE will be designated across all lot frontages adjacent to the street right-of-way. (Sheet 4 Site Plan).

Chapter 16.84.040(A)(2) lists criteria for the Southwest Canby Development Concept Plan that implements the SDCP. Where practical, the proposed subdivision is delineated to follow the development concept plan design that was included as part of the annexation approval. Streets will align with the shadow plat design of the plan for connectivity where non-participating properties outside the subdivision will be developed at a later date.

A minimum lot size of 7,000 square feet and a maximum of 10,000 square feet is allowed in the R-1 zone, under provisions in Section 16.16.030(A). According to the applicant's information, the lot sizes for the R-1 zoned portion of the subdivision range from 6,464 square feet to 9,274 square feet with two lots proposed under the 7000 square foot minimum at 6,464 square feet and 6,483 square. No lots are over the maximum. In the R-1.5 zone, four lots are under the minimum 5,000 square foot standard and seven lots are over the 6.500 square foot maximum. Additionally, Section 16.16.030(C) of the R-1 zone requires a minimum lot width of 60 feet and Section 16.18.030(C) of the R-1.5 zone requires a 40 foot minimum lot width.

The applicant must provide information to the Planning Commission that establishes if the proposed lots mentioned above meet the criteria stated below, in particular the public benefit provision for more than 10% of the lots that are outside the minimum and maximum lot area standard listed in 16.16.030 (B)(1)(a)(2).

The applicant is requesting an exception from the Planning Commission to the minimum and maximum lot size under Section 16.16.030(B) and 16.18.030(B) as well as an exception of the minimum lot width on 6 lots in the R-1 zone. Those sections state that the Planning Commission may approve an exception to the minimum and maximum lot size as part of a subdivision if standards in 16.16.030(B)(1) and 16.18.030(B)(1) are met. Section 16.16.030(B) states the following:

16.16.030
"*B.* *Lot area exceptions:*

1. *The Planning Commission may approve an exception to the minimum and maximum lot area standards in subsection 16.16.030.A as part of a subdivision or partition application when all of the following standards are met:*

a. *The average area of all lots created through the subject land division, excluding required public park land dedications, surface water management facilities and similar public use areas, shall be no less than seven thousand square feet and no greater than ten thousand square feet. Non-required significant natural resource areas shall be included in the average lot size calculation to enable a transfer of density onto buildable portions of the site. Required areas include identified parks, wetland areas, riparian corridors, and other areas in which building is not permitted under local, state, or federal laws or regulations. For land in the North Redwood DCP area, the Planning Commission may allow public park land dedications to be included in the lot size averaging calculation in order to achieve community development goals and allow protection of natural resources; in this case, the resulting average lot size shall not be less than 5,000 square feet. (Am. Ord.1422, 2015)*

b. *No lot shall be created that contains less than six thousand square feet, unless the alternative lot layout option provided in Section 16.64.040 is used (Am. Ord.1422, 2015);*

c. *The lot area standards for two-family dwellings, as provided in Sections 16.16.010 and 16.16.020, shall be met; and*

d. *As a condition of granting the exception, the city will require the owner to record a deed restriction with the final plat that prevents the re-division of over-sized lots (e.g., ten thousand square feet and larger), when such re-division would violate the average lot area provision in subsection 16.16.030.B.1.a. All lots approved for use by more than one dwelling shall be so designated on the final plat.*

2. *A public benefit must be demonstrated in order to allow more than ten percent of the lots to be outside of the minimum and maximum lot areas in subsection 16.16.030.A.*

3. *The Planning Commission may modify the maximum lot area requirements in 16.16.030.A if these cannot be met due to existing lot dimensions, road patterns, or other site characteristics."*

C. Minimum width and frontage: sixty feet*, except that the Planning Commission may approve lots having less frontage subject to special conditions to assure adequate access."*

Criteria for reductions and increases of lot sizes in the R-1.5 zone are as follows:

16.18.030

"B. *Lot area exceptions:*

1. *The Planning Commission may approve an exception to the minimum and maximum lot area standards in subsection 16.18.030.A as part of a subdivision or partition application when all of the following standards are met:*

a. *The average area of all lots and open space tracts created through the subject land division, excluding required public park land dedications, surface water management facilities and similar public use areas, shall be no less than five thousand square feet and no greater than six thousand five hundred square feet. Non-required significant natural resource areas shall be included in the average lot size calculation to enable a transfer of*

density onto buildable portions of the site. Required areas include identified parks, wetland areas, riparian corridors, and other areas in which building is not permitted under local, state, or federal laws or regulations. For land in the North Redwood DCP area, the Planning Commission may allow public park land dedications to be included in the lot size averaging calculation in order to achieve community development goals and allow protection of natural resources; in this case, the resulting average lot size shall not be less than 4,000 square feet (Am. Ord. 1422, 2015);

***b**. No lot shall be created that contains less than four thousand square feet, unless the alternative lot layout option provided in Section 16.64.040 is used (Am. Ord. 1422, 2015); and*

***c.** As a condition of granting the exception, the city will require the owner to record a deed restriction with the final plat that prevents the re-division of over-sized lots (six thousand five hundred square feet and larger), when such re-division would violate the average lot size provision in subsection 16.18.030.B.1.a. All lots approved for use by more than one dwelling shall be so designated on the final plat.*

***2.** A public benefit must be demonstrated in order to allow more than ten percent of the lots to be outside of the minimum and maximum lot areas in subsection 16.18.030.B.1.a.*

***3.** The Planning Commission may modify the maximum lot area requirements in subsection 16.18.030.B if these cannot be met due to existing lot dimensions, road patterns, or other site characteristics.*

***4.** Lots of three thousand square feet each may be permitted by the Planning Commission for single family dwellings having common wall construction.*

***5.** The maximum lot area standard does not apply to dwellings existing prior to subdivision or partition plan approval or to lots designated for open space.*

***C. Minimum width and frontage: forty feet**, except that the Planning Commission may approve lots having less frontage subject to special conditions to assure adequate access. Twenty feet is permitted for single family attached (common wall) housing on interior lots".*

Findings: The applicant stated in the submitted narrative that the proposed lot reductions and increases, as well as the lot width reductions, are justified under the above criteria. However, the Planning Commission must determine if the applicant's arguments are valid enough to except the lots from meeting the code requirements. An alternative would be to redraw the Tentative Plat in a way that the lot sizes and widths are consistent with criteria listed in the code or limit the number of undersized lots.

As a condition of approval, a Street Tree Plan shall be submitted with the final plat, and street tree fees must be paid prior to release of the final plat.

As a condition of approval, the applicant shall pay the applicable Public Improvement Engineering Plan review fee prior to recording the final plat.

The subdivision will access onto S. Fir Street, classified a local street and S. Elm Street a collector street. A portion of S. Fir Street is under Clackamas County jurisdiction at this location, but is in the process of converting to City jurisdiction. Proposed 16th Avenue will extend east to west and connect S. Fir and S. Elm streets, and "F" Street, "G" Street, and 15th Avenue will circulate through the subdivision. A planned stub of 15th Avenue ends at property in the northeast corner of the subdivision that is not part of the subdivision but was included for future redevelopment in the SW Canby Development Concept Plan. As a condition of approval, the applicant shall note on the final plat any additional right-of-way required by Clackamas County and the City for S. Fir Street and S. Elm Street.

The applicant will dedicate .86 acres of park and trail identified as Tract "A" on the submitted tentative plat map. In this particular case, park SDC fees will be determined based on a land value formula.

The formula for required park SDC fees credit can be based on an agreed upon $100,000/acre value or on appraised values if requested by the applicant. The value of park land dedication offsets the park SDC fee otherwise due.

Staff has reviewed the applicant's narrative and submitted material and finds that this subdivision application conforms to applicable review criteria and design standards, subject to the Planning Commission's decision to exempt lot size and lot width standards, and the request is consistent with Comprehensive Plan policies.

The applicant must specify at the public hearing which lots are proposed for lot size reduction or increase and identify which lots are proposed for minimum lot frontage reduction in order for the Planning Commission to make a detailed decision.

VARIANCE:

16.53 MAJOR VARIANCE

The applicant requested a major variance to alter Section 16.64.020(B) of the Canby Municipal Code (CMC). The request is to increase the length of a block from the required 400 feet standard in a residential zone to 591 feet between S. Fir Street and G Street within the subdivision. Section 16.64.020(B) states the following:

"Sizes. Block length shall be limited to 300 feet in the C-1 zone, 400 feet in residential zones, 600 feet in all other zones, except for 1,000 feet on arterials. Exceptions to this prescribed block standard shall be permitted where topography, barriers such as railroads or arterial roads, or environmental constraints prevent street extension. The block depth shall be sufficient to provide two lot depths appropriate to the sizes required by Division III. (Ord. 740 section 10.4.40(C)(2), 1984; Ord. 1043 section 3, 2000; Ord. 1076, 2001; Ord. 1338, 2010)"

16.53.020 These provisions are intended to prescribe procedures which allow variations from the strict application of the regulations of this title, by reason of exceptional circumstances and other specified conditions:

A. Authorization. The commission may authorize variances from the requirements of this title, other than Division VII, where it can be shown that, owing to special and unusual circumstances related to a specific piece of property, the literal interpretation of the regulations would cause an undue or unnecessary hardship, except that no variance shall be granted to allow the use of property for purposes not authorized within the district in which the proposed use would be located. In granting a variance, the commission may attach conditions which it finds necessary to protect the best interests of the surrounding property or neighborhood and to otherwise achieve the purpose of this title.

B. Standards and Criteria. A variance may be granted only upon determination that all of the following conditions are present:

1. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the city and within the same zone. These exceptional or extraordinary circumstances result from tract size or shape, topography or other circumstances over which the owners of the property have no control. Actions of previous owners do not constitute other exceptional or extraordinary circumstances; and

Findings: The applicant indicates in the submitted narrative that the location of existing properties that are not included in the subdivision create exceptional circumstances that necessitate additional length of the block. A property that was part of the SW Canby Development Concept Plan, but not a part of this subdivision application, created a problem with the extension of "F" Street as shown on the SCDP. The street delineated on the SCDP would have extended across 16th Avenue and formed a cul-de-sac in alignment with an existing dwelling located on tax lot 41E04CA01500. In order to accommodate the property owner, the applicant intersected "F" Street at 16th Avenue. Consequently, the block length must be extended between S. Fir Street and proposed "G" Street within the subdivision. The Planning Commission must determine if the request meets this provision.

2. The variance is necessary to assure that the applicant maintains substantially the same property rights as are possessed by the owners of other property in the city and within the same zone; and

Findings: The property rights established for these particular zones is to allow a development of single-family housing within the R-1 Zone and R-1.5 Zone. As mentioned above, the design constraints caused by the adjacent property may justify the requested variance and allows the applicant to maintain property rights.

3. Granting of this variance will not be materially detrimental to the intent or purposes of the city's Comprehensive Plan or the Land Development and Planning Ordinance; and

Findings: As discussed above the proposal does not appear to be in conflict with the Comprehensive Plan that allows for single-family development. The Planning Commission should consider that the intent of the Comprehensive Plan and the regulations listed above is to provide for better quality of life, reduce congestion and provide for increased safety.

4. Granting of this variance will not be materially detrimental to other property within the same vicinity; and

Findings: Section 16.64.030(C) states that a pedestrian path must be provided for any block length over 600 feet, and the request is for a block length of 591 feet. It does not appear that development of a 591 foot block where a 400 foot block is required would be detrimental to other development in the vicinity. In provides a better alternative to the previous design proposal.

5. The variance requested is the minimum variance which will alleviate the hardship; and

Findings: It appears that the applicant's hardship is that, if the length of the block is not increased and if the proposed extension of "F" Street occurs it would eliminate two proposed lots and stub the street in alignment with an existing dwelling on an adjacent property. The Planning Commission will have to decide if the proposal meets this criterion. Staff is inclined to support the variance as being a reasonable hardship and the minimum necessary.

6. The exceptional or unique conditions of the property which necessitate the issuance of a variance were not caused by the applicant, or the applicant's employees or relatives.

Findings: The applicant indicates that the shape of the existing development properties and the existing dwelling on adjacent property create the unique conditions that require the variances.

Staff has reviewed the applicant's narrative and submitted material and finds that this variance request could conform to applicable review criteria.

IV. PUBLIC TESTIMONY/AGENCY COMMENTS

Notice of this application and opportunity to provide comment was mailed to owners and residents of lots within 500 feet of the subject properties and to all applicable public agencies. All citizen and agency comments that were received to date are available in the file.

Agency Comments: City Engineer, ODOT, DirectLink

Public Comments: From Steinke, McClurken, Joy, Fushton, Acker

V. Decision

Based on the application submitted and the facts, findings, and conclusions of this report, staff recommends that the Planning Commission **approve** Subdivision SUB 18-01/VAR 18-01 subject to the following Conditions of Approval.

General Public Improvement Conditions:

1. Prior to the start of any public improvement work, the applicant must schedule a pre-construction conference with the city and obtain construction plan sign-off from applicable agencies.
2. The development shall comply with all applicable City of Canby Public Works Design Standards.
3. **The final construction design plans shall conform to the comments provided by the City**

Engineer, when applicable, in his memorandum dated May 31, 2018 as follows:

1. S Fir Street is a county road and should have been transferred to the City upon annexation of this property as per the agreement between Clackamas County and the City of Canby, dated November 4, 1992. This roadway is classified as a local street as per the City Transportation System Plan (TSP), the existing right-of.-way is 40 feet wide (20 feet on each side of the centerline). Additional right-of-way dedication of 9 feet along the entire site frontage of this development is adequate and meets City local standards. The developer shall construct half street improvements with curbs, 4.5-foot wide planter strip with street trees from City approved tree list, 6-foot wide concrete sidewalks, utilities as required and street lights. The half street improvements shall be built to City Standards with the curb placed at 18-foot from the centerline right-of-way to match the east side of the roadway in conformance with section 2.207 of the City of Canby Public Works Design Standards dated June 2012. An asphalt tapers at the rate of 10:1 shall be constructed to match existing asphalt surface at both ends of the street.

2. All interior streets within the subdivision shall be designed to City local street standards with 34-foot paved width, curbs, 4.5-foot wide planter with street trees, 6-foot wide sidewalks, street lights and utilities in conformance with Chapter 2 of the City of Canby Public Works Design Standards, dated June 2012.

3. Temporary fire truck turnarounds shall be constructed at the phase lines and at the end of 15th Avenue where the roadway is in excess of 150 feet in length. The geometric turnaround and location shall meet the City of Canby Fire Department requirements.

4. A minimum of 10 feet wide paved trail shall be constructed along the top of the bluff and connects to G Street and S Elm Street as shown. Removable bollards must be installed at the connection with G Street and S Elm Street.

5. All comer ADA ramps and sidewalks at the existing house to remain frontage shall be constructed as part of this development.

6. The developer's design engineer will be required to submit as part of the construction plans a signing and striping plan. All street names and traffic signs shall be installed by the developer at his expense and as part of this development. The City may supply the required traffic and street name signs based on a mutually agreed cost.

7. As part of the final design, the developer's design engineer shall provide a minimum of 200-foot future centerline street profile design to assure future grades can be met at all the adjoining properties (S Fir Street, 15th Avenue and 16th Avenue).

8. An erosion control permit will be required from the City of Canby prior to any on-site disturbance.

9. A demolition permit will be required from the City prior to demoing any

existing structures on lots 20 & 21, lots 25 & 26 and lots 52 thru 56.

10. The existing domestic or irrigation wells shall be abandoned in conformance with OAR 690-220-0030. A copy of Oregon water Rights Department (OWRD) abandonment certificate shall be submitted to the City.

11. Any existing on-site sewage disposal system shall be abandoned in conformance with DEQ and Clackamas County Water Environmental Services (WES) regulations. A copy of the septic tank removal certificate shall be submitted to the City.

12. The existing house on lot 24 shall connect to City water and sewer as part of this development and SDC charges shall be paid prior to connection.

13. Sanitary sewer exists along S Elm Street to serve this site. Sanitary sewer lines shall be extended to serve the adjoining properties as applicable.

14. A storm drainage plan has not been submitted as part of this application. The storm drainage runoff can be discharged the Molalla River or using on-site drywells. Discharging storm runoff directly to the Molalla River will require water quality treatment prior to any discharge and may require DEQ approval. Using drywells (UIC) as a means to discharge runoff from the public streets must meet the following criteria: The UIC structures location shall meet at least one of the two conditions: (1) the vertical separation distance between the UIC and seasonal high groundwater is more than 2.5 feet or (2) the horizontal separation distance between the UIC and any water well is a minimum of 267 feet in accordance of the City of Canby Stormwater Master Plan, Appendix "C", Groundwater Protectiveness Demonstration and Risk Prioritization for Underground Injection Control (UIC) Devices. A final storm drainage report shall be prepared by a registered professional engineer and submitted with the final construction plans. The report shall meet Chapter 4 of the City of Canby Public Works Design Standards dated June 2012.

15. All private storm drainage runoff shall be disposed on the individual lots as per Chapter 4 of the City of Canby Public Works Design Standards dated June 2012.

4. **The applicant shall comply with the applicable recommendations listed in the DKS Traffic Impact Study dated September 29, 2017.**
5. Public improvements such as sidewalk and street improvements on S. Elm Street and S. Fir Street are required during development.
6. A turnaround, at or near the terminus of SE 15th Avenue, shall be as directed by Canby fire district.
7. The applicant shall pay the applicable Public Improvement Engineering Plan Review fee prior to recording the final plat.

Fees/Assurances:

8. All public improvements are normally installed prior to the recordation of the final plat. If the applicant wishes to forgo construction of any portion of the public improvements until after the recordation of the final plat, then the applicant shall provide the City with appropriate performance security (subdivision performance bond or cash escrow) in the amount of 110% of the cost of the remaining public improvements to be installed.
9. If the applicant chooses to provide a subdivision performance bond for some or all of the required public improvements, the applicant shall obtain a certificate from the city engineer that states:
   a. The applicant has complied with the requirements for bonding or otherwise assured completion of required public improvements.
   b. The total cost or estimate of the total cost for the development of the subdivision. This is to be accompanied by a final bid estimate of the subdivider's contractor, if there is a contractor engaged to perform the work, and the certificate of the total cost estimate must be approved by the city engineer.
10. The applicant must guarantee or warranty all public improvement work with a 1 year subdivision maintenance bond in accordance with 16.64.070(P).
11. The applicant must pay the City Master Fee authorized Site Plan Development Engineering Plan Review fee prior to the approval of the construction plans.

Streets, Signage & Striping:

12. The street improvement plans for S. Elm Street and S. Fir Street frontage and the interior streets shall conform to the TSP and Public Works standards as indicated by the city engineer.
13. A roadway striping plan shall be submitted by the applicant and shall be approved by city engineer and by the Public Works street department prior to the construction of public improvements.
14. A roadway signage plan shall be submitted by the applicant and shall be approved by the city engineer and by the Public Works street department prior to the construction of public improvements.
15. The applicant shall be responsible for installing all required street signage and striping at the time of construction of public improvements, unless other arrangements are agreed to by the City.

Sewer:

16. The applicant shall submit documentation of DEQ approval of the sewer plans to the City Engineer prior to the construction of this public improvement with each phase of development.

Stormwater:

17. Stormwater systems shall be designed in compliance with the Canby Public Works Design Standards as determined by the City Engineer.
18. The applicant shall obtain DEQ approved drywells if proposed within the subdivision.

Grading/Erosion Control:

19. The applicant shall submit grading and erosion control plans for approval by Canby Public Works in conjunction with construction plan approval prior to the installation of public

improvements and start of grading with each phase of development.

20. The applicant shall grade all areas of the site, including the proposed lots, to minimize the amount of soil to be removed or brought in for home construction.

Final plat conditions:

General Final Plat Conditions:

21. The applicant shall apply for final plat approval at the city and pay any applicable city fees to gain approval of the final subdivision plat. Prior to the recordation of the final plat at Clackamas County, it must be approved by the city and all other applicable agencies. The city will distribute the final plat to applicable agencies for comment prior to signing off on the final plat if deemed necessary.

22. All public improvements or submittal of necessary performance security assurance shall be made prior to the signing and release of the final plat for filing of record.

23. The final plat shall conform to the necessary information requirements of CMC 16.68.030, 16.68.040(B), and 16.68.050. The city engineer or county surveyor shall verify that these standards are met prior to the recordation of the subdivision plat.

24. All "as-built" of City public improvements installed shall be filed with Canby Public Works within sixty days of the completion of improvements.

25. Clackamas County Surveying reviews pending subdivision plat documents for Oregon Statutes and county requirements. A subdivision final plat prepared in substantial conformance with the approved tentative plat must be submitted to the City for approval within one year of approval of the tentative plat or formally request an extension of up to 6-months with a finding of good cause.

26. The applicant shall record the final plat at Clackamas County within 6 months of the date of the signature of the Planning Director.

27. The applicant shall assure that the city is provided with a copy of the final plat in a timely manner after it is recorded at Clackamas County, including any CC&Rs recorded in conjunction with the final plat.

28. The City shall assign addresses for each newly created subdivision lot and distribute that to the developer, and other agencies that have an interest.

Dedications

29. The applicant shall dedicate 7 feet of R.O.W. width for the full frontage of the subdivision along S Fir Street on the Final Plat.

30. The applicant shall dedicate .88 acres for a public park.

Easements

31. A dual 12 foot utility, pedestrian, and temporary street tree easement along all of the lot street frontages shall be noted on the final plat. This easement may be combined with other easements and shall be measured from the property boundary.

32. Sidewalk easements are required along the frontage of the newly created private lots for any portion of the 6' public sidewalk that will lie on private property.

Street Trees

33. A Street Tree Plan shall be submitted with the final plat, and street tree fees paid prior to release of the final plat. The plan will allow the city to establish street trees per the Tree Regulation standards in Chapter 12.32 of the Canby Municipal Code. The total per tree fee amount is calculated at one tree per 30 linear feet of total street frontage on both sides of all internal streets and the adjacent side of

external streets or as determined by an approved Street Tree Plan on a per tree basis.

Monumentation/Survey Accuracy Conditions

38. The county surveyor and/or city engineer shall verify that the lot, street, and perimeter monumentation shall meet the requirements set forth in Oregon Revised Statutes and conform with the additional survey and monumentation standards of 16.64.070(M)(1-3) prior to recordation of the final plat.

Residential Building Permits Conditions:

39. Construction of all required public improvements and recordation of the final subdivision plat must be completed prior to the construction of any homes.

40. The homebuilder shall apply for a City of Canby Site Plan Permit and County Building Permit for each home and satisfy the residential design standards of CMC 16.21.

41. The homebuilder shall apply for a City of Canby Erosion Control Permit.

42. All residential construction shall be in accordance with applicable Public Works Design Standards.

43. On-site stormwater management shall be designed in compliance with the Canby Public Works Design Standards.

44. Clackamas County Building Codes Division will provide structural, electrical, plumbing, and mechanical plan review and inspection services for home construction per contract with the City. The applicable county building permits are required prior to construction of each home.

45. Per the Canby Public Works Design Standards, minimum residential driveway widths at the inside edge of the sidewalk shall be 12 feet and the maximum residential driveways widths shall be 24 feet with an allowed exception for 28 feet for a home with 3 or more garages.

46. Sidewalks and planter strips shall be constructed by the developer and shown on the approved tentative plat.

47. All usual system development fees shall be collected with each home within this development except as otherwise indicated within the Park Land Dedication and Improvement Agreement associated with this subdivision.

City of Canby
Planning Department
222 NE 2nd Avenue
PO Box 930
Canby, OR 97013
(503) 266-7001

LAND USE APPLICATION

SUBDIVISION
Process Type III

APPLICANT INFORMATION: *(Check ONE box below for designated contact person regarding this application)*

☐ Applicant Name: Stafford Development Company Phone: Levi Levasa 503-250-3651
Address: 485 South State Street Email: levi@staffordlandcompany.com
City/State: Lake Oswego, Oregon Zip: 97034 Gordon Root 503-720-0914

■ Representative Name: Planning & Land Design LLC Phone: Ryan O'Brien 503-780-4061
Address: 1862 NE Estate Drive Email: ryanobrien1@frontier.com
City/State: Hillsboro, Oregon Zip: 97124

■ Property Owner Name: Nadine J. Beck, Trustee Phone:
Signature: Nadine J Beck by Rodney J Beck Trustee/POA
Address: 1715 S. Fir Street Email:
City/State: Canby, Oregon Zip: 97013

■ Property Owner Name: Rodney J. & Carol M. Beck Phone: Rodney cell 503-313-9778
Signature: Rodney J Beck Carol M Beck
Address: 1555 S. Fir Street Email: rodjbeck@gmail.com
City/State: Canby, Oregon Zip: 97013

NOTE: Property owners or contract purchasers are required to authorize the filing of this application and must sign above

❶ All property owners represent they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.
❷ All property owners understand that they must meet all applicable Canby Municipal Code (CMC) regulations, including but not limited to CMC Chapter 16.49 Site and Design Review standards.
❸ All property owners hereby grant consent to the City of Canby and its officers, agents, employees, and/or independent contractors to enter the property identified herein to conduct any and all inspections that are considered appropriate by the City to process this application.

PROPERTY & PROJECT INFORMATION:

1555 & 1715 South Fir Street	13.95 acres	1401 & 1500 - 41E04C, 1600 - 41E04CA
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
2- SFR houses and agricultural buildings	R-1 & R-1.5	Low & Medium Density Res.
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

"BECK POND" 69-lot detached SFR subdivision with lots ranging from 4,400 to 9,160 sf in area
Describe the Proposed Development or Use of Subject Property

STAFF USE ONLY				
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

SUBDIVISION APPLICATION – TYPE III
Instructions to Applicants

All required application submittals detailed below must also be submitted in electronic format on a CD, flash drive or via email to: PlanningApps@canbyoregon.gov

Applicant Check	City Check	
[x]	[ ]	One (1) copy of this application packet. The City may request further information at any time before deeming the application complete.
[x]	[ ]	Payment of appropriate fees – cash or check only. Refer to the city's Master Fee Schedule for current fees. Checks should be made out to the *City of Canby*.

SUBDIVISION APPLICATION – TYPE III

Applicant Check	City Check	
[x]	[ ]	**Please submit one (1) electronic copy of mailing addresses in either an EXCEL SPREADSHEET or WORD DOCUMENT** for all property owners and all residents within 500 feet of the subject property. If the address of a property owner is different from the address of a site, an address for each unit on the site must also be included and addressed to "Occupant." A list of property owners may be obtained from a title insurance company or from the County Assessor's office.
[x]	[ ]	One (1) copy of a written, narrative statement describing the proposed development and detailing how it conforms with the Municipal Code and to the approval criteria, including the applicable Design Review Matrix, and availability and adequacy of public facilities and services. ***Ask staff for applicable Municipal Code chapters and approval criteria.*** Applicable Code Criteria for this application includes: 16.08 - 16.10 - 6.16 - 16.18 - 16.40 - 16.46 - 16.56 - 16.62 - 16.64 - 16.66 - 16.86 16.88 - 16.89 - 16.120 - Canby Public Works Standards
[x]	[ ]	Three (3) copies of a Traffic Impact Study (TIS), conducted or reviewed by a traffic engineer that is contracted by the City and paid for by the applicant (payment must be received by the City *before the traffic engineer will conduct or review a traffic impact study.* Ask staff to determine if a TIS is required.
[x]	[ ]	One (1) copy in written format of the minutes of the neighborhood meeting as required by Municipal Code 16.89.020 and 16.89.070. The minutes shall include the date of the meeting and a list of attendees.
[x]	[ ]	One (1) copy in written format of the minutes of the pre-application meeting
[x]	[ ]	One copy of either the recorded plat or the recorded deeds or land sales contracts that demonstrates how and when legal property lines were established and where the boundaries of the legal lot(s) of record are located. If the property is a lot or parcel created by plat, a copy of the recorded plat may be obtained from the Clackamas County Surveyor's office. If the property is a legal lot of record created by recorded deed or land sales contract at a time when it was legal to configure property lines by deed or contract,

then those recorded deeds may be obtained from the Clackamas County Office of the Clerk, or a Title Company can also assist you in researching and obtaining deeds.

Applicant Check	City Check	
☒	☐	If the development is located in a Hazard ("H") Overlay Zone, submit one (1) copy of an affidavit signed by a licensed professional engineer that the proposed development will not result in significant impacts to fish, wildlife and open space resources of the community. If major site grading is proposed, or removal of any trees having trunks greater than six inches in diameter is proposed, then submit one (1) copy of a grading plan and/or tree-cutting plan.

SUBDIVISION APPLICATION – TYPE III

☒ ☐ Two (2) 11" x 17" paper copies of the proposed plans, printed to scale no smaller than 1"=50'. The plans shall include the following information:

- ☐ Vicinity Map. Vicinity map at a scale of 1"=400' showing the relationship of the project site to the existing street or road pattern.
- ☐ Site Plan-the following general information shall be included on the site plan:
  - ☐ Date, north arrow, and scale of drawing;
  - ☐ Name and address of the developer, engineer, architect, or other individual(s) who prepared the site plan;
  - ☐ Property lines (legal lot of record boundaries);
  - ☐ Location, width, and names of all existing or planned streets, other public ways, and easements within or adjacent to the property, and other important features;
  - ☐ Location of all jurisdictional wetlands or watercourses on or abutting the property;
  - ☐ Finished grading contour lines of site and abutting public ways;
  - ☐ Location of all existing structures, and whether or not they are to be retained with the proposed development;
  - ☐ Layout of all proposed structures, such as buildings, fences, signs, solid waste collection containers, mailboxes, exterior storage areas, and exterior mechanical and utility equipment;
  - ☐ Location of all proposed hardscape, including driveways, parking lots, compact cars and handicapped spaces, loading areas, bicycle paths, bicycle parking, sidewalks, and pedestrian ways;
  - ☐ Callouts to identify dimensions and distances between structures and other significant features, including property lines, yards and setbacks, building area, building height, lot area, impervious surface area, lot densities and parking areas;
  - ☐ Location of vision clearance areas at all proposed driveways and streets.
- ☐ Landscape Plan

  The following general information shall be included on the landscape plan:
  - ☐ Layout and dimensions of all proposed areas of landscaping;
  - ☐ Proposed irrigation system;
  - ☐ Types, sizes, and location of all plants to be used in the landscaping (can be a "palette" of possible plants to be used in specific areas for landscaping);
  - ☐ Identification of any non-vegetative ground cover proposed, and dimensions of non-vegetative landscaped areas;

- ☐ Location and description of all existing trees on-site, and identification of each tree proposed for preservation and each tree proposed for removal;
- ☐ Location and description of all existing street trees in the street right-of-way abutting the property, and identification of each street tree proposed for preservation and each tree proposed for removal.
- ☐ Elevations Plan

  The following general information shall be included on the elevations plan:
- ☐ Profile elevations of all buildings and other proposed structures;
- ☐ Profile of proposed screening for garbage containers and exterior storage areas;
- ☐ Profile of proposed fencing.

☐ Sign Plan.
- ☐ Location and profile drawings of all proposed exterior signage.

☐ Color and Materials Plan.
- ☐ Colors and materials proposed for all buildings and other significant structures.

☐ Name of Proposed Subdivision Plat (subject to review and approval by Clackamas County).

☐ Township, range, and section in which the property lies.

☐ Title Block Including:
  - Name & address of engineer or surveyor who prepared plans
  - Date that the plans were prepared
  - Scale of the drawings (standard engineer's scale)

☐ Subdivision boundary, lot lines, lot dimensions, gross area in square feet of each lot (excluding the square footage of accessways for flag lots), proposed public and private easements, and subdivision phase boundaries;

☐ If any undevelopable tract is proposed to be created, the dimensions, gross area, and purpose of the tract shall be included.

☐ If any oversized lots are proposed, which in the opinion of the Planning Director are likely to be further divided in the future, provide an illustration of how the lot could be further divided in conformance with all CMC standards in a manner which provides for continuation of streets and provides adequate building envelopes.

☐ Existing contour lines having the following minimum intervals:
  - One-foot contour intervals for ground slopes up to five percent;
  - Two-foot contour intervals for ground slopes between five and ten percent;
  - Five-foot contour intervals for ground slopes exceeding ten percent.
  - Include base flood elevation and delineation of any areas on the property subject to inundation in the event of a 100-year flood.

☐ Location and proposed disposition of all existing: driveways, wells, septic tanks, drain fields, easements, drainage ways, and jurisdictional watercourses or wetlands on or abutting the property. As a reminder, the property owner is responsible for meeting all state/federal wetland and waterway regulations.

☐ Location, names, right-of-way width, improvement dimensions, curve radius, and grades of all existing and proposed streets and public access ways within the proposed subdivision and abutting the subdivision.

☐ Identify the classification of all streets in accordance with the Canby Transportation System Plan. Show typical cross-sections of proposed street improvements, including identification of proposed street trees. Provide street center profiles showing the finished grade of all streets as approved by the City Engineer, including extensions for a reasonable distance beyond the limits of the proposed subdivision.

- ☐ Location and type of existing and proposed transit facilities.
- ☐ Location of all proposed utilities, including sewer, water, storm water, electric, telephone, and natural gas; including utility sizes and grades.
- ☐ Indicate on the proposed plans how the proposed lots meet Canby's solar access standards (only applicable to lots created in an R-1, R-1.5, or R-2 zoning district).

SUBDIVISION – TYPE III: APPLICATION PROCESS

1. Prior to submitting an application, all applicants are encouraged to request a pre-application meeting with the City or the City Planner may determine that a pre-application meeting is necessary after an application has been discussed or upon receipt of an application by the City. To schedule a pre-application meeting, an applicant must submit a completed pre-application form, two (2) sets - 11" x 17" paper copies of preliminary drawings, and an electronic submittal of all application materials either on CD, a jump drive, or by email to PlanningApps@canbyoregon.gov to the Planning Department and pay the appropriate fees. You will receive an email notice verifying the date of the Pre-Application meeting.

2. Prior to submitting an application, all applicants must hold a neighborhood meeting with surrounding property owners and any recognized neighborhood association representative, pursuant to the procedures described in Canby Municipal Code Section 16.89.070. In certain situations, the Planning Director may waive the neighborhood meeting requirement.

3. At the time an application is submitted to the City, payment of all required application processing fees is required. An application will not be accepted without payment of fees. Please see the Master Fee Schedule on our website at www.canbyoregon.gov

4. Staff will check the application, making sure that it is complete and all fees are paid. Copies of the application materials are routed to various City/State/County departments, as applicable, for their comments. Along with the comments received from others, the application is reviewed for completeness. The City Planner will accept or return the application with a written list of omissions within thirty (30) calendar days of the submittal.

5. Staff investigates the application, writes a staff report, issues public notice, notifies surrounding property owners, and makes all facts relating to the request available to the Planning Commission and all interested parties.

6. Prior to the public hearing, the City will prepare notice materials for posting on the subject property. This material will be posted **City Staff** at least ten (10) days before the public hearing.

7. The staff report will be available to all interested parties seven (7) days prior to the hearing.

8. The Planning Commission holds a public hearing. The staff report is presented to the Commission. Testimony is presented by the applicant, proponents and opponents, followed by rebuttal from the applicant.

9. The Commission then issues findings of fact which support approval, modification, or denial of the application. A decision may be appealed to the City Council.

10. If an approval or a denial is appealed, City Council holds a public hearing. The staff report is presented and testimony taken, as at the original hearing(s). Unless the City Council decides to hear the appeal de novo, only testimony regarding items already in the record is permitted, and no new information may be entered. In the case of an appeal, the Council may affirm, revise or reverse the action of the Planning Commission in all or in part. The Council may also remand the matter back to the hearing body for further consideration.

11. Prior to construction of any of the subdivision improvements required pursuant to CMC 16.64.070, a preconstruction meeting is held with the City and all applicable utility and service providers. If required, this meeting must be held before issuance of any permits.

SUBDIVISION – TYPE III: STANDARDS AND CRITERIA

Under Section 16.62.020 of the Canby Municipal Code, an application for tentative subdivision approval shall be evaluated based on the following standards and criteria:

A. Conformance with the text and applicable maps of the Comprehensive Plan;

B. Conformance with other applicable requirements of the Land Development and Planning Ordinance;

C. The overall design and arrangement of lots shall be functional and shall adequately provide building sites, utility easements, and access facilities deemed necessary for the development of the subject property without unduly hindering the use or development of adjacent properties; and

D. It must be demonstrated that all required public facilities and services are available, or will become available through the development, to adequately meet the needs of the proposed land division.

City of Canby
Planning Department
222 NE 2nd Avenue
P.O. Box 930
Canby, OR 97013
Ph: 503-266-7001
Fax: 503-266-1574

LAND USE APPLIACTION

MAJOR VARIANCE
Process Type III

APPLICANT INFORMATION: *(Check ONE box below for designated contact person regarding this application)*

☐ Applicant Name: Stafford Development Company Phone: Levi Levasa 503-250-3651
Address: 485 South State Street Email: levi@staffordlandcompany.com
City/State: Lake Oswego, Oregon Zip: 97034 Gordon Root 503-720-0914

☐ Representative Name: Planning & Land Design LLC Phone: Ryan O'Brien 50-780-4061
Address: 1862 NE Estate Drive Email: ryanobrien1@frontier.com
City/State: Hillsboro, Oregon Zip: 97124

☐ Property Owner Name: Nadine J. Beck, Trustee Phone:
Signature: Nadine J Beck by Rodney J Beck Co-Trustee / POA
Address: 1715 S. Fir Streeet Email:
City/State: Canby, Oregon Zip: 97013

☐ Property Owner Name: Rodney J. & Carol M. Beck Phone: Rodney cell 503-313-9778
Signature: Rodney J Beck Carol M Beck
Address: 1555 S. Fir Street Email: rodjbeck@gmail.com
City/State: Canby, Oregon Zip: 97013

NOTE: Property owners or contract purchasers are required to authorize the filing of this application and must sign above

❶ All property owners represent they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.
❷ All property owners understand that they must meet all applicable Canby Municipal Code (CMC) regulations, including but not limited to CMC Chapter 16.49 Site and Design Review standards.
❸ All property owners hereby grant consent to the City of Canby and its officers, agents, employees, and/or independent contractors to enter the property identified herein to conduct any and all inspections that are considered appropriate by the City to process this application.

PROPERTY & PROJECT INFORMATION:

1555 & 1715 South Fir Street	13.95 acres	1401 & 1500 - 41E04C, 1600 - 41E04CA
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
2 - SFR houses and agricultural buildings	R-1 & R-1.5	Low & Medium Density Res.
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

69-lot SF detached house subdivision. "BECK POND". Lots ranging from 4,400 sf to 9,160 sf in area
Describe the Proposed Development or Use of Subject Property

STAFF USE ONLY				
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

MAJOR VARIANCE APPLICATION – TYPE III

All required application submittals detailed below must also be submitted in electronic format on a CD, flash drive or via email to: PlanningApps@canbyoregon.gov

Applicant Check	City Check	
[x]	[ ]	One (1) copy of this application packet. The City may request further information at any time before deeming the application complete.
[x]	[ ]	Payment of appropriate fees – cash or check only. Refer to the city's Master Fee Schedule for current fees. Checks should be made out to the *City of Canby*.
[x]	[ ]	**Please submit one (1) electronic copy of mailing addresses in either an EXCEL SPREADSHEET or WORD DOCUMENT** for all property owners and all residents within 500 feet of the subject property. If the address of a property owner is different from the address of a site, an address for each unit on the site must also be included and addressed to "Occupant." A list of property owners may be obtained from a title insurance company or from the County Assessor's office.
[x]	[ ]	One (1) copy of a written, narrative statement describing the proposed development and detailing how it conforms with the Municipal Code and to the approval criteria, including the applicable Design Review Matrix, and availability and adequacy of public facilities and services. ***Ask staff for applicable Municipal Code chapters and approval criteria.*** Applicable Code Criteria for this application includes: Section 16.64.020.B limits block lengths to 400-feet. The block length of 16th Avenue between "G" and Fir Streets in the northern portion of the Beck Pond subdivision is 591-feet in length. This is a Major Variance request to increase the block length by 48%. The shape of the existing lots and the location of the existing house on Tax Lot 1500, 41E04CA prevents a 400-foot block length.
[x]	[ ]	Three (3) copies of a Traffic Impact Study (TIS), conducted or reviewed by a traffic engineer that is contracted by the City and paid for by the applicant (payment must be received by the City *before the traffic engineer will conduct or review a traffic impact study.* Ask staff to determine if a TIS is required.
[x]	[ ]	One (1) copy in written format of the minutes of the neighborhood meeting as required by Municipal Code 16.89.020 and 16.89.070. The minutes shall include the date of the meeting and a list of attendees.
[x]	[ ]	One copy of either the recorded plat or the recorded deeds or land sales contracts that demonstrates how and when legal property lines were established and where the boundaries of the legal lot(s) of record are located. If the property is a lot or parcel created by plat, a copy of the recorded plat may be obtained from the

Applicant Check	City Check	

Clackamas County Surveyor's office. If the property is a legal lot of record created by recorded deed or land sales contract at a time when it was legal to configure property lines by deed or contract, then those recorded deeds may be obtained from the Clackamas County Office of the Clerk, or a Title Company can also assist you in researching and obtaining deeds.

☒ ☐ Two (2) 11" x 17" paper copies of the proposed plot plan drawn to an engineer's scale no smaller than 1"=50'. The plot plan shall include the following information:

A. All legal lot lines, north arrow, lot size and dimensions, location of public and private easements, and location and names of all adjacent streets.

B. Any major topographic or landscape features, driveways, wells, septic tanks, drain fields, and jurisdictional watercourses or wetlands on or abutting the property. As a reminder, the property owner is responsible for meeting all state/federal wetland and waterway regulations.

C. Location and description of all existing and proposed structures. Call out the distance between the structures and lot lines, and clearly illustrate the variance that is being requested.

MAJOR VARIANCE – TYPE III: APPLICATION PROCESS

1. Prior to submitting an application, all applicants are encouraged to request a pre-application meeting with the City, or the City Planner may determine that a pre-application meeting is necessary after an application has been discussed or upon receipt of an application by the City. To schedule a pre-application meeting, an applicant must submit a completed pre-application form and set of preliminary plans to the City Planner, and after receiving the Planner's initials, must then make and take 16 copies of the pre-application materials to the Canby Public Works Department to schedule the pre-application meeting. The City does not charge a fee for a pre-application meeting.

2. At the time an application is submitted to the City, payment of all required application processing fees is required. An application will not be accepted without payment of fees. City Staff can provide you with information concerning application fees.

3. Staff will check the application, making sure that it is complete and all fees are paid. Copies of the application materials are also routed to various City/State/County departments, as applicable, for their comments. The City Planner will accept or return the application with a written list of omissions within thirty (30) calendar days of the submittal.

4. Staff investigates the application, writes a staff report, issues public notice, notifies surrounding property owners, and makes all facts relating to the request available to the Planning Commission and all interested parties.

5. Prior to the public hearing, the City will prepare notice materials for posting on the subject property. This material will be posted **by staff** at least ten (10) days before the public hearing.

6. The staff report will be available to all interested parties seven (7) days prior to the hearing.

7. The Planning Commission holds a public hearing. The staff report is presented to the Commission. Testimony is presented by the applicant, proponents and opponents, followed by rebuttal from the applicant.

8. The Commission then issues findings of fact which support approval, approval with conditions, or denial of the application. A decision may be appealed to the City Council.

9. If the Planning Commission decision is appealed, City Council holds a public hearing. The staff report is presented and testimony taken, as at the original hearing(s). Unless the City Council decides to hear the appeal de novo, only testimony regarding items already in the record is permitted, and no new information may be entered. In the case of an appeal, the Council may affirm, revise, or reverse the decision of the Planning Commission in all or in part. The Council may also remand the matter back to the hearing body for further consideration.

MAJOR VARIANCE – TYPE III: STANDARDS AND CRITERIA

Under Section 16.53.020of the Canby Municipal Code, an application for MAJOR VARIANCE approval shall be evaluated based on the following standards and criteria:

A. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the City and within the same zone. These exceptional or extraordinary circumstances result from tract size or shape, topography or other circumstances over which the owners of the property have no control. Actions of previous owners do not constitute other exceptional or extraordinary circumstances; and

B. The variance is necessary to assure that the applicant maintains substantially the same property rights as are possessed by the owners of other property in the city and within the same zone; and

C. Granting this variance will not be materially detrimental to the intent or purposes of the city's Comprehensive Plan or the Land Development and Planning Ordinance; and

D. Granting this variance will not be materially detrimental to other property within the same vicinity; and

E. The variance requested is the minimum variance which will alleviate the hardship; and

F. The exceptional or unique conditions of the property which necessitate the issuance of a variance were not caused by the applicant, or the applicant's employees or relatives.

BECK POND PRELIMINARY PLAT and VARIANCE APPLICATIONS

Updated 4-02-18

Prepared by Planning & Land Design LLC
1862 NE Estate Drive, Hillsboro, Oregon 97124
Ryan O'Brien Phone (503) 780-4061
ryanobrien1@frontier.com

LIST of EXHIBITS

1. Subdivision and Variance Land Use Applications
2. Subdivision Plans
3. Average Lots Sizes and Lot Size Variations and Deeds of the Property
4. Local Public Street Section and Proposed Eyebrow Street Standards
5. Pre-Application Meeting Notes
6. Neighborhood Meeting Notice and Minutes of Meeting
7. Neighborhood Mailing Radius Map, Meeting Sign Up Sheet and Mailing List
8. Traffic Report

I. Introduction.

A. Ownership and Applicant

Stafford Development Company has an option to purchase the subject property. A total of 69 lots are proposed in 2 phases on 13.78 acres. The subdivision includes a range of lot sizes to accommodate a variety of house prices. Easements on the lots are proposed for monument signs at the intersections of 16th Avenue and Fir and Elm Streets. Tract "A" is public pedestrian pathway and pocket park along the top of the bluff. All buildings on the site will be removed except the existing house at the NW corner of the site. Rodney and Carol Beck own Tax Lot 1600, Tax Map 4-1E4CA and Tax lot 1401, Tax Map 4-1E-4C. The Nadine Beck Trust owns Tax Lot 1500, Tax Map 4-1E-4C.

B. Proposal

This application is a request for approval of a 69-lot subdivision and a block length variance to increase the block length form 400-feet to 591-feet. A total of 23 lots are in the R-1, "Low Density Residential," zone and 46 lots are in the R-1.5, "Medium Density Residential" zone (Page 3 of Exhibit 2). The subject property is part of the SW Canby Development Concept Plan (DCP) approved by the Canby City Council in February 2018. Sheet 10 of Exhibit 2 shows the approved Master Plan. Sheet 11 is a previous plan with a slightly different street and lot pattern. The Beck Pond plan is very similar to the Sheet 11 plan. This subdivision application includes a request to use the Sheet 11 plan rather than the Sheet 10 plan.

Each lot will be developed with one (1) single-family detached dwelling. The lots in the R-1 zone range from 6,464 sf to 9,274 sf. The average Lot size is 7,445 sf. The code

requires a minimum lot size of 7,000 sf and a maximum of 10,000 sf. The code allows 10% of the lots to range from 6,000 to 6,999 sf and over 10,000 sf. Two lots in the R-1 zone are under 7,000 sf which is 8% of the 23 lots. No lots are larger than 10,000 sf.

The lots in the R-1.5 zone range from 4,337 sf to 8,234 sf. Lot 24, which contains the existing house that will remain, is 13,754 sf. This lot is exempt from the 10% maximum lot variation standard. The average lot size is 5,986 sf. The code allows 10% of the lots to range from 4,000 to 4,999 sf and over 6,500 sf. A total of 4 lots are less than 5,000 sf which is 9% of the 46 lots in the R-1.5 zone. A total of 7 lots are over 6,500 sf. A total of 11 lots are either under or over the minimum and maximum lot size in the R-1.5 zone which is 24% of 46 total number of lots. The Planning Commission can approve a percentage higher than 10% based on specific standards in Section 16.18.030.B.2 to B.5 of the Canby Land Development Code.

C. Site and Adjacent Zoning and Land Use

The property to the northwest is developed with a mobile home park. Property to the northeast is developable land that contains an existing house. The property owner of Tax Lot 1500 (Steinke) wants the property to be developed but still retain the existing house. The pre-plat shows how surrounding property adjacent to Beck Pond can develop in the future. The approved Southwest Canby Development Concept Plan (Sheet 10 of Exhibit 1) shows potential future development of all the properties surrounding the propsosed Beck Pond Subdivision. Property to the east will be developed by Hope Village. No specific development plans are available for property to the southeast. Property to the southwest is outside of the Canby UGB (Tax Lot 1500). It is owned by the Nadine Beck Trust. This land contains an existing pond and will continue with rural uses. Property to the west is already developed with single family detached houses.

D. Applicant Team

Stafford Development Company is represented by Gordon Root and Levi Levasa. The civil engineer is Chris Kittredge with Kittredge Engineers and surveyor is ZTec Engineers. The land use planner is Ryan O'Brien with Planning & Land Design. The traffic engineer is Chris Maciejewski with DKS. The land use attorney is Andrew Stamp.

II. Site Services and Utilities

The Site is served by the following public and private services utilities and facilities:

- Water - 12-inch line in Fir Street and a 10-inch line in Elm Street
- Sanitary Sewer - 8-inch lines in Fir and Elm Streets

- Public Storm Sewer - 12-inch lines in Fir and Elm Streets
- Fire - Canby Fire District
- Police - City of Canby Police Department
- Electricity - Canby Utility
- Natural Gas - NW Natural Gas Company
- Telecommunications - Canby Telecom and Direct Link
- Public schools - Canby School District.

Public and private services, utilities and facilities are sufficient to serve this proposed 69-Lot subdivision as identified in the approved SW Canby DCP.

III. Characterization of the Application.

The subdivision and major variance applications are "Limited Land Use Decisions" as defined in ORS 197.015(12). According to ORS 197.195(1) which identifies preliminary subdivisions, the City may not apply comprehensive plan policies to a limited land use decision unless those plan policies are expressly referenced in the City's land use regulations and/or zoning ordinance.

Subdivision applications are subject to the **"Needed Housing"** statutes in ORS 197.303(1) and 197.307(4). The following is ORS 197.303(1):

> "As used in ORS 197.307, **"needed housing"** means housing types determined to meet the need shown for housing within an urban growth boundary at particular price ranges and rent levels, including at least the following housing types:
>
> (a) Attached and detached single-family housing and multiple family housing for both owner and renter occupancy".

ORS 197.307(4) indicates a **"needed housing"** application is subject to only clear and objective standards, conditions and procedures regulating the development of needed housing on buildable land.

The Site is on buildable land because it is zoned for residential use. The Canby Comprehensive Plan (the "Plan"), Housing Element, Page 148, provides that the City has "made a commitment to expanding housing opportunities." Further, Plan Housing Element and Finding No. 1 states, "Canby's urban growth policies must provide efficient area to allow for new housing construction as needed" (Comprehensive Plan - Page 148). Additionally, Plan Housing Element and Finding No. 1 states, "It is natural to expect these vacant or under-utilized areas of the City to gradually be developed or redeveloped to higher densities." (Comprehensive Plan - Page 149). These Plan statements recognize the City's commitment to provide the opportunity for the development of additional single-family dwellings in the city.

IV. Approval Criteria

This section addresses relevant approval criteria found in the Canby Land Development and Planning Ordinance.

Chapter 16.04 Definitions

16.04.380 - Lot width means the **average** width of a lot when measure at the front and rear setback line for a principal use.

FINDING: All the lots comply with the average lot width of 40-feet in the R-1.5 zone and 60-feet in the R-1 zone.

16.04.670 - Vision clearance area means the triangle area at the intersection of two streets, a driveway and a street, or a street and a railroad, two sides of which are measured from the corner intersection of the existing or proposed curb lines to a distance specified in this title. No plantings, structures, or temporary or permanent obstructions shall be located within a vision clearance area, extending from two and one-half to ten feet above the curb or street elevation. Except, however, that one tree trunk not greater than eighteen inches in diameter shall be permitted within a vision clearance area.

FINDING: The vision clearance area is 30-feet as measured from the curb to a single-family dwelling on a corner lot at the intersection of 2 streets. The minimum vision clearance in this subdivision is 37-feet as indicated in Chapter 16.10 below.

Chapter 16.08 General Provisions

16.08.030 - Zone Boundaries - When a zone boundary divides a lot into two or more zones, the entire lot shall be considered to be in the zone containing the greater lot area, provided the boundary adjustment is a distance of less than (20) twenty feet.

FINDING: A total of 6 lots in this subdivision have split zoning as shown by the pre-plat on Page 4 of Exhibit 2 (Lots 42, 45, 67, 62, 63 and 58). The split is less than 20-feet on each lot. This split zoning cannot be avoided because of the straight line of the R-1.5 and R-1 zoning and the need to provide lots that comply with the code requirements. The street pattern dictates the location of these lots. The portion of a lot less than 20-feet in width will assume the zoning of the larger portion of the lot. For example, Lot 42 will have R-1 zoning and Lot 45 will have R-1.5 zoning. Sheet 4 shows the actual dimensions of the portion of a lot that project into another zone.

Chapter 16.10 - Off-Street Parking and Loading

TABLE 16.10.050. A minimum of 2 off-street parking space are required for each dwelling unit.

16.10.070(B)(10)f. The minimum distance between driveways for single-family residential houses and an intersection shall be thirty (30) feet. The distance shall be measured from the curb intersection point [as measured for vision clearance area (16.04.670)].

FINDING: Each lot will have a minimum of 4 off-street parking spaces in proposed driveways and garages. The minimum distance between the curb and a residential driveway on a corner lot will be 37-feet with a 30-foot wide house. The measurement is 11-feet from the curb to the back of the sidewalk, 15-feet for the street side yard setback to the side of the house and 11-feet to the driveway. See the street section on Sheet 3 of the pre-plat plans (Exhibit 2).

Chapter 16.16 - R-1 Low Density Residential Zone

16.16.010.A - Uses Permitted Outright

FINDING: The R-1 zone allows single-family detached houses outright. Only this type of housing is proposed.

16.16.030 - R-I Development Standards

16.16.030.A requires lots in the R-1 zone to be a minimum 7,000 sf and a maximum of 10,000 sf in area unless an exception is approved by the Planning commission in accordance with 16.16.030.B. The maximum lot size does not apply to existing single-family dwellings.

FINDNG: Lots 66 and 67 are less than 7,000 sf in area. A lot area exception is requested for these 2 lots in accordance with 16.16.030.B

16.16.030.B - Lot Area Exceptions

16.16.030.B.1 - The Planning Commission may approve an exception to maximum lot size in LDO 16.16.030.A subject to four (4) standards as follows:

16.16.030.B.1.a - The average lot size of all lots created shall be no less than 7,000 square feet and no greater than 10,000 square feet.

16.16.030.B.1.b - The minimum lot size is 6,000 sf.

16.16.030.B.1.c - No two-family dwellings are proposed.

16.16.030.B.1.d – No lots are over 10,000 sf in area.

16.16.030.B.2 - A public benefit must be demonstrated in order to allow more than 10% of the lots to be outside of the minimum and maximum lot areas in subsection 16.16.030.A.

16.16.030.B.3 - The Planning Commission may modify the maximum lot area requirements in 16.16.030.A if these cannot be met due to existing lot dimensions, road patterns, or other site characteristics.

FINDING: The average lot size of the 23 lots in the R-1 zone is 7,445 sf which is more than 7,000 sf. A total of 2 lots are less than 7,000 sf but over 6,000 sf in area. Only 9% of the 23 lots are under 7,000 sf and no lots are over 10,000 sf. This is less than the 10% variation allowed by the code. Therefore, demonstrating public benefit or justifying the 9% lot size variation is not required.

16.16.030.C - The minimum lot width and frontage is 60 feet. However, the Planning Commission may approve lots with less frontage subject to special conditions to ensure adequate access.

FINDING: The applicant proposes 6 lots in the R-1 zone with less than 60 feet of frontage (Lots 48, 49, 50, 52, 53 and 58). Each of these 6 lots have adequate street access sufficient to accommodate a typical driveway width. Lot 49 is a flag lot which normally has narrow street frontage. Because of the irregular shape of the property, complying with 60-foot lot frontage is difficult. All the lots have a 60-foot lot width when measured at the front yard setback as defined by the 16.040.380 (lot width definition). The Planning Commission can allow these 6 lots to have lot frontage less than 60-feet because each lot has adequate access. All the lots have an average lot width of 60-feet in compliance with Section 16.04.380 of the code definitions. Lot width means the average width of a lot when measured at the front and rear yard setback.

16.16.030.D - Minimum Yard Requirements

FINDING: Each lot will comply with the minimum yard requirements. This section limits the maximum amount of impervious surface in the R-1 zone to 60% of the lot area. Section 16.16.030.F.1 defines impervious surface.

Chapter 16.18 - R-1.5 Development Standards

16.18.010.A - Uses Permitted Outright

FINDING: The R-1.5 zone allows single-family detached houses outright. This is the only type of housing proposed in the Beck Pond Subdivision.

16.18.030.A requires lots in the R-1.5 zone to be a minimum 5,000 sf and a maximum of 6,500 sf in area unless an exception is approved by the Planning commission in accordance with 16.18.030.B. The maximum lot size does not apply to existing single-family dwellings.

FINDNG: Lots 18, 25, 26 and 27 are proposed to be less than 5,000 sf. A lot area exception is requested for these 4 lots in accordance with 16.18.030.B. Lot 24 is 13,849 sf in area and contains the existing house to be retained. Therefore, lot 24 is exempt from the 6,500-sf maximum lot size. A total of 7 lots are over 6,500-sf in area because of the location of the existing house, the existing size and shape of the tax lots, the proposed street pattern, the location of existing street accesses of adjacent properties and the split zone boundary.

16.18.030.B - Lot Area Exceptions

16.18.030.B.1 - The Planning Commission may approve an exception to the minimum and maximum lot size subject to the following 5 standards.

16.18.030.B.1.a - The average lot size of all lots created shall be no less than 5,000 square feet and no greater than 6,500 square feet.

16.18.030.B.1.b - The minimum lot size is 4,000 sf.

16.18.030.B.1.c - As a condition of granting the exception, the city will require the owner to record a deed restriction with the final plat which prevents the re-subdivision of over-sized lots (6,500 sf and larger), when such re-division would violate the average lot size provision in subsection 16.18.030.B.1.a.

FINDING: The average lot size of the 46 lots in the R-1.5 zone is 5,982 sf which is more than 5,000 sf. Only 4 lots are less than 5,000 sf and over 4,000 sf in area. A deed restriction as a condition of approval is not necessary. Only Lot 62 is over 8,000 sf in area which could be divided into 2 lots in the future. Once a house is built on Lot 62, it will never be subdivided, provided the house remains livable. The total area of all lots in the R.1.5 zone is 275,164 sf. A total of 55 lots could be developed with an average lots size of 5,000 sf which is 9 more lots than the 46 lots proposed. Therefore, lowering the average lot size below 5,000 sf is not possible from re-subdivision of oversized lots in this subdivision.

16.18.030.B.2 - A public benefit must be demonstrated in order to allow more than 10% of the lots to be outside of the minimum and maximum lot areas in subsection 16.16.030.A.

16.18.030.B.3 - The Planning Commission may modify the maximum lot area requirements in 16.16.030.A if these cannot be met due to existing lot dimensions, road patterns, or other site characteristics.

16.18.030.B.4 - Lots 3,000 sf each may be permitted by the Planning Commission for single family dwellings having common wall construction.

16.18.030.B.5 - The maximum lot area standard does not apply to dwellings existing prior to subdivision approval or to lots designated open space.

FINDING: A total of 4 lots are less than 5,000 sf in area and 7 lots over 6,500 sf in area. A total of 46 lots are proposed in the R-1 zone. The variation is 9% for lots under 5,000 sf. The combination of these 11-variable lot sizes is 24%. Therefore, demonstrating public benefit and justification is required to exceed the 10% minimum and maximum lot area requirement. The phrase **"public benefit"** is highly subjective. The Oregon **"needed housing"** statutes, identified on pages 4 and 5 of this report, prohibit the City from applying the subjective **public benefit** standard to this application. The following comments are public benefit reasons and justification for the proposed 24% lot size variation:

1. The proposed subdivision is in an area where larger lots are typical. Smaller lots are not typical. As a result, only 9% of the lots are less than 5,000 sf. Lots larger than 6,500 sf are compatible with the general area and the adjacent R-1 zoned lots in the Beck Pond subdivision.

2. Providing lot and house size variety is a public benefit to all future residents of Canby. This subdivision has a wide variety of lot sizes ranging from 4,337 sf to 9,274 sf. This creates a wide variety of house prices with larger and smaller houses compatible with the various lot sizes.

3. The combination of the required location of 16th Avenue and the R-1 and R-1.5 zone boundary limits the ability to comply with the 10% requirement. Larger lots are needed to avoid irregular lot widths that are not compatible with the widths of typical houses. These larger lots are designed for specific house sizes. The corner lots need to be larger to accommodate the 15-foot street side yard, the 7-foot interior side yard and the 3-foot sidewalk easements. This is a total of 25 feet which needs to be subtracted from the width of a corner lot. In the R-1.5 zone, a typical house width is 40 feet which requires a 65-foot-wide corner lot. In the R-1.5 zone, the 7-foot interior side yards should be 5 feet and the street side yard should be 10-feet to be compatible with the 5,000-sf lot size standard.

4. All the lots larger than 6,500 sf can be modified and reduced to 6,500 sf as indicated below. However, modification of the lots would create irregularly shaped lots that will be the wrong size to fit typical houses.

5. Lot 23 is 7,312 sf in area because it is a flag lot. The 114-foot lot depth is necessary to provide a backup area from the garage. The lot depth could be reduced by 13 feet to 101-feet which reduces the lot area to 6,500 sf. However, this option is not reasonable because the smaller lot depth reduces the garage backup area. The 65-foot lot width of Lot 23 could be reduced by 8-feet to create a 6,500-sf lot. However, the option for a 50-foot wide single-story house is not possible. The maximum house width would be reduced to 43-feet. Providing the opportunity for single story houses is a public benefit. A single-story house is more compatible with the existing one-story house on lot 24 and the single story mobile homes to the north. Reducing the lot width of Lot 23 would just increase the size of Lot 24 which is already oversized at 13,754 sf.

6. The width of lot 29 could be reduced from 66-feet which accommodates a 41-foot-wide house to 60 feet which only accommodates a 35-foot wide house. The lots along “G” and “F” Streets are generally 7,000 to 9,000 sf feet in area and 64 to 70 feet in width. Lot 29 is part of the neighborhood with large lots and houses. If necessary, the extra 6 feet from lot 29 could be added to Lot 60.

7. Lot 30 is 6,933 sf in area. This lot could be reduced to 6,500 sf by reducing the width from 58 feet to 54 feet which only allows a 29-foot-wide house. This 4-foot lot width would be added to Lot 31. All the 44-foot-wide interior lots are designed to accommodate 30-foot wide houses with 7-foot side yards. Many plans are available for 30-foot wide houses.

8. Lot 37 is 6,513 sf in area. The lot depth could be reduced by less than 1-foot to make Lot 37 6,500 sf in area. The extra area could be added to Lots 36 and 44. The 61-foot

width for Lot 37 is necessary to accommodate a 36-foot wide house. The curved street artificially increases the size of Lot 37.

9. Lot 59 is 6,533 sf in area. It could be reduced to less than 54 feet. However, Lot 59 is designed for a 40-foot wide house. Therefore a 54-foot lot width is needed. If the Planning Commission does not approve the size of Lots 29 and 59, these lots can be reduced to 6,500 sf by adding area to Lot 60. The same is true for the other larger lots.

10. Lot 61 is 7,010 sf to accommodate a larger house which is compatible with the adjacent 7,000 sf lots. If necessary, Lot 61 can be reduced to 6,500 sf by adding 510 sf to Lot 63. This option is not reasonable because lot 63 is already oversized. Increasing the depth of Lots 30, 31 and 32 is also not reasonable. These lots are already 114-feet in depth.

11. Lot 62 is 8,234 sf in area. To reduce this lot to 6,500 sf, the width needs to be reduced by 16-feet. This 16-feet would be added to Lot 63 which increase that lot to over 10,000 sf. The width of Lot 62 is 75 feet which accommodates a 60-foot one-story house. A lot width reduction of 16 feet would only allow Lot 62 to accommodate a 44-foot wide 2-story house. The 110-foot lot depth is necessary for garage backup area just like Lot 23.

12. Approving the proposed larger lots in the R-1.5 zone would be a public benefit by providing more housing variety and opportunities for one and two-story houses. Because of the shape of the property, the street pattern and the zoning boundary, no additional lots can be created by complying with 6,500 sf maximum lot size and limiting the lot size variation to 10%.

16.18.030.C - Frontage

FINDING: All the lots in the R-1.5 zone comply with the minimum 40-feet of frontage except for the 2 flag lots.

16.18.030.D - Minimum Yard Requirements

FINDING: The proposed houses will comply with all the yard requirements.

16.18.030.E - Maximum Building Height

FINDING: The proposed houses will comply with the building height requirements.

16.18.030.F - Maximum Impervious Surface

FINDING: The proposed houses will comply with the 70% maximum impervious surface. Section 16.16.030.F.1 defines impervious surface.

16.18.030.G - Other Regulations

FINDING: Adequate vision clearance is provided as explained in Section 16.10.070(B)(10)f.

16.46 - Access Limitations

16.46.010.A applies to single-family residential access. Section 16.46.010.A.1 requires roads to have a minimum width of 28-feet with parking restricted to one side of the street, or a minimum width of 36 feet with parking on both sides of the street. Up to 132 units are allowed with 2 access points and 207 units with 3 access points. The formula for the number of units allowed with more than 3 access points is **(**60) x (1 + (0.05 x number of access points)) x (number of access points**)**.

FINDING: City staff has indicated the public works standard for a local street is 34 feet of pavement with parking on both sides of the street. The Beck Pond plans show 34 feet of pavement for all interior and exterior streets. Fir and Elm Streets are local streets. A total of 672 units are allowed with 8 access points to collector or arterial streets. Two access points to Ivy Street, an arterial street, are available through Hope Village. Two access points with Elm and Fir Streets are available to 13th Avenue, an arterial street. Four access points are available to 13th Avenue thorough the subdivision on the east side of Ivy Street. A total of 672 units, including Beck Pond, can use these 8 access points.

16.46.010.C The Planning Commission may allow increases beyond the maximum number of units listed in the above Subsection A. Such increases shall be based upon findings that no unwarranted problems will result for the public street system or emergency service vehicles.

FINDING: The Exhibit 8 Traffic Report indicates that all intersections will operate at a minimum “C” level of service.

16.46.010.G requires all on-site public roads accessing development to be a minimum of two (2) travel lanes with twenty-four (24) feet of pavement width to the nearest improved Collector or Arterial street.

FINDING: Fir and Elm Streets are local streets. The pavement width of Elm Street is 32-feet from 13th to 16th Avenues. 13th Avenue is the closest arterial street. The pavement width of Fir Street will be 24-feet south of 16th Avenue and 34-feet between 16th and 13th Avenues. Both streets comply with the minimum pavement width of 24-feet.

16.46.020 - Ingress and Egress

FINDING: All ingress and egress to the lots are from public streets.

16.46.030 - Access Connection

FINDING: Minimum street spacing for Local Streets is 150-feet, as measured from the centerlines. Beck Pond complies with this standard. Maximum street spacing is 400-feet. The 16th Avenue block length between "G" Street and Fir Street is 591-feet which exceed the 400-foot maximum. A Major Variance in accordance to Section 16.53.020 is requested for this longer block length.

Ingress and egress for this subdivision will be in conformance with the requirements of this subchapter. All the interior and exterior street adjacent to Beck Pond are "Neighborhood/Local" streets. the spacing for "Maximum spacing of roadways" as listed in Table 16.46.30 will be satisfied, subject to approval of the variance application. The "Minimum spacing of roadway to driveway" does not apply to single family residential driveways. Refer to Section 16.10.070 in this report.

Chapter 16.53 - Variances

16.53.020 Major Variances
These provisions are intended to prescribe procedures which allow variations from the strict application of the regulations of this title, by reason of exceptional circumstances and other specified conditions:

A. Authorization - The Planning Commission may authorize variances from the requirements of this title, other than Division VII, where it can be shown that, owing to special and unusual circumstances related to a specific piece of property, the literal interpretation of the regulations would cause an undue or unnecessary hardship, except that no variance shall be granted to allow the use of property for purposes not authorized within the district in which the proposed use would be located. In granting a variance, the commission may attach conditions which it finds necessary to protect the best interests of the surrounding property or neighborhood and to otherwise achieve the purpose of this title.

Finding: Section 16.64.020.B limits street block lengths to 400-feet in residential zones unless topography, barriers such as railroads or arterial roads, or environmental constrains prevent a street extension. The block length is 591-feet in the Beck Pond subdivision between Fir Street, 16th Avenue, "G" Street and 15th Avenue. A variance is requested to Code Section 16.64.020.B to increase the block length from 400-feet to 591-feet. Section 16.64.030.C requires pedestrian pathways for any block over 600 feet in length. Therefore, a pedestrian access is not required because the block length is 591-feet. However, the Planning Commission may require a pedestrian pathway as a condition of approval of this variance. The pathway would be 16-feet wide to comply with Sub-Sections C.1 and C.2. The southern portion of the pathway would be located between Lots 9 and 10. The northern portion of the pathway would be located on the Steinke property.

B. Standards and Criteria. A variance may be granted only upon determination that all of the following conditions are present:

1. Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the city and within the same zone. These exceptional or extraordinary circumstances result from tract size or shape, topography or other circumstances over which the owners of the property have no control. Actions of previous owners do not constitute other exceptional or extraordinary circumstances; and

FINDING: The exceptional and extraordinary circumstances that apply to the property include the location of the Steinke house, the limited opportunity to stub a street to the north because of the existing mobile home park, the requirement for 16th Avenue to connect Fir and Elm Streets and the need to maintain 5,000 sf foot lots. Many of the Beck Pond lots are 54-feet wide to accommodate 40-foot wide houses with 7-foot interior side yards. Other circumstances are as follows:

> **A.** Lots 23 and 25 and the existing house on Lot 24 cannot front on Elm Street because Tax Lot 1800 blocks access to Elm Street. Therefore, the location of "G" street is in the only reasonable location.

B. Lots 23 to 29, 59 and 60 have frontage on "G" Street instead of Elm Street because steep slopes, a masonry wall and mature trees line the Elm Street right-of-way which prevents access to Elm Street. If these lots could front on Elm Street, "G" Street would move 100 feet to the east which reduces the block length to 491-feet. With this option, a variance would still be required.

C. A second street stub could be extended from "F" Street to the Steinke property to reduce the block length to 340-feet. However, this street stub would require Steinke to remove his existing house. Steinke wants to develop his property and retain the existing house. Therefore, this option is not reasonable or practical.

D. The street pattern for the Beck Pond subdivision is the most efficient plan for the subject property and adjacent properties.

2. The variance is necessary to assure that the applicant maintains substantially the same property rights as are possessed by the owners of other property in the city and within the same zone; and

FINDING: Other properties in the area were developed without the maximum 400-foot block length requirement of Section 16.64. Section 16.64 was adopted by the city in February 2013. Development to the north occurred prior to this adoption date. Development would be restricted on the vacant properties to the north (Steinke and Wenrick) if this variance is not approved. The only option is to extend "F" Street to the Steinke property as shown by the approved DCP Master Plan (Sheet 10 of Exhibit 2). This would require Steinke to remove his existing house when his property is developed in the future.

3. Granting of this variance will not be materially detrimental to the intent or purposes of the city's Comprehensive Plan or the Land Development and Planning Ordinance; and

FINDING: Development of the Beck Pond property will be the same regardless if the variance is approved or not approved. "F" Street could be extended to the Steinke property if this variance is not approved. This will have a significant impact to the Steinke property. This may also impact the Wenrick property if the city requires a stub street from "F" Street to Fir Street to comply with the 400-foot block length requirement. The intent of the 400-foot block length is to provide reasonable circulation. A 400-foot block length is practical for pedestrian access, but not necessary for vehicle access. Approval of this variance complies with the Canby Comprehensive Plan as identified below:

Land Use Element Policy 2
Canby shall encourage a general increase in the intensity and density of permitted development as a means of minimizing urban sprawl.

Implementation Measure "A"

Continue to implement the policies of the Housing Element to increase the range of housing opportunities and diversify housing types.

FINDING: The intent of this policy is to provide affordable housing and higher densities. Additional roads and the loss of buildable lots just to maintain a 400-foot block length increases the cost of housing and reduces the supply of affordable housing.

4. Granting of this variance will not be materially detrimental to other property within the same vicinity; and

FINDING: Approval of this variance will not be detrimental to other property in the same vicinity. The 400-foot block length is internal to Beck Pond. However, denial of the variance will have a substantial impact to the Wenrick and Steinke properties to the north. These are the only properties in the same vicinity. The Sorenson and Netter properties to the south (Tax Lots 1600 and 1602) will develop with a short cul-de-sac as shown on the Southwest DCP street pattern map. Property on the east side of Fir Street will be developed by Hope Village with private streets. Property on the west side of Elm Street is already developed.

5. The variance requested is the minimum variance which will alleviate the hardship; and

FINDING: The 591-foot block length is the minimum variance to alleviate the hardship of Steinke losing his house when his property is developed and the hardship to the developer of the Beck Pond subdivision from building 200-feet of extra public street and loosing 2 lots just to provide pedestrian access.

6. The exceptional or unique conditions of the property which necessitate the issuance of a variance were not caused by the applicant, or the applicant's employees or relatives.

FINDING: The exceptional and unique conditions of the property are as follows:

1. The shape of the property was created with old county zoning and prior to inclusion in the Canby UGB
2. Constraints identified in the above comments
3. The location of the Steinke house
4. The adoption of the 2013 code requiring 400-foot block lengths

Before the Steinke house was built, property lines were created for Steinke, Wenrick and Beck without consideration about future development, zoning and zoning requirements.

Actions of the applicant or the applicant's employees or relatives did not cause the exceptional and unique conditions of the property.

Chapter 16.56 - General Provisions

16.56.030.A - Comprehensive Plan

FINDING: The Comprehensive Plan does not apply to this limited land use decision unless a specific Plan goal or policy is incorporated into the City's land use regulations. ORS 197.195(1).

16.56.030.C - Health, safety and Sanitation

FINDING: The City can determine this application conforms with all applicable state, county and city regulations regarding health, safety and sanitation. The phrase "all applicable state, county and city regulations regarding health, safety and sanitation" is subjective and may not be applied under ORS 197.30

16.56.030.D - Building

FINDING: A request to construct structures or buildings is not included in these subdivision and variance applications.

16.56.030.E - Streets and Roads

FINDING: The City may not apply this standard pursuant to ORS 197.307(4) because the phrase "all applicable city ordinances or policies" is subjective.

Chapter 16.62 - Subdivision Applications

16.62.020 - Standards and Criteria - Applications for subdivisions shall be evaluated based upon the following standards and criteria:

16.62.020.A - Conformance with other applicable requirements of the Land Development and Planning Ordinance.

FINDING: This section requires that the application conforms with "other applicable requirements of the Land Development and Planning Ordinance." The phrase "other

applicable" is subjective and the City may not apply this standard pursuant to ORS 197.307(4).

16.62.020.B - The overall design and arrangement of lots shall be functional and shall adequately provide building sites, utility easements, and access facilities deemed necessary for the development of the subject property without unduly hindering the use or development of adjacent properties;

FINDING: The City can determine the subdivision design and arrangement of lots is functional and adequately provides building sites, utility easements and access facilities without unduly hindering the use or development of adjacent properties. The proposed tentative subdivision map provides adequate building areas conforming to the R-1 and R-1.5 zoning district requirements. This standard is subjective because the words "functional" and "adequately" and the phrase "without unduly hindering" are subjective and may not be applied to this application pursuant to ORS 197.307(4).

16.62.020.C.1-5 - Low Impact Development

FINDING: This application complies with the Low Impact Development criteria. The residential blocks are defined, but the streets are curved to avoid a linear development pattern and to create lots with variable sizes and shapes. Storm water on the subject site will be managed by the construction of 3 pollution control manholes and 3 dry wells (Grading and Storm Sewer Plan - Sheet 6 of Exhibit 2). All street and driveway storm water will be directed to the public storm sewer pipes in the public streets. Roof and foundation drains will outfall on each lot with small drywells. If required by the geotech engineer, roof and foundation drains from Lots 51 to 60 may outfall to the existing pond located on the southern portion of Tax Lot 1500 outside the UGB. This project has open space and a street pattern with minimal hard surfaces. The public street improvements are the minimum necessary to serve this subdivision. Some of the trees along the west and north property lines will be saved if possible.

16.62.020.D - It must be demonstrated that all required public facilities and services are available, or will become available through the development, to adequately meet the needs of the proposed land division.

FINDING: All required public facilities and services are available or will become available through development to meet the needs of this 69-lot subdivision. The DKS traffic study (Exhibit 8) indicates that all intersections will operate at a “C” or better Level of Service.

16.62.020.E - Subdivision Layout

FINDING: The streets within the subdivision will have sidewalks on both sides of the street which provides safe and efficient walking and bicycling routes within the subdivision and to adjacent subdivision. Safe routes are available to schools to the north for bicyclist and pedestrians. Tract "A" provides a public walkway between Lot 52 and 53 which connects to the regional trail along the bluff. Providing routes for pedestrian and bicycle circulation complies with city standards.

16.62.020.F - A Traffic Impact Study (TIS) may be required in accordance with Section 16.08.150

FINDING: DKS prepared a TIS in accordance with Section 16.08.150 for both the DCP and the Beck Pond subdivision (See Exhibit 8).

16.64.010.A. The location, width and grade of streets shall be considered in relation to existing and planned streets, to topographical conditions, to public convenience and safety, and to the proposed use of land to be served by the streets. The street system shall assure an adequate traffic circulation pattern with intersection angles, grades, tangents, and curves appropriate for the traffic to be carried. Where location is not shown in a development plan, the arrangement of streets shall either:

1. Provide for the continuation or appropriate projection of existing principal streets in surrounding areas; or

2. Conform to a plan for the neighborhood approved or adopted by the commission to meet a particular situation where topographical or other conditions make continuance of conformance to existing street patterns impractical;

3. Minimum right-of-way and roadway width shall follow the requirements of the Canby Public Works Design Standards;

4. Consider opportunities to incrementally extend and connect local streets to provide for safe and convenient bike and pedestrian circulation.

FINDING: All proposed public streets within the project site have been designed to city standards. The proposed street pattern is practical and fulfills the requirement for City standard streets in a residential subdivision. 16th Avenue provides a major east/west connection between Elm and Fir Streets. The SW Canby Master Plan (Sheets 9 and 10 of Exhibit 2) shows that 18th Avenue will provide another east/west connection to Ivy Street. The proposed street pattern fulfills the 4 criteria in Section16.64.010.A.

16.64.010.B to O - Street Standards

B. Permeable Surfaces - All streets and right-of-way improvements will incorporate impervious surfaces with asphalt streets and concrete sidewalks. Permeable pavement is not a viable option for this development.

C. Reserve Strips - No reserve strips are planned unless required by the City of Canby for 15th Avenue which is a dead-end street. The owner of Tax Lot 1500 east of 15th Avenue will probably sell the property for development in the near future.

D. Alignment - 16TH Avenue aligns with the exiting access from Hope Village on the east side of Fir Street. The future extension of 15th Avenue aligns with another existing Hope Village access off Fir Street. The extension of 16th Avenue to Elm Street is in the right location to match existing grades of Elm Street and to achieve maximum sight distance. The 15th Avenue street stub to Tax Lot 1500 is located in the right place to allow the home owner to retain his existing house. This street extension also serves the Wenrick property further north (Tax Lot 1400). No south street stub to Tax Lot 1602 is planned. The owner of this Tax Lot requested elimination of the street stub because it conflicted with their plans for future development of Tax Lot 1602. All the streets exceed the 150-foot centerline offset.

E. Future Extension of Streets - The street extensions are identified above. 15th Avenue is a dead-end street. The flag pole for Lot 23 will serve as a temporary back up area for emergency and service vehicles as shown on Sheet 4 of Exhibit 2. The Beck Pond subdivision plan is slightly different than the approved SW Canby DCP Master Plan (See Sheet 10 of Exhibit 2). The Beck Pond subdivision plan shows the potential future development of Tax Lot 1500 (Steinke) and Tax Lot 1400 (Wenrick). The Beck Pond preliminary plat is very similar the previous DCP Master Plan (See Sheet 11 of Exhibit 2). The Sheet 10 plan was approved by the City Council because of an assumption the owner of Tax Lot 1500 (Steinke) was willing to sell his property so his house could be removed. Currently, Steinke wants to keep the house and development a subdivision plan as shown by Sheet 11. This is adequate justification to develop the Beck Pond subdivision as proposed because the end result is almost identical to the approved DCP master plan. The only change is a new street to Fir Street rather than a 15-foot pedestrian access as shown on Sheet 10.

F. Intersection Angles - All intersection angles are at 90 degrees.

G. Existing Streets – Elm Street adjacent to Beck Pond is fully improved. Canby staff indicated no additional Elm Street right-of-way dedication or street improvements are necessary. The existing trees and masonry wall along Elm Street are planned for preservation. The grade difference between the subject property and Elm Street improvements requires lots back up to Elm Street rather than fronting on Elm Street. Additional dedication of right-of-way to 29-feet from centerline is proposed along Fir Street. Only 25-feet of right-of-way dedication from centerline is required. However,

Fir Street will carry a lot more traffic compared to the interior streets. The developer wants the sidewalk to be in public right-of-way rather than easements on the lots.

H. Half Streets - A half street is proposed along Fir Street south of 16th Avenue. The pavement width will be 24-feet in accordance with Section 16.46.010.G. No half street improvements are proposed for the interior of the Beck Pond subdivision.

I. Cul-de-Sacs - No cul-de-sacs are proposed and no streets are permanently dead-end street or cul-de-sacs.

J. Marginal Access Streets - This standard does not apply because the property is not adjacent to an arterial street.

K. Alleys - No alleys are proposed.

L. Street Names - 15th and 16th Avenues are proper street names. New street names for "F" and "G" Streets will be approved by city staff prior to recordation of the final plat.

M. Planting Easements - The new streets within the subdivision have 5-foot planting strips between the face of the curb and the 6-foot sidewalk. Street trees will be planted in this 5-foot planter in accordance with city standards. A 12-foot PUE is proposed as shown by the street section on the site plan (Sheet 4 of Exhibit 2).

N. Grades and Curbs - All streets, curbs, sidewalks and other public improvements will be designed to comply with city requirements. The site is very flat and level. No street grades will exceed one percent as shown by Sheet 7, Exhibit 2.

O. Streets Adjacent to Highway 99-E or Railroad Right-of-way - This standard does not apply.

16.64.015 - Access

FINDING: The streets follow the topography of the site and the natural feature along the bluff of the south property line. Adequate street intersection sight distance is available based on a 25 MPH design speed. The proposed 34-feet of pavement is adequate for this residential subdivision. Sidewalks are provided on both sides of the street. A pedestrian pathway is provided between Lots 52 and 53 to access the regional trail and the future street on Tax Lot 1602 at the southeast corner of Beck Pond. The local street network will allow residents, visitors, service and emergency vehicles to fully access individual homes. These features will fulfill the access management standards of the TSP.

16.64.020 - Blocks

FINDING: This subdivision has 2 blocks. The **first block** is bounded by 15th Avenue, 16th Avenue, Fir Street and "G" Street. The block length is 591-feet which exceeds the maximum length of 400-feet (See Sheet 4 of Exhibit 2). A variance to increase the maximum block length was submitted with this subdivision application (See Chapter 16.53 of this report).

The **second block** is bounded by 16th Avenue, "G" Street and "F" Street. This block length is 337-feet in the east/west direction and 355-feet the north/south direction. This block complies with the 400-foot maximum block length standard. A pedestrian pathway is provided between Lots 52 and 53. The street pattern of Beck Pond achieves the same design goal as a traditional "lot and block" pattern. Because of the shape of the property, and the adjacent tax lots and houses, a traditional "lot and block" plan would not create an efficient subdivision.

16.64.030 - Easements

FINDING: Adequate easements are provided for dry utilities, sidewalks and private sanitary sewer lines as shown by Sheet 4, Exhibit 2. No water courses are located in this subdivision. The northerly block is less than 600-feet in length. Therefore, a mid-block pathway is not required. Pedestrian tracts 100 feet in length are required to be 10-feet wide. The width increases by 1 foot for every 20-feet of pathway length over the first 100 feet. As a result, the pathway between Lots 52 and 53 is 12-feet wide. The city code requires 3-foot candle illumination of this pathway. No decision has been made about lighting along the regional pathway. A second pedestrian pathway is provided in the Elm Street right-of-way from the Regional Trail with a reasonable grade extending to the existing Elm Street sidewalk (See Sheet 8 of Exhibit 2).

16.64.040 - Lots

A. Size and Shape

FINDING: The size and shape of the 69 lots in Beck Pond are appropriate for the location of this subdivision. The depth of the lots does not exceed 3 times the width.

B. Minimum Lot Sizes

FINDING: An alternative lot layout is not proposed for Beck Pond.

C. Lot Frontage.

FINDING: In the R-1 zone, this subdivision contains 1 flag lot with 24-feet of frontage and 5 other lots with substandard frontage as indicated in Section 16.16.030.C of this report. The frontage requirement in the R-1 zone is 60 feet. All the lots in the R-1.5 zone complies with the 40-foot frontage requirement, **except** Lots 23 and 62 which are flag lots with 22-feet of frontage. These 2 lots will have a common driveway. The flag pole of Lot 23 will provide a fire truck back up area. These lots maximize use of the land and reduce the area required for streets in the subdivision. Based on this subsection, "the Planning Commission may allow the creation of flag lots, cul-de-sac lots and other such unique designs upon findings that access and building areas are adequate". The City can approve lots with less than sixty (60) feet of frontage in the R-1 zone and less than 40-feet of frontage in the R-1.5 zone. All lots have adequate access with a driveway to provide a minimum of 2 parking spaces in front of the garage. Each lot can accommodate a dwelling which complies with the R-1 and R-1.5 zoning standards.

D. Double Frontage Lots

FINDING: This subdivision has 7 double frontage lots (Lots 26, 27, 28, 29, 60, 59 and 58). These lots are double frontage because of the Elm Street grades, shallow sanitary sewer elevations, existing masonry wall, existing house on Lot 24 and the need to retain existing trees along Elm Street. Double frontage lots should be avoided **except** where there is a need to overcome specific disadvantages or topography and orientation.

E. Side Lot Lines

FINDING: Most side lot lines run perpendicular to the streets. Some lots fronting the curved streets and knuckles are not perpendicular because of the following:

1. Size and space of the lot
2. The need to comply with the square footage standard
3. The split zoning standards
4. The need to maximize the buildable area of the lots

F. Re-Subdivision

FINDING: No re-subdivision of the lots is anticipated unless the house is removed from Lot 24. In that case, Lot 24 would be divided into 2-lots.

G. Building Lines.

FINDING: No special building lines have been established for the proposed lots. The proposed building setback are shown on Sheet 5 of Exhibit 2.

H. Potentially Hazardous Lots or Parcels.

FINDING: No lots or parcels are hazardous due to flooding or soil conditions, the site is not within the 100-year floodplain of the Willamette River, and the soils are not considered unstable. However, a geotechnical engineer will evaluate the construction on Lots 51 to 60, which are close to the bluff line, and determine if special setbacks or additional construction standards are required.

I. Flag Lots or Panhandle-shaped Lots

FINDING: This subdivision contains 4 flag lots (Lots 22, 23, 49 and 62). Flag lots are the only the suitable design alternative because of the location of the parcels. These flag lots comply with the standards in Subsection 16.64.040.I which require 12-foot wide flag poles that are less than 100 feet in length. The depth of these lots need to be adequate to allow vehicle turn around to prevent vehicles from backing out the flag pole into a public street. The flag pole is not included in the lot area calculation. For the purposes of defining setbacks, flag lots shall have 3 side yards and one rear yard. The rear yard may be placed on any side of the main building.

.

J. Designation of Lots as 'Infill Home' sites

FINDING: This Site is not an "infill" site.

16.64.050 - Parks and Recreation

FINDING: See subsection 16.120 below. A 0.86-acre park is proposed with this subdivision (Tract “A”).

16.64.060 - Grading of building sites

FINDING: When grading begins, the applicant will identify any hazards to the public or danger to public facilities.

16.64.070 - Improvements

A. Improvement Procedures

FINDING: The applicant is aware of the procedures for public and private improvements. Items 1 through 5 in this subsection contain requirements for construction of improvements.

B. The following improvements shall be installed at the expense of the subdivider.

FINDING: All extensions of sanitary sewer, water, and any other public facility or service will be necessary to serve this subdivision.

C. Streets

FINDING: The new streets within the project area will be designed and constructed in accordance with city standards.

D. Surface Drainage and Storm Sewer System

FINDING: The subdivision will have 3 pollution control and 3 dry well manholes for storm water management. Roof and foundation drains will be disposed on each lot.

E. Sanitary Sewers

FINDING: Sanitary sewers are available to the site in a size adequate to serve the project.

F. Water System

FINDING: The city's water system is available to the site with line sizes and flow volumes to serve the proposed project. The proposed 10" water line in 16th Avenue will connect with a 12" water line in Fir Street and a 10" water line in Elm Street. The location of the existing and proposed fire hydrants is shown on Sheet 6 of Exhibit 2.

G. Sidewalks

FINDING: Sidewalks are proposed on both sides of each street within the subdivision as shown by the street section on the pre-plat plans (Sheet 4 of Exhibit 2).

H. Bicycle Routes

FINDING: There are no identified bicycle routes in this subdivision other than the regional trail.

I. Street Name Signs

FINDING: Street name signs, as required by the city, will be placed where appropriate by the applicant as part of the site improvement process.

J. Street Lighting System

FINDING: Street lights will be located and installed by the applicant in response to the requirements of the city.

K. Other Improvements

FINDING: Any other improvements that may be required under this subsection will be carried out by the applicant.

L. Improvements in Areas of Flood or Slope Hazard

FINDING: This requirement does not apply unless a slope hazard is identified by a geotechnical report.

M. Survey Accuracy and Requirements

FINDING: All survey work related to this project will be completed by ZTec Engineers.

N. Agreement for Improvements

FINDING: The applicant will either install all required improvements or will complete an Agreement for Improvements with the City.

Q. Large Scale or Solar Efficient Development

FINDING: Beck Pond is not a large scale or Solar Efficient development.

R. Fences/ Walls

FINDING: Subsection "R" prevents the placement of fences and/or walls for the purpose of separating the neighborhood from the rest of the city. The proposed fences in the Beck Pond Subdivision do not provide separation from the surrounding neighborhood. The only exception is the existing masonry wall along Elm Street. The applicant requests the Planning Commission to approve retention of this masonry wall and allow lots to back up to Elm Street

16.64.080 - Low Impact Development Incentives

FINDING: The applicant may use some of the Low Impact Development Incentives. However, the applicant is not requesting to Low Impact Development **Incentives**. Only a

few trees are located along the west and north property line perimeters. Some of these trees will be preserved if an arborist determines the trees are not a hazard or diseased and if the trees do not conflict with the proposed houses construction.

16.66 - Subdivisions and Planning Commission Action

FINDING: City staff will review the subdivision and the Planning Commission will either approve or deny the subdivision.

Chapter 16.86 - Regulations

16.86.020 - General Provisions.

FINDING: All the streets are **"Local"**. The streets will be designed in accordance with Chapter 7 of the City TSP. Appropriate rights-of-way will be dedicated for the streets. Bicycle lanes or bike paths are not required except for the Regional Trail and the pathway between Lots 52 and 53.

16.86.040 - Recommended Roadway Standards

FINDING: The application applies the applicable standards for roadway design as contained in the TSP and the Canby Public Works Design Standards.

16.86.060 - Street Connectivity

FINDING: Because all streets are through streets, and there are no cul-de-sacs. However, 15th avenue will be a temporary dead-end street.

16.89.020 - Description and Summary of Processes

FINDING: This application requires a Type III process with a public hearing before the City Planning Commission. Any appeal of the Planning Commission decision can be appealed to the City Council. Table 16.89.020 identifies this process as a "Subdivision" which requires public hearing notification within 500-feet of the site and a neighborhood meeting prior to submittal of the application. The variance application does not require a neighborhood meeting.

16.89.050 - Type of Decision

FINDING: In accordance with the provisions of this subsection, the following requirements are met.

A. A Pre-Application Conference was held on March 1, 2018 (Exhibit 5).

B. The required neighborhood meeting was held on March 29, 2018 (Notes per Exhibit 6).

16.89.070 - Neighborhood Meetings

FINDING: The required neighborhood meeting was held on March 29, 2018 (Notes per Exhibit 6). Notices of the meeting were sent on March 14, 2018, 2 weeks before the meeting. The neighborhood association chair was also notified.

Chapter 16.120 - Parks, Open Space and Recreation Land

FINDING: The proposed subdivision contains land along the bluff that will be dedicated to the city for public regional trail and pocket park. The city determined that 35 feet is the minimum width of the trail tract.

16.120.020 - Minimum standards for park, open space and recreation land

FINDING: The following formula is used to determine the required amount park land for a subdivision.

0.01 x 2.7 persons per house x 69 lots = 1.86 acres of required park land dedication

A total of 1.86 acres of park land is required for Beck Pond. A total of 0.86 acres are proposed for dedication to the city which requires 1 acre of addition land to be dedicated to the city or payment of a fee in lieu. If suitable park land dedication, in compliance with the park locations standards of Section 16.121.020, is not available in this subdivision or any other location in the city, the applicant can pay a Park System Development Charge ("SDC") fee in lieu of park land dedication.

16.120.040 - Cash in lieu of dedication of land

FINDING: City staff requested the applicant to pay a Park System Development Charge (Park SDC) fee in lieu of park land dedication for 1-Acre or coordinate the dedication of other park land on the McMartin property south of Hope Village between Fir and Ivy Streets. The builder of each lot will be responsible to pay this Park SDC fee on each lot prior to issuance of a building permit.

V. CANBY PUBLIC WORKS STANDARDS

The public streets are designed in compliance with the local street standard in Exhibit 4. The knuckles along Lots 22, 23 and 24 and Lots 48, 49 and 50 are designed in accordance with the Washington County standard in Exhibit 4. The existing house prevents a standard knuckle along Lots 22, 23 and 24. Sheet 4 of Exhibit 2 shows a fire truck back up area in

the flag pole of Lot 23. This back up area is necessary because of the temporary 15th Avenue dead-end street. This back up area can be used for city and other service vehicles.

The grading plan shows all storm water will flow to storm sewer pipes with dry wells in 16th Avenue. In overflow situations, storm water will flow to Elm Street and then to the Molalla River flood plain. A total of 3 dry wells and pollution control man holes are proposed. The dry wells are located outside of the 267-foot radius of the wells as show by Sheet 7 of Exhibit 2. Wells are located on Tax Lot 1500 (Steinke) and 1603 (Sorenson). The results of the geotechnical study and tests will determine the final number of dry wells and the location. The grades of the streets are 0.5% or greater. A slight fill of the southeast portion the site is necessary to achieve a sanitary sewer invert elevation of 5-feet or more below the manhole rim. This 5-feet of depth provides proper separation from the water line which requires a minimum of 3-feet of cover.

Section 2.201.b - This section requires 5 foot sidewalks. However, 6-foot sidewalks are proposed in accordance with the city standard in Exhibit 4.

Section 2.203.c - This section requires a minimum local street centerline radius of 165-feet. The centerline radius is 185 feet for "G" Street. The centerline radius is 165-feet for the extension of 15th Avenue into the Tax Lot 1500 (Steinke Property).

Section 2.205.b - The minimum intersection spacing is 150-feet for local streets that do not line up. The spacing of all streets in Beck Pond are over 150-feet.

Section 2.205.c - The minimum intersection curb radius is 25-feet as shown on Sheet 4 of Exhibit 2.

Section 2.211.f - The minimum driveway width is 12 feet. The maximum driveway width is 24 feet for a 2-car garages and 28-feet for 3-car garages. The code is silent about the maximum width for shared driveways for single family detached houses.

Section 3.301 - The minimum size of a sanitary sewer lateral is 6-inches.

Section 3.303.b - The minimum public sanitary sewer line slope for an 8-inch line is 0.4%. The sewer line shown on Sheet 6 of Exhibit 2 complies with this standard.

Section 3.304.e - Th elevation drop in a manhole is 0.1-feet when the pipe is straight and 0.2-feet when the pipe changes direction. The sewer lien elevation on Sheet 6 of Exhibit 2 comply with this standard.

Section 3.306.d - The minimum slope of a sanitary sewer lateral is 2%.

VI. CONCLUSION

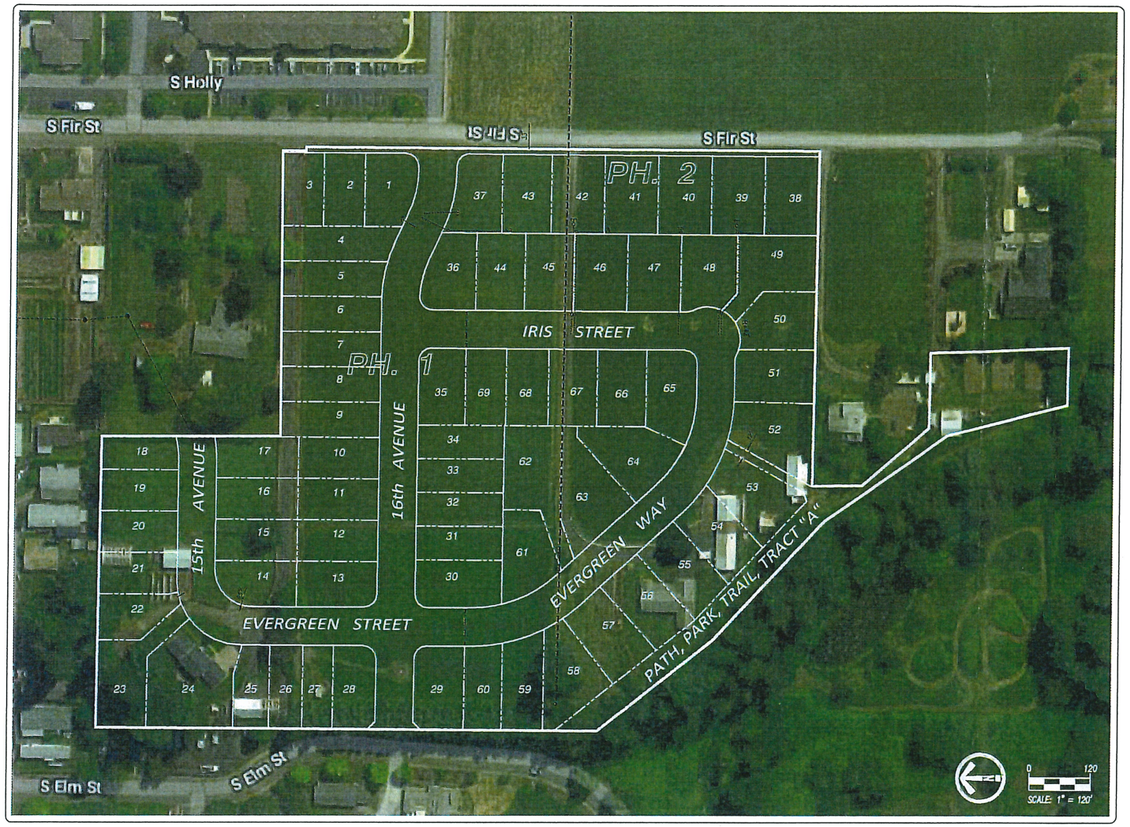
The Planning Commission can determine if this preliminary subdivision application meets the relevant approval criteria. If the Canby Comprehensive Plan policies are not incorporated into the City's land use regulations, they may not be applied to this application (ORS 197.195(1)). Other subjective standards also do not apply (ORS 197.307(4)).

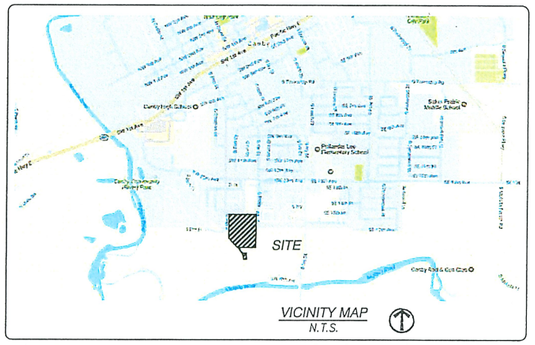
Based on the information in this report and the plans and exhibits submitted with this application, the Applicant requests Planning Commission approval the 69-lot preliminary subdivision and variance applications with clear and objective conditions of approval.

BECK POND

69 LOT RESIDENTIAL SUBDIVISION

LOCATED IN TOWNSHIP 4S, RANGE 1E, W.M., SECTION 4
CANBY, OREGON
MAY 26, 2018





VICINITY MAP
N.T.S.

UTILITY CONTACTS & SERVICE PROVIDERES

WATER & ELECTRICAL:	CANBY UTILITY 154 NW 1ST AVENUE, CANBY, OREGON 97013 (503) 226-1156	TELEPHONE & CABLE	DIRECTLINK 190 SE 2ND AVENUE, CANBY, OREGON 97013 (503) 226-8111
PUBLIC WORKS:	CANBY PUBLIC WORKS 1470 NE TERRITORIAL ROAD, CANBY, OREGON 97013		WAVE BROADBAND 353 NW 2ND AVENUE, CANBY, OREGON 97013 (800) 222-5314
SCHOOLS:	CANBY SCHOOL DISTRICT 86 1130 S. IVY STREET, CANBY, OR 97013	GAS:	NORTHWEST NATURAL GAS COMPANY 220 NW 2ND AVENUE, PORTLAND, OREGON 97209
		FIRE:	CANBY FIRE DISTRICT #62 221 S. PINE STREET, CANBY, OR 97013

PROJECT CONTACTS

APPLICANT:	STAFFORD DEVELOPMENT COMPANY 485 SOUTH STATE STREET LAKE OSWEGO, OREGON 97034 GORDON ROOT (503) 720-0914 (M) LEVI LAVASA (503) 250-3651 (M)	APPLICANTS REPRESENTATIVE:	PLANNNING & LAND DESIGN 1862 NE ESTATE DRIVE HILLSBORO, OREGON 97124 ATTN: RYAN O'BRIEN 503-780-4061 (M)
ENGINEER:	KITTREDGE ENGINEERS, LLC 6975 SW SANDBURG ST. #310 TIGARD, OREGON 97223 ATTN: CHRIS KITTREDGE, P.E. (503) 708-3942	CANBY DEVELOPMENT SERVICES	222 NE 2ND AVENUE CANBY, OREGON 97013 ATTN: BRYAN BROWN PLANNING DIRECTOR (503) 266-7001 (O)
SURVEYOR:	ZTEC ENGINEERS INC. 3880 S.E. 8TH AVENUE SUITE 280, PORTLAND, OREGON 97202 ATTN: CHRIS FISCHBORN (503) 235-8795 (O)		

SHEET INDEX

SITE DATA

SITE AREA: TRACT "A"	415,419 SF = 9.536 AC 37,458 SF = 0.859 AC	ZONING:	R-1 R-1.5	LOW DENSITY RESIDENTIAL MEDIUM DENSITY RESIDENTIAL	TAX MAP LOCATION:	T4S R1E SECTION 4C TAX LOTS 1500 & 1401 T4S R1E SECTION 4CA, TAX LOT 1600

NUMBER OF LOTS: 69

5-26-18

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

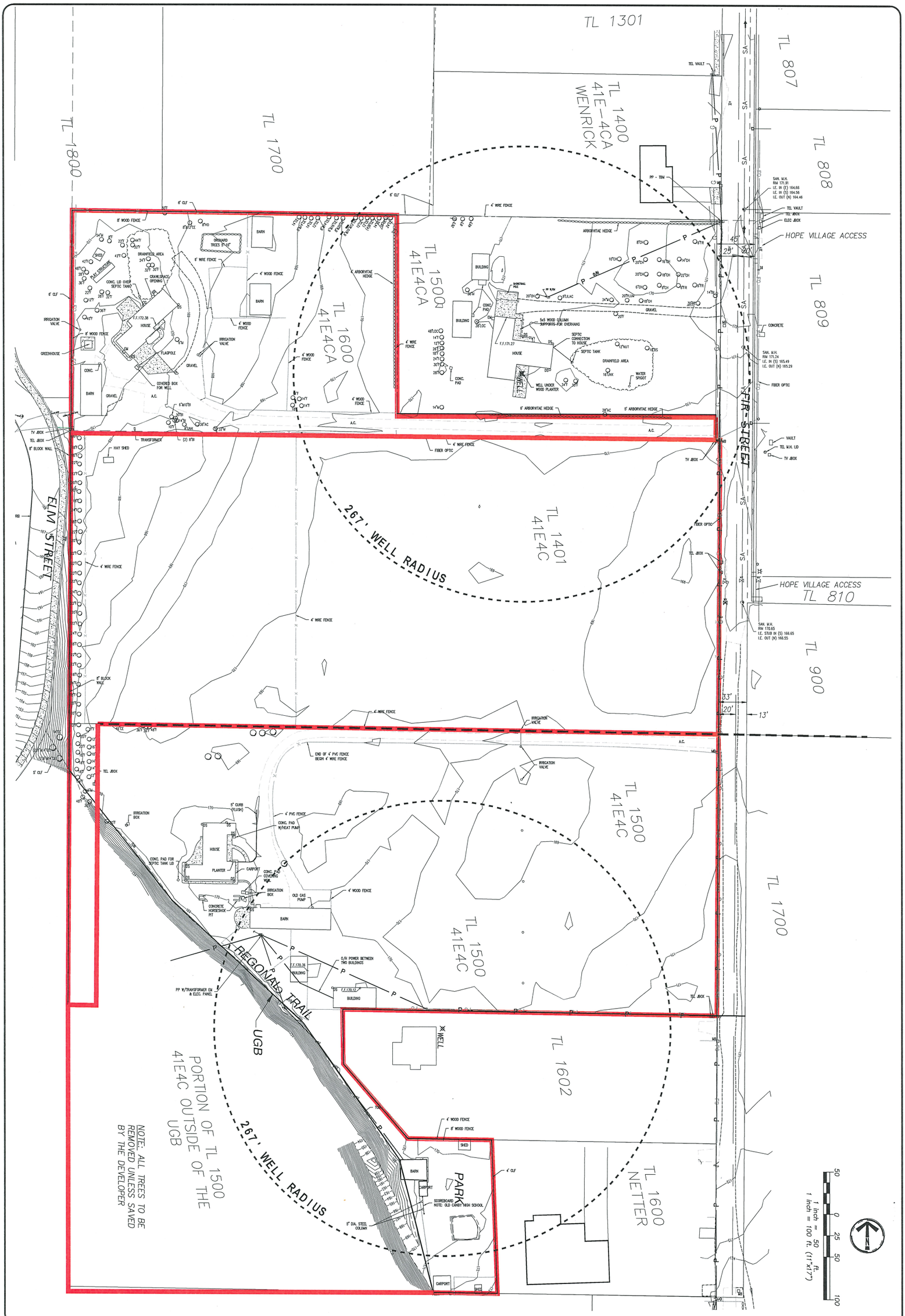
STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
RESIDENTIAL DEVELOPMENT
COVER SHEET

REVISIONS		
NO.	DATE	DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 1 OF 11



SHEET	PLANNING & LAND DESIGN	REVISIONS	BECK POND	STAFFORD	SOUTHWEST CANBY
2 OF 11	1862 NE ESTATE DRIVE HILLSBORO, OREGON 97124 RYAN O'BRIEN (503)780-4061	NO. DATE DESCRIPTION	EXISTING CONDITIONS	DEVELOPMENT COMPANY, LLC 485 SOUTH STATE STREET LAKE OSWEGO, OREGON 97034	TAX MAP T4S, R1E, SECTION 4 SEC. 4CA TAX LOTS 1600 SEC. 4C TAX LOTS 1401, 1500 CITY OF CANBY, OREGON

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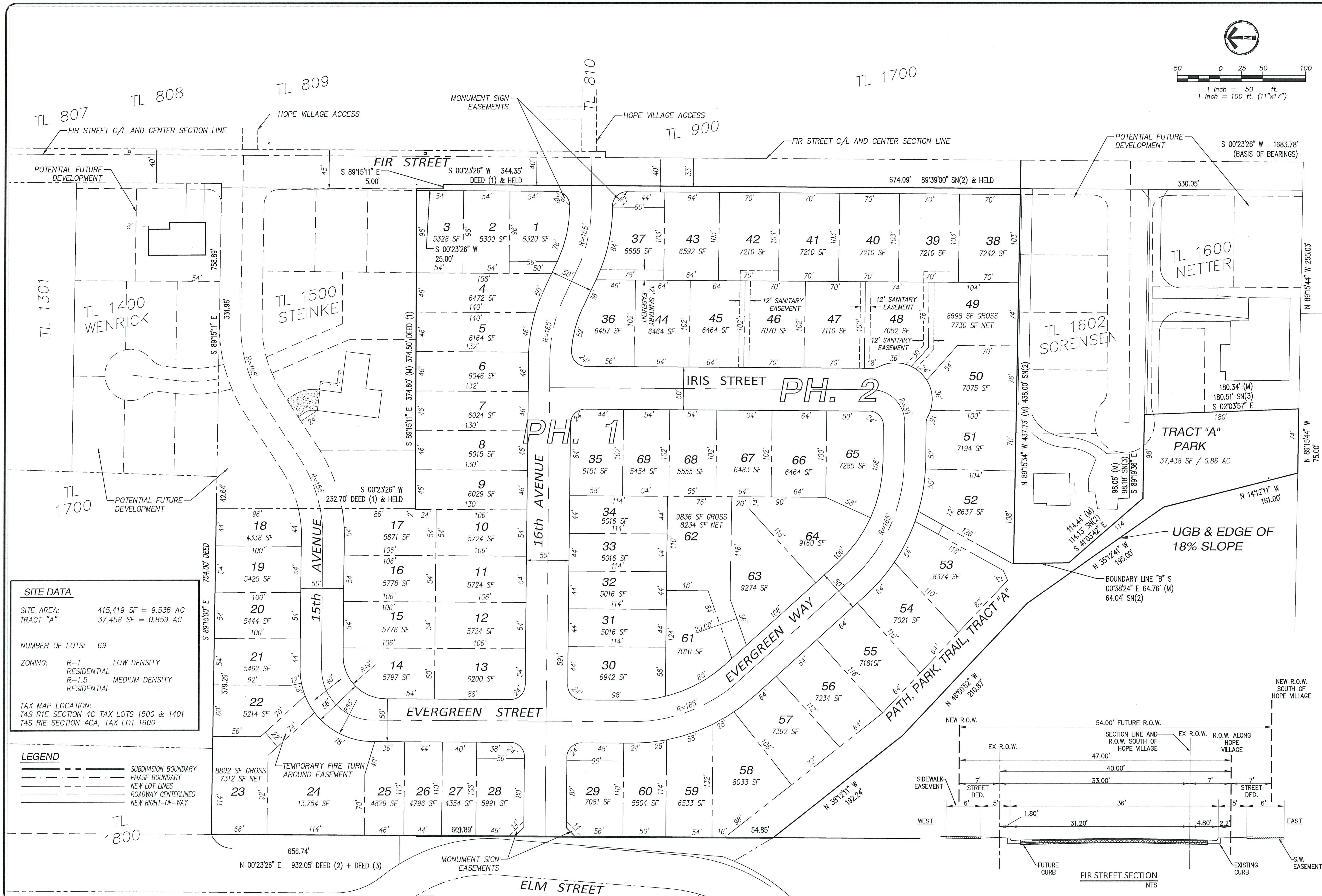

TL 807
TL 808
TL 809
TL 810
TL 1700
TL 900
FIR STREET C/L AND CENTER SECTION LINE
HOPE VILLAGE ACCESS
MONUMENT SIGN EASEMENTS
POTENTIAL FUTURE DEVELOPMENT
FIR STREET
S 89°15'11" E 5.00'
S 00°23'26" W 344.35' DEED (1) & HELD
674.09' 89°39'00" SN(2) & HELD
S 00°23'26" W 1683.78' (BASIS OF BEARINGS)
330.05'
1 inch = 50 ft.
1 inch = 100 ft. (11"x17")
TL 1301
TL 1400 WENRICK
TL 1500 STEINKE
TL 1600 NETTER
TL 1602 SORENSEN
TL 1700
TL 1800
IRIS STREET
PH. 1
PH. 2
16th AVENUE
15th AVENUE
EVERGREEN WAY
EVERGREEN STREET
ELM STREET
PATH, PARK, TRAIL, TRACT "A"
TRACT "A" PARK
37,438 SF / 0.86 AC
UGB & EDGE OF 18% SLOPE
BOUNDARY LINE "B" S 00°38'24" E 64.76' (M) 64.04' SN(2)
12' SANITARY EASEMENT
TEMPORARY FIRE TURN AROUND EASEMENT
656.74'
N 00°23'26" E 932.05' DEED (2) + DEED (3)
SITE DATA
SITE AREA: 415,419 SF = 9.536 AC
TRACT "A" 37,458 SF = 0.859 AC
NUMBER OF LOTS: 69
ZONING: R-1 LOW DENSITY RESIDENTIAL
R-1.5 MEDIUM DENSITY RESIDENTIAL
TAX MAP LOCATION:
T4S R1E SECTION 4C TAX LOTS 1500 & 1401
T4S RIE SECTION 4CA, TAX LOT 1600
LEGEND
SUBDIVISION BOUNDARY
PHASE BOUNDARY
NEW LOT LINES
ROADWAY CENTERLINES
NEW RIGHT-OF-WAY
FIR STREET SECTION
NTS
54.00' FUTURE R.O.W.
NEW R.O.W. SOUTH OF HOPE VILLAGE
SECTION LINE AND R.O.W. SOUTH OF HOPE VILLAGE
EX R.O.W.
R.O.W. ALONG HOPE VILLAGE
SIDEWALK EASEMENT
STREET DED.
WEST
EAST
FUTURE CURB
EXISTING CURB
S.W. EASEMENT

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
PRELIMINARY PLAT

REVISIONS

NO.	DATE	DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 3 OF 11

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EMERGENCY VEHICLE TURN AROUND DETAIL

20 0 10 20 40
1 inch = 20 ft.

50 0 25 50 100
1 inch = 50 ft.
1 inch = 100 ft. (11"x17")

R-1.5 R-1

TL 1700

TL 810

TL 900

MONUMENT SIGN EASEMENTS

HOPE VILLAGE ACCESS

FIR STREET C/L AND CENTER SECTION LINE

POTENTIAL FUTURE DEVELOPMENT

S 00°23'26" W 1683.78' (BASIS OF BEARINGS)

STREET

S 00°23'26" W 344.35' DEED (1) & HELD

674.09' 89°39'00" SN(2) & HELD

330.05'

TL 1600 NETTER

N 89°15'44" W 255.03'

TL 1602 SORENSEN

PH. 1

PH. 2

IRIS STREET

12' SANITARY EASEMENT

180.34' (M)
180.51' SN(3)
S 02°03'57" E

TRACT "A" PARK

N 89°15'34" W 437.73' (M)
N 89°15'44" W 438.00' SN(2)

98.06' (M)
98.18' SN(3)
S 89°19'56" E

N 89°15'44" W 75.00'

N 14°12'11" W 161.00'

8' WIDE PATHWAY

114.44' (M)
114.13' SN(2)
S 41°03'42" E

UGB & EDGE OF 18% SLOPE

N 35°12'41" W 195.00'

BOUNDARY LINE "B" S 00°38'24" E 64.76' (M) 64.04' SN(2)

PATH, PARK, TRAIL, TRACT "A"

N 46°50'52" W 210.87'

S 89°15'11" E 374.60' (M) 374.50' DEED (1)

S 00°23'26" W 25.00'

S 00°23'26" W 232.70' DEED (1) & HELD

42.64'

TL 1700

POTENTIAL FUTURE DEVELOPMENT

754.00' DEED

S 89°15'00" E

379.29'

15th AVENUE

16th AVENUE

EVERGREEN WAY

EVERGREEN STREET

601.89'

656.74'

N 00°23'26" E 932.05' DEED (2) + DEED (3)

54.85'

N 38°12'11" W 192.24'

MONUMENT SIGN EASEMENTS

ELM STREET

TL 1800

NEW STREET SECTION
NTS
PROPERTY LINE RADIUS = 17'
CURB RADIUS = 25'

P/L 12' PUE 25' C/L 25' P/L 12' PUE
28' 28'
6' 5' 17' 17' 5' 6'

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
SITE PLAN

REVISIONS
NO. DATE DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 4 OF 11

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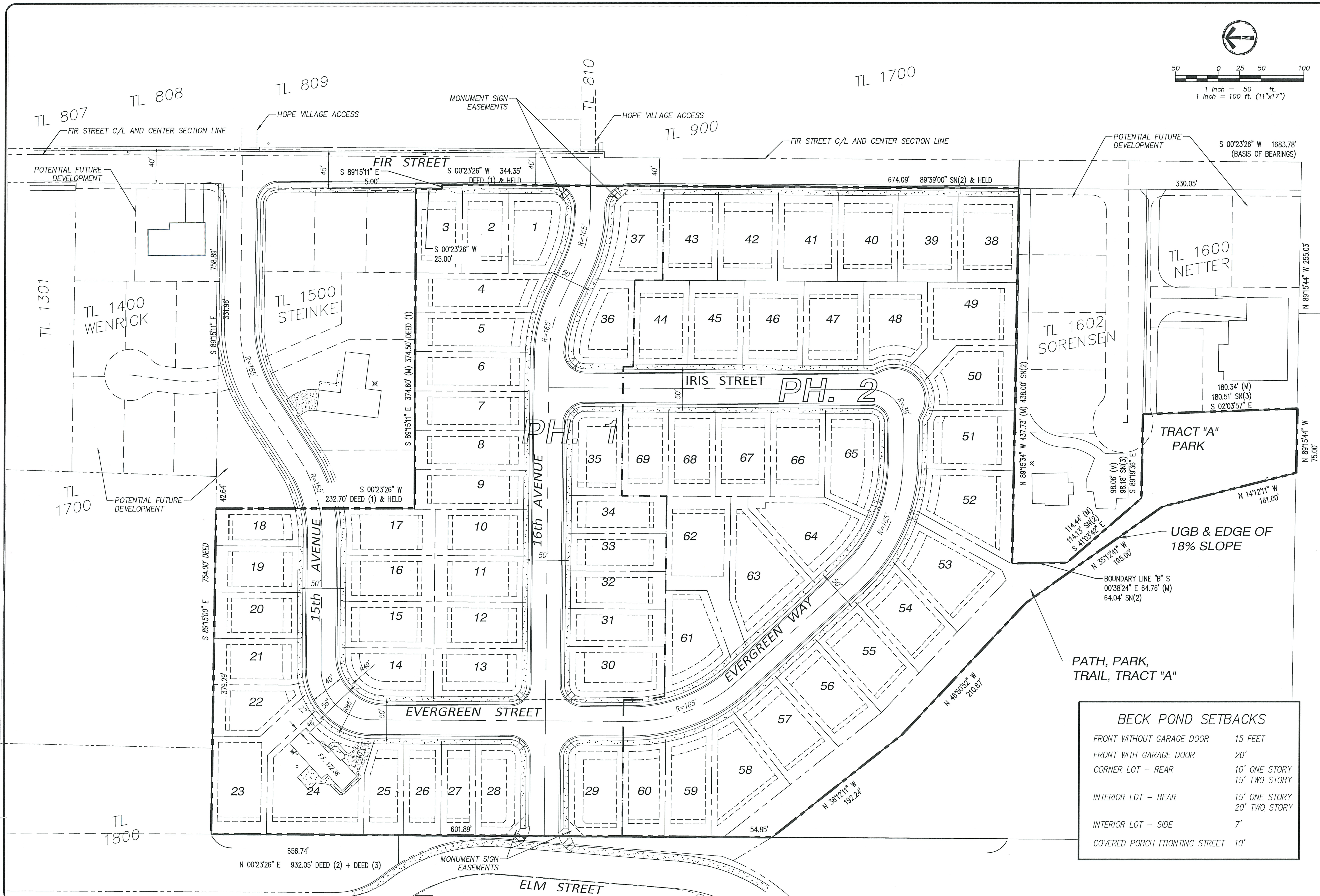

TL 807
TL 808
TL 809
TL 810
TL 1700
TL 900
FIR STREET C/L AND CENTER SECTION LINE
HOPE VILLAGE ACCESS
MONUMENT SIGN EASEMENTS
FIR STREET
S 89°15'11" E 5.00'
S 00°23'26" W 344.35' DEED (1) & HELD
674.09' 89°39'00" SN(2) & HELD
POTENTIAL FUTURE DEVELOPMENT
S 00°23'26" W 1683.78' (BASIS OF BEARINGS)
330.05'
1 inch = 50 ft.
1 inch = 100 ft. (11"x17")
TL 1301
TL 1400 WENRICK
TL 1500 STEINKE
TL 1600 NETTER
TL 1602 SORENSEN
TL 1700
TL 1800
IRIS STREET
PH. 1
PH. 2
16th AVENUE
15th AVENUE
EVERGREEN WAY
EVERGREEN STREET
ELM STREET
TRACT "A" PARK
UGB & EDGE OF 18% SLOPE
PATH, PARK, TRAIL, TRACT "A"
BOUNDARY LINE "B" S 00°38'24" E 64.76' (M) 64.04' SN(2)
N 35°12'41" W 195.00'
N 14°12'11" W 161.00'
N 46°50'52" W 210.87'
N 38°12'11" W 192.24'
N 89°15'44" W 255.03'
N 89°15'44" W 75.00'
180.34' (M) 180.51' SN(3) S 02°03'57" E
N 89°15'34" W 437.73' (M) 438.00' SN(2)
S 00°23'26" W 232.70' DEED (1) & HELD
S 89°15'11" E 374.60' (M) 374.50' DEED (1)
S 89°15'11" E 331.96'
758.89'
42.64'
S 89°15'00" E 754.00' DEED
379.29'
601.89'
54.85'
656.74'
N 00°23'26" E 932.05' DEED (2) + DEED (3)

BECK POND SETBACKS

FRONT WITHOUT GARAGE DOOR	15 FEET
FRONT WITH GARAGE DOOR	20'
CORNER LOT – REAR	10' ONE STORY 15' TWO STORY
INTERIOR LOT – REAR	15' ONE STORY 20' TWO STORY
INTERIOR LOT – SIDE	7'
COVERED PORCH FRONTING STREET	10'

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
SETBACK PLAN

REVISIONS

NO.	DATE	DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 5 OF 11

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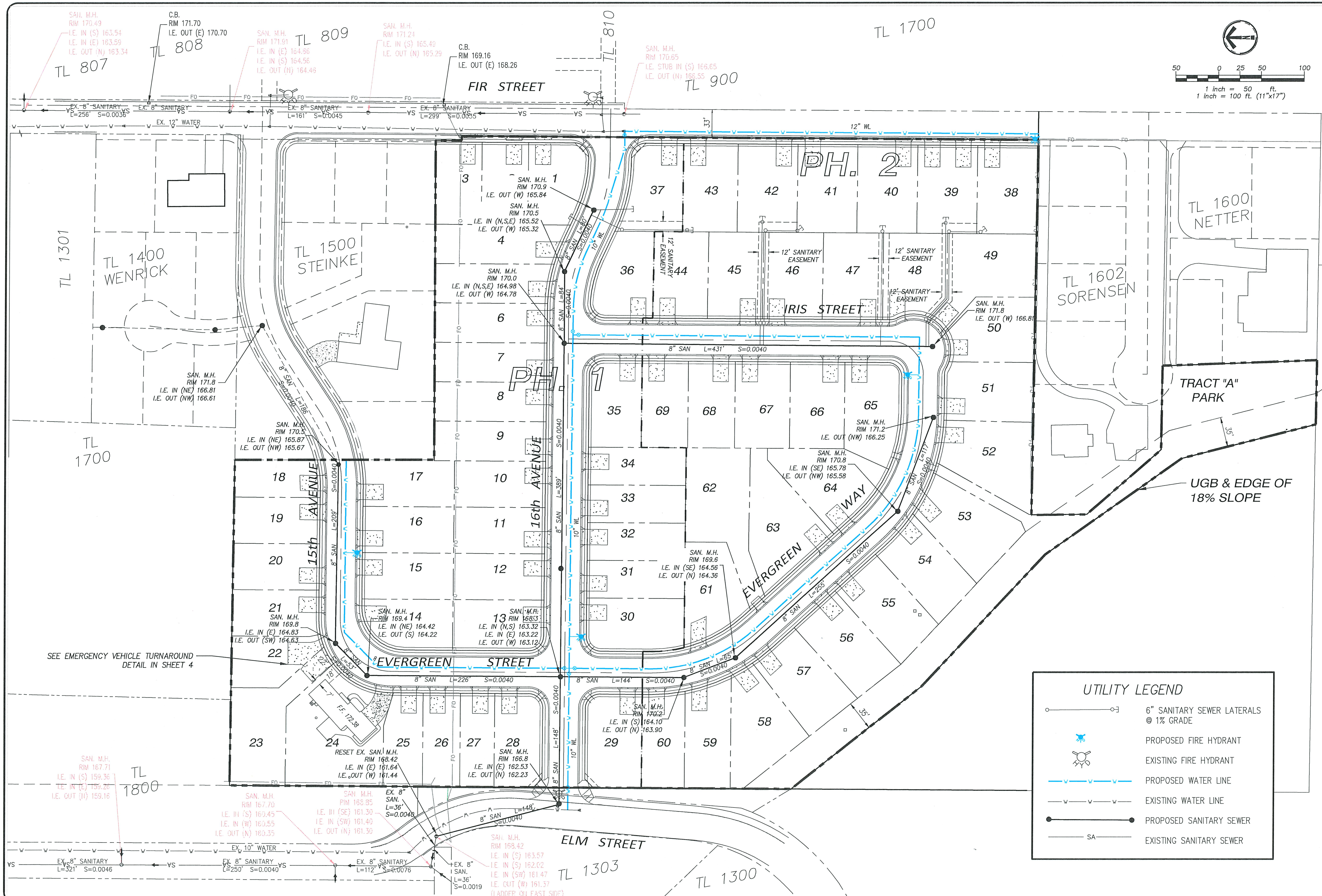


SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
PRELIMINARY
WATER AND SEWER PLAN

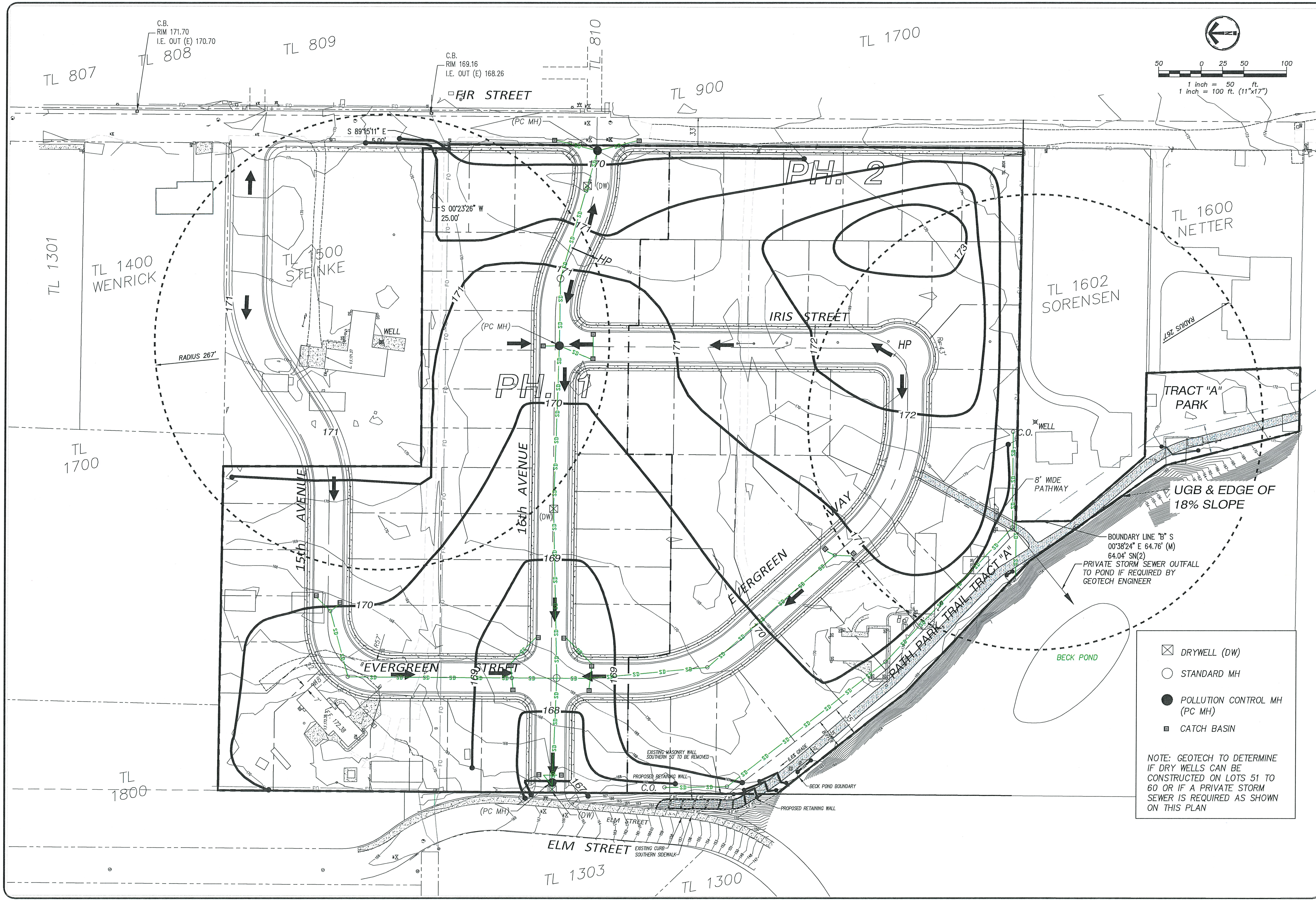
REVISIONS

NO.	DATE	DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 6 OF 11

5/25/2018 1:39:10 PM


FIR STREET
ELM STREET
IRIS STREET
EVERGREEN STREET
EVERGREEN WAY
15th AVENUE
16th AVENUE
PH. 1
PH. 2
TL 807
TL 808
TL 809
TL 810
TL 900
TL 1700
TL 1301
TL 1400 WENRICK
TL 1500 STEINKE
TL 1600 NETTER
TL 1602 SORENSEN
TL 1800
TL 1303
TL 1300
TRACT "A" PARK
PATH, PARK, TRAIL TRACT "A"
UGB & EDGE OF 18% SLOPE
BECK POND
RADIUS 267'
C.B. RIM 171.70 I.E. OUT (E) 170.70
C.B. RIM 169.16 I.E. OUT (E) 168.26
S 89°15'11" E 5.00'
S 00°23'26" W 25.00'
8' WIDE PATHWAY
BOUNDARY LINE "B" S 00°38'24" E 64.76' (M) 64.04' SN(2)
PRIVATE STORM SEWER OUTFALL TO POND IF REQUIRED BY GEOTECH ENGINEER
BECK POND BOUNDARY
PROPOSED RETAINING WALL
EXISTING MASONRY WALL SOUTHERN 50' TO BE REMOVED
EXISTING CURB SOUTHERN SIDEWALK
WELL
HP
C.O.
(PC MH)
(DW)
1 inch = 50 ft.
1 inch = 100 ft. (11"x17")
DRYWELL (DW)
STANDARD MH
POLLUTION CONTROL MH (PC MH)
CATCH BASIN
NOTE: GEOTECH TO DETERMINE IF DRY WELLS CAN BE CONSTRUCTED ON LOTS 51 TO 60 OR IF A PRIVATE STORM SEWER IS REQUIRED AS SHOWN ON THIS PLAN

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
PRELIMINARY GRADING AND STORM SEWER PLAN

REVISIONS

NO.	DATE	DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 7 OF 11

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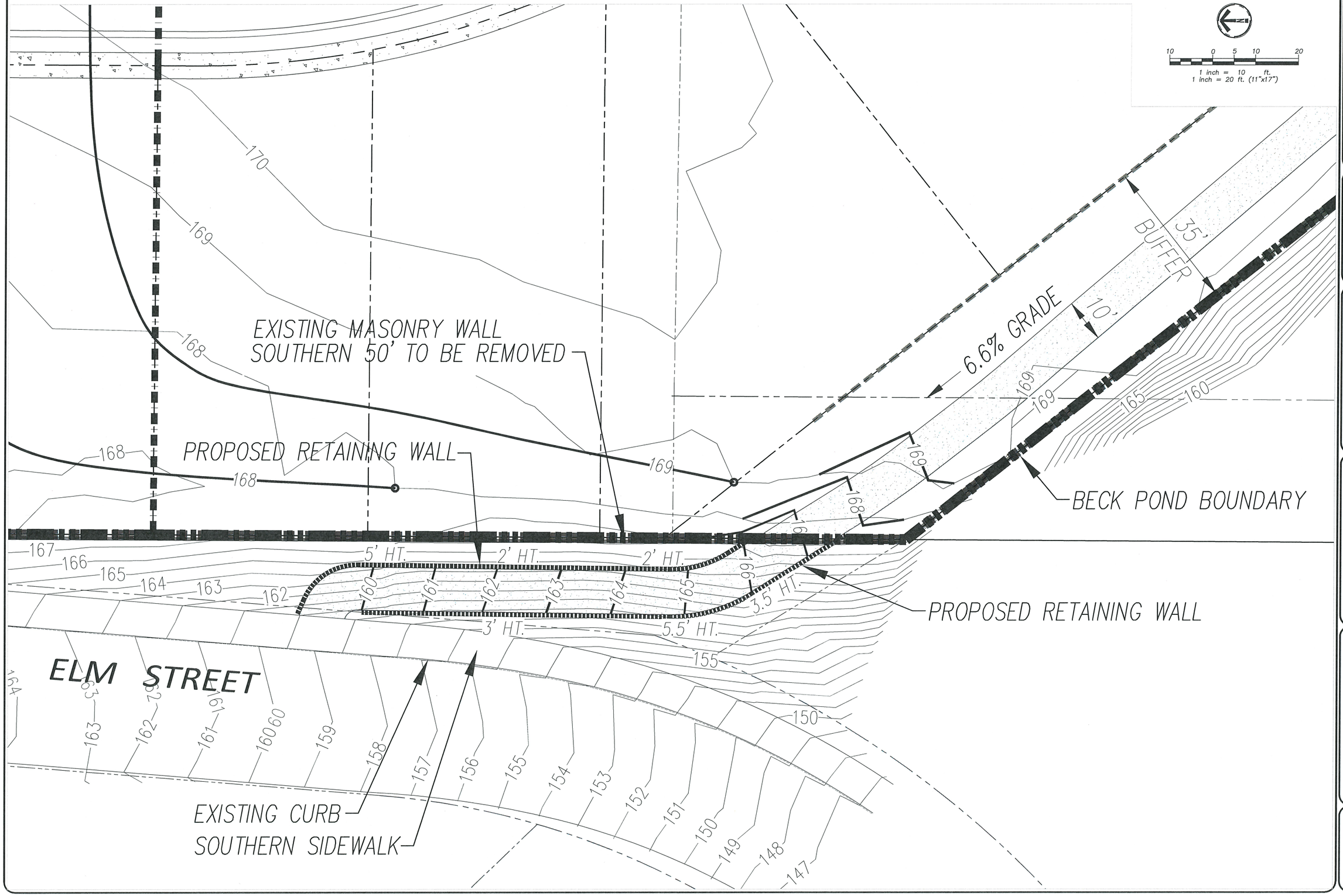

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4CA TAX LOTS 1600
SEC. 4C TAX LOTS 1401, 1500
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

BECK POND
ELM STREET PEDESTRIAN PATHWAY

REVISIONS

NO.	DATE	DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 8 OF 11

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BECK POND AVERAGE LOT SIZES 3-28-18

LOT NO.	SQ. FT.	Variable R-1.5 Zone
1	5348	
2	5076	
3	5076	
4	6472	
5	5883	
6	5784	
7	5795	
8	5806	
9	5844	
10	5724	
11	5724	
12	5724	
13	6200	
14	5599	
15	5778	
16	5778	
17	5810	
18	4337	under
19	5425	
20	5444	
21	5415	
22	5260	
23	7312	over
24	13754	exempt
25	4829	under
26	4796	under
27	4354	under
28	5991	
29	7081	over
30	6942	over
31	5016	
32	5016	
33	5016	
34	5016	
35	6151	
36	6454	
37	6516	over
43	6400	
44	6464	
45	6464	
59	6533	over
60	5504	
61	7010	over
62	8234	over

LOT NO.	SQ. FT	Variable R-1 Zone
38	7080	
39	7070	
40	7070	
41	7070	
42	7070	
46	7070	
47	7110	
48	7052	
49	7763	
50	7024	
51	7210	
52	8662	
53	8374	
54	7021	
55	7181	
56	7234	
57	7392	
58	8033	
63	9274	
64	9160	
65	7285	
66	6464	under
67	6483	under

Total SF 171152
SF Ave. 7,441

Percentage Under 7,000 sf = 9%

2 = Lots Under 7,000 SF
0 = Lots Over 10,000 SF
23 = Total Lots in the R-1 Zone

69 = Total Lots in R-1 & R-1.5 Zones Combined

EXHIBIT 3

68	5555
69	5454
TOTAL SF	275164
SF AVE.	5,982

Percentage under 5,000 sf & over 6,500 sf = 24%
Percentage under 5,000 sf = 9%

4 = Lots Under 5,000 SF
7 = Lots Over 6,500 SF
46 = Total Lots in the R-1.5 Zone

66 lots minus Lot 81 = 65 lots to compute Variable Percentage

NADINE J. BECK, Trustee
BECK JOINT TRUST

Grantor's Name and Address

RODNEY J. BECK
CAROL M. BECK

Grantee's Name and Address

After recording, return to (Name, Address, Zip):
Rodney J. Beck, PC
#150, 15 82nd Drive
Gladstone, Oregon 97027

Until requested otherwise, send all tax statements to (Name, Address, Zip):
Rodney & Carol Beck
1555 S. Fir
Canby, Oregon 97013

STATE OF OREGON,
County of _____ } ss.

Clackamas County Official Records
Sherry Hall, County Clerk

2009-061777

SP
RE
01338734200900617770010016

$31.00

08/31/2009 09:42:06 AM

D-D Cnt=1 Stn=2 JANISKEL
$5.00 $10.00 $16.00

NAME TITLE

By _____, Deputy.

BARGAIN AND SALE DEED

KNOW ALL BY THESE PRESENTS that Nadine J. Beck, Sole Trustee, Beck Joint Trust, restated August 20, 2002, hereinafter called grantor, for the consideration hereinafter stated, does hereby grant, bargain, sell and convey unto Rodney J. Beck and Carol M. Beck, tenants by entirety as to remaing 5% ownership, hereinafter called grantee, and unto grantee's heirs, successors and assigns, all of that certain real property, with the tenements, hereditaments and appurtenances thereunto belonging or in any way appertaining, situated in Clackamas County, State of Oregon, described as follows, to-wit:

Real property in the County of Clackamas, State of Oregon, described as follows:

A TRACT OF LAND LOCATED IN THE SOUTHWEST ONE-QUARTER OF SECTION 4, TOWNSHIP 4 SOUTH, RANGE 1 EAST, OF THE WILLAMETTE MERIDIAN, IN THE COUNTY OF CLACKAMAS AND STATE OF OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A STONE WHICH MARKS THE SOUTH ONE-QUARTER CORNER OF SAID SECTION 4; THENCE NORTH 00° 14' EAST, 1320.00 FEET ALONG THE EASTERLY RIGHT OF WAY LINE OF O. R. MACK ROAD TO A POINT; THENCE NORTH 89° 25' WEST, 33.00 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY OF SAID ROAD, SAID POINT BEING THE TRUE POINT OF BEGINNING OF THE HEREINAFTER DESCRIBED TRACT OF LAND; THENCE CONTINUING NORTH 89° 25' WEST PARALLEL TO THE E. D. RACKLEEF ROAD, 726.00 FEET; THENCE SOUTH 00° 14' WEST PARALLEL TO THE O. R. MACK ROAD, 330.00 FEET; THENCE NORTH 89° 25' WEST PARALLEL TO THE E. D. RACKLEEF ROAD 33.00 FEET; THENCE NORTH 00° 14' EAST PARALLEL TO THE O. R. MACK ROAD 674.35 FEET; THENCE SOUTH 89° 25' EAST 759.00 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF THE O. R. MACK ROAD; THENCE SOUTH 00° 14' WEST ALONG THE WESTERLY RIGHT OF WAY LINE OF SAID ROAD, 344.35 FEET TO THE TRUE POINT OF BEGINNING.

NOTE: This legal description was created prior to January 1, 2008.

Tax Parcel Number: 01002195

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE)

To Have and to Hold the same unto grantee and grantee's heirs, successors and assigns forever.

The true and actual consideration paid for this transfer, stated in terms of dollars, is $ -0- ① However, the actual consideration consists of or includes other property or value given or promised which is ☐ part of the ☐ the whole (indicate which) consideration.① (The sentence between the symbols ①, if not applicable, should be deleted. See ORS 93.030.)

In construing this deed, where the context so requires, the singular includes the plural, and all grammatical changes shall be made so that this deed shall apply equally to corporations and to individuals.

IN WITNESS WHEREOF, the grantor has executed this instrument on May 13, 2008; if grantor is a corporation, it has caused its name to be signed and its seal, if any, affixed by an officer or other person duly authorized to do so by order of its board of directors.

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. 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 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.

X Nadine J. Beck
NADINE J. BECK, Trustee

STATE OF OREGON, County of Clackamas) ss.

This instrument was acknowledged before me on _____,
by _____.

This instrument was acknowledged before me on May 13, 2008,
by NADINE J. BECK
as TRUSTEE
of BECK JOINT TRUST, Restated August 20, 2002.

OFFICIAL SEAL
DIANE MC COY
NOTARY PUBLIC - OREGON
COMMISSION NO. 392874
MY COMMISSION EXPIRES MAY 24, 2009

Diane Mc Coy
Notary Public for Oregon
My commission expires 5-24-09

PUBLISHER'S NOTE: If using this form to convey real property subject to ORS 92.027, include the required reference.

BARGAIN AND SALE DEED

JOHN WILSON BECK and NADINE J. BECK, GRANTORS, convey to JOHN WILSON BECK AND NADINE J. BECK, GRANTEES, Trustees (or any successor Trustee) under Trust Agreement dated March 31st, 1993, wherein GRANTORS are Trustors and Beneficiaries, the real property described on Exhibit A attached hereto located in Clackamas County, Oregon. Said real property is to be added to Schedule A-1 of the BECK JOINT TRUST.

The true consideration for this conveyance is $ None .

THIS INSTRUMENT WILL 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 APPROVED USES.

DATED this 31st day of March, 1993.

John Wilson Beck
JOHN WILSON BECK

Nadine J. Beck
NADINE J. BECK

STATE OF OREGON)
:ss. March 31st, 1993
County of Multnomah)

Personally appeared the above named JOHN WILSON BECK and NADINE J. BECK and acknowledged the foregoing instrument to be their voluntary act and deed.

Before me:

NOTARY PUBLIC STATE OF OREGON

Lisa E Pennington
Notary Public for Oregon
My commission expires: 4/20/93

Grantors' name and address:

John Wilson and Nadine J. Beck
P.O. Box 846
Canby, OR 97013

Grantee's name and address:

John Wilson and Nadine J. Beck, Co-Trustees
P.O. Box 846
Canby, OR 97013

After recording, return to:

Laurie R. Caldwell-Lee
300 Pioneer Tower, 888 S.W. 5th Ave
Portland, OR 97204

Until a change is requested, all tax statements shall be sent to:
NO CHANGE

93 34836

EXHIBIT A

Parcel I (1715 S. Fir Street, Canby, Oregon) R 41E 04C 01500

BEGINNING at a point 60 rods North and 2 rods West from the one-quarter section corner on the South boundary of Section 4 of T. 4 S., R. 1 E. of the W.M., running thence North and parallel with the line between East and West halves of Section 4 20 rods; thence North 89° 25' West, 44 rods; thence South 20 rods; thence South 89° 25' East 44 rods to the place of beginning in the County of Clackamas and State of Oregon.

Parcel II (6.25 acres adjacent to southerly property line of 1555 S. Fir, Canby, Oregon) R 41E 04C 01401

A tract of land located in the Southwest one-quarter of Section 4, T. 4 S., R. 1 E., of the W.M., in the County of Clackamas and State of Oregon, described as follows:

BEGINNING at a stone which marks the South one-quarter corner of said Section 4; thence North 00° 14' East, 1320.00 feet along the Easterly right of way line of O. R. Mack Road to a point; thence North 89° 25' West, 33.00 feet to a point on the Westerly right of way of said road, said point being the true point of beginning of the hereinafter described tract of land; thence continuing North 89° 25' West parallel to the E. D. Rackleef Road, 726.00 feet; thence South 00° 14' West parallel to the O. R. Mack Road, 330.00 feet; thence North 89° 25' West parallel to the E. D. Rackleef Road 33.00 feet; thence North 00° 14' East parallel to the O. R. Mack Road 674.35 feet; thence South 89° 25' East 759.00 feet to a point on the Westerly right of way line of the O. R. Mack Road; thence South 00° 14' West along the westerly right of way line of said road, 344.35 feet to the true point of beginning.

STATE OF OREGON
County of Clackamas } ss.

I, John Kauffman, County Clerk, for the County of Clackamas, do hereby certify that the instrument of writing was received for recording in the records of said county at

93 MAY 24 PM 3:09

Witness my hand and seal affixed

JOHN KAUFFMAN
County Clerk

Recording Certificate
ECP-64 (Rev. 6/91)

93 34836

Page 1 - EXHIBIT A

2

KNOW ALL MEN BY THESE PRESENTS, That .. ED HARNACK, a life estate, and LELA BELLE CARR, fee remainder,

hereinafter called the grantor, for the consideration hereinafter stated, to grantor paid by RODNEY J. BECK *, hereinafter called the grantee, does hereby grant, bargain, sell and convey unto the said grantee and grantee's heirs, successors and assigns, that certain real property, with the tenements, hereditaments and appurtenances thereunto belonging or appertaining, situated in the County of* Clackamas *and State of Oregon, described as follows, to-wit:*

See Exhibit "A" attached hereto and thereby made a part hereof.

C-16913 SAFECO TITLE INSURANCE COMPANY

(IF SPACE INSUFFICIENT, CONTINUE DESCRIPTION ON REVERSE SIDE)

To Have and to Hold the same unto the said grantee and grantee's heirs, successors and assigns forever.

And said grantor hereby covenants to and with said grantee and grantee's heirs, successors and assigns, that grantor is lawfully seized in fee simple of the above granted premises, free from all encumbrances

and that grantor will warrant and forever defend the said premises and every part and parcel thereof against the lawful claims and demands of all persons whomsoever, except those claiming under the above described encumbrances.

The true and actual consideration paid for this transfer, stated in terms of dollars, is $ 7,380.00 *. ~~However, the actual consideration consists of or includes other property or value given or promised which is~~ the whole part of the ~~consideration (indicate which).~~ (The sentence between the symbols, if not applicable, should be deleted. See ORS 93.030.)*

~~In~~ construing this deed and where the context so requires, the singular includes the plural and all grammatical changes shall be implied to make the provisions hereof apply equally to corporations and to individuals.

In Witness Whereof, the grantor has executed this instrument this 4th *day of* June *, 19* 76*; if a corporate grantor, it has caused its name to be signed and seal affixed by its officers, duly authorized thereto by order of its board of directors.*

(If executed by a corporation, affix corporate seal)

X Ed Harnack X

Lela B. Carr

STATE OF OREGON, County of Clackamas } ss.

June 4, 19 76

Personally appeared the above named Ed Harnack and Lela Belle Carr *and acknowledged the foregoing instrument to be* they *voluntary act and deed.*

(OFFICIAL SEAL) *Before me:* Margaret E. Smith

Notary Public for Oregon

My commission expires: 7-22-78

STATE OF OREGON, County of ....) ss.

............, 19......

Personally appeared .... *and* .... *who, being duly sworn, each for himself and not one for the other, did say that the former is the* .... *president and that the latter is the* .... *secretary of* .... *, a corporation, and that the seal affixed to the foregoing instrument is the corporate seal of said corporation and that said instrument was signed and sealed in behalf of said corporation by authority of its board of directors; and each of them acknowledged said instrument to be its voluntary act and deed.*

Before me: (OFFICIAL SEAL)

Notary Public for Oregon

My commission expires:

Ed Harnack and Lela Belle Carr

GRANTOR'S NAME AND ADDRESS

Rodney J. Beck

GRANTEE'S NAME AND ADDRESS

After recording return to:

Rodney J. Beck
P. O. Box 846
Canby, Oregon 97013

NAME, ADDRESS, ZIP

Until a change is requested all tax statements shall be sent to the following address.

Rodney J. Beck
P. O. Box 846
Canby, Oregon 97013

NAME, ADDRESS, ZIP

SPACE RESERVED FOR RECORDER'S USE

STATE OF OREGON, } ss.

County of ....

I certify that the within instrument was received for record on the ...... *day of* ......, 19......, *at* ...... *o'clock* ......*M., and recorded in book* ...... *on page* ...... *or as file/reel number* ......, *Record of Deeds of said county.*

Witness my hand and seal of County affixed.

.... *Recording Officer*

By .... *Deputy*

'76 18496

EXHIBIT "A"

DESCRIPTION

A part of the Southwest one-quarter of Section 4, Township 4 South, Range 1 East of the Willamette Meridian, in Clackamas County, Oregon, described as follows:

BEGINNING at an iron rod marking the Northeast corner of that tract of land conveyed to John W. Beck, et ux, by deed recorded August 17, 1970, as Recorder's Fee No. 70-16311, Clackamas County Records, which bears North 00° 14' West, 1,664.35 feet and North 89° 25' West, 33 feet from the South one-quarter corner of said Section, also being a point on the West right-of-way line of County Road No. 1288; thence North 89° 25' West, tracing the North line of said Beck tract, 759 feet to a point of intersection with the East line of that tract of land sold on contract to Dwayne L. Lingel, et ux, recorded August 9, 1971, in Book 590, Page 577, Clackamas County Deed Records; thence North 0° 14' East, tracing the East line of said Lingel tract and the East line of that tract of land conveyed to Robin A. Drews, et ux, by deed recorded September 12, 1963, in Book 628, Page 267, Clackamas County Deed Records, 257.70 feet to the Southwest corner of a tract of land conveyed to Rodney M. Pitts by instrument recorded October 18, 1961, in Book 594, Page 12, Clackamas County Deed Records; thence East, along the South line of said Pitts tract, 105.00 feet to the Southeast corner thereof, said point also being the Southwest corner of a tract of land conveyed to Mabel Yates by instrument recorded October 18, 1961, in Book 594, Page 13, Clackamas County Deed Records; thence East, along the South line of said Yates tract, 274.50 feet to a point; thence South 0° 14' West, parallel to the West line of County Road No. 1288, a distance of 232.70 feet, to a point which bears North 25 feet from the North line of the aforesaid Beck tract, when measured at right angles thereto; thence South 89° 25' East, parallel to said North line, 379.50 feet to a point of intersection with the West right-of-way of County Road No. 1288; thence South 0° 14' West, tracing said right-of-way, 25 feet to the point of beginning.

EXCEPTING therefrom the Easterly five feet of the premises herein described lying West of and adjacent to when measured at right angles thereto, the West line of County Road No. 1288.

STATE OF OREGON
County of Clackamas } ss.

I, George D. Poppen, County Clerk, Ex-Officio Recorder of Conveyances and Ex-Officio Clerk of the Circuit Court of the State of Oregon, for the County of Clackamas, do hereby certify that the within instrument of writing was received for and recorded in the records of said county at

76 JUN 4 P3:35

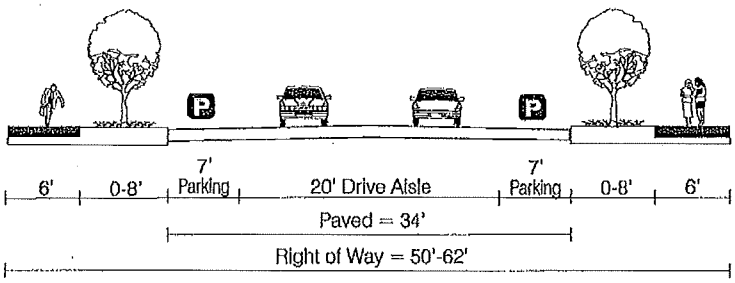
Witness my hand and seal affixed.
GEORGE D. POPPEN
County Clerk
Deputy.

Recording Certificate 76 18496

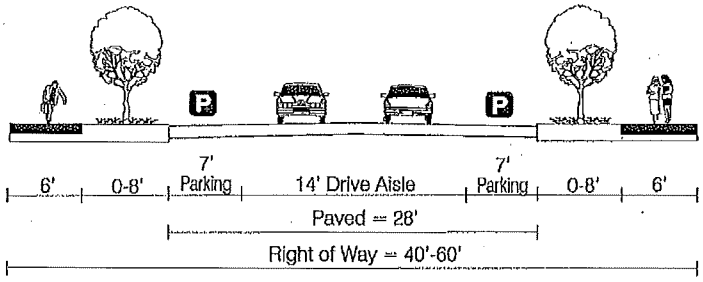
CCP—R4

2

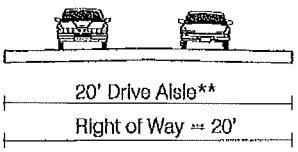
STANDARD LOCAL STREET



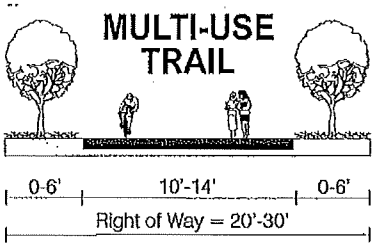
LOW-VOLUME LOCAL STREET (<500 Vehicles Per Day)



ALLEY



MULTI-USE TRAIL



Notes:
** On-Street Parking prohibited.

Low Impact Street Design Characteristics

Characteristic	Local
Drive Aisle	*14 ft.*
On-Street Parking	*7 ft.- Both sides required*
Bicycle Lanes (minimum)	*None*
Sidewalks (minimum)	*6 ft.*
Buffer/Planter Strip	*0-8 ft*
Turn Lane/Median	*None*
Neighborhood Traffic Management (NTM)	*Under Special Conditions*
Transit	*Should not be used*
Turn Lanes	*None*

"Low Impact" standards require demonstration of hardship, other exceptional circumstances resulting from conditions of the adjacent properties and must be approved by City Staff.

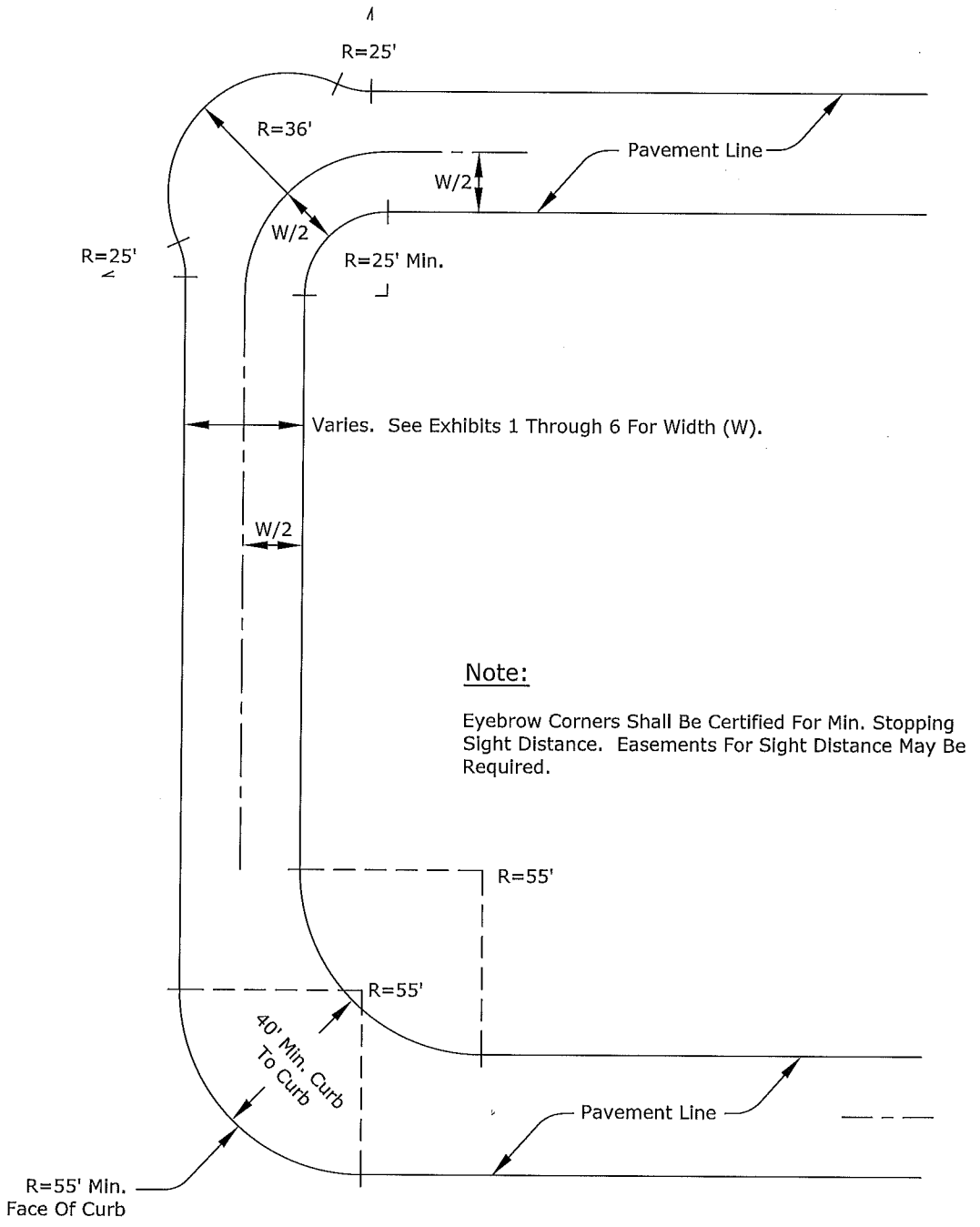
EXHIBIT 4

LEGEND

P - On-street Parking Lane (except at intersections)

Figure 7-6

LOCAL STREET/ALLEY: STANDARD CROSS-SECTIONS



WASHINGTON COUNTY DEPARTMENT OF LAND USE & TRANSPORTATION ENGINEERING SECTION	EYEBROW - CORNER	
PLOT STAMP: 02/24/11 5:23P KELLYE CAD: 2220.DWG	EFFECTIVE DATE: 3/18/2011	WASH. CO. # 2220

Pre-Application Meeting

Beck Pond Subdivision
March 1, 2018
10:30 am

Attended by:

Hassan Ibrahim, Curran-McLeod Engineering, 503-684-3478
Doug Quan, Canby Utility, Water Department, 971-563-6314
Jordan Marlia, Sisul Engineering, 503-657-0188
Jerry Nelzen, Public Works Department, 971-253-9173
Levi Levasa, Stafford Development, 503-250-3651
Bryan Brown, Planning Department, 503-266-0702
Chris Kittredge, Kittredge Engineers, 503-708-3942
Ryan O'Brien, Stafford Development, 503-780-4061
Jennifer Cline, Public Works Department, 503-266-0780
Gordon Root, Stafford Development, 503-720-0914
Gary Stockwell, Canby Utility, Electric Dept, 503-263-4307

This document is for preliminary use only and is not a contractual document.

STAFFORD DEVELOPMENT, Ryan O'Brien

- The plans we brought today have changed as of yesterday and we outlined the plan around the Stanke property. The Stanke's have pulled out of the development and have requested no street stubs to their property.
- We have two major accesses from S Fir Street adjacent to Hope Village and off of S Elm Street. This plan was approved by the City of Canby's Planning Commission and reviewed by the City of Canby Council. This development concept plan has a goal for an east/west street to get to S Elm Street to take any pressure off of S Fir Street. The property owner (tax lot 1400) discussed having a cul-de-sac on their property and we showed how they wanted to develop. We originally had a street stub going through this property, but the property owner's said they would oppose it, so we did this looping system.
- We have the pedestrian access going through to the local pocket park.
- We have assumed since S Elm Street is fully improved there would be no street improvements required.
- Our issue is we received the letter from Clackamas County wanting a smaller street improvement on S Fir Street and we want to verify with you on this issue because we are ready to finalize our preliminary plat. Jennifer asked what did Clackamas County require and Ryan stated they wanted a 32 ft paved area and we were proposing 36 ft and Clackamas County wanted a 54 ft right-of-way (ROW) with 32 ft paved and the city requires 34 ft pavement. Jennifer said it was my understanding the city would be taking the jurisdiction of S Fir Street and Ryan said he did not know, we just want to know who takes precedence. We were planning on doing a 58 ft ROW with a 34 ft pavement to keep the sidewalks inside the ROW, so if you can give us direction that would be great.
- We have an R-1 and R-1.5 zones. We would like to discuss some issues with property lines and zone lines.

EXHIBIT 5

CANBY UTILITY, ELECTRIC DEPARTMENT, Gary Stockwell

- All of these discussions we are having about the changing of the preliminary plans change all of our plans. I cannot put a design in place until you have a design in place. The phasing in this development will be important because of the street improvements and the requirements of putting the overhead lines underground on S Fir Street. If you piece meal this kind of phasing, it limits me on how we can effectively serve your project and you will need to keep it in mind.
- Once again, I will need to know the layout for the street lighting and making sure we get adequate lumination throughout the subdivision.
- Multi-family versus single family is another indicator on how we place and size the equipment.
- There are overhead existing line utilities to the west serving tax lot 1602 as well as the existing homes. In the phasing process the question is when does it go away or do we modify it for underground and again once you have a design in place we can answer those questions.
- On phase 1 we have some conduits in a joint trench with DirectLink and ours are not continuous they break right in the middle because we did not have an easement, we were utilizing DirectLink's easement. We do have an existing underground direct bury service to the existing home with a transformer and depending on your phasing it will need to be relocated and temporarily placed if you plan on keeping the home. Gordon stated they will be keeping the home. Gary said the source is running through the middle of the lots, is that about where you figure it? The answer was yes. Gary said with the phasing and trying to replace, move and get out of the way for the other phasing will be creative on both our parts. Gordon asked if Gary would like to have the existing house be included in phase 1 and Gary said getting the road improvements done in phase 1 of the project is good and we can make some sort of accommodation to the existing house. If I can make a suggestion, if you put in the street it would give you a nice street with lighting for your project and Gordon said you are talking about S Fir Street and Gary said correct and other than the existing house back here, I think we can accommodate most of the other issues easily.
- We require a 12 ft front easements and do not require side easements, however with the 12 ft easement and a 6 ft of sidewalk we start to running out of room for our utilities. Chris said we normally have sidewalks back of the PUE and Gary said in the event of conflicts we have done bump outs at property lines to accommodate vaults and I want to make sure it was understood. Ryan said you need a 12 ft PUE and Gary said yes.

DIRECTLINK, Dinh Vu

- We are a communication service and usually for all the new developments the contractor/developer provides the utility trench and we provide everything for us. But in this case, we have a major main line with (3) 4 inch conduits and I believe 1,200 pairs of copper and 336 fiber lines going through this area feeding Village on the Loch. I sent you a map via email and I am hoping it will go through the back of the property lines of all of the proposed housing and it looks like it will not work. If this cannot work and we have to relocate all of these services, I will have to sit down with the chief engineer and workout a price to move it to the new roadway. I do not know at this time on how much it will cost, but we will come

up with a cost and present it to you and Ryan asked if the developer will have to pay for it. Dinh said you will help in part of the movement of the utilities and I do not know what the cost will be yet. I will have Eric contact you on the cost.

CURRAN-MCLEOD ENGINEERING, Hassan Ibrahim

- We have checked on the capacity at the waste water treatment plant and we have enough capacity. It looks like you are going towards S Elm Street for the sanitary sewer and Ryan said yes. The sanitary sewer public main lines are a minimum of 8 inch size, .4% as per Department of Environmental Quality (DEQ). The sewer lateral shall be 6 inch, 1% minimum with a cleanout somewhere in the sidewalk and from the cleanout to the residence is the responsibility of the property owner to maintain.
- I did not see any storm drainage and Ryan said they do not have it yet. Hassan asked if they were going to go with drywells and Ryan said we met with Jordan, Sisul Engineering yesterday and they gave us all the information regarding Canby's storm system. Hassan asked if they were going to go to the pond and they said it was an option and Jerry said you will be getting a geo-tech and the answer was yes. Ryan said the problem we have is there are wells in the area and our plan limits us on where we can put the drywells. Hassan said as long as you have enough of the storm drainage conveyance system outside the 267 ft radius and Ryan said the other problem is the geo-tech may say we cannot put drywells on these lots because they are too close to the bank and we do not know yet. Our other option was to put a private storm/sewer line and dump it out this way to the pond and Hassan said we will need to look at it. Ryan said we hired Sisul Engineering to help us and Chris Kittredge of Kittredge Engineers will do the final engineering.
- As far as transportation goes I brought an agreement between Clackamas County and the City of Canby. It states once an annexation occurs the city will negotiate with the county on taking over the county roads. Jennifer said the person from the county who sent the email may not be aware we are going to take the road and Bryan said you will need to talk to Rick Robinson on S Fir Street because he is entertaining taking it over, but I do not know where he is in the process and Jerry said he is in the middle of it. Hassan said we own part of S Fir Street from SW 13th Avenue approximately 150 to 200 ft south and from there to the river is county's jurisdiction and Bryan said in front of this proposed site it is a county road and Hassan concurred. Ryan asked if this part of the road was part of the annexation and the answer was yes and Ryan asked if it changed the jurisdiction and Bryan said not automatically there is a process and in the urban growth management agreement it talks about the city taking over local streets when they are annexed. In all the past years no one has been honoring the urban growth boundary area and technically it states we are supposed to take the local street. Jennifer said we can discuss it with the county on meeting our city standards for roads and Jennifer said we can follow up on this and get back to you on the decision. Gordon said it is only 2 ft and we can work with each other and we are perfectly willing to build the road to city standards. Hassan said you will have to build at least 20 ft minimum and Ryan said two-thirds of a street and the answer was correct.
- Are you planning on tying into S Elm Street and they answer was yes.
- It looks like you have met the curve radii, 165 ft for local streets.

- I see on your plans you have 28 ft streets and just a reminder you can only park on one side. Bryan said we have a disconnect between our city ordinances and the Public Works Design Standards. We have a city ordinance that states it is restricted to one side only, but then you have the Public Works Design Standards which adopted the Transportation System Plan (TSP) cross section and it reads on a low volume street you can have parking on both sides, but we have not allowed that for several years. We have not had a chance to correct the Public Works Design Standards and change the TSP. Ryan said we will have to decide on what we want to do and we like the 28 ft to make it a close-knit neighborhood and Hassan said people like to have parking in front of their homes.
- We need at least a 25 ft tangent at the intersection from the face curb and the angle should not exceed 75 degrees and Ryan said we are at 90 degrees. Ryan said we used the Washington County standards to achieve the 15 ft setback and Hassan said our standards say on an elbow or eyebrow the curb has to be 48 ft. Ryan asked if there were any modifications to the standards. Discuss ensued.
- Is this a private sewer on the back of these properties and Ryan said no, it is public and on these plans it is showing the existing sewer and this is the proposed sewer and Jennifer said she would like to see the profiles. Ryan said you would have to raise the street by 2.7 ft and Gordon said this is our solution and these utilities plans were accepted with the concept plan. We are going to build a driveway here for you to maintain the sewer manhole and build it to access standards. Hassan asked when fences were installed over the sewer main and Ryan said we can put in a gate and I see a problem for us to raise the street 2.7 ft. Jerry said no, we have a problem with it entirely and Jennifer stated you have land locked a public sewer main and if we have to dig it out we would be digging fence lines and landscaping. Ryan said if this is an issue we could do a sewer line here and put private laterals back to the lots. Jerry said as long as it is all private it is a whole different issue. Ryan said we planned on raising this area up 2.5 ft to the grades out to the street and we will be able to get a gravity feed and Hassan said as long as you terminate it with a cleanout and from there on will be private. Ryan said you want the cleanout in the sidewalk and the answer was yes. Jennifer said you will need to disclose to the future property owners where the utility easements are for each property affected.
- Jennifer asked on these plans you are doing phases and would you be doing the city's infrastructure with phase 1 and/or would you be stubbing the streets? The answer was we would stub the streets.
- Ryan said we know there are wells in this area and Gordon said there is a well that serves the Beck's property and Ryan said it will be decommissioned. This is the area where we can do the drywells and I heard the city has a map that shows all the drywells in the city and I would like a copy to verify where the wells are on the entire site. Jerry said we have a map in our Public Works office area and you can use your phone and take a picture of the section. Ryan said he thinks this has adequate room to put the drywells in and Hassan said you can pipe it also by building a conveyance system. Ryan said you have a requirement to have the storm on site and Hassan said yes and just a reminder you cannot put any private stormwater into our public stormwater. Jerry asked if they will be maintaining the pond and the answer was they did not know yet. Jerry said you will need to determine it because it drains into the creek, which goes through a culvert under our road. Gordon said he would like to give the

pond to the parks department and the answer was no. Discussion ensued on private on-site storm for the lots next to the bluff and waiting for the geo-tech's report. Jerry wanted to know who is maintaining the culvert under the roadway because it gets dammed up by beavers and we need to have access to it for maintenance. Gordon said we will figure out a way for Public Works to have access and we will do on-site infiltration for each property, do drywells for the public stormwater, which will be outside the radii of the drinking wells. If you need an easement we will give you one for the maintenance of the culvert and Hassan said when you do a survey it will let us know where the culvert lies on which property and go from there.

PUBLIC WORKS DEPARTMENT, Jennifer Cline

- You are planning on giving us an update to all we have discussed here, drywells, stormwater system, street, storm and sewer profiles and cross sections of the streets. If you want acceptance to get your grading permit, I will need to see all of them. Gordon said this is our pre-application preliminary application to get the subdivision approval, but you need to understand we will incorporate all the comments in here and after we have our subdivision application approved and then we will come in for our engineering plans and that is when we will have all the details complete. Bryan said we need to make sure we come to an agreement on the preliminary concept of how you are dealing with drainage, come to an agreement to have access to the culvert for maintenance purposes and move the city sewer main from the backyards to the city's ROW. If that is appropriate you can move forward with the preliminary plat and we can feel confident that they will work out the final details in the constructions plans after the preliminary plat is approved. Ryan said do you want 34 ft ROW on S Fir and basically on all of our streets and Jennifer and Bryan will work this out. Bryan said you might have problems with the planning commission with 28 ft wide streets and they will know there will be limited parking to one side of the street and we have had a lot of protests from neighbors because there will not be enough parking and they will spill out on S Fir Street.
- Ryan asked what size of sidewalks do you want and Bryan said we have been doing 6 ft sidewalks with a 4-1/2 ft planter strip as our new standard. Jennifer asked if the planters were mandatory and Bryan said they are optional and Ryan said we can go with curb tight sidewalks. Jennifer said only if you are trying to preserve front yards and Gary said do not forget about utility easements in the front. Bryan said if you use a low volume street standard then we can potentially entertain curb tight sidewalks, but that is not what we want, we prefer planter strips. Hassan said from the face of the curb the planter strip is 5 ft to the front of the walk.
- Hassan stated when we take over a street from the county, the agreement we have is the road has to be to our city standards. Bryan said to our knowledge this was the only street that was evaluated and was satisfied with the majority of S Fir Street being built to city standards and Hassan said most of it is from Hope Village down to SW 13th Avenue and everything up towards the river is not.

CANBY UTILITY, WATER DEPARTMENT, Doug Quan

- On SW 16th Avenue between S Elm and S Fir Streets we will be asking for a 10 inch water line to connect to those two streets. We will require 8 inch water lines on all the other streets and on S Fir Street will be a 12 inch line.
- An automatic blow off station will be located at dead ends. The automatic blow off will be going to the stormwater system and be equipped with a dechlorination unit. Jerry said we will need to see the stormwater flow rates to see if they will accommodate the blow off unit's discharge.
- In phase 1 you have two stubs off an 8 inch main line and if those lots were not in play you would not need to place blow offs here and here, but if these stubs are not in play with services we can close the gate valve off. Ryan asked if they moved the services from here to here and placed the dead end here with the gate turned off will that work. Doug said as long as there are no active services off of this section and these two lots are off of SW 16th Avenue and you connect to it in phase 2 these lots can get services and you do not have to do a blow off stations.
- We will do the fire hydrants and put them at the proper spacing.

CITY OF CANBY, PLANNING DEPARTMENT, Bryan Brown

- Question #2 is about the percent of lots above or below and my advice to you is try to modify your lots in the lower percentage rather than 35% and reduce it to 10% and Ryan said it makes it worse because we have these 44 ft wide lots and they are all over 6,500 sq ft due to this extra area here. Are they more concerned with lots below the 5,000 sq ft as opposed to have lots larger than 6,500 sq ft? Bryan said the issue is affordable housing in Canby and even though they talk about it, we are not there yet. People do not want dense housing and they do not like small lots and you will need to have good reasons not meeting the standards. We do allow you the flexibility with lot averaging so you can have some under and over. I would say you better not press too much beyond the 10% allowed by the code for less than 5,000 sq ft. The bigger lots are not the problem it is the smaller ones. Ryan asked if they could take the R-1 and R-1.5 zones together so we can take the entire 70 lots. Bryan said that gets confusing because the lot sizes you are going outside of the boundary and are completely different. Ryan said you want 10% from each zone and Bryan stated you will have to separate them.
- You had a string of lots that were less than the required 60 ft frontage, lots 19, 27 and 43 are probably okay to be less, but 23, 24 and 40 are questionable because why can you not do the normal width standard since you are not on an eyebrow because if you are on an eyebrow you do not have to meet the minimum lot frontage and also if you are a flag lot it is 20 ft. The others, unless the lot is really weird shaped or on a curve which is really significant then yes you can argue on those. Ryan said we placed a pedestrian path between 23 and 40 and Bryan said you can potentially argue that factor, but the main issue is can you demonstrate adequate access to the individual home lots without meeting the normal frontage requirement. If you press too many of them without the obvious reasons then they will say you are just making the lots smaller. Ryan said the frontage issue is a code requirement and Bryan stated is does give the planning commission flexibility.

- Ryan asked about the 590 ft block length on SW 16th Avenue between S Fir to S G Streets and Bryan said you are thinking now of doing this updated version and the answer was yes. Bryan said our ordinance reads if it is 600 ft or more you have to put in a pedestrian easement and Ryan said we are 10 ft less than it. Jennifer asked what the standard for intersections was and Bryan said 150 ft minimum and 600 ft maximum. Jennifer asked what the intersection difference between SW 15th and SW 16th Avenues and Ryan stated 250 ft.

STAFFORD
LAND COMPANY
INC

March 14, 2018

RE: SW Canby Subdivision Proposal

Dear Neighbor,

We would like to invite you to a neighborhood meeting to discuss our proposed project on property located between S Elm Street and S Fir Street, and generally west/southwest of Hope Village. A concept plan for the proposed property is on the back side of this letter.

This meeting will be informative and allow you the opportunity to raise concerns and ask questions about the proposed project. We hope you will be able to join us at the location and time listed below.

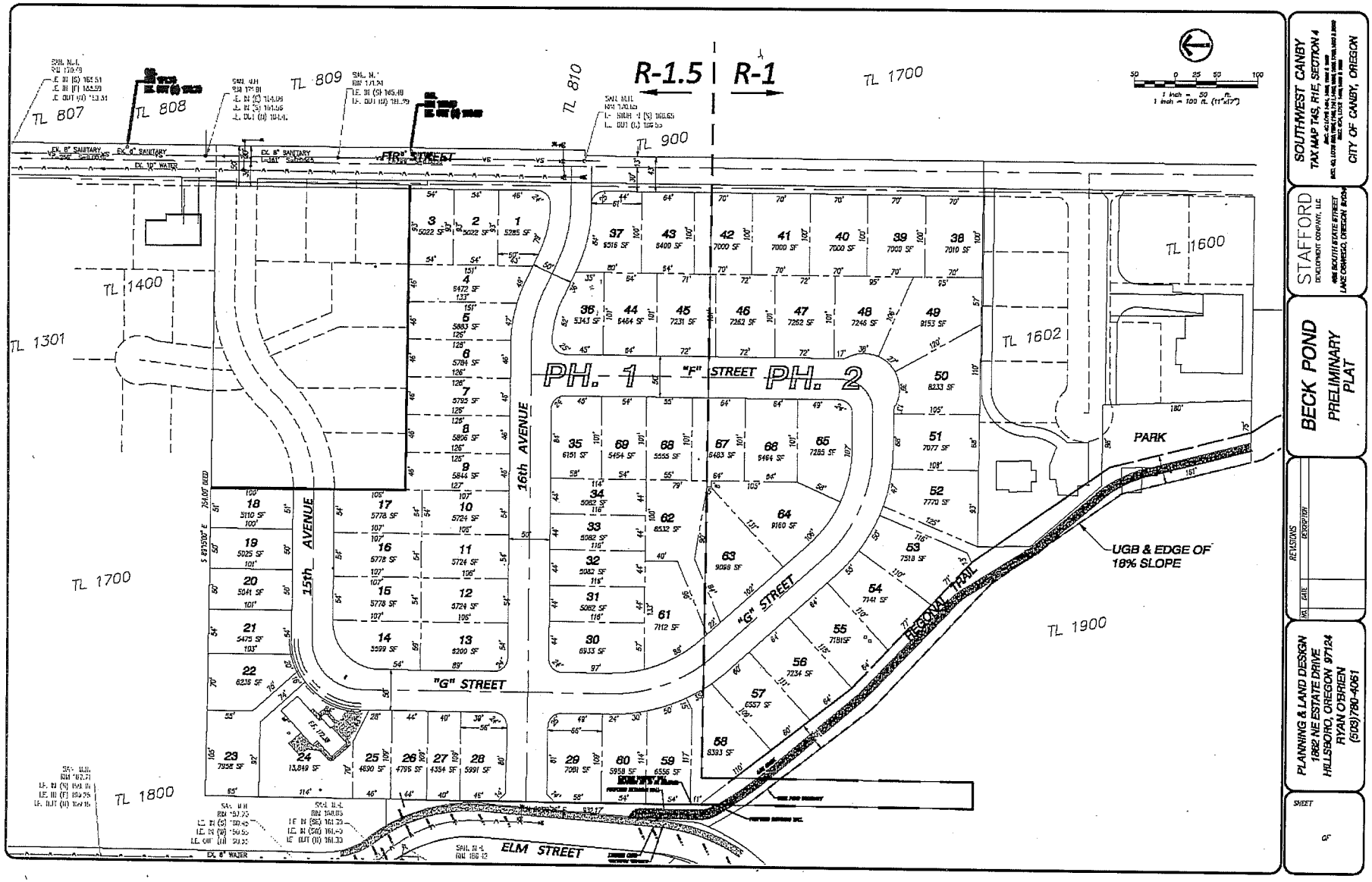
Meeting Location:	**Canby Adult Center** **1250 S Ivy Street** **Canby, OR 97013**
Meeting Date & Time:	**Thursday, March 29, 2018 from 7:30pm – 8:30pm**

Please feel free to call or email me with any questions or comments if you are unable to attend this meeting.

Sincerely,

Levi Levasa - Project Manager
Email: Levi@staffordlandcompany.com
Phone: 971.206.8614

EXHIBIT 6



SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
CITY OF CANBY, OREGON

STAFFORD DEVELOPMENT COMPANY, LLC

BECK POND
PRELIMINARY PLAT

REVISIONS
NO. DATE DESCRIPTION

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET
OF

Beck Pond Neighborhood Meeting

A Neighborhood meeting was head for 7:30 pm to 8:30 pm on 3/29/18 at the Canby Adult Center at 1250 S. Ivy Street in Canby. The meeting was conducted by Levi Levasa, Project manager at Stafford Development Company. Josh McDonald with Stafford Development Company took the meeting notes and Ryan O'Brien with Planning & Land Design answered questions from the residents that attended the meeting. The meeting was attend by 17 neighbors from the area. Notice of the neighborhood meeting was sent to all property owners and renters or occupants in that live in houses owned by an absentee property owner. This included all residents of Hope Village and the surrounding mobile home parks. A radius map is included with this Exhibit 5 showing the notification area.

Levi Levasa presented background information about Stafford Development Company **(SDC).** He said SDC recently built 2 smaller subdivisions in the City of Canby. SDC will be constructing the subdivision and building the houses. Levi discussed building "Zero Ready" high efficiency homes that are ready for installation of solar and geothermal power. The SW Canby Development Concept Plan (DCP) was adopted by the City Council in February 2018 which included the McMartin Farm property south of Hope Village. The Master Plan only shows how property in the Master Plan could potentially develop. The DCP is binding, but the City Council said lot lines and roads can be adjusted in the future provided the adjustments comply with the intent of the DCP. One example of a change is the road alignment for the Steinke property.

Levi mentioned the lots range from 4,400 sf to over 9,000 sf. The width of the lots range form 40 feet to over 70 feet. This will create a variety of house sizes and prices. No improvements to Elm Street are proposed because Elm Street is already fully improved. Fir street will have a ¾ street improvement. The pavement will be widened to 24 feet. A half street improvement is 17 feet from centerline. 16th Avenue will be built with the first phase to create a link between Fir and Elm Streets, since Fir street has no public street outlet.

The Beck Pond property is the only site with available gravity sanitary sewer from Elm Street. The remaining property in the DCP to the south of Beck Pond and between Fir and Ivy Streets need a sanitary sewer pump station. A Geotech engineer started soil tests on 3-28-18 to determine the capability of the soil for the dry wells. All other utilities and services are available to the site. The following are questions from the neighbors at the meeting.

Question: Does the Elm Street sanitary sewer line have adequate capacity and what is the flow direction? If the sanitary sewer line needs to be upgraded, who will pay for it? The existing Elm Street sanitary sewer line stinks during the summer. This sewer line is located just north of the proposed 16th Avenue and Elm Street intersection.

Answer: If the sewer line needs to be upgraded, SDC will pay the upgrade cost. The city indicated adequate sanitary sewer capacity is available for the Beck Pond Subdivision. Ryan indicated the sewer line that stinks will be investigated by the city. There is a possibility the sewer

line has a low spot that does not drain which causes stagnation and the smell. This can be determined with a video camera inspection of the sewer line.

Question: Will Fir Street be widened? Will the street improvement have any effect on Hope Village? Will the street improvement extend into the private driveway at the south end of the Fir Street right-of-way?

Answer: Fir Street will be widened to 24 feet along the Beck Pond street frontage starting from the existing Hope Village street improvement. The Fir Street improvement to the north along the Beck Pond street frontage will be 17 feet from centerline to create a full street improvement because Hope Village already has half street improvements.

Question: How will air and road quality be maintained? SDC should construct a full improvement for Fir Street rather than a half street? How many phases are proposed and when will construction start? Will the Fir Street improvement occur in Phases?

Answer: Levi indicated air quality will be controlled by water trucks and erosion control. Truck drivers will be carful to stay on the paved road surface and not cross over the unpaved surfaces in the public right-of- way. Ryan discussed the ¾ street improvement with a minimum of 24 feet of pavement When the McMartin property developed, the remaining portion of Fir Street will be constructed south of Hope Village. SDC is only required to construct the Fir Street improvements along the frontage of the Beck Pond subdivision. Two phases are proposed. Phase 1 is the northern phase. Construction will start in the summer of 2018. Phase 2 is the southern portion and construction will start in the summer of 2019. The portion of Fir Street along Phase 1 will be constructed with the Phase 1. The remaining portion of Fir Street will be constructed with Phase 2.

Question: Who maintains drywells? Currently drywells on Fir Street overflow when it rains? Where does the water go from the Beck Pond subdivision during overflow situations?

Answer: The dry wells are maintained by the city. The designs of the dry wells ae dictated by the city and the geotech engineer. All the drainage from the site flows in a westerly direction via 16th Avenue to Elm Street and not Fir Street. If the drywells overflow, storm water will exit into Elm Street and then flow into the Molalla River flood plain south of Elm Street.

Question: The neighbors complained about increased traffic and the danger of current traffic levels? Will construction traffic only use Fir Street? How will Construction Traffic Move? How will trucks get around yellow walk ways? Will SDC notify everyone about construction traffic? The 24-hour elderly care facilities need extra care along Elm Street during construction.

Answer: Levi indicated they will notify residents before construction traffic starts and he would talk to the truck driver about neighborhood traffic concerns. Both Fri and Elm Street will probably be used for construction traffic.

Question: Explain the subdivision review process. Will the neighbors be noticed about any updated maps?

Answer: The first step in the subdivision application process is the neighborhood meeting. The second step is submittal of the subdivision application to the city. The third step is Notification of a Planning Commission public hearing. The notice will be sent to all the property owners and house occupants within 500 feet of the Beck Pond Subdivision property. The final step is the Planning Commission Public Hearing. The complete application submitted by SDC and city staff reports will be available on the city web site 7 days before the Planning Commission public hearing.

Question: What is the price range of the houses? Are they $350,000 to $400,000? The medium house price in Canby is currently $318,000.

Answer: The houses prices will vary significantly. The goal of the first phase is to build smaller lots and smaller houses to meet the demand for affordable housing. The price of the new house will be above the $318,000 medium price of existing homes in Canby.

Question: Will SDC pay School Construction Excess Tax fees? What is the fee per house? Where is the location of the park? Who owns the pond area outside UGB and what is the acreage? What will happen with the pond property. Is the pond filled by water coming from Canby Park?

Answer: SDC will pay School Construction Excess Tax fees with the building permit for each house. Levi was not sure about the fee amount. A small Pocket Park is located at the south end of the property at the end of the Emerald Necklace Regional Trail. This trail starts at Elm Street and temporally ends at the Pocket Park. Levi indicated the trial will continue in the future to Ivy Street. Trail property will be dedicated as each property develops in the future. The city did not want any more park property from the Beck Pond subdivision. However, Levi is hoping the city will consider the 3.5-acre pond property as a public park even though the property is outside of the UGB and the city limits. This pond property is located directly south of the Beck Pond subdivision. The pond property will remain in SDC ownership or transferred to the Beck

Pond HOA if one is formed. Levi did not know how the pond is filled with water. Additional Public Park dedication will occur with McMartin property between Fir and Ivy Streets along the Molalla River bluff.

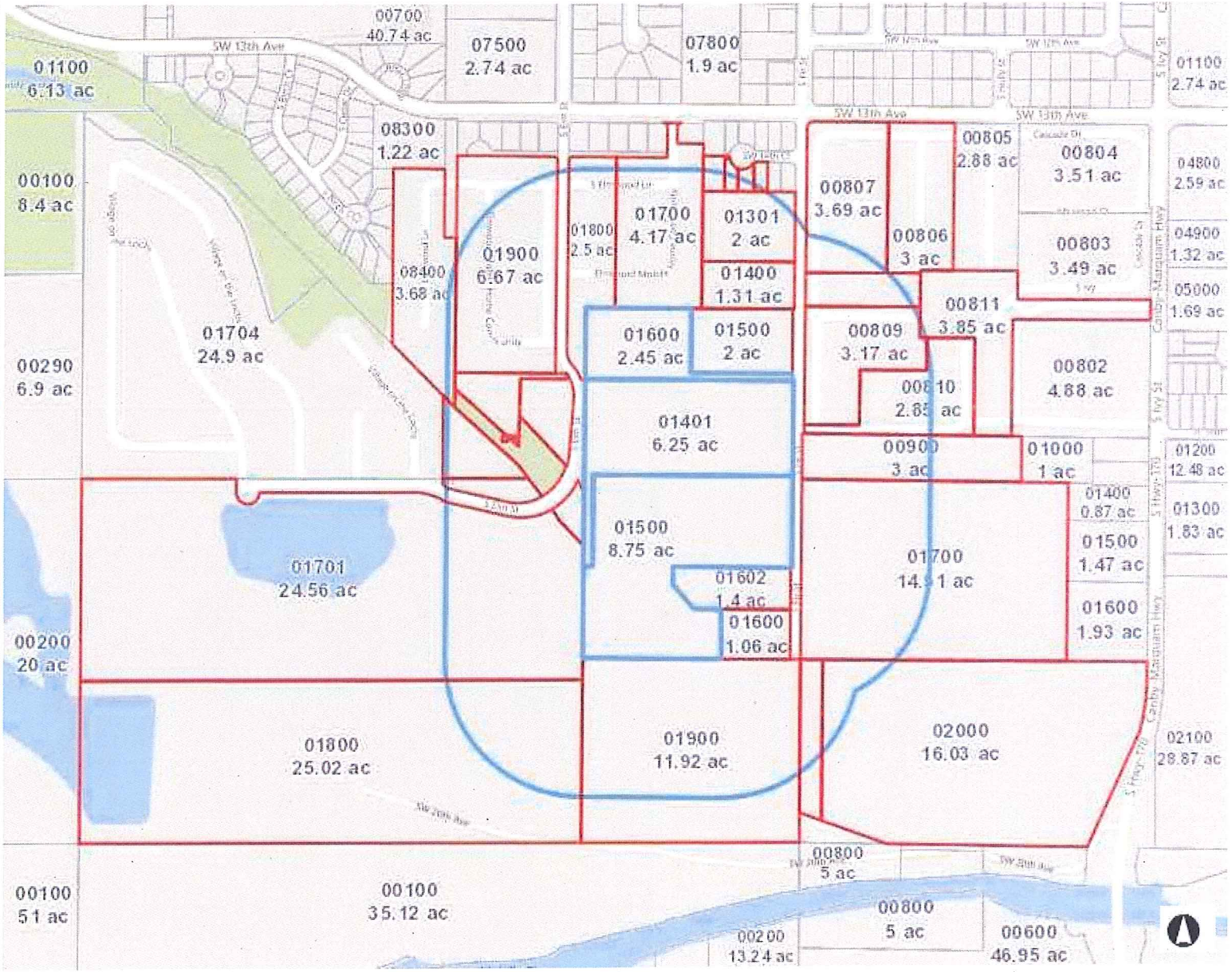
Question: Will all the infrastructure be constructed at one time? Will the city require SDC to develop all of Fir Street one time or in phases? There will be HOA?

Answer: Only the infrastructure in each phase will be built. Only the portion of Fir Street adjacent to each phase will be built with that phase. A HOA **may** or **may not** be formed depending if the HOA has maintenance responsibilities and/or owns land needing maintenance.

Question & Announcement: How can we get added to the list if we don't live within 500 ft? Nadine Beck passed away recently.

Answer: We will add you from the sign in list for this meeting.

500' Buffer - 41E04CA 1600, 41E04C 1401 and 1500



First American Title™

Subject

Radius

Radius Properties

3/5/2018

Notes

0.3 0 0.14 0.3 Miles

EXHIBIT 7

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project Name: Beck Pond Subdivision	**Subject Properties:** Tax Lots: 41E04CA01600, 41E04C01401, & 41E04C01500
Meeting Location: Canby Adult Center, 1250 S Ivy St, Canby, OR 97013	**Meeting Date & Time:** March 29, 2018 at 7:30 PM PST

PUBLIC RECORDS LAW DISCLOSURE: This sign-in sheet is a public record of the City of Canby and is subject to public disclosure under Oregon Public Records Law.

NAME	MAILING ADDRESS	E-MAIL ADDRESS	PHONE NUMBER
Nancy Wilmes	1495 S. Fir St	nanwilmes@aol.com	503 266-9500 (503 740-4276)
Stephanie Boyce	1055 S Elm St #333	sfboyce3@gmail.com	
Jackie Jones	482 SW 13th Ave. Canby	jacajones@msn.com	5037843796
Ed Netter	1847 S Fir st.	netterhomes@hotmail.com	503-314-8381
Angela Baker	1777 S. Fir St	funnyfarm@ canke	503) 995-3299
Justin Sorum	" "	Jusorum91@Yahoo.com	5033816270
JOE FREEMAN	1441 S IVY #303 CANBY		
Gail Freeman	" " " "		
Judie STONE	405 sw Pacific Crest Dr. Canby		5032630296
DON STONE	" " "		"
ROGER STEINKE	1547 S FIR ST CANBY		

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project Name: Beck Pond Subdivision	**Subject Properties:** Tax Lots: 41E04CA01600, 41E04C01401, & 41E04C01500
Meeting Location: Canby Adult Center, 1250 S Ivy St, Canby, OR 97013	**Meeting Date & Time:** March 29, 2018 at 7:30 PM PST

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NAME	MAILING ADDRESS	E-MAIL ADDRESS	PHONE NUMBER
Tom Rushton	1441 S. Ivy St #906 Canby Or		503 266 9060
Julie Rushton	" "		"
Fermin Martinez	939. S. Fir St.		503-313 2073
DeAnna Ball-Karb	1238 S. Cedar Loop, Canby OR. 97013	dfball0617@yahoo.com	503-984-9[illegible]
Kay Parish	1555 S Ivy St Canby On 97013		

Owner Name	Mail City	Address 1	Address 2	Mail State	Mail Zip
Resident	Canby	1546 S Ivy St.	Unit 100	OR	97013
Resident	Canby	1546 S Ivy St.	Unit 101	OR	97013
Resident	Canby	1546 S Ivy St.	Unit 102	OR	97013
Resident	Canby	1546 S Ivy St.	Unit 103	OR	97013
Resident	Canby	1546 S Ivy St.	Unit 104	OR	97013
Resident	Canby	1546 S Ivy St.	Unit 105	OR	97013
Resident	Canby	1546 S Ivy St.	Unit 106	OR	97013
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Resident	Canby	1400 S Elm St	Unit 83	OR	97013
Resident	Canby	1400 S Elm St	Unit 84	OR	97013
Resident	Canby	1400 S Elm St	Unit 85	OR	97013
Resident	Canby	1400 S Elm St	Unit 86	OR	97013
Resident	Canby	1400 S Elm St	Unit 87	OR	97013
Resident	Canby	1400 S Elm St	Unit 88	OR	97013
Resident	Canby	1400 S Elm St	Unit 89	OR	97013
Resident	Canby	1400 S Elm St	Unit 90	OR	97013
Resident	Canby	1400 S Elm St	Unit 91	OR	97013
Resident	Canby	1400 S Elm St	Unit 92	OR	97013
Resident	Canby	1400 S Elm St	Unit 93	OR	97013
Resident	Canby	1400 S Elm St	Unit 94	OR	97013
Resident	Canby	1400 S Elm St	Unit 95	OR	97013
Resident	Canby	1400 S Elm St	Unit 96	OR	97013
Resident	Canby	1400 S Elm St	Unit 97	OR	97013
Resident	Canby	1400 S Elm St	Unit 98	OR	97013
Resident	Canby	1400 S Elm St	Unit 99	OR	97013

Resident	Canby	1400 S Elm St	Unit 100	OR	97013
Resident	Canby	1400 S Elm St	Unit 101	OR	97013
Resident	Canby	1400 S Elm St	Unit 102	OR	97013
Resident	Canby	1400 S Elm St	Unit 103	OR	97013
Resident	Canby	1400 S Elm St	Unit 104	OR	97013
Resident	Canby	1400 S Elm St	Unit 105	OR	97013
Resident	Canby	1400 S Elm St	Unit 106	OR	97013
Resident	Canby	1400 S Elm St	Unit 107	OR	97013
Resident	Canby	1400 S Elm St	Unit 108	OR	97013
Resident	Canby	1400 S Elm St	Unit 109	OR	97013
Resident	Canby	1400 S Elm St	Unit 110	OR	97013
Resident	Canby	1400 S Elm St	Unit 111	OR	97013
Resident	Canby	1400 S Elm St	Unit 112	OR	97013
City Of Canby	Canby	182 N Holly St		OR	97013
Gordon Pearson	Canby	1625 S Elm St		OR	97013
City Of Canby	Canby	182 N Holly St		OR	97013
Bill & Betty Onst	Roseburg	3070 Slope St		OR	97470
Village On The L	Irvine	18006 Sky Park Cir		CA	92614
Rodney & Carol	Canby	1555 S Fir St		OR	97013
Beck Nadine J (T	Canby	1715 S Fir St		OR	97013
Ed & Alissa Nett	Canby	1847 S Fir St		OR	97013
Eric & Angela So	Hubbard	31499 S Barlow Rd		OR	97032
Merry Widow Lt	Irvine	18006 Sky Park Cir STE 200		CA	92614
David Bernert	West Linn	4131 Imperial Dr		OR	97068
Canby Sand & G	Canby	24370 S Highway 99e		OR	97013
Thomas & Erika	Canby	1893 S Fir St		OR	97013
Merry Widow Lf	Irvine	18006 Sky Park Cir STE 200		CA	92614
S T J 1 Llc	Canby	130 SW 2nd Ave STE 103		OR	97013
Susan Graper	Cashmere	7168 Olalla Canyon Rd		WA	98815
Lynn Bloomfield	Canby	435 SW 14th Ct		OR	97013
John Peakes	Canby	425 SW 14th Ct		OR	97013
Hope Village Inc	Canby	1535 S Ivy St		OR	97013
Paul Wenrick	Canby	1495 S Fir St		OR	97013
Roger & Cheryl S	Canby	1547 S Fir St		OR	97013

Rodney & Carol	Canby	1555 S Fir St	OR	97013
Teresa Desimon	Seattle	Po Box 98757	WA	98198
Teresa Desimon	Seattle	Po Box 98757	WA	98198
Teresa Desimon	Seattle	Po Box 98757	WA	98198
Teresa Desimon	Seattle	Po Box 98757	WA	98198
Hope Village Inc	Canby	1535 S Ivy St	OR	97013
Hope Village Inc	Canby	1535 S Ivy St	OR	97013
Hope Village Inc	Canby	1535 S Ivy St	OR	97013
Meadows At Ho	Canby	1535 S Ivy St	OR	97013
Cascade House I	Canby	1535 S Ivy St	OR	97013
Hope Village Inc	Canby	1535 S Ivy St	OR	97013
Stj 1 Llc	Canby	130 SW 2nd Ave STE 103	OR	97013
Mcmartin Farms	Oregon City	19236 Carmelita Dr	OR	97045
Enc 4 Llc	Canby	1847 S Fir St	OR	97013
Mcmartin Farms	Oregon City	19236 Carmelita Dr	OR	97045

Traffic Impact Analysis

CANBY STAFFORD ANNEXATION DEVELOPMENT CONCEPT PLAN (DCP)

CITY OF CANBY, OR

Prepared by

Project No. 17118-000
Submitted September 29th, 2017

***DKS** Associates*
Chris Maciejewski, P.E., PTOE
Jeffrey Heald, P.E. (CA)
Rohit Itadkar, T.E. (CA)

720 SW Washington Street
Suite 500
Portland, OR
Telephone (503) 243-3500

EXHIBIT 8

DKS

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APPENDICES

1.0 INTRODUCTION

The following presents the Traffic Impact Analysis (TIA) prepared by DKS Associates (DKS) for the annexation of the Stafford Development Concept Plan (DCP) area in City of Canby. The purpose of this study is to identify potential transportation system impacts (and potential mitigations) triggered by this project. The Stafford DCP area is located in unincorporated Clackamas County inside the Canby Urban Growth Boundary and is within the boundaries of a designated DCP area.

This TIA has been prepared consistent with the policies of the City of Canby Transportation System Plan, and Clackamas County Comprehensive Plan. Additionally, a TIA for the proposed near-term Beck Subdivision development was also conducted in accordance with the City's and County's requirements. The Beck Subdivision development TIA technical memorandum is presented in Appendix A.

Site Location and Study Area

The DCP is located in the southwest part of Canby. The DCP area spans 71.88 acres and consists of 15 tax lots which are bounded by S Ivy Street on the east, S Elm Street on the west, city limits on the north and the Urban Growth Boundary (UGB) on the south. The access to the project site is proposed to be provided by one new local street on S Ivy Street and three new local streets on S Fir Street. The study area is shown in Figure 1. In addition to the four proposed project intersections, the following three intersections have been identified as study area intersections, with their traffic controls listed:

Figure 1: Study Area

- SW 13th Avenue/S Ivy Street (Signalized)
- SW 13th Avenue/S Fir Street (Two-way Stop)
- S Ivy Street/SE 16th Avenue (Two-way Stop)

2.0 EXISTING CONDITIONS

Pedestrian and Bicycle Facilities

An inventory of existing pedestrian and bicycle facilities was conducted to determine the current locations of sidewalks and bicycle lanes within the study area. For the purpose of this inventory, "bike lanes" included areas on roadways where shoulders were specifically designated for bicycle use through pavement markings, as well as other paved shoulders of at least five feet in width that could be used for bicycle travel. Table 1 presents the study area roadways with pedestrian and bicycle facilities.

Table 1: Existing Pedestrian and Bicycle Facilities

Roadway	Sidewalks	Bike Facilities
SW 13th Avenue	Both Sides	Both Sides
S Fir Street	East Side Only	None
S Ivy Street	None	Both Sides

Existing pedestrian facilities are provided along SW 13th Avenue and S Fir Street. A side walk is provided on the east side of S Fir Street. There are no sidewalks along the S Fir Street through the project site. There are also existing bicycle facilities along SW 13th Avenue. A Class II bike lane is provided on both sides of this roadway. Along S Ivy Street, marked shoulders on both sides of the roadway can be used as bike lanes.

Pedestrian and bicycle count data was also collected during the AM and PM peak period at study area intersections. The observed pedestrian activity was low at all study intersections but could be significantly higher on school days.[1] Maximum pedestrians are observed at the intersection of SW 13th Avenue/S Fir Street (6 pedestrians during AM and PM peak hour). No bicycle activity was observed at any of the study intersections.

Transit Facilities

Transit service in Canby is provided by Canby Area Transit (CAT). CAT provides a fixed route bus service and Dial-a-ride within the City and to neighboring communities. There are four CAT routes (Green Line, Blue Line, Purple Line, and Orange Line) which run five days a week. There is a transit stop along 16th Avenue between S Fir Street and S Ivy Street which gets served approximately on an hourly basis during a 24 hour period by the Blue line.

[1] Based on intersection turn movement counts conducted on July 11th, 2017.

3.0 SUMMARY OF 2010 CANBY TSP

The 2010 Canby Transportation System Plan (TSP)[2] identified specific transportation improvement projects and programs needed throughout Canby to guide the City's transportation investment. These projects and programs support the City's goals and policies, serve planned growth through the year 2030, and improve safety and mobility for all travel modes in Canby. The TSP addressed all areas of Canby, including the Stafford development area.

The sections from the 2010 TSP that are most applicable to the current Stafford planning effort are summarized in the paragraphs below. Corresponding clips of figures—which are zoomed in on the project area—are also provided.

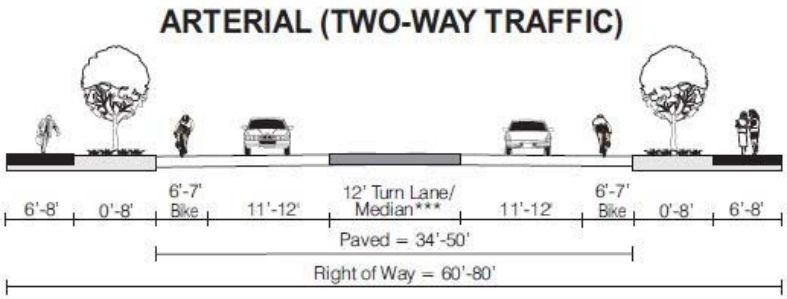
Functional Roadway Classification and Cross Sections

Canby's functional roadway classification hierarchy includes Arterials, Collectors, Neighborhood Routes, and Local Streets. As shown in Figure 7-1 from the City's TSP, S Ivy Street and SW 13th Avenue are classified as Arterials, while S Fir Street is a Local Street. All the remaining streets that may be constructed within the project site would likely become Local Streets.

TSP Figure 7-1: Functional Classification

The Canby TSP provides Standard Cross-Sections for each of the City's functional classifications as shown in Figure 7-4 and 7-6 in the City's TSP. The Arterial cross-section includes two travel lanes with center turn lane that may be used for turning vehicles or a median. It also includes bike lanes and sidewalks. Neighborhood Traffic Management (NTM) may also be used under special conditions. The Local Street consists of two travel lanes separated by a center line marking. It included on-street parking and sidewalks on both sides of the roadway.

[2] *Canby Transportation System Plan (TSP)*, December 2010.



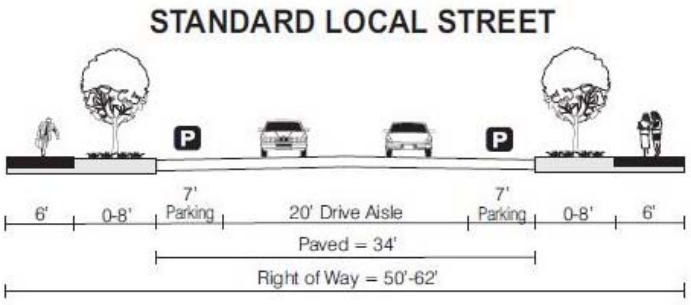
Notes:

* On-Street Parking is only allowed on arterial roadways within downtown commercial district. Diagonal or parallel parking may be provided on one or both sides interchangeably.

** When on-street parking is provided, bike lanes should only be provided adjacent to parallel parking (not head-in diagonal parking). If diagonal parking is provided on both sides and speeds are 25 miles per hour or less, then bike lanes are not required.

*** Turn Lane/Median section is optional and may consist of one of the following:

A. 12' Left-Turn Lane or Two-Way Left-Turn Lane with No Raised Median
B. 10' Raised, Landscaped Median with 1' Shy Distance on Either Side
C. 10' Pedestrian Refuge (Level with Roadway) with 1' Shy Distance on Either Side



TSP Figure 7-4 and 7-6: Standard Cross-Sections

Truck Routes

The truck routes are shown in Figure 7-2a from the City's TSP. S Ivy Street and SW 13th Avenue are currently designated as truck routes. S Fir Street is not a truck route. S Ivy Street could be used a key access route to and from the Cities located south of Canby.

TSP Figure 7-2a: Existing Truck Routes

Local Street Connectivity

The TSP also specifies the general locations where new local streets should be constructed as the project site develops. The proposed local street connectivity is shown in Figure 7-8 from the City's TSP. The arrows in the figure represent *potential* connections and the general direction for the placement of the connection.[3] The purpose of these connections is to ensure that the new development site accommodates future local circulation between adjacent neighborhoods to improve connectivity for all modes of transportation. The guidelines that should be followed when selecting local street connections includes:

TSP Figure 7-8: Local Street Connectivity

- Provide full street connections with spacing of no more than 500 feet between connections, except where prevented by barriers
- Provide bike and pedestrian access ways with spacing of no more than 300 feet, except where prevented by barriers (bike and pedestrian access ways should be considered at the end of cul-de-sacs)
- Limit use of cul-de-sacs and other closed-end street systems to situations where barriers prevent full street connections or to locations where pedestrian/bike accesses are to be provided (approximately halfway between vehicular accesses)
- Include no close-end street longer than 150 feet or having no more than 30 dwelling units

[3] Other local street connections may be required as the City conducts development review.

- Include street cross-sections demonstrating dimensions of ROW improvements, with streets designed for posted or expected speed limits

Topography, railroads, and environmental conditions (such as wetland areas) limit the level of connectivity in Canby. Some stub end streets may become cul-de-sacs, extended cul-de-sacs, or only provide local connections. Pedestrian connections from the end of any stub end street that results in a cul-de-sac will be mandatory as future development occurs (with the exception of locations where topography, railroads, and environmental conditions make such connections infeasible). The goal is to improve city connectivity for all modes of transportation as feasible.

Financially Constrained Motor Vehicle Improvements

Based on the City's existing and future motor vehicle needs, multiple improvement projects were identified throughout Canby. As shown in Figure 7-10 from the City's TSP, the only motor vehicle project in the immediate project vicinity is the potential non-capacity improvements along 13th Avenue. The project consists of performing safety study and constructing traffic calming and other safety improvements prior to constructing Sequoia Parkway extension to SE 13th Avenue. The project is included in the financially-constrained solutions package.

TSP Figure 7-10: Financially Constrained Motor Vehicle

Neighborhood Traffic Management (NTM)

Neighborhood Traffic Management (NTM) is a term used to describe traffic control devices typically used in residential neighborhoods to slow traffic or possibly reduce the volume of traffic. The City of Canby currently has limited NTM elements, mainly the use of narrow road widths that manage vehicle speed. However, the TSP recognized that as traffic congestion increases in the future, protecting the livability of neighborhoods may become an increasing need that requires the ability to mitigate impact.

An important consideration of NTM is the need to manage vehicle speeds and volumes with the need to maintain mobility, circulation, and function for service providers (e.g. emergency response). Table 7-5 lists common NTM applications and suggests which devices may be supported by the Canby Fire District. If NTM is considered for S Ivy Street, SW 13th Avenue, S Fir Street or any local streets planned for the project site, then coordination will be needed with emergency agency staff to ensure public safety is not

compromised. The proposed project intersection along S Ivy Street is planned to be a roundabout to reduce the speeds along S Ivy Street.

Table 7-5: Allowed Traffic Calming Measures by Roadway Functional Classification

Traffic Calming Measure	Is Measure Supported? (per Roadway Classification)[a]		
	Arterial	*Collector*	*Neighborhood Route/ Local Street*
Curb Extensions	Supported	Supported	Calming measures are supported on roads that have connectivity (more than two accesses) and are accepted and field tested by the Canby Fire District.
Roundabouts	Supported	Supported	
Medians and Pedestrian Islands	Supported	Supported	
Pavement Texture	Supported	Supported	
Speed Hump	Not Supported	Not Supported	
Raised Crosswalk	Not Supported	Not Supported	
Speed Cushion (provides emergency pass-through with no vertical deflection)	Not Supported	Not Supported	
Choker	Not Supported	Not Supported	
Traffic Circle	Not Supported	Not Supported	
Diverter (with emergency vehicle pass through)	Not Supported	Supported	
Chicanes	Not Supported	Not Supported	

[a] Traffic calming measures are supported with the qualification that they meet Canby Fire District guidelines including minimum street width, emergency vehicle turning radius, and accessibility/connectivity.

Access Spacing Standards

Access spacing standards along City roadways is another important consideration when developing or redeveloping a parcel of land. Table 7-2 of the Canby TSP specifies access spacing standards for City roadways based on functional classification. Non-conforming access should work to achieve a condition as close to standard as possible. For example, consolidated or shared accesses should be explored; however, parcels shall not be landlocked by access spacing policies.

For the purpose of reviewing the access spacing along S Ivy Street which is a County roadway, the access spacing standards from the Clackamas County Roadway Standards would be used. The minimum spacing for local street intersections along a Major Arterial (S Ivy Street is classified as a Major Arterial in the County's Transportation System Plan) is 250'. [4]

[4] Table 2-2, Clackamas County Roadway Standards, February 2013.

Table7-2: Access Spacing Standards for City Street Facilities[a]

Street Facility	Maximum spacing[b] of roadways	Minimum spacing[b] of roadways	Minimum spacing[b] of roadway to driveway[c]	Minimum Spacing[b] driveway to driveway[c]
Arterial	1,000 feet	660 feet	330 feet	330 feet or combine
Collector	600 feet	250 feet	100 feet	100 feet or combine
Neighborhood/Local	600 feet	150 feet	50 feet	10 feet

[a] Exceptions may be made in the downtown commercial district, if approved by the City Engineering or Public Works Department, where alleys and historic street grids do not conform to access spacing standards.

[b] Measured centerline to centerline

[c] Private access to arterial roadways shall only be granted through a requested variance of access spacing policies when access to a lower classification facility is not feasible (which shall include an access management plan evaluation)

4.0 DATA COLLECTION

Existing Traffic Volumes

Vehicle turn movement counts were conducted at all study area intersections during the weekday AM peak period (7:00 am to 9:00 am) and PM peak period (4:00 pm to 6:00 pm) on July 11, 2017. Since the counts collected were during the beginning of summer season when the Canby Public Schools are not in session, the counts did not include the on-street traffic occurring when school is in session. Therefore, the counts were adjusted with school traffic during both peak hours. The City of Canby Travel Forecast Tool developed for the City's Transportation System Plan was utilized for the traffic counts data adjustment. The weekday AM and PM peak hour volumes developed for the study intersections are presented in Figure 2. The raw traffic counts data is included in Appendix B.

In addition to the turning movement counts at the study intersections, 24-hour vehicles counts, classification counts and speed data was collected during a typical weekday on S Fir Street adjacent to SW 14th Court.

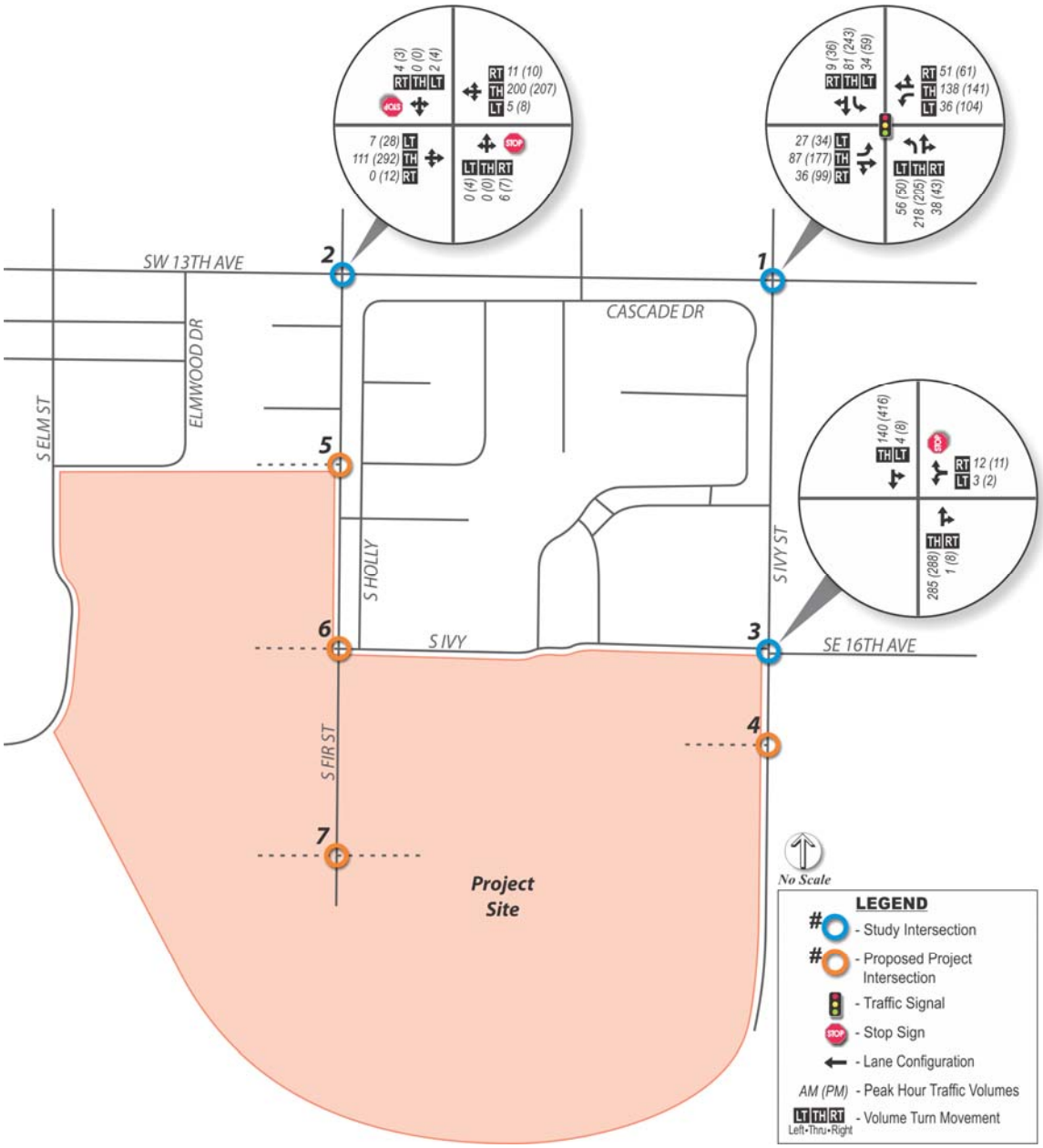


Figure 2: Existing Peak Hour Intersection Volumes

Safety Analysis

The most recent three years (2013 – 2015) of available collision data for the study area was obtained from ODOT and used to evaluate the collision history.[5] The individual collision types at study intersections were examined to see if any patterns would emerge. Table 2 breaks down the collision types and severities experienced, showing quantities of each. Of the total 9 collisions at study intersections, one was a rear-end collision, six were angled collision, and two were turning movement collision. There were no fatal collisions at the study intersections during this three-year period.

Observed crash rates at the study intersections were calculated to identify problem areas in need of safety mitigation. The total number of crashes experienced at an intersection is typically proportional to the number of vehicles entering it. Therefore, a crash rate describing the frequency of crashes per million entering vehicles (MEV) based on the critical crash rate procedure in the Highway Safety Manual (HSM) Network Screening chapter is used to evaluate each intersection.[6] Intersections with an observed crash rate greater than the critical crash rate warrant further review.

Table 2 displays the total reported collisions at each study intersection as well as the calculated observed crash rate and the critical crash rates for similar intersections. As shown in Table, the observed crash rates do not exceed the critical crash rates at all study intersections.

Table 2: Summary of Intersection Collection History

Intersection	Total Crashes	Crash Type				Crash Severity			Observed Crash Rate (per MEV*)	Critical Crash Rate (per MEV*)
		Rear-End	Angle	Turn	Other	PDO**	Minor Injury	Major Injury		
SW 13th Avenue/S Ivy Street	6	1	4	1	0	0	6	0	0.26	0.65
SW 13th Avenue/S Fir Street	3	0	2	1	0	0	1	2	0.28	0.78
S Ivy Street/SE 16th Avenue	0	0	0	0	0	0	0	0	0.0	1.31

*MEV: Million Entering Vehicles
**PDO: Property Damage Only

[5] ODOT reported collisions for January 1, 2013 through December 31, 2015.
[6] *2010 Highway Safety Manual* (HSM), Chapter 4, Page 4-11: The critical crash rate is a threshold value that allows for relative comparison among site with similar characteristics. The critical crash rate depends on the average crash rate at similar sites, traffic volume, and a statistical constant that represents a desired level of significance.

5.0 DCP TRANSPORTATION NETWORK EVALUATION

Land Use Summary

The preliminary zoning proposal for the Stafford DCP area is consistent with the Canby Comprehensive Plan designations. The DCP site plan is presented in Figure 3. As shown in the figure, below are the detailed land use designations within the site:

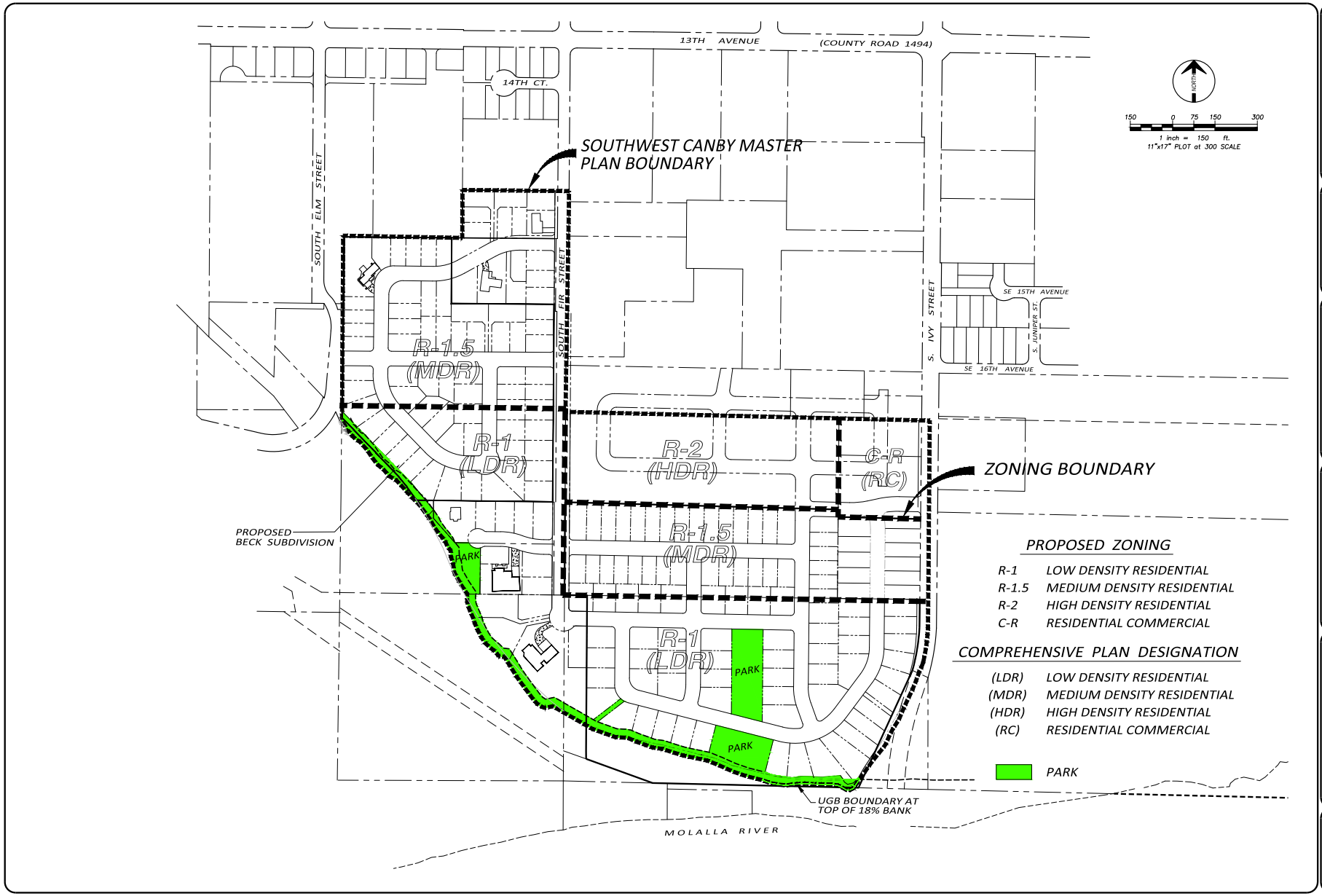
- The northwest part (between S Fir Street and S Elm Street) and the central part (between S Fir Street and S Ivy Street) of the DCP area are proposed to be zoned as R-1.5, which is medium density residential.
- The southern part is proposed to be zoned as R-1 which is low density residential.
- The northeast part is proposed to be zoned as C-R which is residential commercial.
- The northern part (east of S Fir Street) is proposed to be zoned as R-2 which is high density residential.

The project is proposed to build a total of 193 single family residential units in the entire DCP area except the northeast part which is planned to be designated as residential commercial. This designation allows the site to be developed as multifamily residential along with limited commercial use. The northeast part of the DCP (Hope Village) is proposed to have 55 multifamily units in the future. Therefore, the entire DCP area is proposed to have a total of 248 residential units.

Internal Roadway Cross-Section

The proposed development proposes three new accesses from S Fir Street and one new access from S Ivy Street. The connection to S Ivy Street will be a three legged intersection with its west leg serving as an access to the DCP site. This intersection would serve as an access to the future DCP area in the east. Based on the review of the site plan, the internal network of streets within the DCP is proposed to have a right-of-way width of 52 feet. For a typical residential street, the functional classification is a Local Street. The minimum right-of-way width for a Local Street is 50'. [7] Therefore, the proposed right-of-way width which is provided in the site plan satisfies the requirements of the City's TSP.

[7] Figure 7-6, *Canby Transportation System Plan (TSP)*, December 2010.



SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4C LOTS 1401, 1800, 1802 & 1900
SEC. 4D, LOTS 900,1000,1101,1400,1500,1600,1700,1800 & 2000
SEC. 4DA, LOTS 1400,1800 & 1900
CITY OF CANBY, OREGON

STAFFORD LAND COMPANY LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

SOUTHWEST CANBY
MASTER PLAN
9/13/17

REVISIONS

NO.	DATE	DESCRIPTION
	2-12-17	

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET 2 OF 2

MasterPlan, 9/13/2017 4:58:35 AM

DKS

No Scale

Figure 3

Site Plan

Internal Circulation and Sight Distance

Based on the site plan, the proposed project internal roadway network appears to provide adequate circulation in and out of the development.

The proposed development proposes three new accesses from S Fir Street and one new access from S Ivy Street. S Fir Street and S Ivy Street are designated as a Local Street and Arterial respectively. [8] Based on the field review; S Fir Street and S Ivy Street meet the cross-section requirements of a typical Local Street and Arterial respectively. Therefore, the existing roadway configuration will be able to accommodate the added traffic due to the project.

All site roadway connections will need to meet American Association of State Highway and Transportation Officials (AASHTO) sight distance requirements.[9] This includes providing adequate sight triangles at intersections that are clear of objects (large signs, landscaping, parked cars, etc.) that could potentially limit vehicle sight distance.

Based on preliminary review of the sight distance of the existing locations of the proposed intersections, there is adequate sight distance available at the all proposed access locations. Prior to occupancy, sight distance at any existing access points will need to be verified, documented, and stamped by a registered professional Civil or Traffic Engineer licensed in the State of Oregon.

Access Spacing

The proposed project intersection along S Ivy Street is located south of 16th Avenue. Based on the review of the access spacing standards in the County's Roadway Standards, it is recommended that the proposed intersection be at least 250 feet from the adjacent roadway intersections along a Major Arterial roadway facility.[10] Based on the review of the site plan, the distance of the proposed project intersection south of 16th Avenue is more than 250' from the intersection of S Ivy Street/16th Avenue.

The proposed access to DCP site from S Fir Street is provided by three new intersections. Based on the review of the access spacing standards in the City's TSP, it is recommended that the intersection spacing be at least 50 feet from the adjacent proposed intersection. Based on the review of the site plan, the minimum intersection spacing is more than the minimum requirement of the access spacing standards in the City's TSP.

Multi-Modal Connectivity

This section examines the multi-modal connectivity along S Ivy Street and S Fir Street adjacent to the project site. There are currently no sidewalks along S Ivy Street and S Fir

[8] Figure 7-1, *Canby Transportation System Plan (TSP)*, December 2010.
[9] *Geometric Design of Highways and Streets,* AASHTO, 2011.
[10] Table 2-2, Clackamas County Roadway Standards, February 2013.

Street directly adjacent to the site. There is a five feet sidewalk on the west side of S Ivy Street which terminates at the northern perimeter of the site. There is intermittent sidewalk on the east side of the street which is six feet wide.

To meet the City's Arterial standards along the S Ivy Street adjacent to the project site, the roadway would need to be widened and rebuilt. Arterial standards call for a six to seven foot bike lane, an optional landscaping strip, and a six to eight foot sidewalk on each side of the road. Along the site's east frontage to S Ivy Street, it is recommended that the development provide half-street roadway improvements including curb, sidewalks, and appropriate set-back for bike lanes in the future. These improvements should be coordinated with City staff, and may include half-street improvements to County standards. Internal connectivity should be provided when the site develops, and external connections to the existing street sidewalk network would allow for good pedestrian connectivity.

To meet the City's Local Street standards along the S Fir Street adjacent to the project site, the roadway would need to be widened and rebuilt. Local standards call for a seven foot on-street parking, an optional landscaping strip, and a six foot sidewalk on each side of the road. Along the site's frontage to S Fir Street, it is recommended that the development provide street roadway improvements including curb, and sidewalks, and in the future. Since the vehicular speed will most likely be less than 25 MPH and the average daily traffic is estimated to be less than 2,000 vph, it is safe for bicycles to use this street.

There is currently poor bicycle connectivity to the site along both S Ivy Street and S Fir Street due to narrow roadway width and lack of bicycle lanes. There are shoulders along S Ivy Street which could be used as bicycle lanes. If the roadway is rebuilt to the designated standards as required by their corresponding functional classification, the street's bicycle lanes would create connectivity with the nearest major roadway SW 13th Avenue, which currently has bicycle lanes.

Intersection Operations Analysis

This section covers the intersection operating conditions in the study area. Included is a description of the intersection performance measures, jurisdictional operational standards, and traffic operational analysis.

Intersection Performance Measures

Level of service (LOS) and volume-to-capacity (v/c) ratios are two commonly used performance measures that provide a gauge of intersection operations. In addition, they are often incorporated into agency mobility standards.
Descriptions are given below:

- **Level of service (LOS):** A "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak

hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.

- **Volume-to-capacity (v/c) ratio:** A decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used (i.e., the saturation) at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays.

Jurisdictional Operational Standards

All study intersections must operate at or below the operating standards or mitigation may be necessary to approve future growth. The intersection performance measures vary by jurisdiction of the roadways. All study intersections are under the jurisdiction of City of Canby and Clackamas County and must comply with the intersection evaluation methodology stated in the City's TSP and Clackamas Roadway County Standards.[11] The study intersections must comply with the v/c targets in the Clackamas County Comprehensive Plan which specifies a v/c target of 0.90 and LOS E for the study area.[12]

Existing Intersection Operations Analysis

The existing traffic operating conditions at the study intersections was determined for the PM peak hour based on the 2000 Highway Capacity Manual methodology[13] for signalized intersections and 2010 Highway Capacity Manual methodology for unsignalized intersections.[14] The conditions include the estimated average delay, level of service (LOS), and volume-to-capacity (v/c) ratio of the study intersections.

Weekday PM peak hour intersection operations are shown in Table 3. During the PM peak hour, all study area intersections operate within the adopted mobility targets. Detailed HCM intersection analysis reports are included in Appendix C.

[11] Section 295, Clackamas County Roadway Standards, February 1, 2013.
[12] Table 5-2b, Clackamas County Comprehensive Plan.
[13] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.
[14] *2010 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2010.

Table 3: Existing PM Peak Hour Intersection Operations

No.	Intersections	Control Type	PM Peak Hour	
			v/c	LOS
1.	SW 13th Avenue/S Ivy Street	Signal	0.45	B
2.	SW 13th Avenue/S Fir Street	TWSC*	0.02	A/B
3.	S Ivy Street/SE 16th Avenue	TWSC*	0.02	A/B

TWSC – Two-way Stop Controlled
LOS – Level of Service
*Volume-to capacity ratio for two-way stop intersections report for the worst movement and LOS report for the worst major street/minor street movements.

Future 2035 Plus Project Scenario

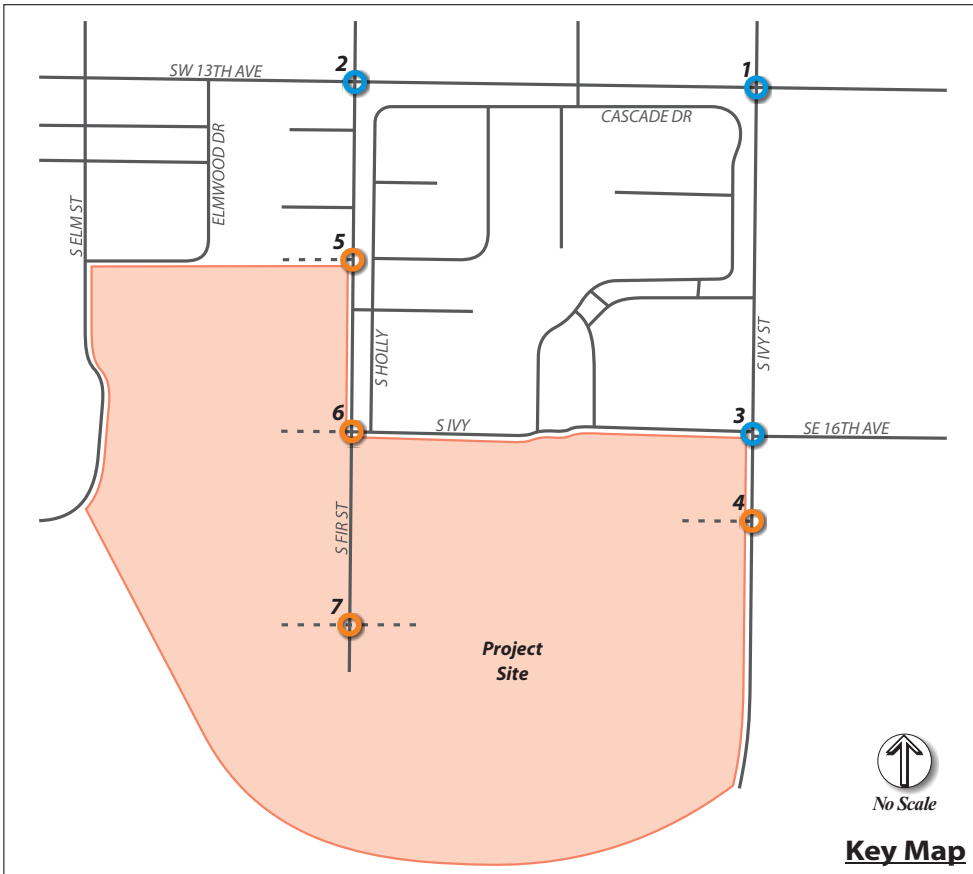
Forecasting Method Summary

The future 2035 plus project volumes at all existing study intersections and proposed project intersections during the PM peak hour were determined by utilizing the City of Canby's Travel Forecast model developed for the City's Transportation System Plan. The model forecasted the future volumes till the year 2030. The future 2035 volumes were estimated by adding an annual growth rate of 2%.[15] The future 2035 plus project peak hour turn volumes during the PM peak hour are presented in Figure 4.

The land uses assumed in the City's TSP were consistent with the proposed zoning for the DCP, but were slightly different in units than the land uses in the proposed project. The transportation analysis zones (TAZ), which are specific to the travel model do not exactly align with the study area. The study area overlaps with two TAZs. The northern portion of the study area west of S Ivy Street and east of S Fir Street includes only a portion of TAZ 142, while the remaining portion of the study area encompasses the entire area of TAZ 143.

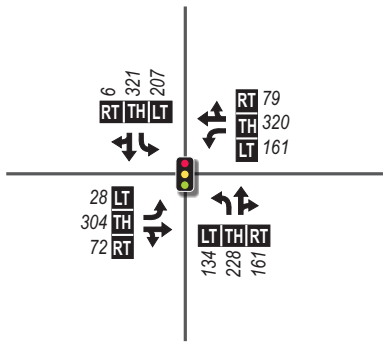
The portion of the study area within the TAZ 142 was assumed to have 11 more households in the City's TSP. Thus, the City's TSP overestimated the development in that area compared to the proposed project. The remaining portion of the study area (TAZ 143) was expected to have 213 households in the City's TSP, while the proposed plan anticipates 225 households in the same area. Thus, the City's TSP underestimated the development (12 less households) in that area. However, the net difference between the City's TSP and the proposed project is only one household.

[15] *Table 4-1, Canby Transportation System Plan (TSP)*, December 2010.

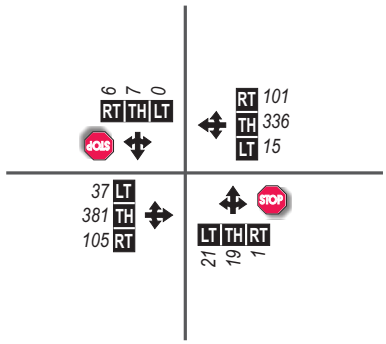


Key Map

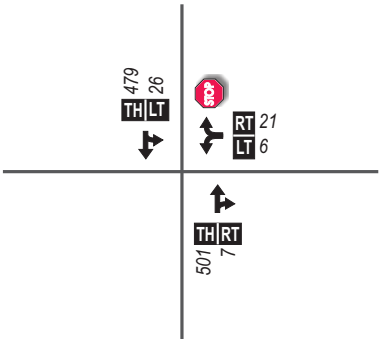
1. *SW 13th Ave. @ S Ivy St.*



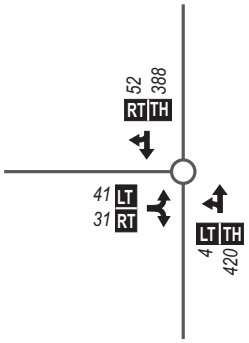
2. *SW 13th Ave. @ S Fir St.*



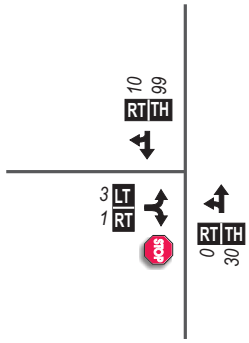
3. *S Ivy St. @ SE 16th Ave.*



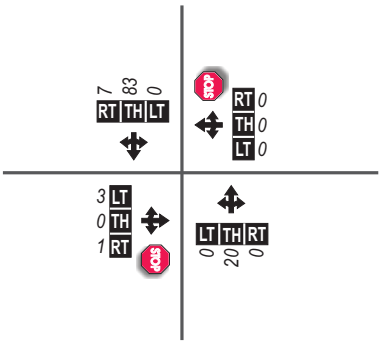
4. *S Ivy St. @ Driveway 1*



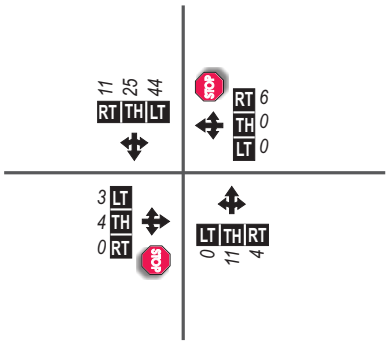
5. *S Fir St. @ Driveway 1*



6. *S Fir St. @ Driveway 2*



7. *S Fir St. @ Driveway 3*



LEGEND

- # - Study Intersection
- # - Proposed Project Intersection
- Traffic Signal
- Stop Sign
- ← - Lane Configuration
- *PM* - Peak Hour Traffic Volumes
- LT TH RT - Volume Turn Movement (Left•Thru•Right)

DKS

Figure 4

Future (2035) Plus Project PM Peak Hour Traffic Volumes

The City's TSP did not assume any employment growth in TAZ 142 which is consistent with the proposed project. The City's TSP assumed 3 employees in TAZ 143, while this analysis assumed 15 employees. Table 4 shows the updated household and employment assumptions used for this analysis.

Table 4: Existing and Future Year Household and Employment Assumptions

TAZ	Existing Year		Future Year		Growth	
	HH	EMP	HH	EMP	HH	EMP
142	239	10	277	10	38	0
143	9	0	225	15	216	15

HH: Household, EMP: Employment

The Hope Village expansion includes a portion of Residential-Commercial (RC) zoning. For TPR purposes, the travel forecast model assumed employment growth within this area. The final proposed plan with the DCP does not include employment growth. However, the trips generated by the assumed employment growth are higher than the trips that would be generated by the residential development in the proposed project. From a trip generation perspective, the land use assumed is consistent with the proposed plan (i.e. the number of trips generated by the assumed employment growth in that area is representative of the number of trips generated by the proposed household growth in that area).

In the end, the land uses assumed to develop model forecasted future volumes slightly overestimates the number of trips expected as compared to the land uses in the proposed project. Therefore, the analysis is slightly conservative and adequate to represent the land use in the DCP.

Future 2035 Plus Project Intersection Operations Analysis

The future 2035 plus project PM peak hour intersection operations are shown in Table 5. As shown in the table, all study area intersections operate within the adopted mobility targets. Therefore, the proposed project would have no significant impact to any of the study intersections and proposed intersections. As a result, no mitigation measures are recommended as part of this project. Detailed HCM intersection analysis reports are included in Appendix D.

Table 5: Future 2035 PM Peak Hour Intersection Operations

No.	Intersections	Control Type	PM Peak Hour	
			v/c	LOS
1.	SW 13th Avenue/S Ivy Street	Signal	0.75	C
2.	SW 13th Avenue/S Fir Street	TWSC*	0.22	A/D
3.	S Ivy Street/SE 16th Avenue	TWSC*	0.07	A/B
4.	S Ivy Street/Project Driveway 1	TWSC*	0.01	A/A
5.	S Fir Street/Project Driveway 1	TMSC*	0.01	A/A
6.	S Fir Street/Project Driveway 2	TMSC*	0.01	A/A
7.	S Fir Street/Project Driveway 3	TMSC*	0.03	A/A

TWSC – Two-way Stop Controlled
LOS – Level of Service
*Volume-to capacity ratio for two-way stop intersections report for the worst movement and LOS report for the worst major street/minor street movements.

Area Safety and Urban Design

S Ivy Street connects the City of Canby with the unincorporated Clackamas County located in the South. Vehicles travelling north along S Ivy Street (Canby-Marquam Highway) into the City along experience a profound change in land use density and posted speed. The area within the City is characterized by large residential neighborhoods, retirement homes, an adult center, schools, and an aquatic center. The speed along S Ivy Street (Canby-Marquam Highway) through the rural area is 55 MPH. In order to promote the reduction in speed and help vehicles transition from a rural area to an urban environment, which would significantly enhance safety in an area with high potential for pedestrian and bicycle travel, a roundabout treatment should be considered at the new intersection on S Ivy Street (south of 16th Avenue) created by the DCP. The roundabout could also act as a gateway treatment for urban design aesthetics for the entry into Canby.

The safety benefit of roundabouts can be seen from national research[16] on their effectiveness of reducing crashes, where data has shown a reduction of 35% of total crashes, 76% in injury crashes and 89% in fatalities. This is partially due to reducing the number of conflict points, but also points to the benefit of effectively reducing vehicle speeds where potential conflicts occur. The benefits of this reduction in speed would then provide benefit to the S Ivy Street corridor to the north. A sketch for the potential

[16] *Federal Highway Administration, Roundabouts, Section 2:Benefits of Roundabouts*

roundabout location is presented in Appendix E to illustrate the potential footprint and land-use impact of the improvement.
To advance the roundabout concept, additional conversation would be required with Clackamas County (who has authority over the roadway) to discuss the feasibility of implementation, including factors such as designing for farm vehicles and trucks that would travel through the roundabout.

Transportation Planning Rule (TPR) Evaluation

The proposed annexation of the Stafford Development Concept Plan (DCP) area includes changes in the land use. However, the proposed rezone could potentially allow more intense uses to develop on the site compared to either the existing zoning or the average land use density assumed in the City's TSP. Therefore, the analysis documented in Appendix F would determine to see if the proposed zone change would cause significant impact to the transportation system in addition to what was accounted for in the City's TSP. Based on the TPR evaluation in the appendix, the proposed zone change is consistent with the comprehensive plan designations and City's TSP.

Recommendations

Based upon the analysis presented in this report, it was determined that the proposed project would not generate significant off-site traffic impacts. Therefore, no off-site mitigation is recommended for the proposed project as a result of traffic impacts. However, there are some site-access and circulation related improvements which DKS would recommend to improve traffic flow and safety, which includes:

1) Proposed project intersections shall be kept clear of visual obstructions such as signage, trees etc. which may limit the vehicle sight distance.
2) A roundabout at a proposed project intersection along S Ivy Street would be a significant safety enhancement. However, coordination with Clackamas County is required to determine the feasibility of including design standards for farm vehicles and trucks.

DKS

APPENDIX A

Becks Subdivision Traffic Impact Study

DRAFT MEMORANDUM

720 SW Washington St.
Suite 500
Portland, OR 97205
503.243.3500
www.dksassociates.com

DATE: September 29th, 2017

TO: Bryan Brown, City of Canby

FROM: Chris Maciejewski, PE, PTOE
Jeff Heald, PE (CA)
Rohit Itadkar, TE (CA)

SUBJECT: **Traffic Impact Analysis for Beck Subdivision Development** P#17118-000

This memorandum summarizes the transportation impacts associated with the proposed Beck Subdivision development within the Stafford Development Concept Plan (DCP) in Canby, Oregon. The proposed development proposes 41 lots spread over 8.70 acres with 24 additional tax lots to be added in the development during second phase of the project. The proposed project will be designated as R-1.5 (medium density residential) in the north and R-1 (low density residential) in the south of the site. This would add a total of 90 single family residential units. The project site is located within the Stafford DCP site between S Fir Street and S Elm Street.

Access to the site will be provided by three proposed intersections from S Fir Street. The study area is shown in Figure 1. The following three intersections have been identified as study area intersections, with their traffic controls listed:

- SW 13th Avenue/S Ivy Street
- SW 13th Avenue/S Fir Street
- S Ivy Street/SE 16th Avenue

Figure 1: Study Area

Existing No Project Intersection Operations Analysis

Intersection Performance Measures

Level of service (LOS) and volume-to-capacity (v/c) ratios are two commonly used performance measures that provide a gauge of intersection operations. In addition, they are often incorporated into agency mobility standards.

Descriptions are given below:

- **Level of service (LOS):** A "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection. LOS A, B, and C indicate conditions where traffic moves without significant delays over periods of peak hour travel demand. LOS D and E are progressively worse operating conditions. LOS F represents conditions where average vehicle delay has become excessive and demand has exceeded capacity. This condition is typically evident in long queues and delays.
- **Volume-to-capacity (v/c) ratio:** A decimal representation (between 0.00 and 1.00) of the proportion of capacity that is being used (i.e., the saturation) at a turn movement, approach leg, or intersection. It is determined by dividing the peak hour traffic volume by the hourly capacity of a given intersection or movement. A lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases and performance is reduced. If the ratio is greater than 1.00, the turn movement, approach leg, or intersection is oversaturated and usually results in excessive queues and long delays.

Jurisdictional Operational Standards

All study intersections must operate at or below the operating standards or mitigation may be necessary to approve future growth. The intersection performance measures vary by jurisdiction of the roadways. All study intersections are under the jurisdiction of City of Canby and Clackamas County and must comply with the intersection evaluation methodology stated in the City's TSP and Clackamas Roadway County Standards.[1] The study intersections must comply with the v/c targets in the Clackamas County Comprehensive Plan which specifies a v/c target of 0.90 and LOS E for the study area.[2]

[1] Section 295, Clackamas County Roadway Standards, February 1, 2013.
[2] Table 5-2b, Clackamas County Comprehensive Plan.

Volumes

The existing no project volumes were used from the counts conducted as part of the Stafford Annexation DCP traffic study. [3]

Level of Service Analysis

The existing traffic operating conditions at the study intersections was determined for the AM and PM peak hour based on the 2000 Highway Capacity Manual methodology[4] for signalized intersections and 2010 Highway Capacity Manual methodology for unsignalized intersections.[5] The conditions include the estimated average delay, level of service (LOS), and volume-to-capacity (v/c) ratio of the study intersections. Weekday AM and PM peak hour intersection operations are shown in Table 1. During the AM and PM peak hour, all study area intersections operate within the adopted mobility targets.

Table 1: Existing Peak Hour Intersection Operations

No.	Intersections	Control Type	AM Peak Hour		PM Peak Hour	
			v/c	LOS	v/c	LOS
1.	SW 13th Avenue/S Ivy Street	Signal	0.39	B	0.45	B
2.	SW 13th Avenue/S Fir Street	TWSC*	0.01	A/B	0.02	A/B
3.	S Ivy Street/SE 16th Avenue	TWSC*	0.02	A/B	0.02	A/B

TWSC – Two-way Stop Controlled
LOS – Level of Service
*Volume-to capacity ratio for two-way stop intersections report for the worst movement and LOS report for the worst major street/minor street movements.

Project Trip Generation

The proposed Beck Subdivision development is shown in Figure 2. The amount of new vehicle trips generated by the additional 90 single family dwelling units was estimated using the ITE Trip Generation Manual for similar land use type[6]. Trip generation estimates for the proposed project are provided for daily, morning and evening peak hours and are summarized in Table 2. As shown in Table, the proposed site is expected to generate 68 (17 in, 51 out) AM peak hour trips, 90 (57 in, 33 out) PM peak hour trips, and 857 daily trips.

[3] Figure 2, Canby Stafford Annexation Development Concept Plan Traffic Impact Analysis, September 2017.
[4] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.
[5] *2010 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2010.
[6] Trip Generation Manual, Institute of Transportation Engineers, 9th Edition.

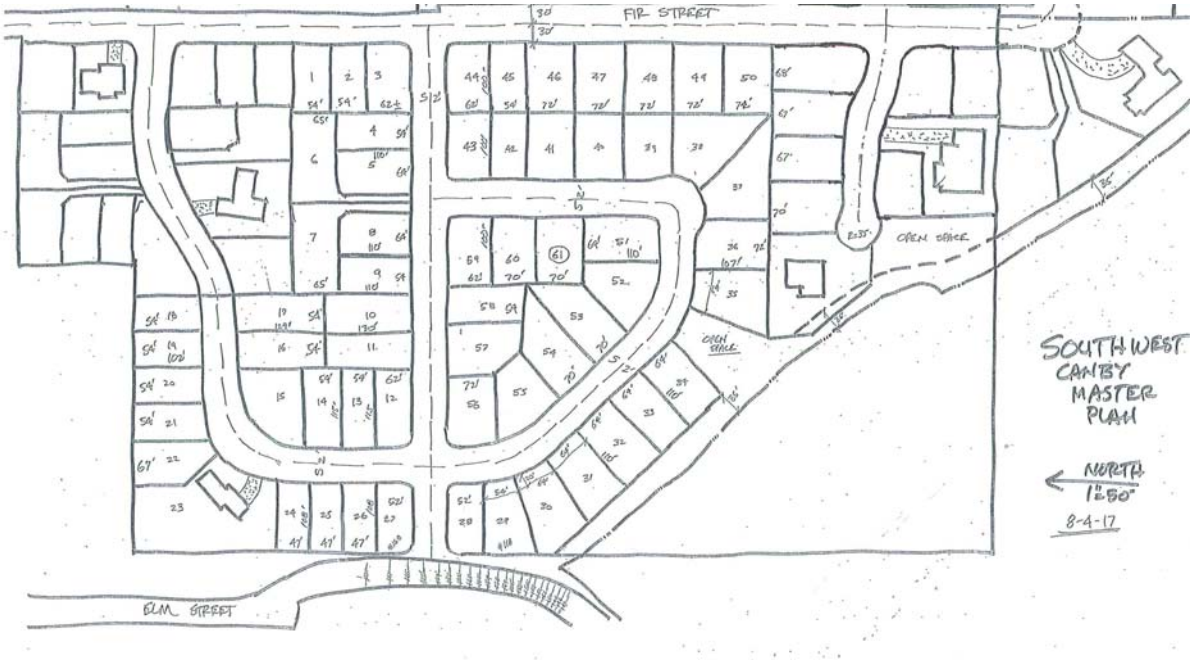


Figure 2: Project Site Plan

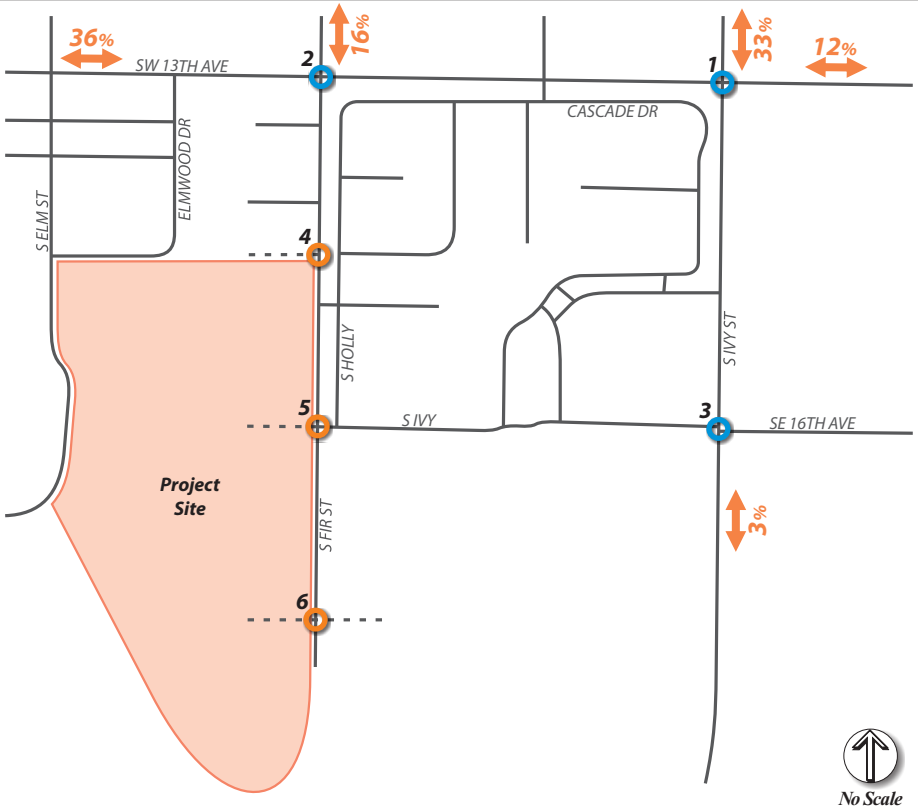
Table 2: Project Trip Generation Summary

Land Use	Size	Daily	AM Peak Hour			PM Peak Hour		
Trip Rates								
Single Family Detached (210)	Per Dwelling Unit (DU)	9.52	0.19	0.56	0.75	0.63	0.37	1.00
Trip Generation								
Single Family Detached (210)	90 DU	857	17	51	68	57	33	90

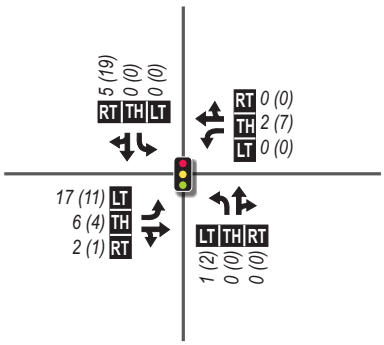
Project Trip Generation

Trip distribution reflects how site generated traffic will leave and arrive at the proposed site and what roads those trips will take. The trip distribution for the proposed project was estimated based on City of Canby Travel Forecast Tool.[7] The assumed trip distribution and assignment is shown in Figure 3.

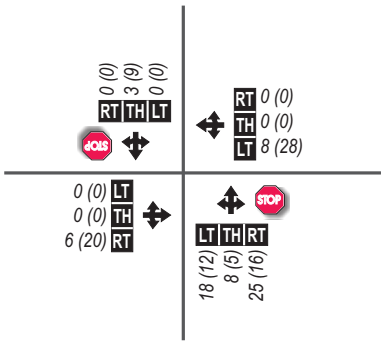
[7] Canby Travel Forecast Tool, Canby Transportation System Plan, DKS Associates.



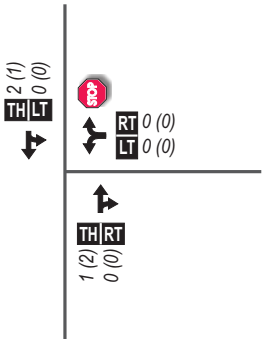
1. *SW 13th Ave. @ S Ivy St.*



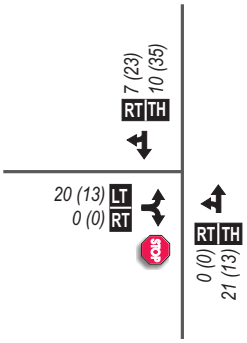
2. *SW 13th Ave. @ S Fir St.*



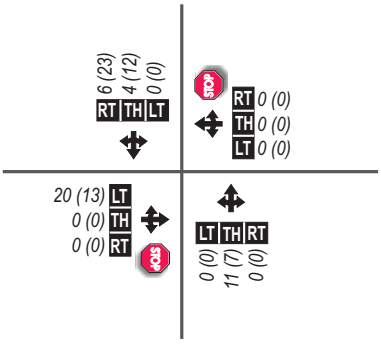
3. *S Ivy St. @ SE 16th Ave.*



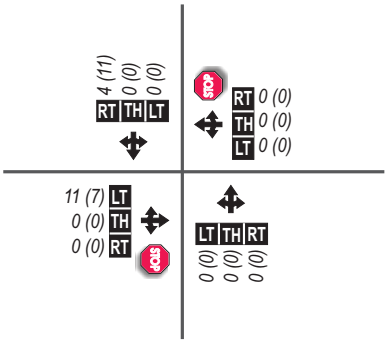
4. *S Fir St. @ Driveway 1*



5. *S Fir St. @ Driveway 2*



6. *S Fir St. @ Driveway 3*



LEGEND

- # - Study Intersection
- # - Proposed Project Intersection
- Traffic Signal
- STOP - Stop Sign
- 00% - Trip Distribution Percentage
- Lane Configuration
- AM (PM) - Peak Hour Traffic Volumes
- LT TH RT - Volume Turn Movement (Left•Thru•Right)

DKS

Figure **3**

Project Trip Distribution and Assignment

Existing Plus Project Intersection Operations Analysis

Volumes

The study area intersection operations were evaluated for the Existing Plus Project scenario to determine if the proposed project would cause any intersections to not meet jurisdictional standards. The Existing Plus Project scenario includes the existing traffic volumes, and the trips added by the proposed project. The Existing (2017) Plus Project traffic volumes are shown in Figure 4.

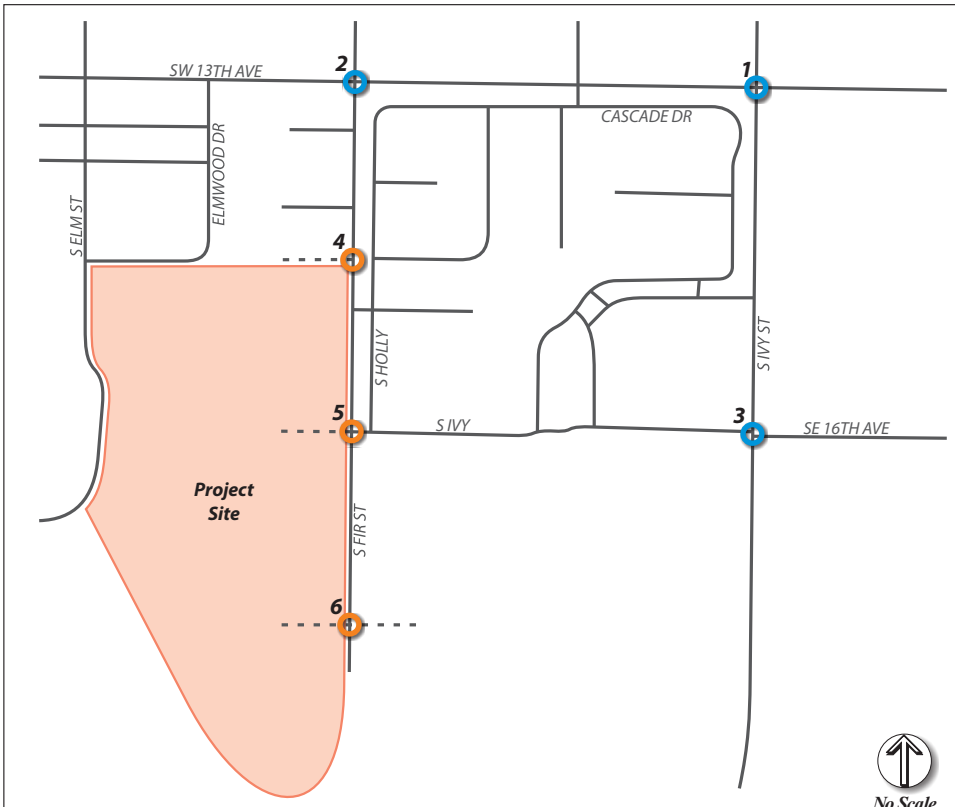
Level of Service Analysis

The existing plus project traffic operating conditions at the study intersections was determined for the AM and PM peak hour are shown in Table 3. During the AM and PM peak hour, all study area intersections operate within the adopted mobility targets. Therefore, there are no significant impacts on the study intersections. As a result no mitigation measures are recommended as part of this project.

Table 3: Existing Peak Hour Intersection Operations

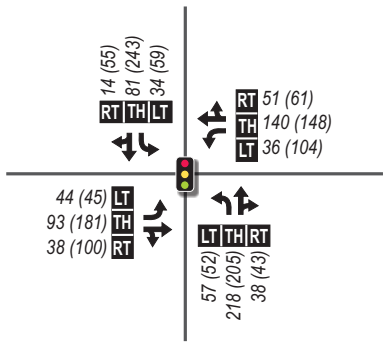
No.	Intersections	Control Type	AM Peak Hour		PM Peak Hour	
			v/c	LOS	v/c	LOS
1.	SW 13th Avenue/S Ivy Street	Signal	0.39	B	0.47	B
2.	SW 13th Avenue/S Fir Street	TWSC*	0.09	A/B	0.12	A/C
3.	S Ivy Street/SE 16th Avenue	TWSC*	0.20	A/B	0.20	A/B
4.	S Fir Street/Project Driveway 1	TWSC*	0.02	A/A	0.02	A/A
5.	S Fir Street/Project Driveway 2	TWSC*	0.02	A/A	0.01	A/A
6.	S Fir Street/Project Driveway 3**	TWSC*	--	--	--	--

TWSC – Two-way Stop Controlled
LOS – Level of Service
*Volume-to capacity ratio for two-way stop intersections report for the worst movement and LOS report for the worst major street/minor street movements.
** No LOS reported since there are no conflicting movements.

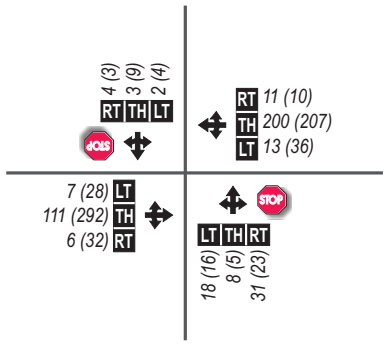


Key Map

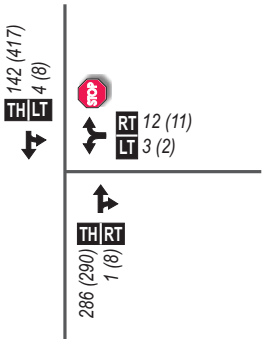
1. SW 13th Ave. @ S Ivy St.



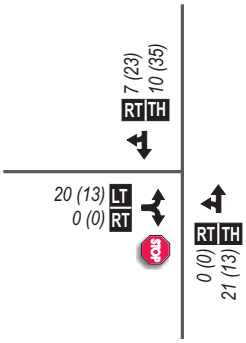
2. SW 13th Ave. @ S Fir St.



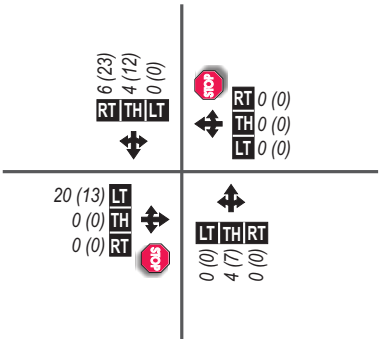
3. S Ivy St. @ SE 16th Ave.



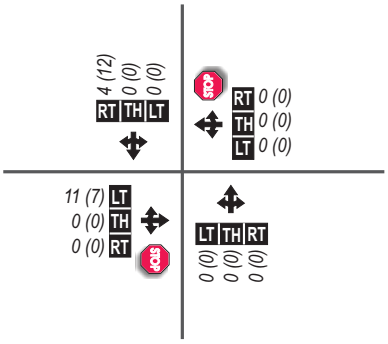
4. S Fir St. @ Driveway 1



5. S Fir St. @ Driveway 2



6. S Fir St. @ Driveway 3



LEGEND

- # - Study Intersection
- # - Proposed Project Intersection
- Traffic Signal
- STOP - Stop Sign
- Lane Configuration
- AM (PM) - Peak Hour Traffic Volumes
- LT TH RT - Volume Turn Movement (Left•Thru•Right)

DKS

Figure 4

Existing Plus Project Peak Hour Traffic Volumes

Queuing Analysis

An estimate of the 95th percentile vehicle queues were determined for each of the intersection approach movements under both the Existing and Existing Plus Project scenarios. 95th percentile vehicle queues are queue lengths that would not be exceeded in 95 percent of the queues formed during the peak hour are estimated. When vehicle queues extend past available storage bays, turning queues can block through movements and through movements can block upstream intersections. The result is an increased potential for rear-end collisions and a significant loss in system capacity. The queue formation for left turning traffic at all study intersections except SW 13th Avenue/S Ivy Street is less than 25'. Queuing results for the intersection of SW 13th Avenue/S Ivy Street are summarized in Table 4.

Table 4: Queuing Summary at SW 13th Avenue/S Ivy Street

Movement	Available Storage (feet)	95th Percentile Queue for Existing Plus Project (feet)	
		AM Peak Hour	PM Peak Hour
Northbound Left	120	20	20
Southbound Left	125	20	20
Eastbound Left	120	40	40
Westbound Left	130	20	60

The queue formations in all directions are within the available storage. Overall, the proposed project is not expected to have a negative impact on the queuing at any study intersections.

Neighborhood Through Traffic Study

To protect livability in neighborhood areas, the City of Canby has adopted traffic impact thresholds for residential streets. Developments anticipated to add significant traffic levels to residential streets are required to develop mitigations that will reduce the impact. A development is considered to have a potentially significant impact when it adds 30 through-vehicle trips during a peak hour to an adjacent residential street with an average daily traffic (ADT) volume of 1,200 or higher and/or a 85th percentile speed greater than 28 miles per hour.

Based on zoning and fronting land uses S Fir Street south of 13th Avenue is the only roadway within the study area that would be classified as residential streets and may be significantly impacted by the proposed project. 24-hour bidirectional traffic volume and speed data was collected on the roadway

section. The data for S Ivy Street showed an ADT volume lower than 1,200 vehicles (1,107 vehicles) and an 85th percentile speed of 17 miles per hour, which is lower than the threshold of 28 miles per hour.

The proposed project is expected to add more than 30 vehicles during peak hours to S Fir Street along the residential portions. Therefore, the project would add significant traffic levels to this street and increase the ADT to above 1,200 vehicles (1,970 vehicles per day). Potential volume reduction measures to address this impact could include diverters, movement closures, and decrease route speed by modifying geometry and/or traffic control (some speed reduction can also have a secondary effect of reducing traffic volume (by making a route less attractive).

A review of potential measure for offsetting the traffic volume increase found that the options would simply shift the through traffic from one neighborhood street to another, as there are only local residential streets that connect the area to the surrounding arterial network. As the observed traffic speeds are significantly below speed thresholds for neighborhood livability, we recommend not implementing mitigation measures that would restrict volumes (i.e., diverters or closures). In this circumstance, maximizing connectivity (i.e., via the proposed connection to S Ivy Street) appears to be the optimal strategy for neighborhood traffic management.

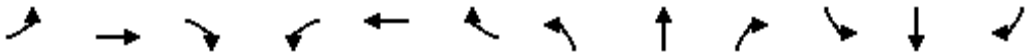
Conclusions

- The increase in vehicle trips associated with the proposed project (68 trips during the AM peak hour and 90 trips during the PM peak hour) would not significantly impact traffic operations along the surrounding transportation network.
- Site intersections shall be kept clear of objects (e.g. landscaping, objects, etc.) that could potentially limit vehicle sight distance.

Attachments

Existing (2017) No Project Level of Service Worksheets

Existing (2017) Plus Project Level of Service Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	87	36	36	138	51	56	218	38	34	81	9
Future Volume (vph)	27	87	36	36	138	51	56	218	38	34	81	9
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1641		1630	1646		1630	1678		1630	1690	
Flt Permitted	0.57	1.00		0.67	1.00		0.67	1.00		0.59	1.00	
Satd. Flow (perm)	982	1641		1149	1646		1149	1678		1005	1690	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	97	40	40	153	57	62	242	42	38	90	10
RTOR Reduction (vph)	0	33	0	0	30	0	0	8	0	0	5	0
Lane Group Flow (vph)	30	104	0	40	180	0	62	276	0	38	95	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.3	8.3		8.3	8.3		26.8	24.4		25.2	23.6	
Effective Green, g (s)	8.3	8.3		8.3	8.3		26.8	24.4		25.2	23.6	
Actuated g/C Ratio	0.17	0.17		0.17	0.17		0.56	0.51		0.53	0.49	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	170	284		199	285		668	856		550	834	
v/s Ratio Prot		0.06			c0.11		c0.00	c0.16		0.00	0.06	
v/s Ratio Perm	0.03			0.03			0.05			0.03		
v/c Ratio	0.18	0.37		0.20	0.63		0.09	0.32		0.07	0.11	
Uniform Delay, d1	16.8	17.4		16.9	18.3		4.8	6.9		5.5	6.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.6		0.4	4.0		0.0	1.0		0.0	0.3	
Delay (s)	17.2	18.0		17.3	22.3		4.8	7.9		5.5	6.8	
Level of Service	B	B		B	C		A	A		A	A	
Approach Delay (s)		17.9			21.5			7.3			6.4	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	111	0	5	200	11	0	0	6	2	0	4
Future Vol, veh/h	7	111	0	5	200	11	0	0	6	2	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	125	0	6	225	12	0	0	7	2	0	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	237	0	0	125	0	0	384	388	125	386	382	231
Stage 1	-	-	-	-	-	-	140	140	-	242	242	-
Stage 2	-	-	-	-	-	-	244	248	-	144	140	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1330	-	-	1462	-	-	574	547	926	573	551	808
Stage 1	-	-	-	-	-	-	863	781	-	762	705	-
Stage 2	-	-	-	-	-	-	760	701	-	859	781	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1462	-	-	566	541	926	564	545	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	566	541	-	564	545	-
Stage 1	-	-	-	-	-	-	858	776	-	757	701	-
Stage 2	-	-	-	-	-	-	752	697	-	848	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.2	8.9	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	926	1330	-	-	1462	-	-	706
HCM Lane V/C Ratio	0.007	0.006	-	-	0.004	-	-	0.01
HCM Control Delay (s)	8.9	7.7	0	-	7.5	0	-	10.1
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

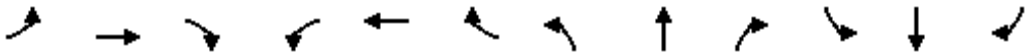
Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	12	285	1	4	140
Future Vol, veh/h	3	12	285	1	4	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	13	313	1	4	154

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	477	314	0	0	314	0
Stage 1	314	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	547	726	-	-	1246	-
Stage 1	741	-	-	-	-	-
Stage 2	866	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	545	726	-	-	1246	-
Mov Cap-2 Maneuver	545	-	-	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	863	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	681	1246	-
HCM Lane V/C Ratio	-	-	0.024	0.004	-
HCM Control Delay (s)	-	-	10.4	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	177	99	104	141	61	50	205	43	59	243	36
Future Volume (vph)	34	177	99	104	141	61	50	205	43	59	243	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1623		1630	1638		1630	1671		1630	1682	
Flt Permitted	0.61	1.00		0.46	1.00		0.58	1.00		0.57	1.00	
Satd. Flow (perm)	1042	1623		791	1638		998	1671		985	1682	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	35	184	103	108	147	64	52	214	45	61	253	38
RTOR Reduction (vph)	0	41	0	0	32	0	0	12	0	0	8	0
Lane Group Flow (vph)	35	246	0	108	179	0	52	247	0	61	283	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.4	11.4		11.4	11.4		22.0	20.5		23.8	21.4	
Effective Green, g (s)	11.4	11.4		11.4	11.4		22.0	20.5		23.8	21.4	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.46	0.43		0.50	0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	248	387		188	390		479	716		522	753	
v/s Ratio Prot		c0.15			0.11		0.00	0.15		c0.01	c0.17	
v/s Ratio Perm	0.03			0.14			0.05			0.05		
v/c Ratio	0.14	0.64		0.57	0.46		0.11	0.34		0.12	0.38	
Uniform Delay, d1	14.3	16.3		16.1	15.6		7.2	9.1		6.3	8.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	3.0		3.5	0.6		0.1	1.3		0.1	1.4	
Delay (s)	14.5	19.3		19.5	16.2		7.3	10.5		6.3	10.2	
Level of Service	B	B		B	B		A	B		A	B	
Approach Delay (s)		18.8			17.3			9.9			9.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	292	12	8	207	10	4	0	7	4	0	3
Future Vol, veh/h	28	292	12	8	207	10	4	0	7	4	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	321	13	9	227	11	4	0	8	4	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	334	0	0	641	645	327	644	647	233
Stage 1	-	-	-	-	-	-	389	389	-	251	251	-
Stage 2	-	-	-	-	-	-	252	256	-	393	396	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1329	-	-	1225	-	-	388	391	714	386	390	806
Stage 1	-	-	-	-	-	-	635	608	-	753	699	-
Stage 2	-	-	-	-	-	-	752	696	-	632	604	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1329	-	-	1225	-	-	376	377	714	371	376	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	377	-	371	376	-
Stage 1	-	-	-	-	-	-	617	590	-	731	693	-
Stage 2	-	-	-	-	-	-	743	690	-	607	586	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	11.8	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	538	1329	-	-	1225	-	-	483
HCM Lane V/C Ratio	0.022	0.023	-	-	0.007	-	-	0.016
HCM Control Delay (s)	11.8	7.8	0	-	8	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0

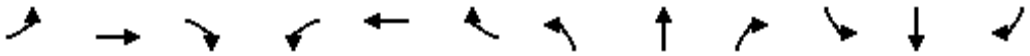
Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	11	288	8	8	416
Future Vol, veh/h	2	11	288	8	8	416
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	316	9	9	457

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	796	321	0	0	325	0
Stage 1	321	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	356	720	-	-	1235	-
Stage 1	735	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	352	720	-	-	1235	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	620	1235	-
HCM Lane V/C Ratio	-	-	0.023	0.007	-
HCM Control Delay (s)	-	-	10.9	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	93	38	36	140	51	57	218	38	34	81	14
Future Volume (vph)	44	93	38	36	140	51	57	218	38	34	81	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1641		1630	1647		1630	1678		1630	1677	
Flt Permitted	0.57	1.00		0.66	1.00		0.67	1.00		0.59	1.00	
Satd. Flow (perm)	970	1641		1140	1647		1143	1678		1005	1677	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	49	103	42	40	156	57	63	242	42	38	90	16
RTOR Reduction (vph)	0	33	0	0	30	0	0	8	0	0	8	0
Lane Group Flow (vph)	49	112	0	40	183	0	63	276	0	38	98	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.4	8.4		8.4	8.4		26.8	24.4		25.2	23.6	
Effective Green, g (s)	8.4	8.4		8.4	8.4		26.8	24.4		25.2	23.6	
Actuated g/C Ratio	0.18	0.18		0.18	0.18		0.56	0.51		0.53	0.49	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	170	287		199	288		663	854		549	826	
v/s Ratio Prot		0.07			c0.11		c0.00	c0.16		0.00	0.06	
v/s Ratio Perm	0.05			0.04			0.05			0.03		
v/c Ratio	0.29	0.39		0.20	0.64		0.10	0.32		0.07	0.12	
Uniform Delay, d1	17.2	17.5		16.9	18.3		4.8	6.9		5.5	6.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.6		0.4	4.0		0.0	1.0		0.0	0.3	
Delay (s)	17.8	18.1		17.2	22.3		4.9	7.9		5.5	6.8	
Level of Service	B	B		B	C		A	A		A	A	
Approach Delay (s)		18.1			21.5			7.4			6.5	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	13.5
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	111	6	13	200	11	18	8	31	2	3	4
Future Vol, veh/h	7	111	6	13	200	11	18	8	31	2	3	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	125	7	15	225	12	20	9	35	2	3	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	237	0	0	131	0	0	408	410	128	426	407	231
Stage 1	-	-	-	-	-	-	144	144	-	260	260	-
Stage 2	-	-	-	-	-	-	264	266	-	166	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1330	-	-	1454	-	-	554	531	922	539	533	808
Stage 1	-	-	-	-	-	-	859	778	-	745	693	-
Stage 2	-	-	-	-	-	-	741	689	-	836	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1330	-	-	1454	-	-	541	521	922	505	523	808
Mov Cap-2 Maneuver	-	-	-	-	-	-	541	521	-	505	523	-
Stage 1	-	-	-	-	-	-	854	773	-	741	685	-
Stage 2	-	-	-	-	-	-	724	681	-	790	770	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.4	10.7	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	693	1330	-	-	1454	-	-	614
HCM Lane V/C Ratio	0.092	0.006	-	-	0.01	-	-	0.016
HCM Control Delay (s)	10.7	7.7	0	-	7.5	0	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0.1

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	12	286	1	4	142
Future Vol, veh/h	3	12	286	1	4	142
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	13	314	1	4	156

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	480	315	0	0	315	0
Stage 1	315	-	-	-	-	-
Stage 2	165	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	545	725	-	-	1245	-
Stage 1	740	-	-	-	-	-
Stage 2	864	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	543	725	-	-	1245	-
Mov Cap-2 Maneuver	543	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	861	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	679	1245	-
HCM Lane V/C Ratio	-	-	0.024	0.004	-
HCM Control Delay (s)	-	-	10.4	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	21	10	7
Future Vol, veh/h	20	0	0	21	10	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	23	11	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	38	15	18	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	23	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	974	1065	1599	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1000	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	974	1065	1599	-	-	-
Mov Cap-2 Maneuver	974	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	974	-	-
HCM Lane V/C Ratio	-	-	0.022	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	0	0	11	4	6
Future Vol, veh/h	20	0	0	11	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	22	0	0	12	4	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	20	8	11	0	-	0
Stage 1	8	-	-	-	-	-
Stage 2	12	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	997	1074	1608	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	1011	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	997	1074	1608	-	-	-
Mov Cap-2 Maneuver	997	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	1011	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1608	-	997	-	-
HCM Lane V/C Ratio	-	-	0.022	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

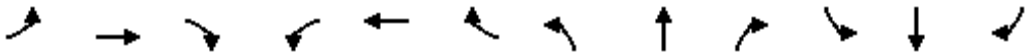
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	0	0	0	0	0	0	0	0	0	0	4
Future Vol, veh/h	11	0	0	0	0	0	0	0	0	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	0	0	0	0	0	0	0	0	0	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2	2	2	2	4	0	4	0	0	0	0	0
Stage 1	2	2	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	2	4	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1020	894	1082	1020	891	-	1618	-	-	-	-	-
Stage 1	1021	894	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1021	892	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	894	1082	1020	891	-	1618	-	-	-	-	-
Mov Cap-2 Maneuver	-	894	-	1020	891	-	-	-	-	-	-	-
Stage 1	1021	894	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1021	892	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	0	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1618	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0	0	-	-
HCM Lane LOS	A	-	-	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	181	100	104	148	61	52	205	43	59	243	55
Future Volume (vph)	45	181	100	104	148	61	52	205	43	59	243	55
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.97		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1624		1630	1640		1630	1671		1630	1668	
Flt Permitted	0.60	1.00		0.45	1.00		0.57	1.00		0.57	1.00	
Satd. Flow (perm)	1022	1624		776	1640		981	1671		984	1668	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	47	189	104	108	154	64	54	214	45	61	253	57
RTOR Reduction (vph)	0	41	0	0	30	0	0	12	0	0	13	0
Lane Group Flow (vph)	47	252	0	108	188	0	54	247	0	61	297	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.5	11.5		11.5	11.5		21.8	20.3		23.6	21.2	
Effective Green, g (s)	11.5	11.5		11.5	11.5		21.8	20.3		23.6	21.2	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.46	0.43		0.49	0.44	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	246	391		187	395		468	711		519	741	
v/s Ratio Prot		c0.16			0.11		0.00	0.15		c0.01	c0.18	
v/s Ratio Perm	0.05			0.14			0.05			0.05		
v/c Ratio	0.19	0.64		0.58	0.48		0.12	0.35		0.12	0.40	
Uniform Delay, d1	14.4	16.3		16.0	15.5		7.3	9.2		6.3	9.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	3.2		3.5	0.7		0.1	1.3		0.1	1.6	
Delay (s)	14.7	19.5		19.5	16.2		7.4	10.6		6.4	10.6	
Level of Service	B	B		B	B		A	B		A	B	
Approach Delay (s)		18.8			17.3			10.0			9.9	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	13.5
Intersection Capacity Utilization	59.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	292	32	36	207	10	16	5	23	4	9	3
Future Vol, veh/h	28	292	32	36	207	10	16	5	23	4	9	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	321	35	40	227	11	18	5	25	4	10	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	356	0	0	719	718	338	727	730	233
Stage 1	-	-	-	-	-	-	400	400	-	312	312	-
Stage 2	-	-	-	-	-	-	319	318	-	415	418	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1329	-	-	1203	-	-	344	355	704	339	349	806
Stage 1	-	-	-	-	-	-	626	602	-	699	658	-
Stage 2	-	-	-	-	-	-	693	654	-	615	591	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1329	-	-	1203	-	-	318	332	704	306	326	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	318	332	-	306	326	-
Stage 1	-	-	-	-	-	-	608	585	-	679	633	-
Stage 2	-	-	-	-	-	-	654	629	-	570	574	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	1.2	14	15.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	449	1329	-	-	1203	-	-	360
HCM Lane V/C Ratio	0.108	0.023	-	-	0.033	-	-	0.049
HCM Control Delay (s)	14	7.8	0	-	8.1	0	-	15.5
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	11	290	8	8	417
Future Vol, veh/h	2	11	290	8	8	417
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	319	9	9	458

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	799	323	0	0	327	0
Stage 1	323	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	355	718	-	-	1233	-
Stage 1	734	-	-	-	-	-
Stage 2	625	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	351	718	-	-	1233	-
Mov Cap-2 Maneuver	351	-	-	-	-	-
Stage 1	734	-	-	-	-	-
Stage 2	619	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	619	1233	-
HCM Lane V/C Ratio	-	-	0.023	0.007	-
HCM Control Delay (s)	-	-	11	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	0	13	35	23
Future Vol, veh/h	13	0	0	13	35	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	0	14	38	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	65	51	63	0	-	0
Stage 1	51	-	-	-	-	-
Stage 2	14	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	941	1017	1540	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	1009	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	941	1017	1540	-	-	-
Mov Cap-2 Maneuver	941	-	-	-	-	-
Stage 1	971	-	-	-	-	-
Stage 2	1009	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1540	-	941	-	-
HCM Lane V/C Ratio	-	-	0.015	-	-
HCM Control Delay (s)	0	-	8.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	0	0	7	12	23
Future Vol, veh/h	13	0	0	7	12	23
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	0	0	8	13	25

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	34	26	38	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	8	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	979	1050	1572	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	979	1050	1572	-	-	-
Mov Cap-2 Maneuver	979	-	-	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	1015	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1572	-	979	-	-
HCM Lane V/C Ratio	-	-	0.014	-	-
HCM Control Delay (s)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	0	0	0	0	0	0	0	0	0	12
Future Vol, veh/h	7	0	0	0	0	0	0	0	0	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	0	0	0	0	0	0	0	0	0	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	7	7	7	7	13	0	13	0	0	0	0	0
Stage 1	7	7	-	0	0	-	-	-	-	-	-	-
Stage 2	0	0	-	7	13	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	1013	888	1075	1013	881	-	1606	-	-	-	-	-
Stage 1	1015	890	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1015	885	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	-	888	1075	1013	881	-	1606	-	-	-	-	-
Mov Cap-2 Maneuver	-	888	-	1013	881	-	-	-	-	-	-	-
Stage 1	1015	890	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	1015	885	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	0	0
HCM LOS	-	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1606	-	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0	0	-	-
HCM Lane LOS	A	-	-	-	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-	-	-	-

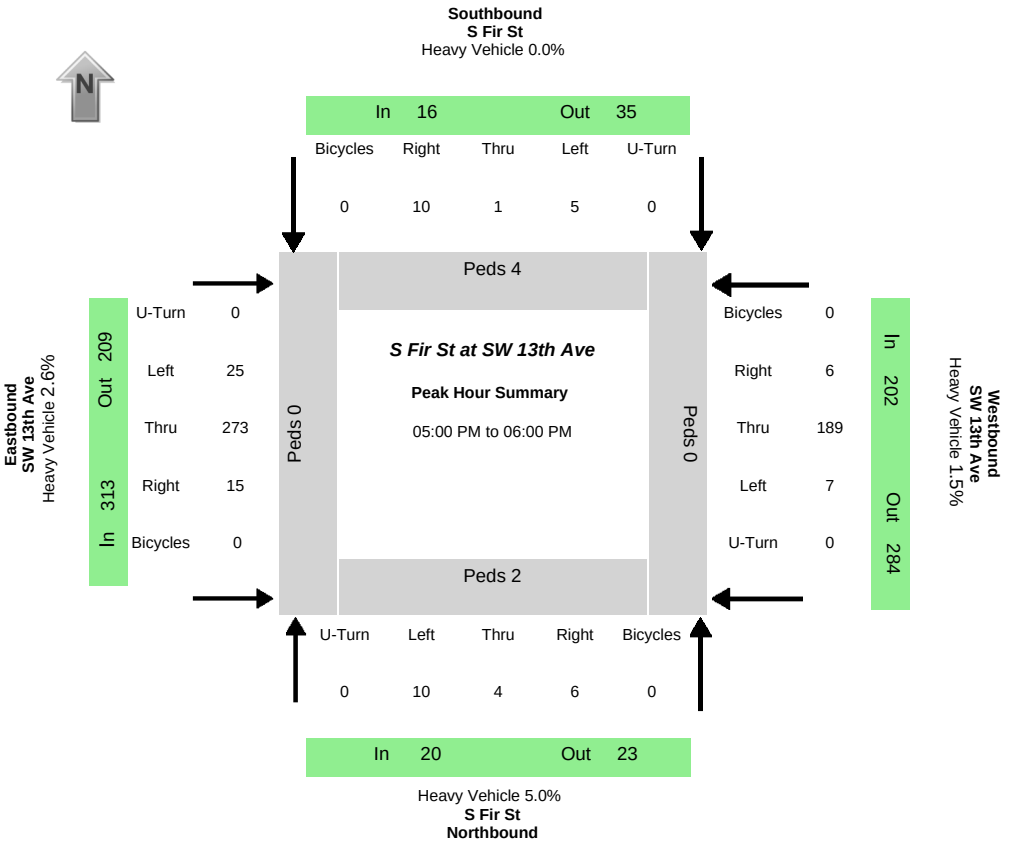
DKS

APPENDIX B

Existing Counts

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Fir St*
E/W street	*SW 13th Ave*
City, State	Canby OR
Site Notes	
Location	45.252166 - -122.691978
Start Date	Tuesday, July 11, 2017
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	05:00:00 PM
Peak 15 Min Start	05:10:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
10	4	6	0	5	1	10	0	25	273	15	0	7	189	6	0	20	16	313	202	23	35	209	284

Percent Heavy Vehicles

0.0%	0.0%	16.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	6.7%	0.0%	0.0%	1.6%	0.0%	0.0%	5.0%	0.0%	2.6%	1.5%	4.3%	0.0%	1.4%	2.8%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0

PHV - Pedestrians

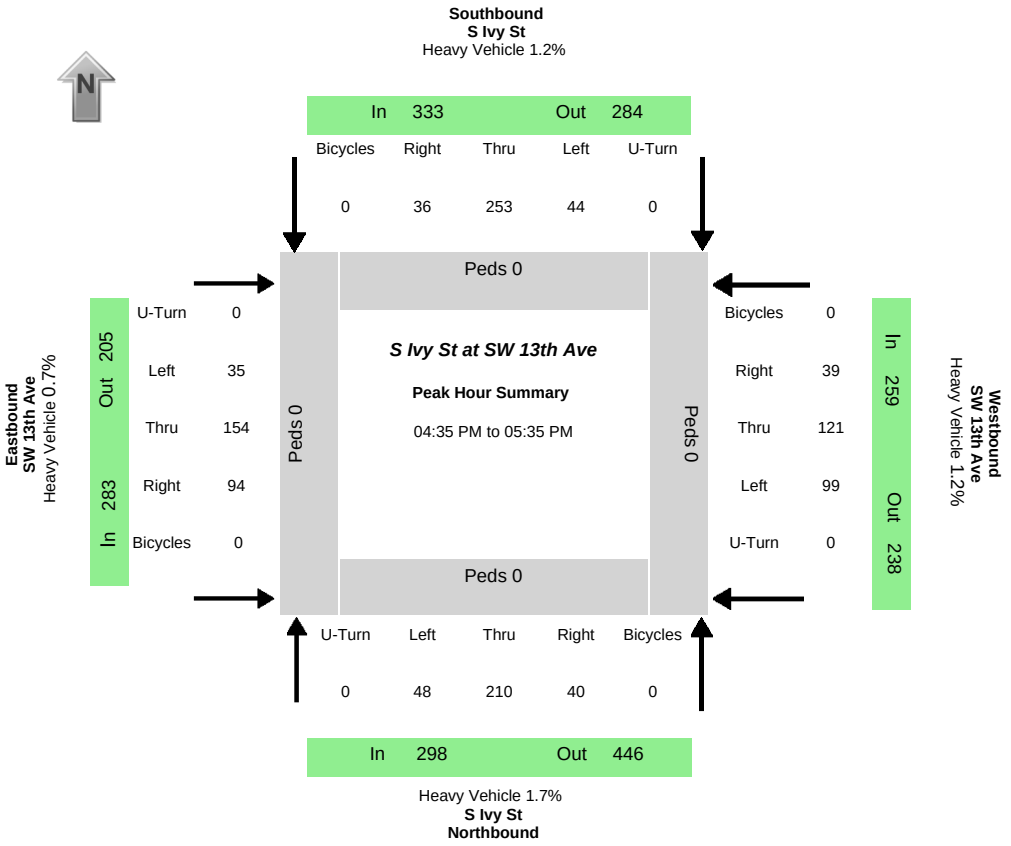
in Crosswalk				
NB	SB	EB	WB	**Sum**
2	4	0	0	6

All Vehicle Volumes

	Northbound S Fir St				Southbound S Fir St				Eastbound SW 13th Ave				Westbound SW 13th Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	2	0	0	0	1	0	2	0	3	23	3		3	16	2	0		
04:05:00 PM	0	0	1	0	3	0	0	0	1	19	2		0	17	2	0		
04:10:00 PM	2	0	0	0	0	1	1	0	4	18	1		0	14	2	0	143	
04:15:00 PM	0	0	1	0	1	1	2	0	1	30	0		1	21	1	0	147	
04:20:00 PM	3	0	0	0	0	0	1	0	0	20	2		2	16	0	0	146	
04:25:00 PM	2	0	0	0	0	0	0	0	0	19	1		0	15	1	0	141	
04:30:00 PM	2	1	0	0	0	0	1	0	2	15	0		0	6	1	0	110	
04:35:00 PM	1	0	0	0	0	0	1	0	3	23	1		2	15	0	0	112	
04:40:00 PM	0	0	0	0	0	0	3	0	0	26	1		1	15	1	0	121	
04:45:00 PM	4	0	1	0	1	1	2	0	3	23	1		1	16	0	0	146	
04:50:00 PM	1	0	0	0	0	0	1	0	3	17	1		0	18	0	0	141	
04:55:00 PM	2	0	0	0	1	0	1	0	1	16	0		1	10	0	0	126	531
05:00:00 PM	2	1	0	0	1	1	0	0	2	28	4		0	19	0	0	131	534
05:05:00 PM	0	0	0	0	1	0	1	0	0	17	1		0	13	0	0	123	522
05:10:00 PM	0	0	0	0	0	0	0	0	2	23	2		1	14	2	0	135	523
05:15:00 PM	0	1	0	0	1	0	1	0	2	23	1		1	19	1	0	127	514
05:20:00 PM	0	0	1	0	0	0	1	0	3	32	0		2	19	0	0	152	528
05:25:00 PM	0	0	1	0	0	0	0	0	0	15	1		0	16	0	0	141	523
05:30:00 PM	4	0	0	0	1	0	3	0	3	22	1		0	17	1	0	143	547
05:35:00 PM	0	2	0	0	0	0	1	0	1	22	1		0	14	0	0	126	542
05:40:00 PM	2	0	1	0	0	0	2	0	4	21	1		2	19	1	0	146	548
05:45:00 PM	2	0	1	0	0	0	1	0	5	18	1		1	14	1	0	138	539
05:50:00 PM	0	0	1	0	0	0	0	0	1	32	0		0	10	0	0	141	542
05:55:00 PM	0	0	1	0	1	0	0	0	2	20	2		0	15	0	0	129	551

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Ivy St*
E/W street	*SW 13th Ave*
City, State	Canby OR
Site Notes	
Location	45.252157 - -122.686946
Start Date	Tuesday, July 11, 2017
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.96



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
48	210	40	0	44	253	36	0	35	154	94	0	99	121	39	0	298	333	283	259	446	284	205	238
Percent Heavy Vehicles																							
0.0%	2.4%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	2.0%	0.8%	0.0%	0.0%	1.7%	1.2%	0.7%	1.2%	1.3%	1.8%	0.5%	0.8%

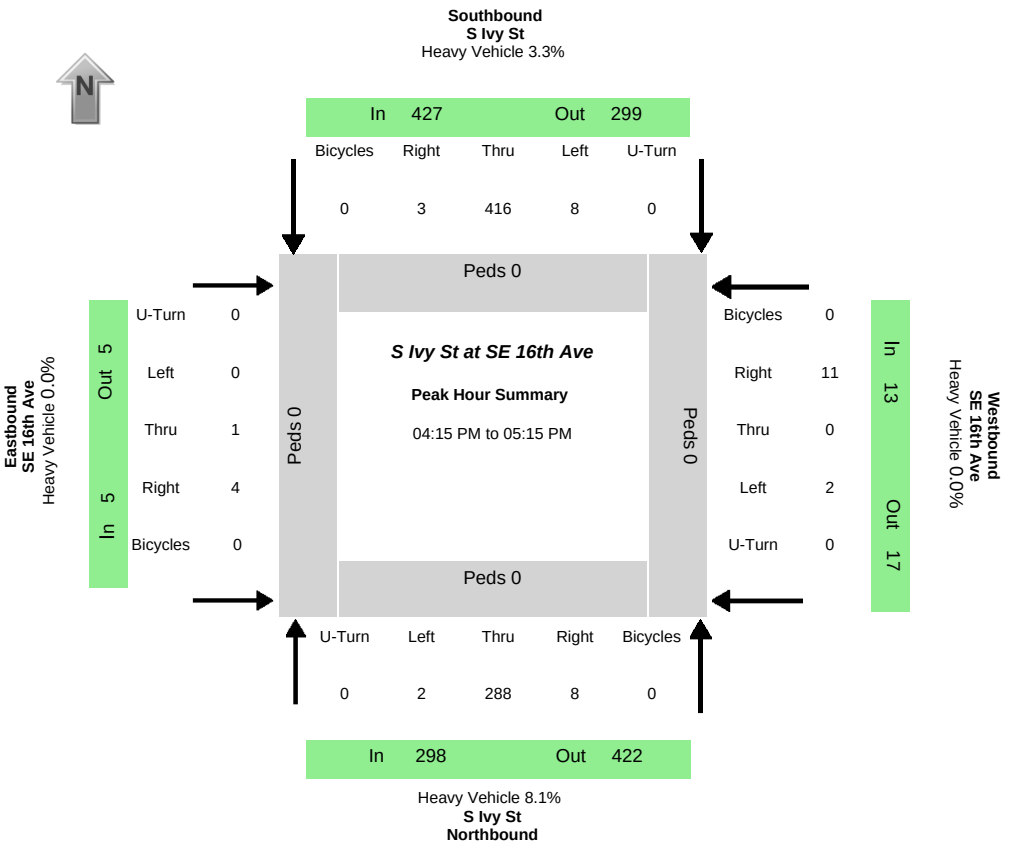
PHV- Bicycles																	PHV - Pedestrians					
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0		0	0	0	0	0	0

All Vehicle Volumes

	Northbound S Ivy St				**Southbound** S Ivy St				**Eastbound** SW 13th Ave				**Westbound** SW 13th Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	6	17	3	0	0	15	7	0	3	12	6		8	11	6			
04:05:00 PM	9	23	7	0	4	18	4	0	2	13	11		12	12	5			
04:10:00 PM	1	12	5	0	0	11	1	0	1	10	5		8	15	2		285	
04:15:00 PM	7	25	4	0	3	13	2	0	2	21	8		8	11	3		298	
04:20:00 PM	4	28	6	0	6	18	3	0	0	16	5		8	10	1		283	
04:25:00 PM	5	20	5	0	0	22	3	0	1	10	2		12	10	2		304	
04:30:00 PM	1	18	4	0	0	18	1	0	0	13	2		12	5	3		274	
04:35:00 PM	1	17	3	0	0	21	5	0	0	18	7		9	13	7		270	
04:40:00 PM	2	15	1	0	3	17	3	0	1	9	9		6	8	1		253	
04:45:00 PM	9	16	7	0	3	31	2	0	6	13	5		6	10	3		287	
04:50:00 PM	3	19	2	0	4	20	3	0	5	13	5		11	8	4		283	
04:55:00 PM	4	16	4	0	4	25	2	0	2	10	3		12	6	4		300	1142
05:00:00 PM	8	18	5	0	5	25	3	0	6	12	6		12	7	6		302	1161
05:05:00 PM	6	17	4	0	5	20	2	0	4	12	11		10	9	2		307	1143
05:10:00 PM	2	23	3	0	6	13	1	0	2	11	10		9	8	2		305	1162
05:15:00 PM	3	20	4	0	4	18	5	0	3	11	11		6	20	1		298	1161
05:20:00 PM	5	14	2	0	4	19	6	0	3	22	10		6	10	1		298	1158
05:25:00 PM	1	21	3	0	3	22	2	0	1	11	8		4	12	4		300	1158
05:30:00 PM	4	14	2	0	3	22	2	0	2	12	9		8	10	4		286	1173
05:35:00 PM	4	17	4	0	5	14	2	0	3	10	9		12	9	3		276	1164
05:40:00 PM	5	9	3	0	1	17	3	0	6	9	5		10	11	4		267	1172
05:45:00 PM	4	16	5	0	5	16	0	0	2	10	6		10	12	3		264	1150
05:50:00 PM	0	14	7	0	9	15	0	0	4	21	9		10	11	2		274	1155
05:55:00 PM	3	12	4	0	2	13	1	0	0	8	8		4	12	2		260	1132

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Ivy St*
E/W street	*SE 16th Ave*
City, State	Canby OR
Site Notes	
Location	45.249 - -122.686981
Start Date	Tuesday, July 11, 2017
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:15:00 PM
Peak 15 Min Start	05:00:00 PM
PHF (15-Min Int)	0.91



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
2	288	8	0	8	416	3	0	0	1	4	0	2	0	11	0	298	427	5	13	422	299	5	17

Percent Heavy Vehicles

0.0%	8.3%	0.0%	0.0%	0.0%	3.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	8.1%	3.3%	0.0%	0.0%	3.3%	8.0%	0.0%	0.0%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum
0	0	0	0	0	0	0	0	0	0	0		0	0	0		0

PHV - Pedestrians

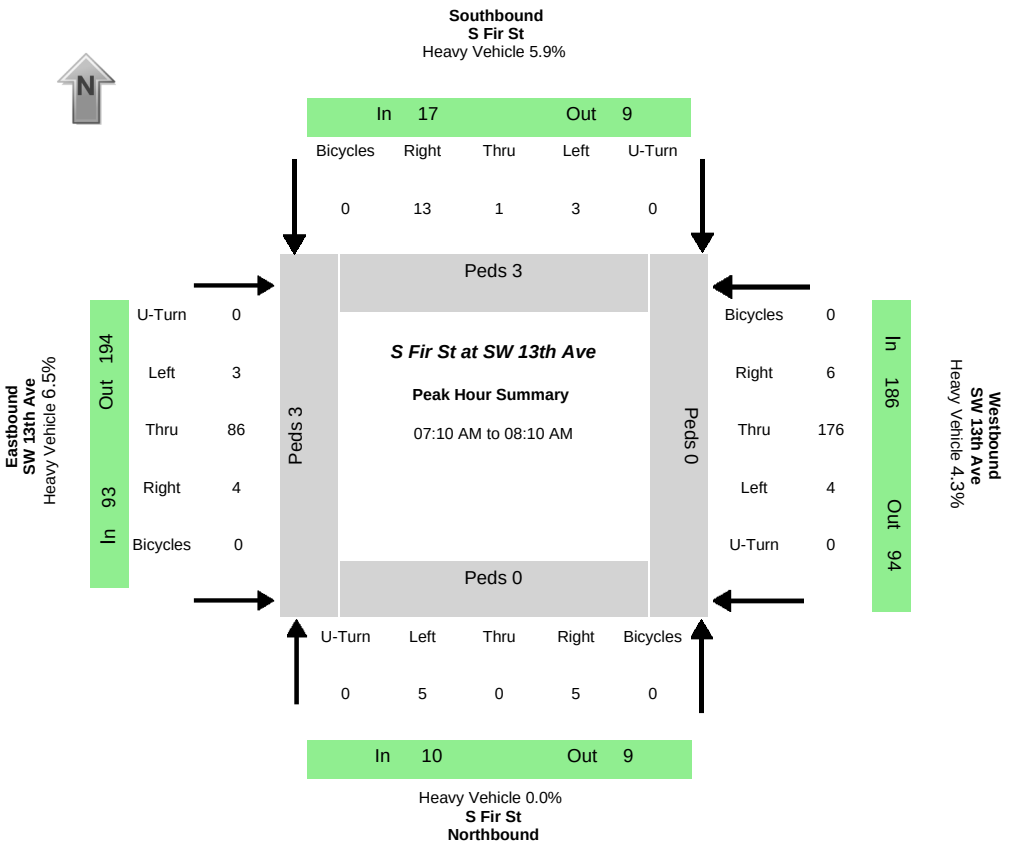
in Crosswalk				
NB	SB	EB	WB	Sum
0	0	0	0	0

All Vehicle Volumes

	Northbound S Ivy St				Southbound S Ivy St				Eastbound SE 16th Ave				Westbound SE 16th Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
04:00:00 PM	0	27	0	0	0	27	0	0	0	0	0		1	0	0			
04:05:00 PM	0	22	1	0	1	34	0	0	0	0	0		0	0	1			
04:10:00 PM	0	21	0	0	1	24	1	0	0	0	0		0	0	0		161	
04:15:00 PM	0	35	0	0	1	32	0	0	0	0	0		0	0	1		175	
04:20:00 PM	0	24	2	0	0	30	0	0	0	0	1		0	0	1		174	
04:25:00 PM	0	30	0	0	0	32	3	0	0	0	0		0	0	0		192	
04:30:00 PM	1	20	0	0	0	29	0	0	0	0	0		0	0	0		173	
04:35:00 PM	0	16	0	0	0	33	0	0	0	0	0		1	0	0		165	
04:40:00 PM	0	15	0	0	1	35	0	0	0	0	0		0	0	1		152	
04:45:00 PM	0	33	1	0	0	47	0	0	0	0	0		0	0	1		184	
04:50:00 PM	1	16	1	0	1	24	0	0	0	0	1		0	0	1		179	
04:55:00 PM	0	25	0	0	0	42	0	0	0	0	0		0	0	1		195	700
05:00:00 PM	0	22	1	0	2	33	0	0	0	0	2		0	0	1		174	706
05:05:00 PM	0	24	1	0	1	37	0	0	0	0	0		1	0	1		194	712
05:10:00 PM	0	28	2	0	2	42	0	0	0	1	0		0	0	3		204	743
05:15:00 PM	1	27	0	0	0	34	0	0	0	0	0		0	0	0		205	736
05:20:00 PM	0	17	2	0	0	36	0	0	0	0	0		2	0	0		197	735
05:25:00 PM	0	21	0	0	0	29	0	0	0	0	0		0	0	0		169	720
05:30:00 PM	0	18	0	0	2	33	0	0	0	0	0		1	0	2		163	726
05:35:00 PM	0	25	0	0	1	36	0	0	0	0	0		1	0	0		169	739
05:40:00 PM	0	15	0	0	3	30	1	0	0	0	0		0	0	1		169	737
05:45:00 PM	3	24	0	0	0	32	0	0	0	0	0		3	0	1		176	718
05:50:00 PM	0	15	1	0	1	28	0	0	0	0	0		0	0	0		158	718
05:55:00 PM	0	20	1	0	2	27	1	0	0	0	0		1	0	1		161	703

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Fir St*
E/W street	*SW 13th Ave*
City, State	Canby OR
Site Notes	
Location	45.252166 - -122.691978
Start Date	Tuesday, July 11, 2017
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:10:00 AM
Peak 15 Min Start	07:20:00 AM
PHF (15-Min Int)	0.89



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
5	0	5	0	3	1	13	0	3	86	4	0	4	176	6	0	10	17	93	186	9	9	194	94

Percent Heavy Vehicles

0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	0.0%	0.0%	0.0%	7.0%	0.0%	0.0%	0.0%	4.0%	16.7%	0.0%	0.0%	5.9%	6.5%	4.3%	0.0%	11.1%	3.6%	7.4%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0		0

PHV - Pedestrians

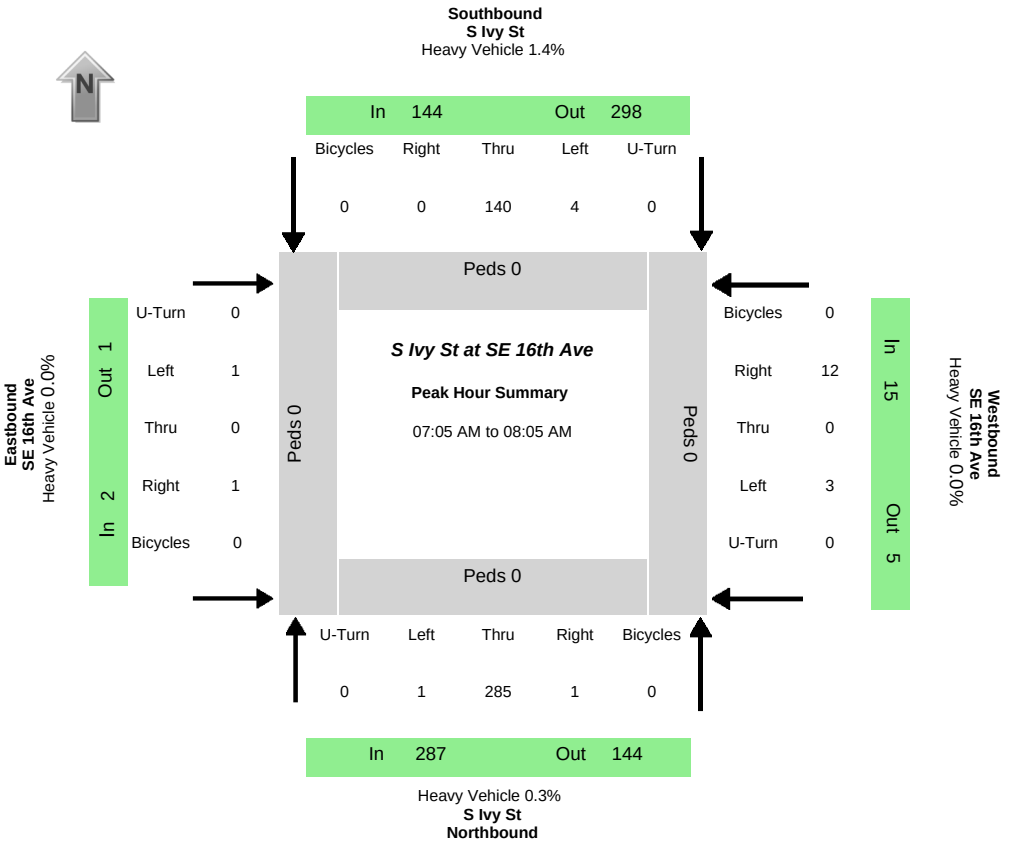
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	3	3	0	6

All Vehicle Volumes

	Northbound S Fir St				Southbound S Fir St				Eastbound SW 13th Ave				Westbound SW 13th Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM	0	0	0	0	0	0	1	0	0	3	1		1	7	2			
07:05:00 AM	0	0	0	0	0	0	2	0	0	8	0		0	9	0			
07:10:00 AM	1	0	0	0	0	0	2	0	0	3	1		0	15	0		56	
07:15:00 AM	1	0	0	0	0	0	0	0	0	7	0		0	12	0		61	
07:20:00 AM	0	0	0	0	0	0	2	0	0	7	0		0	22	0		73	
07:25:00 AM	0	0	1	0	1	0	0	0	0	11	1		0	10	1		76	
07:30:00 AM	0	0	2	0	1	0	2	0	0	8	1		1	15	0		86	
07:35:00 AM	0	0	1	0	0	0	1	0	0	5	0		0	14	1		77	
07:40:00 AM	0	0	0	0	1	0	0	0	1	5	0		0	23	1		83	
07:45:00 AM	0	0	1	0	0	0	3	0	1	7	0		1	15	0		81	
07:50:00 AM	1	0	0	0	0	0	1	0	0	9	0		0	14	1		85	
07:55:00 AM	1	0	0	0	0	0	1	0	1	9	1		1	13	1		82	297
08:00:00 AM	0	0	0	0	0	0	0	0	0	9	0		1	13	0		77	305
08:05:00 AM	1	0	0	0	0	1	1	0	0	6	0		0	10	1		71	306
08:10:00 AM	0	0	1	0	0	0	1	0	0	5	0		0	10	0		60	301
08:15:00 AM	0	0	0	0	0	0	2	0	0	11	0		0	8	0		58	302
08:20:00 AM	2	0	0	0	0	0	1	0	0	6	0		0	10	0		57	290
08:25:00 AM	0	0	0	0	0	0	1	0	1	7	1		1	15	0		66	291
08:30:00 AM	1	0	0	0	1	1	0	0	2	6	1		0	8	0		65	281
08:35:00 AM	2	0	2	0	1	0	1	0	1	1	1		0	8	0		63	276
08:40:00 AM	2	0	0	0	0	0	2	0	0	11	2		0	13	0		67	275
08:45:00 AM	1	0	2	0	1	0	1	0	0	13	0		0	17	0		82	282
08:50:00 AM	0	0	0	0	0	0	0	0	1	10	0		1	13	0		90	281
08:55:00 AM	1	0	0	0	0	1	0	0	1	12	0		1	14	0		90	283

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Ivy St*
E/W street	*SE 16th Ave*
City, State	Canby OR
Site Notes	
Location	45.249 - -122.686981
Start Date	Tuesday, July 11, 2017
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:05:00 AM
Peak 15 Min Start	07:20:00 AM
PHF (15-Min Int)	0.86



Peak-Hour Volumes (PHV)																								
Northbound				**Southbound**				**Eastbound**				**Westbound**				**Entering**				**Leaving**			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
1	285	1	0	4	140	0	0	1	0	1	0	3	0	12	0	287	144	2	15	144	298	1	5

Percent Heavy Vehicles																							
0.0%	0.4%	0.0%	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%	1.4%	0.0%	0.0%	1.4%	0.3%	0.0%	0.0%

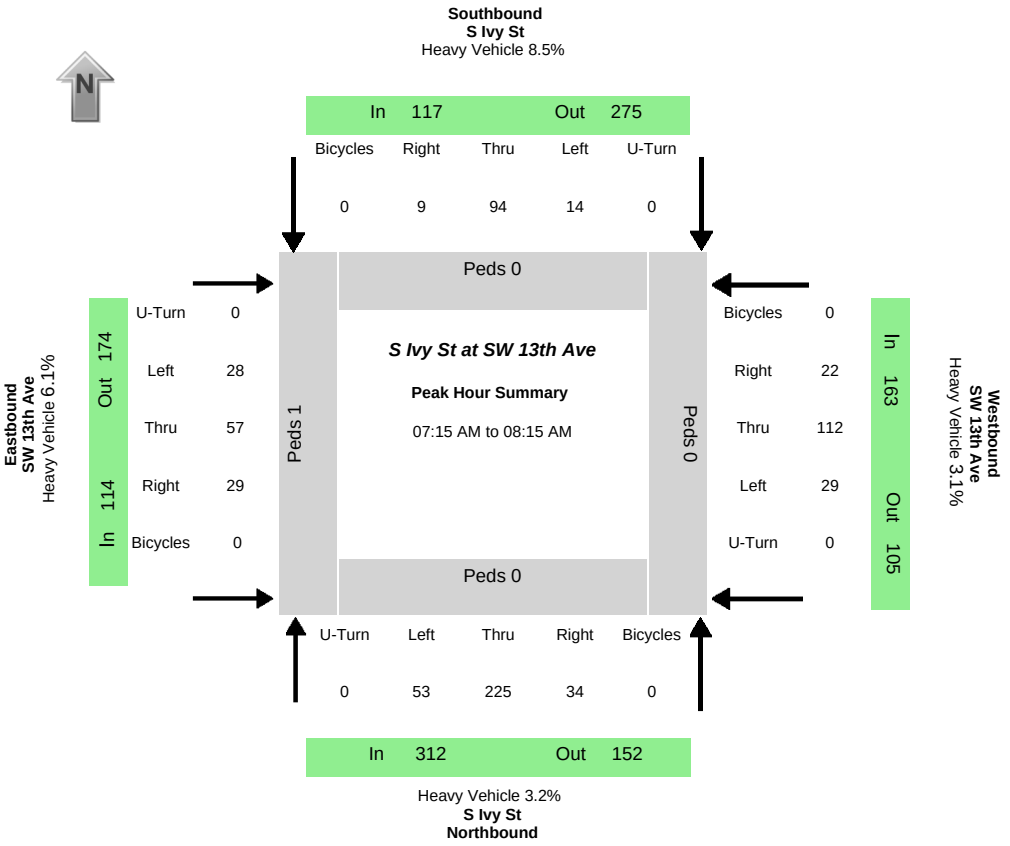
PHV- Bicycles																	PHV - Pedestrians					
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0		0	0	0	0	0	0

All Vehicle Volumes

	Northbound S Ivy St				**Southbound** S Ivy St				**Eastbound** SE 16th Ave				**Westbound** SE 16th Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM	0	18	0	0	0	13	0	0	0	0	0		0	0	2			
07:05:00 AM	1	20	0	0	0	14	0	0	0	0	0		0	0	1			
07:10:00 AM	0	12	1	0	0	5	0	0	0	0	0		0	0	3		90	
07:15:00 AM	0	29	0	0	0	8	0	0	0	0	0		0	0	1		95	
07:20:00 AM	0	19	0	0	0	15	0	0	0	0	1		1	0	1		96	
07:25:00 AM	0	29	0	0	2	11	0	0	0	0	0		0	0	0		117	
07:30:00 AM	0	27	0	0	0	23	0	0	1	0	0		0	0	0		130	
07:35:00 AM	0	20	0	0	0	9	0	0	0	0	0		0	0	0		122	
07:40:00 AM	0	20	0	0	0	6	0	0	0	0	0		0	0	2		108	
07:45:00 AM	0	37	0	0	0	11	0	0	0	0	0		0	0	1		106	
07:50:00 AM	0	30	0	0	2	8	0	0	0	0	0		0	0	0		117	
07:55:00 AM	0	20	0	0	0	16	0	0	0	0	0		1	0	2		128	443
08:00:00 AM	0	22	0	0	0	14	0	0	0	0	0		1	0	1		117	448
08:05:00 AM	0	27	0	0	0	5	0	0	0	0	0		0	0	1		110	445
08:10:00 AM	0	2	0	0	1	6	0	0	0	0	0		0	0	0		80	433
08:15:00 AM	0	9	0	0	0	7	0	0	0	0	0		0	0	1		59	412
08:20:00 AM	0	39	0	0	0	28	2	0	0	0	0		0	0	1		96	445
08:25:00 AM	0	13	0	0	1	8	0	0	0	0	0		0	0	1		110	426
08:30:00 AM	1	18	1	0	0	12	1	0	0	0	0		0	0	0		126	408
08:35:00 AM	0	24	0	0	0	12	0	0	0	0	0		0	0	0		92	415
08:40:00 AM	0	13	0	0	1	8	0	0	0	0	0		0	0	0		91	409
08:45:00 AM	0	21	0	0	0	15	1	0	0	0	0		0	0	0		95	397
08:50:00 AM	0	30	0	0	1	10	0	0	0	0	0		0	0	2		102	400
08:55:00 AM	0	17	1	0	0	17	0	0	0	0	0		0	0	0		115	396

K-D-N
KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224	
N/S street	*S Ivy St*
E/W street	*SW 13th Ave*
City, State	Canby OR
Site Notes	
Location	45.252157 - -122.686946
Start Date	Tuesday, July 11, 2017
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:15:00 AM
Peak 15 Min Start	07:45:00 AM
PHF (15-Min Int)	0.90



Peak-Hour Volumes (PHV)

Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
53	225	34	0	14	94	9	0	28	57	29	0	29	112	22	0	312	117	114	163	152	275	174	105

Percent Heavy Vehicles

0.0%	4.0%	2.9%	0.0%	7.1%	9.6%	0.0%	0.0%	0.0%	10.5%	3.4%	0.0%	0.0%	4.5%	0.0%	0.0%	3.2%	8.5%	6.1%	3.1%	6.6%	3.3%	2.9%	7.6%

PHV- Bicycles

Northbound				Southbound				Eastbound				Westbound				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0		0

PHV - Pedestrians

in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	1	0	1

All Vehicle Volumes

	Northbound S Ivy St				Southbound S Ivy St				Eastbound SW 13th Ave				Westbound SW 13th Ave				15 Min	1 HR
Time	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Sum	Sum
07:00:00 AM	0	17	2	0	0	11	0	0	1	0	1		2	7	3			
07:05:00 AM	1	20	4	0	2	7	0	0	3	6	1		6	8	3			
07:10:00 AM	6	7	2	0	0	4	0	0	0	1	0		0	9	0		134	
07:15:00 AM	5	18	2	0	0	5	1	0	0	8	0		2	12	1		144	
07:20:00 AM	7	19	3	0	0	7	0	0	0	4	7		4	13	3		150	
07:25:00 AM	3	16	3	0	1	3	0	0	2	6	3		4	5	1		168	
07:30:00 AM	1	22	4	0	2	12	1	0	2	4	5		1	15	1		184	
07:35:00 AM	1	15	3	0	0	9	0	0	4	4	2		3	10	1		169	
07:40:00 AM	4	18	1	0	1	5	1	0	4	1	0		0	15	2		174	
07:45:00 AM	9	29	3	0	0	8	1	0	2	5	1		3	6	1		172	
07:50:00 AM	8	18	3	0	2	11	2	0	6	5	1		1	5	2		184	
07:55:00 AM	1	22	1	0	2	9	2	0	3	5	1		5	10	3		196	672
08:00:00 AM	4	18	1	0	1	7	1	0	1	8	3		3	12	3		190	690
08:05:00 AM	6	18	5	0	3	7	0	0	2	3	0		2	4	2		178	681
08:10:00 AM	4	12	5	0	2	11	0	0	2	4	6		1	5	2		168	706
08:15:00 AM	5	5	2	0	0	6	0	0	0	4	2		2	2	2		136	682
08:20:00 AM	2	12	7	0	2	10	0	0	2	4	1		4	8	2		138	669
08:25:00 AM	5	13	2	0	2	8	1	0	2	1	4		3	8	2		135	673
08:30:00 AM	4	17	3	0	1	11	1	0	3	4	2		2	4	3		160	658
08:35:00 AM	3	14	2	0	1	9	0	0	2	1	0		3	6	2		149	649
08:40:00 AM	3	13	3	0	0	4	0	0	4	6	3		4	11	3		152	651
08:45:00 AM	6	13	4	0	2	15	0	0	3	5	5		2	13	2		167	653
08:50:00 AM	5	17	3	0	0	6	1	0	1	7	4		2	7	1		178	643
08:55:00 AM	3	19	1	0	4	12	2	0	0	6	3		2	9	3		188	643

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
503-804-3294

Fir St south of 13th

Date Start: 13-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
07/13/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	2	1	0	0	0	0	0	0	0	0	0	0	0	0	3
03:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	2	0	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
06:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
06:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
06:45	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
	0	4	0	0	0	0	0	0	0	0	0	0	0	1	5
07:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:15	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
07:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45	0	1	2	0	0	0	0	0	0	0	0	0	0	0	3
	0	2	7	0	0	0	0	0	0	0	0	0	0	0	9
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
08:30	0	2	1	1	0	0	0	0	0	0	0	0	0	0	4
08:45	0	6	0	0	1	0	0	0	0	0	0	0	0	0	7
	0	12	1	1	1	0	0	0	0	0	0	0	0	0	15
09:00	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
09:15	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
09:30	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
09:45	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2
	0	18	3	0	2	0	0	0	0	0	0	0	0	0	23
10:00	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
10:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
10:30	0	2	0	0	1	0	0	0	0	0	0	0	0	0	3
10:45	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
	0	16	1	0	2	0	0	0	0	0	0	0	0	0	19
11:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
11:15	0	5	2	0	1	0	0	0	0	0	0	0	0	0	8
11:30	0	3	0	0	0	0	0	0	0	0	0	0	0	1	4
11:45	0	7	0	0	1	0	0	0	0	0	0	0	0	0	8
	0	20	3	0	2	0	0	0	0	0	0	0	0	1	26
Total	2	81	15	1	7	0	0	0	0	0	0	0	0	2	108
Percent	1.9%	75.0%	13.9%	0.9%	6.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
503-804-3294

Fir St south of 13th

Date Start: 13-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

SB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12 PM	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
12:15	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
12:30	0	9	1	0	1	0	0	0	0	0	0	0	0	1	12
12:45	2	6	0	0	0	0	0	0	0	0	0	0	0	0	8
	2	26	2	0	2	0	0	0	0	0	0	0	0	1	33
13:00	0	11	0	0	0	0	0	0	0	0	0	0	0	0	11
13:15	0	3	1	0	2	0	0	0	0	0	0	0	0	0	6
13:30	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
13:45	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
	0	26	5	0	2	0	0	0	0	0	0	0	0	0	33
14:00	0	2	0	0	1	0	0	0	0	0	0	0	0	0	3
14:15	1	5	2	0	0	0	0	0	0	0	0	0	0	0	8
14:30	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
14:45	1	4	0	0	0	0	0	0	0	0	0	0	0	0	5
	2	16	3	0	1	0	0	0	0	0	0	0	0	0	22
15:00	1	6	0	0	0	0	0	0	0	0	0	0	0	0	7
15:15	0	9	0	0	1	0	0	0	0	0	0	0	0	0	10
15:30	1	6	1	0	1	0	0	0	0	0	0	0	0	0	9
15:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
	2	25	2	0	2	0	0	0	0	0	0	0	0	0	31
16:00	1	3	0	0	0	0	0	0	0	0	0	0	0	0	4
16:15	0	3	1	0	1	0	0	0	0	0	0	0	0	2	7
16:30	0	2	0	0	0	0	0	0	0	0	0	0	0	1	3
16:45	0	8	1	0	0	0	0	0	0	0	0	0	0	1	10
	1	16	2	0	1	0	0	0	0	0	0	0	0	4	24
17:00	0	6	3	0	0	0	0	0	0	0	0	0	0	0	9
17:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
17:30	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
17:45	0	2	0	0	1	0	0	0	0	0	0	0	0	0	3
	0	15	3	0	1	0	0	0	0	0	0	0	0	0	19
18:00	1	3	3	0	1	0	0	0	0	0	0	0	0	0	8
18:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
18:30	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
18:45	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
	1	19	4	0	1	0	0	0	0	0	0	0	0	0	25
19:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
19:15	0	3	1	0	1	0	0	0	0	0	0	0	0	0	5
19:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
19:45	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	0	11	3	0	1	0	0	0	0	0	0	0	0	0	15
20:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
20:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:30	0	2	2	0	0	0	0	0	0	0	0	0	0	1	5
20:45	1	1	1	0	0	0	0	0	0	0	0	0	0	0	3
	1	5	4	0	0	0	0	0	0	0	0	0	0	1	11
21:00	0	4	1	0	1	0	0	0	0	0	0	0	0	0	6
21:15	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
21:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
21:45	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
	0	15	2	0	2	0	0	0	0	0	0	0	0	0	19
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	9	176	30	0	13	0	0	0	0	0	0	0	0	6	234
Percent	3.8%	75.2%	12.8%	0.0%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.6%	
Grand Total	11	257	45	1	20	0	0	0	0	0	0	0	0	8	342
Percent	3.2%	75.1%	13.2%	0.3%	5.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.3%	

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
503-804-3294

Fir St south of 13th

Date Start: 13-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
07/13/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2
	1	1	0	0	0	0	0	0	0	0	0	0	0	1	3
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
05:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
06:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
06:15	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4
06:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45	0	6	1	0	0	0	0	0	0	0	0	0	0	1	8
	0	12	2	0	0	0	0	0	0	0	0	0	0	1	15
07:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15	1	2	1	0	0	1	0	0	0	0	0	0	0	0	5
07:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
07:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
	1	6	2	0	0	1	0	0	0	0	0	0	0	0	10
08:00	0	5	1	0	0	0	0	0	0	0	0	0	0	0	6
08:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
08:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
08:45	0	7	0	0	1	0	0	0	0	0	0	0	0	0	8
	0	17	1	0	1	0	0	0	0	0	0	0	0	0	19
09:00	1	3	1	0	0	0	0	0	0	0	0	0	0	0	5
09:15	0	2	2	0	0	0	0	0	0	0	0	0	0	0	4
09:30	0	2	1	0	1	0	0	0	0	0	0	0	0	0	4
09:45	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
	1	13	5	0	1	0	0	0	0	0	0	0	0	0	20
10:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
10:15	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
10:30	0	3	3	0	1	0	0	0	0	0	0	0	0	0	7
10:45	0	7	2	0	0	0	0	0	0	0	0	0	0	2	11
	0	21	6	0	1	0	0	0	0	0	0	0	0	2	30
11:00	0	9	2	0	0	0	0	0	0	0	0	0	0	0	11
11:15	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
11:30	0	6	1	0	0	0	0	0	0	0	0	0	0	1	8
11:45	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
	0	23	5	0	0	0	0	0	0	0	0	0	0	1	29
Total	3	95	23	0	3	1	0	0	0	0	0	0	0	6	131
Percent	2.3%	72.5%	17.6%	0.0%	2.3%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.6%	

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
503-804-3294

Fir St south of 13th

Date Start: 13-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

NB

Start Time	Bikes	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classe	Total
12 PM	0	8	0	0	1	0	0	0	0	0	0	0	0	0	9
12:15	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
12:30	0	7	2	0	0	0	0	0	0	0	0	0	0	0	9
12:45	0	8	2	0	0	0	0	0	0	0	0	0	0	0	10
	0	29	4	0	1	0	0	0	0	0	0	0	0	0	34
13:00	1	2	1	0	1	0	0	0	0	0	0	0	0	1	6
13:15	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
13:30	0	6	1	0	1	0	0	0	0	0	0	0	0	0	8
13:45	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
	1	15	4	0	2	0	0	0	0	0	0	0	0	1	23
14:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
14:15	0	6	3	0	2	0	0	0	0	0	0	0	0	2	13
14:30	0	5	1	0	1	0	0	0	0	0	0	0	0	0	7
14:45	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6
	0	25	5	0	3	0	0	0	0	0	0	0	0	2	35
15:00	1	6	0	0	0	0	0	0	0	0	0	0	0	0	7
15:15	0	4	0	0	1	0	0	0	0	0	0	0	0	0	5
15:30	0	5	0	0	1	0	0	0	0	0	0	0	0	0	6
15:45	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
	1	19	1	0	2	0	0	0	0	0	0	0	0	0	23
16:00	1	5	1	0	0	0	0	0	0	0	0	0	0	0	7
16:15	0	3	1	0	0	0	0	0	0	0	0	0	0	3	7
16:30	2	1	2	0	0	0	0	0	0	0	0	0	0	0	5
16:45	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
	3	15	5	0	0	0	0	0	0	0	0	0	0	3	26
17:00	3	6	0	0	0	0	0	0	0	0	0	0	0	0	9
17:15	1	2	1	0	0	0	0	0	0	0	0	0	0	0	4
17:30	2	4	0	0	0	0	0	0	0	0	0	0	0	0	6
17:45	4	6	0	0	0	0	0	0	0	0	0	0	0	0	10
	10	18	1	0	0	0	0	0	0	0	0	0	0	0	29
18:00	2	6	2	0	0	0	0	0	0	0	0	0	0	0	10
18:15	3	5	0	0	0	0	0	0	0	0	0	0	0	0	8
18:30	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
18:45	0	6	2	0	0	0	0	0	0	0	0	0	0	0	8
	5	22	6	0	0	0	0	0	0	0	0	0	0	0	33
19:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
19:15	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
19:30	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
19:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	0	14	1	0	0	0	0	0	0	0	0	0	0	0	15
20:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
20:15	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
20:30	0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
20:45	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
	0	7	4	0	0	0	0	0	0	0	0	0	0	0	11
21:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
21:15	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
21:30	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
21:45	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
	1	7	2	0	0	0	0	0	0	0	0	0	0	0	10
22:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
22:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
23:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	21	174	33	0	8	0	0	0	0	0	0	0	0	6	242
Percent	8.7%	71.9%	13.6%	0.0%	3.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	
Grand Total	24	269	56	0	11	1	0	0	0	0	0	0	0	12	373
Percent	6.4%	72.1%	15.0%	0.0%	2.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.2%	

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
503-804-3294

Fir St south of SW 13th

Date Start: 12-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

SB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
07/12/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	19	0	0	0	0	0	0	0	0	0	0	0	0	0	19	17	19
13:00	**24**	1	0	0	0	0	0	0	0	0	0	0	0	0	**25**	17	19
14:00	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20	17	20
15:00	21	**2**	**1**	0	0	0	0	0	0	0	0	0	0	0	24	19	21
16:00	18	1	0	0	0	0	0	0	0	0	0	0	0	0	19	17	20
17:00	21	1	0	0	0	0	0	0	0	0	0	0	0	0	22	17	19
18:00	19	0	0	0	0	0	0	0	0	0	0	0	0	0	19	17	19
19:00	19	1	0	0	0	0	0	0	0	0	0	0	0	0	20	17	20
20:00	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17	19
21:00	13	0	0	0	0	0	0	0	0	0	0	0	0	0	13	16	19
22:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17	19
23:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17	19
Total	195	7	1	0	0	0	0	0	0	0	0	0	0	0	203		
Percent	96.1%	3.4%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.																	
PM Peak Vol.	13:00 24	15:00 2	15:00 1												13:00 25		

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
503-804-3294

Fir St south of SW 13th

Date Start: 12-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

SB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
07/13/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17	19
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
05:00	7	0	0	0	0	0	0	0	0	0	0	0	0	0	7	16	19
06:00	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	17	19
07:00	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9	16	19
08:00	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15	17	19
09:00	21	**2**	0	0	0	0	0	0	0	0	0	0	0	0	23	18	20
10:00	19	0	0	0	0	0	0	0	0	0	0	0	0	0	19	17	19
11:00	**23**	2	**1**	0	0	0	0	0	0	0	0	0	0	0	**26**	19	21
12 PM	**33**	0	0	0	0	0	0	0	0	0	0	0	0	0	**33**	16	19
13:00	32	0	0	**1**	0	0	0	0	0	0	0	0	0	0	33	17	19
14:00	22	0	0	0	0	0	0	0	0	0	0	0	0	0	22	17	19
15:00	31	0	0	0	0	0	0	0	0	0	0	0	0	0	31	17	19
16:00	21	**2**	**1**	0	0	0	0	0	0	0	0	0	0	0	24	19	21
17:00	16	2	0	1	0	0	0	0	0	0	0	0	0	0	19	20	24
18:00	25	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17	19
19:00	14	1	0	0	0	0	0	0	0	0	0	0	0	0	15	18	20
20:00	10	1	0	0	0	0	0	0	0	0	0	0	0	0	11	18	20
21:00	18	0	1	0	0	0	0	0	0	0	0	0	0	0	19	17	22
22:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	23	23
Total	326	10	4	2	0	0	0	0	0	0	0	0	0	0	342		
Percent	95.3%	2.9%	1.2%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	11:00	09:00	11:00												11:00		
Vol.	23	2	1												26		
PM Peak	12:00	16:00	16:00	13:00											12:00		
Vol.	33	2	1	1											33		
Grand Total	521	17	5	2	0	0	0	0	0	0	0	0	0	0	545		
Percent	95.6%	3.1%	0.9%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 3 MPH
50th Percentile : 10 MPH
85th Percentile : 17 MPH
95th Percentile : 19 MPH

Statistics

10 MPH Pace Speed : 1-10 MPH
Number in Pace : 261
Percent in Pace : 47.9%
Number of Vehicles > 35 MPH : 0
Percent of Vehicles > 35 MPH : 0.0%
Mean Speed(Average) : 11 MPH

KEY DATA NETWORK
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503-804-3294

Fir St south of SW 13th

Date Start: 12-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

NB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
07/12/17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	18	0	0	0	0	0	0	0	0	0	0	0	0	0	18	16	19
13:00	25	0	0	0	0	0	0	0	0	0	0	0	0	0	25	17	19
14:00	**31**	0	0	0	0	0	0	0	0	0	0	0	0	0	**31**	17	19
15:00	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17	17	19
16:00	17	**1**	0	0	0	0	0	0	0	0	0	0	0	0	18	18	20
17:00	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23	17	19
18:00	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23	17	19
19:00	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11	17	19
20:00	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11	17	19
21:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17	19
22:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17	19
23:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17	19
Total	188	1	0	0	0	0	0	0	0	0	0	0	0	0	189		
Percent	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak																	
Vol.																	
PM Peak	14:00	16:00													14:00		
Vol.	31	1													31		

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Fir St south of SW 13th

Date Start: 12-Jul-17

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

NB

Start Time	1 20	21 22	23 24	25 26	27 28	29 30	31 32	33 34	35 36	37 38	39 40	41 42	43 44	45 999	Total	85th Percent	95th Percent
07/13/17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
04:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	17	19
05:00	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17	19
06:00	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15	17	19
07:00	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	17	19
08:00	19	0	0	0	0	0	0	0	0	0	0	0	0	0	19	17	19
09:00	20	0	0	0	0	0	0	0	0	0	0	0	0	0	20	17	19
10:00	**29**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**30**	17	19
11:00	29	0	0	0	0	0	0	0	0	0	0	0	0	0	29	17	19
12 PM	34	0	0	0	0	0	0	0	0	0	0	0	0	0	34	17	19
13:00	22	**1**	0	0	0	0	0	0	0	0	0	0	0	0	23	17	19
14:00	**35**	0	0	0	0	0	0	0	0	0	0	0	0	0	**35**	17	19
15:00	23	0	0	0	0	0	0	0	0	0	0	0	0	0	23	17	19
16:00	26	0	0	0	0	0	0	0	0	0	0	0	0	0	26	16	19
17:00	29	0	0	0	0	0	0	0	0	0	0	0	0	0	29	17	19
18:00	33	0	0	0	0	0	0	0	0	0	0	0	0	0	33	16	19
19:00	15	0	0	0	0	0	0	0	0	0	0	0	0	0	15	17	19
20:00	11	0	0	0	0	0	0	0	0	0	0	0	0	0	11	17	19
21:00	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10	17	19
22:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17	19
23:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17	19
Total	371	2	0	0	0	0	0	0	0	0	0	0	0	0	373		
Percent	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	10:00	10:00													10:00		
Vol.	29	1													30		
PM Peak	14:00	13:00													14:00		
Vol.	35	1													35		
Grand Total	559	3	0	0	0	0	0	0	0	0	0	0	0	0	562		
Percent	99.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile :	3 MPH
50th Percentile :	10 MPH
85th Percentile :	17 MPH
95th Percentile :	19 MPH

Statistics

10 MPH Pace Speed :	11-20 MPH
Number in Pace :	279
Percent in Pace :	49.6%
Number of Vehicles > 35 MPH :	0
Percent of Vehicles > 35 MPH :	0.0%
Mean Speed(Average) :	11 MPH

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503-804-3294

Fir St south of 13th

Date Start: 7/12/2017

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start Time	7/12/2017 Wed	SB	NB	Combined Total
12:00 AM		*	*	*
01:00		*	*	*
02:00		*	*	*
03:00		*	*	*
04:00		*	*	*
05:00		*	*	*
06:00		*	*	*
07:00		*	*	*
08:00		*	*	*
09:00		*	*	*
10:00		*	*	*
11:00		*	*	*
12:00 PM		19	18	37
01:00		25	25	50
02:00		20	31	51
03:00		24	17	41
04:00		19	18	37
05:00		22	23	45
06:00		19	23	42
07:00		20	11	31
08:00		17	11	28
09:00		13	4	17
10:00		3	4	7
11:00		2	4	6
Total		203	189	392
Percent		51.8%	48.2%	

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Fir St south of 13th

Date Start: 7/12/2017

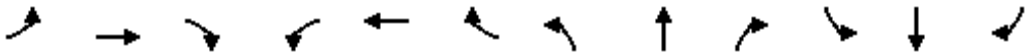
Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

Start Time	7/13/2017 Thu	SB	NB	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		4	1	5
04:00		0	3	3
05:00		7	4	11
06:00		5	15	20
07:00		9	10	19
08:00		15	19	34
09:00		23	20	43
10:00		19	30	49
11:00		26	29	55
12:00 PM		33	34	67
01:00		33	23	56
02:00		22	35	57
03:00		31	23	54
04:00		24	26	50
05:00		19	29	48
06:00		25	33	58
07:00		15	15	30
08:00		11	11	22
09:00		19	10	29
10:00		1	2	3
11:00		1	1	2
Total		342	373	715
Percent		47.8%	52.2%	
Grand Total		545	562	
Percentage		49.2%	50.8%	
ADT		ADT 627		AADT 627

DKS

APPENDIX C

Existing (2017) Level of Service Worksheet



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	177	99	104	141	61	50	205	43	59	243	36
Future Volume (vph)	34	177	99	104	141	61	50	205	43	59	243	36
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.95		1.00	0.97		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1623		1630	1638		1630	1671		1630	1682	
Flt Permitted	0.61	1.00		0.46	1.00		0.58	1.00		0.57	1.00	
Satd. Flow (perm)	1042	1623		791	1638		998	1671		985	1682	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	35	184	103	108	147	64	52	214	45	61	253	38
RTOR Reduction (vph)	0	41	0	0	32	0	0	12	0	0	8	0
Lane Group Flow (vph)	35	246	0	108	179	0	52	247	0	61	283	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	11.4	11.4		11.4	11.4		22.0	20.5		23.8	21.4	
Effective Green, g (s)	11.4	11.4		11.4	11.4		22.0	20.5		23.8	21.4	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.46	0.43		0.50	0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	248	387		188	390		479	716		522	753	
v/s Ratio Prot		c0.15			0.11		0.00	0.15		c0.01	c0.17	
v/s Ratio Perm	0.03			0.14			0.05			0.05		
v/c Ratio	0.14	0.64		0.57	0.46		0.11	0.34		0.12	0.38	
Uniform Delay, d1	14.3	16.3		16.1	15.6		7.2	9.1		6.3	8.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	3.0		3.5	0.6		0.1	1.3		0.1	1.4	
Delay (s)	14.5	19.3		19.5	16.2		7.3	10.5		6.3	10.2	
Level of Service	B	B		B	B		A	B		A	B	
Approach Delay (s)		18.8			17.3			9.9			9.5	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	47.8	Sum of lost time (s)	13.5
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	292	12	8	207	10	4	0	7	4	0	3
Future Vol, veh/h	28	292	12	8	207	10	4	0	7	4	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	321	13	9	227	11	4	0	8	4	0	3

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	334	0	0	641	645	327	644	647	233
Stage 1	-	-	-	-	-	-	389	389	-	251	251	-
Stage 2	-	-	-	-	-	-	252	256	-	393	396	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1329	-	-	1225	-	-	388	391	714	386	390	806
Stage 1	-	-	-	-	-	-	635	608	-	753	699	-
Stage 2	-	-	-	-	-	-	752	696	-	632	604	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1329	-	-	1225	-	-	376	377	714	371	376	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	376	377	-	371	376	-
Stage 1	-	-	-	-	-	-	617	590	-	731	693	-
Stage 2	-	-	-	-	-	-	743	690	-	607	586	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	11.8	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	538	1329	-	-	1225	-	-	483
HCM Lane V/C Ratio	0.022	0.023	-	-	0.007	-	-	0.016
HCM Control Delay (s)	11.8	7.8	0	-	8	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	11	288	8	8	416
Future Vol, veh/h	2	11	288	8	8	416
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	12	316	9	9	457

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	796	321	0	0	325	0
Stage 1	321	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	356	720	-	-	1235	-
Stage 1	735	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	352	720	-	-	1235	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	735	-	-	-	-	-
Stage 2	620	-	-	-	-	-

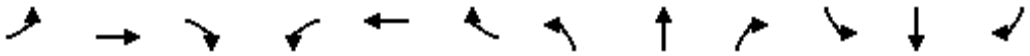
Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	620	1235	-
HCM Lane V/C Ratio	-	-	0.023	0.007	-
HCM Control Delay (s)	-	-	10.9	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

DKS

APPENDIX D

Future (2035) Plus Project Level of Service Worksheet



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	304	72	161	320	79	134	228	161	207	321	6
Future Volume (vph)	28	304	72	161	320	79	134	228	161	207	321	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.94		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1630	1666		1630	1665		1630	1609		1630	1711	
Flt Permitted	0.30	1.00		0.34	1.00		0.51	1.00		0.37	1.00	
Satd. Flow (perm)	523	1666		578	1665		867	1609		637	1711	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	29	317	75	168	333	82	140	238	168	216	334	6
RTOR Reduction (vph)	0	16	0	0	17	0	0	45	0	0	1	0
Lane Group Flow (vph)	29	376	0	168	398	0	140	361	0	216	339	0
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.6	16.6		16.6	16.6		23.4	19.9		25.4	20.9	
Effective Green, g (s)	16.6	16.6		16.6	16.6		23.4	19.9		25.4	20.9	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.43	0.37		0.47	0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.0	5.0		4.0	5.0	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.0		2.5	4.0	
Lane Grp Cap (vph)	159	507		176	507		421	587		378	656	
v/s Ratio Prot		0.23			0.24		0.02	c0.22		c0.05	0.20	
v/s Ratio Perm	0.06			c0.29			0.12			0.22		
v/c Ratio	0.18	0.74		0.95	0.79		0.33	0.61		0.57	0.52	
Uniform Delay, d1	14.0	17.0		18.6	17.3		9.7	14.2		9.4	12.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	5.5		54.2	7.6		0.3	4.8		1.7	2.9	
Delay (s)	14.4	22.5		72.7	24.9		10.1	18.9		11.1	15.8	
Level of Service	B	C		E	C		B	B		B	B	
Approach Delay (s)		22.0			38.7			16.7			14.0	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	54.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	37	381	105	15	336	101	21	19	1	0	7	6
Future Vol, veh/h	37	381	105	15	336	101	21	19	1	0	7	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	419	115	16	369	111	23	21	1	0	8	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	480	0	0	534	0	0	1023	1071	476	1027	1073	425
Stage 1	-	-	-	-	-	-	558	558	-	458	458	-
Stage 2	-	-	-	-	-	-	465	513	-	569	615	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1082	-	-	1034	-	-	214	221	589	213	220	629
Stage 1	-	-	-	-	-	-	514	512	-	583	567	-
Stage 2	-	-	-	-	-	-	578	536	-	507	482	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1082	-	-	1034	-	-	194	204	589	185	204	629
Mov Cap-2 Maneuver	-	-	-	-	-	-	194	204	-	185	204	-
Stage 1	-	-	-	-	-	-	486	484	-	551	555	-
Stage 2	-	-	-	-	-	-	552	525	-	458	455	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.3	27.9	17.8
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	202	1082	-	-	1034	-	-	296
HCM Lane V/C Ratio	0.223	0.038	-	-	0.016	-	-	0.048
HCM Control Delay (s)	27.9	8.5	0	-	8.5	0	-	17.8
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.8	0.1	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	21	501	7	26	479
Future Vol, veh/h	6	21	501	7	26	479
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	23	551	8	29	526

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1138	554	0	0	558	0
Stage 1	554	-	-	-	-	-
Stage 2	584	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	223	532	-	-	1013	-
Stage 1	575	-	-	-	-	-
Stage 2	557	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	214	532	-	-	1013	-
Mov Cap-2 Maneuver	214	-	-	-	-	-
Stage 1	575	-	-	-	-	-
Stage 2	535	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	400	1013	-
HCM Lane V/C Ratio	-	-	0.074	0.028	-
HCM Control Delay (s)	-	-	14.7	8.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Intersection Delay (sec/veh):	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	41	0	31	0	0	0	4	420	0	0	388	52
Conflicting Peds.(#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
Right Turn Channelized	None	None	None	None	None	None	None	None	None	None	None	None
Storage Length	0		0	0		0	0		0	0		0
Median Width		0			0			0			0	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	45	0	34	0	0	0	4	457	0	0	422	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Major/Minor	Minor 1			Minor 1			Major 1			Major 2		
Conflicting Flow Rate - All	915	915	450	-	943	-	478	0	-	-	0	0
Stage 1	450	450	0	-	465	-	0	0	-	-	0	0
Stage 2	465	465	0	-	478	-	0	0	-	-	0	0
Follow-up Headway	3.518	4.018	3.318	-	4.018	-	2.218	-	-	-	0	0
Pot Capacity-1 Maneuver	253	273	609	-	263	-	1083	-	-	-	-	-
Stage 1	589	572	-	-	563	-	-	-	-	-	-	-
Stage 2	578	563	-	-	556	-	-	-	-	-	-	-
Mov Capacity-1 Maneuver	-	271.9	609	-	261.9	-	1083	-	-	-	-	-
Mov Capacity-2 Maneuver	-	271.9	-	-	261.9	-	-	-	-	-	-	-
Stage 1	589	0	-	-	560.7	-	-	-	-	-	-	-
Stage 2	575.7	560.7	-	-	0	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay (s)	-	0	0.1	0
HCM LOS	-	A	A	A

Lane	NBL	NBT	EBLn1	WBLn1	SBT	SBR
Capacity (vph)			-	-		
HCM Control Delay (s)	8.337	0	-	0	-	-
HCM Lane VC Ratio	0.004	-	-	-	0	-
HCM Lane LOS	A	-	-	A	-	-
HCM 95th Percentile Queue (veh)	0.012	-	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	0	30	99	10
Future Vol, veh/h	3	1	0	30	99	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	0	33	108	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	146	113	118	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	846	940	1470	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	846	940	1470	-	-	-
Mov Cap-2 Maneuver	846	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	989	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1470	-	868	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	0	22	83	7
Future Vol, veh/h	3	1	0	22	83	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	1	0	24	90	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	118	94	98	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	878	963	1495	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	878	963	1495	-	-	-
Mov Cap-2 Maneuver	878	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1495	-	898	-	-
HCM Lane V/C Ratio	-	-	0.005	-	-
HCM Control Delay (s)	0	-	9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	4	0	0	0	6	0	11	4	44	25	11
Future Vol, veh/h	3	4	0	0	0	6	0	11	4	44	25	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	4	0	0	0	7	0	12	4	48	27	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	146	145	33	145	149	14	39	0	0	16	0	0
Stage 1	129	129	-	14	14	-	-	-	-	-	-	-
Stage 2	17	16	-	131	135	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	823	746	1041	824	743	1066	1571	-	-	1602	-	-
Stage 1	875	789	-	1006	884	-	-	-	-	-	-	-
Stage 2	1002	882	-	873	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	799	723	1041	801	720	1066	1571	-	-	1602	-	-
Mov Cap-2 Maneuver	799	723	-	801	720	-	-	-	-	-	-	-
Stage 1	875	765	-	1006	884	-	-	-	-	-	-	-
Stage 2	996	882	-	841	761	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	8.4	0	4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1571	-	-	754	1066	1602	-	-
HCM Lane V/C Ratio	-	-	-	0.01	0.006	0.03	-	-
HCM Control Delay (s)	0	-	-	9.8	8.4	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0.1	-	-

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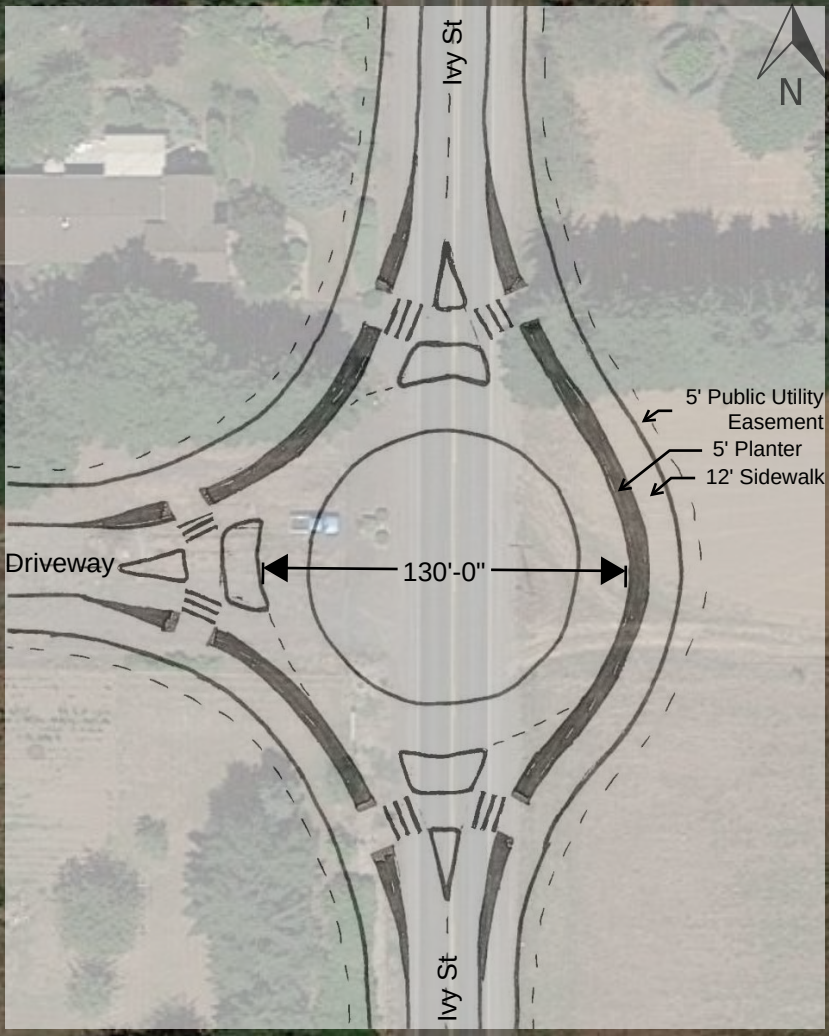
APPENDIX E

Roundabout Sketch


Ivy St
N
5' Public Utility Easement
5' Planter
12' Sidewalk
Driveway
130'-0"
Ivy St

Scale 50'-0"

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APPENDIX F

Transportation Planning Rule (TPR) Evaluation

DKS

Transportation Planning Rule (TPR) Evaluation

This memorandum summarizes how the requirements of Oregon Administrative Rule (OAR) 660-012-0060, the Transportation Planning Rule (TPR), are met for the proposed zone changes within the Stafford Development Concept Plan Area in Canby, Oregon. The following section describes the land use applications consistency with both the City's Comprehensive Plan and Transportation System Plan.

Transportation Planning Rule Findings

The Stafford Development Concept Plan Area is located inside Canby's Urban Growth Boundary (UGB) in unincorporated Clackamas County. The area is proposed to have a mix of zoning types through annexation to the City of Canby, which is consistent with the City's adopted Comprehensive Plan designation.

The requirements of Oregon Administrative Rule (OAR) 660-012-0060, the Transportation Planning Rule (TPR), must be met for proposed changes in land use zoning. The intent of the TPR (OAR 660-12-0060) is to ensure that future land use and traffic growth is consistent with transportation system planning, and does not create a significant impact on the surrounding transportation system beyond currently allowed uses. The TPR allows a change in land use zoning in the event that a zone change would make the designation consistent with both the Comprehensive Plan and the Transportation System Plan. The allowance (found in Section 9) was added to the TPR in December 2011 and fits the circumstances of the project parcels. Specifically, section 9 states:
Notwithstanding section (1) of this rule, a local government may find that an amendment to a zoning map does not significantly affect an existing or planned transportation facility if all of the following requirements are met.

(a) The proposed zoning is consistent with the existing comprehensive plan map designation and the amendment does not change the comprehensive plan map;
(b) The local government has an acknowledged TSP and the proposed zoning is consistent with the TSP;
(c) The area subject to the zoning map amendment was not exempted from this rule at the time of an urban growth boundary amendment as permitted in OAR 660-024-0020(1)(d), or the area was exempted from this rule but the local government has a subsequently acknowledged TSP amendment that accounted for urbanization of the area
The City of Canby makes the finding that all three criteria are satisfied; therefore, the proposed rezone will not have a significant effect on the transportation system. The proposed rezoning is consistent with the existing comprehensive plan map designation as shown in Table 1. Additionally, the transportation assessment performed as part of the City's TSP and Stafford Development Concept Plan account for the proposed uses

related to annexation of the Stafford Development Area, therefore the proposed rezoning is consistent with the acknowledged transportation system plan. Lastly, subsection (c) applies if the area was added to the urban growth boundary (UGB). Since the parcels are already within the UGB, provisions from subsection (c) would not apply.

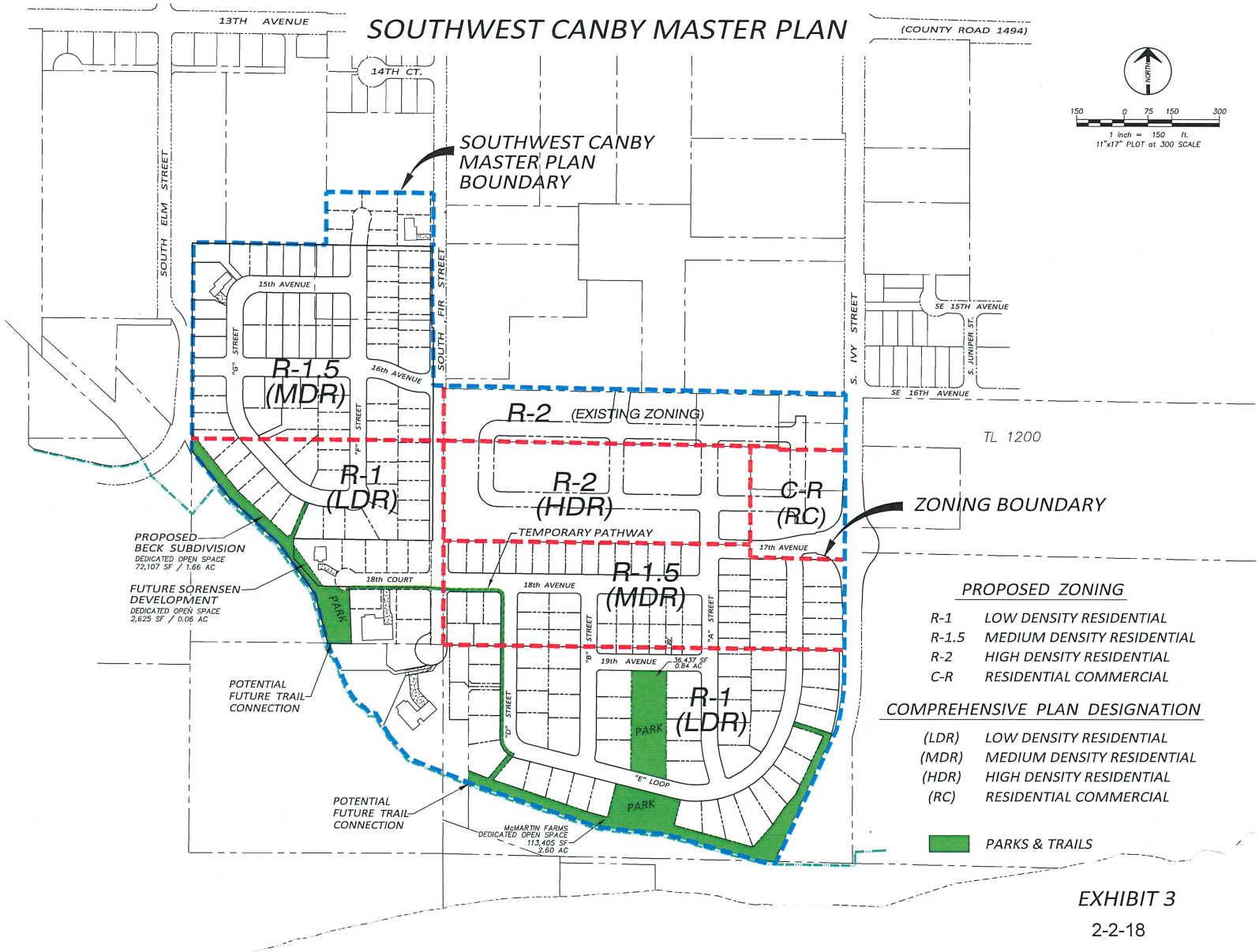
Table 1: Land Use Summary

Tax Lots	City of Canby Comprehensive Plan Land Use	Proposed Land Use
1500, 1600, 1602, 1800, 2000	R-1 (Low Density Residential)	R-1 (Low Density Residential)
1401, 1500, 1400, 1700, 1600	R-1.5 (Medium Density Residential)	R-1.5 (Medium Density Residential)
1700	R-2 (High Density Residential)	R-2 (High Density Residential)
1400, 1500	C-R (Residential Commercial)	C-R (Residential Commercial)

Southwest Canby Development Concept Plan

Prepared by Planning & Land Design LLC
1862 NE Estate Drive, Hillsboro, Oregon 97124
Ryan O'Brien Phone (503) 780-4061
ryanobrien1@frontier.com

SOUTHWEST CANBY MASTER PLAN



PROPOSED ZONING

R-1	LOW DENSITY RESIDENTIAL
R-1.5	MEDIUM DENSITY RESIDENTIAL
R-2	HIGH DENSITY RESIDENTIAL
C-R	RESIDENTIAL COMMERCIAL

COMPREHENSIVE PLAN DESIGNATION

(LDR)	LOW DENSITY RESIDENTIAL
(MDR)	MEDIUM DENSITY RESIDENTIAL
(HDR)	HIGH DENSITY RESIDENTIAL
(RC)	RESIDENTIAL COMMERCIAL

PARKS & TRAILS

EXHIBIT 3
2-2-18

NOTE: Property owners are not bound to lot size and lines as proposed

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4C: LOTS 1401, 1600, 1700 & 1900
SEC. 4D: LOTS 900, 1000, 1100, 1101, 1400, 1500, 1600, 1700, 1800 & 2000
SEC. 4DA: LOTS 1400, 1600 & 1800
CITY OF CANBY, OREGON

STAFFORD DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

SOUTHWEST CANBY MASTER PLAN

REVISIONS

NO	DATE	DESCRIPTION
1	1-11-18	REVISIONS PER 1-8-18 PLANNING COMMISSION MEETING
2	1-22-18	UPDATE BECK POND SUBDIVISION TO INCLUDE STEINKE PROPERTY

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET
OF

MasterPlan, 2/2/2018 9:55:57 AM

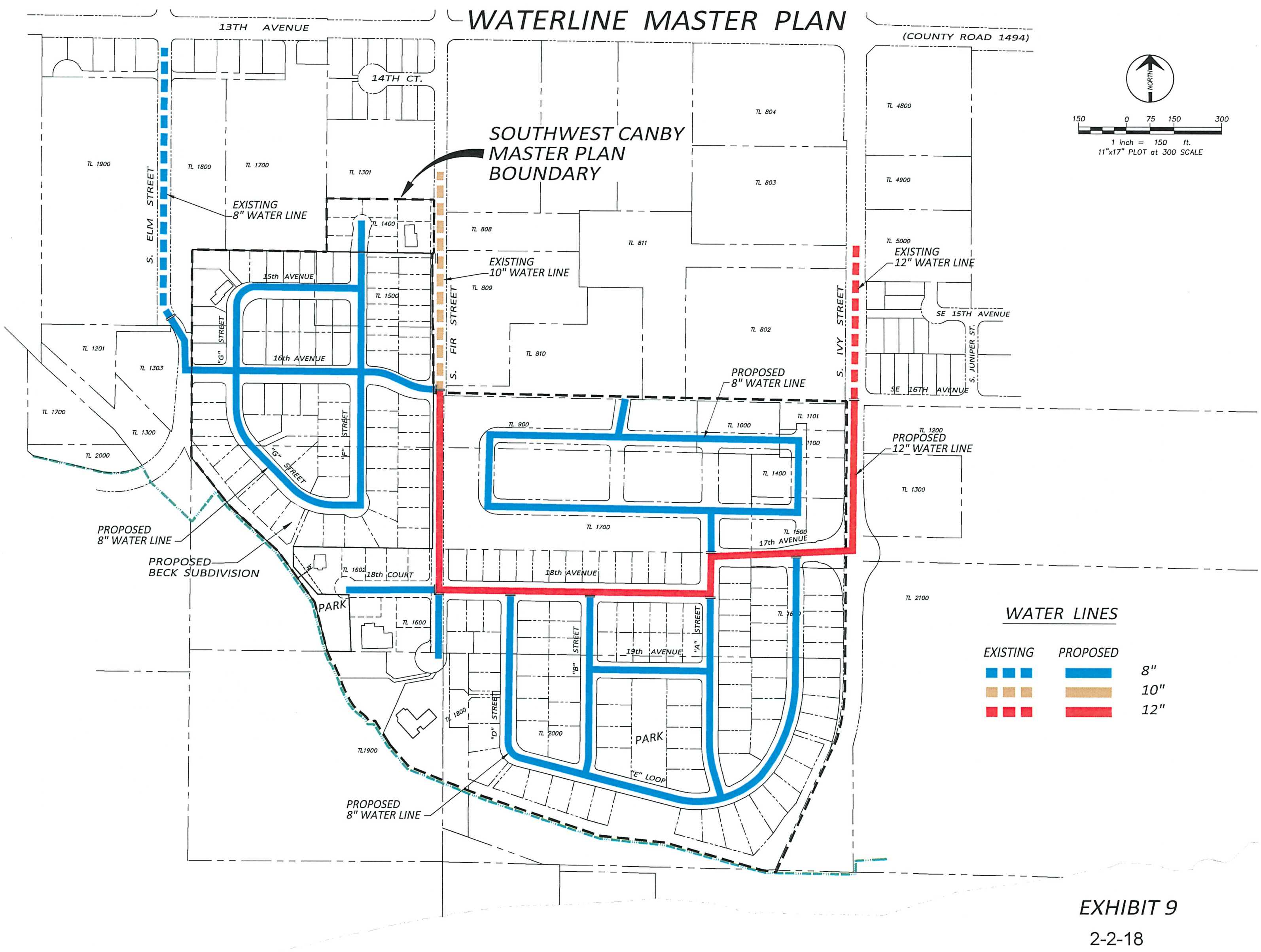


EXHIBIT 9

2-2-18

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4C LOTS 1401, 1600, 1602 & 1900
SEC. 4D, LOTS 900,1000,1100,1101,1400,1500,1600,1700,1800 & 2000
SEC. 4CA, LOTS 1400,1500 & 1600
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

WATER LINE MASTER PLAN

REVISIONS

NO.	DATE	DESCRIPTION
1	1-12-18	REVISIONS PER 1-8-18 PLANNING COMMISSION MEETING
2	1-25-18	UPDATE BECK POND SUBDIVISION TO INCLUDE STEINKE PROPERTY

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET
OF

NOTE: Property owners are not bound to lot size and lines as proposed

Water, 2/2/2018 9:53:34 AM

SANITARY SEWER MASTER PLAN

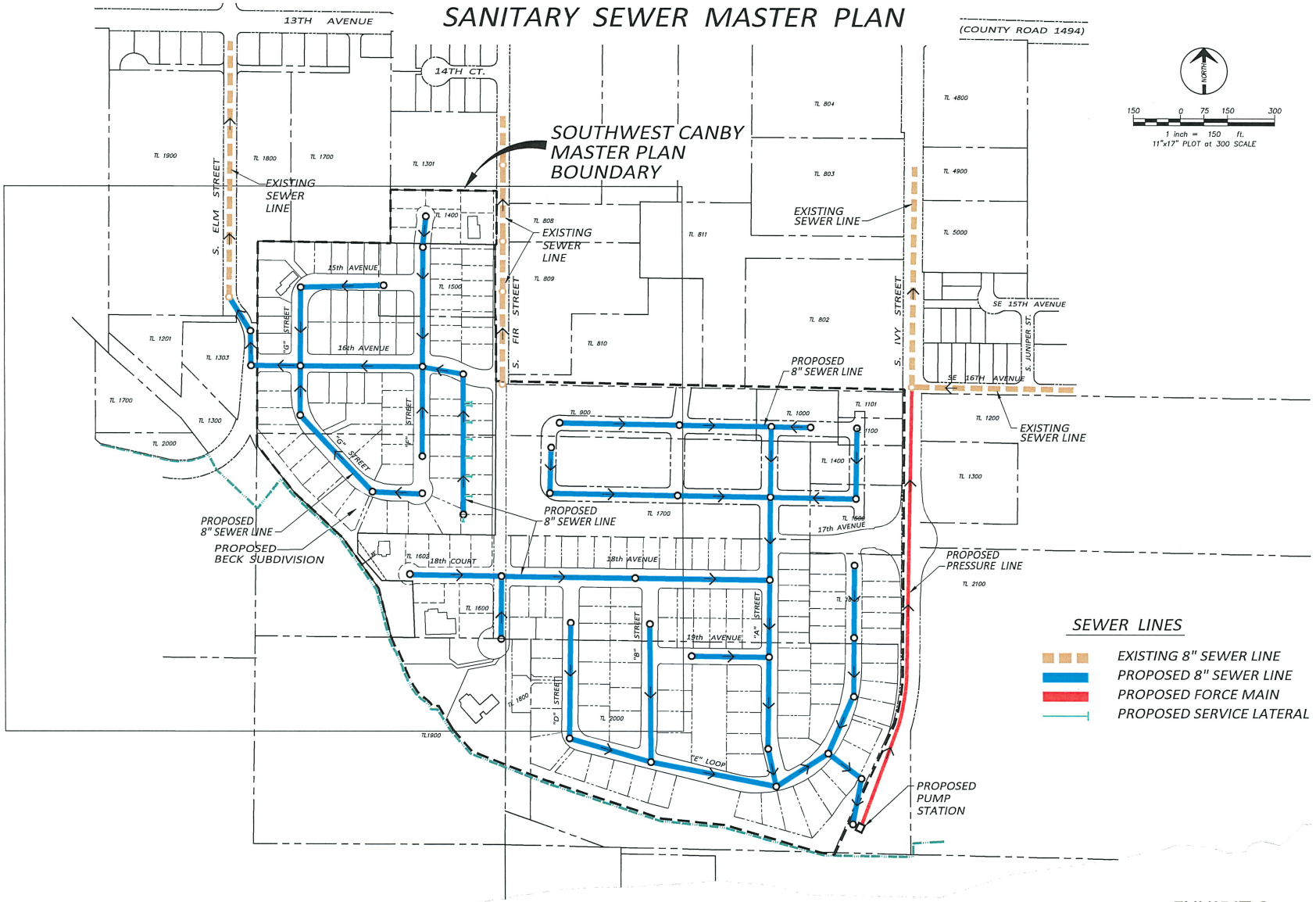


EXHIBIT 8
2-2-18

NOTE: Property owners are not bound to lot size and lines as proposed

SOUTHWEST CANBY
TAX MAP T4S, R1E, SECTION 4
SEC. 4C LOTS 1401, 1600, 1602 & 1900
SEC. 4D, LOTS 1400, 1401, 1500, 1501, 1800 & 2000
SEC. 4CA, LOTS 1400 1500 & 1600
CITY OF CANBY, OREGON

STAFFORD
DEVELOPMENT COMPANY, LLC
485 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

SANITARY SEWER MASTER PLAN

NO.	DATE	REVISIONS DESCRIPTION
1	1-12-18	REVISIONS PER 1-8-18 PLANNING COMMISSION MEETING
2	1-25-18	UPDATE BECK POND SUBDIVISION TO INCLUDE STEINKE PROPERTY

PLANNING & LAND DESIGN
1862 NE ESTATE DRIVE
HILLSBORO, OREGON 97124
RYAN O'BRIEN
(503)780-4061

SHEET
OF

Sanitary, 2/2/2018 9:54:15 AM

VIII. City Approval

I CERTIFY THAT THIS ORDER recommending **APPROVAL** of the **SOUTHWEST CANBY DEVELOPMENT CONCEPT PLAN** was presented to and **APPROVED** by the City Council of the City of Canby.

DATED this 21 st day of February, 2018

[redacted]

Brian Hodson
Mayor

[redacted]

Bryan C. Brown
Planning Director

ORAL DECISION - February 7, 2018
AYES: Smith, Parker, Hensley, Dale, Heidt & Spoon
NOES: none.
ABSTAIN: none.
ABSENT: 0

WRITTEN FINDINGS – February 21, 2018
AYES: Smith, Parker, Hensley, Dale, Heidt & Spoon
NOES: none.
ABSTAIN: none.
ABSENT: none.

ATTEST:

[redacted]

Kimberly Scheafer, MMC
City Recorder

BEFORE THE PLANNING COMMISSION
OF THE CITY OF CANBY

A REQUEST FOR A	**)**	**FINDINGS, CONCLUSION & FINAL ORDER**
SUBDIVISION/VARIANCE	**)**	**SUB 18-01/VAR 18-01**
1555/1715 S. FIR STREET	**)**	**BECK POND SUBDIVISION**

NATURE OF THE APPLICATION

The Applicant has sought approval for a Subdivision and concurrent Variance (SUB 18-01/VAR 18-01) to create a 69 lot subdivision and a variance to increase the block length from the required 400 feet to 591 feet on property located at 1555 and 1715 S. Fir Street and described as Tax Map/Lots 41E04CA01600, 41E04C01401, 01500 Clackamas County, Oregon. The property is zoned Low Density Residential (R-1) and Medium Density Residential (R-1.5) under the Canby Municipal Code (CMC).

HEARINGS

The Planning Commission considered application SUB 18-01/VAR 18-01 after the duly noticed hearing on June 11, 2018 during which the Planning Commission approved SUB 18-01/VAR 18-01. These findings are entered to document the approval.

CRITERIA AND STANDARDS

In judging whether or not a Subdivision/Variance application shall be approved, the Planning Commission determines whether criteria from the *City of Canby Land Development and Planning Ordinance* are met, or can be met by observance of conditions. Applicable code criteria and standards were reviewed in the Staff Report dated May 30, 2018 and presented at the June 11, 2018 meeting of the Canby Planning Commission.

FINDINGS AND REASONS

The Staff Report was presented, and written and oral testimony was received at the public hearing. Staff recommended approval of the Subdivision/Variance application and applied Conditions of Approval in order to ensure that the proposed development will meet all required *City of Canby Land Development and Planning Ordinance* approval criteria.

After accepting public testimony, the Planning Commission closed the public hearing and made the following additional findings beyond those contained in the staff report to arrive at their decision and support their recommended Conditions of Approval and the exact wording thereof:

-

CONCLUSION

In summary, the Planning Commission adopted the findings contained in the Staff Report along with the additional findings concluded at the public hearing and noted herein, concluding that the residential Subdivision/Variance applications meet all applicable approval criteria, and recommending that File SUB 18-01/VAR 18-01 be approved with the Conditions of Approval reflected in the written Order below.

ORDER

The Planning Commission concludes that, with the following conditions, the application meets the requirements for Subdivision/VAR approval. Therefore, **IT IS ORDERED BY THE PLANNING COMMISSION** of the City of Canby that **SUB 18-01/VAR 18-01** is approved, subject to the following conditions:

General Public Improvement Conditions:

1. Prior to the start of any public improvement work, the applicant must schedule a pre-construction conference with the city and obtain construction plan sign-off from applicable agencies.
2. The development shall comply with all applicable City of Canby Public Works Design Standards.
3. **The final construction design plans shall conform to the comments provided by the City Engineer, when applicable, in his memorandum dated May 31, 2018 as follows:**

1. S Fir Street is a county road and should have been transferred to the City upon annexation of this property as per the agreement between Clackamas County and the City of Canby, dated November 4, 1992. This roadway is classified as a local street as per the City Transportation System Plan (TSP), the existing right-of.-way is 40 feet wide (20 feet on each side of the centerline). Additional right-of-way dedication of 9 feet along the entire site frontage of this development is adequate and meets City local standards. The developer shall construct half street improvements with curbs, 4.5-foot wide planter strip with street trees from City approved tree list, 6-foot wide concrete sidewalks, utilities as required and street lights. The half street improvements shall be built to City Standards with the curb placed at 18-foot from the centerline right-of-way to match the east side of the roadway in conformance with section 2.207 of the City of Canby Public Works Design Standards dated June 2012. An asphalt tapers at the rate of 10:1 shall be constructed to match existing asphalt surface at both ends of the street.

2. All interior streets within the subdivision shall be designed to City local street standards with 34-foot paved width, curbs, 4.5-foot wide planter with street trees, 6-foot wide sidewalks, street lights and utilities in conformance with Chapter 2 of the City of Canby Public Works Design Standards, dated June 2012.

3. Temporary fire truck turnarounds shall be constructed at the phase lines and at the end of 15th Avenue where the roadway is in excess of 150 feet in length. The geometric turnaround and location shall meet the City of Canby Fire Department requirements.

4. A minimum of 10 feet wide paved trail shall be constructed along the top of the bluff and connects to G Street and S Elm Street as shown. Removable bollards must be installed at the connection with G Street and S Elm Street.

5. All comer ADA ramps and sidewalks at the existing house to remain frontage

shall be constructed as part of this development.

6. The developer's design engineer will be required to submit as part of the construction plans a signing and striping plan. All street names and traffic signs shall be installed by the developer at his expense and as part of this development. The City may supply the required traffic and street name signs based on a mutually agreed cost.

7. As part of the final design, the developer's design engineer shall provide a minimum of 200-foot future centerline street profile design to assure future grades can be met at all the adjoining properties (S Fir Street, 15th Avenue and 16th Avenue).

8. An erosion control permit will be required from the City of Canby prior to any on-site disturbance.

9. A demolition permit will be required from the City prior to demoing any existing structures on lots 20 & 21, lots 25 & 26 and lots 52 thru 56.

10. The existing domestic or irrigation wells shall be abandoned in conformance with OAR 690-220-0030. A copy of Oregon water Rights Department (OWRD) abandonment certificate shall be submitted to the City.

11. Any existing on-site sewage disposal system shall be abandoned in conformance with DEQ and Clackamas County Water Environmental Services (WES) regulations. A copy of the septic tank removal certificate shall be submitted to the City.

12. The existing house on lot 24 shall connect to City water and sewer as part of this development and SDC charges shall be paid prior to connection.

13. Sanitary sewer exists along S Elm Street to serve this site. Sanitary sewer lines shall be extended to serve the adjoining properties as applicable.

14. A storm drainage plan has not been submitted as part of this application. The storm drainage runoff can be discharged the Molalla River or using on-site drywells. Discharging storm runoff directly to the Molalla River will require water quality treatment prior to any discharge and may require DEQ approval. Using drywells (UIC) as a means to discharge runoff from the public streets must meet the following criteria: The UIC structures location shall meet at least one of the two conditions: (1) the vertical separation distance between the UIC and seasonal high groundwater is more than 2.5 feet or (2) the horizontal separation distance between the UIC and any water well is a minimum of 267 feet in accordance of the City of Canby Stormwater Master Plan, Appendix "C", Groundwater Protectiveness Demonstration and Risk Prioritization for Underground Injection Control (UIC) Devices. A final storm drainage report shall be prepared by a registered professional engineer and submitted with the final construction plans. The report shall meet Chapter 4 of the City of Canby Public Works Design Standards dated

June 2012.

15. All private storm drainage runoff shall be disposed on the individual lots as per Chapter 4 of the City of Canby Public Works Design Standards dated June 2012.

4. **The applicant shall comply with the applicable recommendations listed in the DKS Traffic Impact Study dated September 29, 2017.**
5. Public improvements such as sidewalk and street improvements on S. Elm Street and S. Fir Street are required during development.
6. A turnaround, at or near the terminus of SE 15th Avenue, shall be as directed by Canby fire district.
7. The applicant shall pay the applicable Public Improvement Engineering Plan Review fee prior to recording the final plat.

Fees/Assurances:

8. All public improvements are normally installed prior to the recordation of the final plat. If the applicant wishes to forgo construction of any portion of the public improvements until after the recordation of the final plat, then the applicant shall provide the City with appropriate performance security (subdivision performance bond or cash escrow) in the amount of 110% of the cost of the remaining public improvements to be installed.
9. If the applicant chooses to provide a subdivision performance bond for some or all of the required public improvements, the applicant shall obtain a certificate from the city engineer that states:
   a. The applicant has complied with the requirements for bonding or otherwise assured completion of required public improvements.
   b. The total cost or estimate of the total cost for the development of the subdivision. This is to be accompanied by a final bid estimate of the subdivider's contractor, if there is a contractor engaged to perform the work, and the certificate of the total cost estimate must be approved by the city engineer.
10. The applicant must guarantee or warranty all public improvement work with a 1 year subdivision maintenance bond in accordance with 16.64.070(P).
11. The applicant must pay the City Master Fee authorized Site Plan Development Engineering Plan Review fee prior to the approval of the construction plans.

Streets, Signage & Striping:

12. The street improvement plans for S. Elm Street and S. Fir Street frontage and the interior streets shall conform to the TSP and Public Works standards as indicated by the city engineer.
13. A roadway striping plan shall be submitted by the applicant and shall be approved by city engineer and by the Public Works street department prior to the construction of public improvements.
14. A roadway signage plan shall be submitted by the applicant and shall be approved by the city engineer and by the Public Works street department prior to the construction of public improvements.
15. The applicant shall be responsible for installing all required street signage and striping at the time of construction of public improvements, unless other arrangements are agreed to by the City.

Sewer:

16. The applicant shall submit documentation of DEQ approval of the sewer plans to the City Engineer prior to the construction of this public improvement with each phase of development.

Stormwater:

17. Stormwater systems shall be designed in compliance with the Canby Public Works Design Standards as determined by the City Engineer.

18. The applicant shall obtain DEQ approved drywells if proposed within the subdivision.

Grading/Erosion Control:

19. The applicant shall submit grading and erosion control plans for approval by Canby Public Works in conjunction with construction plan approval prior to the installation of public improvements and start of grading with each phase of development.

20. The applicant shall grade all areas of the site, including the proposed lots, to minimize the amount of soil to be removed or brought in for home construction.

Final plat conditions:

General Final Plat Conditions:

21. The applicant shall apply for final plat approval at the city and pay any applicable city fees to gain approval of the final subdivision plat. Prior to the recordation of the final plat at Clackamas County, it must be approved by the city and all other applicable agencies. The city will distribute the final plat to applicable agencies for comment prior to signing off on the final plat if deemed necessary.

22. All public improvements or submittal of necessary performance security assurance shall be made prior to the signing and release of the final plat for filing of record.

23. The final plat shall conform to the necessary information requirements of CMC 16.68.030, 16.68.040(B), and 16.68.050. The city engineer or county surveyor shall verify that these standards are met prior to the recordation of the subdivision plat.

24. All "as-built" of City public improvements installed shall be filed with Canby Public Works within sixty days of the completion of improvements.

25. Clackamas County Surveying reviews pending subdivision plat documents for Oregon Statutes and county requirements. A subdivision final plat prepared in substantial conformance with the approved tentative plat must be submitted to the City for approval within one year of approval of the tentative plat or formally request an extension of up to 6-months with a finding of good cause.

26. The applicant shall record the final plat at Clackamas County within 6 months of the date of the signature of the Planning Director.

27. The applicant shall assure that the city is provided with a copy of the final plat in a timely manner after it is recorded at Clackamas County, including any CC&Rs recorded in conjunction with the final plat.

28. The City shall assign addresses for each newly created subdivision lot and distribute that to the developer, and other agencies that have an interest.

Dedications

29. The applicant shall dedicate 7 feet of R.O.W. width for the full frontage of the subdivision along S Fir Street on the Final Plat.

30. The applicant shall dedicate .88 acres for a public park.

Easements

31. A dual 12 foot utility, pedestrian, and temporary street tree easement along all of the lot street frontages shall be noted on the final plat. This easement may be combined with other easements and shall be measured from the property

boundary.

32. Sidewalk easements are required along the frontage of the newly created private lots for any portion of the 6' public sidewalk that will lie on private property.

Street Trees

33. A Street Tree Plan shall be submitted with the final plat, and street tree fees paid prior to release of the final plat. The plan will allow the city to establish street trees per the Tree Regulation standards in Chapter 12.32 of the Canby Municipal Code. The total per tree fee amount is calculated at one tree per 30 linear feet of total street frontage on both sides of all internal streets and the adjacent side of external streets or as determined by an approved Street Tree Plan on a per tree basis.

Monumentation/Survey Accuracy Conditions

38. The county surveyor and/or city engineer shall verify that the lot, street, and perimeter monumentation shall meet the requirements set forth in Oregon Revised Statutes and conform with the additional survey and monumentation standards of 16.64.070(M)(1-3) prior to recordation of the final plat.

Residential Building Permits Conditions:

39. Construction of all required public improvements and recordation of the final subdivision plat must be completed prior to the construction of any homes.

40. The homebuilder shall apply for a City of Canby Site Plan Permit and County Building Permit for each home and satisfy the residential design standards of CMC 16.21.

41. The homebuilder shall apply for a City of Canby Erosion Control Permit.

42. All residential construction shall be in accordance with applicable Public Works Design Standards.

43. On-site stormwater management shall be designed in compliance with the Canby Public Works Design Standards.

44. Clackamas County Building Codes Division will provide structural, electrical, plumbing, and mechanical plan review and inspection services for home construction per contract with the City. The applicable county building permits are required prior to construction of each home.

45. Per the Canby Public Works Design Standards, minimum residential driveway widths at the inside edge of the sidewalk shall be 12 feet and the maximum residential driveways widths shall be 24 feet with an allowed exception for 28 feet for a home with 3 or more garages.

46. Sidewalks and planter strips shall be constructed by the developer and shown on the approved tentative plat.

47. All usual system development fees shall be collected with each home within this development except as otherwise indicated within the Park Land Dedication and Improvement Agreement associated with this subdivision.

I CERTIFY THAT THIS ORDER approving **SUB/VAR 18-01 BECK POND SUBDIVISION** which was presented to and **APPROVED** by the Planning Commission of the City of Canby.
DATED this 11th day of June, 2018.

_____
John Savory
Planning Commission Chair

_____
Bryan Brown
Planning Director

_____
Laney Fouse, Attest
Recording Secretary

ORAL DECISION: June 11, 2018

Name	*Aye*	*No*	*Abstain*	*Absent*
John Savory				
John Serlet				
Larry Boatright				
Derrick Mottern				
Tyler Hall				
Shawn Varwig				
Andrey Chernishov				

WRITTEN DECISION: June 11, 2018

Name	*Aye*	*No*	*Abstain*	*Absent*
John Savory				
John Serlet				
Larry Boatright				
Derrick Mottern				
Tyler Hall				
Shawn Varwig				
Andrey Chernishov				