PLANNING COMMISSION
Meeting Agenda
Monday, February 12, 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
b. Chair & Vice-Chair Nominations

2. CITIZEN INPUT ON NON-AGENDA ITEMS

3. MINUTES
a. Approval of Planning Commission Minutes for January 22, 2018.

4. NEW BUSINESS

5. PUBLIC HEARING
a. Consider a request for an Annexation and Zone Change for two properties within the SW Canby Development Concept Plan Area **(ANN 17-01/ZC 17-04 Mayberry Group).**

***6.* FINAL DECISIONS**
(Note: These are final, written versions of previous oral decisions. No public testimony.)
a. Mayberry Group Annexation & Zone Change (**ANN 17-01/ZC 17-04)**

7. ITEMS OF INTEREST/REPORT FROM STAFF
a. Next regularly Planning Commission Meeting scheduled for Monday, February 26, 2018.

8. ITEMS OF INTEREST/GUIDANCE FROM PLANNING COMMISSION

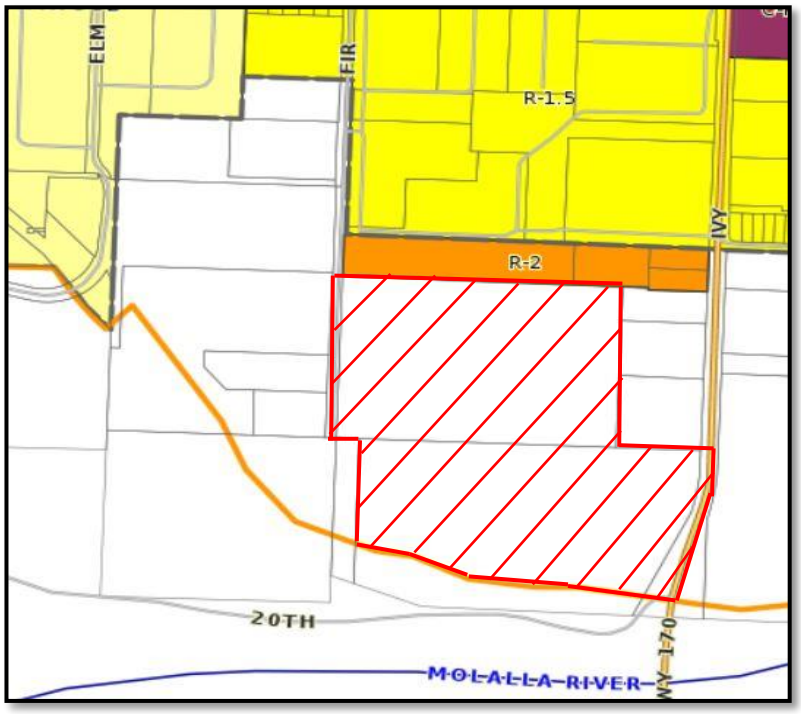
9. ADJOURNMENT

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.

City of Canby

ANNEXATION AND ZONE CHANGE STAFF REPORT
FILE #: ANN 17-01/ZC 17-04
Prepared for the February 12, 2018 Planning Commission Meeting

LOCATION: The properties are situated at southern terminus of S. Fir Street and extending to the east approximately 950 feet to also border on the west side of S. Ivy Street at a point approximately 850 feet south of SE 16th Avenue and extending south to border on the Canby Urban Growth Boundary (UGB) and addressed as 1901 S. Ivy Street.



ANNEXATION PROPERTY SIZE: The site is 28.08 gross acres, net acres are to be determined, (net acres are the subject property minus S. Ivy St. and S. Fir St. R.O.W. and portion outside Urban Growth Boundary)
TAX LOTS: Tax Lots 41E04D01700 and 41E04D02000
COMPREHENSIVE PLAN DESIGNATION: Low, Medium, and High Density Residential (LDR, MDR, HDR)
CURRENT ZONING DESIGNATION: Clackamas County: Exclusive Farm Use (EFU)
PROPOSED ZONING: Low, Medium, and High Density Residential (R-1, R-1.5, R-2)
OWNER: McMartin Farms, LLC
APPLICANT: THE MAYBERRY GROUP
APPLICATION TYPE: Annexation/Zone Change (Type IV)
CITY FILE NUMBER: ANN 17-01/ZC 17-04

I. PROJECT OVERVIEW & EXISTING CONDITIONS

The property owner of two parcels of land located in the southwest portion of the City of Canby's Urban Growth Boundary (UGB) propose annexation into the city limits. The property owner also proposes a zone change application to change the current zoning from the Clackamas County EFU (Exclusive Farm Use) designation to City of Canby's R-1 (Low Density Residential) R 1.5 (Medium Density Residential) and R-2 (High Density Residential Zones). The subject parcels are contiguous properties, and include two tax lots that are located on the east side of S. Fir Street and the west side of S. Ivy Street. The properties are currently in open space, residential, and agriculture use.

The City of Canby's annexation ordinance requires a Concept Development Plan for properties that are a part of an annexation request when located in a Development Concept Area as indicated on the City of Canby Annex Development Map. The Southwest Canby Development Concept Plan (SCDCP) for properties in the area was developed by Stafford Land Development with input from The Mayberry Group, Inc. who is doing this annexation application in the same DCP area and also with input from the property owners within the SCDCP. However, the plan has yet to be adopted by the Canby City Council and must be adopted in conjunction with approval to annex any properties within the DCP area. As a result of the Planning Commission hearing held on January 8, 2017 for annexation case Ann 17-02/ZC 17-03 several changes were made to the original Southwest Canby Master Plan, Sanitary Sewer Master Plan, and Waterline Master Plan that alter the submitted SCDCP and other aspects of this case. The revised copies being submitted to the City Council are included in this file.

The existing annexation area is located within the City of Canby's Urban Growth Boundary. The City of Canby Comprehensive Plan has envisioned the ultimate urbanization of this area and its intended land use, and the Comprehensive Plan Map for these particular lots indicates a mixture of Low Density Residential, Medium Density Residential, and High Density Residential uses. These designations correspond to the zone changes requested by the applicants. The area is currently within Clackamas County's jurisdiction and is presently zoned as EFU (Exclusive Farm Use). This zone change is to rezone the properties involved to the City zoning of R-1, R-1.5, and R-2 zones in accordance with the corresponding City Comprehensive Plan Map land use designations. The zone designations will take effect when the properties are annexed as indicated in this application.

The Southwest Canby Development Concept Plan (SCDCP) is intended to address City of Canby infrastructure requirements for the southwest Canby area. The SCDCP is not a specific development proposal, but a design concept that provides an understanding and framework of how the properties should be developed prior to annexation into the City.

II. ATTACHMENTS

- **A.** Application Forms
- **B.** Submitted Written Narrative and materials
- **C.** Chart of Available Platted Lot Supply in Canby
- **D.** Chart of Available lots and Permits Issued in Last Ten Years
- **E.** Neighborhood Meeting Notes/Attendance List/Notification Letter
- **F.** Pre-Annexation application Meeting Minutes
- **G.** Consent to Annexation Petition
- **H.** Survey of Property to Be Annexed and Legal Description of Private Property and

adjacent S. Fir St. and S. Ivy St. Right-of-Way to be annexed

I. Tax Lot Ownership Survey

J. Maps: Aerial Vicinity Map, Assessor Map, Canby Comprehensive Plan Map, Proposed Annexation Area Map

K. Development Concept Plan Submittal Packet

L. Traffic Analysis - contracted by applicant with City's Consulting Traffic Engineer

M. Agency/Citizen Comments

III. APPLICABLE REVIEW CRITERIA & FINDINGS

Major approval criteria used in evaluating this application include the following Chapters from the *City of Canby's Municipal Code including the Land Development and Planning Ordinance* (Title 16):

- 16.84 Annexations
- 16.54 Amendments to Zoning Map
- 16.89 Application and Review Procedures
- 16.16 R-1 Low Density Residential Zone
- 16.18 R-1.5 Medium Density Residential Zone
- 16.20 R-2 High Density Residential Zone

City of Canby Comprehensive Plan Policies and Implementation Measures
Clackamas County/City of Canby Urban Growth Management Agreement (UGMA)
State Statutes- ORS 195.065 and 222

Chapter 16.84Annexation Compliance

16.84.040 (A)(1)(b) Annexation Development Map.

A. *The following criteria shall apply to all annexation requests.*

1. *The City of Canby Annexation Development Map shall determine which properties are required to submit either (See Figure 16.84.040):*

a. *A Development Agreement (DA) binding for all properties located within the boundaries of a designated DA area as shown on the City of Canby Annexation Development Map. The terms of the Development Agreement may include, but are not limited to:*

1. *Timing of the submittal of an application for zoning*
2. *Dedication of land for future public facilities including park and open space land*
3. *Construction of public improvements*
4. *Waiver of compensation claims*
5. *Waiver of nexus or rough proportionality objections to future exactions*
6. *Other commitments deemed valuable to the City of Canby*

For newly annexed properties that are within the boundaries of a DA area as designated on the City of Canby Annexation Development Map: A Development Agreement shall be recorded as a

covenant running with the land, binding on the landowner's successors in interest prior to the City Council granting a change in zoning classification.

b. *A Development Concept Plan (DCP) binding for all properties located within the boundaries of a designated DCP area as shown on the City of Canby Annexation Development Map. A Development Concept Plan shall address City of Canby infrastructure requirements including:*

1. *Water*
2. *Sewer*
3. *Storm water*
4. *Access*
5. *Internal Circulation*
6. *Street Standards*
7. *Fire Department requirements*
8. *Parks and open space*

For newly annexed properties that are within the boundaries of a DCP area as designated on the City of Canby Annexation Development Map: A Development Concept Plan shall be adopted by the Canby City Council prior to granting a change in zoning classification. (Ord. 1294, 2008)

Findings: A copy of the Southwest Canby Development Concept Plan (SCDCP) is included in the file. The SCDCP provided an extensive packet of information to address City of Canby future infrastructure requirements for the area, and engineering level work has gone into planning for how the concept plan defined area would best be developed and served by all necessary infrastructure.

A traffic analysis of the entire subject area was incorporated into the plan to address traffic impacts associated with anticipated full development of the properties in accordance with the applicable zoning designation. DKS Engineering provided a TIA, dated September 29, 2017 that summarized how the requirements of Oregon Administrative Rule (OAR) 660-012-0060, the Transportation Planning Rule (TPR), are met for the subject properties as well as the SCDCP area. The surrounding roadways and intersections were found to have sufficient capacity to accommodate the proposed annexation, zone change, and for the development concept plan. The Transportation Planning Rule requirements of State Statue were determined to have been met as documented in the TIA.

All necessary utility services are generally available or can be made available through service line extensions to the annexation area. The Concept Plan maps, along with the Concept Plan & Infrastructure narrative, indicate the options for necessary infrastructure to serve this area. Stormwater was discussed in the SCDCP, and stormwater management for street runoff will be handled with the installation of new public underground injection wells and the associated catch basins and pollution control manholes for water quality treatment. Private property runoff will be handled on-site with infiltration facilities on each lot within the individual yard areas.

The SCDCP proposed three "pocket parks" and a 2,500 foot trail that will extend along the

south boundary of the concept area. Based on calculations included in the concept plan the park acres to dwelling units ratio requires 5.24 acres of parks or open space. The proposed parks and trail area results in 3.65 acres, and the plan indicates that the remaining 1.59 acres will be collected by the City as a fee in lieu as a park system development charge. The basic strategy recommended for park appropriation is that Parks SDC fees paid by property owners who are not dedicating land be collected into a "Parks SDC Account" or similar, and that these funds be used to compensate property owners who dedicate land. In order for this mechanism to work, the value of property owners' land contributions needs to be established by appraisal. A more detailed explanation of this process is located in the SCDCP. This criterion can be met.

Criteria 16.84.040(A)(2) *Analysis of the need for additional property within the city limits shall be provided. The analysis shall include the amount of developable land (within the same class of zoning – low density residential, light industrial, etc.) Currently within the city limits; the approximate rate of development of those lands; and how the proposed annexation will affect the supply of developable land within the city limits. A supply of developable residential land to provide for the anticipated population growth over the following three years is considered to be sufficient.*

Findings: A land needs analysis is required with all annexations to assess the current amount of developable land within the same zone designation of that requested in the application. A 3-year supply of developable R-1, R-1.5, and R-2 zoned land is to be considered sufficient. The City Council previously provided a defined policy direction to staff that stated, analysis of actual number of platted lots based on a reasonable assessment of expected consumption rate moving forward, is the appropriate metric to utilize in determining the adequacy of the developable land supply. The applicant included in the file an analysis indicating the deficiency of Canby's 3-year supply of developable land based on population data and existing available platted lots. The study determined that currently forty-six R-1 zoned vacant platted lots remain as inventory within the city limits, no R-1.5 zoned vacant lots, and one R-2 zoned vacant lot. The city has had an average absorption rate of nearly 45 lots per year for the last 10 years. The information stated that, based on a three year average of 2017, 2018, and 2019, a total of 379 single-family platted lots needed through 2020 with 46 currently available which leaves a deficiency of 333 lots. This indicates the supply of readily available platted lots with all necessary infrastructures is below a three-year supply. The applicant also provided an additional analysis that included subdivisions that are preliminarily approved and have yet to record platted lots. The consideration of the additional lots still left a deficiency of 80 lots. If annexed, this property would add to the buildable land supply. It will likely take 2 to 3 years for this land to be fully platted and the lots made available. Staff concludes that information indicates this criterion is met.

Criteria 16.84.040)A)(3) *Statement of potential physical, aesthetic and related social effects of the proposed development on the community as a whole and on the neighborhood of which it will become a part; and proposed actions to mitigate identified concerns, if any. A neighborhood meeting is required as per Table 16.89.020 of the City of Canby Land Development and Planning Ordinance.*

Findings: Future development is anticipated to develop the site at a higher net density per

acre. However, potential traffic generation has been shown to be within the capabilities of the surrounding road system with no mitigation necessary. The addition of three new small neighborhood parks and a future walking trail to be constructed by the City along the UGB boundary will be located within the SCDCP and will add to the social and aesthetic effects of development on the subject properties and the future development of the neighborhood livability. *It should be noted that two property owners who own land that borders the UGB and is located adjacent to the proposed development are not participating in this annexation request and oppose the walking trail that would extend across their property. The trail is currently indicated by a note as a future trail on the DCP before the City Council on February 7. Subsequently, the applicant modified the SCMP to show a temporary route for the walking trail that proceeds through the proposed subdivision in order to circumvent the properties and connect with a proposed park located in the future Beck Subdivision to the west.* Staff does not foresee any significant impacts from the proposal that are not common to growth inside the UGB or need to mitigate any identified concerns. Staff agrees the annexation and future development of the subject parcels is consistent with development indicated by the Development Concept Plan and appropriate in this area of Canby. This criterion is satisfied.

Criteria 16.84.040 (A)(4) *Statement of availability, capacity and status of existing water, sewer, drainage, transportation, park and school facilities*

Findings: The Southwest Canby Development Concept Plan provides maps that demonstrate how utility infrastructure will be made available, and unmanageable capacity issues were not identified by City departments and agencies during the SCDCP review process. The proposed public parks and trail will be beneficial in serving this area of Canby. It appears that there are significant tree resources available for the park area and the conceptual plan provides easy direct access from the subject properties to the park trails and facilities. It appears that public schools are within a reasonable proximity to the concept area. This criterion can be met at the time of development.

Criteria 16.84.040 (A)(5) *Statement of increased demand for such facilities to be generated by the proposed development, if any, at this time*

Findings: Staff finds that the information contained in the SCDCP infrastructure section is sufficient, and the applicable criteria can be met. Full development of the SCDCP area will require the City to build a new sewer pump station at the southeast corner of the DCP area to serve a large portion of the DCP and both the tax lots that are part of this annexation request. The City estimates about a two year planning and construction period to bring the pump station online.

Criteria 16.84.040 (A)(6) *Statement of additional facilities, if any, required to meet the increased demand and any proposed phasing of such facilities in accordance with projected demand.*

Findings: This staff report incorporates the infrastructure sections of the SCDCP as findings. All necessary utility extensions are available to serve this area when development occurs after annexation. The infrastructure section of the SCDCP indicates that connections to existing facilities are available and preferred depending on the development project. However, the

City Engineer commented that a new pump station and pressure main construction will be required. Staff finds that with appropriate conditions of approval, the SCDCP information is sufficient and this criterion is or can be met.

Criteria 16.84.040 (A)(7) *Statement outlining method and source of financing required to provide additional facilities, if any.*

Findings: The applicant will pay the necessary costs of their own development. Information in the SCDCP indicated that most infrastructure facilities in the southwest Canby area are expected to be built by individual developers. The exception is any proposed park facilities and the pump station as well that will be funded with City capital improvements project funds from SDC fees. Staff finds that information in the SCDCP is sufficient for this case, and the applicable criteria can be met.

Criteria 16.84.040 (A)(8) *Statement indicating the type and nature of any comprehensive plan text or map amendments or zoning text or map amendments that may be required to complete the proposed development.*

Findings: The applicant intends to follow the low density residential, medium density residential, and high density residential zoning designation of the Comprehensive Plan. The only change is a zoning map amendment to change the zone from EFU to R-1, R-1.5, and R-2 and the Zone Map Change Application that accompanies this annexation request will satisfy the Development Concept Plan designations. Staff finds that the criterion in 16.84.040(A)(8) can be met.

Criteria 16.84.040 (A)(9) *Compliance with other applicable city ordinances or policies*

Findings: Based on available information, staff concludes that the proposal complies with all other city ordinances and policies.

Criteria 16.84.040 (A)(10) *Compliance of the application with the applicable sections of Oregon Revised Statutes Chapter 222*

Findings: Oregon Revised Statutes (ORS) Chapter 222 provides regulation of city boundary changes and other development requirements. Staff concludes that this proposal complies with all applicable provisions in the Oregon Revised Statutes. The applicable criteria can be met.

Chapter 16.54 Amendments to the Zoning Map Analysis

The assignment of an appropriate zoning district is a part of any annexation application within the City of Canby. The approval criteria are similar to that for approval of an annexation.

16.54.010, 0.20, 0.30 Amendments to the Zoning Map

Findings: 16.54.010 – Authorization to initiate amendments: **The property owners have authorized initiation of the proposed annexation and map amendment by signing an application form and Consent to Annex Form. This criterion has been met.**

16.54.020 – Application and Fee: **The map amendment application and associated fee were received from the applicant. This criterion has been met.**
16.54.030 – Public Hearing on Amendment: **This criterion will be met when the Planning Commission holds a public hearing and makes a recommendation to the City Council and when the City Council conducts its own hearing and issues a decision.**

16.54.040 Standards and criteria
In judging whether or not the zoning map should be amended or changed, the Planning Commission and City Council shall consider:
A. *The Comprehensive Plan of the city, giving special attention to Policy 6 of the land use element and implementation measures therefore, and the plans and policies of the county, state and local districts in order to preserve functions and local aspects of land conservation and development;*

Findings: The subject properties and the SCDCP are not identified as being in an "Area of Special Concern" that is delineated in Policy 6 of the Comprehensive Plan. Additionally, the proposed zone for the properties is consistent with the land use designation on the Comprehensive Plan Map. Staff concludes that the request meets provisions in Policy 6 and the Comprehensive Plan.

B. *Whether all required public facilities and services exist or will be provided concurrent with development to adequately meet the needs of any use or development which would be permitted by the new zoning designation. (Ord. 749 section 1(B), 1984; Ord.740 section 10.3.85(D), 1984)*

Findings: Problems or issues in the extension of utility services have not been raised by City service providers that would prevent services at the time of development. It appears that future development of the properties can meet standards for adequate public facilities.

16.08.150 Traffic Impact Study (TIS)
A. Determination based on information provided by the applicant about the proposed development, the city will determine when a TIS is required and will consider the following when making that determination.
1. Changes in land use designation, zoning designation, or development standard.
2. Changes in use or intensity of use.
3. Projected increase in trip generation.
4. Potential impacts to residential areas and local streets.
5. Potential impacts to priority pedestrian and bicycle routes, including, but not limited to school routes and multimodal street improvements identified in the TSP.
6. Potential impacts to intersection level of service (LOS).

Findings: The Transportation Planning Rule within State Statute (OAR 660-12-0060-9) requires that there be a record of traffic generation findings which are consistent with the City's Transportation System Plan with any Comprehensive Plan Map Amendment or Zoning Map Amendment. As previously mentioned, DKS Engineering provided a section of the SCDCP that confirmed the proposed annexation met provisions of the TPR. Additionally, a Traffic Analysis was incorporated in the SCDCP to discuss any future traffic impacts when development occurred with future zone change proposals. The findings of the analysis determined that the zone change contemplated and the resulting traffic was assumed for trip modeling in the 2010

Canby Transportation System Plan, if developed as allowed, and therefore, the Transportation Planning Rule requirements are met. The zone change from the proposed annexation would not have a significant effect on the surrounding transportation network, and no mitigation measures would be required to satisfy TPR requirements. This review criterion is met.

Chapter 16.89.060 Process Compliance

16.89.060 Type IV Decision

For certain applications, the City Council makes a final decision after a recommendation by the Planning Commission. These application types are referred to as Type IV decisions.

A. Pre-application conference. A pre-application conference may be required by the Planning Director for Type IV applications.

B. Neighborhood meetings. The applicant may be required to present their development proposal at a neighborhood meeting (see Section 16.89.070). Table 16.89.020 sets the minimum guidelines for neighborhood review but the Planning Director may require other applications to go through neighborhood review as well.

C. Application requirements. Type IV applications shall be made on forms provided by the Planning Director. The application shall be accompanied by all required information and fees.

D. Public notice and hearings. The public notice and hearings process for the Planning Commission's review of Type IV applications shall follow that for Type III applications, as provided in subsections 16.89.050.D and 16.89.050.E.

E. Decision process.

1. Approval or denial of a Type IV decision shall be based on the standards and criteria located in the code.

2. The hearings body shall issue a final written order containing findings and conclusions recommending that the City Council approve, approve with conditions, or deny the application.

3. The written decision shall explain the relevant criteria and standards, state the facts relied upon in rendering the decision, and justify the decision according to the criteria, standards, and facts.

4. In cases involving attorneys, the prevailing attorney shall prepare the findings, conclusions, and final order. Staff shall review and, if necessary, revise, these materials prior to submittal to the hearings body.

F. City Council proceedings:

1. Upon receipt of the record of the Planning Commission proceedings, and the recommendation of the Commission, the City Council shall conduct a review of that record and shall vote to approve, approve with conditions, or deny the recommendation of the Planning Commission.

2. The City Council may question those individuals who were a party to the public hearing conducted by the Planning Commission if the Commission's record appears to be lacking sufficient information to allow for a decision by the Council. The Council shall hear arguments based solely on the record of the Commission.

3. The City Council may choose to conduct public hearings on Comprehensive Plan amendments, amendments to the text of this title, zone map amendments, and

annexations. If the Council elects to conduct such hearings, it may do so in joint session with the Planning Commission or after receiving the written record of the Commission. (Ord. 1080, 2001)

Findings: Annexations are processed as a Type IV "quasi-judicial" process which is considered through a public hearing at the Planning Commission that forwards a recommendation to the City Council. The City Council also holds a public hearing and issues a final decision. The notice requirements are the same as for Type III applications.

In this particular case, the annexation request will not be scheduled for a public vote. On March 15, 2016, the Governor signed Senate Bill SB1573 that mandates some properties, meeting certain criteria, to file for annexation without going through a public vote process that might otherwise currently be in effect through local City Charter provisions and adopted code. This application meets the criteria stated in SB1573, and a public vote will not be held for this annexation application.

Notice of this application and the Planning Commission and Council Hearing dates was made to surrounding property owners on January 9, 2018, at least 20-days prior to the hearing. Prior notification and neighborhood meetings were completed during the Southwest Canby Development Concept Plan process. The site was posted with a Public Hearing Notice sign by February 2, 2018. A notice meeting ordinance requirements of the public hearings was published in the Canby Herald on February 7, 2018. A pre-application meeting was held March 9, 2017. These findings indicate that all processing requirements have been satisfied with this application to date.

Public/Agency Testimony Received

Notice of this application and opportunity to provide comment was mailed to owners of lots within 500 feet of the subject properties and to all applicable public agencies and City departments on January 5, 2018. Complete comments are documented in the file. As of the date of this Staff Report, the following comments were received by City of Canby from the following persons/agencies:

The City Engineer stated that requested conditions 1-4 listed in ANN 17-02/ZC 17-03 dated 12-11-17 are applicable to this case.

Conclusion Regarding Consistency with the Standards of the Canby Municipal Code

Staff concludes, as detailed in the submittal from the applicant and as indicated in this staff report, including all attachments hereto, that:

1. The applications and proposed use is in conformance with applicable sections of the City's Comprehensive Plan and Land Development and Planning Ordinance when the determinations contained in this staff report are applied.
2. A City **adopted** Development Concept Plan and explanatory narrative must be submitted detailing how all necessary infrastructures to the properties proposed to be annexed will serve the area as required by the annexation ordinance.
3. The proposed annexation can meet the approval criteria set forth in CMC 16.84.040(A).

4. The zoning of the property, if annexed, should be R-1, R-1.5, and R-2 as indicated in the application and pursuant to the approval criteria set forth for map amendments in CMC 16.54.040.
5. The proposed annexation's requested zoning district of R-1, R-1.5, and R-2 is in conformance with the Comprehensive Plan Land Use Plan Map.
6. The application complies with all applicable Oregon Revised Statutes.
7. There are sufficient public and private agency utility and service capacity to serve the site at the anticipated development intensity.
8. In accordance with the UGMA with Clackamas County, this proposed annexation application will include a description of the entire width of adjacent S. Fir Street and S. Ivy Street road right-of-ways with the properties proposed for annexation.
9. It has been determined that existing land available is below a three-year supply of developed R-1, R-1.5, and R-2 zoned lots within the City limits. Therefore, the supply does not exceed a three-year supply and there is a "need" for low density, medium density, and high density residential zoned land for development at this time and will maintain an adequate 3 year supply.

16.89 Recommendation

Based on the application submitted and the facts, findings and conclusions of this report, but without benefit of a public hearing, staff recommends that the Planning Commission recommend to the City Council that:

1. ANN 17-01/ZC 17-04 be approved and,
2. Upon annexation, the zoning of the subject properties shall be designated as R-1, R-1.5, and R-2 as indicated by the Southwest Canby Development Concept Plan Map and the Canby Comprehensive Plan Map.

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

LAND USE APPLICATION

ANNEXATION
Process Type IV

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

☐ Applicant Name: Mary Johnson Phone: 503-656-4144
Address: 365 Warner Milne Rd. STE 203 Email: maryjohnson@orlaw.us
City/State: Oregon City, OR Zip: 97045

☐ Representative Name: NW Engineers - Matt Newman Phone: 503-601-4401
Address: 3409 NW John Olsen Pl. Email: matt@nw-eng.com
City/State: Hillsboro, OR Zip: 97124

☐ Property Owner Name: McMartin Farms LLC Phone: 503-723-7780
✗Signature: Helen J McMartin
Address: 19236 Carmelita Dr. Email:
City/State: Oregon City, OR Zip: 97045

☐ Property Owner Name: Phone:
Signature:
Address: Email:
City/State: Zip:

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.
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:

1901 S Ivy St	16.61 ac	4 1E04D 02000
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
1 residence since 1925	EFU	
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

Proposed subdivision
Describe the Proposed Development or Use of Subject Property

ZC 17-04 &	STAFF USE ONLY			
ANN 17-01	8.04.17	DE/BB		
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

Incomplete: Calculate additional fee
Need an overall Concept Development Plan
Need the completed traffic study that is in progress.
A narrative with responses demonstrating conformance with standards and review criteria CMC 16.84.040

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

LAND USE APPLICATION

Zone Map Change Application

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

☒ Applicant Name: Tucker Mayberry Phone: 503-750-1122
Address: 10801 SW Riverside Dr Email: tucker@mayberrygroup.com
City/State: Portland, Oregon Zip: 97219

☒ Representative Name: Matt Newman, NW Engineering Phone: 503-601-4401
Address: 3409 NE John Olsen Ave Email: matt@nw-eng.com
City/State: Hillsboro OR Zip: 97124

☒ Property Owner Name(s)*: McMartin Farms, LLC Phone: 503-723-7786
Signature: (See Annexation Form)
Address: 19236 Carmelita Dr Email:
City/State: Oregon City, OR Zip: 97045

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

* 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.

PROPERTY & PROJECT INFORMATION:

1901 S. Ivy St	30.54	41E4D 2000 & 1700
Street Address or Location of Subject Property	Total Size of Property	Assessor Tax Lot Numbers
1 residence	EFU	
Existing Use, Structures, Other Improvements on Site	Zoning	Comp Plan Designation

Zone change to R-2, R-1.5, R-1
Brief description of proposed development or use

STAFF USE ONLY				
ZC 17-04/ANN 17-01	12/1/17	LS		
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

Visit our website at: www.canbyoregon.gov
Email Application to: PlanningApps@canbyoregon.gov

12/1/17 - will send CK for zone change fee #1350 (50% discount)

NW Engineers, LLC
3409 NE John Olsen Avenue
Hillsboro, OR 97124
Phone (503) 601-4401
Fax (503) 601-4402
Website www.nw-eng.com

November 30, 2017

City of Canby
Development Services Department
Attn: Bryan Brown
PO Box 930
Canby, Oregon 97013

Re: Annexation & Zone Change Application
1901 S Ivy Street
4-1E 4D 1700 & 2000

APPLICANT:	The Mayberry Group, Inc. Tucker Mayberry 10801 SW Riverside Drive Portland, Oregon 97219
OWNER:	McMartin Farms, LLC 19236 Carmelita Drive Oregon City, Oregon 97045
APPLICANT'S REPRESENTATIVE:	Matthew Newman NW Engineers, LLC 3409 NE John Olsen Avenue Hillsboro, Oregon 97124
REQUEST:	Annexation and Zone Change for Two Properties within the Southwest Canby Development Concept Plan Area.
SITE LEGAL DESCRIPTION:	Tax Lots 1700 & 2000; Tax Map 4-1E 4D Clackamas County, Oregon
SIZE:	30.54 Acres

LOCATION: 1901 S. Ivy Street
Canby, Oregon 97013

I. APPLICABLE REGULATIONS:

A. Canby Municipal Code
Division VI. – Chapter 16.84 – Annexations
Division III. - Chapter 16.54 – Amendments to Zoning Map

B. Comprehensive Plan Policies
Land Use Element
Policy No. 1-6

C. Urban Growth Boundary Management Agreement (UGMA)

D. Oregon Revised Statutes
ORS 195
ORS 222

II. BACKGROUND:

The applicant (The Mayberry Group, Inc.) requests annexation and zone change for their 30.54-acre property located between S. Fir Street and S. Ivy Street, north of the Molalla River. This annexation and zone change is related to but separate from nearby properties also requesting an annexation and zone change (ANN 17-02/ZC 17-03), all part of the Southwest Canby Development Concept Plan. Refer to documents, plans and exhibits prepared for the Development Concept Plan – including master water & sanitary plans, preliminary street and park plans, Neighborhood Meeting documentation and related exhibits in this packet (See Exhibits 4-10).

The applicant intends to develop the properties into approximately 89 single-family detached lots in the R-1.5 and R-1 zones (See Exhibit 4). The applicant has a tentative agreement to sell the northern portion of Tax Lot 1700 in the R-2 zone to Hope Village. Also proposed in the Concept Development Plan are five parks and open space totaling approximately 91,335 sq. ft. Many of the findings for annexation and zone change for the related application are applicable here – particularly with the population growth forecasts and housing needs.

III. FACILITIES AND SERVICES:

The request for annexation of Tax Lots 1700 & 2000 will serve the needs of the community and is an acceptable level of expansion for the City of Canby. There is higher density development in Hope Village to the north. This request is for R-2 zone adjacent to Hope Village, R-1.5 (medium density) to the south, and R-1 (low density) adjacent to the Urban Growth Boundary. All services are available to serve the site.

Water: Water – provided by the Canby Water Department - is available via a 10-in line in S. Fir Street and a 12-in line in S. Ivy Street. Expansion of the system is feasible as shown on Exhibit 5. The water lines can be extended and looped between the two streets as shown.

Sanitary Sewer: Sanitary sewer – provided by the City of Canby – is available to service the site. A pump station is necessary as shown on the Master Plan (Exhibit 7). The entire site will be served by

the pump station – funded and constructed by the city. The plan includes a pump station at the southeast corner of the site near S. Ivy Street with the force main extending north to the existing sewer line in SE 16th Avenue. The applicant has been told that there is adequate capacity to service this area once the pump station is constructed.

Storm Drainage: Stormwater will be infiltrated on-site with individual dry wells and water quality manholes for street drainage. No off-site storm system will be constructed.

Franchise Utilities: All services are available to the site including electrical services through Canby Electrical Department, natural gas and communications.

Fire Protection: Fire has indicated the site can be served when annexed. The site will be designed in accordance with the Oregon Fire Code when the development is proposed.

Police Protection: The site will be served by Canby Police Department upon annexation.

Schools: The site is within the Canby School District and children will likely attend Lee Elementary, Ackerman Middle School and Canby High School.

Parks: There are several existing parks available near the site including Legacy Park, Community River Park, the Community Swim Center, the Adult Center and others. As shown on Exhibit 4, approximately 91,335 sq. ft. of park and open space is provided on-site including a central park and two pedestrian pathways which connect to the buffer.

V. Approval Criteria

This section will address the applicable standards and criteria for approval of annexation into the City of Canby and a Zoning Map Amendment and the subsequent criteria of the Comprehensive Plan, Urban Growth Management Agreement between Clackamas County and the City of Canby, and the Oregon Revised Statutes. Code sections will be quoted in italic, followed by a comment from the applicant Evidencing the compliance of this request and proposal. Text from certain sections of the quoted codes have been omitted because they are explanatory in nature, are not the responsibility of the Applicant, or do not apply to this application.

Canby Municipal Code

DIVISION VI. – CHAPTER 16.84 – ANNEXATIONS

The regulations and requirements of Oregon Revised Statutes Chapter 222 are adopted by reference and made a part of this division. (Ord. 740 section 10.6.20, 1984)

16.84.005 Background **[omitted]**
16.84.010 Purpose **[omitted]**
16.84.020 State regulations

COMMENT:

These standards are addressed throughout this report.

16.84.030 Filing procedure **[omitted]**
16.84.040 Standards and criteria.

A. The following criteria shall apply to all annexation requests.

1. The City of Canby Annexation Development Map shall determine which properties are required to submit either (See Figure 16.84.040):

a. A Development Agreement (DA) binding for all properties located within the boundaries of a designated DA area as shown on the City of Canby Annexation Development Map. The terms of the Development Agreement may include, but are not limited to: **[portions of this subsection omitted for brevity]**

COMMENT:

The site is not located within a Development Agreement Area.

b. A Development Concept Plan (DCP) binding for all properties located within the boundaries of a designated DCP area as shown on the City of Canby Annexation Development Map. A Development Concept Plan shall address City of Canby infrastructure requirements including:

1. *Water*
2. *Sewer*
3. *Stormwater*
4. *Access*
5. *Internal Circulation*
6. *Street Standards*
7. *Fire Department requirements*
8. *Parks and openspace*

For newly annexed properties that are within the boundaries of a DCP area as designated on the City of Canby Annexation Development Map: A Development Concept Plan shall be adopted by the Canby City Council prior to granting a change in zoning classification. (Ord 1294, 2008)

COMMENT:

The subject properties are part of a Development Concept Plan DCP) area as identified on the City of Canby Annexation Development Map (Exhibit 1). The Applicant has prepared a DCP for the southwest Canby DCP area and included a narrative and exhibits addressing the infrastructure requirements. The DCP is provided as Exhibit 4

2. Analysis of the need for additional property within the city limits shall be provided. The analysis shall include the amount of developable land (within the same class of zoning -low density residential, light industrial, etc.) Currently within the city limits; the approximate rate of development of those lands; and how the proposed annexation will affect the supply of developable land within the city limits. A supply of developable residential land to provide for the anticipated population growth over the following three years is considered to be sufficient;

COMMENT:

The applicant for the related annexation and zone change provided as part of this Southwest Canby DCP has provided a detailed analysis regarding housing needs in the City of Canby. This includes a review of available data. The consultant has determined that there is an insufficient supply of lots – particularly single family lots such as those proposed in their development (west of the site) and this site. The state that "forecasted population growth outweighs the current and anticipated availability of lots within the R-1 (Low Density), R-1.5 (Medium Density),...zones that are ready for development." They have provided a detailed summary of the housing needs which is also applicable to this site. Please refer to their analysis which is incorporated with this application as well. In summary that report states that "the availability of developable lots is insufficient to meet the three-year supply needs in the R-1 and R-1.5 zones." They document that there are currently on

46 remaining R-1 lots. They conclude that there is a need for 702 R-1 lots and 482 R-1.5 lots between 2018 and 2020 but only 195 lots are available or pending based on several developments in the City of Canby including the 105-lot Timber Park. Therefore, based on their analysis there is a current deficiency of 287 lots. This deficiency will only be partially addressed with all lands within the Southwest Canby Master Plan including the Stafford Lands future development, high density residential housing in Hope Village, and the remaining portion of Tax Lot 1700 and 2000 which totals approximately 89 lots. Since there is insufficient current or planned inventory this requested annexation is needed to provide an additional supply of land in the R-2, R-1.5 and R-1 zones.

3. ***Statement of potential physical, aesthetic and related social effects of the proposed development on the community as a whole and on the neighborhood of which it will become a part; and proposed actions to mitigate identified concerns, if any. A neighborhood meeting is required as per Table 16.89.020 of the City of Canby Land Development and Planning Or***

COMMENT:

As shown in the attached exhibits, this proposal will substantially conform to the Southwest Canby Development Concept Plan. The proposal includes high density residential (R-2) near Hope Village, medium density residential (R-1.5) to the south and low density residential along the urban growth boundary. Design of the development will be consistent with surrounding neighborhoods in terms of lot size, circulation and open space provisions. The plan includes a pathway along the buffer connecting S. Ivy Street with properties to the west with easy access from public streets.

The Applicant held a neighborhood meeting in compliance with the requirements of CMC 16.89.070 on Tuesday, April 18, 2017. Additional information is available in Section IV of this application.

4. ***Statement of availability, capacity and status of existing water, sewer, drainage, transportation, park and school facilities;***

COMMENT:

Documentation regarding availability and capacity of existing facilities is provided in this application and related documents (including the transportation report). All services are or can be available to serve the site. As shown on the DCP, parkland and trails are provided adjacent to the Molalla River. There will be some impact to schools with approximately 44 additional school aged children potentially impacting the three existing schools over a period of 2-3 years.

5. ***Statement of increased demand for such facilities to be generated by the proposed development, if any, at this time;***

COMMENT:

As shown on the DCP, approximately 89 new housing units are proposed for the McMartin properties plus additional units in Hope Village. Development of most or all of the site will have to wait until the sanitary sewer pump station is completed. All other services are available. Transportation facilities are adequate as demonstrated in the Transportation Report.

6. ***Statement of additional facilities, if any, required to meet the increased demand and any proposed phasing of such facilities in accordance with projected demand;***

COMMENT:

Extension of streets and water lines will be provided with development. The sanitary sewer pump station will be constructed by the city upon annexation. Gravity sewer lines will be constructed by the developer when the pump station is complete.

7. ***Statement outlining method and source of financing required to provide additional facilities, if any;***

COMMENT:

With the exception of the sanitary sewer pump station, the development will be financed by private developers.

8. ***Statement indicating the type and nature of any comprehensive Plan text or map amendments or Zoning text or map amendments that may be required to complete the proposed development. (Ord 1292, 2008)***

COMMENT:

No Comprehensive Plan amendment is required for this annexation.

9. ***Compliance with other applicable city ordinances or policies;***

COMMENT:

Compliance with additional ordinances and policies is provided in this report including Policy 6, state statutes, and the UGMA between the City of Canby and Clackamas County.

10. ***Compliance of the application with the applicable sections of Oregon Revised Statutes Chapter 222.***

COMMENT:

Compliance with ORS 222 is addressed later in this report.

DIVISION III. – CHAPTER 16.54 – AMENDMENTS TO ZONING MAP

16.54.010 Authorization to initiate amendments.
An amendment to the zoning map may be initiated by the City Council, by the Planning Commission, or by application of the property owner or his authorized agent. The Planning Commission shall, within for ty days after closing the hearing, recommend to the City Council, approval, disapproval or modification of the proposed amendment. (Ord. 740 section 10.3.45 (A), 1984)

COMMENT:

The Applicant requesting an amendment to the zoning map is an authorized agent of the owners of the subject properties.

16.54.020 Application and fee.
Application procedures shall be as described in Chapter 16.89. (Ord. 740 section 10.3.85(B), 1984; Ord. 981 section 7, 1997; Ord. 1019 section 13, 1999; Ord. 1080, 2001)

COMMENT:

The application for an amendment to the zoning map to apply the R-1, R-1.5, and R-2 zoning designations to the subject properties is submitted to the City with the required fee.

16.54.030 Public hearing on amendment
Before taking final action on a proposed amendment, the Planning Commission shall hold a public hearing on the amendment following the requirements for advertising and conduct of hearing prescribed in Division VIII. (Ord. 740 section 10.3.85(C), 1984)

COMMENT:

This application will be heard by the Planning Commission as required.

16.54.040 Standards and criteria.
In judging whether or not the zoning map should be amended or changed, the Planning Commission and City Council shall consider:

A. *The Comprehensive Plan of the city, giving special attention to Policy 6 of the land use element and implementation measures therefore, and the plans and policies of the county, state and loca l districts in order to preserve functions and local aspects of land conservation and development.*

COMMENT:

This proposal will allow development of the site into single family detached homes with some higher density attached homes in Hope Village. The development is well planned for pedestrian and vehicular circulation with planned areas of open space consistent with the policies of the city and districts.

B. *Whether all required public facilities and services exist or will be provided concurrent with development to adequately meet the needs of any use or development which would be permitted by the new zoning designation. (Ord. 749 section 1(B), 1984; Ord.740 section 10.3.85(D), 198 4)*

COMMENT:

All public facilities are, or can be made available to serve the site.

16.54.050 (Ord. 740 section 10.3.85(E), 1984 [omitted]

16.54.060 Improvement conditions.

A. *In acting on an application for a zone change, the Planning Commission may recommend and the City Council may impose conditions to be met by the proponents of the change before the proposed change takes effect. Such conditions shall be limited to improvements or physical changes to the property which are directly related to the health, safety or general welfare of those in the area. Further, such conditions shall be limited to improvements which clearly relate to and benefit the area of the proposed zone ch ange. Allowable conditions of approval may include, but are not necessarily limited to:*

    1. *Street and sidewalk construction or improvements;*
    2. *Extension of water, sewer, or other forms of utility lines;*
    3. *Installation of fire hydrants.*

B. *The city will not use the imposition of improvement conditions as a means of preventing planned development, and will consider the potential impact of the costs or required improvements on needed housing. The Planning Commission and City Council will assure that the required improvements will not reduce housing densities below those anticipated in the Comprehensive Plan. (Ord. 749 sect ion 1(C), 1984: Ord. 740 section 10.3.85 (F). 1984)*

COMMENT:

With the exception of the sanitary pump station, no public improvements are proposed until development. The Planning Commission may impose conditions of development. The developer will

install all required improvements (except the pump station) including roads, sewers, storm facilities, water lines and other improvements not installed by utilities or other districts. The applicant has been told that the some of the park facilities may be installed by the city after dedication.

Comprehensive Plan Policies

LAND USE ELEMENT

GOAL: To guide the development and uses of land so that they are orderly, efficient, aesthetically pleasing, and suitably related to one another.

COMMENT:

The proposed development is adjacent to currently developed Hope Village. Expansion of that development along with the balance of the McMartin properties will wait for the sanitary sewer pump station to be completed. As shown on the DCP, the development will connect S. Ivy Street with S. Fir Street providing connectivity through the site and to the west portion of the DCP and Hope Village. Design of the lots, parks and pedestrian pathways will be compatible with surrounding areas.

Policy No. 1:
"Canby shall guide the course of growth and development so as to separate conflicting or incompatible uses while grouping compatible uses"

COMMENT:

The proposed uses in the DCP are compatible with surrounding uses – high, moderate and low residential uses. There are no conflicting uses. S. Ivy Street and the Molalla River/UGB provide physical boundaries to the neighborhood.

Implementation Measure H:
"Continue to work towards a gradual increase in the density and intensity of development allowed within the City, discouraging wasteful development practices and designs."

COMMENT:

As shown on the DCP, the proposal is for high density (R-2) at the north adjacent to Hope Village decreasing through moderate density (R-1.5) to low density (R-1) on the south side of the site. There is no wasteful design shown on the site plan – it is compact and efficient.

Policy No. 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.
Implementation Measure C: Continue to utilize density bonuses and other inducements to encourage development to improve designs and utilize Planned Unit Development procedures.

Comment:

As shown on the DCP, the proposal is for varying lot sizes to encourage a range of housing prices and diverse community. The plan provides circulation for a walkable neighborhood.

Policy No. 3: Canby shall discourage any development which will result in overburdening any of the community's public facilities and services.

COMMENT:

The proposal will not overburden public facilities and services. As discussed, the city will construct the planned sanitary pump station and the developer will provide all required public improvements with the future development. All services are or can be available to serve the site.

Policy No. 4:
Canby shall limit development in areas identified as having an unacceptable level of risk because of natural hazards.

COMMENT:

The site is not within a resource area, flood plain or landslide area. The applicant's Geotechnical Engineer will provide a study and recommendations for building/foundation design or setbacks from the slope along the south side of the site.

Policy No. 5:
Canby shall utilize the land use map as the basis of zoning and other planning or public facility decisions.

Implementation Measure B:
Rezone properties, as necessary, to conform with the Land Use Map.

COMMENT:

The proposal is in compliance with this standard since the property will be zoned residential in accordance with the densities provided in the DCP.

Policy No. 6 - Canby shall recognize the unique character of certain areas and will utilize the following special requirements, in conjunction with the requirements of the land development and planning ordinance, in guiding the use and development of these unique areas.

COMMENT:

The DCP identifies the McMartin property is uniquely located between S. Ivy Street (to the east), existing homes (to the west), the Molalla River and UGB (to the south), and the higher density Hope Village (to the north). The site gently slopes from northwest to southeast. This site provides the opportunity for east-west vehicular circulation, as well as an additional access to Hope Village from the south. It also provides an opportunity for north-south pedestrian circulation through the site and along the proposed pathway and the park with views of the Molalla River. With these unique features, the development is proposed with mixed housing opportunities from higher density adjacent to Hope Village and low density near the Molalla River.

Urban Growth Management Agreement (UGMA) **The UGMA between Canby and Clackamas County is codified as part of Resolution 519, dated Sept. 23, 1992, and requires certain actions and procedures for a variety of action relative to lands within the Urban Growth Management Boundary area. The UGMA contains seven specific issues on which the City of Canby and Clackamas County agree. Rather than quote each of the seven issues, they will be identified by title and addressed:**

1. ***Boundary***

COMMENT:

The site is within the Urban Growth Boundary.

2. ***Comprehensive Planning, Plan Amendments and Public Facilities Planning for Lands in Unincorporated UGMB;***

COMMENT:

As shown on the DCP, the site is located within the UGB. The DCP includes planned residential zones with an efficient road system. The plan is consistent with the Comprehensive Plan and the development will be designed in accordance with the Canby Development standards. Clackamas County will have no further planning responsibilities.

3. Development Proposals for Unincorporated UGMB Areas;

COMMENT:

This section is not applicable. The site will be annexed prior to development.

4. County Notice to and Coordination with the City;

COMMENT:

This section is not applicable. Development will be proposed under City jurisdiction.

5. City Notice to and Coordination with the County;

COMMENT:

The city will notify the County regarding any pending development proposals.

6. City Annexation and Sewer, Water and Road Service;

COMMENT:

Subsection A: The City agrees to undertake any annexations in accordance with process and procedures agreed to by the County. The adjacent right-of-way is required to be included in the annexation.

Subsection B: The city is required to accept jurisdiction of Fir Street. The applicant will be required to construct a "half street improvement" along the frontage of this street.

Subsection E: Public water and sanitary sewer will be extended to the site as necessary.

7. Terms of Agreement

COMMENT:

The UGMA between the City of Canby and Clackamas County is designed for transfer of services and land from county to city. Future development will be in accordance with City standards.

Oregon Revised Statutes

ORS 195 requires various agreements between jurisdictions when urban services are to be provided. The Clackamas County Urban Growth Management Agreement (UGMA) states what agency will provide which services. The proposed annexation will not create any special or heretofore unforeseen circumstances where the provisions of the UGMA will not apply. The proposed annexation is in accordance with the City of Canby Plan. No new agreements, or any deviation from the provisions of the existing UGMA, will be required for this proposed annexation of this 30.54 acre site.

ORS 222

ORS 222 requires several issues be considered prior to an annexation becoming effective. ORS 222.040 provides that an annexation shall not become effective until an election has been conducted. Part of the process of applying for an annexation is meeting the application deadline in order that internal actions by the Planning Commission and City Council take place prior to the election. The city will provide proper notice as required, and agreements with local service providers will be enacted regarding inclusion of the subject site for service purposes after annexation (ORS 222.005).

The procedures specified under ORS 222.111 will be followed by the city. This includes other sections such as ORS 222.130 (Annexation election; notice); ORS 222.150 (Election results); ORS 222.160 (Procedure when annexation is submitted to city vote); ORS 222.177 (Filing of annexation records with Secretary of State); and ORS 222.180 (Effective date of annexation) are all parts of the process the city must follow for any annexation.

Sections ORS 222.510 through ORS 222.830, as applicable, deal with the change of service jurisdici on for properties serviced with urban services (water, sanitary sewer, fire protection, etc.) which may have been provided by other non-urban area providers when the property is in the jurisdiction of Clackamas County. The heading of this Section is "Annexation of Public Service Districts" and deals with the transfer of service rights and obligations once a property is annexed. Whatever is required under these sections will be accomplished as part of the city's annexation process.

This annexation does not involve a merger of cities, or health abatement, as included in sections included in ORS 22.700's; ORS 222.800's; or ORS 222.900's. Therefore, the proposed annexation complies with, me ets, or otherwise fulfills all specific requirements contained in the appropriate and applicable sections of ORS, Ch. 222.

However, an "Island" will be created by the exclusion of Tax Lot 1400, Tax Map 4-1E-4CA. This property is owned by the Wenrick Trust. To eliminate this island, the city needs to include this property in the annexation and zone change applications.

NW Engineers, LLC
3409 NE John Olsen Avenue
Hillsboro, OR 97124
Phone (503) 601-4401
Fax (503) 601-4402
Website www.nw-eng.com

APPLICANT'S STATEMENT
For
"McMartin Annexation and Zone Change"

REQUEST

Annexation and Zone Change for Two Properties within the Southwest Canby Development Concept Plan Area totaling approximately 30.54-acres located at 1901 S. Ivy Street

APPLICANT

The Mayberry Group, Inc.
Tucker Mayberry
10801 SW Riverside Drive
Portland, Oregon 97219

OWNER

McMartin Farms, LLC
19236 Carmelita Drive
Oregon City, Oregon 97045

REPRESENTATIVE

Matt Newman
NW Engineers, LLC
3409 NE John Olsen Avenue
Hillsboro, Oregon 97124

LEGAL DESCRIPTION

Tax Map 4-1E 4D Tax Lots 1700 & 2000
City of Canby, Oregon

"McMartin Annexation and Zone Change"

Table of Contents

"McMartin Annexation and Zone Change"

Exhibit No.	Exhibit Title
1	Canby Annexation Area
2	Proposed Zone Change
3	Existing Conditions
4	Master Plan
5	Water Master Plan
6	Sanitary Sewer Master Plan
7	Tax Map
8	Pre-Application Minutes
9	Neighborhood Meeting Documentation
10	Demographics

SOUTHWEST CANBY MASTER PLAN

13TH AVENUE
14TH CT.
SOUTH ELM STREET
SOUTH FIR STREET
15th AVENUE
"G" STREET
16th AVENUE
"F" STREET
18th COURT
18th AVENUE
"B" STREET
"A" STREET
19th AVENUE
"D" STREET
"E" LOOP
17th AVENUE
(COUNTY ROAD 1494)
S. IVY STREET
SE 15TH AVENUE
S. JUNIPER ST.
SE 16TH AVENUE
TL 1200

SOUTHWEST CANBY MASTER PLAN BOUNDARY

R-1.5 (MDR)
R-2 (EXISTING ZONING)
R-1 (LDR)
R-2 (HDR)
C-R (RC)
R-1.5 (MDR)
R-1 (LDR)

ZONING BOUNDARY

TEMPORARY PATHWAY

PROPOSED BECK SUBDIVISION
DEDICATED OPEN SPACE
72,107 SF / 1.66 AC

FUTURE SORENSEN DEVELOPMENT
DEDICATED OPEN SPACE
2,625 SF / 0.06 AC

PARK
36,437 SF
0.84 AC

POTENTIAL FUTURE TRAIL CONNECTION

POTENTIAL FUTURE TRAIL CONNECTION

McMARTIN FARMS
DEDICATED OPEN SPACE
113,405 SF
2.60 AC

NORTH
150 0 75 150 300
1 inch = 150 ft.
11"x17" PLOT at 300 SCALE

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

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

SOUTHWEST CANBY MASTER PLAN

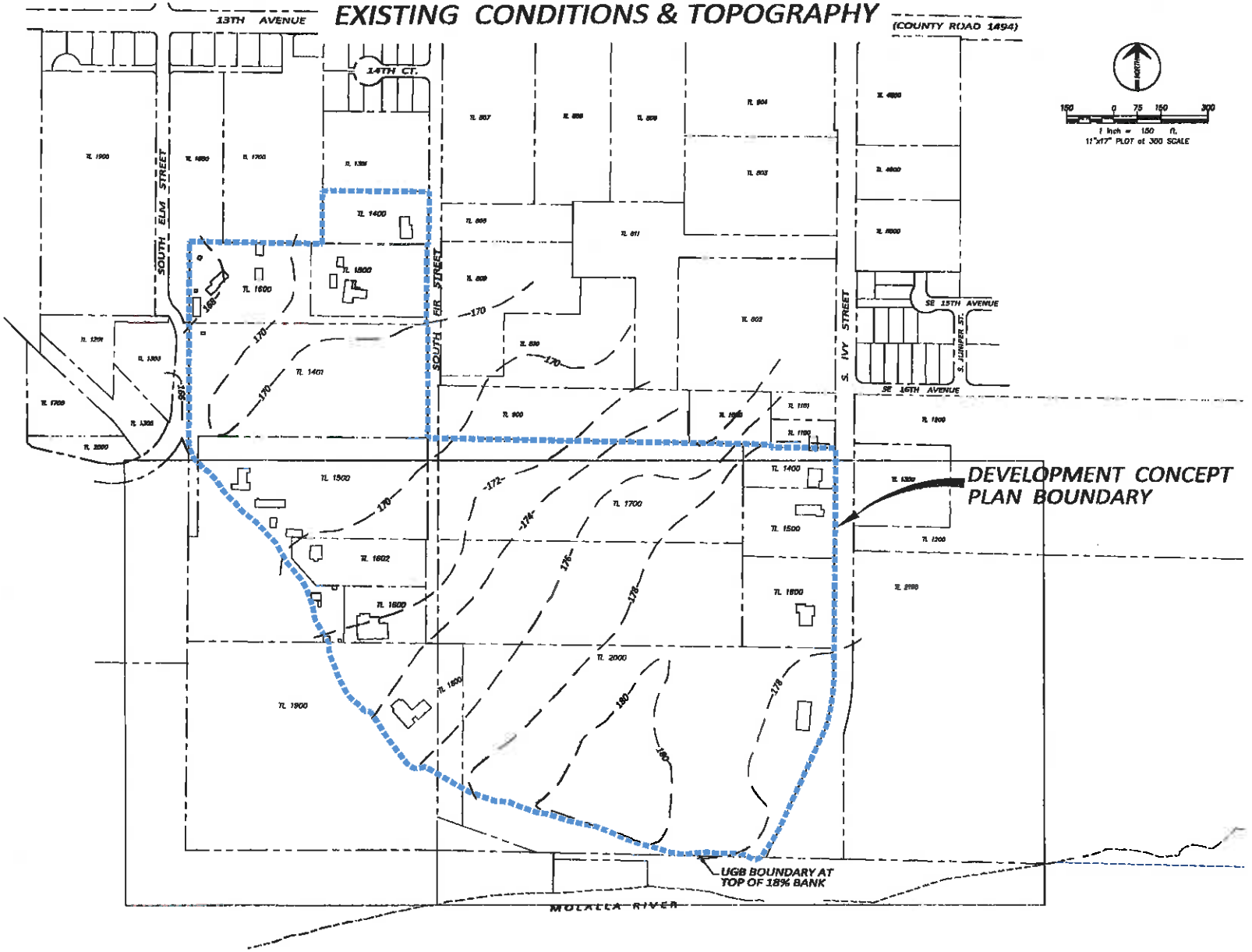
REVISIONS

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

EXISTING CONDITIONS & TOPOGRAPHY



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

STAFFORD DEVELOPMENT COMPANY, LLC
1605 SOUTH STATE STREET
LAKE OSWEGO, OREGON 97034

EXISTING CONDITIONS & TOPOGRAPHY

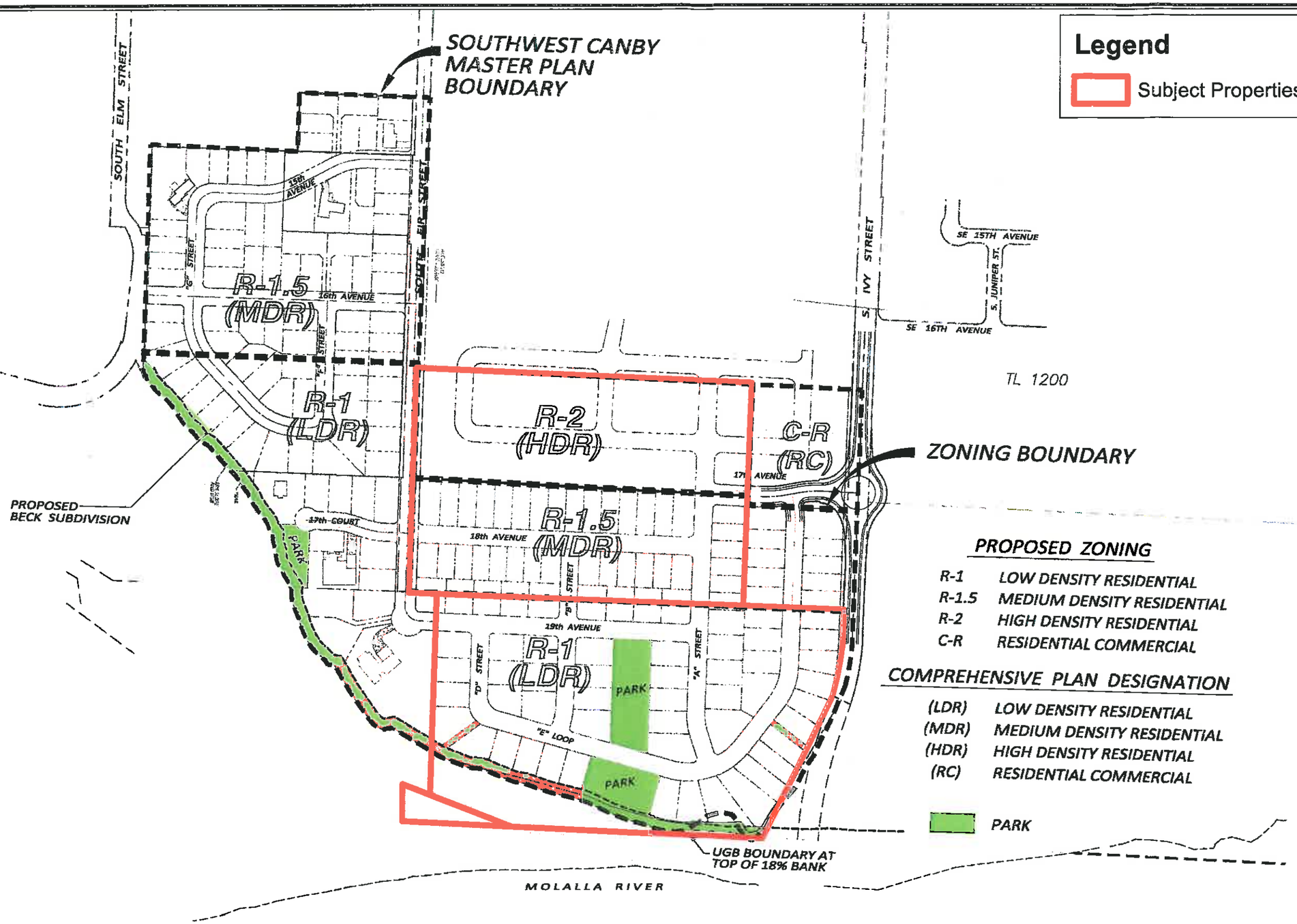
REVISIONS

NO.	DESCRIPTION	DATE
		2-12-17

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

SHEET
8

TOPO, 10/1/2017 4:39:34 PM



Prepared For:
The Mayberry Group, Inc.
Contact: Tucker Mayberry
tucker@mayberrygroup.com
503.750.1122

Proposed Zoning Exhibit
Southwest Canby
City of Canby, Oregon

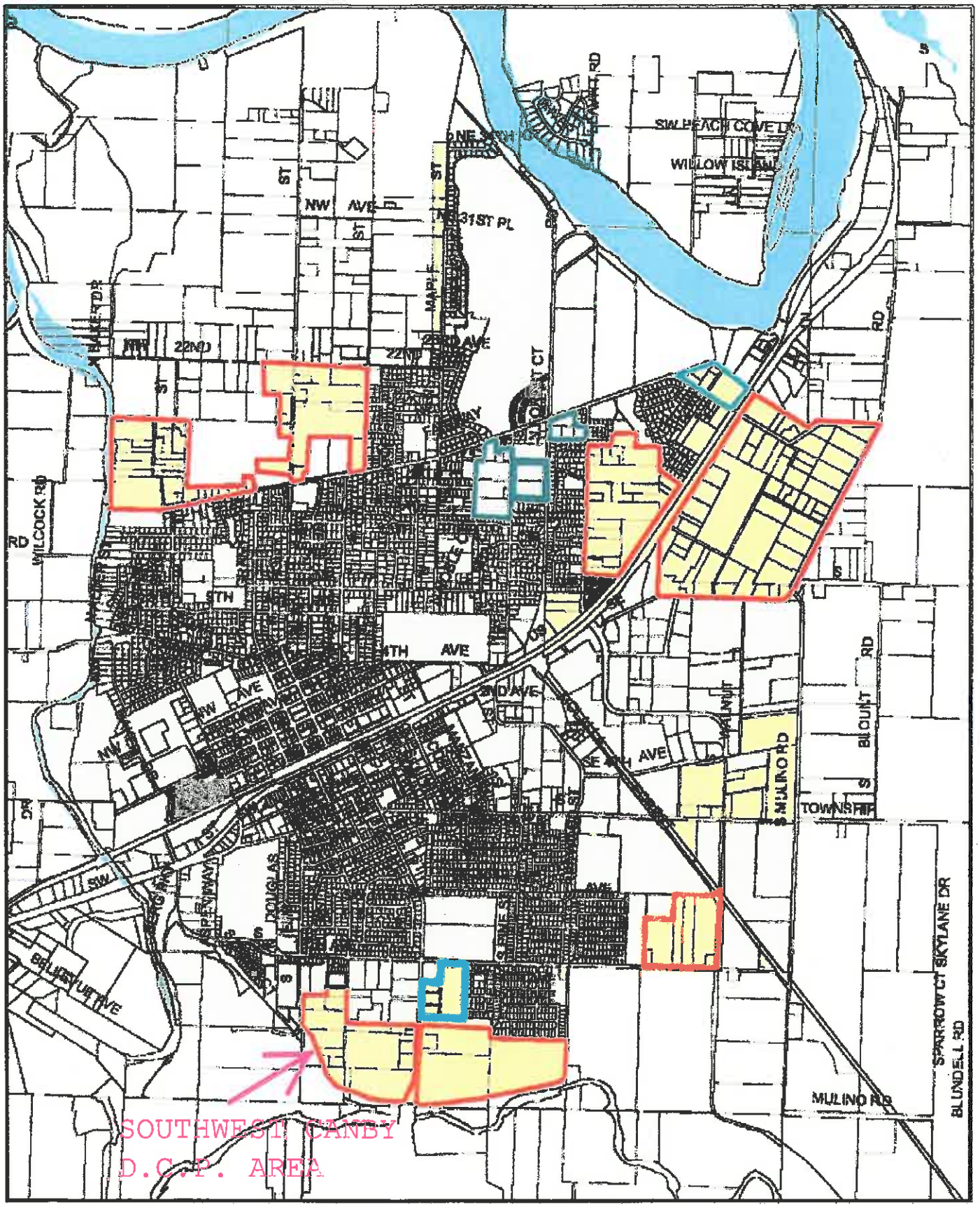
N

Date: 11/30/2017
Scale: 1 in. = ft.
Project #: NB966
Drawn By: CEB

NW ENGINEERS
Surveying & Planning
3409 NW JOHN OLSEN PLACE
HILLSBORO, OREGON 97124
P: 503.601.4401
F: 503.601.4402
W: www.nw-eng.com

Path: P:\NB_50\03 Working\3.2 GIS\3.3.1 Maps\3.3.3.3 Plan\NB966-PROPOSED-ZONE.mxd

City of Canby Annexation Development Map



AMERICAN FactFinder

DP-1

Profile of General Population and Housing Characteristics: 2010

2010 Demographic Profile Data

NOTE: For more information on confidentiality protection, nonsampling error, and definitions, see http://www.census.gov/prod/cen2010/doc/dpsf.pdf.

Geography: Canby city, Oregon

Subject	Number	Percent
SEX AND AGE		
Total population	15,829	100.0
Under 5 years	1,215	7.7
5 to 9 years	1,226	7.7
10 to 14 years	1,280	8.1
15 to 19 years	1,215	7.7
20 to 24 years	794	5.0
25 to 29 years	918	5.8
30 to 34 years	1,006	6.4
35 to 39 years	1,014	6.4
40 to 44 years	1,092	6.9
45 to 49 years	1,130	7.1
50 to 54 years	941	5.9
55 to 59 years	939	5.9
60 to 64 years	812	5.1
65 to 69 years	666	4.2
70 to 74 years	443	2.8
75 to 79 years	393	2.5
80 to 84 years	363	2.3
85 years and over	382	2.4
Median age (years)	36.3	(X)
16 years and over	11,862	74.9
18 years and over	11,345	71.7
21 years and over	10,722	67.7
62 years and over	2,729	17.2
65 years and over	2,247	14.2

Subject	Number	Percent
Male population	7,596	48.0
Under 5 years	614	3.9
5 to 9 years	617	3.9
10 to 14 years	640	4.0
15 to 19 years	640	4.0
20 to 24 years	397	2.5
25 to 29 years	453	2.9
30 to 34 years	472	3.0
35 to 39 years	512	3.2
40 to 44 years	532	3.4
45 to 49 years	544	3.4
50 to 54 years	440	2.8
55 to 59 years	453	2.9
60 to 64 years	387	2.4
65 to 69 years	304	1.9
70 to 74 years	205	1.3
75 to 79 years	145	0.9
80 to 84 years	128	0.8
85 years and over	113	0.7
Median age (years)	34.7	(X)
16 years and over	5,591	35.3
18 years and over	5,312	33.6
21 years and over	5,009	31.6
62 years and over	1,115	7.0
65 years and over	895	5.7
Female population	8,233	52.0
Under 5 years	601	3.8
5 to 9 years	609	3.8
10 to 14 years	640	4.0
15 to 19 years	575	3.6
20 to 24 years	397	2.5
25 to 29 years	465	2.9
30 to 34 years	534	3.4
35 to 39 years	502	3.2
40 to 44 years	560	3.5
45 to 49 years	586	3.7
50 to 54 years	501	3.2
55 to 59 years	486	3.1
60 to 64 years	425	2.7
65 to 69 years	362	2.3
70 to 74 years	238	1.5

Subject	Number	Percent
75 to 79 years	248	1.6
80 to 84 years	235	1.5
85 years and over	269	1.7
Median age (years)	38.0	(X)
16 years and over	6,271	39.6
18 years and over	6,033	38.1
21 years and over	5,713	36.1
62 years and over	1,614	10.2
65 years and over	1,352	8.5
RACE		
Total population	15,829	100.0
One Race	15,371	97.1
White	12,816	81.0
Black or African American	93	0.6
American Indian and Alaska Native	192	1.2
Asian	169	1.1
Asian Indian	14	0.1
Chinese	29	0.2
Filipino	11	0.1
Japanese	12	0.1
Korean	21	0.1
Vietnamese	40	0.3
Other Asian [1]	42	0.3
Native Hawaiian and Other Pacific Islander	29	0.2
Native Hawaiian	14	0.1
Guamanian or Chamorro	3	0.0
Samoan	0	0.0
Other Pacific Islander [2]	12	0.1
Some Other Race	2,072	13.1
Two or More Races	458	2.9
White; American Indian and Alaska Native [3]	123	0.8
White; Asian [3]	77	0.5
White; Black or African American [3]	48	0.3
White; Some Other Race [3]	151	1.0
Race alone or in combination with one or more other races [4]		
White	13,244	83.7
Black or African American	157	1.0
American Indian and Alaska Native	334	2.1
Asian	270	1.7
Native Hawaiian and Other Pacific Islander	54	0.3
Some Other Race	2,251	14.2

Subject	Number	Percent
HISPANIC OR LATINO		
Total population	15,829	100.0
Hispanic or Latino (of any race)	3,368	21.3
Mexican	3,099	19.6
Puerto Rican	20	0.1
Cuban	7	0.0
Other Hispanic or Latino [5]	242	1.5
Not Hispanic or Latino	12,461	78.7
HISPANIC OR LATINO AND RACE		
Total population	15,829	100.0
Hispanic or Latino	3,368	21.3
White alone	991	6.3
Black or African American alone	58	0.4
American Indian and Alaska Native alone	68	0.4
Asian alone	1	0.0
Native Hawaiian and Other Pacific Islander alone	10	0.1
Some Other Race alone	2,061	13.0
Two or More Races	179	1.1
Not Hispanic or Latino	12,461	78.7
White alone	11,825	74.7
Black or African American alone	35	0.2
American Indian and Alaska Native alone	124	0.8
Asian alone	168	1.1
Native Hawaiian and Other Pacific Islander alone	19	0.1
Some Other Race alone	11	0.1
Two or More Races	279	1.8
RELATIONSHIP		
Total population	15,829	100.0
In households	15,735	99.4
Householder	5,647	35.7
Spouse [6]	3,242	20.5
Child	5,152	32.5
Own child under 18 years	4,019	25.4
Other relatives	969	6.1
Under 18 years	388	2.5
65 years and over	110	0.7
Nonrelatives	725	4.6
Under 18 years	76	0.5
65 years and over	45	0.3
Unmarried partner	325	2.1
In group quarters	94	0.6

Subject	Number	Percent
Institutionalized population	77	0.5
Male	28	0.2
Female	49	0.3
Noninstitutionalized population	17	0.1
Male	9	0.1
Female	8	0.1
HOUSEHOLDS BY TYPE		
Total households	5,647	100.0
Family households (families) [7]	4,129	73.1
With own children under 18 years	2,044	36.2
Husband-wife family	3,242	57.4
With own children under 18 years	1,505	26.7
Male householder, no wife present	261	4.6
With own children under 18 years	146	2.6
Female householder, no husband present	626	11.1
With own children under 18 years	393	7.0
Nonfamily households [7]	1,518	26.9
Householder living alone	1,261	22.3
Male	397	7.0
65 years and over	149	2.6
Female	864	15.3
65 years and over	583	10.3
Households with individuals under 18 years	2,233	39.5
Households with individuals 65 years and over	1,629	28.8
Average household size	2.79	(X)
Average family size [7]	3.27	(X)
HOUSING OCCUPANCY		
Total housing units	5,890	100.0
Occupied housing units	5,647	95.9
Vacant housing units	243	4.1
For rent	84	1.4
Rented, not occupied	11	0.2
For sale only	66	1.1
Sold, not occupied	8	0.1
For seasonal, recreational, or occasional use	15	0.3
All other vacants	59	1.0
Homeowner vacancy rate (percent) [8]	1.7	(X)
Rental vacancy rate (percent) [9]	4.2	(X)

Subject	Number	Percent
HOUSING TENURE		
Occupied housing units	5,647	100.0
Owner-occupied housing units	3,765	66.7
Population in owner-occupied housing units	10,408	(X)
Average household size of owner-occupied units	2.76	(X)
Renter-occupied housing units	1,882	33.3
Population in renter-occupied housing units	5,327	(X)
Average household size of renter-occupied units	2.83	(X)

X Not applicable.

[1] Other Asian alone, or two or more Asian categories.

[2] Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

[3] One of the four most commonly reported multiple-race combinations nationwide in Census 2000.

[4] In combination with one or more of the other races listed. The six numbers may add to more than the total population, and the six percentages may add to more than 100 percent because individuals may report more than one race.

[5] This category is composed of people whose origins are from the Dominican Republic, Spain, and Spanish-speaking Central or South American countries. It also includes general origin responses such as "Latino" or "Hispanic."

[6] "Spouse" represents spouse of the householder. It does not reflect all spouses in a household. Responses of "same-sex spouse" were edited during processing to "unmarried partner."

[7] "Family households" consist of a householder and one or more other people related to the householder by birth, marriage, or adoption. They do not include same-sex married couples even if the marriage was performed in a state issuing marriage certificates for same-sex couples. Same-sex couple households are included in the family households category if there is at least one additional person related to the householder by birth or adoption. Same-sex couple households with no relatives of the householder present are tabulated in nonfamily households. "Nonfamily households" consist of people living alone and households which do not have any members related to the householder.

[8] The homeowner vacancy rate is the proportion of the homeowner inventory that is vacant "for sale." It is computed by dividing the total number of vacant units "for sale only" by the sum of owner-occupied units, vacant units that are "for sale only," and vacant units that have been sold but not yet occupied; and then multiplying by 100.

[9] The rental vacancy rate is the proportion of the rental inventory that is vacant "for rent." It is computed by dividing the total number of vacant units "for rent" by the sum of the renter-occupied units, vacant units that are "for rent," and vacant units that have been rented but not yet occupied; and then multiplying by 100.

Source: U.S. Census Bureau, 2010 Census.

STAFFORD
LAND COMPANY
INC

April 3, 2017

RE: Southwest Canby Master Plan – Neighborhood Meeting

Dear Neighbor,

We would like to invite you to a neighborhood meeting to discuss the Master Plan we are proposing for property located in the southwest corner of the Canby Urban Growth Boundary. The properties included in the Master Plan Area are identified on the map on the reverse side of this letter. Before any property in this area can be annexed to the City of Canby and rezoned in accordance with the Canby Comprehensive Plan Map, a Master Plan must be approved by the City of Canby. It is our goal to annex specific properties that we have an interest in within the Master Plan Area. Our application for annexation is also an opportunity for other property owners to join our annexation application if they so desire. Only the property owners that request annexation to the city will be included in the Annexation and Zone Change applications. Property owners that do not want to be annexed to the city can be included in the Master Plan, but are not required to be annexed to the city.

While this Neighborhood Meeting is a requirement for submitting a Master Plan, we think it is a valuable opportunity to provide clarity to the process and our intentions as the applicant and receive feedback and answer questions from community members. The focus of the meeting will be the Southwest Master Plan application and associated Annexation and Zone Change applications. The attached draft Master Plan shows proposed zoning in compliance with the Canby Comprehensive Plan as well as a concept layout depicting a potential development pattern for the near or distant future depending on owner preferences. Each property owner will be able to design plans for their own property which may be different than the attached plan. We hope you will be able to join us for this meeting.

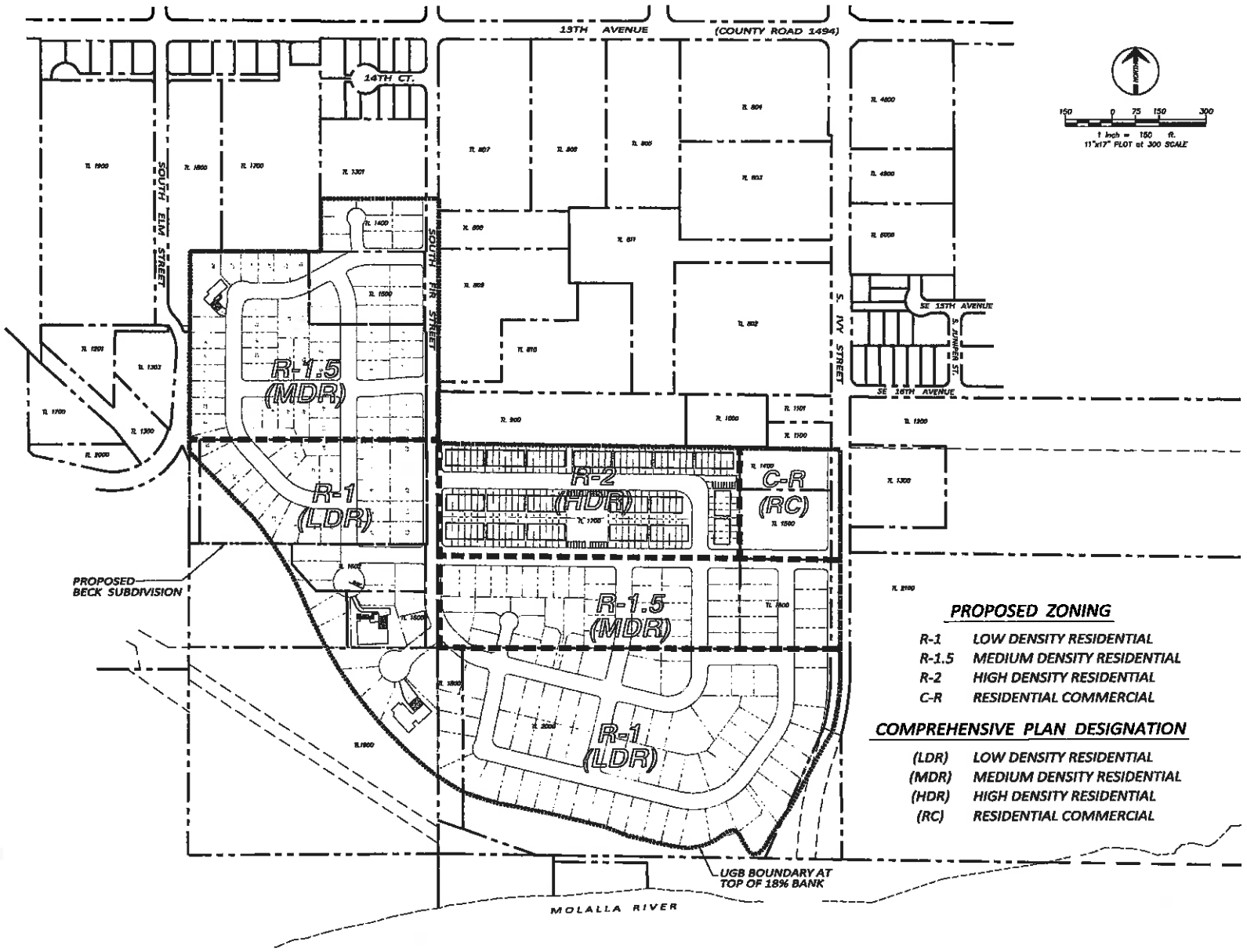
Meeting Location: **Canby Adult Center**
1250 S Ivy Street
Canby, OR 97013

Meeting Date & Time: **Tuesday, April 18, 2017 from 7:00pm to 8:00pm**

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



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

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

SOUTHWEST CANBY
MASTER PLAN

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

SOUTHWEST CANBY MASTER PLAN NEIGHBORHOOD MEETING MINUTES 4-25-17

The Neighborhood Meeting was conducted on 4-18-17 for the Southwest Canby Master Plan at the Canby Adult Center located at the northwest intersection of Ivy Street and 13th Avenue. The meeting started at 7.05 pm and ended about 9 pm. A total of 24 neighbors attended the meeting. The attached Southwest Canby Master Plan was presented to the properties owners and a copy of the plan was handed out to each property owner at the meeting. Gordon Root with Stafford Development made the presentation to the property owners. The issues discussed at the meeting are as follows:

1. Gordon Root requested property owners to contact him if they want to be included in the annexation application which will result in re-zoning the property. The property owners will not be charged a fee by the City of Canby or Stafford Development Company to be included in the annexation and zone change applications. Gordon indicated that inclusion in the annexation is voluntary and not required. All the properties are included in the Master Plan which is a general concept development plan. More specific plans will be presented to the city for approval for individual developments after the properties are annexed to the city and rezoned in accordance with the Canby Comprehensive Plan. Including individual properties in the Master Plan will not cause those properties to be annexed to the city.

2. The property owners asked questions about the proposed sanitary sewer pump station to be located on the west side of Ivy Street at the south end of the Canby UGB. They wanted to know when the pump station will be built and who will pay for it. Gordon indicated the property between Elm and Fir Streets have gravity sanitary sewer available from the existing sewer line in Elm Street. Most of the property between Ivy and Fir Streets will require connection to the future pump station. The city will determine who will pay for the pump station at a later date. The city will probably not authorize construction of the pump station until most of the properties between Fir and Ivy Streets are annexed into the city and preliminary subdivision plans are approved.

3. A property owner wanted to know what will be approved. Gordon indicated approval of the Master Plan will occur for all the property included in the Concept Plan area. Annexation and Rezoning will only be approved for properties requested by the individual property owners.

4. Gordon indicated the Canby Sewer Treatment Plat has 50% more capacity than needed to serve existing development in the City of Canby. Therefore, adequate capacity is available for development in the Master Plan Area.

5. One property owner was concerned about public access to the Molalla River. She wanted to know if a fence could be constructed along the south side of the potential pedestrian pathway along the 18% slope. Gordon indicated pedestrians will probably stay on the pathway to avoid the steep slopes that extend to the Molalla River. Gordon said that fence height along the north

side of the trail next to the residential lots will be limited to 4 feet in height or be required to be seen through, to provide "eyes on the trail" to control vandalism and other problems.

6. Gordon indicated Canby has a lot of parks but lacks the funds to maintain all the parks. Locations of other parks in the Master Plan Area will be evaluated by the city when specific development plans are submitted to the city for review.

7. One property owners asked if they can advocate for more parks when this Master Plan is reviewed by the city. Gordon indicated it would be appropriate for the residents in the area to provide comments about parks to the Planning Commission and City Council at the public hearings.

8. The property owners indicated Ivy Street has too much traffic. They also identified problems with high speeds and sight distance issues with existing driveways, "S" curves just north of the Molalla River and the vertical curves of Ivy Street. The property owners commented on the large number of accidents on Ivy Street from the constraints identified above. Gordon indicated a general traffic study will be prepared for the Master Plan Area and a detained traffic study for the Beck property between Elm and Fir Streets and will be reviewed by Rick Nys at Clackamas County.

9. The property owner of Tax Lot 1600 on the west side of Ivy Street identified a blind spot on Ivy Street when exiting Tax Lot 1600. Gordon indicated this blind spot will be evaluated with the Traffic Study to determine the best location for a new east/west road between Ivy and Fir Streets. The proposed Master Plan currently shows a new east/west street. This new street will probably be named 17th Avenue.

10. One property owner wanted to know how to determine the value of their property. Gordon indicated they work backwards from the house price, house construction and site development costs. All these costs are fixed. The only variable cost is the land price.

11. Gordon indicated Canby is a commuter city to the Portland Metro Area, Tualatin and Wilsonville.

12. The property owners questioned the jurisdiction of Ivy Street. Is it controlled by the State or Clackamas County? They said ODOT was not very responsive to their concerns about traffic accidents, the safety of Ivy Street and reducing the speed limit. They also questioned the future jurisdiction of the other street in the general area. Gordon indicted the city will probably take jurisdiction of all local streets and ODOT will probably retain jurisdiction of Ivy Street.

13. The property owners asked questions about the Commercial Residential Zone. Gordon will get back to those property owners to answer their questions.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

PROJECT: SOUTHWEST CANBY MASTER PLAN **MEETING DATE:** 4-18-17

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

PLEASE PRINT LEGIBLY!

PRINTED NAME	FULL MAILING ADDRESS & E-MAIL ADDRESS	CITY, STATE	ZIP CODE	PHONE #
MARY JOHNSON	365 WARNER MILNE RD STE 203 OREGON CITY OR 97045 maryjohnson@orlaw.us			(503) 656-4444
Nancy Wilmes	PO Box 1004 Canby nancywilmes@aol.com	Canby Or	97013	503 720-1786
Duane McMartin	5743 Abington Beach Dr	Las Vegas, NV	89139	503 752 9250
JERRY / BRENDA MOOTZ	1735 S. Ivy	Canby, OR	97013	503-266-9837
Craig Gingerich	1535 S. Ivy	Canby, OR	97013	503-266-9810
Rod Beck	1555 S Fir	Canby OR	97013	503-313-9770
Peggy Hauck	384 SE 10th Ave	Canby, Or	97013	503-310-0499
Andi Allcroft	8479 SW Tyqua Wy	Tualatin OR	97062	971-404-5228
Susan Gallagher	25261 S Hwy 170	Canby OR	97013	503 312 5425
Alan Gallagher	—	—	—	503-784-2169

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

PROJECT: SOUTHWEST CANBY MASTER PLAN **MEETING DATE:** 4-18-17

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PRINTED NAME	FULL MAILING ADDRESS & E-MAIL ADDRESS	CITY, STATE	ZIP CODE	PHONE #
Rita Schmeiser	1841 S Ivy	Canby, OR	97013	503-266-9108
Steve Hughes Sharon Hughes	490 S. Township Rd.	Canby, Or	97013	503-266-5518
Sandra Salmonson	399 S Holly	Canby OR	97013	503-2266-2980
Angela Baker	31499 Barlow Rd	Hubbard	97032	266 9945
J. Wolf		Portland		
David Peter	25130 S. Hwy 170	Canby, OR.	97013	5033660368

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

PROJECT: SOUTHWEST CANBY MASTER PLAN MEETING DATE: 4-18-17

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PRINTED NAME	FULL MAILING ADDRESS & E-MAIL ADDRESS	CITY, STATE	ZIP CODE	PHONE #
Ed Netter	1847 S Fir Canby, OR 97013			503 314-8381
DeAnna Ball-Karb	1238 S. Cedar Loop	Canby, OR.	97013	503-984-9654
Roger & Cheryl Steinke	1547 S. Fir Canby, OR 97013			5032661547

Pre-application Meeting

65 Lot Subdivision
March 9, 2017
10:30 am

Attended by:

Ryan O'Brien, Planning and Land Designs, 503-708-4051
Hassan Ibrahim, Curran-McLeod Engineering, 503-684-3478
Levi Levasa, Stafford Development, 503-250-3651
Doug Quan, Canby Utility, Water Department, 971-563-6314
Tim Gettel, Wave Broadband, 503-307-0029
Bryan Brown, Planning Department, 503-266-0702
Gordon Root, Stafford Development, 503-720-0914
Gary Stockwell, Canby Utility Electric, 503-263-4307
Jim Stuart, Canby Utility, 971-563-1375

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

STAFFORD DEVELOPMENT, Gordon Root

- We are bringing in this property between S Ivy and S Fir Streets and on the west side of S Fir Street. There are multiple properties involved in this project area and I want to clarify with the process of the subdivision application with annexation, can it be concurrent and Bryan said no, you will have to annex first. Gordon gave a list of the properties:
    - Rodney Beck
    - Nadine Beck
    - McMartins
    - Mootz
    - Hope Village

  The different zonings will have multiple uses. The R-2 as shown on the master plan is the McMartin's property and Hope Village wants to purchase it and expand their overall site. The Mootz property and Hope Village are presently negotiating to purchase the property and they have tentatively reached an agreement in principal.
- We are thinking of bringing a future extension of SW 17th Avenue connecting S Ivy to S Fir Street. This will be on the southern section of the Mootz's property line and it will be the dividing line between the R-2 HDR property and the lower density residential property.
- We anticipate doing the extension of S Fir Street all the down into and through our project. We have been in discussions with Ed Netter who owns a 1 acre parcel and along with the Beck's. We are trying to get the majority of landowners in the projected area to go along with the annexation.
- Gordon said Hope Village will be coming in for their application and Doug asked if this will be a separate application. Gordon said this will be combined for annexation and the land use application will be separate. Doug said the construction will be separate from yours and the answer was yes, but we will construction SW 17th Avenue.

CANBY UTILITY, ELECTRIC DEPARTMENT, Gary Stockwell

- Are you going to piece meal the construction of the project or annex it all at once? Gordon said it will be driven by the gravity fed sewer mains and we will start with the Beck's property first being fed into S Elm Street.
- Before I will be able to do any electrical design work, even the Beck property, I will need the comprehensive plan and have the city's approval because there will be a lot of infrastructure to serve in its entirety. The master plan will be very important to me to be able to put together an electrical plan. Bryan said you will need to make sure everything has been adopted and Gary agreed. Gary said some of the work to be done will be placing the overhead lines underground for the homes that are staying.
- We have worked together on previous jobs and you know our scope of work. You will provide the trenching, staking, grading and backfill and we will provide the conduit, vaults and transformers.
- Depending on the street section where the transformers and vaults will be located behind sidewalk and we may need addition easement to make it fit, especially in the high density areas.
- On the private streets we no longer offer leased street lighting and the private street lighting will be your responsibility.

CURRAN-MCLEOD ENGINEERING, Hassan Ibrahim

- S Fir Street is currently a county street, but as a result of the annexation it will become a city street. It is classified in the Transportation System Plan (TSP) as a local street and you have proposed a 60 ft right-of-way (ROW). We have 36 ft wide streets and we will continue with the 60 ft ROW, making 18 ft half streets. If the other half is not improved then we need to make sure it will be a 20 ft wide minimum allowable two lanes of traffic.
- S Ivy Street is an arterial county street and it will remain a county street. You will have to go through the process with the county on the access spacing and all permits necessary through them. Hassan handed Ryan a drawing from Dinsmore Estates phase 3 to show what the parameters would be for S Ivy Street and it will need to be continued. It is 23 ft from center line, 46 ft pavement in a 60 ROW.
- Any of the city's streets will have to be built to our current design standards and the cul-de-sac has to be 48 ft to the curb line in a 54 ft ROW. I noticed you have not met the 50 ft minimum tangent point coming out of the intersection before you turn the radius. The minimum radius is 165 ft for the local streets onto local streets we have allowed a 50 ft ROW if you cannot meet the lot minimum size and the sidewalks can be in the easement. Ryan said we will need to have a 6 ft sidewalk and a 4-1/2 ft minimum planter strip with 1/2 foot curb (face of the curb to the front of the walk). Hassan said you will need a larger ROW if we put the sidewalks in the easement. Gary said do not forget the public utility easement (PUE) will be behind the sidewalks and Ryan asked how much and Hassan stated the frontage PUE is 12 ft from the ROW line. Gary said I will need to make sure we have enough PUE for our utilities and typically we will need at least 6 ft behind the sidewalk for trenching and when you come to a property line where we place a transformer you will need to bump out the PUE to 12 ft.

- Clackamas County sent in their comments and due to the large size of the development there will be a traffic study required to see what the impacts are on the signal light on SE/SW 13th Avenue and S Ivy Street. Signal modifications may be required.
- We tentatively think we can serve this area with gravity feed sewers and it is not budgeted to build the pump station yet and until we know for sure this development is going in and it is warranted and needed. We do not want to build the lift station and let it sit. As the project progresses and we move into building this phase here we will budget it and Bryan said what may also trigger it will be Hope Village's development. Hassan said if Hope Village decides to build it the sewers should be deep enough right now at 8 or 9 ft.
- Gordon asked what they were responsible for and Hassan said we will be responsible for the pump station and the forced main and everything else will be the responsibility of the developer and you will need to provide a 15 ft easement. Bryan asked if we needed to purchase the land for the pump station and Hassan said he thought we had adequate ROW in this area. Bryan said this information will need to be put in your narrative when you submit for your annexation and the concept plan. We have to have this service pinned down for the entire concept plan area and show the council we have thought and know about all of the parts can be served and how the financing is going to work. Bryan asked how long does it take for a pump station to be built and Hassan said it usually takes 3 to 4 months normally.
- The storm drainage for each tax lot will stay on site. You will need to figure out the public street stormwater system and if you want to do retention ponds or drywells. The drywells will be at a 26 ft minimum with a 4 ft diameter and it will be preceded by a water quality sedimentation manhole. Ryan asked if we have public works standards and Hassan said they will provide them to you.
- There is a 267 ft restriction radius of placing a drywell near any existing water wells.
- Ryan asked about the sewer treatment plant capacity and Hassan stated we are at 50 percent capacity as of this morning.
- Street lights will be required throughout the project and Canby Utility installs them and Gary said they will be included in the construction costs I will send to you.

CANBY UTILITY, WATER DEPARTMENT, Doug Quan

- The water system will be interesting to say the least since you have multiple developments. Hope Village will be addressed with Hope Village's application because it is not a part of your construction. As far as the Beck property it looks like we may have conflicts with the sewer system and there are standard state requirements for separation between water and sewer. The water line is at a depth of 36 inches with cover and we have specifications in our construction guidelines and if the sewer line for the property is above the water line you will have to use a one piece length of HDPE pipe from cleanout to main. Ryan said this is conceptual and we do not know the exact elevation. Doug said fusion couplings are allowed if you cannot do a 20 ft length of pipe, which is a standard pipe length for most of the 6 inch.
- You can access water in both S Fir (10 inch main) and S Ivy (12 inch main) Streets. All your dead ends will require a hydro guard HD 4 automatic flushing station with dechlorination and piped into the storm system. Gordon asked what water main size are you wanting in SW 17th Avenue and Doug said 12 inch water main.

- Depending on how you want to set the fire hydrant for the cul-de-sac you can reduce the line size going into the cul-de-sac and as long as you meet the fire department's rule for fire suppression.
- Construction standards are on the Canby Utility's website.
- We have gone to a sole source hydrant and we have changed our meter boxes to a poly-meter box that is 20 K rated along with a 20 K rated lid. These will all be located in the planter strips.
- If there are any wells in the area you need to let us know if they will be decommissioned and going away, Canby Utility would like the water rights transferred to the city. If they are not going away because we need to look at the properties they will serve and get the proper back flow devices. Gordon said we plan on keeping the well on the Beck's property and Doug asked if they will remain on the well and the answer was yes. Doug asked if the developer is going to put in a service to the property with the well for future needs and the answer was yes. Ryan asked if the rule for drywells still stand being 267 ft from any existing well and the answer was yes. Gordon stated that could dictate us abandoning the well and Hassan said yes, if the drywell happened to be in the low point and it was within the 267 ft.

WAVE BROADBAND, Tim Gettel

- Let us know when the trenches are open and if we can get a copy of the power schematic it helps us with our plan. Hassan said also in the trench line is DirectLink and NW Natural.

CITY OF CANBY, PLANNING DEPARTMENT, Bryan Brown

- The annexation application is not necessarily including all 15 property owners in the master plan area or are you attempting it? Gordon said he was initially going to do both Beck and McMartin properties, but since then we have decided the Mootz property needs to be in this annexation. Bryan said this further complicates issues and we would need to have our comprehensive plan show the different designations within the projected area and therefore you will be amending the comprehensive plan to make that designation. It is a separate application to be completed. Discussion ensued. Bryan said the annexation is whoever wants to annex now, but the concept development plan is for the whole acreage and it will get adopted and be official for anyone annexing in the future and they have to know they will be conforming to that plan. You will need to contact all the land owners in this projected amendment area and have a neighborhood meeting. You have to have a concept plan that the city feels it is very reasonable and efficient way for this to develop and addresses all the basic criteria in the concept plan.
- It is not in our code right now, but we do not allow 28 ft streets unless you are willing to prohibit parking on one side. Ryan asked how many feet does a street have to be in order to have parking on both sides and Bryan said 34 ft.
- Ryan asked if they needed to do a topographical map to get to the 18 percent line and Bryan said the 18 percent is not an absolute magic number and it is more of a guide we use since our concept plan does not tell us where the top of bluff is. Discussion followed.
- Clackamas County is certainly requiring a traffic study and the city will also. There is a minimum requirement by state law we do a transportation planning rule (TPR) analysis for all the properties being rezoned for an annexation. What this means is the properties you are

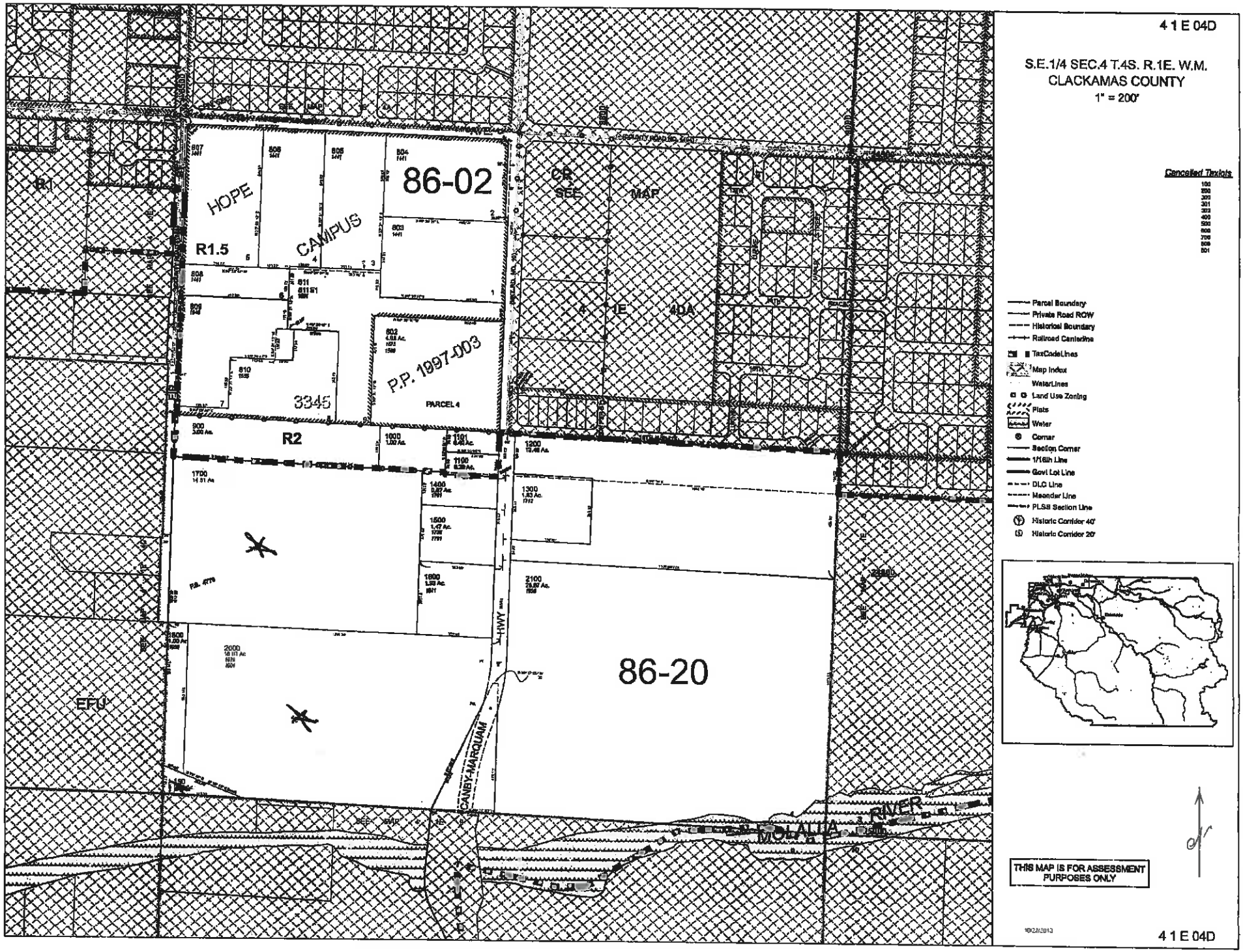
annexing will have to be a part of a traffic analysis demonstrating a conformance with the TPR and it can be in simple terms of traffic studies. If everything was accounted for and you are following the comprehensive zone designations in our adopted transportation system plan (TSP) and our traffic consultants can demonstrate it in a paragraph from the data they have collected during the TSP. We need to satisfy the state requirement by accounting for all the expected traffic if this develops under these scenarios. We will also need some sort of generalized traffic analysis for the entire master plan area and we have the assurance in front of the council stating if this all develops and is annexed as proposed by the master plan, we have an adequate circulatory internal streets and on the edge to handle it. The traffic study should tell us and the county on what impact this development will have on the intersection of SE/SW 13th Avenue and S Ivy Street. The scope of work is for this type of informational studies and even where SW 17th Avenue comes out and I am hopeful you have the best location for it, but sight distances up and down the roadway. Hassan said the county has access spacing requirements on the arterial streets. Bryan said the third item will be a detailed traffic study for the Beck subdivision and since you are following up with it right away, it is possible to have the traffic study with all three components and you do not have to do them separately. You could do a generalized study for the annexation and a TPR and do another focused traffic study for the Beck subdivision when you make that application. One of the main things the professional traffic consultants state in an annexation or a TPR analysis is not the same as a specific development, which is what you are proposing and that kind of study is different on what they look at when they do a generalized reasonable worst case scenario because we do not know how you are going to develop it. You need to get this traffic study started so it does not delay your annexation plans and I would suggest you think about your options and bring us a deposit for $500 to start the scope. Just for your information once you get approval for annexation it takes the state several months to validate it.

- Gordon asked Bryan about SE 16th Avenue and Bryan said Hope Village had discussed bringing SE 16th Avenue across. Gordon said it would be good to have SE 16th Avenue go across and I will talk to them about making their parking lot a street. Discussion ensued. Bryan said it could come out of the traffic study and Hassan said the county may have a problem with the spacing. Gordon asked what the spacing was and Hassan said his best guestimate was 500 ft. You will have to go to the county on the spacing requirements.
- I need to get some more information on the master plan, the urban growth boundary and how it relates to the river, the actual tax lots and the ownership of the property. I know a couple of years ago the legislature passed a law that would allow the property to be partitioned where an urban growth boundary was. Ryan said you have the option of annexing or partitioning if part of the property is in the city and part is out and you can annex the entire piece of property or they allow you to partition without meeting the code requirements of the EFU zone. Bryan said part of our answer lies in our master parks plan that has our Emerald Trail following the Molalla River and if there are ownerships going out beyond the urban growth boundary and there may be some advantage to have it annexed and dedicated as a conservation easement and/or a pedestrian easement for the city's use. Discussion ensued. Bryan said we need park land in this part of town and we are basically requiring you to dedicate per the ordinance requirements in the code. It will tell you the total acreage of the

master plan you need to dedicate for a park to avoid any system development charges (SDC). We still have to get the acceptance of the city administrator and he knows this project is going through and we are going to have the same issue of park maintenance. I need to get answer on whether we force you to dedicate the required amount of land and if the land can be partly the trail with something internal. There is a question on whether we can build a walking trail on the 18 percent slope and I think it is not a good idea, we need it down at the bottom or right at the top on the UG boundary where we can build it. You need to help us to determine it or we are going to say no because you are not meeting our parks master plan requirements to have a trail connect from S Ivy to S Elm Streets. The easements for the trail system is a minimum of 15 ft wide but 20 ft is better.

- Bryan asked who owned S 20th Avenue adjacent to the Molalla River and Gary said it is a private road for Canby Sand and Gravel and Parker NW Paving Company. Bryan said the properties we are discussing today do not actually go to the Molalla River and the answer was no.
- Ryan asked Bryan about the 3 year supply with an annexation. Bryan said we are using a policy and it is interpreted by a 3 year land supply based upon platted lots. The charts are available to assist you and Gordon said he used Pat Sisul's information for our annexation and Bryan said we can help you also. The council and the Planning Commission look at this information in regards to accepting new annexations for our 3 year supply.
- You are required by the code to have a neighborhood meeting prior to annexation. You will need to get all the names of the property owners within the radius and all the names of the owners within the master plan area. You will need to share with them the master plan and tell them they will have to follow it when they decide to develop or if any one sells their property.
- Timing wise it takes at least three weeks to do a traffic scope and a study could take six weeks. Ryan asked who is our traffic engineer and Bryan said DKS Associates. To get this started you need to send a $500 deposit to us and by city ordinance the city with help from our traffic engineer is required to produce the scope of work. You have the option to choose another traffic firm to do the study and they will have to follow the task set for them. Our engineer will review the study and make sure they followed the proper procedures and all the tasks. You will need to have the traffic study done to hold the public hearings with the Planning Commission.
- You will need to pin down the parks dedication through the formula in the code, identifying where you are going to put it in the master plan for a trail and it is very important because we need the emerald necklace trail and/or a park.
- Gordon asked what the timing would be for this process and Bryan stated you will need to have a traffic study complete (6 to 8 weeks), a neighborhood meeting, your application reviewing the criteria in the annexation section of the code, Chapter 16.54 are amendments to the zoning map. Once you submit your application and in 45 days you will have a Planning Commission hearing date. We do send a 35-day notice once you have made an application for a proposed re-zone and an annexation. Gordon said 60 days to be deemed possibly complete and Bryan said the Planning Commission meets twice a month. Gordon asked after the Planning Commission what time factor do we have and Bryan said in approximately 25 days you will be in front of the council and they make the final decision and after that a 20

day appeal period. Then we send the annexation and rezoning ordinance to the Secretary of the State's office.


4 1 E 04D
S.E.1/4 SEC.4 T.4S. R.1E. W.M.
CLACKAMAS COUNTY
1" = 200'
Cancelled Taxlots
86-02
86-20
HOPE
CAMPUS
R1
R1.5
R2
EFU
P.P. 1997-003
PARCEL 4
3345
SEE MAP
4 1E 4DA
HWY
CANBY-MARQUAM
MOLALLA
RIVER
Parcel Boundary
Private Road ROW
Historical Boundary
Railroad Centerline
TaxCodeLines
Map Index
WaterLines
Land Use Zoning
Plats
Water
Corner
Section Corner
1/16th Line
Govt Lot Line
DLC Line
Meander Line
PLSS Section Line
Historic Corridor 40'
Historic Corridor 20'
THIS MAP IS FOR ASSESSMENT PURPOSES ONLY
10/23/2013
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SANITARY SEWER MASTER PLAN

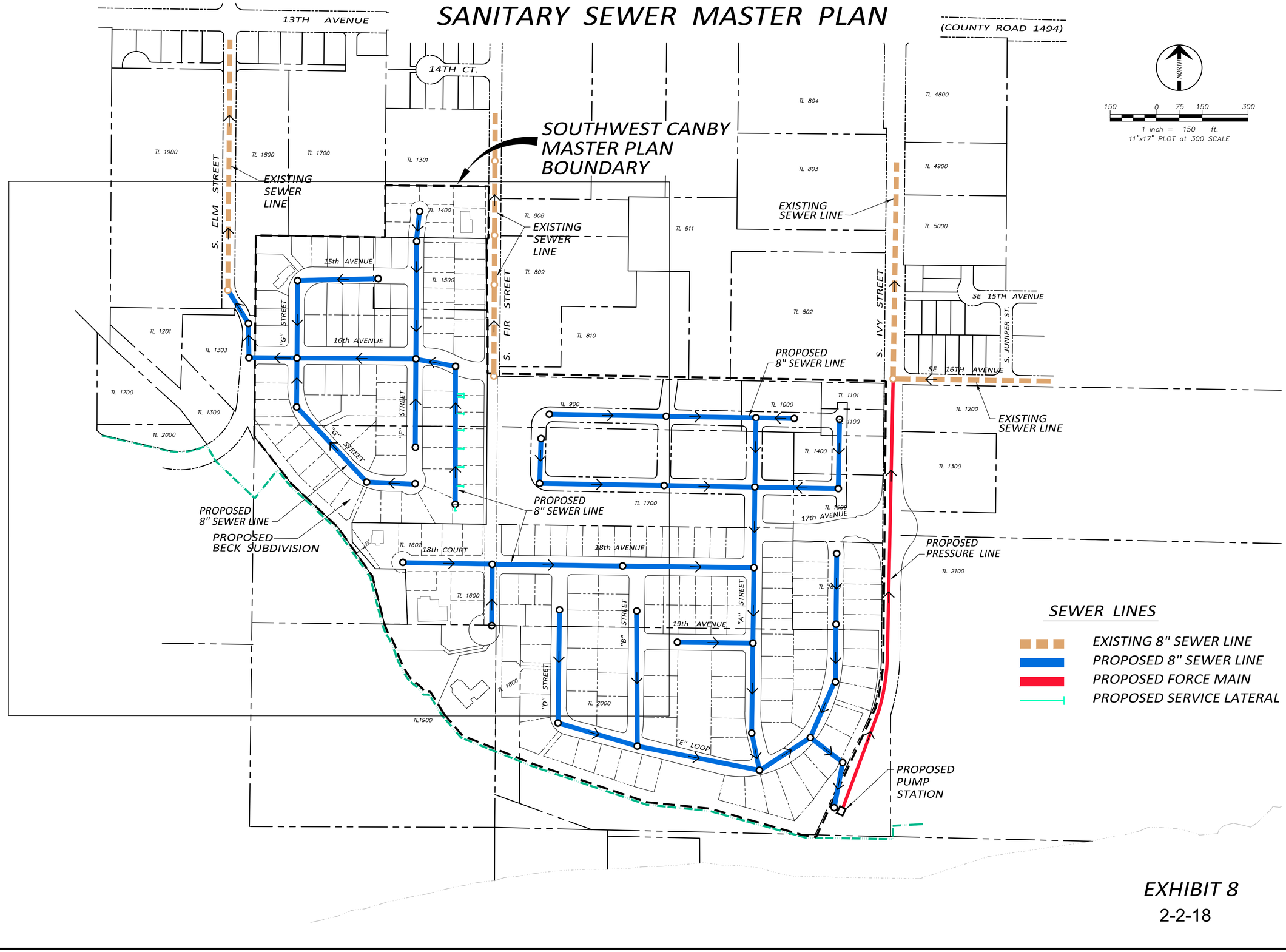

EXHIBIT 8

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

SANITARY SEWER 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

Sanitary, 2/2/2018 9:54:15 AM

WATERLINE MASTER PLAN

13TH AVENUE

14TH CT.

(COUNTY ROAD 1494)

SOUTHWEST CANBY MASTER PLAN BOUNDARY

EXISTING 8" WATER LINE

EXISTING 10" WATER LINE

EXISTING 12" WATER LINE

PROPOSED 8" WATER LINE

PROPOSED 12" WATER LINE

PROPOSED 8" WATER LINE

PROPOSED BECK SUBDIVISION

PROPOSED 8" WATER LINE

S. ELM STREET

S. FIR STREET

S. IVY STREET

S. JUNIPER ST.

15th AVENUE

16th AVENUE

17th AVENUE

18th AVENUE

18th COURT

19th AVENUE

SE 15TH AVENUE

SE 16TH AVENUE

"G" STREET

"F" STREET

"D" STREET

"B" STREET

"A" STREET

"E" LOOP

PARK

PARK

TL 1900 TL 1800 TL 1700 TL 1301 TL 1400 TL 1500 TL 1201 TL 1303 TL 1700 TL 1300 TL 2000 TL 1603 TL 1600 TL 1800 TL 2000 TL1900 TL 804 TL 803 TL 808 TL 811 TL 809 TL 802 TL 810 TL 4800 TL 4900 TL 5000 TL 900 TL 1000 TL 1101 1100 TL 1400 TL 1700 TL 1500 TL 1200 TL 1300 TL 2100 TL 1600

NORTH

150 0 75 150 300

1 inch = 150 ft.
11"x17" PLOT at 300 SCALE

WATER LINES

EXISTING	PROPOSED	
		8"
		10"
		12"

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
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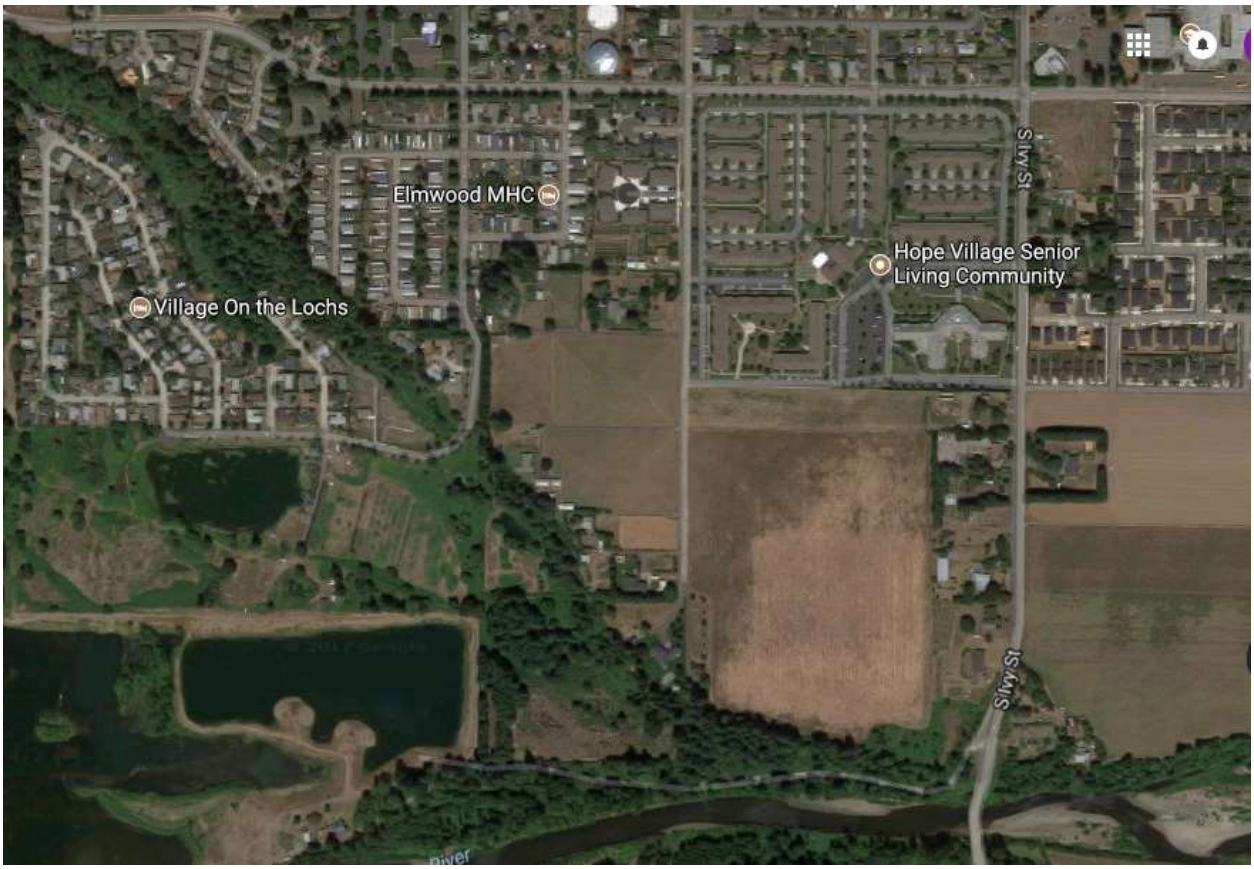
(503)780-4061

SHEET

OF

Southwest Canby Development Concept Plan



Updated 10-6-17

Prepared by Planning & Land Design LLC
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Ryan O'Brien Phone (503) 780-4061
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Table of Contents

I. Purpose

City of Canby Municipal Code (CMC) Section 16.84 establishes criteria for the City of Canby consideration and review of annexation requests. The City of Canby Annexation Development Map on page 4 of this report (Figure 16.84.040) shows which properties are required to submit either:

a. A **Development Agreement** (DA) binding for all properties located within the boundaries of a designated DA area as shown on the City of Canby Annexation Development Map; or

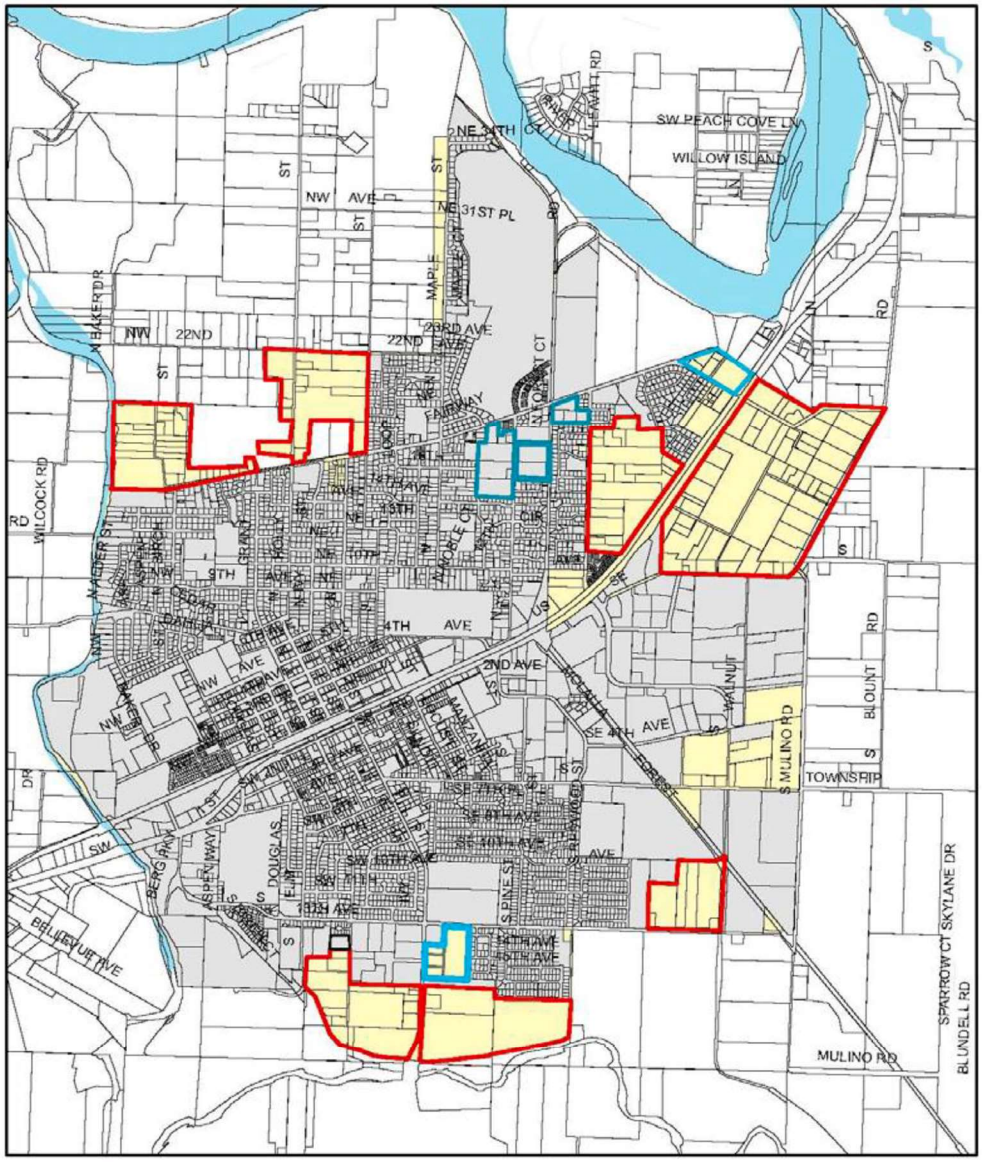
b. A **Development Concept Plan** (DCP) binding for all properties located within the boundaries of a designated DCP area as shown on the City of Canby Annexation Development Map.

A DCP was chosen for the subject property rather than a Development Agreement. A total of 14 tax lots are included in this Development Concept Plan (DCP) with a gross area of 70.95 acres. The net development area above the 18% break in slope along the Molalla River is 56.44 acres. The 18% break in slope is the Canby UGB boundary. The property is located between Ivy and Elm Streets and south of 13th Avenue. The property is designated as a DCP area as shown by CMC Figure 16.84.040 on page 4 of this report. The owners of 9 tax lots are currently requesting city annexation and rezoning as identified by the following table. These 9 owners worked together to prepare and process this DCP. The purpose of this DCP is to address the specific requirements of the City of Canby Municipal Code Section 16.84 and preparation of a DCP prior to annexation rezoning. The following are the 14 tax lots in the DCP.

Net Ac.	Gross Ac.	TL	Tax Map	Ownership (* Included in Annexation)
1.31	1.31	1400	4-1E-4CA	Paul Wenrick
2.00	2.00	1500	4-1E-4CA	* **Roger and Cheryl Steinke**
2.45	2.45	1600	4-1E-4CA	* **Rodney and Carol Beck**
6.25	6.25	1401	4-1E-4C	* **Rodney and Carol Beck**
5.50	8.75	1500	4-1E-4C	* **Nadine Beck**
1.06	1.06	1600	4-1E-4C	Ed and Alissa Netter
1.40	1.40	1602	4-1E-4C	Eric and Angela (Baker) Sorensen
2.16	11.92	1900	4-1E-4C	Thomas and Erika Scott
0.87	0.87	1400	4-1E-4D	* **Brian Christensen**
1.47	1.47	1500	4-1E-4D	* **Hope Village, Inc.**
1.93	1.93	1600	4-1E-4D	* **Rita Schmeiser**
14.51	14.51	1700	4-1E-4D	* **McMartin Farms LLC**
0.80	1.00	1800	4-1E-4D	Enc 4 LLC
14.73	16.03	2000	4-1E-4D	* **McMartin Farms LLC**
56.44	**70.95**	**Total**	**Acres**	

Figure 16.84.040

City of Canby Annexation Development Map



16.84.040 Standards and criteria.
A. The following criteria shall apply to all annexation requests.

16.84.040.A.1.b. A Development Concept Plan (DCP) binding for all properties located within the boundaries of a designated DCP area as shown on the City of Canby Annexation Development Map. A Development Concept Plan shall address City of Canby infrastructure requirements including:

1. Water
2. Sewer
3. Stormwater
4. Access
5. Internal Circulation
6. Street Standards
7. Fire Department requirements
8. Parks and open space

COMMENT: All of the above items are addressed in this report.

II. Existing Conditions

The site is very flat with a 10 foot difference in topography from the northwest corner of the site to the southeast corner s shown by Exhibit 4. The elevation of the DCP area is 170 feet at the northwest corner and 180 feet at the southeast corner. The land is primarily used for agriculture. The Existing Conditions Map (Exhibit 4) shows 6 houses to remain and 3 houses to be removed.

The site is similar in character to surrounding property in southwest Canby. The surrounding area is currently rural in nature and contains large lot single-family houses and agricultural uses. Exceptions are the subdivisions to the north and west between Elm and Fir Streets and the Hope Village development to the north between Fir and Ivy Streets. Annexation of this DCP area is a logical extension of urban development and a reasonable transition from rural to urban uses. Most of the property owners in this DCP are included in the annexation application. The only properties not included in the annexation have limited development opportunities. The Wenrick property to the north, Tax Lot 1400, 4-1E-4CA, is in a trust and the family members are not able to agree on the annexation of the property. The owners of Tax Lots 1600, 1602 and 1900, 4-1E-4C and Tax Lot 1800, 4-1E-4D have limited development options and want to remain outside the city. The Exhibit 3 Master Plan shows how these properties can develop independently in the future. The property included in the annexation application can also develop independently of these other properties outside the annexation area.

A total of 3 public streets provide access to the site (Ivy, Fir and Elm Streets). These streets intersect with 13th Avenue, an arterial street on the Canby Transportation System Plan (TSP). 13th Avenue extends the full length of the city from Highway 99E at the west end of the city to Mulino Road at the east end of the city. Mulino Road is a collector street that extends to Territorial Road. The site is also served with IVY Street (State Highway 170). Ivy Street is designated as an Arterial Street in the city TSP north of 16th Avenue (See Exhibit 12).

Urban infrastructure is available north of the DCP area and can be extended with future development. The property between Elm and Fir Street north the Sorensen property, Tax Lot 1602, can be served with gravity sanitary sewer. The remaining properties to the south and east in the DCP will require a sanitary sewer pump station as shown by Exhibit 8. Water and electrical lines will be extended into the DCP as identified in Section "IV" of this report.

III. Opportunities and Constraints

The DCP area is similar in character to much the surrounding development prior urban development. This area is the best opportunity for additional development in the city because of the large number of property owners that want to develop. This property has no constraints except the sanity sewer pump station.

Most of the property will be developed by 3 groups;

1. Stafford Development Company on the Beck property between Elm and Fir Streets

2. Tucker Mayberry on the R-1.5 and R-1 designed portion of the McMartin property between Ivy and Fir Streets

3. Hope Village on the R-2 designed portion of the McMartin property between Ivy and Fir Streets and the C-R designated property along Ivy Street.

Hope Village intends to develop the R-2 portion of the McMartin property with Tax Lots 900, 1000, 1100 and 1101, Map 4-1E-4D which are already in the Canby city limits. These 4 tax lots are owned by Hope Village or Hope Village affiliates. Because of the large land holdings by these 3 entities, development will be relatively easy compared to the significant number of small parcels in the North Redwood Development Concept Plan which need to be combined to build streets and infrastructure. As a result, the Southwest Canby Master plan is in a much better position to actually development and supply needed housing in the City of Canby compared the Redwood Concept Plan

area. The only environmental constraints of the Southwest Canby DCP are the steep slopes along the Molalla River Corridor. The steep slopes are outside the UGB and will not be annexed to the city.

Schools - The schools are very close to the Southwest Canby DCP. Lee Elementary and Ackerman Middle Schools are located at the northeast corner of Ivy Street and 13th Avenue. Canby High School is located at the southeast corner of Highway 99E and 4th Avenue. These schools have athletic fields which provide active recreational opportunities on weekends, during summers, and when school is not in session.

Bike and Walking Trails – A bicycle and walking trail will be provided along the 18% top of slope from Ivy Street to Elm Street with 3 pocket parks as shown by Exhibit 3. Page 107 of the Canby Comprehensive Plan shows a bike path will be provided along Ivy Street.

SE 13th Avenue & Ivy Street - SE 13th Avenue and Ivy Street are designated arterial streets in the City of Canby Transportation System Plan. SE 13th Avenue provides convenient east-west trips between S Mulino Road and 99E. Because SE 13th Avenue is an arterial, intersections are limited to a spacing guideline established by the City. Ivy Street provides a north-south connection to downtown Canby and neighboring cities and communities to the south.

East-West Connection - Exhibit 3 shows an east-west street connection between Ivy and Fir Streets. These streets are referred to as 17th and 18th Avenues in this report. 17th Avenue lines up with the flag pole of Tax Lot 1200, Map 4-1E-4D located on the east side of Ivy Street to create a major intersection. The Traffic Study addresses this intersection and recommends construction of a traffic circle at this intersection to reduce high speeds on Ivy Street from north and south bound traffic. Appendix "E" of the DKS Traffic report shows a preliminary design for this traffic circle (Exhibit 14).

A second east-west street, 16th Avenue, is located between Fir and Elm Streets on the Beck property directly across from the Hope Village access on the east side of Fir Street. The 16th Avenue access on Elm Street is in the proper location for adequate sight distance in both directions. These 3 new east-west streets will connect the 3 north-south streets in the DCP area to provide an adequate traffic circulation system of the DCP area.

Fire Department Requiements - The Master Plan has been designed to provide adequate fire truck access to all dwelling units. All the streets are looped except for one cul-de-sac on the west side of Fir Street. Water lines will be designed to provide adequate fire hydrant flows and pressure and looped to existing 8, 10 and 12-inch diameter water lines (Exhibit 9).

IV. Concept Plan

Zoning: The DCP land use designations are the same as the City of Canby Comprehensive Plan. The Comprehensive Plan identifies 4 separate plans designations:

LDR - Low Density Residential with **R-1** Low Density Residential Zoning

MDR - Medium Density Residential with **R-1.5** Medium Density Residential Zoning

HDR - High Density Residential with **R-2** High Density Residential Zoning

RC - Residential Commercial with **C-R** Residential Commercial Zoning

Exhibit 3 shows both the Comprehensive Plan designation and proposed Zoning. Since the proposed Zoning designations are the same as the Comprehensive Plan, no Comprehensive Plan Amendments are required with this application.

Canby Municipal Code (CMC) Chapter 16.16 (R-1 Low Density Residential Zone) permits one single family dwelling per lot in addition to other Conditional Uses. Lots in the R-1 zone are required to be 7,000 sf in area unless a PUD or lot averaging is proposed.

Canby Municipal Code (CMC) Chapter 16.18 (R-1.5 Medium Density Residential Zone) allows uses permitted in the R-1 zone and two or three family dwellings (one duplex or tri-plex on each lot). Four-Family and Single-Family **common wall** dwelling units are permitted as Conditional Uses. The current property owners in the DCP do not intend to develop attached or multiple family dwelling units in the R-1.5 zone. Only detached houses are proposed. Lots in the R-1.5 zone are required to be 5,000 sf in area unless a PUD or lot averaging is proposed.

Canby Municipal Code (CMC) Chapter 16.20 (R-2 High Density Residential Zone) permits single family dwellings with **common wall** construction, uses permitted in the R-1.5 zone and other uses such as multi-family dwelling units. Hope Village intends to develop the R-2 and C-R zoned land in the DCP with approximately 43 duplexes, triplexes and fourplexes and 18 three-story senior apartment units.

Canby Municipal Code (CMC) Chapter 16.24 (C-R Residential Commercial Zone) permits one single family dwelling per lot, uses permitted in the R-1.5 zone and Conditional Uses such as multi-family dwelling units. Hope Village intends to develop the C-R zoned land the same as the R-2 zone land with a PUD application, even though only R-1.5 uses and standards are permitted.

Streets: The proposed Master Plan (Exhibit 2) shows connection to 3 existing streets; Elm, Fir and Ivy Streets. All of these streets connect to 13th Avenue, an Arterial Street. 13th Avenue extends the full length of the City of Canby. Most of the interior streets will be developed with the **Low-Volume Street Section** with 28 feet of pavement, 52 feet of right-of-way and parking on both sides of the street. This street section is appropriate for less than 500 vehicle trips per day (VTD). The only exceptions will be the east-west streets between Elm and Ivy Street (17th and 18th Avenues) and Elm and Fir Streets (16th Avenue). These streets will carry over 500 VTD and will develop with the Standard Local Street section with 34 foot of pavement and 58 feet of right-of-way. Both of these street sections are consistent with the local street connections in the attached Figure 7-6 of the Canby TSP (See Exhibit 13). Ivy Street is an Arterial Street and will develop in accordance with the attached two-way arterial street section in Figure 7-4 (Exhibit 13) with 60 to 80 feet of right-of-way and 34 to 50 feet of pavement. Page 107 of the Canby Comprehensive Plan shows a bike path will be provided along Ivy Street.

Parks: The existing City parks that are close to the DCP area are as follows:

1. Legacy Park is located at 1200 SE 13th Avenue next to Ackerman Middle School and features playgrounds, soccer fields, a picnic shelter and a meditation garden.

2. Community River Park is located at 1348 S. Berg Parkway southwest of Canby High School. This is a natural park with picnic facilities, barbecue pits, playground equipment, ball fields and a fishing pond for youth age 17 and under.

3. The Community Swim Center is located at 1150 S. Ivy Street just north of 13th Avenue.

4. The adult Center is located at 1250 S. Ivy Street at the northeast intersection of 13th Avenue and Ivy Street.

A total of 3 new pocket parks are shown on the Master Plan (Exhibit 3). The **First Pocket Park** is located on the McMartin property between 2 local streets. This park is 0.79 acres and size and will be developed with recreational facilities. The extent of the facilities will be determined when the subdivision application is reviewed by the city.

The **Second Pocket Park** is adjacent to one local street and fronts along a proposed trail which follows the 18% slope adjacent to the Molalla River corridor. This park is 0.54 acres in size. On-street parking is available for visitors of both parks. Two pedestrian pathways containing 0.08 acres at the east and west ends of the McMartin

subdivision connect to this trail. A bicycle and walking trail will be developed along the Molalla River Corridor. The trail right-of-way will be generally 35 feet in width and 1000-feet in length. The area of this trail on the McMartin property is 0.80 acres. This trail extends from Ivy Street to 80-feet short of the extension of Elm Street.

The **Third Pocket Park** is 0.23 acres in size. This pocket park can be developed with the Beck subdivision or when a new public street is extended from Fir Street along the common property line of Tax Lots 1600 and 1602, Map 4-1E-4C, as shown by Exhibit 3. The trail from the McMartin property to Elm Street is about 1500 feet long and also generally 35 feet in width. The total length of this rail in the future will be 2500-feet. The area of this trial right-of-way is 1.21 acres. The total area of all the park land combined is 3.65 acres. The need for park land for this DCP is 5.35 acre as identified below leaving a shortage of 1.70 acres. The following is the open space and park calculation:

193 - Total single family detached dwelling units
76 - Hope Village senior housing units (private open space provided)

0.01 acres of park and open space per person x 2.7 persons per house x 198 houses = 5.35 acres - 3.65 acres = 1.70 acres of additional park and open space to be purchased by the City of Canby with Parks System Development Fees. All lots in this Master Plan either dedicate land for parks or pay City SDC fee or a combination of both alternatives.

The 3 new pocket parks and the trail will provide significant recreational opportunities for future residents in this DCP. Additional recreational opportunities are available at the south end of Tax Lot 1500, Map 4-1E-4C outside the UGB. Access to this property is available through an existing road next to Pocket Park 3.

The pocket parks next to the trail can take advantage of the large stand of trees located along the south side of the trail. The trees provide shade for passive recreational opportunities such as walkways, picnic tables, and benches. Additional recreational opportunities include nature walks, playground equipment and picking. The pocket parks will be used as rest stops along the trail. Park improvements may be constructed by the project developer or developed by the City of Canby. See Section VI (Park Dedication), for additional information.

V. Utility Service

Annexation of the subject property with R-1, R-1.5, R-2 and C-R zoning is a reasonable expansion of the City of Canby based on the level of development in the surrounding area and the existing facilities and services that are available to serve the DCP area. The City of Canby staff indicated at a pre-application meeting that all utility service providers and utilities are available in the DCP area or can be made available through development of the site.

Water: Water is provided through Canby Utility's Water Department. A 10-inch water line is available in Fir Street, a 12-inch line in Ivy Street and an 8-inch line in Elm Street. All 3 water lines will be extended into the DCP area. The 12-inch water line will be constructed in the east-west streets between Ivy and Fir Streets (17th and 18th Avenues) and possibly between Fir and Elm Streets (16th Avenue) based on a final water line flow and pressure calculations (See Exhibit 9). The rest of the streets will have looped 8-inch water lines which connect to the existing 10-inch and 12-inch water lines as shown by Exhibit 9. Public water lines will be located in all the public streets. If Hope Village builds private streets in their development, their water lines may be private rather than public.

Sanitary Sewer: Sanitary sewer is provided by the City of Canby. Three existing sewer lines are available to this DCP area. The **first** existing sewer line is 8-inhes in diameter and located to the north at the intersection of 16th Avenue and Ivy Street. The invert elevation is XXXX feet. It can be extend approximately XXX feet to the south along Ivy Street as show by Exhibit 8. The ground elevation of the DCP along Ivy Street is about 178 to 179 feet. Shallow sewer lines extending to the existing sewer lines will conflict with the water lines with only 3 feet of cover. The pump station will be required to lower the depth of the sewer lines to 6 to 8 feet as shown by Exhibit 8.

At the pre-application conference, city staff indicated the city will not plan for or fund the pump station until the city knows for sure development will occur. Construction of the pump station and the associated force main will be paid for with City Systems Development Fees collected by the City. Gravity mains are paid by the developers of the subdivisions. Annexation of property will not trigger the need for the pump station. It will be constructed by the City when the McMartin property and Hope Village properties are approved for development by the City.

The **second** sewer line is 8-inches in diameter and located in Fir Street at the northeast corner of the Steinke property, Tax Lot 1500, Map 4-1E-4CA. The invert elevation is 163.68 feet. This sewer line will serve the northeastern portion of the Beck property as show by Exhibit 8.

The **third** sewer line is 8-inches in diameter and located in Elm Street at the north-west corner of the Beck property, Tax Lot 1401, Map 4-1E-4C. The invert elevation is 161.57. This sewer line will serve all of the remaining Beck property.

Storm Drainage: Roof drains from homes within the subdivision will be drain to privately owned and maintained infiltration facilities on each individual lot. Street drainage will be directed to sumped catch basins and pollution control manholes for water quality treatment and then to dry wells located throughout the development area for disposal through underground injection. All street storm drainage facilities are proposed to be public facilities consistent with the newly adopted City of Canby Stormwater Master Plan and the Canby Public Works Design Standards. When development proposals are submitted, the issue of storm water management and drywell location can be discussed in greater detail.

Private Utilities: Private utilities providing service for telephone, natural gas, cable, garbage, recycling collection and wave broadband are all available in Elm, Fir and Ivy Streets. These utilities generally operate on a franchise basis. Electrical power is provided through Canby Utility's Electrical Department in conjunction with PGE. Dry utilities such as power, communications and natural gas are available north of the DCP area. Extension of these utility lines will occur with each development phase.

VI. Park Dedication

General: Three new pocket parks and a 2,500 foot long trail are proposed with this DCP. The total combined area of the parks and trail is 3.65 acres. This DCP requires 5.35 acres of park land based on the calculation in Section IV of this report. The City of Canby will be required to purchase 1.70 acres of additional park land with Park System Development Fees to increase the total park land area to 5.35 acres. These 3 new pocket parks and trail will provide significant recreational opportunities for the residents in this DCP. The parks next to the trail can take advantage of the large stand of trees located along the south side of the trail. The trees will provide shade for passive recreational opportunities such as walkways, picnic tables, and benches. Other recreational opportunities include nature walks, playground equipment and picking. The pocket parks will be used as rest stops along the trail. Park improvements may be constructed by the project developer or developed by the City of Canby.

As mentioned in Section IV of this report, additional park land is available on the Beck property, Tax Lot 1500, Map 4-1E-4C outside the UGB and south of the trail. Access to this potential park land is available through an existing road next to Pocket Park on the Beck property.

Sale of Park Land to City: All of the 3 pocket parks and 1,900 linear feet of the 2,500 linear foot trail are located in the annexation and proposed for development. A total of 4 tax lots between the Beck and the McMartin properties are excluded from the annexation. Only 600 feet of the trail on 2 tax lots are excluded from the annexation (Tax Lot 1900, Map 4-1E-4C owned by Scott and Tax Lot 1800, Map 4-1E-4D owned by Nutter under the name of ENC LLC).

The sale of the park land will occur after the properties are annexed to the city and approved for development. The park land will be appraised during land sale negotiations with the City and property owners. Park land value is established by a MAI appraisal prepared jointly for the City of Canby and the property owners. The City cannot pay more than the appraised value. Park improvements such as walkways, picnic tables, benches, playground equipment and restrooms can either be completed by the site developer or the City of Canby as chosen by the developer. If the developer improves the parks, the improvements are included in the appraised value which increases the price the city will pay for the parks.

Park SDC Obligation: Per the City of Canby's park dedication formula, a park dedication of 5.35 acres is required to satisfy the Park SDC obligations for 193 lots. Since Hope Village will provide private parks, the proposed Hope Village housing units are not include in the park dedication formula. Any shortage of park dedication will be mitigated by payment of City Park SDC fees at the time building permits are issued for each individual single family detached house.

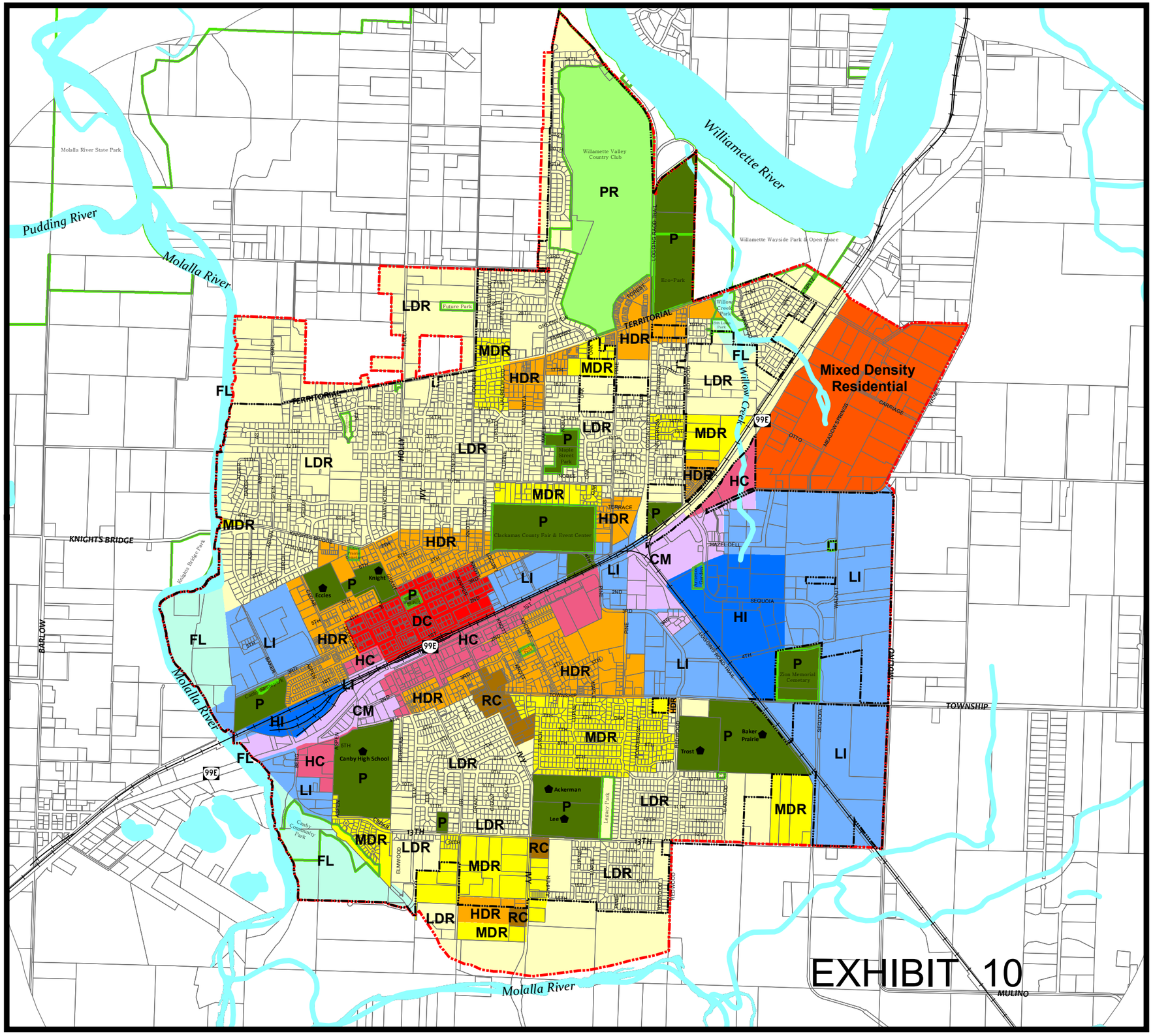
Anticipated Amenities: Construction of park amenities will require approval by the City Parks Board or City Parks Staff prior to construction. These amenities may include walkways, playground equipment, picnic tables, benches and a restroom facility. This list could be modified based on the desires of the City at the time of park dedication and development. Landscaping and signage will be provided to create an aesthetically pleasing park entrance along the public streets. Directional and information signs will be provided along the public street in front of the parks and along the trail.

VII. Development Concept Plan Maps & Reports

1. Vicinity Aerial Map
2. Close up Aerial Photo
3. SW Canby Master Plan & Proposed Zoning
4. Existing Conditions with Topo & Houses
5. Ownership Map with Net Acres in UGB
6. Neighborhood Meeting Minutes
7. Canby Soils Map
8. Sanitary Sewer Plan
9. Water Line Plan
10. Canby Comprehensive Plan Map
11. Canby Zoning Map
12. Canby Transportation System Plan Map
13. Canby Street Sections
14. SW Canby Traffic Study

City of Canby

Comprehensive Plan Map



- City Limits
- Urban Gowth Boundary
- Parks
- LDR-Low Density Residential
- MDR-Medium Density Residential
- HDR-High Density Residential
- Mixed Density Residential
- RC-Residential Commercial
- DC-Downtown Commercial
- HC-Highway Commercial
- CM-Commercial/Manufacturing
- LI-Light Industrial
- HI-Heavy Industrial
- P-Public
- PR-Private Recreation
- FL-Flood Prone/Steep Slopes

0 0.25 0.5 1 Miles

N

May 2014

The information depicted on this map is for general reference only. The City of Canby cannot accept any responsibility for errors, omissions, or positional accuracy. However, notification of errors would be appreciated.

City of Canby

Zoning Map

- City Limits
- Urban Growth Boundary
- Parks
- R-1 Low Density Residential
- R-1.5 Medium Density Residential
- R-2 High Density Residential
- C-R Residential Commercial
- C-1 Downtown Commercial
- C-2 Highway Commercial
- C-M Commercial Manufacturing
- M-1 Light Industrial
- M-2 Heavy Industrial

0 0.25 0.5 1 Miles

January 2014

N

The information depicted on this map is for general reference only. The City of Canby cannot accept any responsibility for errors, omissions, or positional accuracy. However, notification of errors would be appreciated.

EXHIBIT 11

Legend

Functional Classification

- Highway
- Arterial
- Collector
- Neighborhood Connector
- Other Roadways
- Railroads

- Schools
- Civic/Government
- Urban Growth Boundary
- City Limits
- Parks
- Streams

31ST AVE
22ND AVE
21ST
18TH
17TH
16TH
15TH
14TH AVE
13TH AVE
12TH
11TH
9TH
8TH PL
6TH
5TH
4TH
4TH AVE
3RD AVE
2ND AVE
7TH
8TH AVE
9TH
10TH AVE
10TH PL
11TH PL
13TH AVE
1ST AVE
16TH
20TH AVE

WILCOCK RD
BIRCH ST
HOLLY ST
LOCUST ST
TERRITORIAL
TEAKWOOD
VINE ST
PEACH COVE
NEW ERA RD
99E
HAINES RD
FIR ST
MANZANITA ST
MAPLE ST
PINE ST
OAK ST
LUPINE
JUNIPER ST
IVY ST
HAWTHORNE CT
KNOTT ST
CARRIAGE
OTTO RD
BREMER RD
FAWVER RD
KNIGHTS BRIDGE RD
ASH ST
CEDAR
GRANT ST
Library
City Hall
Police Dept
Fire Station
HAZEL DELL
WALNUT ST
SEQUOIA PKWY
BLOUNT RD
MULINO RD
TOWNSHIP RD
BARLOW RD
ARNDT RD
ASPEN ST
KNOTT ST
REDWOOD ST
PEACH ST
KING ST
RAILROAD DR
DOUGLAS ST
LARCH ST
BERG PKWY
Canby HS
Adult Center
SKYLANE DR
MAIN ST
ANDERSON RD
BELLEVUE AVE
TULL RD
ELM ST
GRANT
FIR CT
99E
170

N

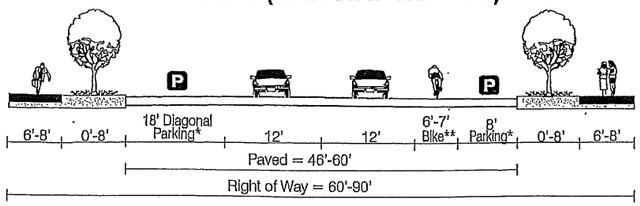
0 0.25 0.5 Miles

EXHIBIT 12

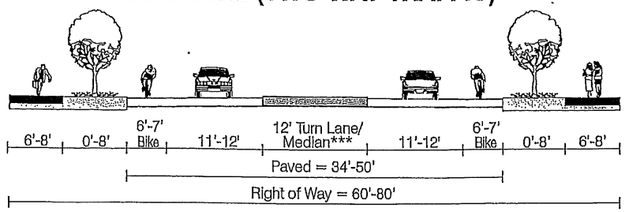
CITY OF CANBY
Transportation System Plan

FIGURE 3-6 **EXISTING ROADWAY FUNCTIONAL CLASSIFICATION**

ARTERIAL (ONE-WAY TRAFFIC)



ARTERIAL (TWO-WAY TRAFFIC)



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

Low Impact Street Design Characteristics

Characteristic	Arterials (One-Way)	Arterials (Two-Way)
Vehicle Lane Widths	11 ft.	11 ft.
On-Street Parking	8 ft.- Only in downtown	8 ft.- Only in downtown
Bicycle Lanes (minimum)	5-6 ft. - Right side or road	5-6 ft.
Sidewalks (minimum)	6-8 ft.	6 ft.
Buffer/Planter Strip	0-8 ft	0-8 ft
Turn Lane/Median	12 ft.- Optional	12 ft. - Optional
Neighborhood Traffic Management (NTM)	Under Special Conditions	Under Special Conditions
Transit	As appropriate	As appropriate
Turn Lanes	When Warranted	When Warranted

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

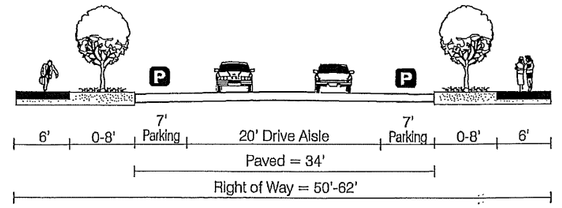
LEGEND

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

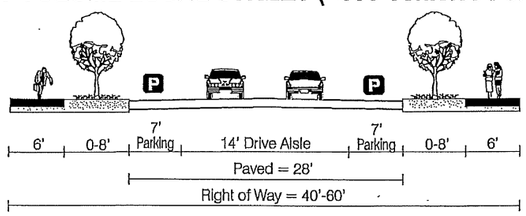
Figure 7-4

ARTERIAL: STANDARD CROSS-SECTIONS

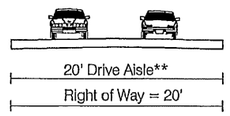
STANDARD LOCAL STREET



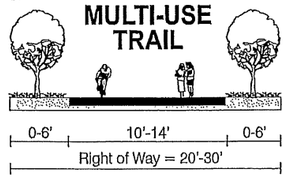
LOW-VOLUME LOCAL STREET (<500 Vehicles Per Day)



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.

LEGEND

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

Figure 7-6

LOCAL STREET/ALLEY: STANDARD CROSS-SECTIONS

EXHIBIT 13

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 14

DKS

TABLE OF CONTENTS

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)

DKS

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.

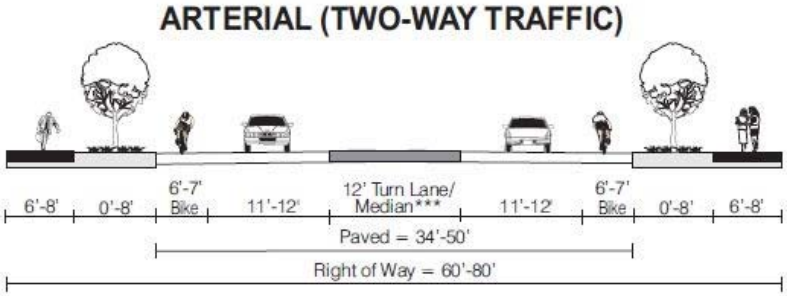
Functional Roadway Classification and Cross Sections

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.



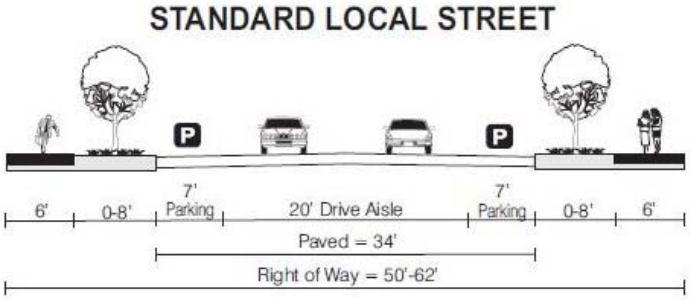
Notes:

* 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.

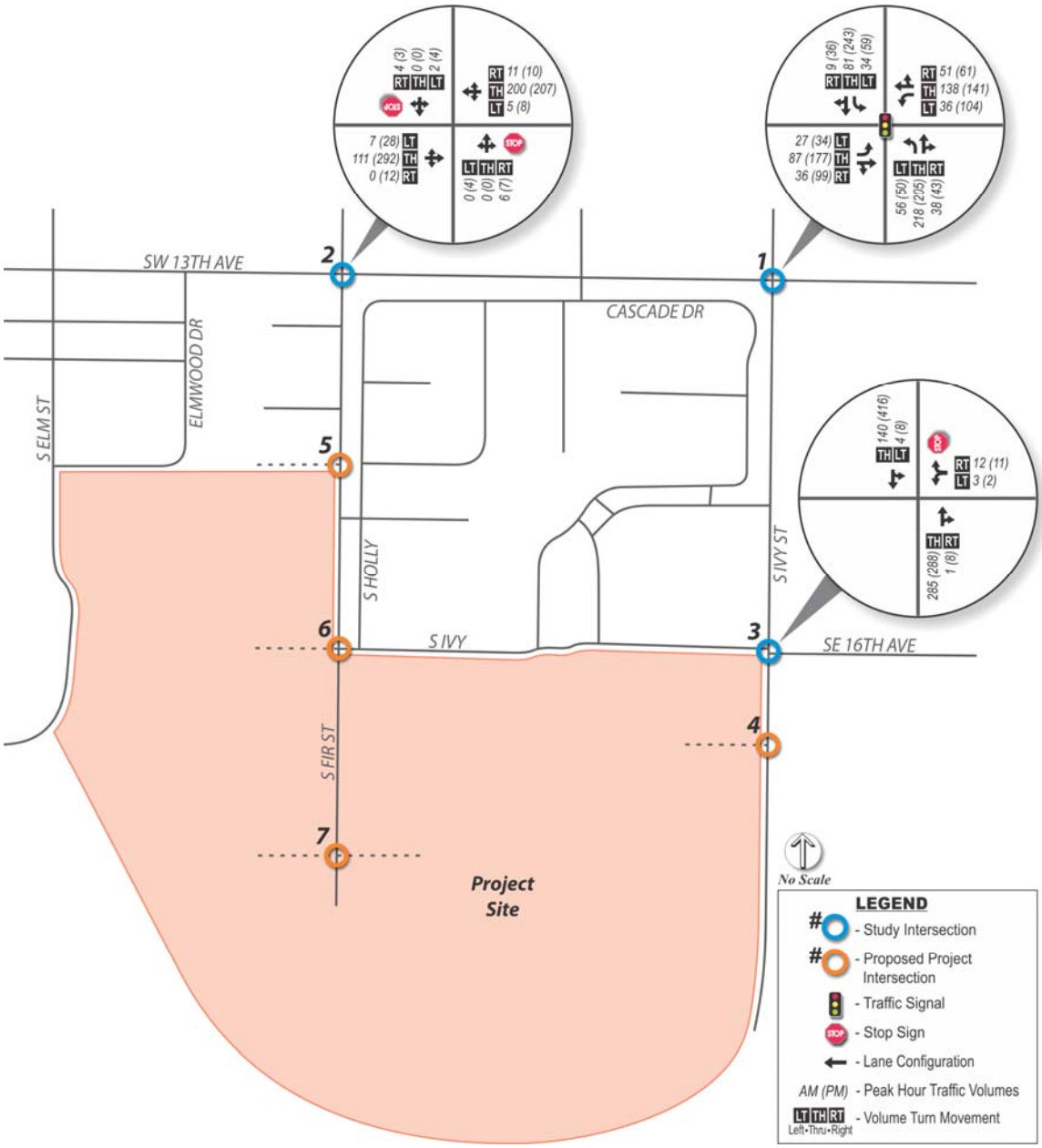


Figure 2: Existing Peak Hour Intersection Volumes

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:

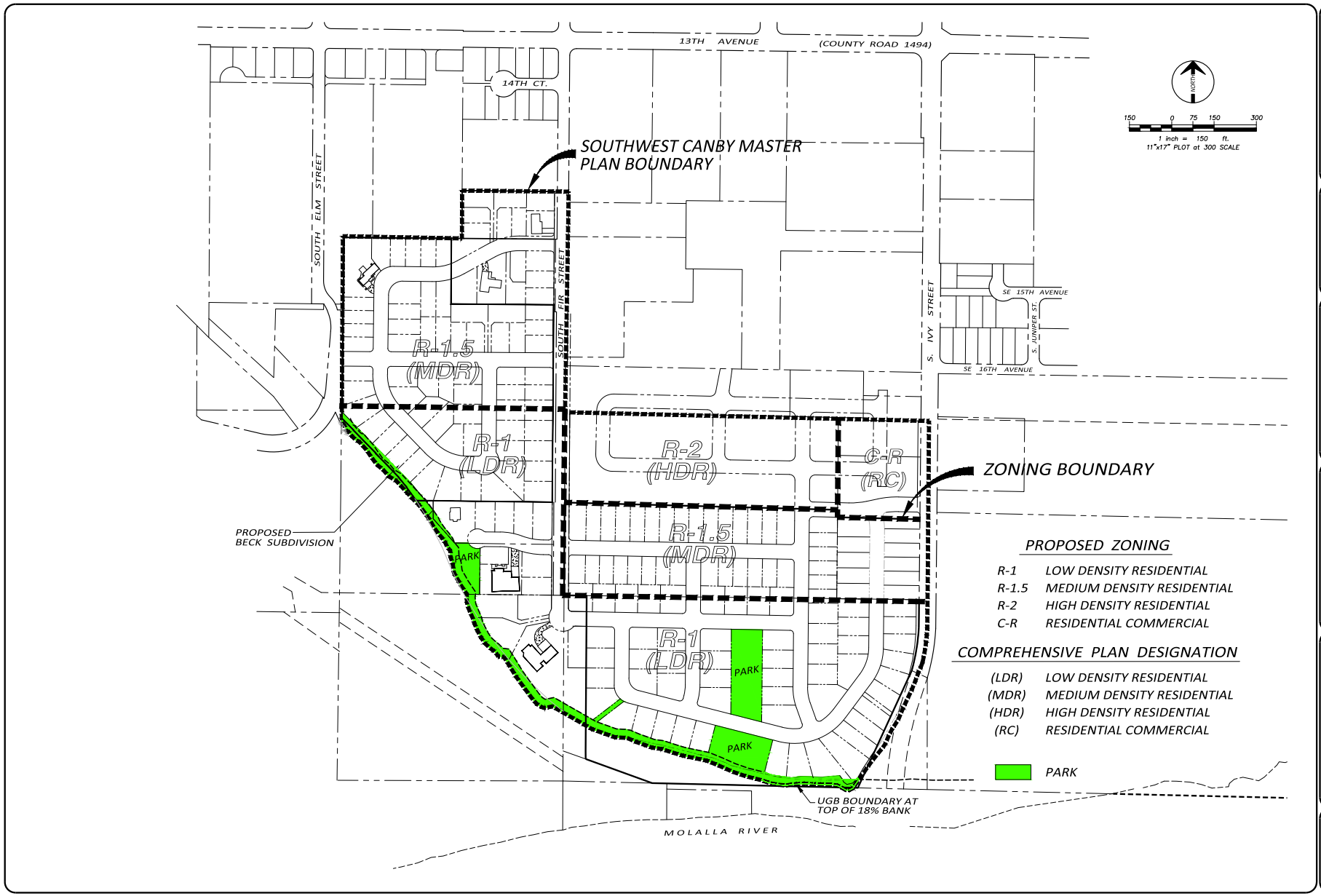
- The northwest part (between S Fir Street and S Elm Street) and the central part (between S Fir Street and S Ivy Street) of the DCP area are proposed to be zoned as R-1.5, which is medium density residential.
- The southern part is proposed to be zoned as R-1 which is low density residential.
- The 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 900,1000,1100,1101,1400,1500,1600,1700,1800 & 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

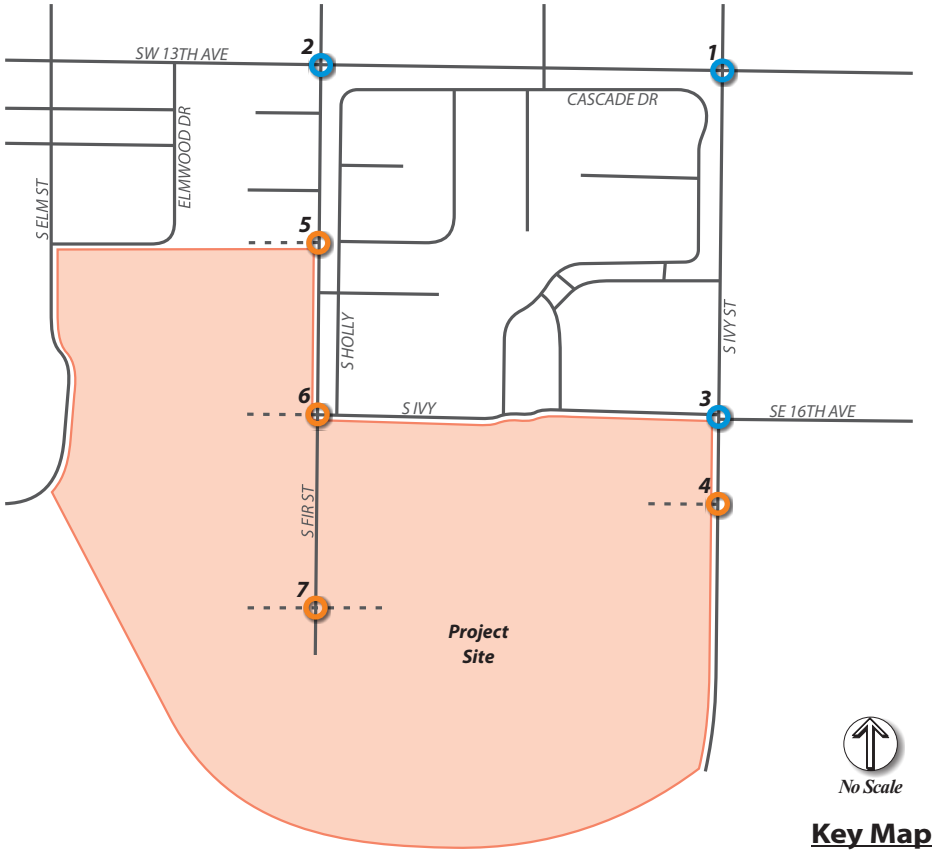
Forecasting Method Summary

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.

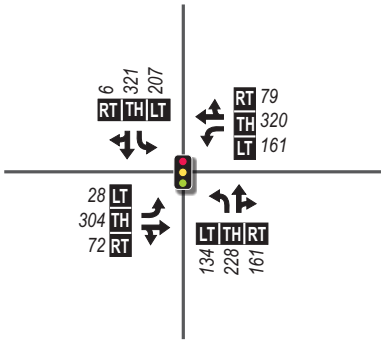
The portion of the study area within the TAZ 142 was assumed to have 11 more households in the City's TSP. Thus, the City's TSP overestimated the development in that area compared to the proposed project. The remaining portion of the study area (TAZ 143) was expected to have 213 households in the City's 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.

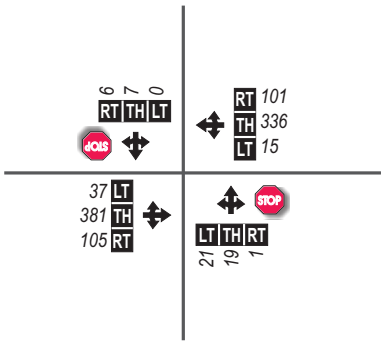


Key Map

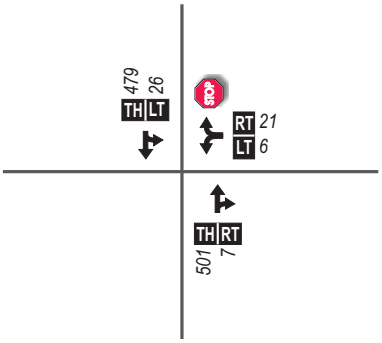
1. *SW 13th Ave. @ S Ivy St.*



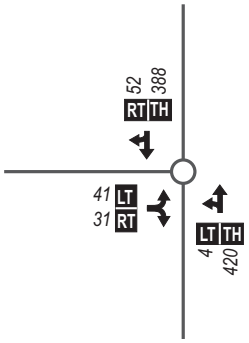
2. *SW 13th Ave. @ S Fir St.*



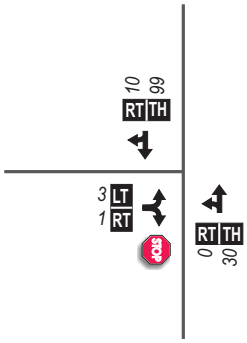
3. *S Ivy St. @ SE 16th Ave.*



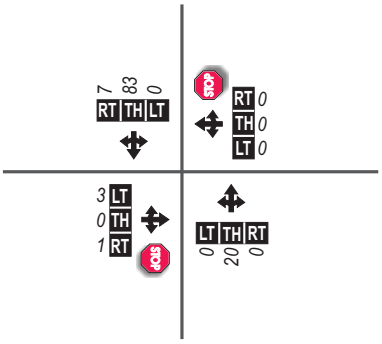
4. *S Ivy St. @ Driveway 1*



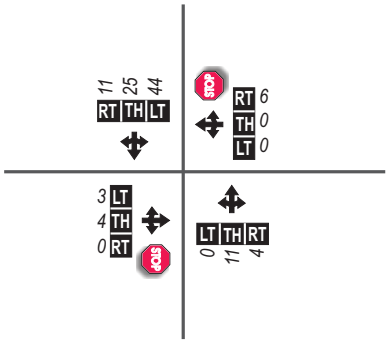
5. *S Fir St. @ Driveway 1*



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 (Left•Thru•Right) - Volume Turn Movement

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

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

DRAFT MEMORANDUM

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

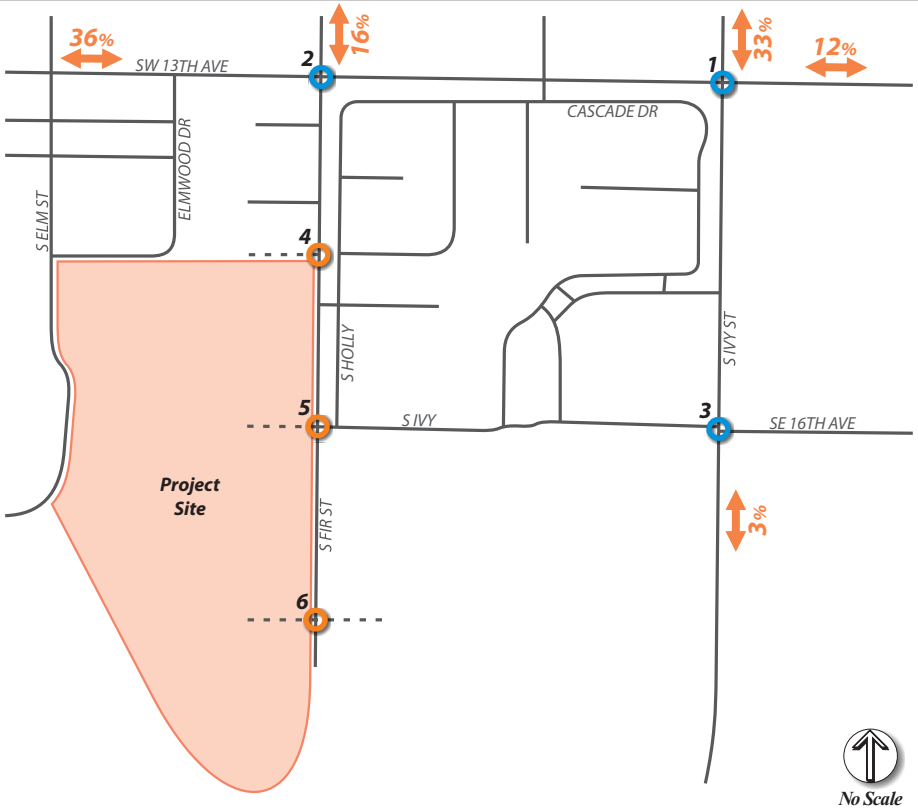
Table 2: Project Trip Generation Summary

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

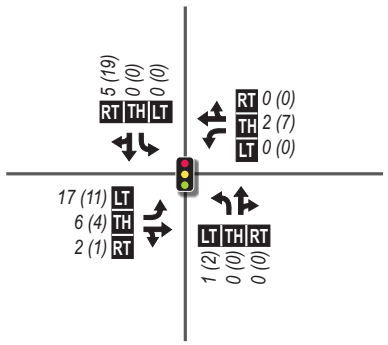
Trip distribution reflects how site generated traffic will leave and arrive at the proposed site and what roads those trips will take. The trip distribution for the proposed project was estimated based on City of Canby Travel Forecast Tool.[7] The assumed trip distribution and assignment is shown in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

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

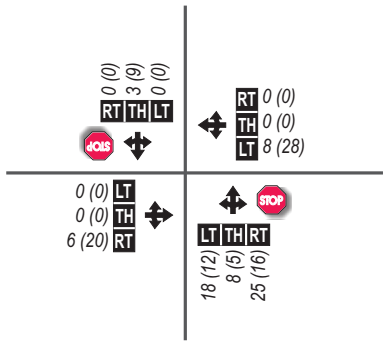


Key Map

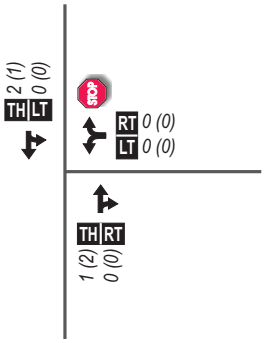
1. *SW 13th Ave. @ S Ivy St.*



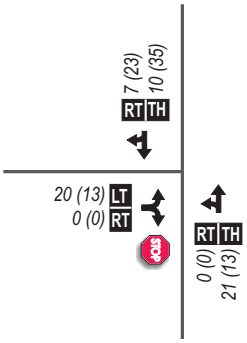
2. *SW 13th Ave. @ S Fir St.*



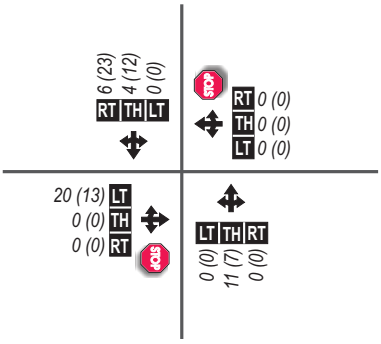
3. *S Ivy St. @ SE 16th Ave.*



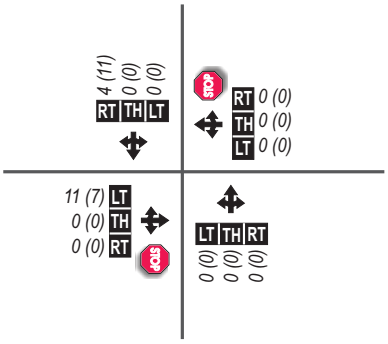
4. *S Fir St. @ Driveway 1*



5. *S Fir St. @ Driveway 2*



6. *S Fir St. @ Driveway 3*



LEGEND

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

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.

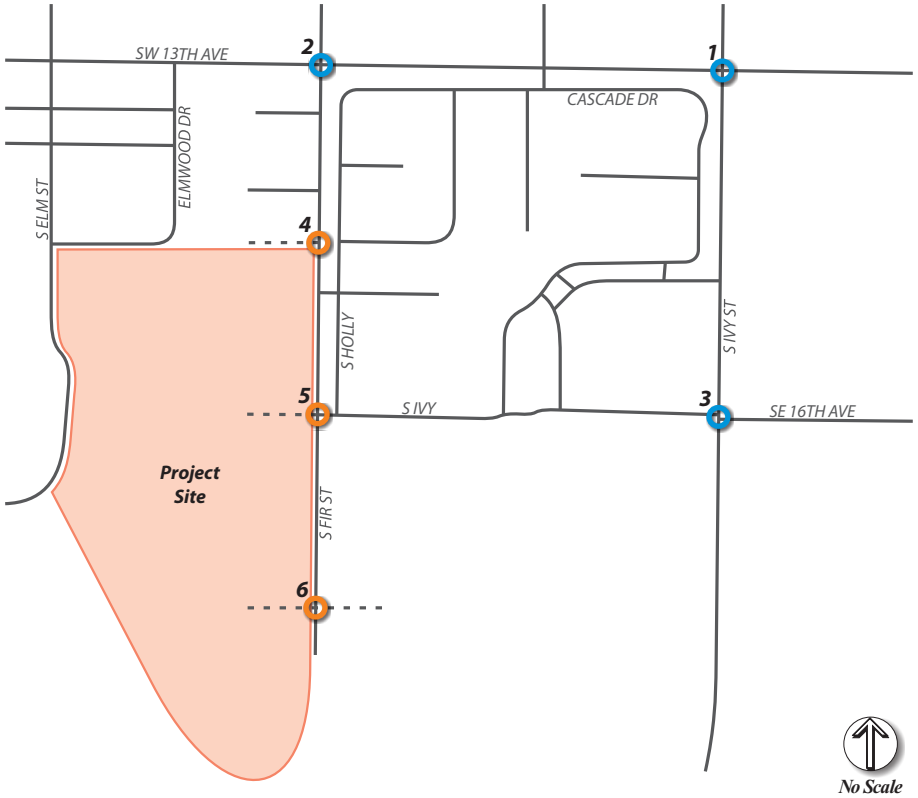
Level of Service Analysis

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

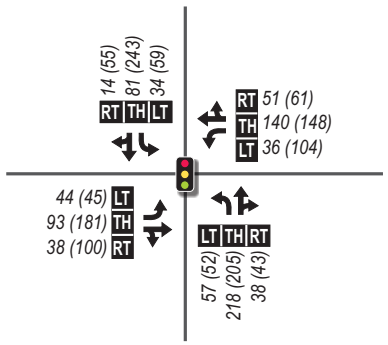
No.	Intersections	Control Type	AM Peak Hour		PM Peak Hour	
			v/c	LOS	v/c	LOS
1.	SW 13th Avenue/S Ivy Street	Signal	0.39	B	0.47	B
2.	SW 13th Avenue/S Fir Street	TWSC*	0.09	A/B	0.12	A/C
3.	S Ivy Street/SE 16th Avenue	TWSC*	0.20	A/B	0.20	A/B
4.	S Fir Street/Project Driveway 1	TWSC*	0.02	A/A	0.02	A/A
5.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

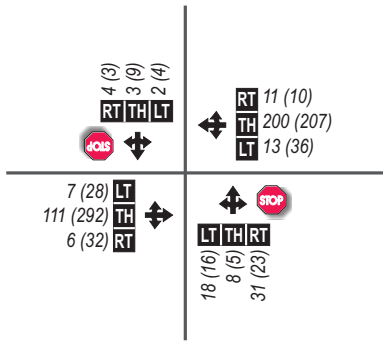


Key Map

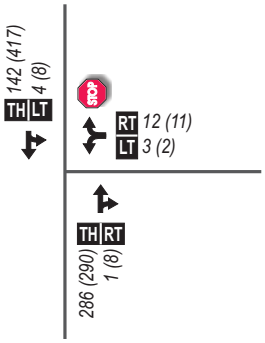
1. ***SW 13th Ave. @ S Ivy St.***



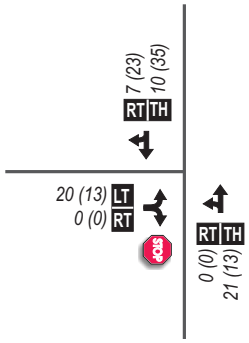
2. ***SW 13th Ave. @ S Fir St.***



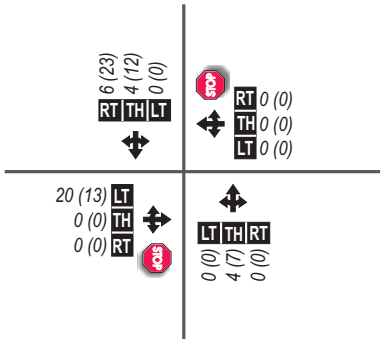
3. ***S Ivy St. @ SE 16th Ave.***



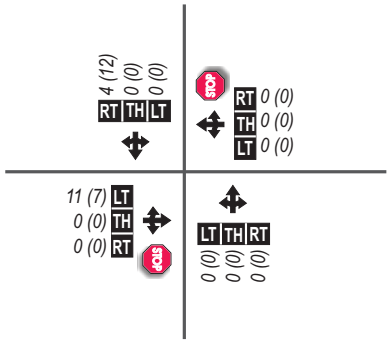
4. ***S Fir St. @ Driveway 1***



5. ***S Fir St. @ Driveway 2***



6. ***S Fir St. @ Driveway 3***



LEGEND

- # - Study Intersection
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- ← - Lane Configuration
- AM (PM) - Peak Hour Traffic Volumes
- LT TH RT (Left•Thru•Right) - Volume Turn Movement

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.

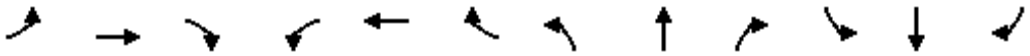
Conclusions

- 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

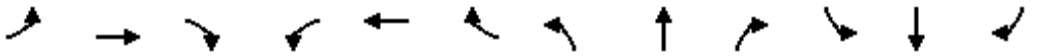
Intersection	
Int Delay, s/veh	0.4

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

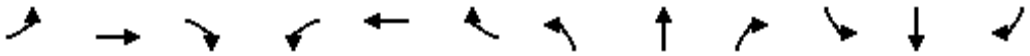
Intersection	
Int Delay, s/veh	0.3

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	-	-

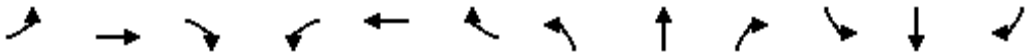
Intersection	
Int Delay, s/veh	0

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	-	-	-	-	-	-	-

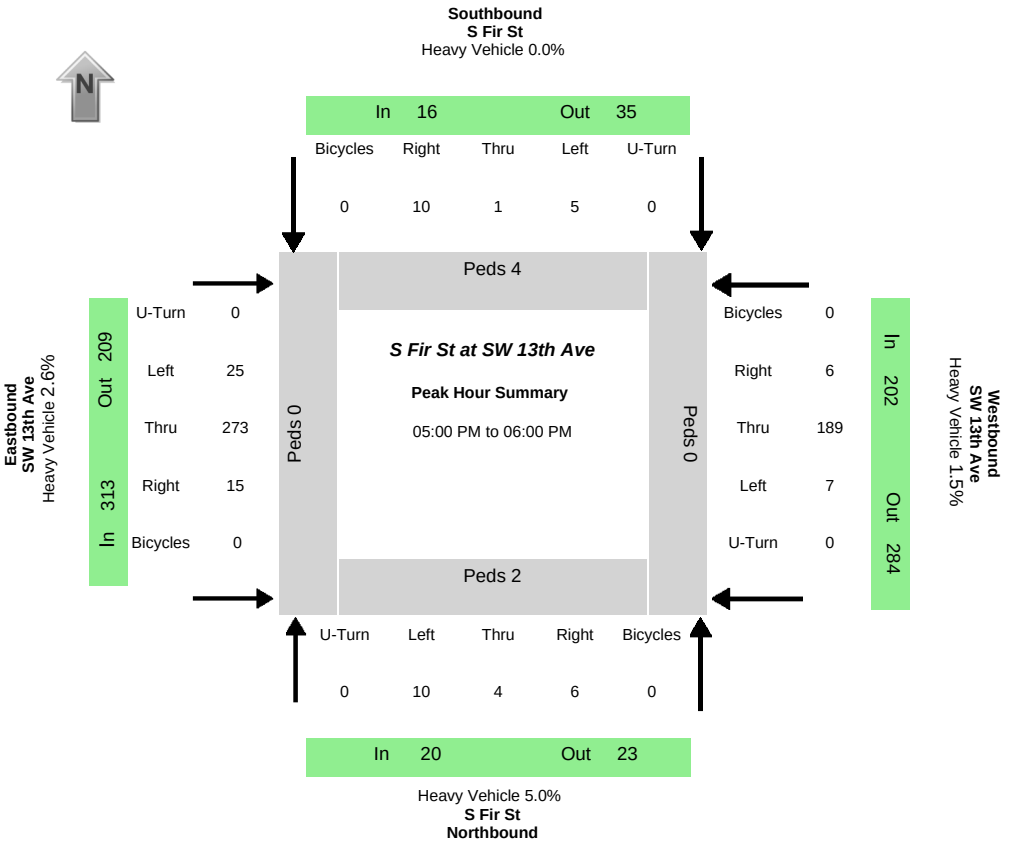
DKS

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%

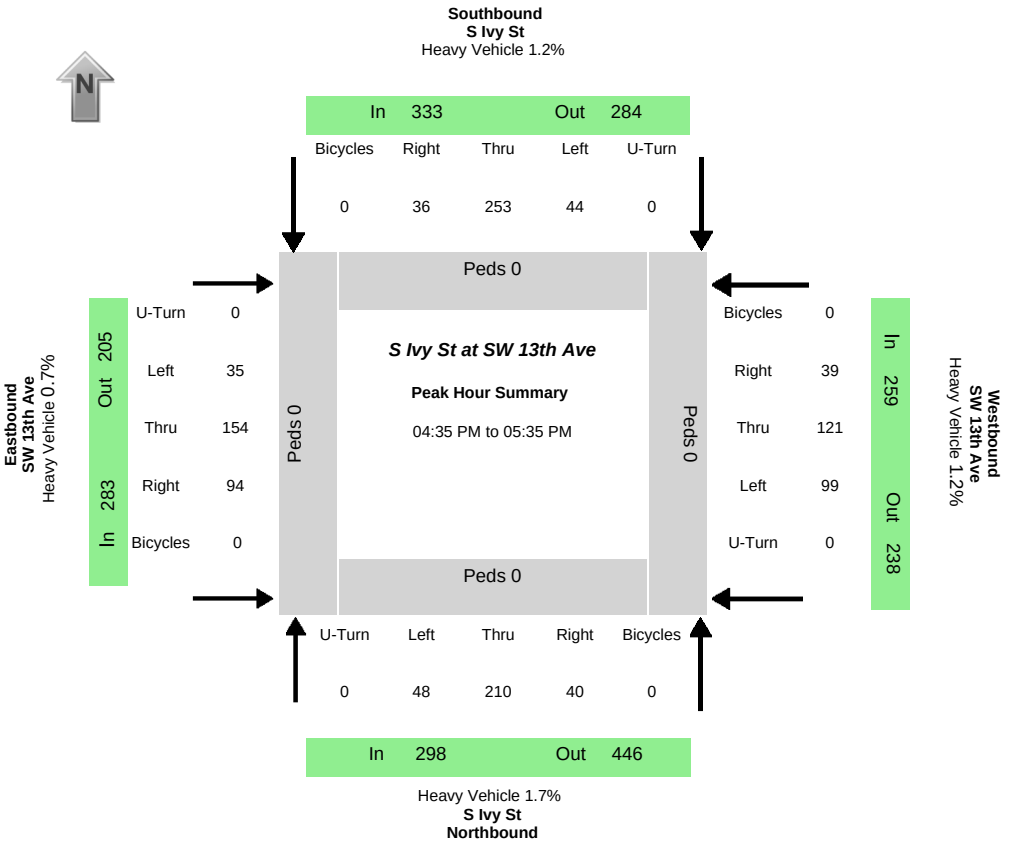
PHV- Bicycles																	PHV - Pedestrians					
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	2	4	0	0	6

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

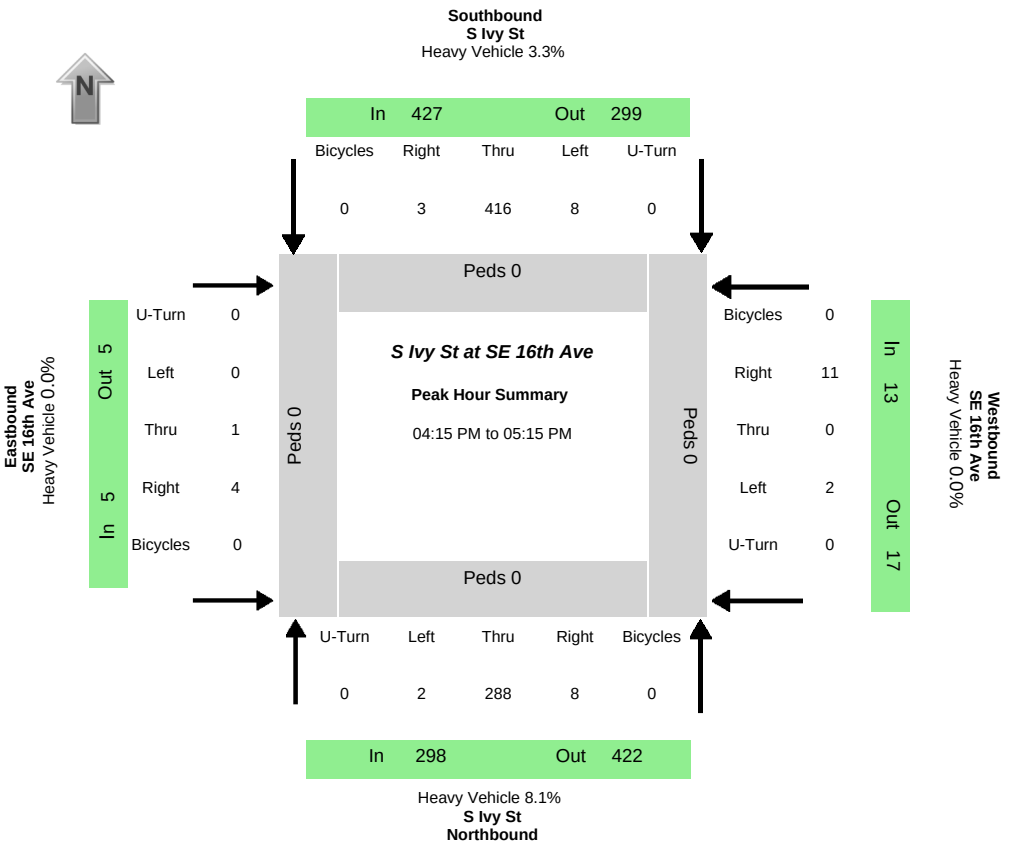
Percent Heavy Vehicles																							
0.0%	2.4%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	2.0%	0.8%	0.0%	0.0%	1.7%	1.2%	0.7%	1.2%	1.3%	1.8%	0.5%	0.8%

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

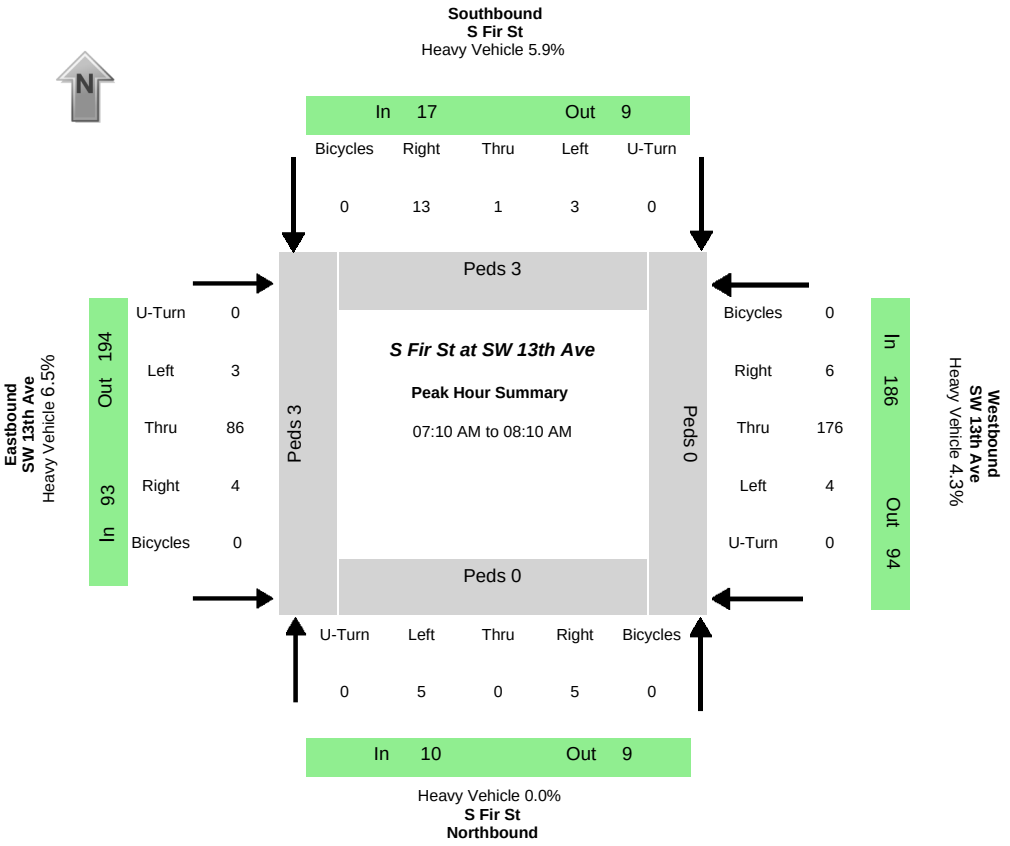
in Crosswalk				
NB	SB	EB	WB	**Sum**
0	0	0	0	0

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

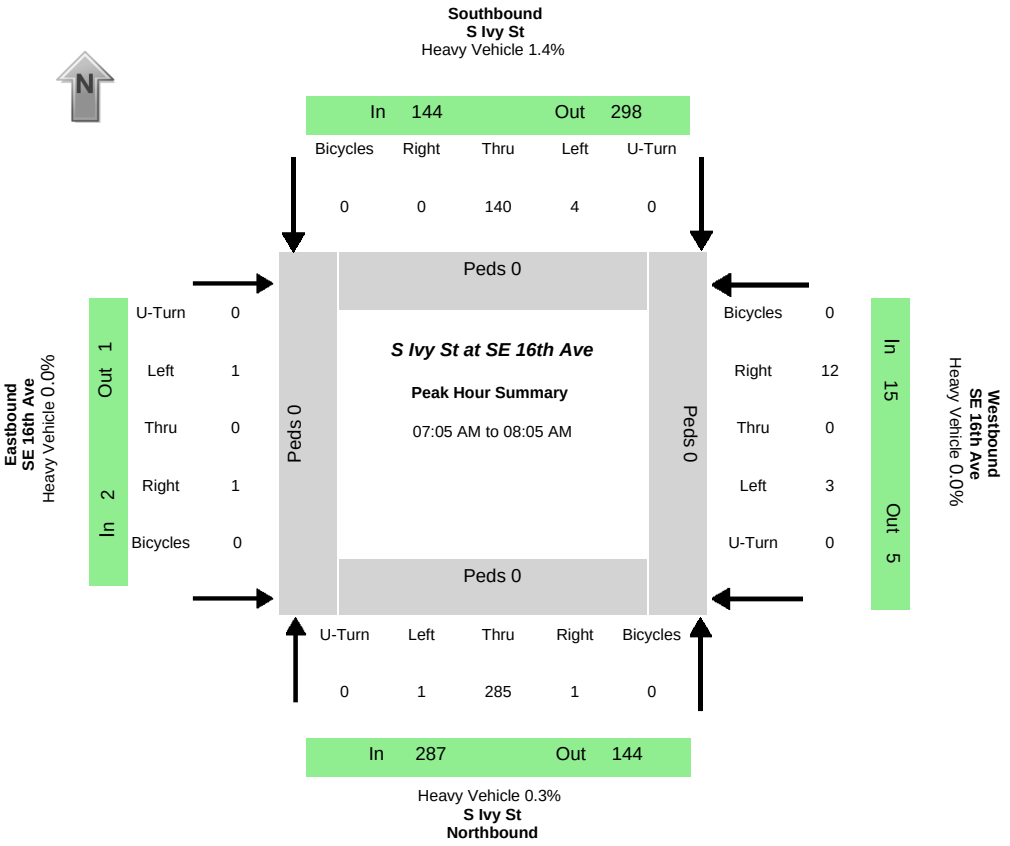
in Crosswalk				
NB	SB	EB	WB	Sum
0	3	3	0	6

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%

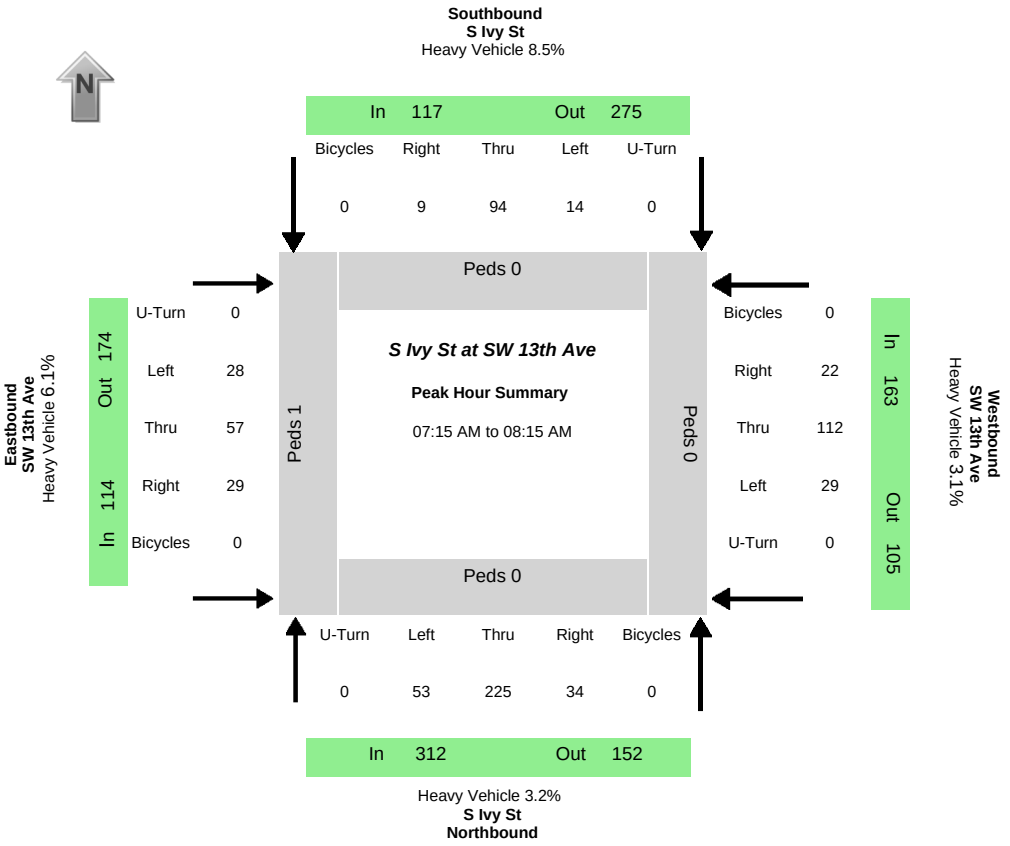
PHV- Bicycles																	PHV - Pedestrians					
Northbound				**Southbound**				**Eastbound**				**Westbound**					in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	**Sum**	NB	SB	EB	WB	**Sum**
0	0	0	0	0	0	0	0	0	0	0		0	0	0		0	0	0	0	0	0

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%	

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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%	

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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%	

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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	13:00	15:00	15:00												13:00		
Vol.	24	2	1												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
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

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 Vol.	14:00 31	16:00 1													14:00 31		

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

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

KEY DATA NETWORK
K-D-N.com
Tualatin, OR 97062
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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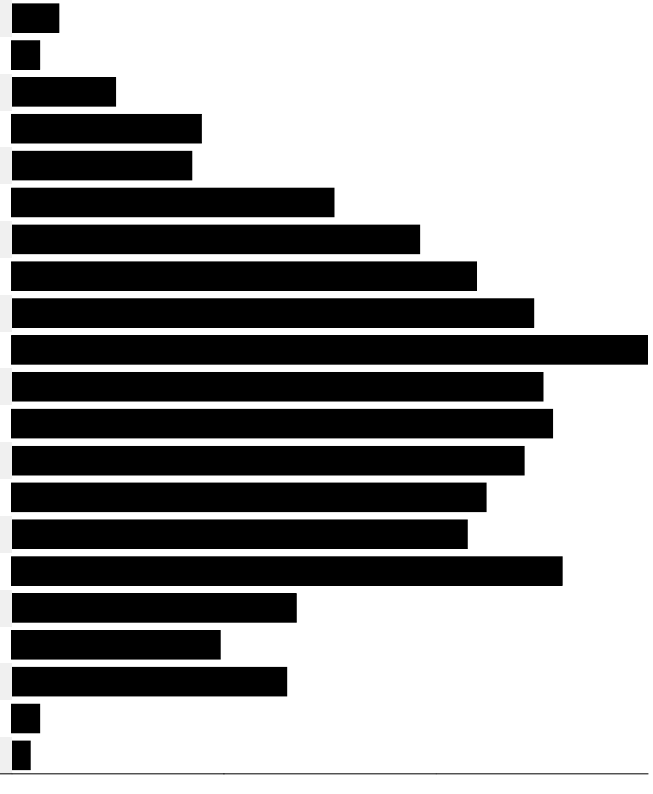
503-804-3294

Fir St south of 13th

Date Start: 7/12/2017

Latitude: 0' 0.0000 Undefined
Longitude: 0' 0.0000 Undefined

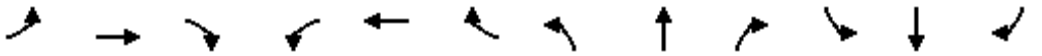
Start Time	7/13/2017 Thu	SB	NB	Combined Total
12:00 AM		0	0	0
01:00		0	0	0
02:00		0	0	0
03:00		4	1	5
04:00		0	3	3
05:00		7	4	11
06:00		5	15	20
07:00		9	10	19
08:00		15	19	34
09:00		23	20	43
10:00		19	30	49
11:00		26	29	55
12:00 PM		33	34	67
01:00		33	23	56
02:00		22	35	57
03:00		31	23	54
04:00		24	26	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	-	-	-	-	-

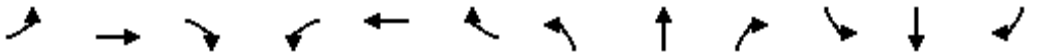
Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.1
HCM LOS	B		

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	-	-	-	-	-	-	-

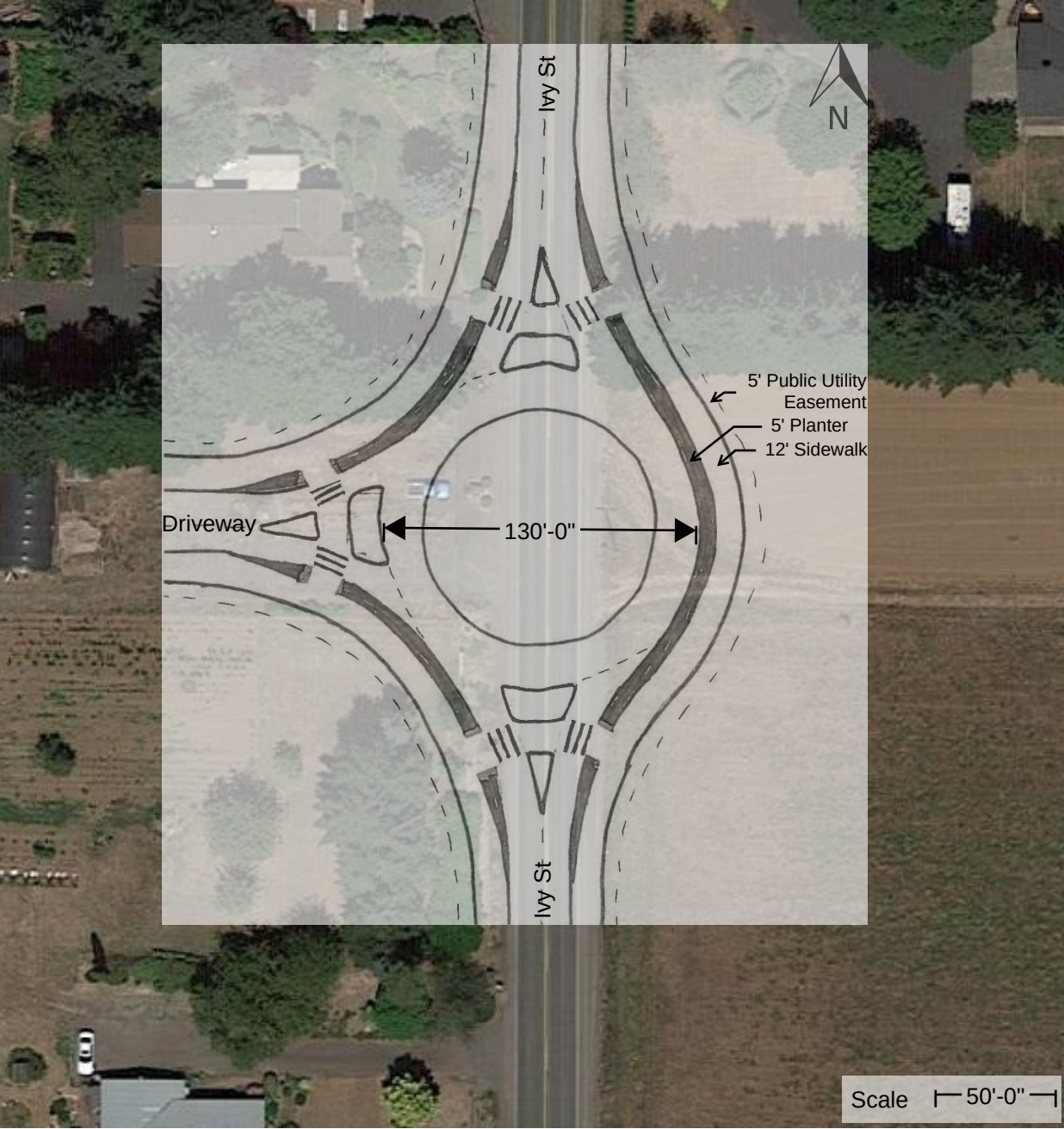
Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	8.4	0	4
HCM LOS	A	A		

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	-	-

DKS

APPENDIX E

Roundabout Sketch


Ivy St
N
5' Public Utility Easement
5' Planter
12' Sidewalk
Driveway
130'-0"
Ivy St
Scale
50'-0"

DKS

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)

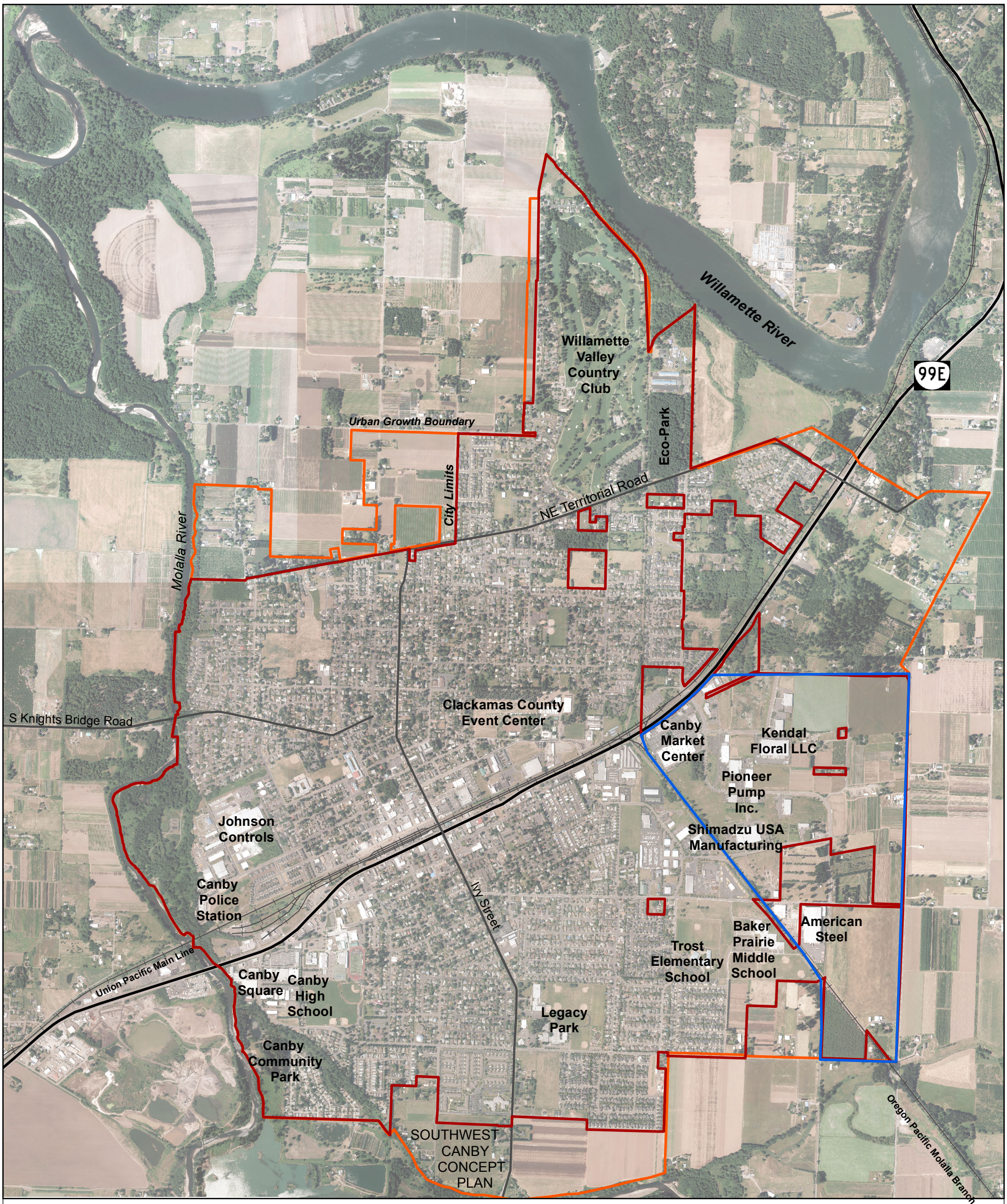


EXHIBIT 1

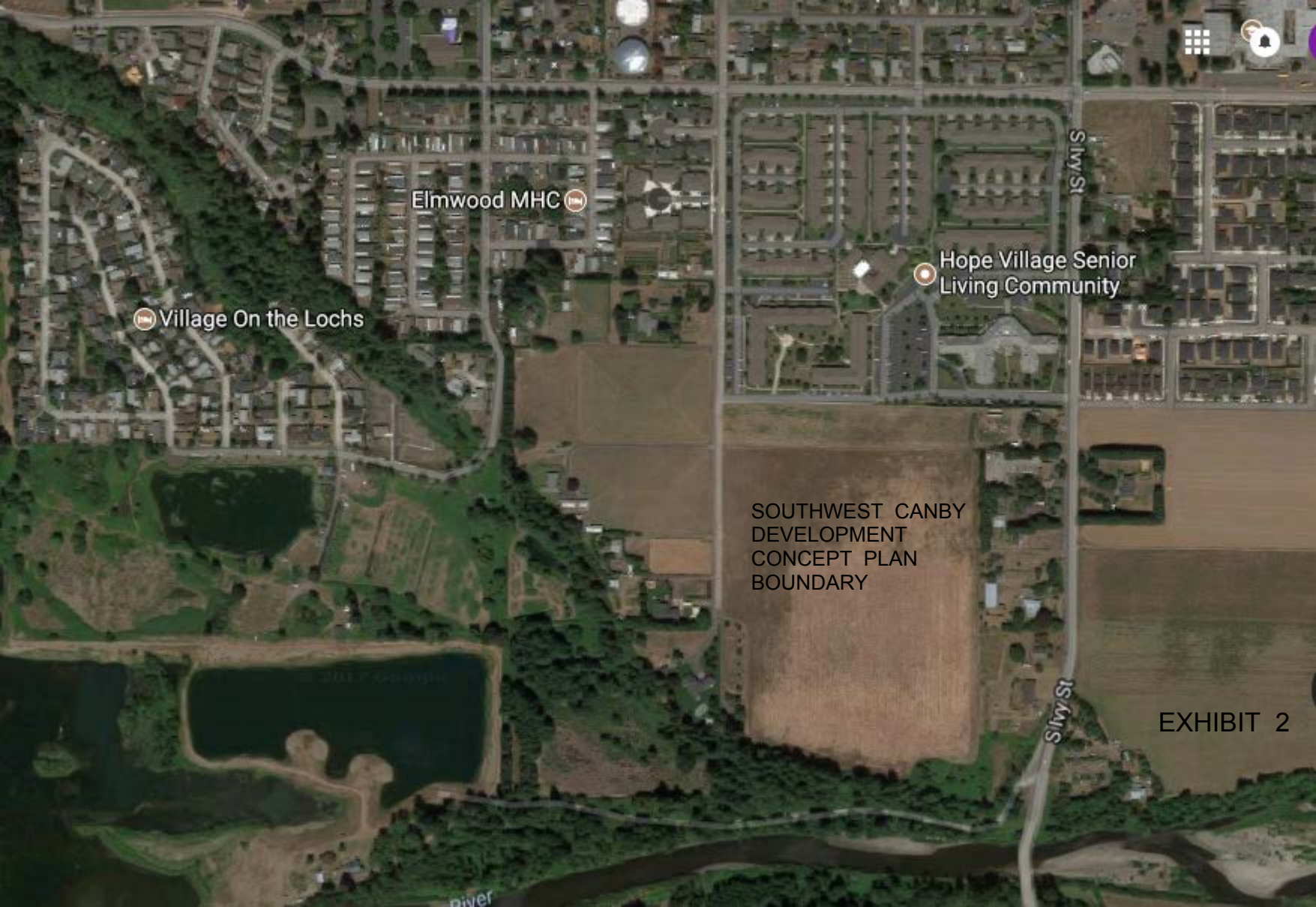
City of Canby Aerial Map

Map based on 2012 aerial photographs - August 13th, 2013

N
W E
S

0 0.25 0.5 1 Miles

The information depicted on this map is for general reference only.
The City of Canby cannot accept any responsibility for errors, omissions, or positional accuracy.


Elmwood MHC
Village On the Lochs
Hope Village Senior Living Community
S Ivy St
SOUTHWEST CANBY DEVELOPMENT CONCEPT PLAN BOUNDARY
S Ivy St
EXHIBIT 2

SANITARY SEWER MASTER PLAN

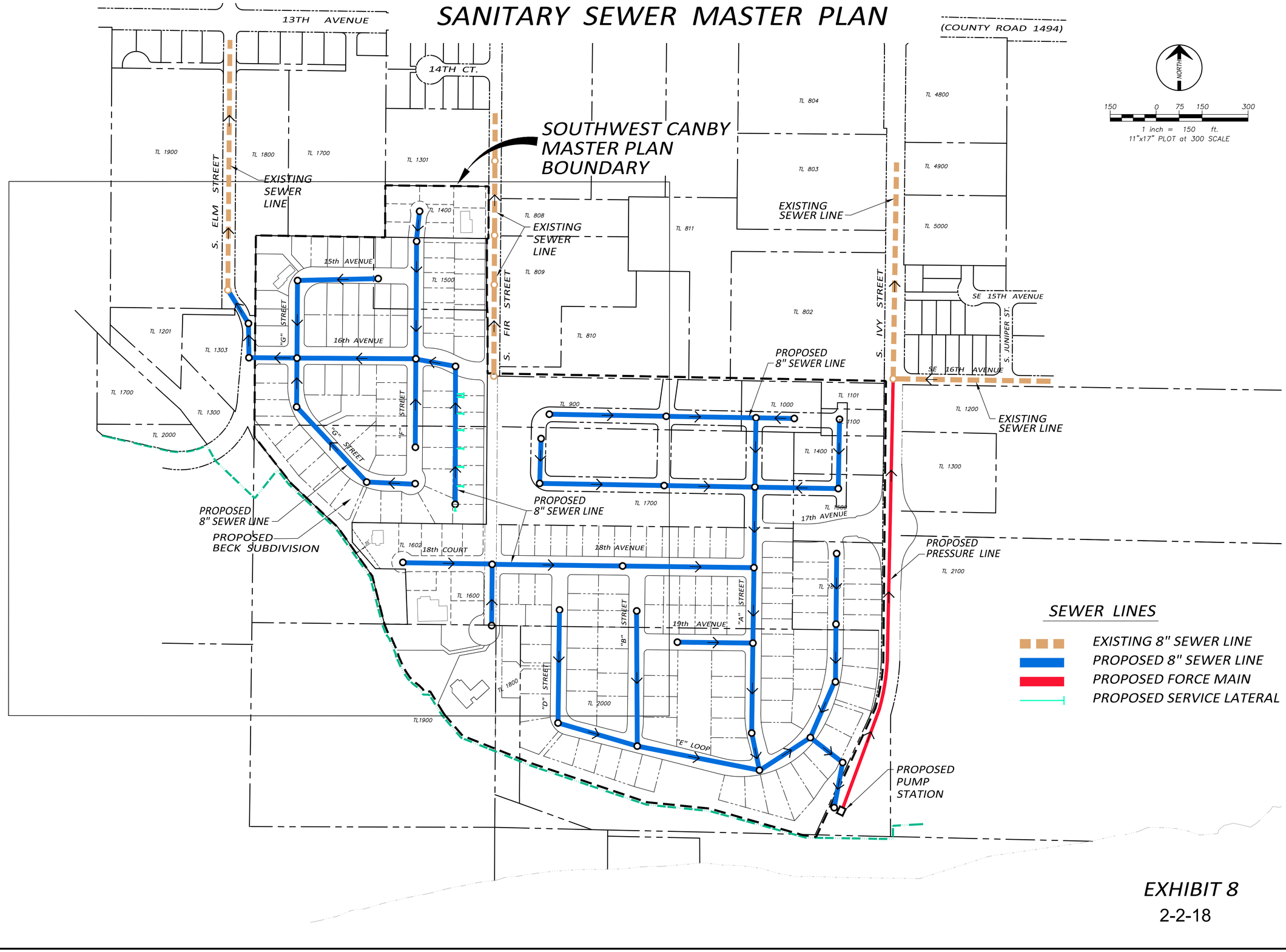


EXHIBIT 8

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

SANITARY SEWER 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

Sanitary, 2/2/2018 9:54:15 AM

WATERLINE MASTER PLAN

13TH AVENUE

14TH CT.

(COUNTY ROAD 1494)

SOUTHWEST CANBY MASTER PLAN BOUNDARY

EXISTING 8" WATER LINE

EXISTING 10" WATER LINE

EXISTING 12" WATER LINE

PROPOSED 8" WATER LINE

PROPOSED 12" WATER LINE

PROPOSED 8" WATER LINE

PROPOSED BECK SUBDIVISION

PROPOSED 8" WATER LINE

S. ELM STREET

S. FIR STREET

S. IVY STREET

S. JUNIPER ST.

15th AVENUE

16th AVENUE

17th AVENUE

18th AVENUE

18th COURT

19th AVENUE

SE 15TH AVENUE

SE 16TH AVENUE

"G" STREET

"F" STREET

"D" STREET

"B" STREET

"A" STREET

"E" LOOP

PARK

PARK

TL 1900 TL 1800 TL 1700 TL 1301 TL 1400 TL 1500 TL 1201 TL 1303 TL 1700 TL 1300 TL 2000 TL 1603 TL 1600 TL 1800 TL 2000 TL1900 TL 804 TL 803 TL 808 TL 811 TL 809 TL 802 TL 810 TL 4800 TL 4900 TL 5000 TL 900 TL 1000 TL 1101 1100 TL 1400 TL 1700 TL 1500 TL 1200 TL 1300 TL 2100 TL 1600

NORTH

150 0 75 150 300

1 inch = 150 ft.
11"x17" PLOT at 300 SCALE

WATER LINES

EXISTING	PROPOSED	
		8"
		10"
		12"

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

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

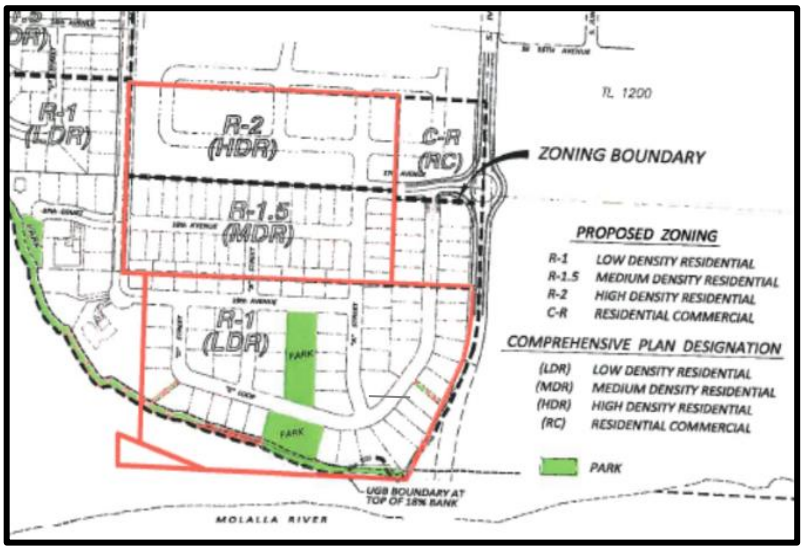
SHEET

OF

City of Canby

PUBLIC HEARING NOTICE &
REQUEST FOR COMMENTS FORM
City File No.: ANN 17-01/ZC 17-04
Project Name: MAYBERRY GROUP, LLC, ANNEXATION, ZONE CHANGE & DEVELOPMENT CONCEPT PLAN
PUBLIC HEARING DATES: PC- February 12, 2018
CC – March 7, 2018

The purpose of this Notice is to invite you to the Planning Commission and City Council Public Hearings and to request your written comments regarding Annexation and Zoning Map Amendment applications (ANN 17-01/ZC 17-04). Applicant proposes to annex and re-zone in accordance with the Canby Comprehensive Plan, properties located in an unincorporated area of Clackamas County southwest of Canby, and within the Southwest Canby Development Concept Plan area. Both Public Hearings will be held in the Council Chambers, at 222 NE 2nd Ave, Canby, OR 97013. The Planning Commission will meet at 7:00 PM, February 12, 2018. The City Council will meet at 7:30 PM, March 7, 2018.



Location: 1901 S Ivy St, & No Situs (See properties outlined in red on map at left)**.**
Tax Lots: 41E04D02000 & 1700.
Lot Size & Zoning: 30.54 Acres, zoned EFU (Exclusive Farm Use)
Property Owners: McMartin Farms, LLC
Applicant: Tucker Mayberry, The Mayberry Group, Inc
Representative: Matthew Newman, NW Engineers, LLC
Application Type: Annexation & Zone Map Amendment (Type IV)
City File Number: ANN 17-01/ZC 17-04
Contact: Bryan Brown, Planning Director at 503-266-0702
Comments due – If you would like your comments to be incorporated into the City's Staff Report, please return the Comment Form by Wednesday, January 31, 2018 for the Planning Commission Meeting and by Monday, February 26, 2018 for the City Council meeting. Written and oral comments can also be submitted up to the time of the Public Hearings and may also be delivered in person during the Public Hearings.

What is the Decision Process? The Planning Commission will consider the Annexation/Zoning Map Amendment applications to annex and zone property in the Southwest Development Concept Plan area and make a recommendation to the City Council. The City Council will then consider the Annexation/Zoning Map Amendment applications and make a final decision. Most types of property annexations no longer need approval by the Canby electorate (Senate Bill 1573).

Where can I send my comments? Written and oral comments can be submitted up to the time of the Public Hearings and may also be delivered in person during the Public Hearings. Prior to the Public Hearings comments may be mailed to the Canby Planning Department, P O Box 930, Canby, OR 97013; delivered in person to 222 NE 2nd Ave; or emailed to PublicComments@canbyoregon.gov.

How can I review the documents and staff report? Weekdays from 8 AM to 5 PM at the Canby Planning Department. The staff report will be available for inspection starting Friday, February 2, 2018, and can be viewed on the City's website: www.canbyoregon.gov. Copies are available at $0.25 per page or can be emailed to you upon request.

Applicable Canby Municipal Code Chapters:

- 16.08 General Provisions
- 16.16 R-1 Low Density Residential Zone
- 16.18 R-1.5 Medium Density Residential Zone
- 16.20 R-2 High Density Residential Zone
- 16.46 Access Limitations on Project Density
- 16.54 Amendments to Zoning Map
- 16.24 Annexations
- 16.64 Subdivisions Design
- 16.86 Street Alignments
- 16.88 General Standards & Procedures
- 16.89 Application & Review Procedures

Please Note: Failure of an issue to be raised in a hearing, in person or by letter, or failure to provide statements or evidence sufficient to afford the decision maker an opportunity to respond to the issue precludes appeal to the board based on that issue.

CITY OF CANBY –COMMENT FORM

If you are unable to attend the Public Hearings, you may submit written comments on this form or in a letter. Please send comments to the City of Canby Planning Department:

By mail: Planning Department, PO Box 930, Canby, OR 97013
In person: Planning Department at 222 NE Second Street
E-mail: PublicComments@canbyoregon.gov

Written comments to be included in Planning Commission packet are due by Wednesday, January 31, 2018.
Written comments to be included in City Council packet are due by Monday, February 26, 2018.
Written and oral comments can be submitted up to the time of the Public Hearings and may also be delivered in person during the Public Hearings.

Application: ANN 17-01/ZC 17-04 Annexation, Zone Change within the Southwest Canby DCP, The Mayberry Group, Inc

COMMENTS:

I have reviewed this phase of the application and the conditions/comments 1 thru 4 as stated in the ANN 17-02/ZC 17-03 dated 12/11/2017 are applicable to this application.

CITIZEN NAME: _____
EMAIL: _____
ORGANIZATION/BUSINESS/AGENCY: _____
ADDRESS: _____
PHONE # (optional):_____
DATE: _____

PLEASE EMAIL COMMENTS TO
PublicComments@canbyoregon.gov

AGENCIES: Please check one box and fill in your Name/Agency/Date below:

☐ Adequate Public Services (of your agency) are available
☑ Adequate Public Services will become available through the development
☐ Conditions are needed, as indicated
☐ Adequate public services are not available and will not become available
☐ No Comments

NAME: Hassan Ibrahim, PE
AGENCY: Curran-McLeod Consulting Engineers, Inc.
DATE: 1/9/2018

Thank you!

January 2018

City of Canby: Planning Commission and City Council

222 NE 2nd St.

Canby, Oregon 97013

Re: Two Projects involving SW Ivy St at Molalla River

Please make sure that this letter is physically in the files which go to City Council.

City Files No: ANN 17-01/2C 17-03 and -04

"If you do not build it, they cannot come."

To City Planning Commission and City Council:

This is a joint statement of concern about the above two projects. The writers are property owners at the Molalla River, on both sides of the River at Goode's Bridge, whose properties will be affected by these developments. We note the Cleo Wolf also owns the property which controls access at the entrance to the river road on the NW side of the river, and not merely on the south side of the river. Canby Sand and Gravel owns the property at the end of the river road, and has a limited easement across the entrance, and the residents at the end of the road are affected by traffic at the bridge.

We attended the developer's community meeting in **April 2017**, and also submitted written comment which should be in your files, and to which we direct your attention. We have asked that that letter be physically in the file before City Council. Some of our concerns have been met in the amended proposals. Others remain a concern. We also commented some years back on the prior proposed development of **McMartin Farms**, expressing many of the same concerns. Some of our concerns were then met, but that proposal was **rejected by the voters of Canby**.

Although it may accord with state law to turn EFU into housing, it is **contrary to the purposes of SB 101** to destroy prime farm land for housing. The perverse result is that prime farm land, if included within a city's UGB boundaries, becomes a target for such destruction. This will also change the visual characteristics of Canby which, in SW Canby, on both sides of S. Ivy St., has long included open fields and splendid views of Mt. Hood. The fields often contain flocks of Canada Geese, and one can observe an Osprey's Nest along the river. The "new Canby" will be just another housing project, the "little boxes" that Malvina Reynolds wrote about.

Such development destroys the character of Canby. People move to Canby for its rural and unique "character," its open spaces, its spacious views, its wide and tree-lined streets, its parks, but their move then undermines or destroys, incrementally, that character. That Canby that so many people move to finally no longer exists, as Canby becomes just a bedroom community for Portland, just another place

with more and more tract housing which might as well be anywhere or nowhere. In the foreseeable future, the lovely field and view on the East side of S. Ivy Street will be next to go. The change from a population of a couple of thousand people, a farm center, to a population of over 16,000, a bedroom community, means that the former Canby becomes more and more an illusion.

Legal Issue: EFU lands may not be subdivided under state law. These plans expand the city to the Urban Growth Boundary at the top of the hill above the Molalla River. It is, however, troublesome, that the notice maps have lines (red and green) which extend beyond the UGB (black lines) to include not only the river but south of the river. Perhaps this is meaningless or inadvertent, but there it is. Some are notice lines, but others indicate **portions of the subject properties outside the UGB**, whose fate is uncertain and not described in the plans. Presumably these will remain as UGB, but this raises a legal issue, on whether rural EFU lands can be so subdivided, which we understand is contrary to state law. We are not aware that city incorporation/annexation makes a difference. This presents a prohibition, or at least an unresolved legal issue, which the city and developers have not addressed.

We dispute the projected growth and "housing need" for the City of Canby, in this sense. That growth can only occur if additional housing is built. **The logic** that additional projected growth requires such housing **is a circular and invalid argument.** Using the baseball analogy: **If you do not build the housing, they cannot come**, and growth will either not occur or will go elsewhere. Growth Is not inevitable or necessarily desirable for its own sake. Canby is not required to "grow."

We note, in passing, that the large increase of population in Oregon, especially in the urban areas, has changed its character and its politics. Oregon, and Portland, e.g., used to be famous for their conservative character, for their independence, integrity, and trustworthiness, the Oregon of Senator Hatfield, of Governors McCall, Straub, and Atiyeh, both Democrats and Repubicans. With extensive in-migration, this has changed. We no longer trust our federal and state politicians, who have given us reason not to trust them, and Portland is no longer "The City that works," but is rather celebrated for its "weirdness" and notorious for its violent and dysfunctional politics, for its unwillingness or inability to deal with problems such as homelessness. Is this what is wanted for Canby? Canby has long been noted for its civility, the integrity of its leaders, and strong willingness to volunteer for the public good. This character has diminished rather than increased as the city has grown, and as newcomers, as in many bedroom communities, become "consumers" rather than contributors.

Contrary to prior decision of Canby voters. Previously, when development in this area (The McMartin Property) was submitted to the people of Canby, it was **rejected**. The present process bypasses the people of Canby, and fails to respect their previously expressed wishes. This may be now legal, after changes in state law, but it is not right. Just because something is legal does not make it right**. A matter previously rejected by Canby citizens should be not be approved only by representatives. That is a betrayal of representative government and of Canby voters. Canby voters decided not to annex these properties, and to leave them in EFU, as farmland.**

We would hope that City Commissioners would be uncomfortable with thus going against the express will of Canby voters. The trust between voters and their representatives has long been a Canby feature and treasure, and this works to diminish such trust.

The Immediate more practical concerns with the proposed projects are several, including **(1)congestion and traffic, (2) lack of adequate parks, (3) proposed development of a sewage station at the SE corner by the river, and (4) effects on the river and its property owners.**

Congestion and Traffic. A significant number of new houses are proposed with **only one outlet** onto S. Ivy St. S. Ivy St. has long been a traffic problem, with excessive speed (recently, perversely, increased to from **40** to **50 mph**, when it should have been reduced) and ever-growing traffic. This **single entrance/exit** is insufficient and dangerous. **Those who live along S. Ivy St. have long expressed their very real concerns about the danger of entering and exiting the street/highway**. These dangers will be increased by these projects. **The traffic study is inadequate in that it focuses only on the S. Ivy Street stretch immediately adjoining the property, and not to the overall effect. It also does not address how traffic appears to those who live there.** The dangers could perhaps be addressed with a traffic light or stop signs at the proposed entrance/exit on S. Ivy St, and with reduction of the speed limit. The present plan envisions either **stop signs or a traffic roundabout**, either of which would address this concern, by slowing traffic. The stop signs seem more practical, and should be implemented whether or not the developments are approved.

S. Ivy Street would, it appear, remain a county or state road, but it seems important that the speed limit be reduced to at least **30 mph**, consistent with an urban street. A two way stop sign will significantly slow traffic, which is good.

This development will also affect traffic and increase danger at the **north end of Good's Bridge**, making more dangerous the entrance/exit to the private river road, where the road curves and goes downward, which also causes visibility problems. We have constantly complained about the **excessive speed of traffic coming to and from Canby on S. Ivy St./Highway 170, resulting in many, many accidents and wrecks**. The road is very unforgiving. When people leave the city, in spite of signage, they mostly shift into high speeds, in excess of 50 mph. Excess speeds and tailgating in both directions are all too common, especially with inexperienced, inattentive, or drunk drivers, and with curves and poor visibility. It is often unsafe to pull into, or exit from, our own driveways, on S. Ivy St. and in the river valley. We have dealt, over the years, with dozens of crashes in our fields and front yards. These are not reflected in the traffic report, nor the increased danger during summer months when people park along the road north and south of the bridge to use the river. This parking should not occur, but it does, and should be taken into account.

This development will adversely affect the area just NW of Good's Bridge which gives access to the private river road. This area is also used as a turn-around for School Busses, and will increase danger for them. If structures (sewage or other) are built in this area, they may also affect visibility and safety.

Lack of adequate parks/fences. Canby has been noted for its parks and open spaces. A livable city requires many parks and open spaces for livability and for its children. These plans provide for three

very small parks and a trail at the top of the bluff (less than City Plan requirements), and this will put extra pressure on ours and others' properties adjoining the river. The River and the River Road are private, not public properties, and the proposed projects will have an adverse effect upon them. The acreage of the proposed parks is less than the city requires, though we understand this will be offset by fees which will enable the city to acquire additional parkland in this area (although, if this is so, should not the parkland now be dedicated?). There should be a **high and adequate fence** on the river side of the trail which cannot easily be crossed, at least six feet of such as a chain-link fence, in order to prevent river and slope access, to protect the slope and the private property as well as people living in the development, and to protect people from easily dumping garbage across the fence, such as appliances, bags of garbage, and so on. The river is an attractive nuisance. We understood from the developers that such a fence would be put in place, but it is not clearly specified in the plan. We remain concerned about **inadequate policing of city parks and trails, which have led to significant vandalism and crime in other parts of Canby, and might lead to the same here**. We have worked for years to keep drugs and vandalism off the river and river road, and would hate to see them recur.

The current plan means that our property will become by default a public park, but without any support systems in place such as policing, trash removal, and restrooms.

Construction of a sewage station: It appears that, if both developments are approved, this will require that a sewage station be constructed by the City, proposed for the SE corner by the river. It is unclear what the physical size of this will be, where exactly it will be, and how it might affect **the existing space, which is county or private property and outside the UGB.** There is no space included in the development land itself for such a station, and it is unclear how the city would acquire ownership or control. We believe, without knowing more, that this will have an adverse effect upon that corner, including access and visibility/safety concerns at the top of the bridge/river road. In addition, what is the plan if the sewage station fails: will sewage flow into the river?

Special concerns include traffic volume on the north end of the development, the theoretical roundabout on the south end by the river and/or midway, no specifics on speed limit changes, and a sewage pump station directly adjacent to highway that, if damaged or malfunctioned, might send sewage water down- hill to the river and, due to never-maintained drains half across the bridge, would allow even more impact on land at the end of bridge. Yearly since 2010, the owner at the south=east end of the bridge has shoveled debris out of the bridge drain so that water volume doesn't overwhelm the drain field 4 lines next to the road. There is concern also about the effect of traffic on school children walking to school on both Ivy and 13th.

Adverse affects on river property owners. Increasing congestion north of the river cumulatively, incrementally, places additional pressure on the river properties, with increases in traffic, and the "natural" overflow of people seeking recreation southward onto private property. The proposal maps suggest that this is the intent of planners. What will separate the proposed housing from the adjoining river properties (high fences, walls?). We have worked with state, county, and city officials for years to police and protect the river, and this will make such protection more difficult. The river in its natural state is one of the treasures of the State and of the area, from its source near Table Rock Wilderness

Area, through its 50 mile course, to its joining the Willamette River. Increasing population and urbanization threatens, and has already adversely affected, the purity of the water (essential to the city) and the wildlife of the river. More parks reduce that pressure by properly directing citizens' uses inward. But development for the sake of development, without consideration of the effects, is cumulatively harmful to the city and its surroundings.

Summary:

This development, and that soon projected to occur across S. Ivy St., will adversely change the character and appearance of Canby, and adversely affect the adjoining properties. Approving these annexations goes counter to the express will of Canby voters, and may in part not be legal because it would divide EFU land.

Respectfully,

_____

Cleo Wolf, 8551 S. Vale Garden Road, Canby, Oregon 97013

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Susan Gallagher, 25261 S. Highway 170, Canby, Oregon 97013. SusanG@Canby.com

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Dr. David Peter, 25130 S. Highway 170, Canby, Oregon 97013. dpeter001@icloud.com

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Cindy Bennett, 25120 S. Highway 170, Canby, Oregon 97013. CindyBen22@yahoo.com

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Alan L. Gallagher, Canby, Oregon 97013. Gallagheralan2000@yahoo.com

January 18, 2018

Tom & Julie Rushton

1441 S Ivy St Unit 906

Canby, Oregon 97013

Re: City File No. ANN 17-02/ZC 17-03 Southwest Canby DCP, Annexation & Zone Change

Stafford Development

As residents of Hope Village, we are writing to express our objection to not receiving the public hearing notices for this project, despite having requested on 2 separate occasions prior to the hearings to be added to the list of parties to be notified. When we spoke with Planning Staff on each of the 2 occasions, we were emphatically told that all residents in the surrounding area were being notified, despite the fact that we had not received any notifications, and are still not receiving them. We would respectfully request that we be added to the list of parties to be notified of all public hearings concerning this project.

As Hope Village residents living on the Fir St side of the project, we object to any increased traffic impact on Fir St. The site lines onto 13th are very poor, we have ourselves noticed many near misses with autos, pedestrians, and bicyclists.

We believe that all residents at Hope Village should be notified individually so we have the opportunity to comment on this project, as we will be greatly impacted by any development, construction and increased traffic volumes in this area for years to come.

Respectfully,

Tom & Julie Rushton

BEFORE THE PLANNING COMMISSION
OF THE CITY OF CANBY

A REQUEST FOR APPROVAL OF	**)**	**FINDINGS, CONCLUSION & FINAL ORDER**
ANNEXATION AND ZONE CHANGE	**)**	**ANN 17-01/ZC 17-04**
FOR PROPERTY LOCATED ON THE	**)**	**MCMARTIN FARMS, LLC**
SOUTHWEST CANBY BETWEEN S. IVY	**)**	
AND S. FIR STREETS	**)**	

NATURE OF THE APPLICATION

The Applicants sought approval for an annexation/zone change application ANN 17-01/ZC 17-04 to annex 28.08 acres of real property described as Tax Lots 41E04D01500 and 41E04D02000, Clackamas County, Oregon. The property is zoned Clackamas County EFU and is requested to be zoned City R-1, Low Density Residential, R-1.5, Medium Density Residential and R-2, High Density Residential.

HEARINGS

The Planning Commission considered applications ANN 17-01/ZC 17-04 after the duly noticed hearing on February 12, 2018 during which the Planning Commission recommended by a / vote that the City Council approve ANN 17-01/ZC 17-04 per the recommendation contained in the staff report.

CRITERIA AND STANDARDS

In judging whether or not the annexation and zone change applications 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 criteria and standards were reviewed in the Planning Commission staff report dated January 31, 2018 and presented at the February 12, 2018 public hearing of the Planning Commission.

FINDINGS AND REASONS

The Planning Commission considered applications ANN 17-01/ZC 17-04 at a public hearing held on February 12, 2018 during which the staff report was presented, including all attachments. Staff recommended that the Planning Commission forward a recommendation of approval to the City Council for the proposed annexation and new zoning designation.

After hearing public testimony, and closing the public hearing, the Planning Commission made no additional findings beyond those contained in the staff report to arrive at their decision and support their recommendation:

CONCLUSION

In summary, the Planning Commission adopted the findings contained in the staff report, concluded that the annexation/zone change meets all applicable approval criteria, and approved Files ANN 17-01/ZC 17-04 as stated below. The Planning Commission's order is reflected below.

ORDER

Based on the application submitted and the facts, findings, and conclusions of the staff report, and any supplemental findings from the public hearing, the Planning Commission recommended to the City Council **APPROVAL** of annexation and zone change applications **ANN 17-01/ZC 17-04** as follows:

1. ANN 17-01/ZC 17-04 be approved and,
2. Upon annexation, the zoning of the subject properties shall be designated as R-1, R-1.5, and R-2 as indicated by the Southwest Canby Development Concept Plan Map and the Canby Comprehensive Plan Map.

I CERTIFY THAT THIS ORDER approving **ANN 17-01/ZC 17-04** presented to and **APPROVED** by the Planning Commission of the City of Canby.
DATED this 12th day of February, 2018

_____
John Savory
Planning Commission Chair

_____
Bryan Brown
Planning Director

_____
Laney Fouse, Attest
Recording Secretary

ORAL DECISION: February 12, 2018

Name	***Aye***	***No***	***Abstain***	***Absent***
John Savory				
John Serlet				
Larry Boatright				
Derrick Mottern				
Tyler Hall				
Shawn Varwig				
Andrey Chernishov				

WRITTEN DECISION: February 12, 2018

Name	***Aye***	***No***	***Abstain***	***Absent***
John Savory				
John Serlet				
Larry Boatright				
Derrick Mottern				
Tyler Hall				
Shawn Varwig				
Andrey Chernishov				